

# **COPY BOARD**

## **BF-041S/BF-041W**

### **SERVICE MANUAL**

## **PLUS**

# CONTENTS

<b>1. COMPLIANCE OF SAFE REPAIR .....</b>	<b>1</b>	<b>7. PARTS LIST .....</b>	<b>24</b>
1-1. Cautions during Product Movement .....	1	7-1. BOARD UNIT SECTION (BF-041S) .....	24
1-2. Cautions during disassembling and assembling ....	1	7-1. BOARD UNIT SECTION (BF-041W) .....	26
<b>2. SPECIFICATIONS .....</b>	<b>2</b>	7-2. FRAME COVER SECTION (BF-041S) .....	28
2-1. Product Specifications .....	2	7-2. FRAME COVER SECTION (BF-041W) .....	29
2-2. Location of Main Set .....	3	7-3. SHEET FRAME SECTION (BF-041S) .....	30
2-3. Operation Panel .....	4	7-3. SHEET FRAME SECTION (BF-041W) .....	31
2-4. Scanning Area .....	4	7-4. BOARD FRAME SECTION (BF-041S) .....	32
<b>3. TROUBLE SHOOTING .....</b>	<b>5</b>	7-4. BOARD FRAME SECTION (BF-041W) .....	34
3-1. Trouble Shooting .....	5	7-5. PRINTER UNIT SECTION 1 (BF-041S/W) .....	36
<b>4. DISASSEMBLY AND ASSEMBLY .....</b>	<b>7</b>	7-6. PRINTER UNIT SECTION 2 (BF-041S/W) .....	38
4-1. Caution .....	7	7-7. STAND SECTION .....	40
4-2. Tools needed .....	7	7-8. WALL MOUNTING SECTION .....	42
4-3. Disassembly and Assembly Order .....	7	7-9. ACCESSORIES SECTION .....	43
4-4. Disassembly and Assembly .....	8	7-10. PACKING SECTION .....	44
<b>5. ADJUSTMENT .....</b>	<b>15</b>	7-11. SCREWS & WASHERS SECTION .....	46
5-1. Quick Calibration .....	15	<b>8. SERVICE NOTE .....</b>	<b>47</b>
5-2. Calibration .....	16	8-1. Replacement Procedure of Dedicated Recording Paper .....	47
5-3. CCD Unit Adjustment .....	17	8-2. Updating the Firmware .....	48
5-4. Tension Adjustment of Timing Belt .....	22	8-3. Thermal Head Test .....	51
<b>6. CABLE AND CABLE CONNECTION .....</b>	<b>23</b>	<b>9. REVISION HISTORY .....</b>	<b>52</b>

# 1. COMPLIANCE OF SAFE REPAIR

Be sure to read this Service Manual before providing services. In the PLUS Copyboard, full consideration is taken to ensure the safety for a fire, electric shock, injury, harmful radiation, and substance. Therefore, observe the notice described in this Service Manual so that the safety is kept when providing services. Moreover, be sure to observe the notice described in the Instruction Manual.

Pay attention to the following during service inspection.

## 1-1. Cautions during Product Movement

- It is necessary to remove the products when making the service of products put on the wall. At that time, hold the products by two or more persons to prevent the products from dropping or a person from falling down.

## 1-2. Cautions during disassembling and assembling

1. This equipment contains parts under high voltage. When doing repairs, make sure that power plug is pulled out to insure safety.
2. Make sure that parts and screws and wiring, etc. are returned to their original positions. Tube, tape and other insulation materials have been used for safety reasons. The internal wiring has been designed to avoid direct contact with hot parts or parts under high voltage when using clamps or other tools.
3. The parts used in this device have special safety features such as flame-resistance and anti-voltage properties.  
When replacing parts, always use parts supplied from the factory.
4. After finishing operations make sure that all parts and wires have been returned to their original position and that there has been no deterioration of the area around the location that was worked on.
5. Be sure to use an earth band (wrist band) during repair and inspection.

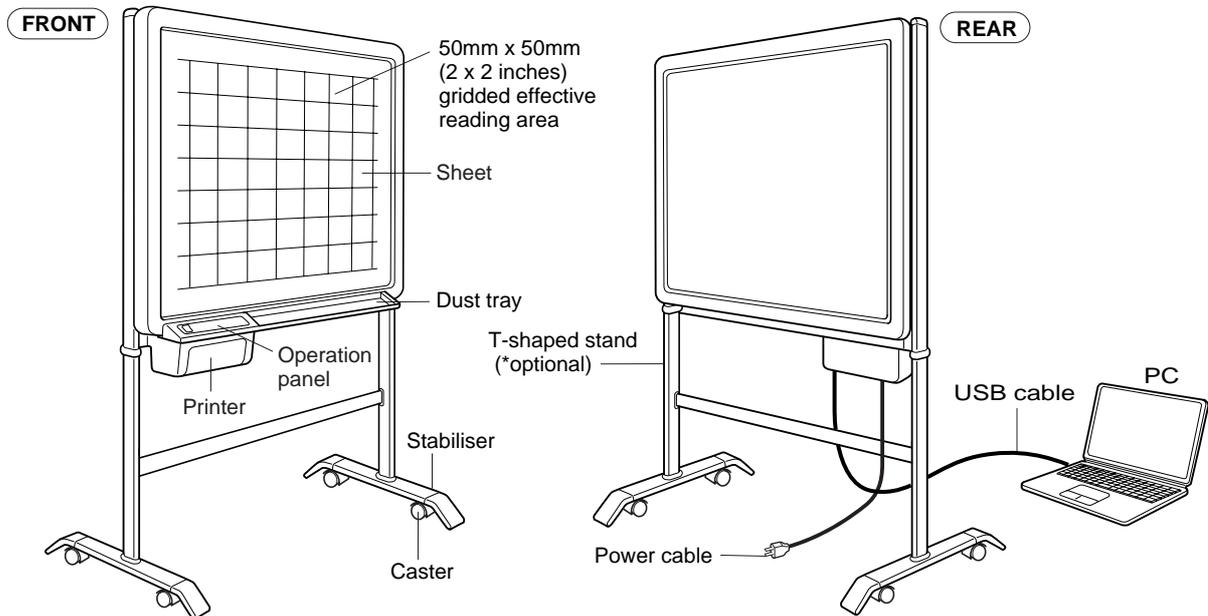
## 2. SPECIFICATIONS

### 2-1. Product Specifications

Item	Specification (BF-041S)	Specification (BF-041W)
<b>Board surface size</b>	W1300 x H920 mm (51.2 x 36.2 inches)	W1800 x H920 mm (70.9 x 36.2 inches)
<b>Effective reading area</b>	W1240 x H880mm (48.8 x 34.6 inches)	W1740 x H880mm (68.5 x 34.6 inches)
<b>Number of pages</b>	2 pages	2 pages
<b>Sheet driving method</b>	One direction endless drive	One direction endless drive
<b>Grid</b>	50 mm (2 inches) squares	50 mm (2 inches) squares
<b>Writing instruments</b>	Dry Erase Whiteboard markers (black/red/blue)	Dry Erase Whiteboard markers (black/red/blue)
<b>Reading method</b>	CCD sensor	CCD sensor
<b>Print method</b>	Thermal printing	Thermal printing
<b>Print density</b>	8 dot/mm	8 dot/mm
<b>Print paper</b>	Special thermal sensitive paper (30 m/98 ft roll)	Special thermal sensitive paper (30 m/98 ft roll)
<b>Size of print paper</b>	A4 size (210X297 mm) Letter size (8.5X11 inches)	A4 size (210X297 mm) Letter size (8.5X11 inches)
<b>Print color</b>	Black	Black
<b>Scan speed</b>	1-page copy : 11 sec/copy Two-in-one page copy : 22 sec/copy	1-page copy : 15 sec/copy
<b>Operating conditions</b>	Temperature : 10-35°C Humidity : 30-85% (No condensation)	Temperature : 10-35°C Humidity : 30-85% (No condensation)
<b>Power Source</b>	100-120 V, 220-240 V The condition is subject to change depends on sales area	100-120 V, 220-240 V The condition is subject to change depends on sales area
<b>Power consumption</b>	60W at stand-by, 120 W at operation	60W at stand-by, 120W at operation
<b>Outer dimensions</b>	W1470XD600XH1885 mm (W57.9XD23.6XH74.2 inches)	W1970XD600XH1885 mm (W77.6XD23.6XH74.2 inches)
<b>Weight</b>	37 kg/81.5 lb	43 kg/94.7 lb
<b>Others</b>	<b>Consumables</b>	
	Thermal print paper (30 m/98 ft) Markers Eraser	Thermal print paper (30 m/98 ft) Markers Eraser

\* Specifications are subject to change without notice for improvement.

## 2-2. Location of Main Set



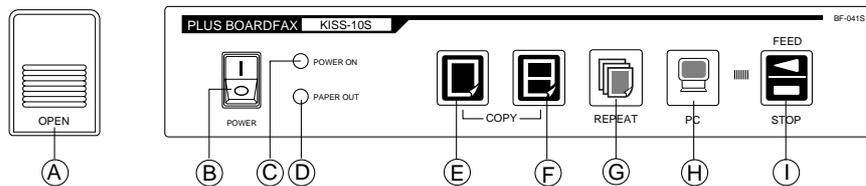
**Note:** Please fix supplied stabilizer at each end of the dedicated stand when you mount the BF-041 on it for stable and safe usage.

## 2-3. Control Functions

### A common function parts

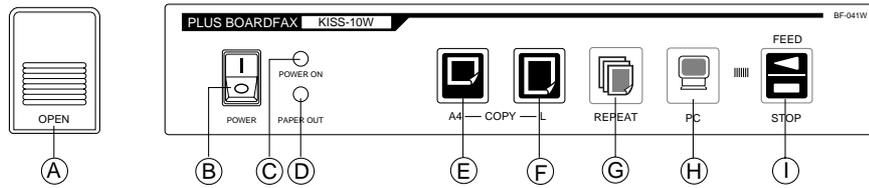
- A: Opening button** ..... Press this button to open the printer cover when replacing the thermal paper.
- B: Power switch** ..... Press " I " to turn ON the power of the copyboard.
- C: Power lamp** ..... Press the ON switch, and the green lamp will blink on and off. The lamp will stay lit (green) when the copyboard is ready for operation.
- D: Paper warning lamp** .... When the thermal paper has run out, the red lamp will light, Load a new roll of print paper (30 m/98 ft length).

### Operation Panel (BF-041S)



- E: One-page copy key** .... This is used when one page of the sheet is copied onto A4/Lette paper.
- F: Two-in-one page key** ... This is used when copying two pages of the sheet at a reduced size onto A4/Letter paper. At this time, the image is compressed horizontally.
- G: Repeat key** ..... Use this to make additional copies after making a one-page copy. During this operation, the sheet does not move.
- H: PC key** ..... Use this to capture the image on one page onto the computer. During this operation, the image is being scanned into the PC. It is not printed.
- I: Feed/stop key** ..... This is used to move the sheet, Pressing this key scrolls the sheet to the left by one page and then automatically stops.  
Pressing the key while the sheet is moving stops it immediately. This can also be used when paper has run out and must be refilled.  
If this key is pressed during the copying operation, the copying operation end and the printer stops.

## Operation Panel (BF-041W)

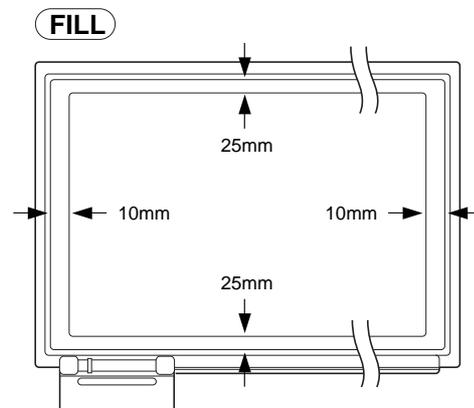


- E: A4 size copy key** ..... This is used when copying one page of the sheet at a compressed size onto A4/ Letter paper. At this time, the image is compressed horizontally.
- F: A4-L copy key** ..... This is used when one page of the sheet is copied onto A4-L paper. The copyboard produces a copy with the same aspect ratio as of that of the original image.
- G: Repeat key** ..... Use this to make additional copies after making a one-page copy. During this operation, the sheet does not move.
- H: PC key** ..... Use this to capture the image on one page onto the computer. During this operation, the image is being scanned into the PC. It is not printed.
- I: Feed/stop key** ..... This is used to move the sheet, Pressing this key scrolls the sheet to the left by one page and then automatically stops. Pressing the key while the sheet is moving stops it immediately. This can also be used when paper has run out and must be refilled. If this key is pressed during the copying operation, the copying operation end and the printer stops.

## 2-4. Scanning area

- Enter in the read effective size.

**NOTE:** Data may not be able to be printed when it is entered in the area except this range.



# 3. TROUBLE SHOOTING

## 3-1. Trouble Shooting

Make repairs while referring to "Table 2 Cause and Remedy" when the failure shown in "Table 1 Symptoms of failure" occurs.

(For the item numbers in Tables 1 and 2, item 1 in Table 1 corresponds to item 1 in Table 2.)

**Tables 1: FAILURE OCCURS**

Item	FAILURE OCCURS
1	The power lamp does not light (blink) and operate even if the power switch is turned on.
2	The power lamp does not light, but operation (sheet feed or print) is performed.
3	The power lamp remains turned on and off and does not light. (The fluorescent lamp does not light.) *1
4	A sheet does not move even if the print button and sheet feed button are pressed.
5	Print cannot be done. (Recording paper feed defect)
6	Print cannot be done. (Recording paper is delivered, but nothing is printed.)
7	A black line (dark line) put in a printing (the image read to a recording paper and personal computer).
8	Printing (the image read to a recording paper and personal computer) is thin and becomes blurred or ruled lines are read.
9	Data cannot be read to a personal computer. (A personal computer does not recognize BF-041.)

\*1: Notice that the power lamp blinks for 8 (minimum) to 128 seconds (maximum) because of the change in the operating environment setting (light quantity stabilization time) for which setup utility was used.

**Tables 2: CAUSE AND REMEDY**

Item	Cause	Remedy
1	1) Electricity does not come into on outlet.	1) Confirm the power supply breaker.
	2) The Power Cable is defective.	2) Replace the Power Cable.
	3) Connectors are defective in contact and disconnected.	3) Insert the connectors again.
	4) Parts and harnesses connecting the parts are defective.	4) Replace the parts.
	· Power Socket Assy	
	· Power SW Assy	
	· Power Board Assy	
	· Main Board Assy	
· SW Board Assy		
2	1) SW Board Assy is defective (LED).	1) Replace the SW Board Assy.
3	1) Fluorescent Lamp does not light	1) Insert or replace the Fluorescent Lamp again.
	2) Out-of-adjustment of the CCD Unit.	2) Readjust the CCD Unit.
	3) Each connector is disconnected.	3) Insert the connectors again.
	4) Parts and harnesses connecting the parts are defective.	4) Replace the parts.
	· Out-of-adjustment of the CCD Unit.	
	· Power Board Assy	
	· Main Board Assy	
4	1) A sheet is attached by static electricity.	1) Remove the static electricity.
	2) Out-of-adjustment of the Timing Belt.	2) Readjust the Timing Belt.
	3) Each connector is disconnected.	3) Insert the connectors again.
	4) Parts and harnesses connecting the parts are defective.	4) Replace the parts.
	· The Sheet Motor Assy is defective.	
	· The Main Board Assy is defective.	

## TROUBLE SHOOTING

Item	Cause	Remedy
5	1) The paper run-out lamp lights. (The paper is exhausted.)	1) Recording paper feed.
	2) The paper run-out lamp lights. (The printer hatch is not closed firmly.)	2) The printer hatch is closed firmly.
	3) The paper run-out lamp lights. (Paper Sensor Board Assy is defective.)	3) Replace the Paper Sensor Board Assy.
	4) Each connector is disconnected.	4) Insert the connectors again.
	5) Parts and harnesses connecting the parts are defective.	5) Replace the parts.
	· Printer Motor Assy	
	· Main Board Assy	
	· Middle Gear	
	· Platen Gear	
	· Platen Roller	
6) Paper jamming	6) Eliminate the jammed paper.	
6	1) Recording paper is wound in the reverse direction.	1) Wind the recording paper in the forward direction.
	2) Each connector is disconnected.	2) Insert the connectors again.
	3) The each is defective.	3) The each is replace.
	· Thermal Head	
	· CCD Unit	
· Main Board Assy		
7	1) The Board frame mirror is dirty. (Adhesion of garbage.)	1) Clean the mirror.
	2) CCD reading is defective.	2) Start calibration and adjustment.
	· Slightness	· Start quick calibration and calibration.
	· Severe	· Start the CCD Unit adjustment.
8	1) CCD reading is defective. (Slightness)	· Start quick calibration and calibration.
	2) Varies depending on the operating environment.	2) Adjustment of setup utility.
		· Adjustment of light and shade.
		· Adjustment of light quantity stabilization time
	3) The paper run-out lamp lights. (The printer hatch is not closed firmly.)	3) The printer hatch is closed firmly.
4) Thermal Head is defective.	4) Replace the Thermal Head.	
9	1) BF-041 is not put into the operation-enable state.	1) Put BF-041 into the operation-enable state.
	2) The USB driver is not registered correctly.	2) Delete the driver and install it again.
	3) Connection is made via a USB hub.	3) Make connection without passing through the USB hub.
	4) The USB cable is disconnected.	4) Replace the USB cable.

# 4. DISASSEMBLY AND ASSEMBLY

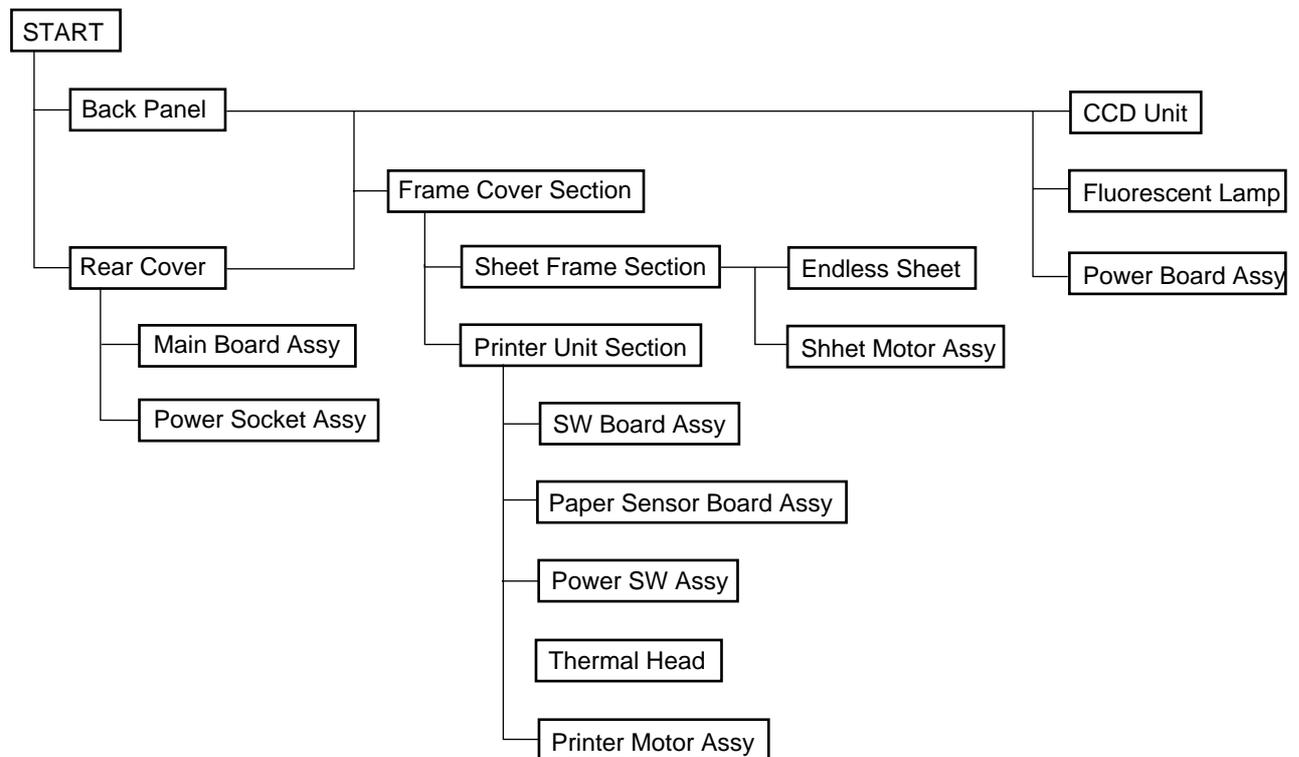
## 4-1. Preparation

- Screwdrivers (+) Nos. 1, 2
- Electrostatic elimination list band
- Nipper
- Cable tie (SG-90 considerable article)
- Screw lock

## 4-2. Caution

- Refer to "1 Compliance of Safe Repair" before disassembling and assembling.
- Refer to "7 Parts List" and "6 Wiring Diagram" for the parts name or wiring.
- The point especially requiring attention when handling parts or performing disassembly and assembly contains a caution. Be sure to follow this caution.
- Wear gloves not to cut a hand in a sharp edge of a frame when disassembling and assembling.

## 4-3. Disassembly and Assembly order



## 4-4. Disassembly and Assembly

This section describes one example of disassembly and assembly procedures. For the actual operation, disassemble and assemble the required parts with reference to Section 4-3.

### 1) Remove the Back Panel. (See Figures 1 and 2.)

1. Remove the "S-14" screws and then remove the Back Panel Corner Side. (Tightening torque :  $8\pm 2.4\text{kgfcm}$ )  
(Do not mind in right and left either.)
2. Slide the Back Panel and remove it as shown in Figures 2.

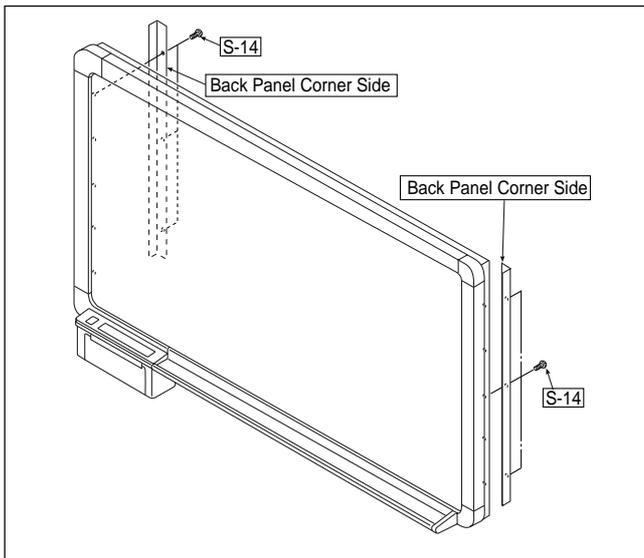


Fig. 1

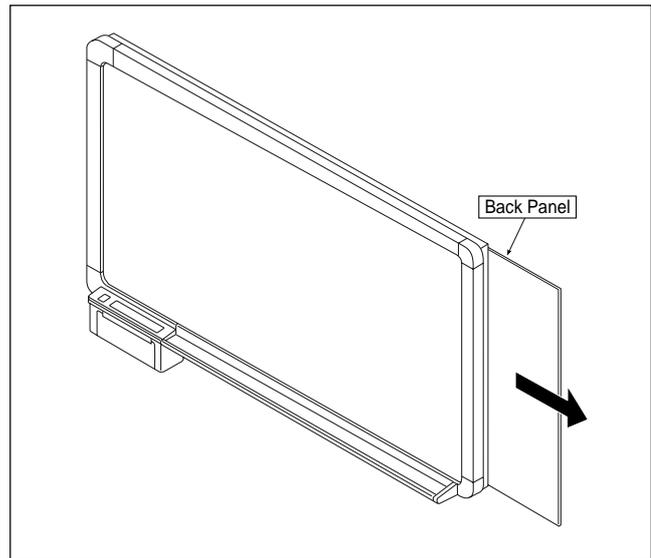


Fig. 2

### 2) Remove the Fluorescent Lamp. (See Figure 3.)

1. Rotate the Fluorescent Lamp as shown in Figure 3 and remove it from the lamp socket.

**Note:** - Be careful not to knock it against any main bodies and damage it when the Fluorescent Lamp is removed.

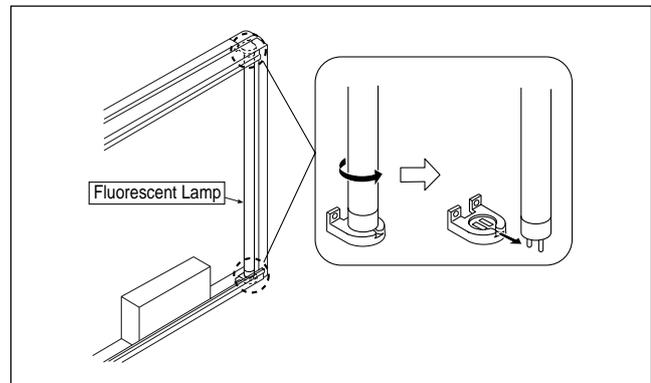


Fig. 3

### 3) Remove the Power Board Assy. (See Figure 4.)

1. Remove the "S-5" screws as shown in Figure 4 and then remove the Power Board Cover. (Tightening torque :  $8\pm 2.4\text{kgfcm}$ )
2. Disconnect the connectors connected to the Power Board Assy.
3. Remove the Power Board Assy.

**Note:** - Be careful not to forget to install the GND Harness, Power Board Cover.

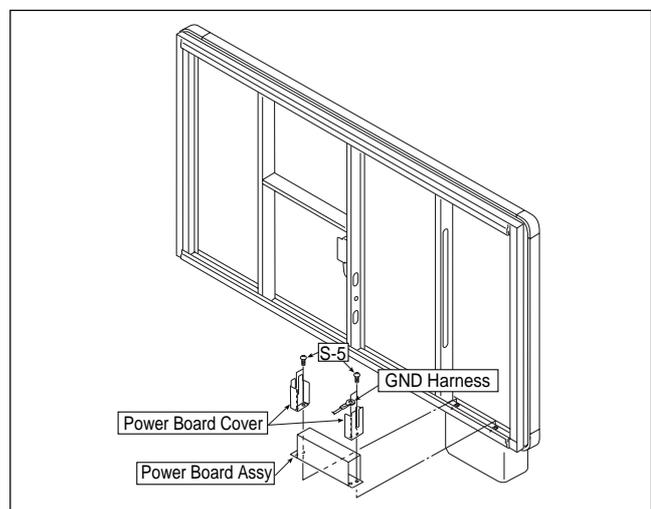


Fig. 4

## DISASSEMBLY AND ASSEMBLY

### 4) Remove the CCD Unit. (See Figure 5.)

1. Remove the "S-5" screws as shown in Figure 5 and then remove the CCD Unit.

**Note:** · The CCD Unit requires adjustment when it is removed. (See 5-3. CCD Unit Adjustment.)

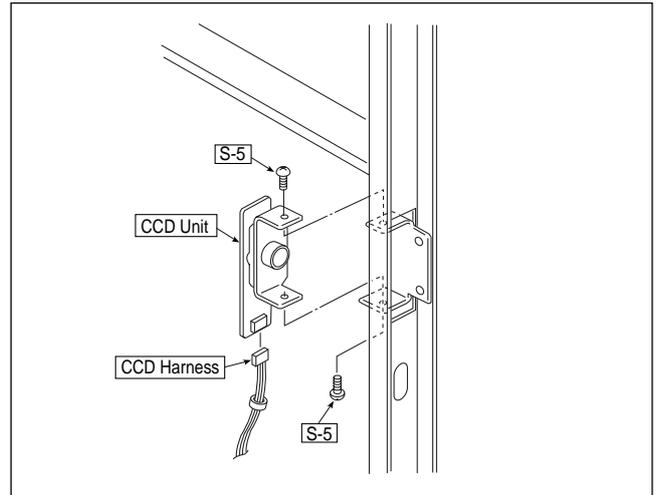


Fig. 5

### 5) Remove the Main Board Assy. (See Figure 6.)

1. Remove the "S-3" and "S-14" screws as shown in Figure 6 and then remove the Rear Cover. (Tightening torque S-3 :  $12 \pm 2.0$ kgfcm, S-14 :  $8 \pm 2.4$ kgfcm)
2. Disconnect the connectors connected to the Main Board Assy.
3. Remove the "S-2" screws shown in Figure 6 and then remove the Main Board Assy. (Tightening torque :  $8 \pm 2.4$ kgfcm)
4. Remove the "S-1" screws. (Tightening torque :  $8 \pm 2.4$ kgfcm)

**Note:** · Be careful not to forget install the "S-1" screws when installing the Main Board Assy.

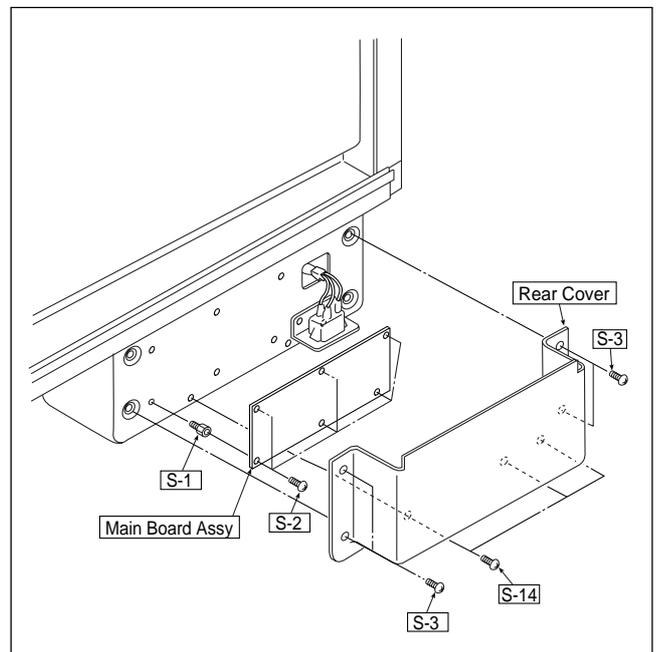


Fig. 6

### 6) Remove the Power Socket Assy. (See Figure 7.)

1. Remove the "S-2" screws as shown in Figure 7. (Tightening torque :  $8 \pm 2.4$ kgfcm)
2. Disconnect the connectors connected to the Power Socket Assy.
3. Remove the Power Socket Assy from the Power Socket Plate. (Push the hook as shown in portion A of Figure 7.)

**Note:** · Be careful not to forget to put the GND Harness.

- For the screw with which a GND Harness is not tightened together, notice that the GND cable of the Power Socket Assy is tightened together.

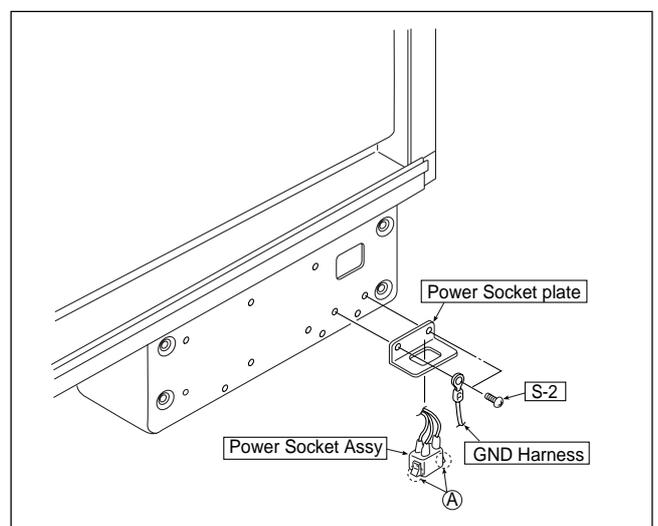


Fig. 7

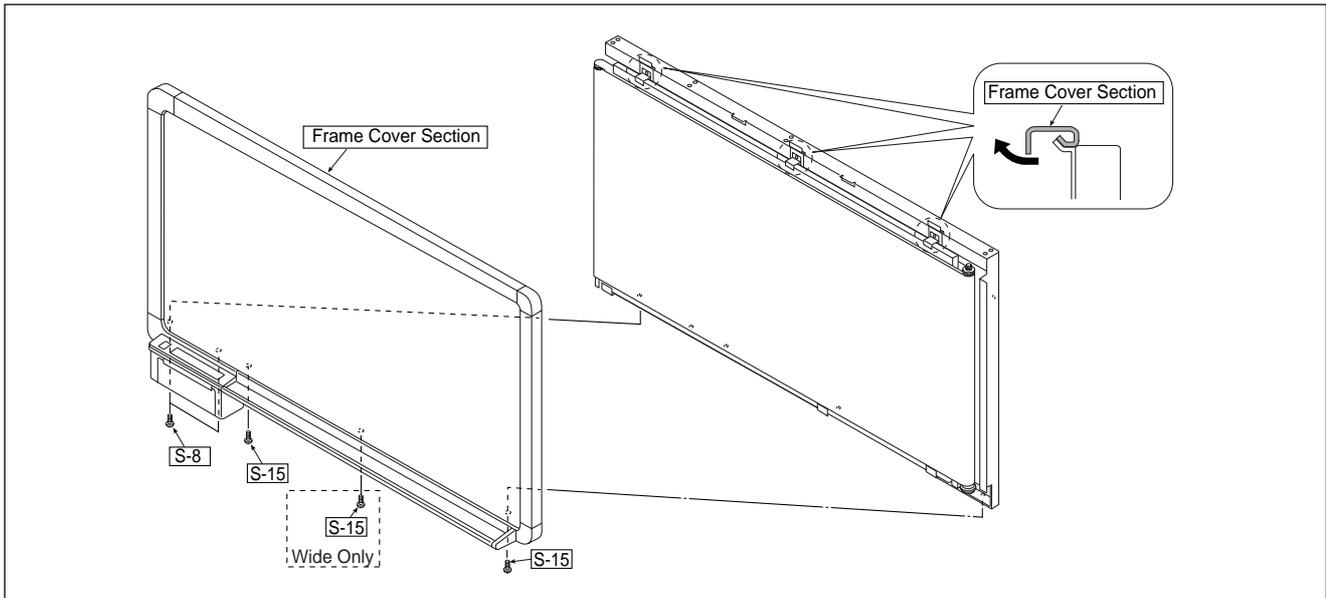


Fig. 8

7) Remove the Frame Cover Section. (See Figure 8.)

1. Remove the "S-8" and "S-15" screws (S : tow screws, W : three screws) as shown in Figure 8. (Tightening torque S-8 :  $14\pm 2.2\text{kgfcm}$ , S-15 :  $12\pm 2.0\text{kgfcm}$ )
2. Slide the Frame Cover Section in the direction indicated by the arrow as shown in the enlarged picture in portion A in Figure 8 and remove it.

**Note:** - Pay attention to the cables wired to the Printer Section when assemble and disassemble the Frame Cover Section.

8) Disassemble the Frame Cover Section. (See Figure 9.)

1. Remove the "S-13" screws as shown in Figure 9 and remove the parts. (Tightening torque :  $11\pm 1.0\text{kgfcm}$ )

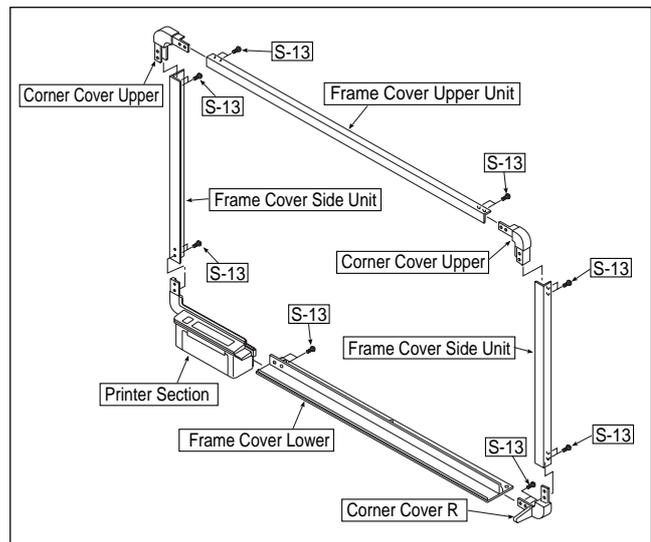


Fig. 9

9) Remove the Paper Sensor Board Assy. (See Figure 10.)

1. Remove the "S-12" screws as shown in Figure 10 and remove the Printer Rear Cover. (Tightening torque :  $8\pm 2.4\text{kgfcm}$ )
2. Remove the "S-9" screws as shown in Figure 10 and remove the Paper Sensor Board Assy. (Tightening torque :  $4\pm 1.2\text{kgfcm}$ )

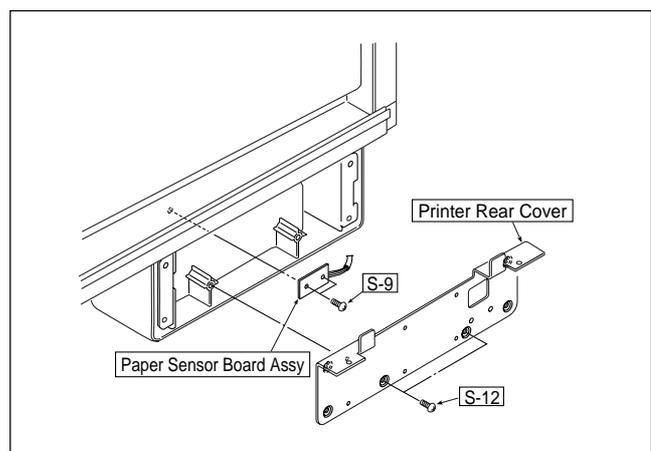


Fig. 10

## DISASSEMBLY AND ASSEMBLY

10) Remove the SW Board Assy. (See Figure 11.)

1. Push the hook of the SW Panel Section as shown in the enlarged picture in portion A of Figure 11, and slide it in the direction indicated by the arrow and remove it.
2. Remove the "S-10" screws as shown in Figure 11 and remove the SW Board Assy. (Tightening torque :  $6 \pm 1.8 \text{kgfcm}$ )
3. Remove the Power SW Assy from the SW Panel Section.

**Note:** · The Power SW Assy cables is fixed to the Printer Frame using a cable tie. Be careful not to forget fixed in a cable tie when assembly.

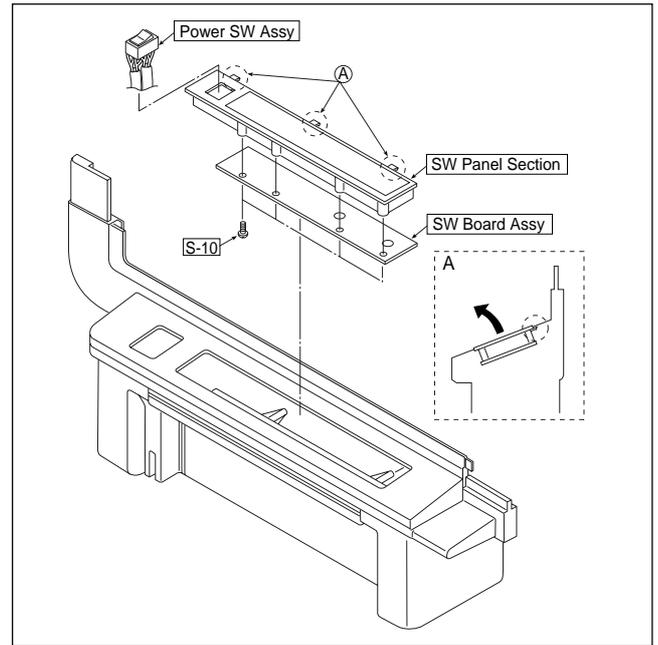


Fig. 11

11) Remove the Front Cover Unit. (See Figures 12 and 13.)

1. Remove the Front Cover Spring as shown in portion A of Figure 12.
2. Remove the "S-16" E-ring in portion B of Figure 12 and remove the Hinge Plate Assy.
3. Remove the "S-11" screws as shown in Figure 13 and remove the Front Cover Unit. (Tightening torque :  $8 \pm 2.4 \text{kgfcm}$ )

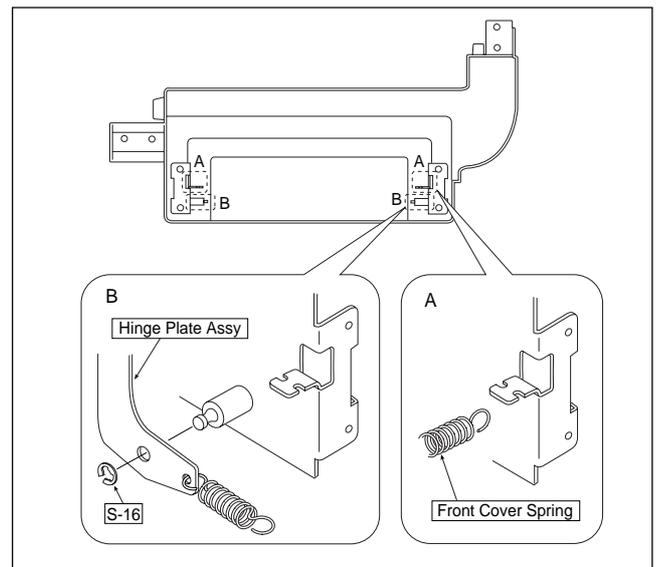


Fig. 12

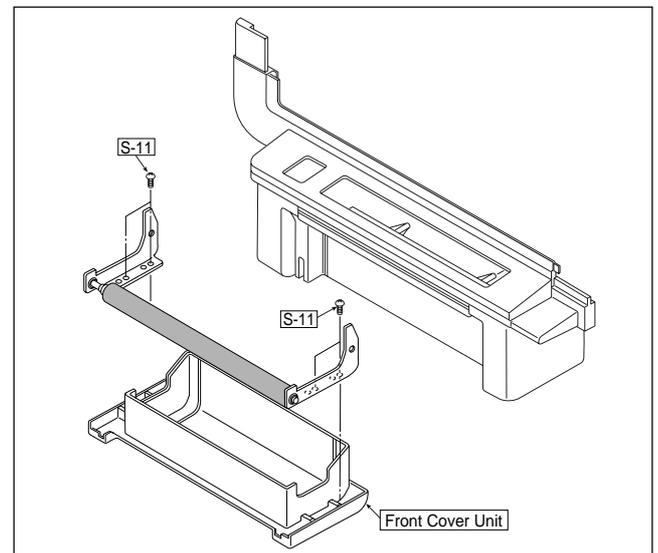


Fig. 13

## DISASSEMBLY AND ASSEMBLY

12) Remove the Printer Frame Section. (See Figure 14.)

1. Remove the "S-10" screws as shown in Figure 14. (Tightening torque :  $6 \pm 1.8 \text{kgfcm}$ )
2. Push the Lock Button and remove the Printer Frame Section from the Printer Cover.
3. Remove the Lock Button from the Printer Frame Section.

**Note:** · Be careful not to forget install the Lock Button Plate during assembling.

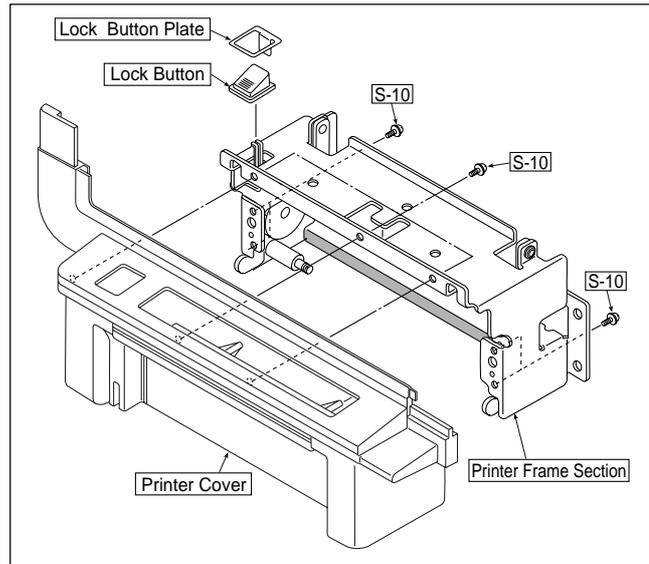


Fig. 14

13) Remove the Thermal Head. (See Figure 15.)

1. Remove the "S-7" screws as shown in Figure 15. (Tightening torque :  $8 \pm 2.4 \text{kgfcm}$ )
2. Remove the Thermal Head Base being careful to the Thermal Head Spring A/B.
3. Remove the "S-4" screws as shown in Figure 15 and remove the Thermal Head from the Thermal Head Base. (Tightening torque :  $8 \pm 2.4 \text{kgfcm}$ )
4. Disconnect the Harness connected to the Thermal Head.

**Note:** · Be careful not to forget install the Thermal Head Collar during assembling.

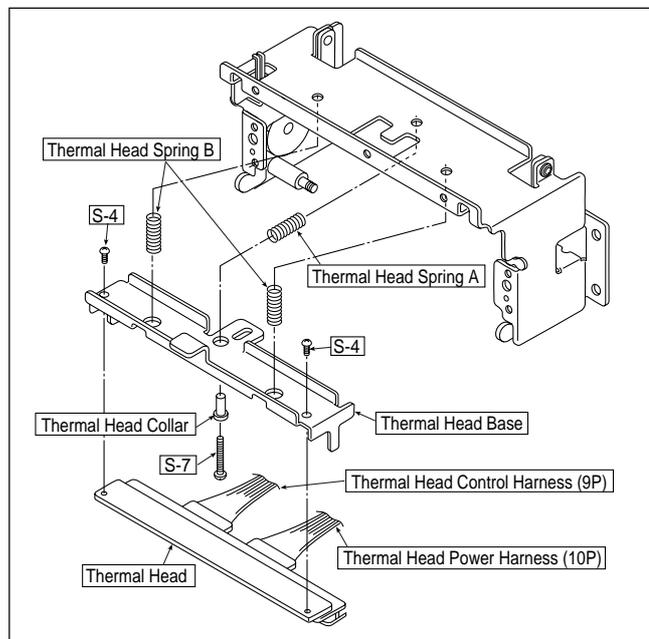


Fig. 15

14) Remove the Lock Base. (See Figure 16.)

1. Remove the "S-6" screws as shown in Figure 16. (Tightening torque :  $8 \pm 2.4 \text{kgfcm}$ )
2. Remove the Lock Spring is fixed to the A ~ A', B ~ B' as shown in Figure 16.

**Note:** · Be careful not to forget to put the Lock Base Collar during assembling.

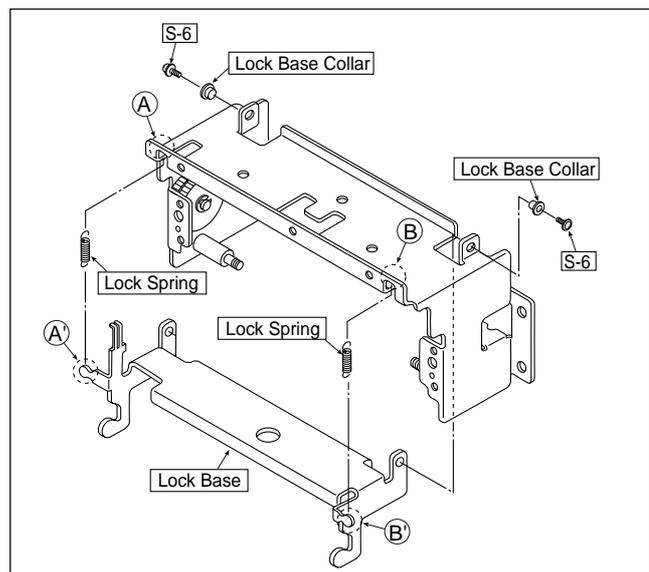


Fig. 16

## DISASSEMBLY AND ASSEMBLY

15) Remove the Printer Motor Assy, Middle Gear. (See Figure 17.)

1. Remove the "S-2" screws as shown in Figure 17 and remove the Printer Motor Assy. (Tightening torque :  $6 \pm 1.8 \text{kgfcm}$ )
2. Remove the "S-16" E-ring as shown in Figure 17 and remove the Middle Gear.

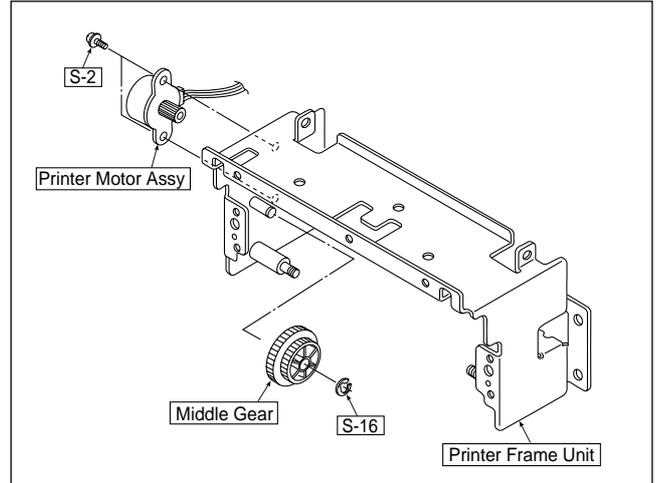


Fig. 17

16) Remove the Sheet Frame Section. (See Figure 18.)

1. Disconnect the connectors connected to the Sheet Motor Assy.
2. Remove the "S-15" screws (S : four screws, W : six screws) as shown in Figure 18. (Tightening torque :  $12 \pm 2.0 \text{kgfcm}$ )
3. Slide the Sheet Frame Section in the direction indicated by the arrow as shown in the enlarged picture in portion A in Figure 18 and remove it.

**Note:** - Be careful not to damage the Sheet Motor Assy when the Sheet Frame Section is installed and removed.  
- Be careful fall of the Sheet Frame Section.

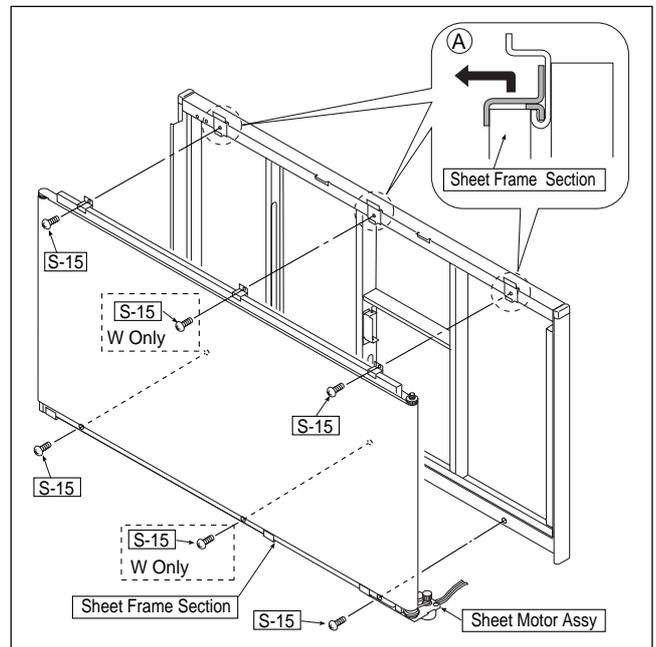


Fig. 18

17) Remove the Sheet Motor Assy. (See Figure 19.)

1. Remove the "S-5" screws as shown in Figure 19 and remove the Sheet Motor Assy.

**Note:** - Adjustment is required the tension of the Timing Belt when removing and replacing the Sheet Motor Assy. (See 5-4. Tension Adjustment of the Timing Belt)

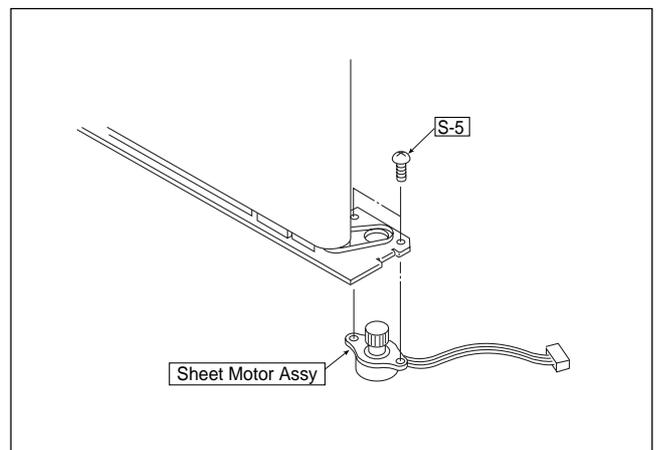


Fig. 19

## DISASSEMBLY AND ASSEMBLY

18) Remove the Endless Sheet. (See Figures 20 and 21, 22.)

1. Push the Sheet Roller Section inside as shown in Figures 20 and 21.
2. Remove the Endless Sheet as shown in Figure 22.

**Note:** · Be careful not to fold or damage it when handling the Endless Sheet. (The Endless Sheet exchange work in more than two by all means.)

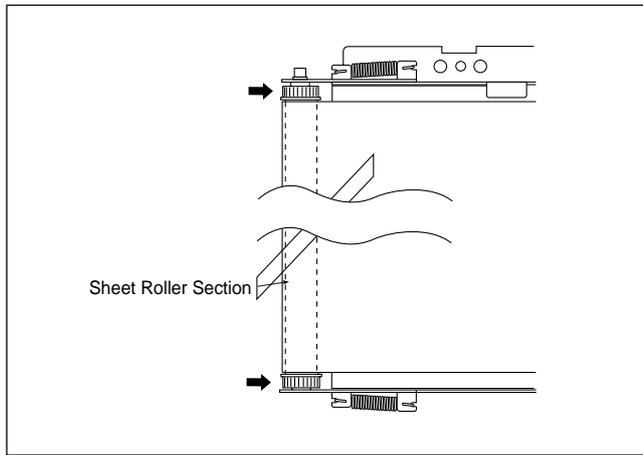


Fig. 20

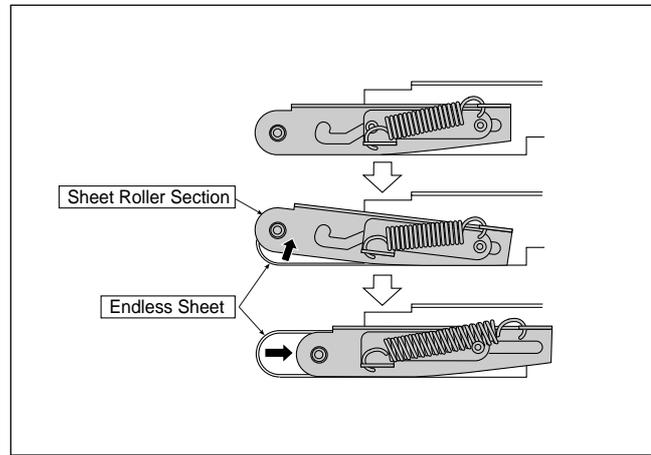


Fig. 21

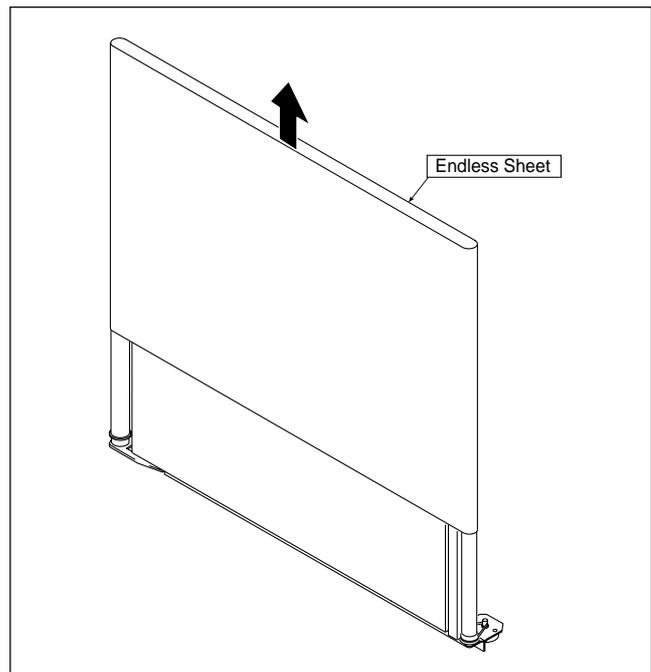


Fig. 22

# 5. ADJUSTMENT

## 5-1. Quick Calibration

### Quick calibration is required in the following case

- When an error (such as a dark line or rubbing) occurs during print and read operation. (After the installation position is changed.)

### Procedure

- 1) Clean the sheet. (See Figure 1.)

As shown in Figure 1, keep clean the width of about 20 cm (maximum) (four ruled lines or more) from the left end of the sheet surface.

(Wipe completely so that no left note and dust remain. The optimum read sensitivity cannot be adjusted if any dust exists.)

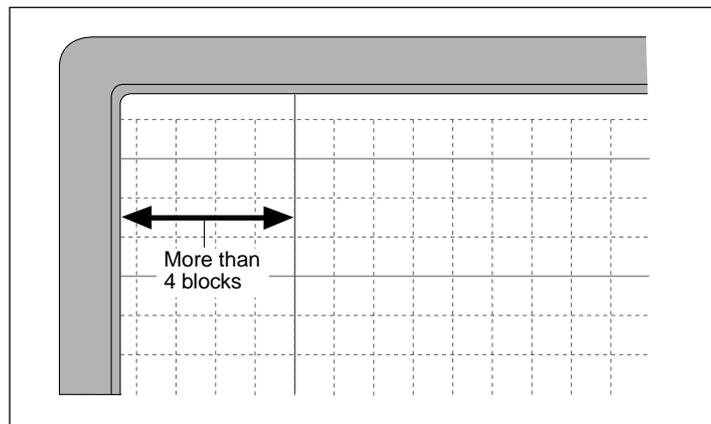


Fig. 1

- 2) Turn OFF the POWER. (Connect the Power Cable.)

- 3) Start the quick calibration. (See Figure 2.)

- Turn ON the POWER while pressing and holding the COPY button as shown in portion A of Figure 2. The POWER ON lamp blinks, and the fluorescent lamp lights after four or five seconds.

**Note:** To stabilize the fluorescent lamp, the stop state continues for about 5 minutes.

Do not move a sheet manually while the stop state is continued.

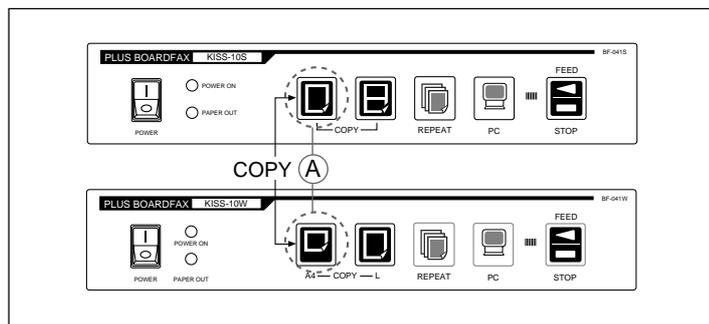


Fig. 2

- A sheet automatically moves (by about three ruled lines) to adjust the read sensitivity.
  - When adjustment is terminated normally, the current state automatically return to the ordinary state.
  - \* When adjustment is not terminated normally, the POWER ON and PAPER OUT lamps blink alternately. Start quick calibration again. Execute calibration when improvement is not made. (See 5-2 Calibration.)
- 4) Make a copy and confirm the print and read state.
    - \* Start calibration when an error (such as a dark line and rubbing) occurring during print and read operation cannot be improved. (See 5-2. Calibration.)

## 5-2. Calibration

**Calibration is required in the following case.**

- When the fluorescent lamp is replaced.
  - When the Main Board Assy is replaced.
  - When a CCD Unit is adjusted and replaced.
  - When an error occurring during print and read operation cannot be improved even if quick calibration is performed.
- \* Auto power-off time, light quantity stabilization time, and density adjustment are set as default when calibration is executed.

### Calibration procedure

- 1) Clean the sheet.  
Clean the sheet surface sufficiently. The read range cannot be normally adjusted when any dust or left note remains.
- 2) Write test patterns on the sheet surface. (See Figures 1, 2, and 3.)  
Write adjustment patterns on the sheet surface using a black marker as shown in Figure 1.
  - Write horizontal lines of 100 mm (two ruled lines) in the upper, middle, and lower positions according to the ruled line.
  - Write vertical lines of 100 mm (two ruled lines) in the middle position, 100 mm (two ruled lines) away from the horizontal lines in the middle position.

\* For the letter size, write vertical lines of 100 mm (two ruled lines) in the middle position, 100 mm (two ruled lines) away from the vertical lines in the middle position. (See Figure 2.)

  - Write them so that the horizontal lines in the upper and lower positions are put in the ruled lines as shown in Figure 3.

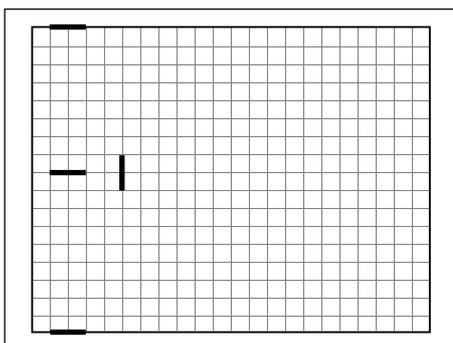


Fig. 1

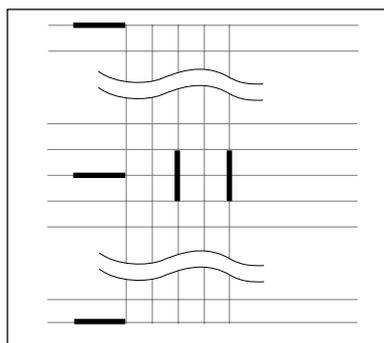


Fig. 2

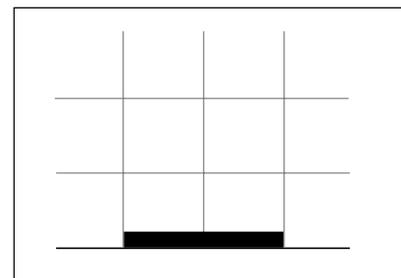


Fig. 3

- 3) Turn OFF the POWER. (Connect the Power Cable.)
- 4) Start the calibration. (See Figure 4.)
  - Turn ON the power while pressing and holding the COPY and FEED buttons as shown in portion A of Figure 4.
  - The POWER ON and PAPER OUT lamps begin to blink at the same time.
  - Push the FEED button. Calibration is started.
  - When adjustment is terminated normally, the current state automatically returns to the ordinary POWER ON state.

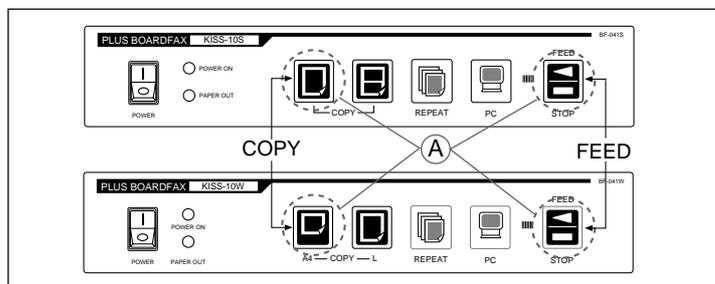


Fig. 4

- \* When adjustment is not terminated normally, the POWER ON and PAPER OUT lamps blink alternately. Confirm that nothing except adjustment patterns is written on the sheet surface, adjustment patterns are correctly written, and the fluorescent lamp lights and execute calibration again.

Perform CCD Unit adjustment when improvement is not made. (See 5-3. CCD Unit Adjustment.)

- 5) Confirmation of print and read operation
  - Confirm that the data written in the ruled lines (scanning area) is printed using a three color markers.

\* Perform the CCD Unit adjustment when an error (such as a dark line and rubbing) occurring during print and read operation is not improved. (See 5-3. CCD Unit Adjustment.)

## 5-3. CCD Unit Adjustment

CCD Unit Adjustment is required in the following case.

- When a CCD Unit is replaced.
- When an error occurring during print and read operation is not improved even if calibration is executed.

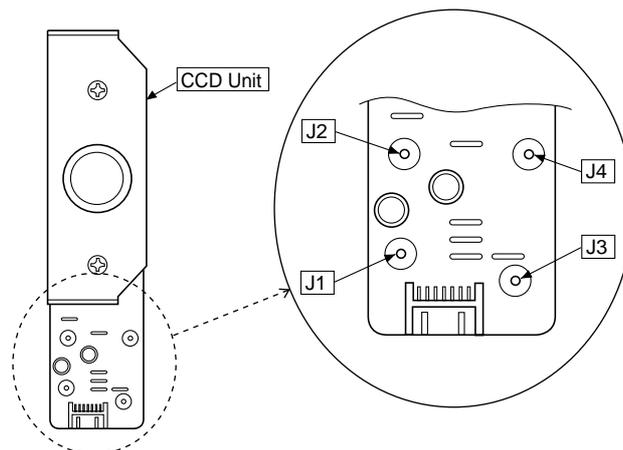
**Note:** Start the calibration after CCD Unit adjustment is completed.

### Preparation

- Oscilloscope
- Phillips screwdriver No.2
- Allen wrench (Across flat has 1.5 mm)

### Procedure

- 1) Remove the Back Panel.
- 2) Connect the probe on the oscilloscope to the CCD Unit (CCD board).  
(See the figure on the right.)
  - Connect GND in Ch2 (ExtTRG) to J4.
  - Connect the measurement pin in Ch2 to J3 (TRG).
  - Connect GND in Ch1 to J1.
  - Connect the measurement pin in Ch1 to J2.



- 3) Setting of oscilloscope
  - Set the Ch1 mode to 2 V/DIV AC.
  - Set the Ch2 (ExtTRG) mode to 1 V/DIV DC.
  - Set the sweep to 500 $\mu$  sec/DIV
  - \* Set the trigger to EXT or Ch2. Only Ch1 is displayed.

4) Write test patterns on the sheet surface. (Same as calibration test patterns.)

Clean the sheet surface sufficiently. The read range cannot be normally adjusted when any dust or left note remains. Write test patterns on the sheet surface. (See Figures 1, 2, and 3.)

As shown in Figure 1, write test patterns on the plate surface using a black marker.

- Write horizontal lines of 100 mm (two ruled lines) in the upper, middle, and lower positions according to the ruled line.
- Write vertical lines of 100 mm (two ruled lines) in the middle position 100 mm (two ruled lines) away from the horizontal lines in the middle position.
- \* For the letter size, write vertical lines of 100 mm (two ruled lines) in the middle position 100 mm (two ruled lines) away from the vertical lines in the middle position. (See Figures 2.)
- Write them so that the horizontal lines in the upper and lower positions are put in the ruled lines as shown in Figure 3.

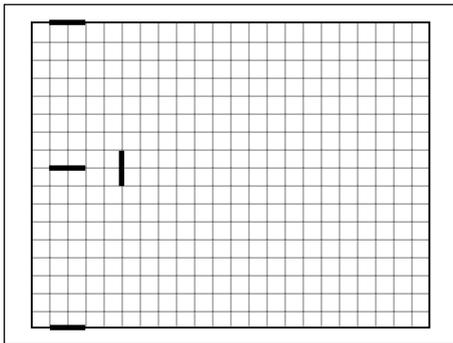


Fig. 1

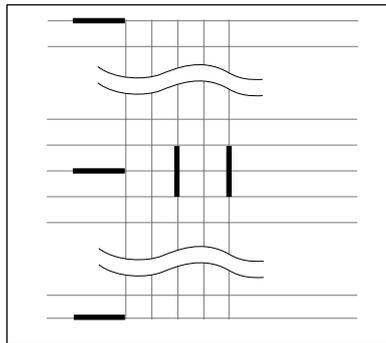


Fig. 2

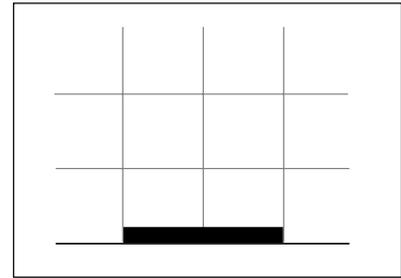


Fig. 3

5) Temporary lens focus adjustment of CCD Unit. (See Figures 4.)

Fix screw A temporarily so that the distance between the lens unit and holder is  $2.5 \pm 1$  mm.

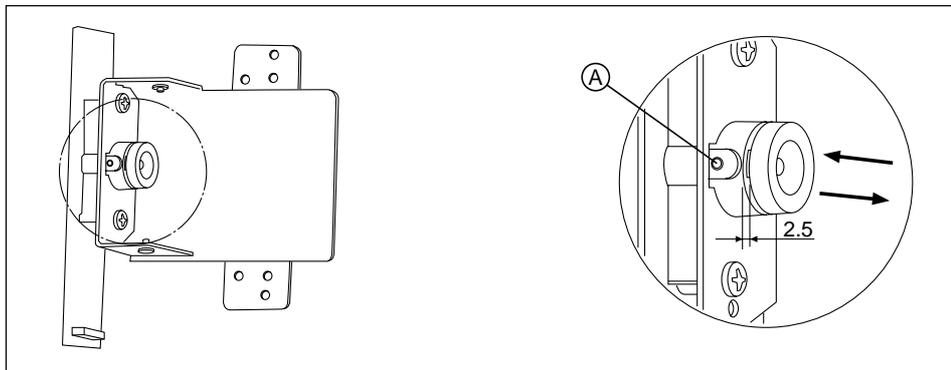


Fig. 4

6) Put the set into the adjustment mode. (See Figures 5.)

- Turn OFF the POWER. (Connect the Power Cable.)
- Turn ON the power while pressing and holding the COPY and FEED buttons as shown in portion A of Figures 5.
- The POWER ON and PAPER OUT lamps begin to blink at the same time.
- Press the PC button.

The set is put into the CCD adjustment mode, so a fluorescent lamp turns on.

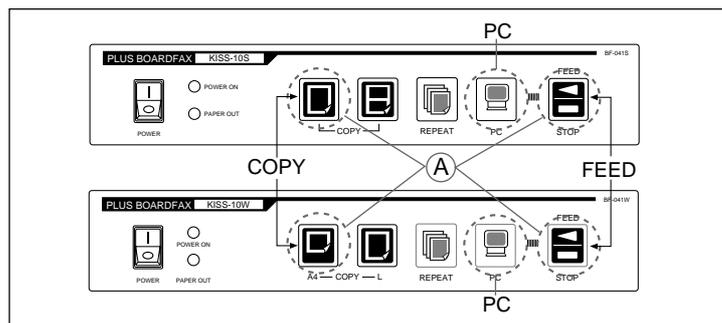


Fig. 5

7) Adjustment of oscilloscope. (See Figures 6 and 7.)

- Adjust the trigger level and Ch1 vertical position, so that a CCD waveform appears on the oscilloscope.
- Adjust the Ch1 horizontal position, luminance, and focus.
- Adjust the trigger level in Ch2 (ExtTRG) and fix the waveform.
- Adjust screw A shown in Figure 7 so that the waveform (4.7Å)0.3Vp-p) is as shown in Figure 6.

\*1 When the waveform level is normal, the POWER and PAPER OUT lamps on the operation panel blink at the same time.

\*2 When the waveform level is low, the PAPER OUT lamp on the operation panel blinks.

\*3 When the waveform level is high, the POWER lamp on the operation panel blinks.

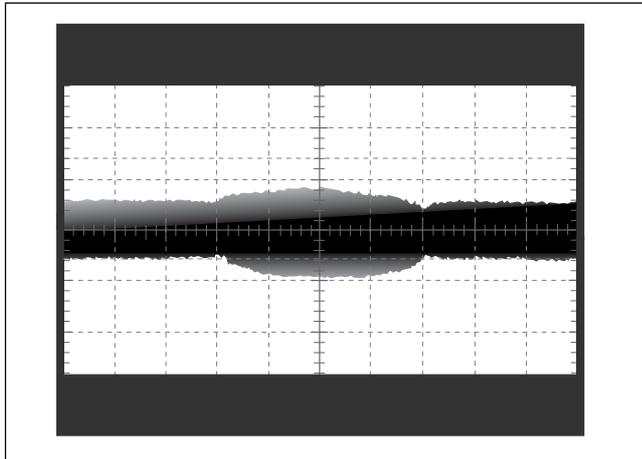


Fig. 6

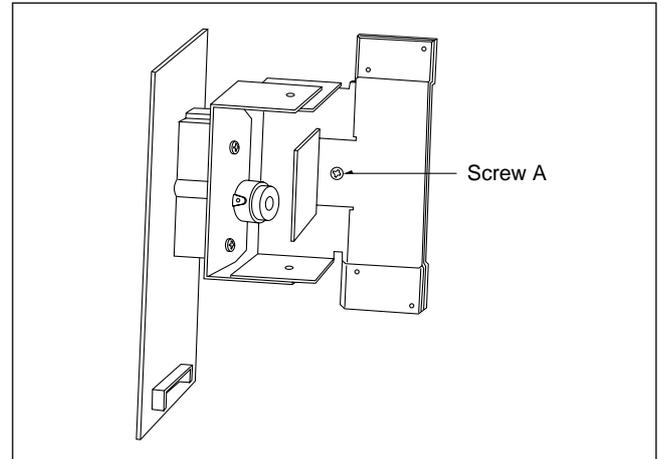


Fig. 7

8) Left and right swing adjustment of CCD Unit (See Figures 8 to 10.)

- Insert the scale to 20.5 mm (+1.0, -0.5) from the middle position of the outer frame as shown in Figure 8.
- Loosen screw A shown in Figure 9, move metal sheet B so that the scale end is moved from the state in which it is not displayed on the oscilloscope, and fix screw A when the waveform falls to the intermediate level as shown in Figure 10.

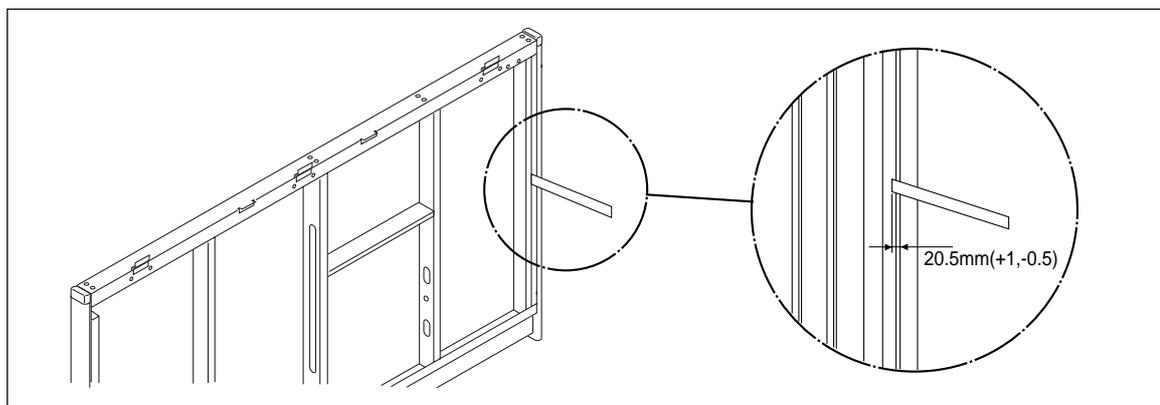


Fig. 8

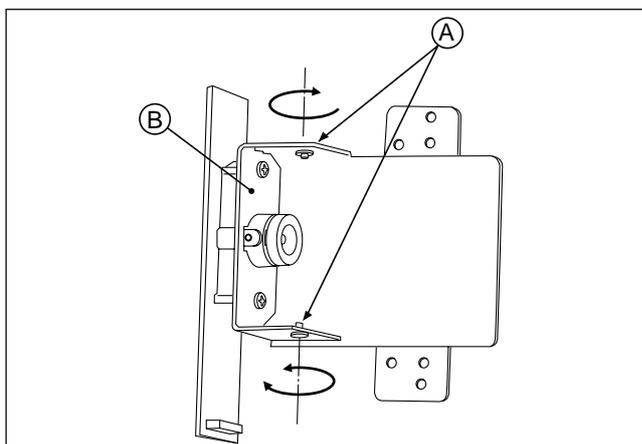


Fig. 9

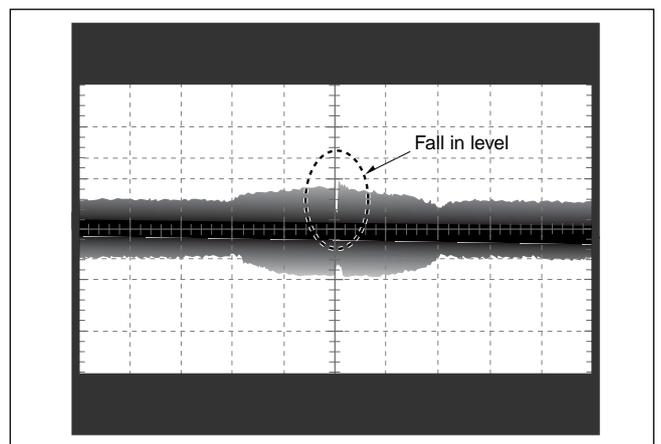


Fig. 10

## 9) Confirmation of reading position. (See Figures 11 and 12.)

- Move a sheet so that the test patterns (vertical lines) are displayed on an oscilloscope. (By manual operation.)
- When the vertical lines fall in level by more than one-third of the P-P waveform as shown in Figure 11. (Confirm that the vertical lines exist in the read position shown in Figure 12.)

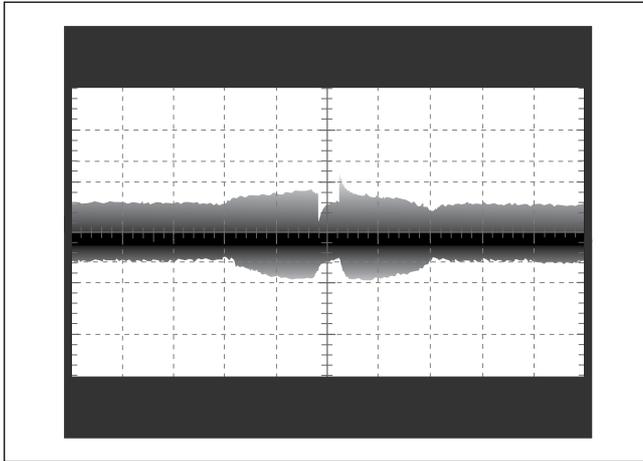


Fig. 11

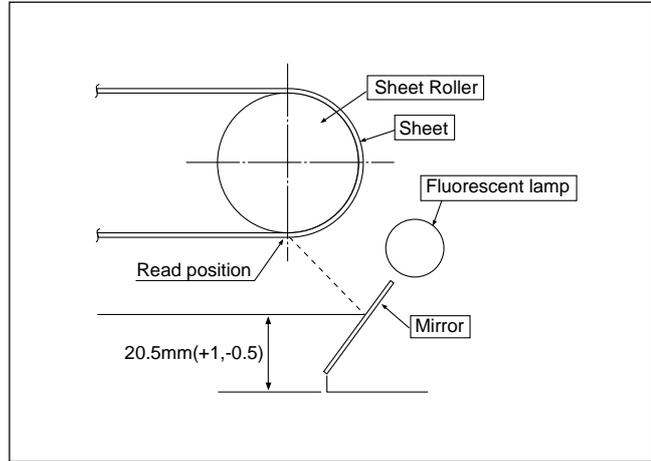


Fig. 12

## 10) Torsion adjustment of CCD Unit. (See Figure 13.)

- Loosen screw A shown in Figure 13, and fix screw A when the waveforms shown in Figure 11 become symmetrical.

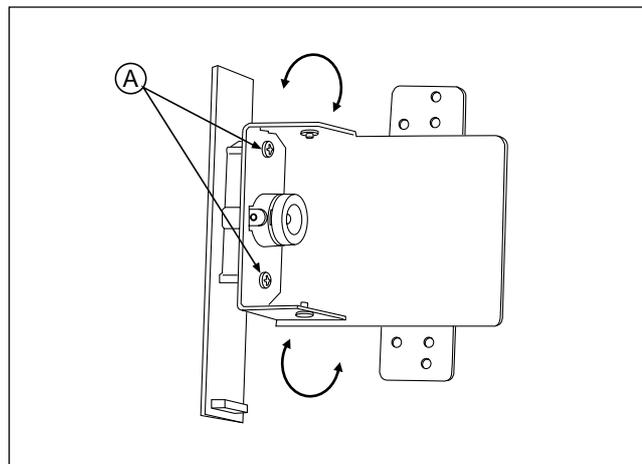


Fig. 13

## 11) Focus adjustment. (See Figures 12, and 14 to 17.)

- Move a sheet so that the test patterns of horizontal lines are displayed on an oscilloscope (so that the horizontal lines exist in the read position shown in Figure 12). (By manual operation.)
- Adjust screw A and fix so that the left, middle, and right lines of the waveforms on an oscilloscope are horizontal as shown in Figure 14 and so that these lines fall in level by more than one-third of the P-P waveform.
- Change the sweep setting of an oscilloscope and confirm the middle line.
- Adjustment is satisfactory if the waveform is almost the same as the waveform shown in Figure 16. (The adjustment is insufficient if the waveform is the waveform, near an acute angle, shown in Figure 17. Perform focus adjustment again.)

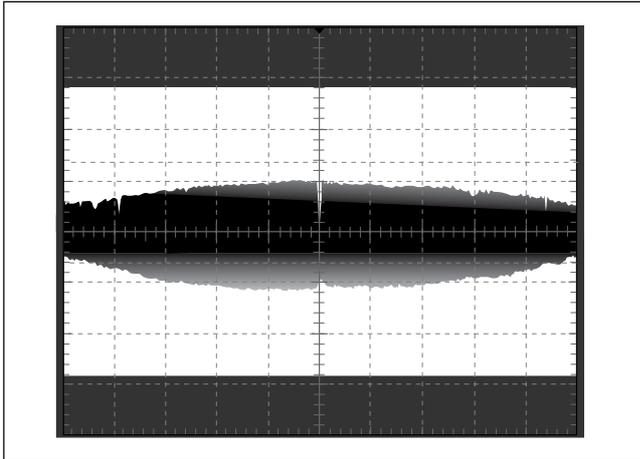


Fig. 14

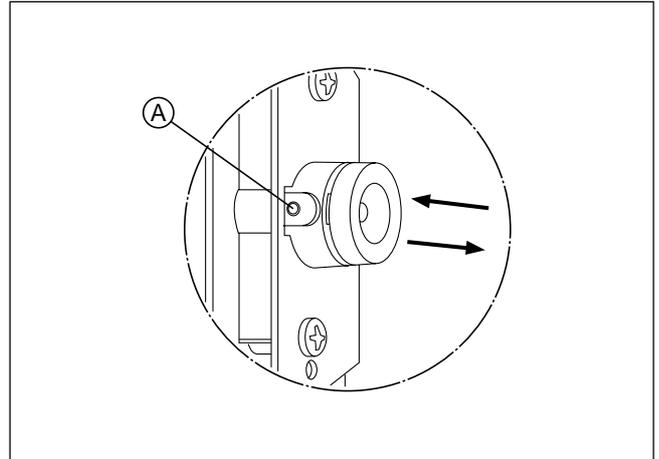


Fig. 15

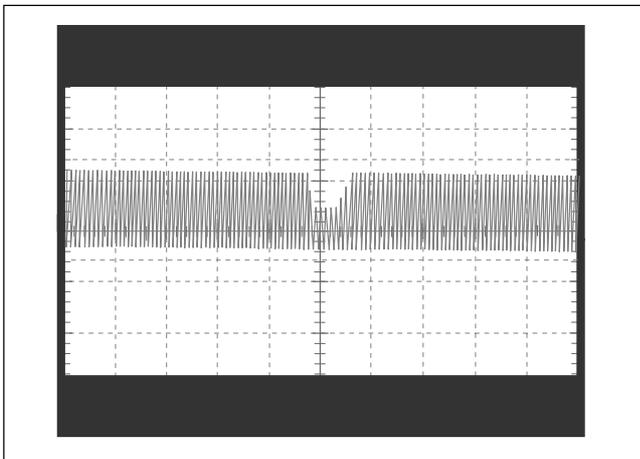


Fig. 16

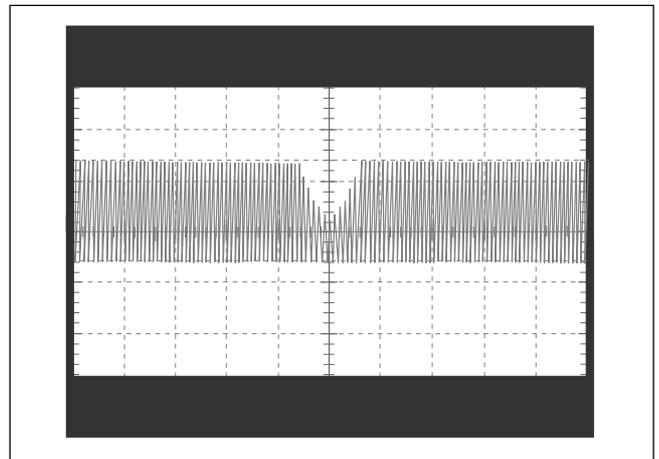


Fig. 17

## 12) Confirmation of adjustment.

- If focus adjustment is complete, confirm adjustments 7), 9), and 10) again.
- Adjustment is completed if there is no abnormality after confirmation.
- \* If the adjustment seems to slip off, perform the corresponding adjustment again.

## 13) Carry out calibration. (See 5-2. Calibration.)

## 5-4. Tension Adjustment of Timing Belt

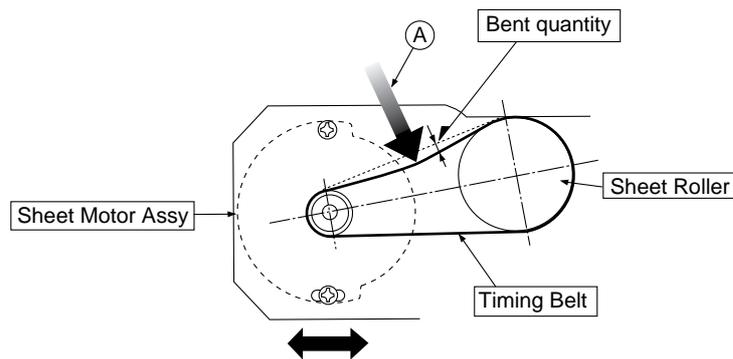
The tension of a timing belt must be adjusted when the Sheet Motor Assy is replaced and removed.

Tool required

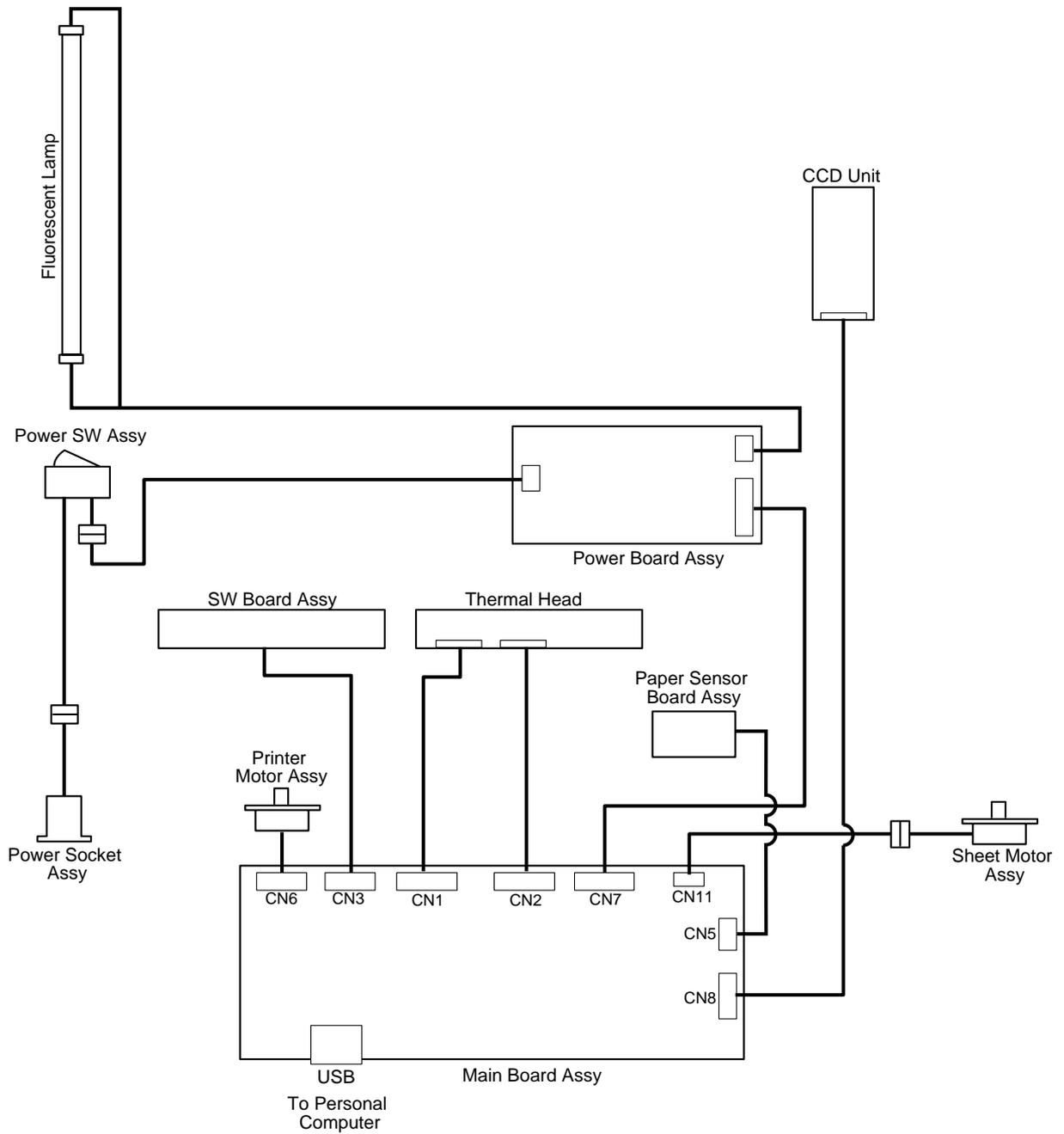
**Adjustment (See the illustration shown below.)**

- 1) Fix the Sheet Motor Assy tentatively and confirm the tension of a timing belt.
- 2) Fix the Sheet Motor Assy with the deflection slightly left when the timing belt was pushed in the direction indicated by arrow A shown in the figure.

**Note:** · Notice that the Sheet does not rotate when the Sheet Motor Assy is fixed with any deflection not left.  
· Notice that the timing belt may get of place during operation when deflection is left excessively.

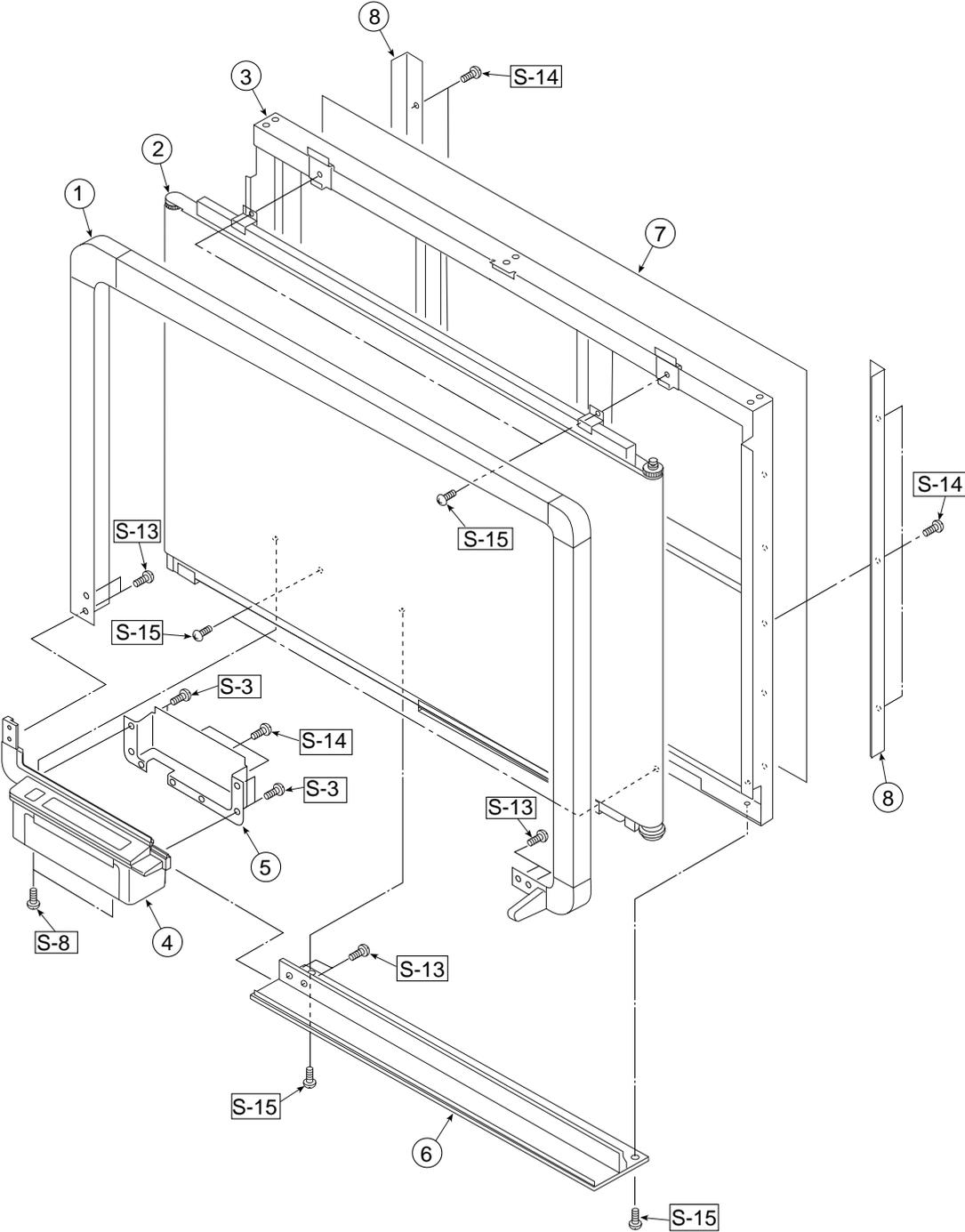


# 6. CABLE AND CABLE CONNECTION



# 7. PARTS LIST

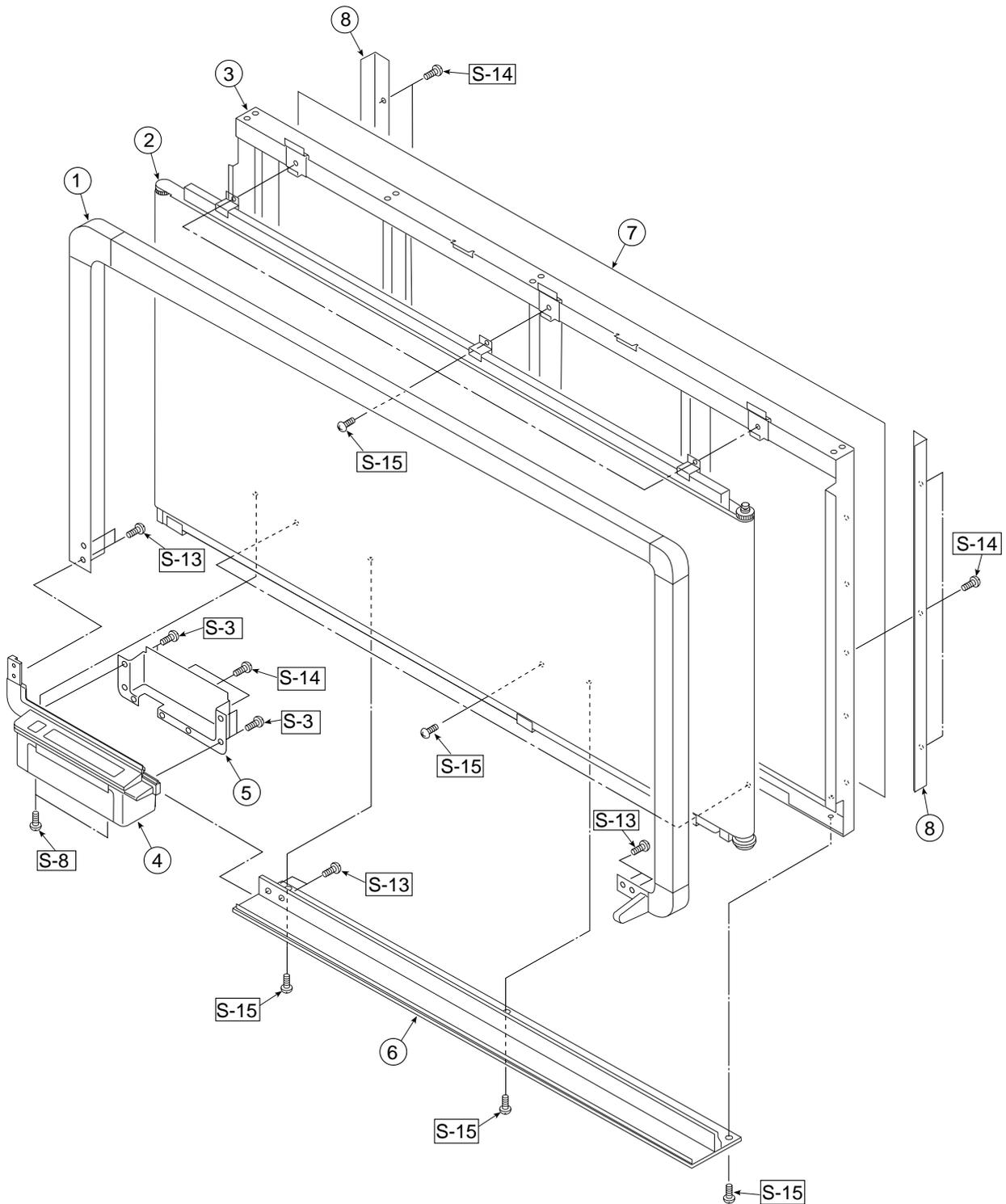
## 7-1. BOARD UNIT SECTION (BF-041S)



## PARTS LIST

<b>7-1. BOARD UNIT SECTION (BF-041S)</b>				
No	PARTS NAME	PARTS No	Q'ty	REMARK
1	Frame Cover Section	-	-	See 7-2. FRAME COVER SECTION
2	Sheet Frame Section	-	-	See 7-3. SHEET FRAME SECTION
3	Board Frame Section	-	-	See 7-4. BOARD FRAME SECTION
4	Printer Unit Section	-	-	See 7-5, 6. PRINTER UNIT SECTION
5	Rear Cover	741490100	1	
6	Frame Cover Lower S	714150500	1	
7	Back Panel S	741492900	1	
8	Back Panel Corner Side	741492500	2	
-	Main Frame Unit S	304103	1	Set No.14+15+18

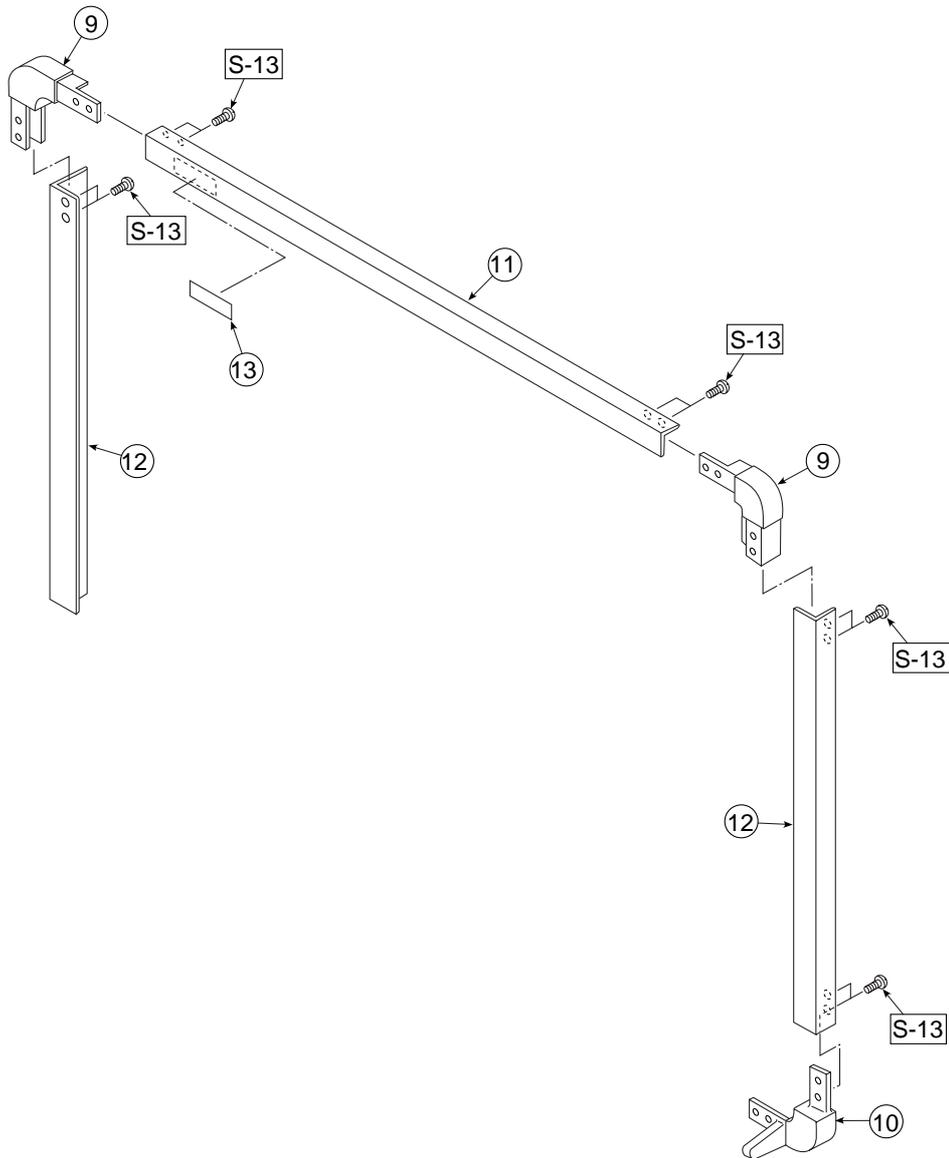
7-1. BOARD UNIT SECTION (BF-041W)



## PARTS LIST

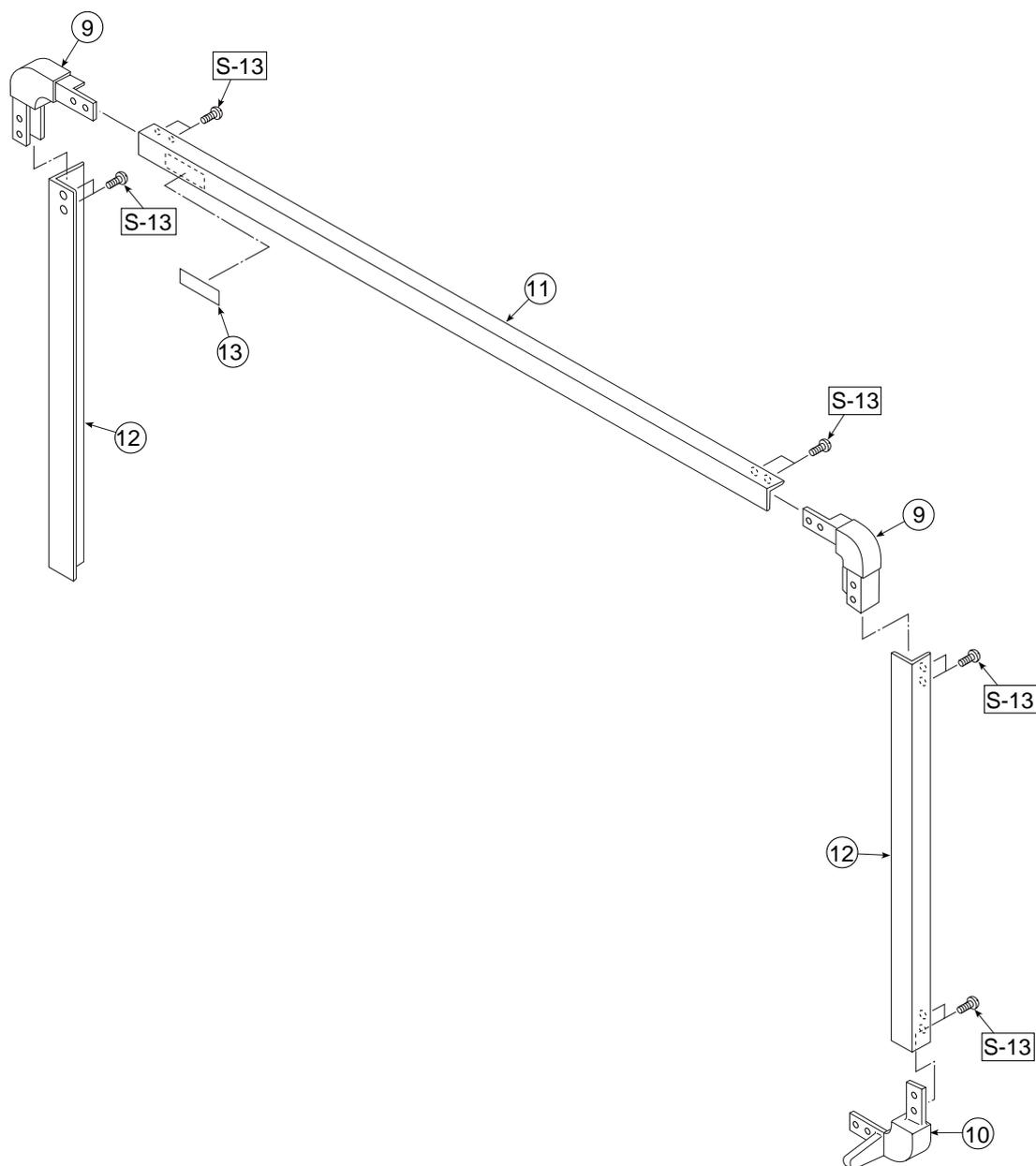
<b>7-1. BOARD UNIT SECTION (BF-041W)</b>				
No	PARTS NAME	PARTS No	Q'ty	REMARK
1	Frame Cover Section	-	-	See 7-2. FRAME COVER SECTION
2	Sheet Frame Section	-	-	See 7-3. SHEET FRAME SECTION
3	Board Frame Section	-	-	See 7-4. BOARD FRAME SECTION
4	Printer Unit Section	-	-	See 7-5, 6. PRINTER UNIT SECTION
5	Rear Cover	741490100	1	
6	Frame Cover Lower W	714650500	1	
7	Back Panel W	741493000	1	
8	Back Panel Corner Side	741492500	2	
-	Main Frame Unit W	304104	1	Set No.14+15+18

7-2. FRAME COVER SECTION (BF-041S)



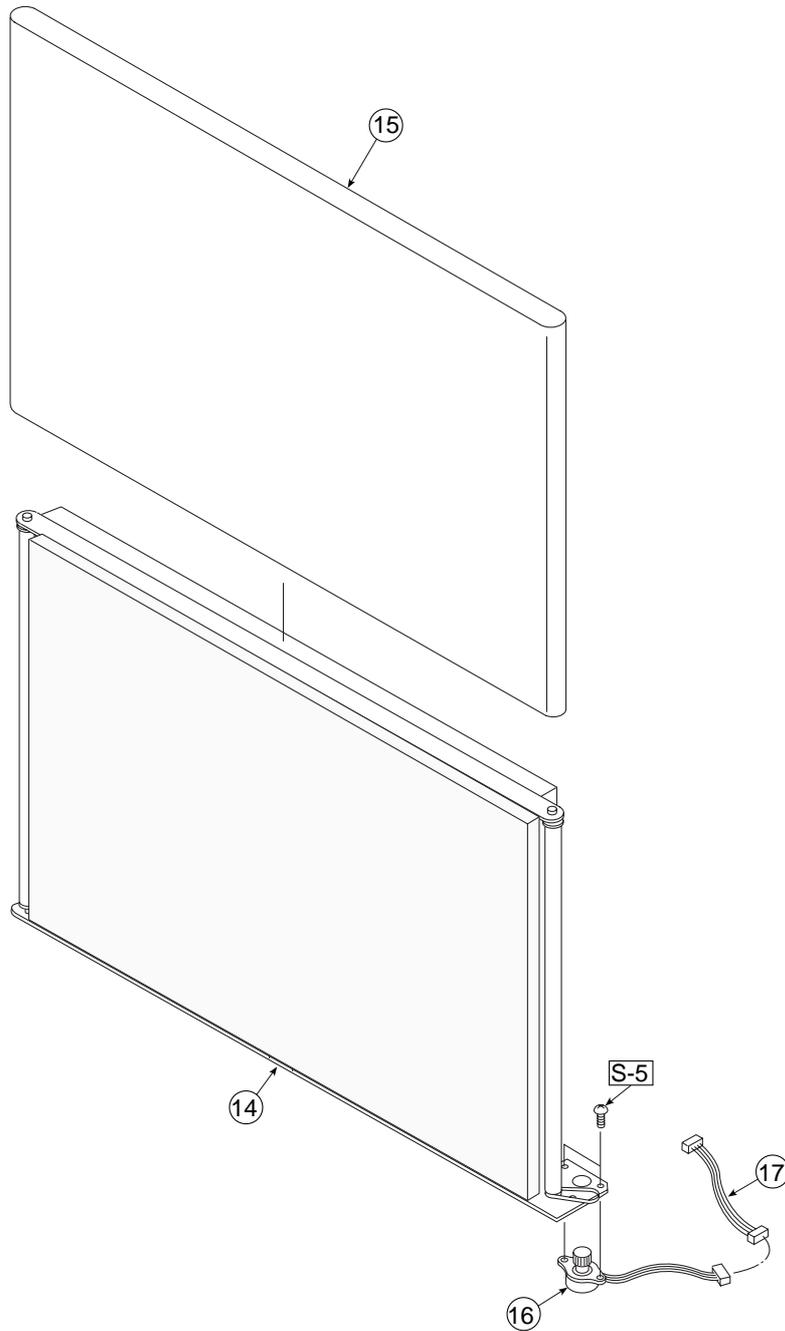
7-2. FRAME COVER SECTION (BF-041S)				
No	PARTS NAME	PARTS No	Q'ty	REMARK
9	Corner Cover Upper	714150100	2	
10	Corner Cover R	714150200	1	
11	Frame Cover Upper Unit S	714090010	1	
12	Frame Cover Side Unit	714090030	2	
13	Name Plate	741492200	1	

**7-2. FRAME COVER SECTION (BF-041W)**



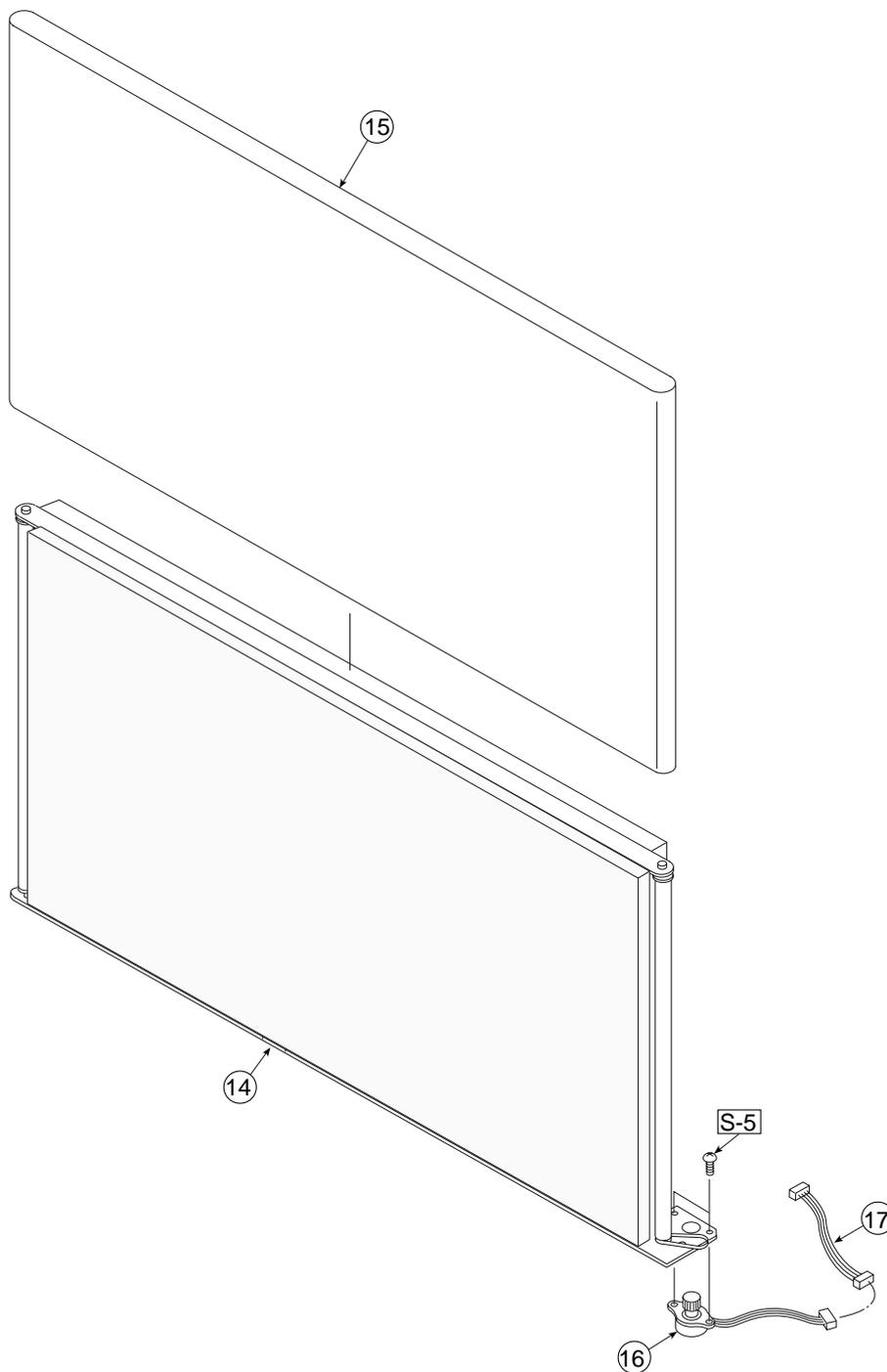
<b>7-2. FRAME COVER SECTION (BF-041W)</b>				
No	PARTS NAME	PARTS No	Q'ty	REMARK
9	Corner Cover Upper	714150100	2	
10	Corner Cover R	714150200	1	
11	Frame Cover Upper Unit W	714090020	1	
12	Frame Cover Side Unit	714090030	2	
13	Name Plate	741492200	1	

**7-3. SHEET FRAME SECTION (BF-041S)**



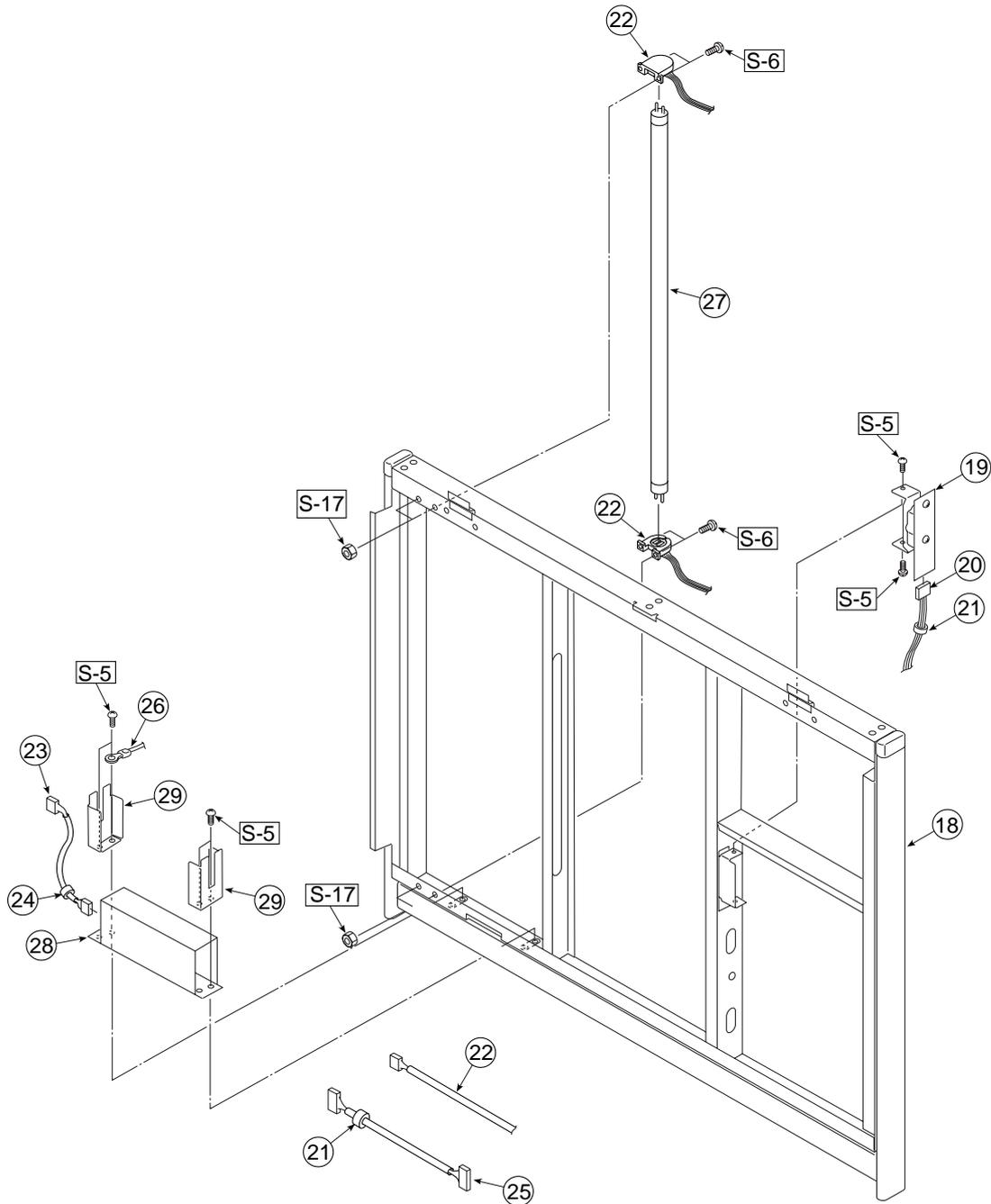
<b>7-3. SHEET FRAME SECTION (BF-041S)</b>				
No	PARTS NAME	PARTS No	Q'ty	REMARK
14	Sheet Frame Unit S	-	1	
15	Endless Sheet S	714722400	1	
16	Sheet Motor Assy	714180800	1	
17	Sheet Motor Harness S	741254600	1	

7-3. SHEET FRAME SECTION (BF-041W)



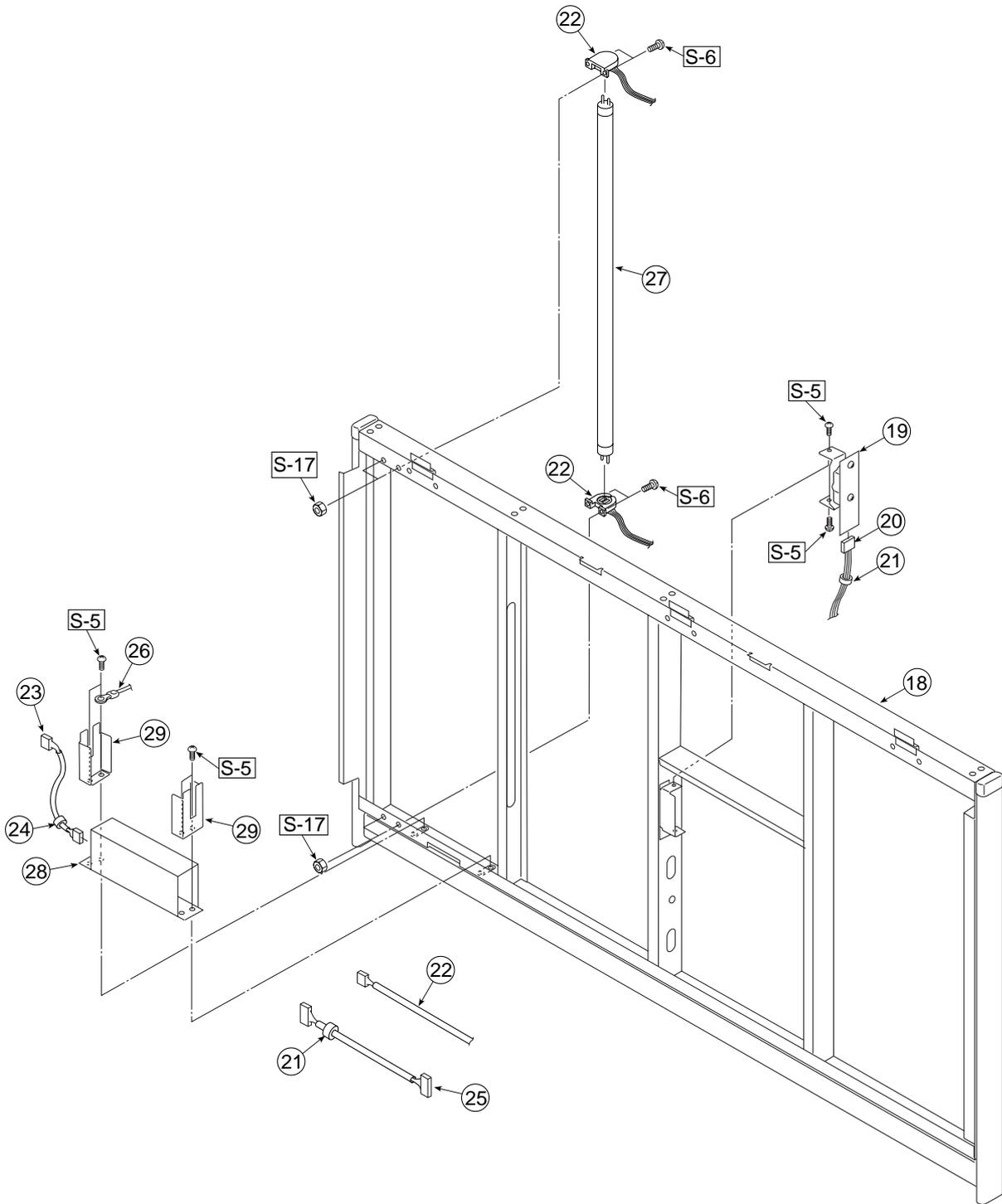
7-3. SHEET FRAME SECTION (BF-041W)				
No	PARTS NAME	PARTS No	Q'ty	REMARK
14	Sheet Frame Unit W	-	1	
15	Endless Sheet W	714622400	1	
16	Sheet Motor Assy	714180800	1	
17	Sheet Motor Harness W	741255500	1	

7-4. BOARD FRAME SECTION (BF-041S)



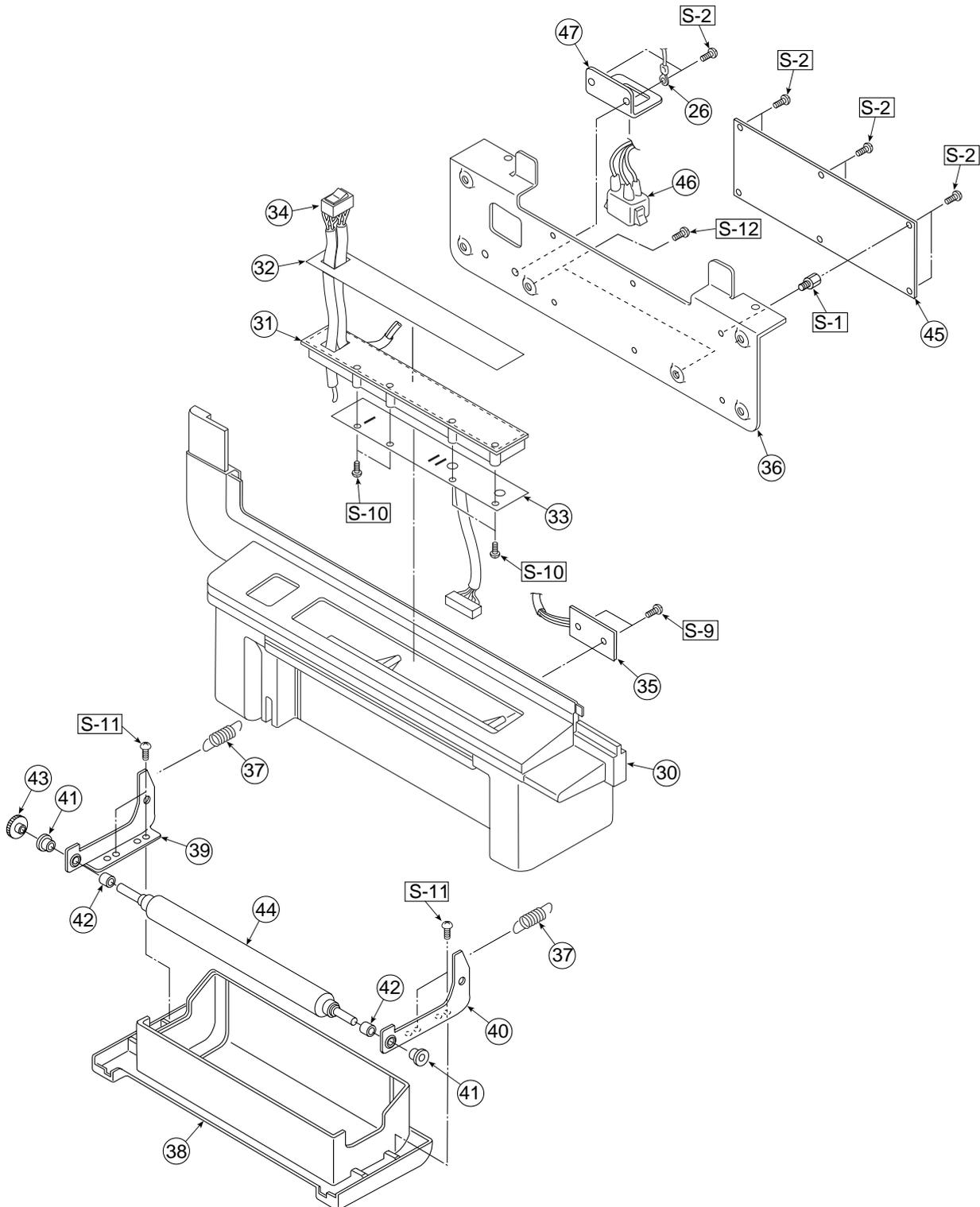
<b>7-4. BOARD FRAME SECTION (BF-041S)</b>				
No	PARTS NAME	PARTS No	Q'ty	REMARK
18	Board Frame Unit S	-	1	
19	CCD Unit	714090040	1	
20	CCD Harness	741254400	1	
21	Ferrite core	715251512	2	
22	Lamp Socket Assy-J	714090210	1	JAPAN Only
	Lamp Socket Assy-OS	714090220	1	
23	AC Power Harness	741254800	1	
24	DK Core	714890100	1	
25	DC Power Harness	741254700	1	
26	GND Harness	741258600	1	
27	Fluorescent Lamp	714180700	1	
28	Power Board Assy(100-120V)	741258000	1	
	Power Board Assy(220V)TUV	741258200	1	

**7-4. BOARD FRAME SECTION (BF-041W)**



<b>7-4. BOARD FRAME SECTION (BF-041W)</b>				
No	PARTS NAME	PARTS No	Q'ty	REMARK
18	Board Frame Unit W	-	1	
19	CCD Unit	714090040	1	
20	CCD Harness	741254400	1	
21	Ferrite core	715251512	2	
22	Lamp Socket Assy-J	714090210	1	JAPAN Only
	Lamp Socket Assy-OS	714090220	1	
23	AC Power Harness	741254800	1	
24	DK Core	714890100	1	
25	DC Power Harness	741254700	1	
26	GND Harness	741258600	1	
27	Fluorescent Lamp	714180700	1	
28	Power Board Assy(100-120V)	741258000	1	
	Power Board Assy(220V)TUV	741258200	1	

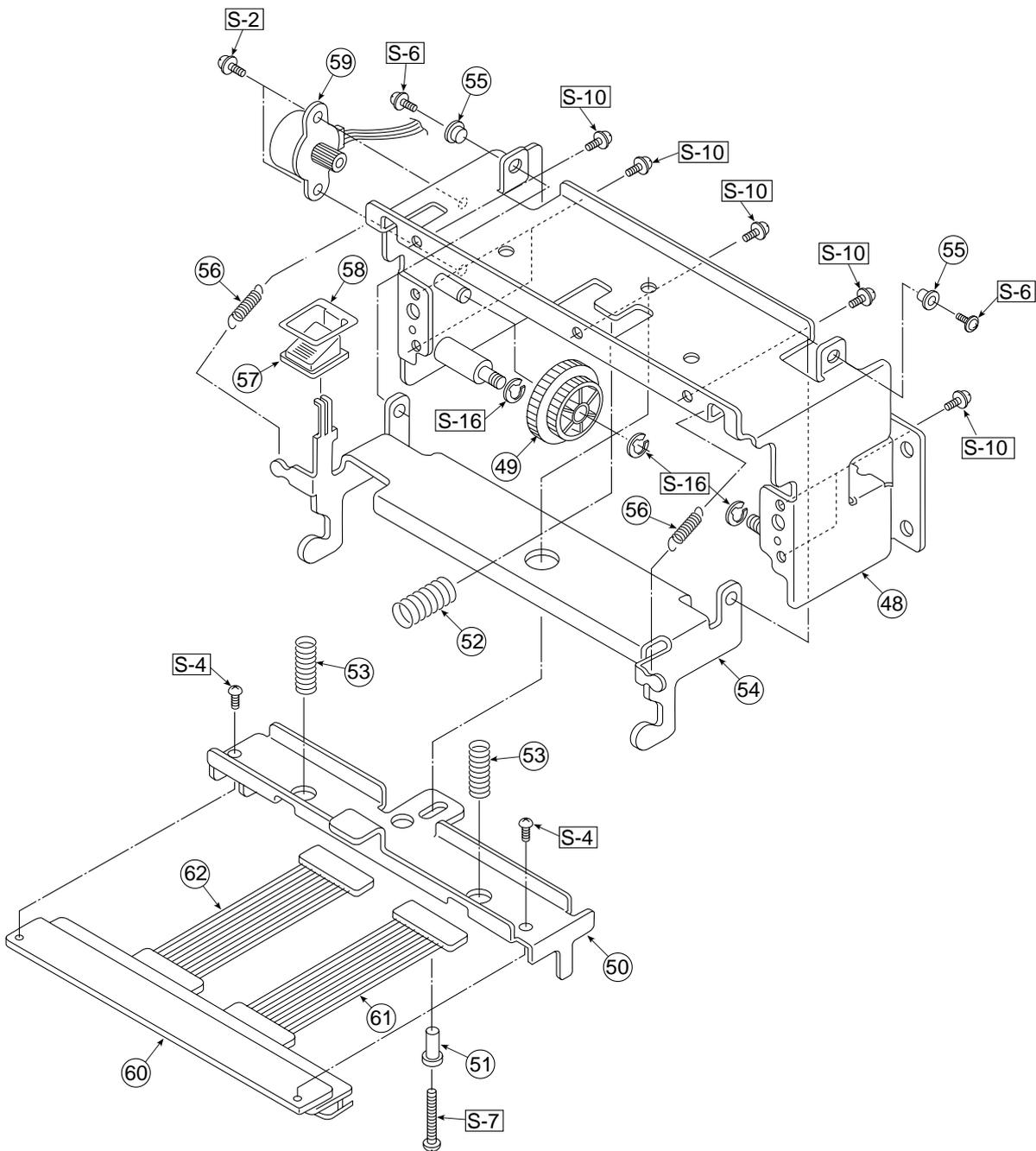
7-5. PRINTER UNIT SECTION 1 (BF-041S/W)



## PARTS LIST

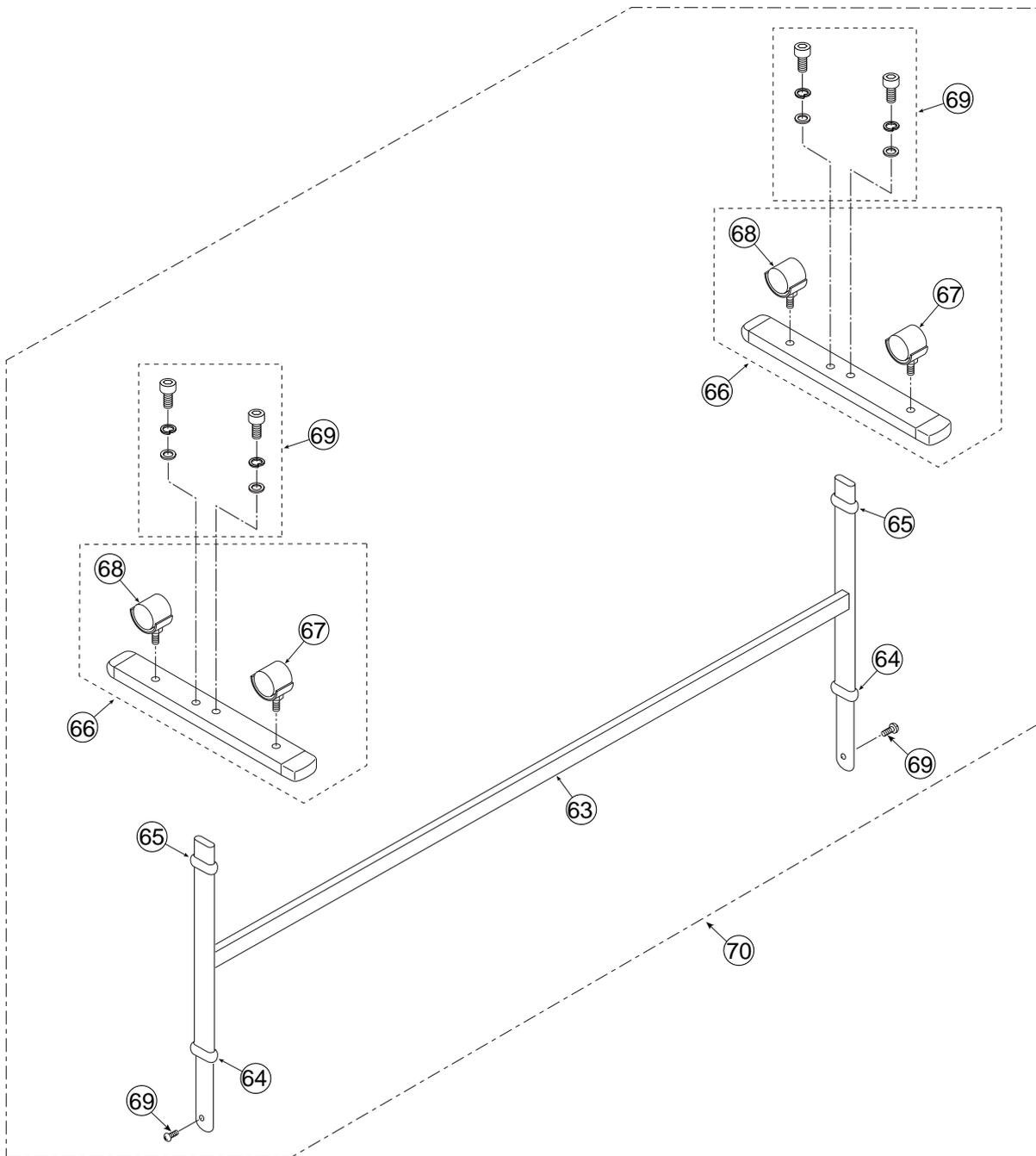
<b>7-5. PRINTER UNIT SECTION 1(BF-041S/W)</b>				
No	PARTS NAME	PARTS No	Q'ty	REMARK
30	Printer Cover	714830200	1	
31	SW Panel	714831800	1	
32	SW Sheet S-J	741491600	1	JAPAN Only
	SW Sheet S-OS/UL	741491800	1	
	SW Sheet S-C	741490500	1	CHINA Only
33	SW Board Assy	741258400	1	
34	Power SW Assy	741255200	1	
35	Paper Sensor Board Assy	741258500	1	
36	Printer Rear Cover	741490000	1	
37	Front Cover Spring	714141700	2	
38	Front Cover Unit (A4)	714090230	1	
	Front Cover Unit (Letter)	714090240	1	
39	Hinge Plate Assy R	714341104	1	
40	Hinge Plate Assy L	714341404	1	
41	Oiles Bushing	716100200	2	
42	Platen Collar	714140700	2	
43	Platen Gear	714140800	1	
44	Platen Roller	714140600	1	
45	Main Board Assy	741253200	1	
46	Power Socket Assy	741255300	1	
47	Power Socket Plate	741490300	1	

7-6. PRINTER UNIT SECTION 2(BF-041S/W)



<b>7-6. PRINTER UNIT SECTION 2(BF-041S/W)</b>				
No	PARTS NAME	PARTS No	Q'ty	REMARK
48	Printer Frame Unit	714090060	1	
49	Middle Gear	714130800	1	
50	Thermal Head Base	714330904	1	
51	Thermal Head Collar	714131000	1	
52	Thermal Head Spring A	714131100	1	
53	Thermal Head Spring B	714131200	2	
54	Lock Base	714331305	1	
55	Lock Base Collar	714131400	2	
56	Lock Spirng	714131500	2	
57	Lock Button	714131600	1	
58	Lock Button Plate	714132300	1	
59	Printer Motor Assy	714182100	1	
60	Thermal Head	714182300	1	
61	Thermal Head Power Harness (10P)	741254900	1	
62	Thermal Head Control Harness (9P)	741255000	1	

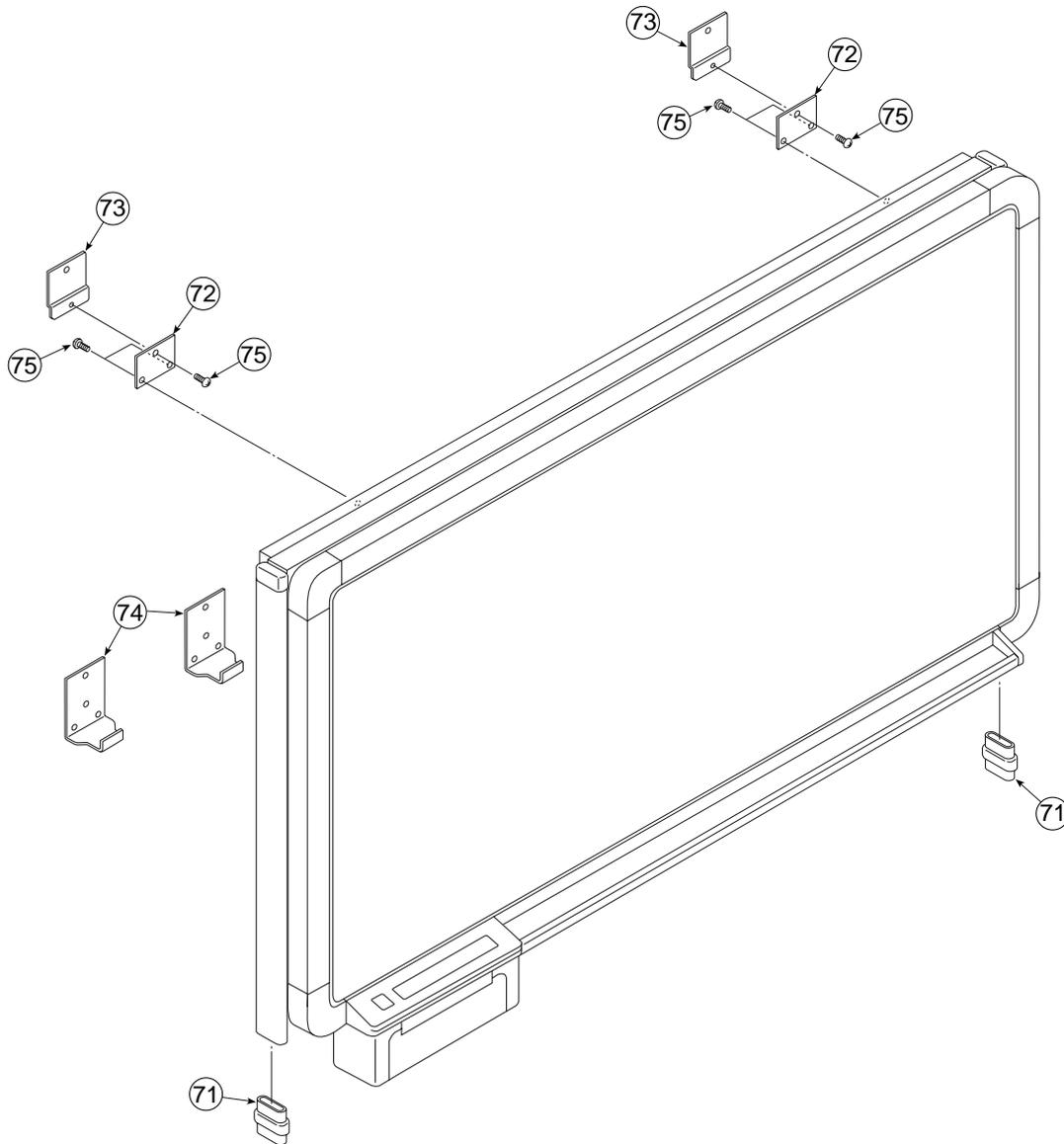
**7-7. STAND SECTION**



## PARTS LIST

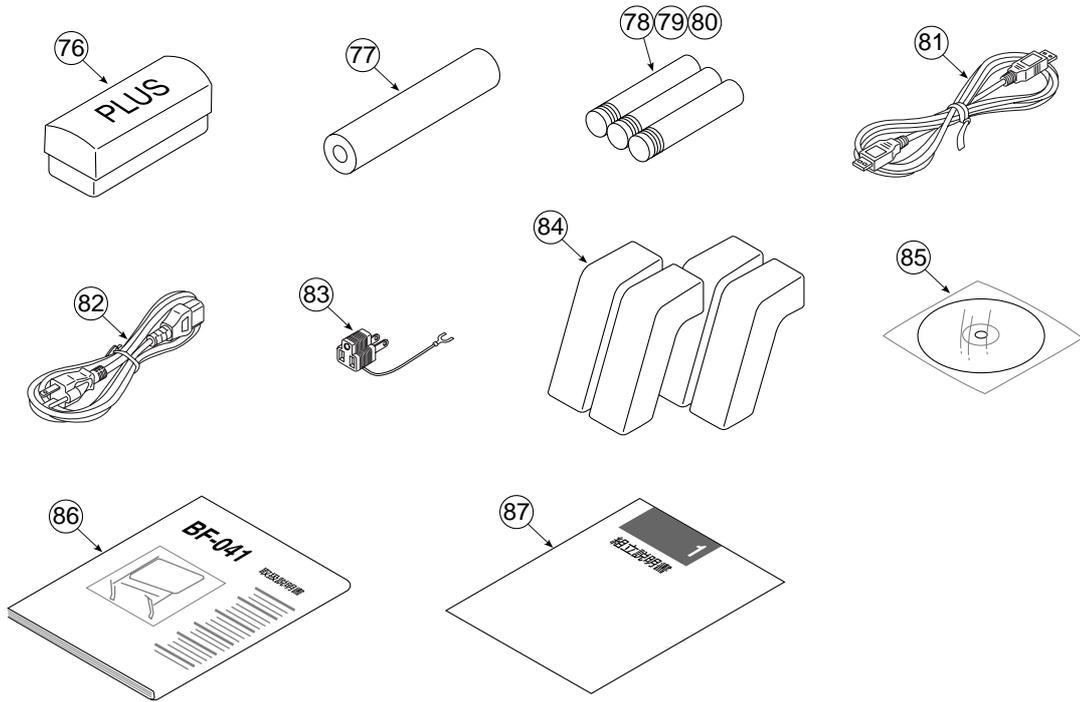
<b>7-7. STAND SECTION</b>				
No	PARTS NAME	PARTS No	Q'ty	REMARK
63	Stand Pipe Assy S	714160109	1	BF-041S Only
	Stand Pipe Assy W	714660109	1	BF-041W Only
64	Joint Cap Upper	714160700	2	
65	Joint Cap Lower	714160800	2	
66	Caster Pipe Assy	714091290	2	
67	Front Caster	714660400	2	
68	Back Caster	714660500	2	
69	Stand Screw Set	714090070	1	
70	Stand Unit S	304105	1	Set No.63~69 (BF-041S Only)
	Stand Unit W	304106	1	Set No.63~69 (BF-041W Only)

**7-8. WALL MOUNTING SECTION**



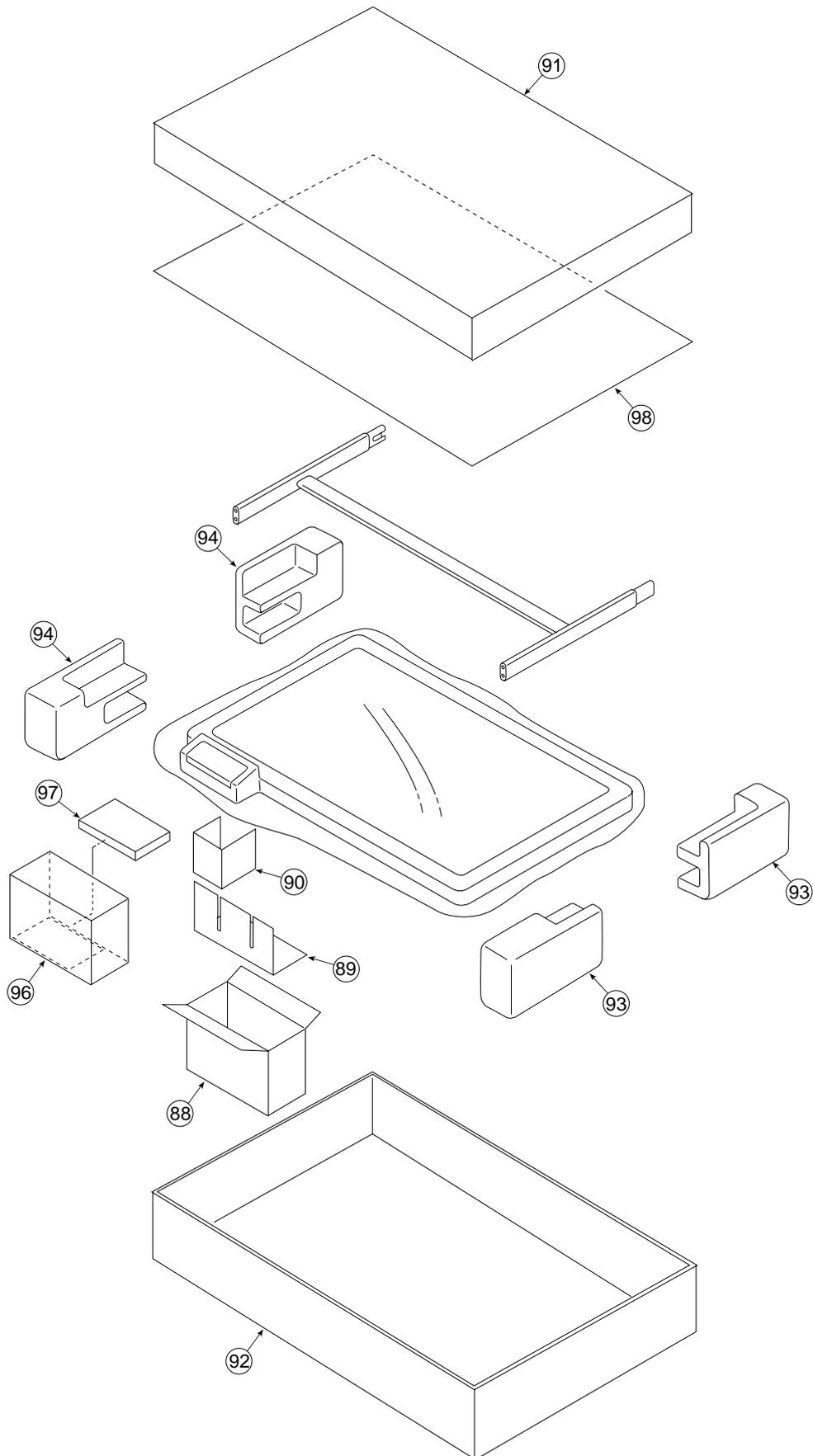
<b>7-8. WALL MOUNTING SECTION</b>				
No	PARTS NAME	PARTS No	Q'ty	REMARK
71	Pipe Frame Cap	714112600	2	
72	Board Plate	714559302	2	
73	Bracket Upper	714559104	2	
74	Bracket Lower	714559203	2	
75	Wall Mounting Screw SET	714090080	1	

**7-9. ACCESSORIES SECTION**



<b>7-9. ACCESSORIES SECTION</b>				
No	PARTS NAME	PARTS No	Q'ty	REMARK
76	Eraser assy	51058	1	
77	Thermal Roll Paper A4 (30m)	44744	1	
	Thermal Roll Paper Letter (30m)	714870100	1	
78	Marker (Black)	44070	1	
79	Marker (Red)	44071	1	
80	Marker (Blue)	44072	1	
81	USB Cable (3m)	741255400	1	
82	Power Cable JP	714461400	1	JAPAN Only
	Power Cable GB	753676000	1	
	Power Cable UL	753670000	1	
	Power Cable CEE	753671000	1	
	Power Cable BS	753673000	1	
	Power Cable SAA	717853400	1	
83	Conversion Plug	753670100	1	TAIWAN Only
84	Stabilizer	741493900	4	
85	CD-ROM	741492800	1	
86	Operation Manual (J)	741494400	1	JAPAN Only
	Operation Manual (OS)	741494500	1	
87	Assembly Manual (J)	741494600	1	JAPAN Only
	Assembly Manual (E)	741494700	1	
	Assembly Manual (C)	741494800	1	CHINA Only

7-10. PACKING SECTION



## PARTS LIST

<b>7-10. PACKING SECTION</b>				
No	PARTS NAME	PARTS No	Q'ty	REMARK
88	Accessory box	714171300	1	
89	Accessory box Pad A	714171800	1	
90	Accessory box Pad B	714171900	1	
91	Carton Upper S	741493700	1	
	Carton Upper W	741493800	1	
92	Carton Lower S	714232300	1	
	Carton Lower W	714232500	1	
93	Corner Packing R (U/L)	714171400	1	
94	Corner Packing L (U/L)	714171500	1	
95	Polyethylene Bag (Board) S	714171600	1	
	Polyethylene Bag (Board) W	714671600	1	
96	Accessory Box Support S	714171700	1	
	Accessory Box Support W	714671700	1	
97	Support Packing	741495500	1	
98	Sheet Guard Pad S	714873100	1	Wall Mounting Type Only
	Sheet Guard Pad W	714973100	1	Wall Mounting Type Only
-	Packing Set S (Stand Type)	-	1	No Parts Supply
	Packing Set W (Stand Type)	-	1	No Parts Supply
-	Packing Set S (Wall Mounting Type)	-	1	No Parts Supply
	Packing Set W (Wall Mounting Type)	-	1	No Parts Supply
-	CARTON UNIT (S) BF-041S	304107	1	Set No.88~96
-	CARTON UNIT (W) BF-041W	304108	1	Set No.88~96

**7-11. SCREWS & WASHERS SECTION**

<b>7-11. SCREWS &amp; WASHERS SECTION</b>					
No	PARTS NAME	PARTS No	Q'ty		REMARK
			041S	041W	
S-1	M3-6 Hexagonal Spacer	954330641	6	6	
S-2	M3-6 Cross Recessed Binding Head	951230610	10	10	
S-3	M4-8 Cross Recessed Binding Head	951240820	4	4	
S-4	M3-5 Cross Recessed 2-Point Type Screw	952130510	2	2	
S-5	M3-8 Cross Recessed 3-Point Type Screw	952530810	8	8	
S-6	M3-10 Cross Recessed 3-Point Type Screw	952531010	6	6	
S-7	M3-25 Cross Recessed 3-Point Type Screw	952532510	1	1	
S-8	M4-12 Cross Recessed 3-Point Type Screw	952541210	2	2	
S-9	M2.6-6 P-Tight Cross Recessed Binding Head	953226610	2	2	
S-10	M3-6 P-Tight Cross Recessed Binding Head	953230610	11	11	
S-11	M3-8 P-Tight Cross Recessed Binding Head	953230810	4	4	
S-12	M4-8 P-Tight Cross Recessed Binding Head	953240820	2	2	
S-13	M4-10 P-Tight Cross Recessed Binding Head	953141010	16	16	
S-14	M3-8 Cross Recessed Binding Head	953630820	9	9	
S-15	M4-8 Cross Recessed Binding Head	953640810	6	9	
S-16	E Ring Ø4	958140010	3	3	
S-17	Nut (M3)	955230010	4	4	

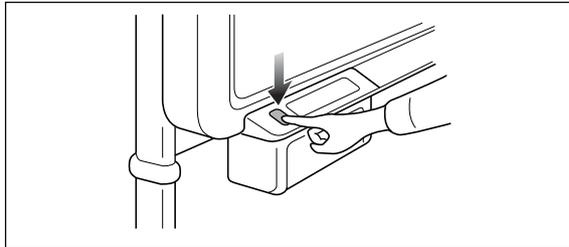
## 8. SERVICE NOTE

### 8-1. Replacement Procedure of Dedicated Recording Paper

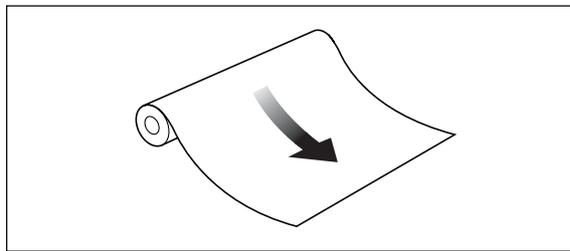
Use the recording paper prepared for a test instead of user's recording paper when making a print test during repair visit.

#### Procedure

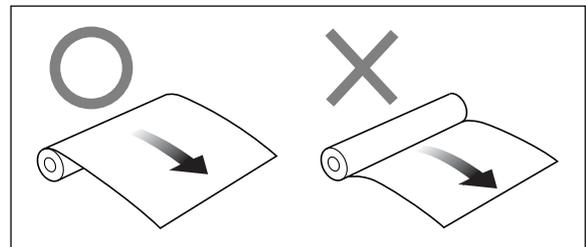
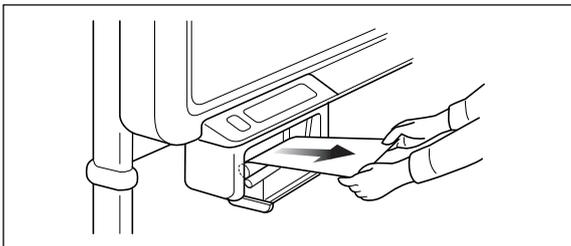
- 1) Press the "OPEN" button, open the printer hatch, and take out the recording paper.



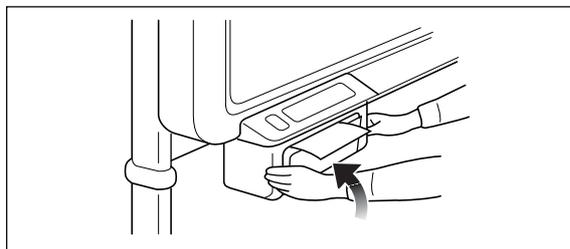
- 2) Pull out the recording paper from the top.



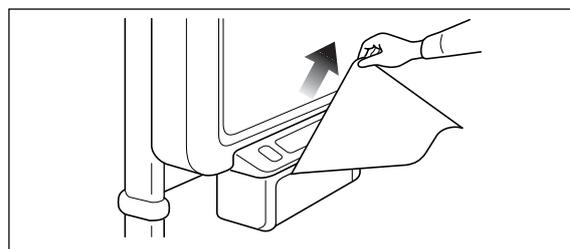
- 3) Set the recording paper with its tip pulled out by about 20 cm. (Pay attention to the direction of paper.)



- 4) Push both ends of the printer hatch and close the printer hatch until it is "clicked".  
(At that time, confirm that the recording paper does not slip off. When the recording paper slips off to the right and left, the print position may slip off or creases may be put in the recording paper.)



- 5) Cut the excessive recording paper from the exit of a printer



**8-2. Updating the Firmware**

Firmware may be updated after products are shipped. Perform the operation according to the procedure below when the user updates firmware.

**Notes:**

- The Main Board Assy must be replaced when the updating of firmware was not completed normally.
- Calibration must be performed after firmware is updated. (See 5-2. Calibration.)

**Preparation**

- Notebook-sized personal computer (PC)  
PC that satisfies the specifications below.

PC	IBM PC/AT-compatible machine (DOS/V-compatible machine)
CPU	Processor of Pentium ? or higher
Interface	USB1.1 or USB2.00
OS	Windows XP Professional
	Windows XP Home Edition
	Windows 2000 Professional
	Windows Millennium Edition
	Windows 98 SE
Memory	64MB or more (128 MB or more recommended)
Hard disk drive	Empty capacity of 64 MB or more (except the area in which an image is saved)
Display	800X600 pixels or more
CD-ROM drive	Required

- BF-041 Setup Utility (PLUS Copyboard Software for BF-041 series CD-ROM)
- USB cable (Supplied for this set)
- Updating program (There are a full program rewrite version and specific area rewrite version.)

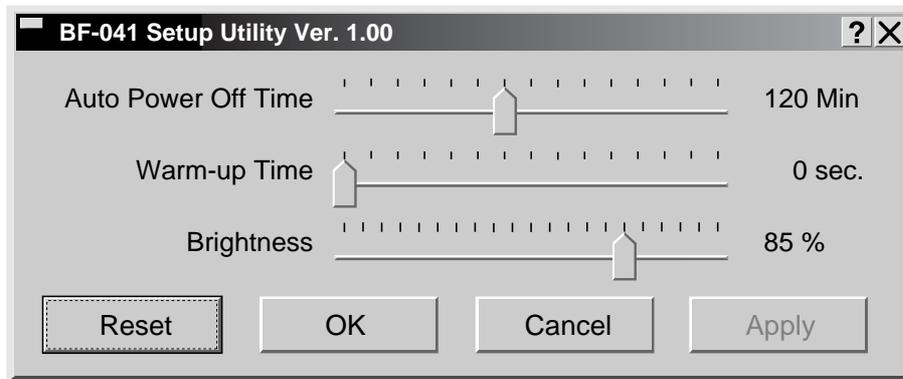
**Name:** \*\_BF\_041\_XXXX.mot

\*=F: Full rewrite updating program / P: Specific area rewrite updating program

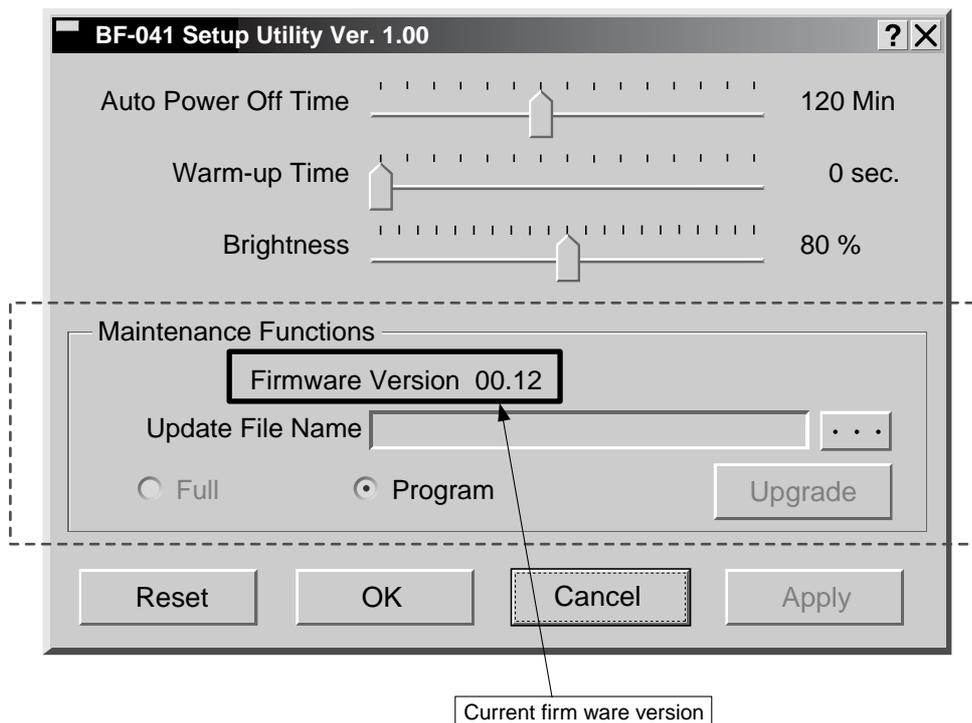
XXXX = Version number

**Procedure**

- 1) Save an updating program in any folder of PC to be used.
- 2) Install BF-041 Setup Utility and USB driver in PC to be used.  
(For more details, see the CD-ROM version of Instruction Manual.)
- 3) Connect PC and BF-041 using a USB cable and turn on the power of BF-041.
- 4) Start BF-041 Setup Utility. (The screen below is displayed.)

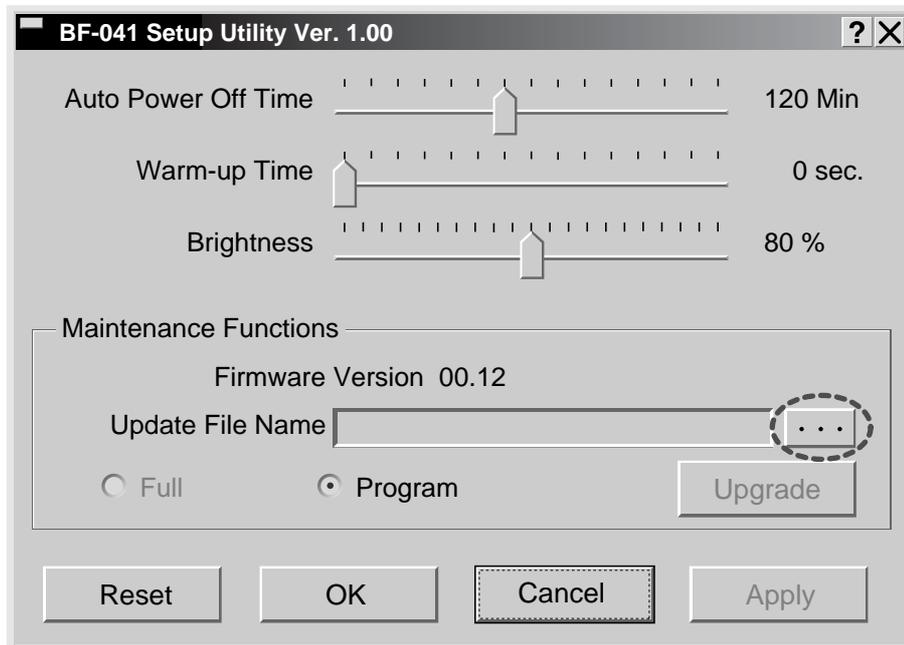


- 5) Pres the "Ctrl", "Alt", and "F12" button simultaneously.  
"Maintenance Functions" is displayed as shown on the screen below.



6) Select an updating program.

Press the "... " button on the screen and select the updating program saved in any place. (See the display below.)



\*: The Full or Program selection radio button is automatically selected according to the file name.

7) Press the "Update" button.

Program data is transferred to BF-041,

**Note:**

- A slider indicating the progress state is displayed. Never turn off the power or disconnect the USB cable while the slider is displayed.
- If so, operation is terminated abnormally. The Main Board Assy must be replaced in this case.

8) A popup dialog box indicating the completion of rewrite is displayed when operation is terminated normally. Press the "OK" button to terminate the processing.

**Note:**

- Firmware cannot be updated from PC when operation is terminated abnormally. Therefore, it is necessary to replace the Main Board Assy.

9) Perform calibration. (See 5-2. Calibration.)

10) Rewrite is completed when calibration is terminated normally.

Perform adjustment while referring to 5-2. Calibration when calibration is not terminated normally.

### 8-3. Thermal Head Test

When print defect (missing white or no printing) occurs, it can be judged whether a failure exists on the printer or CCD read side by carrying out this test.

#### Procedure

- 1) Set the "POWER" button to OFF (with the power cable connected).
- 2) Start a thermal head test. (See Figure 1.)
  - Set the "POWER" button to OFF while simultaneously pressing the "COPY" and "FEED" buttons show in portion A of Figure 1.
  - The "POWER ON" and "PAPER OUT" lamps begin to blink simultaneously.
  - Press the "COPY" button (the second button from the left, BF-041S: two-side compression print key/BF-041W: A4-L equal ratio print key).
  - The test pattern shown in Figure 2 is printed.

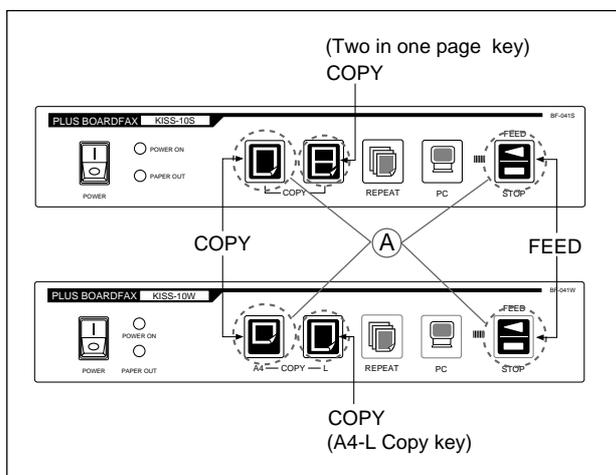


Fig. 1

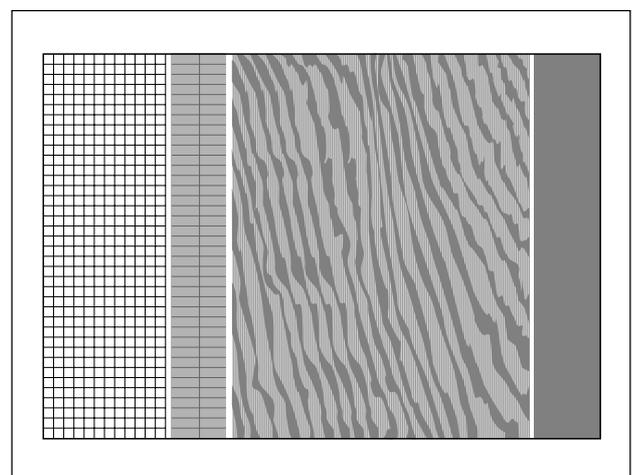


Fig. 2

- For the missing white shown in Figure, a trouble may occur not on the CCD read side, but on the thermal head side.

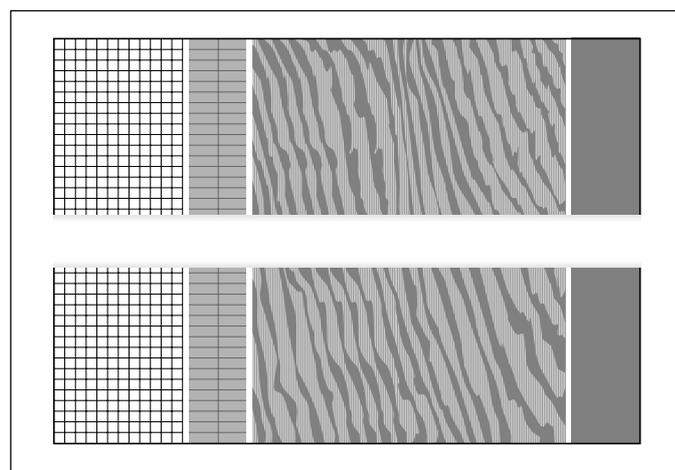


Fig. 3

