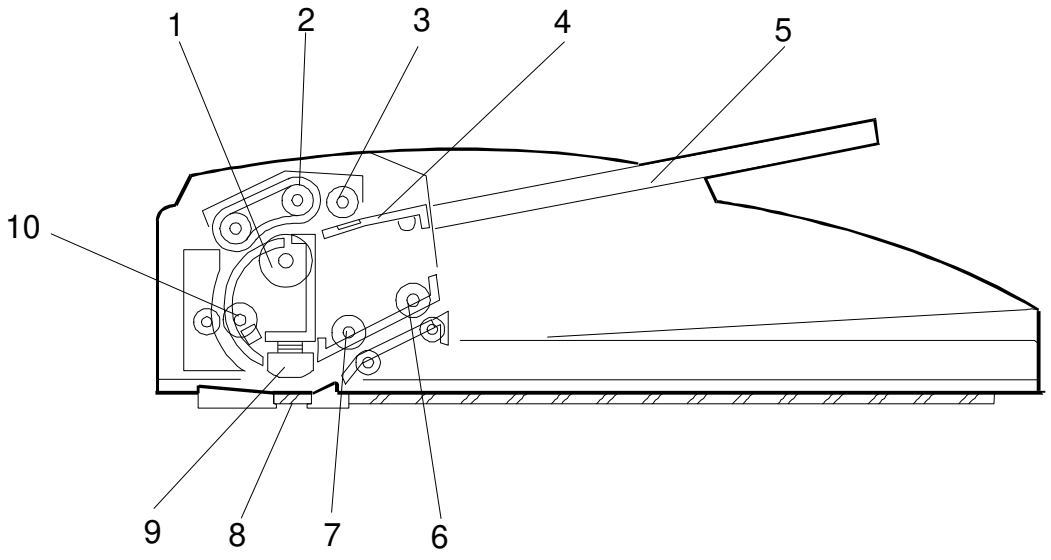
DOCUMENT FEEDER (A628)

1. SPECIFICATIONS

Original Size:	Standard Size A3 to A5 Non-standard Size Max. width 297 mm Min. width 105 mm Max. length 1260 mm Min. length 128 mm
Original Weight :	50 g to 90 g
Table Capacity :	30 sheets (70 kg)
Original Standard Position:	Rear left corner
Separation:	FRR
Original Transport:	Roller transport
Original Feed Order:	From top original
Reproduction Range:	37 to 150%
Power Source:	24 & 5 Vdc from the copier
Power Consumption:	25 W
Dimensions (W x D x H):	550 x 470 x 120 mm
Weight:	9 kg

2. COMPONENT LAYOUT

2.1 MECHANICAL COMPONENT LAYOUT



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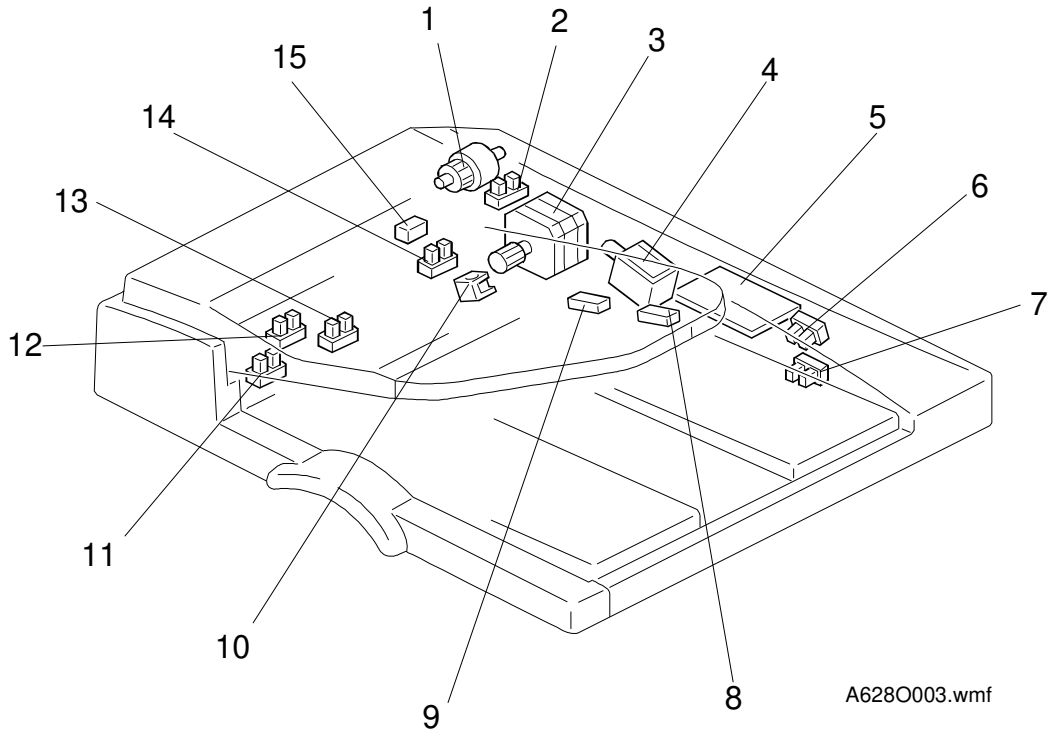
1. Separation Roller
2. Paper Feed Belt
3. Pick-up Roller
4. Original Entrance Guide
5. Original Table
6. Original Exit Roller
7. 2nd Transport Roller
8. DF Exposure Glass
9. Original Exposure Guide
10. 1st Transport Roller

2.2 ELECTRICAL COMPONENT LAYOUT

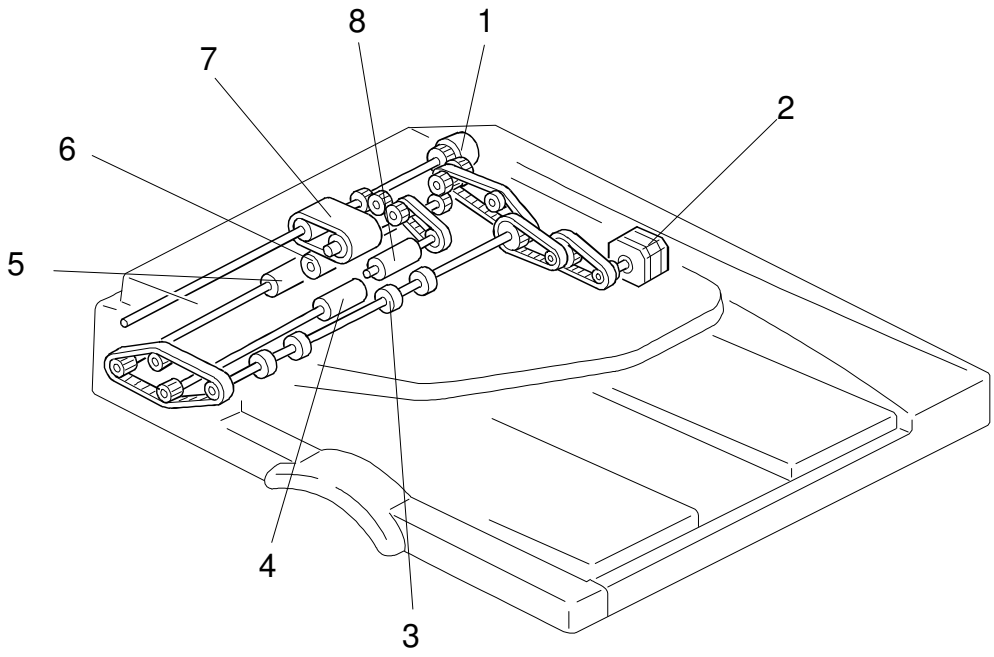


1. DF Feed Clutch
2. Feed Cover Open Sensor
3. DF Feed Motor
4. DF Pick-up Solenoid
5. DF Drive PCB
6. DF Position Sensor
7. APS Start Sensor
8. Original Length Sensor 2
9. Original Length Sensor 1
10. Stamper Solenoid
11. Original Width Sensor 3
12. Original Width Sensor 2
13. Original Width Sensor 1
14. Original Set Sensor
15. Registration Sensor

2.3 ELECTRICAL COMPONENT DESCRIPTION

Symbol	Name	Function	Index No.
Motors			
S1	DF Feed	Drives all the rollers.	3
Sensors			
S1	APS Start	Informs the CPU when the DF is opened and closed (for platen mode) so that original size sensors in the copier can check the original size.	7
S2	DF Position	Detects whether the DF is lifted or not.	6
S3	Registration	Detects the leading edge of the original to turn off the transport motor, detects the original exposure timing, and checks for original misfeeds.	5
S4	Feed Cover Open Sensor	Detects whether the feed-in cover is opened or not.	2
S5	Original Width - 1	Detects the original width	13
S6	Original Width - 2	Detects the original width	12
S7	Original Width - 3	Detects the original width	11
S8	Original Length - 1	Detects the original length.	9
S9	Original Length - 2	Detects the original length.	8
S10	Original Set	Detects if an original is on the feed table.	14
Solenoids			
SOL1	DF Pick-up	Controls the up-down movement of the original table.	4
SOL2	Stamper	Energizes the stamper to mark on the original.	10
Clutches			
MC1	DF Feed	Transfers transport motor drive to the pick-up roller and feed belt.	1
PCBs			
PCB1	DF Drive	Interfaces the sensor signals with the copier, and transfers the magnetic clutch, solenoid and motor drive signals from the copier.	5

2.4 DRIVE LAYOUT



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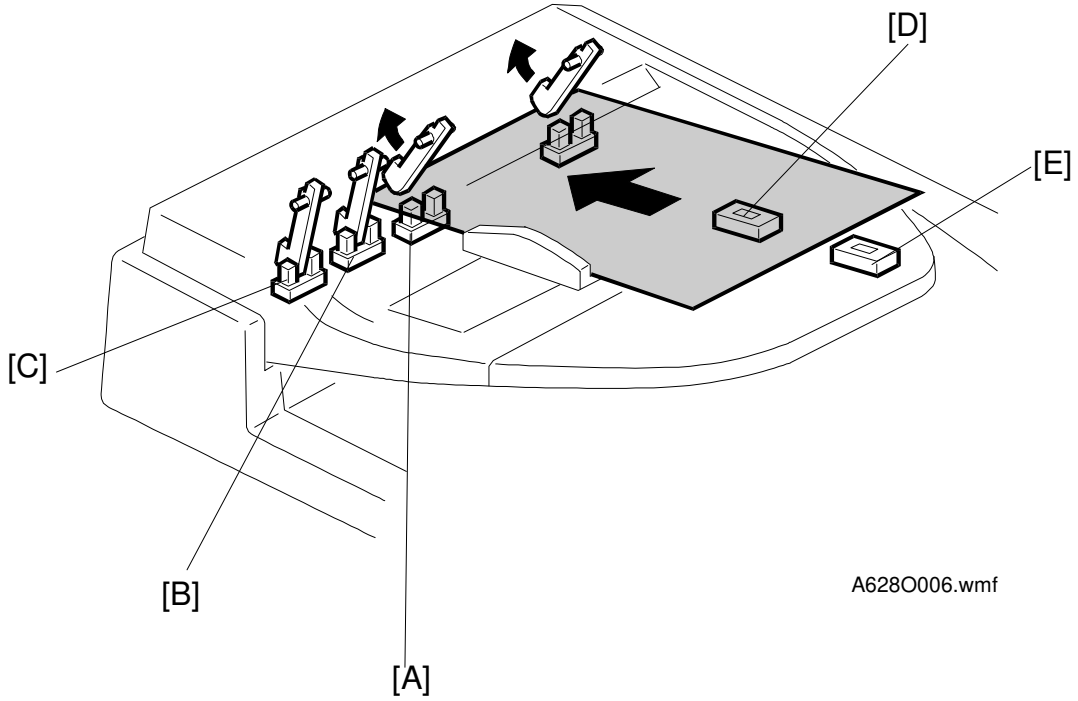
1. DF Feed Clutch
2. DF Feed Motor
3. Exit Roller
4. 2nd Transport Roller
5. 1st Transport Roller
6. Separation Roller
7. Original Feed Belt
8. Pick-up Roller

3. DETAILED DESCRIPTIONS

3.1 ORIGINAL SIZE DETECTION



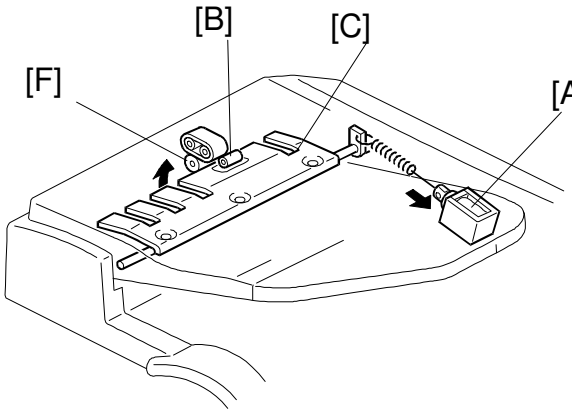
The DF has three width sensors (- 1 [A], - 2 [B], and - 3[C]) to detect the original width and two original length sensors (-1 [D] and -2 [E]) to detect the original length. The DF detects the original size through the combination of those five sensors as shown in the table on the next page.

When using an original of a non-standard size, the user needs to input the original length at the operation panel.

	NA	EU	Original Width-1	Original Width-2	Original Width-3	Original Length-1	Original Length-2
A3 (297 x 420)	7	m	ON	ON	ON	ON	ON
B4 (257 x 364)	7	m	ON	ON	–	ON	ON
A4 (Lengthwise) (210 x 297)	7	m	ON	–	–	ON	–
A4 (297 x 210) (Sideways)	7	m	ON	ON	ON	–	–
B5 (182 x 257) (Lengthwise)	7	m	–	–	–	ON	–
B5 (257 x 182) (Sideways)	7	m	ON	ON	–	–	–
A5 (148 x 210) (Lengthwise)	7	7	–	–	–	–	–
A5 (210 x 148) (Sideways)	7	m	ON	–	–	–	–
11" x 17" (DLT)	m	7	ON	ON	ON	ON	ON
11" x 15"	m	7	ON	ON	ON	ON	ON
10" x 14"	m	7	ON	ON	–	ON	ON
8.5" x 14" (LG)	m	7	ON	–	–	ON	ON
8.5" x 13" (F4)	7	m	ON	–	–	ON	ON
8" x 13" (F)	m	m	ON	–	–	ON	ON
8.5" x 11" (Lengthwise)	m	7	ON	–	–	ON	–
8.5" x 11" (Sideways)	m	7	ON	ON	ON	–	–
10" x 8" (Lengthwise)	m	7	ON	–	–	ON	–
5.5" x 8.5" (Lengthwise) (HLT)	m	7	–	–	–	–	–
5.5" x 8.5" (Sideways) (HLT)	m	7	ON	–	–	–	–

Key
7 : No, m : Yes
ON: Paper present

3.2 PICK-OFF AND SEPARATION MECHANISM



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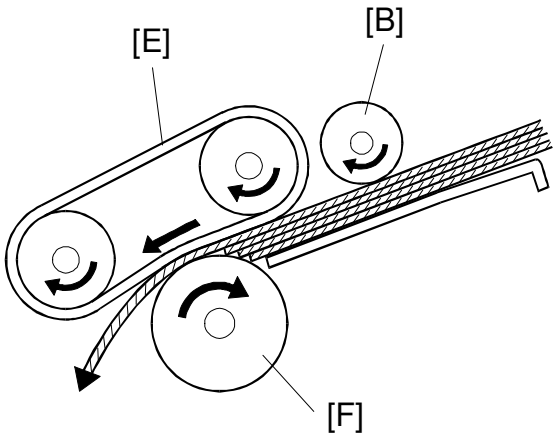

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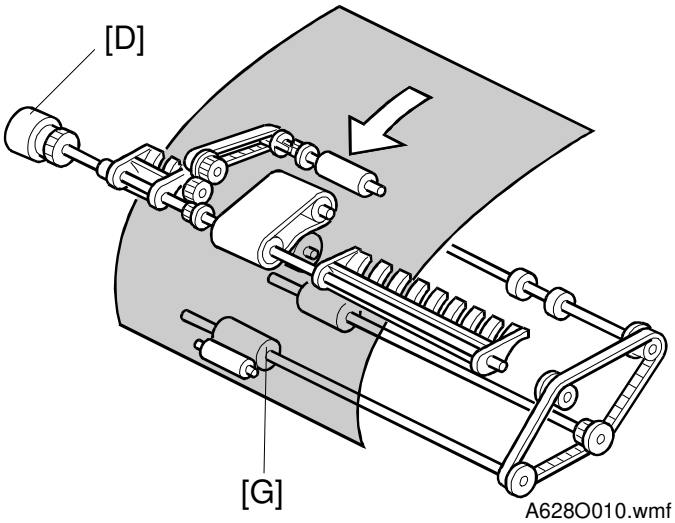

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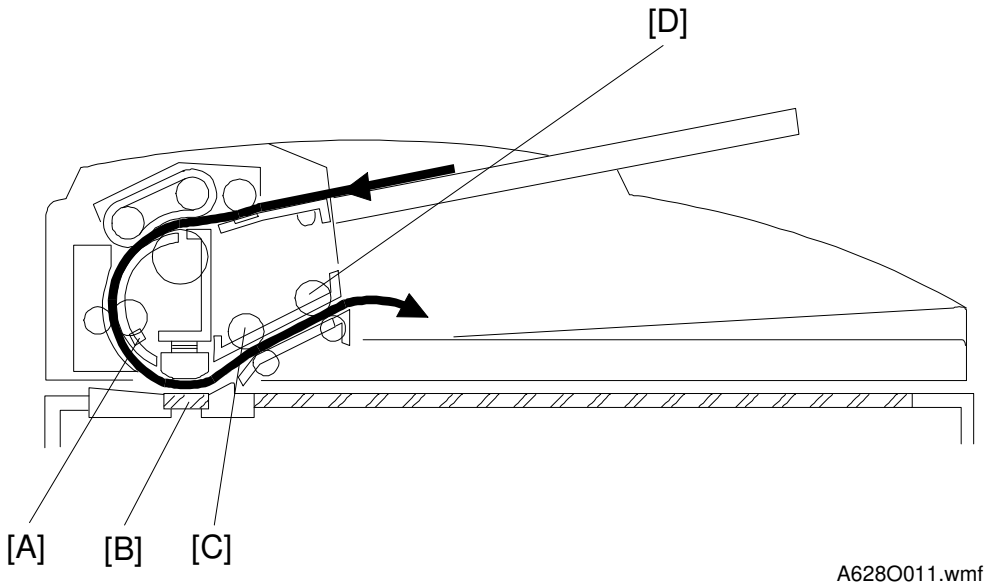
When the print key is pressed, the DF pick-up solenoid [A] turns on and the originals are lifted up to the pick-up roller [B] by the entrance guide [C]. At the same time, the DF feed clutch [D] turns on.

At 300 ms after this, the DF feed motor turns on. The original is fed to the paper feed belt [E] from the top page. The pages are separated by the separation roller [F] and the top sheet of the original is fed to the 1st transport roller [G]. The original separation system uses the FRR system.

3.3 ORIGINAL TRANSPORT AND EXIT MECHANISM



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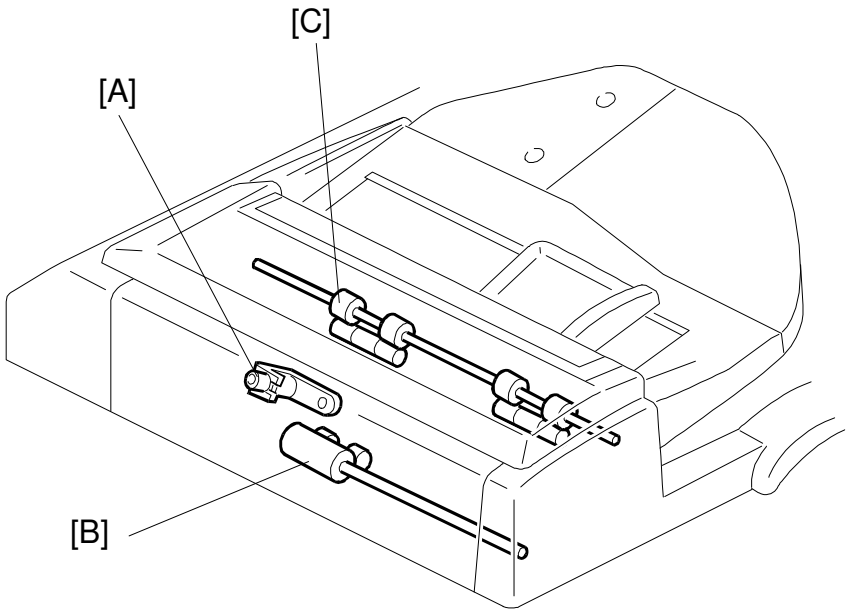
When the leading edge of the original reaches the registration sensor [A], the DF feed motor turns off. After a short time the DF feed motor turns on again. The original is fed to the DF exposure glass [B] and it is scanned in this area. The original is fed through to the 2nd transport roller [C] and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

The DF feed motor speed while feeding the original to the registration sensor is 47.5 mm/s. However, when the motor turns on again to feed the original to the exposure glass, the speed depends on the selected reproduction ratio. At 100%, it is 90 mm/s.

3.4 STAMP



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This function is only for fax mode.

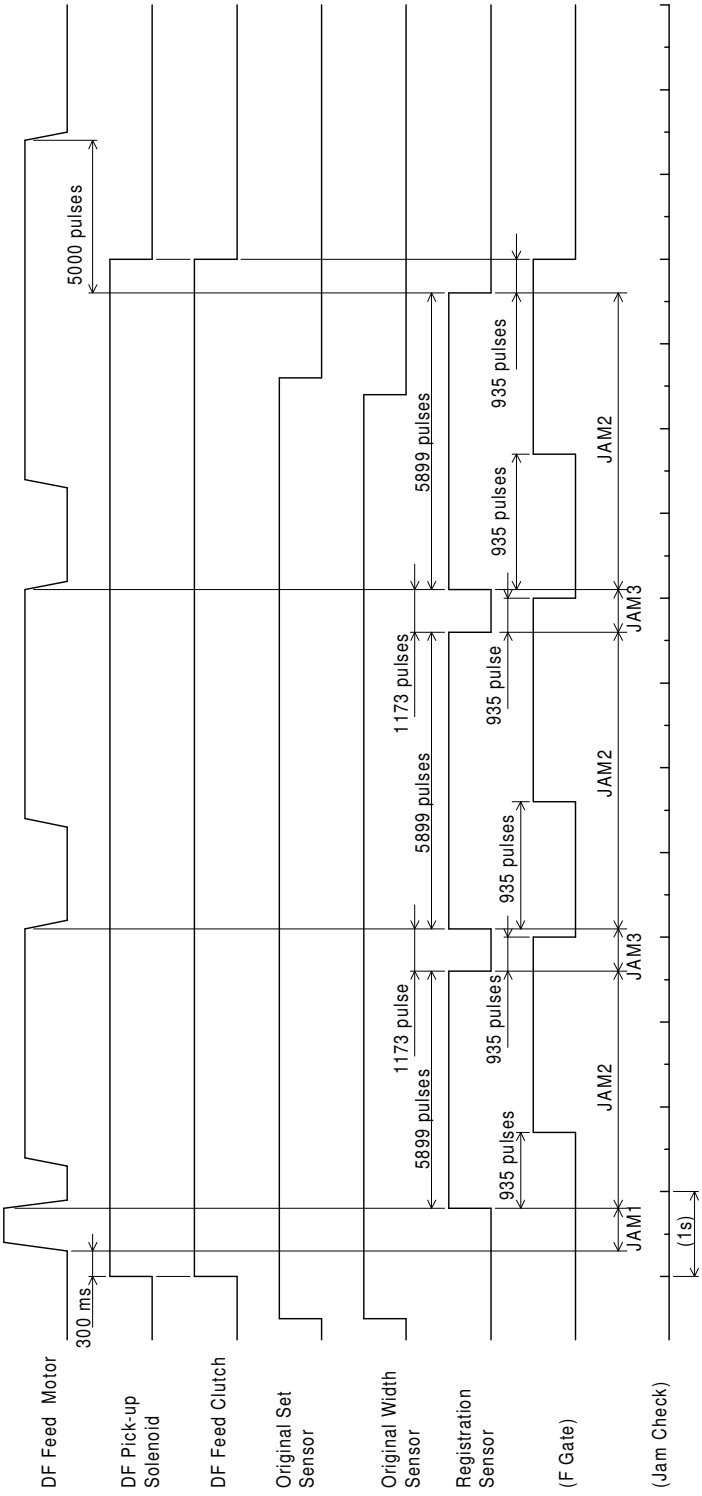
There is a stamp [A] between the 2nd transport roller [B] and the exit roller [C], and its solenoid is controlled by the copier directly.

When the original reaches the stamp position, the DF feed motor stops. At 300 milliseconds after stopping the DF feed motor, the stamper solenoid turns on if the page was sent successfully (immediate transmission) or stored successfully (memory transmission). After stamping, the DF feed motor starts again for feeding out the document, and its speed is about 1.3 times the normal speed.

The stamping position on the original can be changed by adjusting SP6-010.

3.5 TIMING CHARTS

3.5.1 A4 Lengthwise



JAM1: The 1st original dose not reach the registration sensor (after 6413 pulses).
JAM2: The original remains at the registration sensor (after 8259 pulses).
JAM3: The 2nd or a later original does not reach the registration sensor (after 5596 pulses).
F Gate: Laser scan start signal.

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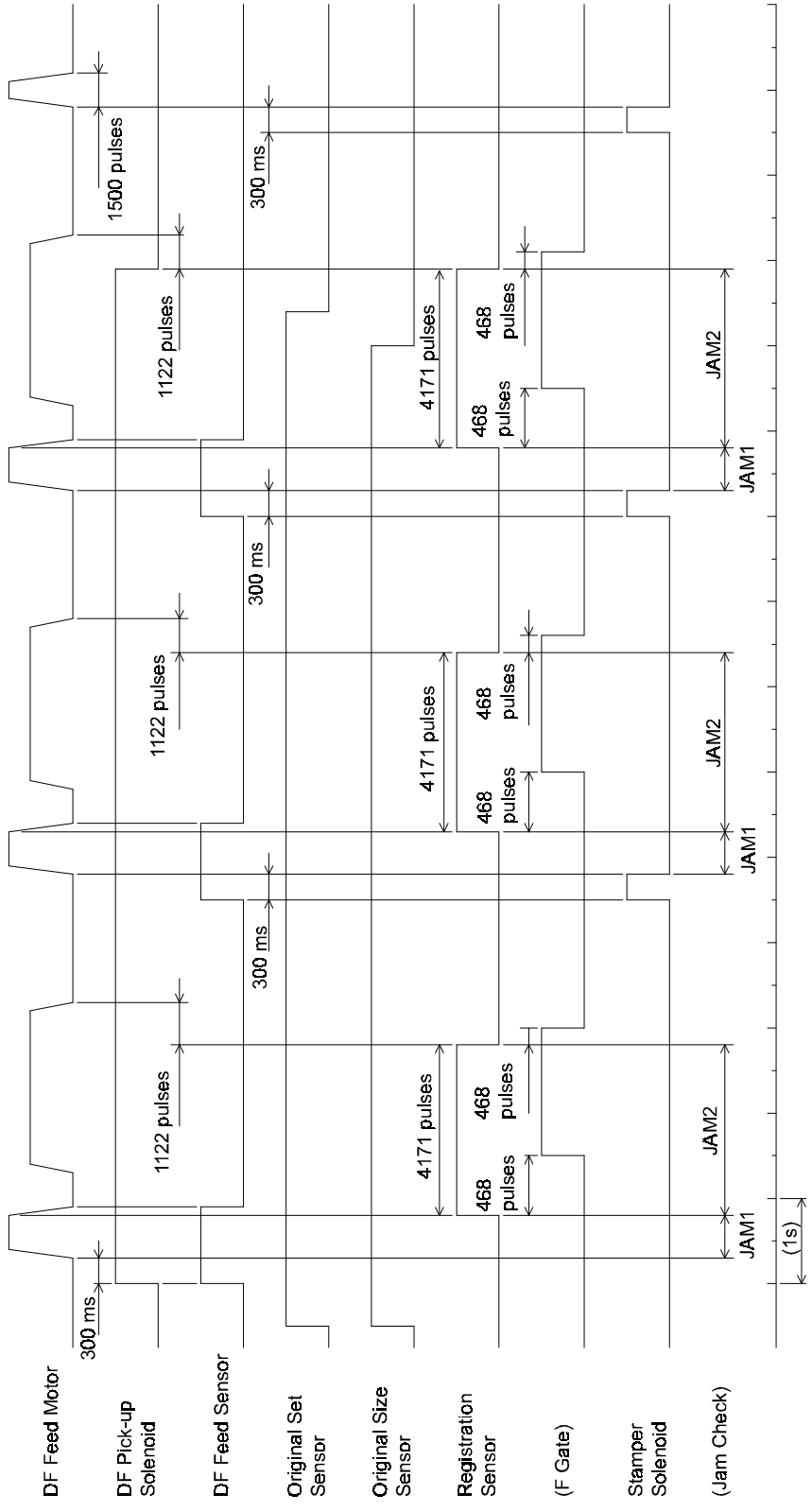
Options

3.5.2 A4 Sideways (Stamper Mode)



JAM1: The original does not reach the registration sensor (after 6413 pulses).
JAM2: The original remains at the registration sensor (after 5840 pulses).
F Gate: Laser scan start signal.

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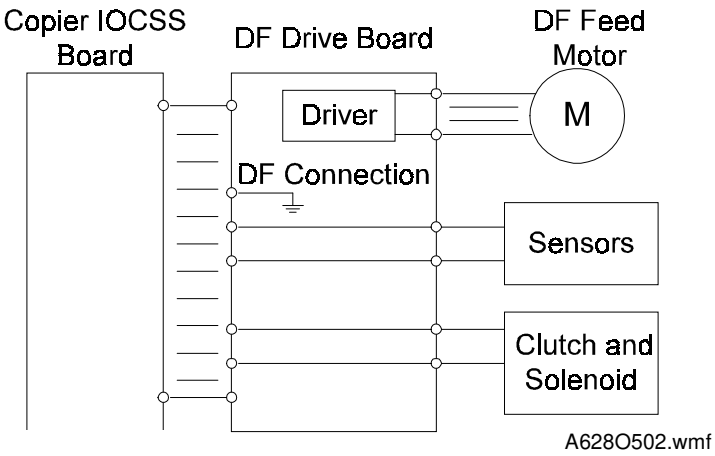
3.6 OVERALL ELECTRICAL CIRCUIT

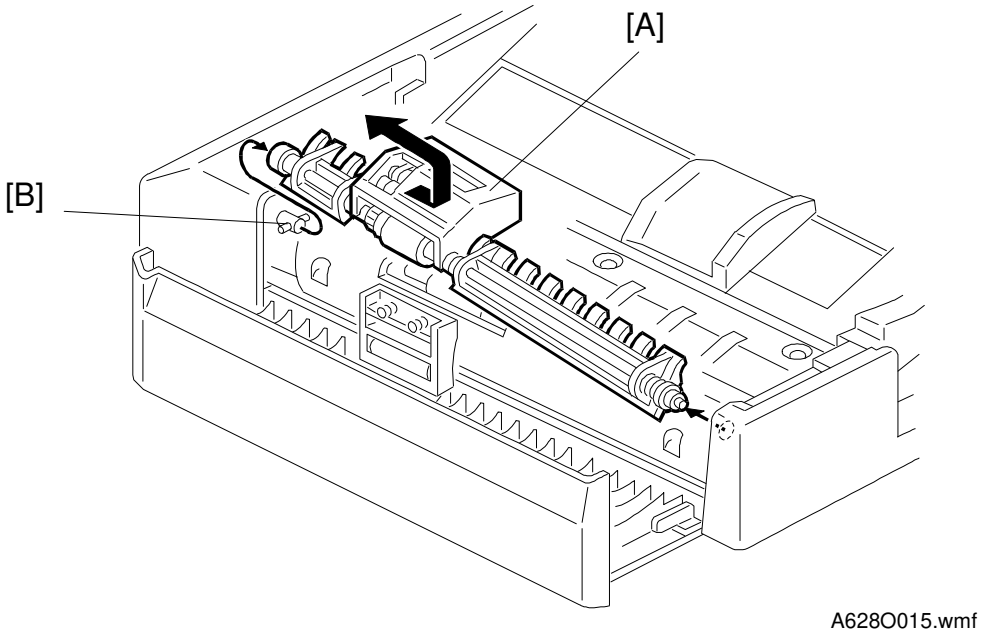


The DF pick-up solenoid, stamper solenoid and DF feed clutch are directly controlled by the copier through the DF drive board. The sensor signals are directly sent to the copier through the DF interface board. The DF drive board has a driver for the DF feed motor and its drive signal is sent from the copier.

When the DF connector is connected to the copier IOCSS board, the DF connection signal to the copier is grounded. Then the copier detects that the DF is connected.

4. REPLACEMENT AND ADJUSTMENT

4.1 ORIGINAL FEED UNIT REMOVAL



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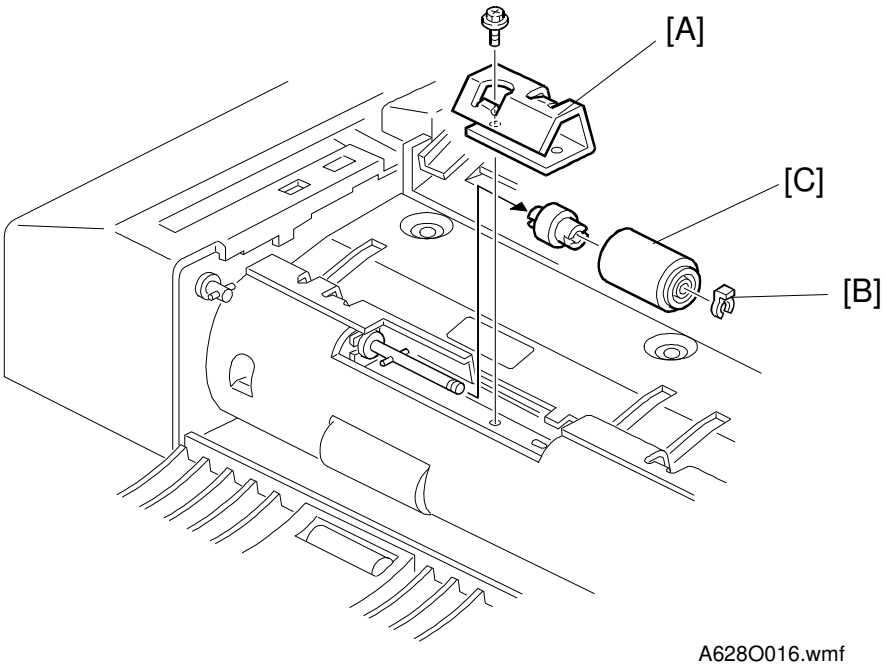
1. Open the DF feed cover.
2. Push the original feed unit to the front [A].
3. Release the rear joint of the original feed unit [B].
4. Remove the original feed unit.

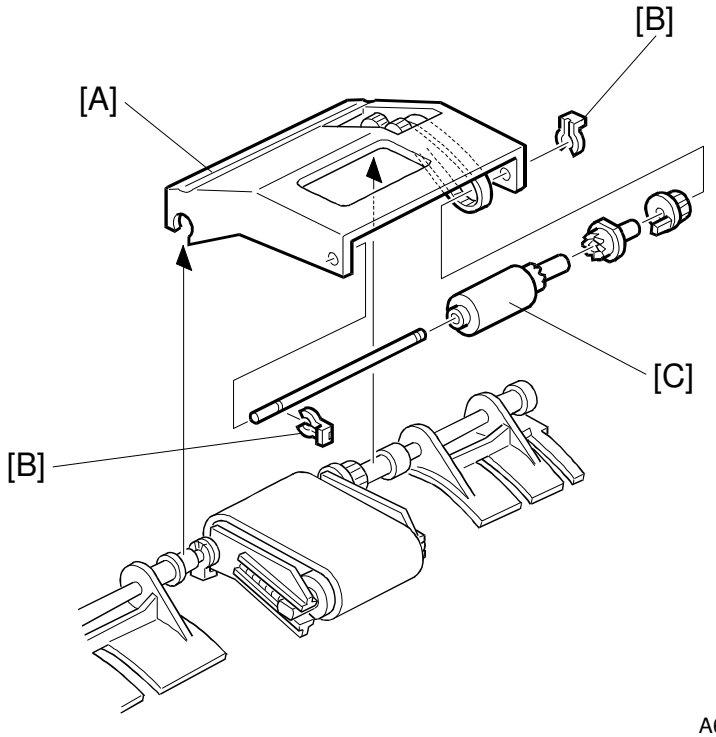
4.2 SEPARATION ROLLER REPLACEMENT



A628O016.wmf

1. Remove the original feed unit.
2. Remove the support guide [A] (1 screw).
3. Remove the snap ring [B].
4. Replace the separation roller [C].

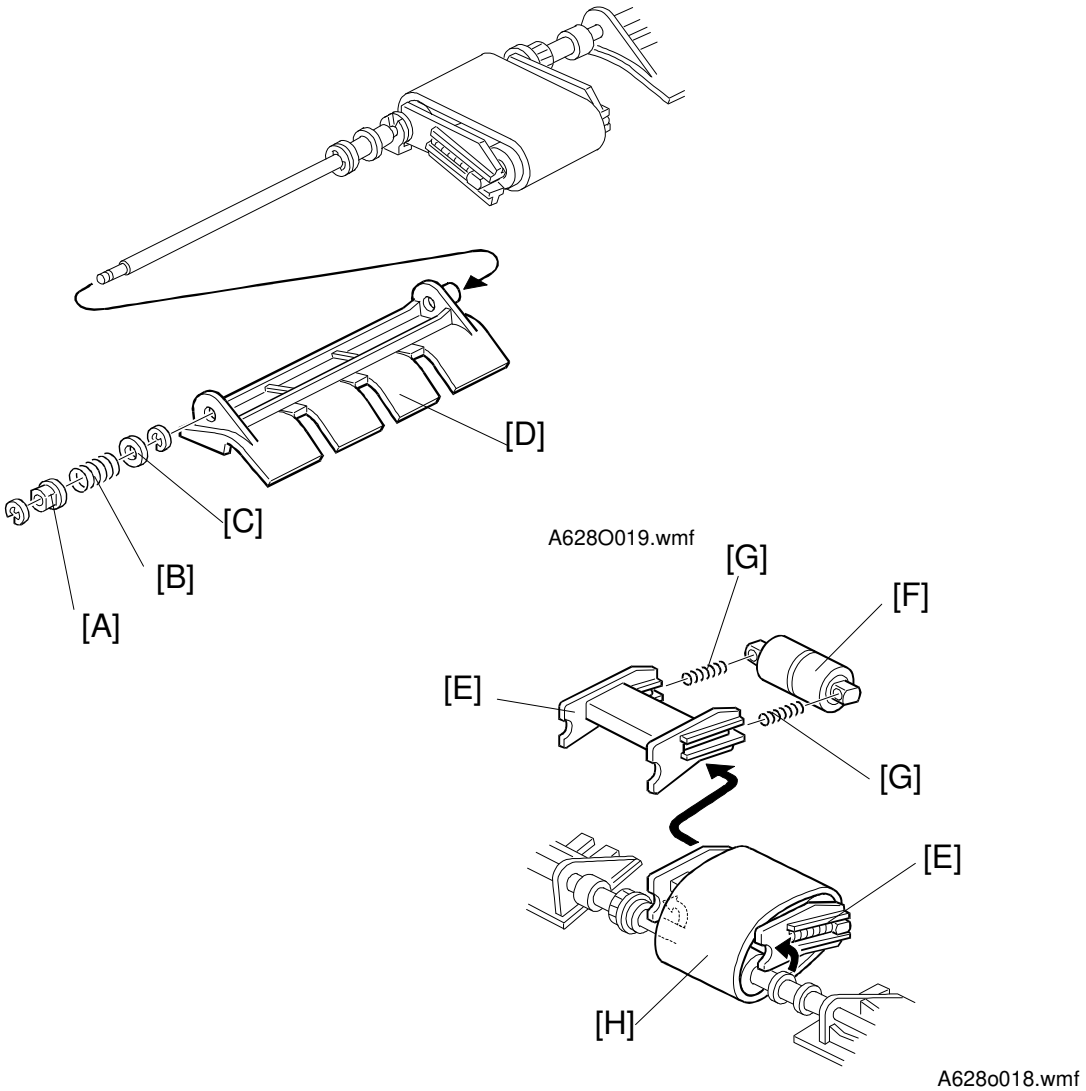
4.3 PICK-UP ROLLER REPLACEMENT



A628O017.wmf

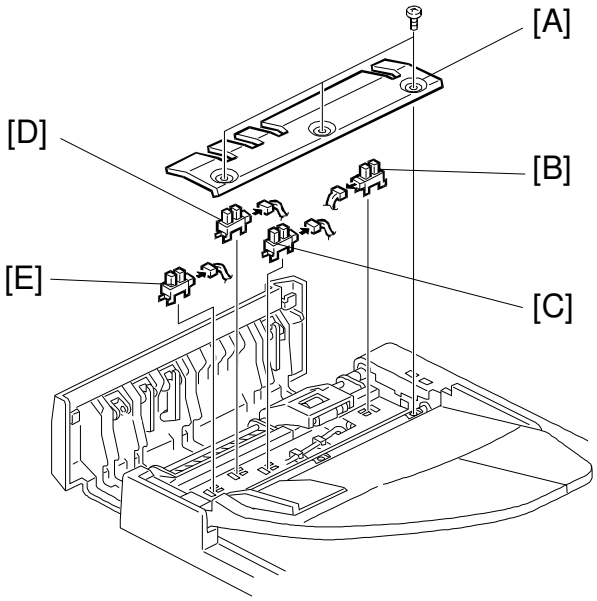
1. Remove the original feed unit.
2. Remove the pick-up roller unit [A].
3. Remove the two snap rings [B].
4. Replace the pick-up roller [C].

4.4 FEED BELT REPLACEMENT



1. Remove the original feed unit.
2. Remove the pick-up roller unit.
3. Remove the front bushing [A], spring [B], and washer [C] (1 E-ring).
4. Remove the original guide [D] (1 E-ring).
5. Release the idle roller holder [E] from the drive roller shaft.
6. Remove the idle roller [F], idle roller holder [E], and 2 springs [G].
7. Replace the feed belt [H].

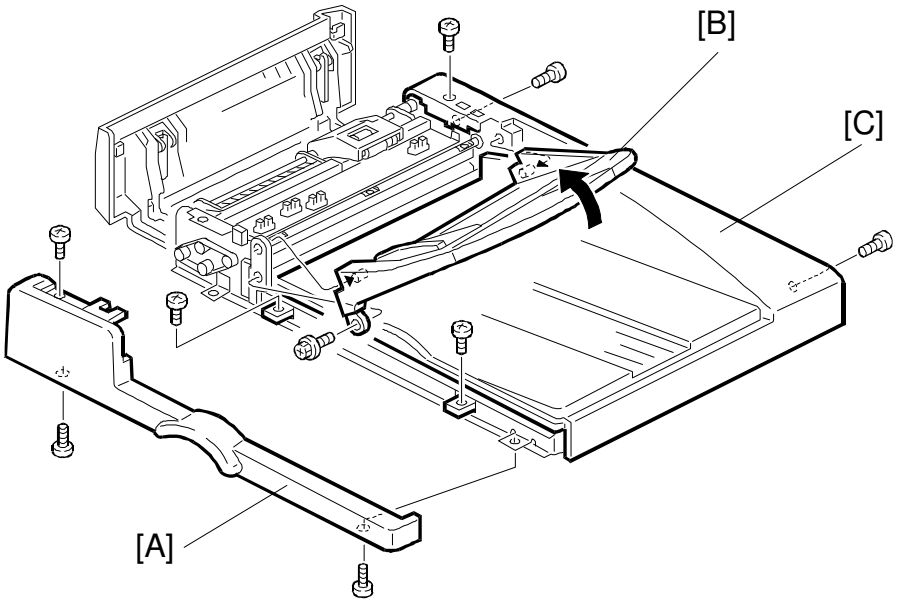
4.5 ORIGINAL SET SENSOR AND WIDTH SENSOR REPLACEMENT



A628O020.wmf

1. Open the DF feed cover.
2. Remove the entrance guide [A] (3 screws).
3. Replace the following sensors.
   Original Set Sensor [B]
   Original Width Sensor 1 [C]
   Original Width Sensor 2 [D]
   Original Width Sensor 3 [E]

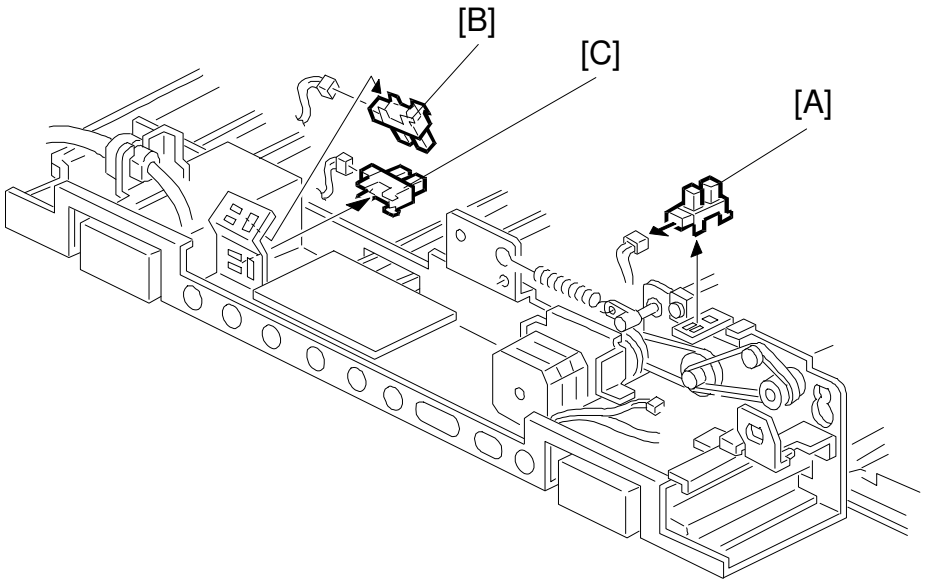
4.6 DF COVER REMOVAL



A628O021.wmf

1. Open the DF feed cover.
2. Remove the front cover [A] (3 screws).
3. Remove the original table [B] (1 screw).
4. Remove the rear cover [C] (5 screws).

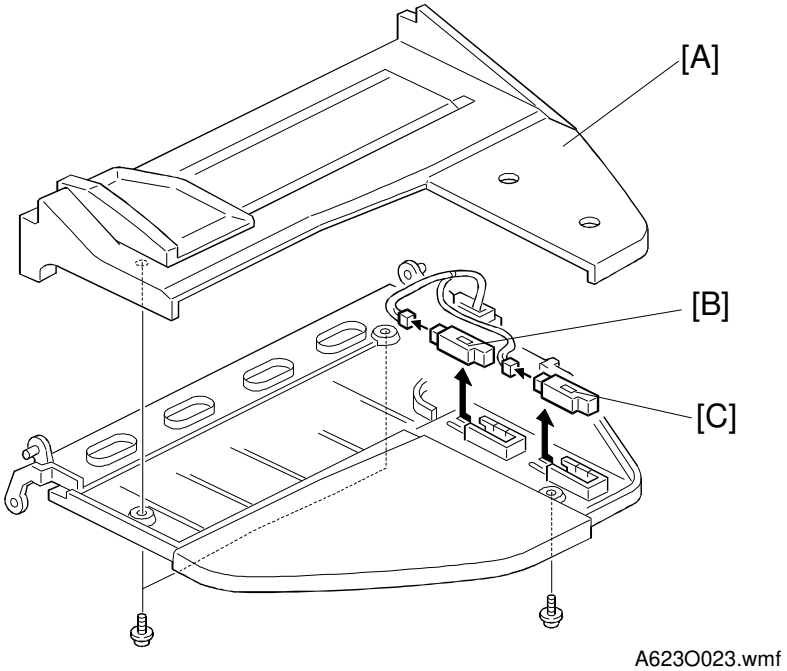
4.7 DF FEED COVER OPEN , DF POSITION, AND APS START SENSOR REPLACEMENT



A628O503.wmf

1. Remove the rear cover.
2. Replace the following sensors.
   DF Feed Cover Open Sensor [A].
   DF Position Sensor [B].
   APS Start Sensor [C].

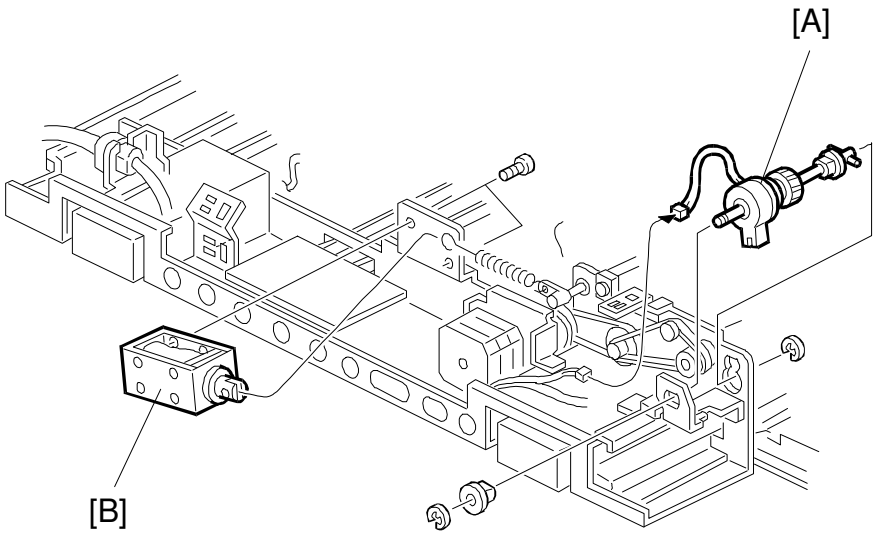
4.8 ORIGINAL LENGTH SENSOR REPLACEMENT



A623O023.wmf

1. Remove the original table.
2. Remove the original guide [A] (3 screws).
3. Replace the following sensors.
   Original Length Sensor 1 [B]
   Original Length Sensor 2 [C]

4.9 DF FEED CLUTCH AND DF PICK-UP SOLENOID REPLACEMENT



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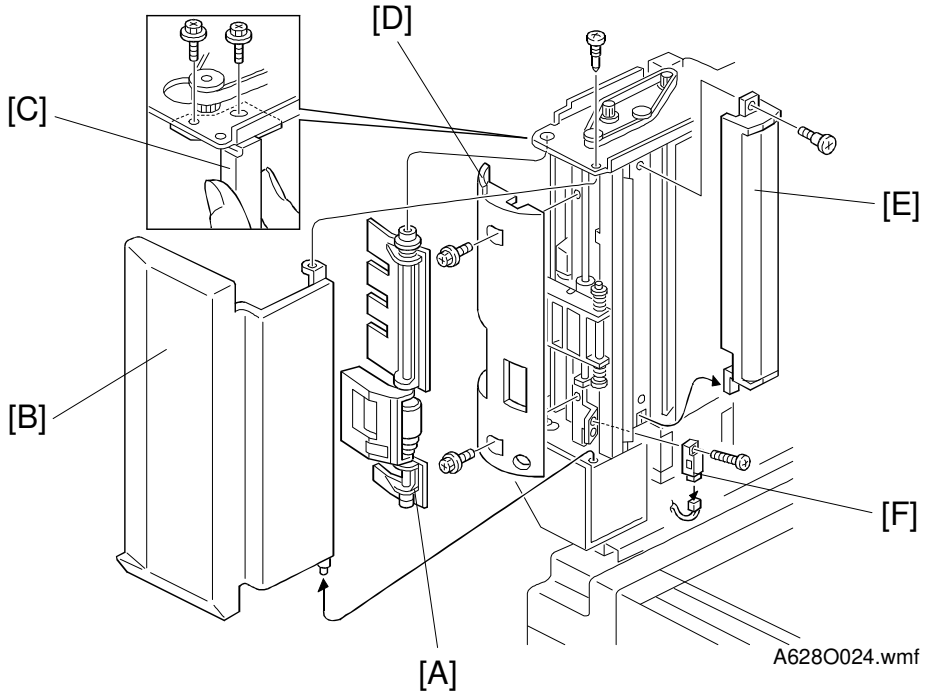
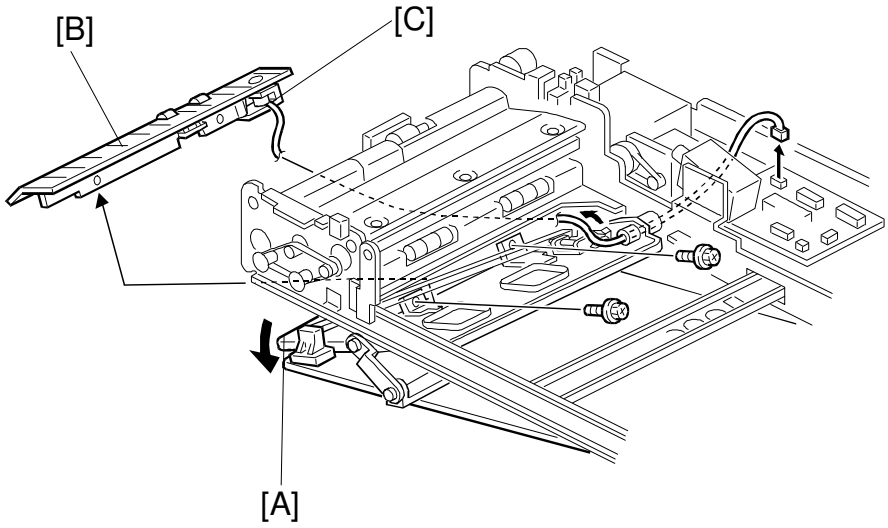
1. Remove the rear cover.
2. Replace the following clutch and solenoid.
   DF Feed Clutch [A] (2 E-rings, 1 connector)
   DF Pick-up Solenoid [B] (2 screws, 1 connector)

4.10 REGISTRATION SENSOR REPLACEMENT



1. Remove the front cover.
2. Remove the original feed unit [A].
3. Remove the DF feed cover [B] (1 screw).
4. Remove the front two screws for the stay [C].
5. Remove the transport guide [D] (2 screws).
6. Remove the original exposure guide [E] (2 screws).
7. Replace the registration sensor [F] (1 screw, 1 connector).

4.11 STAMPER SOLENOID REPLACEMENT



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1. Remove the front cover, original table, and rear cover.
2. Release the lever and open the original guide [A].
3. Remove the lower original guide [B] (2 screws).
4. Replace the stamper solenoid [C] (1 screws, 1 connector).

4.12 SP MODES

6-006-1 ADF Side-to-Side Registration
See Copy Adjustment Printing/Scanning in Replacement and Adjustment.

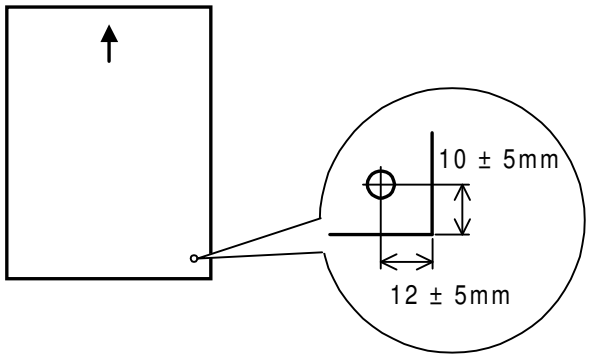
6-006-2 ADF Leading Edge Registration
See Copy Adjustment Printing/Scanning in Replacement and Adjustment.

6-006-3 ADF Trailing Edge Registration
See Copy Adjustment Printing/Scanning in Replacement and Adjustment.

6-007 ADF Sub-scan Magnification
See Copy Adjustment Printing/Scanning in Replacement and Adjustment.

6-009 ADF Free Run
After starting the Free Run (1 + # + #), the ADF automatically starts without exposing when an original is placed on the original table. Jams are detected.

6-010 Stamp Position Adjustment
The default position is shown below. The position can be adjusted in the sub-scan direction.



A628O507.wmf

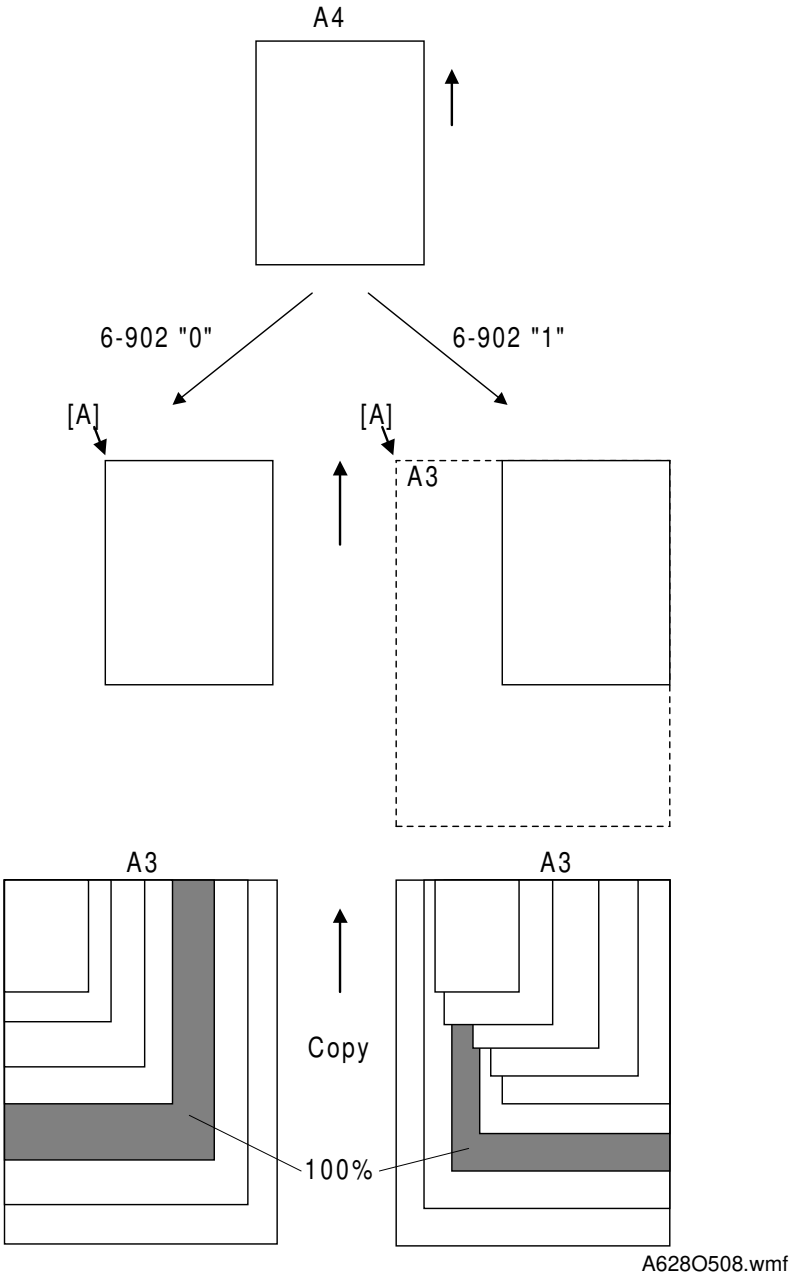
6-901 ADF Original Sensor Output Display
See the SP mode table.

6-902 ADF Original Scanning Method

The position [A] of the last pixel of the main scan line is changed.

0 : Original 1 : Copy paper + magnification

Example : Copying A4 size original to A3 paper at various reproduction ratios



A628O508.wmf

6-903 Original Non-waiting Start

If SP6-903 is '0', the next original is not fed until the trailing edge of the current original has passed the registration sensor. This leaves a gap of about 72 mm between originals.

If SP6-903 is '1', the next original is fed earlier. The gap between originals depends on SP6-904.

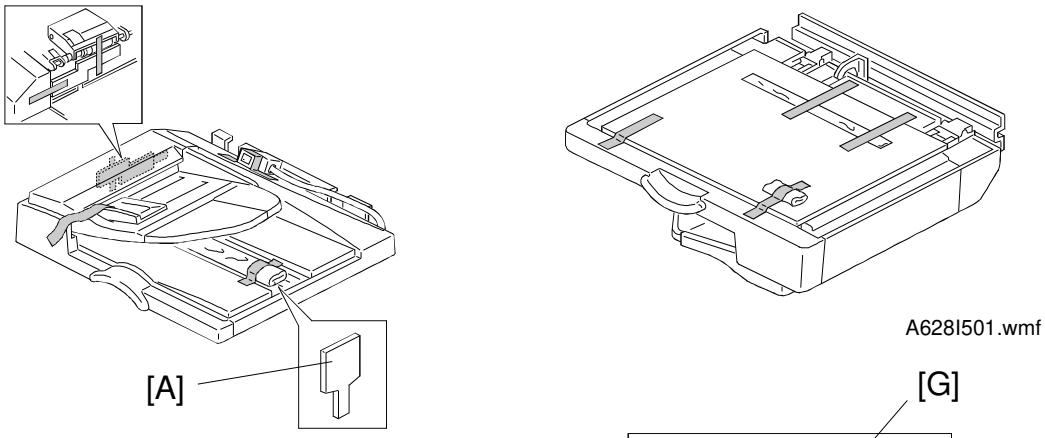
6-904 Original Scanning Interval

This SP mode is effective only if SP6-903 is '1'
Use it to adjust the distance between the trailing edge of the original and the leading edge of the next original.

6-910 ADF/Printer Free Run

After starting the Free Run (1 + # + #), the ADF automatically starts without exposing when an original is placed on the original table. Jams are detected.

AUTO DOCUMENT FEEDER INSTALLATION



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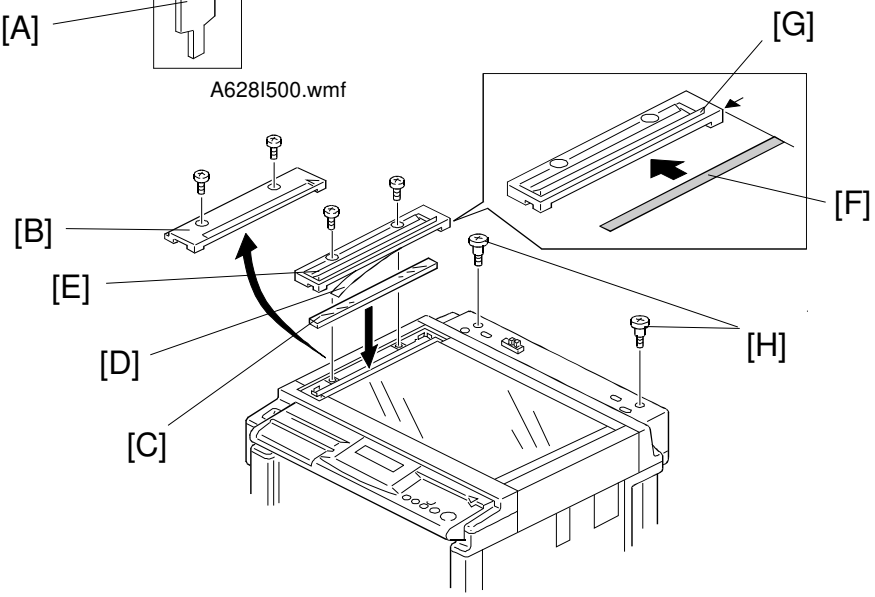

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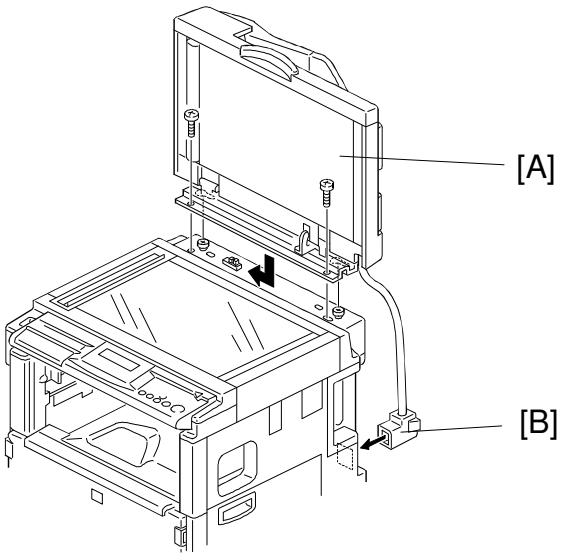
⚠ CAUTION

Unplug the copier power cord before starting the following procedure.

NOTE: When installing the DF, use the tool [A] in the accessory bag or a usual screw driver.

1. Unplug the document feeder. Then, remove all tapes.
2. Remove the left scale [B] (2 screws).
3. Place the DF exposure glass [C] on the glass holder.
4. Peel off the backing [D] of the double side tape attached to the rear side of the scale guide [E], then install the scale guide (2 screws removed in step 2).
5. Attach the original size decal [F] to the scale guide.

   NOTE: Place the decal at the rear edge, and the left side flush with the scale paper guide [G], as shown.
6. Install the stud screws [H] for the DF on the copier.



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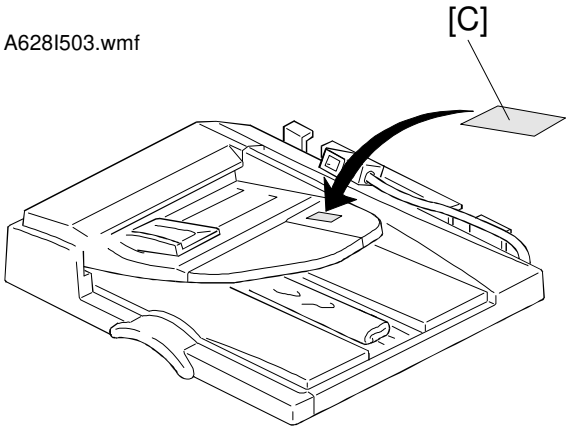

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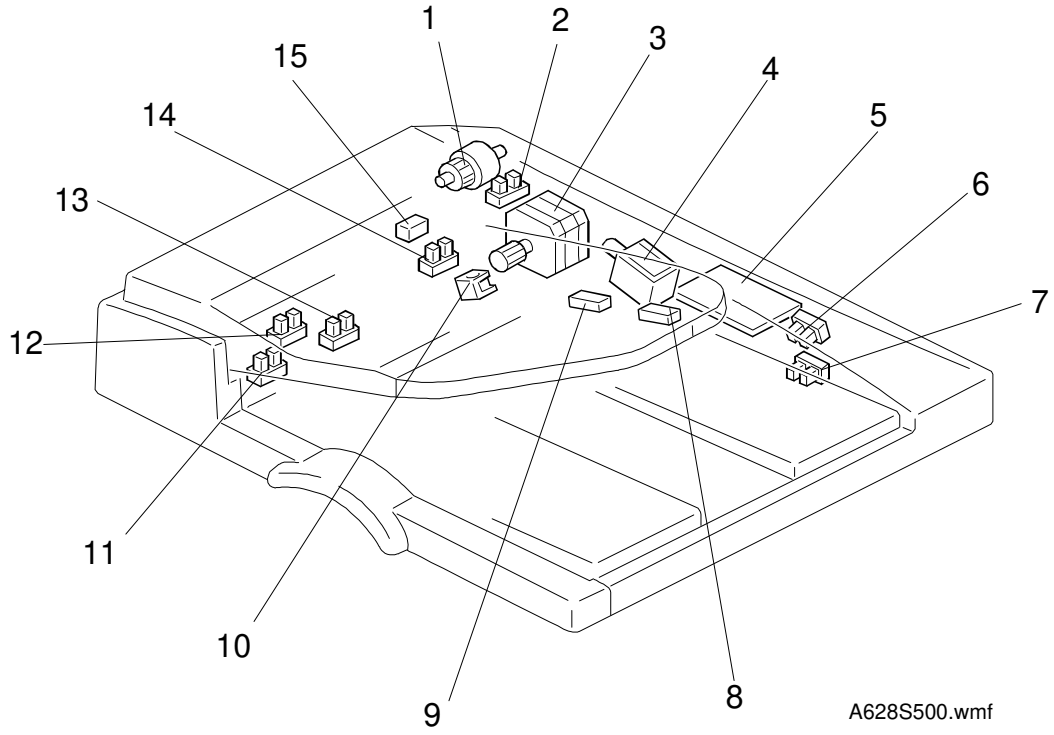
7. Install the DF unit [A].
8. Slide the DF to the left, then secure the DF unit with 2 screws (M4 x 10).
9. Connect the I/F harness [B] to the copier.
10. Attach the original direction decal [C] to the DF table as shown.
11. Turn the ac and main switches on. Then, check if the document feeder works properly.

Auto Document Feeder (A628)



Auto Document Feeder (A628)

Symbol	Index No.	Description	P to P (1/2)
Motors			
S1	3	DF Feed	N6
Sensors			
S1	7	APS Start	O6
S2	6	DF Position	O6
S3	5	Registration	Q6
S4	2	Feed Cover Open Sensor	O6
S5	13	Original Width - 1	P6
S6	12	Original Width - 2	P6
S7	11	Original Width - 3	P6
S8	9	Original Length - 1	P6
S9	8	Original Length - 2	P6
S10	14	Original Set	Q6
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SOL1	4	DF Pick-up	N6
SOL2	10	Stamper	N6
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PCB1	5	DF Drive	O9