

COPY BOARD

CR-5

SERVICE MANUAL

PLUS

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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 User's Manual.

Pay attention to the following during service inspection.

1-1. Cautions during product maintenance

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

1-2. Cautions during disassembling and assembling

1. Disassemble and assemble products with the products removed from the stand or wall and with the products laid down.
2. Lay down products on a carpet so that the Endless sheet and cover are not damaged during disassembling and assembling.
3. This equipment contains parts under high voltage. When doing repairs, make sure that power plug is pulled out to insure safety.
4. 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.
5. 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.
6. 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.
7. Be sure to use an earth band (wrist band) during repair and inspection.

2. SPECIFICATIONS

2-1. Product Specifications

BOARD TYPE (Model name)		CR-5
Form	Installation method	wall mounting
	External dimensions	W1143 X D63 X H688 mm
	Main unit weight	8.5 kg (Not including pen tray and AC adapter)
BOARD	Panel Size	H610 X W1000 mm
	Effective reading size	H600 X W990 mm
	Number of pages	2
	Paging	Endless in one direction (Horizontal or vertical scroll)
	Drive method	Sheet movement
	Reading method	CIS (Contact Image Sensor)
	Reading illumination light source	RGB LED
	Reading resolution	Main scanning direction (vertical sheet surface) 1.92 dots/mm (50 dpi or equivalent) Sub scanning direction (horizontal sheet surface) 1.92 dots/mm (50 dpi or equivalent)
	Reading time	Black & white: approx. 10 s Color: approx. 15 s
Memory	Type	USB Flash memory*1
	Compatible FAT types	FAT , FAT 32
	File format	JPEG or PNG format
	Interface	USB1.1 or USB2.0*2
Control panel	Control buttons	ON/Standby, Save, Print, Feed/Stop
	Display	7-Segment (Status of PC connection, Error#),
Added functions	Clock	Used for the timestamp and for file dating properties (Includes backup battery for when there is a loss of power)
	PC connection	Transfer of sheet surface image data via USB (TWAIN supported), settings
Power supply	AC power adapter	Input : AC100–240V/50–60 Hz, Max 1.5 A Output : DC 24 V, 2.71 A
Operating conditions	Temperature	10–35°C
	Humidity	30–85% (No condensation)
Recording section	Printer interface	USB1.1 or USB2.0 full-speed mode compliant printers are supported
Miscellaneous	Ruled lines	34mm
	Miscellaneous	Dedicated markers (black, red, blue, and green)

Remarks

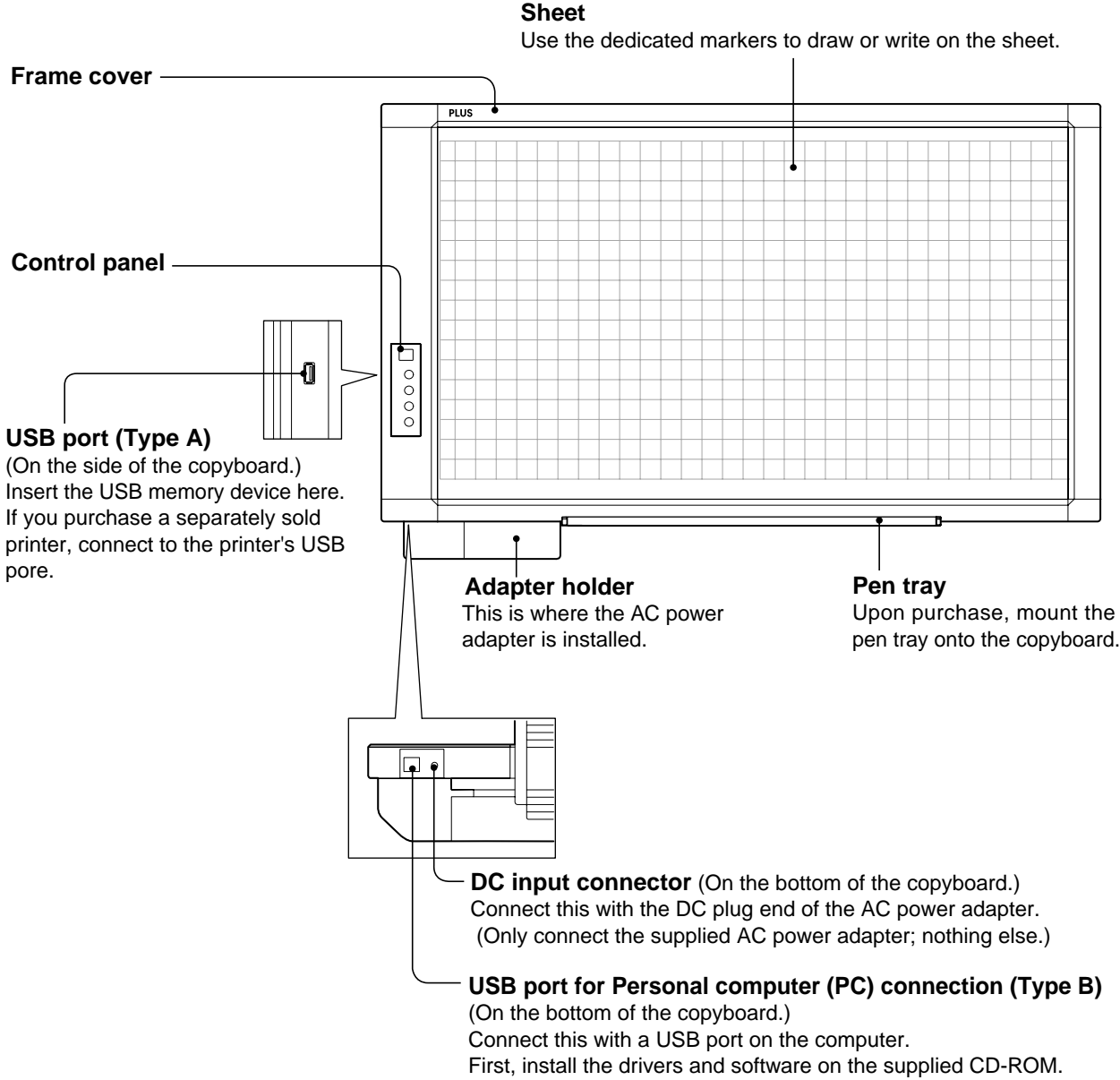
*1: USB flash memory is not supplied.

*2: High-speed is not supported.

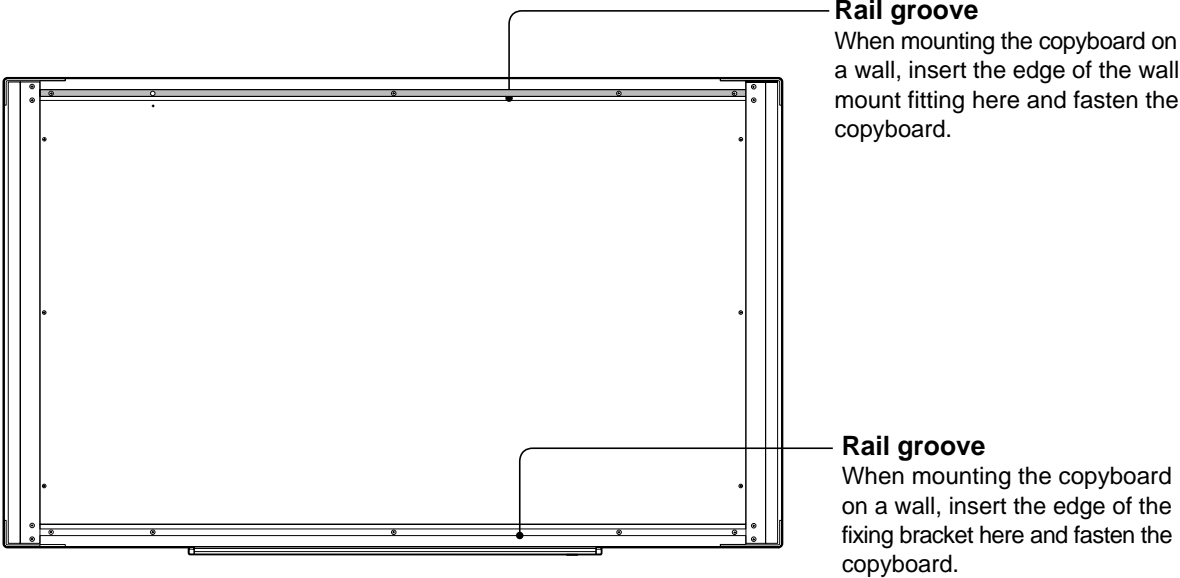
- Please note that the appearance of the main unit, the supplied printer, specifications, and other items are subject to change without notice for the purpose of quality improvement.
- This machine contains eParts of the eSOL, Co., Ltd.
- This unit is a PLUS Copyboard product.

2-2. Names of the Parts

Front



Rear

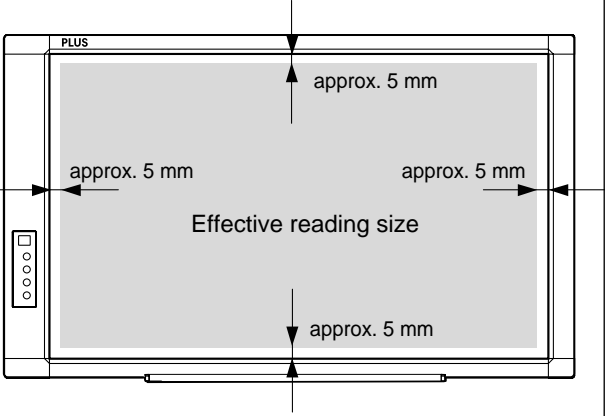


Effective Reading Size

The area that can be copied is the gray area of the diagram.

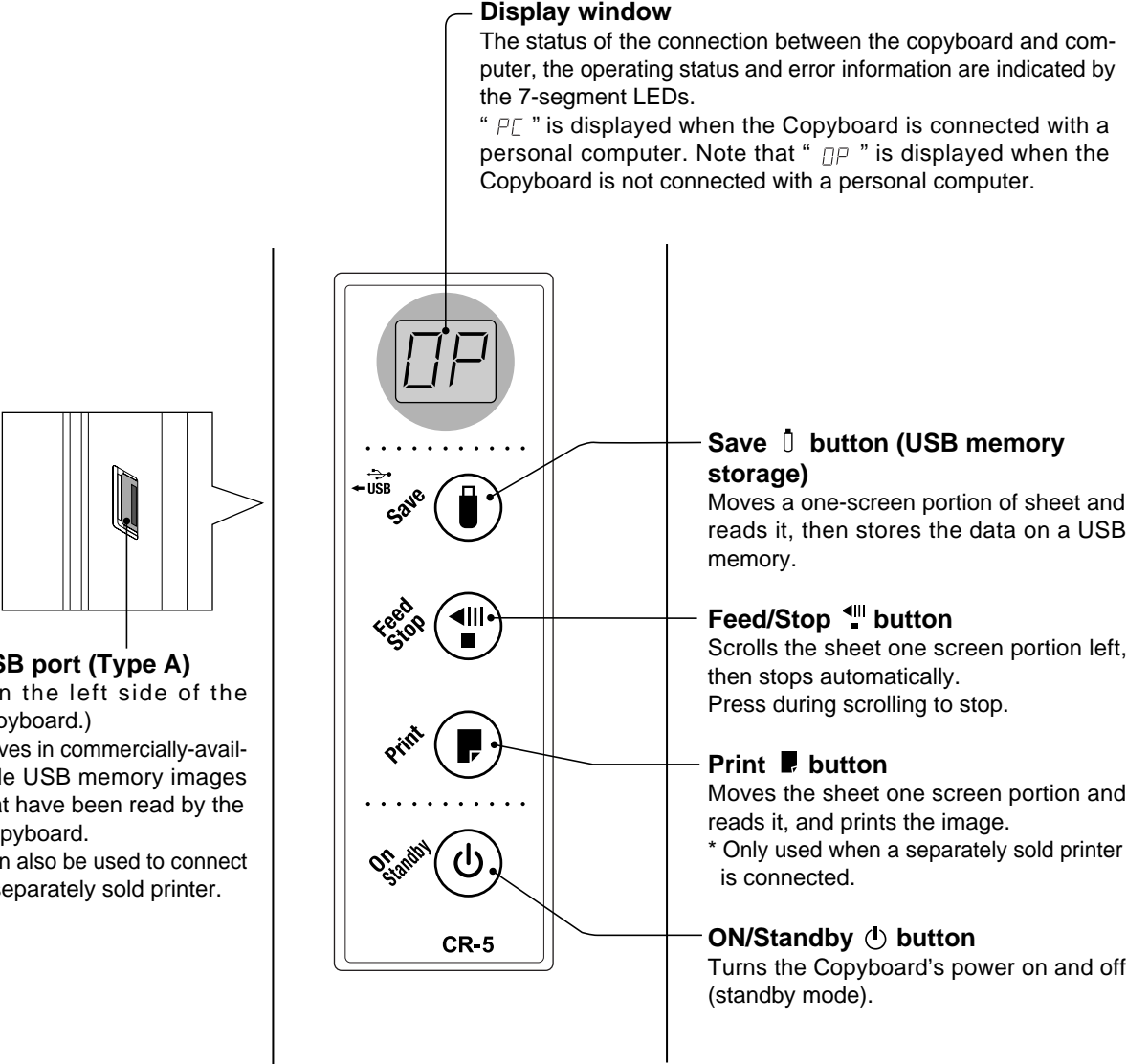
Note:

- It might not be possible to print or copy when storing to USB memory or personal computer any portions that are drawn outside of this range.



2-3. Control Panel

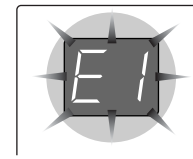
When pressing a button, please press the center area (i.e., the round and protruding portion).
The button may not work if it is pressed on a corner.













2-4. Error Display

If any of the following flashing indications appear in the display window of the control panel, please check the matters described below.

Error messages will flash for 5 seconds; however, error displays of “E4” and “E5” will be lit steadily after the flashing stops.



Error display number	Problem and Solution	
 Printer not connected No printing paper Printer problem	<ul style="list-style-type: none"> Is the printer cable connected? Is power being supplied to the printer? When the printer uses an AC power adapter, is the cable disconnected somewhere? Has paper been set in the printer? 	<ul style="list-style-type: none"> Connect the printer properly and switch on the printer power. Turn the power of the printer off and then on again, and load the printer with A4 paper.
 USB Memory not recognized	<ul style="list-style-type: none"> Is the USB memory unformatted. Is a USB memory that is not supported by the Copyboard being used? Is the USB memory device plugged in fully? Is the USB memory damaged? 	<ul style="list-style-type: none"> This unit supports the FAT and FAT 32 formats. Perform the formatting with the personal computer. Please see our home page for information about USB memories that can be used with the Copyboard. (http://www.plus-vision.com) Please check the operation with a personal computer.
 USB Memory storage problem	<ul style="list-style-type: none"> An error occurred during USB memory storage. 	<ul style="list-style-type: none"> Please perform USB memory storage again. Do not insert or remove the USB memory during processing.
 Reading problem	<ul style="list-style-type: none"> There is a lighting fault of the reading light source, or a read signal error. 	<ul style="list-style-type: none"> Unplug the power plug from the power outlet and then plug it in again.
 System error	<ul style="list-style-type: none"> There is a memory or internal fault. 	<ul style="list-style-type: none"> Unplug the power plug from the power outlet and then plug it in again.
 Security protection	<ul style="list-style-type: none"> You have attempted to use a function disabled by the security settings. 	<ul style="list-style-type: none"> The settings can be changed using the included software. For details, contact your nearby PLUS Vision sales office, dealer or store.
 USB memory not connected When the “USb” letter display is flowing...Warning that disconnection of USB memory has been forgotten 	<ul style="list-style-type: none"> USB memory device is not plugged into the main unit. Did you press the ON/Standby button while the USB memory device was plugged into the main unit? 	<ul style="list-style-type: none"> Plug the USB memory device into the USB port. A USB memory device is plugged into the main unit. When the USB memory device is disconnected, the power will be switched off and the unit will enter the standby mode.
 USB Memory is full	<ul style="list-style-type: none"> There is no available space. 	<ul style="list-style-type: none"> Please delete unnecessary data using a personal computer.
 An unsupported printer is connected	<p>A printer that is not supported by the Copyboard has been connected.</p>	<ul style="list-style-type: none"> Press the ON/Standby button and switch off the power. When a record is required, switch on the power and save to USB memory.

If the problem persists, please contact your nearby PLUS Vision sales office, dealer, or store.

3. SOFTWARE PLUS TOOLBOX

3-1. What is Copyboard Soft PLUS TOOLBOX?

The "PLUS TOOLBOX" software is an application for connecting the copyboard directly to a computer by USB port to allow transfer of the scanned data to the computer using a TWAIN driver so that the data can be stored on the computer as image files. It can also be used to manage the copyboard's operating environment and security settings from the computer.

Note:

- The security settings apply to the connection between the copyboard's USB memory and computer. They can be set to prohibit deleting or unauthorized setting by anyone other than the administrator. In consideration of password management, etc., please note that this security function can only be enabled after contacting PLUS Vision. The security settings can also be made via USB memory.

Operating Environment

Supported OS:	Microsoft Windows 2000 Professional (Service Pack 4 or higher) / XP (Home Edition /Professional Edition Service Pack 2 or higher) / Vista (32 bit version)
Supported PC:	IBM PC/AT fully compatible computers that run the aforementioned OS
CPU:	Pentium II or greater
Memory:	Windows 2000 (128 MB or greater), Windows XP (256 MB or greater), Windows Vista (512 MB or greater)
Connector:	USB port (type A), interface compatible with USB 1.1 and USB 2.0 standards.
Available hard disk space:	40 MB or greater
Display resolution:	800 x 600 pixels or greater
Peripheral devices:	CD-ROM drive, standard USB ports
Web browser:	Internet Explorer 6.0 or higher

Note:

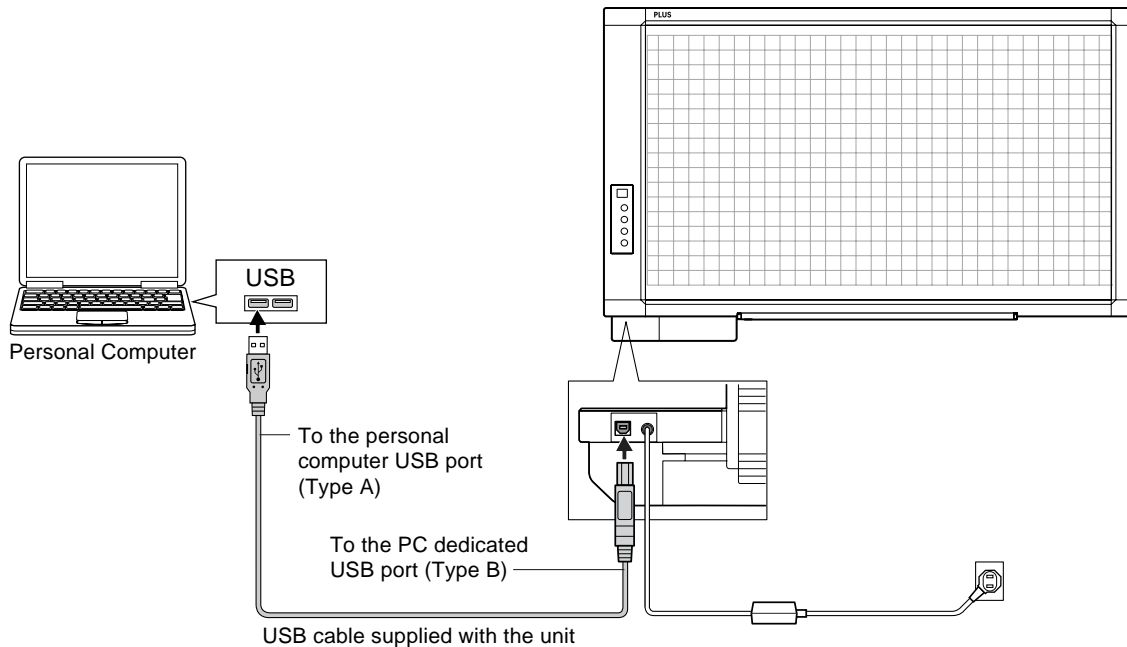
- All operations are not guaranteed in the aforementioned operating environment.
- Windows 95, 98SE/Me, NT, 2000 Server, Server 2003, and Vista (64 bit version) are not supported.

3-2. Connection to the Computer

The copyboard must be connected with a computer in order to use this software.

Note:

Do not connect this machine to the personal computer before installing the software.



Description of the included CD-ROM's menu screen (CR-5 setup launcher)

The menu screen is displayed automatically when the included CD-ROM is inserted into the computer's CD-ROM drive.

■ Install software

When clicked, the installer is launched and the "PLUS TOOLBOX", TWAIN driver and USB driver are installed simultaneously.

■ Software manual

When clicked, the PLUS TOOLBOX software's operating instructions (in PDF format) open.

■ Handling instructions (this manual)

When clicked, the handling instructions (in PDF format) open.

■ Acrobat Reader

This is an application for viewing files in PDF format.

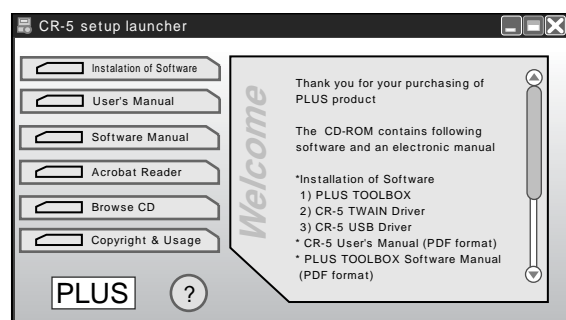
If the PDF files cannot be opened, click "Acrobat Reader" on the menu and follow the instructions on the screen to install.

* View CD-ROM

Click this to view the contents of the CD-ROM using the computer's Explorer application.

* Copyright and Usage Conditions

Click this to open the copyright, usage conditions and other information.



3-3. Installation of the Software

When “Install Software” on the included CD-ROM’s menu is clicked, the “PLUS TOOLBOX”, TWAIN driver and USB driver are installed.

Check Prior to Installation

1. Check whether your personal computer satisfies the operating environment.
2. Check that your personal computer is not currently connected to this machine via USB.
3. At the time of installation, install with Administrator rights (i.e., a user having administrator rights) for Windows 2000, or with a Computer Administrator rights (account) for Windows XP/Vista.
4. Close all other applications that are running.

Installation of the PLUS TOOLBOX

1 Insert the supplied CD-ROM into the CD-ROM drive of the personal computer.

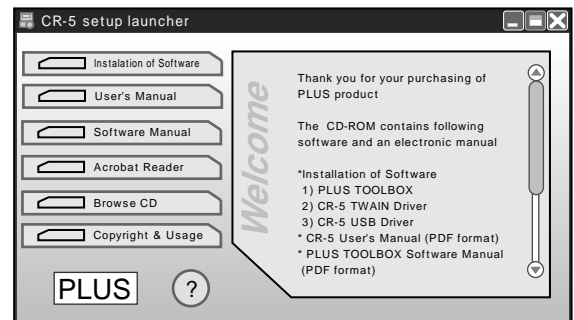
The menu screen will be displayed automatically.
If the menu screen is not displayed automatically, double click CD-ROM icon and double click “autorun.exe”.

2 Click “Installation of PLUS TOOLBOX”.

The installer will start.

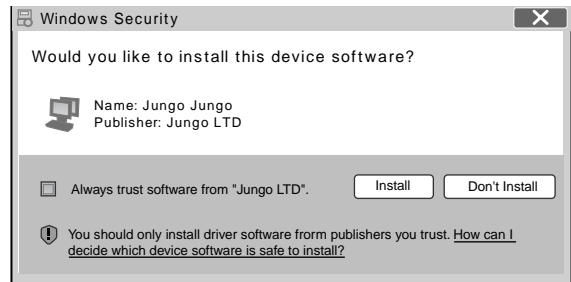
3 Follow the instructions of the installer and start the installation.

The PLUS TOOLBOX, the TWAIN driver, the USB driver, and the Setup Utility will be installed at the same time.



Note:

- * The Windows Security dialog box will be displayed with Windows Vista.
Select "Install this driver software (I)".
- * When using Windows Vista, each time the installer is started, the User Account Control dialog box is displayed.
Select "Continue" and continue with the installation.



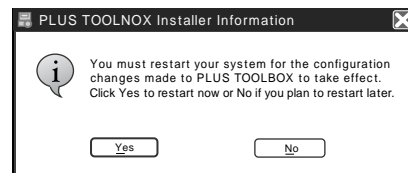
4 Click "Finish".

The "Installer Information Dialog Box" will be displayed.



Click "Yes (Y)" and restart the personal computer.

When this software is installed on the personal computer for the first time, continue to make the following connections and operations.



■ Installing the USB Driver

The USB driver is installed on the computer with the installer, but this does not complete association with the USB port. In order to use PLUS TOOLBOX, install using the procedure described below with the copyboard connected.

- Preparation**
1. Press the ON/Standby button of the Copyboard to turn on the power.
 2. Use a USB cable to connect the USB port of the personal computer with the PC dedicated USB port of the Copyboard. (See Page 8)
- The New Hardware Search Wizard will be displayed.

Install according to the New Hardware Search Wizard.

1 Select "Install Software Automatically (Recommended) (T)" and click "Next (N)" (when using Windows XP).

Start the installation of the USB driver.

Note:

- * Installation will be completed automatically with Windows 2000/Windows Vista.



2 Click “Finish”.

This software can now be used.



Uninstallation of the PLUS TOOLBOX

1 Selecting [Start] → [Control Panel] will display the Control Panel screen.

Check that your personal computer and the Copyboard are not currently connected by USB.

2 Double click “Add or Remove Programs or Applications” (this will differ depending on the OS) to display the “Add or Remove Programs Properties” screen.

3 Select PLUS TOOLBOX from among the list displayed and click [Change / Remove] to display the Add or Remove wizard screen.

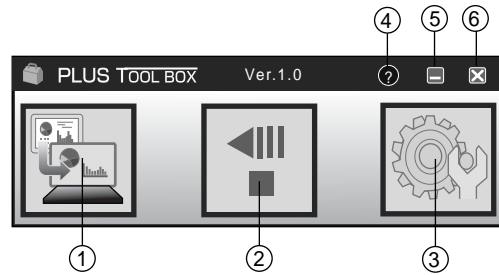
4 Selecting the [Remove] radio button of the wizard and clicking [Next] will start the uninstallation.

Note:

- * “Add or Remove Programs” will be displayed for Windows XP/Vista.
- * When using Windows Vista, each time the uninstaller is started, the User Account Control dialog box is displayed.
Select “Continue” and continue with the uninstallation.

3-4. Menu Screen Names and Functions

When a computer on which the “PLUS TOOLBOX” dedicated software is installed is connected to the copyboard, the “PLUS TOOLBOX” main menu appears.



① Start Scan button

Click this to scan the words or diagrams drawn on the copyboard onto the computer.

The copyboard’s sheet moves, scanning of one sheet’s worth of data begins, and the data is transferred to the computer.

During data transfer, the progress is displayed.

② Feed/Stop button

Click this to display the sheet surface you want to scan onto the computer.

The copyboard’s sheet surface scrolls (moves) one sheet then stops automatically.

Click again while the sheet is scrolling to stop.

③ Setup button

Click this to display the settings screen.

The settings screen consists of the “Hardware Setup”, “Copyboard Firmware Update” and “Security” tabs.

Click a tab to switch to the corresponding screen.

④ ⓘ (Help)

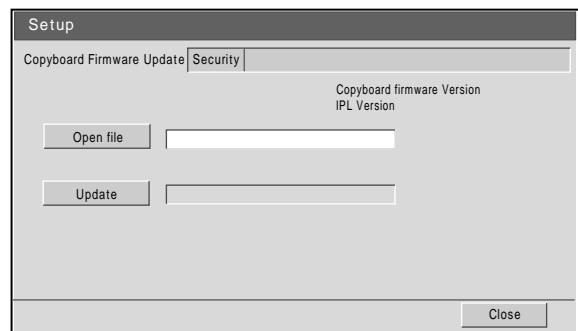
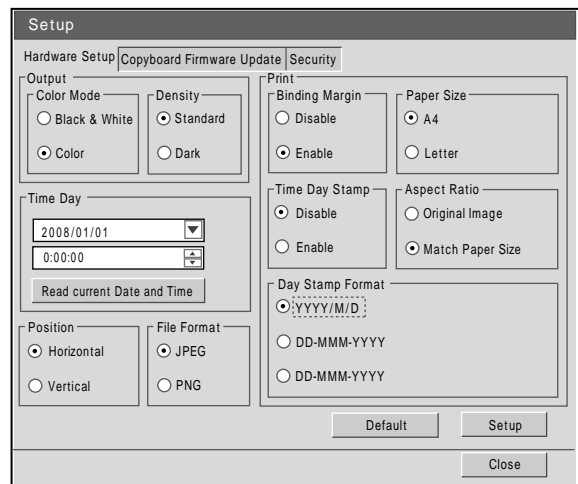
Click this to display the operating instructions.

⑤ ☒ (Minimize)

Click this to minimize the menu screen, displaying it as an icon on the task bar.

⑥ ☒ (Close)

Click this to exit the program.



3-5. Operating the copyboard from the computer

This function allows you to store the words or diagrams drawn on the copyboard's sheet surface directly onto the computer.

The image data you have stored (in JPEG or PNG format) can be distributed to the meeting's participants by e-mail or used with other software to create documents of your meetings.

1 Turn on the copyboard's power, start up the computer, then make the USB connections.

The "PLUS TOOLBOX" main menu appears on the computer.

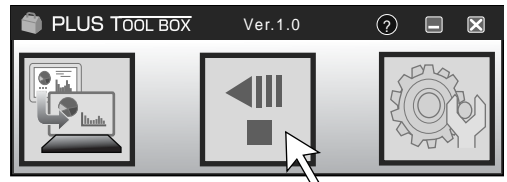
- PLUS TOOLBOX is stationed on the task bar, and the main menu appears automatically when the copyboard is connected.
- The main menu can also be displayed by right-clicking on the PLUS TOOLBOX icon on the task bar and selecting "Display".



2 Click the Feed/Stop button to display the sheet surface you want to scan.

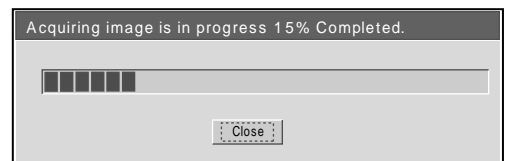
When the Feed/Stop button is clicked, the copyboard's sheet surface scrolls one sheet then stops automatically.

* This button functions in the same way as the Feed/Stop button on the main unit.



3 Click the scan button to begin transfer.

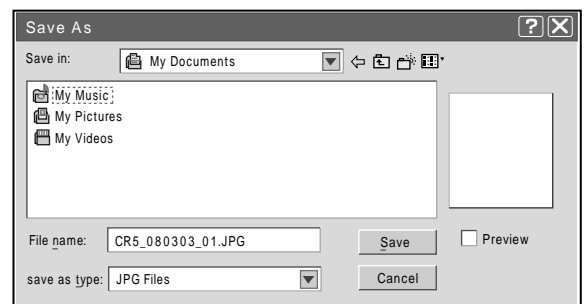
The transfer progress bar is displayed. To interrupt scanning, click the [Cancel] button. The [Save As] screen appears once transfer is finished.



4 Saving

Choose where the file is to be saved, input the file name, then click the [Save] button.

To change the file format, click the [▼] button at [File Type] before clicking the [Save] button, and select "JPG" or "PNG".



Note:

When other TWAIN compatible applications are used to capture the picture data, while PLUS TOOLBOX software is running, following procedure should be taken.

When PLUS TOOLBOX is running or its icon appears on the Windows task bar, and the picture data is attempted to be captured using other TWAIN compatible application software, below error message may pop up. In this case, right-click the PLUS TOOLBOX icon on the task bar to quit the program and start capturing procedure using other TWAIN compatible software.



3-6. Hardware Setup

Use this procedure to set the copyboard's operating environment from the computer. The factory defaults are shown below.

Setting item	Description of setting	Factory default
Color Mode	Color mode for scanning, Color/Black & White	Color
Density	Density for scanning, Standard/Dark	Standard
Time Day	Sets the date and time	Japan Standard Time
Time Day Stamp	Adds the date and time when printing, Enable/Disable	Enable
Day Stamp Format	YYY/MMM/DD / DD-MMM-YYYY / MMM-DD-YYYY	YYY/MMM/DD
Binding Margin	Enable/Disable	Disable
Paper Size	A4/Letter	A4
Aspect Ratio	Sets the aspect ratio of the printed image Original Image/Match Paper Size	Match Paper Size
File Format	Sets the format of files stored on the USB memory device JPEG/PNG	JPEG
Position	Horizontal/Vertical	Horizontal

1 Turn on the copyboard's power, start up the computer, then make the USB connections.

The "PLUS TOOLBOX" main menu appears on the computer.



2 Click the [Setup] button.

The [Hardware Setup] screen appears.



3 Click the desired item to select it.

For the radio buttons, when is clicked, it switches to (only one radio button can be selected within each item).

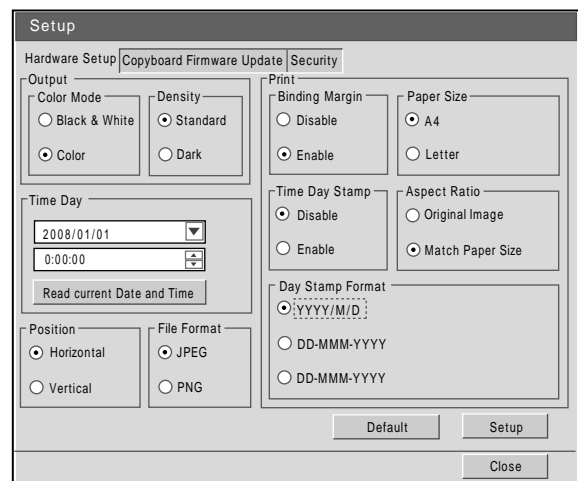
● Output setting

Color Mode: This sets the color of the output image.

Color: Four colors (red, green blue and black)

Black & White Black only

Density: This sets the density of the output image. If the output image is too light with the standard setting, set to "Dark".



● Time Day

This sets the current date and time.

Loading the current time

When “Load the current time” button is clicked, the display switches to the computer’s current time. This eliminates the need to set the current time on the copyboard.

Setting the date

1. Click [▼] at the Time Day section to display a calendar.
2. Click [◀] or [▶] on the calendar to choose the calendar for the current date (year and month).
 - When [▶] is clicked while December is displayed, the calendar switches to the next year.
 - When [◀] is clicked while January is displayed, the calendar switches to the previous year.
3. Click today’s date.
 - When clicked, the calendar closes and the current day is changed.

Setting the time

By factory default, the time is set to Japan Standard Time. PLUS TOOLBOX uses a 24-hour time display. Click to [▲] return, to [▼] advance.

1. When the hours (20 in this example) in the time section is clicked, a gray cursor is displayed over the hours.
2. Click [▲] or [▼] in the time section to choose the current hour.
3. Now click the minutes (15 in this example) to display a gray cursor over the minutes.
4. Click [▲] or [▼] to choose the current minutes.
5. Now click the seconds (06 in this example) to display a gray cursor over the seconds.
6. Click [▲] or [▼] to choose the current seconds.

Note:

- The clock starts when the [Set] button is clicked.

● Print setting

This setting is enabled when the copyboard is connected to a separately sold printer.

Binding Margin

When “Enable” is selected, a white margin for binding is created on the paper when printing.

Paper Size

Select whether to print on A4 or letter size paper.

Time Day Stamp

When “Enable” is selected, the date and time are printed.

Day Stamp Format

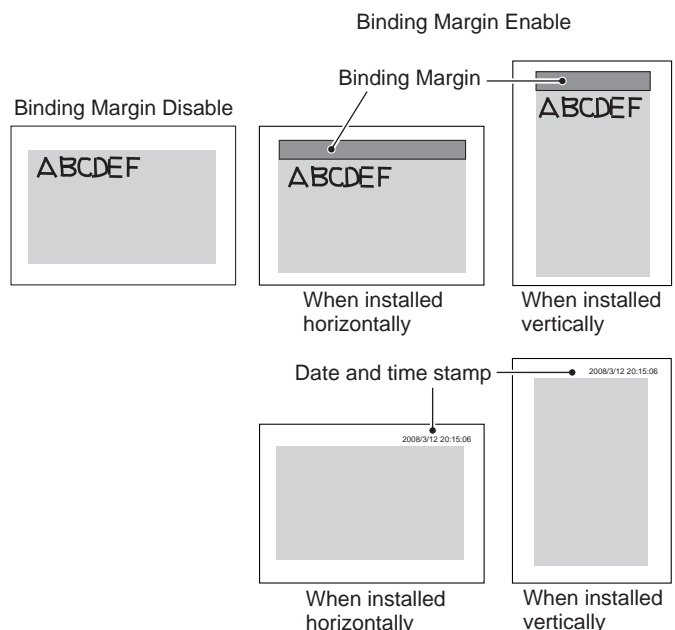
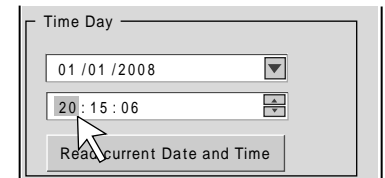
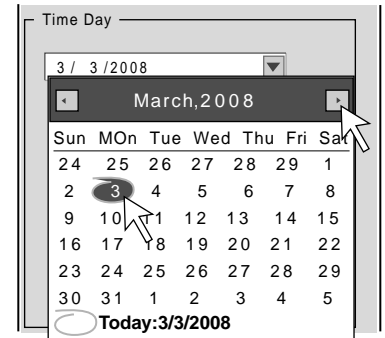
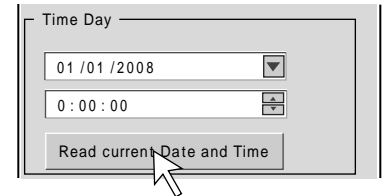
When “Enable” is selected for “Time Day Stamp”, select the date format.

Below are display examples.

YYY/MMM/DD: 2008/Mar/12

DD-MMM-YYYY: 12-Mar-2008

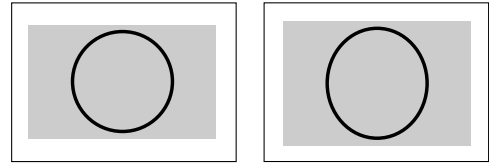
MMM-DD-YYYY: Mar-12-2008



Aspect Ratio setting

Select the vertical/horizontal aspect ratio for printing.

When "Original Image" is selected, the image is printed with the same aspect ratio as on the copyboard's sheet surface. When "Match Paper Size" is selected, the image is compressed in the horizontal direction to the same aspect as the A4 or letter size printing paper (for example, a circle will become an oval).



● Position

Set whether the images are to be recorded horizontally or vertically. The corresponding orientation of the image when it is opened on the computer and printed is shown below.

Position setting	Copyboard orientation	Orientation of image on computer	Orientation of printed image
Horizontal			
Vertical			

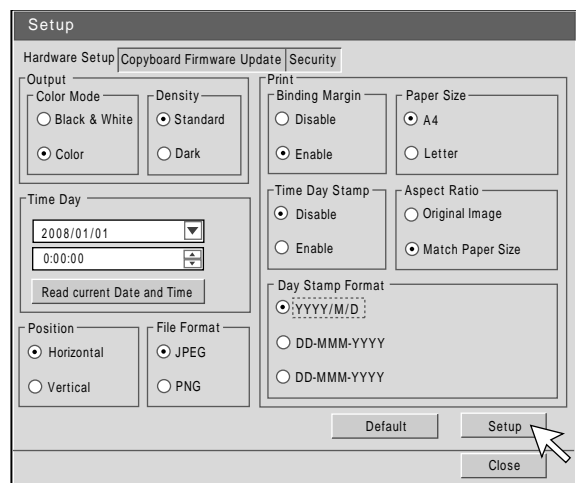
● File Format

Select the format of the images stored on the USB memory device, JPEG (".jpg" extension) or PNG (".png" extension). Images scanned when a computer is connected can be selected when storing acquired data.

4 Set the selected data.

Check the settings of the items you have changed, and if they are OK click the [Set] button.

- Click [Cancel] if you do not want to change the settings. The changes are canceled.
- Click [Default] to return all the settings to the factory defaults.



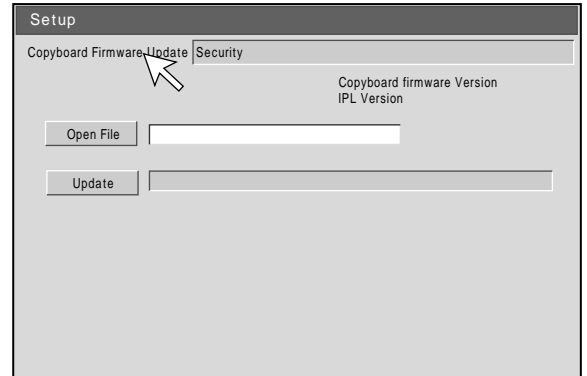
3-7. Update the Copyboard's Internal Program

Preparations:

1. Download the "Copyboard Firmware Update" program for the CR-5 ("XXXXX.zip")
2. Unzip the "CR5_XX_X.zip" file and save the program file ("CR5_XX_X.mot").
3. If the copyboard's power cord is plugged into an outlet, unplug it.
4. Plug in the copyboard's power cord while pressing the Save button.
5. Once the display window has switched from "OP" to "UP", execute the "Copyboard Firmware Update" program.

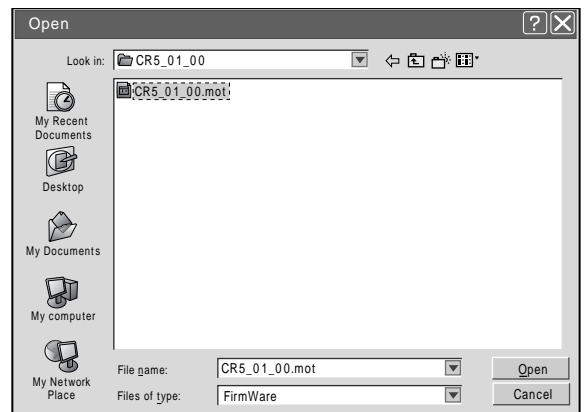
1 Displaying the "Copyboard Firmware Update" screen.

A let you display a machinery "Hardware Setup" screen. Click the "Copyboard Firmware Update" tab to switch to the "Copyboard Firmware Update" screen.



2 Open the "XXXXX" update file.

1. Click "Open file" to display the screen for opening the file.
2. Select the CR-5 update file ("CR5_01_00.mot"), then click the "Open" button.



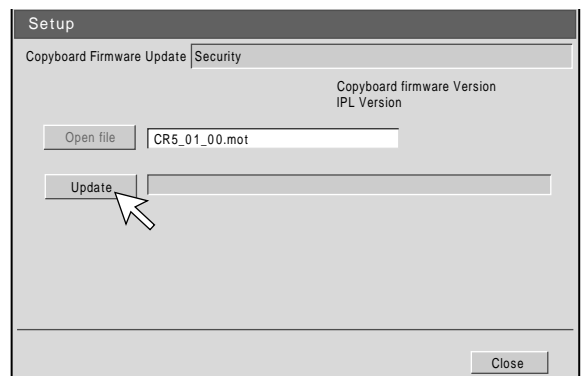
3 Click the "Update" button to start updating.

A status bar is displayed during updating. Please wait. "RR" is displayed on the display window on the copyboard's control panel.

Note:

- Do not perform other operations or turn off the copyboard's power during updating.
- Doing so could damage the copyboard.

Once "RR" is displayed on the copyboard's display window, unplug the power cord, then plug it back in and turn the power on.



4. TROUBLE SHOOTING

By checking operations, it is possible to carry out judgments on malfunction to a certain extent. Carry out the following checks before disassembling the equipment.

1. Press the Standby(On) button and turn on the power.

Is the power turned on?

- No →
- The AC Adapter is disconnected from the wall outlet.
 - The AC Adapter is defective.
 - The power cord of an AC adapter is disconnected.
 - The Main Board Assy is defective.

Yes

Does the Error display appear?

- Yes → The error display (E5) appears. (See section 2-4. Error display)
- The Main Board Assy is defective.

No

2. Feed / Stop button.

Does the sheet operate normally?

- No →
- The connectors of the Motor Harness is disconnected / poor contact.
 - The Sheet Panel closely adheres to the back of the Endless Sheet. (Electrification or dew condensation)
 - The Sheet Motor Unit is defective.
 - The Main Board Assy is defective or is out of fixed position. (Screw loosening)

Yes

3. Press the Print button (when a printer is used).

Does the error display (E1) appear?

- Yes → Printer failure. (See section 2-4. Error display)
- The printer is defective. (See the Instruction Manual of a printer.)
 - The power of a printer is not turned on.
 - Printer paper is exhausted or clogged.
 - A Printer is not connected to the USB port.
 - The Main Board Assy is defective.

No

Is the object written in the board printed normally?

- No → Half of an image becomes black.
- The CIS Unit is disconnected / poor contact.
 - The CIS LED does not light. (The Main Board Assy is defective.)

A black line is put in printing.

- Foreign matter adheres to the CIS Unit.
- Misalignment of CIS Unit: Slight (It is improved by calibration.)
- Misalignment of CIS Unit: Severe (Replace the CIS Unit for improvement.)
- The Main Board Assy is defective.

An image (print) is rubbed.

- Deterioration of CIS Unit.
- The marker (written character) becomes blurred.
- The ink cartridge of a printer is defective. (Ink is exhausted.)

A specific color is not printed or the printed color is improper (when a color printer is used).

- The ink of a printer is exhausted.
- The ink cartridge of a printer is defective.

Yes

4. Press the Save button (when a USB memory is used).

Do the error displays (E2, E3 and E8) appear?

- Yes → Error display: E2 is displayed. (See section 2-4. Error display)
- An incompatible USB memory is used.
 - A USB memory is defective.
 - Insertion is defective (during use of USB memory).

Error display: E3 is displayed.

Release the write protect of USB memory and save data again.

- Memory storage error: Repeat save operation again.
- The Main Board Assy is defective.

Error display: E8 is displayed. (See 2-4. Error display.)

- A security function is executed.

No

Is the object written in the board stored normally?

- No → black line is put in a picture.
- Dust adheres to the CIS Unit.
 - Misalignment of CIS Unit: Slight (It is improved by calibration.)
 - The CIS Unit is defective: Serious (Replace the CIS Unit for improvement.)

An image is rubbed.

- Deterioration of CIS UNIT.
- The marker (written character) becomes blurred.

Yes

Normal operation

5. DISASSEMBLY AND ASSEMBLY

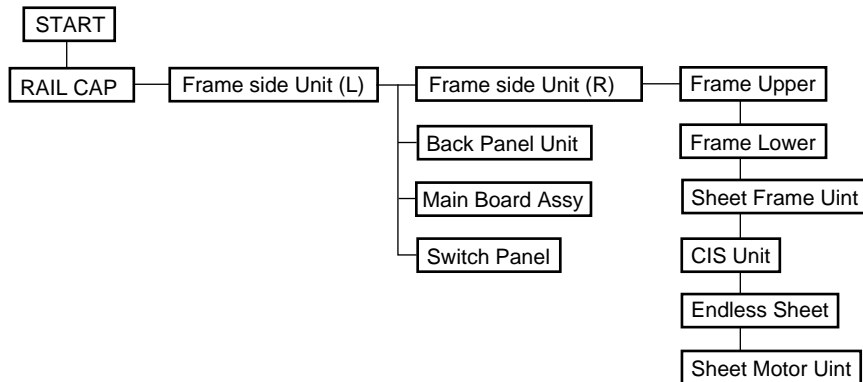
5-1. Tools Required

- Phillips screwdriver (+) No. 2
- Phillips screwdriver (-)

5-2. Cautions

- See “1. Compliance of Safety Repair and Safety Inspection” before disassembling and assembling.
- Put on gloves so that you do not cut your hand at the sharp edge of a frame during disassembly and assembly.
- See “7. Wiring Diagram” and “8. Parts List” 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.

5-3. Disassembly and Assembly Procedures



5-4. 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 "5-3. Disassembly and Assembly Procedures".

- * Remove the main set from the stand and proceed with operation with the sheet surface facing downward. (Perform the operation on a mat.)
- * Remove the pen tray before performing the procedure below.

- 1) Remove the RAIL CAP L. (See Fig. 1.)
Remove the RAIL CAP L shown in the figure. (Two RAIL CAPs on the side of the Frame side L Unit.)

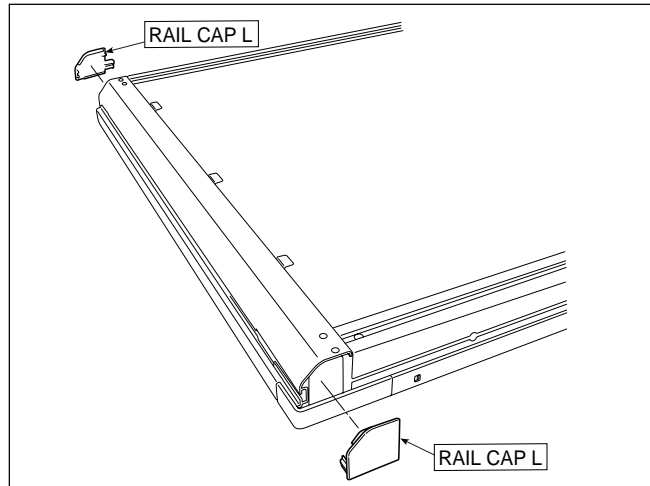


Fig. 1

- 2) Remove the Frame side L Unit. (See Fig. 2.)
 1. Remove the "S-6" screws shown in the figure.
 2. Push the hooks on both sides of the Frame side L Unit and remove the Frame side L Unit slightly.
 3. Disconnect the connectors (six places) and then remove the Frame side L Unit.
 - * Do not push the "hook" excessively. To return to the normal position, push it gently.

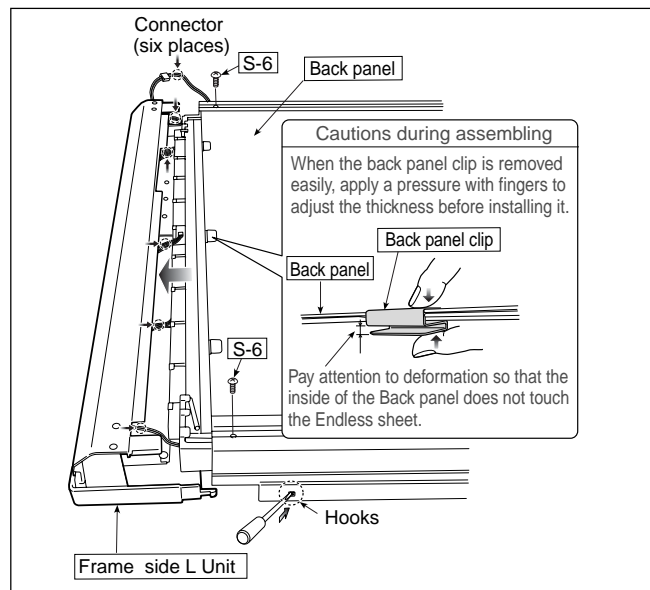


Fig. 2

- 3) Remove the Frame side R Unit. (See Fig. 3)
 1. Remove the RAIL CAP R shown in the figure. (Two RAIL CAPs on the side of the Frame side R Unit.)
 2. Remove the "S-7" screws shown in the figure.
 3. Push the hooks on both sides of the Frame side R Unit and remove the Frame side R Unit.
 4. Remove the Back panel Unit.
 5. Remove the "S-5" screws shown in the figure and then remove the "S-6" screws.
 6. Remove the Frame upper and the Frame lower.
 - * During assembling, be careful not to handle the "S-6" and "S-7" screws incorrectly. Pay attention because the tip of screws partly touches the Sheet Frame Unit. (S-6 screw: 6 mm long, S-7 screw: 4 mm long)

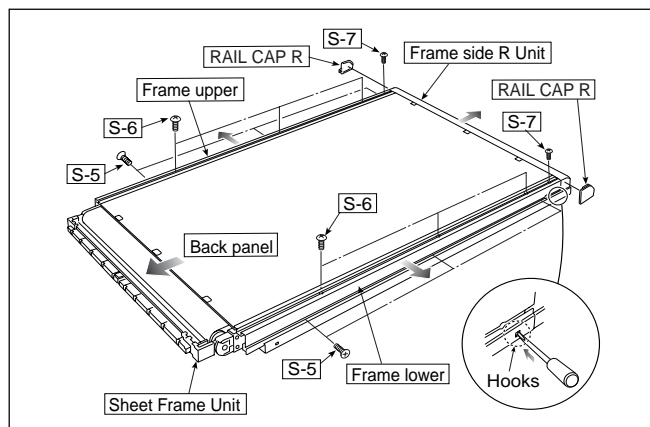


Fig. 3

DISASSEMBLY AND ASSEMBLY

4) Remove the CIS Unit. (See Fig. 4.)

1. Remove the motor harness from the cable clamp
2. Remove the "S-1" screws shown in the figure. (Both sides.)
3. Hold the aluminum portion of the CIS Unit shown in the figure and remove it.

* During assembling, fix it using a cable clamp to prevent the motor harness being interposed.

Note:

- During installation, pay attention to the top and bottom of the CIS Unit and install the CIS Unit with no spring on the motor side.

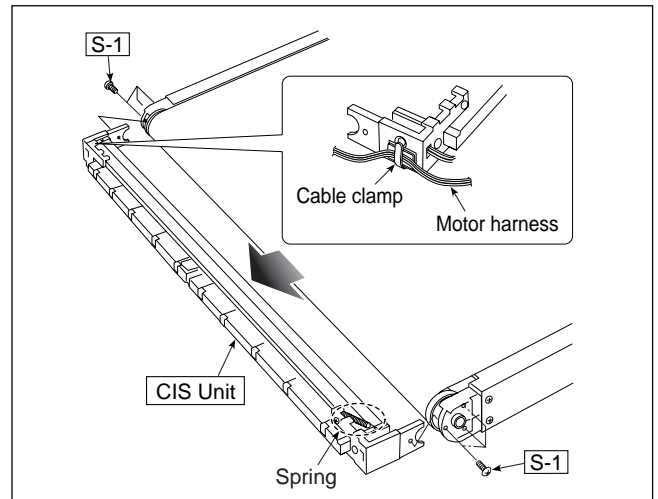


Fig. 4

5) Replace the Endless sheet. (See Fig. 5.)

1. Push tension rollers into the (two vertical) tension roller bases, shown in the figure, using screws (frame upper screws: M4-6).
2. Hold both ends of the Endless sheet shown in the figure and remove it slowly.

Note:

- Be careful not to damage or fold it when handling the Endless sheet.
- Replace it by two persons during replacement of the Endless sheet.

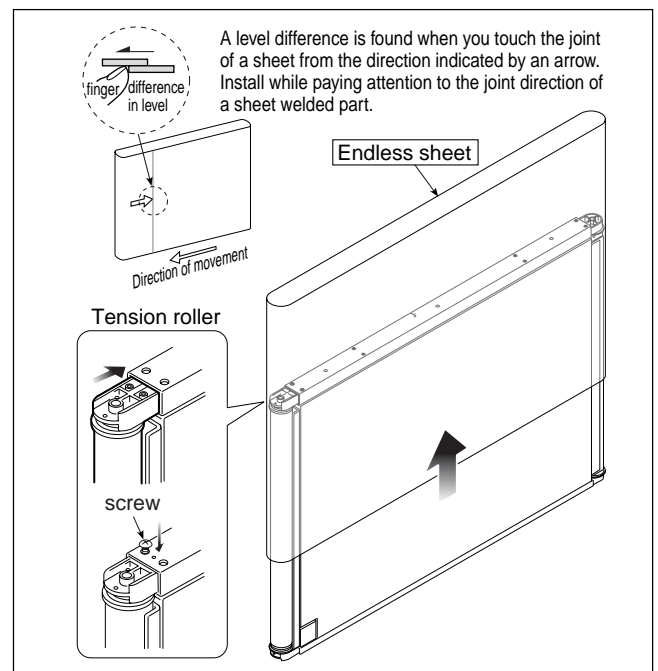


Fig. 5

6) Remove the Sheet Motor Unit. (See Fig. 6.)

1. Remove the "S-8" screws shown in the figure and then remove the Sheet Motor Unit.

* For details of adjustment, see 6-5. Timing belt adjustment on page 26.

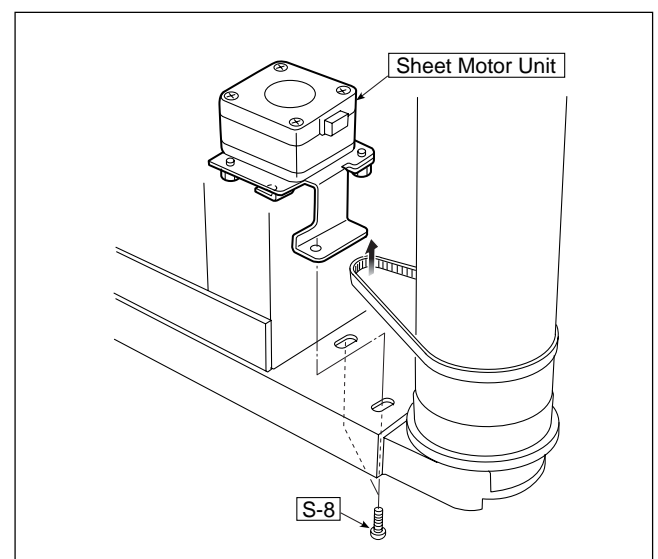


Fig. 6

DISASSEMBLY AND ASSEMBLY

7) Remove the Main Board Assy. (See Fig. 7.)

1. Remove the "S-3" screws shown in the figure.
2. Remove the "S-4" screw shown in the figure and then remove the Main Board Assy.

Note:

- Install so that a USB port is put below the gasket USB when installing the Main Board Assy.
- The harnesses fixed to a cable clamp are a CIS LED harness (long), CIS harness B, and an EEPROM harness.

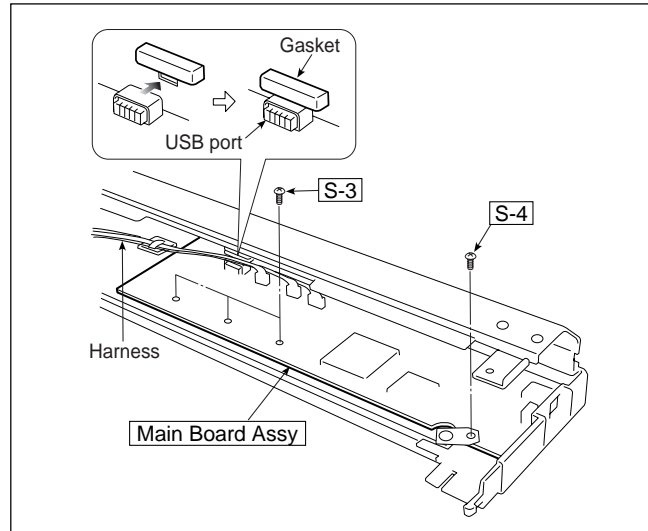


Fig. 7

8) Remove the Plate Switch panel. (See Fig. 8.)

1. Remove the "S-2" screws shown in the figure and then remove the Plate Switch panel.

Note:

- Remove the Plate Switch panel from the surface of Frame side L Unit.

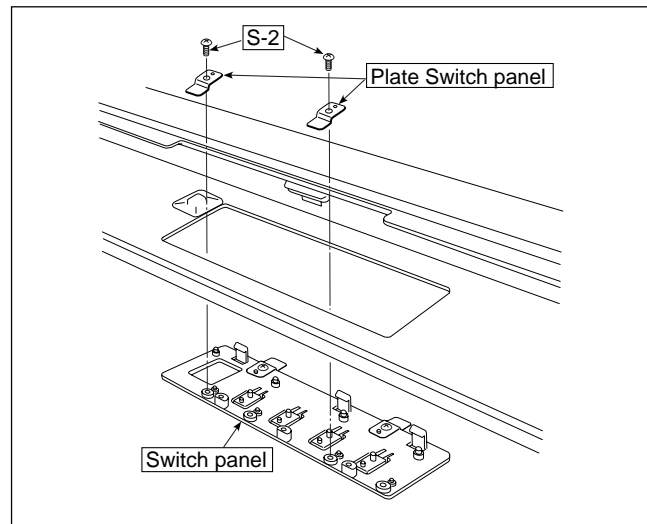


Fig. 8

6. ADJUSTMENT

6-1. Calibration

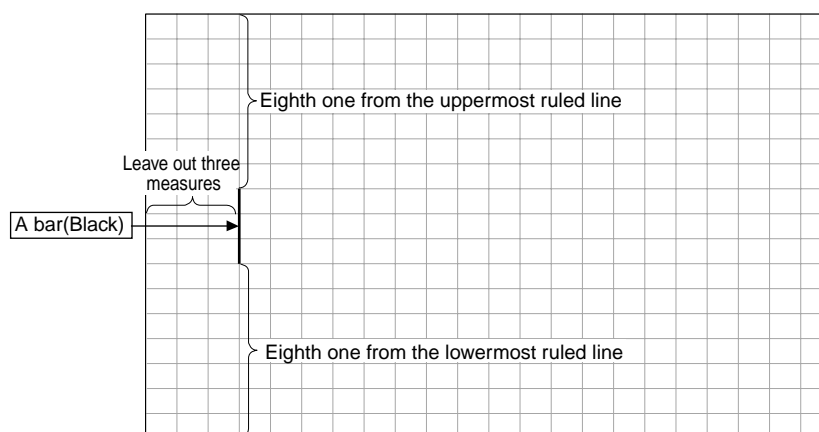
Calibration is required in the following cases.

- When a main board is replaced
- When a CIS unit is replaced
- When an endless sheet is replaced

For the replacement of a CIS Unit in the market, usually, use a unit that has been adjusted at a factory.

* When any failure occurs in an image, be sure to perform calibration after replacing the CIS Unit.

[Calibration]



<Preparation>

Enter a three-measure vertical line (black) between the eighth ruled lines from the uppermost and lowermost ruled lines. (34-mm graph paper X 3 measures)

* Clean the Endless sheet (double-sided) and then perform calibration.

<Calibration mode>

- Insert the plug of an AC adapter into the main set so as to apply an electric current.
- Press the “Save” button three times while pressing and holding the Power “ON/Standby” button.
Segment display in test adjustment mode: <AP>
- Press the “Feed/Stop” button, select segment display: “1”, and then press the “Save” button.

- a. When calibration is started, <1. SPC>*
- b. Acquire the reference level. <1.0>
- c. Search the place where a vertical line is entered. <1.1>
- d. Turn by one round and move the sheet until a vertical line appears again. <1.2>
Turn the sheet by one round and calculate the distance.
- e. Acquire the monochromatic reference level. <1.3>
- f. Acquire the color reference level. <1.4>
- g. Save the sheet length in flash ROM. <1.5>
- h. Save the reference level in EEPROM. <1.6>
Segment display: <AA> Calibration completion <AA>

After calibration is completed, pull out an AC adapter once and insert it again.

- * SPC indicates the non-lighting state.
- * <O.O.> is each displayed when an error occurs.
- * <E.E.> is displayed when normal data is not written.

Enter data in a sheet using a four-color marker pen and confirm the result of image data (PC connection) or print (a printer).

6-2. Updating the internal program of CR-5 main set (using USB memory)

There are the way to update an internal program using software Plus Toolbox and the way to update a program using USB memory. (See 3-7. Updating the program incorporated into this set on page 17.)

Rewrite a program according to the procedure below using USB memory.

CR5_XX_XX.mot major version : XX / minor version : XX
CR5_01_00.mot

<How to rewrite program using PC>

Equipment (including software) required

- 1) A program file for CR-5
- 2) PC (in which software PLUS TOOLBOX was installed)
- 3) USB Cable

1. Save a CR-5 program file (example: CR5_01_00) in PC.
2. Display the main menu of software "PLUS TOOLBOX" in PC.
3. Click the "SET" button. →The [Equipment setting] screen is displayed.
4. Pull out the power plug of the main set when it is connected to the wall outlet.
5. Connect the power plug of the main set to the wall outlet while pressing and holding the "Save" button.
6. Click "Updating the main set" after "UP" blinks on the display window.
7. Click "Open file" to display the screen for opening a file.
8. Display a CR-5 updating file (example: C.XXXX.CR5_01_00.mot), select the desired file, and click the "Open" button.
9. Click the "Update" button and start the updating of an internal program.
The display window is rotation-displayed during program rewrite operation. (Time required: Approx. one minute)
10. Updating is completed when "FF" appears on the display window. Click the "Close" button on the PC screen display to terminate the operation.
11. Pull out the AC adaptor of the CR-5 main set after five seconds pass and insert the AC adaptor again after ten seconds or more. After that, press the "Power" button of the CR-5 main set.

* Do not turn off the power during write.

Do not pull out the AC adaptor for about five seconds after you press the "Power" button to turn off the power when pressing the "Power" button of the main set to turn off the power and disconnecting an AC adaptor after a program has been rewritten.

<How to rewrite program using USB memory>

Equipment (including software) required

- 1) A program file for CR-5
- 2) USB flash memory (Hereinafter referred to as USB memory.)

1. Store a program (CR5_01_00) in the route of USB memory.
2. Press the "Power" button of the CR-5 main set and insert the USB memory into a USB memory port in the ON state.
3. The USB memory is recognized, a file is automatically detected, and the currently written major version blinks on the display window during display. (Display example:"01" ...)
4. Press the "Save" button of the CR-5 main set to rewrite a program. (The old program version blinks during display.)
5. A new program version lights on the display window during display when write operation is terminated normally. (Display example: "01")
6. Remove the USB memory, press the "Power" button of the CR-5 main set, and turn off the power.
7. Pull out the AC adaptor of the CR-5 main set after five seconds pass and insert the AC adaptor again after ten seconds or more. After that, press the "Power" button of the CR-5 main set and turn on the power.
8. Enter data in a sheet using the supplied marker pen and then make a print (test print) or read an image into PC for confirmation.

* Do not turn off the power during write.

Do not pull out the AC adaptor for about five seconds after you press the "Power" button to turn off the power when pressing the "Power" button of the main set to turn off the power and disconnecting an AC adaptor after a program has been rewritten.

- Segment display "E. E."; Indicates the state where the sheet length and CIS white level data do not exist. In this case, perform calibration.

6-3. [Test mode]

1. Program version display

- Insert the plug of an AC adaptor into the main set to apply the electric current.
- Press the “Save” button three times while pressing and holding the Power “ON/Standby” button.
Test/adjustment mode segment display: <AP>

Press the “Feed/Stop” button, select segment display: “3”, and then press the “Save” button.

→ Segment display : <3.SPC>

Press the “Save” button once to display the major version. Press the “Save” button once again to display the minor version.

2. Printer test mode

- Insert the plug of an AC adaptor into the main set to apply the electric current.
- Press the “Save” button three times while pressing and holding the Power “ON/Standby” button.
Test/adjustment mode segment display: <AP>

Press the “Feed/Stop” button, select segment display: “8”, and then press the “Save” button.

→ Segment display: <8.SPC>

A test print is started when you press the “Print” button once during connection of a printer.

3. Factory-setting data clear

- Insert the plug of an AC adaptor into the main set to apply the electric current.
- Press the “Save” button three times while pressing and holding the Power “ON/Standby” button.
Test/adjustment mode segment display: <AP>

Press the “Feed/Stop” button, select segment display: “20”, and then press the “Save” button.

→ Segment display: <≡.SPC>

Press the “Feed/Stop” button. → Press the “Save” button. → Return to <≡.SPC> after segment display “FF” blinks.

Clear the sheet length of the CR-5 main set and the existing data of a CIS white level according to the procedure described above.

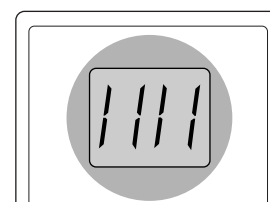
6-4. Direct Command of CR-5 Main Set (for Maintenance Service and Installation Traders)

The setting can be partially changed using the button on the operation panel of the main set. (Can be used for CR-6 of firmware CR-5_04_00 and later.)

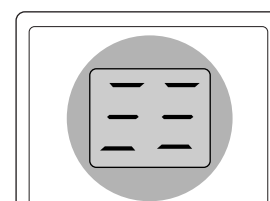
Installation:

During factory setting, this set has been set to horizontal installation. Therefore, change the setting to vertical installation in the procedure below.

1. Insert the plug of an AC adapter into the main set to apply an electric current.
2. Press the “Feed/Stop” button three times while pressing and holding the “Power” button.
3. Pull out the plug of the AC adapter from the main set after “|||” appears on the display window.
4. Insert the plug of the AC adapter into the main set to apply an electric current.
5. Press the “Power” button again.
6. Press the “Print” button to confirm the direction of printing.


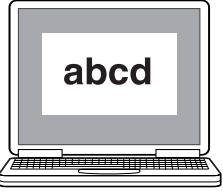

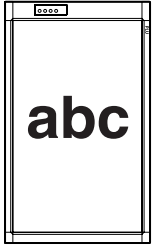
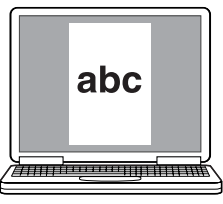
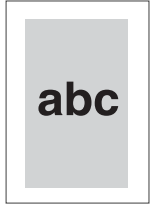


- * Follow the procedure above again when returning the setting to horizontal installation. Pull out the plug of an AC adapter from the main set after confirming that “≡≡” appears on the display window.



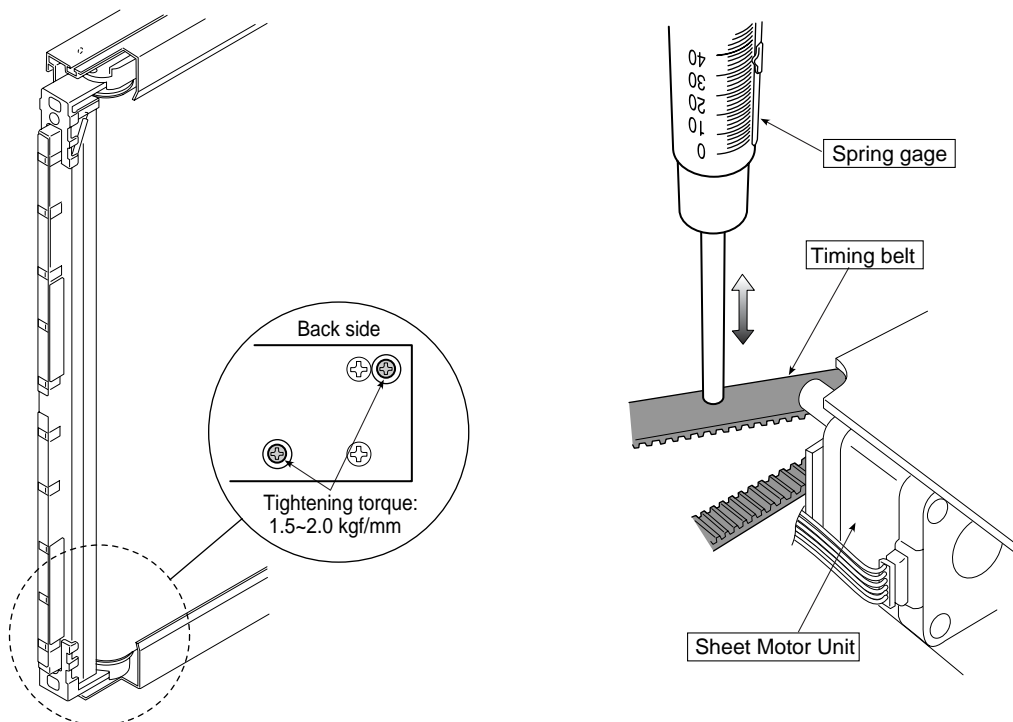
● Installation

This is the setting on whether to put the recorded image in the horizontal or vertical direction. The selection of installation and the direction in which an image was opened and printed using a personal computer are as shown in the table below.

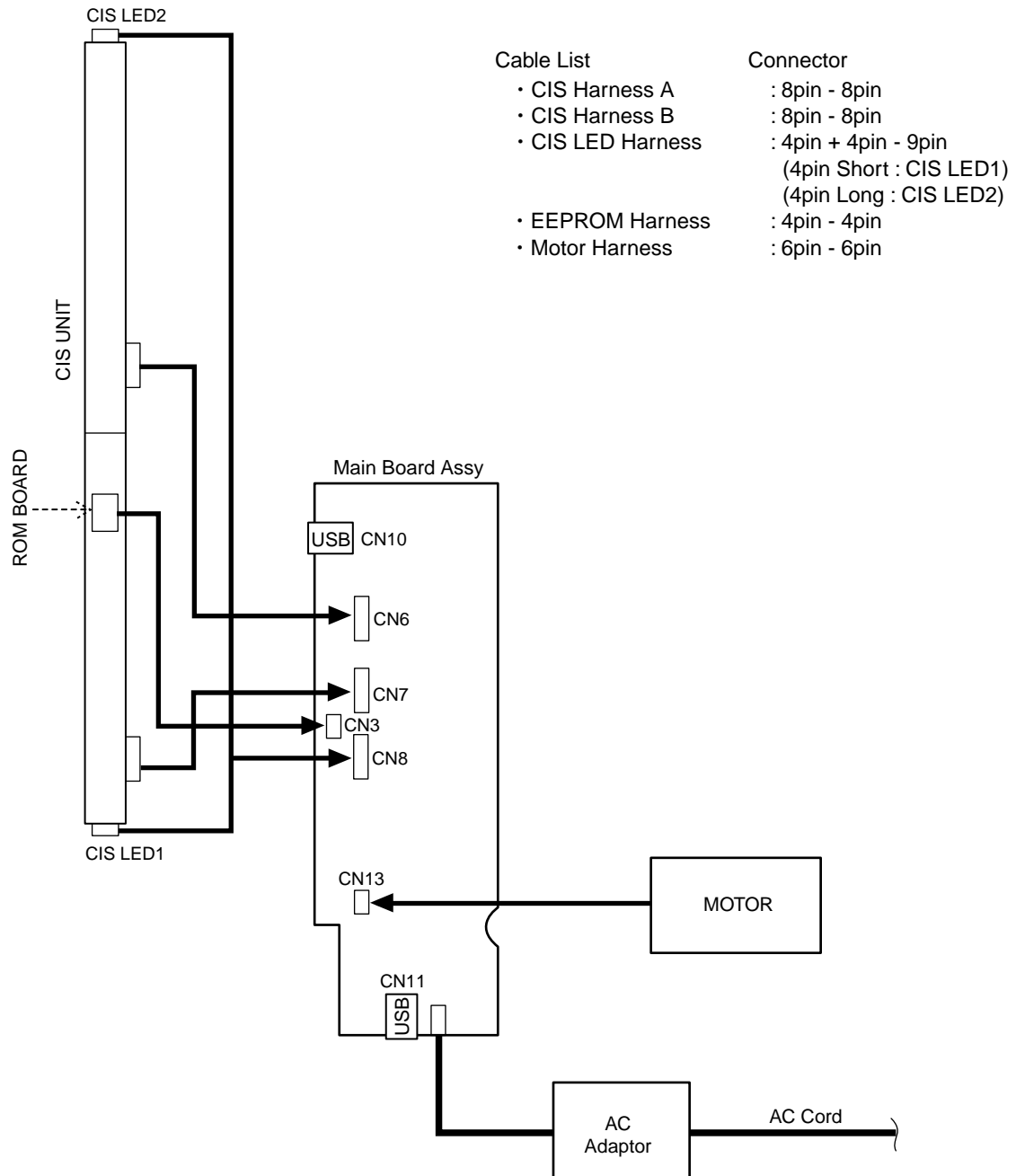
Position setting	Copyboard orientation	Orientation of image on computer	Orientation of printed image
Horizontal			
Vertical			

6-5. Timing belt adjustment

- Fix the Sheet Motor Unit tentatively and measure the tension of the timing belt using a spring gage. Fix the timing belt in the state where it reaches proper load.
- The proper load is 0.03 kgf with the timing belt bent by about 1 mm. (Reference value)
 - * No strange noise must be generated when a sheet is actually moved (during data read).
 - * Be sure to apply a locking compound after adjustment is completed. (Use a solvent fixing agent in this case.)

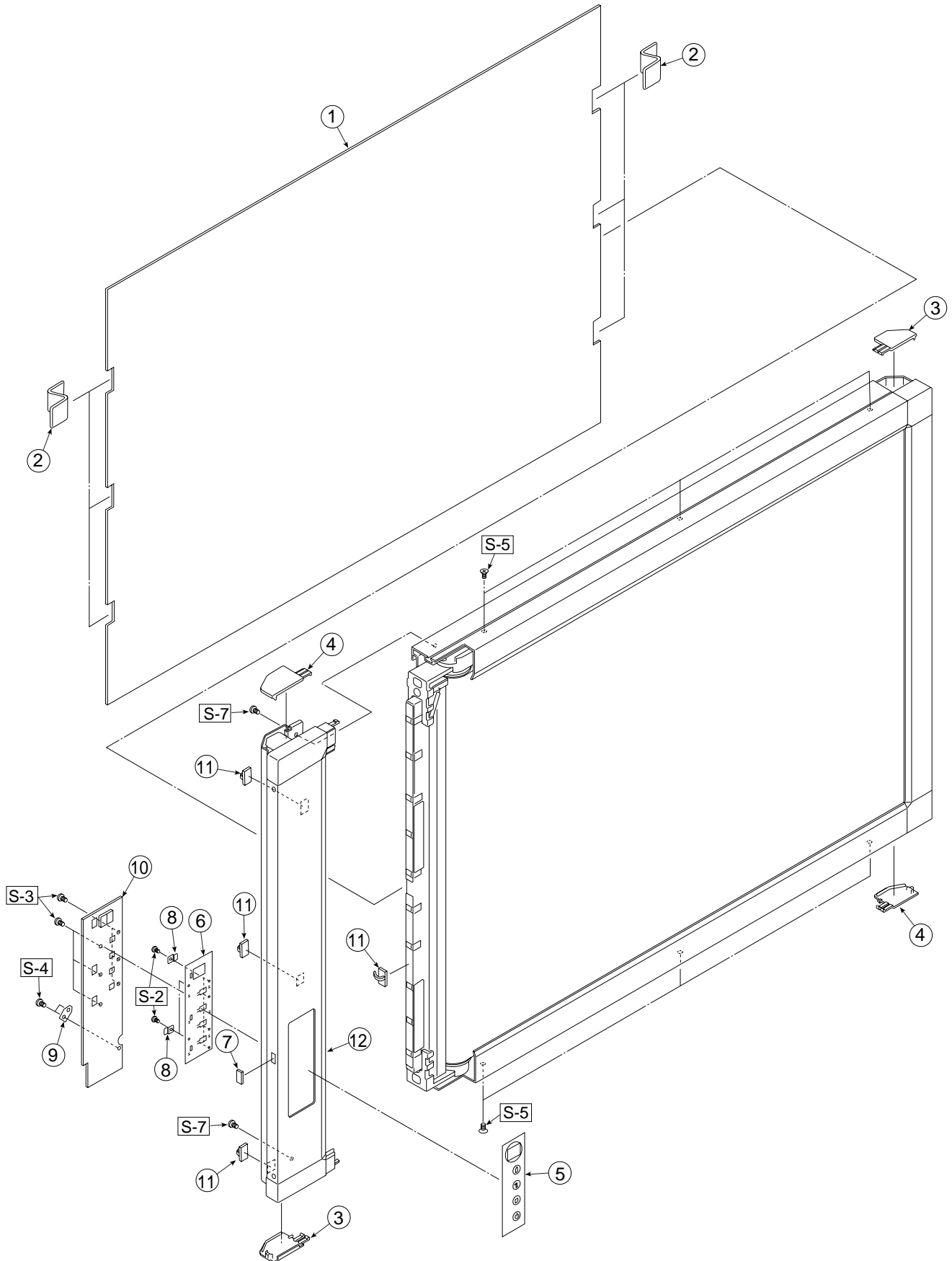


7. CABLE AND CABLE CONNECTION



8. PARTS LIST

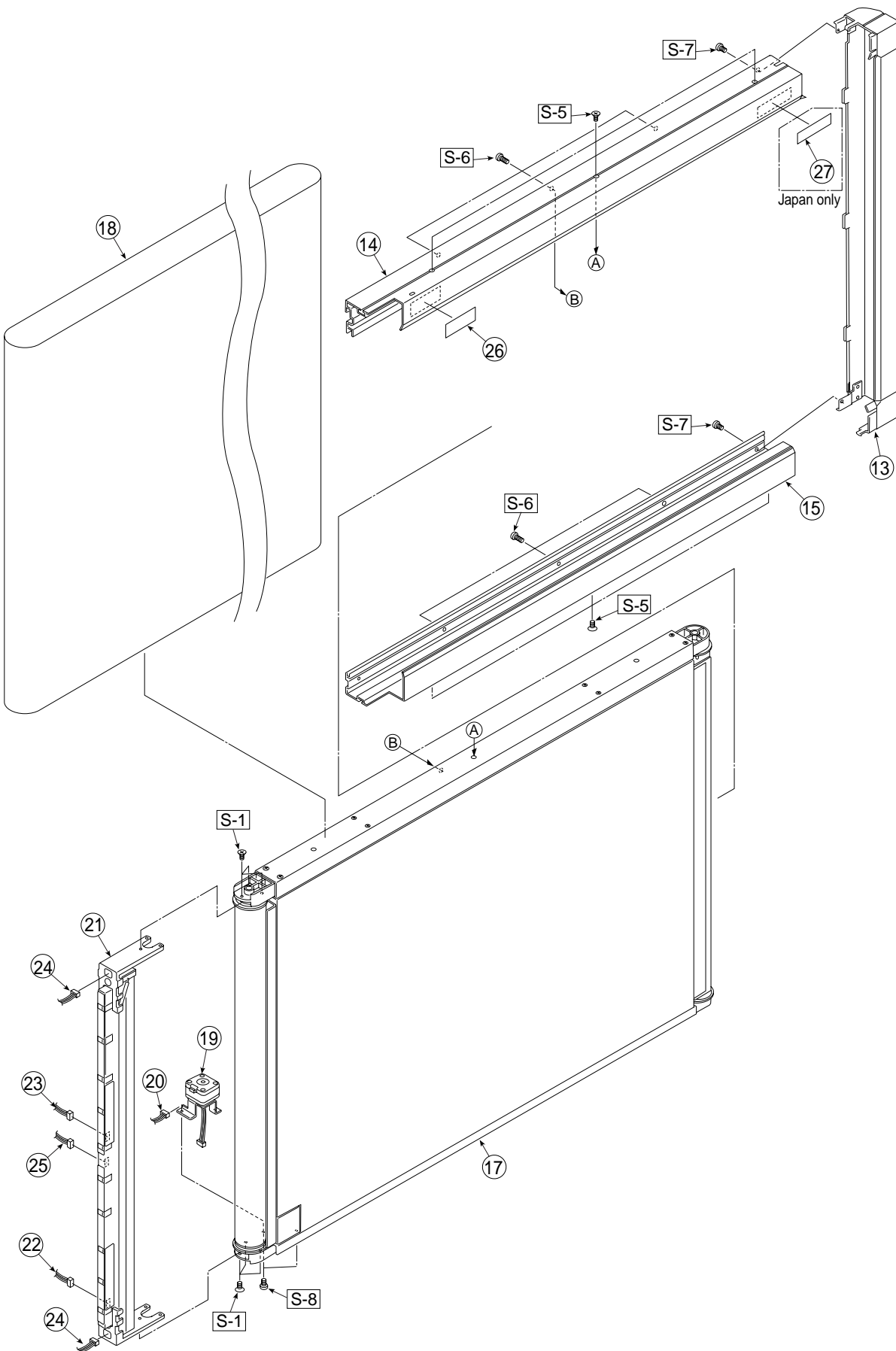
1. Overall configuration



PARTS LIST

1. Overall configuration				
No	PARTS NAME	PARTS No.	Q' ty	REMARK
1	Back Panel Unit CR-5	300501	1	
2	Back Panel Clip	722135100	6	
3	RAIL CAP R	722120600	2	
4	RAIL CAP L	722120700	2	
5	Switch sheet (OS) CR-5	722150100	1	
6	Switch Panel CR-5	722120300	1	
7	Gasket USB	722550200	1	
8	Plate Switch panel	722130300	4	
9	FG SHEET	722550500	1	
10	Main Board ASSY CR-5	722511000	1	
11	Cable clamp	716209800	4	
12	Frame side L Unit	300508	1	

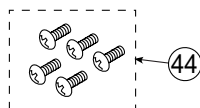
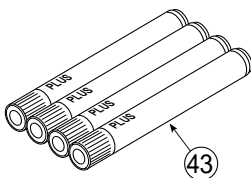
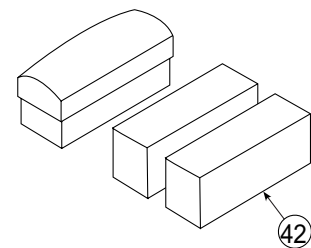
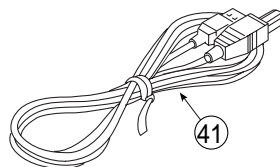
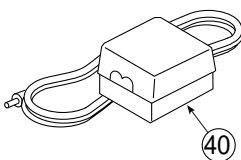
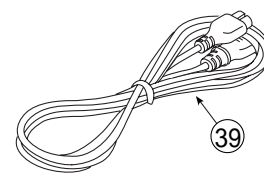
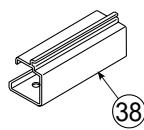
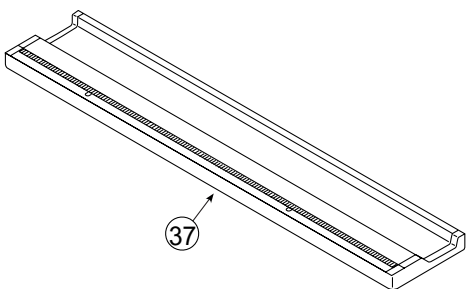
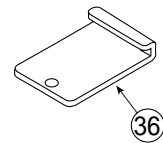
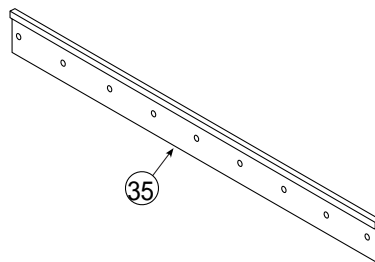
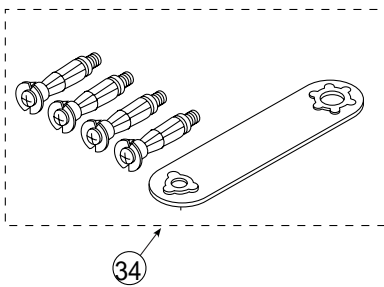
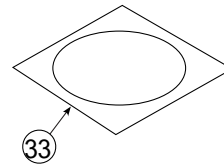
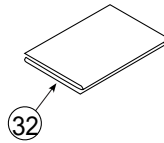
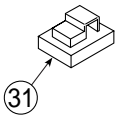
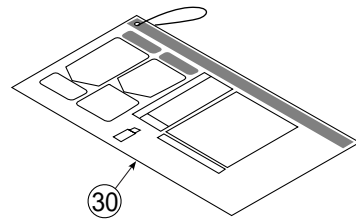
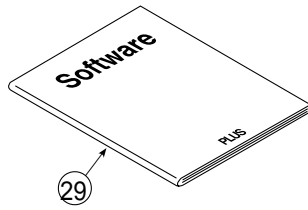
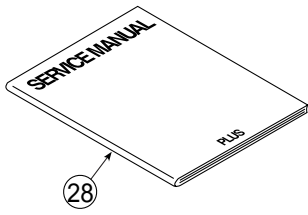
2. Frame Section



PARTS LIST

2. Frame Section				
No	PARTS NAME	PARTS No.	Q' ty	REMARK
13	Frame side R Unit	300509	1	
14	Frame upper	300510	1	
15	Frame lower	300511	1	
16	–	–	-	
-	Frame Cover Unit CR-5	300502	1	
17	Sheet Frame Unit CR-5	300504	1	
18	Endless Sheet CR-5	300503	1	
19	Sheet Motor Unit CR-5	722502000	1	
20	Motor relay Harness	722591800	1	
21	CIS Unit CR-5	722500000	1	
22	CIS Harness A	722590200	1	
23	CIS Harness B	722590300	1	
24	CIS LED Harness	722590400	1	
25	EEPROM Harness	722590600	1	
26	Logo Seal	722150500	1	
27	Mascot Name Seal	–	1	Japan Only

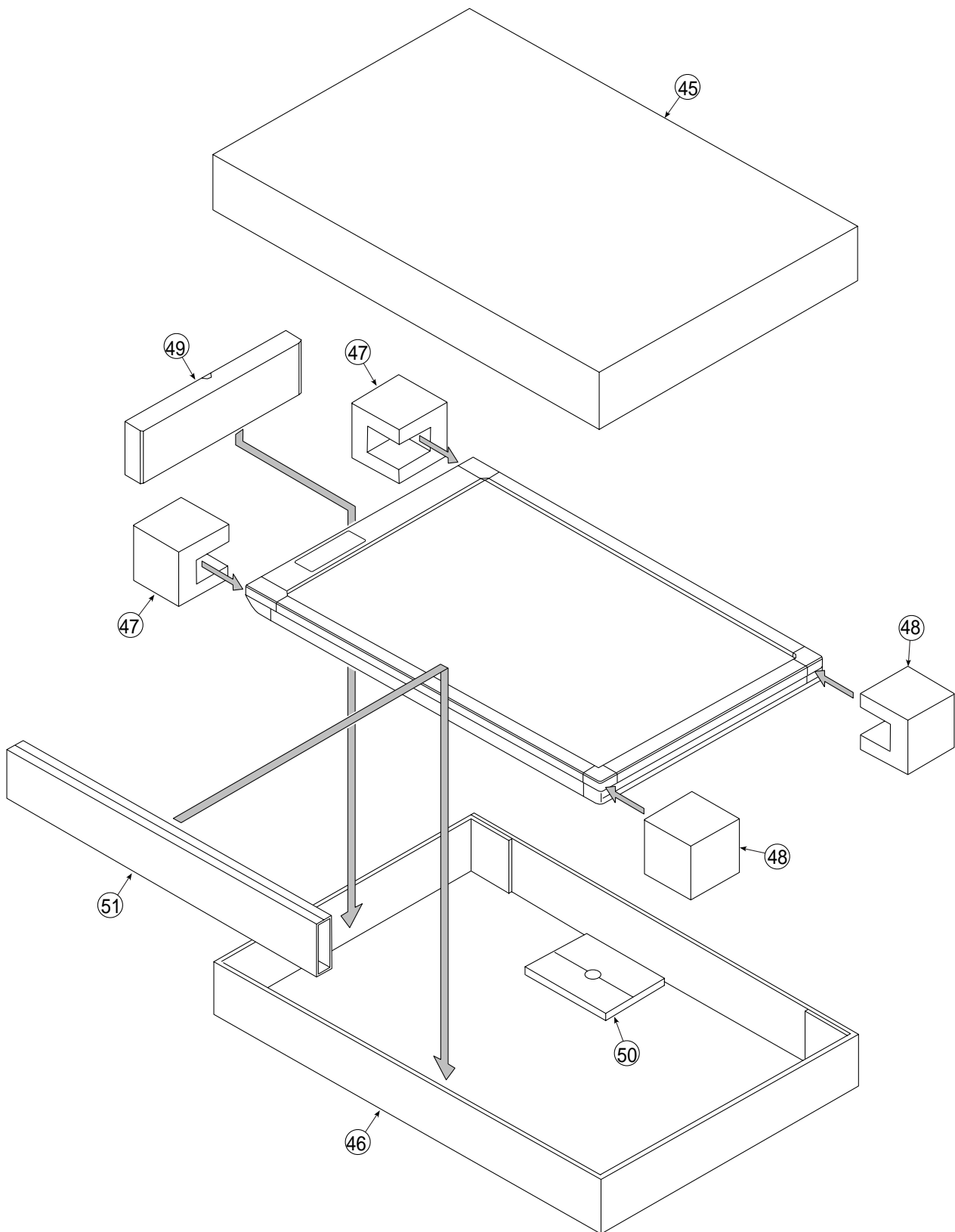
3. Accessories Section



PARTS LIST

3. Accessories Section				
No	PARTS NAME	PARTS No.	Q' ty	REMARK
28	Operation Manual CR-5	722461300	1	
29	Software Operation Manual CR-5	722461400	1	
30	Quick guide CR-5 (E)	722462200	1	
31	Quick guide Hang	715354600	1	
32	Wall Mount Plate positioning	722461500	1	
33	CD-ROM CR-5	722461100	1	
34	Molly anchor Set	722171000	1	with wrench
35	Hook for Wall Mount CR-5	722130600	1	
36	Wall Mount Plate Lower	722130700	1	
37	Pen Tray Unit B	722130000	1	
38	Adapter holder	722122000	1	
39	Power Code (CEE) 4m	722591400	1	
	Power Code (BS) 4m	722591500	1	
	Power Code (UL) 4m	722591300	1	
	Power Code (SAA) 4m	722591600	1	
	Power Code (GB) 4m	—	1	No Parts Supply
40	AC dapter	715259000	1	
41	USB Cable	741255400	1	
42	Eraser ER-44369	500044369	1	
43	Marker Set	—	1	No Parts Supply
44	Screw Unit For CR-5	722910000	1	

4. Carton & Section



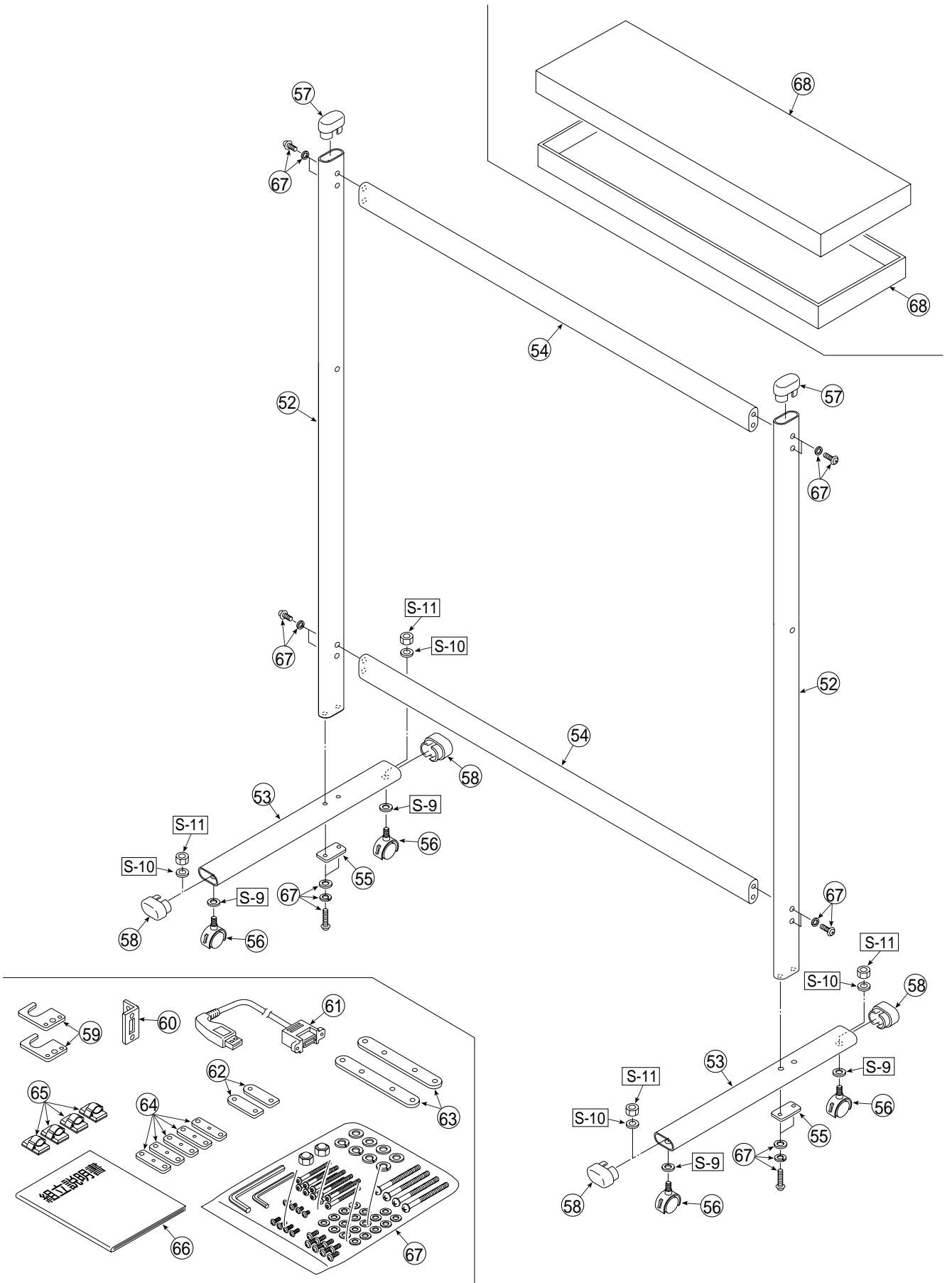
PARTS LIST

4. Carton & Section				
No	PARTS NAME	PARTS No.	Q' ty	REMARK
-	Carton Unit For CR-5 (O/S)	300507	1	
45	Upper carton OS	—	1	No Parts Supply
46	Lower carton	—	1	No Parts Supply
47	Corner Packing (R)	—	2	No Parts Supply
48	Corner Packing (L)	—	2	No Parts Supply
49	Accessory box	—	1	No Parts Supply
50	Operation Manual box	—	1	No Parts Supply
51	Storage box	—	1	No Parts Supply

PARTS LIST

5. Screws & Washers				
No	PARTS NAME	PARTS No.	Q' ty	REMARK
S-1	M4-6 Cross Recessed Binding Head	961240610	6	
S-2	M3-4 P-Tight Cross Recessed Binding Head	963230410	4	
S-3	M3-6 P-Tight Cross Recessed Binding Head	963230610	4	
S-4	M4-5 P-Tight Cross Recessed Binding Head	963240530	1	
S-5	M3-8 P-Tight Countersunk Head	963330830	6	
S-6	M4-6 S-Tight Cross Recessed Binding Head	963640630	6	
S-7	M4-4 Cross Recessed Binding Head	961240430	2	
S-8	M3-8 Pan Head With Spring Washer and Plane	952530810	2	

6. CR-5-T

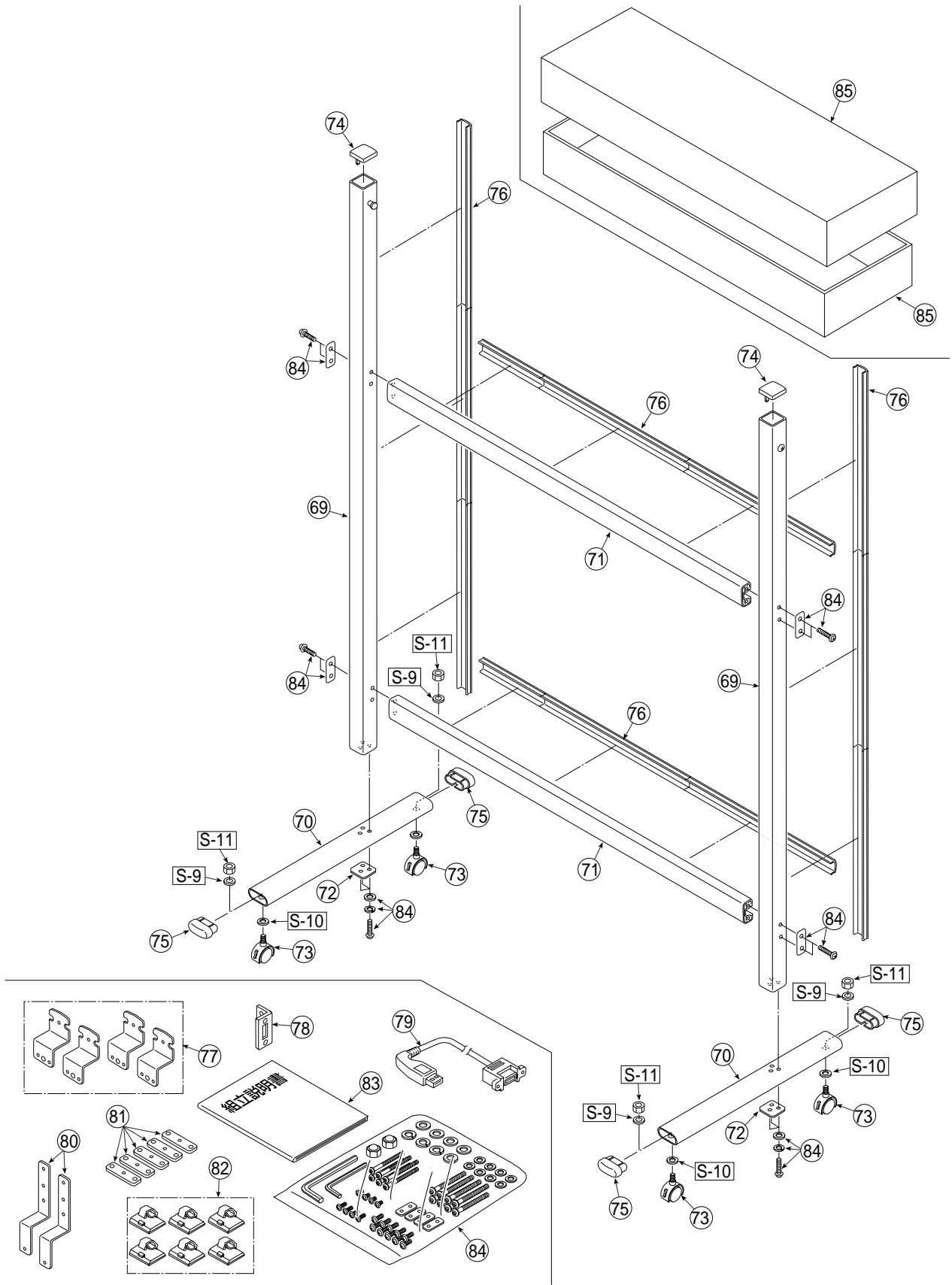


PARTS LIST

6. CR-5-T				
No	PARTS NAME	PARTS No.	Q' ty	REMARK
52	Foot pipe A	722300100	2	
53	Foot pipe B	722330800	2	
54	Foot pipe C	722300200	2	Wide setting
	Foot pipe CV	722300300	2	Long setting
55	Foot Plate	718206900	2	
56	Front Caster	714660400	4	
57	Pipe Freme Cap	714112600	2	
58	Pipe Cap	714160600	4	
59	Stand's hanger upper	722330400	2	
60	USB connector plate	722330900	1	Long setting
61	USB extension cable	722390100	1	Long setting
62	Stand's hanger lower	722330500	2	Wide setting
63	Stand's hanger lower V	722330600	2	Long setting
64	Plate nut	722330700	5	
65	Cable Clamp for Stsnd	722370100	6	
66	Assemble manual for stand	722360200	1	
67	Screw Unit For CR-5-T	722910000	1	
68	Carton Unit For CR-5-T	—	1	No Parts Supply

Screws & Washers				
No	PARTS NAME	PARTS No.	Q' ty	REMARK
S-9	No2-10 Flat Washer	957210210	4	
S-10	No2-10 Spring Washer	957410210	4	
S-11	Hexagon nut W3/8	955217610	4	

7. CR-5-TN

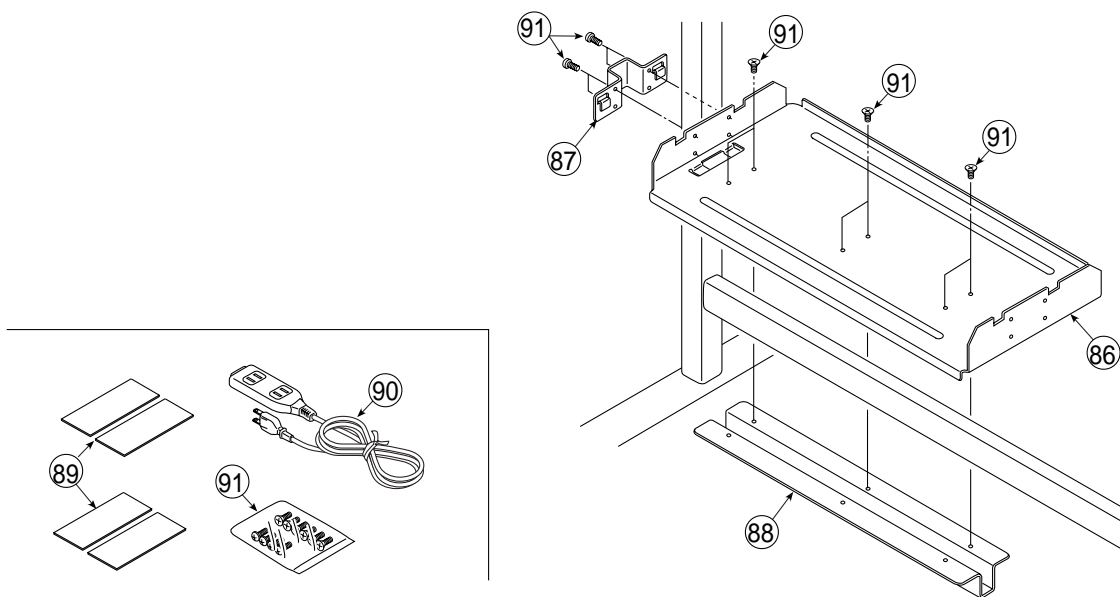


PARTS LIST

7. CR-5-TN				
No	PARTS NAME	PARTS No.	Q' ty	REMARK
69	Foot pipe A CR	300513	2	
70	Foot pipe B CR	300514	2	
71	pipe CR H	722331400	2	Wide setting
-	pipe CR V	722331500	2	Long setting
72	Foot Plate CR	722331300	2	
73	Caster 52	722370200	4	
74	Pipe Freme Cap CR	722320100	2	
75	Pipe Cap CR	722320300	4	
76	Cable Cover Set	722090011	1	
77	Stand's hanger upper CR	722331600	4	
78	USB connector plate	722330900	1	Long setting
79	USB extension cable	722390100	1	Long setting
80	Stand's hanger lower V CR	722331700	2	Long setting
81	Plate nut	722330700	5	
82	Cable Clamp for Stsnd	722370100	6	
83	Assemble manual for stand CR-5-TN	722363100	1	No Parts Supply
84	Screw Unit For CR-5-TN	722090010	1	
85	Carton Unit For CR-5-TN	-	1	No Parts Supply

S-9	No2-10 Flat Washer	957210210	4	
S-10	No2-10 Spring Washer	957410210	4	
S-11	Hexagon nut W3/8	955217610	4	

8. PRINTER table



8. PRINTER table				
No	PARTS NAME	PARTS No.	Q' ty	REMARK
86	printer table	722730100	1	
87	printer table clamp A	722730200	1	
88	printer table clamp B	722730300	1	
89	fastener layer Set 50 X 100	722090012	1	
90	2TAP plug socket	722780100	1	Japan Only
91	Screw Unit For PRINTER table CR-5	722090013	1	

9. REVISION HISTORY

No	Revision History	Revision page	Date
1			
2			
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