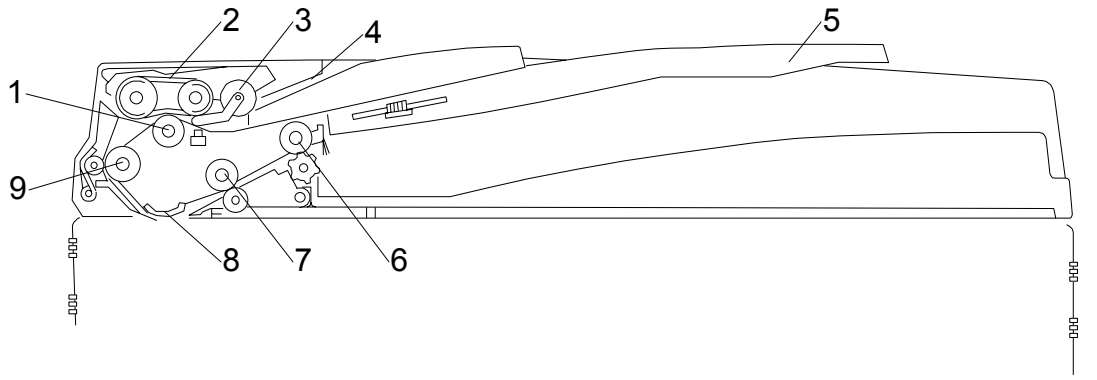
AUTO DOCUMENT FEEDER
(Machine Code: C642)

TABLE OF CONTENTS

1. OVERALL INFORMATION

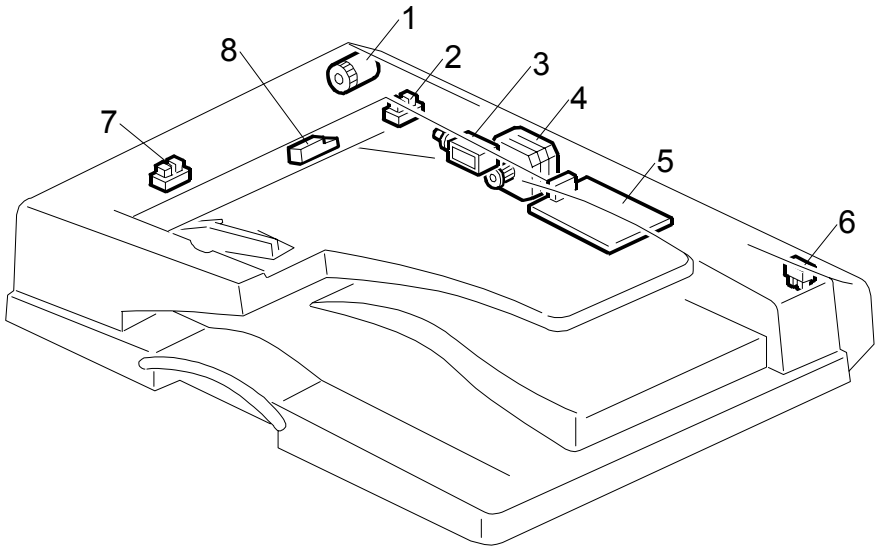
1.1 MECHANICAL COMPONENT LAYOUT



C642V900.WMF

1. Separation roller
2. Original feed belt
3. Pick-up roller
4. Original entrance guide
5. Original table
6. Original exit roller
7. 2nd transport roller
8. Original exposure guide
9. 1st transport roller

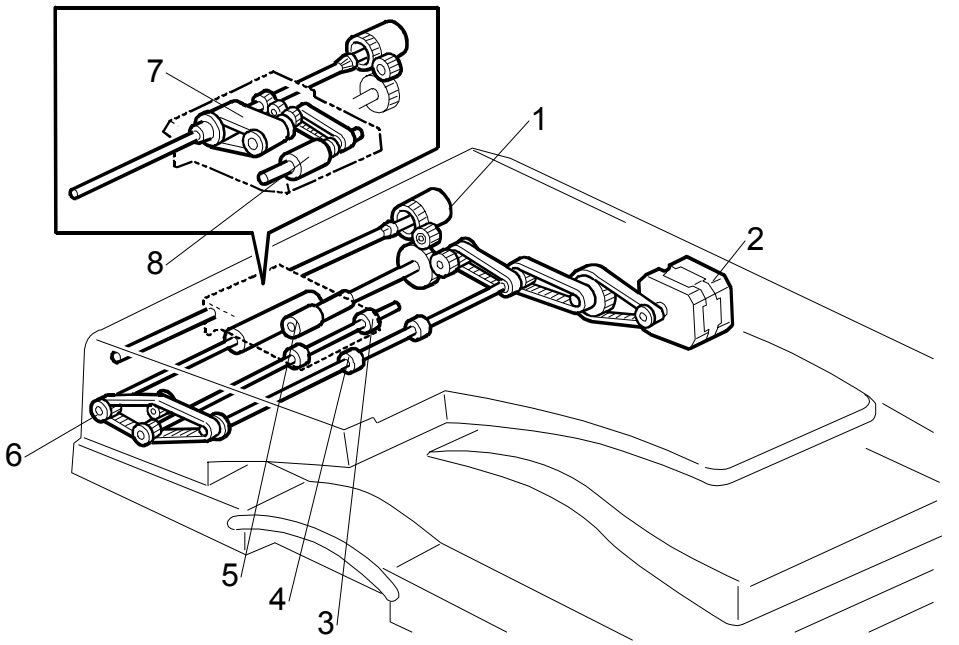
1.2 ELECTRICAL COMPONENT LAYOUT



C642V901.WMF

1. DF feed clutch
2. Feed cover open sensor
3. DF pick-up solenoid
4. DF transport motor
5. DF drive board
6. DF position sensor
7. Original set sensor
8. Registration sensor

1.3 DRIVE LAYOUT



C642V903.WMF

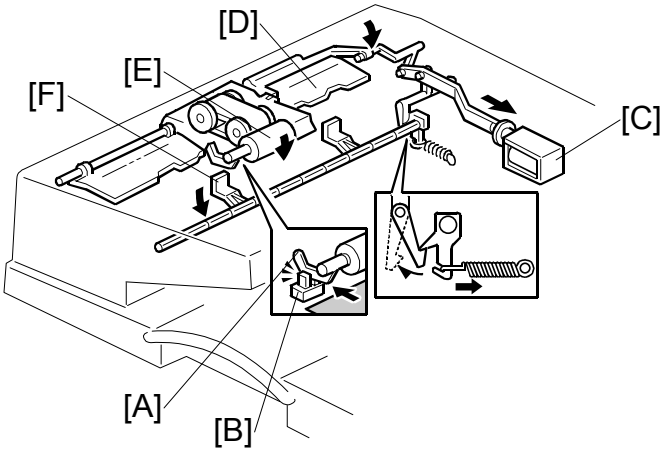
1. DF feed clutch
2. DF transport motor
3. 2nd transport roller
4. Exit roller
5. Separation roller
6. 1st transport roller
7. Original feed belt
8. Pick-up roller

2. DETAILED SECTION DESCRIPTIONS

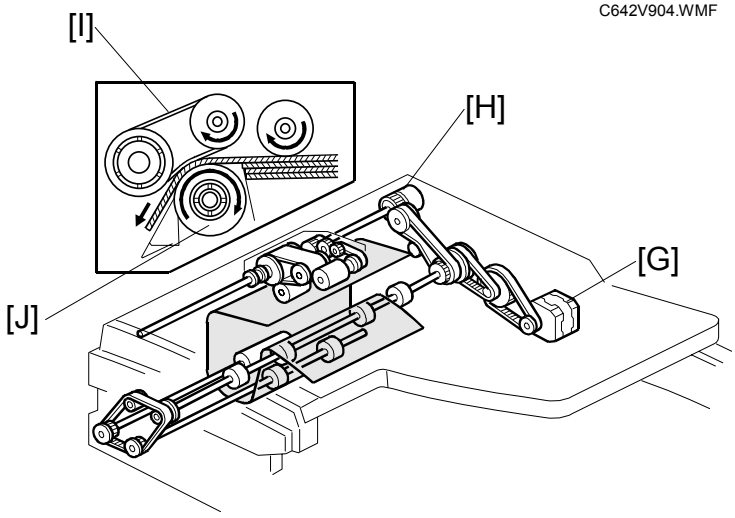
2.1 ORIGINAL SIZE DETECTION

The ADF does not have original size sensors (Original width sensor, Original length sensor and Original trailing edge sensor).

2.2 PICK-UP AND SEPARATION



C642V904.WMF



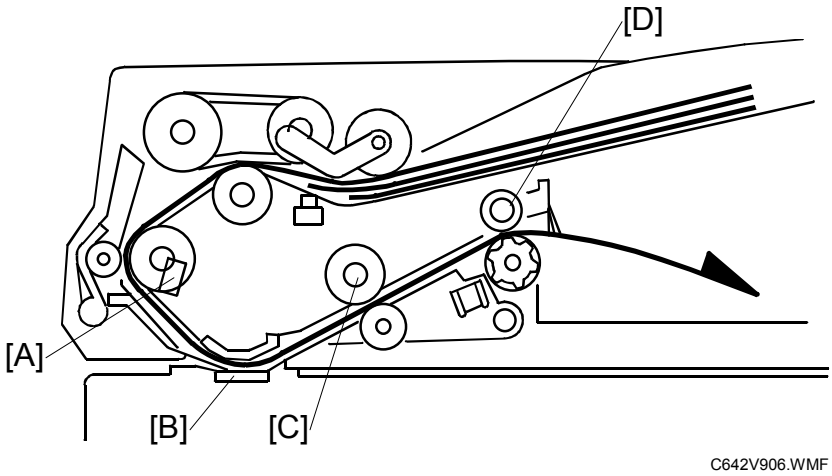
C642V905.WMF

An FRR (feed and reverse roller) system is used.

When you put an original on the feed table, this lifts the original set sensor feeler [A], then the original set sensor [B] tells the main CPU that the DF is ready to start feeding.

When the Start key is pressed, the DF pick-up solenoid [C] turns on. This causes the transport guide [D] and pick-up roller [E] to lower onto the original, and at the same time it causes the original stoppers [F] to drop down to clear the feed path for the original. After 200 ms, the DF transport motor [G] and DF feed clutch [H] turn on, feeding the top original page to the paper feed belt [I], where it is separated by the separation roller [J].

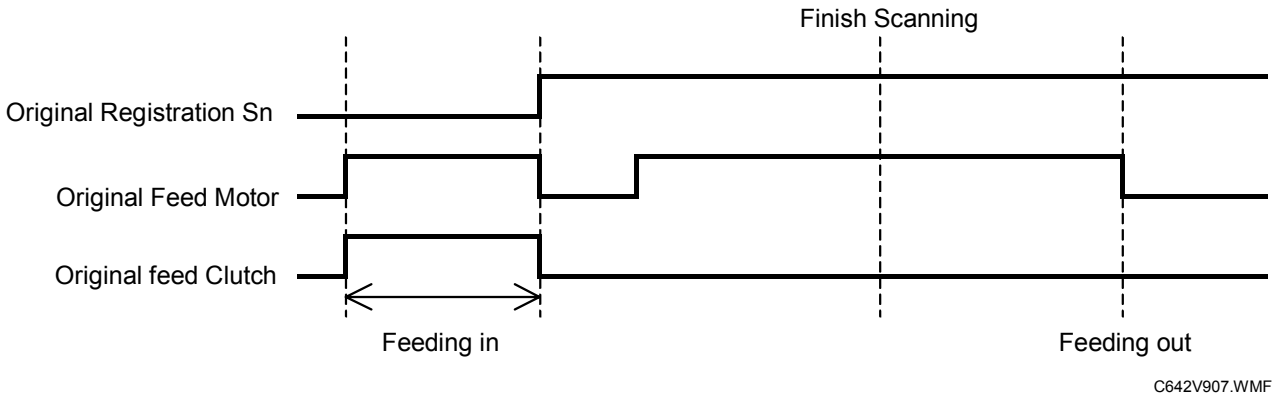
2.3 ORIGINAL TRANSPORT AND EXIT MECHANISM



When the leading edge of the original reaches the registration sensor at [A], the DF transport motor turns off. After a short time, the DF transport motor turns on again. The original is fed past the DF exposure glass [B], where it is scanned. It is then fed through to the 2nd transport roller [C] and fed out by the exit roller [D].

The DF transport motor uses a constant speed to feed the original up to the registration sensor. When the motor turns on again to feed the original to the DF exposure glass, however, the speed depends on the selected reproduction ratio. At 100%, the speed is 200 mm/s.

2.4 TIMING CHART / JAM DETECTION (P JAM LOCATION INDICATOR)



Feeding in the original

Feeding in

The P jam indicator lights if the original registration sensor does not turn on within 5 seconds after the original feed motor turns on.

Feeding out

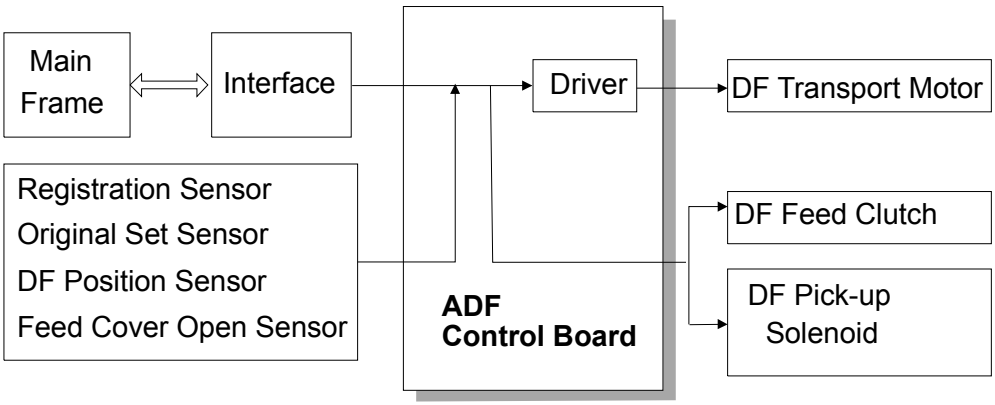
When the scanner has fed out the correct length and feeds 150mm more, but the original registration sensor still detects the original, the P jam indicator lights.

Just after turning on the main switch

If the original registration sensor detects an original, the P jam indicator lights.

2.5 OVERALL ELECTRICAL CIRCUIT

The MPU controls the DF transport motor, DF feed clutch and DF pick-up solenoid. The MPU also monitors all sensors and provides updated status when prompted at regular intervals by the mainframe, which may then take action based on this information. The DF/mainframe connection is checked automatically immediately after the mainframe is powered on.

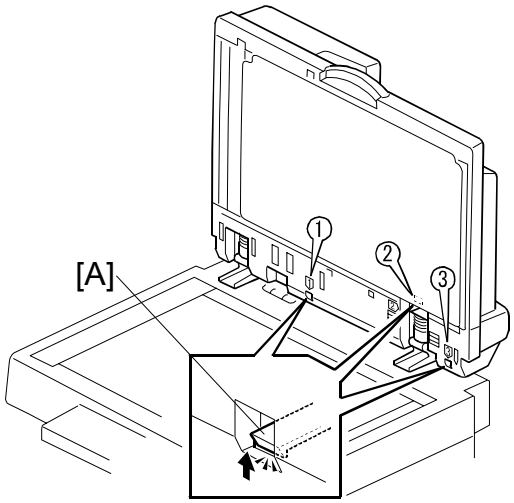


C642V902.WMF

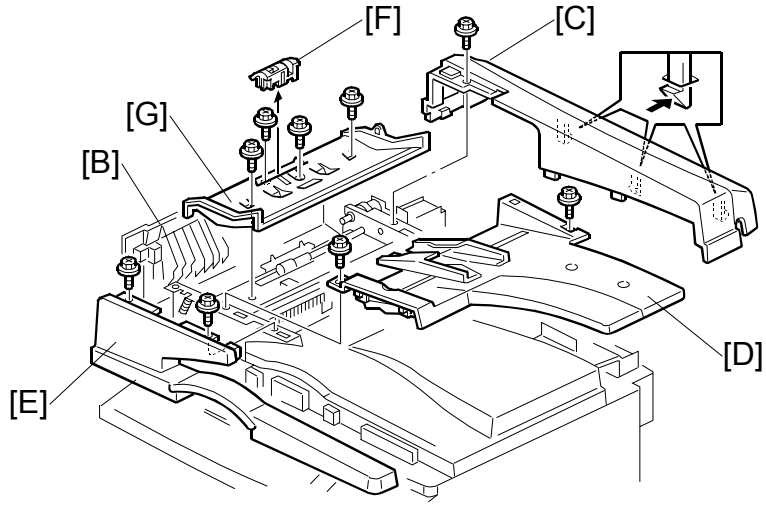
3. REPLACEMENT AND ADJUSTMENT

3.1 EXTERIOR COVERS

3.1.1 REAR COVER



C642V908.WMF



C642V909.WMF

1. Lift the DF.
2. Unhook the three latches [A] in the order marked on the DF body.
3. Close the DF.
4. Open the DF feed cover [B].
5. Rear cover [C] (🔩 x 1)

3.1.2 ORIGINAL TABLE

1. Rear cover (☛ 3.1.1)
2. Original table [D] (🔩 x 2, 🖐 x 2)

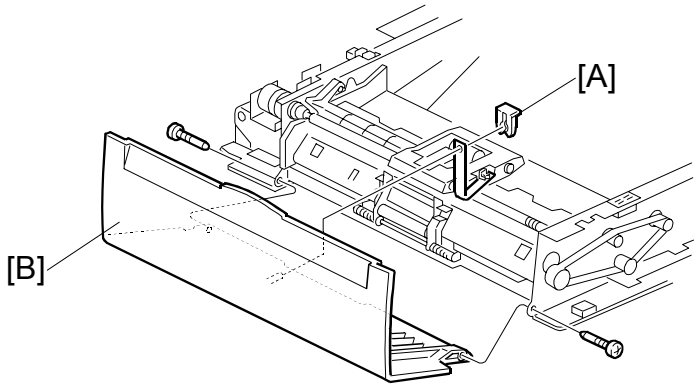
3.1.3 FRONT COVER

1. Open the DF feed cover [B].
2. Original table. (☛ 3.1.2)
3. Front cover [E] (🔩 x 2)

3.1.4 ORIGINAL ENTRANCE GUIDE

1. Feed unit (☛ 3.2)
2. Original table (☛ 3.1.2)
3. Roller cover [F]
4. Original entrance guide [G] (🔩 x 4)

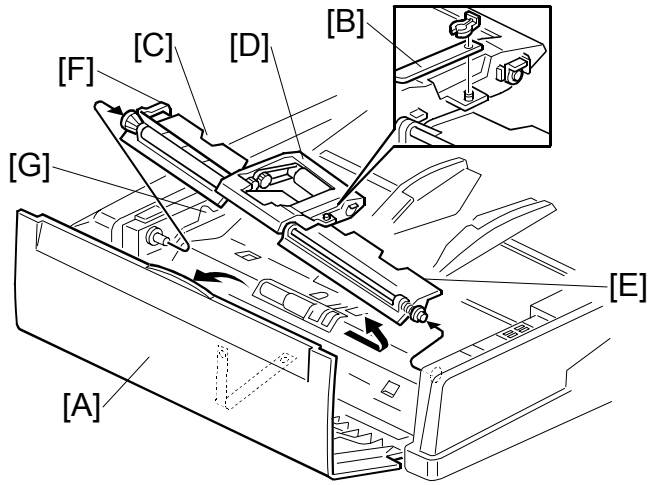
3.1.5 DF FEED COVER



C642V910.WMF

1. Rear cover (☛ 3.1.1)
2. Original table (☛ 3.1.2)
3. Front cover (☛ 3.1.3)
4. Clip [A]
5. DF feed cover [B] (🔩 x 2)

3.2 FEED UNIT

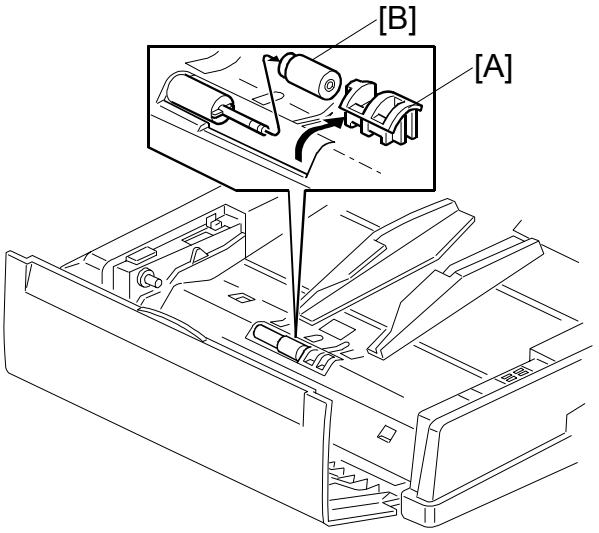


C642V911.WMF

1. Open the DF feed cover [A] and detach the strap [B] (⌀ x 1).
2. Raise the front guide flap [C] to about a 45-degree angle, and push the feed unit [D] into the spring so that it comes free.

NOTE: 1) The feed unit comes off very easily if you first lift flap [E] to about a 45-degree angle.
2) When reinstalling, be sure that the lever [F] is above the pin [G].

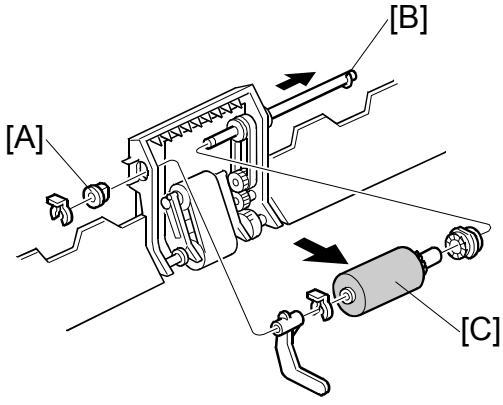
3.3 SEPARATION ROLLER



C642V912.WMF

1. Feed unit (☛ 3.2)
2. Roller cover [A]
3. Separation roller [B] (⟲ x 1).

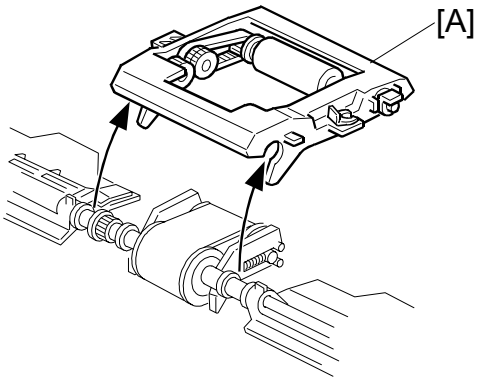
3.4 PICK-UP ROLLER



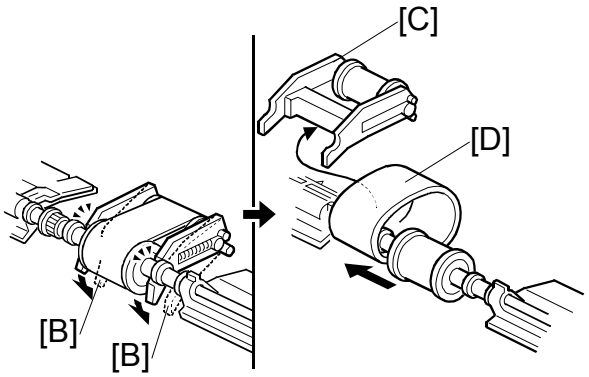
C642V913.WMF

1. Feed unit (☛ 3.2)
2. Remove 2 clip rings and 1 bushing [A]
3. Pull the shaft [B] part way out at the gear end, so that the pick-up roller [C] can be taken off.

3.5 FEED BELT



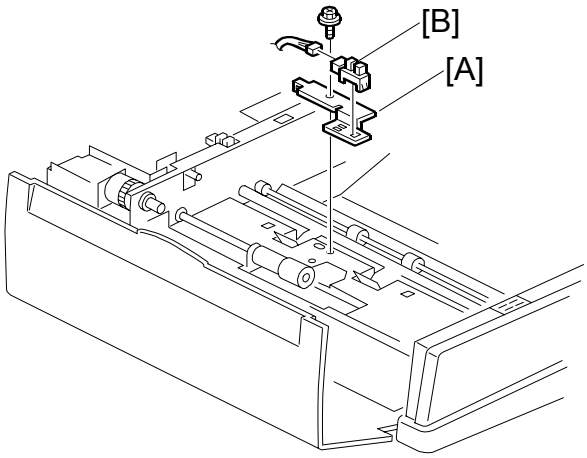
C642V914.WMF



C642V915.WMF

1. Feed unit (☛ 3.2)
2. Pick-up roller housing [A]
3. Push down on the lower wings [B] of the tensioning piece [C], so that the tensioning piece comes free of the shaft.
4. Take the tensioning piece out, and then remove the belt [D].

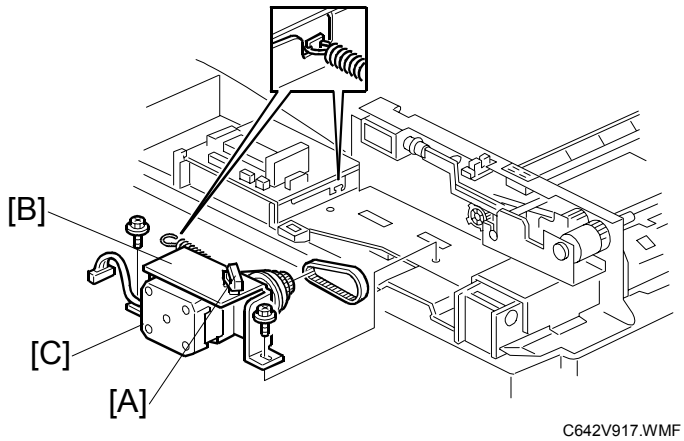
3.6 ORIGINAL SET SENSOR



C642V916.WMF

1. Original entrance guide (☛ 3.1.4)
2. Sensor bracket [A] (🔩 x 1)
3. Original set sensor [B] (🖑 x 1)

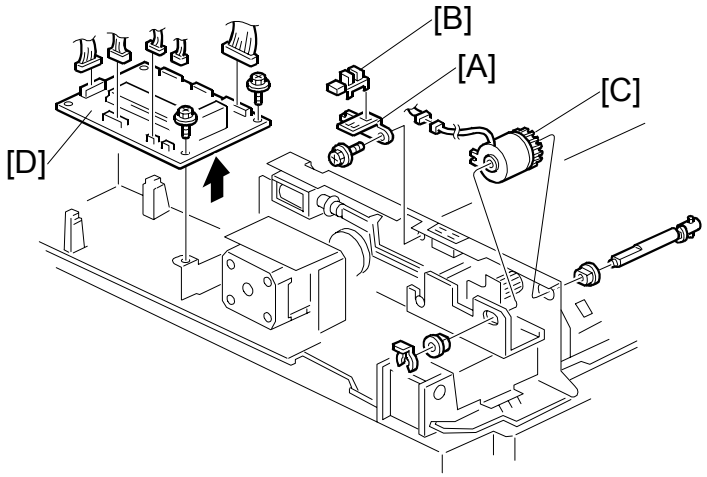
3.7 TRANSPORT MOTOR



C642V917.WMF

1. Rear cover (☛ 3.1.1)
2. Open the wire clamp [A] at the top of the motor bracket [B].
3. Motor bracket [B] (🔩 x 2, spring)
   NOTE: Unhook the spring at the board side.
4. Transport motor [C] (🔩 x 2, 🖑 x 1)

3.8 FEED COVER OPEN SENSOR / FEED CLUTCH / DF DRIVE BOARD



C642V918.WMF

Exterior

1. Rear cover (☛ 3.1.1)

Feed Cover Open Sensor

1. Sensor bracket [A] (☞ x 1)
2. Feed cover open sensor [B] (☞ x 1)

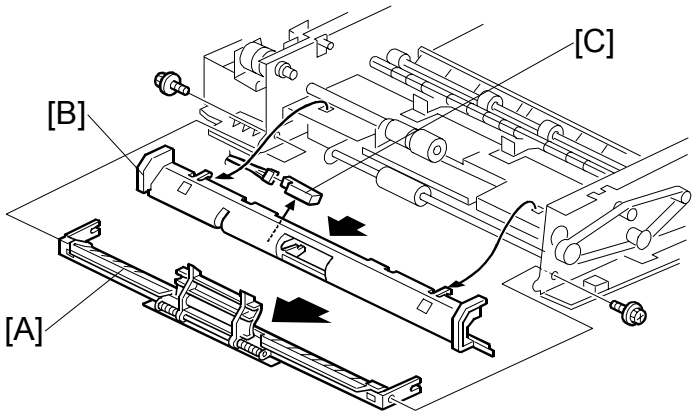
Feed Clutch

1. Feed unit (☛ 3.2)
2. Feed clutch [C] (☞ x 1, 1 bushing, ☞ x 1).
   NOTE: Pull the shaft inward until the clutch can be removed.

DF Drive Board

1. DF drive board [D] (☞ x 3, all connectors)

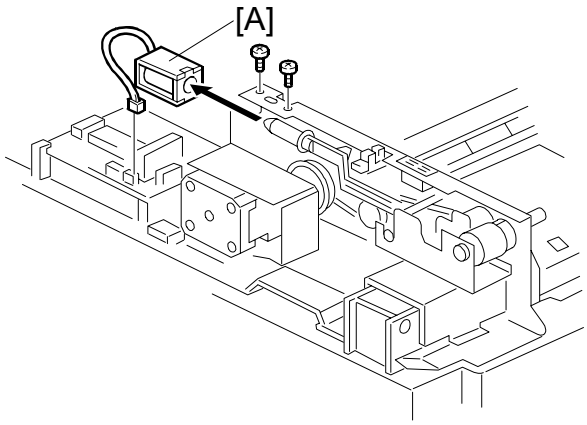
3.9 REGISTRATION SENSOR



C642V919.WMF

1. DF feed cover (☛ 3.1.5)
2. Original entrance guide (☛ 3.1.4)
3. Outer turn guide [A] (🔩 x 2)
4. Take out the inner turn guide [B], and remove the registration sensor [C] (🖑 x 1)

3.10 PICK-UP SOLENOID



C642V920.WMF

1. Rear cover (☛ 3.1.1)
2. Pick-up solenoid [A] (🔩 x 2, 🖑 x 1)