








**LCIT RT4020**  
**Machine Code: D709**  
**Field Service Manual**  
**Ver 1.01**

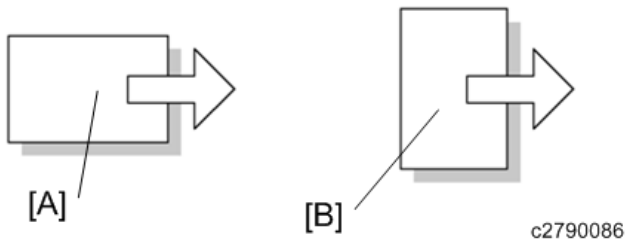
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**Initial Release: Oct, 2016**  
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# Symbols, Abbreviations

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

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



[A] Short Edge Feed (SEF)

[B] Long Edge Feed (LEF)

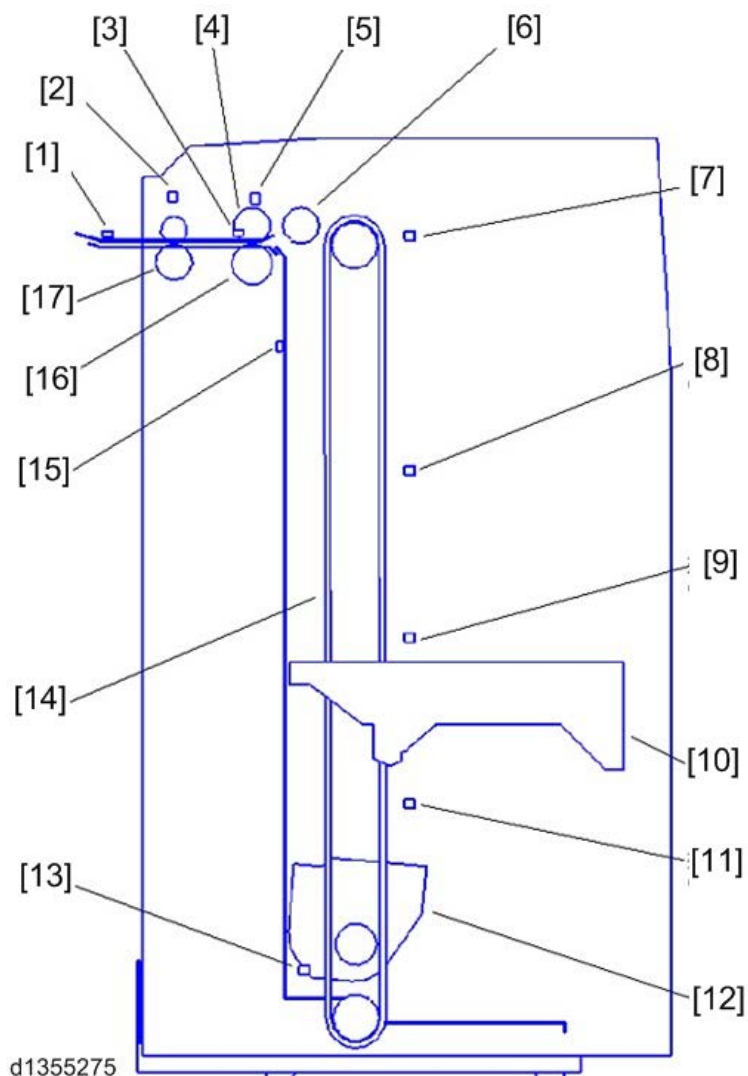


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# 1. Detailed Descriptions

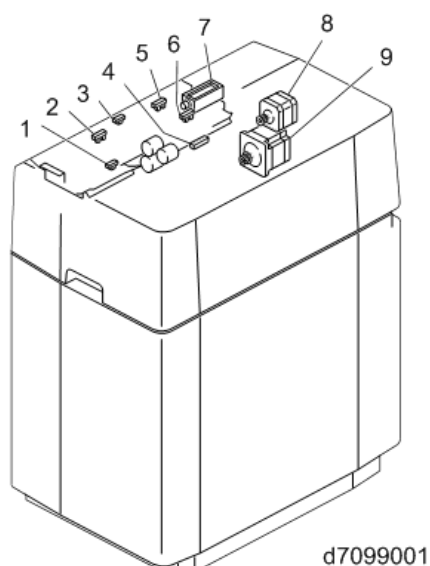
## Component Layout



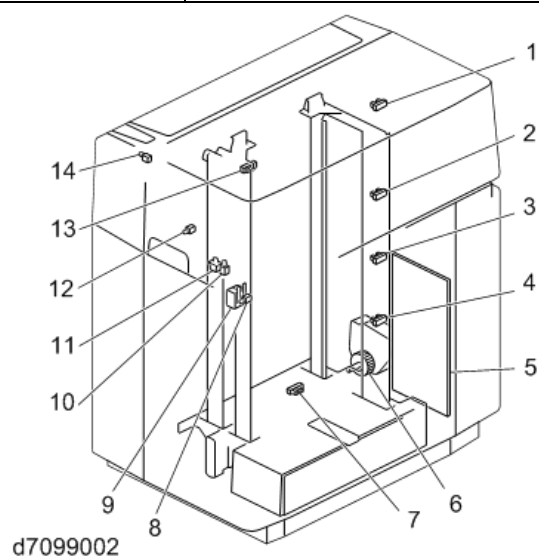
No.	Description	No.	Description
1	LCIT Relay Sensor	10	Bottom Tray
2	LCT Set Sensor (x 2)	11	Paper Remaining Sensor (Paper Remaining: 75%)
3	Feed Sensor	12	Lift Motor
4	Feed Roller	13	Lower Limit Sensor
5	Lift Sensor	14	Tray Drive Belt
6	Pick-up Roller	15	Stack Sensor
7	Paper Height Sensor (Near End)	16	Reverse Roller
8	Paper Height Sensor (Paper Remaining: 25%)	17	Grip Roller
9	Paper Height Sensor (Paper Remaining 50%)		

## Electrical Components

The number in [ ] indicates the symbol in Point-to-Point diagram.



No	Item
1	Paper Feed Sensor [S4]
2	LCT Set Sensor (Front) [S5]
3	Paper Transport Sensor [S3]
4	Paper Feed Sensor [S1]
5	LCT Set Sensor (Rear) [S6]
6	Upper Limit Sensor [S2]
7	Pick-up Solenoid [SOL1]
8	Paper Feed Motor [M1]
9	Paper Transport Motor [M2]

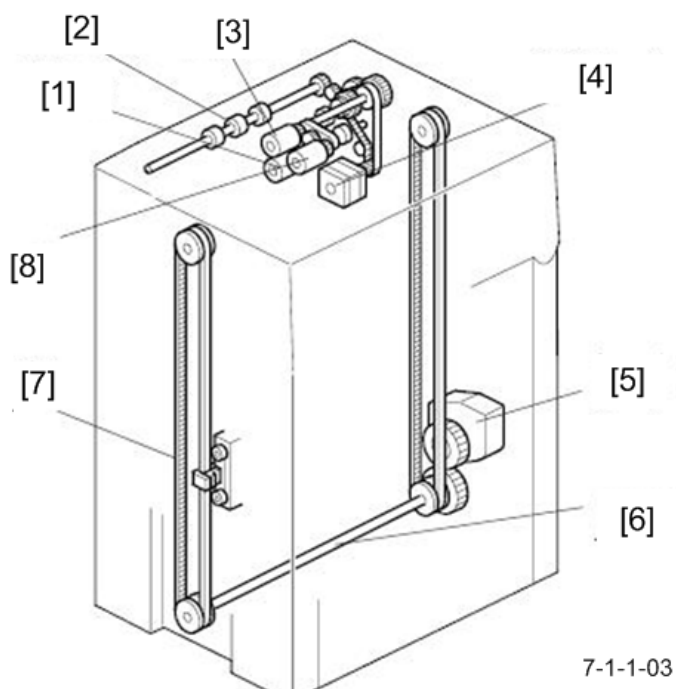


No	Item
1	Paper Remaining Sensor 1 [S7]

## 1.Detailed Descriptions

No	Item
2	Paper Remaining Sensor 2 [S8]
3	Paper Remaining Sensor 3 [S9]
4	Paper Remaining Sensor 4 [S10]
5	Main Control Board [PCB1]
6	Lift Motor [M3]
7	Lower Limit Sensor [S11]
8	Paper Feed LED [LED4]
9	Lift Switch [SW1] Feed Unit Cover Switch [SW2]
10	Tray Down LED [LED1]
11	Down Switch [SW3]
12	Feed Unit Cover LED [LED3]
13	Stack Sensor [S12]
14	Slide Handle LED [LED2]

## Drive Layout



No	Item
1	Separation Roller
2	Transport Roller
3	Feed Roller
4	Paper Feed Motor
5	Lift Motor



## 1.Detailed Descriptions

No	Item
6	Tray Lift Shaft
7	Tray Drive Belt
8	Pick-up Roller

## Mechanism Details

### Feed/Separation

FRR method including a non-contact magnetic maintenance-free torque limiter. (same as the bypass tray of the main machine)

### Tray Up/Down

A lift motor and a timing belt shift the tray up/down.

### Size Detection

Adjusted with SP mode input, not with the side fence (fixed).

### Paper Height Sensor

Four photo-interrupters and a feeler detect the height of the tray.

### Paper End Detection

A reflective sensor detects paper end.

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### Paper Feed, Separation

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The tray unit and paper transport section is integrated in this LCIT.

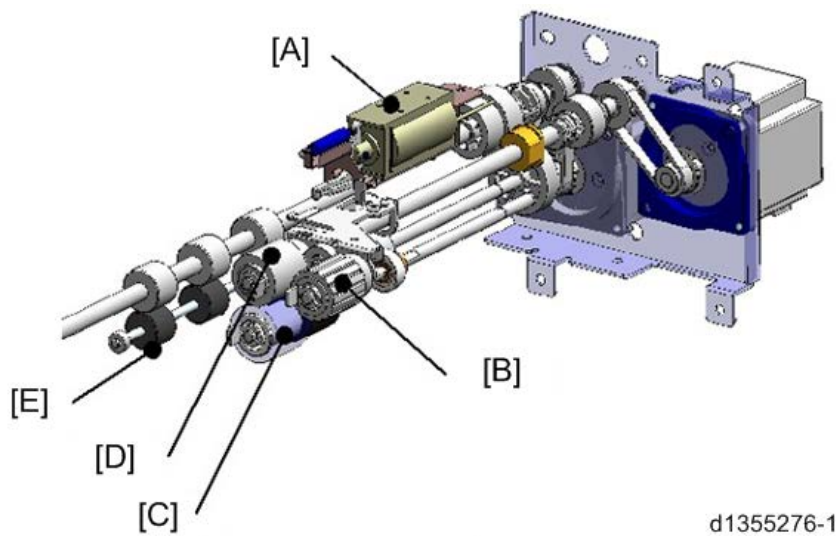
Pick-up roller, feed roller, and separation roller used for this LCIT are the same as the bypass tray unit on the main machine.

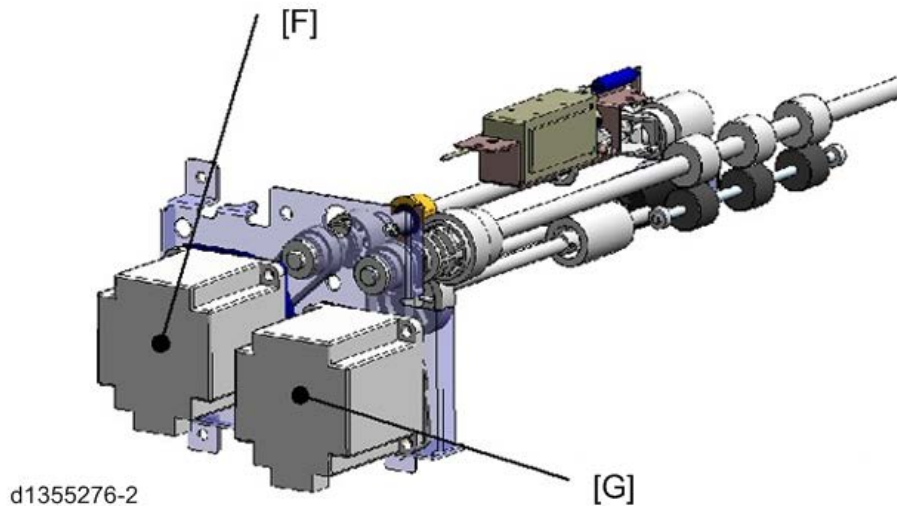
The FRR feed method is used for feeding and separating, which the main machine also employs.

### Idling

When the paper transport motor [G] starts, the paper transport roller [E] starts rotating.

The separation roller is stopped by the friction with the feed roller.





### Paper Feed and Separation

When the paper feed motor [F] and the pick-up solenoid [A] are turned ON, the feed roller [D] starts rotating. Then the pick-up roller [B] also rotates and feeds the top sheet of paper on the feed tray.

The separation roller [C] contains a torque limiter. The friction between the separation roller and the feed roller [D] exceeds the limit of the torque limiter.

When two or more sheets of paper are fed, the torque limiter makes the separation roller [C] rotate to push the lower sheet of paper back to the tray.

When the paper feed sensor detects paper, the pick-up solenoid [A] turns OFF, and the pick-up roller [B] lifts away from the paper to reduce the resistance to paper feed.

The paper that is fed in is transported to the registration roller.

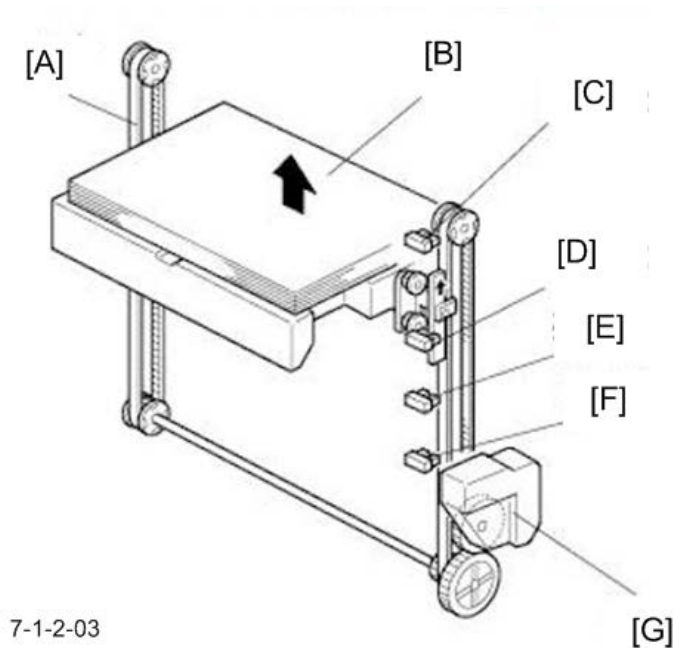
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### Tray Shift Up/Down

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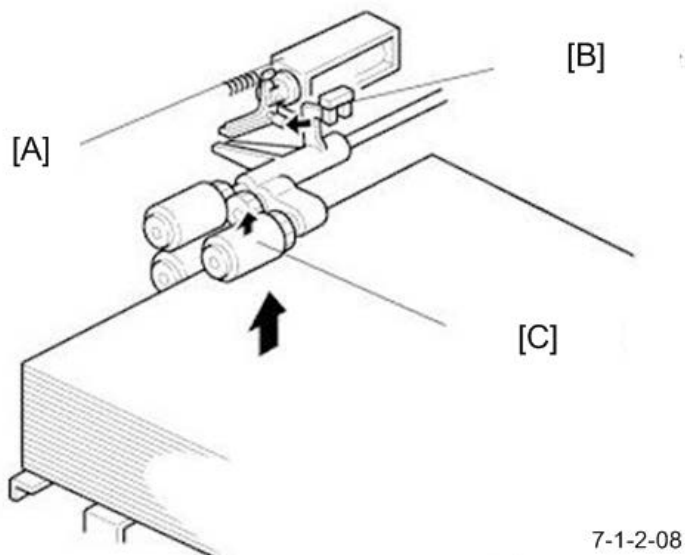
The tray motor [G] drives the tray drive belt [A] through a gear and the tray drive pulley. The tray drive belt [A] shifts the tray [B] up/down. ([C]: Near End Sensor, [D][E][F]: Paper Height Sensor 1 ~ 3)

## 1.Detailed Descriptions



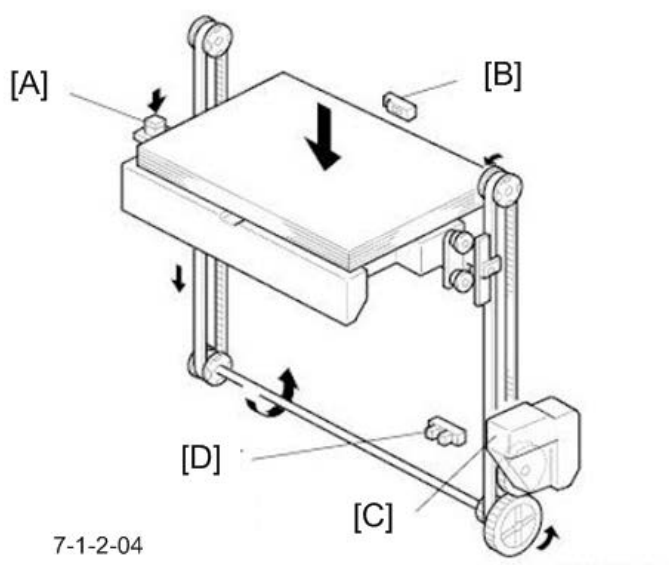
After adding paper, when the upper cover is closed, the pickup solenoid [A] turns ON for the pickup roller [C] to drop down. In this state, if none of the paper height sensors are interrupted, the tray [B] shifts down until a sensor is interrupted. Then the tray shifts up.

To check the tray position, the following process is done and then the tray stops: the tray motor drives in reverse until the lift sensor [B] is not interrupted, and the tray motor drives forward until the lift sensor [B] is interrupted. After some sheets are fed, when the top of the stack drops so that the actuator leaves the lift sensor [B], the tray motor drives forward again in order to lift the top of the paper stack to the correct position for feed.



When the tray down button [A] is pushed, the tray motor drives in reverse and the tray shifts down until the top of the paper stack reaches the stack sensor [B]. Then the tray motor [C] stops (approximately 500 sheets can be added).

The lower limit sensor [D] detects the lowest point that the tray can shift.



### Tray Shift-up Trigger

- Power switch ON
  - Lift sensor ON (Interrupted) while copying
  - Closing the upper cover when lift sensor is ON
- Lift Sensor OFF (Not Interrupted) means “shift-up stop”.

### Tray Shift-down Trigger

- Pushing the tray down button
  - At paper-end
- Shift-down stops when the stack sensor is OFF.

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## Size Detection

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By changing the location of the side fence and the rear edge supporting rod, you can switch among A4 LEF / B5 LEF / LT LEF. The size detection is adjusted with SP5959-003. For details about how to change the location of the side fence and the rear edge supporting rod, see the Field Service Manual of the MFP.

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## Detecting Paper Remaining Amount and Paper End

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Four paper remaining sensors and the paper end sensor detect the amount of remaining paper in the tray.

See the detail as below.

Remaining	Approx. Sheet Count	Paper Remaining Sensors				Paper End Sensor	Indicator
%	Paper thick = 0.11 mm	1	2	3	4	1 = reflect	
100	3501 - 4000	0	0	0	0	0	4 bars
75	2501 - 3500	0	0	0	1	0	4 bars
50	1501 - 2500	0	0	1	N.C.	0	3 bars
25	76 - 1500	0	1	N.C.	N.C.	0	2 bars
5	1- 75	1	N.C.	N.C.	N.C.	0	1 bar

## 1.Detailed Descriptions

Remaining	Approx. Sheet Count	Paper Remaining Sensors				Paper End Sensor	Indicator
%	Paper thick = 0.11 mm	1	2	3	4	1 = reflect	
0	0	N.C.	N.C.	N.C.	N.C.	1	Paper End

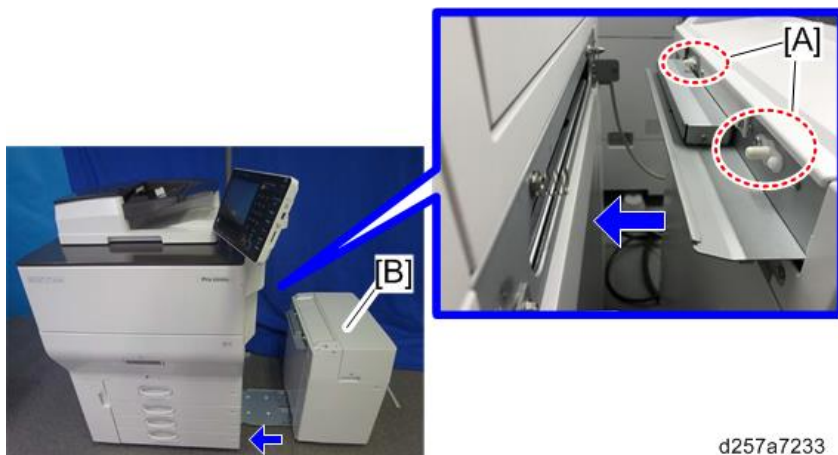
- N.C. = No check
- When the status of any of the paper remaining sensors are changed from 0 to 1, the machine detects the paper remaining amount goes down one level and indicates it on the operation panel.

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### Detecting the LCT Set Condition

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The LCT set sensor detects whether the LCT is correctly connected to the main machine. There are two projections [A] on the LCT. When the LCT is correctly connected to the main machine, the projections [A] are pushed by the main frame, and then the LCT set sensor turns on. If the LCT set sensor is OFF, the machine cannot print from the LCT.



## 2. Replacement and Adjustment

### Common Procedures

#### External Covers

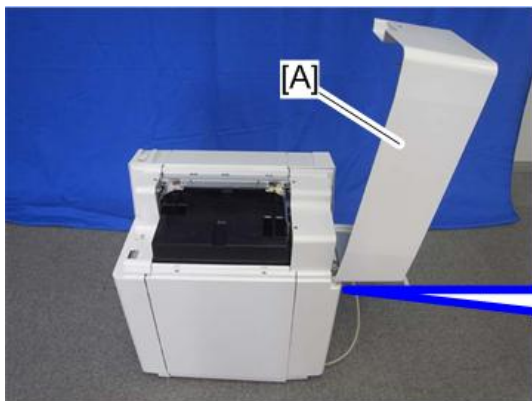
Top Right Cover, Top Left Cover, Rear Right Cover, Rear Cover, Left Cover

1. Open the top right cover [A].



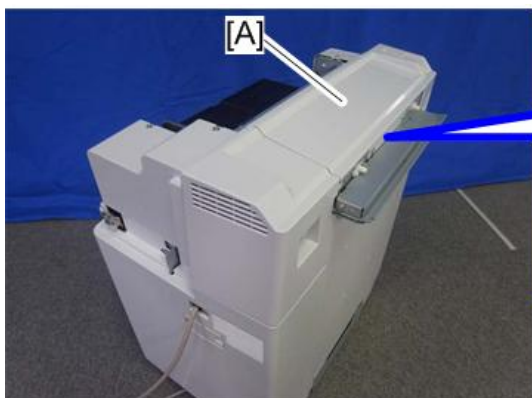
d1351068

2. Top right cover [A] (⚙️ x1)



d1351069

3. Top left cover [A] (⚙️ x2)



d1351070

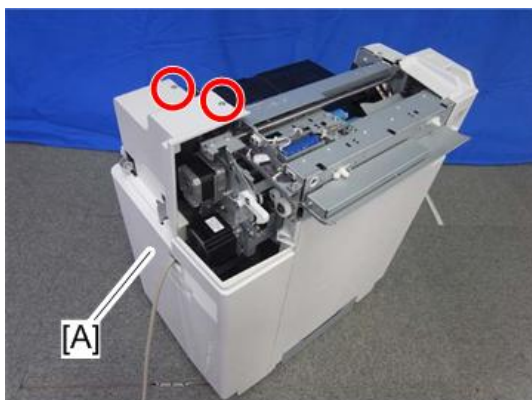
## 2.Replacement and Adjustment

### 4. Rear left cover [A] (⌀ x2)



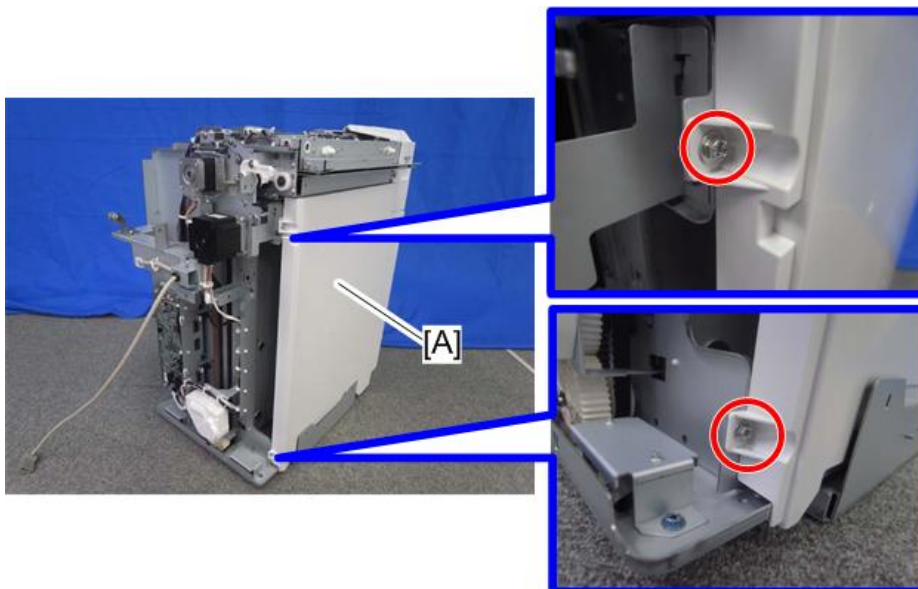
d1351071

### 5. Rear cover [A] (⌀ x2)



d1351073

### 6. Left cover [A] (⌀ x2)



d1351075



## Right Cover

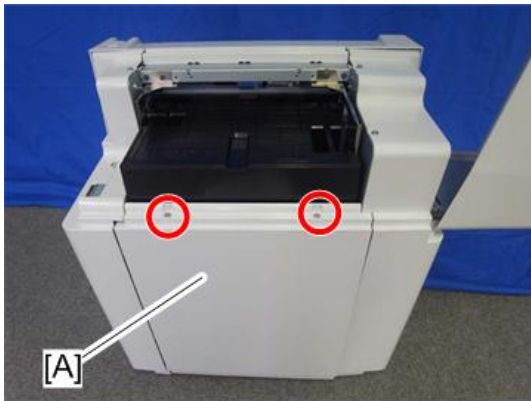
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1. Open the upper right cover [A].



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2. Right cover [A] (⊗ x2)



d1351074

## Front Left Cover, Front Cover

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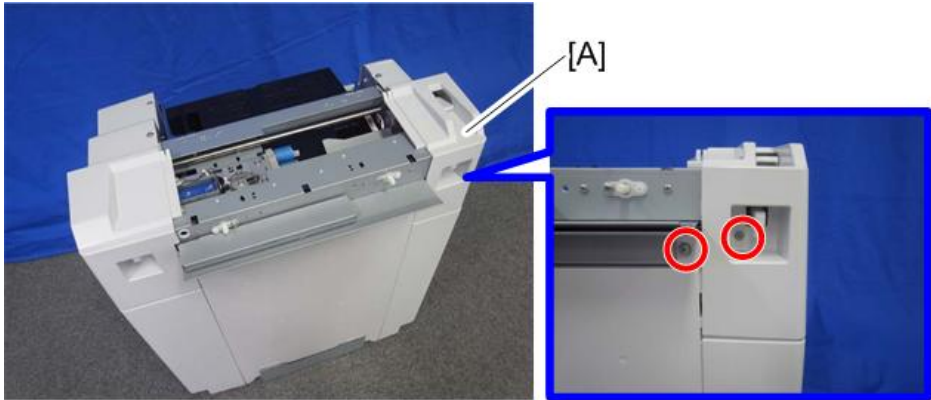
1. Remove the following. (Top Right Cover, Top Left Cover, Rear Right Cover, Rear Cover, Left Cover)
  - Top right cover
  - Top left cover
2. Right cover (Right Cover)
3. Knob cover [A] (⊗ x1)



d1351076

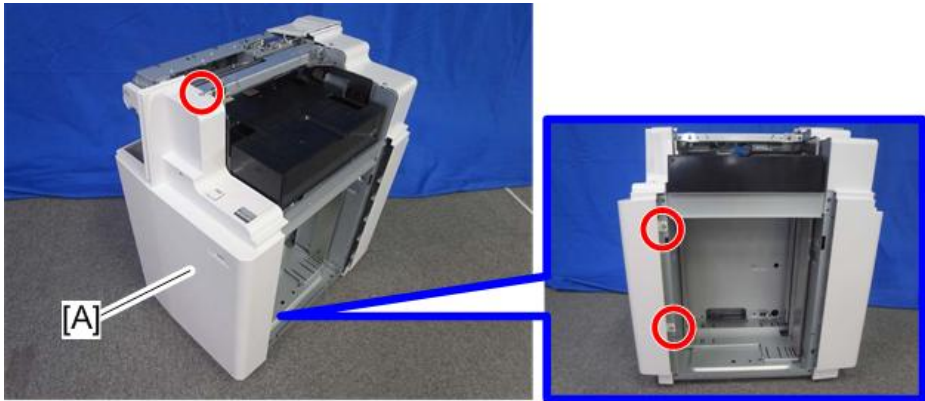
2.Replacement and Adjustment

4. Front right cover [A] (⌚ x2)



d1351077

5. Front cover [A] (⌚ x3)

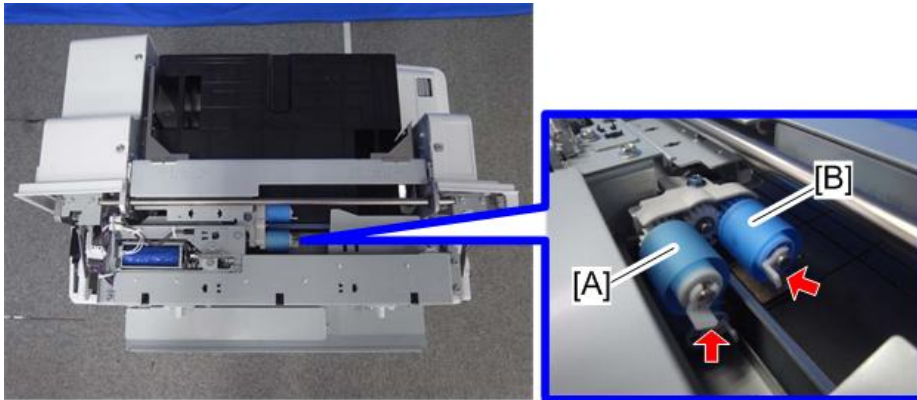


d1351078

## Rollers

### Pick-Up Roller, Feed Roller, Separation Roller

1. Remove the following. ([External Covers](#))
  - Top right cover
  - Top left cover
  - Rear left cover
  - Front left cover
2. Remove the feed roller [A] and the pick-up roller [B]. (⌚ x1 each)



d1351079

3. Separation roller [A] (⌚ x1)

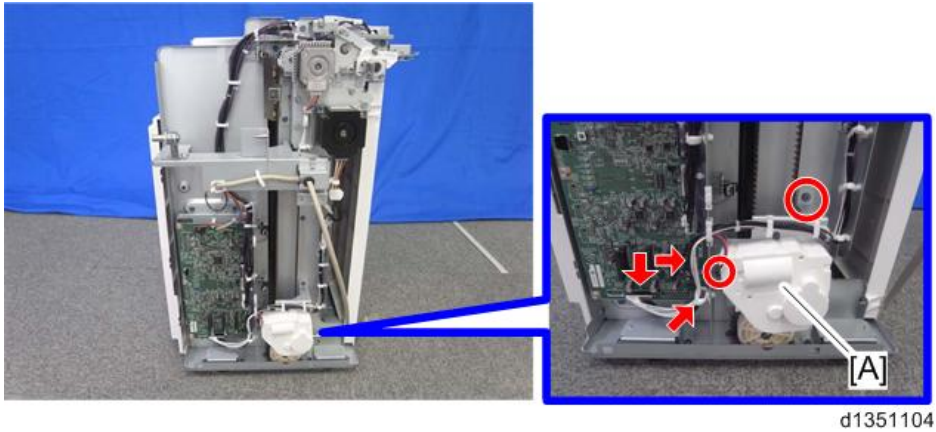


d1351080

## Motors

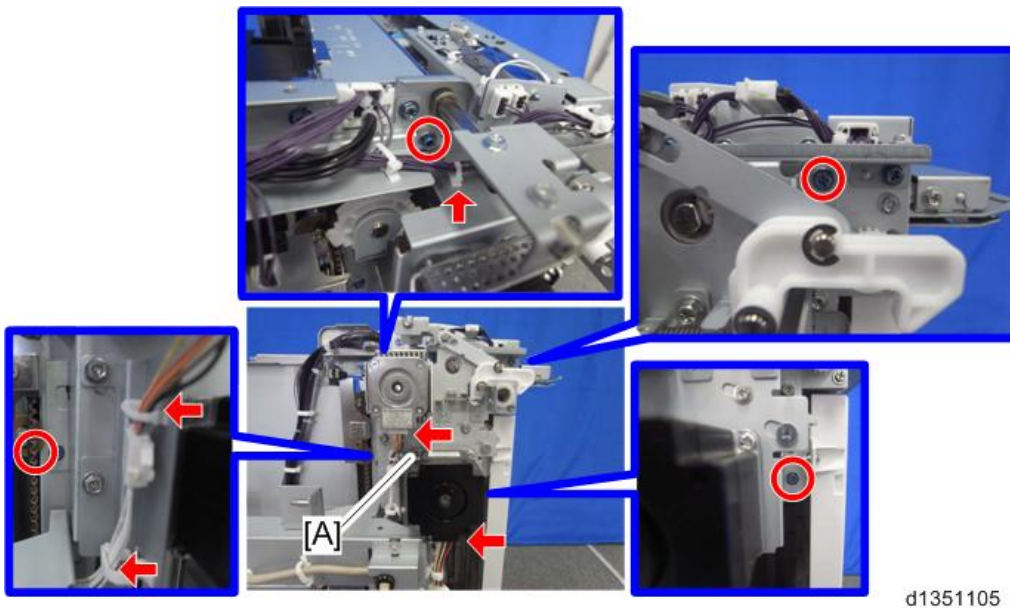
### Lift Motor

1. Rear cover ([External Covers](#))
2. Lift motor [A] (⚙️ x 2, 📦 x1, 🛠️ x2)

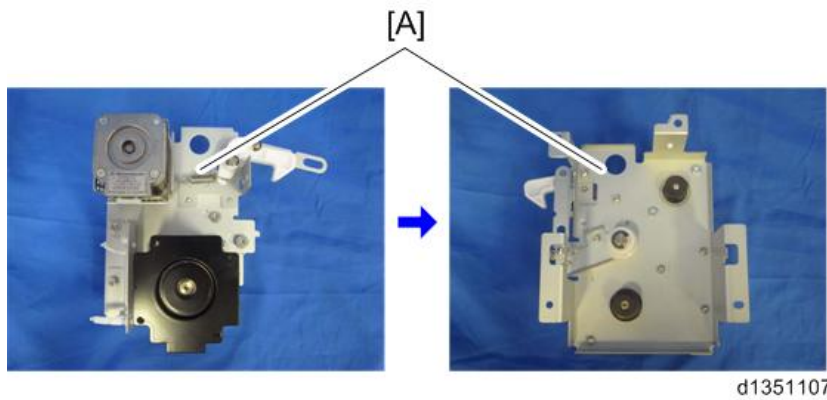


### Paper Feed Motor, Paper Transport Motor

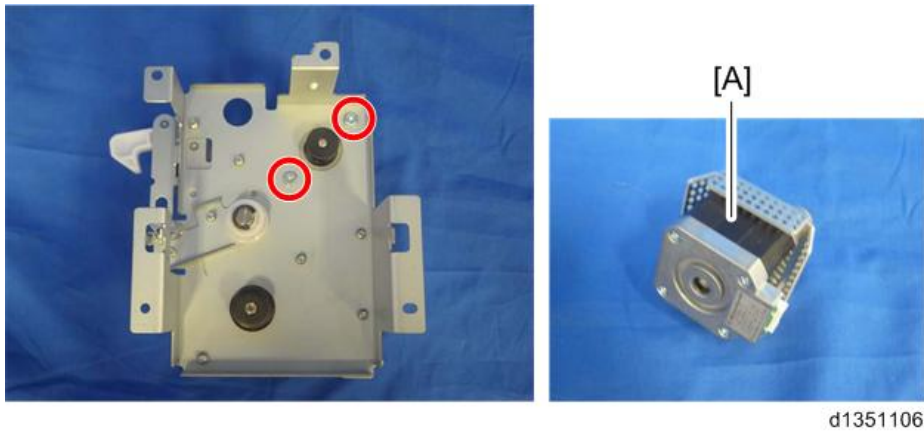
1. Front cover ([External Covers](#))
2. Paper feed/paper transport motor bracket [A] (⚙️ x 4, 📦 x2, 🛠️ x3, timing belt x2)



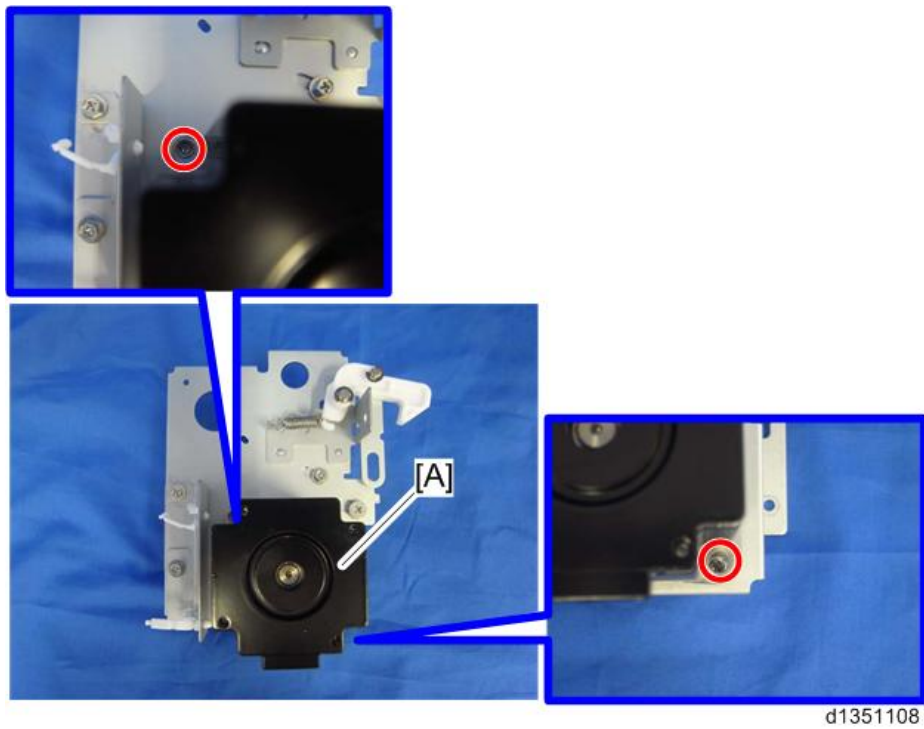
3. Turn over the paper feed/paper transport motor bracket [A].



4. Paper feed motor [A] (⌀ x 2)



5. Paper transport motor [A] (⌀ x 2)





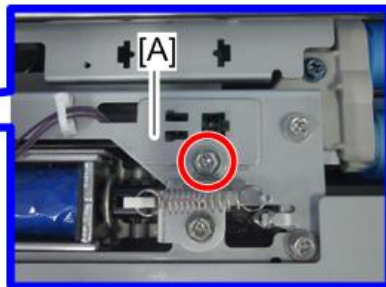
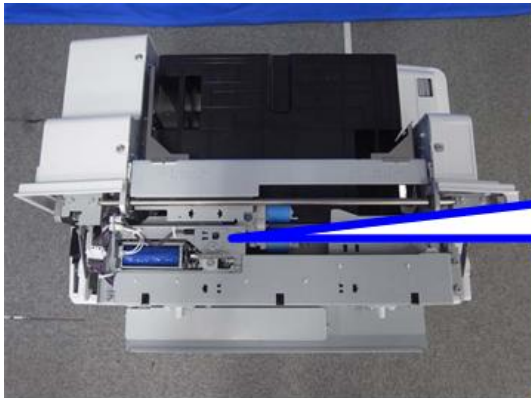
## Sensors

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### Upper Limit Sensor

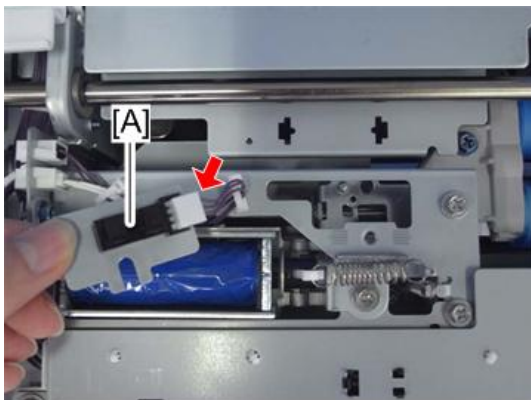
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1. Remove the following. ([External Covers](#))
  - Top right cover
  - Top left cover
  - Rear left cover
  - Front left cover
2. Upper limit sensor bracket [A] (🔧 x1)



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3. Upper limit sensor [A] (🔧 x1, hook x3)



d1351084

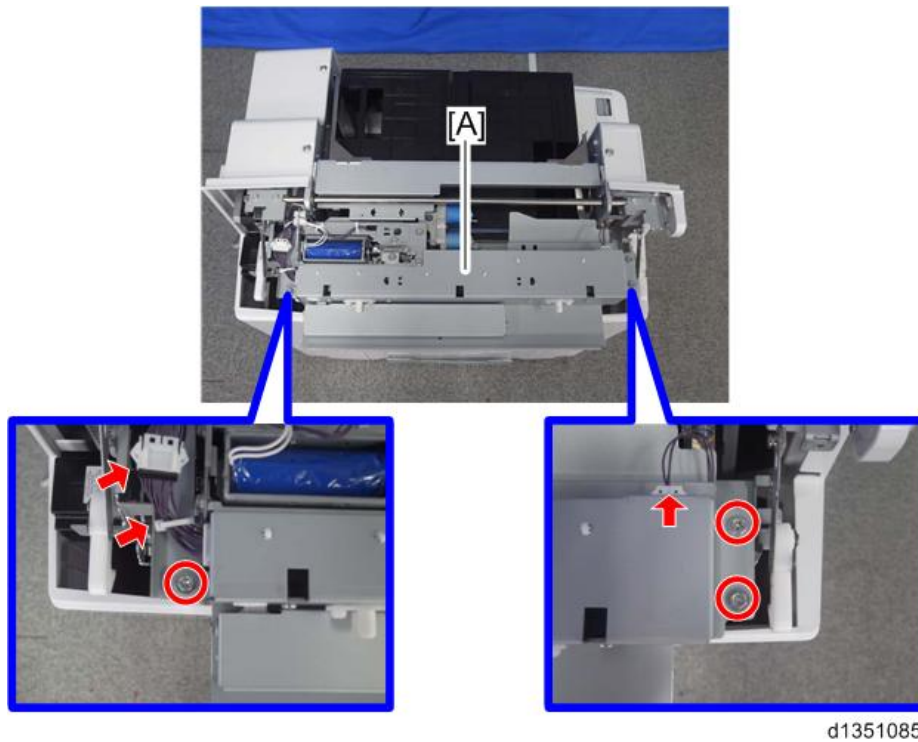
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### LCT Set Sensor

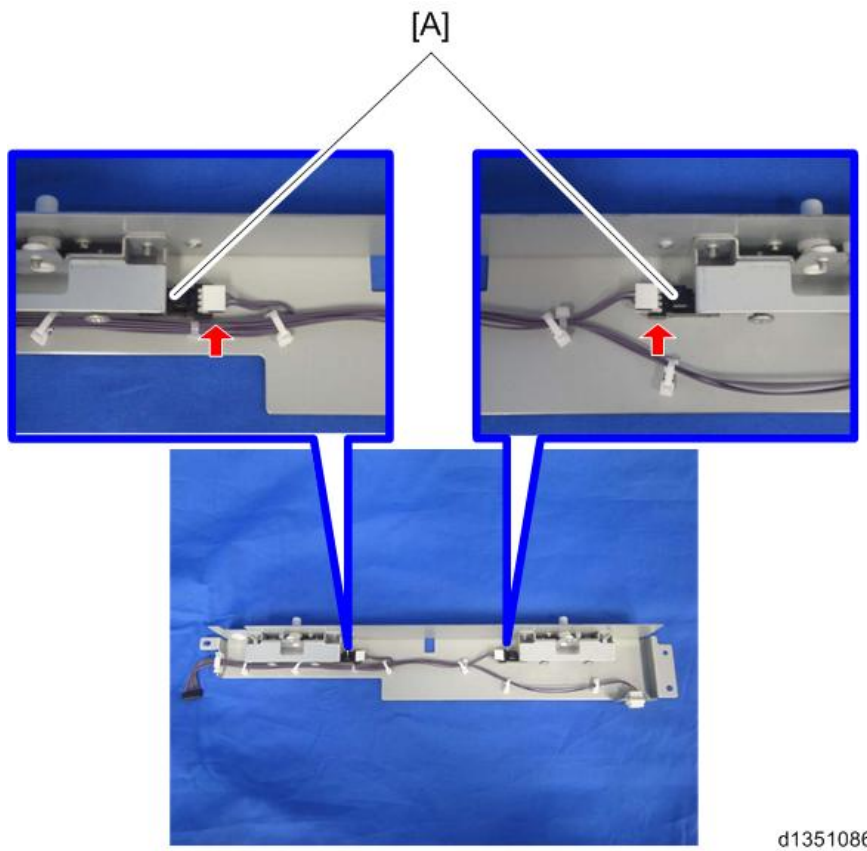
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1. Remove the following. ([External Covers](#))
  - Top right cover
  - Top left cover
  - Rear left cover
  - Front left cover

2. Bracket cover [A] (🔩 x3, 📦 x2, 🛠️ x1)



3. LCT set sensor [A] (📦 x1, hook x3 each)



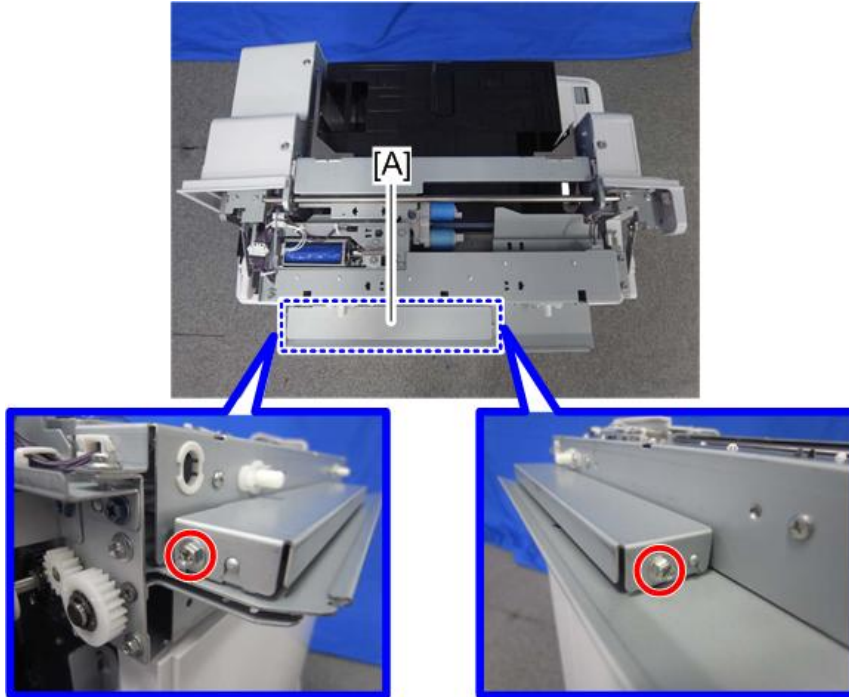
## Paper Transport Sensor

1. Remove the following. ([External Covers](#))

## 2.Replacement and Adjustment

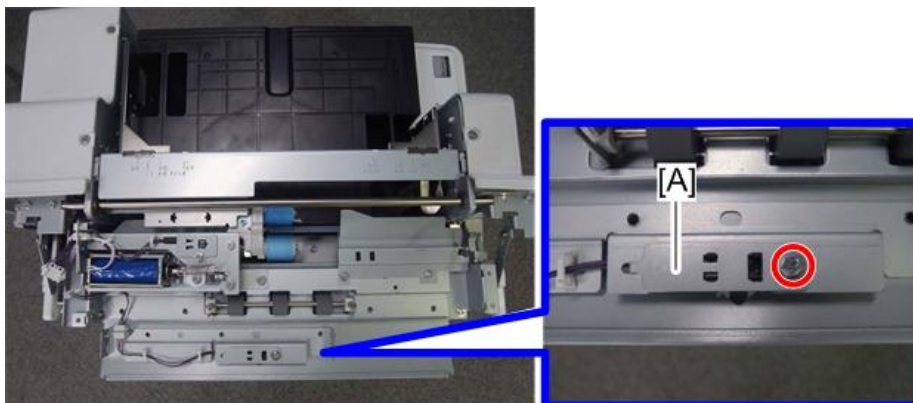
- Top right cover
- Top left cover
- Rear left cover
- Front left cover

### 2. Paper transport sensor cover [A] (⌚ x2)



d1351087

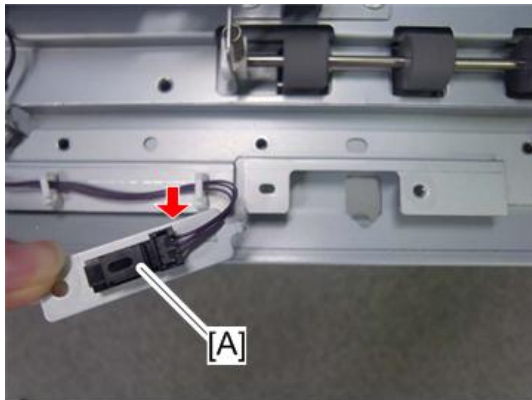
### 3. Paper transport sensor bracket [A] (⌚ x1)



d1351088



4. Paper transport sensor [A] (📦 x1, hook x3)



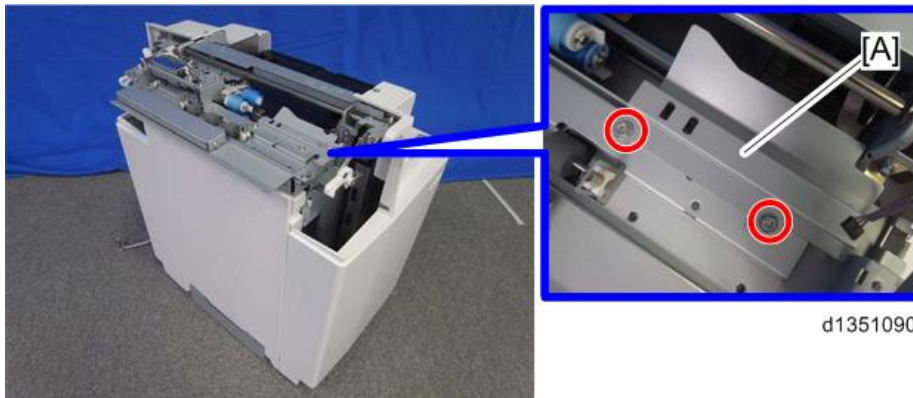
d1351089

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## Paper Feed Sensor

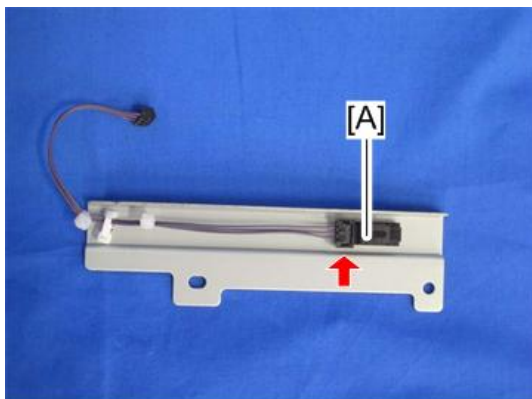
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1. Bracket cover ([LCT Set Sensor](#))
2. Paper feed sensor bracket [A] (🔧 x 2)



d1351090

3. Paper feed sensor [A] (📦 x1, hook x3)



d1351091

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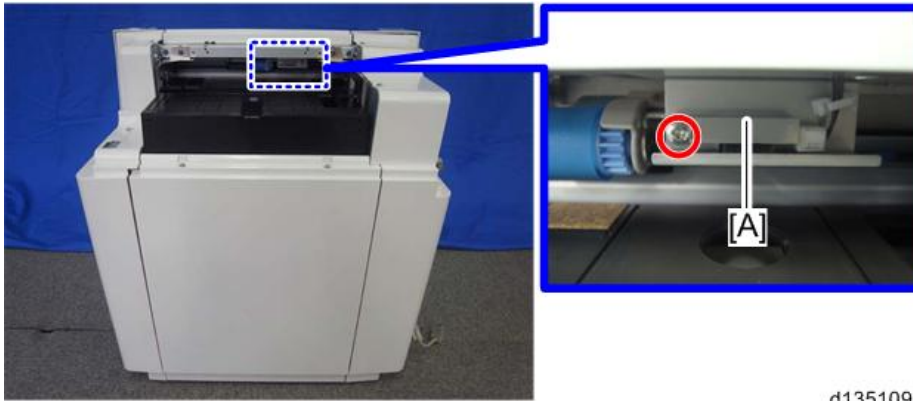
## Paper End Sensor

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1. Top left cover ([External Covers](#))

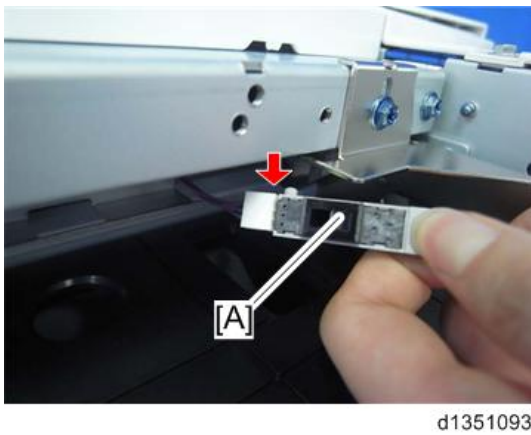
## 2.Replacement and Adjustment

2. Paper end sensor bracket [A] (🔧 x 1)



d1351092

3. Paper end sensor [A] (🔧 x1, hook x 3)



d1351093

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## Stack Sensor

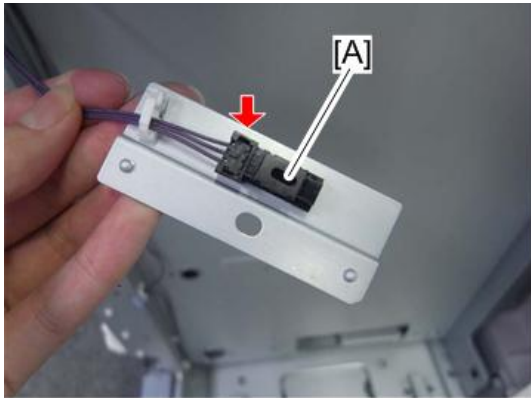
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1. Left cover ([External Covers](#))
2. Paper position sensor bracket [A] (🔧 x 1)



d1351100

3. Stack sensor [A] (📦 x1, hook x3)



d1351101

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### Lower Limit Sensor

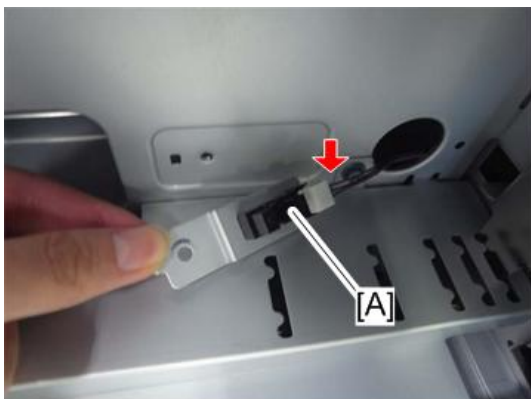
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1. Right cover ([External Covers](#))
2. Lower limit sensor bracket [A] (🔧 x 1)



d1351102

3. Lower limit sensor [A] (📦 x1, hook x3)

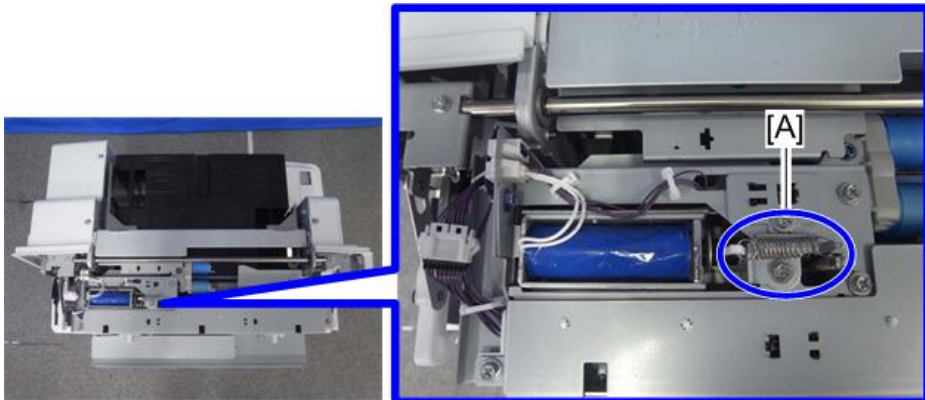


d1351103

## Solenoids

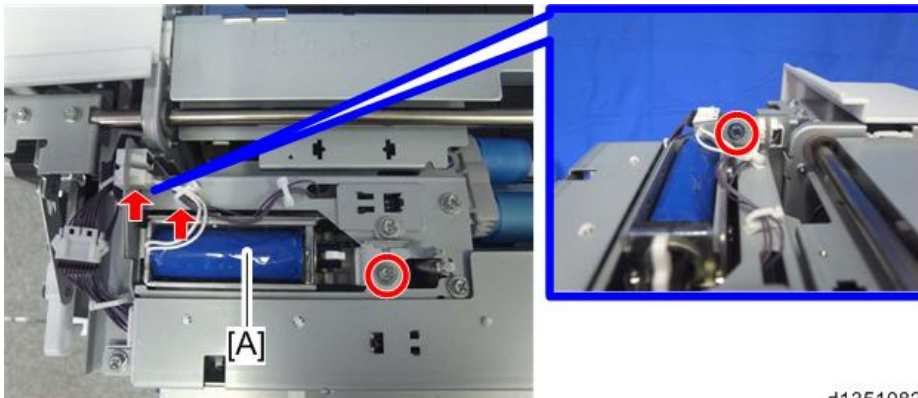
### Pick-Up Solenoid

1. Remove the following. ([External Covers](#))
  - Top right cover
  - Top left cover
  - Rear left cover
  - Front left cover
2. Remove the spring [A] of the pick-up solenoid. (spring x1)



d1351081

3. Pick-up solenoid [A] (⚙️ x2, 📦 x1, 🛠️ x1)



d1351082

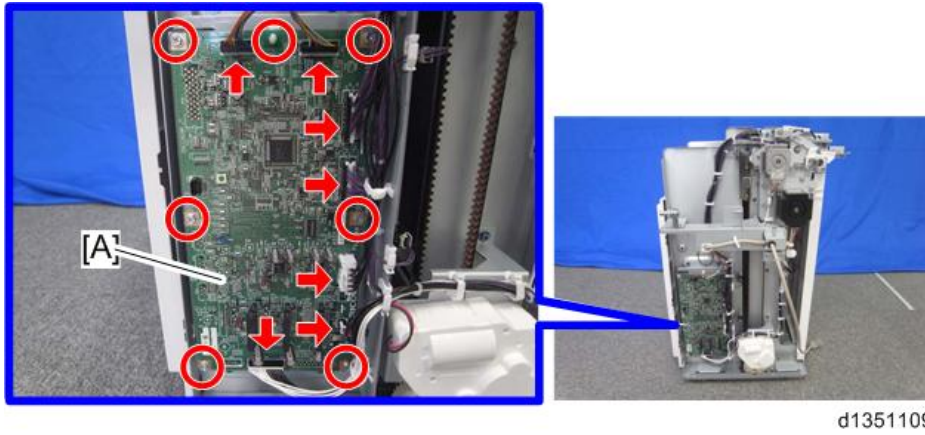
## Boards

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### Main Control Board

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1. Rear cover ([External Covers](#))
2. Main control board [A] (⚙️ x 6, Stand off x 1, 📦 x7)



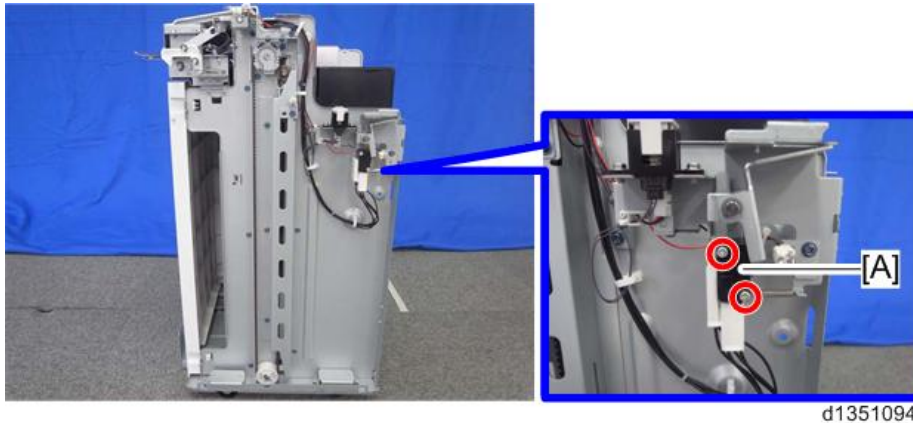
## Others

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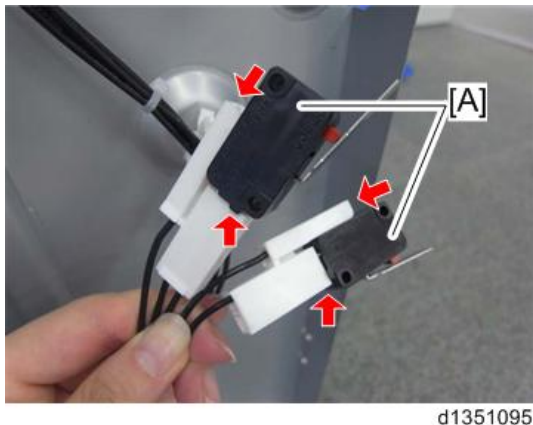
### Feed Unit Cover Switch

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1. Remove the following. ([External Covers](#))
  - Top right cover
  - Top left cover
  - Front cover
2. Feed unit cover switch unit [A] (🔑 x 2)



3. Feed unit cover switches [A] (🔑 x4)



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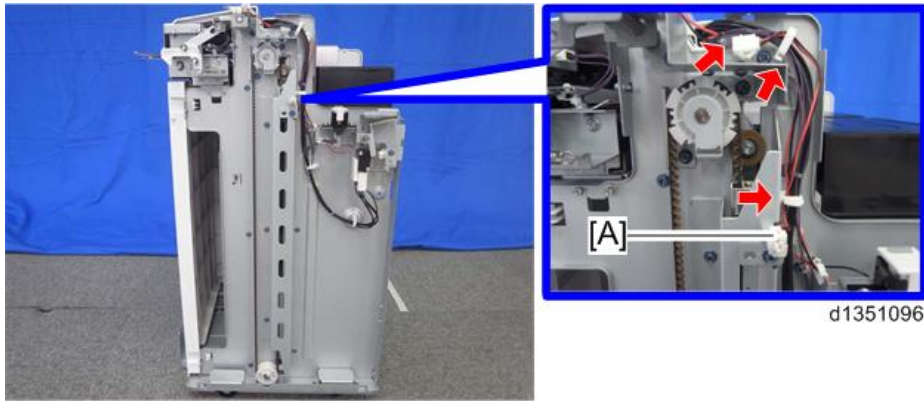
### Feed Unit Cover LED, Paper Feed LED, Slide Handle LED

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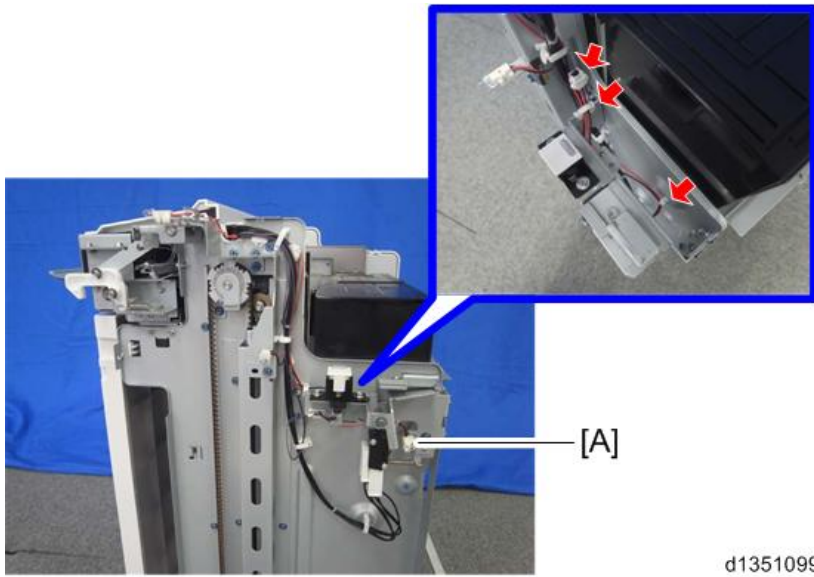
1. Remove the following. ([External Covers](#))
  - Top left cover
  - Front cover



2. Feed unit cover LED [A] (📦 x1, 🛠️ x2)

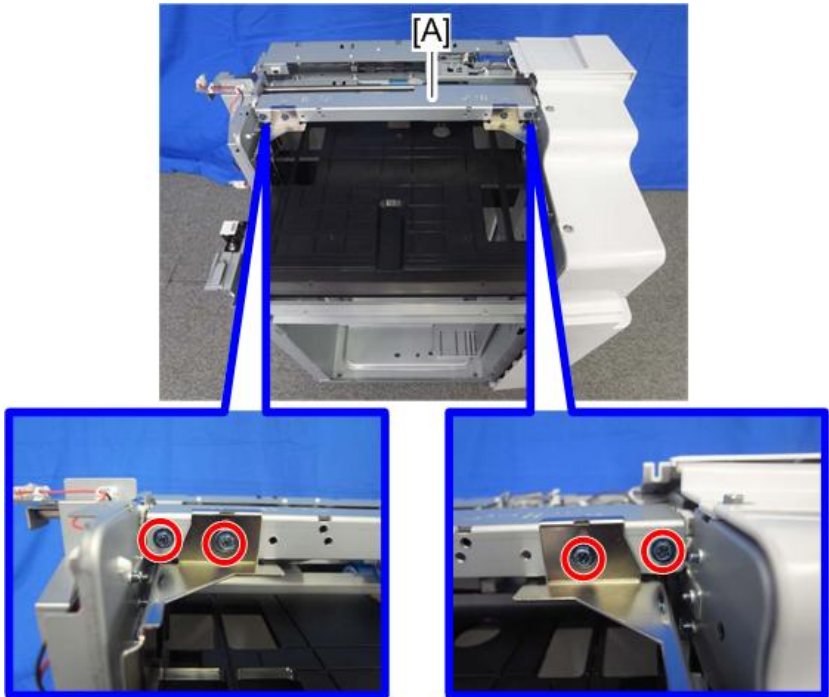


3. Paper feed LED [A] (📦 x1, 🛠️ x2)



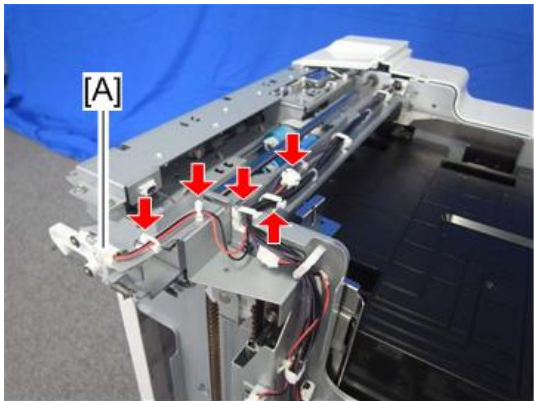
2.Replacement and Adjustment

4. Harness cover [A] (🔩 x 4)



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5. Slide handle LED [A] (📺 x1, 🔩 x4)



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