

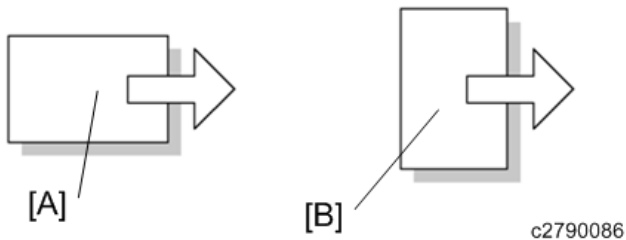
Mail Box CS4010
Machine Code: D708
Field Service Manual
Ver 1.0

Latest Release: Oct, 2016
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)

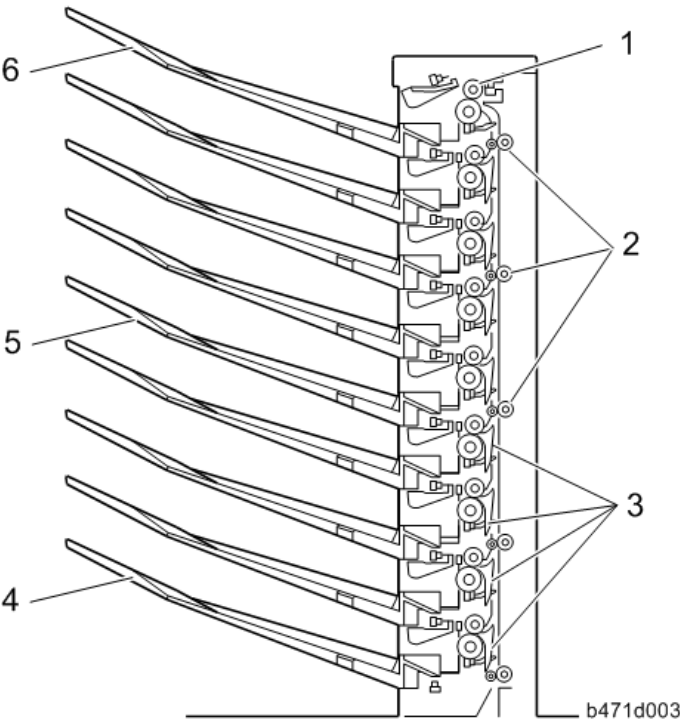
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1. Detailed Descriptions

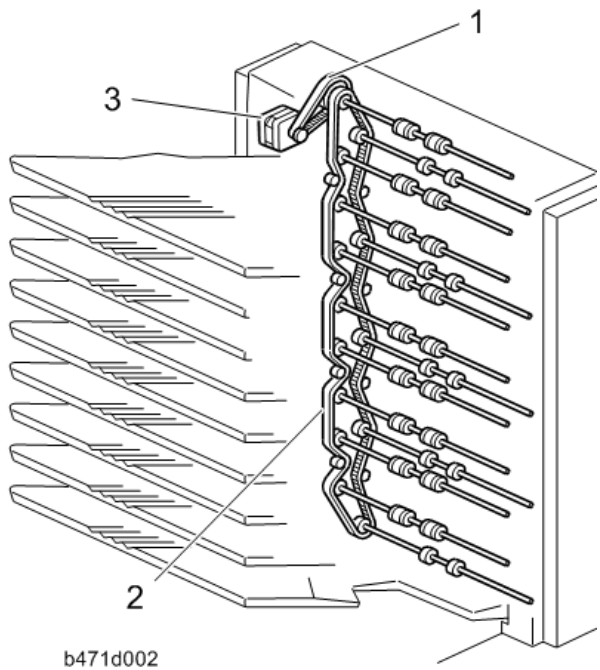
Mechanism Descriptions

Overview Layout



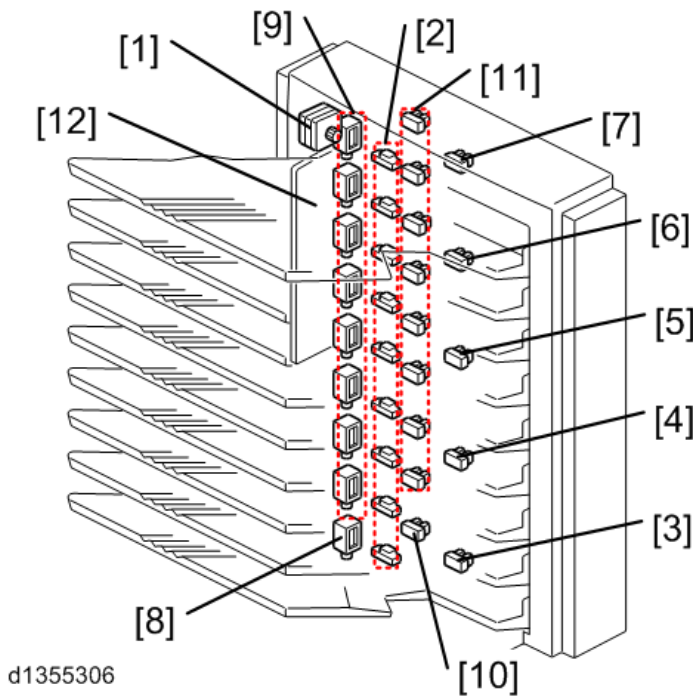
No.	Description	No.	Description
1	Exit Roller	4	1st Bin Tray
2	Transport Roller	5	5th Bin Tray
3	Junction Gate	6	9th Bin Tray

Drive Layout



No.	Description	No.	Description
1	Drive Timing Belt	3	Main Motor
2	Driven Timing Belt		

Electrical Components



Name	Function
1: Main Motor	Drives all the rollers in the unit

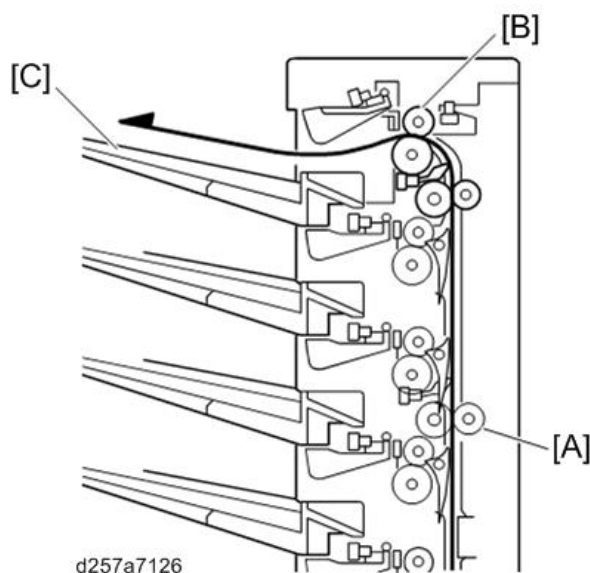
1.Detailed Descriptions

Name	Function
2: Tray Sensor (Tray 1) ~ (Tray 9)	Detects paper in trays 1 ~ 9
3: Vertical Transport Sensor 1	Detects misfeeds (located between trays 1 and 2)
4: Vertical Transport Sensor 2	Detects misfeeds (located between trays 3 and 4)
5: Vertical Transport Sensor 3	Detects misfeeds (located between trays 5 and 6)
6: Vertical Transport Sensor 4	Detects misfeeds (located between trays 7 and 8)
7: Vertical Transport Sensor 5	Detects misfeeds (located at the exit to tray 9)
8: Junction Gate Solenoid 1	Opens/closes the junction gate at the entrance to the mailbox
9: Junction Gate Solenoids 2-9	Opens/closes the junction gates for trays 1-8.
10: Tray Overflow Sensor 1	Detects paper full in tray 1.
11: Tray Overflow Sensor 2-9	Detects paper full in trays 2 to 9 (cannot detect A5).
12: Controller Board	Controls the unit.

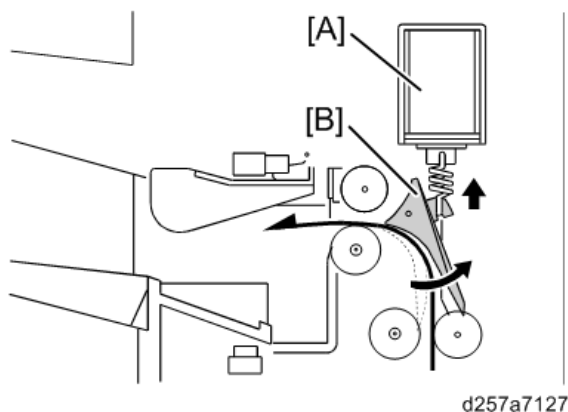
Mechanism Details

Basic Operation

This 9-pin mailbox connects electrically to the finisher with a 14-pin drawer connector. When a print job starts, the main motor turns on to rotate all rollers, and the specified bin receives the paper. The transport roller [A] transports the paper to each bin, and then the exit roller [B] outputs the paper to each tray [C].



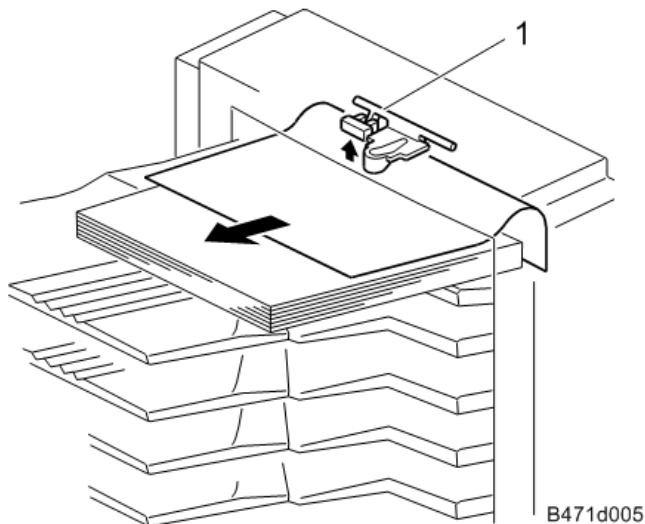
When the junction gate solenoid [A] turns on, the gate [B] switches and the tray receives the paper. When the uppermost tray is selected, all solenoids stay off. When the last paper's trailing edge passes the tray overflow sensor and the sensor turns off, the paper has gone to the tray, so the selected tray's junction gate solenoid and the main motor turn off. Normally, the speed of paper transport in this unit is nearly the same as in the finisher.



Paper Tray Full Detection

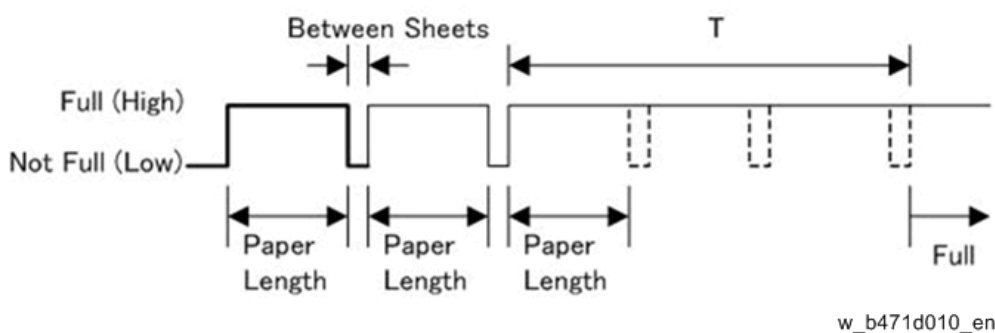
Each bin has a tray overflow sensor and it monitors each tray so that it does not become overloaded.

1.Detailed Descriptions



No.	Description
1	Tray Overflow Sensor

Paper Tray Full Detection Timing



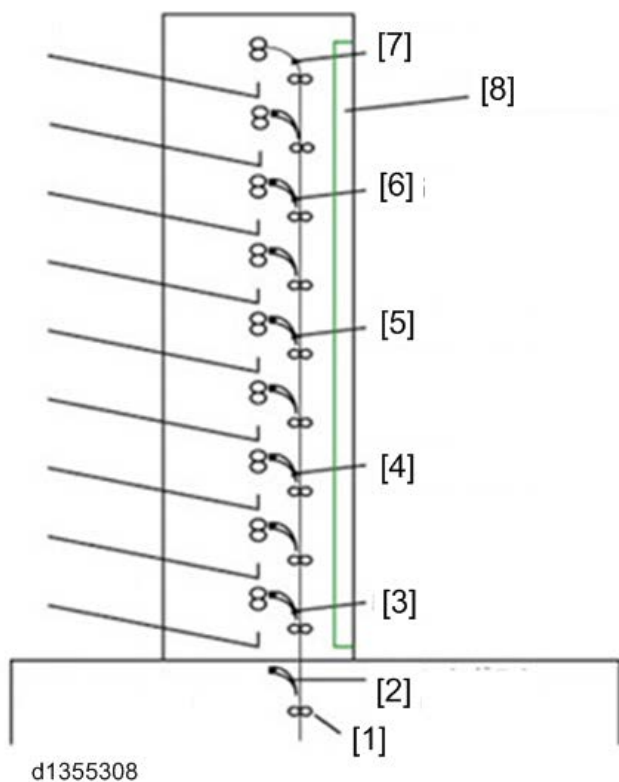
When output from the tray overflow sensor is more than (T) seconds at the "High" level, full detection will occur. For example, at the lowest PPM (12 sheets / A3), when the sensor does not switch to "Low" by 40 sec after the detection, the print job will be stopped.

The machine determines the following depending on the result of the detection and the machine state.

Judge	Machine State	Trigger
Full	While receiving paper	Output 8 sheets of paper in a row in the same tray while the paper overflow sensor remains ON.
	In all states other than receiving paper (with door closed, no jam, and no remaining paper)	The sensor stays on for more than 1.5 sec.
Not Full	-	The sensor turns OFF

Jam Detection

Jams are detected with the five sensors in the picture below:



No.	Description	No.	Description
1	Finisher Exit Roller	5	Vertical Transport Sensor 3
2	Entrance Junction Gate (CS4010)	6	Vertical Transport Sensor 4
3	Vertical Transport Sensor	7	Vertical Transport Sensor 5
4	Vertical Transport Sensor 2	8	Open/Close Guide Plate

Jam Detection Details

Jam Name	Logging Code	Remark
Transport Sensor 1 Late Jam	350	Even though paper has moved "pulse x 1.5" ("distance L") from the finisher exit roller, vertical transport sensor 1 in the 9-bin mailbox does not turn ON.
Transport Sensor 1 Lag Jam	351	
Transport Sensor 2 Late Jam	352	
Transport Sensor 2 Lag Jam	353	
Transport Sensor 3 Late Jam	354	
Transport Sensor 3 Lag Jam	355	

1.Detailed Descriptions

Transport Sensor 4 Late Jam	356	
Transport Sensor 4 Lag Jam	357	
Transport Sensor 5 Late Jam	358	
Transport Sensor 5 Lag Jam	359	
Main Machine Ordering Data-Wrong Jam	360	Cannot continue to receive paper due to the following reasons; • The instructions from the main machine are wrong. • The mail box cannot respond to the start request from the main machine because the mail box cannot accept it for some reason.

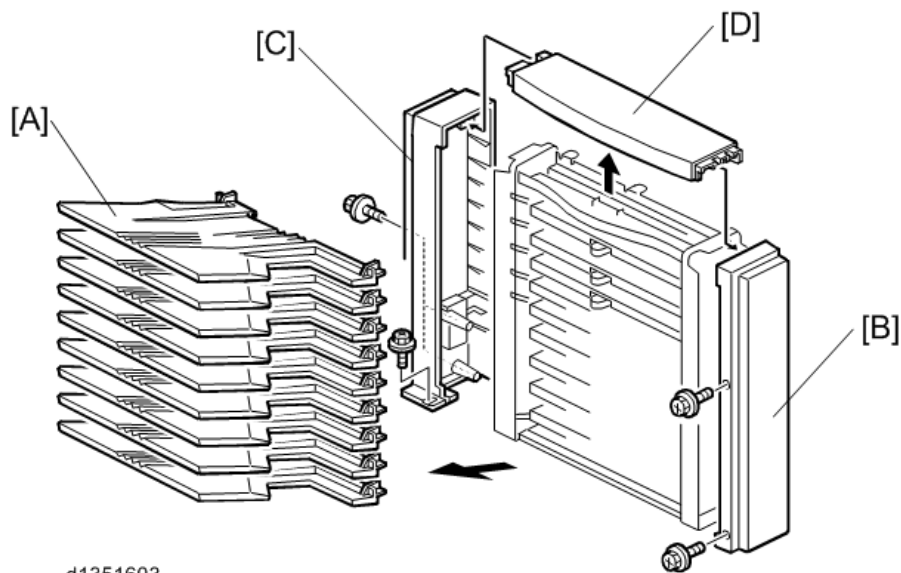
2. Replacement and Adjustment

CAUTION

- Always turn off and unplug the machine before the replacement.

Covers and Trays

1. Trays [A]
Grip each tray by the front and lift out.
2. Front cover [B] ( x2)
3. Rear cover [C] ( x 3)
4. Top cover [D]

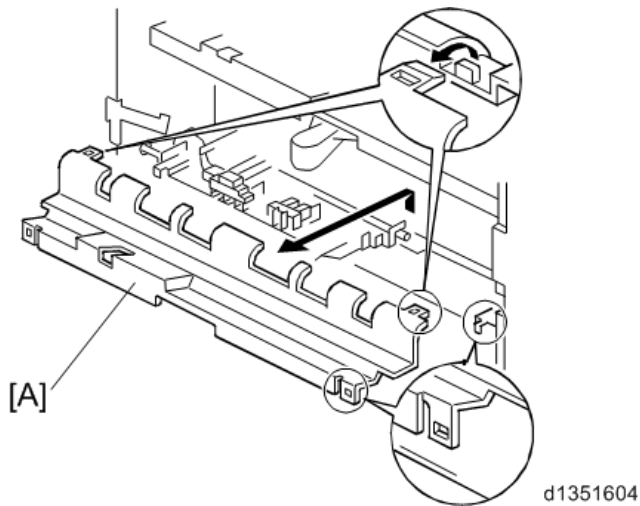


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Sensors

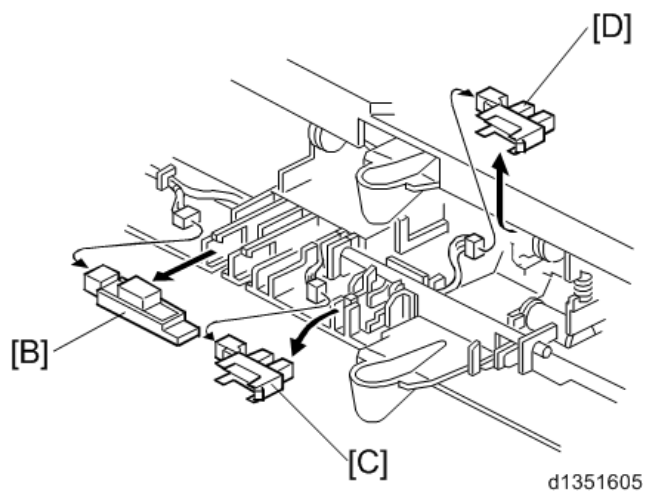
Tray sensor, Tray overflow sensor, Vertical transport sensor

1. Remove the tray. ([Covers and Trays](#))
2. Bin cover [A]



3. Tray sensor ( x1) [B]
4. Tray overflow sensor ( x 1) [C]
5. Vertical transport sensor ( x 1) [D]

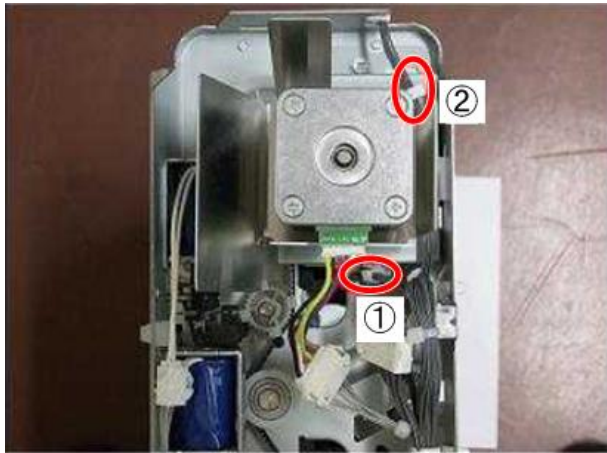
Raise the pawl, then grip the bottom of the sensor to remove.



Main Motor and Control Board

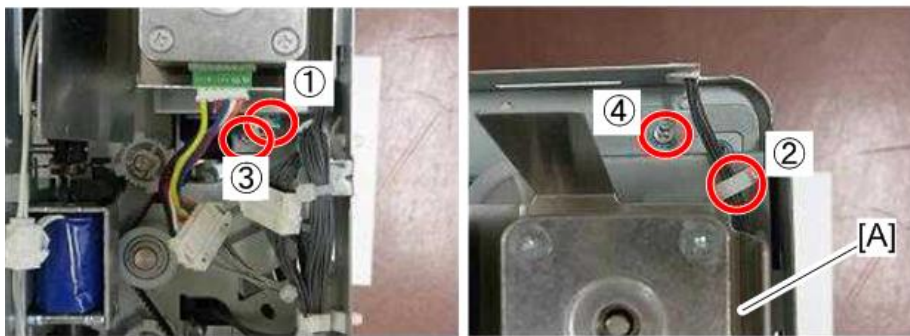
Main Motor

1. Rear cover ([Covers and Trays](#))
2. Disconnect the harness of the main motor bracket. (🔧 x 2)



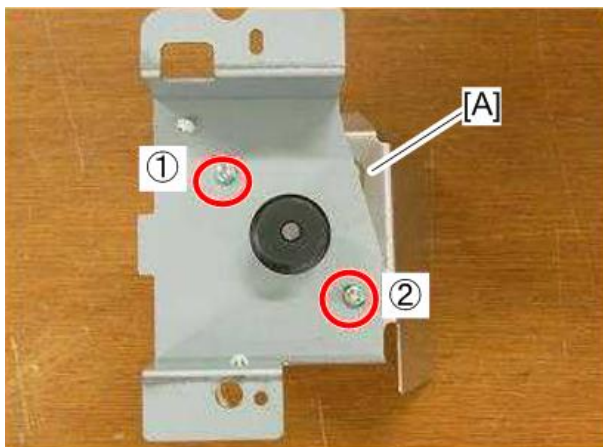
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3. Main motor bracket [A] (🔧 x 3, timing belt x 1)



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4. Main motor [A] (🔧 x 2)



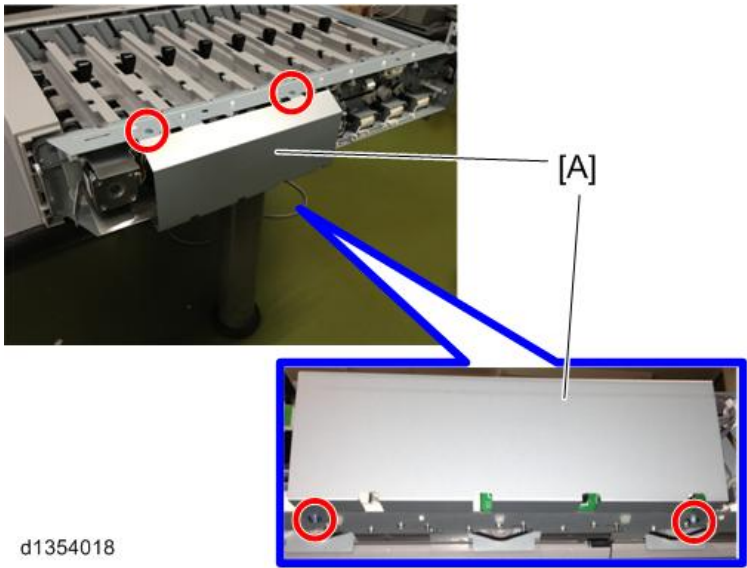
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Control Board

1. Rear cover ([Covers and Trays](#))

2.Replacement and Adjustment

2. Bracket [A] (🔩 x4)



3. Control board [A] (🔩 x2, 📦 x15)

