High Capacity Stacker SK5010
Machine Code: D447
Service Manual

20th January, 2009
Subject to change

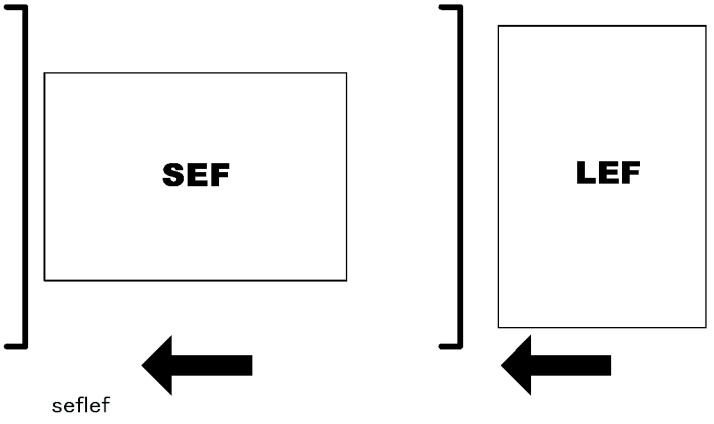
Safety, Conventions, Trademarks

Conventions

Common Terms

This is a list of symbols and abbreviations used in this manual.

Symbol	What it means
CT	Core Tech Manual
	Screw
	Connector
	E-ring
	C-ring
	Harness clamp
FFC	Flexible Film Cable
JG	Junction Gate
LE	Leading Edge of paper
LEF	Long Edge Feed
SEF	Short Edge Feed
TE	Trailing Edge of paper
S31E	The "Emitter" sensor of a sensor pair
S31R	The "Receptor" sensor of a sensor pair



seflef

The notations "SEF" and "LEF" describe the direction of paper feed, with the arrows indicating paper feed direction.

Warnings, Cautions, Notes

In this manual, the following important symbols and notations are used.

⚠WARNING

- A Warning indicates a potentially hazardous situation. Failure to obey a Warning could result in death or serious injury.

⚠CAUTION

- A Caution indicates a potentially hazardous situation. Failure to obey a Caution could result in minor or moderate injury or damage to the finisher or other property.

Important

- **Obey these guidelines to avoid problems such as misfeeds, damage to originals, loss of valuable data and to prevent damage to the machine.**

Note

- This information provides tips and advice about how to best service the machine.

General Safety Instructions

For your safety, please read this manual carefully before you use this product. Keep this manual handy for future reference.

Safety Information

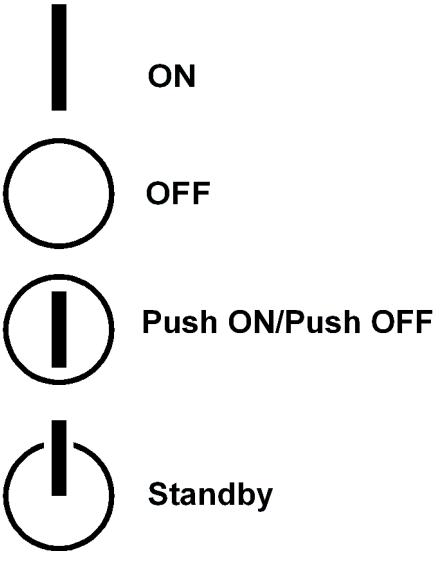
Always obey the following safety precautions when using this product.

Safety During Operation

In this manual, the following important symbols and notations are used.

Switches and Symbols

Where symbols are used on or near switches on machines for Europe and other areas, the meaning of each symbol conforms with IEC60417.



safe–sym

Responsibilities of the Customer Engineer

Reference Material for Maintenance

- Maintenance shall be done using the special tools and procedures prescribed for maintenance of the machine described in the reference materials (service manuals, technical bulletins, operating instructions, and safety guidelines for customer engineers).
- In regard to other safety issues not described in this document, all customer engineers shall strictly obey procedures and recommendations described the “CE Safety Guide”.
- Use only consumable supplies and replacement parts designed for use of the machine.

Before Installation, Maintenance

Power

⚠WARNING

- Always disconnect the power plug before doing any maintenance procedure. After switching off the machine, power is still supplied to the main machine and other devices. To prevent electrical shock, switch the machine off, wait for a few seconds, then unplug the machine from the power source.
- Before you do any checks or adjustments after turning the machine off, work carefully to avoid injury. After removing covers or opening the machine to do checks or adjustments, never touch electrical components or moving parts (gears, timing belts, etc.).
- After turning the machine on with any cover removed, keep your hands away from electrical components and moving parts. Never touch the cover of the fusing unit, gears, timing belts, etc.

Installation, Disassembly, and Adjustments

⚠CAUTION

- After installation, maintenance, or adjustment, always check the operation of the machine to make sure that it is operating normally. This ensures that all shipping materials, protective materials, wires and tags, metal brackets, etc., removed for installation, have been removed and that no tools remain inside the machine. This also ensures that all release interlock switches have been restored to normal operation.
- Never use your fingers to check moving parts causing spurious noise. Never use your fingers to lubricate moving parts while the machine is operating.

Special Tools

⚠CAUTION

- Use only standard tools approved for machine maintenance.
- For special adjustments, use only the special tools and lubricants described in the service manual. Using tools incorrectly, or using tools that could damage parts, could damage the machine or cause injuries.

During Maintenance

General

⚠CAUTION

- Before you begin a maintenance procedure: 1) Switch the machine off, 2) Disconnect the power plug from the power source, 3) Allow the machine to cool for at least 10 minutes.
- Avoid touching the components inside the machine that are labeled as hot surfaces.

Safety Devices

⚠WARNING

- Never remove any safety device unless it requires replacement. Always replace safety devices immediately.
- Never do any procedure that defeats the function of any safety device. Modification or removal of a safety device (fuse, switch, etc.) could lead to a fire and personal injury. Always test the operation of the machine to ensure that it is operating normally and safely after removal and replacement of any safety device.
- For replacements use only the correct fuses or circuit breakers rated for use with the machine. Using replacement devices not designed for use with the machine could lead to a fire and personal injuries.

Organic Cleaners

⚠CAUTION

- During preventive maintenance, never use any organic cleaners (alcohol, etc.) other than those described in the service manual.
- Make sure the room is well ventilated before using any organic cleaner. Use organic solvents in small amounts to avoid breathing the fumes and becoming nauseous.
- Switch the machine off, unplug it, and allow it to cool before doing preventive maintenance. To avoid fire or explosion, never use an organic cleaner near any part that generates heat.
- Wash your hands thoroughly after cleaning parts with an organic cleaner to contamination of food, drinks, etc. which could cause illness.
- Clean the floor completely after accidental spillage of silicone oil or other materials to prevent slippery surfaces that could cause accidents leading to hand or leg injuries. Use “My Ace” Silicone Oil Remover (or dry rags) to soak up spills. For more details, please refer to Technical Bulletin “Silicone Oil Removal” (A024-50).

Ozone Filters

⚠CAUTION

- Always replace ozone filters as soon as their service life expires (as described in the service manual).
- An excessive amount of ozone can build up around machines that use ozone filters if they are not replaced at the prescribed time. Excessive ozone could cause personnel working around the machine to feel unwell.

Power Plug and Power Cord

⚠WARNING

- Before servicing the machine (especially when responding to a service call), always make sure that the power plug has been inserted completely into the power source. A partially inserted plug could lead to heat generation (due to a power surge caused by high resistance) and cause a fire or other problems.
- Always check the power plug and make sure that it is free of dust and lint. Clean it if necessary. A dirty plug can generate heat which could cause a fire.
- Inspect the length of the power cord for cuts or other damage. Replace the power cord if necessary. A frayed or otherwise damaged power cord can cause a short circuit which could lead to a fire or personal injury from electrical shock.
- Check the length of the power cord between the machine and power supply. Make sure the power cord is not coiled or wrapped around any object such as a table leg. Coiling the power cord can cause excessive heat to build up and could cause a fire.
- Make sure that the area around the power source is free of obstacles so the power cord can be removed quickly in case of an emergency.
- Make sure that the power cord is grounded (earthed) at the power source with the ground wire on the plug.
- Connect the power cord directly into the power source. Never use an extension cord.
- When you disconnect the power plug from the power source, always pull on the plug, not the cable.

After Installation, Servicing

Disposal of Used Items

⚠CAUTION

- Always dispose of used items (developer, toner, toner cartridges, OPC drums, etc.) in accordance with the local laws and regulations regarding the disposal of such items.

- To protect the environment, never dispose of this product or any kind of waste from consumables at a household waste collection point. Dispose of these items at one of our dealers or at an authorized collection site.

Points to Confirm with Operators

At the end of installation or a service call, instruct the user about use of the machine. Emphasize the following points.

- Show operators how to remove jammed paper and troubleshoot other minor problems by following the procedures described in the operating instructions.
- Point out the parts inside the machine that they should never touch or attempt to remove.
- Confirm that operators know how to store and dispose of consumables.
- Make sure that all operators have access to an operating instruction manual for the machine.
- Confirm that operators have read and understand all the safety instructions described in the operating instructions.
- Demonstrate how to turn off the power and disconnect the power plug (by pulling the plug, not the cord) if any of the following events occur: 1) something has spilled into the product, 2) service or repair of the product is necessary, 3) the product cover has been damaged.
- Caution operators about removing paper fasteners around the machine. They should never allow paper clips, staples, or any other small metallic objects to fall into the machine.

Safety Instructions for this Machine

1. The installation must be done by trained service technicians.
2. This machine weighs 316 kg. (695 lb.). At least four persons are required to remove the machine from its pallet and position it for installation.
3. To prevent fire hazards never use flammable solvents around the machine.
4. Never place any object on the machine.
5. If anything falls into the machine, turn off the main power switch on the right side of the machine, then disconnect the power cord from the power source.
6. Locate the machine on a sturdy flat surface where it will not be exposed to excessive vibration.
7. To avoid fire hazard, confirm that the ventilation ports are not blocked, so air can flow freely.
8. Gas generated by the molten glue can irritate the eyes, throat, and nose. The machine should always be used in a well ventilated room.
9. To avoid the dangers of fire and electrical shock, make sure that the machine is never exposed to:
    - Excessive high temperatures and/or humidity

- Dust
- Water
- Direct sunlight
- Open flame
- Corrosive gases

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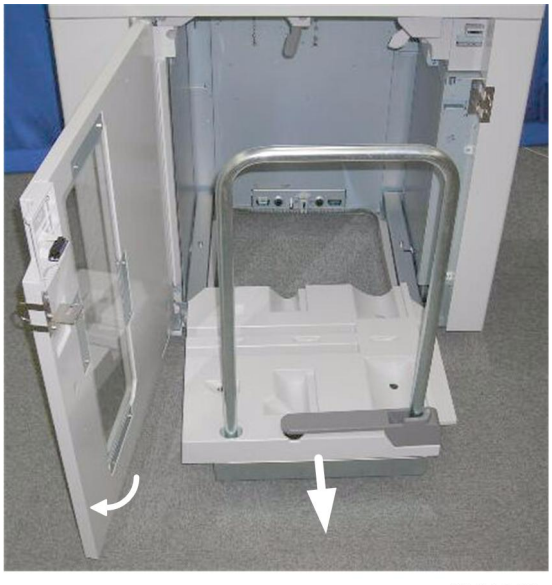
1. Replacement and Adjustment

Common Procedures

Roll-Away Cart D456



d447r001

Important

- **To prevent damage to the tray switches at the back of the machine, always remove the tray cart before moving the stacker unit.**
- **Always remove the cart before servicing.**

1. Open the front door.
2. Pull out the cart.

Covers

Door and Cover Names

d447r002

①	Front Door (🔩 x1)
②	Bottom Hinge Cover (🔩 x1)
③	Front Left Cover (🔩 x2)
④	Front Right Cover (🔩 x2)
⑤	Top Door ("L" Pins x2)
⑥	Top Front Cover (🔩 x2)
⑦	Top Center Cover (🔩 x2)
⑧	Proof Tray (🔩 x2)
⑨	Top Rear Cover (🔩 x2)r

d447r003

⑩	Exit Cover Plate (x2)
⑪	Left Cover (x4)

d447r004

⑫	Rear Upper Cover (x4)
⑬	Rear Lower Cover (x4)
⑭	Corner Cover (x4)

Rear Lower Cover, Rear Upper Cover

d447r005

1. The rear lower cover should be removed before the rear upper cover.
2. Rear lower cover [A] (x4)

d447r006

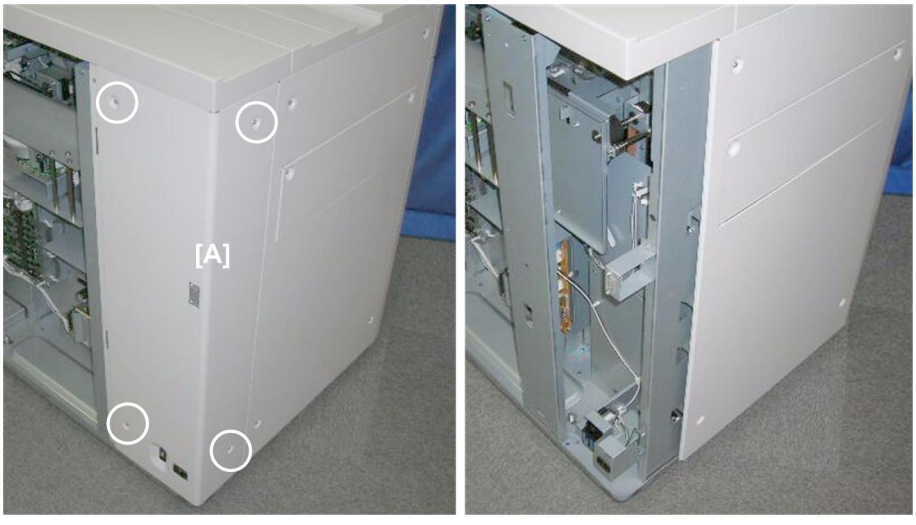
3. Rear upper cover [B] (x4)

Corner Cover

Preparation

Remove these parts:

- Rear lower cover
- Rear upper cover



d447r007

1. Corner cover [A] (x4)

Left Exit Cover Plate

If a peripheral unit has been installed downstream of the stacker, this cover was removed at installation.

d447r008

1. Left exit cover plate [A] (x2)

Left Cover

Preparation

- Remove the left exit cover plate

d447r009

1. Left cover [A] (x4)

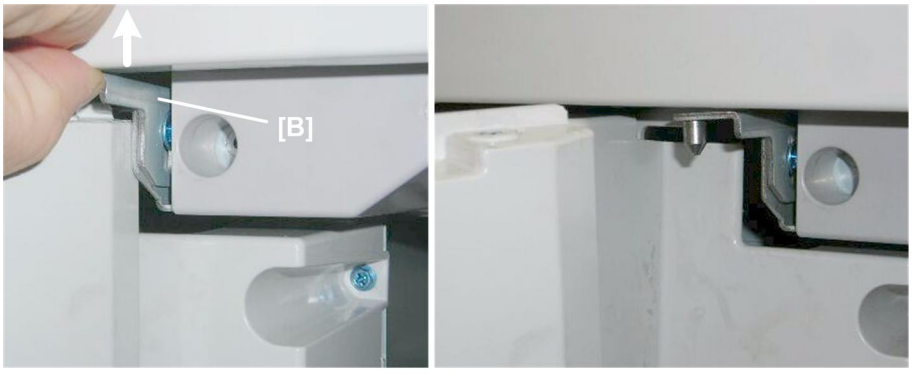
⚠CAUTION

- Remove the last screw carefully. The left cover may fall suddenly because there are no hooks holding it in place.
- Never place your hand or fingers below the bottom edge of the cover when removing it.

Front Door

d447r010

1. Open the front door.
2. Remove screw [A] (x1)



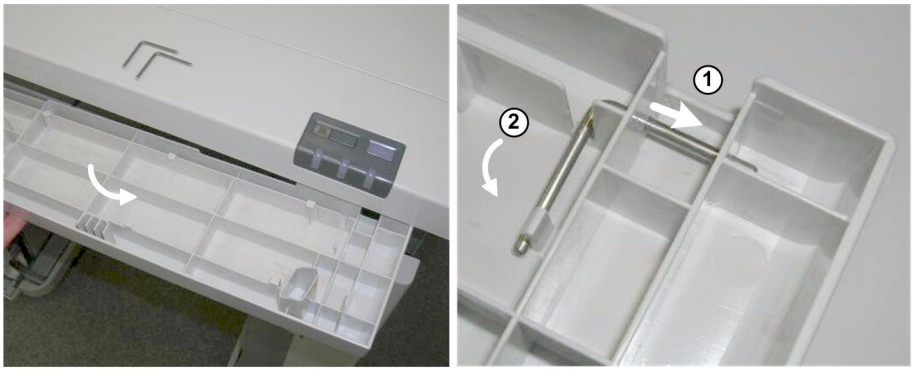
d447r011

3. Raise hinge [B] out of the hole at the top of the door.
4. Pull the door off the bottom hinge.

Top Door

d447r012

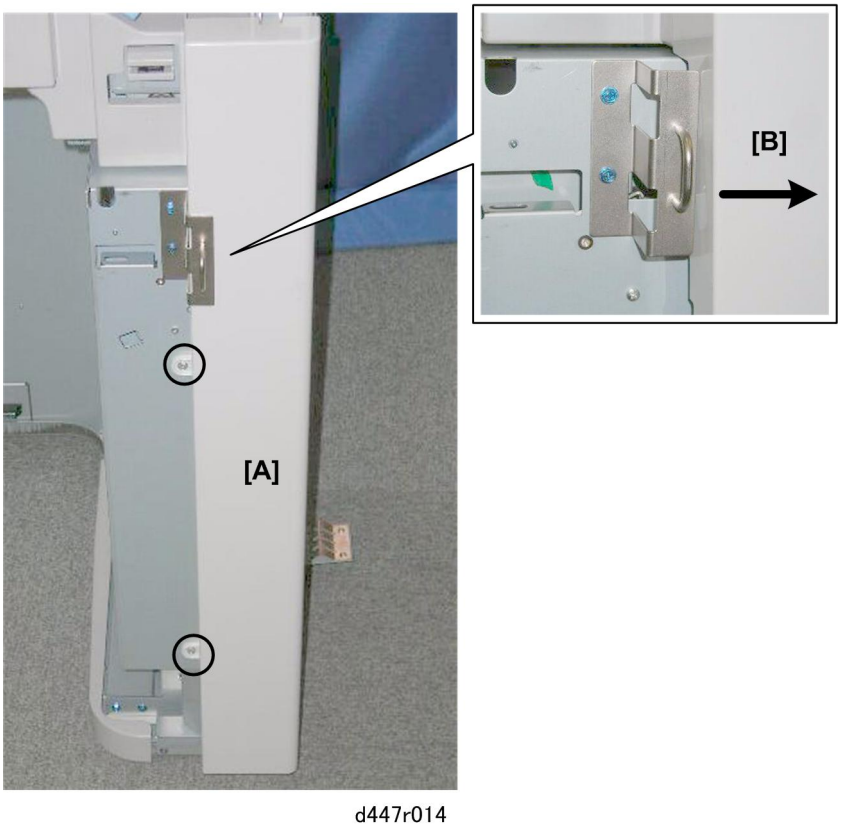
1. Open the top door.
2. Remove the "L" hinges from the right and left ends of the door.



d447r013

3. Pull the door away from the stacker.
4. You may want to re-insert the "L" hinges in their holes ① and ② so that they do not get misplaced.

Front Right Cover



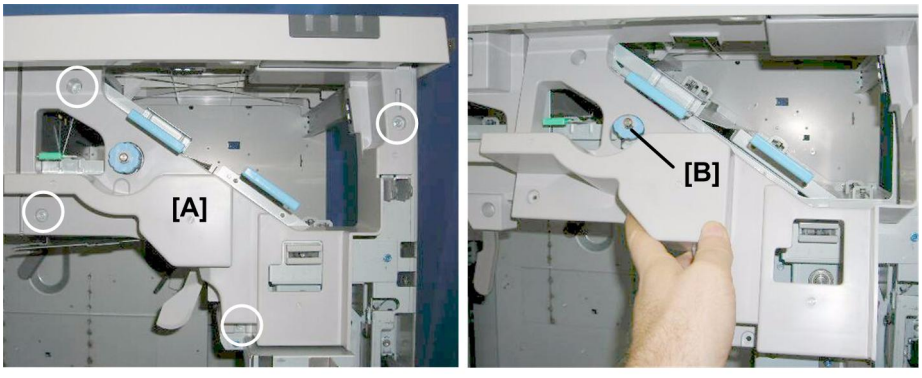
d447r014

1. Front right cover [A] (🔩 x2).
2. Push cover [B] to the right to remove it. (You do not need to remove the lock hasp.)

Right Inner Cover

Preparation

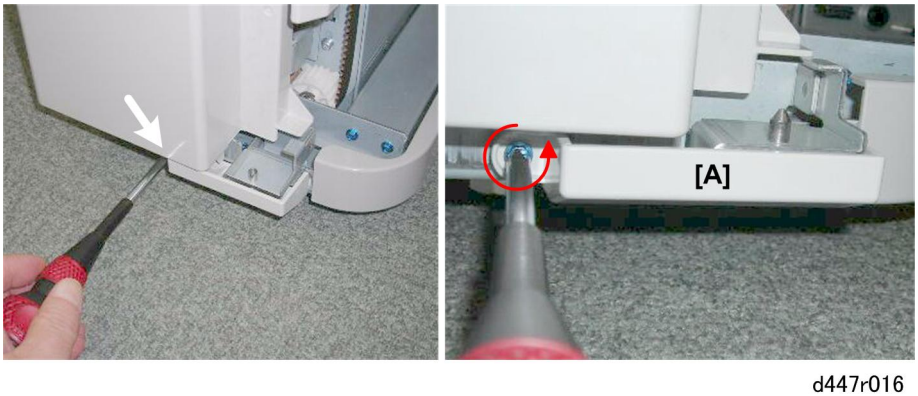
- Remove the front right cover



d447r015

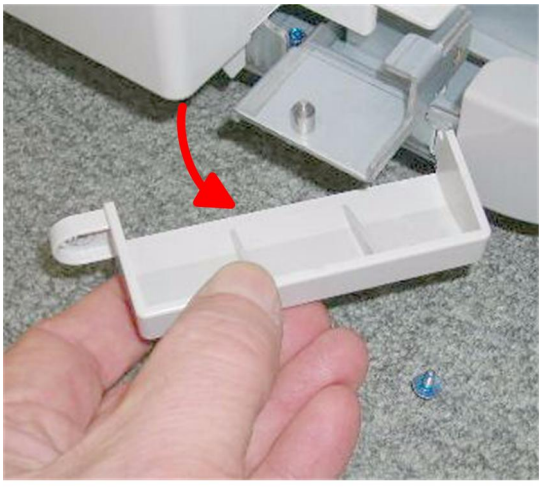
1. Right inner cover [A] (x4). (You do not need to remove knob [B].)

Front Door Bottom Hinge Cover



d447r016

1. Hinge cover [A] (x1)



d447r017

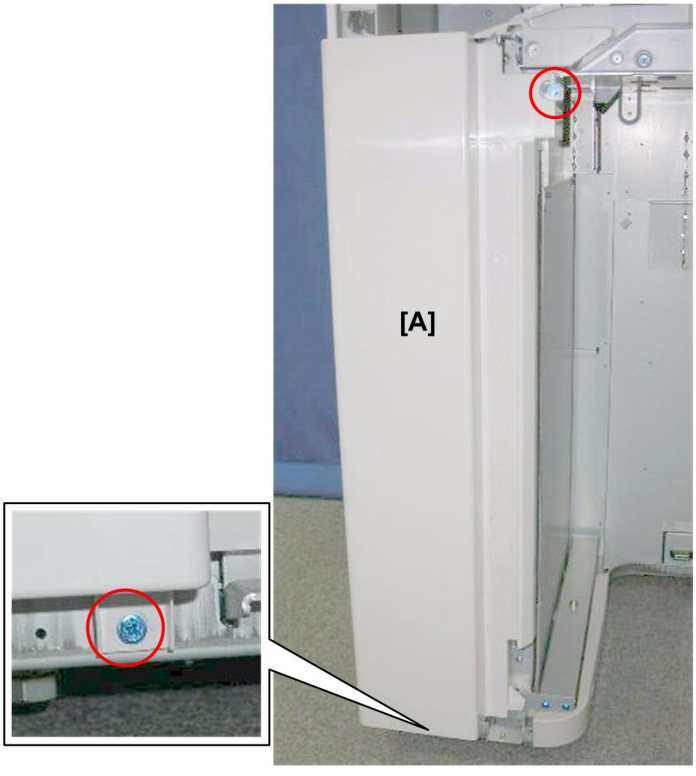
2. Pull the cover away from the hinge.

Front Left Cover

Preparation

Remove these parts:

- Front door
- Front door bottom hinge cover



d447r018

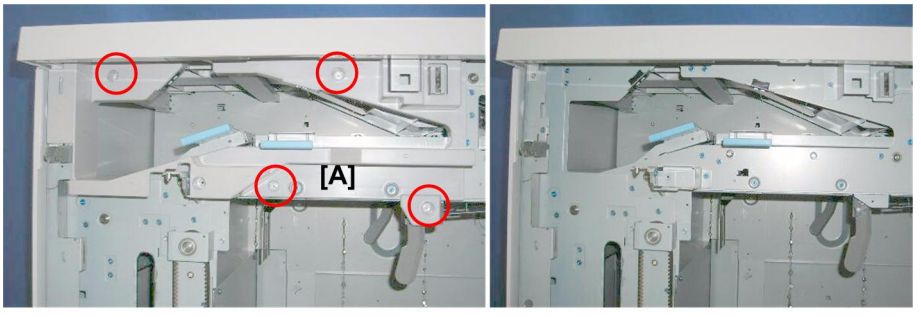
1. Front left cover [A] (x2)

Left Inner Cover

Preparation

Remove these parts:

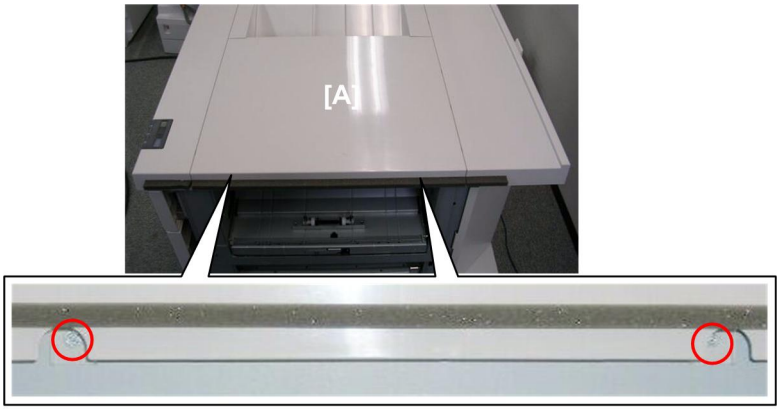
- Front door
- Front door bottom hinge cover
- Front left cover



d447r019

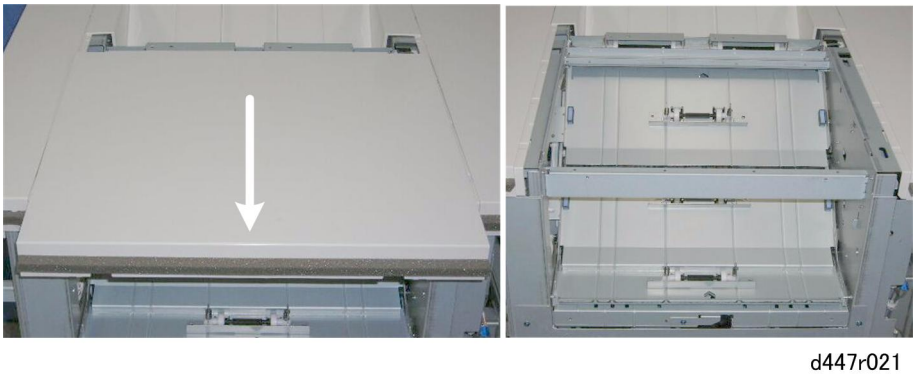
1. Left inner cover [A] (x4)

Top Center Cover



d447r020

1. Top center cover [A] (x2)



d447r021

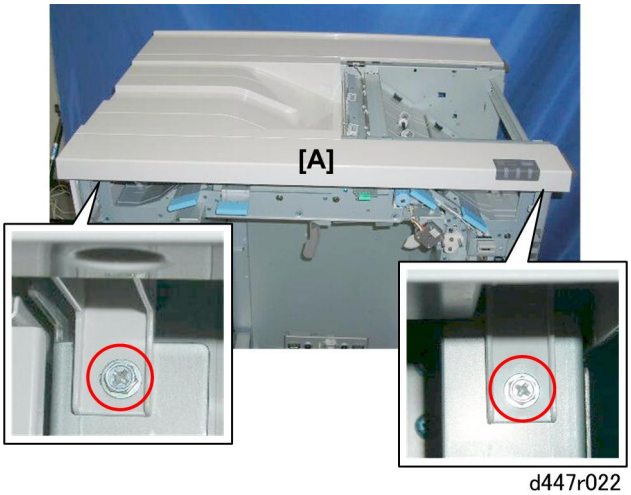
2. Pull the cover to the right to remove it.

Top Front Cover

Preparation

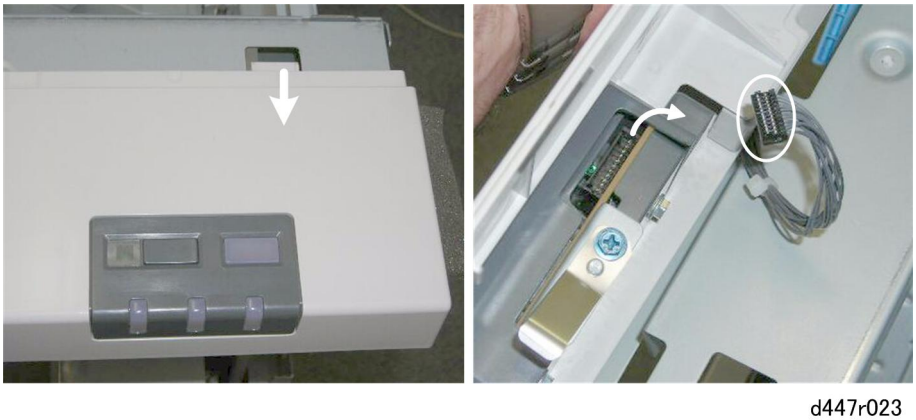
Remove these parts:

- Right inner cover
- Left inner cover
- Top center cover



d447r022

1. Top front cover [A] (x2)



d447r023

2. Disconnect the tabs on the right and left ends of the cover.
3. Turn the cover over and disconnect the operation panel PCB (x1).

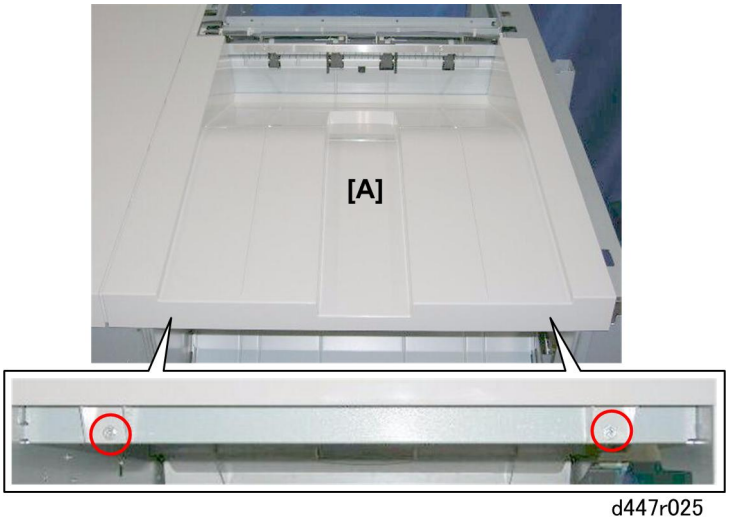
d447r024

Proof Tray

Preparation

Remove these parts:

- Left exit cover plate
- Left cover



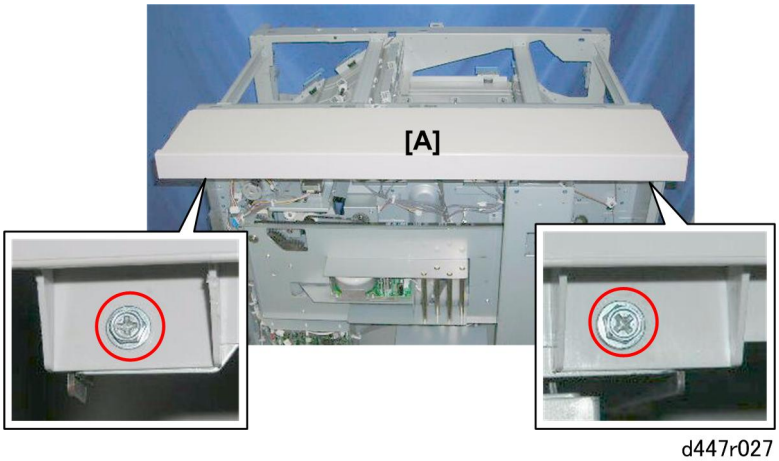
d447r025

1. Proof tray [A] (x2)

d447r026

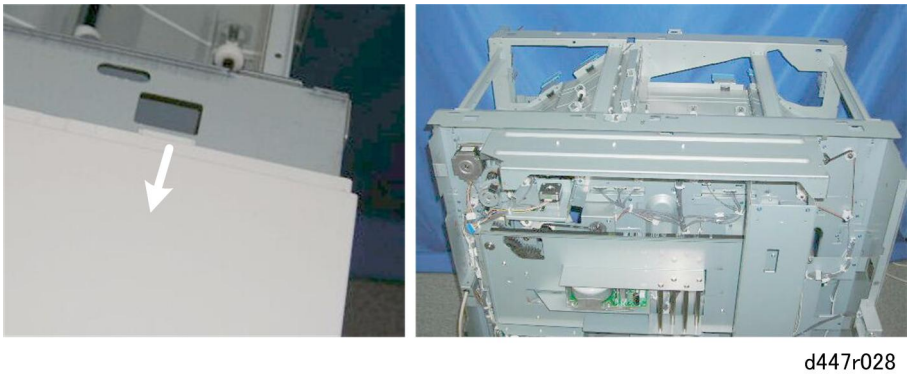
2. Slowly pull the proof tray off the top of the stacker.

Top Rear Cover



d447r027

1. Top rear cover [A] (x2)



d447r028

2. Release the tabs on both ends.

Jogger Unit

1

Jogger Unit Removal

The jogger unit must be removed at these times:

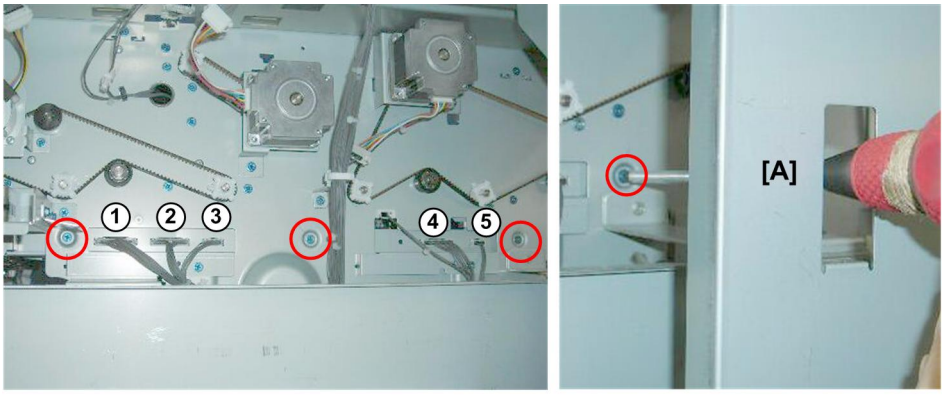
- To service the motors and sensors of the jogger unit
- To access other areas of the stacker for other procedures

Preparation

Remove these parts:

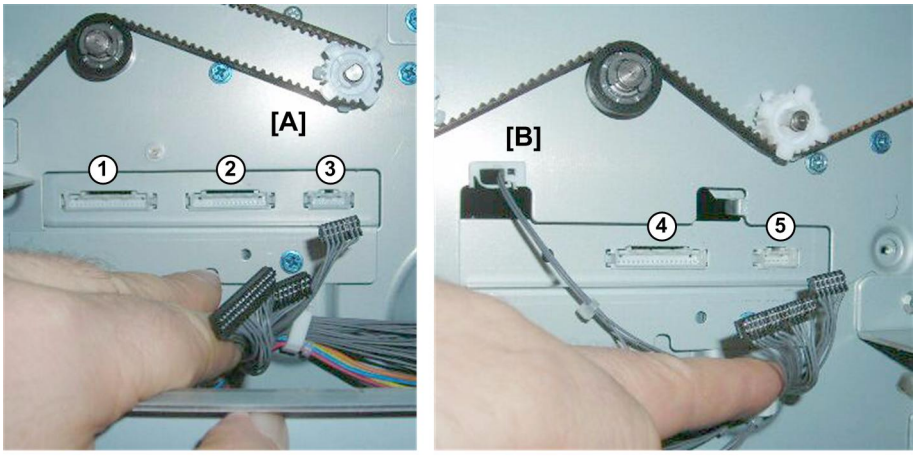
- Right inner cover
- Rear lower tray
- Rear upper tray

Rear



d447r029

1. At the rear, you must remove three screws and disconnect five connectors.
2. Remove the screw on the right through the frame cutout [A] (x3)



d447r030

3. Disconnect:

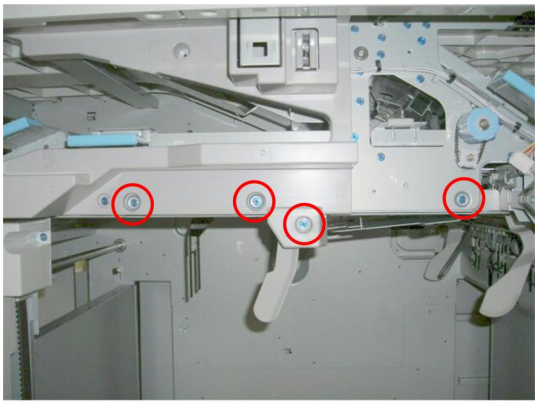
   [A] Center: Harnesses ①, ②, ③ (x3)

   [B] Right: Harnesses ④, ⑤ (x2)

d447r031

4. Remove the four steel jogger unit legs.

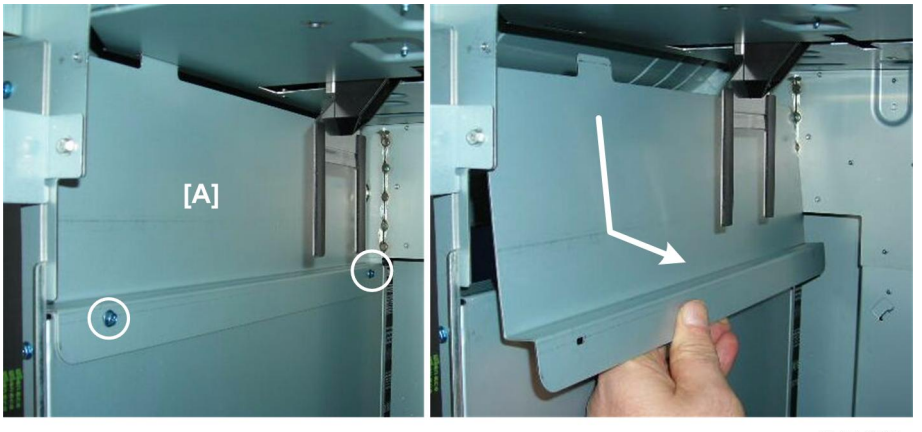
   Front



d447r032

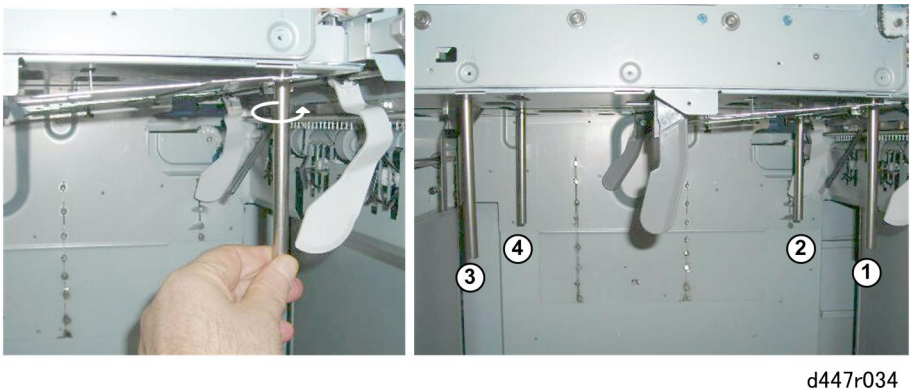
5. Disconnect the jogger unit (x4).

   The jogger unit is held in place by four hooks. It will not fall after the screws have been removed.



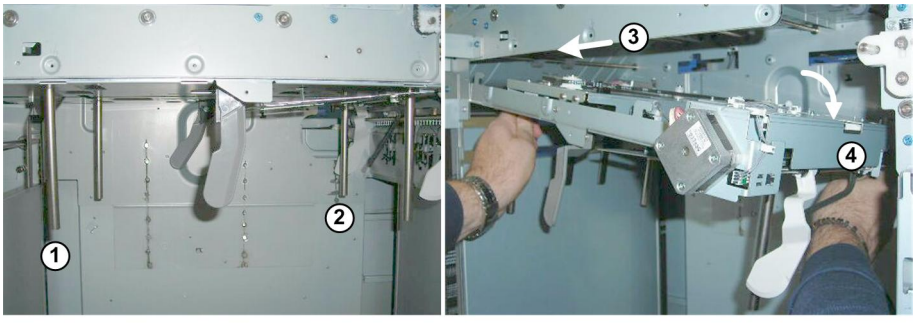
d447r033

6. Remove the lock plate [A] (x2).



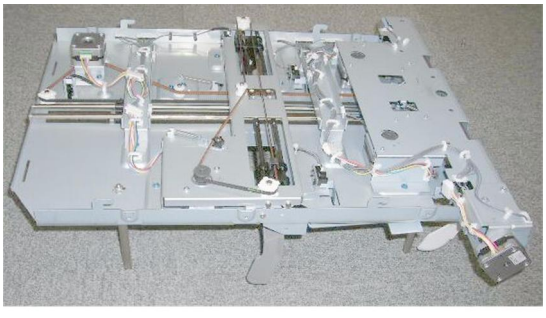
d447r034

7. Screw each leg into the bottom of the jogger unit [A].



d447r035

8. Grip one leg at the front ①, and one at the rear ②.
9. Push the jogger unit to the left ③ to disengage the hooks.
10. Slowly lower the jogger unit to the right ④ and pull it out of the stacker.



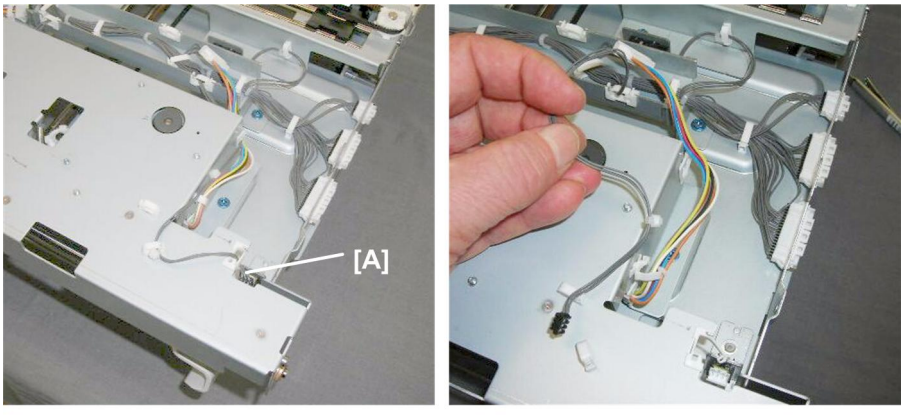
d447r036

11. Set the jogger unit on a flat surface.

Main Jogger Cover Plate

The main jogger cover plate must be removed to service these parts:

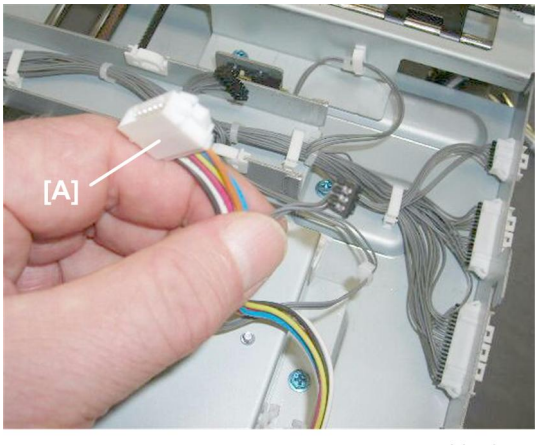
- Main jogger front fence motor and HP sensor
- Main jogger rear fence motor and HP sensor
- Shift tray paper sensor



d447r037

Rear

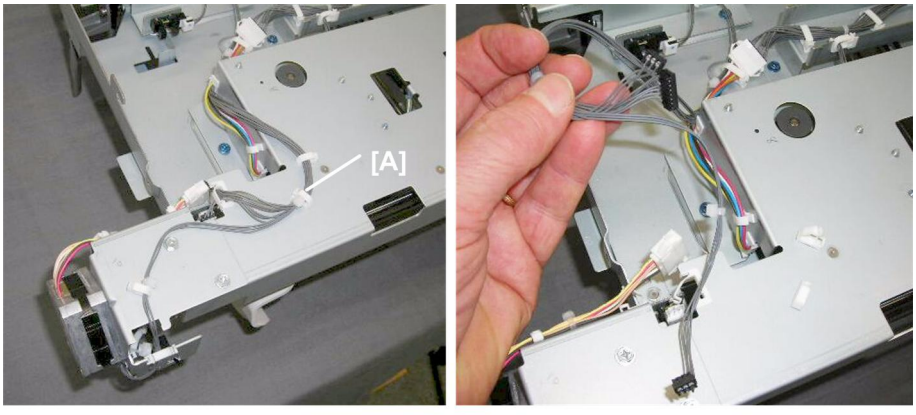
1. Disconnect the rear fence HP sensor harness [A] (x1, x4).



d447r038

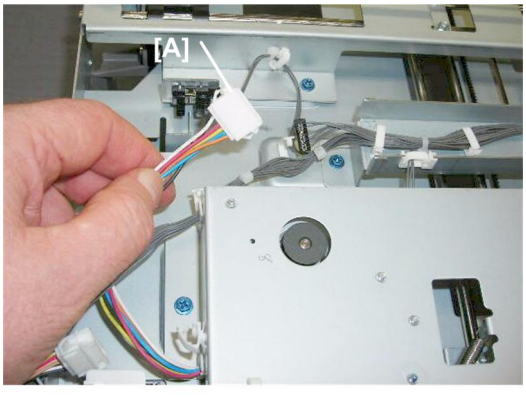
2. Disconnect the rear fence motor [A] (x1, x3).

Front



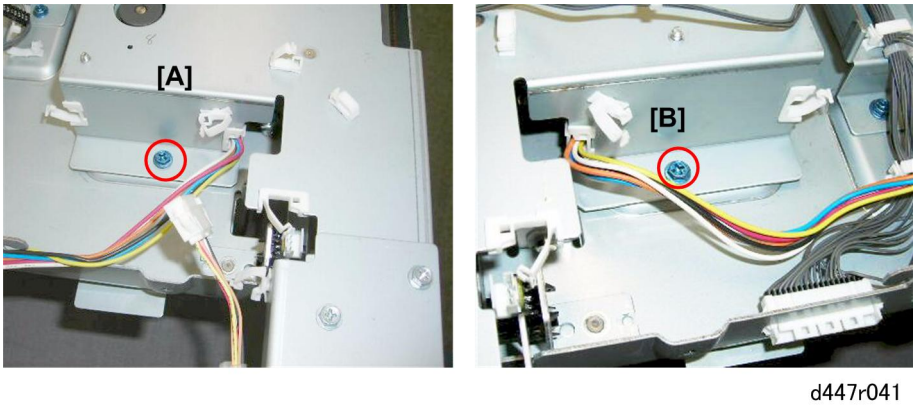
d447r039

3. Disconnect the dual harness [A] for the main jogger fence retraction HP sensor and front fence HP sensor (x2, x7).



d447r040

4. Disconnect the front fence motor harness [A] (x1, x3).

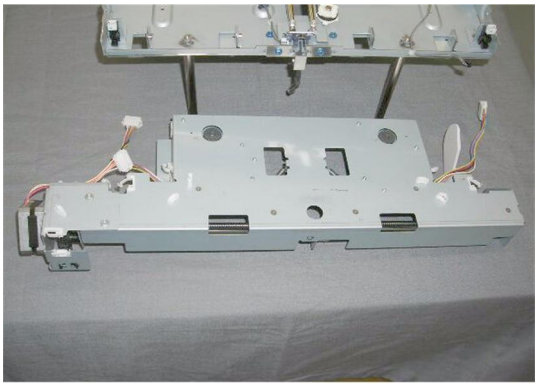


d447r041

5. Remove the plate:

   [A] Front (x1)

[B] Rear (x1)

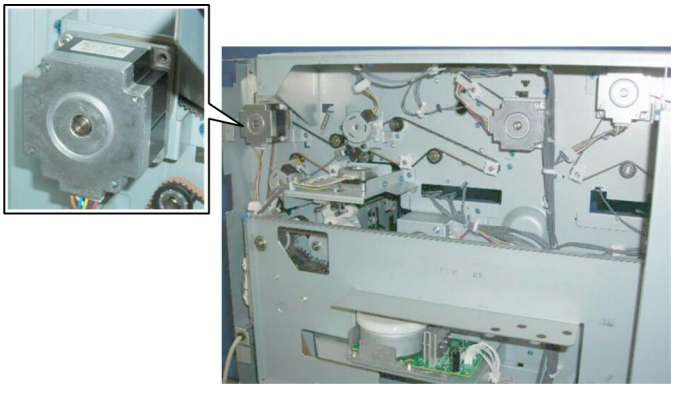


d447r042

Straight Paper Path

Motors

Entrance Motor

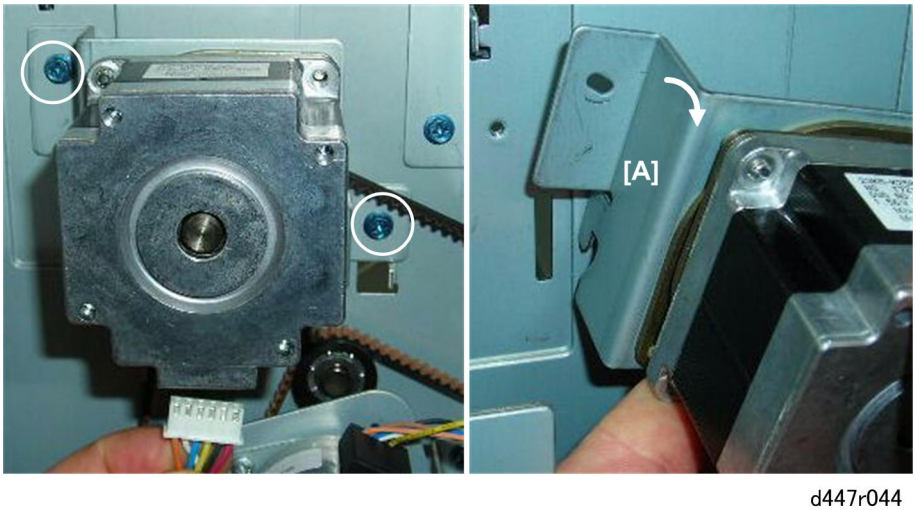


d447r043

Preparation

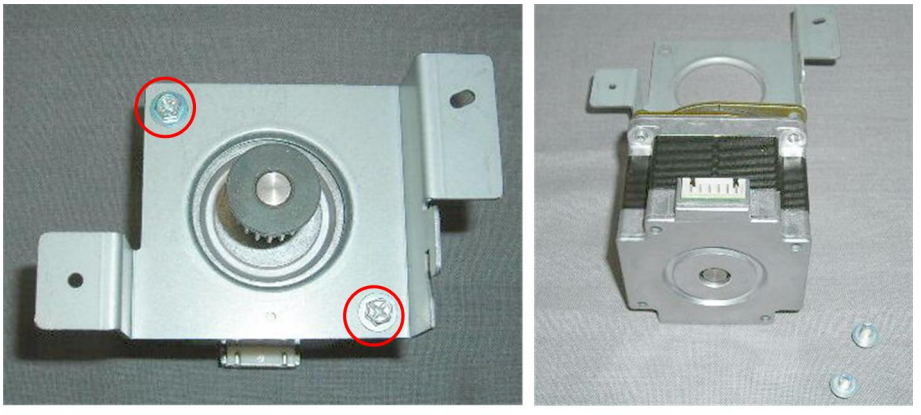
Remove these parts:

- Rear lower cover
- Rear upper cover



d447r044

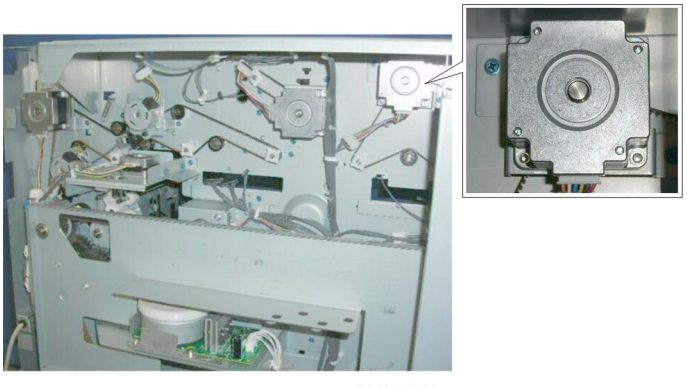
1. Motor bracket [A] (x1, x2, Hook x1, Belt x1)



d447r045

2. Separate the motor and the bracket (x2)

Transport Motor

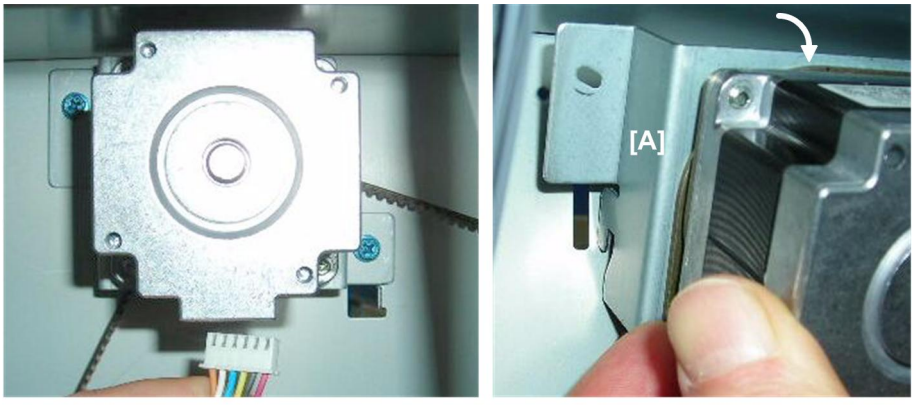


d447r046

Preparation

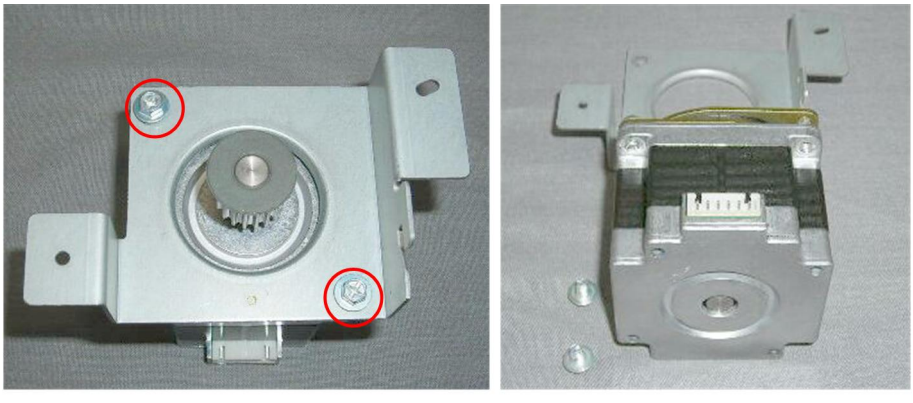
Remove these parts:

- Rear lower cover
- Rear upper cover



d447r047

1. Motor bracket [A] (✋ x1, 🔩 x2, Hook x1, Belt x1)



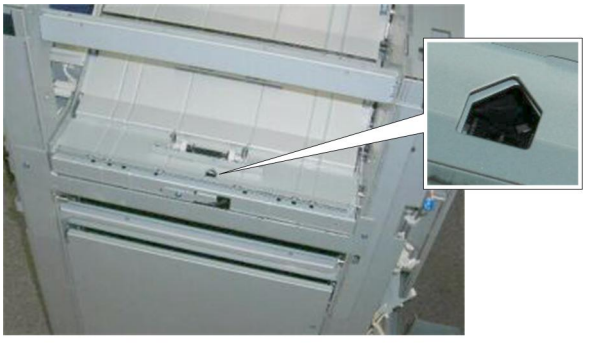
d447r048

2. Separate the motor and the bracket (🔩 x2)

Sensors

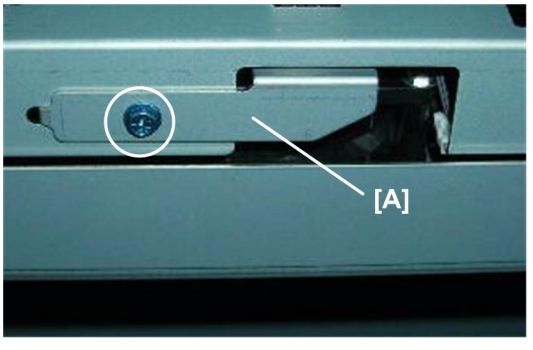
1

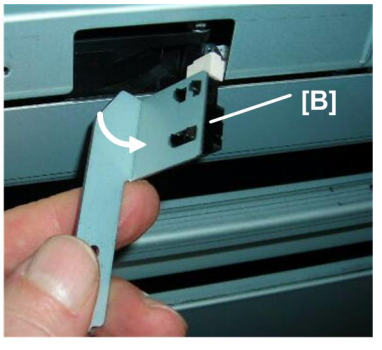
Entrance Sensor



d447r049

The entrance sensor is on the right side of the stacker.

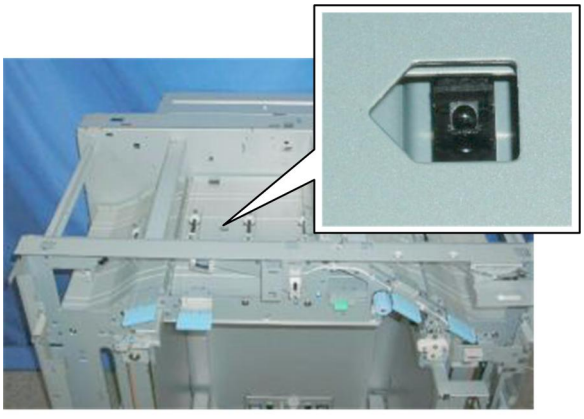




d447r050

1. Sensor bracket [A] (x1, x1
2. Sensor [B] Pawls x5)

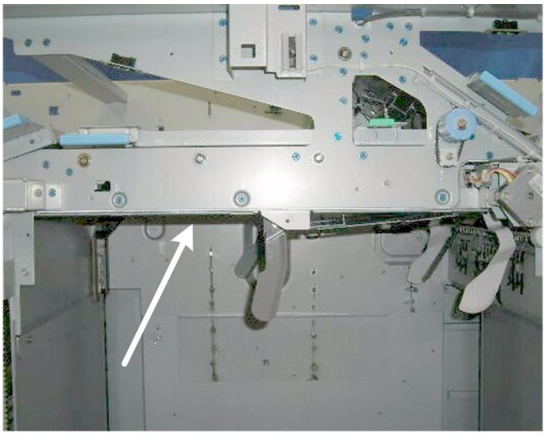
Transport Sensor



d447r051

Preparation

- Remove the jogger unit

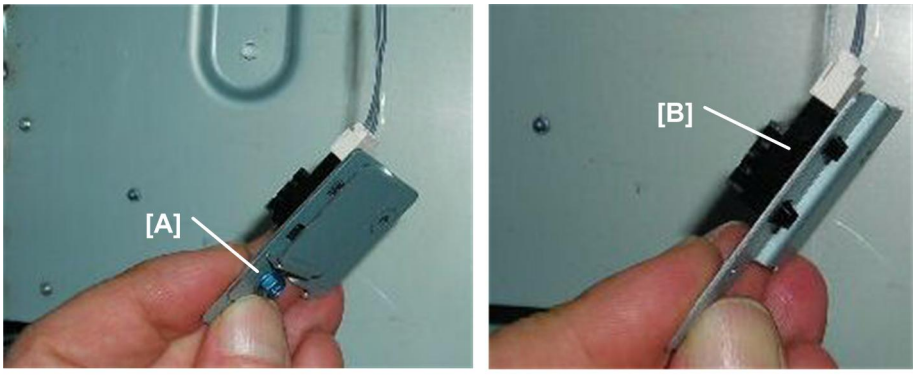


d447r052

You can see the sensor bracket on the bottom of the transport plate from inside the stacker.

d447r053

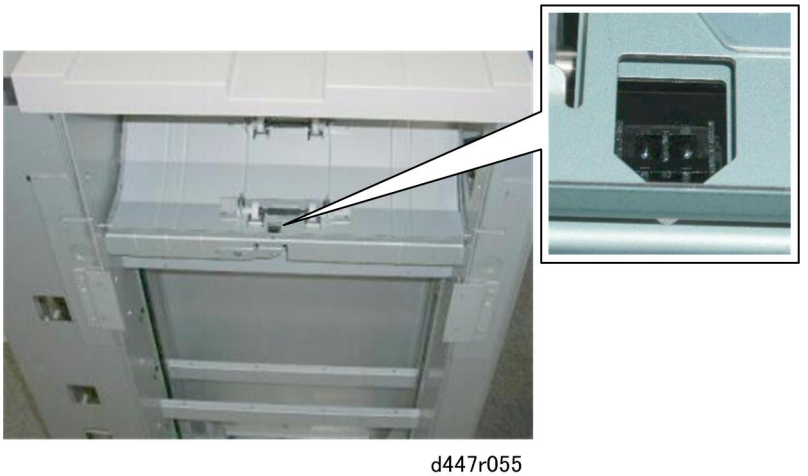
1. Sensor bracket [A] (x1)



d447r054

2. Sensor plate [A] and sensor [B] (x1, x1, x1, Pawls x5)

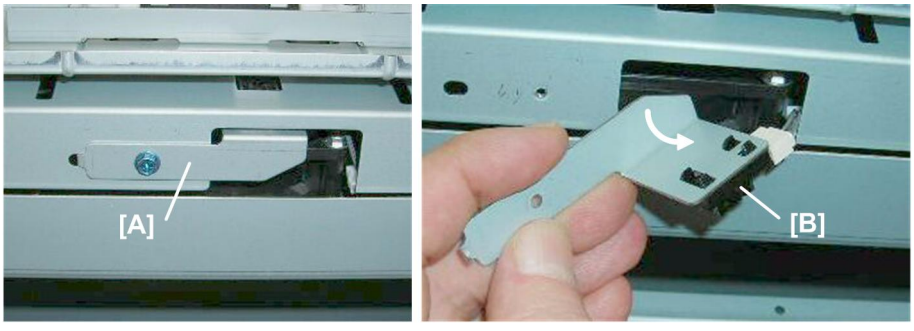
Exit Sensor



d447r055

Preparation

- Remove the exit cover plate
- The illustration below shows the left cover removed, but this is not required.



d447r056

1. Sensor bracket [A] (x1)
2. Sensor [B] (x1, Pawls x5)

Proof Tray

1

Motors

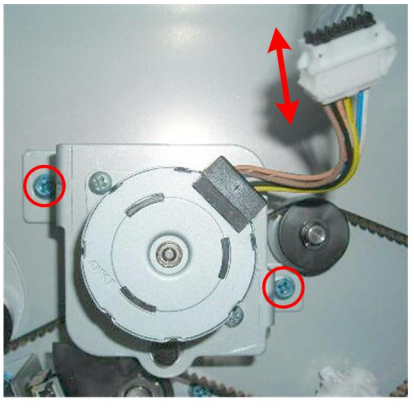
Proof Tray JG Motor

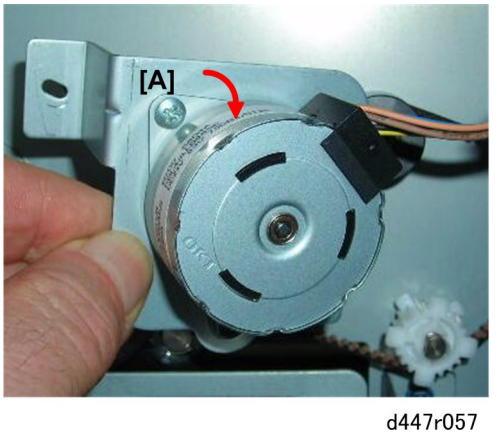
d447r057

Preparation

Remove these parts:

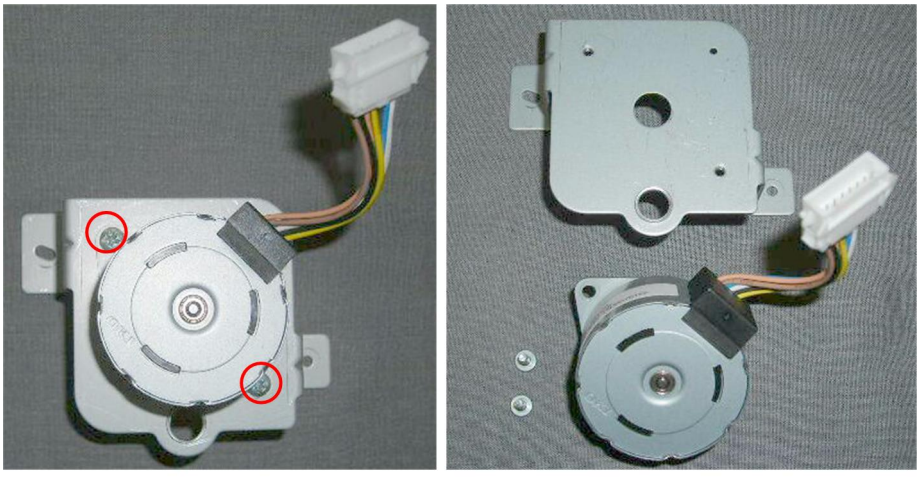
- Rear lower cover
- Rear upper cover





d447r057

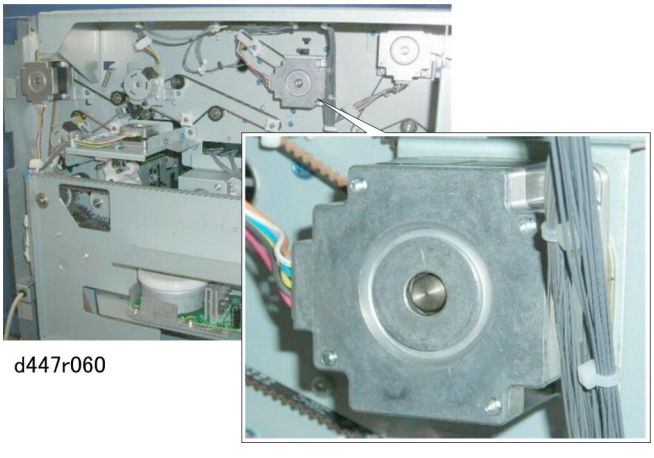
1. Motor bracket [A] (x1, x2)



d447r059

2. Separate the motor and the bracket (x2)

Proof Tray Exit Motor

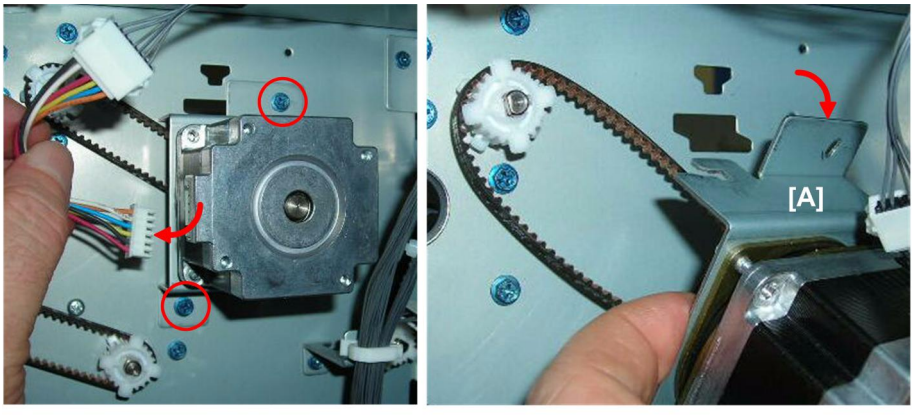


d447r060

Preparation

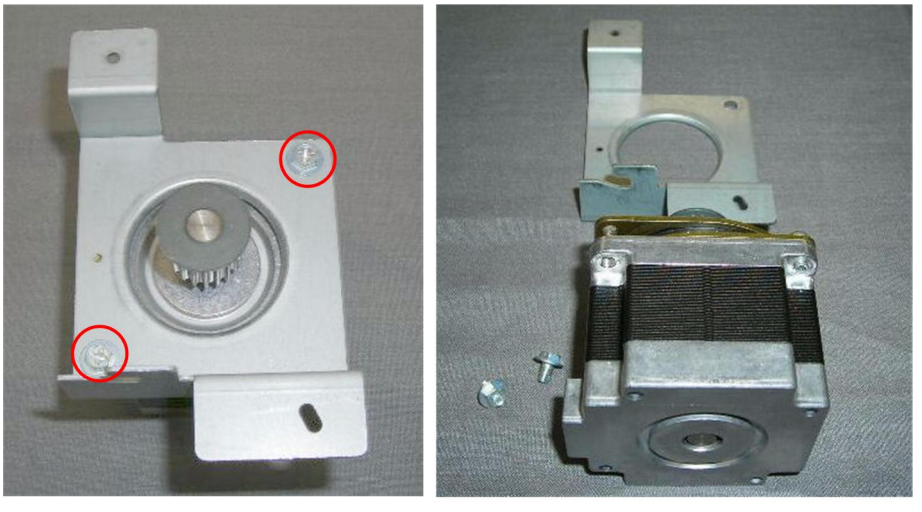
Remove these parts:

- Rear lower cover
- Rear upper cover



d447r061

1. Motor bracket [A] (✋ x1, 🔩 x2, Hook x1, Belt x1)

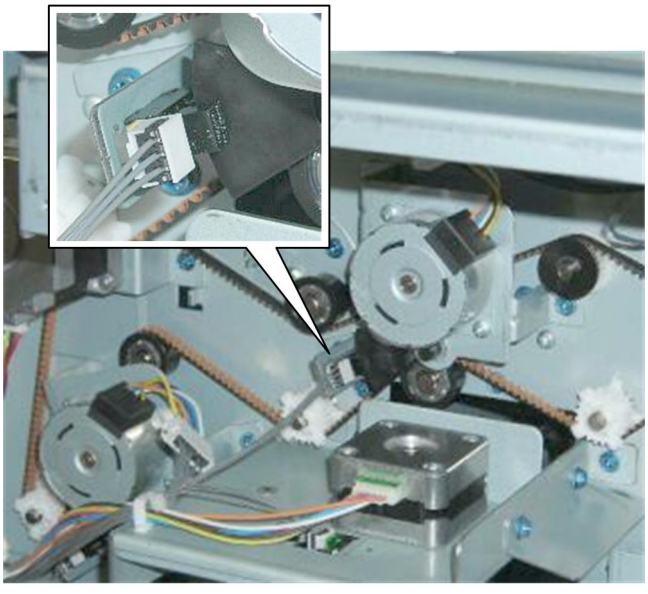


d447r062

2. Separate the motor and the bracket (🔩 x2)

Sensors

Proof Tray JG HP Sensor

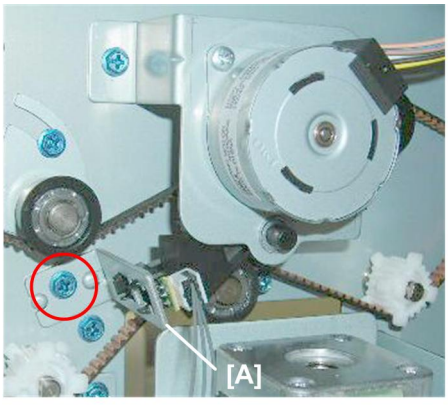


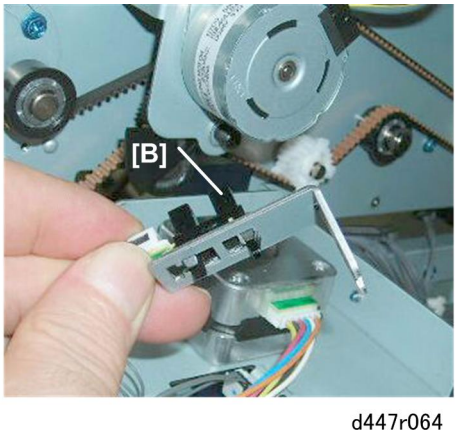
d447r063

Preparation

Remove these parts:

- Rear lower cover
- Rear upper cover

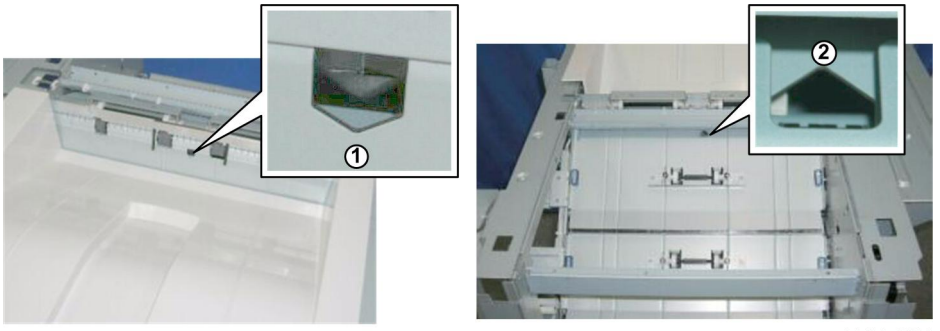




d447r064

1. Sensor bracket [A] (x1)
2. Sensor [B] (x1, Pawls x5)

Proof Tray Exit Sensor, Proof Tray Full Sensor



d447r065

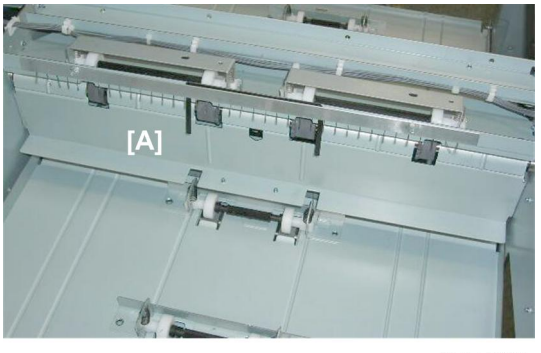
①	Proof Tray Full Sensor	Located above the proof tray,.
②	Proof Tray Exit Sensor	Shown with the top center cover removed.

Preparation

Remove these parts:

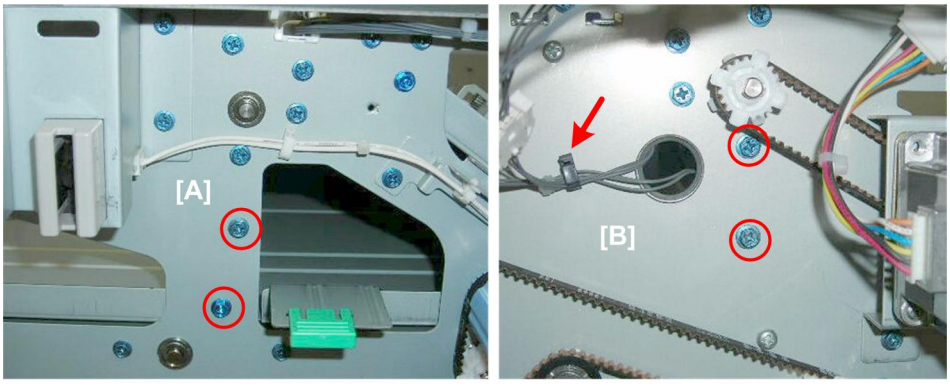
- Rear lower cover
- Rear upper cover
- Proof tray
- Top center cover
- Top rear cover

Common Procedure



d447r066

1. Plate [A] must be removed,



d447r067

2. Remove:

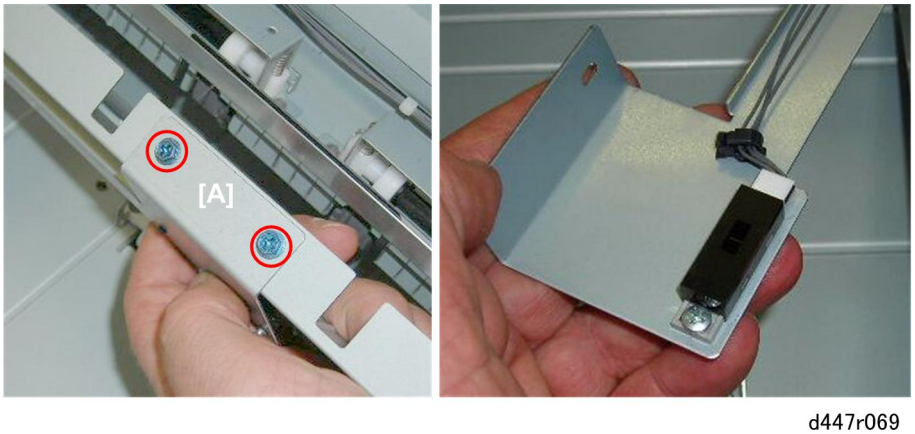
   [A] Front (x2)

   [B] Rear (x2, x1) (Opening the harness clamp creates slack in the harness and allows free movement of the plate.)

d447r068

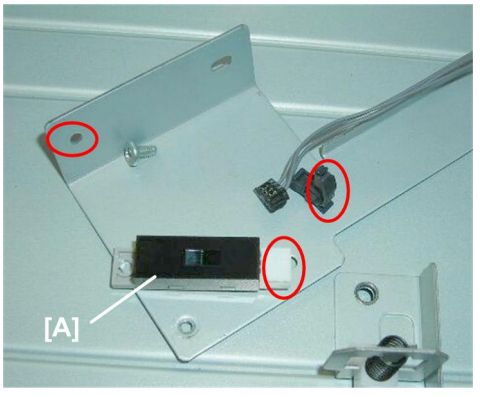
3. Pull away the cover plate.
4. Remove the tray full sensor, or the tray exit sensor. See below.

Tray Full Sensor



d447r069

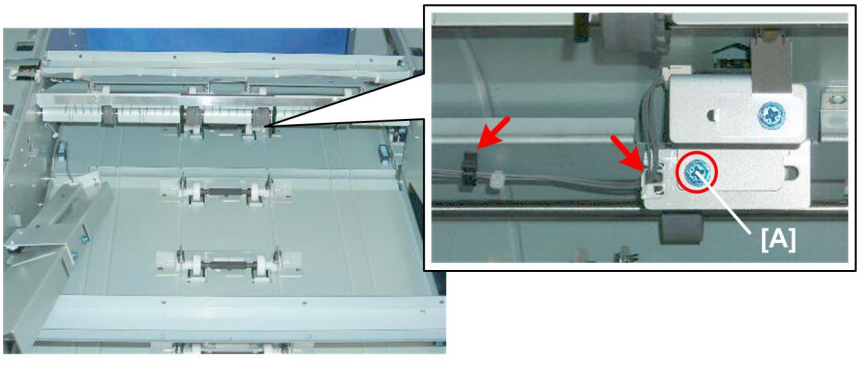
1. Turn the plate over.
2. Sensor bracket [A] (x2)



d447r070

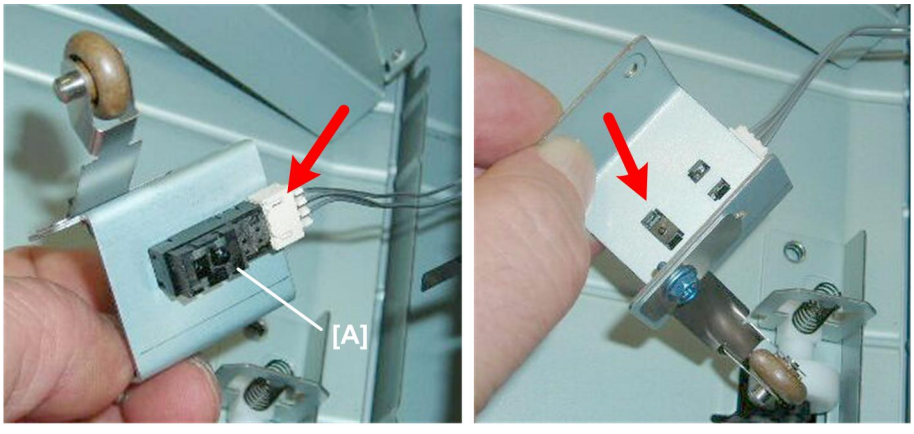
3. Sensor [A] (x1, x1, x1)

Tray Exit Sensor



d447r071

1. Remove the lower bracket screw [A], not the upper screw (x2, x1).



d447r072

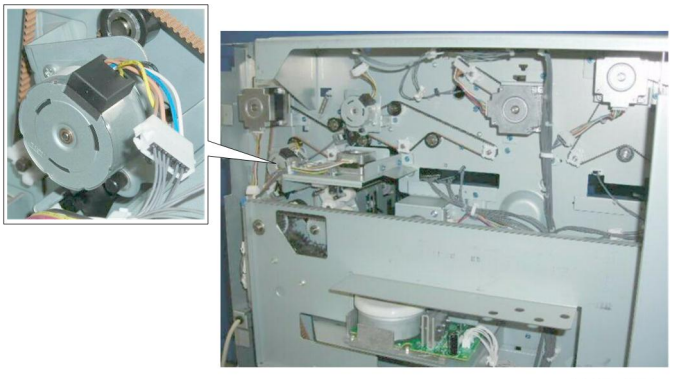
2. Sensor [A] (x1, Pawls x5)

Shift Tray

1

Paper Shift Operation

Shift Tray JG Motor

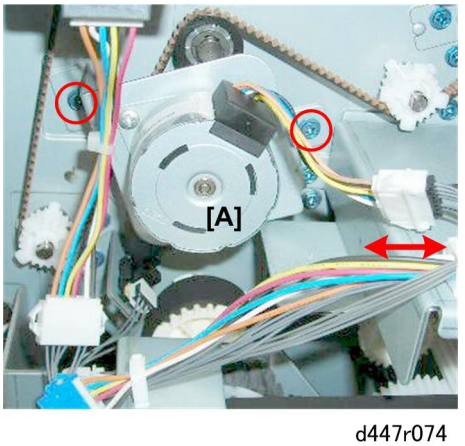


d447r073

Preparation

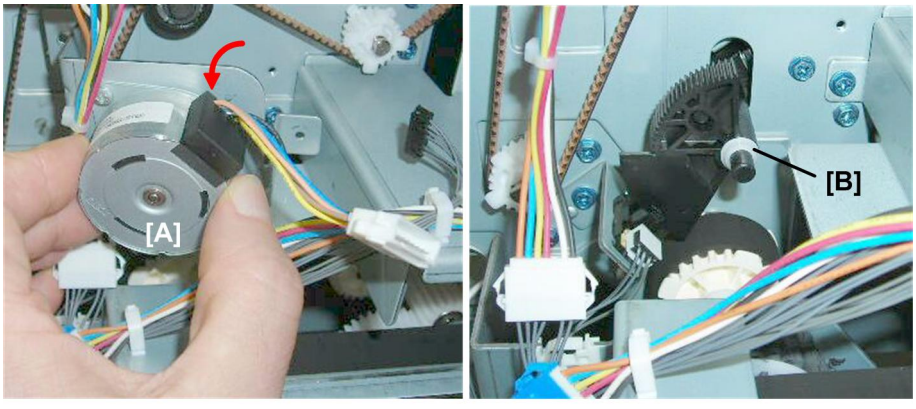
Remove these parts:

- Rear lower cover
- Rear upper cover



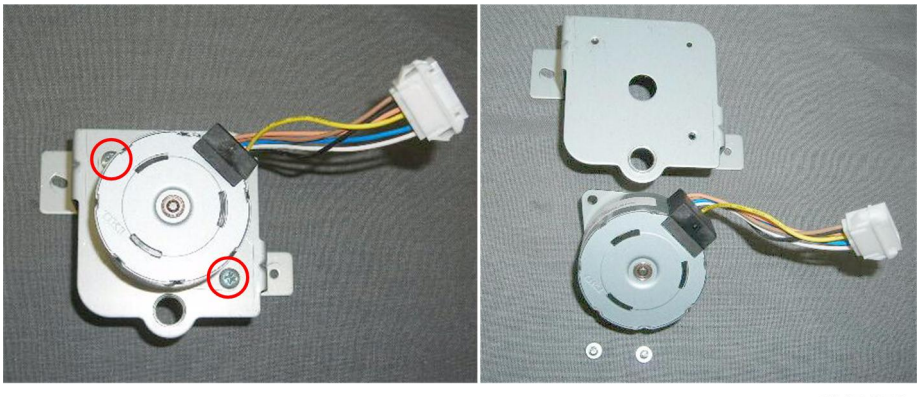
d447r074

1. Slowly remove motor bracket [A] (x1, x, 2)



d447r075

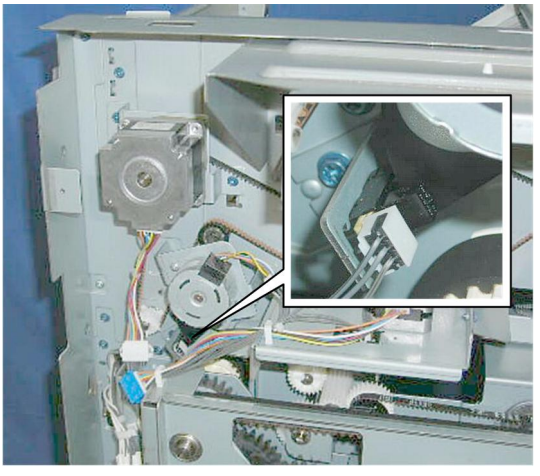
2. Remove this Teflon sleeve [B] so that it does not fall.



d447r076

3. Separate the motor and the bracket (x2)

Shift Tray JG HP Sensor

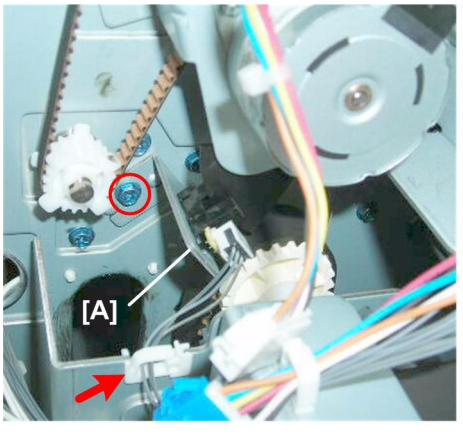


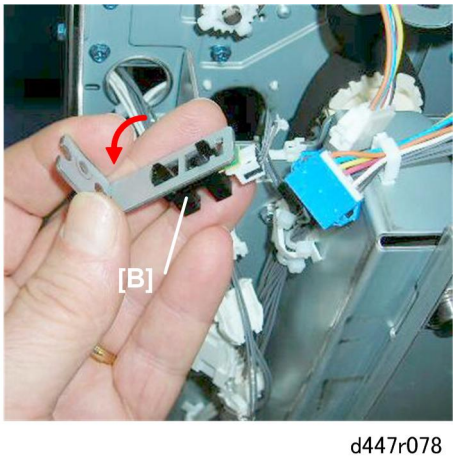
d447r077

Preparation

Remove these parts:

- Rear lower cover
- Rear upper cover

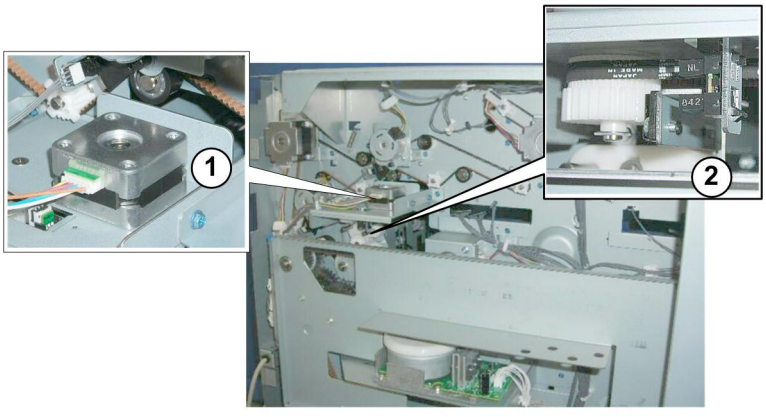




d447r078

1. Sensor bracket [A] (x1, x1).
2. Sensor [B] (x1, Pawls x5)

Shift Motor, Shift HP Sensor



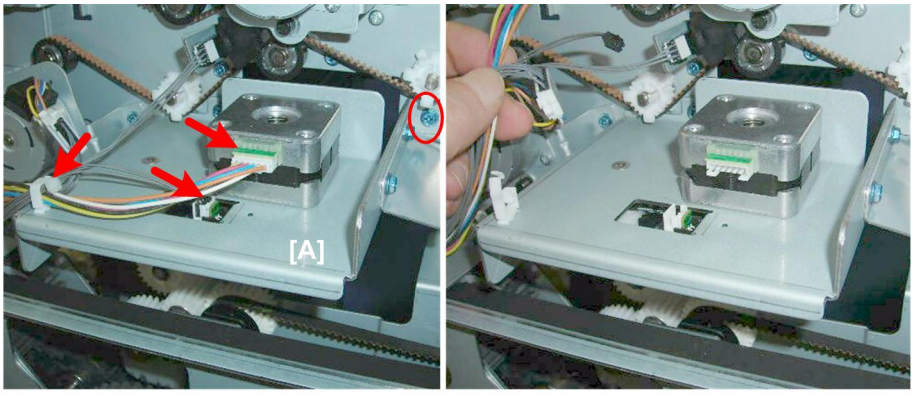
d447r079

①	Shift Motor
②	Shift HP Sensor

Preparation

Remove these parts:

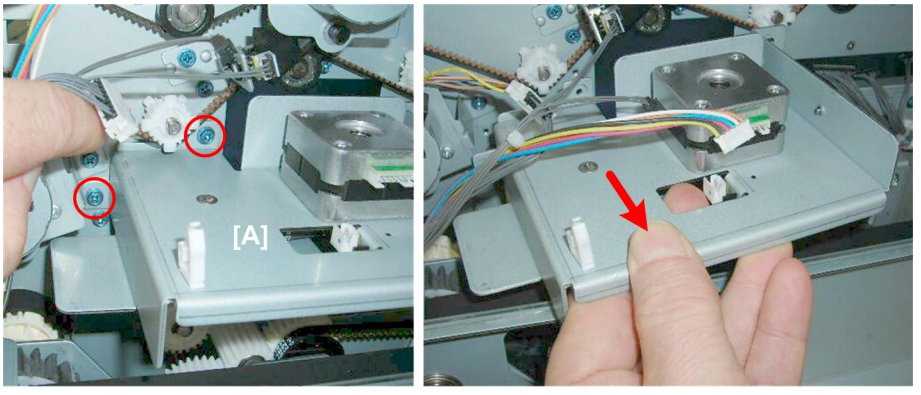
- Rear lower cover
- Rear upper cover



d447r080

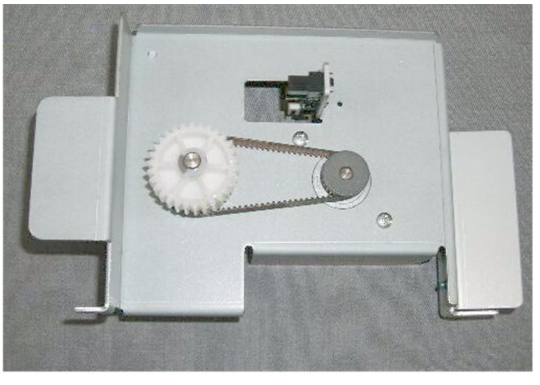
Common

1. Disconnect motor bracket [A] (x1, x2, x1)



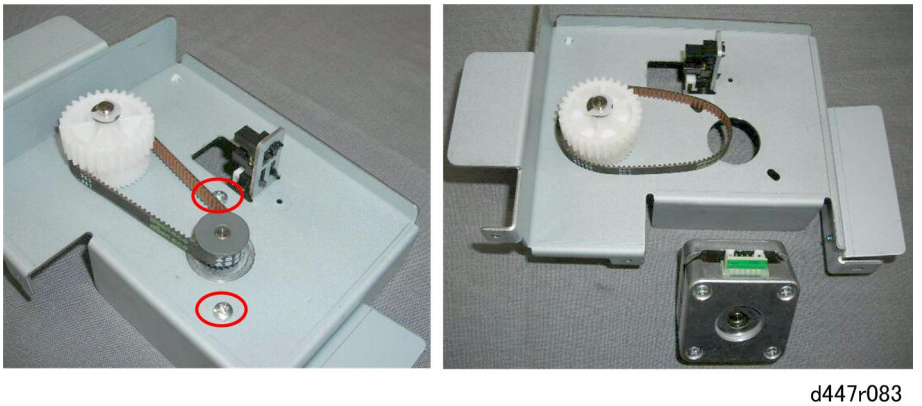
d447r081

2. Remove motor bracket [A] (x2)



d447r082

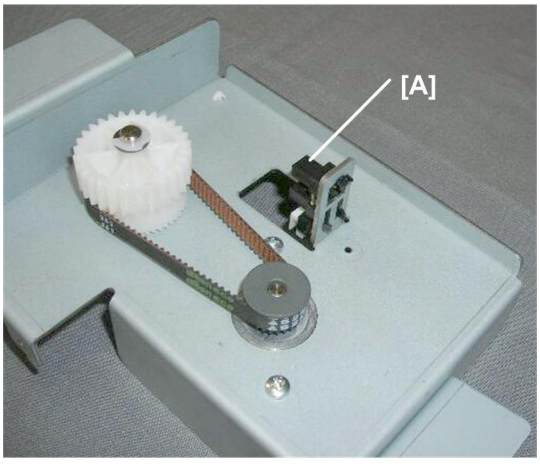
Shift Motor



d447r083

1. Separate the bracket and the motor (x2)

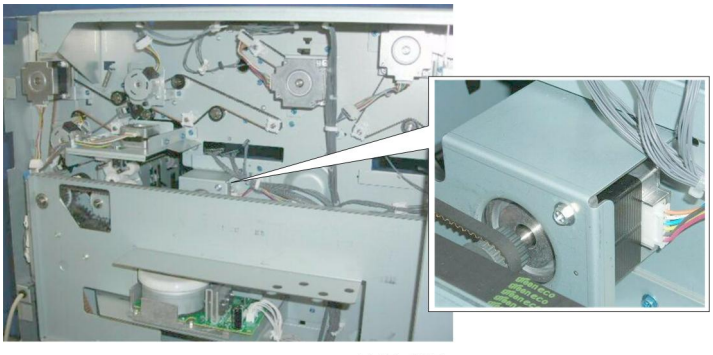
Shift Roller Sensor



d447r084

1. Sensor [A] (Pawls x5)

Shift Exit Motor

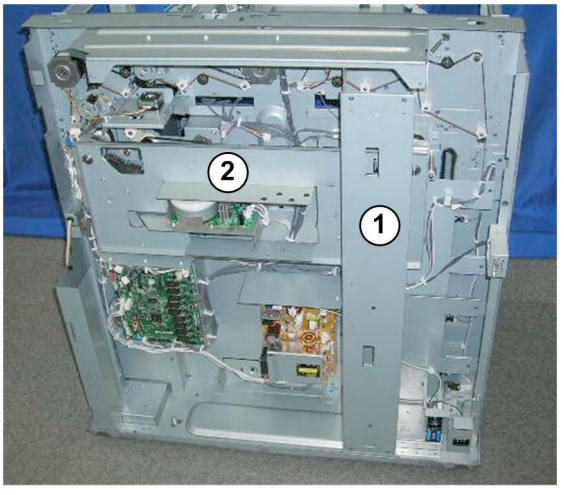


d447r085

Preparation

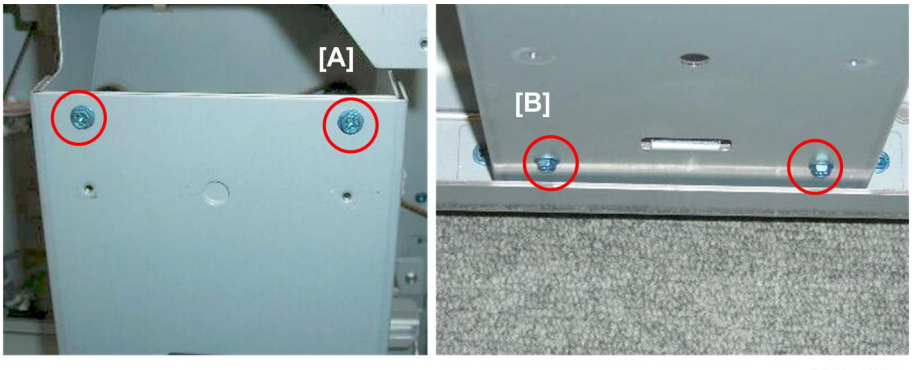
Remove these parts:

- Rear lower cover
- Rear upper cover



d447r086

1. Plates ① and ② must be removed.

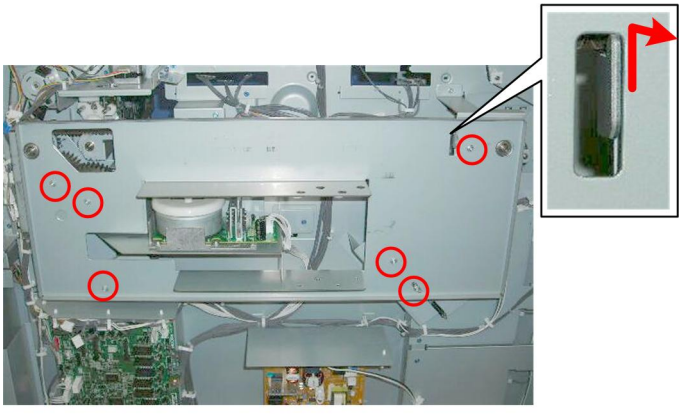


d447r087

2. Remove plate ①.

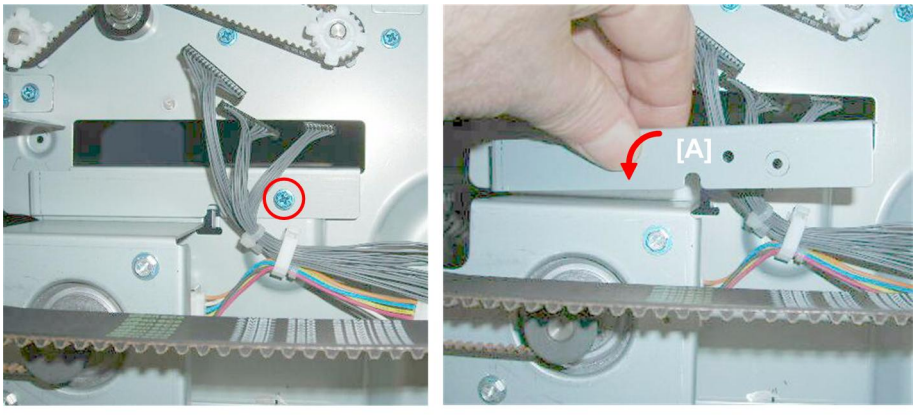
   [A] Top (🔩 x2)

   [B] Bottom (🔩 x2)



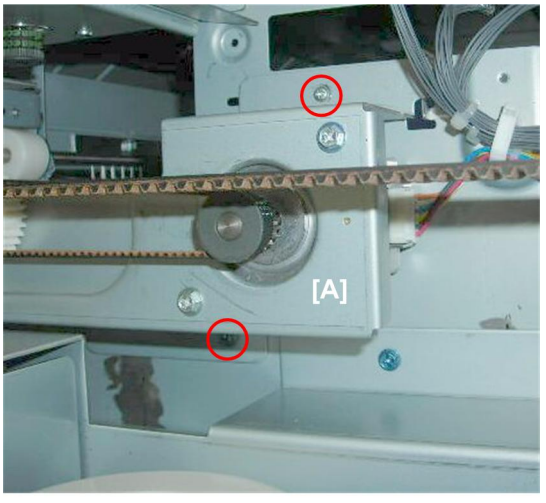
d447r088

3. Remove plate ② (x6, Hook x1)



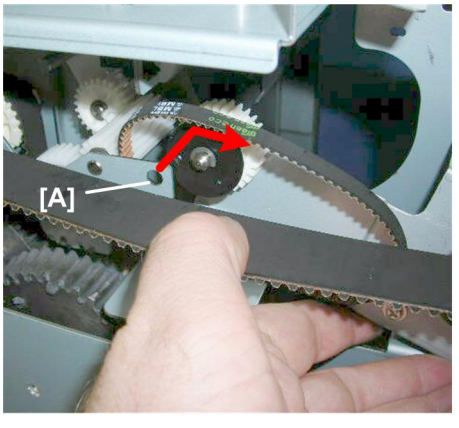
d447r089

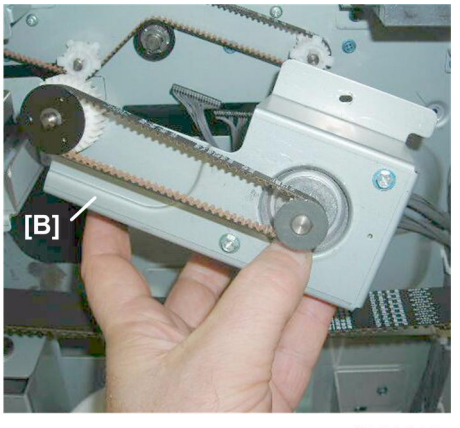
4. Remove plate [A] (x1)



d447r090

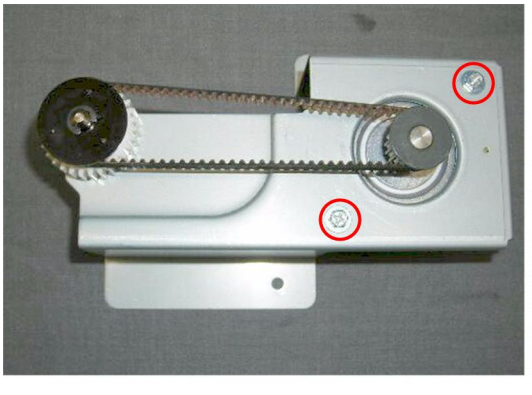
5. Disconnect motor bracket [A] (x2)





d447r091

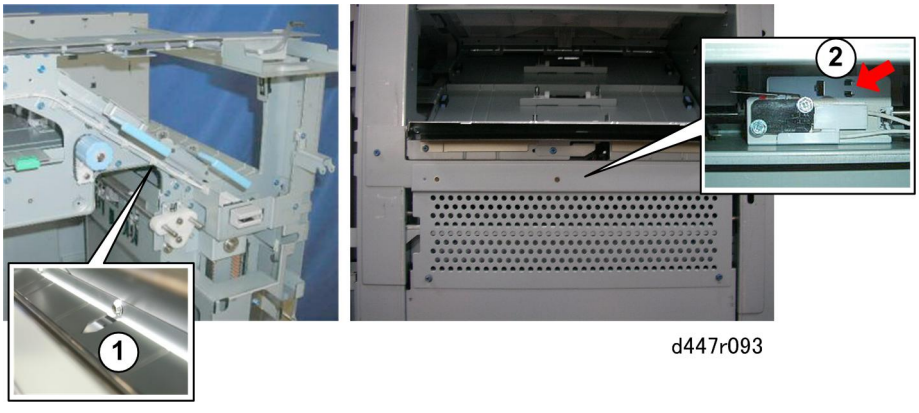
6. Push the shaft [A] out of the hole and remove motor bracket [B].



d447r092

7. Separate the motor and the bracket (x2)

Shift Tray Exit Sensor, Paper Height Sensor



d447r093

Both sensors are difficult to see.

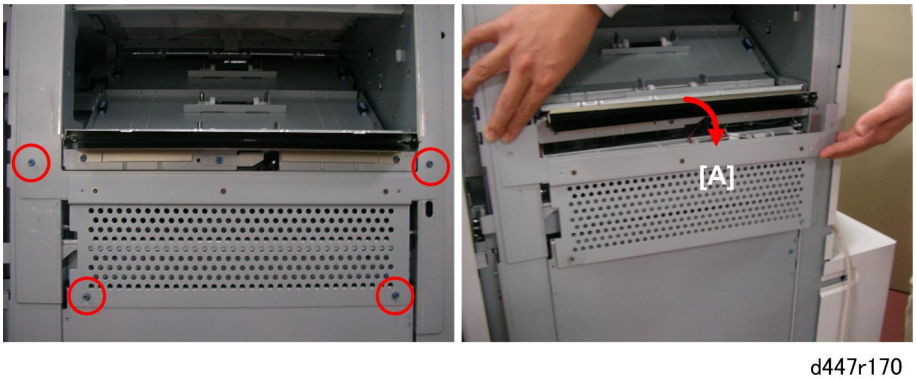
①	Shift Tray Exit Sensor	Under the plate.
②	Paper Height Sensor	Right side, under the right plate facing the interior of the machine.

Preparation

Remove these parts:

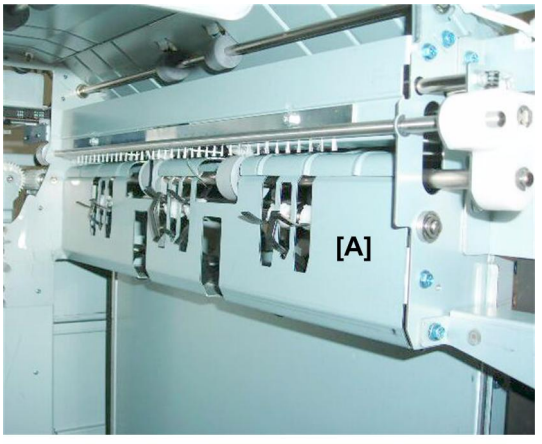
- Rear lower cover
- Rear upper cover
- Jogger unit

Common



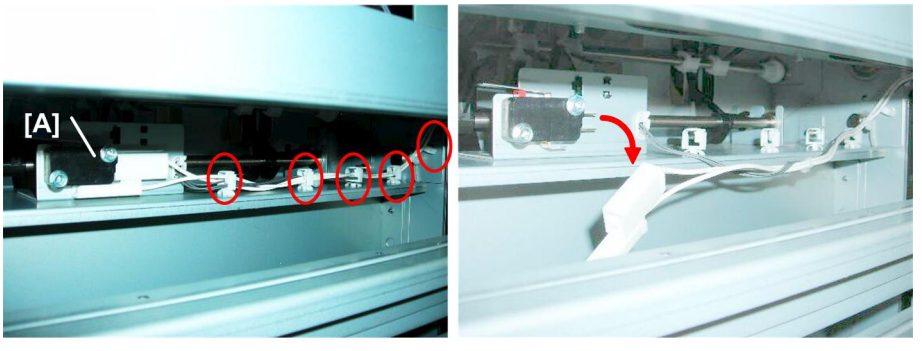
d447r170

1. Remove plate [A] (x4)



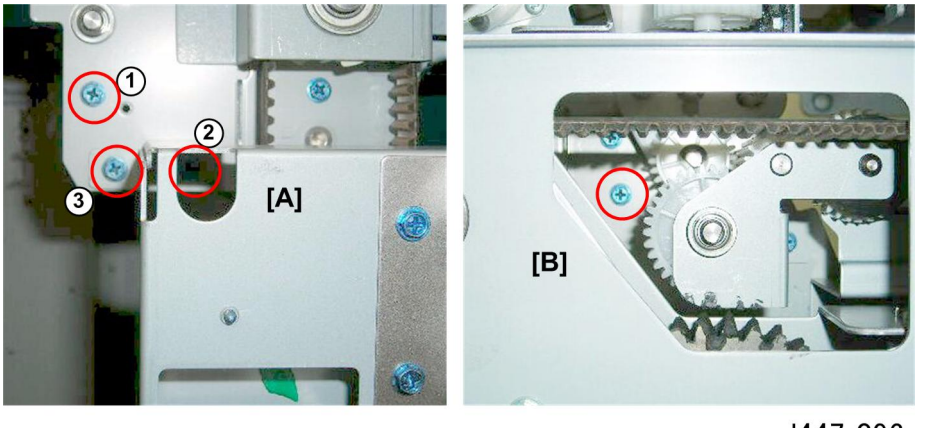
d447r094

2. Cover [A] must be removed.



d447r095

3. Disconnect tray high limit switch [A] (x1, x5)

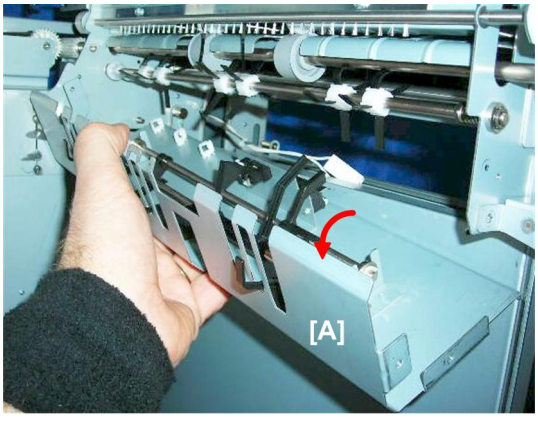


d447r096

4. Disconnect the cover:

   [A] Front (x3)

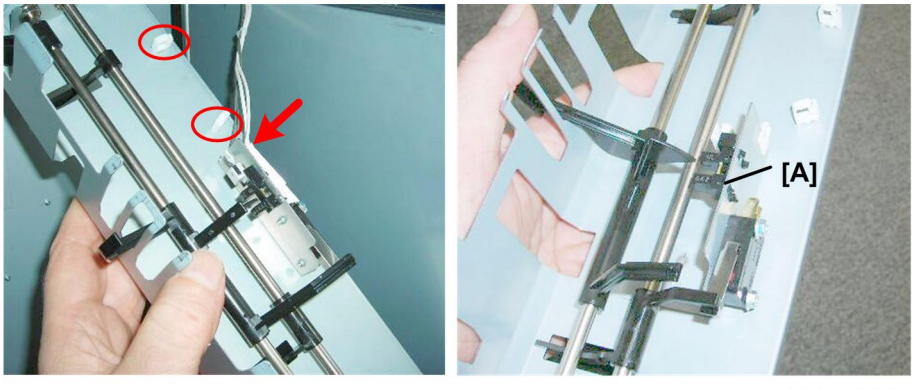
[B] Rear (x1)



d447r097

5. Remove the cover [A].

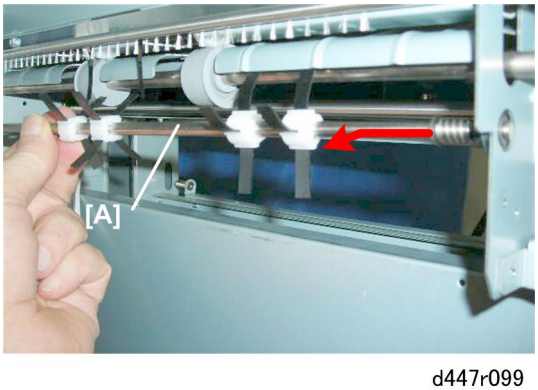
Paper Height Sensor



d447r098

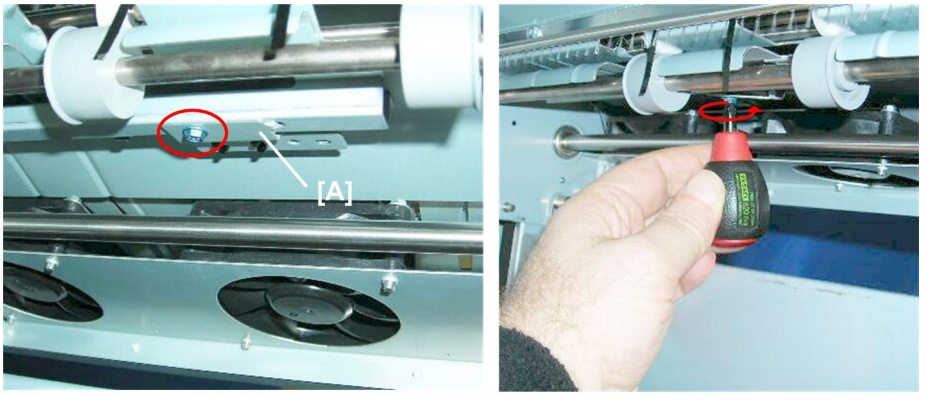
1. Paper height sensor [A] (x2, x1, Pawls x5)

Shift Entrance Sensor



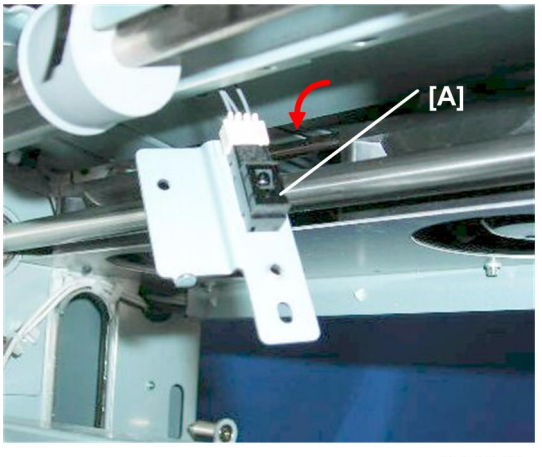
d447r099

1. Remove roller [A]. The roller is spring loaded. Just push it to the rear and disconnect at the front.



d447r100

2. Use a short screwdriver to remove sensor bracket [A] (x1)

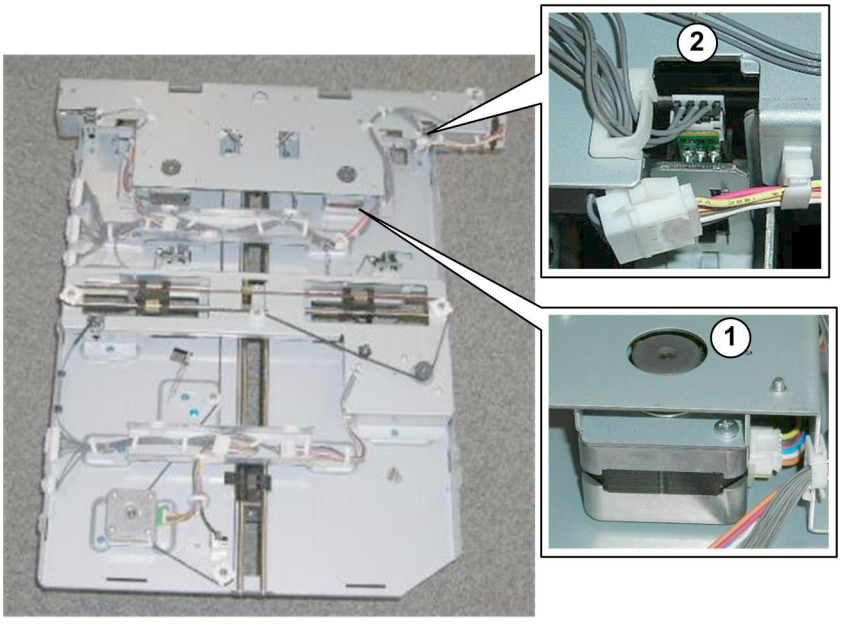


d447r101

3. Sensor [A] (x1, Pawls x5)

Paper Jogging

Main Jogger Front Fence Motor, Front Fence HP Sensor



d447r102

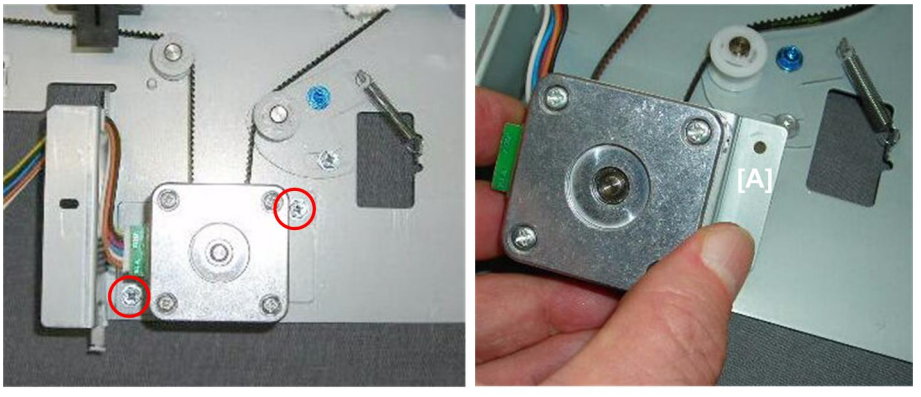
①	Main Jogger Front Fence Motor
②	Main Jogger Front Fence HP Sensor

Preparation

Remove these parts:

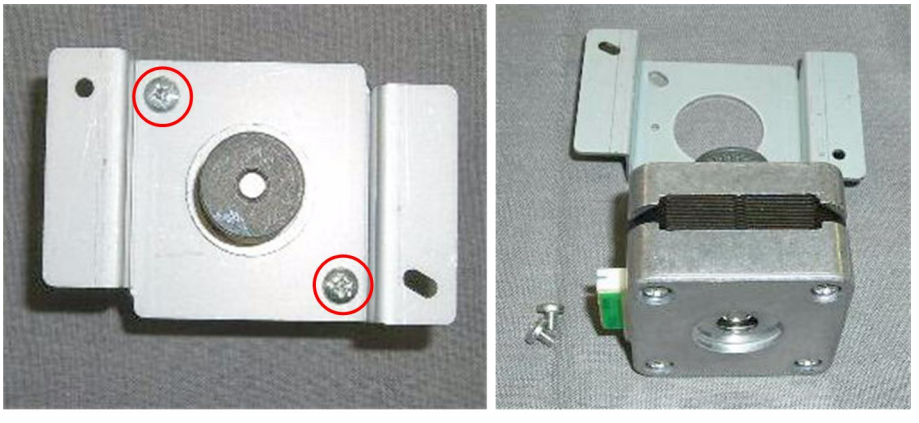
- Jogger unit
- Main jogger cover plate

Front Fence Motor



d447r103

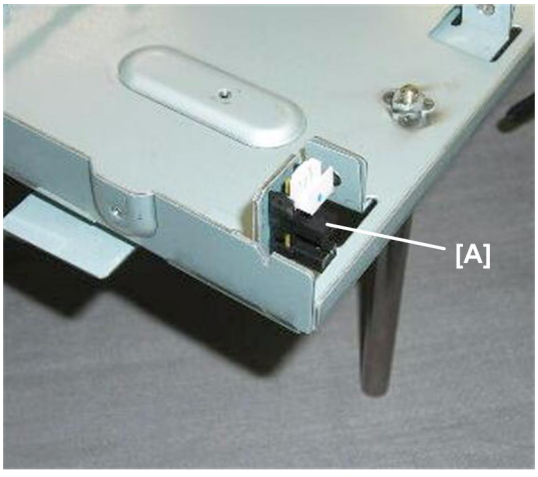
1. Motor bracket [A] (x2, x1, Belt x1)



d447r104

2. Separate the motor and the bracket (x2)

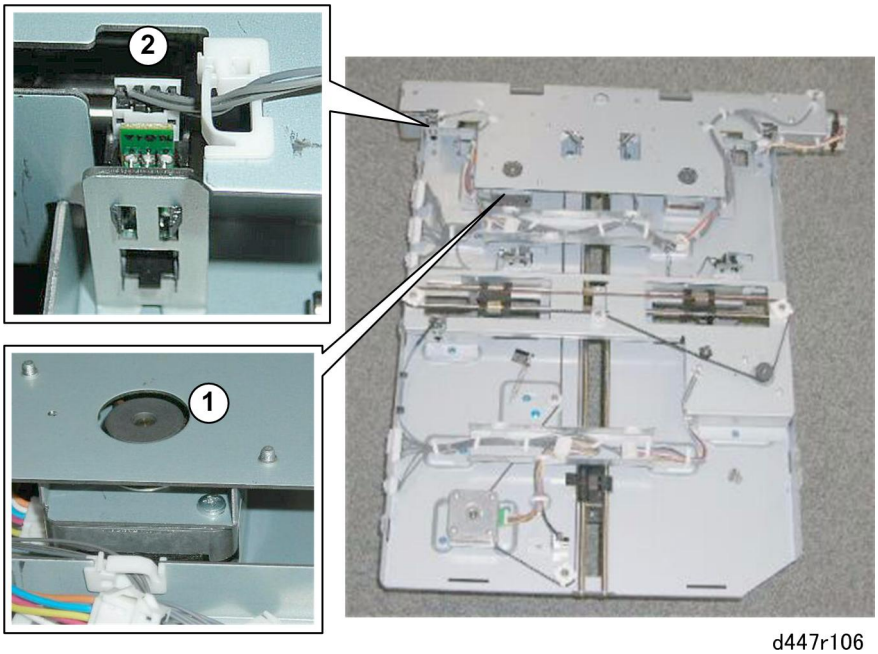
Front Fence Jogger HP Sensor



d447r105

1. Sensor [A] (Pawls x5)

Main Jogger Rear Fence Motor, Rear Fence HP Sensor



d447r106

①	Main Jogger Rear Fence Motor
②	Main Jogger Rear Fence HP Sensor

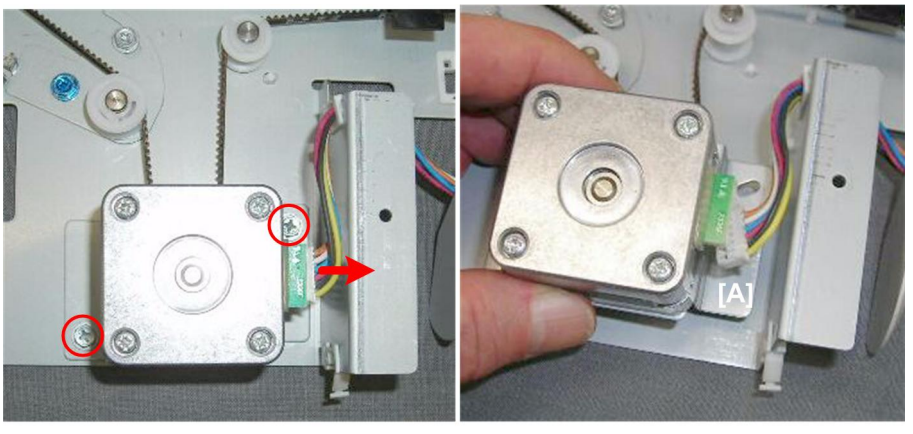
1

Preparation

Remove these parts:

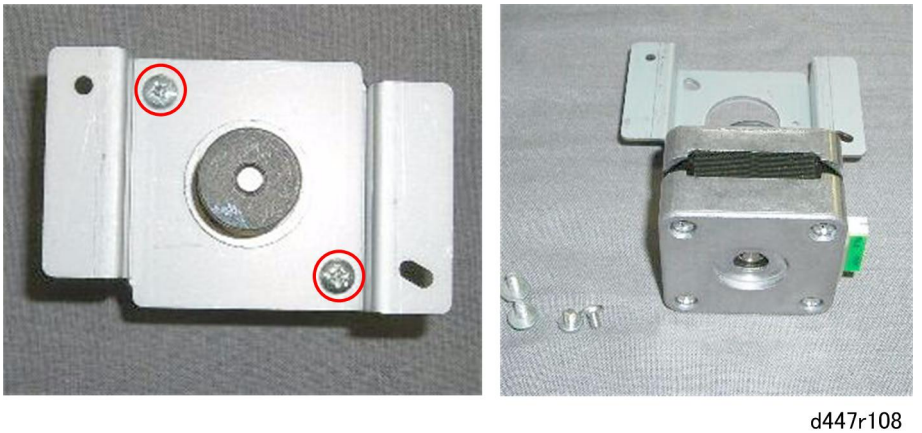
- Jogger unit
- Main jogger cover plate

Rear Fence Motor



d447r107

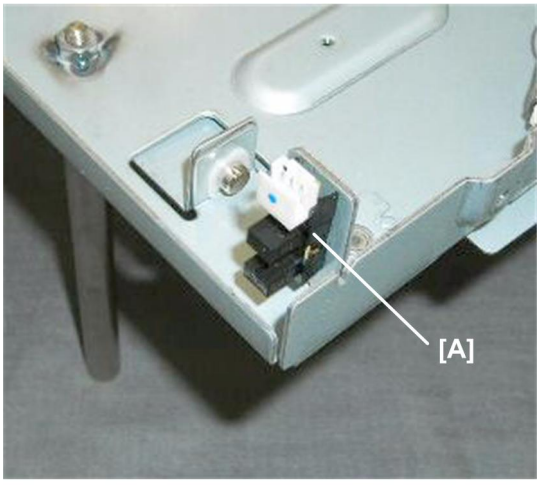
1. Motor bracket [A] (x2, x1, Belt x1)



d447r108

2. Separate the motor and the bracket (x2)

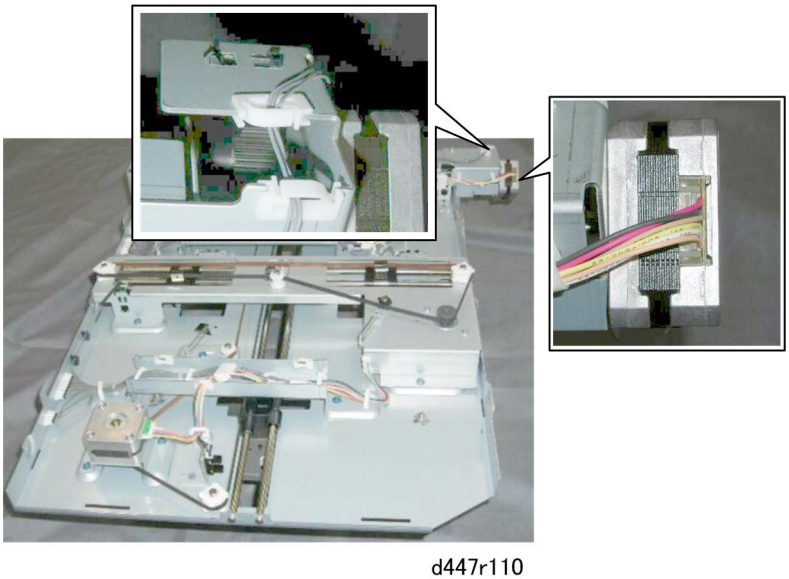
Rear Fence HP Sensor



d447r109

1. Sensor [A] (Pawls x5)

Main Jogger Fence Retraction Motor, Fence Retraction HP Sensor



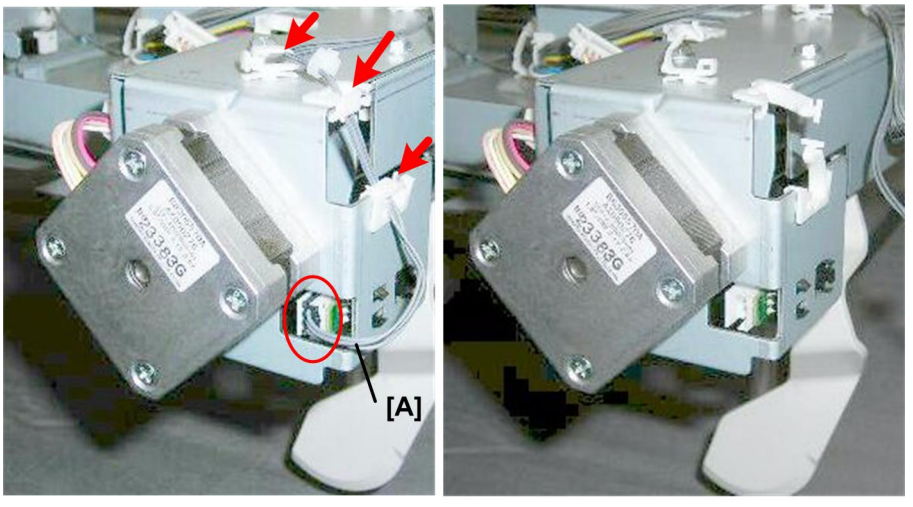
d447r110

Preparation

Remove these parts:

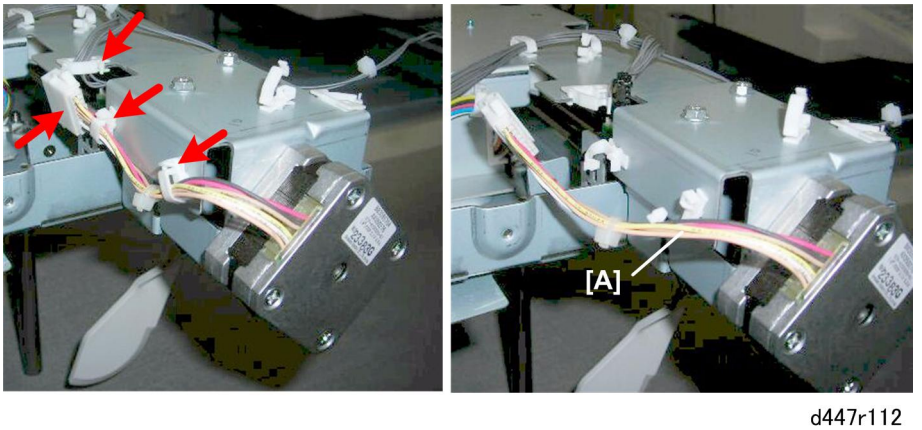
- Jogger unit
- Main jogger cover plate

Fence Retraction Motor



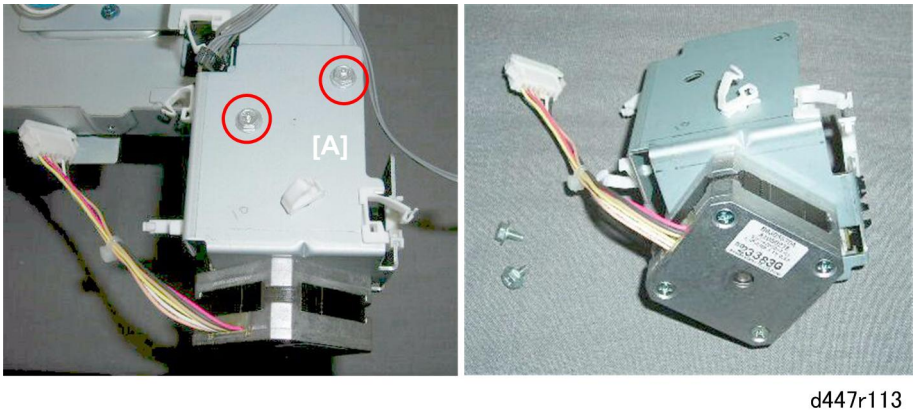
d447r111

1. Disconnect the front fence retraction HP sensor harness [A] (x1, x3).



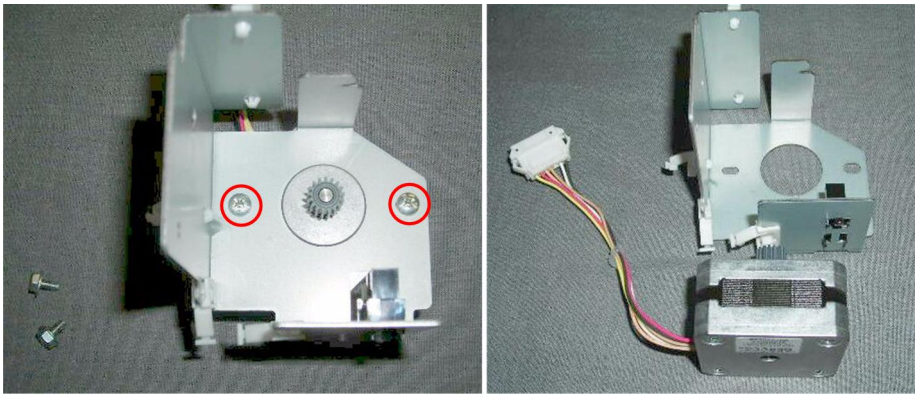
d447r112

2. Disconnect the front fence retraction motor harness [A] (x1, x3).



d447r113

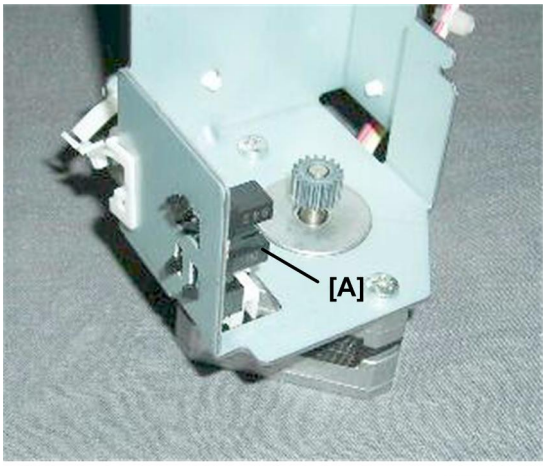
3. Motor bracket [A] (x2)



d447r114

4. Separate the motor and the bracket (x2)

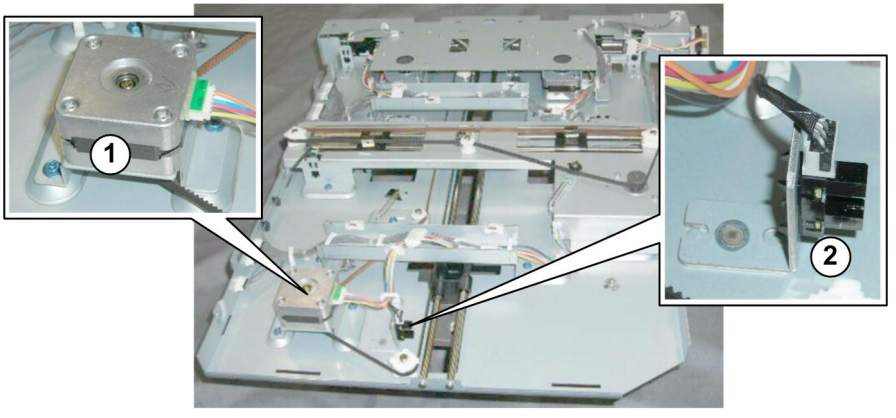
Fence Retraction HP Sensor



d447r115

1. Sensor [A] (Pawls x5)

LE Stopper Motor, LE Stopper HP Sensor



d447r116

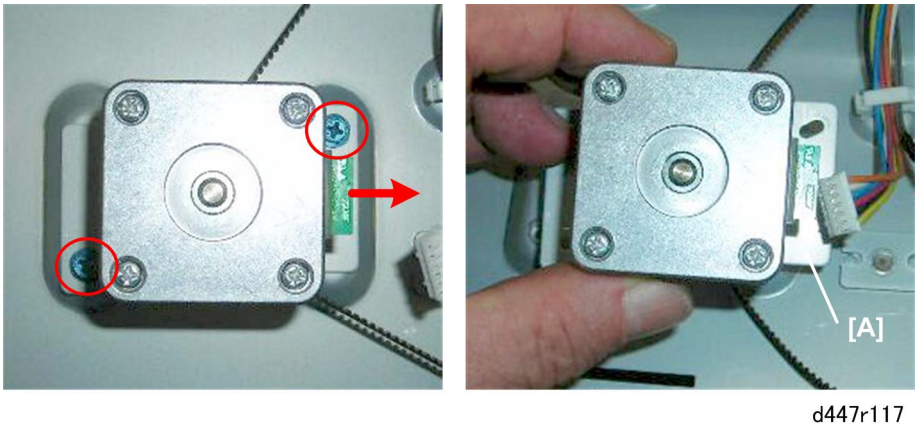
①	LE Stopper Motor
②	LE Stopper HP Sensor

Preparation

Remove these parts:

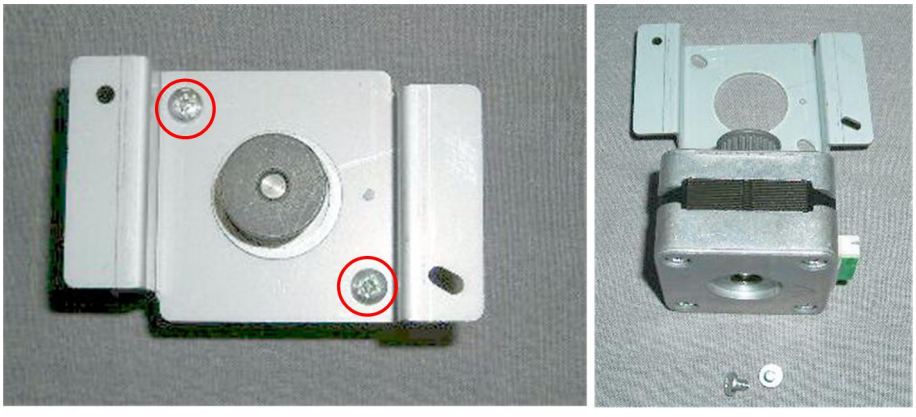
- Jogger unit
- Main jogger cover plate

LE Stopper Motor



d447r117

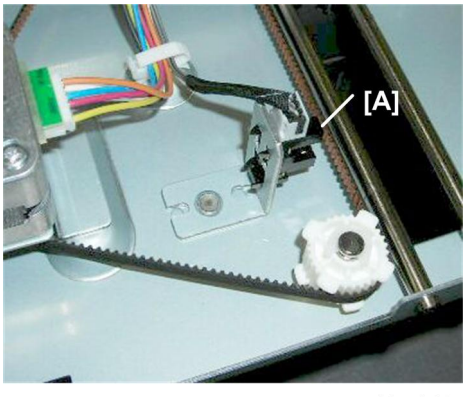
1. Motor bracket [A] (x2)



d447r118

2. Separate the motor and the bracket (x2)

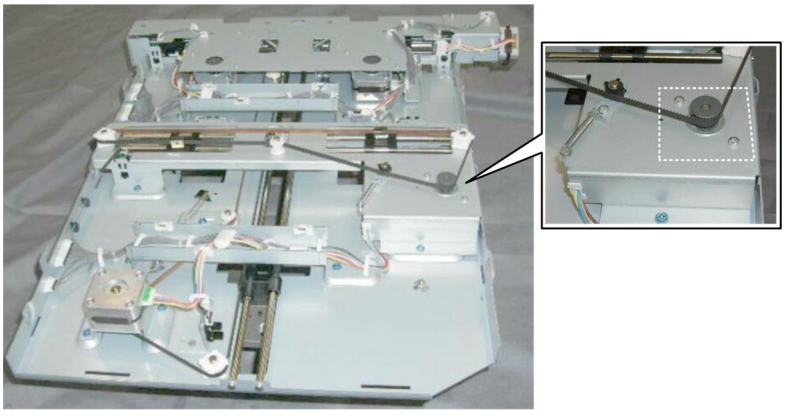
LE Stopper HP Sensor



d447r119

1. Sensor [A] (x1, Pawls x5)

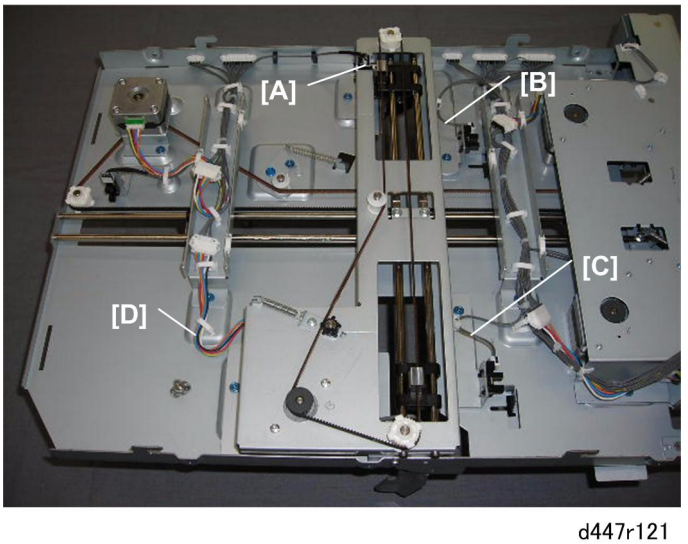
Sub Jogger Motor



d447r120

Preparation

- Remove the jogger unit



d447r121

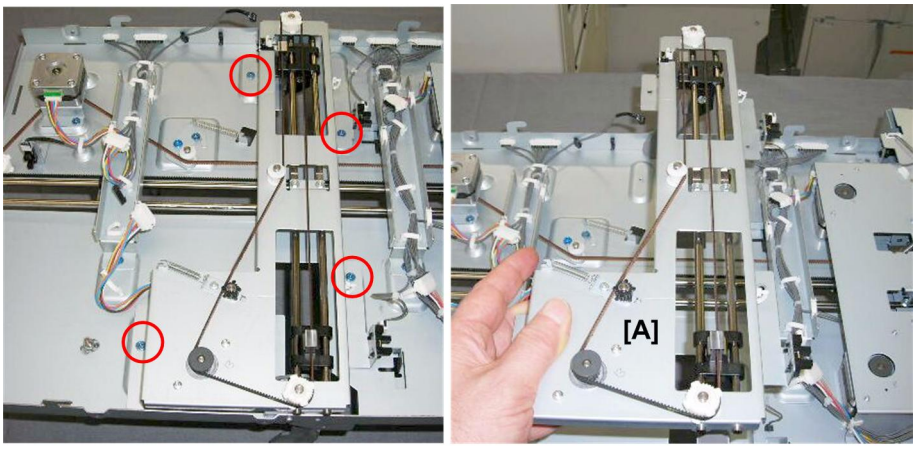
1. Disconnect these harnesses:

   [A] Sub jogger fence HP sensor (x1, x1)

   [B] Tray guard sensor 1 (x1, x1)

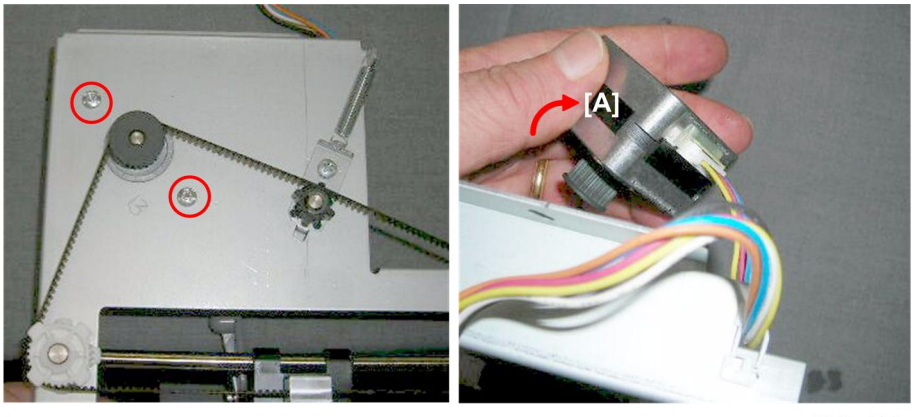
   [C] Tray guard sensor 2 (x1, x1)

   [D] Sub jogger motor (x1, x1)



d447r122

2. Remove cover [A] (x4)



d447r123

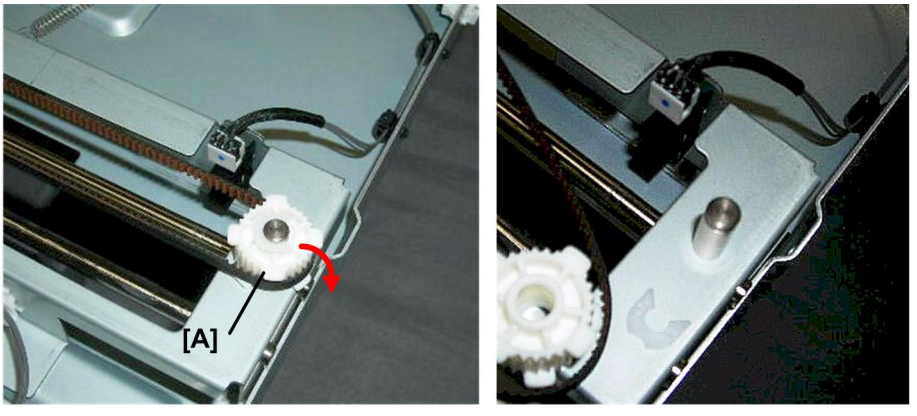
3. Motor [A] (x1, Belt x1, x1)

d447r124

Sub Jogger HP Sensor

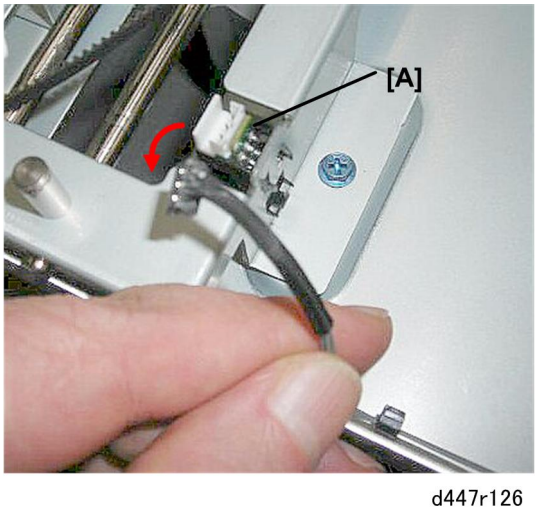
Preparation

- Remove the jogger unit



d447r125

1. Disconnect pulley [A] and belt. (x1, Pulley x1, Belt x1)



d447r126

2. Sensor [A] (x1, Pawls x5)

Shift Tray Lift Control

Roll Away Cart Set SW

d447r127

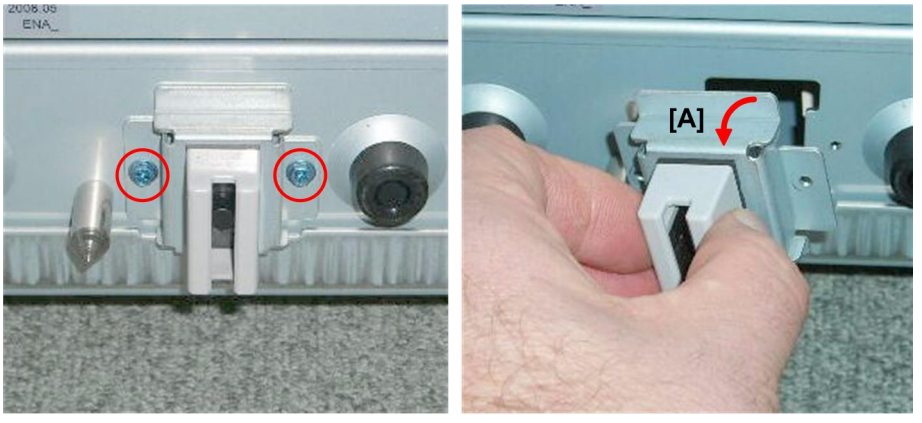
Preparation

Remove these parts:

- Cart
- Rear lower cover

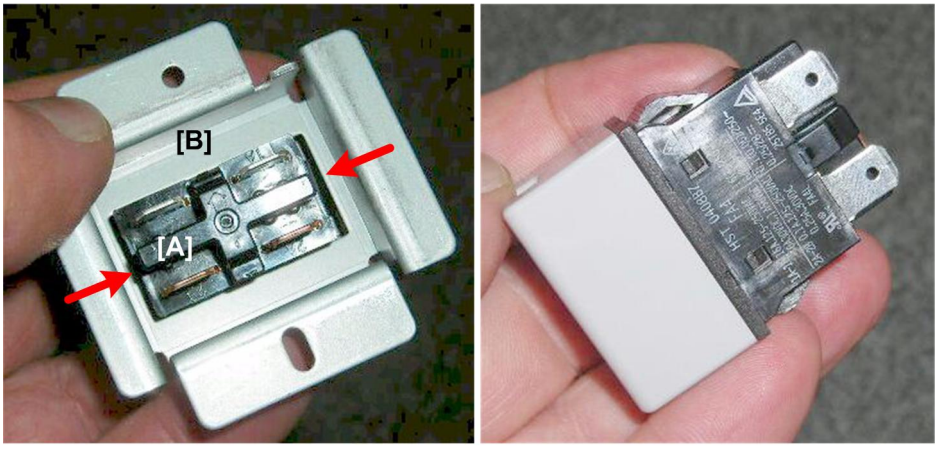
d447r128

1. Switch [A] (x1)



d447r129

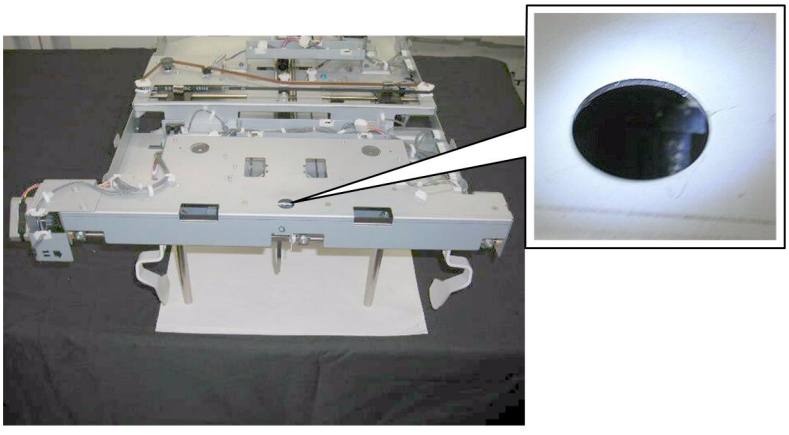
2. Switch [A] (🔩 x2)



d447r130

3. Depress the clamps on both sides of switch [A] and separate the switch from clamp [B].

Shift Tray Paper Sensor

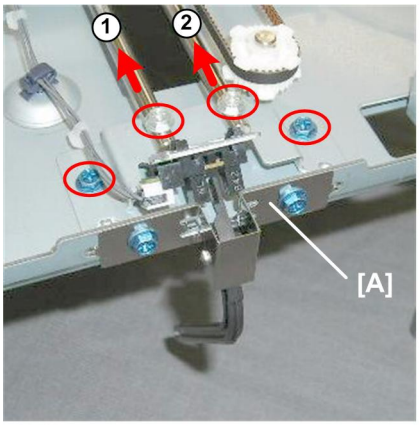


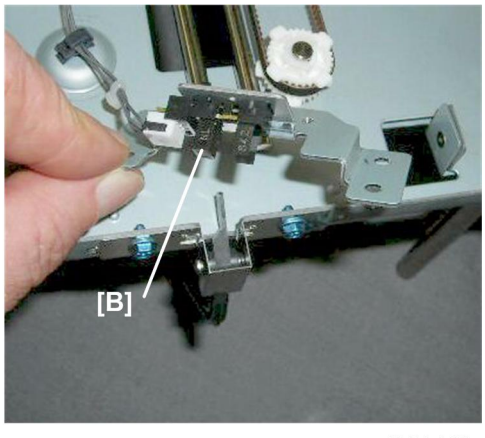
d447r131

Preparation

Remove these parts:

- Jogger unit
- Main jogger cover plate

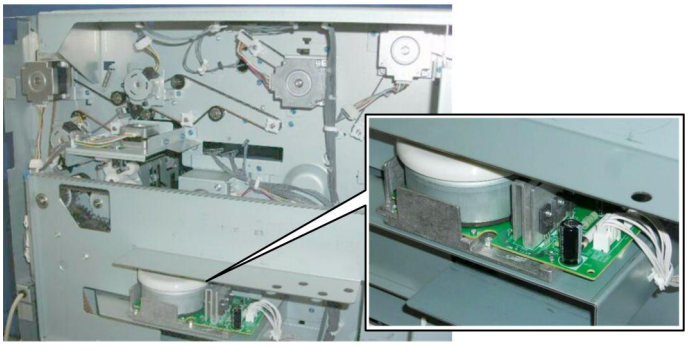




d447r132

1. Disconnect sensor bracket [A] and rails ① and ② (x4).
2. Slide the rails to the rear.
3. Remove sensor [B] (x1, Pawls x5)

Tray Lift Motor

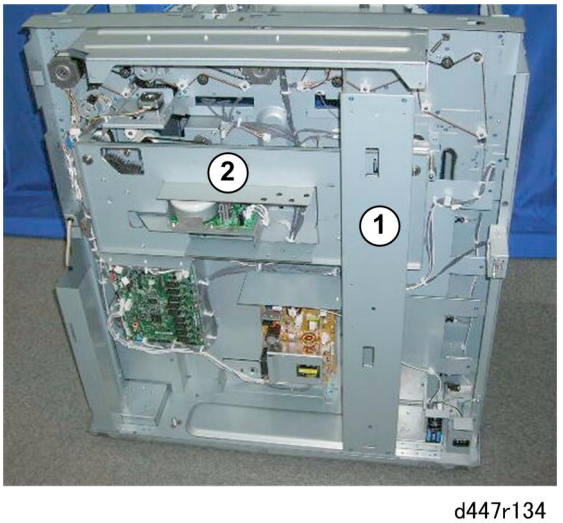


d447r133

Preparation

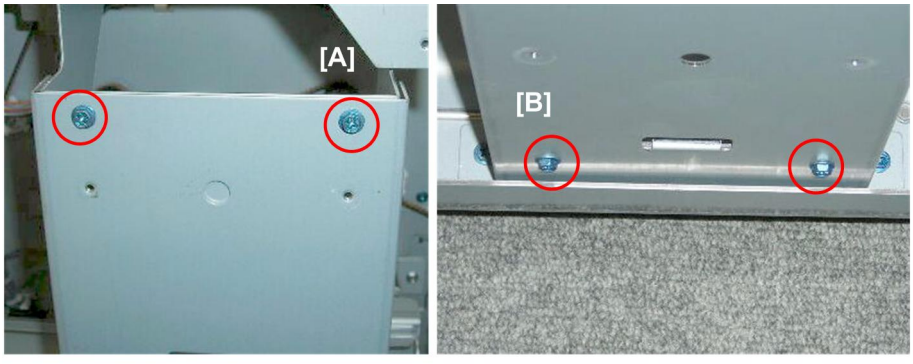
Remove these parts:

- Rear lower cover
- Rear upper cover



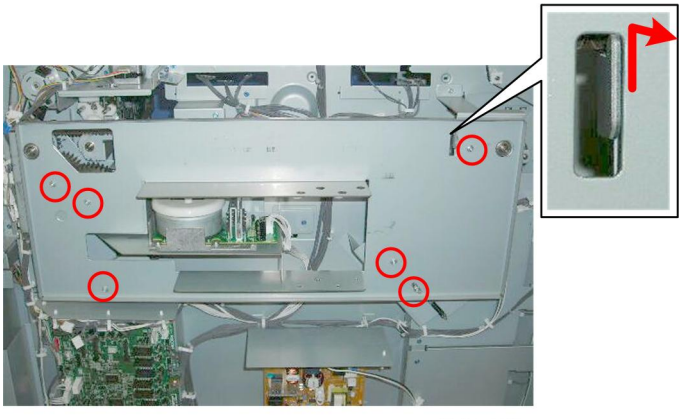
d447r134

1. Plates ① and ② must be removed.



d447r135

2. Remove plate ①.
   - [A] Top (x2)
   - [B] Bottom (x2)

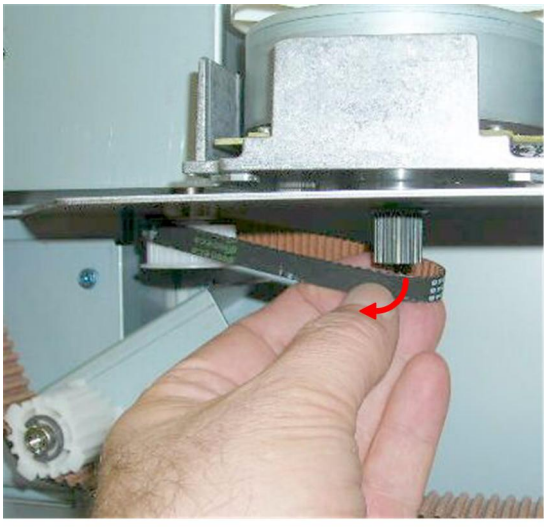


d447r136

3. Remove belt cover plate (x6, Hook x1).

d447r137

4. Disconnect motor bracket [A] (x4)



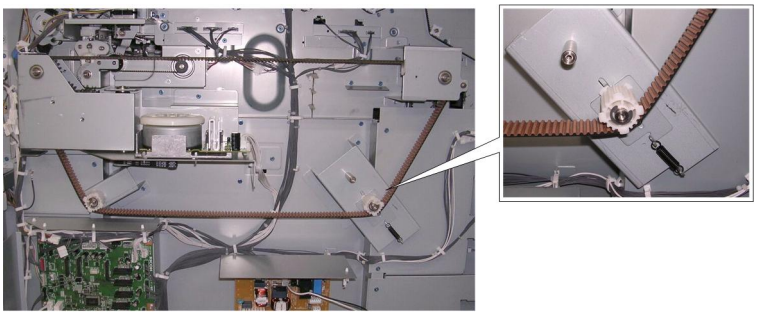
d447r138

5. Disconnect the belt below the motor (Belt x1)

d447r139

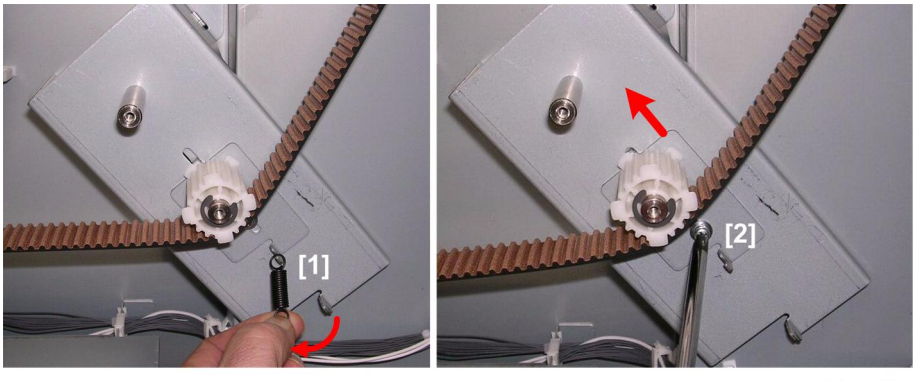
Re-installation

Whenever the belt cover plate has been removed, you should check and re-set the tension on the transverse belt before re-attaching the belt cover plate.



d447r201

This is the belt tension adjustment mechanism.

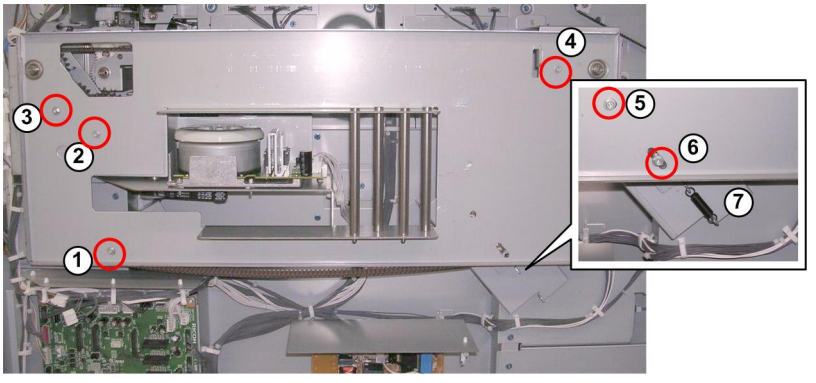


d447r202

1. Remove spring [1].
2. Loosen screw [2] (do not remove it) to raise the tension bracket to the left.

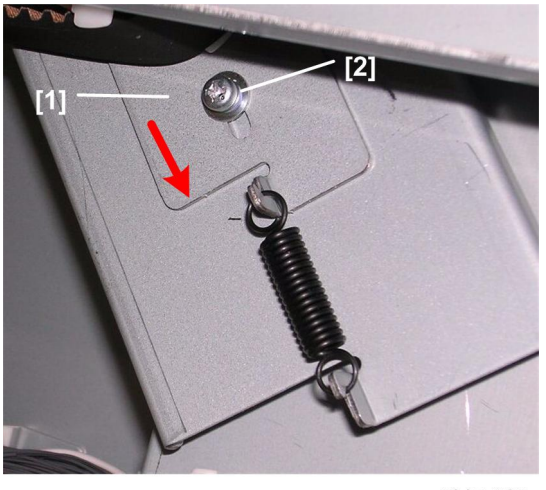
d447r203

3. Hang the belt cover plate [A] on the hook ①.
4. Make sure the bearings and ③ are snug in the holes.



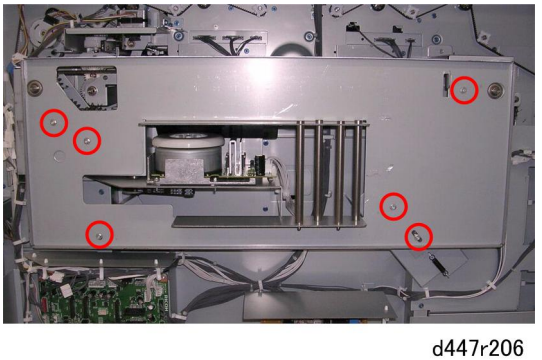
d447r204

5. Attach screws ①, ②, ③, ④ and tighten.
6. Attach screws ⑤, ⑥ but do not tighten.
7. Re-attach the removed spring ⑦.



d447r205

8. Above the spring, pull the tension bracket down [1] as far as it will go, and tighten tension screw [2]



d447r206

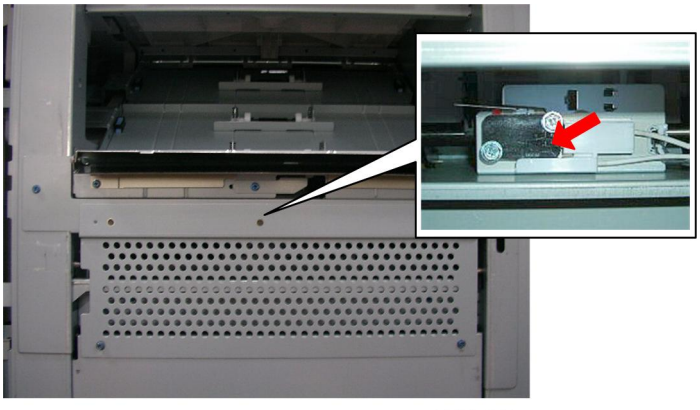
9. Tighten all the screws (x6).

Paper Height Sensor

The paper height sensor is mounted on the same bracket as the shift entrance sensor.

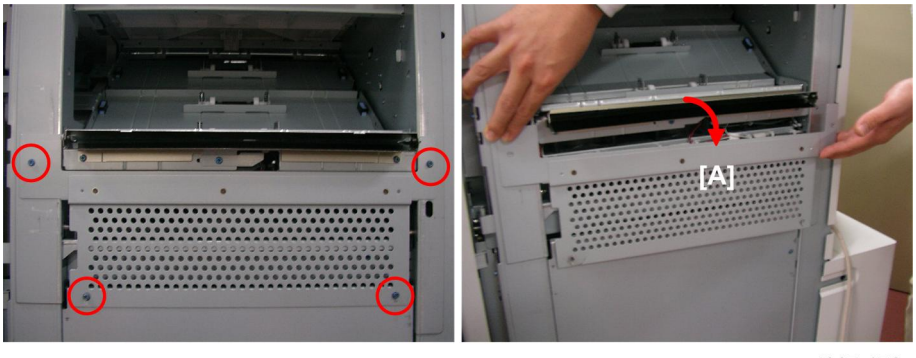
For details about this procedure, please refer to Shift Tray Exit Sensor, Paper Height Sensor. (☛ xref)

Tray High Limit SW



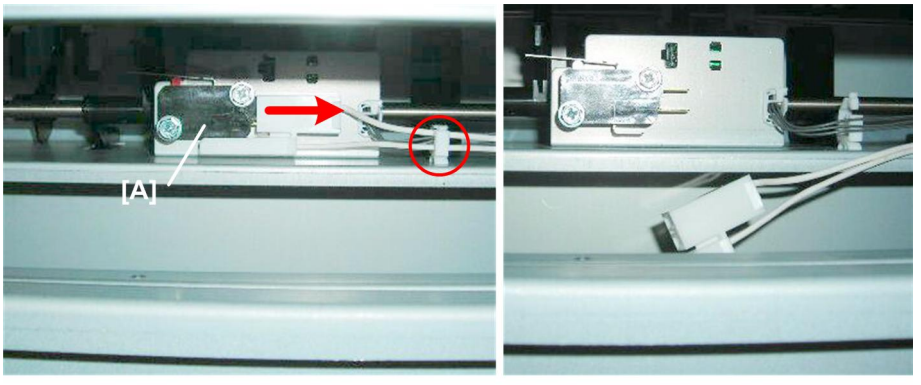
d447r140

This switch is on the right side of the stacker.



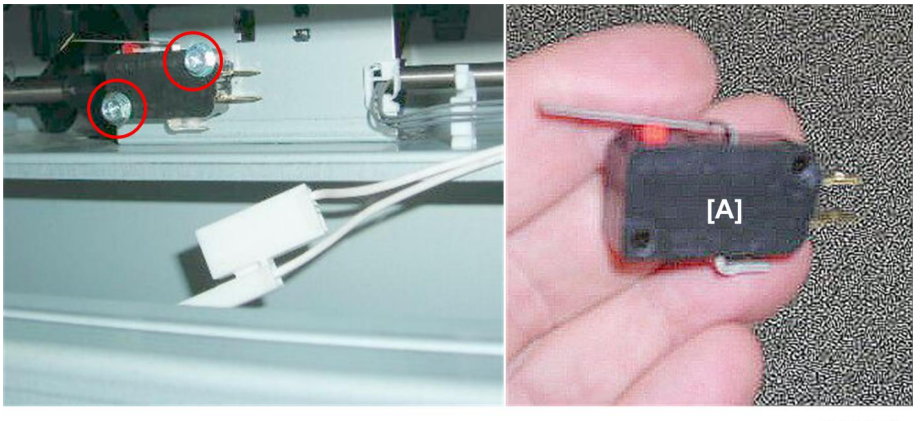
d447r170

1. Remove plate [A] (x4)



d447r141

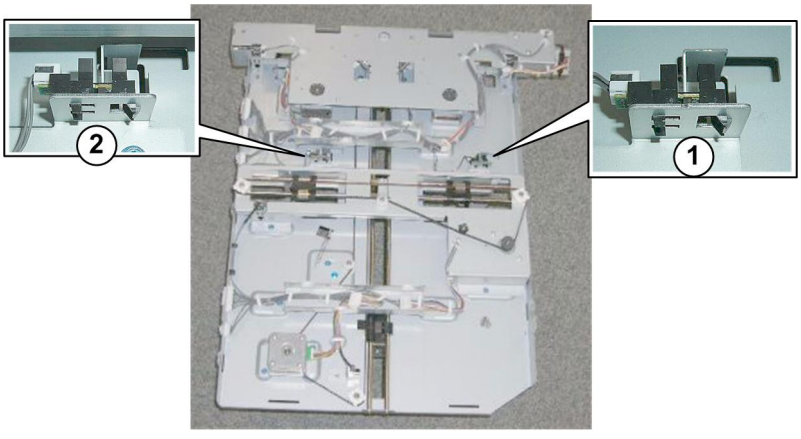
2. Disconnect switch [A] (x1, x2)



d447r142

3. Remove switch [A] (x2).

Tray Guard Sensors 1, 2

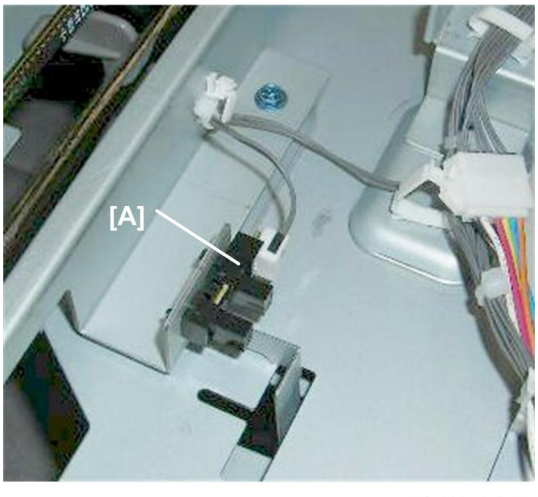


d447r143

Preparation

- Remove the jogger unit

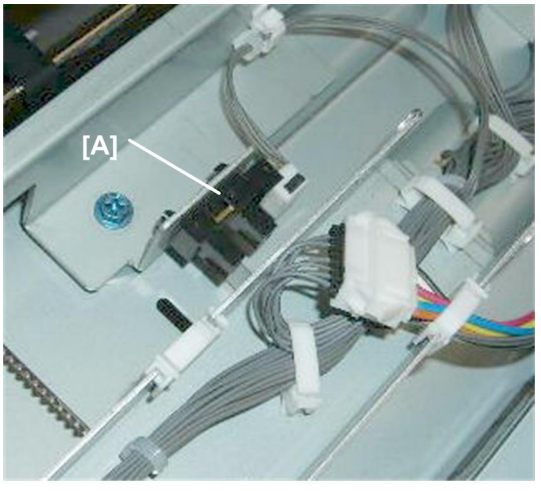
Tray Guard Sensor 1



d447r144

1. Sensor [A] 5302 (x1, Pawls x5)

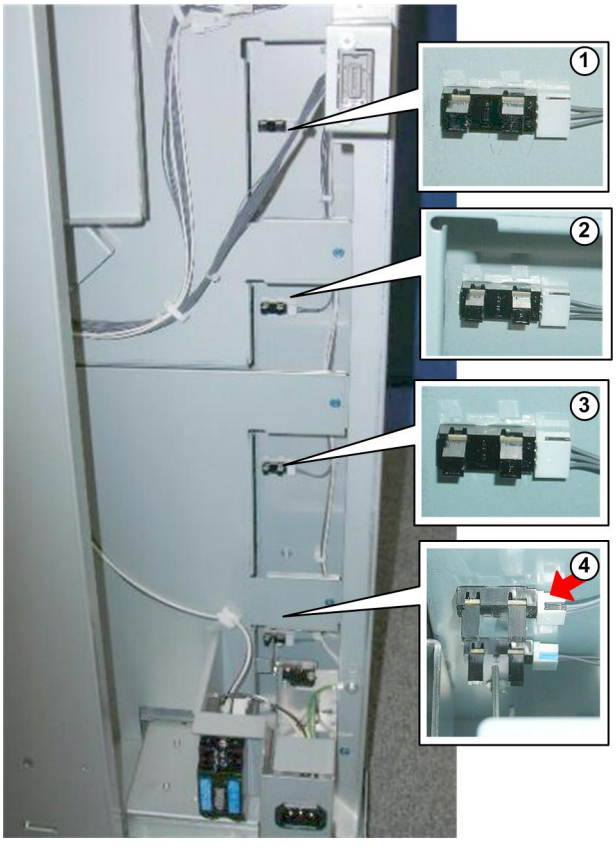
Tray Guard Sensor 2



d447r145

1. Sensor [A] 5302 (x1, Pawls x5)

Tray Full Sensors 1, 2, 3, 4



d447r146

There are four tray full sensors mounted on the same vertical support:

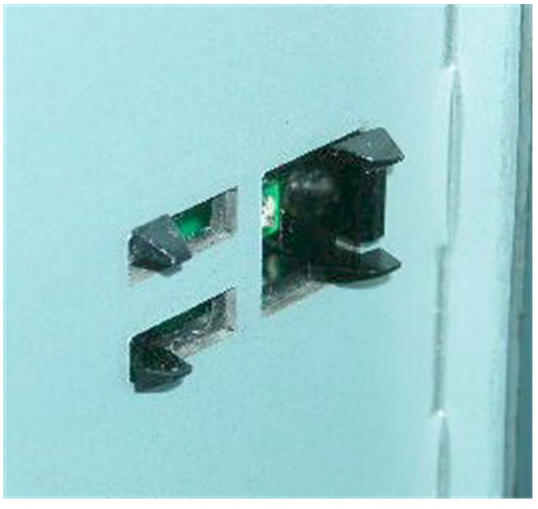
- ① Tray Full Sensor 1: 25%
- ② Tray Full Sensor 2: 50%
- ③ Tray Full Sensor 3: 75%
- ④ Tray Full Sensor 4: 100%

Preparation

Remove these parts:

- Rear lower cover
- Rear upper cover
- Left cover

Tray Full Sensors 1, 2, 3



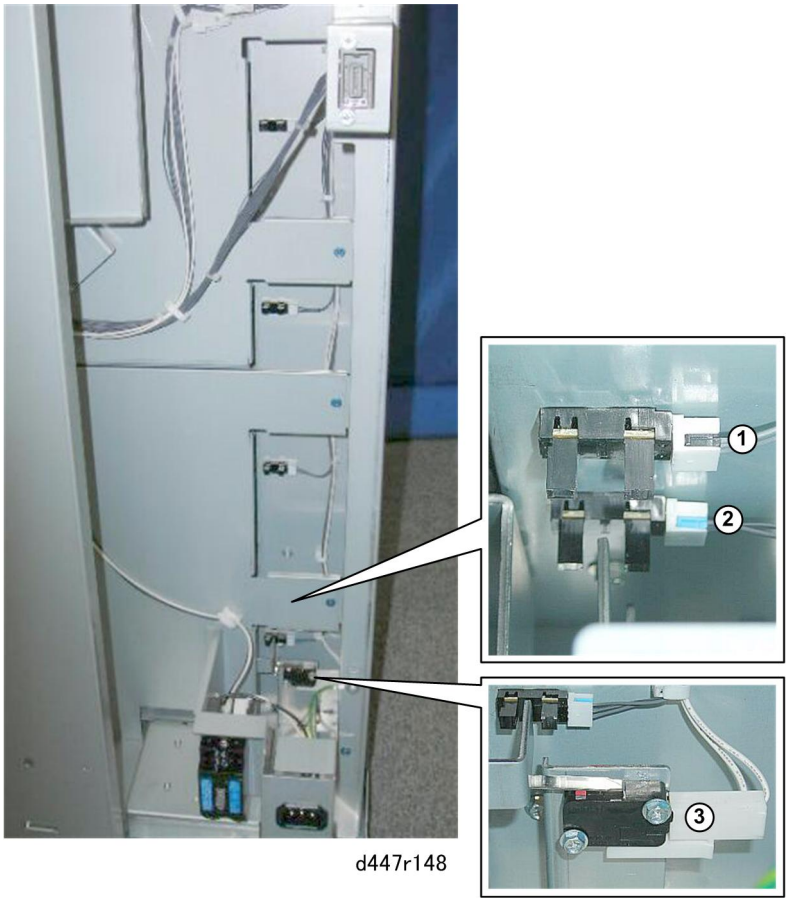
d447r147

1. The pawls of these sensors are visible behind the frame (✋ x1, Pawls x5 each)

Tray Full Sensor 4

See the next procedure below.

Tray Full Sensor 4, Tray Low Limit Sensor, Tray Low Limit Switch



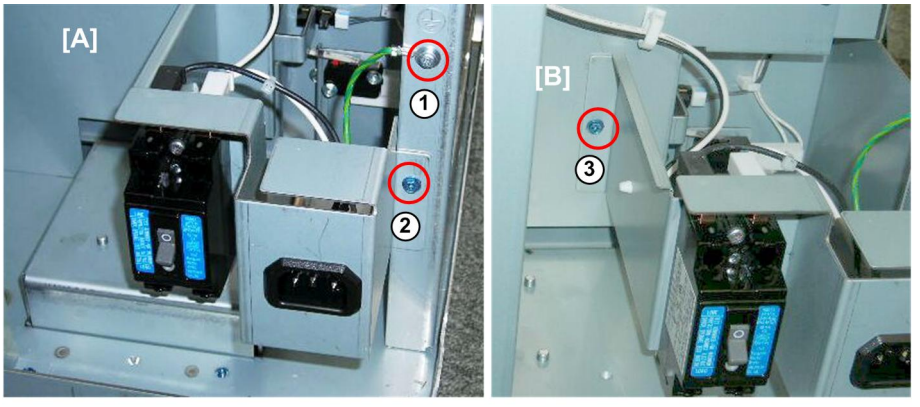
d447r148

①	Tray Full Sensor 4 100%
②	Tray Low Limit Sensor
③	Tray Low Limit Switch

Preparation

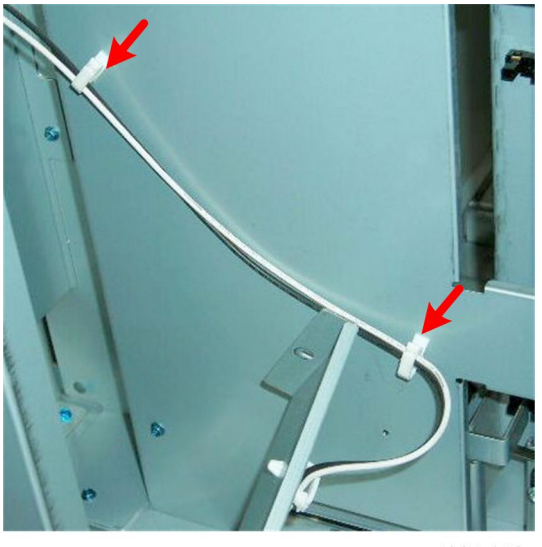
Remove these parts:

- Rear lower cover
- Left cover



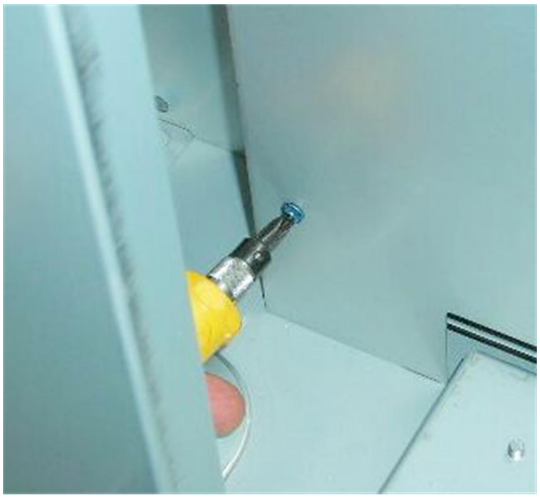
d447r149

1. Right side [A]:
    - Ground wire ① (x1)
    - Bracket ② (x1)
2. Left side [B]:
    - Bracket ③ (x1)



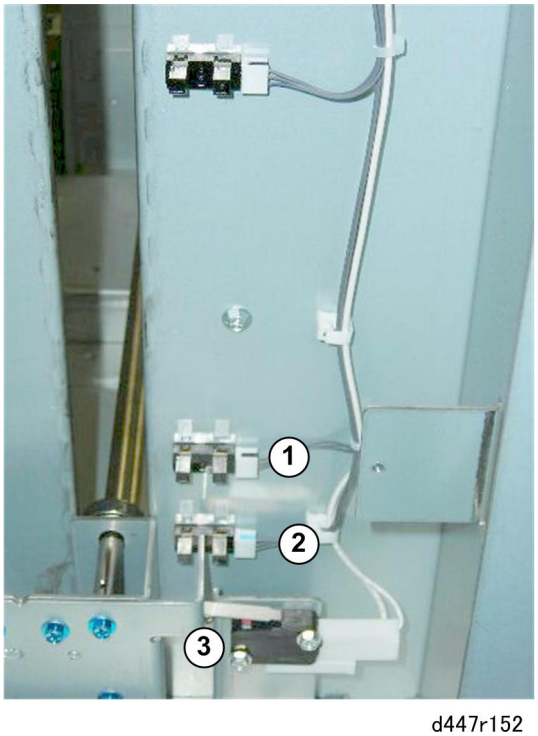
d447r150

3. Open the clamps (x2)



d447r151

4. Use a short screwdriver to move the left lower screw, then remove the other screws at each corner of the plate. (x4)



d447r152

5. Remove (in any order):

- Tray Full Sensor 4 100% ①
- Tray Low Limit Sensor ②

- Tray Low Limit Switch ③

Shift Tray Position Adjustment

The shift tray timing belts can be adjusted to ensure that the shift tray is level:

- **Front-to-rear**. This adjustment is done first.
- **Left-to-right**. This adjustment is done after front-to-rear adjustment.

Important

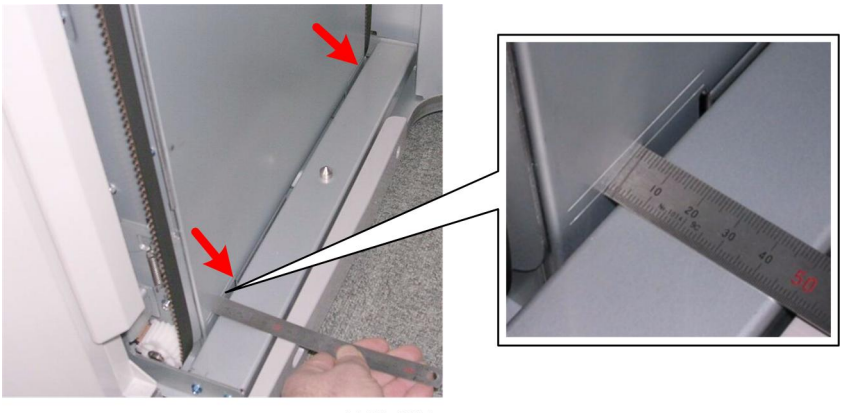
- **Always do the front-to-rear adjustment first on both sides, then do the left-to-right adjustment.**
- **Never do the front-to-rear adjustments without later checking and setting the left-to-right alignment of the tray.**

Check for Skew

Right Side

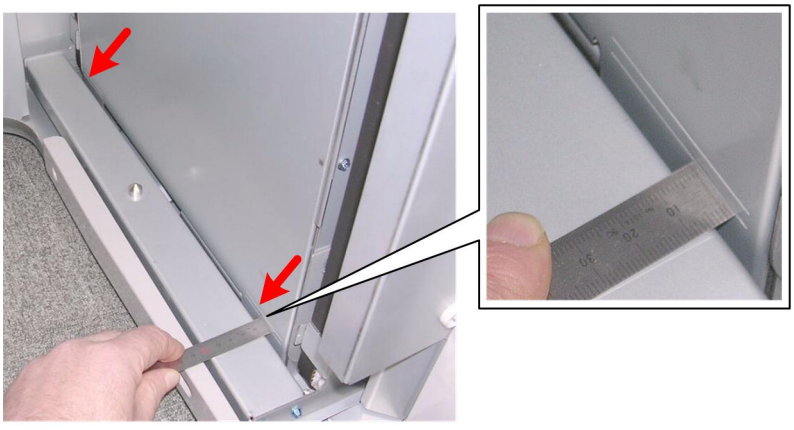
1. Press the button on the stacker operation panel to lower the shift tray.
2. Open the front door and pull out the tray cart.
3. Check the front-to-rear alignment of the tray.

Front left, below stacker exit



d447r207

Front right, below stacker entrance



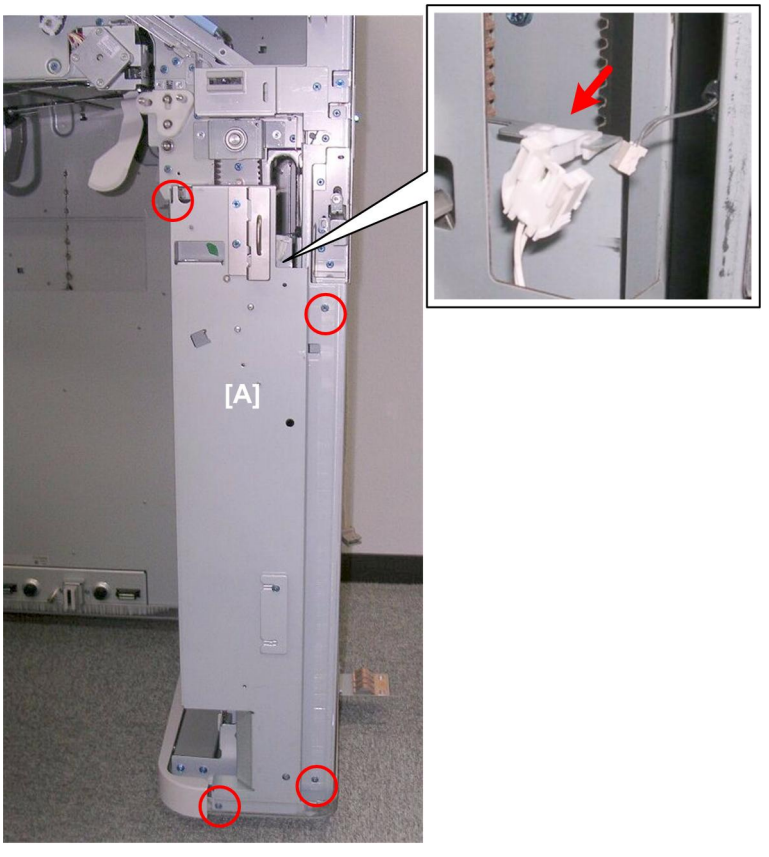
d447r208

4. Check the alignment of the left and right sides of the tray brackets.
5. Determine if the brackets are at the same level:
    - Front-to-back
    - Left-to-right

    If the brackets are at the same level, no adjustment is required.

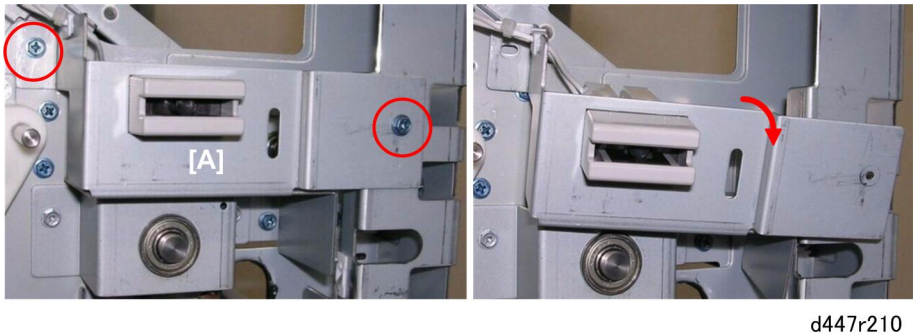
Front-to-Rear Adjustment

1. Remove:
    - Top door (Pins x2).
    - Front right cover (x2)
    - Right inner cover [A] (x4)



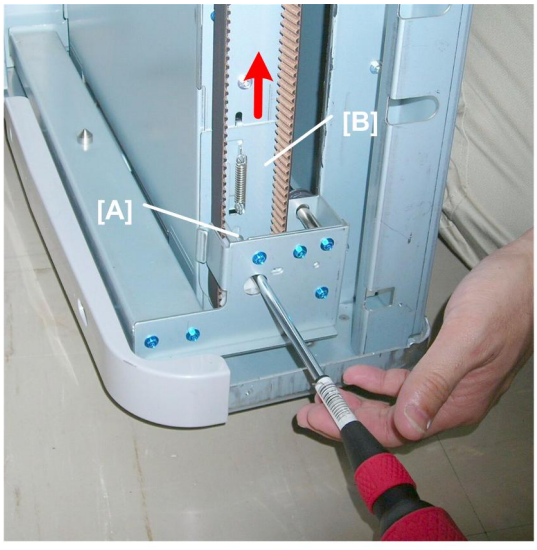
d447r209

2. Remove the right vertical stay [A] (x2, x1)



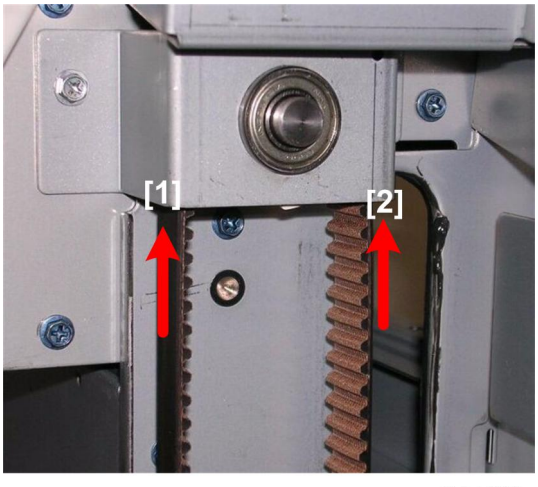
d447r210

3. Remove the screws of the front door switch bracket [A] (x2). You do not need to remove the bracket.



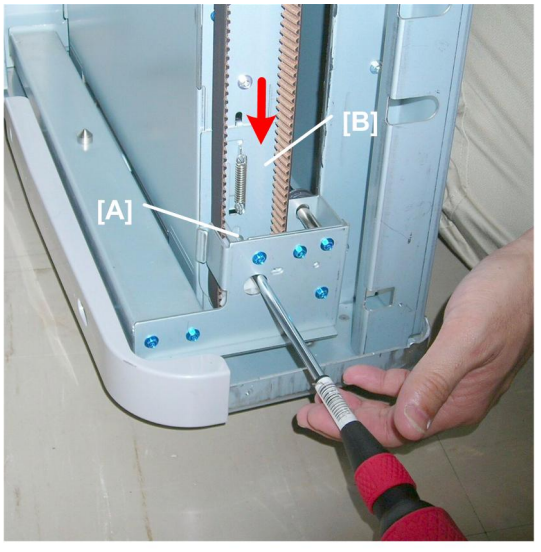
d447r211

4. Loosen the tension on the belt:
    - Loosen screw [A].
    - The tension bracket [B] will rise.
    - Tighten screw [A].



d447r212

5. Adjust the belt:
    - If the front end is low, pull up the left side of the belt [1] to raise the front.
    - If the front end is high, pull up the right side of the belt [2] to lower the front.
    - Every notch adjustment (you will be able to hear it click) adjusts the height of the front by 5 mm.

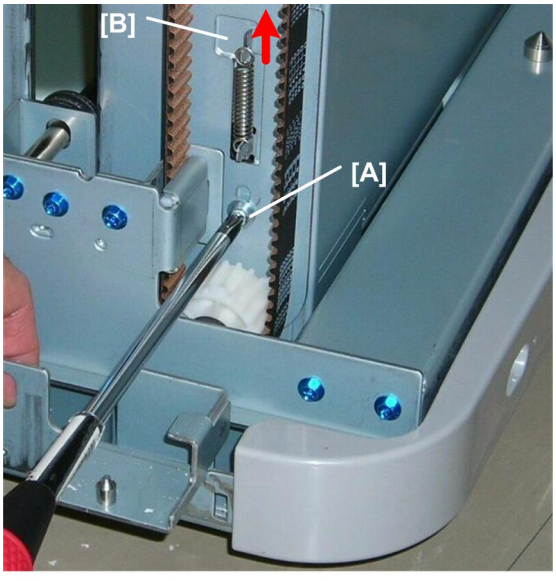


d447r213

6. Re-set the belt tension:
    - Loosen screw [A].
    - Pull down the spring [B] to apply tension to the belt.
    - Tighten screw [A] with the bracket pulled down.

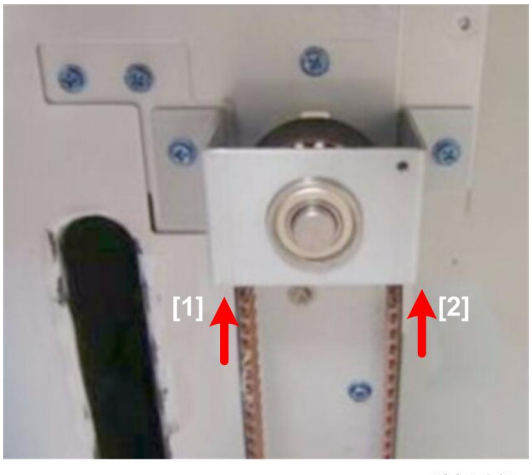
Left Side

1. Remove:
    - Top front door ("L" x2)
    - Front door
    - Front door bottom hinge cover (x1)
    - Left front cover (x2)



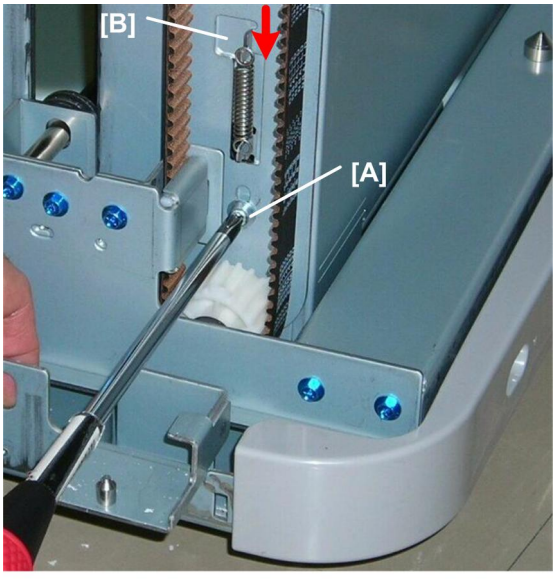
d447r214

2. Loosen the tension on the belt:
    - Loosen tension screw [A].
    - The tension bracket [B] will rise.
    - Tighten screw [A].



d447r215

3. Adjust the belt:
    - If the front end is low, pull up the left side of the belt [1] to raise the front.
    - If the front end is high, pull up the right side of the belt [2] to lower the front.
    - Every notch adjustment (you will be able to hear it click) adjusts the height of the front by 5 mm.

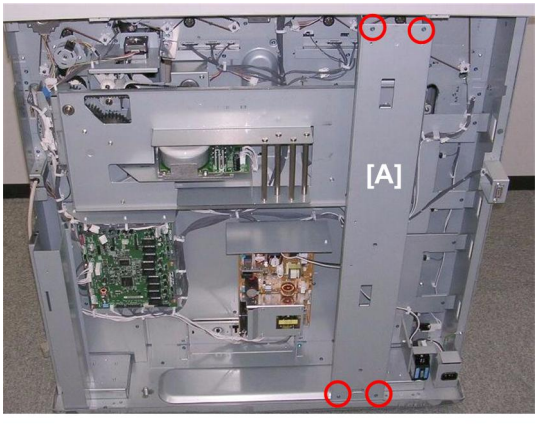


d447r216

4. Set the belt tension:
    - Loosen screw [A].
    - Pull down the spring [B] to apply tension to the belt.
    - Tighten screw [A] with the bracket down.

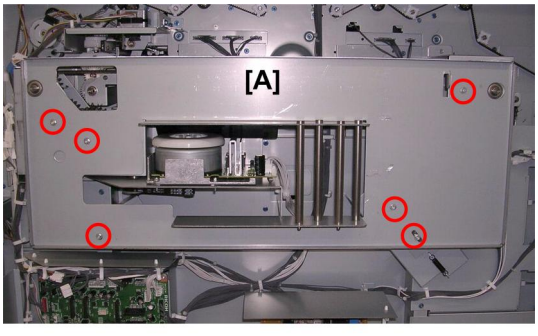
Left-to-Right Adjustment

1. Check the lines inside the stacker to determine if the tray is slanting to the left or right.
2. Remove:
    - Rear lower cover (x4)
    - Rear upper cover (x4)
    - Corner cover (x4)



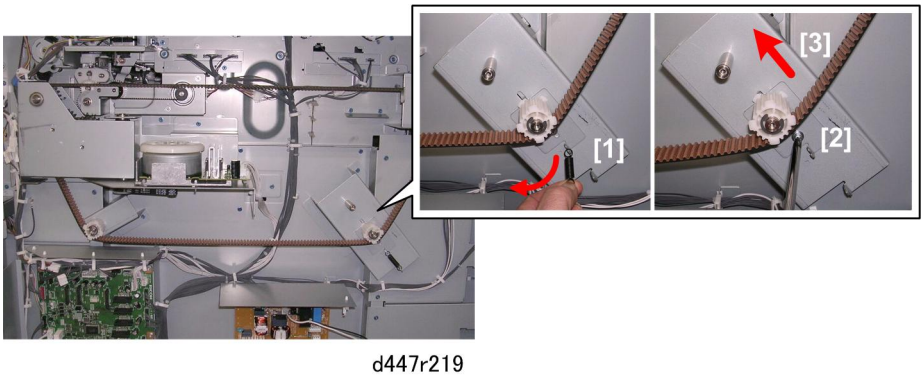
d447r217

3. Remove the vertical stay [A] (x4).



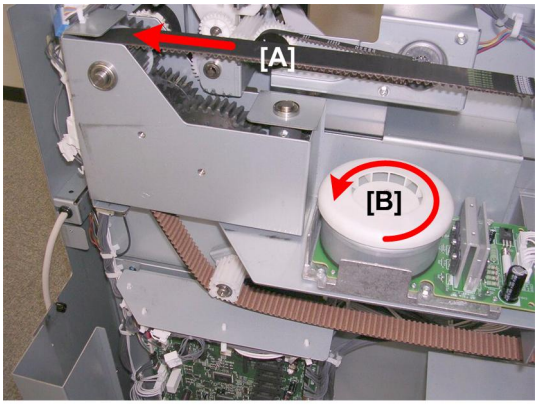
d447r218

4. Remove the rear timing belt cover plate [A] (x6).



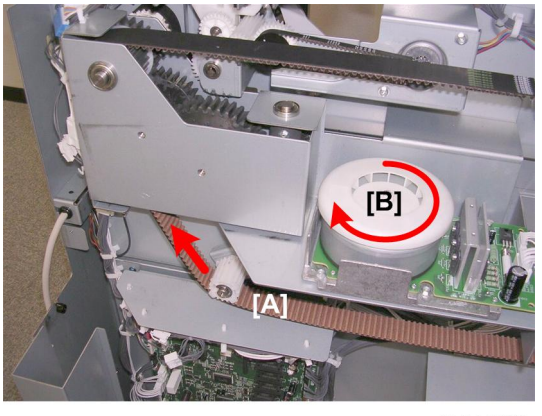
d447r219

5. Release the tension on the timing belt:
   - Remove spring [1].
   - Loosen tension screw [2].
   - Slide bracket [3] up to the left.



d447r220

6. Adjust the belt position:
    - To lower the right side of the tray below the stacker entrance, pull the belt in the direction of the arrow at [A] while rotating the top of the tray lift motor [B] counter-clockwise.

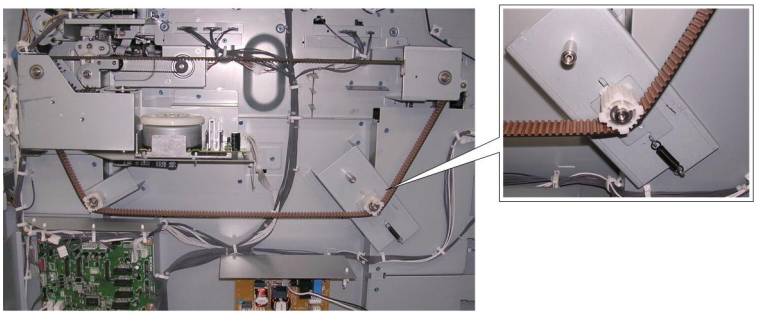


d447r220

    - To raise the right side of the tray below the stacker entrance, pull the belt in the direction of the arrow at [A] while rotating the top of the tray lift motor {B] clockwise.

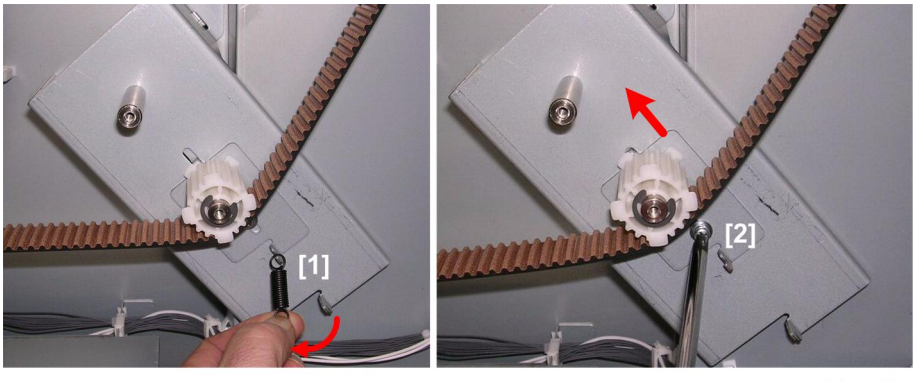
Re-installation

Whenever the belt cover plate has been removed, you should check and re-set the tension on the transverse belt before re-attaching the belt cover plate.



d447r201

This is the belt tension adjustment mechanism.

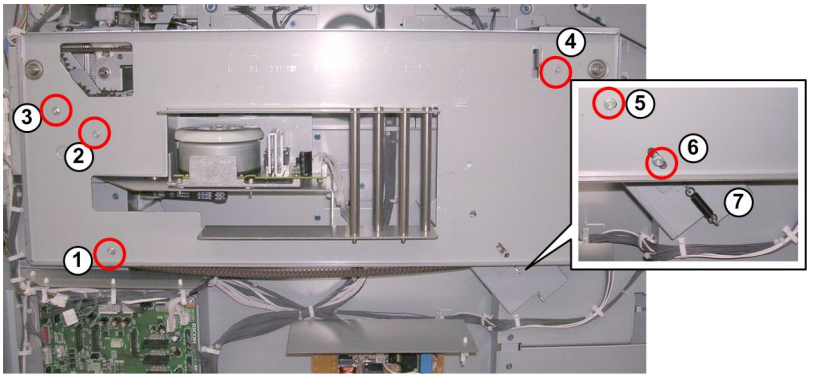


d447r202

1. Remove spring [1].
2. Loosen screw [2] (do not remove it) to raise the tension bracket to the left.

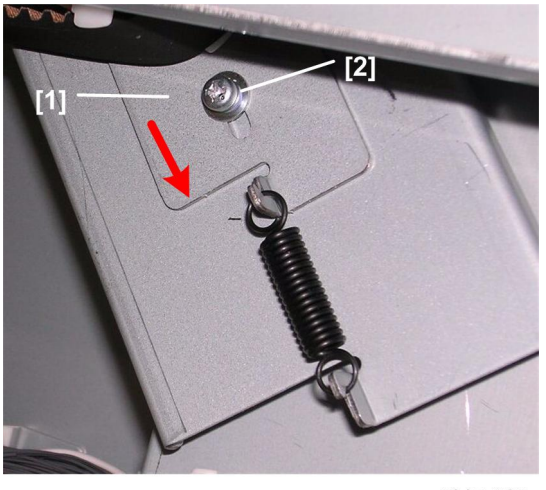
d447r203

3. Hang the belt cover plate [A] on the hook ①.
4. Make sure the bearings ② and ③ are snug in the holes.



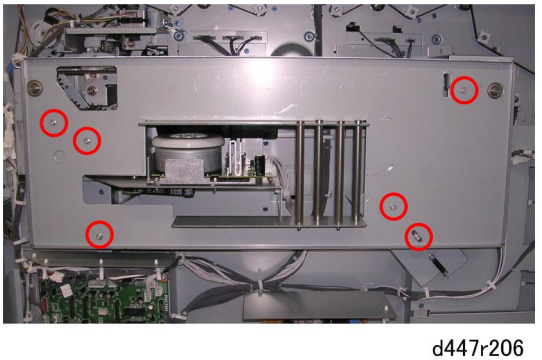
d447r204

5. Attach screws ①, ②, ③, ④ and tighten.
6. Attach screws ⑤, ⑥ but do not tighten.
7. Re-attach the removed spring ⑦.



d447r205

8. Above the spring, pull the tension bracket down [1] as far as it will go and tighten tension screw [2]



d447r206

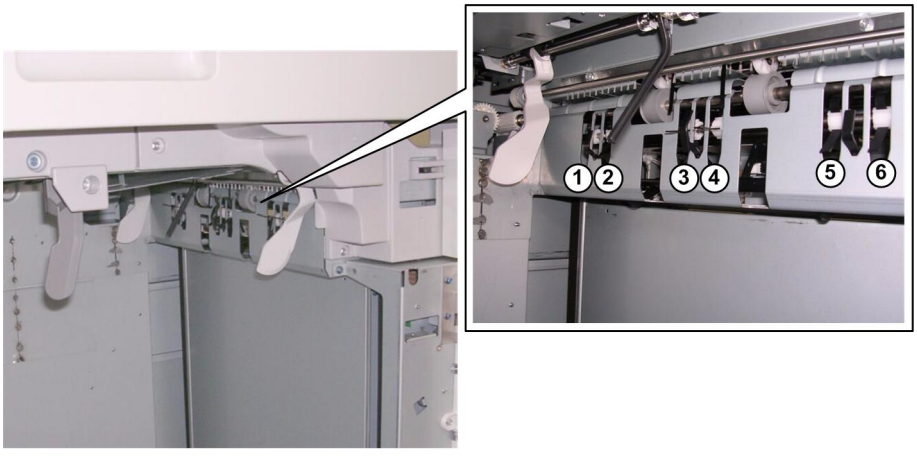
9. Tighten all the screws (x6).

Paddle Roller

Paddle Roller Cleaning

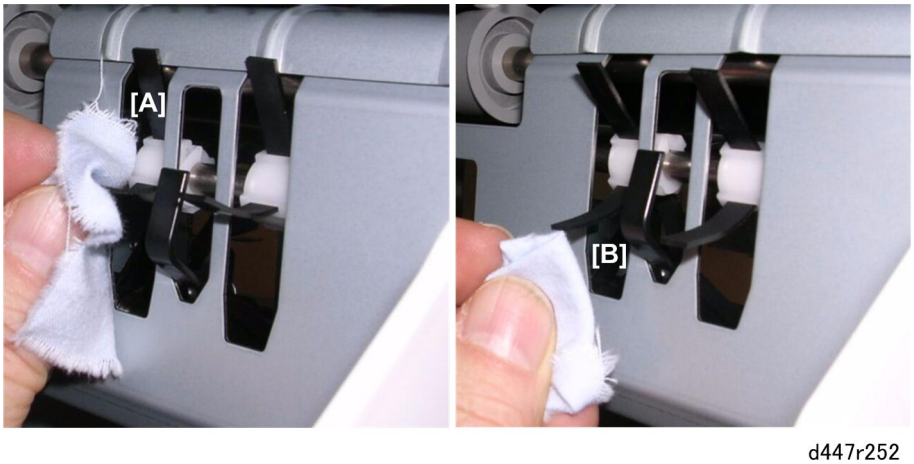
Preparation

- Open the front door
- Remove the roll-away cart



d447r251

1. You can see the paddles at six locations behind on the right side between the jogger fences.

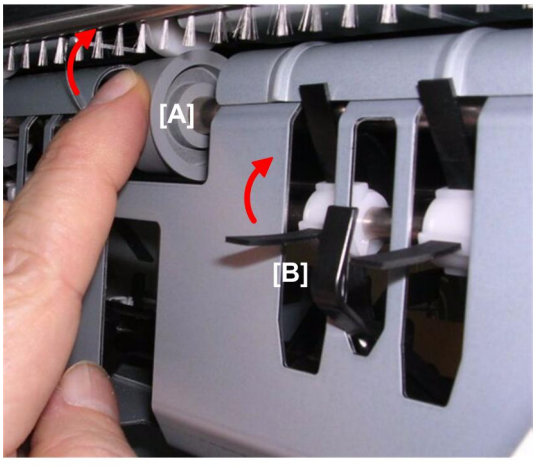


d447r252

2. Use a dry cloth to clean:

   [A] Top and bottom surfaces of each paddle

[B] Tip of each paddle

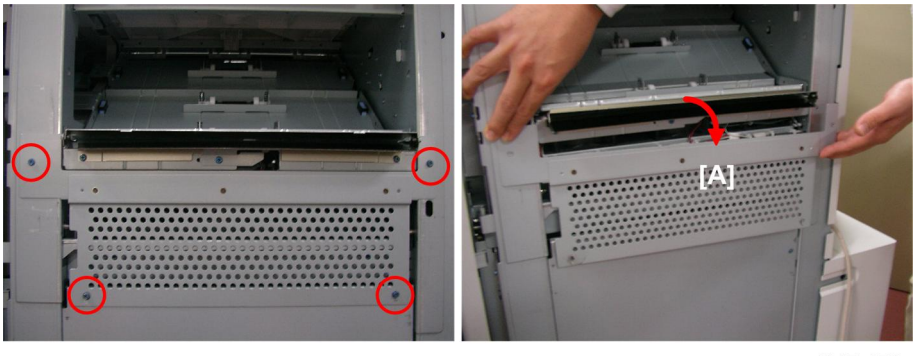


d447r253

3. Rotate the exit roller [A] to expose the next paddle [B].
4. Repeat Steps 1 and 2 at each location until all the paddles have been cleaned.
   There are four paddles at each of the six locations where the paddles are exposed.

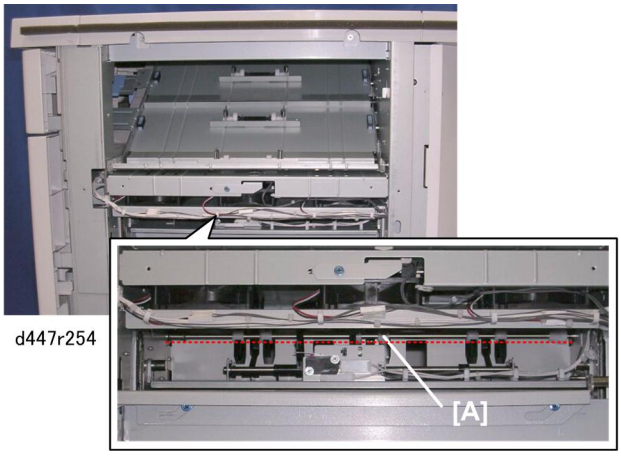
Replacing Paddles

Removing the Paddle Roller



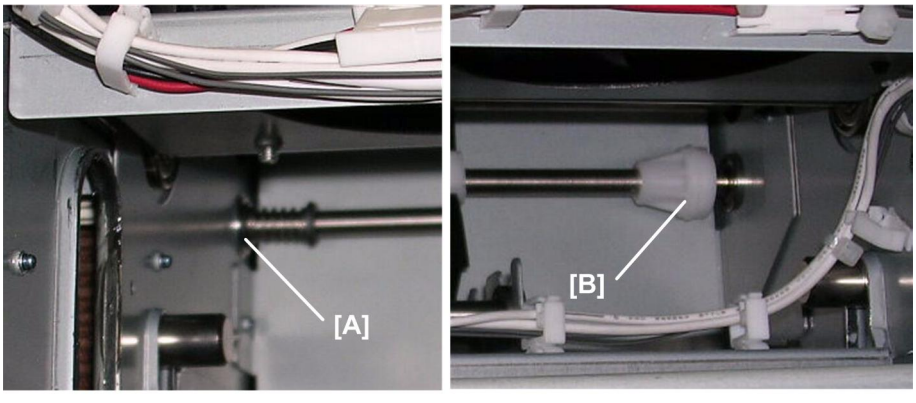
d447r170

1. Remove plate [A] (x4)



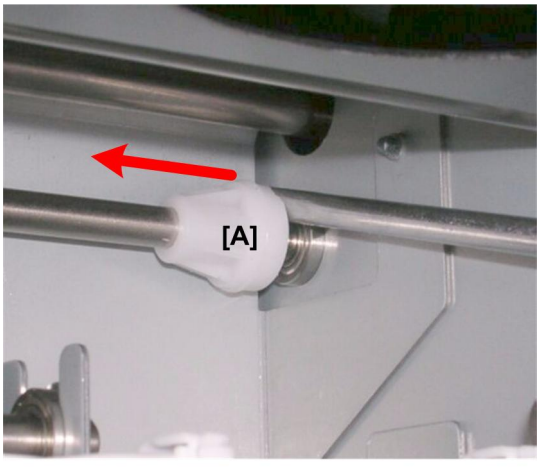
d447r254

2. With the plate removed, you can see the paddle roller [A].



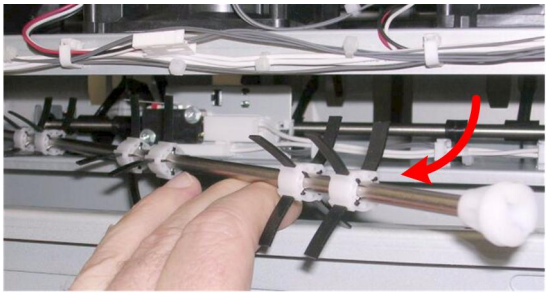
d447r255

3. A spring is attached to the left end of the paddle roller shaft [A].
4. A groove in the shaft coupling [B] on the right is set on a straight pin that drives the roller.



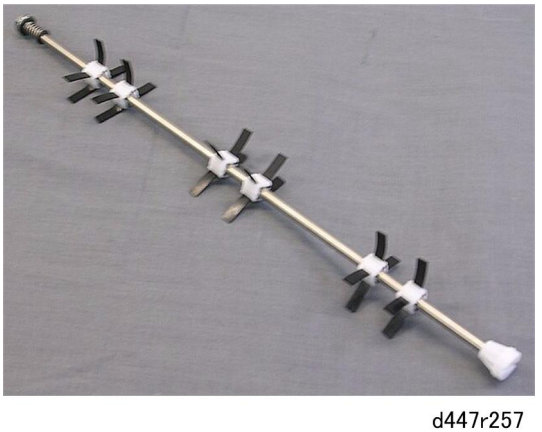
d447r256

5. Use your finger or the tip of a flat screwdriver to push the coupling [A] to the front and disconnect it from its drive pin.



d447r257

6. Lift the roller up and pull it out.



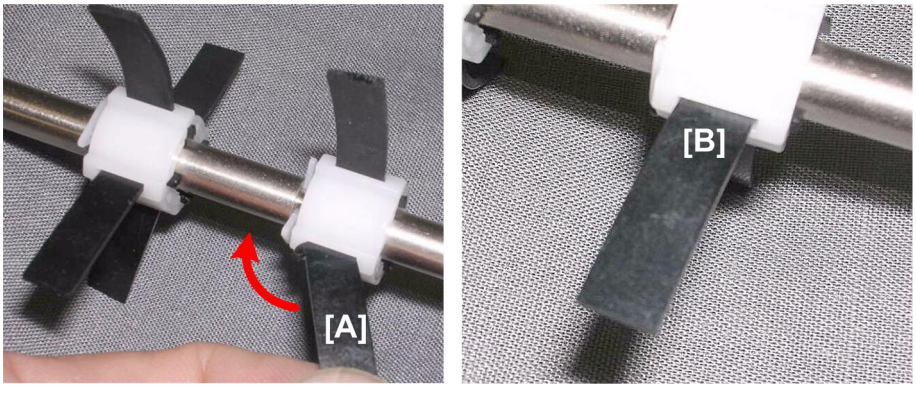
d447r257

7. Place the paddle roller on a clean, flat surface.

Replacing Paddles

d447r259

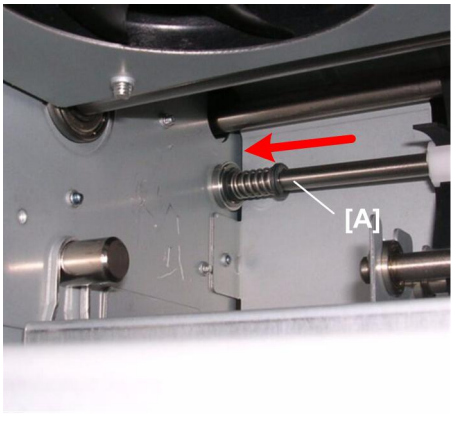
1. To remove an old paddle, twist the paddle slightly to the right and pull it out of its slot.



d447r260

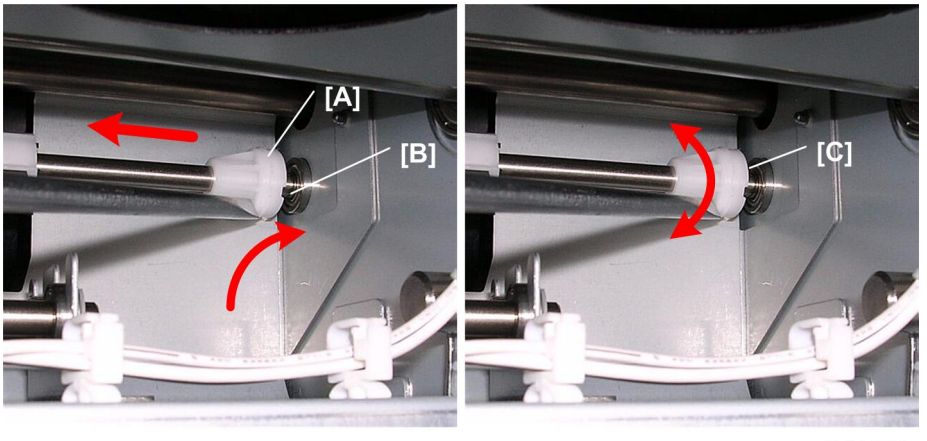
2. To attach a new paddle [A], insert the right end first then twist to the left until its left tab locks in place.
3. Make sure that the new paddle [B] is straight and firmly set.

Re-installing the Paddle Roller



d447r261

1. First, set the left of the paddle roller shaft [A] in it its hole. Make sure that it is completely inserted.



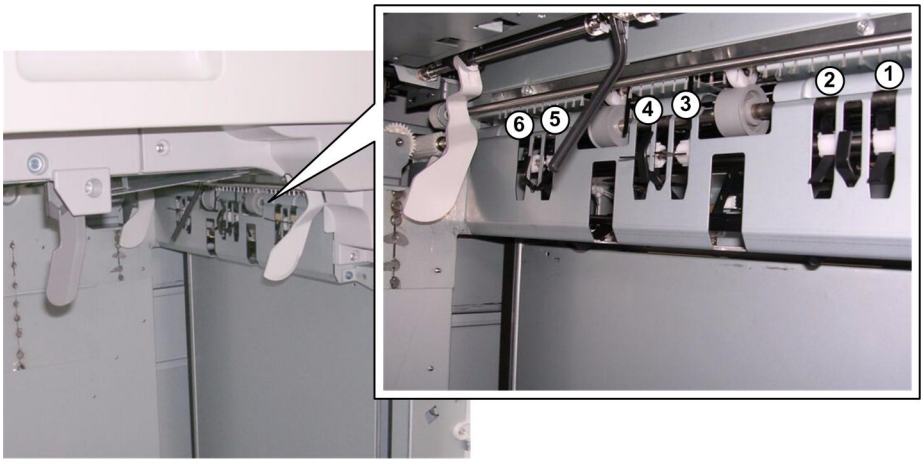
d447r262

2. Push the coupling [A] to the left and set it on the tip of the pin coupling [B].
3. Rotate the coupling [C] until the pin snaps into its groove.
4. Rotate the roller with your hand to make sure that it is set properly.

Cleaning Exit, Shift Roller Shaft

Preparation

- Open the front door
- Remove the roll-away cart

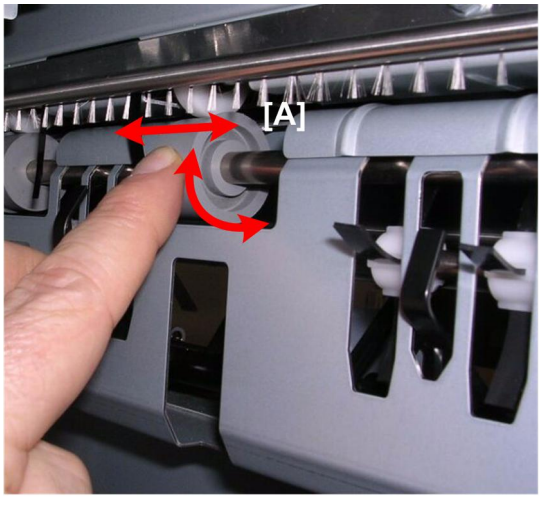


d447r263

1. You can see the roller shaft exposed at six locations above the paddles of the paddle roller.

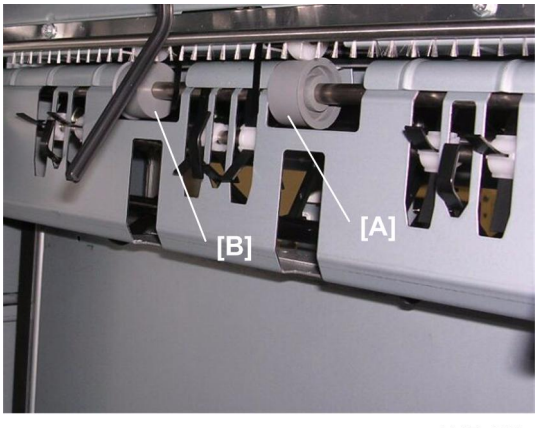
d447r264

2. Use a soft dry cloth to clean the shaft at the first cutout.



d447r265

3. Rotate the exit roller [A] and push it from side to side while holding the cloth in place.
4. Repeat Steps 1 and 2 at each location.



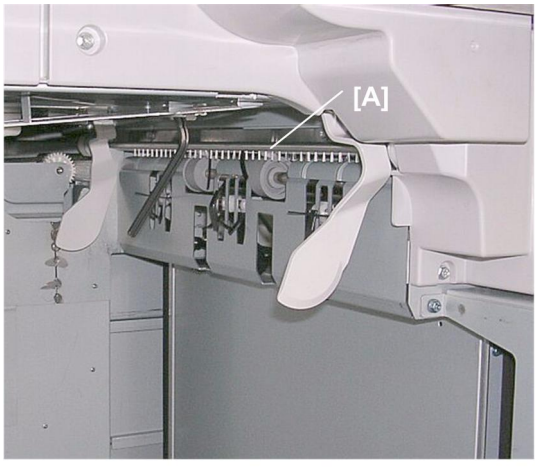
d447r266

5. Clean the rollers [A] and [B].

Anti-Static Brush Replacement

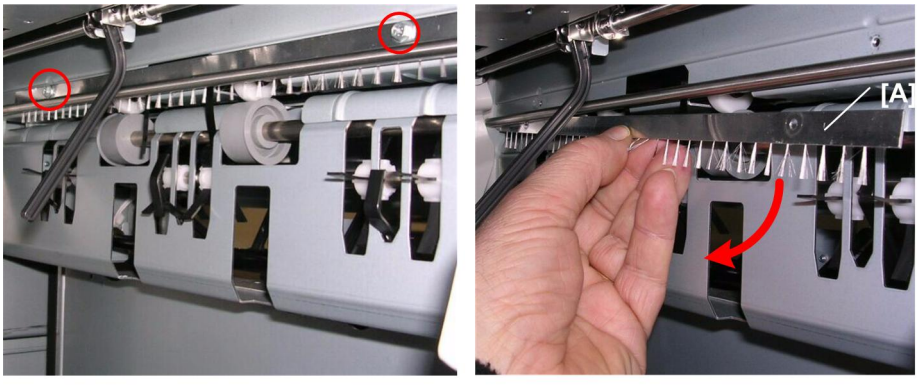
Preparation

- Open the front door
- Remove the roll-away cart



d447r267

1. You can see the anti-static brush [A] between the jogger fences.



d447r268

2. Remove the anti-static brush [A] (x2).

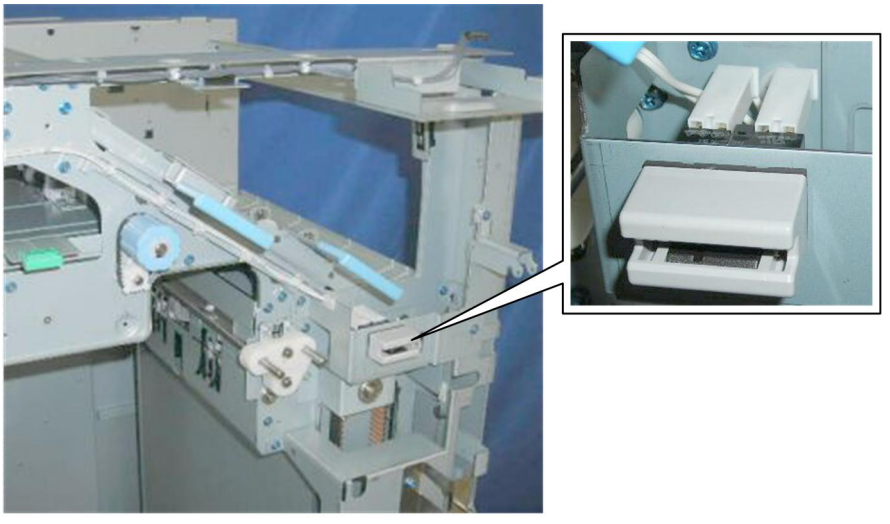
d447r269

Switches, Solenoid

1

Door Switches

Front Door SW

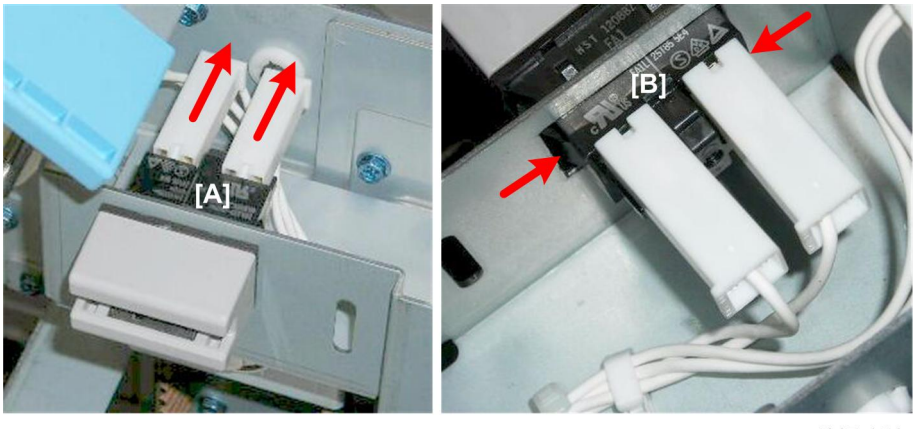


d447r153

Preparation

Remove these parts:

- Top front cover off
- Top center cover off



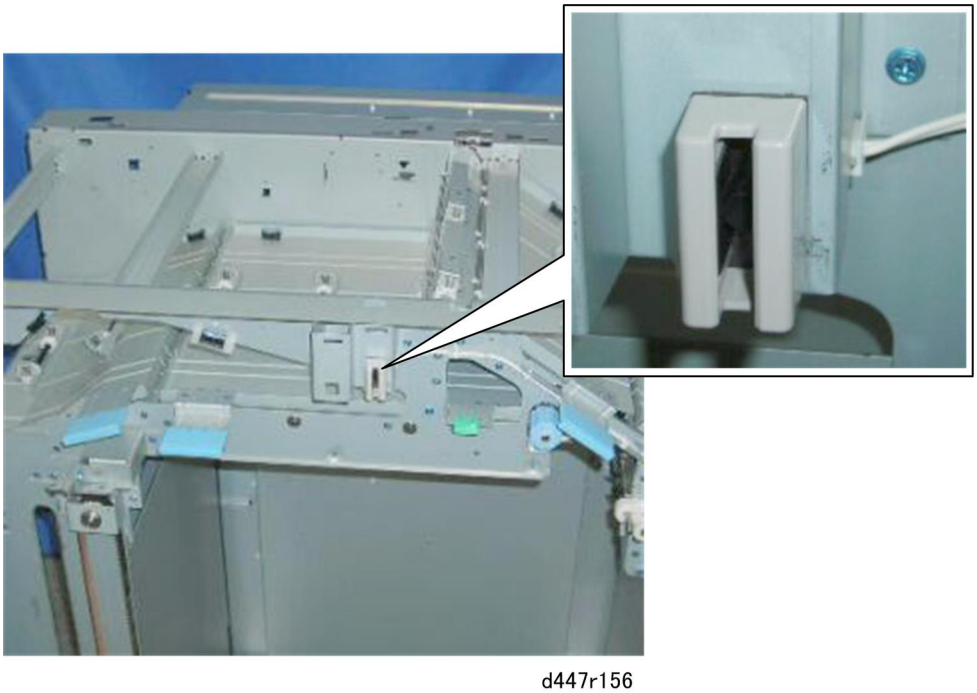
d447r154

1. Loosen connectors [A] (x2)

d447r155

2. Depress releases [B] on both sides of the switch and remove (x2).

Top Door SW



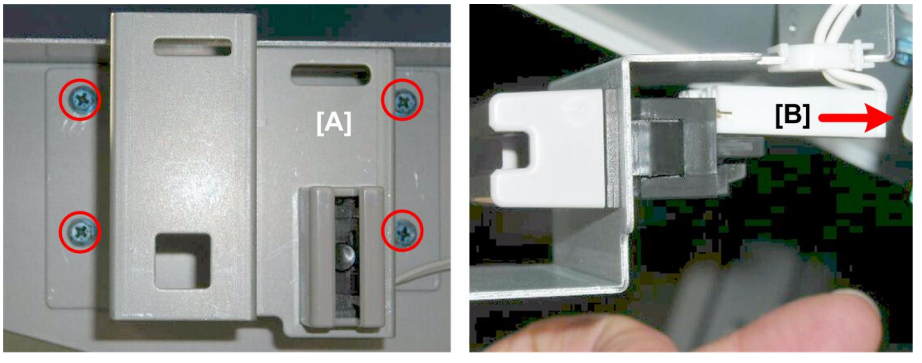
d447r156

Preparation

Remove these parts:

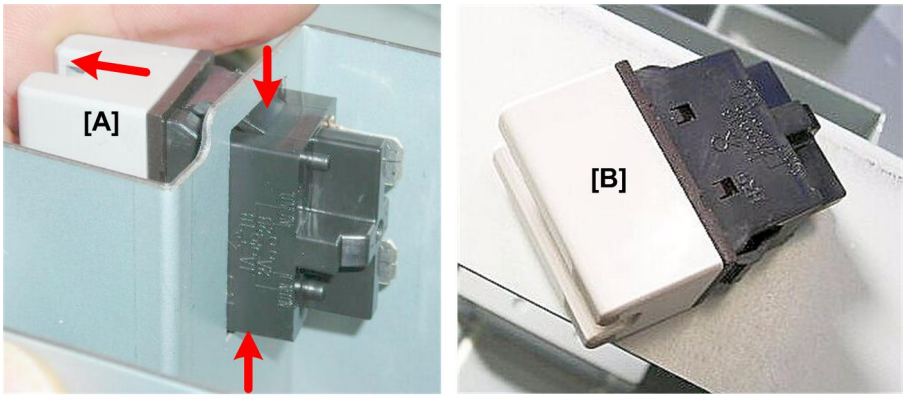
- Top front cover off

- Top center cover off



d447r157

1. Remove bracket [A] (x4).
2. Disconnect switch [B] (x1)

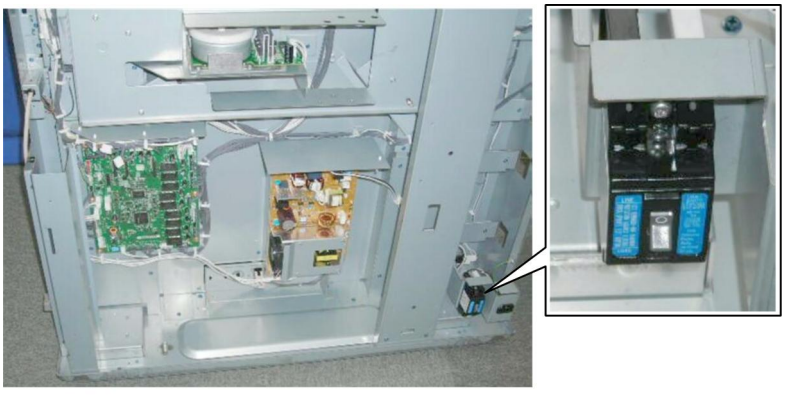


d447r158

3. Depress releases [A] then remove switch [B].

Breaker Switch, Solenoid

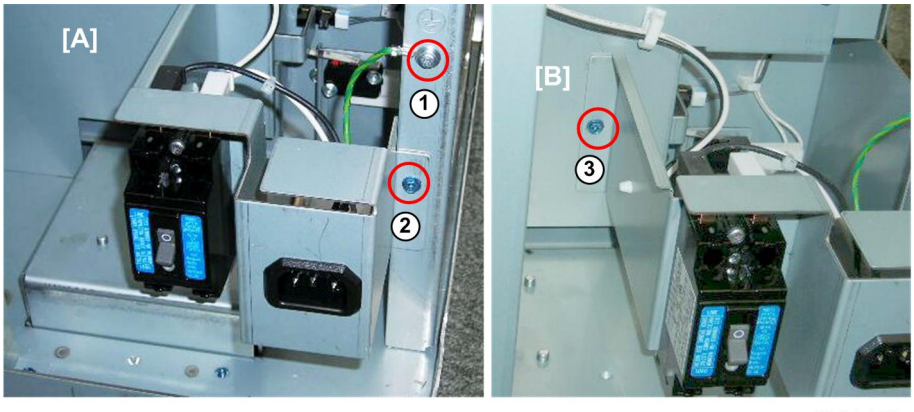
Breaker Switch



d447r159

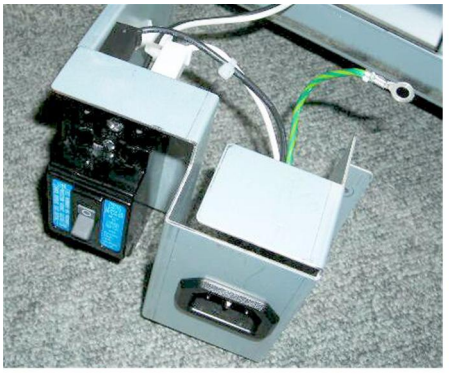
Preparation

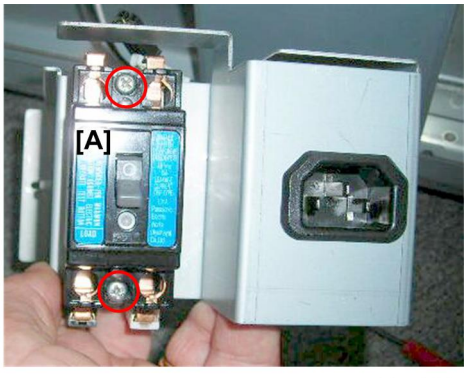
- Remove the rear lower cover



d447r160

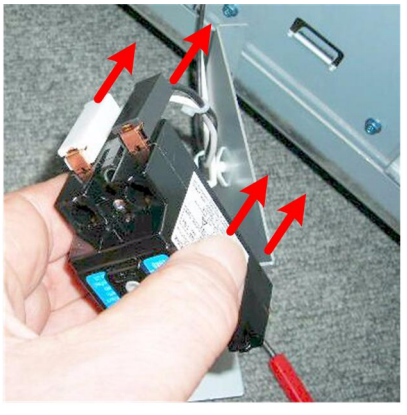
1. Right side [A]:
    - Ground wire ① (x1)
    - Bracket ② (x1)
2. Left side [B]:
    - Bracket ③ (x1)





d447r161

3. Disconnect breaker switch [A] (x2)



d447r162

4. Disconnect and remove breaker switch [A] (x4)

Front Door Lock SOL

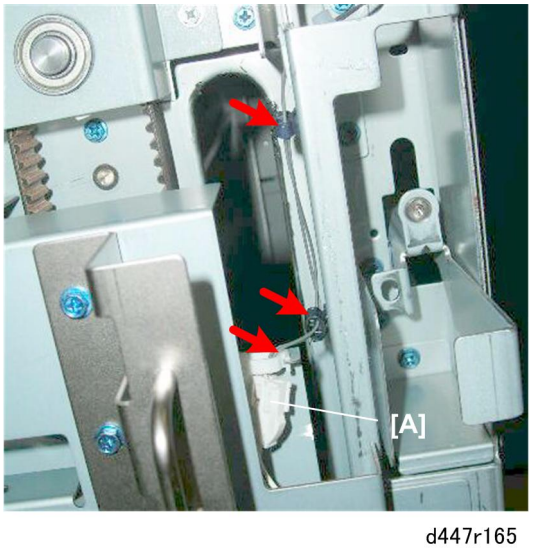
d447r163

Preparation

- Open the front door
- Remove the front right cover

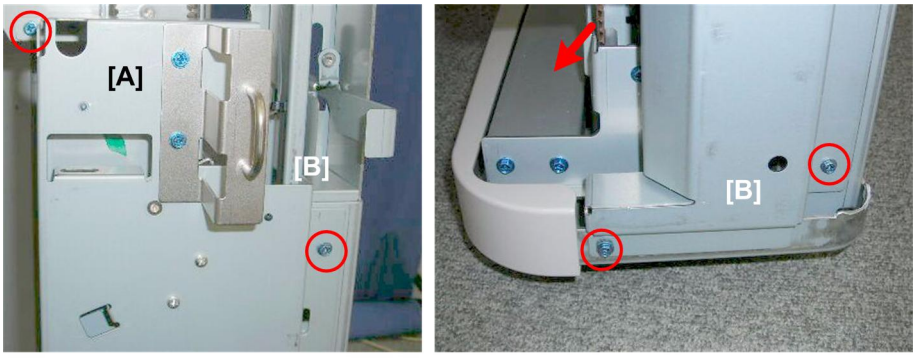
d447r164

1. Plate [A] must be removed.



d447r165

2. Disconnect the solenoid at the top (x1, x3)

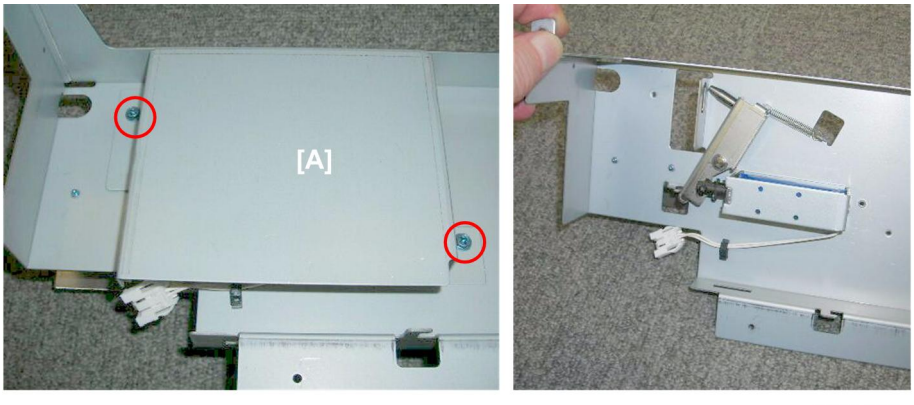


d447r166

3. Remove the plate:

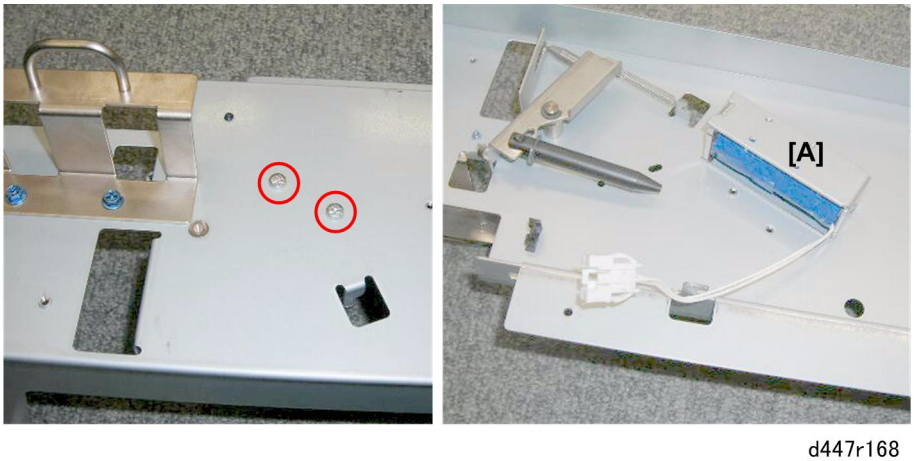
   [A] Top (🔩 x2)

   [B] Bottom (🔩 x2)



d447r167

4. Cover plate [A] (🔩 x2)

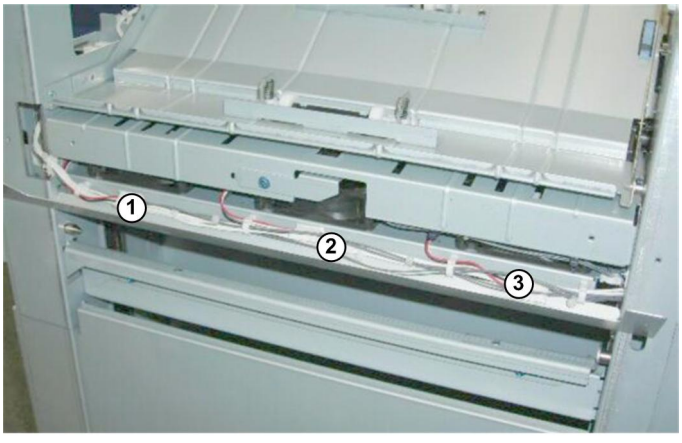


d447r168

5. Turn the plate over.
6. Remove the solenoid [A] (x2)

Fans

Entrance Fan Motors



d447r169

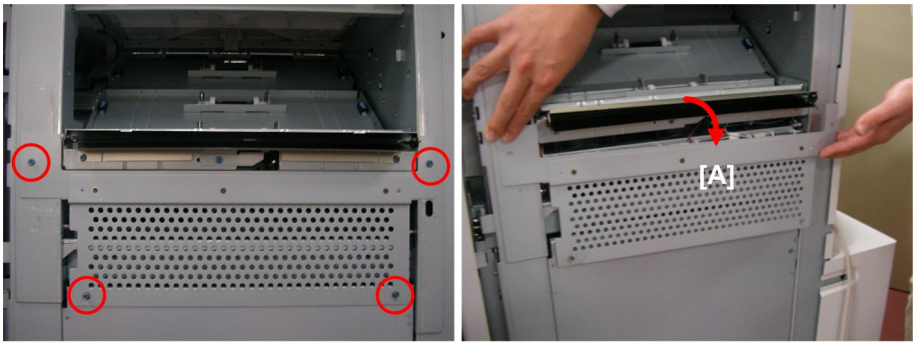
Below the stacker entrance, three fan motors are mounted on the same plate:

- Fan 1 Motor
- Fan 2 Motor
- Fan 3 Motor

Preparation

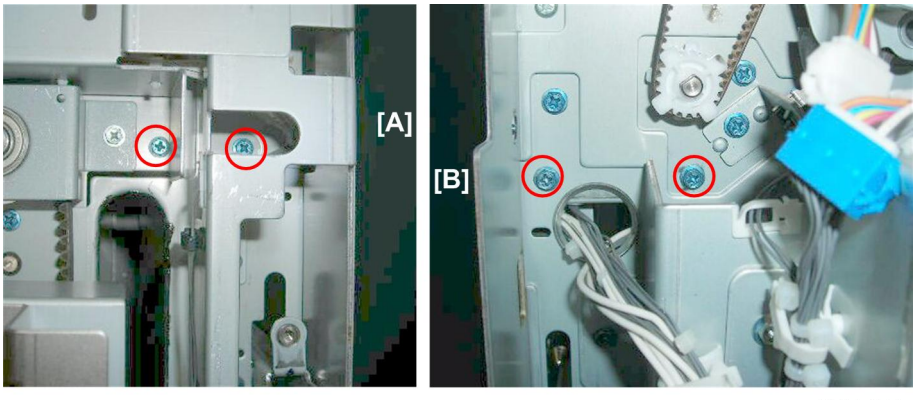
Remove these parts:

- Rear lower cover
- Rear upper cover
- Open the front door
- Right inner cover
- Top center cover



d447r170

1. Remove plate [A] (x4)

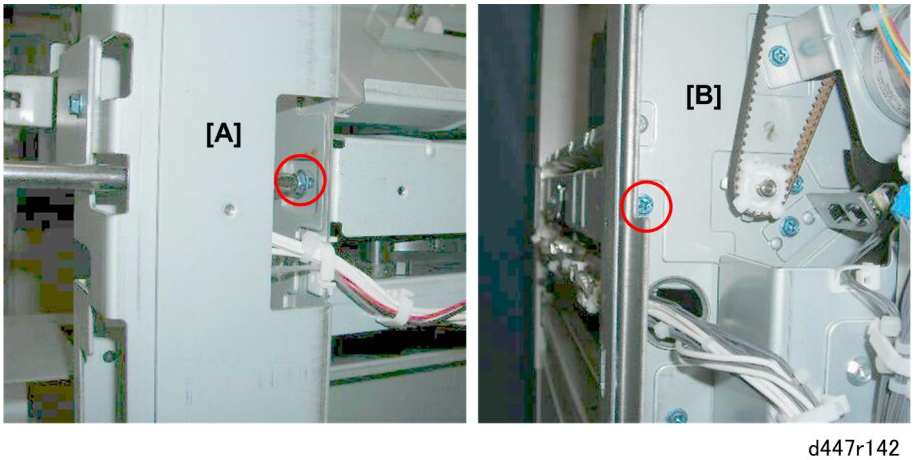


d447r171

2. Disconnect the motor mount.

   [A] Front (x2)

   [B] Rear (x2)

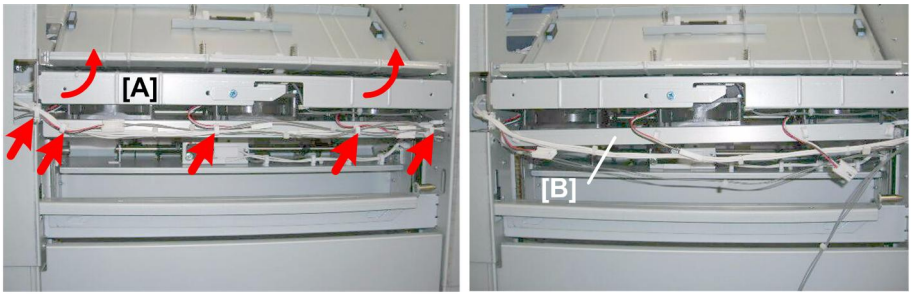


d447r142

3. Remove the cover plate screws:

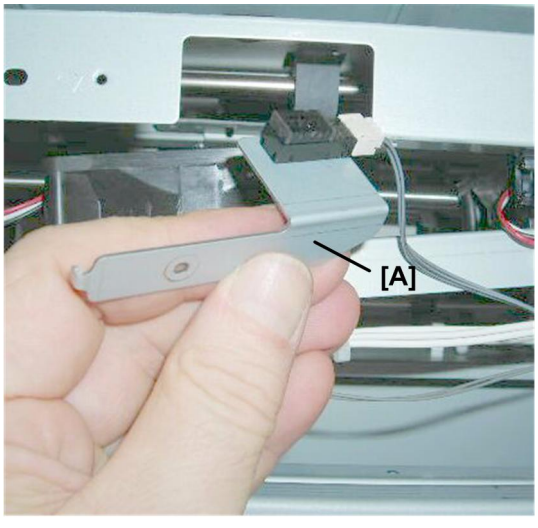
[A] Front (x1)

[B] Rear (x1)



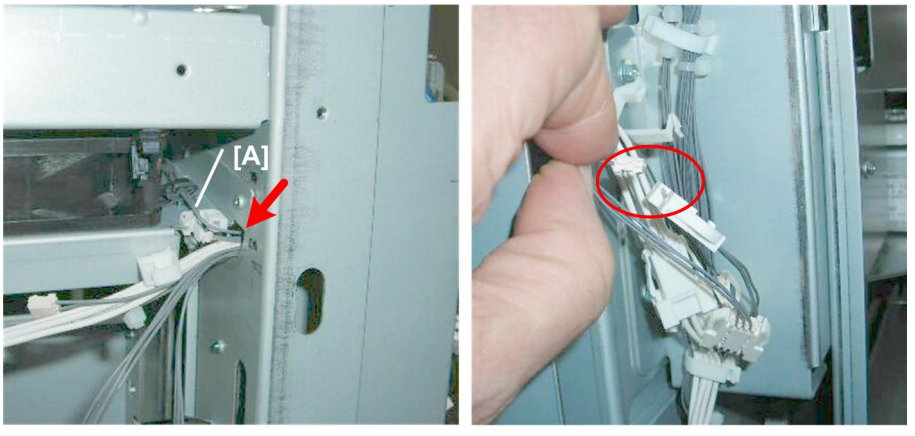
d447r173

4. Raise cover plate [A] as high as possible.
5. Disconnect the harnesses and fans to clear the area in front of the motor mount [B] (x5, x3).



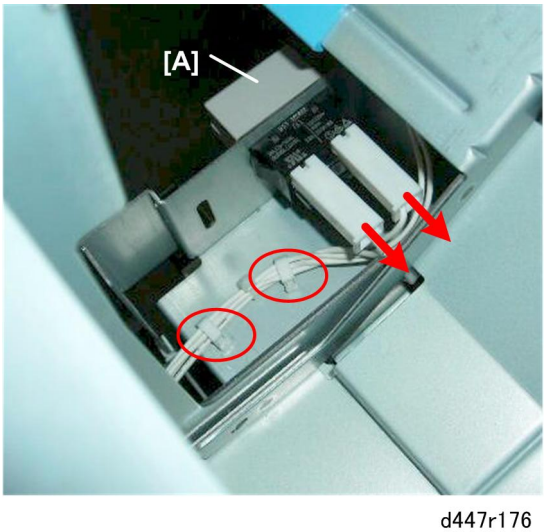
d447r174

6. Disconnect entrance sensor bracket [A] and pull it aside (x1, x3)



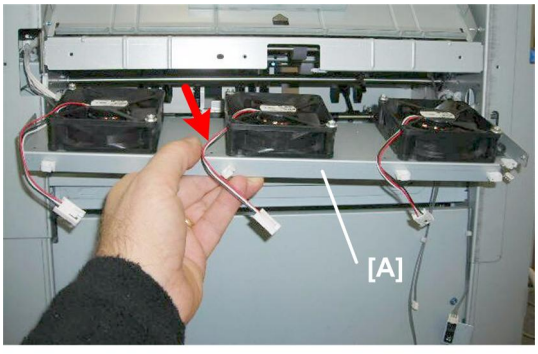
d447r175

7. Trace gray harness [A] to its connector near the main board.
8. Disconnect (x1, x 1)
9. Pull the gray harness back through the hole



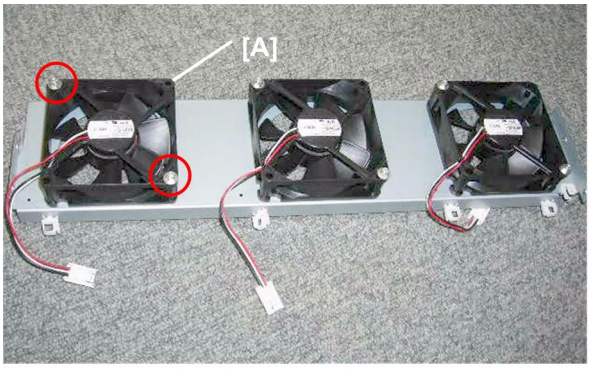
d447r176

10. Disconnect front door switch harness [A] to create some slack in the white harness (x2, x2)



d447r177

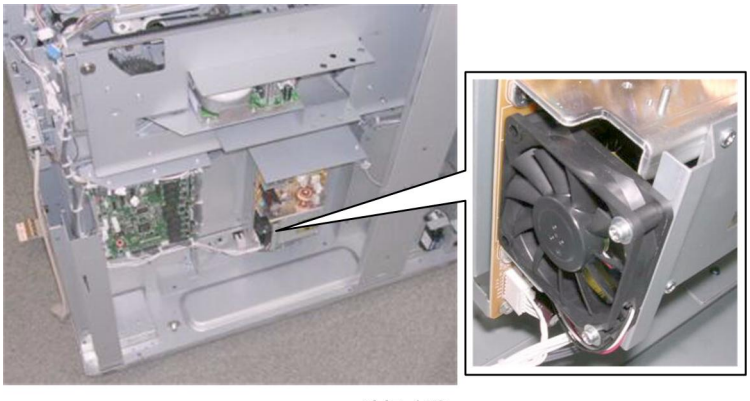
11. Pull out fan motor mount [A].



d447r178

12. Each fan motor is fastened with two screws (x2)

PCB Cooling Fan



d447r179

Preparation

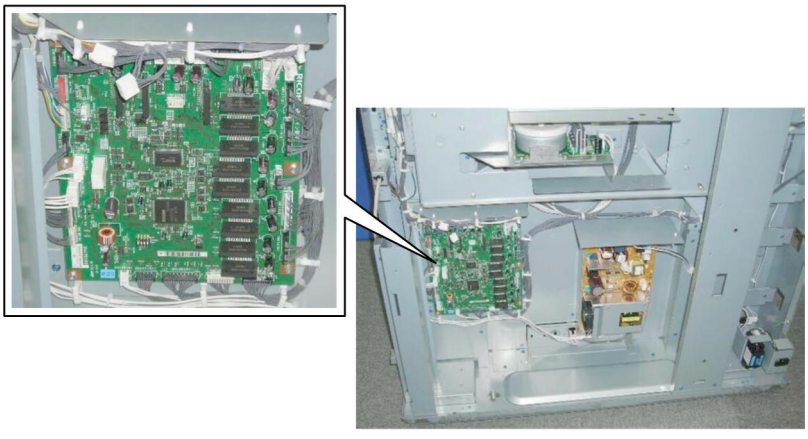
- Remove the rear lower cover

d447r180

1. Remove cooling fan [A] from the PCU (x2, x1)

Boards

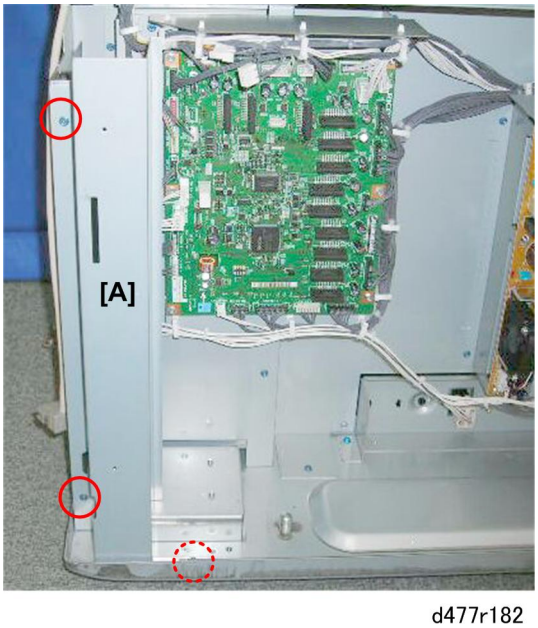
Main Board



d447r181

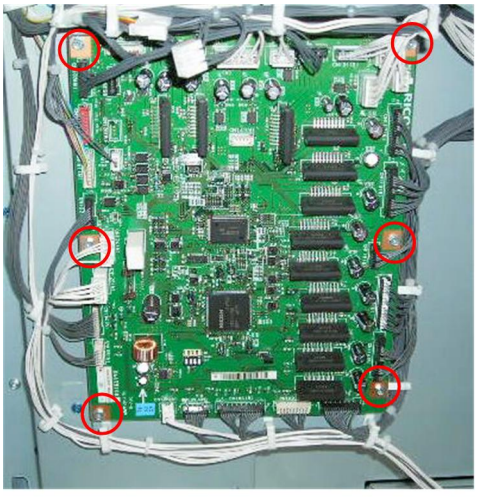
Preparation

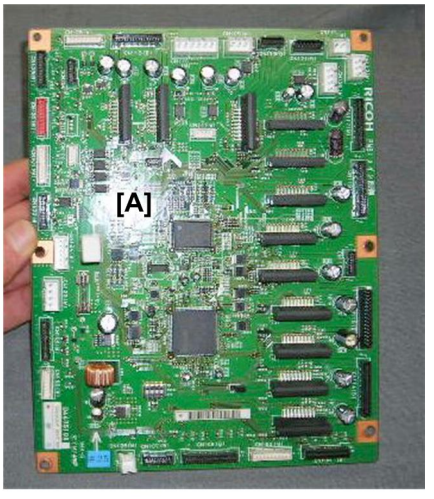
- Remove the rear lower cover



d477r182

1. Remove brace [A] (x3)

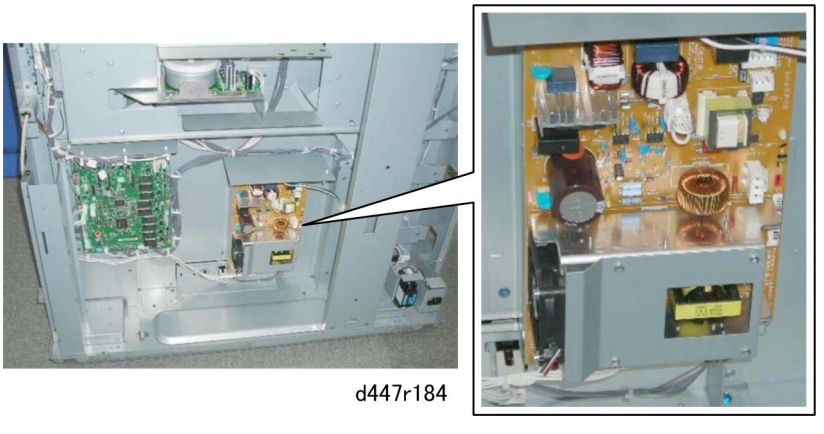




d447r183

2. Remove the main board (x28, x6)

PSU



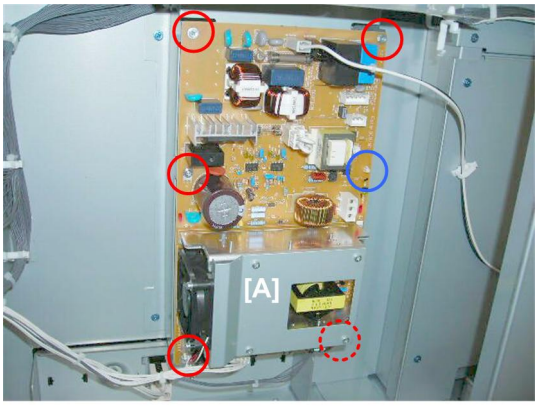
d447r184

Preparation

- Remove the rear lower cover

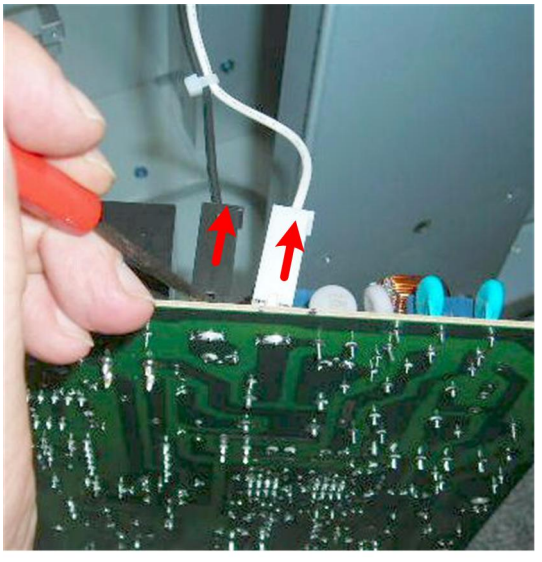
d447r185

1. Disconnect the PSU at the bottom (x3)



d447r186

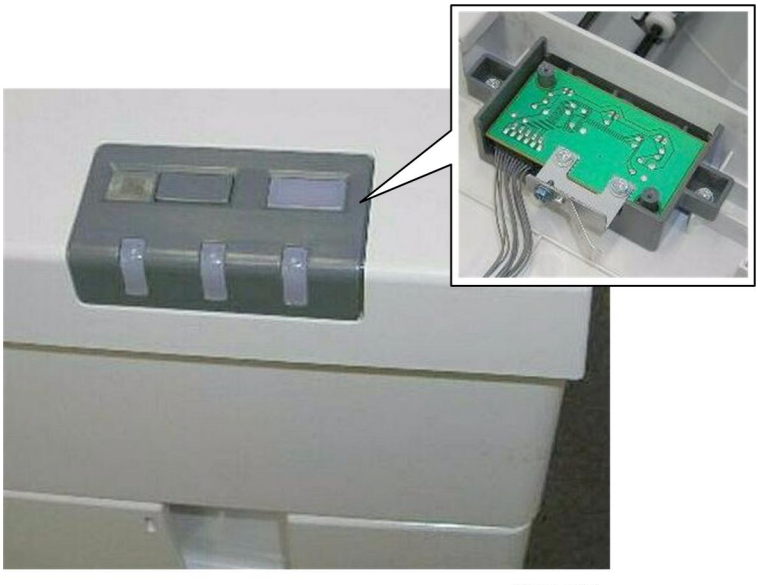
2. Remove the PSU (x5, Standoff x1)



d447r187

3. Bayonet connectors (x2).
    - These connectors may be too stiff to disconnect before removing the board.
    - Disconnect them after removing the board.

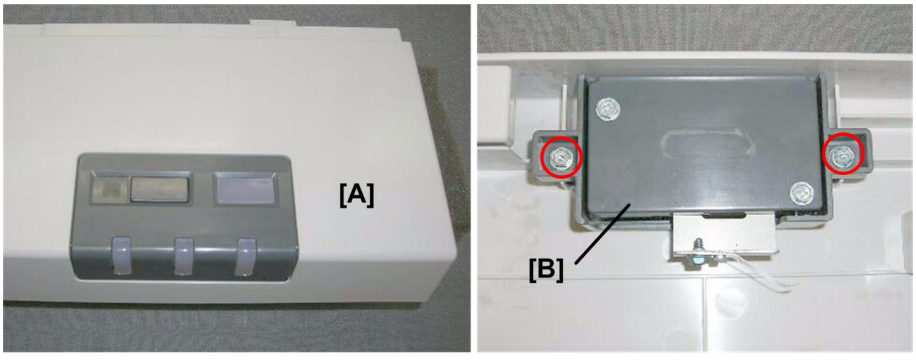
Operation Panel PCB



d447r188

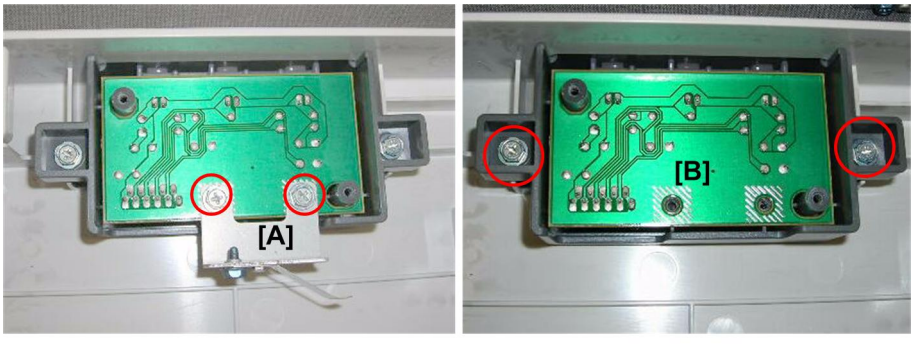
Preparation

- Remove the top front cover



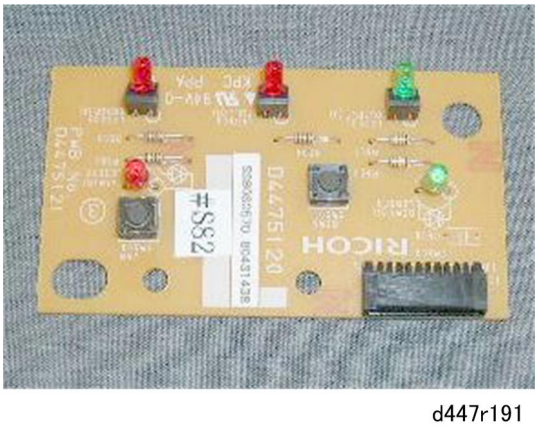
d447r189

1. Turn over the top front cover [A].
2. Under the LED display, remove plate [B] (x2)



d447r190

3. Spring plate [A] (x2)
4. PCB [B] (x2)

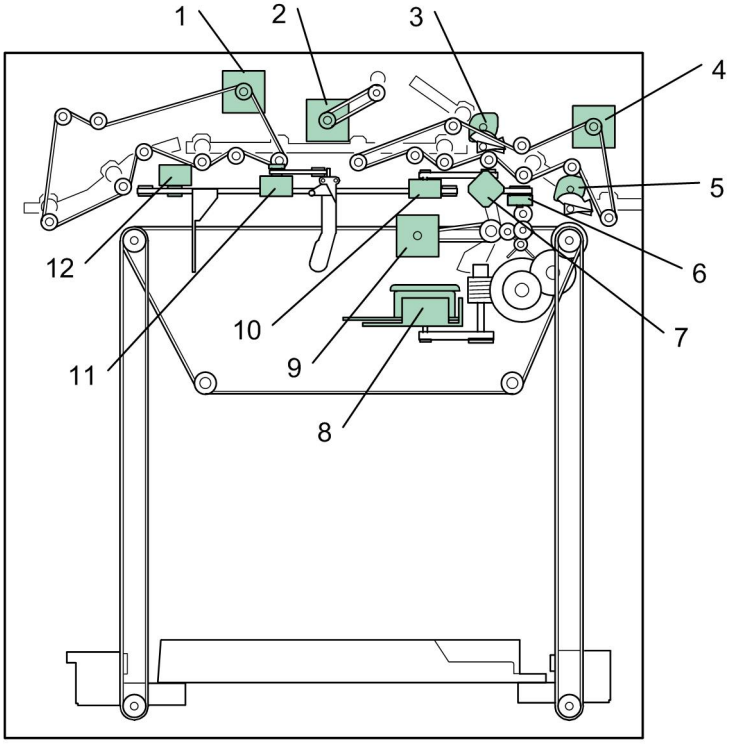


d447r191

2. Details

Overview

Main Motors



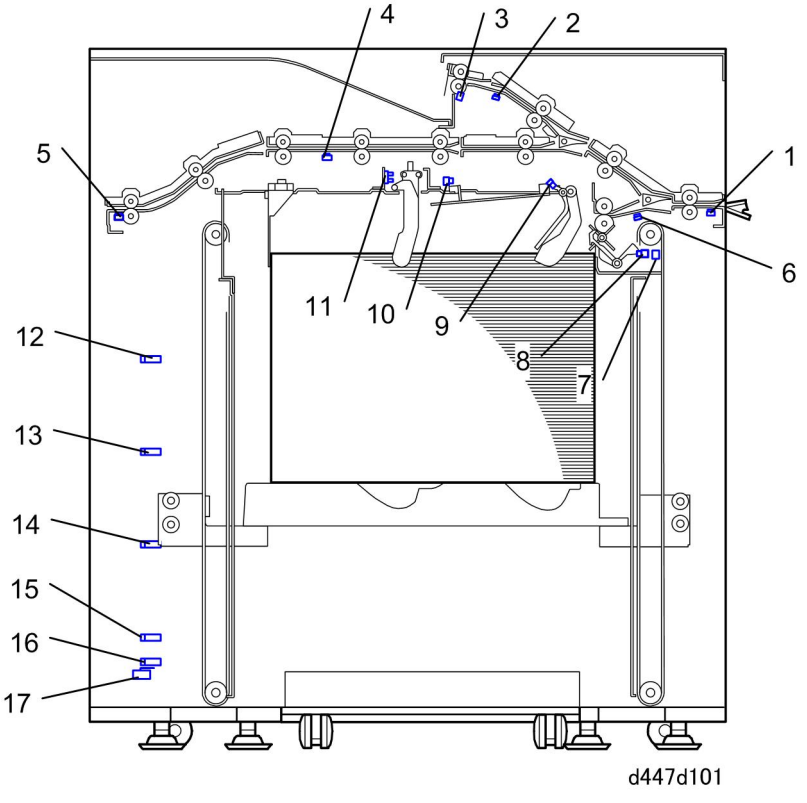
d447d102

1.	Transport Motor
2.	Proof Tray Exit Motor
3.	Proof Tray JG Motor
4.	Entrance Motor
5.	Shift Tray JG Motor
6.	Front, Rear Jogger Fence Motors x2
7.	Main Jogger Fence Retraction Motor

8.	Tray Lift Motor
9.	Shift Exit Motor
10.	Shift Motor
11.	Sub Jogger Motor
12.	LE Stopper Motor

Sensors

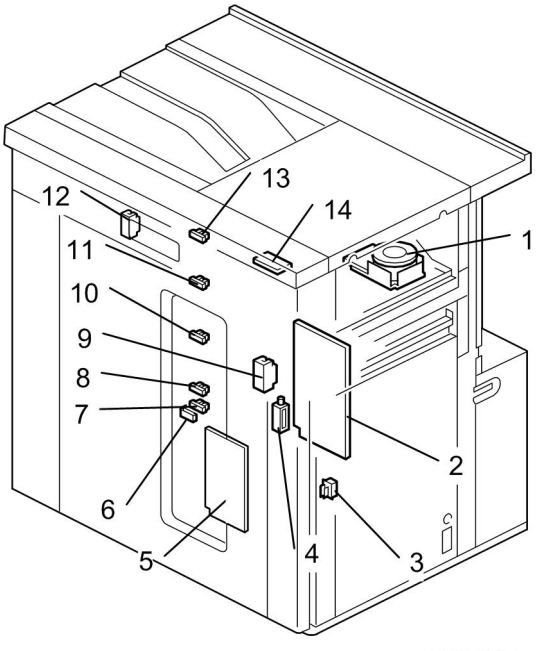
Paper Path, Paper Height Sensors



1.	Entrance Sensor	10.	Tray Guard Sensors 1, 2
2.	Proof Tray Exit Sensor	11.	Sub Jogger Fence HP Sensor
3.	Proof Tray Full Sensor	12.	Tray Full Sensor 1 25%

4.	Transport Sensor	13.	Tray Full Sensor 2 50%
5.	Exit Sensor	14.	Tray Full Sensor 3 75%
6.	Shift Tray Exit Sensor	15.	Tray Full Sensor 4 100 %
7.	Tray High Limit Switch	16.	Tray Lower Limit Sensor
8.	Paper Height Sensor	17.	Tray Lower Limit Switch
9.	Shift Tray Paper Sensor		

Sensors, Boards, Solenoid



d447d104

1.	Tray Lift Motor	8.	Tray Full Sensor 4 100%
2.	Main Board	9.	Front Door Switch
3.	Cart Set Sensor	10.	Tray Full Sensor 3 75%
4.	Front Door Lock Solenoid	11.	Tray Full Sensor 2 50%
5.	PSU	12.	Top Door Switch
6.	Tray Low Limit Switch	13.	Tray Full Sensor 1 25%

7.	Tray Low Limit Sensor	14.	Operation Panel PCB

Electrical Components

Motors		
M01	Entrance Motor	Drives the entrance rollers that feed each sheet of paper as it enters the stacker.
M02	Shift Tray JG Motor	Opens the shift junction gate that directs paper the shift tray. Paper goes past this junction gate when it is closed to the proof tray or stacker exit.
M03	Transport Motor	Drives the transport rollers that feed paper through the finisher between the entrance and exit.
M04	Shift Exit Motor	Drives the shift exit rollers that output paper to the shift tray.
M05	Shift Motor	Moves the shift roller set (drive roller and idle roller) to the front and back. For every other document set, the shift roller will take each sheet of paper and move it to the front so every other stack is staggered.
M06	Proof Tray Exit Motor	Drives the proof tray exit roller that outputs each sheet of paper to the proof tray on top of the stacker.
M07	Proof Tray JG Motor	Opens the shift junction gate that directs the paper to the proof tray on top of the stacker. When this gate is closed, paper goes past this gate and goes to the stacker exit.
M08	Main Jogger Front Fence Motor	Moves the front jogger fence of the main jogger unit that aligns the front edge of the paper on the shift tray (near the front corner of the trailing edge).
M09	Main Jogger Rear Fence Motor	Moves the rear jogger fence of the main jogger unit that aligns the rear edge of the paper on the shift tray (near the rear corner of the trailing edge).
M10	Main Jogger Fence Retraction Motor	Raises both the rear and front jogger fences of the main jogger unit after each set is output to the shift tray and aligned. The fences are raised to position them for the next shifted set.
M11	PSU Cooling Fan	This is the small cooling fan mounted on the left lower corner of the PSU. It cools the area around the PSU.

Motors		
M12	LE Stopper Motor	Moves the leading edge stopper to the leading edge of the paper on the shift tray and stops. The leading edge of each sheet of paper is aligned against this stationary stopper. This aligns the stack in the direction of paper feed.
M13	Sub Jogger Motor	Operates the front and back fences of the sub jogger. The sub jogger is used to align either the front or rear edge of the stack near the front or rear corner at the LE stopper. This motor controls the movement of both the front and rear fence with a single belt. (The front and rear fence of the main jogger unit have independent motors and drive belts.)
M14	Tray Lift Motor	Raises and lowers the shift tray mounted on the roll-away cart.
M15	Fan 1 Motor	These fans cool the area directly below the stacker entrance where paper enters the stacker and the shift tray.
M16	Fan 2 Motor	
M17	Fan 3 Motor	

Sensors		
S01	Entrance Sensor	Detects each sheet of paper as it enters the stacker. Also signals a jam if the paper fails to arrive or leave within the prescribed time.
S02	Shift Tray Exit Sensor	Detects each sheet of paper as it enters the shift tray. Also signals a jam if the paper fails to arrive or leave within the prescribed time.
S03	Proof Tray Exit Sensor	Detects each sheet of paper as it is output to the proof tray. Also signals a jam if the paper fails to arrive or leave within the prescribed time.
S04	Proof Tray Full Sensor	When this photo-sensor detects the top of the stack in the proof tray, it signals that the proof tray is full and stops the stacking operation.
S05	Paper Height Sensor	Detects the height of the paper stack on the shift tray. The readings of this sensor are used to keep the tray at its optimum height for paper stacking.
S08	Shift Tray JG HP Sensor	Detects the shift tray junction gate when it reaches its home position and switches off the shift tray JG motor.

Sensors		
S09	Proof Tray JG HP Sensor	Detects the proof tray junction gate when it reaches its home position and switches off the proof tray JG motor.
S10	Shift HP Sensor	Detects the home position of the shift rollers and switches off the shift motor.
S11	Front Fence HP Sensor	Detects the home position of the front fence of the main jogger unit and switches off the front fence jogger motor.
S12	Rear Fence HP Sensor	Detects the home position of the rear fence of the main jogger unit and switches off the rear fence jogger motor.
S13	Jogger Fence Retraction HP Sensor	Detects the home position of the front and rear fences after they have been lowered by the main jogger fence retraction motor and switches off the retraction motor.
S14	Shift Tray Paper Sensor	Detects the presence absence of paper on the shift tray.
S15	Tray Guard Sensor 1	Switches off the stacker if the top of the stack pushes up the front or back plate and actuates the sensor. This stops stacker output (the straight-through and proof paper paths can still be used.)
S16	Tray Guard Sensor 2	
S17	Exit Sensor	Detects paper as it exits to the finisher downstream.
S18	Transport Sensor	Monitors the passage of each sheet of paper in the feed path between the entrance and exit of the stacker.
S19	LE Stopper HP Sensor	Detects the leading edge stopper when it reaches its home position and switches off the LE stopper motor
S20	Sub Jogger HP Sensor	Detects the sub jogger when it reaches its home position and switches off the sub jogger motor.
S21	Tray Full Sensor 1: 25%	Detects when the shift tray is 25% full.
S22	Tray Full Sensor 2: 50%	Detects when the shift tray is 50% full.
S23	Tray Full Sensor 3: 75%	Detects when the shift tray is 75% full.
S24	Tray Full Sensor 4: 100%	Detects when the shift tray is 100% full. Signals tray full and shuts down the stacker.
S25	Tray Low Limit Sensor	Detects the low limit of the shift tray and signals that the tray must be removed.

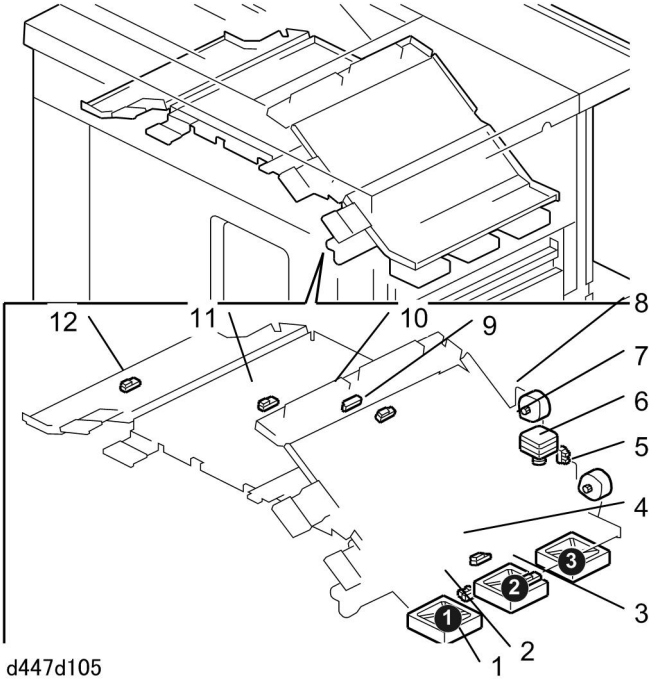
Boards		
PCB1	Main Board	Performs overall control of the stacker.
PCB2	PSU	Steps down power source voltage to 24V power supply.
PCB3	Operation Panel PCB	Controls the buttons used for manual operation of the stacker tray, and contains the LEDs that indicate the status of the stacker.

Solenoid		
SOL1	Front Door Lock SOL	Keeps the front door of the stacker locked so it cannot be opened while the stacker is operating.

Switches		
SW1	Top Door SW	Detects when the top door is open. While the top door is open, the power supply to the proof tray and straight-through paper path remains off.
SW2	Front Door SW	Detects when the front door is opened. While the front door is open, the power supply to the tray lift motor and the stacker drive system remains off.
SW3	Tray High Limit SW	A micro-switch that detects the high limit for shift tray operation and cuts power to the tray lift motor to shut it off.
SW4	Tray Low Limit SW	Detects the lower limit for shift tray operation and cuts power to the tray lift motor to shut it off.
SW5	Roll Away Cart Set SW	Detects when the tray cart is in the stacker. If the tray cart is not set inside the stacker, the power supply to the tray lift motor and the stacker drive system remains off.
SW6	Breaker Switch	Shuts down the operation of the stacker in the event of a power surge.

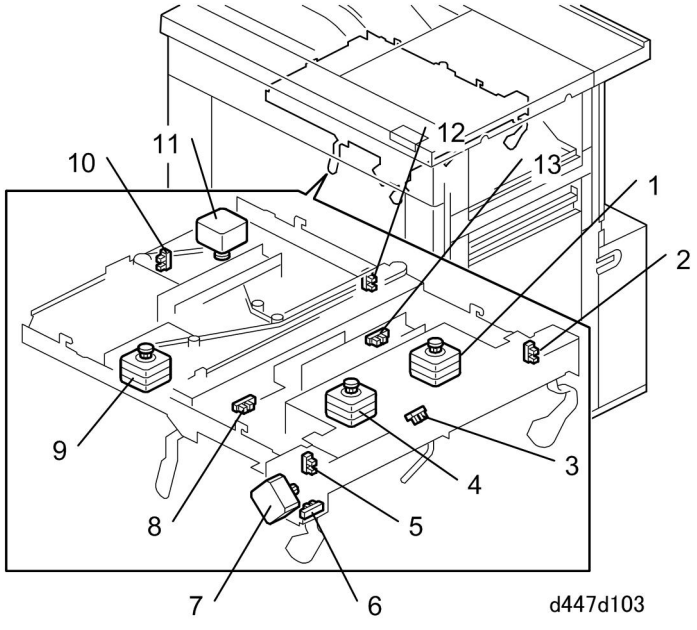
2

Paper Path



1.	Fan 1, 2, 3 Motors	7.	Shift HP Sensor
2.	Shift Tray Exit Sensor	8.	Proof Tray JG Motor
3.	Tray High Limit Switch	9.	Proof Tray Exit Sensor
4.	Paper Height Sensor	10.	Proof Tray Full Sensor
5.	Shift Tray JG Motor	11.	Transport Sensor
6.	Shift Motor	12.	Exit Sensor

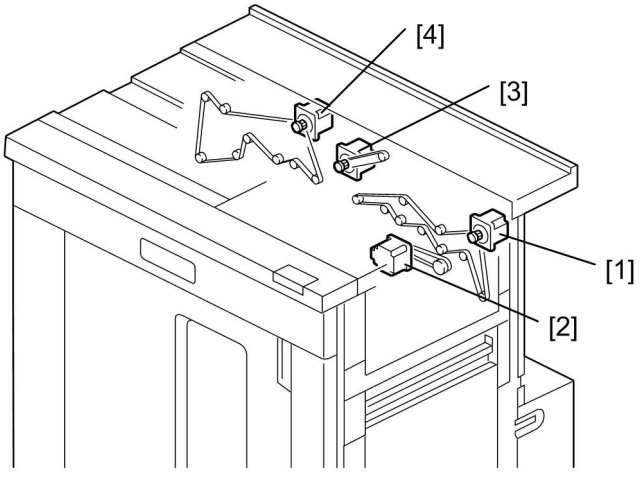
Jogger Unit



1.	Main Jogger Rear Fence Motor	8.	Tray Guard Sensor 1
2.	Rear Fence HP Sensor	9.	Sub Jogger Fence Motor
3.	Shift Tray Paper Sensor	10.	LE Stopper HP Sensor
4.	Main Jogger Front Fence Motor	11.	LE Stopper Motor
5.	Front Fence HP Sensor	12.	Sub Jogger Fence HP Sensor
6.	Main Jogger Fence Retraction HP Sensor	13.	Tray Guard Sensor 2
7.	Main Jogger Fence Retraction Motor		

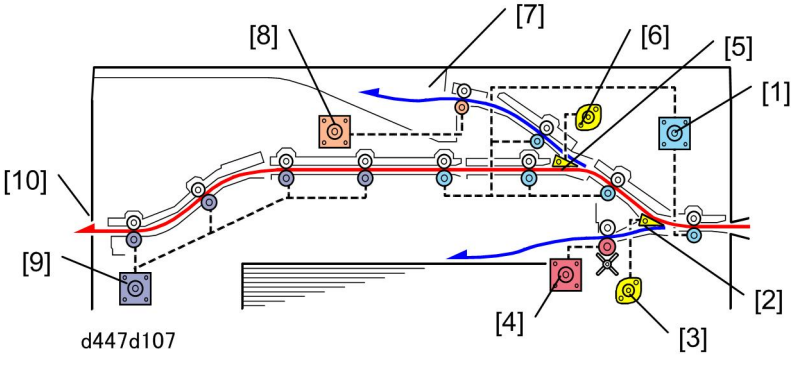
Paper Path

Paper Path Motors



These are the motors that drive the rollers of the stacker:

- [1] **Entrance motor**. Drives the entrance rollers and other transport rollers that feed the paper straight through the stacker to the transport motor.
- [2] **Shift tray exit motor**. Drives the rollers that feed paper from the shift tray junction gate onto the shift tray.
- [3] **Proof tray exit motor**. Drives the rollers that feed paper up from the proof tray junction gate to the proof tray on top of the stacker.
- [4] **Transport motor**. Drives the rollers that feed paper out of the stacker from the straight-through paper path.



This is a cross-sectional view of the paper feed motors.

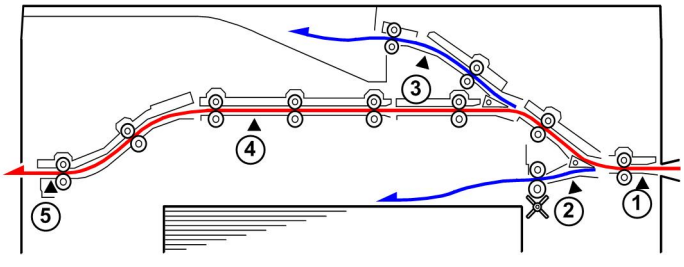
The entrance motor [1] drives not only the entrance roller but several other feed rollers as well.

The shift tray junction gate [2] is opened by the shift tray junction gate motor [3]. When the junction gate is opened, paper is guided to the shift tray. The shift tray exit motor [4] drives the shift rollers that feed the paper onto the shift tray. When the shift tray junction gate is closed, paper passes over to the proof tray junction gate.

The proof tray junction gate [5] is closed by the proof junction gate motor [6]. When the gate is closed paper passes over the junction gate into the paper path for the proof tray [7] above. The proof tray exit motor [8] drives the rollers in the paper path to the proof tray. When the proof tray junction gate is open, the paper passes below to the stacker exit.

Once the paper has passed both junction gates the paper will be fed by the rollers driven by the transport motor [9] until it exits the stacker at [10].

Paper Path Sensors



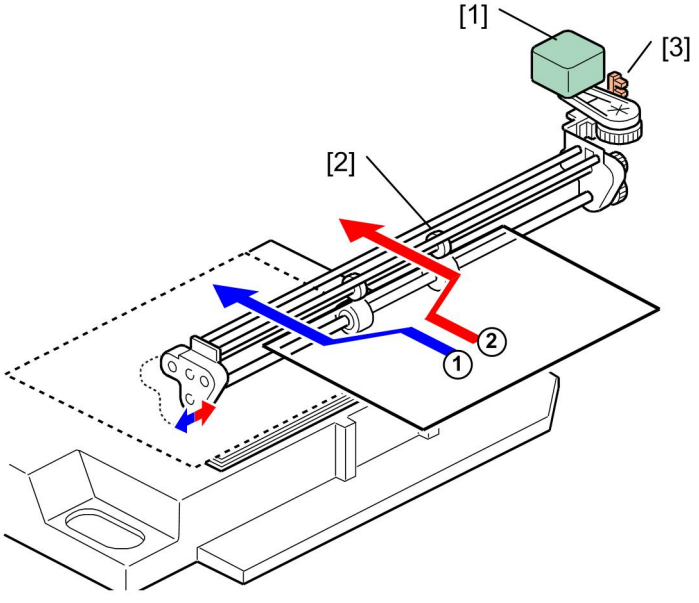
d447d107a

There are five main sensors at critical points in the paper paths. Each sensor detects the leading and trailing edge of each sheet of paper as it passes. If the paper fails to arrive (late error) or leave (lag error) within the prescribed time interval. the sensor will signal a jam.

- ① Entrance sensor
- Shift tray exit sensor
- ③ Proof tray exit sensor
- ④ Transport sensor
- ⑤ Exit sensor

Paper Shift and Alignment

Paper Shift



d447d111

In the shift mode, the paper is fed past the open shift tray junction gate and onto the shift tray.

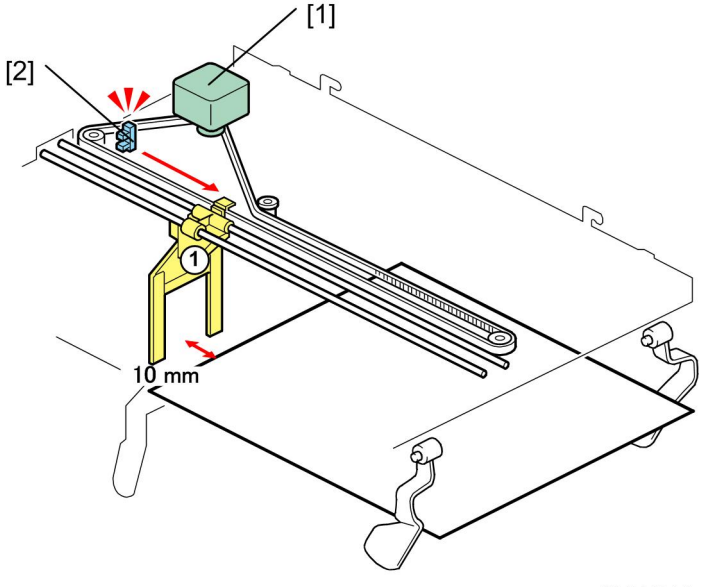
1. When the first set ① starts to feed:
    - The leading edge of the paper is fed into the nip of the shift rollers (drive and idle roller pair.)
    - After the trailing edge of the sheet leaves the nip of the upstream rollers, the shift motor [1] switches on.
    - The belt pushes the shift rollers [2] with the paper still feeding between them to the front and stops.
    - The paper feeds onto the tray at the forward position.
    - The shift motor reverses and rotates the belt until the shift rollers return to the home position. The shift HP sensor [3] detects the home position of the rollers and switches off the shift motor.
    - This sequence repeats for the 1st set until the last sheet has been fed.
    - The amount of shift from the center is fixed at 10 mm. (This cannot be adjusted.)

1. When the second set starts to feed:
    - The leading edge of the paper is fed into the nip of the shift rollers (drive and idle roller pair.)

- After the trailing edge of the sheet leaves the nip of the upstream rollers, the shift motor [1] switches on.
- The belt pulls the shift rollers [2] with the paper still feeding between them to the rear and stops.
- The paper feeds onto the tray at the rear position.
- The shift motor reverses and rotates the belt until the shift rollers return the home position. The shift HP sensor [3] detects the home position of the rollers and switches off the shift motor.
- This sequence repeats for the 2nd set until the last sheet has been fed.
- The amount of shift from the center is fixed at 10 mm. (This cannot be adjusted.)

Paper Alignment: Jogging

Leading Edge

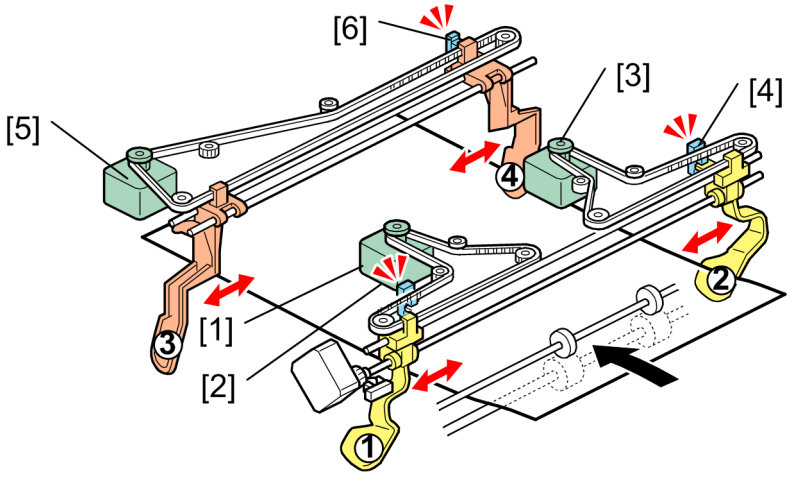


d447d110

To keep the leading edges of the stacks aligned:

- At the start of a job in the shift mode the LE stopper motor [1] switches on.
- The belt moves the leading edge stopper ① to a position 15 mm away from the leading edge of the paper selected for the job..
- The leading edge stopper moves right and left to align the leading edge of each sheet as it is fed.
- At the end of the job the LE stopper motor reverses, and the belt moves the leading edge stopper to its home position.
- When the LE stopper HP sensor detects the stopper at its home position, this switches off the motor.

Main, Sub Jogger



The following parts comprise the main jogger which operates the front fence ① and rear fence :

[1] Front fence motor

[2] Front fence HP sensor

[3] Rear fence motor

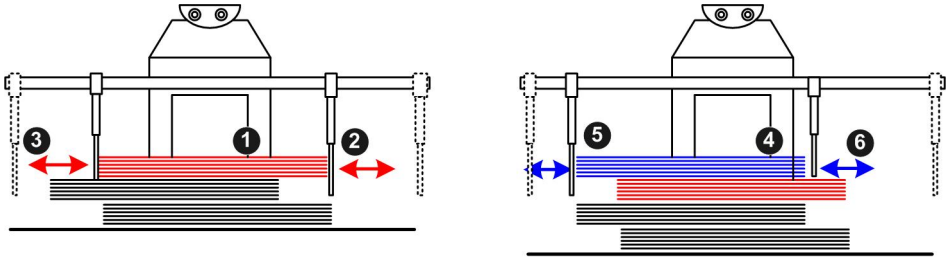
[4] Rear fence HP sensor

The movements of the front fence ① and rear fence during jogging (paper edge alignment) are controlled independently by two separate motors.

Unlike the main jogger fences the front fence ③ and rear fence ④ of the sub jogger unit are controlled by one motor, the sub jogger fence motor [5]. The motor switches on, and the belt drives the fences in. The motor reverses and when the sub jogger HP sensor [6] detects the fences at their home positions, it switches off the sub jogger fence motor.

The main jogger is also provided with a fence retraction mechanism that raises front and rear fences after each set has been aligned. The main jogger fence retraction motor [1] switches on and raises both the front fence ① and rear fence together after the edge of each set is aligned. The motor reverses and lowers both fences, the fence retraction HP sensor [2] detects the home position of the fences and switches off the motor. The sub jogger has no such mechanism.

Jog points: Smaller Than 300 mm



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The jogger unit uses only the main jogger to align paper sizes smaller than 300 mm. The sub jogger does not operate.

Set 1

- The shift motor switches on and off, moving the shift rollers and each sheet 10 mm to the rear.
- The leading edge of each shifted sheet output to the shift tray is aligned by the leading edge stopper ①.
- The main jogger rear and front jogger fence motors switch on and push the rear and front fence against the shifted edge of the stack at and ③.
- The front fence moves on top of the stack below. The front fence is light so it does not interfere with the top sheet of the stack below.
- After the last sheet of the set has fed and been aligned, the main jogger retraction motor raises both fences and positions them at the front for the next set.

Set 2

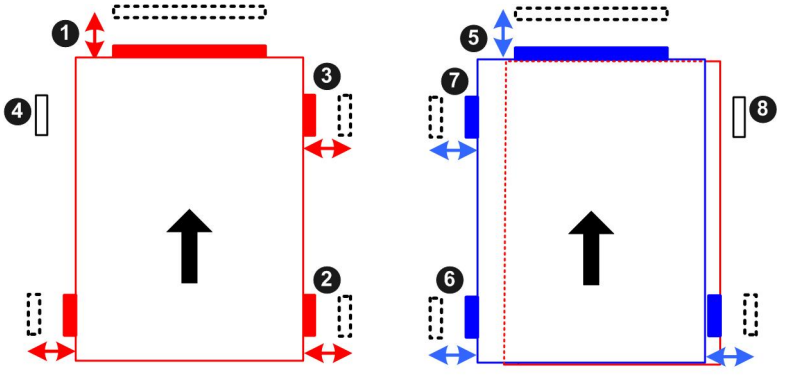
When the next set (blue above) is output to the shift tray in shift mode:

- The shift motor switches on and off, moving the shift rollers and each sheet 10 mm to the front.
- The leading edge of each shifted sheet output to the shift tray is aligned by the leading edge stopper ④.
- The main jogger front fence and rear fence motors switch on and push the front and rear fence against the edges of the stack at ⑤ and ⑥.
- The rear fence moves on top of the stack below. The rear fence is light so it does not interfere with the top sheet of the stack below.
- After the last sheet of the set has fed and been aligned, the main jogger retraction motor raises both fences and positions them at the rear for the next set.

At the end of the job, the rear and front fence motors reverse and move the rear and front fences back to the home position and stop.

The stack is jogged at three points: at the leading edge by the LE stopper, and at the front and rear of the trailing edge by the main jogger unit.

Jog points: 300 mm and Larger



d447d902

The jogger unit uses both the main jogger and one fence of the sub jogger to align papers sizes 300 mm and larger.

Set 1

- The set (red above) is shifted and output to the tray.
- The LE stopper ① jogs the leading edge of the stack.
- The front and rear jogger fences align the front and rear of the trailing edge. (This is the same operation as for smaller paper sizes.)
- The sub jogger fence motor switches on and moves its front and rear fence. Only the rear fence ③ touches the rear corner of the stack near the LE stopper. The front fence ④ also moves but does not touch the front edge of the stack. (There is only one sub jogger motor so both sub jogger fences move.)

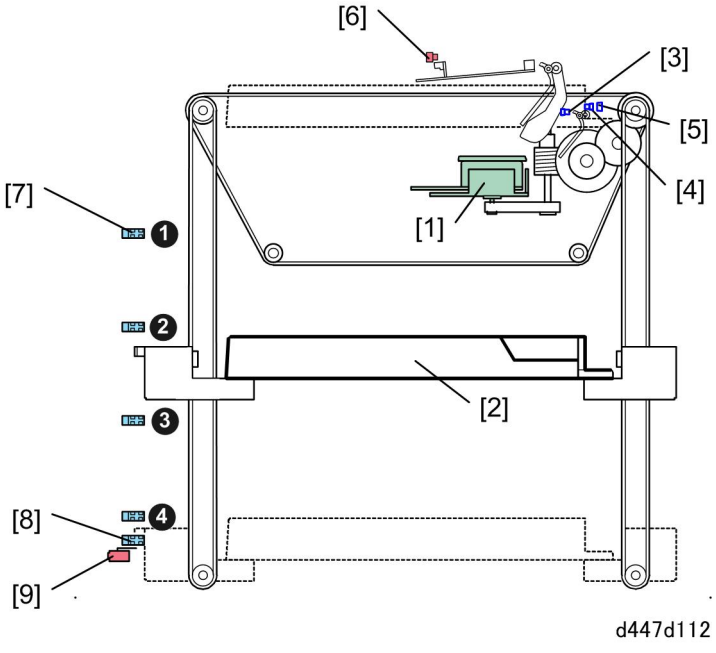
The paper is aligned at four points: at the leading edge by the LE stopper, at the front and rear corners of the trailing edge by the main jogger fences, and at the rear corner near the leading edge by the sub jogger rear fence.

Set 2

- The set (blue above) is shifted and output to the tray..
- The LE stopper ⑤ jogs the leading edge of the stack.
- The main jogger fences ⑥ align the paper at the front and rear of the trailing edge. (This is the same operation as for smaller paper sizes.)
- The sub jogger fence motor switches on and moves both the front and rear fence. Only the front fence ⑦ touches the front corner of the stack near the LE stopper. The rear fence ⑧ also moves but does not touch the rear edge of the stack. (There is only one sub jogger motor so both sub jogger fences move.)

The paper is aligned at four points: at the leading edge by the LE stopper, at the front and rear corners of the trailing edge by the main jogger fences, and at the front corner near the leading edge by the sub jogger front fence.

Shift Tray Lift and Height Adjustment



1.	Tray Lift Motor
2.	Paper Tray
3.	Shift Tray Paper Sensor (in jogger unit)
4.	Paper Height Sensor
5.	Tray High Limit Switch (micro-switch)
6.	Tray Guard Sensors 1, 2
7.	Tray Full Sensors 1, 2, 3, 4 (25%, 50%, 75%, 100%)
8.	Tray Low Limit Sensor
9.	Tray Low Limit Switch (micro-switch)

Sensor, Switch Summary

The tray lift motor [1] raises and lowers the paper tray [2].

The shift paper sensor [3] is mounted in the jogger unit.

- When there is no paper on the tray its actuator falls into a cutout on the tray and signals no paper on the tray.
- When there is paper on the tray (at least one sheet) the actuator remains up signaling paper on the tray.

When the top of the stack grows high enough as paper is output onto the tray, the actuator enters the gap of the paper height sensor [4]. This signals the tray lift motor to lower the tray the prescribed distance so the tray can accept more paper. This sequence of is repeated until the tray is full.

The tray upper limit switch [5] is mounted behind the paper height sensor. If the edge of the tray (not the stack) raises high to push up the actuator along the length of the tray edge, this will trigger the micro-switch, signal the high limit of the tray switch off the stacking operation.

There are two tray guard sensors [6] mounted side by side in the jogger unit. Each sensor is mounted above a swinging plate with an actuator on top. If the top of the stack pushes up either plate far enough to activate either sensor, this will shut down operation of the stacker immediately. These sensors are also fail safe mechanisms. If stack on the tray skews and either the paper height sensor or tray high limit switch fail to detect the top of the stack, one of the guard sensors will trigger a signal to shut down the stacker. This prevents the top of the stack (or empty) tray from striking the bottom of the paper transport plates above and causing damage.

The four tray full sensors [7] signal the status of the tray on the main machine operation panel at each stage: 25% full, 50% full, 75% full, 100% full. When the actuator on the tray reaches tray full sensor 4 (100%) the stacking operation will stop, signaling the operator that the cart is full and must be emptied.

The tray low limit sensor [8] signals when the tray is down (the cart can be removed).

The tray low limit switch [9] will shut down the stacker if the edge of the tray hits this micro-switch. This is one additional fail-safe mechanism designed to shut down the stacker if either sensor above (Tray Full 4, Tray Low Limit Sensor) fails to signal tray full.

Power Off

At the end of the job:

- The tray does not lower.
- The operator must press the DOWN button on the stacker operation panel to lower the tray and remove the paper stacked on the cart.

Power ON

If there is no paper on the tray:

- The shift paper sensor [3] detects no paper.
- The tray lift motor raises the tray until the paper height sensor [4] is pushed up far enough to detect the top of the tray and then stops.
- The tray lift motor reverses and lowers the tray to the start position.

If there is paper on the tray:

- The shift paper sensor [3] detects paper.

- The tray lift motor raises the tray until the paper height sensor [4] detects the top of the tray and then stops.
- The tray lift motor reverses and lowers the tray far enough to accept more paper.

MEMO

MEMO

MEMO