

SLP721RT SERIES THERMAL PRINTER SERVICE MANUAL

Rev.01

Seiko Instruments Inc.

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PREFACE

This service manual describes the information necessary to perform the maintenance service for the SLP721RT series thermal printer (hereinafter referred to as "printer").

For a better understanding, the following documents are necessary to read together with this manual.

- SLP721RT SERIES Thermal Printer USER'S GUIDE
- SLP721RT SERIES THERMAL PRINTER TECHNICAL REFERENCE

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	Illustrated Parts Breakdown List

CHAPTER 1 DISASSEMBLY/REASSEMBLY (PARTS CATALOG)

Illustrated parts breakdown and the parts list of the unit are shown below.

The numbers of the illustrated parts breakdown and those in the parts list correspond with each other.

Refer to the illustrated parts breakdown for disassembly and reassembly.

(NOTE)	·Be careful to sharp edges during disassembly/reassembly.			
	 FFC and FPC are being wired. Pay attention not to break them during 			
	disassembly/reassembly.			
	\cdot Tighten screws with the specified tightening torque, and make sure the screws are			
	not lifted.			

Table 1-1 Illustrated Parts Breakdown List

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Figure 1-1 Illustrated Parts Breakdown (Printer Whole Body)





Figure 1-2 Illustrated Parts Breakdown (BOTTOM COVER UNIT Installation)



When replacing the BOTTOM COVER UNIT:

Depending on the interface type of the SLP721RT-* MAIN PCB BLOCK A to be installed, cut and remove the tabs shown in the figure below.

The portion of the dashed line can be broken by pushing the tabs back and forth.

At this time, be careful not to cut surrounding parts if a cutting tool is used.

Also, be careful not to cut unused portions of the interface types.





Figure 1-3 Illustrated Parts Breakdown (SLP721RT-* MAIN PCB BLOCK A Installation)



(NOTE) ·Solder 23, 24, and 32.

- Insert the FFC of 7 into CN8 on 25, 9 into CN11 on 25, 14 into CN10 on 25, and 11 into CN9 on 25.
- Install the FFC of 34 and 35 into CN5 and CN6 on 25.
- •Screw 11, 24, and 25 with 47.
- Tighten screw 47 with tightening torque 63.7 cN·m (6.50 kgf·cm).

When removing the SLP721RT-* MAIN PCB BLOCK A, remove the single screw shown below.



When inserting the FPC on the SLP721RT-* MAIN PCB BLOCK A (CN10), insert it to the connector in the correct orientation, paying attention to the front and back as shown in the figure below.



Pass the tips of terminal of the FG CABLE A installed on the TOP COVER UNIT and FG CABLE B installed on the PAPER HOLDER UNIT through the hole as shown in the figure below and solder them...



Install the lead wire of the FG CABLE A and FG CABLE B as shown in the figure below, and pass the lead wire of the FG CABLE A along the guide.



FG CABLE B



Figure 1-4 Illustrated Parts Breakdown (FRONT COVER UNIT Installation)

(NOTE) ⋅Screw 3, 5, and 11 with 47.Tighten screw 47 with tightening torque 63.7 cN⋅m (6.50 kgf⋅cm).



Figure 1-5 Illustrated Parts Breakdown (FRONT COVER UNIT Reassembly)

(NOTE)	·For white model, install 51 on 9.
	·Install 6, 7, 8, 9, and 10 on 5.
	·Screw 7 to 8 with 46.
	Tighten screw 46 with tightening torque 23.7 cN⋅m (2.42 kgf⋅cm).

When assembling 51 and 9, install them so that 51 is inserted deeply in the correct orientation as shown in the figure below.





When replacing the TAKEN SENSOR PCB ASSY, fix it with the 2 hooks aligned on the FRONT COVER as shown in the figure below.



Install the TAKEN SENSOR PCB ASSY so that the lead wires pass through the 3 guides as shown in the figure below.





Figure 1-6 Illustrated Parts Breakdown (SIDE COVER Installation)



(NOTE) • Install 3 on 11.
 Install the fastening surface of 3 to 11 through the path indicated by the arrow in the figure.
 • Screw 3 to 11 with 47.

Tighten screw 47 with tightening torque 63.7 cN·m (6.50 kgf·cm).



Figure 1-7 Illustrated Parts Breakdown (TOP COVER UNIT Installation)

(NOTE) • Install the boss of 27 in the hole of 11.
• Pass the FFC of 34 and 35 through the hooks of 11.
• Pass 32 through the guide of 11.

When installing the TOP COVER UNIT, install it so that the TOP COVER SPRING is held by the embossed portion of the PAPER HOLDER.

When installing or removing the TOP COVER UNIT, the TOP COVER SPRING should be hold so that it does not project out or fall off.



When installing the TOP COVER UNIT, pass the FFC through the hooks of the PAPER HOLDER.







(NOTE)	·After installing 29 on 28, install it on 27.
	Screw MECH BLOCK to 26 with 45.
	Tighten screw 45 with tightening torque 59.0 cN·m (6.02 kgf·cm).
	Install 41 and 42 on 27.
	Screw 27 to 26 with 48.
	Tighten screw 48 with tightening torque 63.7 cN·m (6.50 kgf·cm).
	·Paste 43 on 27.

When assembling MECH BLOCK and TOP COVER BASE, install them so that LOCK ARM SHAFT is held by the 2 hooks as shown in the figure below.



When removing the COVER DAMPER UNIT, place it in the position shown in the figure below and pull it out in the direction of the arrow in the figure.



When assembling TOP COVER SPRING-R and TOP COVER SPRING-L, install them so that their tips are held by the tabs on the TOP COVER BASE as shown in the figure below.

When installing or removing the TOP COVER BASE, the TOP COVER SPRING should be hold so that it does not project out or fall off.



When assembling the MECH BLOCK, bend the FFC in 2 places as shown in the figure below and pass the hooks through them, and install the lead wires so that they pass through the guides.





Figure 1-9 Illustrated Parts Breakdown (MECH BLOCK Reassembly)

(NOTE) ·Screw 35 to 31 with 45.
Tighten screw 45 with tightening torque 59.0 cN⋅m (6.02 kgf⋅cm).
Install 40 on 31 and 36.
Install 39 on 38, and then install 38 on 31 and 36.

When replacing the thermal head, assemble the FFC in the correct orientation as shown in the figure below, paying attention to the front and back of the FFC.



Correct



Incorrect (The front and back of the connection terminals are wrong.)

When installing MECH BLOCK, pass the FG CABLE A through the hook as shown in the figure below.





Figure 1-10 Illustrated Parts Breakdown (PAPER HOLDER UNIT Reassembly)

(NOTE)	•After installing 21 on 20, install it on 11.
	•Screw 22 to 11 with 45 and 49.
	Tighten screws 45 and 49 with tightening torque 59.0 cN⋅m (6.02 kgf⋅cm).
	·Screw 11 to 23 with 48.
	Tighten screw 48 with tightening torque 63.7 cN⋅m (6.50 kgf⋅cm).

When assembling the PAPER HOLDER UNIT, pass the FG CABLE B through the hook as shown in the figure below.



Table 1-2 Parts List

No.	Parts No.	Parts Name	Qty.	Notes
4	U001455928XX	BOTTOM COVER UNIT	1	For Black model
	U001465661XX			For White model
2	U001460891XX	RUBBER FOOT	3	
~	U001455300XX		4	For Black model
3	U001465547XX	SIDE COVER	1	For White model
	U001455930XX		4	For Black model
4	U001465672XX	FRONT COVER UNIT	I	For White model
F	U001455333XX			For Black model
Э	U001465560XX	FRONT COVER	I	For White model
6	U001455344XX	LED LENS	1	
7	U001455355XX	OPERATION PCB ASSY	1	
0	U001455377XX	DUTTON	4	For Black model
0	U001465571XX	BOTTON	1	For White model
9	U001455388XX	TAKEN SENSOR PCB ASSY	1	
10	U001460812XX	CAUTION LABEL-B	1	
11	U001465356XX	AS PAPER HOLDER UNIT	1	
12	U001465863XX	PAPER GUIDE L UNIT	1	
13	U001455952XX	PAPER GUIDE R UNIT	1	
14	U001455478XX	BM SENSOR FPC UNIT	1	
15	U001455006XX	PLATEN	1	
16	U001455017XX	PLATEN BEARING	2	
17	U001455028XX	PLATEN DRIVING GEAR	1	
18	U001454984XX	PRINTER REDUCTION GEAR NO.3	1	
19	U001465446XX	AS MOTOR BLOCK	1	
20	U001456064XX	DAMPER UNIT	1	
21	U001455546XX	DAMPER ARM SPRING	2	
22	U001455840XX	FIXED CUTTER BLOCK	1	
23	U001457673XX	FG CABLE B	1	
24	U001457515XX	FG TERMINAL	1	
	U001465481XX	SLP721RT-U MAIN PCB BLOCK A		SLP721RT-UK2F11
25	U001465503XX	SLP721RT-E MAIN PCB BLOCK A	1	SLP721RT-EK2F11
	U001465525XX	SLP721RT-W MAIN PCB BLOCK A		SLP721RT-WK2F*1
26	U001455557XX		1	For Black model
20	U001465582XX	TOP COVER	I	For White model
27	U001455568XX	TOP COVER BASE	1	
28	U001457414XX	COVER DAMPER UNIT	1	
29	U001455581XX	COVER DAMPER SPRING	2	
30	U001455513XX	PAPER GUIDE ROLLER	1	
31	U001465367XX	AS MECH BLOCK	1	
32	U001455592XX	FG CABLE A	1	
33	U001455884XX	HEAD BLOCK	1	

No.	Parts No.	Parts Name	Qty.	Notes
34	U001456042XX	FFC FOR HEAD	1	
35	U001455851XX	MOVABLE CUTTER UNIT	1	
	U001455906XX	LOCK ARM BLOCK		For Black model
30	U001465705XX		1	For White model
07	U001455243XX		4	For Black model
37	U001465593XX	OPENLEVER	I	For White model
38	U001455254XX	LOCK ARM SPRING	2	
39	U001465176XX	HEAT SHRINK TUBE	2	
40	U001455265XX	LOCK ARM SHAFT	1	
41	U001457381XX	TOP COVER SPRING-R	1	
42	U001457392XX	TOP COVER SPRING-L	1	
43	U001460823XX	ROLL SET LABEL	1	
	U001471487XX			SLP721RT-UW2F11
	U001471498XX			SLP721RT-EW2F11
	U001471500XX		1	SLP721RT-WW2FJ1
44	U001471511XX	AS PRODUCT LABEL		SLP721RT-UK2F11
	U001471522XX			SLP721RT-EK2F11
	U001471533XX			SLP721RT-WK2FJ1
45	U000015621XX	CROSS-RECESSED PAN-HEAD SCERW	11	M3X5,NiP
46	U001456053XX	CROSS-RECESSED PAN-HEAD TAPPING SCREW	4	B-TIGHT,2.0X6,No.0-Type3,NiP
47	U001457695XX	CROSS-RECESSED PAN-HEAD TAPPING SCREW	11	P-TIGHT,3X8,NiP
48	U001457706XX	CROSS-RECESSED PAN-HEAD TAPPING SCREW	11	P-TIGHT,3X6,NiP
49	U001458900XX	CROSS-RECESSED PAN-HEAD SCERW	1	M3X6,SW+PW,NiP
50	U001466471XX	PLUG CAUTION LABEL	1	
51	U001180642XX	PAPER SENSOR COVER	1	For White model

·Only the parts listed in "Parts No." are available as the service parts. Please contact our sales representative for details.

CHAPTER 2 CIRCUIT DIAGRAM

Figure 2-1 to Figure 2-25 show the circuit diagrams of the circuit board.

Figure 2-26 to Figure 2-28 show the component layouts of the circuit board.



Figure 2-1 Circuit Diagram of Main Board for USB Model (Japan Only) (SLP721RT-U MAIN PCB BLOCK A) (1/8)



Figure 2-2 Circuit Diagram of Main Board for USB Model (Japan Only) (SLP721RT-U MAIN PCB BLOCK A) (2/8)



Figure 2-3 Circuit Diagram of Main Board for USB Model (Japan Only) (SLP721RT-U MAIN PCB BLOCK A) (3/8)



Figure 2-4 Circuit Diagram of Main Board for USB Model (Japan Only) (SLP721RT-U MAIN PCB BLOCK A) (4/8)

vcc

vcc

FET8

LP2305DSLT3G

R56

R57 VV 100

R59

R60 VV 100

vcc

C44

GND

vcc

470p_25V

7k 1x

C45

470p_25V

LESD8LF5.0CT5G

GND

LESD8LF5.0CT5G

GND

TAKEN SENSOR

TP35

TP36 ⊠

TP37

CUTTER SENSOR

→→→CN6-7 TP39 979-33-207311

→ TP40 979-33-207311

> →<)CN6-5 979-33-207311

™ 17738

FCN11-2 BM03B-SRSS-TBT(LF)(SN)

⊖CN11-1 BM03B-SRSS-TBT(LF)(SN)

VTKNS

TKNS

GND

VCS

CUTS

GND

SLP721RT-U MAIN PCB BLOCK A [POWER , MOTOR]



Figure 2-5 Circuit Diagram of Main Board for USB Model (Japan Only) (SLP721RT-U MAIN PCB BLOCK A) (5/8)
SLP721RT-U MAIN PCB BLOCK A [LANCPU] Pottern only



Figure 2-6 Circuit Diagram of Main Board for USB Model (Japan Only) (SLP721RT-U MAIN PCB BLOCK A) (6/8)

SLP721RT-U MAIN PCB BLOCK A [PHY] Pattern only



Figure 2-7 Circuit Diagram of Main Board for USB Model (Japan Only) (SLP721RT-U MAIN PCB BLOCK A) (7/8)

SLP721RT-U MAIN PCB BLOCK A [USB , DRAWER/BUZZER , WLAN]



Figure 2-8 Circuit Diagram of Main Board for USB Model (Japan Only) (SLP721RT-U MAIN PCB BLOCK A) (8/8)



Figure 2-9 Circuit Diagram of Main Board for Ethernet + USB Model (SLP721RT-E MAIN PCB BLOCK A) (1/8)



Figure 2-10 Circuit Diagram of Main Board for Ethernet + USB Model (SLP721RT-E MAIN PCB BLOCK A) (2/8)



Figure 2-11 Circuit Diagram of Main Board for Ethernet + USB Model (SLP721RT-E MAIN PCB BLOCK A) (3/8)



VCS

CUTS

GND

Figure 2-12 Circuit Diagram of Main Board for Ethernet + USB Model (SLP721RT-E MAIN PCB BLOCK A) (4/8)



Figure 2-13 Circuit Diagram of Main Board for Ethernet + USB Model (SLP721RT-E MAIN PCB BLOCK A) (5/8)

SLP721RT-E MAIN PCB BLOCK A [LANCPU]



Figure 2-14 Circuit Diagram of Main Board for Ethernet + USB Model (SLP721RT-E MAIN PCB BLOCK A) (6/8)



Figure 2-15 Circuit Diagram of Main Board for Ethernet + USB Model (SLP721RT-E MAIN PCB BLOCK A) (7/8)

SLP721RT-E MAIN PCB BLOCK A [USB , DRAWER/BUZZER , WLAN]



Figure 2-16 Circuit Diagram of Main Board for Ethernet + USB Model (SLP721RT-E MAIN PCB BLOCK A) (8/8)



Figure 2-17 Circuit Diagram of Main Board for Wireless LAN Model (Japan Only) (SLP721RT-W MAIN PCB BLOCK A) (1/8)



Figure 2-18 Circuit Diagram of Main Board for Wireless LAN Model (Japan Only) (SLP721RT-W MAIN PCB BLOCK A) (2/8)



Figure 2-19 Circuit Diagram of Main Board for Wireless LAN Model (Japan Only) (SLP721RT-W MAIN PCB BLOCK A) (3/8)



Figure 2-20 Circuit Diagram of Main Board for Wireless LAN Model (Japan Only) (SLP721RT-W MAIN PCB BLOCK A) (4/8)



Figure 2-21 Circuit Diagram of Main Board for Wireless LAN Model (Japan Only) (SLP721RT-W MAIN PCB BLOCK A) (5/8)

SLP721RT-W MAIN PCB BLOCK A [LANCPU] Pattern only



Figure 2-22 Circuit Diagram of Main Board for Wireless LAN Model (Japan Only) (SLP721RT-W MAIN PCB BLOCK A) (6/8)

SLP721RT-W MAIN PCB BLOCK A [PHY] Pattern only



Figure 2-23 Circuit Diagram of Main Board for Wireless LAN Model (Japan Only) (SLP721RT-W MAIN PCB BLOCK A) (7/8)

SLP721RT-W MAIN PCB BLOCK A [USB , DRAWER/BUZZER , WLAN]



Figure 2-24 Circuit Diagram of Main Board for Wireless LAN Model (Japan Only) (SLP721RT-W MAIN PCB BLOCK A) (8/8)





FEED







Figure 2-26 Component Layout of Circuit Board (Japan Only) (SLP721RT-U MAIN PCB BLOCK A) (Reference)



Figure 2-27 Component Layout of Circuit Board (SLP721RT-E MAIN PCB BLOCK A) (Reference)



Figure 2-28 Component Layout of Circuit Board (Japan Only) (SLP721RT-W MAIN PCB BLOCK A) (Reference)

CHAPTER 3 TROUBLESHOOTING

The printer troubles are classified into 2 types: setting problems or printer failures.

This chapter describes troubleshooting in the case of printer failures. If the printer does not operate smoothly due to setting problems, refer to the TECHNICAL REFERENCE.

3.1 FAILURE DIAGNOSTICS

Types of the printer failures and the causes are listed below.

Meanwhile, when the replacement of the MECH BLOCK or the PLATEN is required due to defect of the printer function or the cutter function, replace both parts at the same time in order to avoid the functional difference between them.

No.	Failure Type	Page No.
(1)	Printer does not turn on.	Page 3-2
(2)	Print defects occur.	Page 3-2
(3)	Paper feed does not operate correctly.	Page 3-3
(4)	Irregular paper feed pitch occurs.	Page 3-4
(5)	Abnormal sound is generated.	Page 3-4
(6)	Cut failure occurs.	Page 3-5
(7)	LED does not light up or blink properly.	Page 3-6
(8)	Paper is not detected.	Page 3-7
(9)	Paper mark is not detected.	Page 3-8
(10)	Paper ejection is not detected.	Page 3-8
(11)	Top cover is not detected.	Page 3-9
(12)	Top cover does not open.	Page 3-10
(13)	Top cover does not close.	Page 3-10
(14)	Communication error occurs.	Page 3-10

Table 3-1	List of Failure	Types
	List of Fullard	19000

(1) Printer does not turn on.

TO an different Dessent the DOM/ED Outline in built the and share wet to see and LED dessent the	
IL ONDITION PRESS THE PUWER SWITCH BUT THE DRINTER DOES NOT TURN ON AND LED DOES NOT UC	int lin eitner
Toolidition 1 1000 the LOWER Owner, but the printer does not turn on, and LED does not ig	int up onnor.

Possible Cause	Check Point and Method	Evaluation Criteria and Standard	Corrective Action
Defective AC adapter	Measure the AC adapter output terminal voltage.	22.8 to 25.2 V	Replace the AC adapter.
Connection failure of of AC adapter	Check the insertion status of the AC adapter plug.	-	Insert the plug of AC adapter securely.
Defective Power IC	Measure the voltage between Vcc (TP59) and GND (TP95) on the main circuit board.	3.15 to 3.45 V	Replace the SLP721RT-x MAIN PCB BLOCK A.
Defective operation circuit board	Remove the FFC inserted into the CN8 on the main circuit board. Hold the POWER Switch down, and measure the resistance value between FFC terminals #6 - #7 on the operation circuit board.	100 Ω or less	Replace the OPERATION PCB ASSY.
Defective circuit board	-	-	Replace the SLP721RT-x MAIN PCB BLOCK A.

(2) Print defects occur.

[Condition] A specific dot printing is light or blurred.

Possible Cause	Check Point and Method	Evaluation Criteria and Standard	Corrective Action
Adhered foreign material to the thermal head	Observe the thermal head's surface by a magnifier or the like.	No foreign material	Remove the foreign material using a cotton swab moistened with a little ethyl alcohol.
Adhered foreign material to the platen	Observe the platen's surface by a magnifier or the like.	No foreign material	Remove the foreign material using a cotton swab moistened with a little ethyl alcohol.
Uneven worn of the platen	Rotate the platen and check its eccentricity from the side.	No eccentricity on the outer perimeter surface	Replace the MECH BLOCK and PLATEN.
Damaged thermal head	Check average resistance values of the thermal head by special test print (See "4.2 SPECIAL TEST PRINT").	776 to 824 Ω	Replace the MECH BLOCK and PLATEN.
Defective main circuit board	-	-	Replace the SLP721RT-x MAIN PCB BLOCK A.
Defective printer mechanism	-	-	Replace the MECH BLOCK and PLATEN.

[Condition] Specific dot is not printed at all.

Possible Cause	Check Point and Method	Evaluation Criteria and Standard	Corrective Action
Adhered foreign material to thermal head	Observe the thermal head surface by a magnifier.	No foreign material	Remove the foreign material using a cotton swab moistened with a little ethyl alcohol.
Adhered foreign material to platen	Observe the platen surface by a magnifier.	No foreign material	Remove the foreign material using a cotton swab moistened with a little ethyl alcohol.
Damaged thermal head	Confirm the number of effective dots by special test print (See 4.2 SPECIAL TEST PRINT).	448 dots (448alive)	Replace the MECH BLOCK and PLATEN.
Defective main circuit board	-	-	Replace the SLP721RT-x MAIN PCB BLOCK A.

(3) Paper feed does not operate correctly.

[Condition] LED indication is normal, but paper feed does not performed even when FEED Switch is pressed.

Possible Cause	Check Point and Method	Evaluation Criteria and Standard	Corrective Action
Defective operation circuit board	Remove the FFC inserted into the CN8 on the main circuit board. Hold the POWER Switch down, and measure the resistance value of FFC on the operation circuit board between #5 and #7.	100 Ω or less	Replace the OPERATION PCB ASSY.
Connection failure of paper feed motor connector	Check the housing insertion status of the CN9 on the main circuit board.	No incomplete connection	Connect the FPC securely.
Defective paper feed motor	Remove the housing inserted into the CN9 on the main circuit board. Measure each of resistance values between #1 and #2, #3 and #4 of housing on the motor sides.	6.3 to 7.7 Ω	Replace the MECH BLOCK and PLATEN.
Adhered foreign material to the gear	Check the cog status of the platen gear and its meshing gear.	No foreign material	Remove the foreign material using a cotton swab.
Defective main circuit board	-	-	Replace the SLP721RT-x MAIN PCB BLOCK A.

(4) Irregular paper feed pitch occurs.

Possible Cause	Check Point and Method	Evaluation Criteria and Standard	Corrective Action
Connection failure of paper feed motor connector	Check the housing insertion state of CN9 on the main circuit board.	No incomplete connection	Insert the connector securely.
Damaged gear	Check the cog state of the platen gear and its meshing gear.	No damage	Replace the MECH BLOCK and PLATEN.
Defective main circuit board	-	-	Replace the SLP721RT-x MAIN PCB BLOCK A.

[Condition] Specified paper feed is not performed.

(5) Abnormal sound is generated.

[Condition] Abnormal sound occurs during paper feed operation.

Possible Cause	Check Point and Method	Evaluation Criteria and Standard	Corrective Action
Adhered foreign material to the gear	Check the cog state of the platen gear and its meshing gear.	No foreign material	Remove the foreign material using a cotton swab.
Damaged gear	Check the cog shapes of the platen gear and its meshing gear.	No damage	Replace the MECH BLOCK and PLATEN.
Defective paper feed motor	Press the FEED Switch, and check the operating sound of the motor.	No abnormal sound	Replace the MECH BLOCK and PLATEN.

(6) Cut failure occurs.

[Condition] Movable blade does not operate.

Possible Cause	Check Point and Method	Evaluation Criteria and Standard	Corrective Action
Connection failure of cutter sensor connector	Check the FFC insertion state of CN6 on the main circuit board.	No incomplete connection	Connect the connector securely.
Defective cutter sensor	Unplug the AC adapter and remove the FFC of CN5. Move the movable blade with the tweezers to insert the AC adapter, and check the cutter sensor output voltage (TP39) by the oscilloscope.	Home position: 2.31 V or more The others: 0.99 V or less	Replace the MECH BLOCK and PLATEN.
Adhered foreign material to the cutter sensor	Check the status of cutter gear portion.	No foreign material	Remove the foreign material using a cotton swab.
Damaged cutter gear	-	-	Replace the MECH BLOCK and PLATEN.
Defective cutter motor	Remove the FFC inserted into CN6 on the main circuit board. Measure each of resistance values between #1 and #3, #2 and #4 of FFC on the motor sides.	19.8 to 24.2 Ω	Replace the MECH BLOCK and PLATEN.
Defective main circuit board	-	-	Replace the SLP721RT-x MAIN PCB BLOCK A.

[Condition] Movable blade is not on the home position.

Possible Cause	Check Point and Method	Evaluation Criteria and Standard	Corrective Action
Adhered foreign material to the movable portion of movable blade	Check the state of movable portion.	No foreign material	Remove the foreign material using a cotton swab.
Cutter sensor failure	Unplug the AC adapter and remove the FFC of CN5. Move the movable blade with the tweezers to insert the AC adapter, and check the cutter sensor output voltage (TP39) by the oscilloscope.	Home position: 2.31 V or more The others: 0.99 V or less	Replace the MECH BLOCK and PLATEN.

[Condition] Movable blade operates, but it cannot cut thermal paper.

Possible Cause	Check Point and Method	Evaluation Criteria and Standard	Corrective Action
	Check the cutter blade status (a movable blade, a fixed blade).	Not chipped	Replace the MECH BLOCK and PLATEN.
Damaged cutter blade		No foreign material	Remove the foreign material using a cotton swab. (Do not use alcohol.)

[Condition] The remaining of partial cut-off is large or small.

Possible Cause	Check Point and Method	Evaluation Criteria and Standard	Corrective Action
Adhered foreign material to cutter gear	Check the cog state of the cutter gear portion.	No foreign material	Remove the foreign material using a cotton swab.
Damaged cutter gear	-	-	Replace the MECH BLOCK and PLATEN.

(7) LED does not light up or blink properly.

[Condition] AC adapter output +24.0V and Vcc voltage +3.3V, but LED does not light up or blink.

Possible Cause	Check Point and Method	Evaluation Criteria and Standard	Corrective Action
Connection failure of operation connector	Check the FFC insertion state of CN8 on the main circuit board.	No incomplete connection	Insert the connector securely.
Defective operation circuit board	Remove the FFC inserted into the CN8 on the main circuit board, and measure the each following resistance values on the operation circuit board: ·LED (common) and FPC#1 ·LED1 pin#1 and FPC#4 ·LED1 pin#2 and FPC#3 ·LED1 pin#3 and FPC#2	10 Ω or less	Replace the OPERATION PCB ASSY.
Defective operation circuit board	-	-	Replace the OPERATION PCB ASSY.
Defective main circuit board	-	-	Replace the SLP721RT-x MAIN PCB BLOCK A.

(8) Paper is not detected.

[Condition] Out of thermal paper, but printing does not stop. The LED status does not indicate out-of-paper error.

Possible Cause	Check Point and Method	Evaluation Criteria and Standard	Corrective Action
Damaged paper sensor	Remove the thermal paper, and check the paper sensor output voltage (TP28 and TP31) by an oscilloscope.	1.86 V or more	Replace the BM SENSOR FPC UNIT.
Defective main circuit board	-	-	Replace the SLP721RT-x MAIN PCB BLOCK A.

[Condition] Load thermal paper in the printer, but printing does not start. The LED status does not change.

Possible Cause	Check Point and Method	Evaluation Criteria and Standard	Corrective Action
Damaged paper sensor	Load the thermal paper, and check the paper sensor output voltage (TP28 and TP31) by an oscilloscope.	1.86 V or more	Replace the BM SENSOR FPC UNIT.
Connection failure of out-of-paper sensor connector	Check the FPC insertion status of CN10 on the main circuit board.	No incomplete connection	Connect the connector securely.
Defective main circuit board	-	-	Replace the SLP721RT-x MAIN PCB BLOCK A.

(9) Paper mark is not detected.

Possible Cause	Check Point and Method	Evaluation Criteria and Standard	Corrective Action
Wrong setting of the mark	Check MS1-3 (Mark Mode Selection) on the test print.	-	Change to Enable.
Non-standard mark size	Check the mark size.	The mark size must be within the specification.	Replace the thermal paper.
Wrong setting of the mark detection threshold value	Restore the mark detection threshold value to the setting at the factory. Insert the user's paper and perform form feed of the mark.	Form feed can be performed.	When the form feed can be performed, change the setting of the mark detection threshold value.
			When the form feed cannot be performed, check if the mark density is non-standard.
Sensor failure	Remove the thermal paper, and check the output voltage of PS1 and PS2 (TP28 and TP29, TP31 and TP32) by an oscilloscope.	1.65 V or more	Replace the BM SENSOR FPC UNIT.
Connection failure of sensor connector	Check the FPC insertion status of CN10 on the main circuit board.	No incomplete connection	Connect the connector securely.
Defective main circuit board	-	-	Replace the SLP721RT-x MAIN PCB BLOCK A.

[Condition] The paper mark is not detected. (The printer skips reading the mark.)

(10) Paper ejection is not detected.

[Condition] The paper remains in the paper outlet after cutting, but the LED does not indicate the status of paper removal waiting.

Possible Cause	Check Point and Method	Evaluation Criteria and Standard	Corrective Action
Wrong setting	Check MS1-2 (Taken Mode Selection) on the test print.	-	Change to Enable.
Taken sensor failure	Load the thermal paper on the taken sensor after cutting, and check the taken sensor output voltage (TP36 and TP37) by an oscilloscope.	1.00 V or less	Replace the TAKEN SENSOR PCB ASSY.
Connection failure of taken sensor connector	Check the housing insertion status of CN11 on the main circuit board.	No incomplete connection	Connect the connector securely.
Defective main circuit board	-	-	Replace the SLP721RT-x MAIN PCB BLOCK A.

[Condition] The paper is removed from the paper outlet after cutting, but the LED indicates the status of paper removal waiting.

Possible Cause	Check Point and Method	Evaluation Criteria and Standard	Corrective Action
Adhered paper residue around the taken sensor	Visually check around the taken sensor.	No paper residue	Remove paper residue.
Taken sensor failure	Remove the thermal paper on the taken sensor after cutting, and check the taken sensor output voltage (TP36 and TP37) by an oscilloscope.	1.00 V or less	Replace the TAKEN SENSOR PCB ASSY.
Defective main circuit board	-	-	Replace the SLP721RT-x MAIN PCB BLOCK A.

(11) Top cover is not detected.

[Condition] Open the top cover, but the LED does not indicate the status of cover open.

Possible Cause	Check Point and Method	Evaluation Criteria and Standard	Corrective Action
Damaged AS MOTOR BLOCK	Remove the housing inserted into CN9 on the main circuit board. Hold the top cover opened, and measure the resistance value of the housing between #1 and #2.	1 MΩ or more	Replace the COVER SW BLOCK.
Adhered foreign material to platen position switch	Move the platen position switch, and check an operation.	To be at the normal position	Remove the USB cable.
Defective main circuit board	-	-	Replace the SLP721RT-x MAIN PCB BLOCK A.

[Condition] Close the top cover, but the LED indicates the status of cover open.

Possible Cause	Check Point and Method	Evaluation Criteria and Standard	Corrective Action
Damaged platen position switch	Remove the housing inserted into CN9 on the main circuit board. Hold the top cover closed, and measure the resistance value of the housing between #1 and #2.	10 Ω or less	Replace the AS MOTOR BLOCK.
Connection failure of cover open sensor connector	Check the housing insertion status of CN9 on the main circuit board.	No incomplete connection	Insert the connector securely.
Defective main circuit board	-	-	Replace the SLP721RT-x MAIN PCB BLOCK A.

(12) Top cover does not open.

[Condition] Operate the release lever, but the top cover does not open.

Possible Cause	Check Point and Method	Evaluation Criteria and Standard	Corrective Action
Deformation of the lock arm	Check the form of the lock arm.	No deformation	Replace the LOCK ARM BLOCK.

Hold the release lever pulled down, open the top cover forcibly.

(13) Top cover does not close.

[Condition] Press the top cover by hands, but the top cover does not close completely.

Possible Cause	Check Point and Method	Evaluation Criteria and Standard	Corrective Action
Deformation of the lock arm	Check the form of the lock arm.	No deformation	Replace the LOCK ARM BLOCK.
Damaged the top cover	Check the form of the top cover.	No damage	Replace the TOP COVER UNIT.

(14) Communication error occurs.

[Condition] The printer does not print using USB.

Possible Cause	Check Point and Method	Evaluation Criteria and Standard	Corrective Action
Damaged USB connector	Check the form of the connector.	No deformation	Replace the SLP721RT-x MAIN PCB BLOCK A.
Defective main circuit board	-	-	Replace the SLP721RT-x MAIN PCB BLOCK A.

[Condition] The printer does not print using LAN.

Possible Cause	Check Point and Method	Evaluation Criteria and Standard	Corrective Action
Damaged LAN connector	Check the form of the connector.	No deformation	Replace the SLP721RT-E MAIN PCB BLOCK A.
Defective main circuit board	-	-	Replace the SLP721RT-E MAIN PCB BLOCK A.

[Condition] The printer does not print using Wireless LAN.

Possible Cause	Check Point and Method	Evaluation Criteria and Standard	Corrective Action
Poor communication environment	Bring the printer closer to the host and check the communication.	Able to print	Improve the communication environment.
Defective main circuit board	-	-	Replace the SLP721RT-W MAIN PCB BLOCK A.

CHAPTER 4 TEST PRINT

4.1 TEST PRINT

The printer has a test print function. In the test print, firmware version, setting functions and characters are printed.

- 1. Load the thermal paper into the printer, and make sure the power is turned off.
- 2. Hold the FEED Switch down and press the POWER Switch, then release the POWER Switch.
- 3. Release the FEED Switch when the test print has been started.
- 4. The printer cuts the paper and returns to the print-ready status when the test print has completed.

```
SLP series Interface
SLP720RT Series [ Ver X.XX ]
 DD.MMM.YYYY
Copyright(C):SII
* MS1 *
2) Taken Mode:Enable
3) Mark Mode:Disable
4-5) Standby LED:Green
7) Auto Activation by AC:Enable
8) Power SW:Enable
* MS2 *
1-2) Buzzer Count:None
3-4) Buzzer Pattern: Pattern1
5) Buzzer Volume:Loud
* MS3 *
1-2) Buzzer Count:None
3-4)Buzzer Pattern:Pattern1
5) Buzzer Volume:Loud
* MS4 *
4) Paper Width:58[mm]
6) Paper Auto Detection:Disable
7-8)Print Speed:High
* MS5 *
1) Auto Status Back:Enable
2) Init. Response:Enable
   Error Through:Enable
3)
4) Response Data Discarding:
     Disable
6-7) Paper Set Handle:
     Standard
8) Cutting Method:Full
* MS6 *
1-8)Print Density:100[%]
* MS7 *
1-8) Thermal Paper:
     Linerless label
* MS13 *
1) Kanji Code:
     JIS Code
3) Realtime Command:Enable
* MS17 *
1-2)Paper Saving:Disable
3) Backfeed After Cut:
     Enable
* MS18 *
1-2) Buzzer Count:None
3-4) Buzzer Pattern: Pattern1
5) Buzzer Volume:Loud
* Communication Type *
 LAN Communication
                XX:XX:XX:XX:XX:XX
 MAC Address:
 IP Address:
                 192.168.0.190
 Subnet Mask:
                 255.255.255.0
 GateWay Address: 0.0.0.0
DHCP Client: Enable
Physical Layer: Auto Nego
* Font Information *
 Character Code Table:
  Code Page437
 International Character:
   LISA
* Serial Number Information *
 XXXXXXXXXX
```

Figure 4-1 Test Print Example (Ethernet + USB Model)
4.2 SPECIAL TEST PRINT

The printer has a special test print function.

Printing items in the special test print are as follows: the resistance value and the number of effective dots of the thermal head, the power supply voltage, and the thermal head temperature.

- 1. Load the thermal paper into the printer; and make sure the power is turned off.
- 2. Hold the FEED Switch down and press the POWER Switch, then release the POWER Switch.
- 3. Press the FEED Switch twice immediately when the test print has been started.
- 4. Items of the special test print are printed out following those of test printing.

```
[ Special Test Print ]
Seiko Instruments Inc.
Printer Department
            :XXX[ohm]
Head reg
Head dot
            :XXX[dot]
            :XXX[dot](XXXalive)
Area dot
٧p
            :XX.X[V]
Head Temp.
            :XX[deg]
Extend RAM :XXXK[byte]
POSBOOT [ Ver X.XX ]
  XX.XXX.XXXX
```

Figure 4-2 Special Test Print Example

CHAPTER 5 PACKING SPECIFICATIONS

5.1 PACKING MATERIAL

Packing material list and illustrated packing parts breakdown of the printer are shown below. The number of packing material list and illustrated packing parts breakdown correspond with each other.

No.	Parts Name	Parts No.	Qty.	Remarks
1	PRINTER UNIT	-	1	
2	PRODUCT BOX	U001464478XX	1	Individual package For USB model (for Japan only), Ethernet + USB model, Wireless LAN model (for Japan only)
3	DIVIDER A	U001458224XX	2	
4	DIVIDER B	U001458235XX	1	
5	DIVIDER C	U001464287XX	1	
6	PE BAG	U001462511XX	1	Bag for the Printer main body
7	QUICK START GUIDE	U001458270XX	1	Leaflet (1 sheet)
8	SAFETY PRECAUTIONS	U001422101XX	1	Leaflet (3 sheets)
9	TP-SR220A-C1	U001460564XX	1	SAMPLE PAPER ROLL
10	AC ADAPTER	U001458268XX	1	PW-H2415-W1 (packaged)
11	AC CABLE	U001427174XX	1	CB-JP08-20A (packaged) For Japan
12	INTERFACE CABLE	U001318151XX	1	IFC-U02-2 (USB cable) (packaged) Included only with USB model
13	PLUG PRECAUTION	U001466482XX	1	Leaflet (1 sheet)

Table 5-1 Packing Material List

•Only the parts listed in "Parts No." are available as the service parts. Please contact our sales representative for details.



Figure 5-1 Illustrated Packing Parts Breakdown

5.2 DIMENSIONS AND MASS



Dimensions:W 243 mm × D 180 mm × H 181 mmMass:Approx. 2.1 kg (Including optional products)

Figure 5-2 Dimensions and Mass