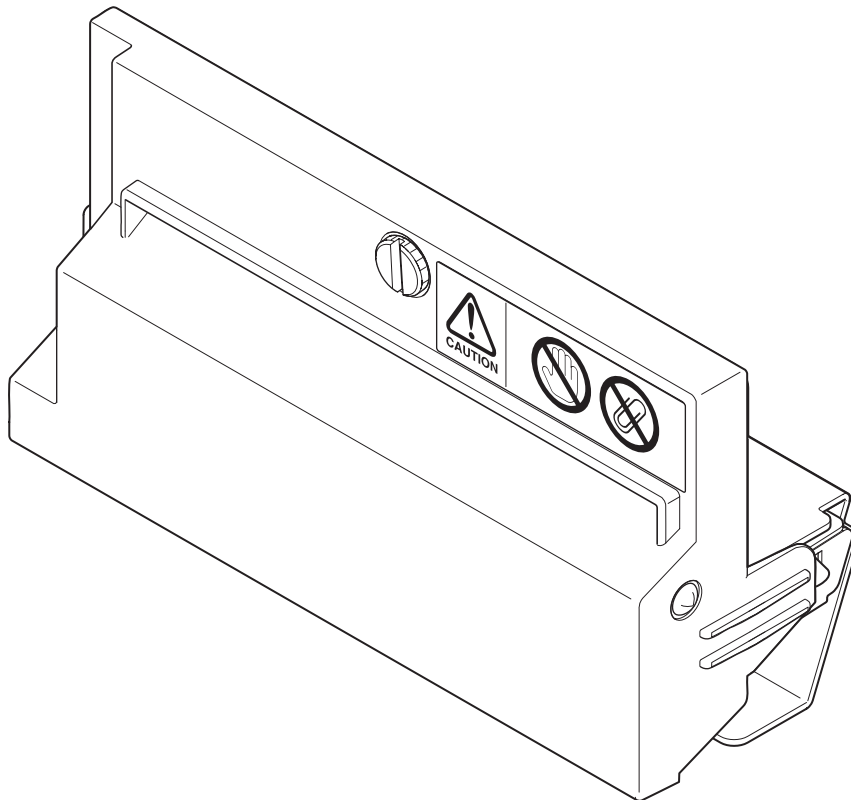


# **Technical Manual**

## **CLP-521**

## **CLP-621 & CLP-631**

## **Auto Cutter Unit**



**CITIZEN SYSTEMS JAPAN CO., LTD.**

**JM74947-00F**  
**1.00E-0610**

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Be sure to observe the following warnings and cautions during installing, removing or repairing the auto cutter unit.

### **WARNINGS**

- (1) Before starting installing, removing or repairing, be sure to turn off the power of the printer and disconnect the power cord from the power source.
- (2) During disassembly/reassembly or adjustment, do not touch the cutting blade as it is very dangerous.
- (3) Do not insert a foreign object such as a paper clip into the cutting blade section.
- (4) When cleaning the cutter blade, use a cotton swab that is soaked in ethyl alcohol. Do not directly wipe with a soft cloth as the cutting blade is very dangerous.

### **CAUTIONS**

- (1) Do not disassemble/reassemble or adjust the auto cutter unit, if it functions properly. Particularly, do not loosen screws on any component, unless necessary.
- (2) After completing an inspection and before turning on the power, be sure to check that there is no abnormality.
- (3) Do not put anything on the covers, etc. during maintenance or while the printer is in operation.
- (4) During maintenance, be careful not to leave parts or screws unattached or loose inside the auto cutter unit.
- (5) When disassembling or reassembling, check cables for any damage and make sure that they are not caught by covers, etc.

# CHAPTER 1 SPECIFICATIONS



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# 1-1. General Specifications

Item	Descriptions
Cutting method	Guillotine type
Maximum cut paper thickness	0.25 mm (0.01")
Minimum cut paper length	25.4 mm (1")
Cut paper width	Maximum: 118 mm (4.65") Minimum: 25.4 mm (1")
Durability	<p>Number of cuts:</p> <p>More than 300,000 times (for 60 to 150 μm (0.0024 to 0.0059") paper thickness )</p> <p>More than 100,000 times (for 150 to 250 μm (0.0059 to 0.0098") paper thickness)</p> <p><b>Note:</b> - Paper with adhesive substance may be excluded from these figures. - Number of cuts may differ depending on the paper material to be used.</p>
Paper specifications	<p>Roll or label (continuous, die-cut, fanfold, tag and ticket). However, the following paper cannot be used.</p> <ul style="list-style-type: none"> <li>- Paper thickness: 0.06 mm (0.0024") or less</li> <li>- Roll paper core diameter: 51 mm (2") or less</li> </ul> <p><b>Note:</b> Paper other than the specified may have problems such as paper jams, so paper must be checked whether it meets the specification or not before use.</p>
Cut accuracy	<p>Cut length tolerance: <math>\pm 1.0</math> mm (<math>\pm 0.04</math>") or less Maximum cut difference between left and right edge: <math>\pm 1.0</math> mm (<math>\pm 0.04</math>") or less</p> <div data-bbox="635 1391 1276 1816" style="text-align: center;"> <p>The diagram shows a rectangular piece of paper with a downward-pointing arrow in the center labeled 'Paper feed direction'. To the right of the paper, there are two vertical dimension lines. The outer one is labeled 'Cut length tolerance' and spans the full height of the paper. The inner one is labeled 'Maximum cut difference between left and right edge' and shows a small gap between the left and right edges at the top of the paper.</p> </div> <p><b>Note:</b> - Above accuracy will be satisfied at normal temperature/normal humidity when recommended label paper and ribbon are used. - Paper cut position can be adjusted using the printer command. (Refer to the Command Reference Manual for details.)</p>

Item	Descriptions
Power consumption	Typical operating: Approx. 1.5 A (24 V) (Power is supplied from the printer.)
Operating temperature and humidity	Temperature: 5 to 40°C (41 to 104°F) Humidity: 30 to 75% RH (non-condensing) (Condition: Under good ventilation with natural convection) Note: Specifications for temperature and humidity are the same as the printer.
Outer dimensions	149 mm (W) x 76 mm (H) x 52 mm (D) (5.87" (W) x 2.99" H x 2.05" (D))
Weight	Approx. 0.5 kg (1.1 lb.)

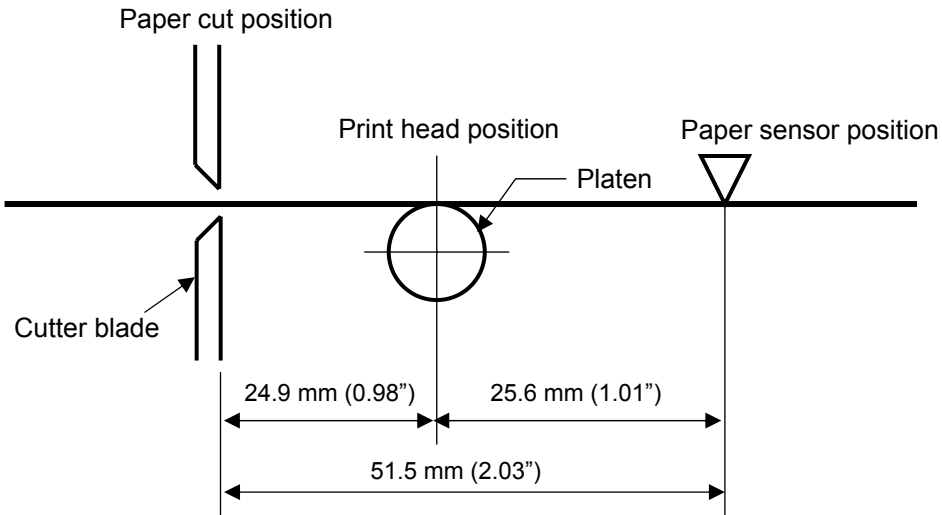
**Note:** When paper with adhesive is used, do not cut a label portion. Otherwise, adhesive of label may stick onto the cutter blade, which could cause cutting malfunction.

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## 1-2. Cut Position

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The distances from the paper sensor and thermal print head to the cutter blade are shown below.



# 1-3. Cutter Errors

## 1-3-1. Error Indication

When a cutter error occurs, an alarm sounds and the error condition is displayed on the LEDs of the operation panel.

If a cutter error (except for abnormal auto cutter temperature) occurs, the printer goes offline and the PRINT LED goes out.

In case of abnormal cutter temperature, the printer stops temporarily, but it will automatically restart when temperature lowers.

Item	PRINT LED	CONDITION LED	ERROR LED
Media end	OFF	OFF	<input type="checkbox"/> ON <input checked="" type="checkbox"/> OFF
Media out (Media location cannot be detected.)	OFF	<input type="checkbox"/> ON <input checked="" type="checkbox"/> OFF	<input type="checkbox"/> ON <input checked="" type="checkbox"/> OFF
Ribbon end	OFF	○●○●○●○●	●○●○●○●○
Auto cutter abnormality (Jamming, etc.)	OFF	OFF	ON
Abnormal auto cutter temperature	<input type="checkbox"/> ON <input checked="" type="checkbox"/> OFF	<input checked="" type="checkbox"/> OFF <input type="checkbox"/> ON	OFF

Time axis: →

○ : ON, ● : OFF

ON  OFF : Slow LED flashing

○●○●○●○● : Quick LED flashing



### 1-3-2. Troubleshooting

Symptoms	Checks	Remedies
Media is not cut cleanly.	1. Is adhesive label used and adhesive stuck onto the cutter blade?	1. Cleaning of blade is required. If the blade is worn out, replace the Cutter Unit.
Media jammed.	1. Turn off the power of the printer and check the Cutter Unit for any foreign matter. 2. Is the Cutter Cable SA (JM67765-0) of the Cutter Stand Unit (JM98802-0) connected to the Main PCB SA (CN15) of the printer? 3. Is the cable of the Cutter Unit connected to the Cutter Stand Unit? 4. Is the gap of cutter slit in a specified range (0.9 mm to less than 1.0mm)? 5. Failure in the cutter control circuit. 6. Failure in the printer control circuit.	1. Remove foreign matter. 2. Connect it firmly. 3. Connect it firmly. 4. Adjust the gap. (Refer to Chapter 3 "Adjustments".) 5. Replace the Cutter PCB Unit. 6. Replace the Main PCB Unit in the printer
Printer stopped because of abnormal auto cutter temperature	1. Check if PRINT LED and CONDITION LED light alternately.	1. Wait until the Cutter Unit gets cool.

# CHAPTER 2

# INSTALLATION PROCEDURE

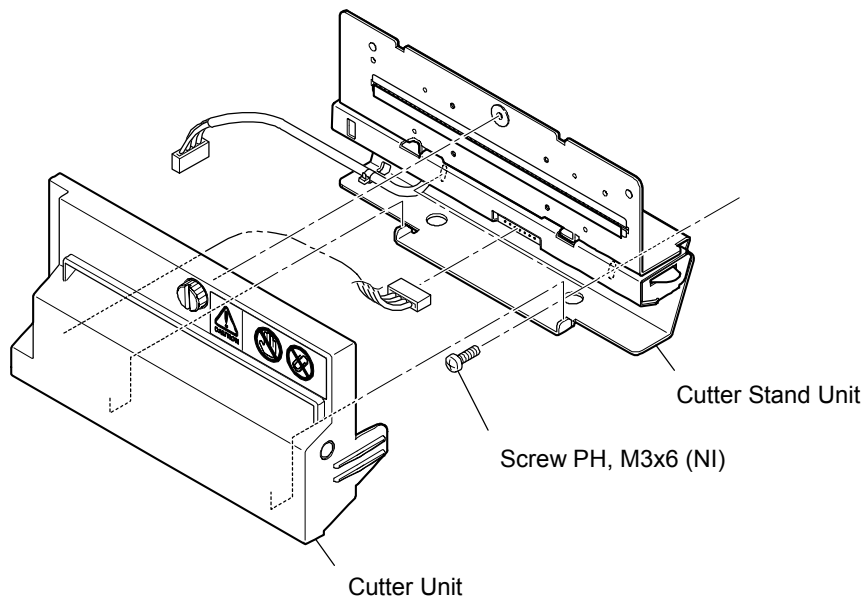
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## 2-1. Auto Cutter Unit Components

The Auto cutter unit consists of the following parts. Be sure that all the parts are included in the auto cutter unit.

1. Cutter Unit
2. Cutter Stand Unit
3. PH, M3x6 (NI) .... 2 pcs.
4. Cutter User's Manual (JM74912-5)
5. Manual for service personnel (JM74937-0)



## 2-2. Maintenance Tools List

Maintenance tools shown below are needed when replacing the maintenance parts of the auto cutter unit.

Maintenance Tools List

No.	Name	Q'ty	Description	Remarks
1	Phillips Screwdriver screws (Length 200 mm)	1	For 3 to 4 mm	
2	Phillips Screwdriver screws (Length 100 mm)	1	For 2 to 3 mm	
3	Thickness Gauge	1	0.9mm/1.0mm	

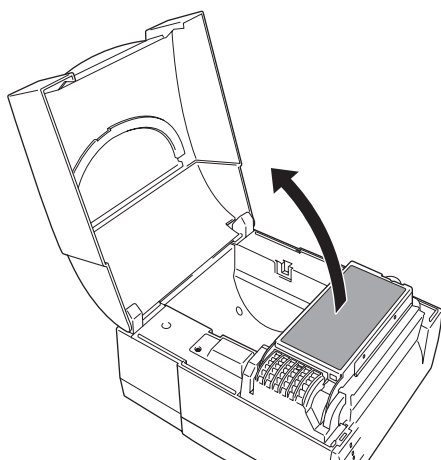
## 2-3. Installation Procedure

**Notes:**

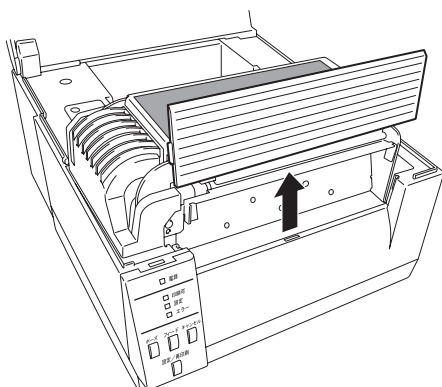
- The following shows the auto cutter unit installation procedure for CLP-521. However, the procedure for CLP-621 and CLP-631 is basically the same as for CLP-521.
- The auto cutter unit cannot be installed on the printer if an optional peeler unit is attached. Therefore, remove the peeler unit before installing the auto cutter unit.

### 2-3-1. Installing the Cutter Stand Unit

1. Turn the printer off and unplug the power cord from the printer.
2. Open the Top Cover SA.



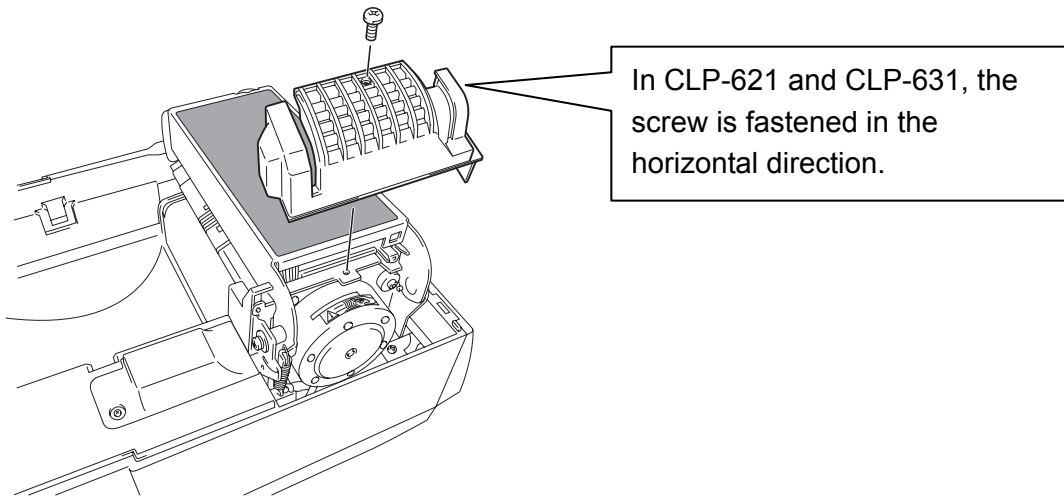
3. Lift the Front Cover upward and remove it from the printer.

**Note:**

Keep the Front Cover as it will be used again when the auto cutter unit is removed from the printer.

4. Remove the one screw (PH, M3x3) that fastens the Motor Cover, and detach the Motor Cover.

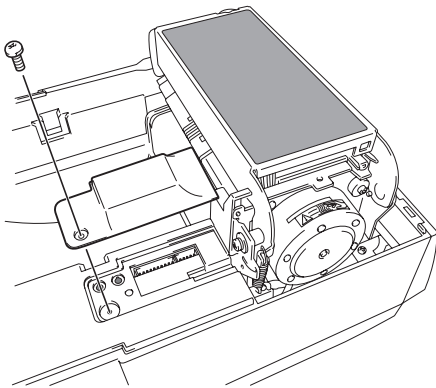
In this case, pay attention not to drop the screw inside the printer.



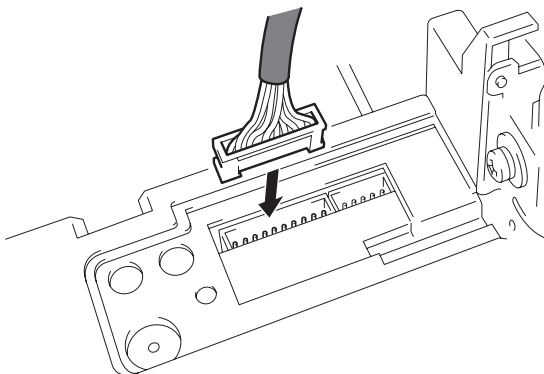
**Note:**

Do not touch the motor as it can get hot.

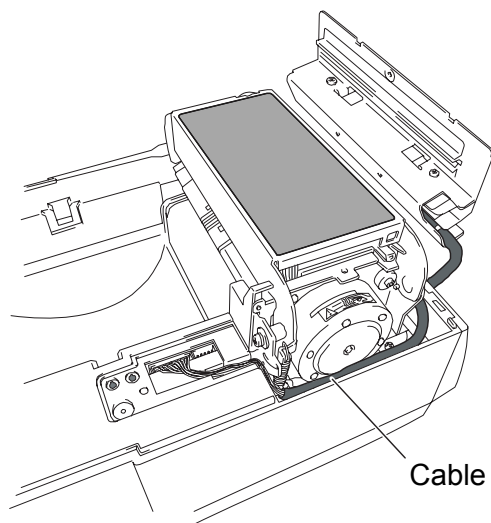
5. Remove the one screw (PHT(BH2T), M3x14) that fastens the Connector Cover, and detach the Connector Cover.



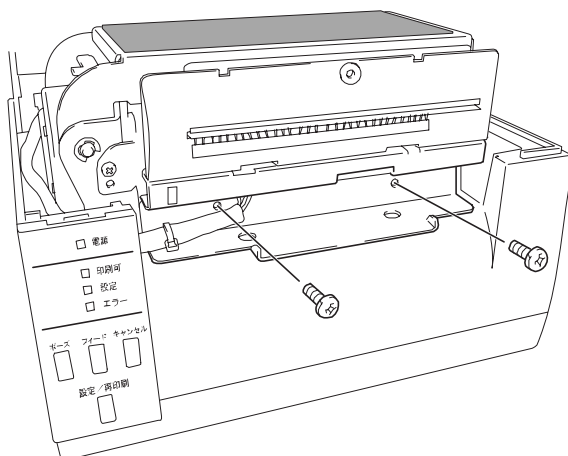
6. Connect the cable of Cutter Stand Unit to the connector (CN15) on the Main PCB Unit of the printer.



7. Run the cable stated in step 6 along the printer case as shown below.  
In this case, run the cable so that it will not be caught by the Connector Cover or Motor Cover that will be installed again.



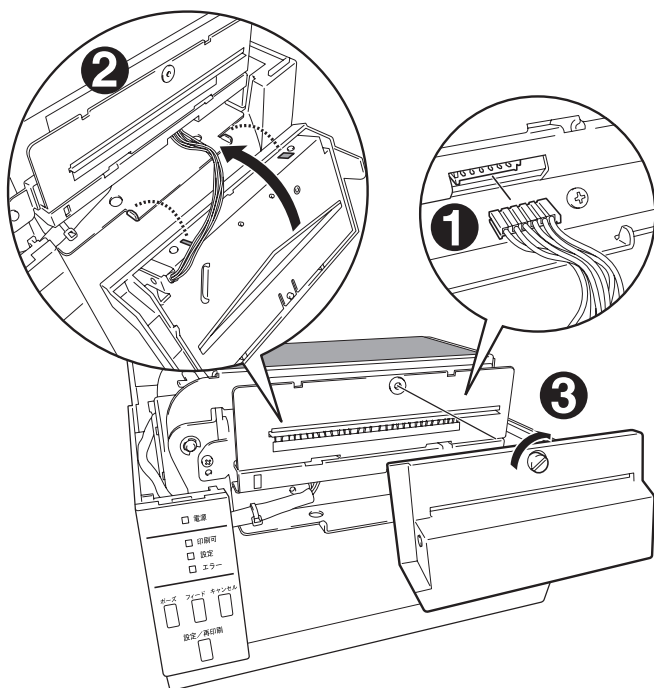
8. Fasten the Cutter Stand Unit to the printer with the attached two screws.



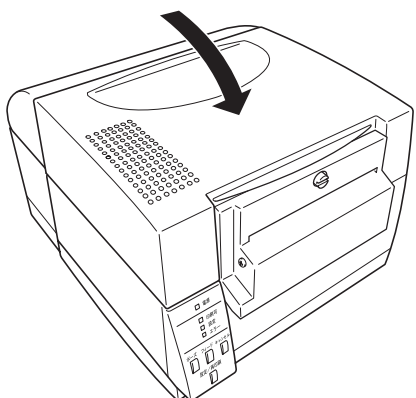
### 2-3-2. Installing the Cutter Unit

After attaching the Cutter Stand Unit to the printer, install the Cutter Unit as follows:

1. Connect the cable of the Cutter Unit to the connector of the Cutter Stand Unit (❶).
2. While aligning two convexes at the bottom of the Cutter Unit with two projections of the Cutter Stand Unit (❷), fasten the screw knob of the Cutter Unit with a flat-bladed screwdriver to install the Cutter Unit to the Cutter Stand Unit (❸).  
In this case, pay attention so as not to pinch the cable with the Cutter Unit.



3. Install the Motor Cover and Connector Cover on the printer body.
4. Close the Top Cover SA.



5. Connect the power cord and turn on the power switch of the printer.
6. Perform self print function and check for correct cutter operation.  
Refer to "3.2 Cutter Operation Check" in Chapter 3 "Adjustments".

### 2-3-3. Removing the Auto Cutter Unit

**Note:**

Before starting work, be sure to turn off the power of the printer and disconnect the power cord from the power source.

Remove the Auto Cutter Unit from the printer by performing reverse procedure to installation procedure.

In this case, while detaching the Cutter Unit from the printer by removing the fastening screw, hold the Cutter Unit by hand as it can fall down.

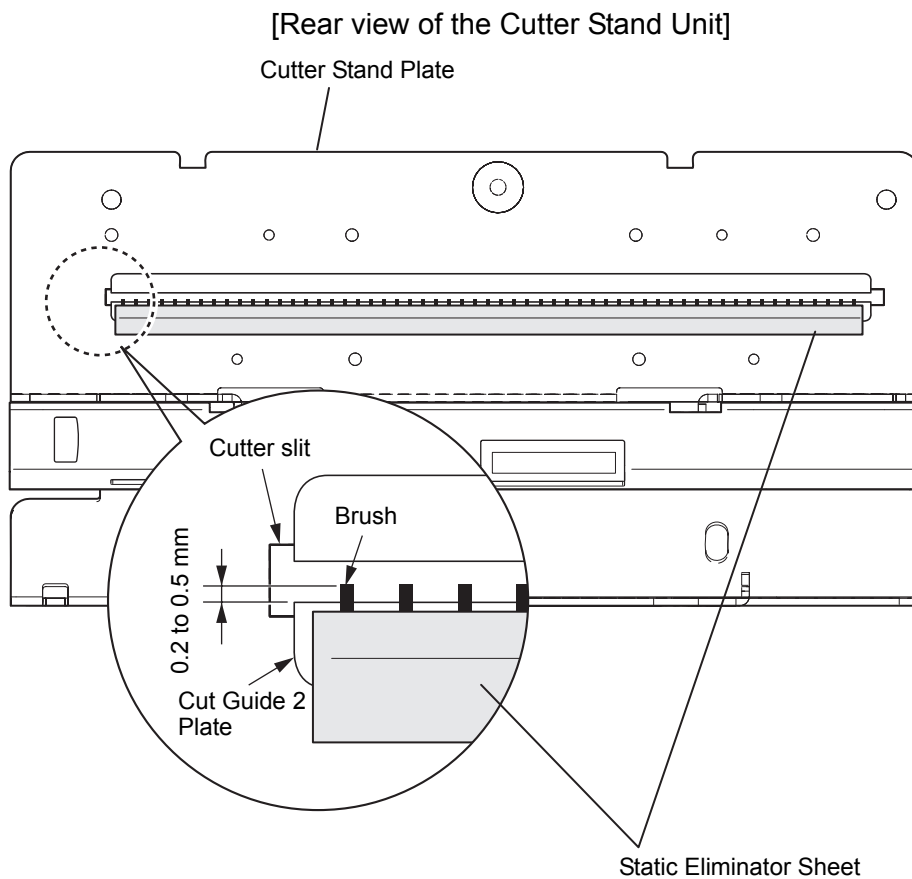
### 2-3-4. Caution when replacing parts

If the following part is removed from the Cutter Stand Unit, adjustment is required when assembling.

1	Static Eliminator Sheet	Positioning is required.
2	Metal parts that regulate the cutter slit width	Refer to Chapter 3 "Adjustments".

### Static Eliminator Sheet Sticking Position:

Stick the Static Eliminator Sheet to the position shown below.





# CHAPTER 3 ADJUSTMENTS

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## 3-1. Mechanical Adjustment

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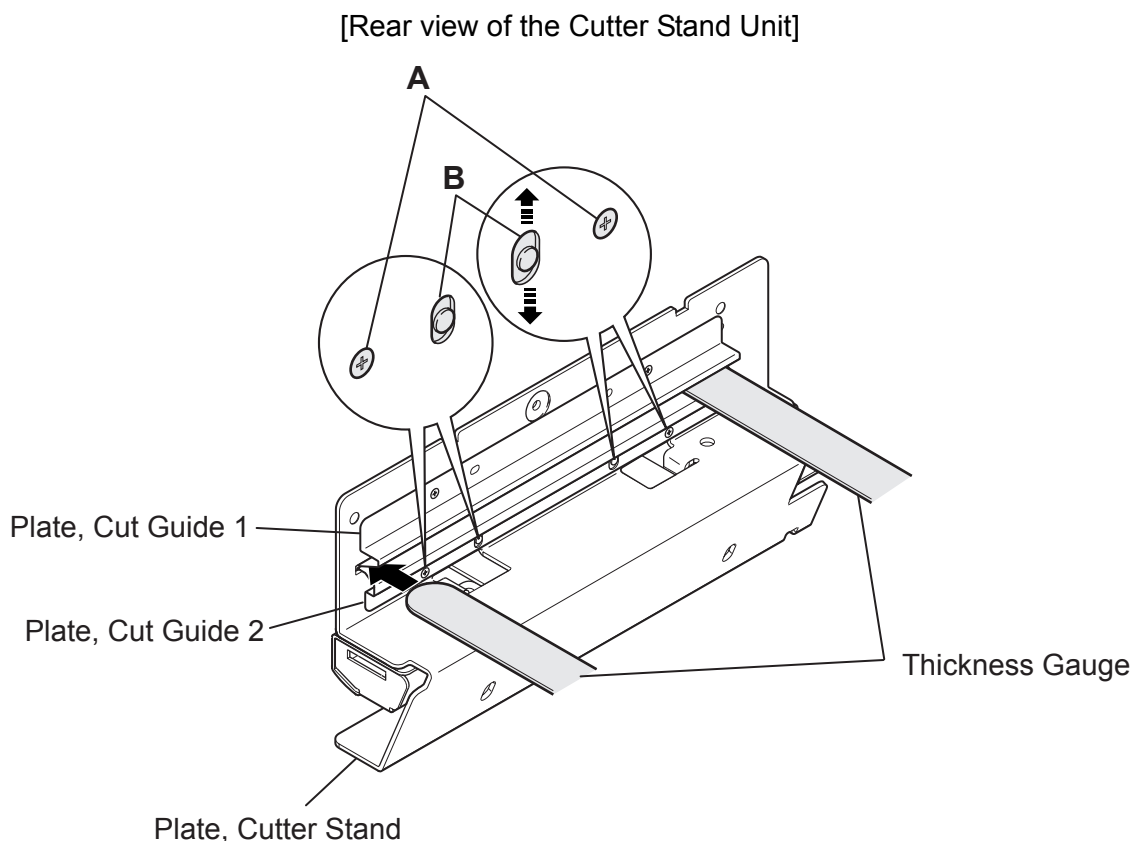
When the following part is replaced, perform cutter slit width adjustment explained here.

- Cutter Stand Plate

- Cut Guide 2 Plate (Adjustment is also necessary when it is reassembled.)

### 3-1-1. Cutter slit width adjustment

1. Using thickness gauges (0.9 mm and 1.0 mm), check the cutter slit width in the Cutter Stand Unit.
  - 1) Be sure that the 0.9 mm thickness gauge can pass through the slit on both right and left sides.
  - 2) Be sure that the 1.0 mm thickness gauge cannot pass the slit on both sides.
2. If satisfactory results are not obtained, adjust the slit width as follows:
  - 1) Loosen (not remove) the two screws "A" on the back of Cutter Stand Unit.
  - 2) Adjust the slit width while sliding the Cut Guide 2 Plate located in the lower part of Cutter Stand Unit. (The Cut Guide 2 Plate moves vertically along the elongate holes "B".)
  - 3) Be sure that the 0.9 mm thickness gauge passes through the slit but the 1.0 mm thickness gauge does not pass it through.  
**Note:** Perform this check on both sides of the slit to ensure the parallelism of the Cut Guide 2 Plate against the Cut Guide 1 Plate.
  - 4) Tighten the screws "A" to fasten the Cut Guide 2 Plate.



## 3-2. Cutter Operation Check

After installing the auto cutter unit in the printer, perform the self test to check the cutter operation.

Self print pattern is printed over two pages and each page is automatically cut.

### 3-2-1. Operation in self print mode

Install the media and operate the printer as follows:

#### Case of label media:

Turn on printer power while pushing the FEED key.

When the PRINT LED has begun to flash slowly, release the FEED key.

After it enters TEST MODE and media has fed, two labels print then printing stops.

To restart printing, press the FEED key once more.

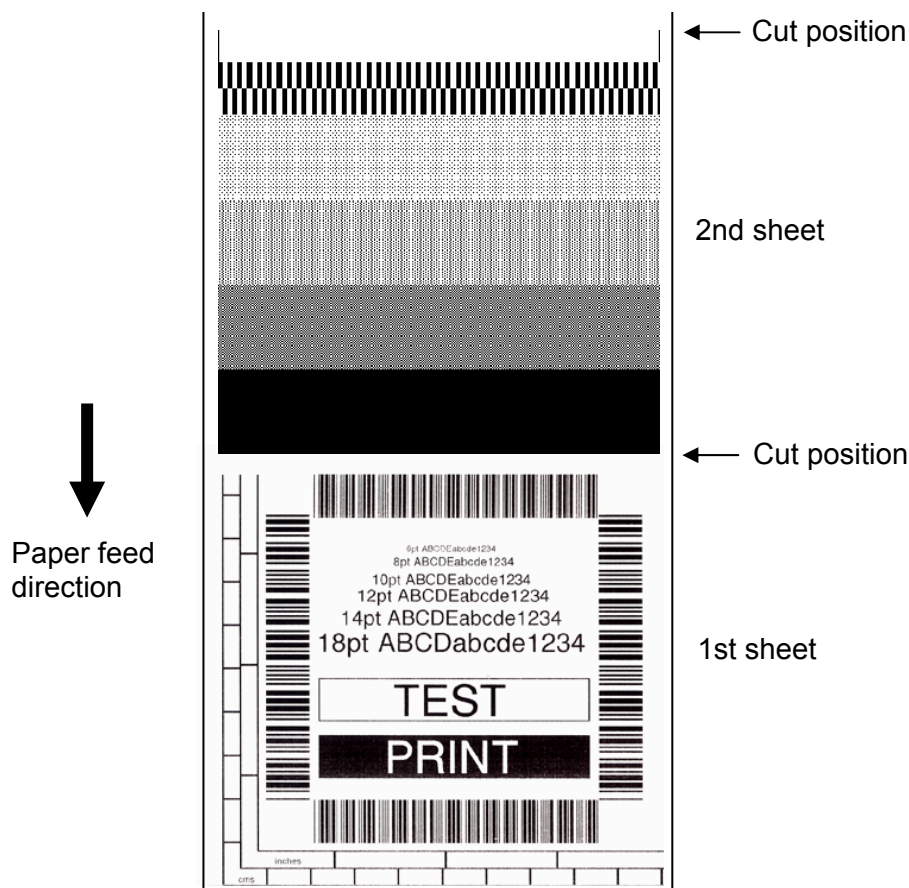
#### Case of continuous media:

Turn on printer power while pushing the FEED key.

When PRINT LED has stopped flashing slowly and has begun to flash rapidly, release the FEED key.

After it enters TEST MODE, it prints and then printing stops.

To restart printing, press the FEED key once more.



Self test print pattern

**Notes:**

- With the original factory settings, the printer automatically recognizes installation of the Auto Cutter Unit.
  
- If cutting operation is not performed, "Auto Configure" option in the "After Print" menu may be set to "Off". In this case, set it to "On" and then retry self test print operation.  
\*: To change the menu setting, refer to the User's Manual.
  
- Cutter operation is possible even when "Auto Configure" option in the "After Print" menu is set to "Off". To enable the cutter operation, select "Cut On" in "Function Select" of the "After Print" menu, and then perform self test print operation.