

**PAPER FEED UNIT  
(Machine Code: G389)  
  
SERVICE MANUAL**

March, 2007  
Subject to change

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# Safety and Symbols

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## Replacement Procedure Safety

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### **CAUTION**


- Turn off the main power switch and unplug the machine before beginning any of the replacement procedures in this manual.

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## Symbols Used in this Manual

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This manual uses the following symbols.

: See or Refer to

: Screws

: Connector

: Clip ring

: E-ring

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# 1. Replacement and Adjustment

## Exterior Covers

1

### ⚠ CAUTION

- Turn the power off and disconnect the printer before you remove parts of the printer.

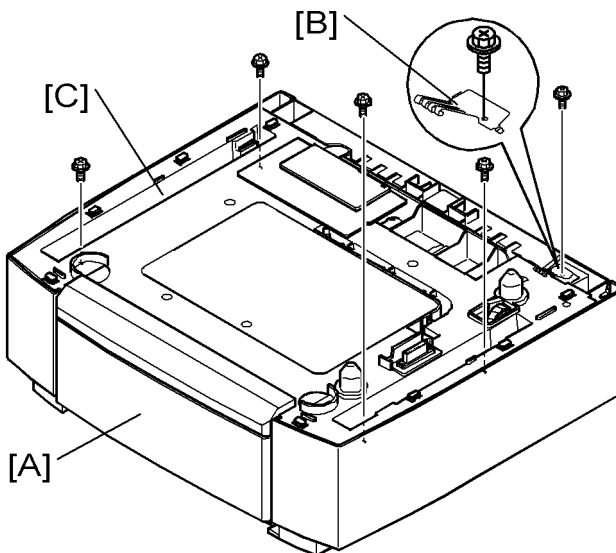
Symbols:

👁: See or refer to, 🔩: Screw, 📏: Connector, 🌀: Clip ring, Ⓢ: E ring

### Top Cover and Sensor Cover

### ⚠ CAUTION

- When you reassemble, attach the top cover before you close the paper tray. The link lever (👁 "Detailed Descriptions – Paper End Detection") is damaged if you attach the top cover after you close the paper tray.



G389R901

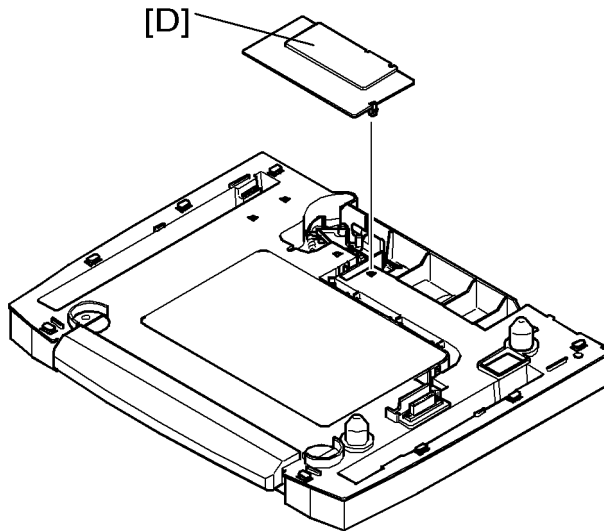
1. Remove the printer from the paper feed unit.
2. Paper tray [A]

#### ↓ Note

- The paper tray is linked to the feeler of the paper end sensor (👁 "Detailed Descriptions – Paper End Detection").

3. Ground plate [B] (1 x 1)
4. Top cover [C] (1 x 4)

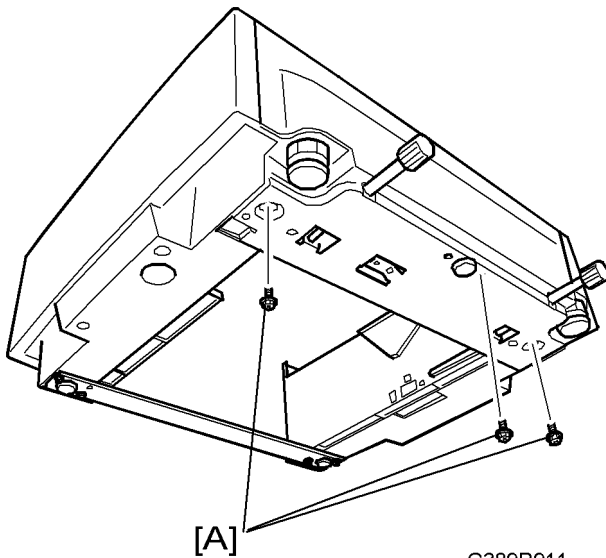
1



G389R902

5. Sensor cover [D]

## Bottom Base and Rear Cover



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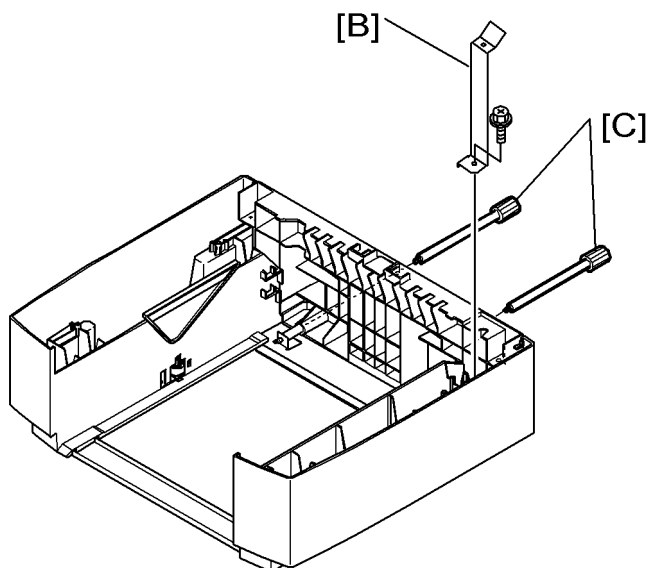
1. Remove the printer from the paper feed unit.

2. Tray

3. Three screws on the bottom base [A]

**Note**

- Do not remove the stud shafts [C] at this time. If you remove the stud shafts, the bottom base becomes loose. The edges of the bottom base can scratch and damage the bottom areas of the left and right covers.



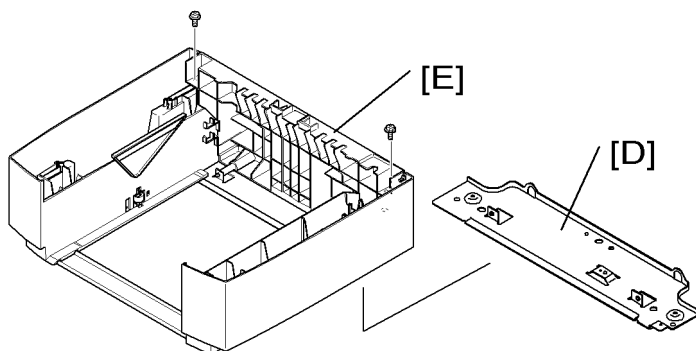
G389R910

4. Top cover (☛ "Top Cover and Sensor Cover")

5. Clutch assembly (☛ "Paper Feed Clutch")

6. Ground plate [B] (☛ x 1)

7. Stud shafts [C]



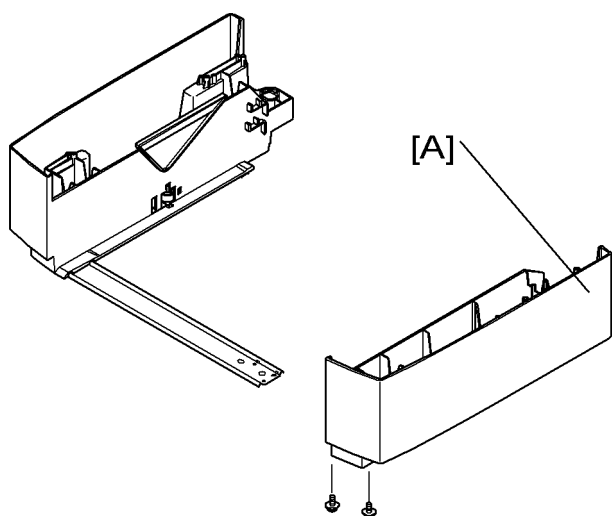
G389R912

8. Bottom base [D]

9. Rear cover [E] (🔩 x 2)

# 1

## Right Cover

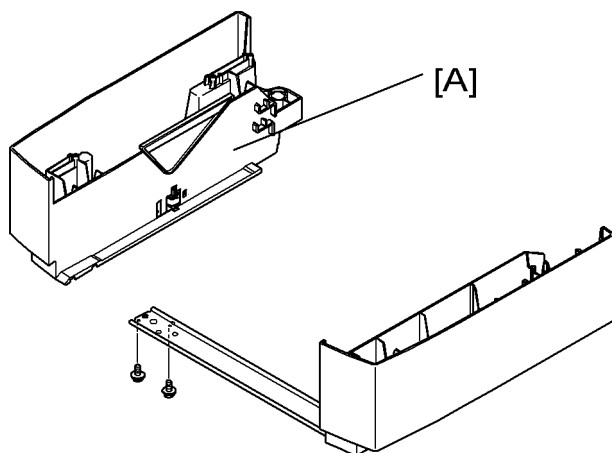


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1. Rear cover (🔩 "Bottom Base and Rear Cover")

2. Right cover [A] (🔩 x 2)

## Left Cover



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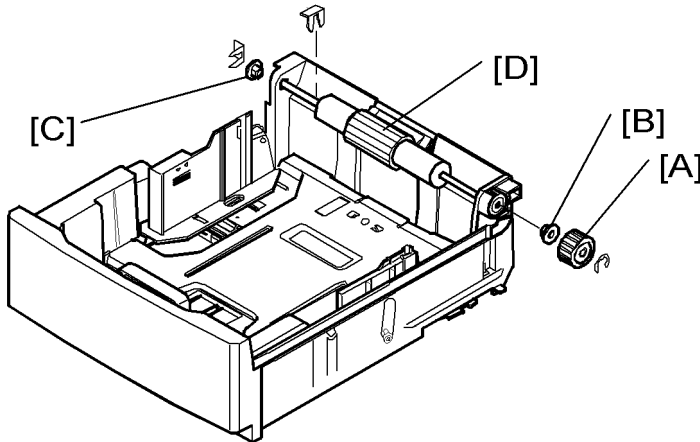
1. Rear cover (☛ "Bottom Base and Rear Cover")
2. Left cover [A] (🔩 x 2)



# Feed Roller and Separator Pad

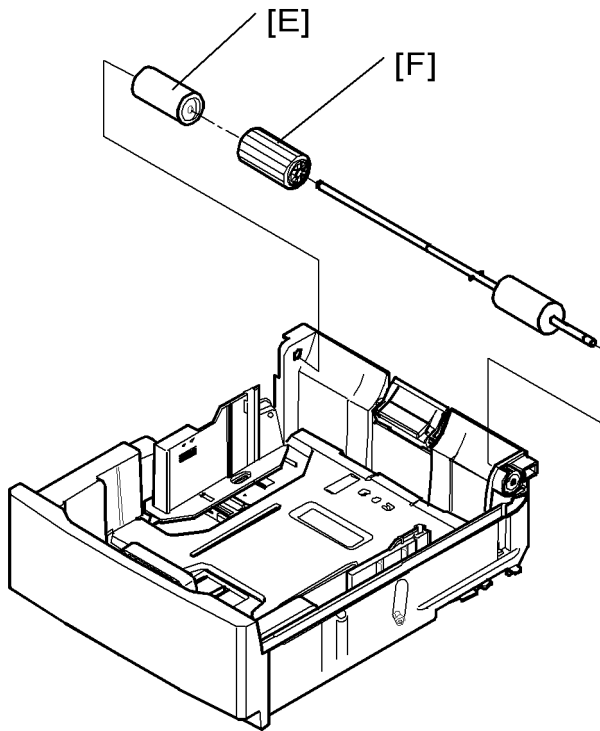
1

## Feed Roller



G389R915

1. Tray
2. Gear [A] (⌀ x 1)
3. Bushing [B] (⌀ x 1)
4. Bushing [C] (⌀ x 1)
5. Feed roller (with the shaft) [D]



G389R916

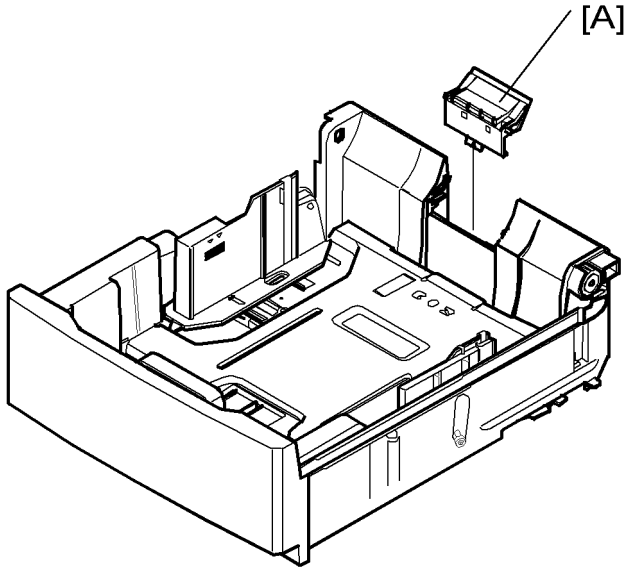
6. Roller support [E] (☞ x 1)

7. Feed roller [F]

### Necessary Setting

After replacing the feed roller, reset the PM counter for this part (see the service manual for the main body).

## Separator Pad



G389R917

1. Feed roller (with the shaft) (☛ "Feed Roller")
2. Separator pad [A]

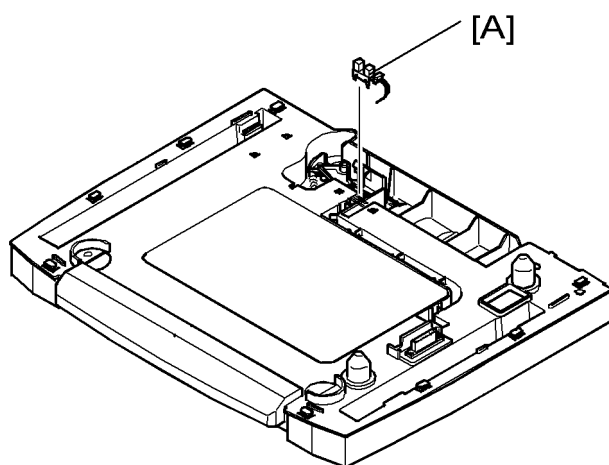
### Necessary Setting

After replacing the feed roller, reset the PM counter for this part (see the service manual for the main body).

# Sensors

## Paper End Sensor

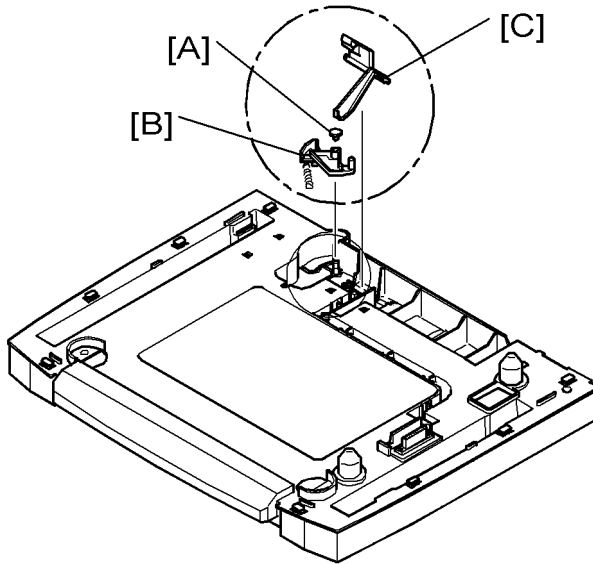
1



G389R903

1. Sensor cover (🔑 "Covers – Top Cover and Sensor Cover")
2. Sensor [A] (🔌 x 1)

## Paper End Feeler and Link Lever



G389R918

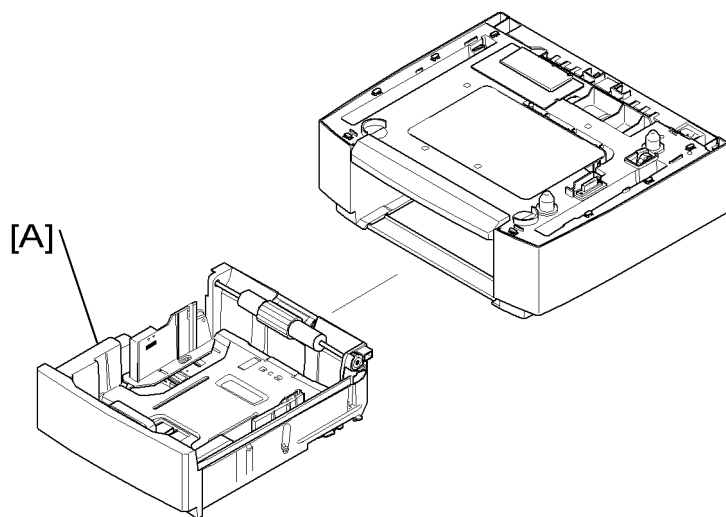
1. Sensor cover (☛ "Covers – Top Cover and Sensor Cover")
2. Tray
3. Stopper [A]
4. Link lever [B]
5. Paper end feeler [C]

### Reassembling

1. Attach the link lever.
2. Attach the stopper.
3. Close the tray.
4. Attach the paper end feeler.
5. Attach the sensor cover.

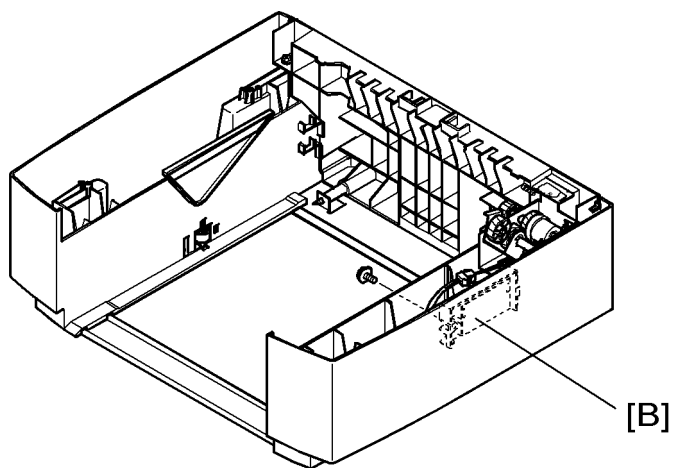
## Paper Size Sensor

1



G389R904

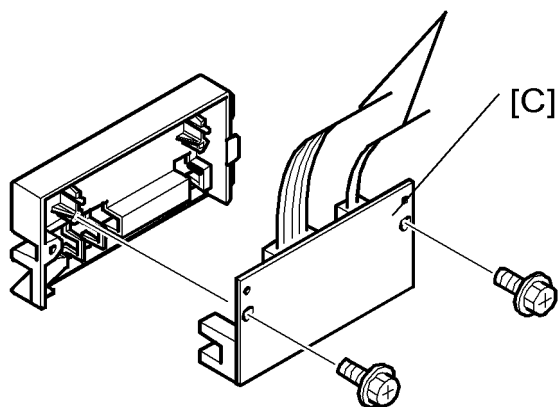
1. Tray [A]



G389R905

2. Sensor cover (with the sensor) [B] (1 x 1)

1

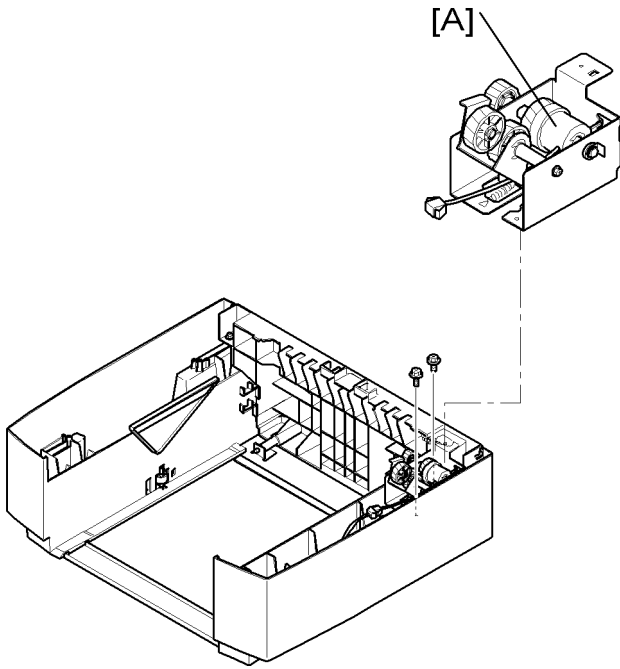


G389R906

3. Paper size sensor [C] (  x 2,  x 2 )

# Paper Feed Clutch

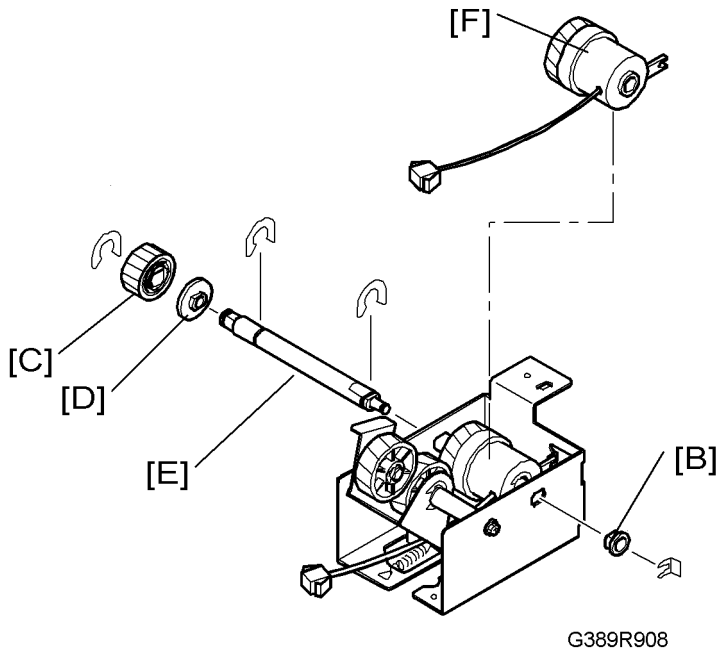
1



G389R907

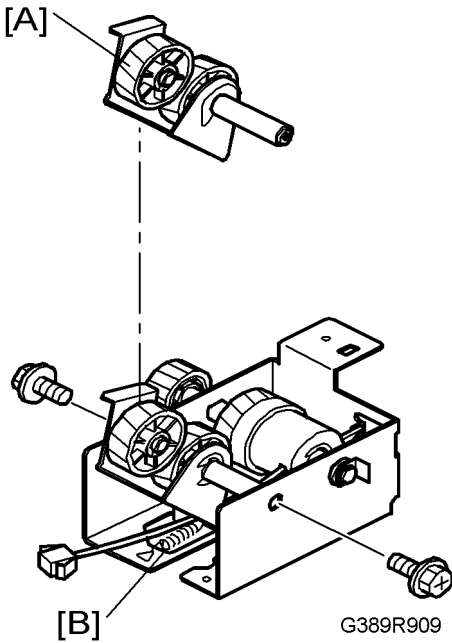
1. Top cover (🔑 'Covers')
2. Clutch assembly [A] (🔧 x 1, 🛠️ x 2)





3. Bushing [B] (1 x 1)
4. Gear [C] (1 x 1)
5. Bushing [D]
6. Clutch shaft [E] (1 x 2)
7. Paper feed clutch [F]

# Relay Gears



1. Clutch assembly (☛ "Paper Feed Clutch")
2. Relay gears [A] (☛ x 2)

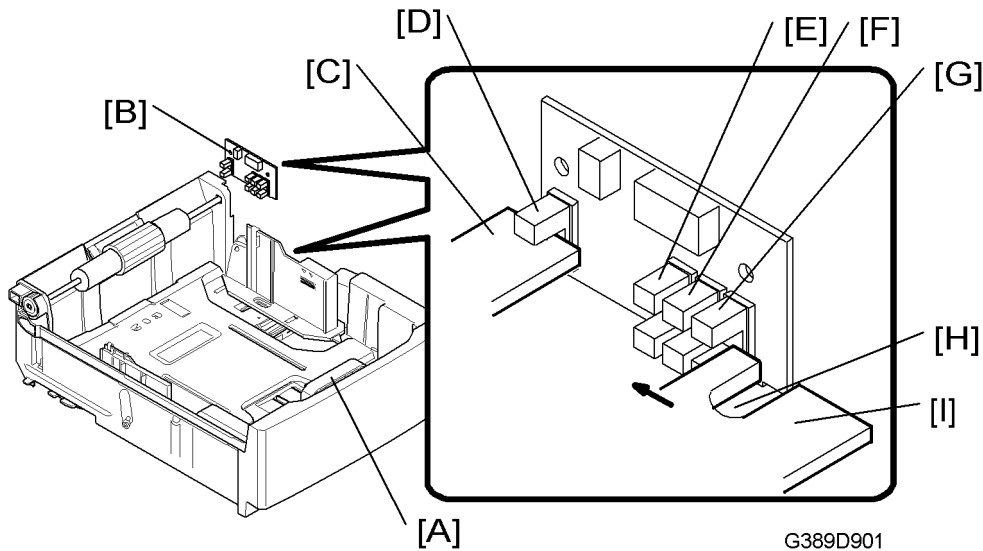
## Reassembling

Make sure that you attach the spring [B] to the relay gear bracket and the clutch assembly bracket.



# 2. Details

## Paper Size and Paper Tray Detection



There is a printed circuit board [B] at the rear end of the right paper-tray rail. There are four photosensors on this PCB. The three photosensors on the front side [E] [F] [G] are the paper size sensors. The other is the paper tray sensor [D]. The paper size sensors detect the paper size in the paper tray. The paper tray sensor detects the paper tray.

The interrupter [I] that is mechanically attached to the front plate [A] can interrupt the paper size sensors. This interrupter has an opening [H]. The interrupter can interrupt two sensors or less.

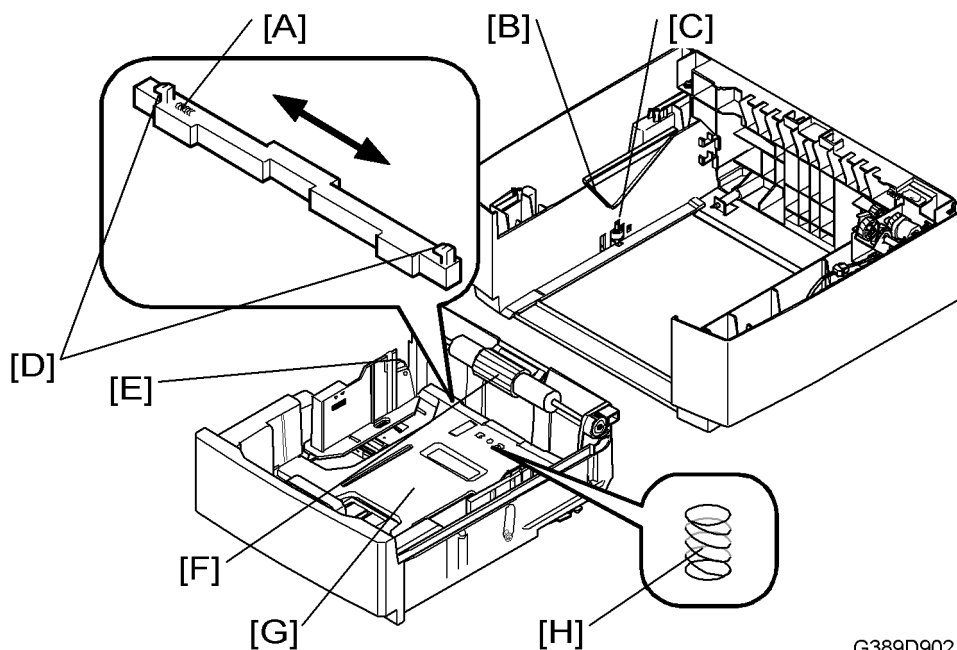
The paper tray has one more interrupter [C] on its rear right corner. This interrupter interrupts the paper tray sensor. While the paper tray is correctly set in the paper feed unit, the paper tray sensor is always interrupted.

The table lists the sensor patterns and detected paper sizes.

Paper Size Sensor			Paper Tray Sensor	Paper Size
[G]	[F]	[E]	[D]	
Interrupted	Not interrupted	Not interrupted	Interrupted	B5
Not interrupted	Not interrupted	Interrupted	Interrupted	B5
Interrupted	Interrupted	Not interrupted	Interrupted	Executive

Paper Size Sensor			Paper Tray Sensor	Paper Size
Not interrupted	Interrupted	Not interrupted	Interrupted	Letter
Interrupted	Not interrupted	Not interrupted	Interrupted	A4

## Paper Lift



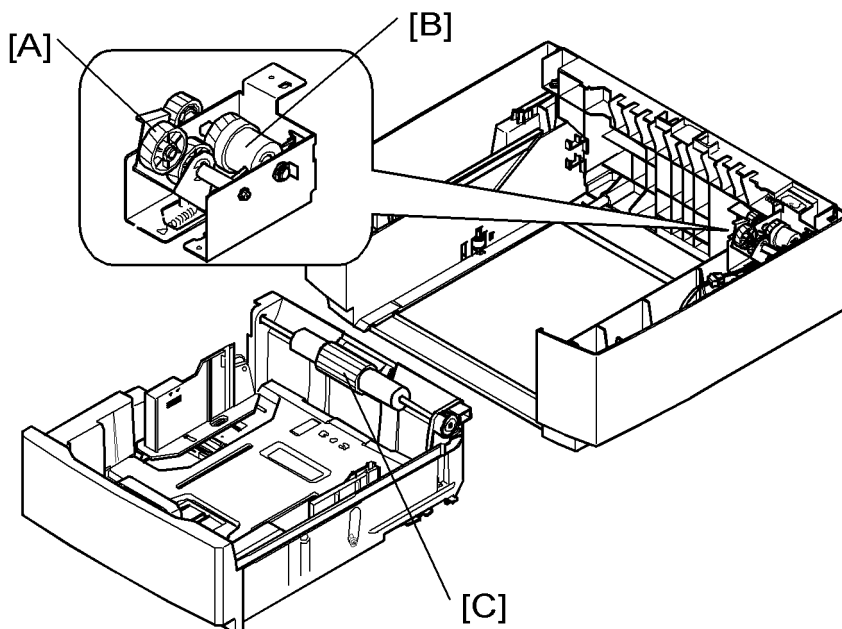
G389D902

A spring [H] and a white bar are below the bottom plate [G]. The white bar has a spring [A] and two hooks [D]. These hooks hold the bottom plate. The white bar moves to the two sides.

When you push the paper tray into the paper feed unit, the roller on the left side [C] pushes the white bar. The white bar moves to the right side (shown from the machine front). The two hooks on the white bar release the bottom plate. The spring pushes the bottom plate and lifts it up. The uppermost sheet of paper in the tray is pushed to the feed roller [F].

When you pull the paper tray out of the paper feed unit, the triangular rail [B] on the left side pushes down the roller [E] on the paper tray. This roller is attached to the bottom plate. The bottom plate is gradually pushed down when you pull the paper tray. Finally, the bottom plate reaches the white bar. The hooks on the white bar hold the bottom plate.

## Paper Feed



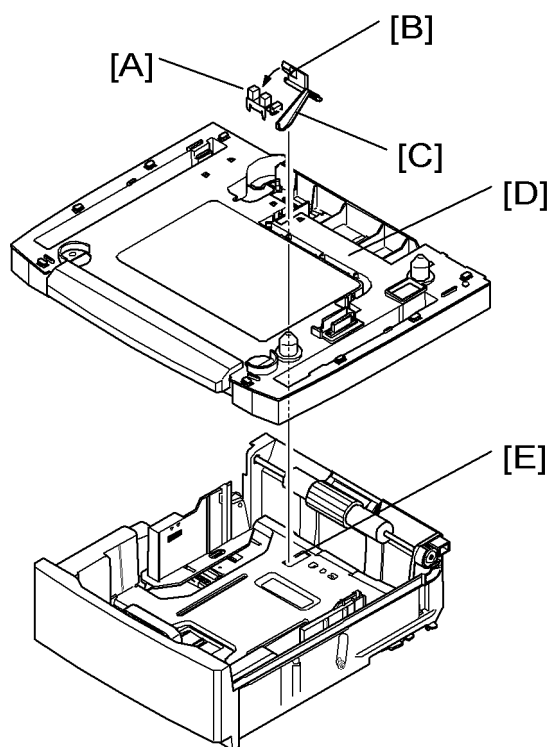
G389D903

The paper feed unit does not have a motor. The main motor of the printer drives the topmost gear [A] in the clutch assembly. The clutch [B] sends drive power to the paper feed roller [C] when it is set on. The paper feed roller moves the uppermost sheet of paper.

# Paper End Detection

## Paper End Sensor

2

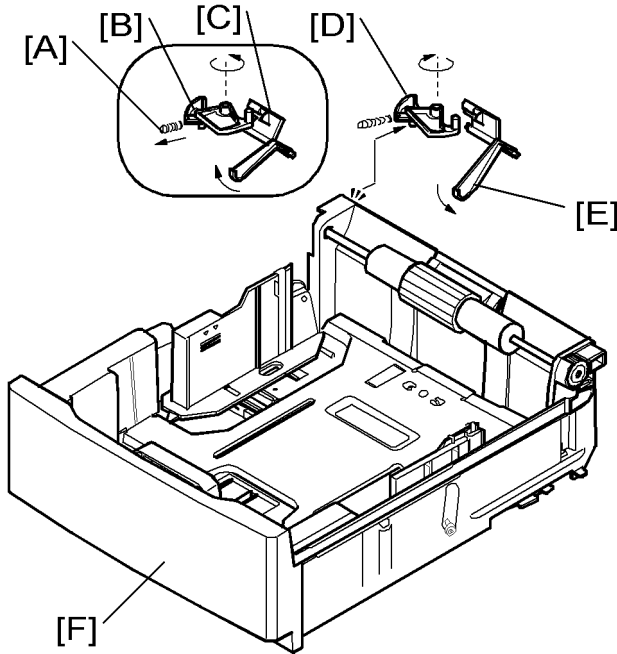


G389D904

A paper end sensor [A] and a feeler [C] are on the top cover [D]. The feeler stays on the topmost paper in the paper tray. When the paper tray is empty, the feeler falls into the opening [E] in the bottom plate. The left end of the feeler [B] interrupts the paper end sensor.



## Link Lever



G389D905

### Function

A link lever is on the top cover. This link lever lifts the feeler of the paper end sensor when the paper tray is out of the paper feed unit. The link lever lets the feeler fall down when the paper tray is in the paper feed unit. Because of this mechanism, the feeler is not damaged when you pull or push the paper tray.

### Mechanism

When the paper tray [F] is out of the paper feed unit, the spring [A] pulls one end of the link lever [B]. The other end of the link lever pushes the feeler [C] of the paper end sensor. The feeler is lifted up.

When the paper tray is in the paper feed unit, the paper tray pushes one end of the link lever [D]. The other end of the link lever goes away from the feeler of the paper end sensor. The feeler [E] comes down to the topmost sheet of paper.

