



USER'S GUIDE

Thermal Printer

MPU-L465

Read this manual carefully before use.
Keep this manual in a place where it can be
accessed quickly.

Seiko Instruments Inc.

MPU-L465 THERMAL PRINTER USER'S GUIDE

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Applicable EC Directive and Standards

Product: Thermal Printer MPU-L465-1xB

Directive: Title

1999/5/ECEC Radio and Telecommunications Terminal Equipment Directive

Standards

EN 301 489-1 V 1.3.1
EN 301 489-17 V 1.1.1
EN 300 328-2 V1.2.1
EN 60950 :2000



Note that the radio frequency band used this equipment has not been harmonized in all the EU.

This product may be used in following all EU and EFTA countries:

EU

Austria, Belgium, Denmark, Finland, France,
Germany, Greece, Ireland, Italy, Luxembourg,
Portugal, Spain, Sweden, The Netherlands, United Kingdom

EFTA

Iceland, Norway, Switzerland, Liechtenstein

Product: Thermal Printer MPU-L465-0xB

Directive: Title

89/336/EEC EC ElectricMagnetic Compatibility Directive

Standards

EN 55022 :1998 +Amendment1 :2001 Class B
EN 61000-3-2 :2000 Class A
EN 61000-3-3 :1995 +Amendment1 :2001
EN 55024 :1998 +Amendment1 :2001

Product: AC adapter PW-0904-W1

Directive: Title

73/23/EEC EC Low Voltage Directive

Standards

EN60950 :2000

Product: Battery Charger PWC-L07A1-W1

Directive: Title

89/336/EEC EC ElectricMagnetic Compatibility Directive

73/23/EEC EC Low Voltage Directive

Standards

EN 55022 :1998 +Amendment1 :2000 Class B

EN 61000-3-2 :2000 Class A

EN 61000-3-3 :1995 +Amendment1 :2001

EN 55024 :1998 +Amendment1 :2001

EN 60950 :1992 +Amendment1 :1993 +Amendment2 :1993 +Amendment3 :1995

+Amendment4 :1997 +Amendment11 :1997

Federal Communications Commission (FCC) compliance statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any changes in this certified device could void your legal right to operate it.

DECLARATION OF CONFORMITY

Responsible Party	Seiko Instruments USA, Inc. Micro Printer Division
Address	2990 Lomita Boulevard, Torrance California 90505 USA
Telephone	(310) 517-8176

Declare under out sole responsibility that the product.

Trade Name	:	Thermal Printer
Model Number	:	MPU-L465

This device complies with part15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

I the undersigned, hereby declare that the equipment specified above conforms to the above requirements.

California USA, on July 1st, 2003

Industry Canada (IC) compliance statement

This device complies with the requirements of RSS-210. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

INTRODUCTION

This manual describes the functions of the MPU-L465 thermal printer.

Read through the safety and operating precautions on pages 2 to 15 carefully before using the printer.

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For more details, please ask your dealer for a copy of the *MPU-L465 Technical Reference*.

SAFETY PRECAUTIONS

The following symbols are used in this manual in order to make proper use of the printer and avoid incidental damages.

Follow the guidelines marked with each individual symbol.

 WARNING	Failure to follow the guidelines marked with this symbol could result in serious personal injury or death.
 CAUTION	Failure to follow the guidelines marked with this symbol could result in minor personal injury or product and/or peripheral damage.

Symbol Examples

	The symbol  indicates caution (including danger and warning). This example indicates warning or caution.
	The symbol  indicates prohibition. This example indicates prohibition of disassembling.
	The symbol  indicates requirements or what must be done. This example asks you to unplug the power cable.

Warning on the Printer



WARNING

	If you find any of the following abnormalities in the printer, power off the printer, unplug the AC cable, and remove the battery pack from the printer. ◆ When an unusual state was not returned to the normal's. ◆ When the printer gave out a nasty smell or smoke, or generated noise. ◆ When metallic powders, water or other foreign substances entered the printer. ◆ When the printer case was broken. If not, it might cause fire or an electricshock. Please ask your dealer for repair.
	NEVER put metallic powders, water or other foreign substances into the printer from its opening. If not, it might cause fire or an electricshock.
	NEVER disassemble or remodel the printer. DO NOT try to repair the printer yourself. If not, it might cause fire, an accident or failure.
	DO NOT use any power supply other than our dedicated AC adapter and battery pack. If not, there is fear of burst, ignition, or generation of heat that might cause fire or an accident.
	Power off the printer, when you attach and detach the battery pack to and from the printer. If not, it might cause an electricshock.

CAUTION

	When not in use for long periods of time, power off the printer, unplug the AC cable, and remove the battery pack from the printer. If not, it might cause fire or an electricshock.
	When you clean the printer, power off the printer, unplug the AC cable, and remove the battery pack from the printer. If not, it might cause fire or an electricshock.
	Keep the printer away from children. If not, it might cause injury.
	Keep the printer away from direct sun and high temperature. If not, it might cause fire or a failure.
	Keep the printer away from high humidity and dust. If not, it might cause fire or a failure.
	While using the printer, NEVER cover cloth, etc. over it. If not, it might cause fire or a failure.
	Install the printer in a vibration-free place. Keep the printer away from unstable, shaky, unsteady and slanting environment. If not, it might cause injury or a failure.
	The thermal printhead might reach a high temperature just after printing. NEVER touch the printhead. Remove paper jam and clean the printhead after making sure that the printhead has cooled down. If not, it might cause injury.
	The printer is designed so that you can directly touch the thermal head, the paper sensor, and the platen roller due to improvement of paper insertion mechanism. However, NEVER touch any of them directly except where necessary. If not, it might cause injury or a failure.
	DO NOT touch the cutter. If not, it might cause injury.
	When inserting the battery pack into the printer, secure the battery cover. If not, the battery cover is turned over, the battery jumps out, and injury or a failure may happen.

When the AC adapter is used



WARNING

	If you find any of the following abnormalities in the AC adapter, unplug the AC cable. ◆ When the AC adapter gave out a nasty smell or smoke, or generated noise. ◆ When the printer case was broken. If not, it might cause fire or an electric shock. Please ask your dealer for repair.
	NEVER disassemble or remodel the AC adapter. If not, it might cause fire, an accident, or a failure.
	DO NOT use any AC cable other than our dedicated one. If not, it might cause fire, an accident, or a failure.
	DO NOT use the AC adapter at any voltage other than the specified power supply voltage. If not, it might cause fire, an accident, or a failure.
	DO NOT touch the metallic areas of the AC adapter and the connector to avoid shortcircuiting. If not, it might cause fire, an accident, or a failure.
	Keep the AC adapter away from rain and water. If not, it might cause fire, an accident or a failure.

CAUTION

	Unplug the AC cable when cleaning the AC adapter. If not, it might cause an electricshock.
	Keep the AC adapter away from children. If not, it might cause injury.
	Keep the AC adapter away from direct sun and high temperature. If not, it might cause fire or a failure.
	Keep the AC adapter away from high humidity and dust. If not, it might cause fire or a failure.
	DO NOT touch the AC adapter by wet hand. If not, it might cause an electricshock.
	While using the AC adapter, NEVER cover cloth, etc. over it. If not, it might cause fire or a failure.
	Keep the AC adapter away from unstable, shaky, unsteady and slanting environment. If not, it might cause injury or a failure.

When the battery pack is used



WARNING

	If you find any of the following abnormalities in the battery pack, remove the battery pack from the printer and keep away from fire. ◆ When the battery pack gave out a nasty smell, reached an extraordinarily high temperature or showed any unusual sign. ◆ When the battery pack case was broken. ◆ When leakage was found. If not, there is fear of leakage, generation of heat, burst, or ignition that might cause fire or injury.
	NEVER disassemble, remodel, or solder the battery pack. If not, there is fear of leakage, generation of heat, burst, or ignition that might cause fire or injury.
	DO NOT charge the battery pack except by the dedicated battery charger. If not, there is fear of leakage, generation of heat, burst, or ignition that might cause fire or injury.
	DO NOT touch the metallic area of the battery pack to avoid shortcircuiting. If not, there is fear of heat generation or an electric shock that might cause fire or injury.
	DO NOT throw the battery pack into fire and DO NOT heat it. If not, there is fear of leakage, generation of heat, burst, or ignition that might cause fire or injury.
	DO NOT charge the battery pack in a place at 35 °C / 95 °F or more under burning scorching or in the close vicinity of fire. If not, there is fear of leakage, generation of heat, burst, or ignition that might cause fire or injury.
	DO NOT apply strong impact to the battery pack with a hammer or a nail, and DO NOT crush it. If not, there is fear of leakage, generation of heat, burst, or ignition that might cause fire or injury.
	DO NOT put the battery pack into water. Always keep it away from rain and water. If not, there is fear of leakage, generation of heat, burst, or ignition that might cause fire or injury.

CAUTION

	If liquid inside the battery pack enter your eyes, immediately wash it away with clean water and take a physician's medical treatment. If not, your eyesight might be damaged.
	Keep the battery pack away from children. If not, it might cause injury.
	Keep the battery pack away from direct sun and high temperature, especially in a car. If not, there is fear of leakage, generation of heat, burst or ignition that might cause fire or injury.
	DO NOT use or keep the battery pack in a place where is humid and dusty. If not, there is fear of leakage, generation of heat, burst or ignition that might cause fire or injury.
	DO NOT touch the battery pack by wet hand. If not, it might cause an electricshock or a failure.
	Keep the battery pack away from unstable, shaky, unsteady and slanting environment. If not, it might cause injury or a failure.

When the charger is used



WARNING

	When you find any of the following abnormalities in the charger, unplug the AC cable from the wall socket. ◆ When the charger gave out a nasty smell, reached an extraordinarily high temperature or showed any unusual sign. ◆ When metallic powders, water or other foreign substances entered the charger. ◆ When the charger case was broken. If not, it might cause fire or an electricshock. Please ask your dealer for repair.
	When the charger gave out a smoke or nasty smell, reached an extraordinarily high temperature or showed any unusual sign during its charging. Unplug the AC cable from the wall socket. If not, there is fear of leakage, generation of heat, burst or ignition that might cause fire or injury.
	NEVER put water and foreign substances into the charger. If not, it might cause fire or an electricshock.
	NEVER disassemble or remodel the charger. If not, it might cause fire or an electricshock.
	DO NOT connect any battery pack other than our specified one to the charger. If not, there is fear of burst, ignition or generation of heat that might cause fire or injury.
	DO NOT use any AC cable other than our dedicated one in the charger. If not, there is fear of heat generation, or ignition that might cause fire or an accident.
	DO NOT use the charger at any power supply voltage other than the specified one. If not, it might cause fire, an electricshock or a failure.
	DO NOT touch any and all of the output terminals of the charger to avoid shortcircuiting. If not, it might cause fire, an electricshock or a failure.
	DO NOT wet the charger. Always it away from moisture. If not, it might cause fire, an electricshock or a failure.

CAUTION

	Unplug the AC cable except when using the charger. The charger is operating whether or not it is equipped with the battery pack.
	Unplug the AC cable when cleaning the charger. If not, it might cause an electricshock.
	Keep the charger away from children. If not, it might cause injury.
	Keep the charger away from direct sun light and high temperature. If not, it might cause fire or a failure.
	DO NOT put the charger in a place where is humid and dusty. If not, it might cause fire or a failure.
	DO NOT touch the charger by wet hand. If not, it might cause an electricshock.
	While using the charger, DO NOT cover cloth, etc. over it. If not, it might cause fire or a failure.
	Keep the charger away from unstable, shaky, unsteady and slanting environment. If not, it might cause injury or a failure.

When the AC cable is used



WARNING

	Unplug the AC cable if the AC adapter or the charger is damaged. If not, it might cause fire, an electricshock, or a failure.
	Keep the AC adapter and the AC cable of the charger away from dust and metallic powders. If not, it might cause fire or an electricshock.
	Plug the AC adapter and the AC cable of the charger completely. If not, it might cause fire or an electricshock.
	NEVER damage the AC adapter and the AC cable of the charger. DO NOT bent the AC cable forcibly, DO NOT place any heavy goods on it, DO NOT pull it, and DO NOT twist it. If not, it might cause fire, an electricshock, or a failure.
	Always use the dedicated AC cable in the AC adapter and the charger. Use the respective AC cable specified by country and block shown below. In Japan: Model CB-JP01-18A In North America: Model CB-US01-18A In EU: Model CB-CE01-18A

 CAUTION



When you unplug the AC cable of the AC adapter or the charger from the respective wall socket or the plug, remove it while holding the connecting area.
Exposure or disconnection of the cable might cause fire or an electricshock.

OPERATING PRECAUTIONS

Please follow the precautions shown below to ensure full functionality of the printer and thermal paper.

■ Printer

- ◆ Switch the power off when not in use.
- ◆ DO NOT give a shock intentionally by dropping or hitting the printer. The printer with a rubber cover has an excellent structure against impact on each surface. However, it may be broken depending on the surface conditions, the angle of fall or the degradation state of the printer, and so forth.
- ◆ Give attention to ambient temperature and humidity during use of the printer. Proper operating environment is as follows:

Ambient temperature: -15 °C to 50 °C / 5 °F to 122 °F

(0 °C to 50 °C / 32 °F to 122 °F for using Bluetooth interface)

Relative humidity: 10% to 85% (no-condensing)

- ◆ DO NOT set/put the printer near any device that generates strong electromagnetic fields, like a motor in a copying machine.
- ◆ DO NOT open the paper cover during printing.
- ◆ DO NOT remove or reinstall the interface cable during printing or transmission. DO NOT touch the connectors of the interface cable during printing.
- ◆ NEVER close the paper outlet port or press down the paper which came out. If not, it might cause paper jam.
- ◆ Cut only a part of liner with the paper cutter attached to the paper outlet. It may cause a cutting error or make the cutting edge dull due to label adhesive sticking to the cutter if cutting a part of label sheet.
- ◆ Remove the battery pack, when you do not use the printer for long periods of time. If not, it might cause excessive discharge and then will not allow you to use the printer even after it is charged.
- ◆ Clean the printer exterior with a soft, lint-free cloth where necessary. DO NOT use alcohol and other solvent.
- ◆ Before use, always clean the terminals using a dry, soft, lint-free cloth. If the terminals are dirty, it may not allow you to ensure proper contact.
- ◆ Be sure to wipe the printhead with a soft swab, etc. when cleaning the thermal printhead.
- ◆ Unplug the AC cable except when using the AC adapter.

- ◆ When storing the battery pack for long periods of time, keep it in a cool place. If possible, avoid long-term storage in the fully charged state. It may affect the battery life.
- ◆ Clean the terminals of the battery pack regularly (wipe them with a dry cloth).
- ◆ In order to fully demonstrate the performance of the battery pack, charge the battery at room temperature and the temperature of the battery pack ranging from 0 °C to 35 °C / 32 °F to 95 °F.
- ◆ Clean the terminals of the dedicated charger regularly (wipe them with a dry cloth).
- ◆ DO NOT connect the AC cable of the AC adapter or the charger to the power supply wall socket which was already connected to any other devices which generate noise.
- ◆ High-print-rate printing might cause irregular printouts or generate loud noise. This is not a failure in the printer, but an inherent paper phenomenon.
- ◆ Always use roll paper whose width is at least 4 mm wider than the print width.

■ Thermal Paper

- ◆ Store the paper in a cool, dry, and dark place.
- ◆ DO NOT rub the paper with hard objects.
- ◆ DO NOT leave the paper near organic solvents.
- ◆ DO NOT allow the paper to touch plastic film, eraser, or adhesive tape for long periods of time.
- ◆ DO NOT stack the paper together with diazo and wet-type copies immediately after copying.
- ◆ DO NOT use chemical glue when starching up.
- ◆ Always use the specified thermal paper. See Section 13, Optional Units and Consumables, for details.

Tips and Hints

In addition to safety and operating precautions marked with the respective symbols, tips and hints are also provided herein (more specifically, from the subsequent pages) to facilitate customers' smooth operation of the printer:

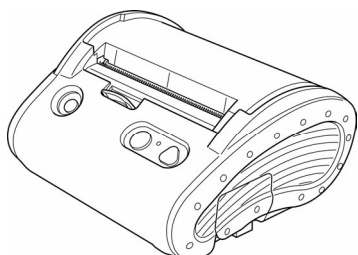
Hints

- Items To be Remembered

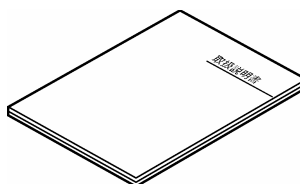
This box contains helpful tips and hints to be remembered.

1. PREPARATION

Once you have opened the carton, make sure it contains the printer and its User's Guide. Please notice that printer functions and package contents differ depending on the printer model.

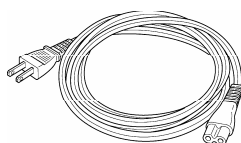


Printer

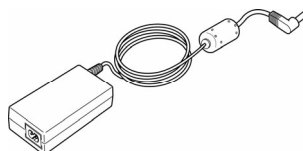


User's Guide (this manual)

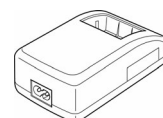
The following are available as optional units:



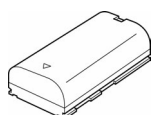
AC cables*1



AC adapter



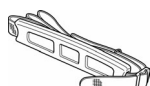
Battery charger*2



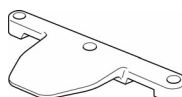
Battery pack



Interface cable*3



Shoulder belt*4



Belt clip*4

*1 AC cables for an optional AC adapter and a battery charger are not contained in this carton. Purchase each. An AC cable can be used for both the AC adapter and the battery charger.

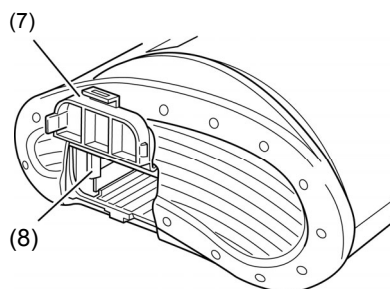
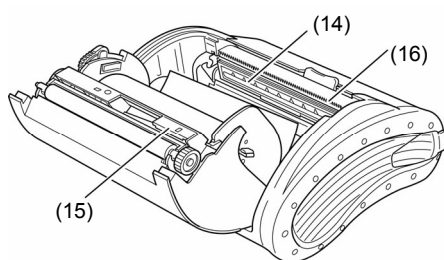
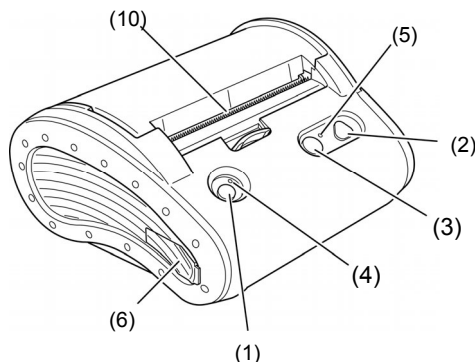
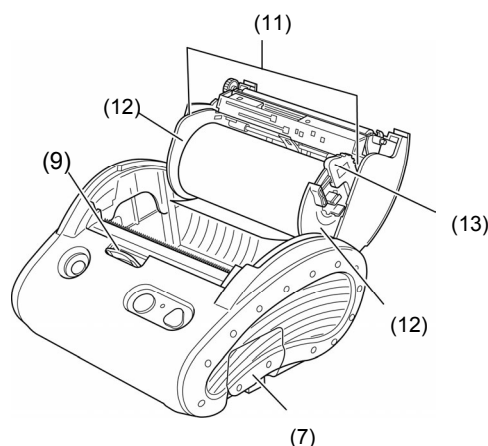
*2 Quickly-chargeable single charger and multi-charger are available.

*3 USB- and serial cables are available.

*4 The belt clip allows you to attach the printer to your belt; and the shoulder belt allows you to carry it on your shoulder.

Keep the carton and packing materials safe for future transport or long-term storage.

2. NAMES OF PARTS



(1) POWER button

This button is used to turn the printer ON and OFF. To power the printer on, hold down the POWER button until the POWER lamp lights. To turn the printer off, hold down the POWER button until the POWER lamp goes off.

(2) FEED button

This button is used to feed the paper. Once this button is pressed when using the marked paper, the paper is fed to the start of the next paper. Once this button is pressed when not using the marked paper, the paper is slightly and gradually fed. Continuing pressing this button advances paper feeding.

(3) REPRINT button

This button is used to print the previous print again. Reprint is available when the REPRINT lamp lights.

(4) POWER lamp

The POWER lamp lights when the printer is turned on. See the Power Lamp Indication shown on the next page for details.

(5) REPRINT lamp

The REPRINT lamp lights in case the previous print can be reprinted.

(6) Interface cover

This cover is used to connect the interface cable and the AC adapter, and insert the connector. Open the rubber cover and insert the connector.

(7) Battery rubber cover

This cover is used to mount and secure the battery pack. Open the rubber cover and then attach and detach the battery pack.

(8) Battery release lever

This lever is used to remove the battery pack from the printer.

(9) Paper cover open lever

This lever is used to open the paper cover in order to install the paper.

(10) Paper outlet port

This is a paper outlet port equipped with a paper cutter.

(11) Paper guide unit

This unit is used to install paper. Paper with various width can be installed.

(12) Paper guide

This guide releases the paper guide lock via lever (13) according to the paper width and changes the paper guide width. By attaching and detaching adapters to it, it is possible to fit several types of inner diameter.

(13) Paper guide lock lever

This lever is used to release the paper guide lock when changing the position of the left and right paper guides.

(14) Thermal printhead

This printhead prints characters on the paper. Be careful that it reaches a high temperature just after printing.

(15) Paper sensor

This sensor detects "no paper" and "timing-mark."

(16) Paper cutter

This unit cuts paper.

[POWER Lamp Indication]

The POWER lamp comes in three colors - -green, red, and orange.

Indication	POWER lamp
Power OFF	Off
Power ON (print ready)	Green On
Standby	Dark Green On
Charging	Orange On
Power voltage failure	Red On
No paper, paper cover open	Green blinks
Battery voltage low (needs charge)	Orange blinks
Error	Red blinks

3. POWER CONNECTING

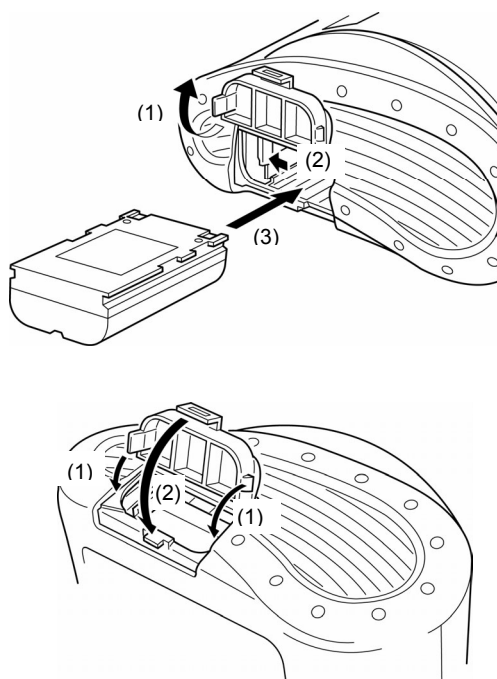
The printer can be powered by either battery pack or AC adapter.

■Attaching and Detaching the Battery Pack

The battery pack should be fully charged. See Section 9, Charging the Battery Pack, for details on the charging method.

Attaching the battery pack

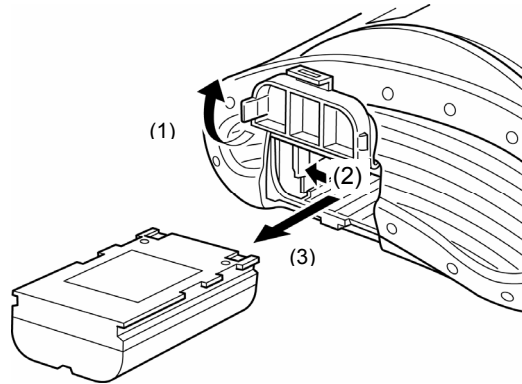
Open the battery cover, place the electrode side of the battery pack upward, and insert the battery pack until being locked by the battery release lever. Then, mount and lock the battery cover. The battery cover has lever pins on the left and right sides and a hook on the lower part. The printer has a projection for hooking the battery cover. After pressing the both sides of the battery cover to push in the lever pins, hook on the projection of the printer.



Detaching the battery pack

Power the printer off.

Remove the hook located on the lower part of the battery cover from the projection of the printer and open the battery cover. When the battery release lever is released in the arrow direction, the battery pack is pushed out due to its spring force.



Hints

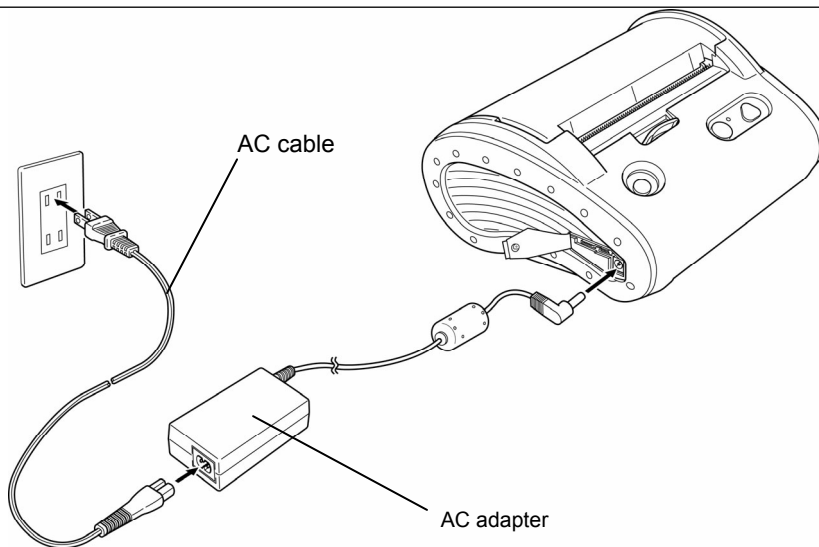
- If the battery pack starts to run out soon, the battery life has expired. Purchase a new's.
- When the battery pack is used at low temperature, the usable operation period of the printer may be shortened.
- Enabling auto-power off function allows the printer to be automatically turned off after passing a certain period with no operation. This prevents unnecessary battery consumption.

■Connecting the AC Adapter (Optional Unit)

- (1) Connect the AC cable to the AC adapter.
- (2) Open the interface cover and insert the DC jack of the AC adapter into the power connector of the printer.
- (3) Insert the AC plug of the AC cable into the electric outlet.
- (4) The printer turns on automatically.

Hint

- The AC adapter may be heated to some extent during operation. There is no problem.



4. PAPER SETUP

The printer supports both thermal paper roll and thermal label roll. The printer function setting differs depending on paper type. See Section 7, Function Settings, for details. Only roll type media is fit to the printer.

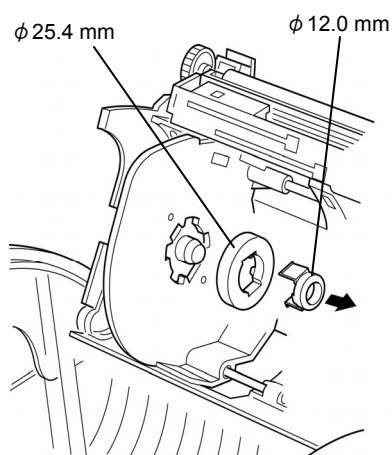
■Mounting/Removing the Paper Roll Adapter

The printer supports internal diameters of $\varnothing 8$ mm, $\varnothing 12.0$ mm, and $\varnothing 25.4$ mm. Mount the paper roll adapter according to the internal diameter of the paper roll to be used. Two types of paper roll adapters are available. Those have been mounted on the printer prior to shipping.

- (1) When using the paper roll of $\varnothing 8.0$ mm:

Remove both paper roll adapters of $\varnothing 12$ mm and $\varnothing 25.4$ mm.

Push the outer lever pin of the paper guide toward the inside to remove two types of the paper roll adapters.

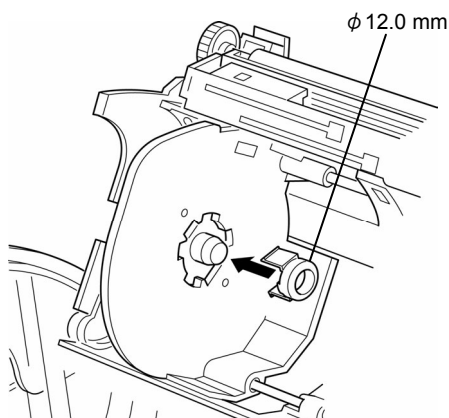


- (2) When using the paper roll of $\varnothing 12$ mm:

Mount only the paper roll adapter of $\varnothing 12$ mm.

Secure the paper roll adapter to the guide through the lever pins of the adapter.

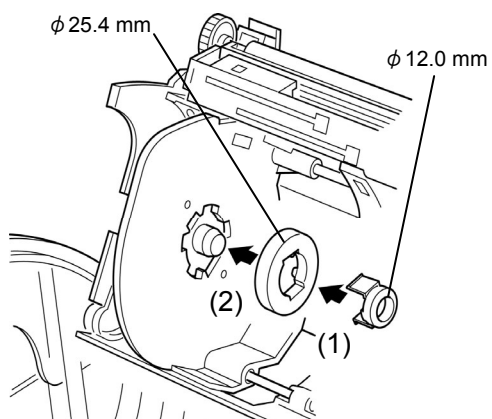
Push the lever pin into the paper guide completely.



(3) When using the paper roll of $\varnothing 25.4$ mm:

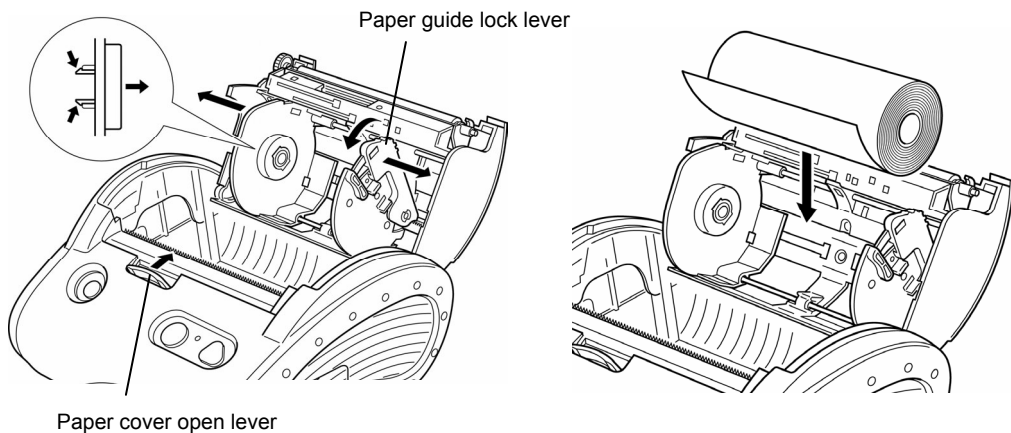
Mount both paper roll adapters of $\varnothing 12.0$ mm and $\varnothing 25.4$ mm.

Assemble both paper roll adapters and secure both paper roll adapters to the paper guide in the same manner as (2).



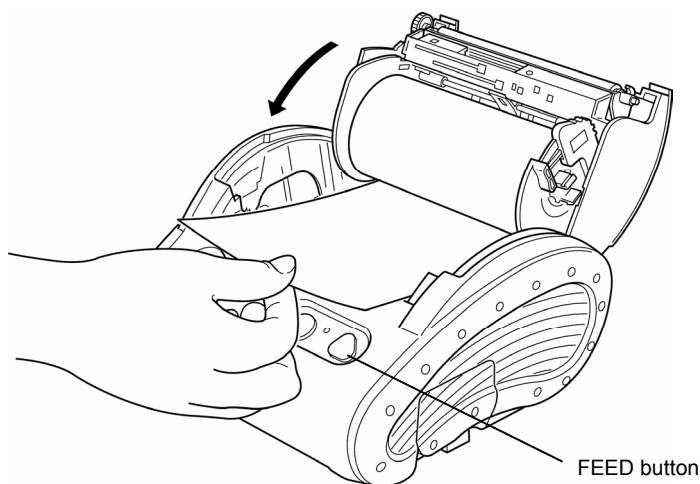
■Step 1: Installing Paper to the Paper Guide Unit

- (1) Press the paper cover open lever in the arrow direction and open the paper cover.
- (2) Widen the paper guide space while pressing the paper guide lock lever in the arrow direction.
- (3) Position the control projection part of the paper guide (paper roll adapter) so that it can be accommodated in the paper roll tube. Then, narrow the paper guide until the paper guide touches the paper roll.
- (4) Release the paper guide lock lever to lock the paper guide.



■Step 2: Closing the Paper Cover

- (1) Pull out the paper so that paper end can be fed out from the paper outlet port when the paper cover is closed.
- (2) Close the paper cover while supporting the paper so that the paper will not deviate right and left. Close the paper cover tightly so that the paper cover will not float.
- (3) When using the marked paper, perform paper print positioning after pressing the FEED button once.



Hints

- The printer function setting for the marked paper is different from that for non-marked paper.

See Section 7, Function Settings, for details.

- The printer also supports the paper roll of max. 58 mm external diameter.
If the internal diameter of the paper roll is different from that of the paper roll adapter, it is necessary to reduce the external diameter of the paper roll against its loose-fitting.
For details, refer to the *MPU-L465 Technical Reference*.

- When using a paper roll of a different width, remove the paper powder from the platen roller before use.

See Section 10, Print Head/Platen Roller Maintenance, for cleaning the platen roller.

- Using a paper roll for long periods of time may affect print quality.
(If a paper roll of a different width from the current installed one is installed for long periods of time, the print quality may be degraded due to wearing of the platen roller.)

Hint

- Do not touch the gears attached to the platen roller. Doing so might degrade the print quality or cause a failure.

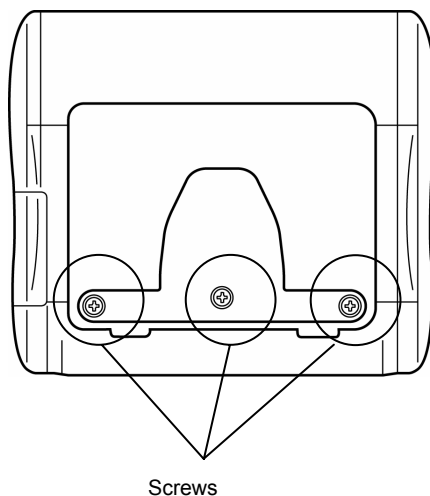
5. Attaching and Detaching the Belt Clip and Strap

The belt clip is provided with the grooves to attach the shoulder belt. When using the shoulder belt, it is necessary to attach the belt clip to the printer.

■Attaching and Detaching the Belt Clip

Attach the belt clip using screws (3 positions).

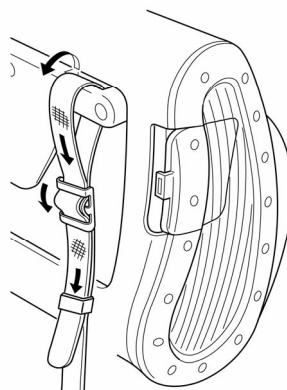
The belt clip is already attached to the printer prior to shipping for the model with a belt clip.



■Attaching and Detaching the Shoulder Belt

(1) Put the shoulder belt through the grooves located on the left and right sides of the belt clip.

(2) Put the shoulder belt as shown in the figure.



6. TEST PRINTING

After setting the paper roll, proceed to test printing. During test printing, the printer function setting data and character strings for testing are printed.

- (1) Make sure that the paper is loaded and the printer is off. If the paper is not loaded, load the paper as instructed in Section 4, Paper Setup, and turn the printer off.
- (2) Press the POWER and FEED buttons simultaneously. When the POWER lamp lights, release the POWER button, then the FEED button.
- (3) Test printing is started as follows:

```
"Mobile Label Printer"
"MPU-L465-**B [Ver. *.**]"
"  ** *** ***"
"Copyright (C) : SII"
"*****"
.
.
.
```

- (4) After test printing is completed, the printer enters the STANDBY mode.

7. FUNCTION SETTINGS

The printer allows for numerous function settings according to the operating conditions and applications.

The settings are saved in the software DIP switches (non-volatile memory) mounted on the printer. The setting can be controlled by the buttons or commands.

The following describes how to set functions by using buttons.

Hint

- See the *MPU-L465 Technical Reference* for details on function settings with commands.

■Function Setting Mode

The printer must be in the function setting mode to set functions with buttons.

Follow steps (1) through (3) to enter the function setting mode:

- (1) Make sure that the paper is loaded and the printer is off. If the paper is not loaded, load the paper as described in Section 4, Paper Setup, and then turn the printer off.

Hint

- If an error occurs in the function setting mode, the POWER lamp blinks several times and then the power is turned off.

- (2) Press the POWER and REPRINT buttons simultaneously. When the POWER lamp lights, release the POWER button, then the REPRINT button.

- (3) If the message shown below is printed, press the FEED button.

Select Function

Setting Mode: FEED SW

HEX Dump Mode: REPRINT SW

Hint

- If you press the REPRINT button at this time, the printer enters the HEX Dump mode. This mode enables you to see the printer's transmission status. See the *MPU-L465 Technical Reference* for details.

(4) If the message shown below is printed, press the FEED button.

[SETTING MODE]

Yes: FEED/No: REPRINT

Hint

- If you press the REPRINT button at this time, the printer exits from the function setting mode and is automatically turned off.

The printer is now in the function setting mode. You can set functions by pressing buttons.

■Changing Settings

In the function setting mode, you can initialize or modify settings. To initialize the settings to the default, follow step (1) shown below. To change the settings, follow step (2) shown below.

(1) Initializing software DIP switch settings

1. When the message shown below is printed in the function setting mode, press the FEED button.

Load Default Setting?

Yes: FEED/No: REPRINT

2. When the message shown below is printed, the printer is turned off. The settings are set to the default. Initialization is completed.

Default Setting Saved.

Setting Mode Finished.

(2) Changing software DIP switch settings

When the message shown below is printed in the function setting mode, press the REPRINT button.

Load Default Setting?

Yes: FEED/No: REPRINT

Hint

- When the REPRINT or FEED button is pressed in the function setting mode, the POWER lamp blinks once. Verify that the POWER lamp blinks.

Operation 1: Transmission selection

If you press the FEED button when the following message is printed, the printer moves to the transmissions selection mode. When the REPRINT button is pressed, the printer moves to the paper selection mode without changing the setting.

DIP Switch setting mode.

I/F=***** Change Setting?

Yes: FEED/No: REPRINT

- (1) Input bit7 (MSB) through bit0 (LSB) in sequential order when the following message is printed.

Input 8 bits.

1: FEED/0: REPRINT

When input [1] : Press the FEED button.

When input [0] : Press the REPRINT button.

For example, when setting "10101110," continuously press the FEED, REPRINT, FEED, REPRINT, FEED, FEED, FEED, and REPRINT buttons in order.

- (2) When the FEED or REPRINT button is pressed eight times (for 8 bits), the printer outputs the following message.

I/F=***** Save Setting?

Yes: FEED/No: REPRINT

When the FEED button is pressed, the printer outputs the following message and the setting is saved.

I/F Setting=***** Saved.

When the REPRINT button is pressed instead of the FEED button, the printer outputs the following message and the setting does not change.

I/F Setting Not Changed.

Hint

- "*****" shows a DIP switch setting. The left side digit shows the MSB (bit7) and the right side digit shows the LSB (bit0).

Operation 2: Paper selection

If you press the FEED button when the following message is printed, the printer moves to the paper selection mode. When the REPRINT button is pressed, the printer moves to the exit of the function setting mode without changing the setting.

DIP Switch setting mode.

Paper=***** Change Setting?

Yes: FEED/No: REPRINT

- (1) Input bit7 (MSB) through bit0 (LSB) in order when the following message is printed.

Input 8 bits.

1: FEED/0: REPRINT

When input [1] : Press the FEED button.

When input [0] : Press the REPRINT button.

For example, when setting "10101110," continuously press the FEED, REPRINT, FEED, REPRINT, FEED, FEED, FEED, and REPRINT in order.

- (2) When the FEED or REPRINT button is pressed eight times (for 8 bits), the printer outputs the following message.

Paper=***** Save Setting?

Yes: FEED/No: REPRINT

When FEED button is pressed, the printer outputs the following message and the setting is saved.

Paper Setting=***** Saved.

If the REPRINT button is pressed instead of FEED button, the printer outputs the following message and the setting is not changed.

Paper Setting Not Changed.

Hint

- "*****" shows a DIP switch setting. The left side digit shows the MSB (bit7) and the right side digit shows the LSB (bit0).

Operation 3: Exit function setting mode

If you press the FEED button when the message shown below is printed, you can return to “Operation 1:Transmission selection” (page 31) and set transmission selection again.

DIP Switch setting mode.

Continue: FEED/Quit: REPRINT

If you press the REPRINT button, the message shown below is printed. The printer exits the function setting mode and is turned off. The function setting is now completed.

Setting Mode Finished.

Hint

- You can confirm the settings by test-printing after the function setting.

■Software DIP Switch Setting

 : Factory settings

Interface selection DIP switch

Posi-tion	Function	Setting							
Bit7	Not used	1							
Bit6	Parity	1	Even			0	Odd		
Bit5		1	No			0	Yes		
Bit4	Flow control	1	Hardware			0	Xon-Xoff		
Bit3	Baud rate	1	115200	1	57600	0	38400	0	19200
Bit2		1		0		1		0	
Bit1	Transmission selection	1	AUTO	1	Bluetooth	0	USB	0	Serial
Bit0		1		0		1		0	

Hints

- When “AUTO” is selected for transmission selection, the printer recognizes and selects the connected transmission method.
Depending upon the host computer, the transmission method may not be recognized. In this case, manually set the transmission method to be used.
- When “AUTO” is selected for transmission selection, serial transmission is recognized by DSR signal of the host computer.
Accordingly, serial transmission of the host computer which does not use the DSR signal cannot be automatically recognized.
In this case, manually set the transmission method to “Serial.”

Paper selection DIP switch

Position	Function	Setting																							
Bit7	Mark detection	1	No							0	Yes														
Bit6	Print speed	1	High speed							0	High quality														
Bit5	Print density	1	No	1	No	1	115 %	1	110 %	0	100 %	0	90 %	0	80 %	0	70 %								
Bit4		1		1		0		0		1		1		0		0									
Bit3		1		0		1		0		1		0		1		0									
Bit2	Paper type	See the following table.																							
Bit1																									
Bit0																									

Paper type

Bit2	Bit1	Bit0	Paper type
1	1	1	Setting prohibition
1	1	0	Setting prohibition
1	0	1	Setting prohibition
1	0	0	Setting prohibition
0	1	1	TP-L465CAH
0	1	0	DTH9500(KL470-ST95)
0	0	1	TL-L465NS/TL-L465NP
0	0	0	TP-L465CXH

8. CONNECTING TO THE HOST COMPUTER

The MPU-L465 thermal printer supports serial and USB transmissions via an interface cable. The Bluetooth-mounted printer supports Bluetooth (Ver.1.1, Serial port profile)-compliant wireless transmission.

The printer function setting differs depending upon a transmission method to be used. See Section 7, Function Settings, for details.

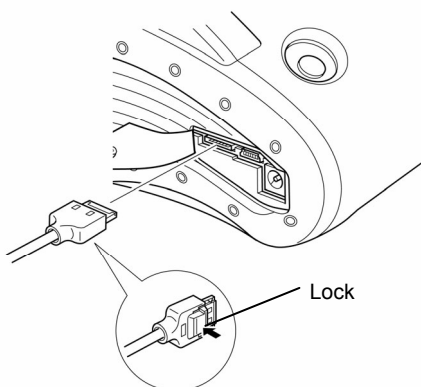
An interface cable is needed for serial or USB transmission. An appropriate interface cable must be selected in accordance with the host computer. See Section 12, Specifications, for details of interface specifications.

The communication speed might be reduced depending on data processing by software as well as print type and size.

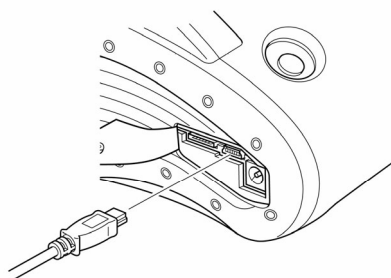
■Serial/USB Transmission via an Interface Cable

Follow the steps shown below:

- (1) Power the printer off.
- (2) Select a transmission method to be used. See Section 7, Function Settings, for details.
- (3) Open the interface connector cover and connect the interface cable to the connector of the printer.
The interface cable connector for serial transmission is provided with a lock. Push the connector in until it is locked.
- (4) Power the printer on and send data from the host computer to the printer.
- (5) Verify that the data is correctly printed.
- (6) The interface cable connector for serial transmission is provided with a lock. To disconnect the cable, pull it out, while holding the connector hook.



Interface cable for serial communication



USB cable

■ Bluetooth-based Wireless Transmission (Bluetooth-mounted Printer)

- (1) Power the printer off.
- (2) Select a transmission method to be used. See Section 7, Function Settings, for details.
- (3) Power the printer on and send data from the host computer to the printer.
- (4) Verify that the data is correctly printed.

Hint

- The maximum distance of transmission is approx. 10 m.
The maximum distance of transmission may differ depending on the radio interference and environment.



WARNING

- ◆ The printer may affect medical or other electronic devices. Obtain information and data concerning influence due to radio interference from the respective manufacturers or dealers.
- ◆ When using the printer in medical institutions, follow their guidelines.
- ◆ DO NOT use the printer in an airplane for safety.
- ◆ DO NOT use the printer in any area or district where its use is prohibited.

9. CHARGING THE BATTERY PACK

Immediately after purchasing or leaving the printer unused for long periods of time, charge the battery pack before use.

This battery pack does not need to be used up or discharged before charging.

The battery pack can be charged when it is installed in the printer connected with an AC adapter. The battery pack can also be charged by a dedicated battery charger.

■Charging the Battery Pack in the Printer

An AC adapter and an AC cable are needed to charge the battery pack in the printer.

- (1) Turn the printer off.
- (2) Install the battery pack in the printer.
- (3) Connect the AC adapter to the printer.
- (4) Connect the AC cable to the AC adapter and insert the AC plug of the AC cable into the wall outlet.
- (5) The printer turns on automatically and starts charging the battery.
- (6) The POWER lamp continues to light orange while charging. When charging is completed, the POWER lamp lights green. The charging time depends on the ambient temperature and the voltage level of the battery pack.

Hints

- The printer can print or receive data while it is charging the battery pack.
- To interrupt charging, turn the printer off. To start recharging, turn the printer on as it is.

■Charging by a Dedicated Battery Charger (Optional Unit)

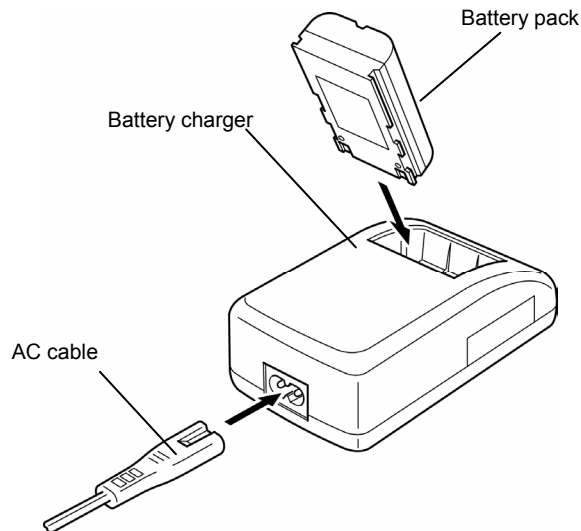
The following two types of a dedicated battery charger are available:

- Battery charger for a single pack. (a single-battery charger)
- Battery charger for 5 packs. (a multi-battery charger)

Single-battery charger

Follow the steps shown below to charge:

- (1) Connect the AC cable to the battery charger.
- (2) Put the AC cable plug into the inlet.
- (3) Mount the battery pack on the battery charger so that the electrodes of the battery pack can be aligned with the metallic terminals of the battery charger.
- (4) The CHARGE lamp on the battery charger lights red to start charging.
- (5) The CHARGE lamp changes to green when the battery is fully charged.
- (6) Remove the battery pack after charging is completed.
- (7) Unplug the AC cable from the inlet.



Multi-battery charger

Follow the steps shown below to charge:

- (1) Connect a dedicated AC cable to the multi-battery charger.
- (2) Connect the AC cable to the AC adapter.
- (3) Put the AC cable plug into the inlet.
- (4) Mount the battery pack on the battery charger so that the electrodes of the battery pack can be aligned with the metallic terminals of the battery charger.
- (5) The CHARGE lamp on the battery charger lights red to start charging.
- (6) The CHARGE lamp changes to green when the battery is fully charged.
- (7) Remove the battery pack after charging is completed.
- (8) Unplug the AC cable from the inlet.

CHARGE lamp (Recharge state indication)

Battery state	CHARGE lamp
Not connected	Off
During charging	Red on
Charge completion	Green on
Error	Red blinks

Hints

- If the CHARGE lamp does not light for a few minutes after start of charging, the battery pack is out of order.
Stop using the battery pack.
- If an error is detected in the battery pack, the CHARGE lamp blinks.
The error may be caused by going out of the battery life, so replace the battery pack with a new's.
- The battery pack and the battery charger may be heated to a very slight extent during charging. There is no problem.



WARNING

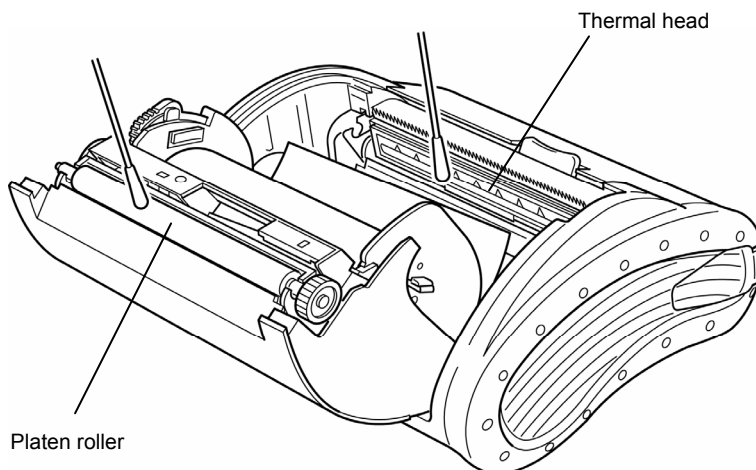
- ◆ The AC adapter for the multi-battery charger differs from the one of the printer.
DO NOT use the dedicated AC adapter for other devices. Doing so may cause a fire or an accident by an explosion, an ignition, or a generating heat.

10.THERMAL HEAD/PLATEN ROLLER MAINTENANCE

If paper dust accumulates, wipe and clean the thermal printhead and the platen roller to ensure the print quality for long periods of time.

■Cleaning the Thermal Printhead and the Platen Roller

- (1) Power the printer off.
- (2) Open the paper cover.
- (3) Wipe gently the thermal printhead with a cotton swab that has been dampened with a small amount of ethyl alcohol.
- (4) Close the paper cover after verifying that ethyl alcohol remaining on the printhead and the platen roller disappears into thin air.



Hint

Do not touch the gears attached to the platen roller. Doing so might degrade the print quality or cause a failure.

11.TROUBLESHOOTING

Please check the following points before asking for repair.

■Power does not turn on:

- Make sure the recommended AC adapter or battery pack is used.
- Make sure the AC cable and AC adapter are correctly connected.
- Make sure the AC adapter is correctly connected to the printer.
- Make sure the battery pack is fully charged.

■Printer does not print:

- Make sure the interface cable is correctly connected.
- Make sure the interface cable that meets the Interface Specifications listed on page 43.
- Make sure the transmission conditions for the printer and the host computer are correct.
- Make sure the recommended paper is used and the paper orientation (top/bottom) is correct.

■POWER lamp blinks:

- See the Lamp Indication on page 18.

■Battery pack is not installed:

- Make sure the battery pack is correctly aligned.
- Make sure the correct battery pack is used.

■Battery runs out soon after charging:

- Make sure the battery has been correctly charged.
- If the battery does not recover to its full charge, it is almost dead. Replace it with a new one.

12.SPECIFICATIONS

Printer Specifications

Item	Specification
Printing method	Thermal
Print speed	85 mm/s maximum
Dots available	1280 dots
Printable width	108.4 mm maximum
Dot density	300dpi
Paper feed pitch	0.085 mm
Paper type	Paper roll
Paper width	70 to 115 mm
Paper external diameter	Max. Ø58 mm
Paper internal diameter	8, 12, 25.4 mm
Interface	USB Ver.1.1 RS-232C Bluetooth Ver.1.1SPP*1
Operating temperature range	-15°C to 50°C / 5°F to 122°F (0°C to 50°C / 32°F to 122°F for using Bluetooth interface)
Relative humidity range	10% to 85% (no condensing)
Character size	
(H x W) Standard size:	36 x 18 / 24 x 12 (dots)
(H x W) Kanji size:	36 x 36 / 24 x 24(dots)
Kinds of characters	Katakana character Extension graphic character Downloaded character JIS level 1 and level 2 Kanji character User defined character Optional font
Kinds of barcodes	UPC A/E, EAN 8/13, ITF, CODE39, CODABAR, CODE93, CODE128, EAN128
Kinds of two dimensional codes	PDF417, QRCode, MAXICODE, DATAMATRIX
Dimensions (W x D x H)	168 x 155 x 87mm ^{*2}
Weight	Approx. 760 g ^{*3}

*1 only Bluetooth model

*2 Excluding projections. Including a rubber cover

*3 Excluding battery, paper roll, and belt clip.
Including a rubber cover.

Interface Specifications

Serial interface (conforms to RS-232C)

Item	Specification
Synchronizing method	Asynchronous
Baudrate	19200, 38400, 57600, 115200 bps
Data length	8 bits
Parity	None, Even, Odd
Flow control	RTS-CTS, Xon-Xoff

Connector

3260-8S3(01) made by HIROSE (equivalents)

Pin No.	Signal name	I/O
1	N.C.	-
2	TxD	O
3	RxD	I
4	DSR	I
5	GND	-
6	DTR	O
7	CTS	I
8	RTS	O

USB interface

Item	Specification
Version	Conforms to Ver.1.1
Data transmission mode	Bulk transmission (12 Mbps)

Connector

Mini B type

Pin No.	Signal name
1	Vbus
2	D -
3	D+
4	NC
5	GND

Bluetooth interface

Item	Specification
Version	Conforms to Ver.1.1
Output	Class II
Topology	Pier to Pier
Profile	Serial port

■Battery Pack (BP-L0718-A1) Specifications

(Optional unit)

Item	Specification
Battery	Lithium ion
Rated voltage	7.4 VDC
Rated capacity	1800 mAh
Operating temperature range: -15°C to 50°C / 5°F to 122°F (discharge) 0°C to 35°C / 32°F to 95°F (charge)	

Weight Approx. 99g.

^{*1} The recycle mark on the battery pack() is valid only in Japan.

Its mark does not mean recycle mark in nations except Japan.

■AC Adapter (PW-0904-W1) Specifications

(Optional unit)

Item	Specification
Input voltage	100 - 240 VAC, 50/60 Hz
Output capacity	9.3 VDC, 4A
Operating temperature range 0°C to 40°C / 32°F to 104°F	
Operating humidity range: 20% to 85% (no condensing)	
Dimensions (W x D x H) 110 x 62 x 31mm ^{*1}	
Weight	Approx. 300g ^{*1}

^{*1} Excluding power cable

■Single-Battery Charger (PWC-L07A1-W1)

Specifications

(Optional unit)

Item	Specification
Input voltage	100 - 240 VAC, 50/60 Hz
Rated output	8.4 VDC, 1.0A
Specified battery	BP-L0718-A1
Charge slot	1
Operating temperature range 0°C to 35°C / 32°F to 95°F	
Operating humidity range: 20% to 85% (no condensing)	
Dimensions (W x D x H) 70 x 120 x 41mm ^{*1}	
Weight	Approx. 140g ^{*1}

^{*1} Excluding power cable

13.CONSUMABLES

■Optional units

Name	Model
Battery pack	BP-L0718-A1
AC adapter	PW-0904-W1
Single-battery charger	PWC-L07A1-W1
Multi-battery charger	PWC-L07A5-W1
AC cable* ¹	
for Japan:	CB-JP01-18A
for USA:	CB-US01-18A
for Europe:	CB-CE01-18A
Belt clip	BLT-A01-1
Shoulder belt	STR-A01-1
Serial cable	IFC-S01-1
USB cable	IFC-U01-1

* The shape of the power outlet differs from country to country. Please confirm it before use. The AC cable can be used for both the AC adapter and dedicated battery charger.

■Paper

Name	Model
Thermal paper	TP-L465CXH
Thermal paper	TP-L465CAH
Label thermal paper	TL-L465NS
Label thermal paper	TL-L465NP
Label thermal paper	DTH9500(MACtac) (KL470-ST95)

If the recommended paper is not used, the print quality or the printhead life may be out of specifications.



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(Specifications are subject to change without notice.)