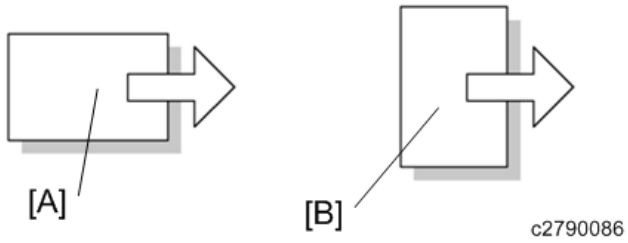
Cover Interposer Tray CI4020
Machine Code: D712
Field Service Manual
Ver 1.0

Latest Release: Oct, 2016
Initial Release: Oct, 2016

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)

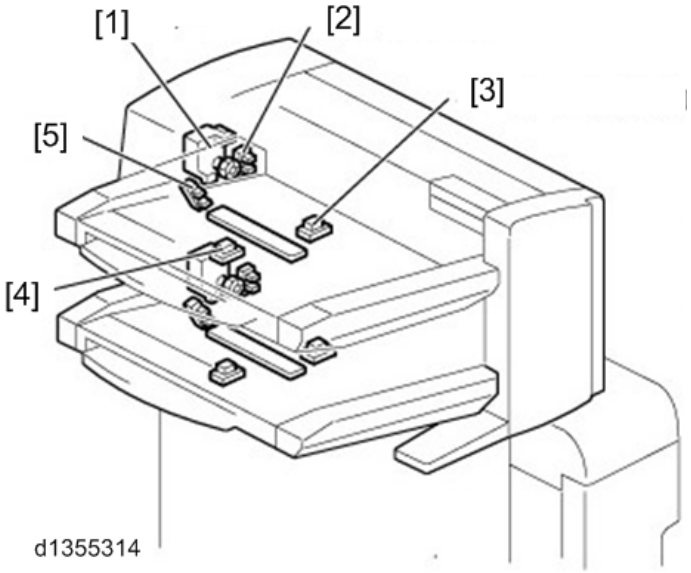
[B] Long Edge Feed (LEF)

Table of Contents

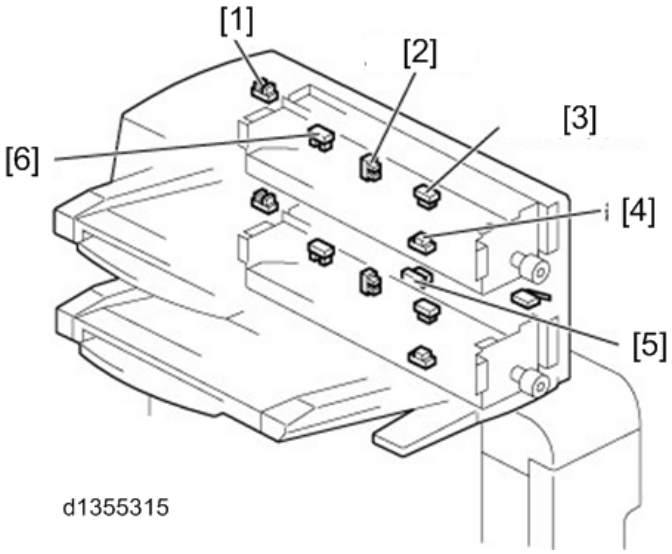
1. Detailed Descriptions

Mechanism Descriptions

Electrical Components



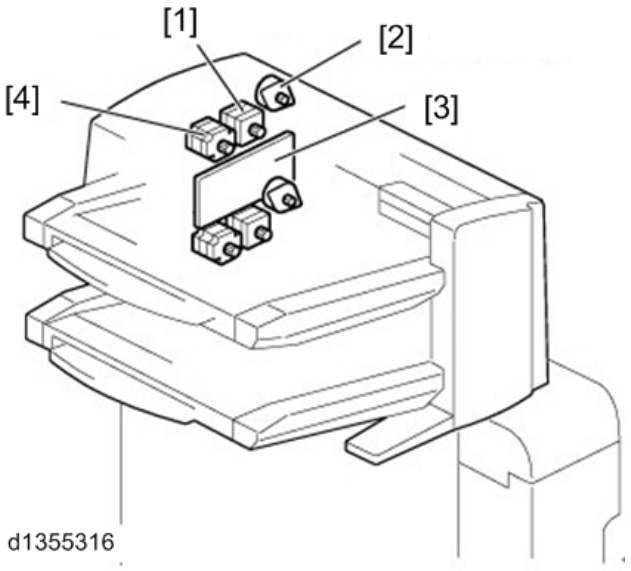
No.	Description	No.	Description
1	Lift Motor	4	Length Sensor
2	Tray Lower Limit Sensor	5	Near End Sensor
3	Paper End Sensor		



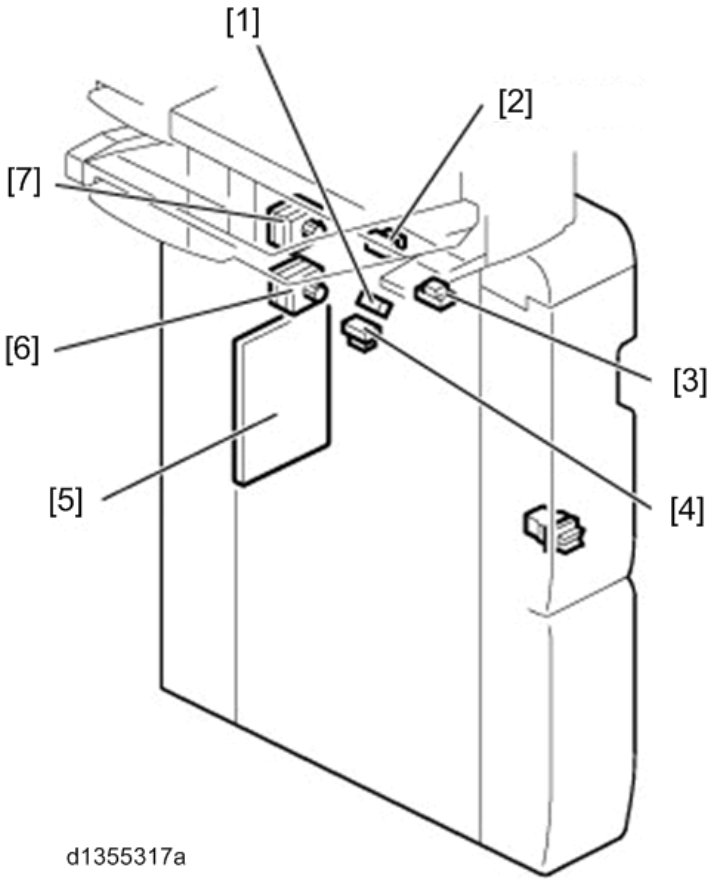
No.	Description	No.	Description
1	Cover Open Sensor	4	Feed Sensor
2	Upper Limit Sensor	5	1st Transport Sensor

No.	Description	No.	Description
3	Pick-up Sensor	6	Pick-up Arm HP Sensor

Drive Layout



No.	Description	No.	Description
1	Pull out Motor	3	Tray Unit Control Board
2	Pick-up Motor	4	Feed Motor



1.Detailed Descriptions

No.	Description	No.	Description
1	Exit Sensor	5	Main Control Board
2	2nd Transport Sensor	6	Horizontal Transport Motor
3	Entrance Sensor	7	Vertical Transport Motor
4	Exit Sensor		

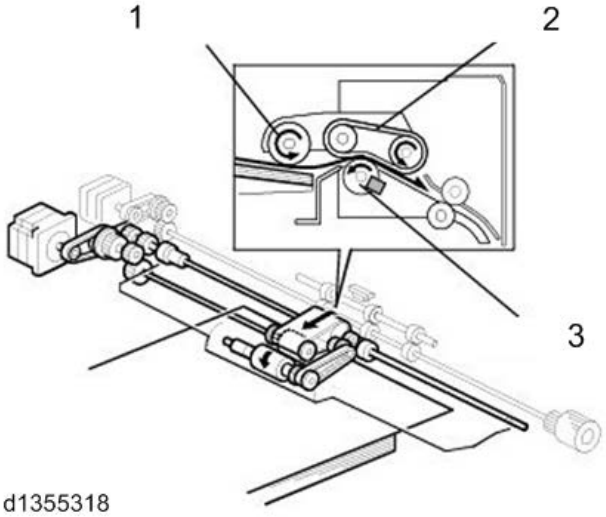
Mechanism Details

This machine has a feed belt and a reverse roller (FRR method).

The direction that the reverse roller turns depends on the frictional forces acting on it. When there is a single sheet of paper between the feed belt and reverse roller, the friction between the feed belt and the paper is greater than the reverse force from the reverse roller. So, the reverse roller turns in the direction of paper feed.

If two or more sheets are fed between the belt and roller, the forward force on the second sheet becomes less than reverse force from the reverse roller because of the low friction between the two sheets. So, the reverse roller drives the second sheet back to the tray.

Finally, the feed belt and the reverse roller feed the paper into the machine.

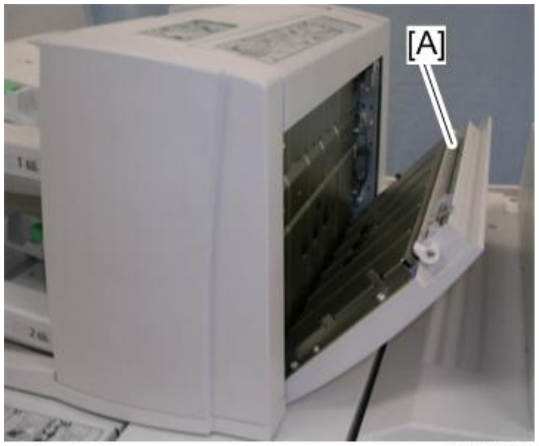


No.	Description	No.	Description
1	Pick-up Roller	3	Reverse Roller
2	Feed Belt		

2. Replacement and Adjustment

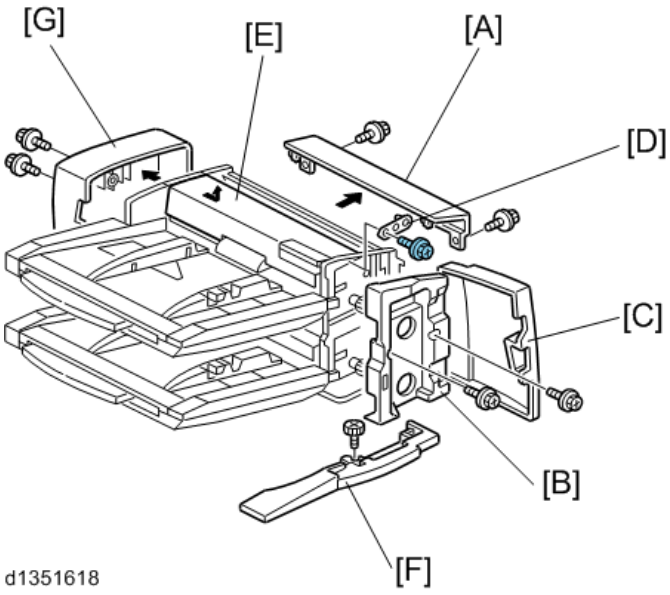
Covers

1. Open the vertical feed cover [A].



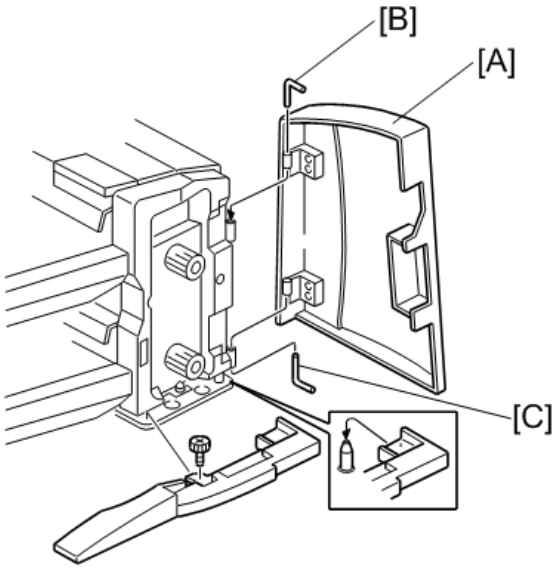
d1351617

2. Top cover [A] (x2)
3. Inner cover [B] with front door [C] (x2)
4. 1st tray cover holder [D] (x1)
5. 1st tray cover [E]. Slide the cover toward you to remove it from the inside pins.
6. Base cover [F] (Knob x1)
7. Tray unit rear cover [G] (x2)



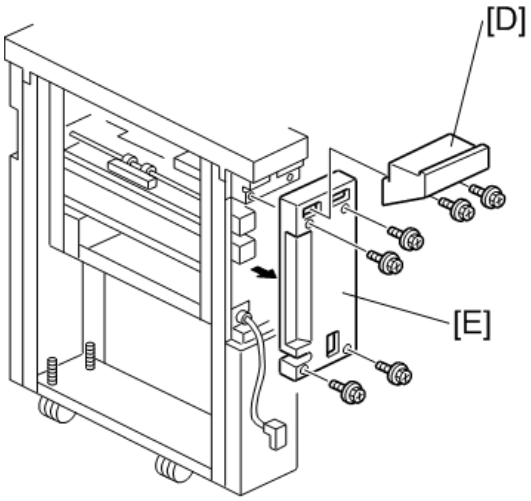
d1351618

8. Front door [A] (L-pins x2)
   - Swing the upper L-pin [B] out of its groove and pull it up.
   - Swing the lower L-pin [C] out of its groove and pull it down.



d1351619

9. Rear top cover of the feed unit [D] (x2)
10. Feed unit rear upper cover [E] (x4)



d1351620

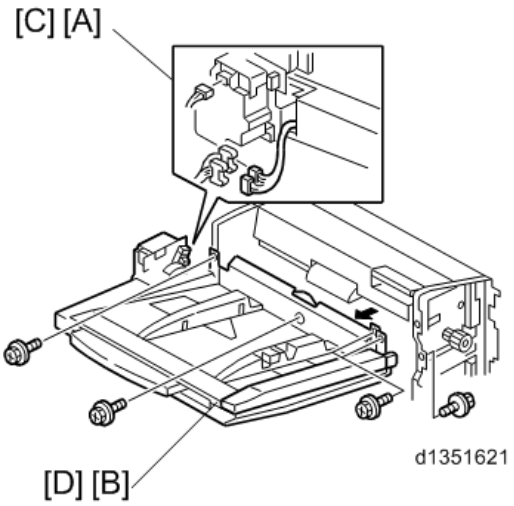
1st, 2nd Trays

1st Tray

1. Remove the following. (Covers)
   - Inner cover with front door
   - Tray unit rear cover
2. Disconnect the following [A]:
   - 1st lift motor (x1, x1)
   - White connectors (x2)
3. 1st tray [B] (x5)

2nd Tray

1. Remove the following. (Covers)
   - Inner cover with tray unit front door
   - Tray unit rear cover
2. Disconnect the following [C]:
   - 2nd lift motor (x1, x1)
   - Red, blue connectors (x2)
3. 2nd tray [D] (x5)



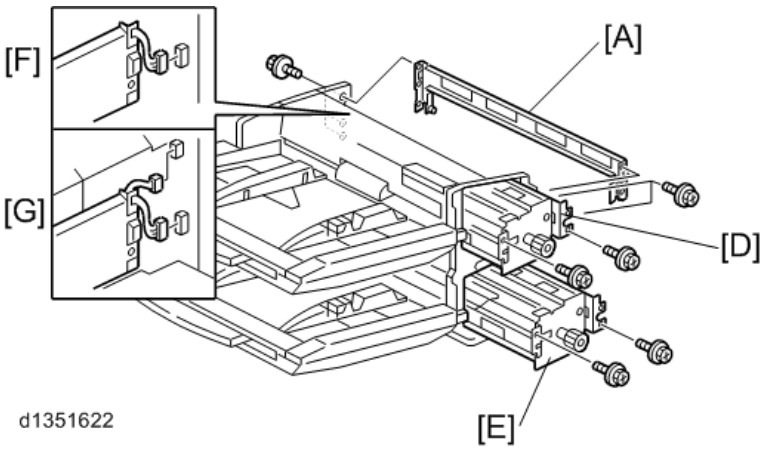
Feed Units

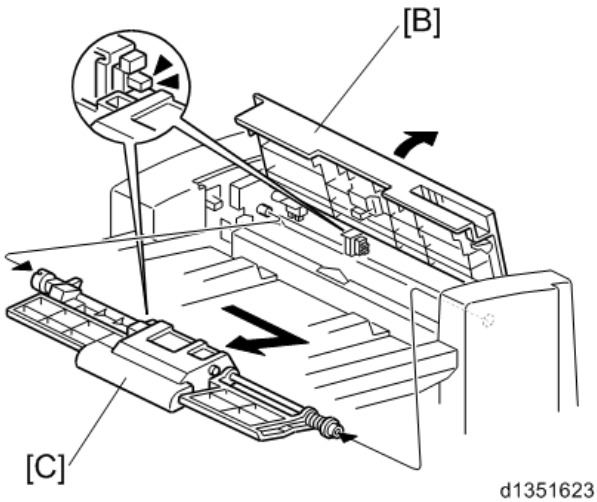
1st Feed Unit

1. Remove the following. (Covers)
   - Top cover
   - Inner cover with front door
   - Tray unit rear cover
2. Stay [A] (x5)
3. Open the 1st tray cover [B] and hold it open.
4. 1st feed belt unit [C]
5. 1st feed unit [D] (x2, x2)

2nd Feed Unit

1. Open the vertical feed cover. (Covers)
2. Remove inner cover with front door. (Covers)
3. 2nd feed belt unit (same as [C])
4. 2nd feed unit [E] (x2, x2)





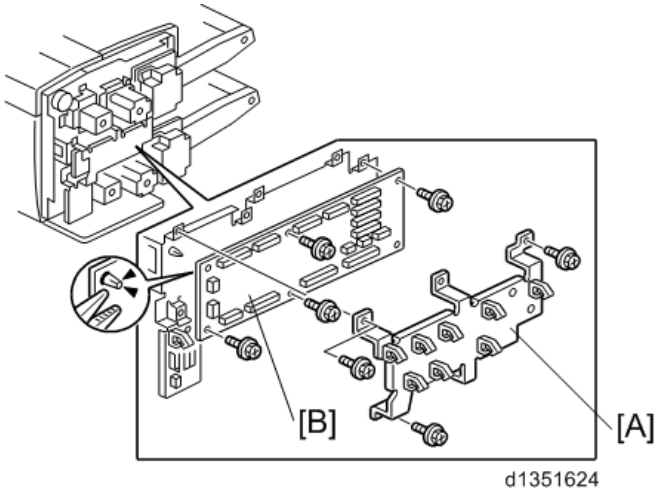
[F]: 1st Tray

[G]: 2nd Tray

Boards

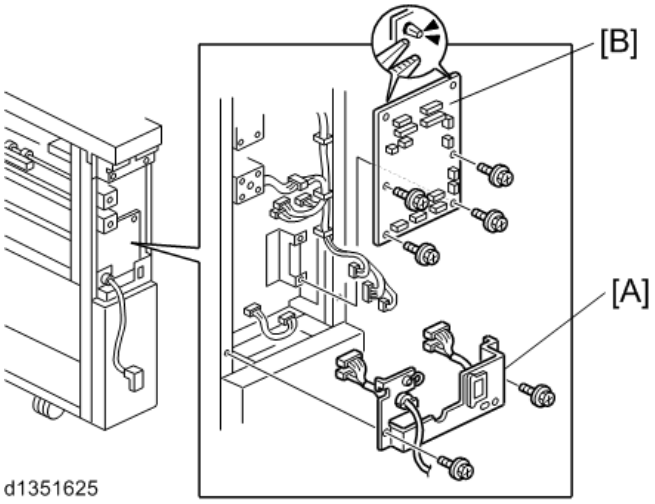
Tray Unit Control Board

1. Tray unit rear cover (x2)
2. Board cover [A] (x3, x8)
3. Tray unit control board [B] (x 17, x5, Standoff x1)



Main Control Board

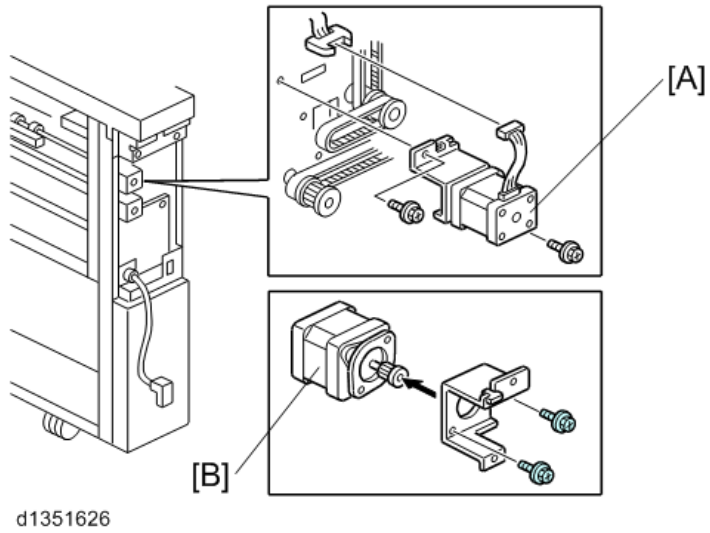
1. Transport unit rear upper cover (Covers)
2. Connector bracket [A] (x2)
3. Main control board [B] (x4, x2, x14, Standoff x2)



Motors

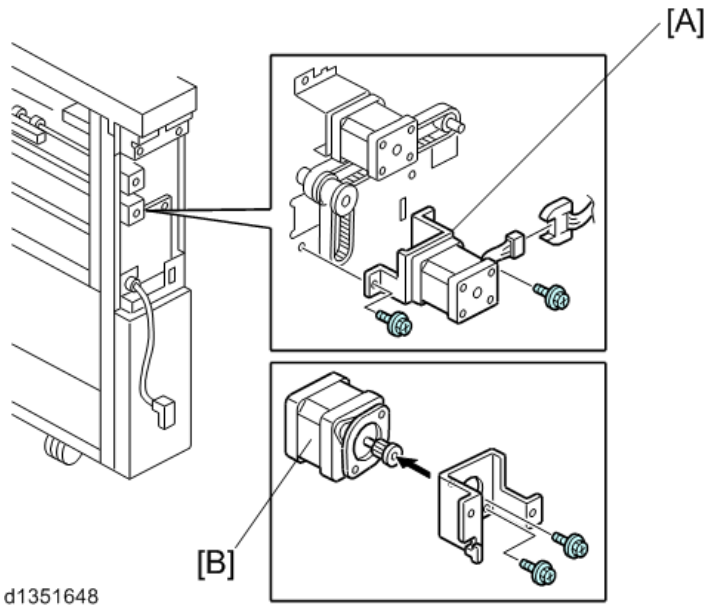
Vertical Tranport Motor

1. Transport unit rear cover (Covers)
2. Motor unit [A] (x2, x1, Timing belt x1)
3. Vertical transport motor [B] (x2)



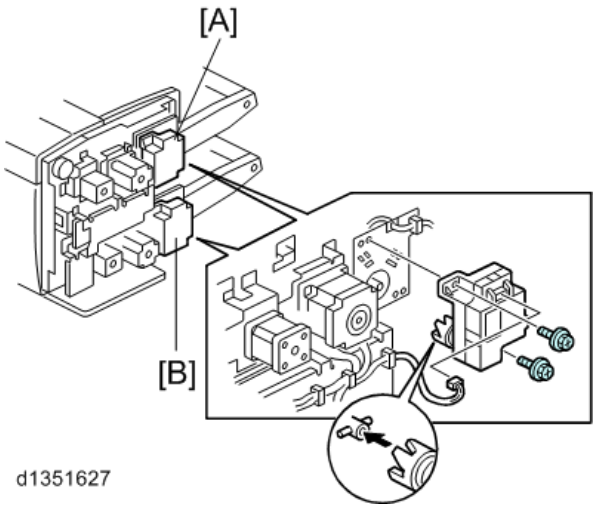
Horizontal Transport Motor

1. Transport unit rear cover (Covers)
2. Motor unit [A] (x2, x1, Timing belt x1)
3. Horizontal transport motor [B] (x2)



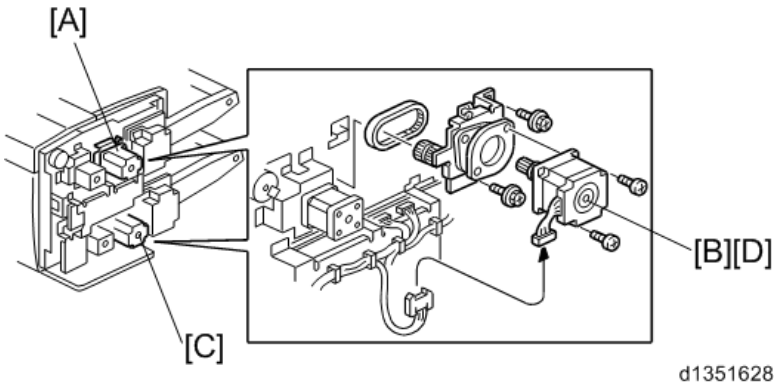
1st, 2nd Lift Motors

1. Tray unit rear cover (Covers)
2. 1st lift motor [A] (x2, x1)
3. 2nd lift motor [B] (x2, x1)



1st, 2nd Feed Motors

1. Tray unit rear cover (Covers)
2. 1st feed motor unit [A] (x3, x2, x1)
3. 1st feed motor [B] (x2, Timing belt x1)
4. 2nd feed motor unit [C] (x3, x1)
5. 2nd feed motor [D] (x2, Timing belt x1)



1st, 2nd Transport Motors

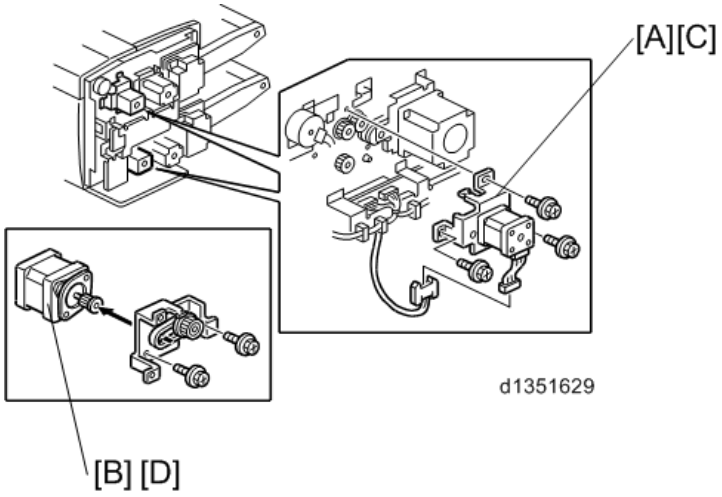
Remove tray unit rear cover. (Covers)

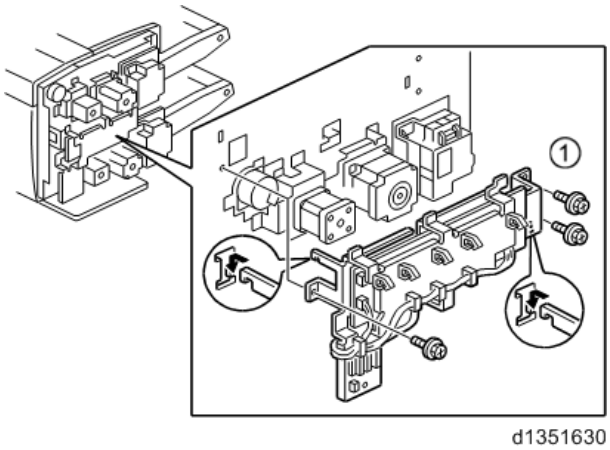
1st Transport Motor

1. 1st transport motor unit [A] (x3, x1)
2. 1st transport motor [B] (x2, Timing belt x1)

2nd Transport Motor

1. Tray unit control board unit ① (Hooks, x3, x9 (Motor x8, CN216))
2. 2nd transport motor unit [C] (x3)
3. 2nd transport motor [D] (x2, Timing belt x1)





1st, 2nd Pick-Up Motors

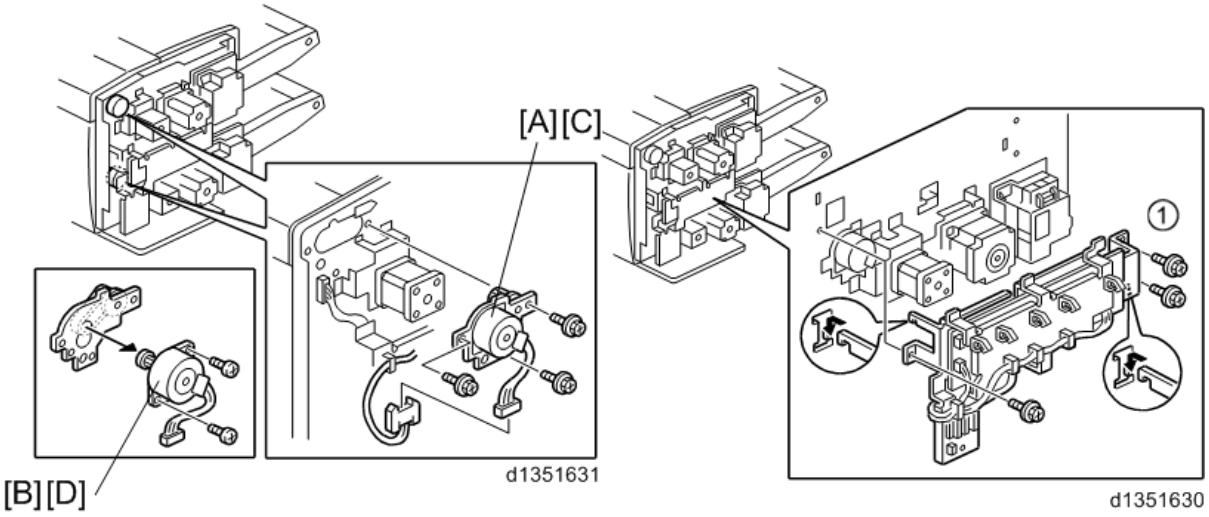
Remove the tray unit rear cover. (Covers)

1st Pick-up Motor

1. 1st pick-up motor unit [A] (x1, x3)
2. 1st pick-up motor [B] (x2, Timing belt x1)

2nd Pick-up Motor

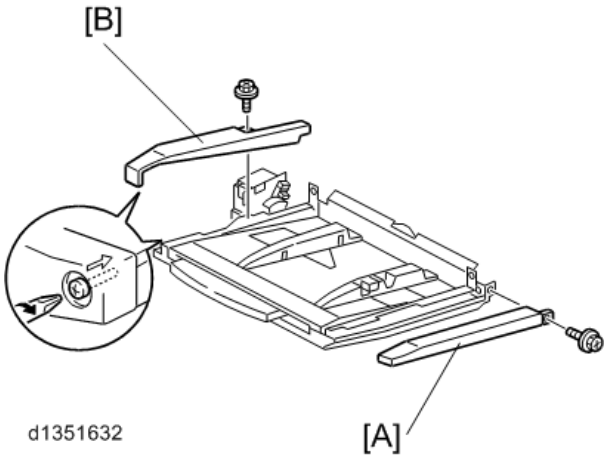
1. Tray unit control board unit ① (Hooks, x3, x9 (Motor x8, CN216))
2. 2nd pick-up motor unit [C] (x1, x3)
3. 2nd pick-up motor [D] (x2, Timing belt x1)


[A][C]
[B][D]
d1351631
1
d1351630

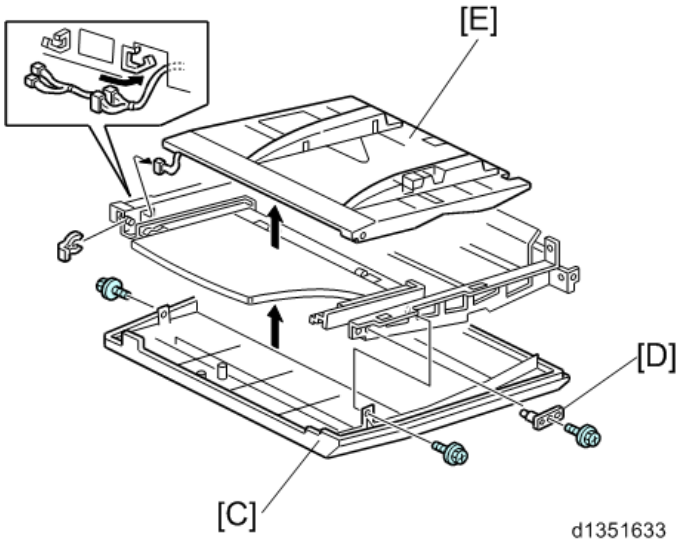
Sensors

Paper Width Switch, Set Sensors, Length Sensor

1. 1st or 2nd paper tray (1st, 2nd Trays)
2. Front cover [A] (x1)
3. Rear cover [B] (x1)

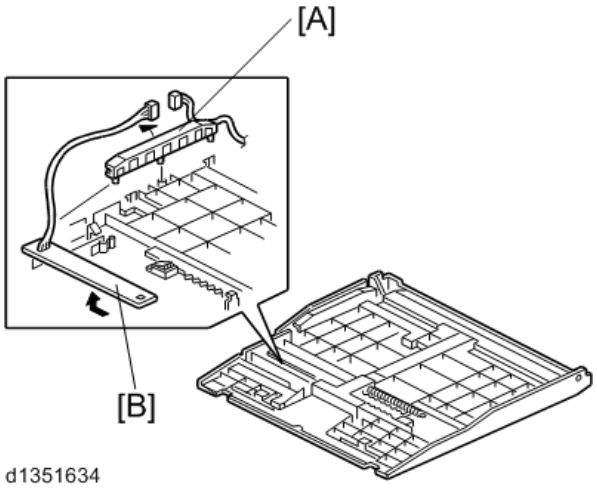


4. Bottom cover [C] (x2)
5. Holder pin [D] (x1, Spring x1)
6. Bottom plate [E] (x1)
7.

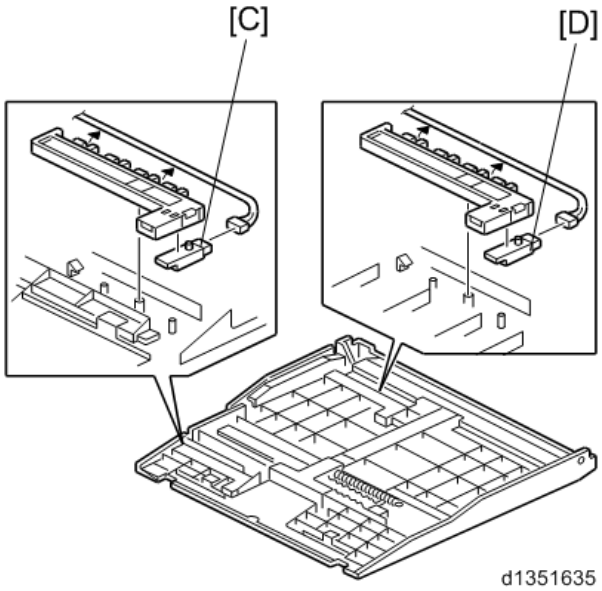


8. Turn over the bottom plate so that it is facing up.
9. Harness cover [A] (Hooks x2)

10. Paper width switch [B] (Hooks x2, x4, x1)



11. Paper set sensor [C] (Hook x1, x1)
12. Paper length sensor [D] (Hooks x1, x1)



Tray Cover Sensors

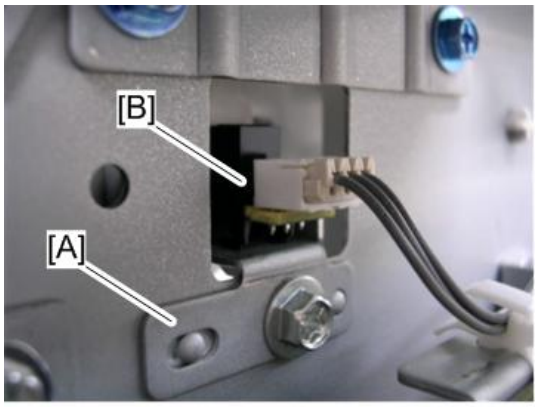
1st Tray Cover Sensor

1. Tray unit rear cover (Covers)
2. Open the 1st tray cover
3. Sensor unit [A] (x1, x1)
4. Tray cover sensor [B] (Pawls x2)

2nd Tray Cover Sensor

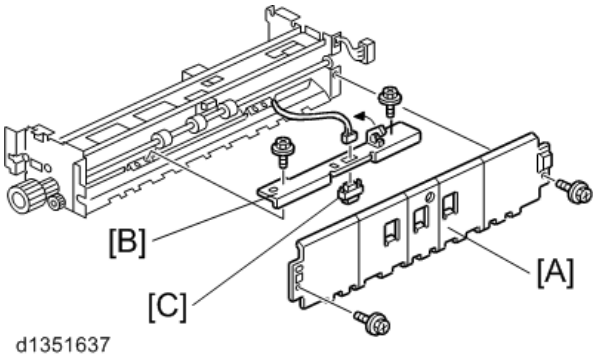
1. Remove the tray unit control board unit (1st, 2nd Transport Motors)
2. Sensor unit [A] (x1, x1)
   Remove with the 2nd tray cover open.

3. Tray cover sensor [B] (Pawls x2)



1st Transport Sensor

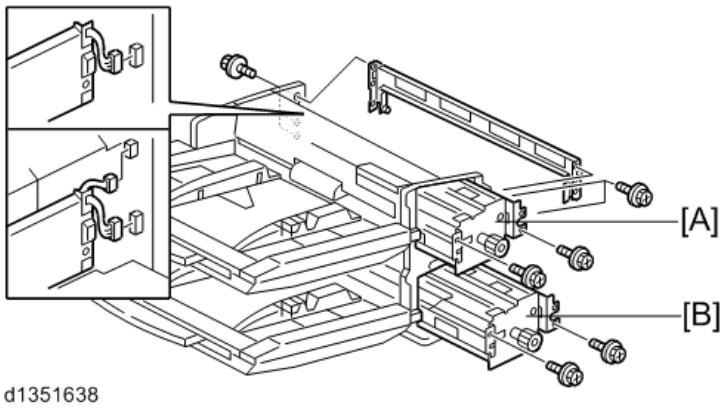
1. Remove the following.
   - Top cover (Covers)
   - Vertical feed cover (Feed Units)
   - Stay (Motors)
2. Upper paper guide [A] (x2)
3. Sensor unit [B] (x2, x1, x1)
4. 1st transport sensor [C] (Pawls x2)



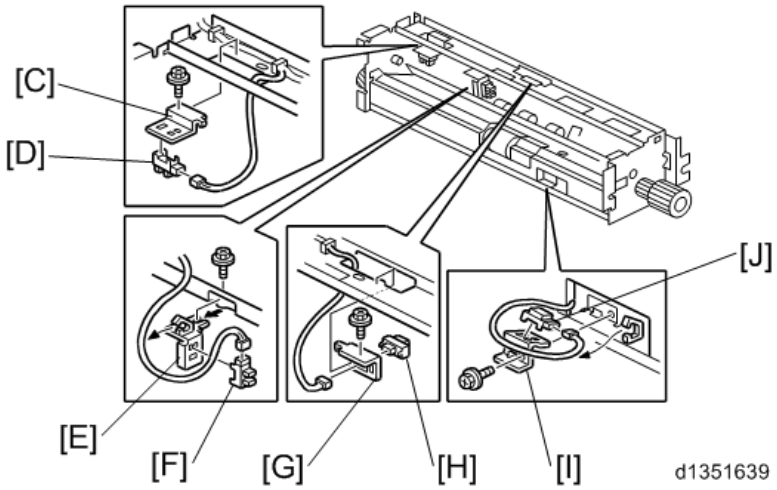
Feed Unit Sensors

1. 1st feed unit [A] (Feed Units)

2. 2nd feed unit [B] (Feed Units)



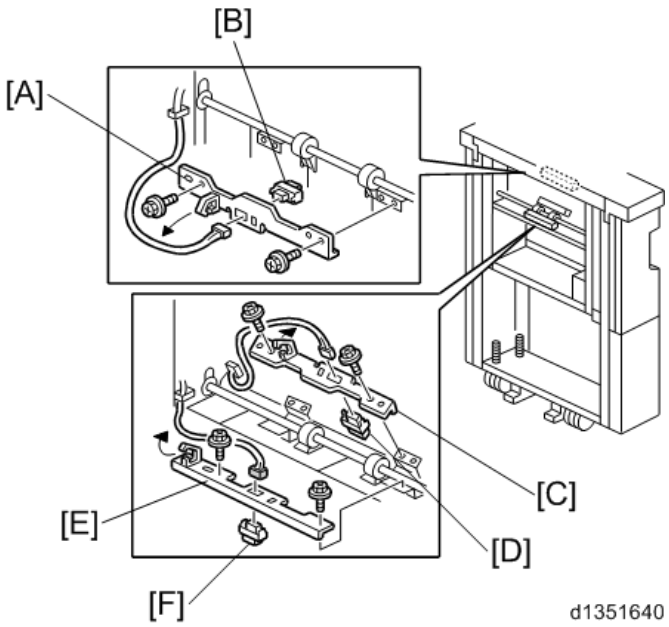
3. Sensor bracket [C] (x1, x1)
4. Pick-up roller HP sensor [D] (Pawls x2)
5. Sensor bracket [E] (x1, x1, x1)
6. Bottom plate position sensor [F] (Pawls x2)
7. Sensor bracket (x1, x1) [G] (2nd feed unit only)
8. 1st vertical transport sensor [H] (Pawls x2) (2nd feed unit only)
9. Sensor bracket [I] (x1, x1, x1)
10. Paper feed sensor [J] (Pawls x2)



2nd Vertical Transport, Exit Sensor

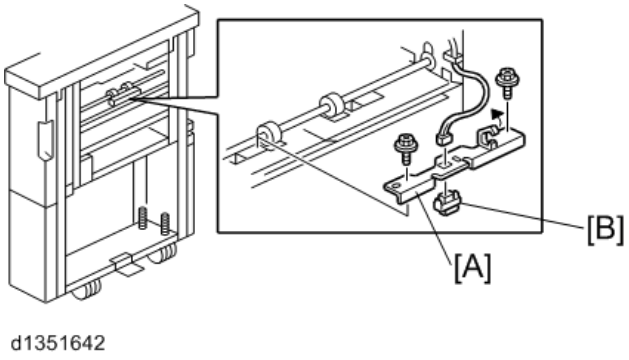
1. Sensor unit [A] (x1, x1, x1)
2. 2nd vertical transport sensor [B] (Pawls x2)
3. Sensor unit [C] (x2, x1, x1)
4. Vertical exit sensor [D] (Pawls x2)
5. Sensor unit [E] (x2, x1, x1)

6. Exit sensor [F] (Pawls x2)



Entrance Sensor

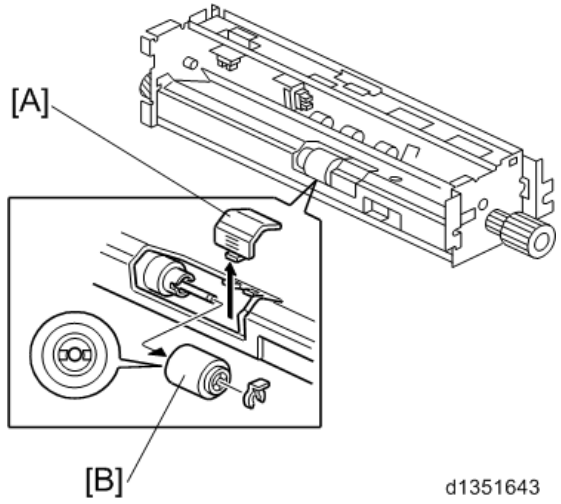
1. Sensor unit [A] (x2, x1, x1)
2. Entrance sensor [B] (Pawls x2)



Rollers

Separation Roller

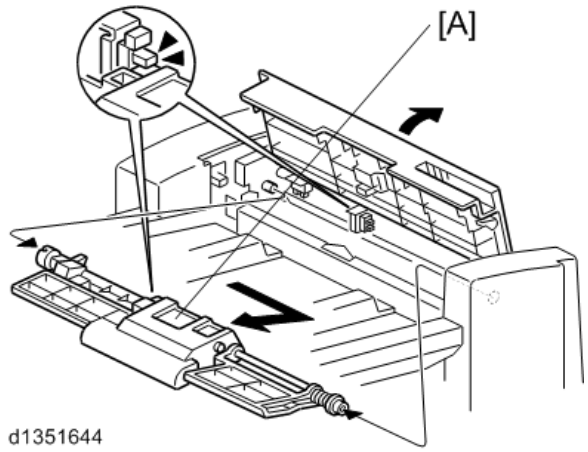
1. 1st (or 2nd) feed unit (Feed Units)
2. Cover [A]
3. Separation Roller [B] (x1)



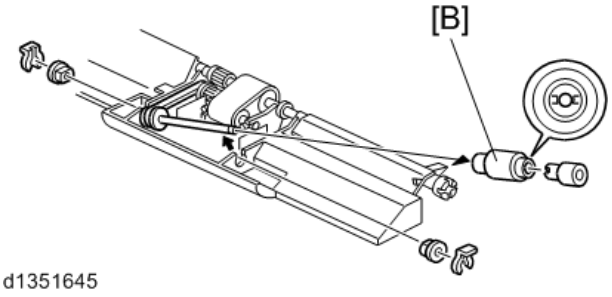
Feed Belt Unit and Pick-Up Roller

1. Open the 1st tray cover.
2. Feed belt unit [A]

   The unit is spring loaded. Push it to the right to release it, then lift it out.

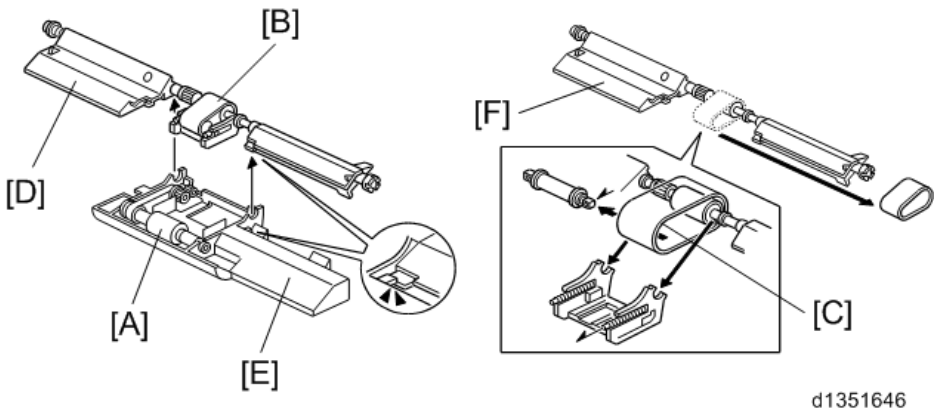


3. Pick-up roller [B] (x 2, bushings x 2)



Feed Belt

1. Feed belt unit (Feed Belt Unit and Pick-Up Roller)
2. Pick-up roller unit [A]
   Pull the unit away from the bushings in the direction of the arrow.
3. Feed belt holder [B]
   - Hold the feed belt holder by the sides, then lift up to separate from the holder.
   - Pull slowly to avoid losing the springs.
4. Feed belt [C]



Re-assembly

1. Position the pick-up roller unit [A] and feed belt holder [B] as shown above.
2. On the rear side, slide out the bushing, and rotate guide plate [D] until its stepped side attaches at [E] as shown above, then snap the guide plate on.
3. On the front side, rotate guide plate [F] until its flat side is parallel with [D], then snap it on. Viewed from the bottom, the plates must be aligned.