PRINTY 3 BL-80RS II

Serial (RS-232C)

INSTRUCTION MANUAL

Before using the printer you must read this instruction manual well for proper operation. Be sure to save this manual and keep it at hand.





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Precautions on Handling the Printer

Be acknowledged that in principle, if your purchased product and system becomes defective due to a fault of our product or system, any inconvenience shall be paid by replacement of the product and it is limited to a cost equivalent to the value of the corresponding replacement product. For product replacement, we shall confirm and take swift measures.

1. Safety Precautions

- Indications and symbol

The following symbols in this instruction manual give you important information for safe use of the equipment:

Be sure to observe what these symbols indicate, and be sure to understand this well before reading the rest of the manual.

MARNING	A mistake or negligence to observe this warning may cause severe injury or even death.
	A mistake or negligence to observe this warning may cause injury or physical damage.

- Meanings of the symbols

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This symbol represents that care must be taken.

This symbol represents what must be done.

This symbol represents the prohibitions.

⚠ WARNING

Do not use any charger, AC adapter or battery pack other than specified. It may cause battery to leak, the ruptures, excess heat or even fire.



🖄 WARNING



▲ Caution

After printing, avoid direct touching the printer mechanism head with your hands. The printer head may burn you since it is hot.



Avoid attaching or removing the AC adapter or battery pack with wet hands. It may cause a failure, electric shock, or fire.



Be sure to charge the battery while it is within its proper temperature range of 0° C to 40° C. Any negligence to observe this rule, may cause it to leak, rupture or even ignite.



If the battery pack becomes contaminated, use a dry cloth to wipe the terminals clean before using it. If you attempt to use the battery pack when it is contaminated, this may cause improper contact and generate excessive heat.

Take care so as not to injure your hand when using a cutter.

2. Precautions on the use of your printer

- Never attempt to disassemble or repair this unit.
- Do not drop or bump the printer.
- Do not let the printer to become damp with water, etc.
- Use the specified thermal paper rolls.
- If trouble such as a paper jam occurs, turn off the power before trying to take any action.
- Lack of paper may prevent the reception of data. Take the greatest care to monitor whether an error occurs to prevent any interruptions of the system.
- If an unexpected event occurs in the printer, fully consider your action to correct the error. Then take corrective action while keeping in mind your action it may cause a defect related to the whole system.
- Be sure to use the adapter that came with your printer, to connect to the power source.
- If you discover an abnormality with your printer such as strange noise or odor or fumes, immediately turn off the power, and make sure that the abnormality does not continue. Then contact a shop you purchased the unit or us.
- Do not attempt to use the printer with the paper cover removed since dust may cause a failure.
- Avoid using the unit at a place exposed to direct sunlight. It may cause the paper sensor to malfunction.
- Pulling paper out from the paper insertion port may cause a failure. Do not attempt to do this.

3. Handling thermal paper

The printer uses special-purpose thermal paper with a surface that is specially-treated with a chemical agent that creates colors by a thermal chemical reaction. Pay attention to the following points when using it:

- 1) Store the thermal paper in a cool and dark place.
- 2) Rubbing thermal paper with a hard material may cause unwanted colors to become printed.
- 3) If your thermal paper gets in contact with an organic solvent may cause unwanted colors to become printed.
- 4) If your thermal paper comes in contact with PVC film, this may cause fading.
- 5) Placing thermal paper on top of blueprint paper or wet copy paper just after copying may cause discoloration.
- 6) To glue thermal paper, use a water-based paste (starchy paste, synthetic paste, etc.) 7) Adhesive papers such as PostIts may discolor thermal paper. Use double-sided
- adhesive paper on the rear surface of the thermal paper to paste things.
- 8) Touching thermal paper with sweaty hands may cause fingerprints or unwanted discoloring.
- 9) When using thermal paper for customer receipts, be sure you what kind of thermal paper you are using and that you have provided precautions on how to store the receipt.

4. Installation

Avoid using thermal paper in the following locations, which may cause a failure.



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5) Avoid places whose temperature is 40°C or higher.





3) Avoid places with much water

or oil. particulates oil



7) Avoid places where electromagnetic noise or corrosive gas is generated.











Unpacking

After unpacking, make sure you find that the package contains the main unit and all the accessories.



Note: Our sales outlet sells the printer thermal paper (paper roll). Please contact us for further information if you need a supply.

Features:

BL-80RSII uses the stationary type, thermal printing method printer which prints data input via RS-232C from a computer or the other host systems.

Design/mechanism	The BL-80RSII is simple and supports most every kind of equipment. It has a convenient battery that makes easy to carry around. Each section of the printer has been well designed and is simple in its handling (especially for loading paper into it).
Printing:	Your printer provides high-speed printing with very little noise. The printer provides clear printing of 16 x 16 dots and 24 x 24 dots (as well as Japanese characters JIS Level I and II. You can also print bar codes.
Functions and power supply	The printer provides various settings such as enlarged-character printing. Graphics can be printed using bit images. The printer is available with a sensor for detecting paper shortages. The automatic paper feed function simplifies paper replacement. A dual power supply is available using either its batteries or AC adapter.

Parts designations

- printer



1. Description of the operation sections

- (1) Power switch (slide type)
- Setting the switch to ON turns on the power. The POWER LED goes on. (2) POWER LED (green)
- Turning on the power turns on the LED.
- (3) SELECT switch
- Changes over the ONLINE/OFFLINE status.

To temporarily stop printing, press this switch to establish the OFFLINE status. (The SELECT LED goes off.) Pressing this switch again establishes the ONLINE status (The SELECT LED goes on) and printing is restarted. Note: The FEED switch functions are enabled at the OFFLINE status. Also note: If the power is turned on with the switch pressed, the hexadecimal dump printing mode is established.

(4) FEED switch

When you press this switch at the OFFLINE status, paper will be continuously fed.

Note: If the power is turned on with the switch pressed, test printing is performed

(5) SELECT LED (green)

The LED goes in green when the ONLINE status is established. At the OFFLINE status, it goes off.

Note: When the LED is turned on at the ONLINE status, it indicates that the printer is ready for printing data (except when test printing is in progress.)

(6) PAPER END LED (red)

The LED goes on with paper roll not found.

(7) Paper cutter

This cuts off the paper sheets. Note: By pulling up on paper, you can cut off a sheet.

Name of the operation sections



2. Connecting the AC adapter

Note: The AC adapter is an option that is available separately.





- (1) Turn off the power switch.
- (2) Insert the DC plug of the AC adapter into the power jack of the main body into your printer.
- (3) Plug the AC adapter into the outlet.

3. Setting the battery pack

The battery pack and the charger are options those are available separately. Product name: Battery pack UR-121, charger NC-LSC05.

3-1 Charging the battery pack

At the time of shipment, the battery pack has not been charged. Charge it before using it. When the battery pack has been charged completely, it allows printing equivalent to an amount of about 1.8 rolls (of 30 m in length) of normal thermal paper (for the "ANK" character and consecutive character.)

- (1) Plug the power cord into the AC outlet.
- (2) Attach the battery pack.

When charging only one battery, you can set it to either A or B channel. When charging the two, set them to the both.

For more information, refer to each Instruction Manual attached to the products



- The charging lamp blinks, and charging is started.
- When charging is completed, and the lamp is continuously lightening.

	During charging	Charging complete
Charging lamp	Blinking	Continuously lightening

3-2 Attaching the battery pack

(1) Slide the battery pack in the direction indicated by the arrow to remove it.



(2) Adjust the battery pack direction properly as illustrated below. Put the battery pack at the right position, slide it in the left direction and set it.



 $\bigtriangleup\,$ mark is placed at the left side

3-3 Removing the battery pack



(1) Detach the battery pack, and slide the battery pack to the right side.

While holding the battery pack by hand so as not to drop it, turn the printer upside down.

Put the battery pack onto your palm and catch it.



4. Inserting the paper roll into the printer



- (1) Turn on the power switch.
- (2) Beforehand cut the front edge of paper roll as you see in Figure 1.
- (3) Open the paper cover.
- (4) Carefully insert the tip of paper roll as straight as possible into the paper insertion port. The automatic paper feeding function will feed paper automatically. After a while, feeding stops automatically.
- (5) Place roll paper in the holder section, and close the paper cover.



Note: Pay your attention to the direction of paper roll, and set it as you see in the figure.



5. How to Solve A JAM

CAUTION (Observe for safety purposes)

- After printing, do not touch the printer mechanism directly because it is very hot and may burn you.
- (1) Turn off the power.
 - If paper is becomes jammed, quickly turn off the power.
- (2) Remove the paper cutter.

Strongly push the paper cutter by finger to the outside to remove it.



- (3) Remove jammed paper in such a manner that does not damage the internal mechanism.
- (4) Attach the paper cutter.Set the hook of the paper cutter to firmly attach it.
 - Note: If you scratch or deform the printer head, platen (roller), the internal rubber roller or the holder plate this may cause failures as such improper printing or paper feeding.
 - Note: It is impossible for you to remove jammed paper; do not attempt to forcibly remove it. Contact a shop where you purchased the unit or our office for further instructions.



6. Test printing

In test printing, print your ANK characters that are currently set mode. Then, a zigzag pattern is printed one line and then printer can accept printing actual data. Take the following steps:

- (1) Turn off the power.
- (2) While holding down the FEED switch, turn on the power.
- (3) After test printing begins, release the FEED switch.
- (4) Then, the currently set mode is printed. After printing, choose the test printing mode or operation setting mode.
- (5) Pressing the FEED switch at this time establishes the test printing mode and test printing begins. (Pressing the SELECT switch establishes the operation setting mode.)
- Note: For how to choose the operation setting mode, see 8.1, Setting the operating functions.

7. Printing a hexadecimal dump

You can print data you enter as hexadecimal numbers to make sure that data has been entered correctly.

Take the following steps to print a hexadecimal dump:

- (1) Turn off the power.
- (2) While holding down the SELECT switch, turn on the power. After "HEX DUMP" is printed, the hexadecimal dump mode starts.
- (3) When data you enter exceeds one line, it is printed as follows: When data is not more than one line, press the FEED switch. The remaining data is then printed out.

[HEX DUMP]	[ASC]
00 01 02 03 04 05 06 07 08 09 04	АОВ
OC OD OE OF 10 11 12 13 14 15 16	3 17
18 19 1A 1B 1C 1D 1E 1F 20 21 22	2 2 3!"#
24 25 26 27 28 29 2A 2B 2C 2D 2E	E2F \$‰?'()*+,−./
30 31 32 33 34 35 36 37 38 39 3A	3B 0123456789:;
3C 3D 3E 3F 40 41 42 43 44 45 46	5 4 7 <=>?@ABCDEFG
0D 0A 20 20 0D 0A	

(4) To terminate the hexadecimal mode, turn off the power

8. Printer Operation

8-1 Setting the operating functions

Use the FEED and SELECT switches to set the printer operating functions. The following functions have been initially set at the factory. After you perform setting, the settings are retained even after you turn off the power.

(1) While holding down the FEED switch, turning on the power prints out the current printer setting mode and then it stops.

BL-80RII/RSII [VX.XX] XXXX/XX/XX SANEI ELECTRIC INC.	: Version No. Year/month/day
Data input= SerialInternational char= JapanPrint mode= GraphicCharacter set= 24dot ANK Gothic typeSelect switch= Available (ON)Baud rate= 9600bpsBit length= 8 bitsParity= NonData control= SBUSYPaper selection= Normal paperUpright/inverted= Upright printingAuto power off=Available (ON)Battery mode= Invalidity (OFF)Shr=0117 temp=029 shvp=740	 International character: Japanese Character/inter-line space setting (interval 0 dot) 24-dot system, Gothic-type character Whether SELECT switch is used or not Baud rate: 9600 bps Data bit length: 8 bits Parity present: No Control system: SBUSY Paper selection: Normal paper Upright printing set Auto power off selected Battery mode Internal status
Push FEED button => END Push SEL button => Setting mode	 Pressing the FEED switch stops operation after test printing. Pressing the SELECT switch goes to the operation setting mode.

(2) At this time, choose whether you will enter the operation setting mode or to begin test printing. Pressing the FEED switch does not start the operation setting mode but only performs test printing.

Pressing the SELECT switch establishes the operation setting mode as follows:

Setting mode

Push FEED	button => Go to next	: Pressing the FEED switch goes to the
		next setting.
Push SEL	button => Condition change	: Pressing the SELECT switch allows you to change the functions.
		0

The shaded section denotes the setting at the time of shipment.

How to operate: Pressing the FEED switch takes you to the next item. Pressing the SELECT switch allows you to change the functions. ♦ Setting the international characters International char = Japan : Japanese International char = U.S.A : American English International char = Germany : German International char = England International char = France : British English : French International char = Spain : Spanish International char = Italy : Italian International char = Sweden : Swedish ♦ Setting the character and inter-line space = Graphic Print mode : Character and inter-line space setting (interval: 0 dot) Print mode = Character : Character and inter-line space setting (Interval: 2 dots) ♦ Setting the character set Character set = 24-dot ANK Gothic type : 24-dot method, Gothic style Character set = 24-dot ANK Ming type : 24-dot method, Ming type Character set = 16-dot ANK Gothic type : 16-dot method, Gothic type Character set = 16-dot ANK Ming type : 16-dot method, Ming type ♦ Use of SELECT switch Select switch = Available(ON) : The SELECT switch is used. Select switch = Invalidity : The SELECT switch is not used. ♦ Setting the RS232C baud rate Baud rate = 9600bps : RS232C baud rate 9600 baud = 19200bps : RS232C baud rate 19200 baud Baud rate Baud rate : RS232C baud rate 4800 baud = 4800bps Baud rate = 38400bps : RS232C baud rate 38400 baud ♦ Setting the RS232C data bit length Bit length = 8 bits : RS232C data bit length 8 bits Bit length : RS232C data bit length 7 bits = 7 bits ♦ Setting the RS232C parity = Non Parity : RS232C No parity Parity = Odd : RS232C Odd parity Parity = Even : RS232C Even parity ♦ Setting the RS232C control method Data control = SBUSY : SBUSY Data control = Xon/Xoff : Xon/Xoff

Paper selection Paper selection	= Normal paper = Reprint paper	: Normal paper selected. : Reprint paper selected.
♦ Setting the Uprigh Upright/inverted Upright/inverted	t/Inverted printing = Upright printing = Inverted printing	: Upright printing : Inverted printing
Setting Auto Power Auto power off Auto power off	er OFF = Available (ON) = Invalidity (OFF)	: Auto power off enabled (90 min. at default) : Auto power off disabled

Note: You can set a time of 1 to 255 minutes in units of minutes (using a command.) For information on how to set it, please check the Technical Manual.

 \diamondsuit Setting the battery mode

		Dette mana de alle els els el
Battery mode	= invalidity (OFF)	: Battery mode disabled
Battery mode	= Available (ON)	: Battery mode enabled

Note: When the battery mode is enabled, the number of dynamic partitions is automatically changed according to the voltage value (The number of dots for dynamic partition is changed. The lower the voltage is, the smaller the number of dots is.) The printing partition change command is ignored. When using the battery, it is recommended to enable the mode.

When the following message appears, the operation setting mode is retained. Data Keeping, Setting mode END !!

Finally, test printing is performed and data input is allowed.

Note: The setting using a control code, ESC+"S" + romsw1 + romsw2 is possible. (Others than Auto Power OFF, battery mode.)

Also note: To return the mode to the initial state it was at shipment, turn on the power while holding down the SELECT switch and the FEED switch.

(3) Internal status

You can output the internal printer status.



Note: The precision of these output values is approximate and for reference purposes only.

8-2. Resetting during printing

When printing dense pattern of many dots, both SEL LED and PE LED are turned on, and PE LED is turned off. During this time, data to be printed may be skipped and printing may continue with each setting reset. It happens because the voltage drops below 4.3V, caused by too many printing dots and the printer reset circuit works.

If this happens, change the printing mode (fixed high-speed, fixed low speed, dynamic partition) to increase printing partition and decrease the number of simultaneously energized dots. However, if the battery voltage is dropped too low, re-charge the battery. (For more information, refer to "Controlling the Thermal Head" in the Technical Manual.)

Note: When using the battery, it is recommended to enable the battery mode.

8-3 Checking the battery voltage

The following two functions are available for checking the battery voltage.

- (1) Soft reset (when the power-supply voltage drops below 5.1V)
 The power is turned off (The power switch is still ON.)
 Turning on the power switch again may turn on the power. If so, re-charge the battery. This happens because the printer software monitors the voltage and interrupts the power when the voltage drops below the specified value.
- (2) Battery reset (when the power-supply voltage drops below 5.0 V for 10ms or a power-supply current of 6A or more flows for 20 ms.) The power is turned off. (The power switch is still ON.) Turning on the power switch again does not turn on the power. Replace or re-charge the battery to turn off the power. In these cases, re-charge the battery. The above events happen during a wait state, but are apt to happen more during printing. They happen because when the specified conditions are met, the battery protective circuit works to interrupt the battery power.

9. Handling errors

Error name	Error description	Range, action	Error-time output
RAM check (at initialization)	RAM defect voltage	Replace the CPU or SRAM.	SEL LED = ● PE LED= ☆
Circuit voltage (at initialization) Vcc	Below 4.50 V, 5.50 V or higher	4.50 V or higher Below 5.50 V Check the voltge and turn on the power again.	SEL LED = ● PE LED= ☆
Head resistance (at initialization)	Below 64 Ω 189 Ω or more Total dot head resistance average value	Replace the printer head.	SEL LED = ● PE LED= ☆
Head temperature HTHERM	+80 °C or more	+ 60 $^{\circ}$ C or lower Wait until the head is held within the range.	SEL LED = ☆ PE LED = □
Head up	The printer head up lever has been raised.	Lower the printer head up lever to reset the state.	SEL LED = ● PE LED= □
Paper shortage	Paper is not found.	Supplying paper resets the state. Automatic loading	SEL LED = ● PE LED = ○
○ = Lights $●$ = Extinguishes ☆ =Blinks □ = PE state at that time			

If any of the following errors occurs, the printer cannot be operated normally and it stops.

Note: When the head temperature exceeds + 90 $\,\,{}^\circ\!\mathrm{C},$ the power is automatically turned off.

Maintenance

When the printer surface becomes dirty, wipe it with dry, soft cloth. If it is very dirty, immerse soft cloth in water with a slight amount of a neutral detergent added, squeeze it well and wipe the printer with it, then wipe it with dry cloth.





Do not use volatile chemical agents as thinner or benzene because it damages the printer's plastic. Never let the inside of the printer become damp with water, etc.

1. General specifications

1-1. Printer specifications

Items	Specifications		
Printing method	Thermal line dot printing		
Total number of dots:	576 dots		
Dot density:	8 dots/mm		
Printing width:	72mm		
Fastest printing speed at	380 dot lines/sec. (47.5 mm/sec.)		
driving voltage of 7.2 V:			
Character	16-dot system		
configuration/dimensions/	Half-size character: 72 digits, 16 x 8 dots, 2.0 x1.0 mm		
Maximum number of	Full-size character: 36 digits, 16 x 16 dots, 2.0 x 2.0 mm		
printing digits	24-dot system		
	Half-size character:48 digits, 24 x 12 dots, 3.0 x 1.5 mm		
	Full-size character: 24 digits, 24 x 24 dots, 3.0 x 3.0 mm		
Lateral dot pitch	P=0.125 mm		
Paper feed pitch	P=0.125 mm		
Paper feeding force	50 g or more		
Paper retaining force	80 g or more		
Service life	(in the case of 25°C and rated energy)		
Pulse resistance:	50 million pulses or more (printing ratio: 25%)		
Anti-abrasion:	30 km or greater		
Data input control:	Serial input (RS-232C)		
Japanese character fonts	Conforms to JIS X 0208-1983 Ming type		
	JIS class I non-Kanji 520 characters		
Kanji ROM used	JIS class I Kanji 2,965 characters		
	JIS class II Kanji 3,388 characters		
Power supply			
Internal power supply	7.2 VDC, lithium ion battery (UR-121) 1		
(2) External power supply	upply 7.2 VDC, 5.5 A (AC adapter used, BL-100W)		
Current consumption	While waiting: 120 mA or less		
Note)	While printing: 3.0A at average (3.5A at maximum)		
Outer dimensions/weight	119 (W) x 77 (H) x 174(D) in mm		
	500 g (main of the printer only)		

Note: The above values are those when the driving voltage is 7.2VDC and the number of simultaneously energized dots is 64 dots.

1-2. Operating conditions

Operating conditions :	0°C to +40°C	20% to 80 %RH
Storage conditions :	- 10°C to +60°C	10% to 95 %RH

2. Interface specifications

2-1. Input/output connector pin layout

Pin No.	Signal name	Direction	Functions	Host
1	FG		Frame ground	
3	RxD	Input	RS-232C data input signal	TxD(3)
5	CTS	Input	RS-232C data to send signal	RTS(7)
2	TxD	Output	RS-232C data output signal	RxD(2)
4	SBUSY	Output	RS-232C data accept disabled signal	CTS(8)
6,8-25	N.C.			
7	GND		Ground	GND(5)

Connector used	(plug): 17LE-13250-27(D5A0	C) (DDK)
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Note: The host signal values in the parentheses are a pin number stipulated in the RS-232C standards.(D-sub9P)

- 1) Thermal paper BL-80-30 (dedicated paper)
 - Width : 80 mm
 - Length: 30 m

The paper will be sold in units of 10 rolls.

- Note: Use BL-80-30 thermal paper that is dedicated for use with your printer. If you attempt to use any paper other than specified, you should be aware that the printing quality or thermal head service life may not be guaranteed or the other troubles may occur.
- 2) AC adapter BL-100W

The AC-100 AC cable dedicated for BL-100W is separately required.

- 3) Battery pack UR-121 (lithium ion battery)
- 4) Charger NC-LSC05 (UR-121 dedicated charger)
- 5) Cable
 - a) BS-4-1.5 (D-SUB25Pconvex-D-SUB25Pconvex)
 - b) BL-2-1.5(D-SUB25Pconvex-half-pitch 14Pconvex)

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c) BLG-02(D-SUB25Pconcave-D-SUB25Pconvex)

NOTE:

NOTE:

For more information, you refer to the technical manual:



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