

ROLL FEED UNIT
(Machine Code: B435/B436)

1. OVERALL MACHINE INFORMATION

1.1 SPECIFICATIONS

Roll Paper Size:	Width: 210 mm to 914 mm, 8 1/2" to 36" Length: 150 meters Diameter: Less than ϕ 170 mm
Cut Size:	–Preset Cut: 1189 mm, 841 mm, 594 mm, 420 mm, 297 mm 48", 36", 24", 18", 12" 46", 34", 22", 17", 11" Up to 10 extra preset cut lengths can be set using SP23 ~ 32. –Selected Length Cut: 297 mm to 3,000 mm (1 mm per step) 11" to 118" (0.1" per step)
Paper Transport Velocity:	60 mm/s
Control:	Microprocessor
Power Source:	+24 volts and +5 volts from the copier
Power Consumption:	Maximum 110 W
Dimensions (W x D x H):	1,200 mm x 720 mm x 775 mm 47.24" x 28.35" x 30.51"
Weight:	78 kg, 171.6 lbs (1 roll) 86 kg, 189.2 lbs (2 rolls)

1.2 ELECTRICAL COMPONENT DESCRIPTIONS

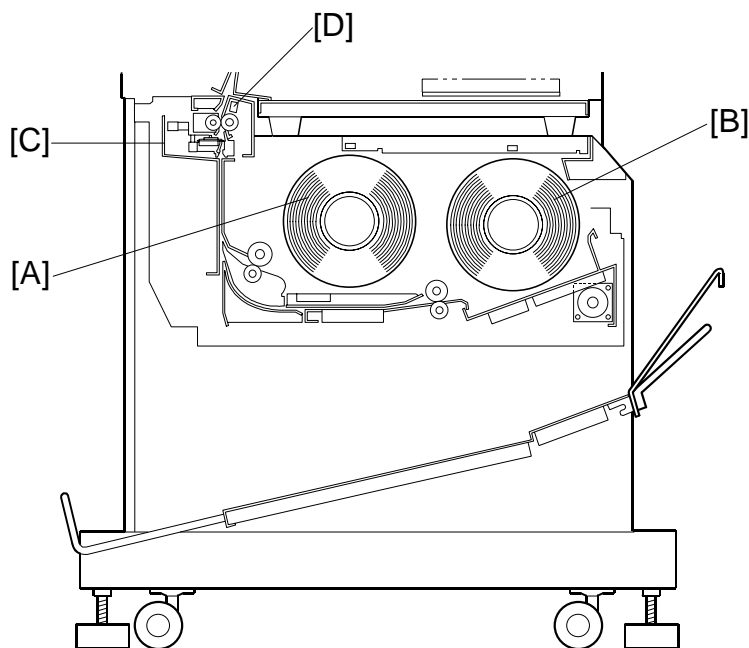
The index numbers refer to the electrical component layout on the reverse side of the Point to Point index (Water proof paper).

Name	Function	Index No.
Motors		
Cutter	Drives the cutter (DC Reversible Motor).	59
Roll Feed	Drives all mechanical components except the cutter unit (Dc Stepper Motor).	61
Magnetic Clutches		
Roll Feed 1	Transmits the roll feed motor drive to the 1st roll feed roller.	56
Roll Feed 2	Transmits the roll feed motor drive to the 2nd roll feed roller.	60
Switches		
Right Cutter	Detects whether or not the cutter is at the right home position.	54
Left Cutter	Detects whether or not the cutter is at the left home position.	57
Dehumidity	Turns on the RF Dehumidity heaters when not copying.	62
Sensors		
Paper End 1	Detects when the roll runs out of paper.	51
Paper End 2	Detects when the roll runs out of paper.	50
Leading Edge	Misfeed detector. Also detects the leading edge of the paper, triggering the paper length pulse count.	55
Door	Indicates "Door Open" on the operation panel and disables the key operation.	58
Printed Circuit Board		
RF Drive	Controls all roll feed unit functions accordance with copier CPU.	49
Others		
RF Dehumidity Heater 1	Removes humidity from the roll paper.	53
RF Dehumidity Heater 2	Removes humidity from the roll paper.	52

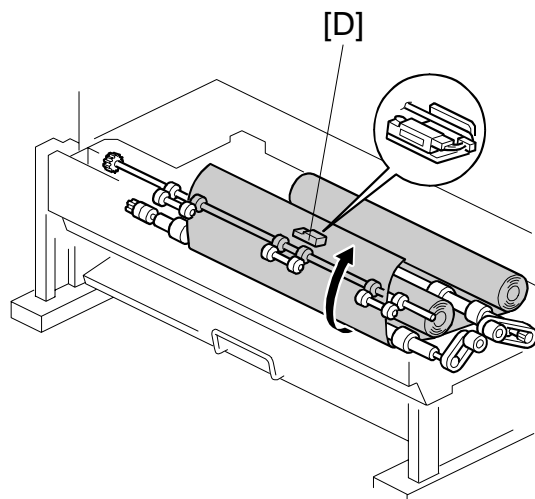
2. DETAILED SECTION DESCRIPTIONS

2.1 MECHANICAL OPERATION

2.1.1 BASIC OPERATION



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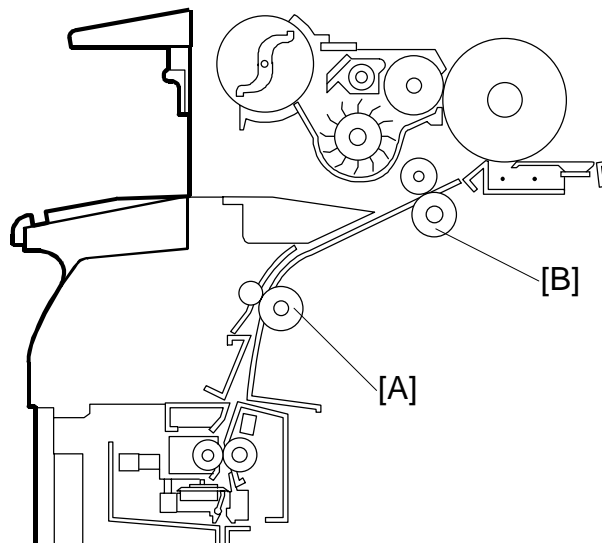


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Options

There are two types of the roll feed unit. B435 Roll feed unit has one roll feed unit (1st [A]). B436 Roll feed unit has two roll feed units (1st [A] and 2nd [B]). The cutter unit [C] uses a sliding rotary cutting blade.

When turning on the main switch or when roll paper is replenished, the roll feed motor rotates and the leading edge of the roll paper is fed until the roll lead edge sensor [D] is activated. Then, the leading edge of the roll paper is returned to the paper feed start position (60 mm before the cutter unit).



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After the leading edge of the paper reaches the exit rollers [A], the paper is directed to the copier registration roller [B]. The registration roller stops rotating once the registration sensor detects the leading edge of the copy paper. The copy paper stops and waits for the original. Shortly after the original registration sensor is activated by the original, the registration roller and roll paper feed motor start to rotate. The copy paper starts to feed again.

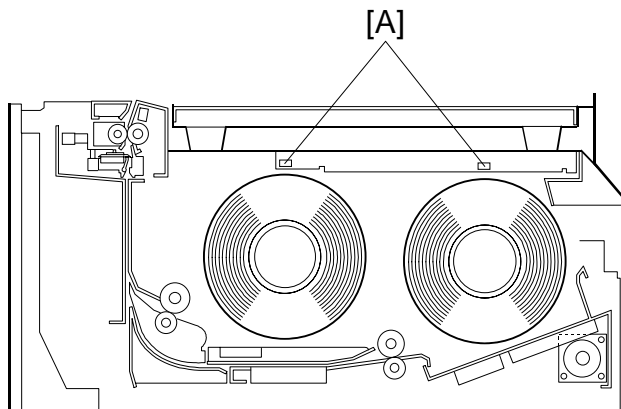
Just before the cut length of copy paper is fed, the speed of the roll paper feed motor is doubled. A paper buckle forms at the trailing edge of the copy paper. When the paper reaches the proper length, paper feed motor stops and the cutter unit cuts the paper. During the time that paper feed motor has stopped, the registration roller continues to feed the copy paper forward. The paper is cut during the time it takes for the paper buckle to be pulled taut. This allows for a neat cut.

When the selected cut length is between 245 mm and 340 mm, the paper reaches the selected length before the registration roller starts to rotate again. In this case, after the registration roller stops, the roll paper feed motor continues to rotate and a paper buckle forms at the trailing edge of the paper. The registration roller brake ensures that the very stiff types of paper will not rotate the registration rollers as the excess paper is fed forwards. The paper is then cut.

When the selected cut length is between 340 mm and 410 mm, the roll cutter unit cuts the paper after the second rotation of the roll paper feed roller.

The paper buckle forms after the first rotation of the roll paper feed motor, because the paper feed roller is still rotating after the registration roller has stopped. The registration roller brake ensures that the very stiff types of paper will not rotate the registration rollers when the paper buckles while it is stopped at these rollers.

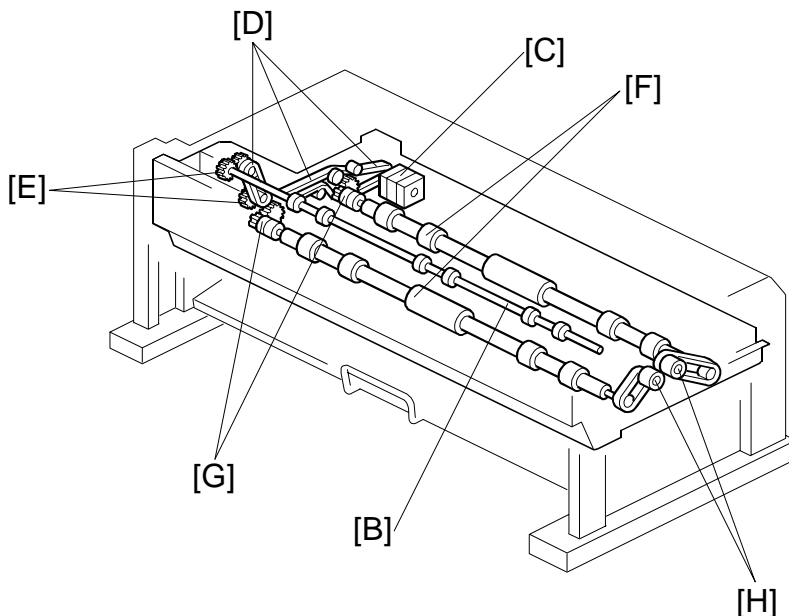
2.1.2 ROLL EDITION DETECTION



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The roll paper end sensor [A] is located above each roll. When the roll paper runs out and the roll paper end sensor detects the black core of the roll, roll end is indicated on the operation panel. If the paper is not caught by the feed rollers, paper feed fails. In this case, roll end is indicated instead of a paper misfeed indication.

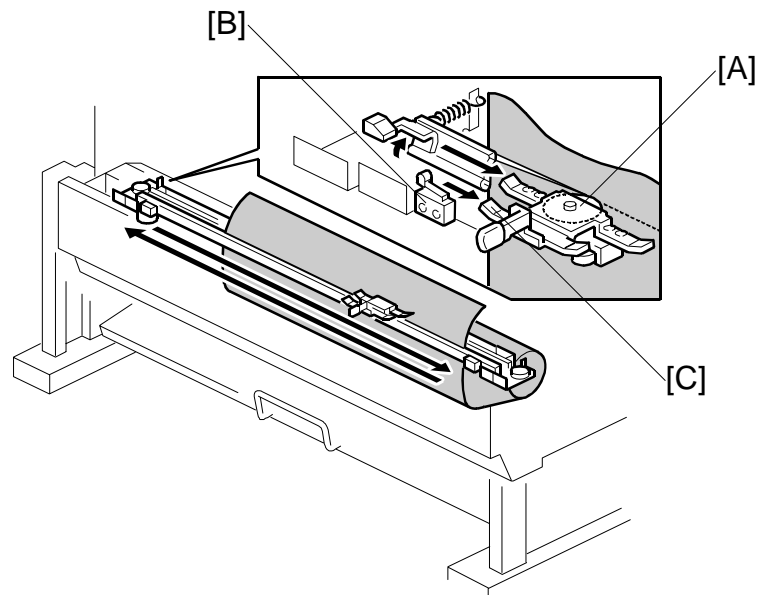
2.1.3 DRIVE MECHANISM



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The roll feed exit roller [B] is driven by the roll feed motor [C] through timing belts [D] and gears [E]. The feed roller [F] of each roll feed unit is driven by the roll feed motor through the belt and each gear and each roll feed clutch [G]. Each feed roller can be driven manually by each knob [H].

2.1.4 CUTTER OPERATION

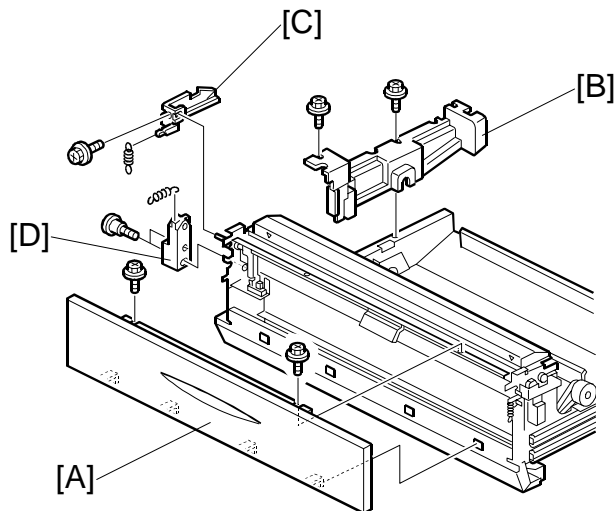


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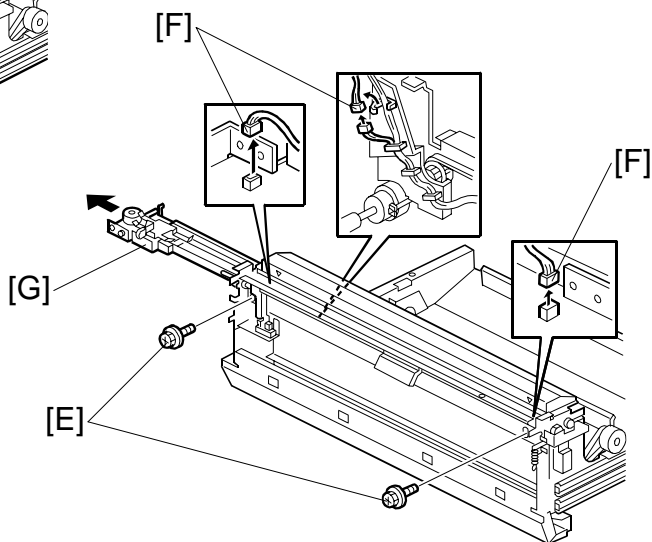
The cutter unit uses a sliding rotary cutting blade [A] which is pulled past a fixed blade by a drive wire. The rotary cutting blade allows the cutter unit to cut paper in both directions. There are home position switches [B] at both ends of the cutter. The cutter motor turns off, stopping the cutting action, when the rotary cutting blade knob plate [C] turns off one of these switches.

3. REPLACEMENT AND ADJUSTMENT

3.1 CUTTER UNIT REPLACEMENT



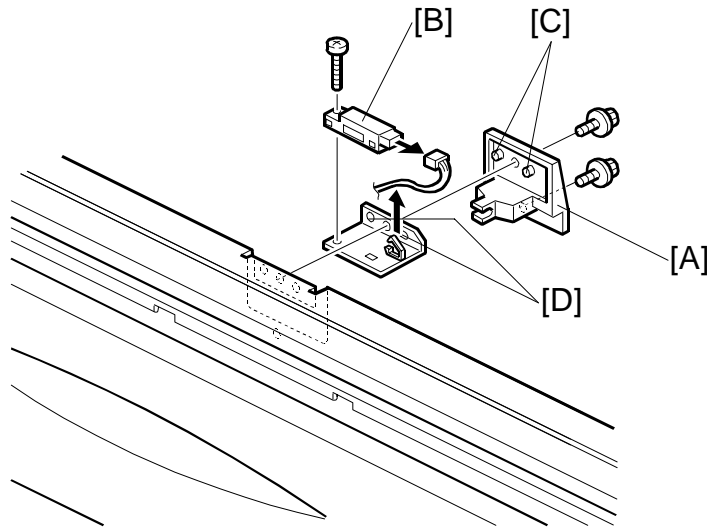
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1. Remove the roll feed unit's front cover [A] (2 screws and 4 hooks) and left inner cover [B] (2 screws).
2. Remove the left tray lock lever [C] (1 screw and 1 spring) and tray stopper [D] (2 shoulder screws and 1 spring).
3. Remove the two screws [E] and disconnect the three connectors [F].
NOTE: When removing and/or reinstalling the connectors, take care not to damage the harnesses. Make sure that you do not pinch the harnesses when reinserting the cutter unit.
4. Slide the cutter unit [G] out as shown.

3.2 ROLL FEED LEADING EDGE SENSOR REPLACEMENT

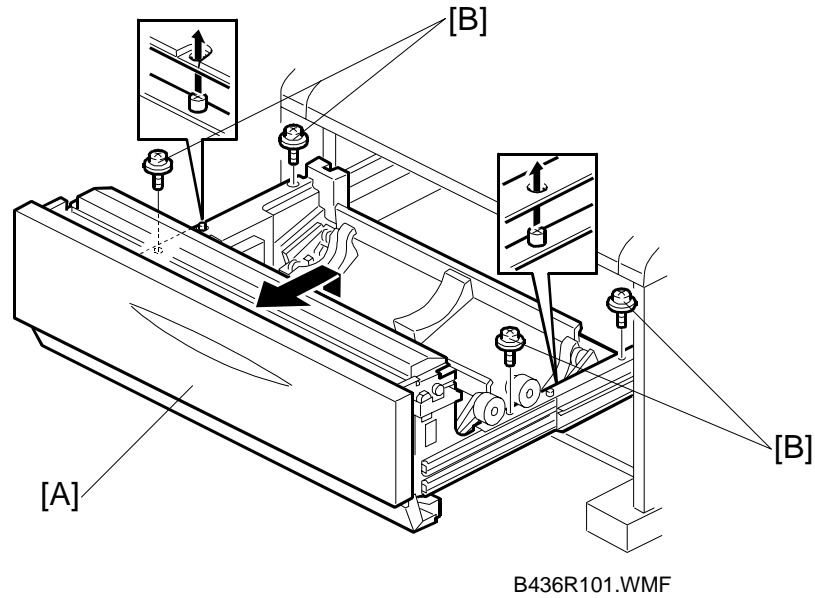


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1. Pull out the roll feed unit.
2. Remove the sensor casing [A] (2 screws).
3. Replace the leading edge sensor [B] (1 screw and 1 connector).

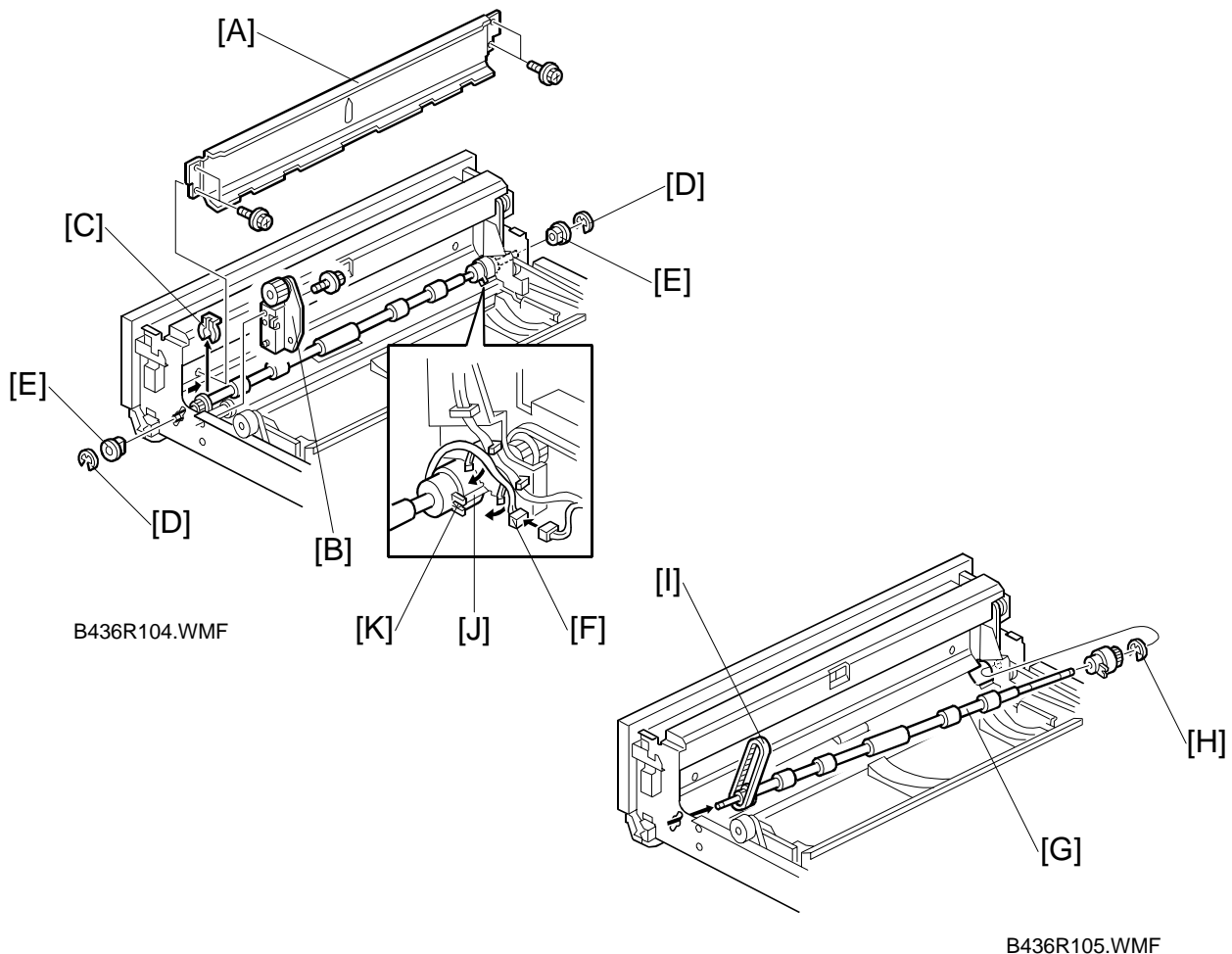
NOTE: When reinstalling the sensor casing, be sure to align the sensor casing's pins [C] with the holes [D] in the sensor bracket.

3.3 ROLL FEED UNIT REMOVAL



1. Pull out the roll feed unit [A].
2. Remove the 4 screws [B] (right side 2 screws and left side 2 screws).
3. Lift the roll feed unit and place it gently onto the floor or other flat surface.

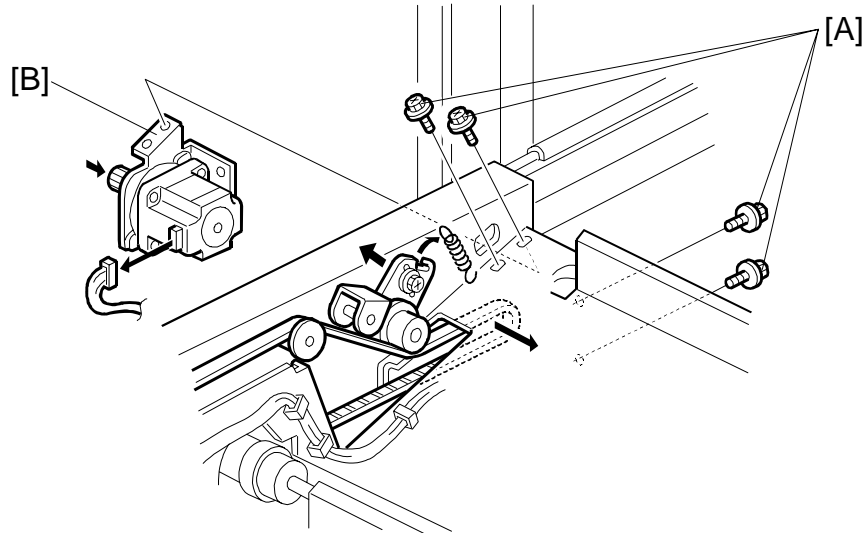
3.4 ROLL FEED CLUTCH REPLACEMENT



1. Remove the roll feed unit.
2. Remove the left inner cover.
3. Remove the roll feed paper guide plate [A] (4 screws).
4. Remove the roller knob bracket [B] (1 screw).
5. Remove the snap ring [C] and two retaining rings [D] and two bushings [E].
6. Disconnect the connector for the roll feed clutch harness [F] (2 clamps).
7. Remove the roll feed roller [G] and clutch [H] (1 retaining ring and 1 timing belt [I]).

NOTE: 1) When reinstalling the clutch, make sure that the clutch pin [J] is set in the cutout [K] of the stopper.
2) After putting all the parts back, turn the roller knob and verify that the timing belt drives the roll feed roller.

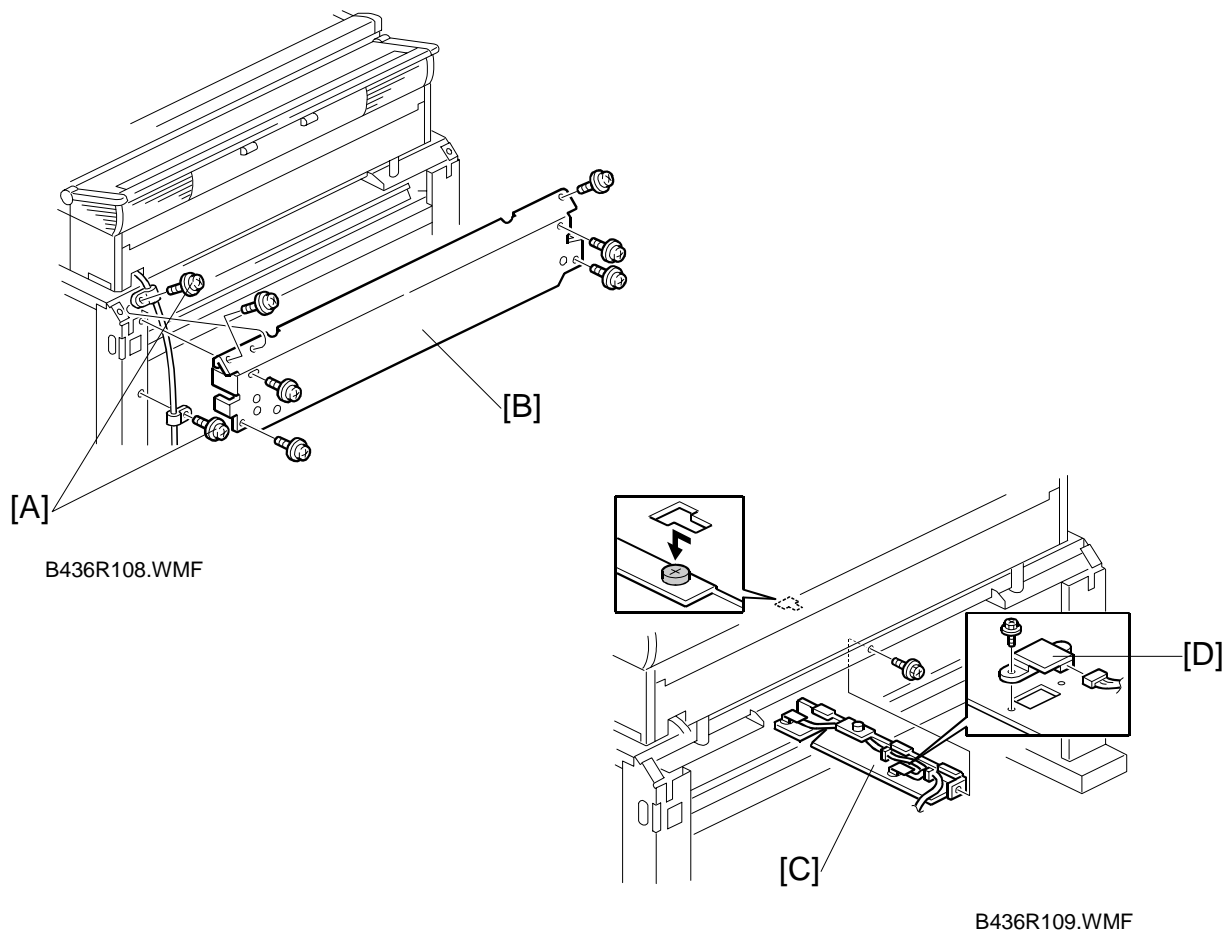
3.5 ROLL FEED MOTOR REPLACEMENT



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1. Pull out the roll feed unit.
2. Remove the left inner cover.
3. Remove the four screws [A] securing the roll feed motor, then remove the roll feed motor [B] (1 connector).

3.6 ROLL END SENSOR REPLACEMENT



1. Remove the 2 screws [A] holding the clamps for the power supply cord.
2. Remove the roll feed rear cover [B] (6 screws).
3. Remove the roll end sensor bracket [C] (1 screw and 1 hook).
4. Replace the roll end sensor [D] (1 screw and 1 connector).

3.7 CUT LENGTH ADJUSTMENT

The cut length adjustment should be done when the roll feeder is installed to correct cutting errors. The cut error correction data is determined in the factory without the copier installed. The cut length varies depending on the copier on which it is installed and/or paper type used. If required, adjust the cut length as follows:

NOTE: The cut length should be measured 10 minutes or later after copying because the fusing unit dries the paper and reduces its length temporarily.

Preset Cut : Adjustment standards: ± 3 mm (for Length Shorter than 420 mm) ± 5 mm (for 420 to 1,189 mm) ± 11 mm (3,000 mm)

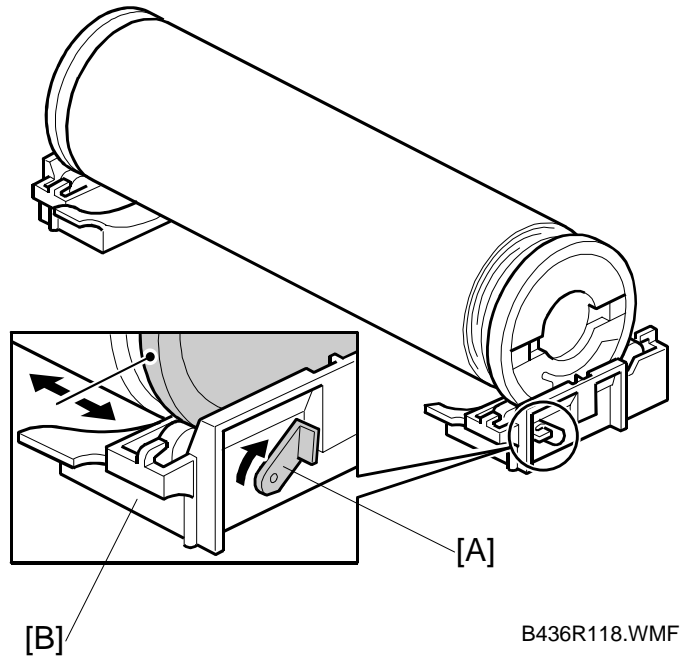
NOTE: 1) There are three settings of the cut length depending on the temperature mode. They are set in the factory to match a standard paper type. [Normal (SP#42, 45, 87), High (SP#43, 46, 88), Low (SP#44, 47, 89)].
2) There are two settings of SP#42 to 47 when the 2 rolls feeder is installed. Adjust the 2nd roll cut length by the same manner of the 1st roll cut length adjustment. Repeat the same steps after 1st roll cut length adjustment.

1. Make 5 copy samples of A0 lengthwise (1189) and A3 sideways (297) in the preset cut mode.
2. Measure the difference of the length between the each copy sample and preset cut length (1189 and 297). Then, calculate the average difference.
3. Input the average value using SP modes #42 to 47 so that the cut length is within the adjustment standards.

Example: 1) Current SP data #42....0
Copy sample length = 297 + 4
Set SP mode #42...-4.0
2) Current SP data #42....0
Copy sample length = 297 - 4
Set SP mode #42...+4.0

4. Make A0 lengthwise and A3 sideways copies using preset cut mode and check their length.
5. Repeat steps 2 to 4 if necessary.
6. Make 5 copy samples of 3,000 mm length. Make sure the average cut length is within the adjustment standards.
7. If it is not within the adjustment standards, change the values using SP modes #87 to 89.

3.8 SIDE REGISTRATION ADJUSTMENT



1. Raise the lever [A] in the left roll holder [B].
2. Adjust the roll paper side position. Lower the lever to fix the position.