IP48 Win

Service Manual

(Control No. SM48W-001)

Table of Contents

1. Introduction

This manual gives detailed explanations of procedures for disassembling the parts of the IP48Win Label Printer. Read this manual carefully before beginning service work.
Since the Service Manual includes important instructions for service work, keep it in a safe place.

This printer has been designed to be used with the supplies designated by Tohoku Ricoh. (refer to the basic specifications). Since use of supplies other than those designated may cause problems such as bad printed characters, bad label feeding, or damage to the head, be careful.

When ordering replacement parts, refer to the parts list at the back of this manual and the disassembly diagrams, and make sure to write the part name and part number from that parts list on the order form, together with the name of the printer model and its serial number.

This manual assumes a level of knowledge appropriate to a service person.
For explanations of unpacking procedures and installation locations for this product, refer to the operator's manual included with it.

Warning Items Concerning Maintenance and Repair

⚠ Electric Shock Warning

Before disassembling this equipment, make sure to move the power switch to OFF and to unplug the power cord.
With only the power switch in the OFF position, some areas remain electrified and a danger of electric shock still exists.

Needed Tools

Philips screwdriver (magnetic tip)	2 × 9.84"	(250 mm)
Flat blade screwdriver (magnetic tip)	2 × 5.91"	(150 mm)
Philips screwdriver (magnetic tip)	1 × 2.95"	(75 mm)
Flat blade screwdriver (magnetic tip)	1 × 2.95"	(75 mm)
Hex wrench	0.06"	(1.5 mm)
Needle nose pliers		
Tweezers		
Cutters		

2. Description of Each Part

2-1 External Part Names

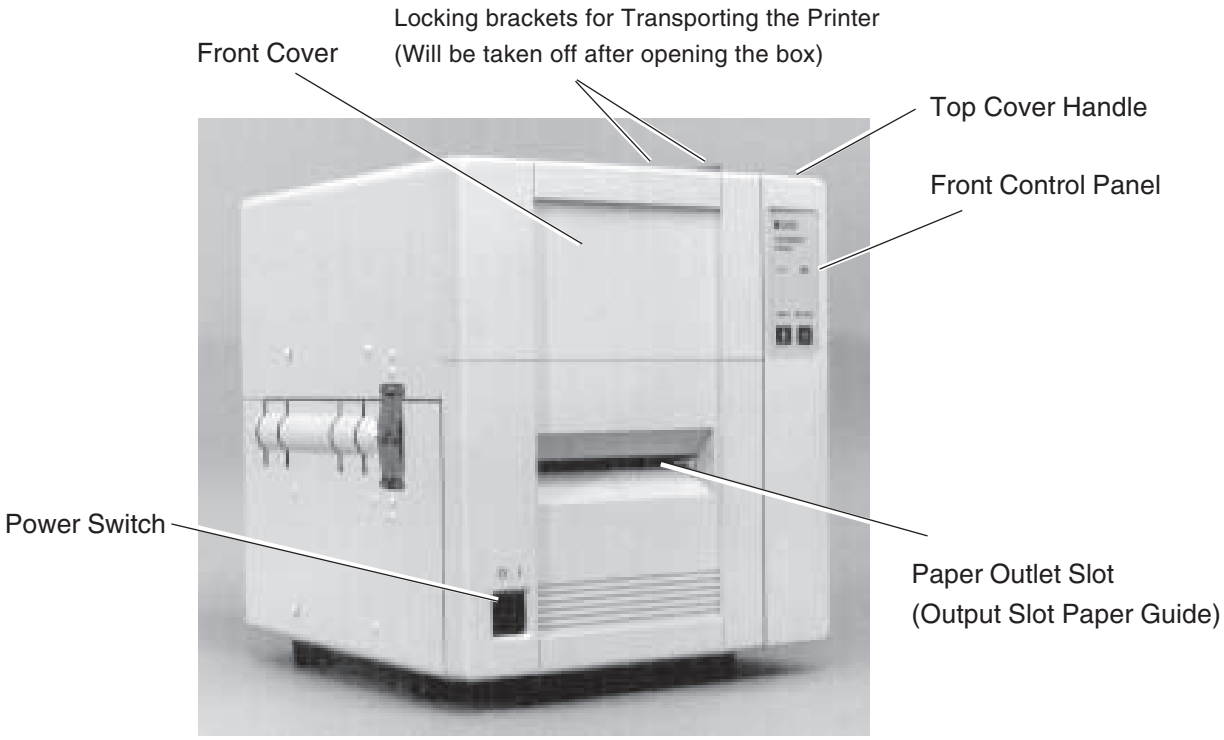


Fig. 2-1 Front View / Side View

Fig. 2-2 Rear View

2-2 Front Control Panel

The control panel provides functions for producing labels (the label issuing mode functions) and for changing various printer settings to suit different applications (the function setting mode).
For details refer to the operator's manual.

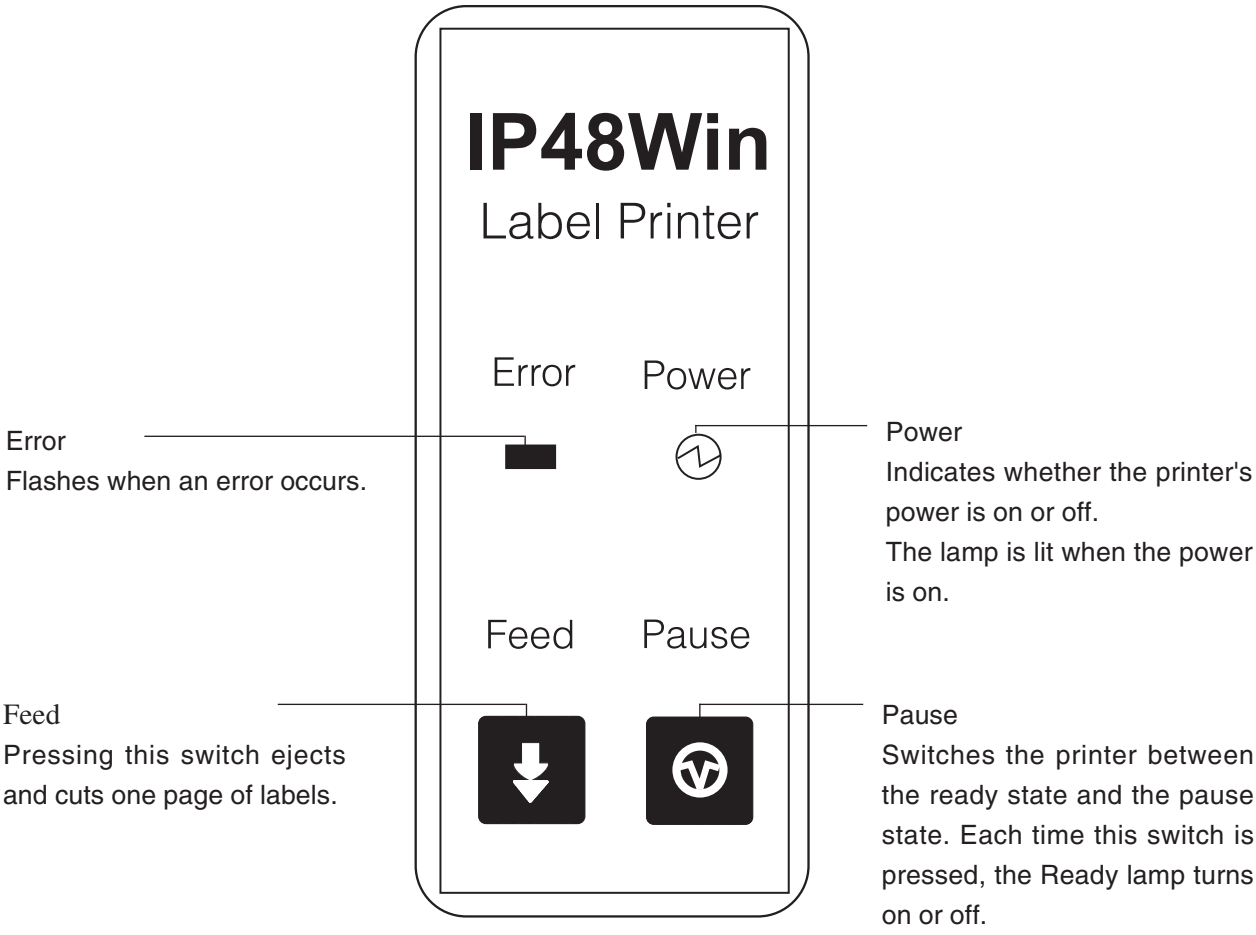


Fig. 2-3 Front Control Panel

2-3 Internal Part Names

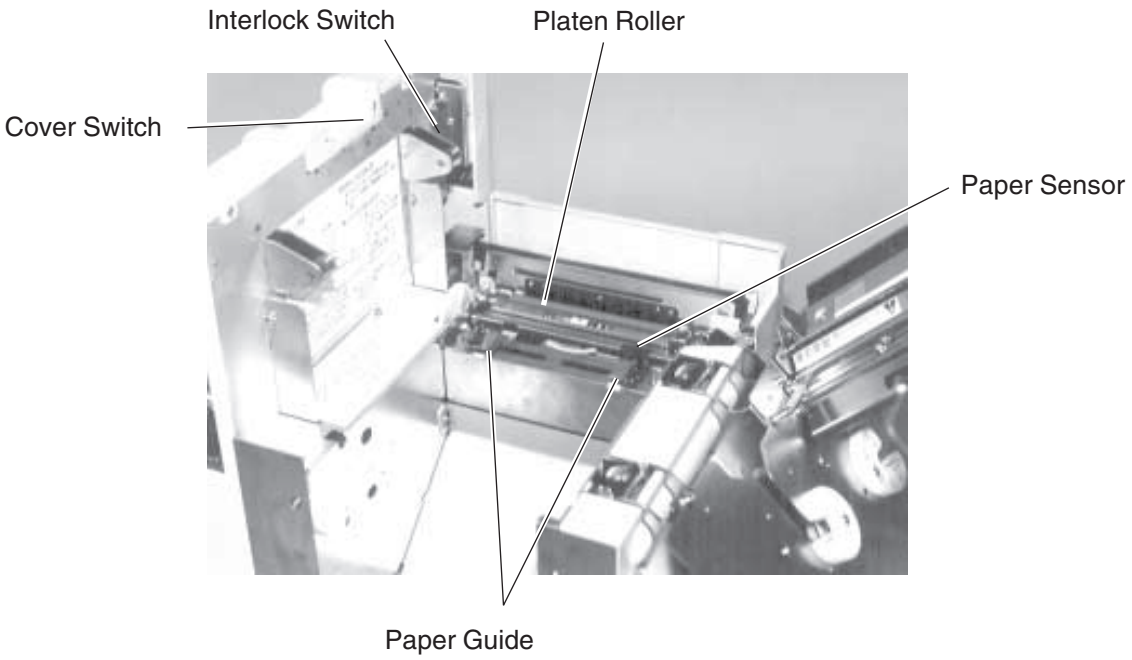


Fig. 2-4 Lower Frame Inside

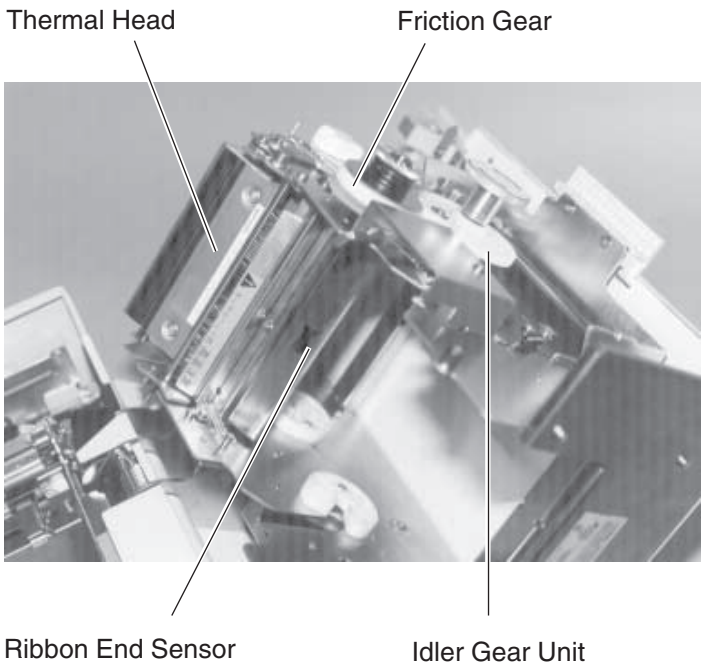
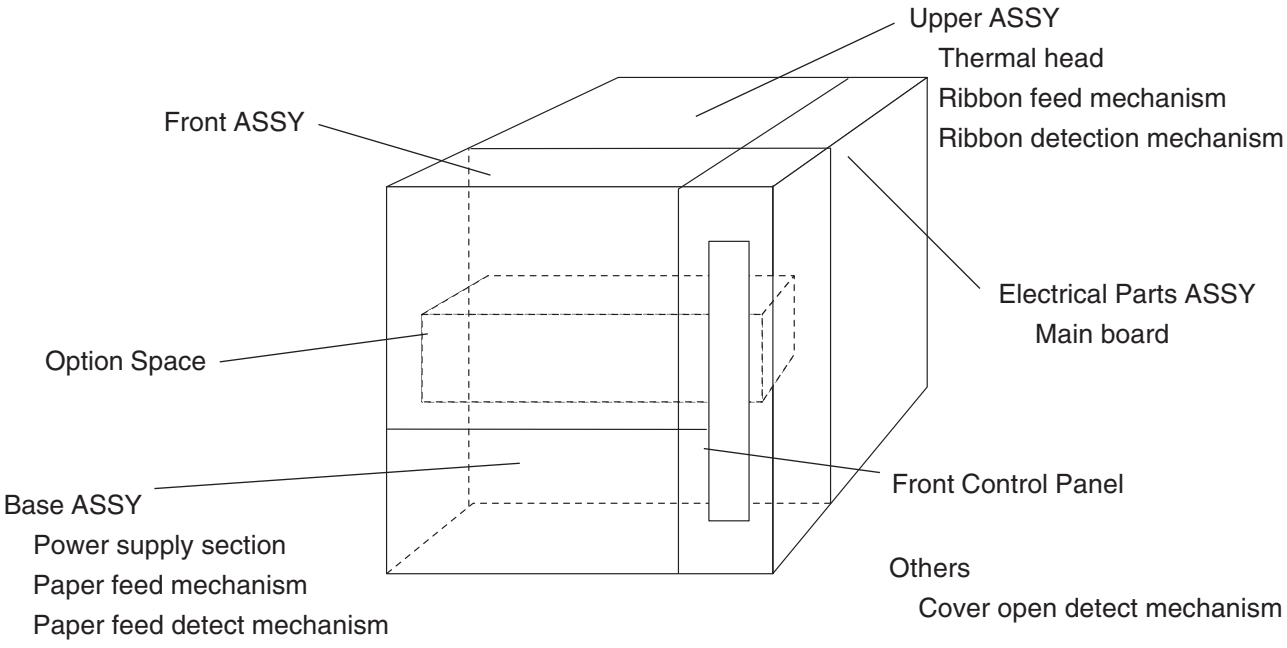


Fig. 2-5 Upper Frame Inside

Overall Configuration Diagram

The printer is made up of five major parts: the upper assembly, the base assembly, electrical assembly, front assembly, and cutter assembly. The mechanism and parts of each assembly is as follows.

- Printer
  - 1 Upper Assembly
    - ① Thermal Head
    - ② Ribbon Feed Mechanism
    - ③ Ribbon Detection Mechanism — Ribbon End Sensor
  - 2 Base Assembly
    - ① Power Supply Section — Power Supply, Fuse
    - ② Paper Feed Mechanism — L/F Motor, Platen, Feed Roller, Paper Guide
    - ③ Paper Feed Detection Mechanism — Reflective Sensor, Interruptive-type center sensor, Interruptive-type form edge sensor
  - 3 Electric Parts Assembly
    - ① Main Board — Control Circuit
  - 4 Front Assembly
    - ① Front Control Panel
  - 5 Cutter Assembly (Cutter Machine)
    - ① Cutter Mechanism — Cutter Carriage Motor, Rotary Knife, Fixed Knife
  - 6 Others
    - ① Cover Open Detection Sensor — Cover Open SW, Interlock SW
    - ② Service Meter



3. Basic Specifications

3-1 Table of Basic Specifications

1. Printing method:	Thermal transfer method			
2. Dot density:	400dpi (15.75 dots/mm)			
3. Printing speed:	0.5"/sec. to 4.0"/sec.(13mm/sec to 100mm/sec)			
4. Maximum printing width:	3.84" (97.54mm)			
5. Maximum printing length:	12.00" (304.8mm)			
6. Page width:	0.98" to 4.33" (25mm to 110mm)			
7. Page length:	0.19" to 12.00" (5mm to 304.8mm)			
8. Page thickness:	0.005" to 0.01" (0.12mm to 0.25mm)			
9. Internal paper roll:	(1) Winding direction	: Printing surface outside/inside		
	(2) Paper roll outer diameter	: ø7.08"(ø180mm) or less		
	(3) Paper tube inner diameter	: ø3.0"(ø76.2mm) and ø3.93" (ø100mm)	(when using the ø3.93"-diameter attachment provided)	
10. Fanfold forms:	page pitch	: 2.76"(70mm) or more	Fanfold forms are placed outside the printer. Print quality is not guaranteed in a 0.08"(2mm) region before and after perforations.	
11. Form sensor types:	(1) Interruptive-type form edge sensor (movable)		Detects notches in the forms	
	(2) Reflective sensor (movable)		Detects "eye" marks	
	(3) Interruptive-type center sensors (fixed)		Detects backing paper and center hole. A blue backing paper is recommended for (1) and (3).	
12. Ribbon width:	1.97" to 4.72" (50 to 120mm)		At least 0.39" (10mm) wider than the forms.	
13. Supply ribbon roll	(1) Winding direction:	Ink on the outside		
	(2) Paper tube inner diameter:	ø1.0" (ø25.4)		
	(3) Length of ending silver tape:	5.91" (150mm) or more		
	(4) Winding dimensions:	ø2.76" (ø70mm) diameter or less		
	(5) Ribbon length:	985ft (300m) : Reference value		
14. Host interface:	SCSI conforming			
15. Weight:	41.8 lbs (19kg)			
16. Input power:	110, 120, 220, 230V AC,	50/60 Hz	available; specify when ordering	
17. Operating temperature and humidity requirements:	41 to 95°F (5 to 35°C), 10 to 85% RH			
18. Options				
-1. External roll holder:	Field option	Model number: RH-63 Roll diameter: No more than ø9.84" (ø250mm)		
-2. Cutter:	Factory option			

3-2 Accessories list

- Ribbon roller gear unit (2)
- Ribbon core (1)
- Roll holder plate (2)
- 3.94" (100mm)-inner diameter paper tube attachment set (1)
- Roll holder shaft (1)
- Power Cable (1)
- Spare fuse (1)
- Screwdriver (1)
- Unpacking Instructions
- Screw Lock (2)
- SCSI Terminator (1)
- Printer driver floppy disk (1)
- Output paper guide (1)
- SCSI interface cable (1)
- Operation Manual (1)
- Setup Guide (1)

4. Disassembly an Reassembly

4-1 Cover Disassembly

4-1-1 Detaching Cover Right

⚠ Electric Shock Warning

Before disassembling this equipment, make sure to move the power switch to OFF and to unplug the power cord.
With only the power switch in the OFF position, some areas remain electrified and a danger of electric shock still exists.

1. Switch the power switch to the OFF position, then unplug the power cable from the electrical outlet.
2. Remove the two exterior screws holding cover: right in place.

Fig. 4-1

3. Open the top cover.
   Open and close the top cover whenever necessary for the job at hand.
4. Remove the two fixing screws on the inside of cover: right and the fixing screw for handle: cover.
5. Remove handle: cover, and remove the cover: right by sliding it upward.

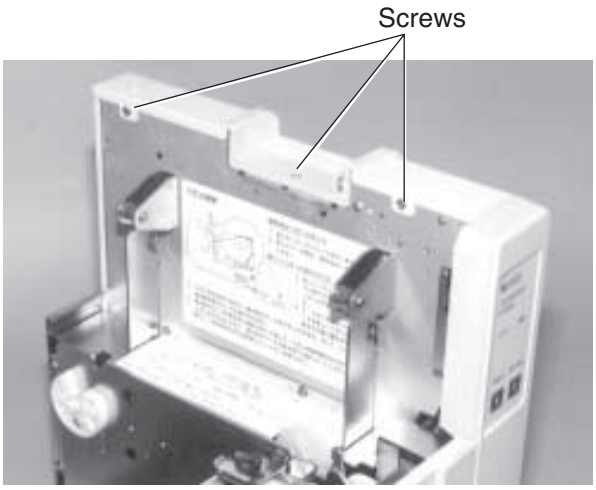


Fig. 4-2

4-1-2 Detaching the Control Panel Unit

1. Remove the three fixing screws for the control panel unit.

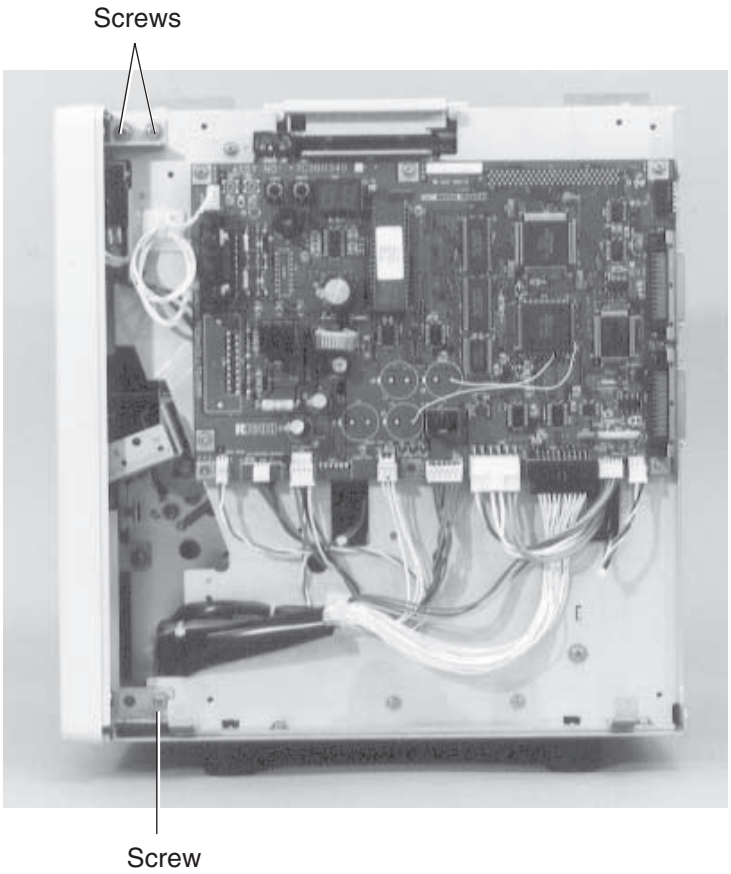


Fig. 4-3

2. Disconnect the connectors at the two places on the side of the control panel.

4-1-3 Detaching Cover Left: Lower

1. Remove the four fixing screws for cover left: lower and the two fixing screws for hinge: assembly. Detach cover left: lower.

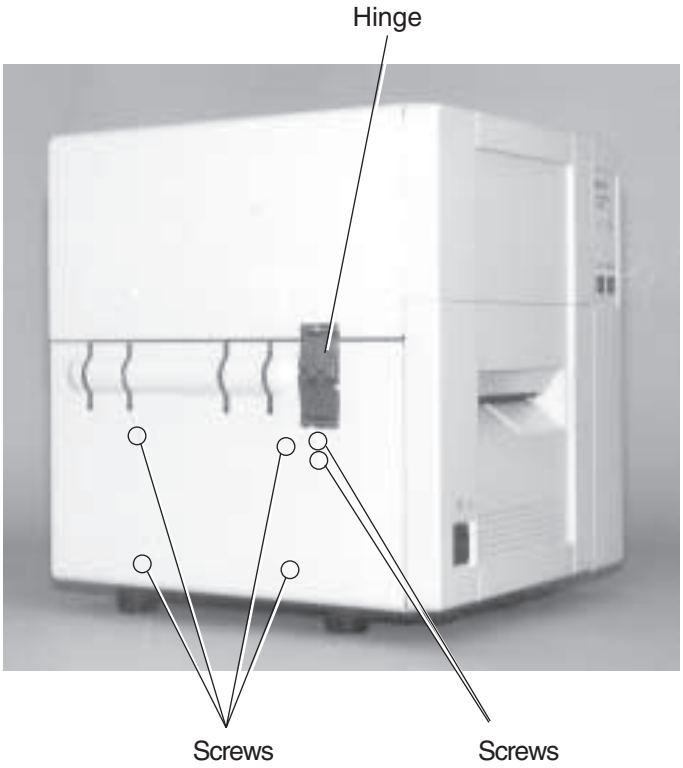


Fig. 4-4

⚠ Electric Shock Warning

Before disassembling this equipment, make sure to move the power switch to OFF and to unplug the power cord.
With only the power switch in the OFF position, some areas remain electrified and a danger of electric shock still exists.

4-1-4 Detaching Cover Front: Lower

1. Remove the two right side fixing screws for cover front: lower.
2. Remove the two left side fixing screws for cover front: lower .

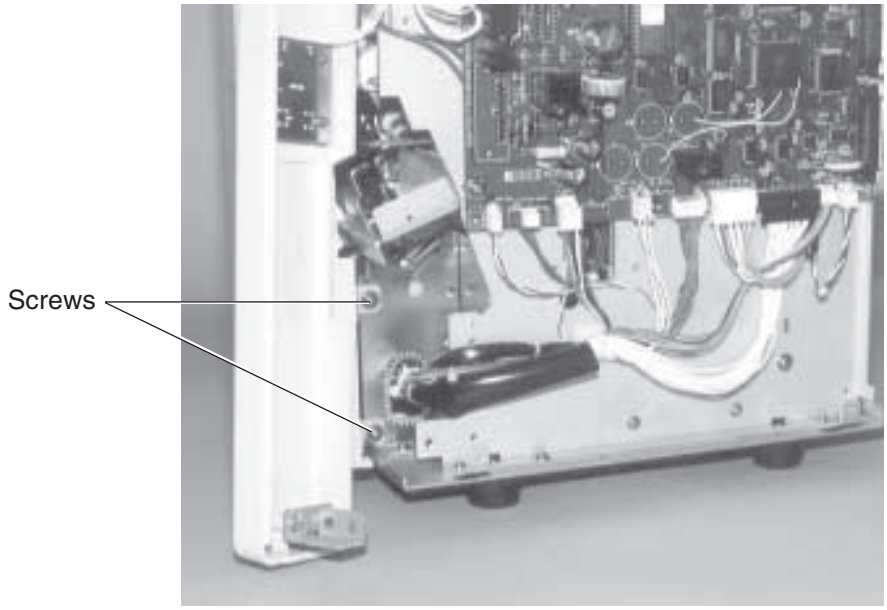


Fig. 4-5

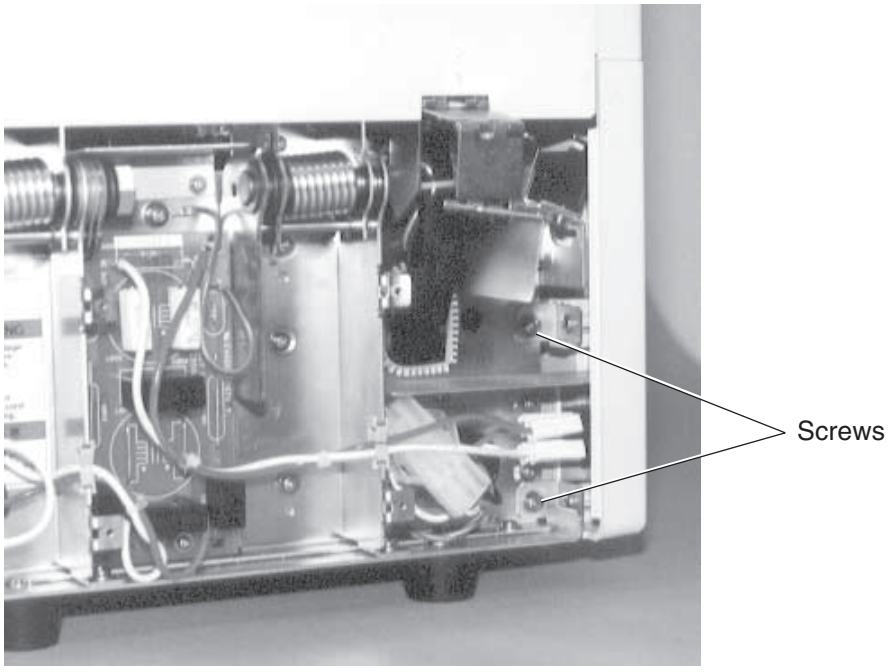


Fig. 4-6

4-1-5 Detaching the Top Cover

1. Remove the six fixing screws for the upper cover (four on the top, and two on the side).

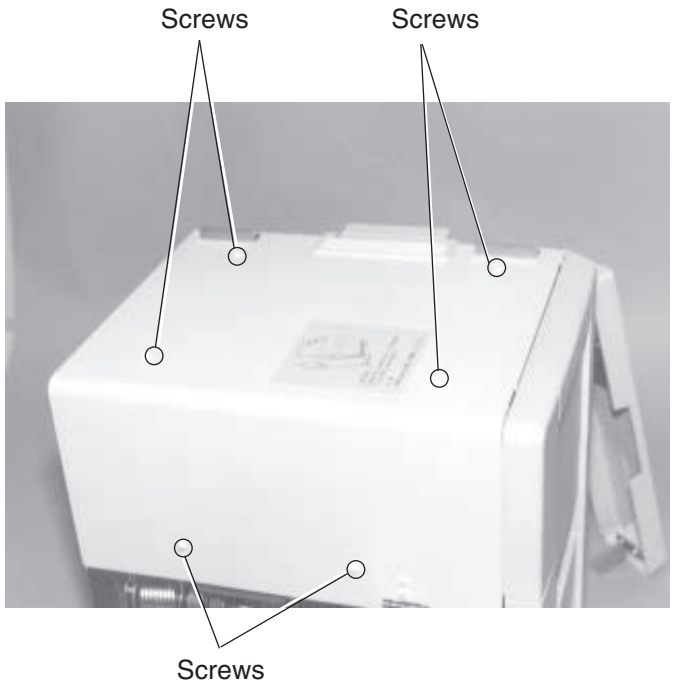


Fig. 4-7

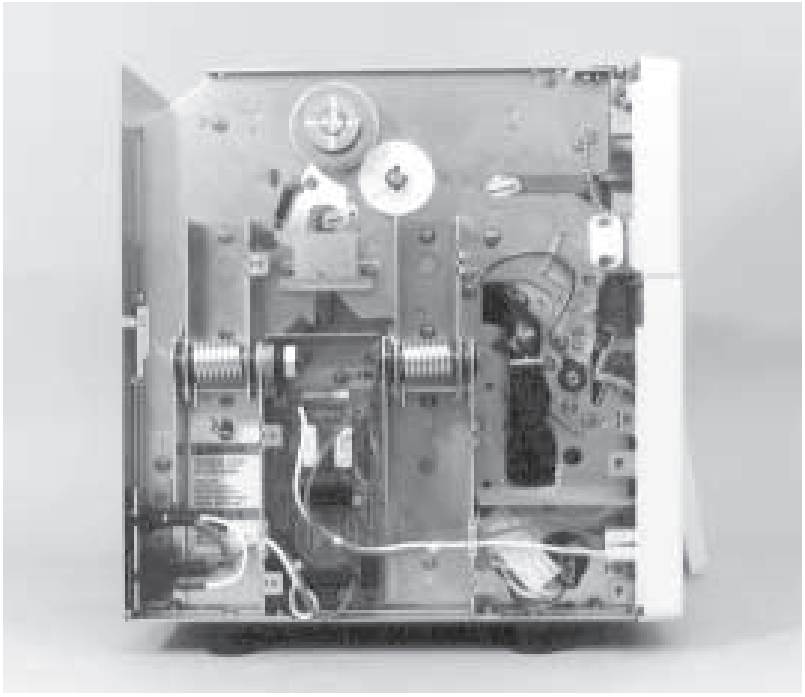


Fig. 4-8

4-1-6 Detaching Cover Front: Upper

1. Remove the four fixing screws for the front of the cover. Remove the fixing screw for the chain.

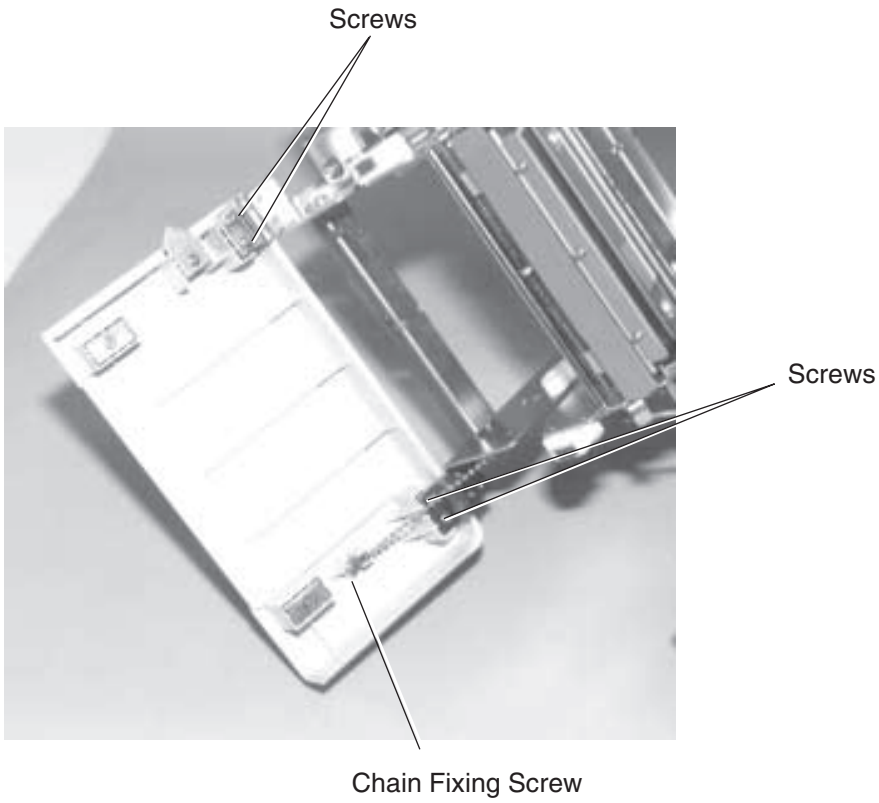


Fig. 4-9

4-2 Replacing the Thermal Head

The thermal head of this printer was designed for durability, but when it is used for a long time, broken lines (white spaces with missing dots) will occur.
In order to maintain print quality, it is necessary to change the head sometimes. The procedures for changing it are shown below. (The thermal head is a consumable part).

1. Switch the power switch to OFF. Open the top cover and remove the ribbon at the roll-in receiving side. Then, open the thermal head cover by rotating it towards the back of the printer.

⚠Caution

Note that the thermal head may be hot, even if the power is off.

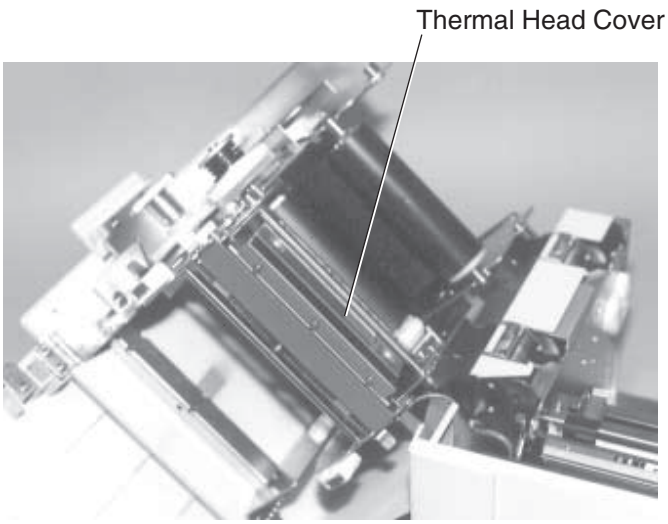


Fig. 4-10

2 Push the right and left release levers and remove the head by pushing it up from below.

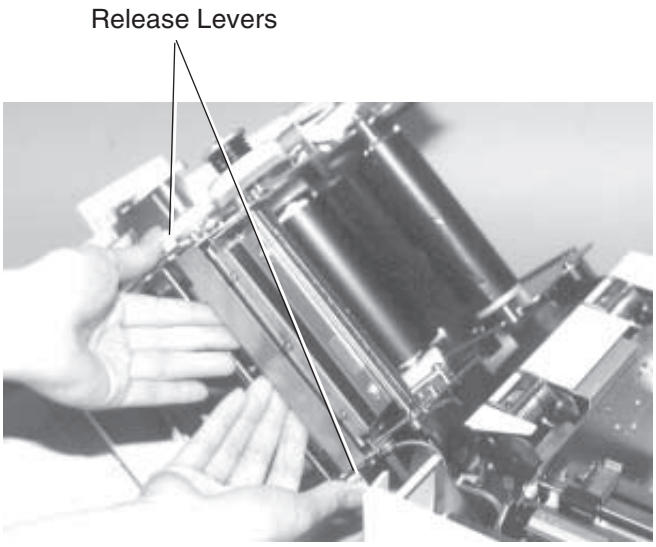


Fig. 4-11

3 Disconnect the two connectors on the thermal head unit.

Caution
Grasp the connector part to remove the head. Pulling and holding the head by the harness may cause a bad connection.

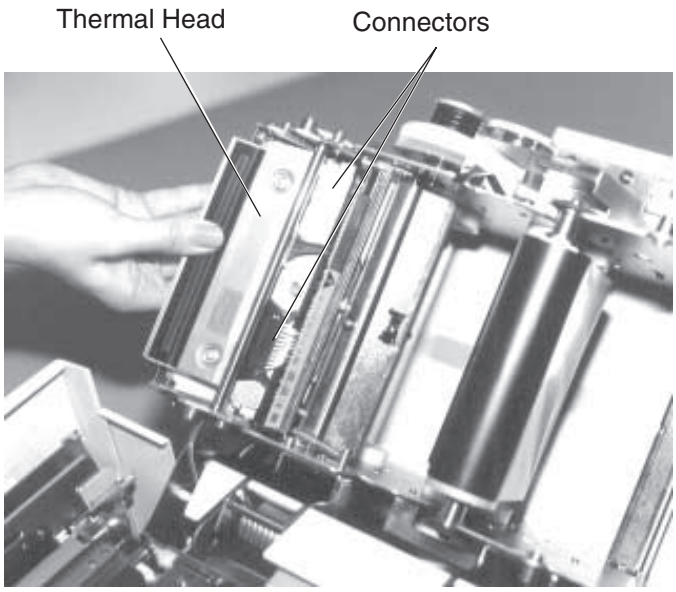


Fig. 4-12

4. Being very careful not to scratch the new thermal head, connect the cables and lock them into place. Set the new thermal head unit into the guide holes in the thermal head brackets. Fix the thermal head into place by pressing the left and right release levers.
   At this time, be careful not to bend the ribbon peeling (by not pushing it).

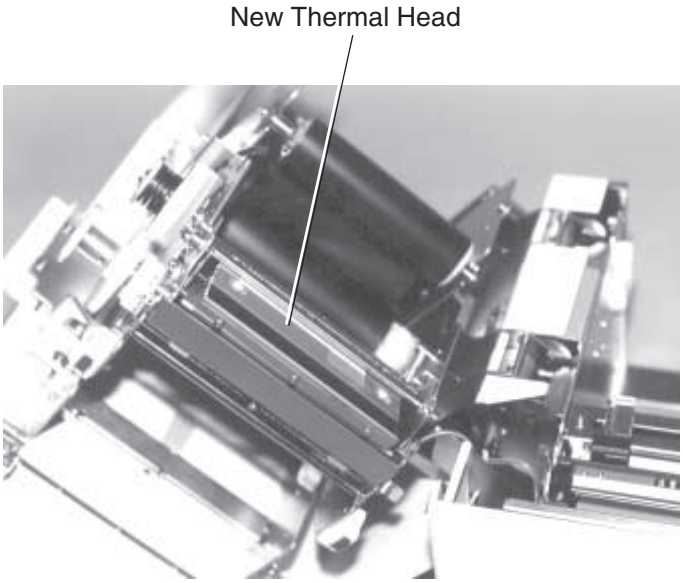


Fig. 4-13

Caution
When connecting or disconnecting connectors, do it only after verifying the orientation and position. Take care to avoid bending the pins of the connectors.

5. Close the thermal head cover.
   Reinstall the ribbon and labels, then close the printer cover.

Caution
When replacing the thermal head unit, be very careful to avoid scratching or staining the new thermal head unit. After replacing, quickly wipe off the new unit.

4-3 Replacing the Platen Roller

The platen roller will wear out after the printer has been used for an extended period of time, resulting in fading of print or other print quality problems. When this occurs, the platen roller must be replaced as follows.

1. Move the cutter carriage to the left.
2. Flop open the release levers at the ends of the platen roller and remove the platen roller from the printer.

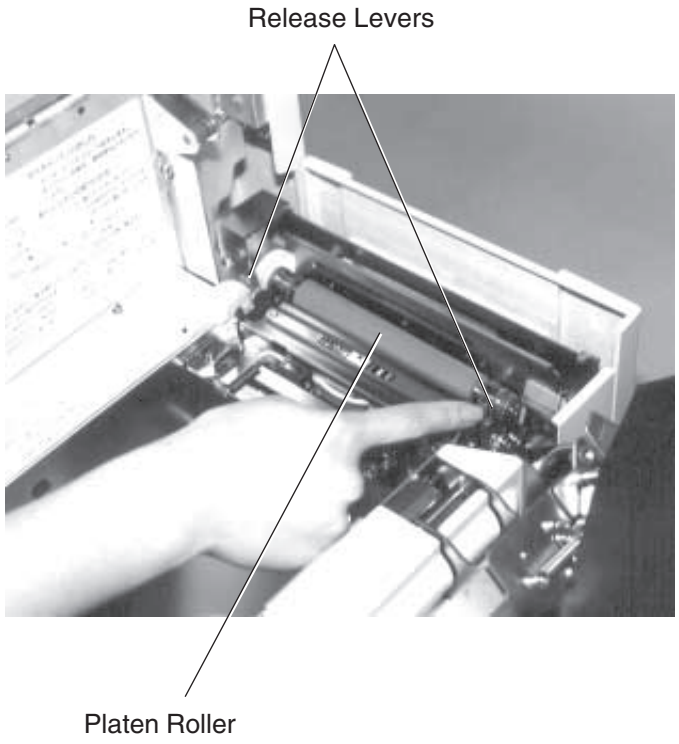


Fig. 4-14

4-4 Replacing Printed Circuit Board: Main Control

1. Do "Cover Disassembly" procedures 4-1-1 ~ 4-1-2.
2. Remove the five fixing screws.

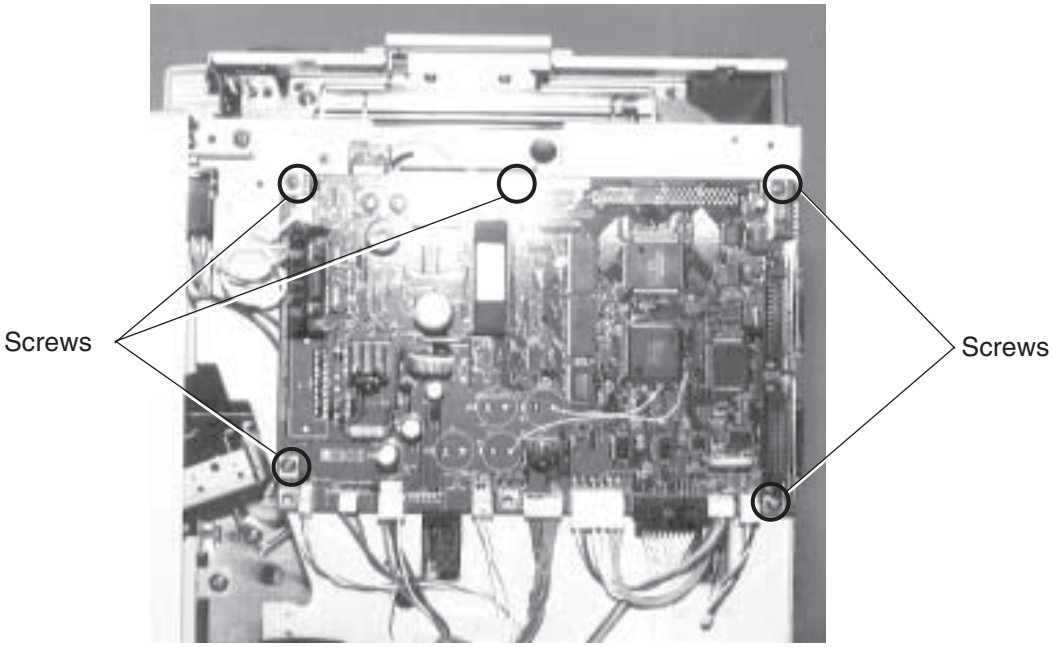


Fig. 4-15

3. Disconnect all the connectors attached to the main circuit board.

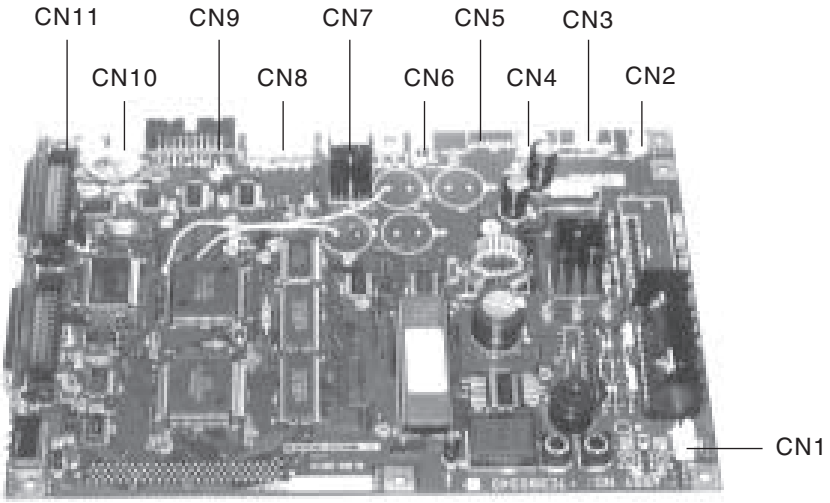


Fig. 4-16

4. Install the new board by reversing the removal procedures.
5. Before attaching the covers, do the procedures below.
   ① Set the DIP switches on the rear face to the same settings as those for the old main control board.
   ② If you are using the serial interface, try connecting the cable connection. If the screws cannot be tightened well, there is a possibility that the screw lock type isn't suitable. Change it for the screw lock on the old main control board or a screw lock that was packaged with the printer.

Note
After connecting the connector, check to see if it is really connected or not.

4.5 Replacing the Power Transformer

1. Do "Cover Disassembly" procedures 4-1-1 ~ 4-1-4.
2. Remove the fixing screw for the earth line.

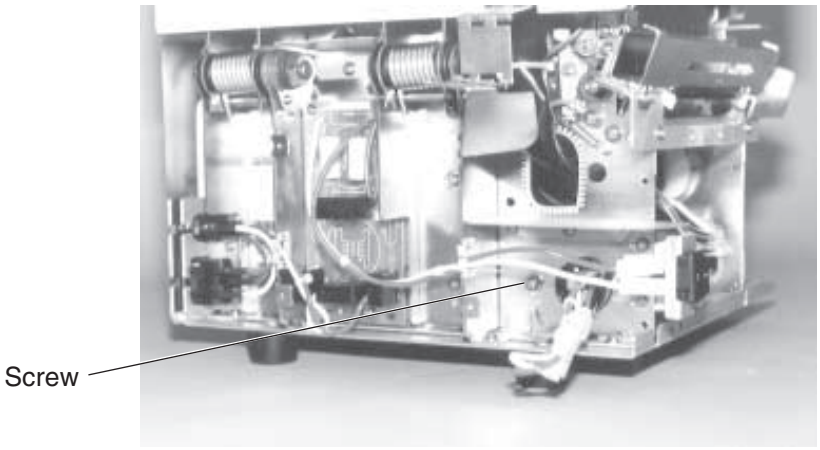


Fig. 4-17

3. Disconnect the two connectors coming out of the power transformer.

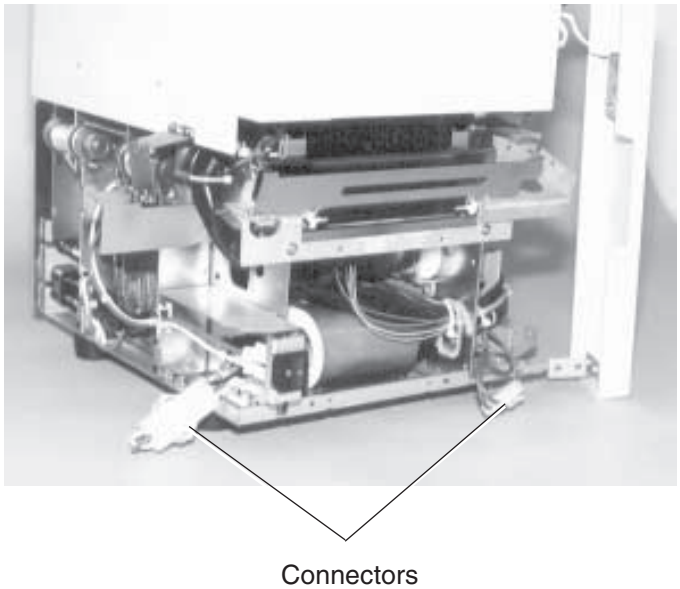


fig. 4-18

4. Remove the four power transformer fixing screws at the bottom of the printer.

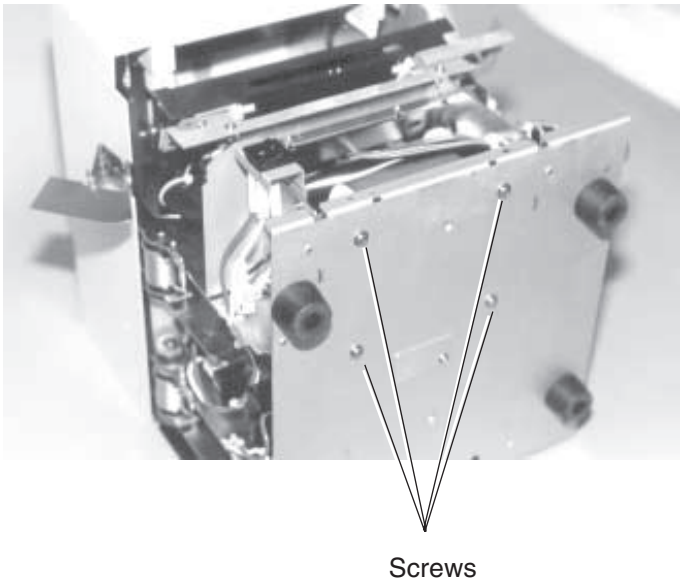


Fig. 4-19

5. Take the power transformer out of the printer.

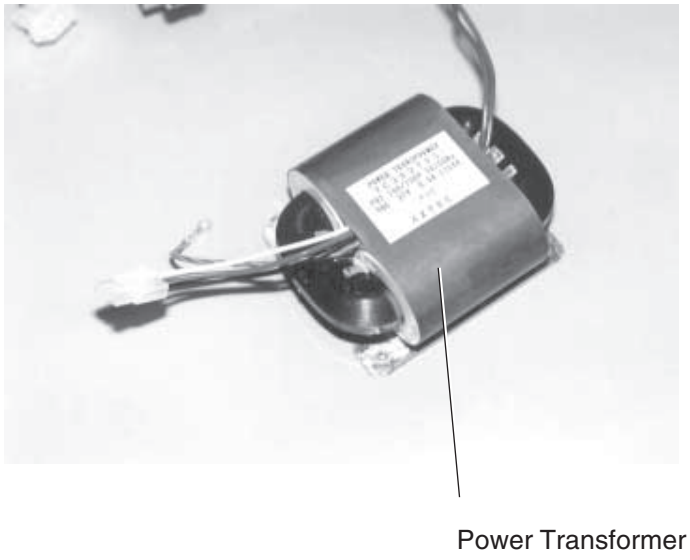


Fig. 4-20

6. Install the new transformer by reversing the removal procedures.

4-6 Replacing Printed Circuit Board: Power Supply Unit (PSU)

1. Do "Cover Disassembly" procedures 4-1-1 ~ 4-1-4
2. Open the top cover and remove the two fixing screws for the cover: drive section: lower.

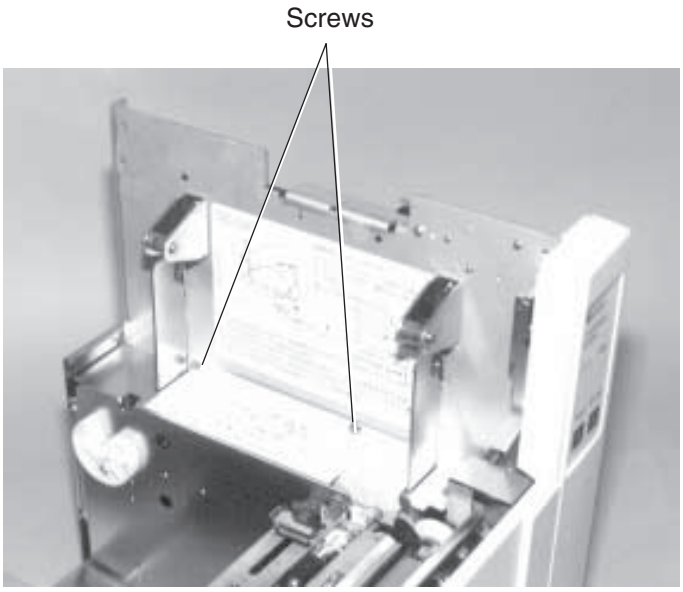


Fig. 4-21

3. Remove the five fixing screws for the printed circuit board: main control, and disconnect connectors CN8 and CN 11.

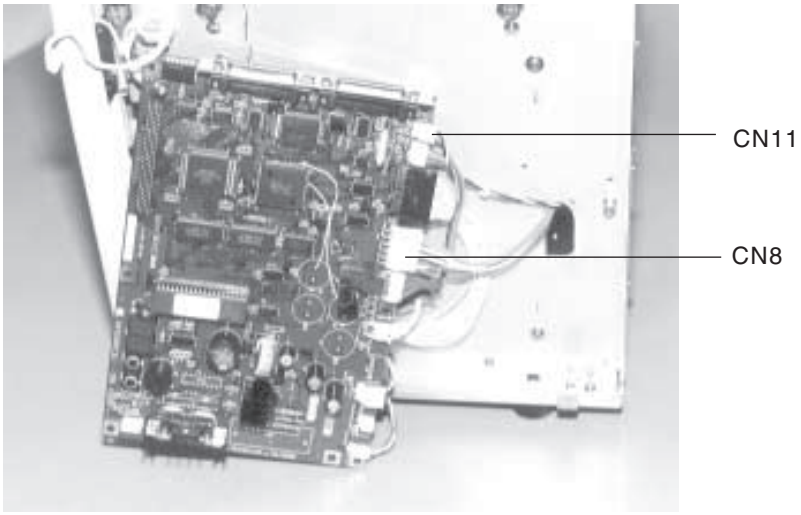


Fig. 4-22

4. Disconnect the cable connector from the power transformer.

5. Disconnect the interlock switch connector.

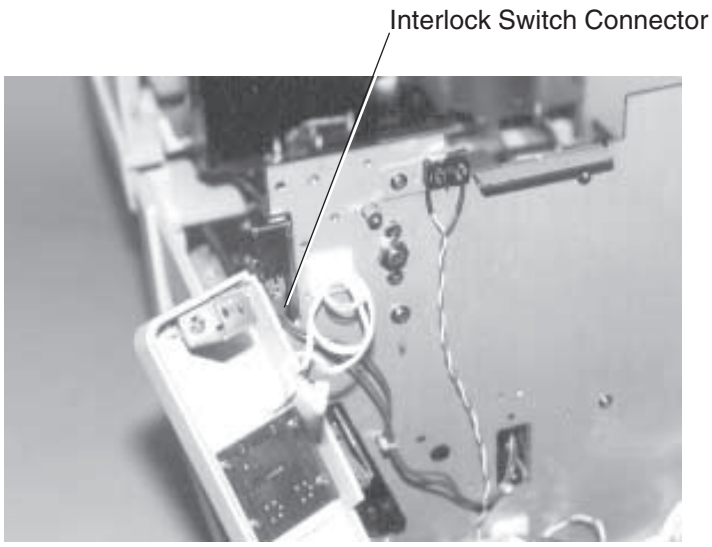


Fig. 4-23

6. Remove the three fixing screws for printed circuit board: PSU and take the board out of the printer.

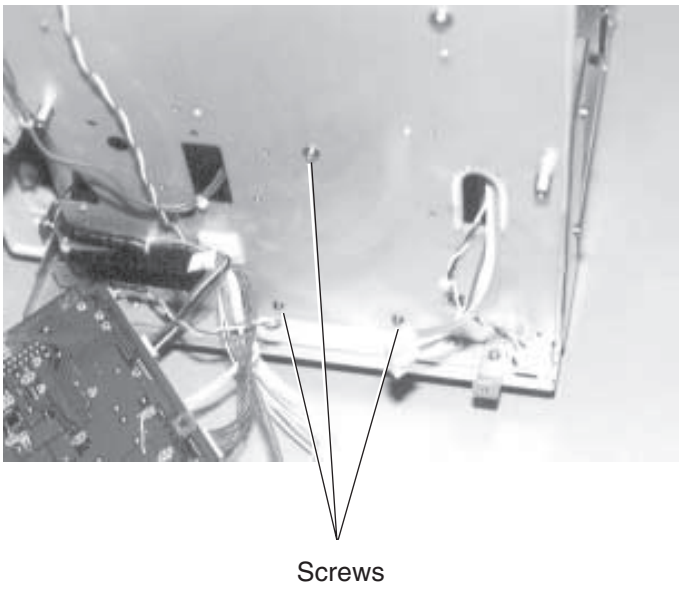


Fig. 4-24

7. Install the new board by reversing the installation procedures (Use new cable bands to replace those that were cut.)

4-7 Replacing the Interlock Switch

1. Do "Cover Disassembly" procedures 4-1-1 ~ 4-1-2.
2. Disconnect the interlock switch connector.

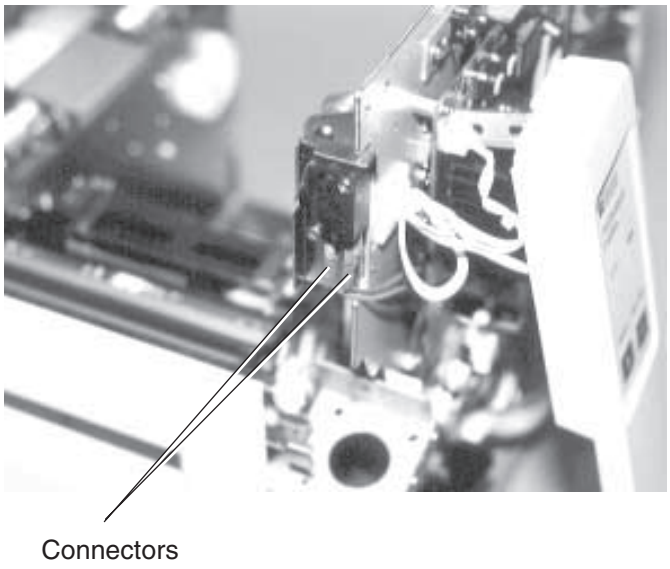


Fig. 4-25

3. Remove the two fixing screws for the interlock switch.

Fig. 4-26

4. Install the new interlock switch by reversing the removal procedures.

4-8 Replacing the Cover Open Switch

1. Do "Cover Disassembly" procedures 4-1-1 ~ 4-1-2.
2. Remove the five fixing screws for the printed circuit board: main control and disconnect CN2.

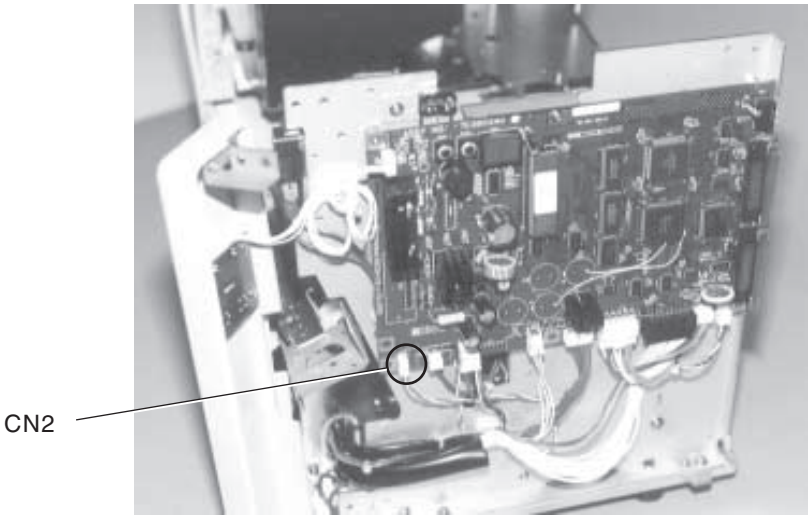


Fig. 4-27

3. Remove the two fixing screws for the cover open switch.

Caution
The screw on the left is tightened with reinforcing hex nut in the rear. Be careful not to drop or lose it.

4. Cut the binders and remove the cover open switch.

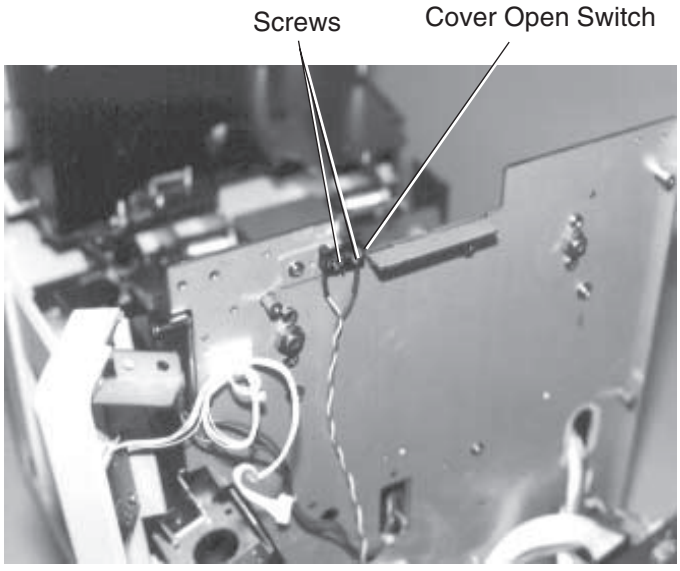


Fig. 4-28

5. Install the new interlock switch by reversing the installation procedures (Use new cable bands to replace those that were cut.)

4-9 Replacing the Paper Sensor Unit

1. Remove the two fixing screws for the base: paper sensor unit.

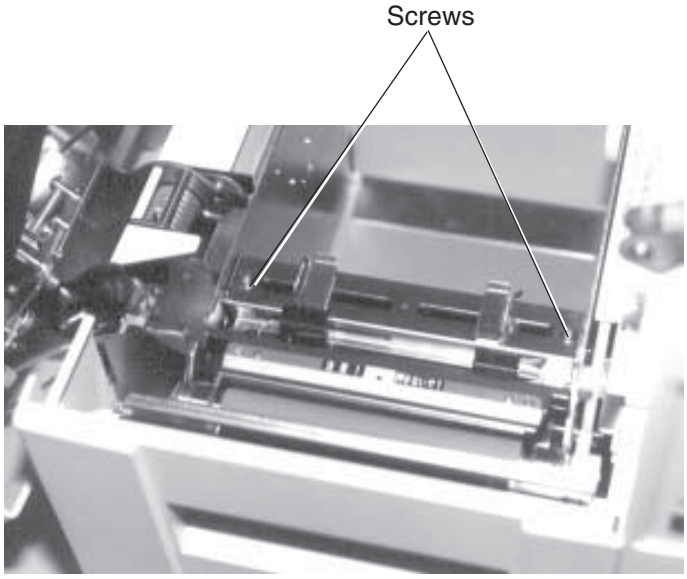


Fig. 4-29

2. Disconnect connector CN1.

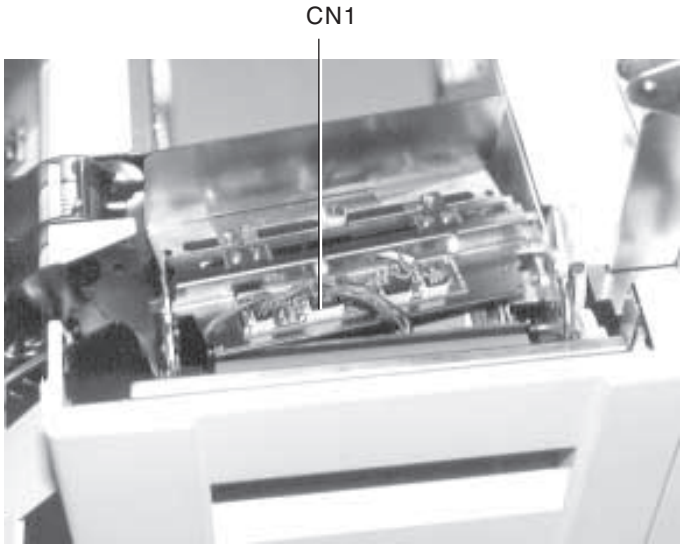


Fig. 4-30

3. Install the sensor by reversing the removal procedures

4-10 Replacing the Ribbon End Sensor

1. Open the top cover of the printer
2. Remove the ribbon at the roll-in receiving side, and place it in the V groove.
3. Remove the fixing screws for the bracket: end ribbon sensor.

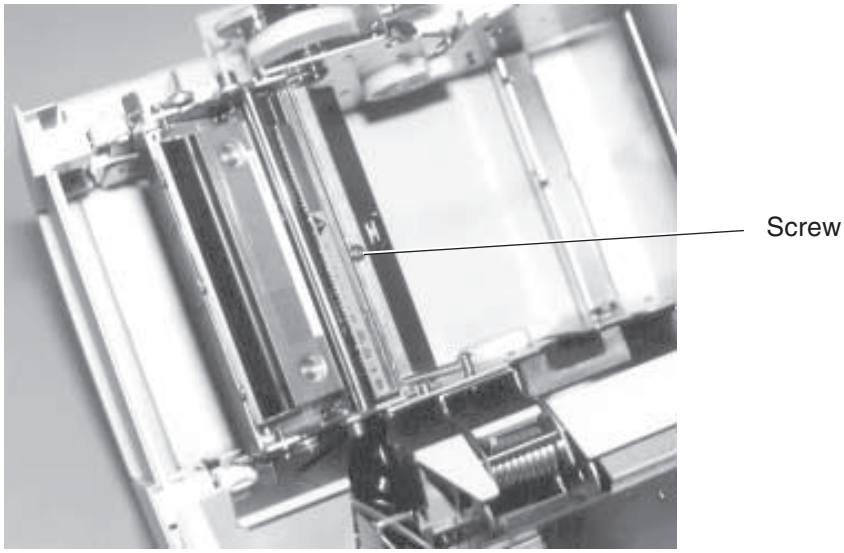


Fig. 4-31

4. Remove the connector for the ribbon end sensor.

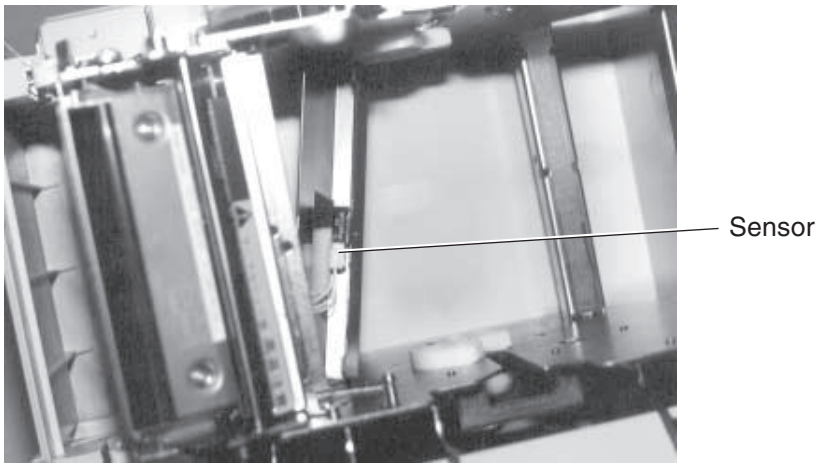


Fig. 4-32

5. While pressing the claw on the end ribbon sensor towards the interior, pull it upward, extracting it from the bracket.

Fig. 4-33

6. Install the new sensor by reversing the removal procedure.

4-11 Replacing the Printed Circuit Board: Panel

1. Do "Cover Disassembly" procedures 4-1-1 ~ 4-1-2.
2. Remove the four fixing screws for printed circuit board: panel and remove the board.

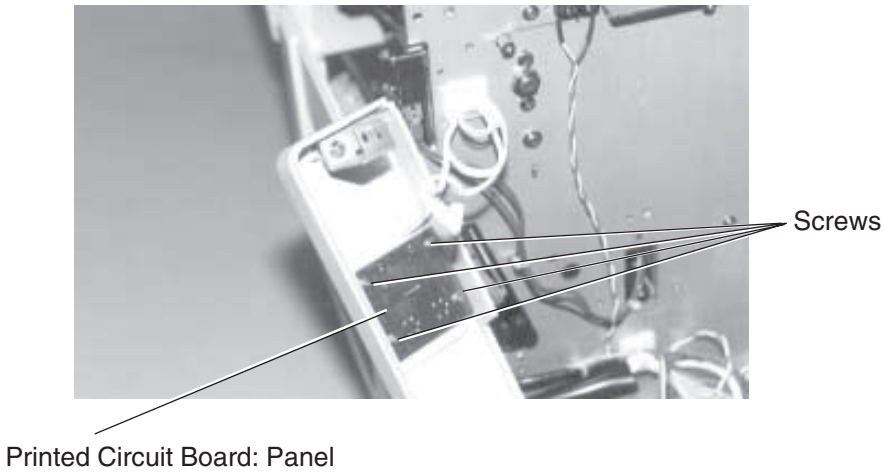


Fig. 4-34

3. Install the new board by reversing the removal procedures.

Caution
Since the screws are self-tapping, be careful not to overtighten them.

4-12 Replacing the Friction Gear Unit

1. Open the top cover of the printer
2. Take off the E-ring that holds the friction gear unit in place, then remove the friction gear.

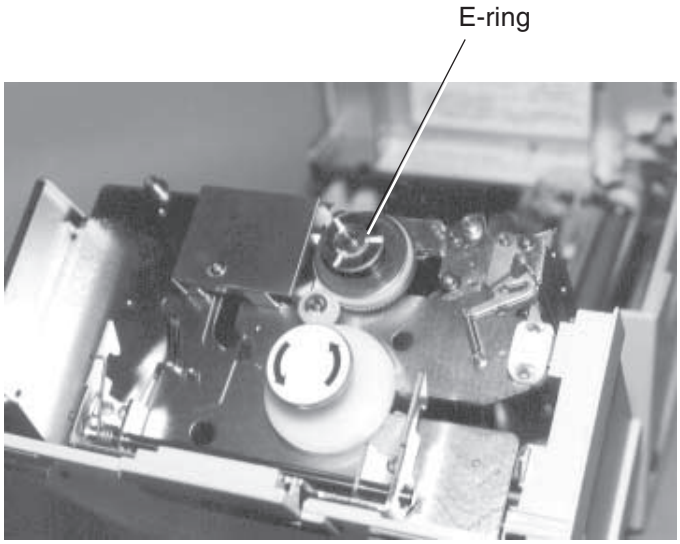


Fig. 4-35

3. Install the new gear by reversing the removal procedures.

4-13 Replacing the Idler Gear Unit

1. Open the top cover of the printer.
2. Loosen the two hex type set screws for knob: roll-in receiver, then remove the knob.

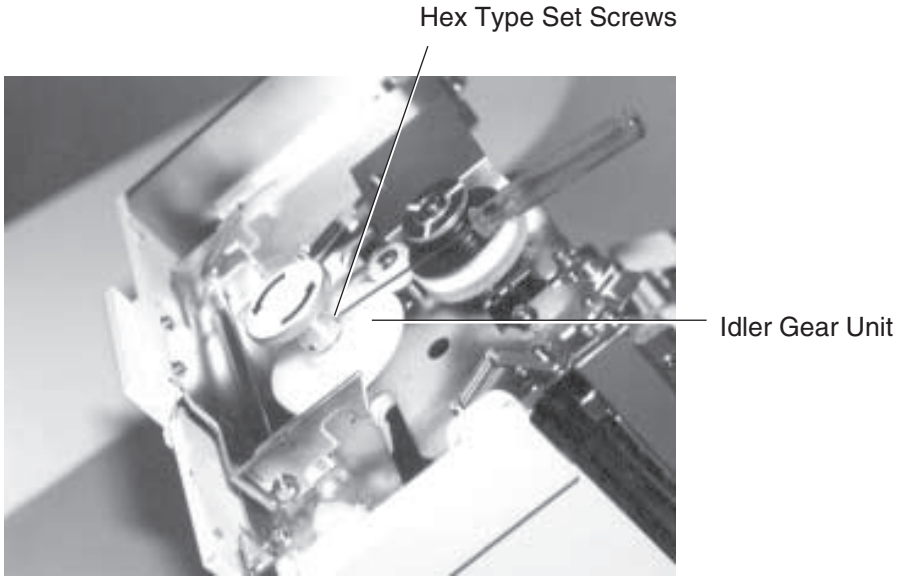


Fig. 4-36

3. Detach the crescent shape snap ring holding the idler gear unit in place, then take out the idler gear unit.

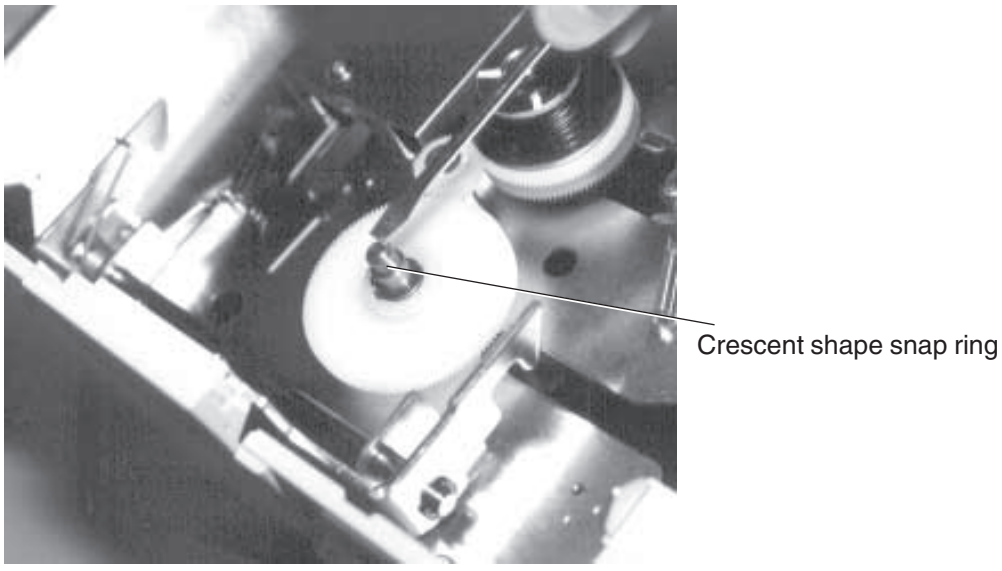


Fig. 4-37

4. Install the new gear by reversing the removal procedures

4-14 Replacing the LF Motor

1. Do "Cover Disassembly" procedures 4-1-1 ~ 4-1-2.
2. Remove the printed circuit board: main control.
3. Remove the two fixing screws for the base: paper sensor and disconnect connector CN1, then remove the paper sensor unit.

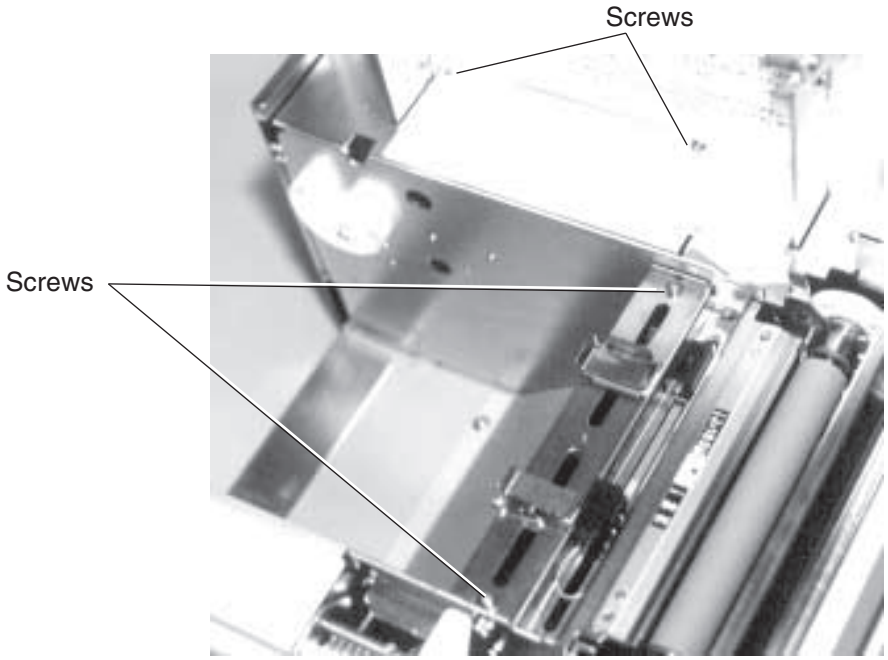


Fig. 4-38

4. Remove the E-ring holding the idler gear: LF in place.

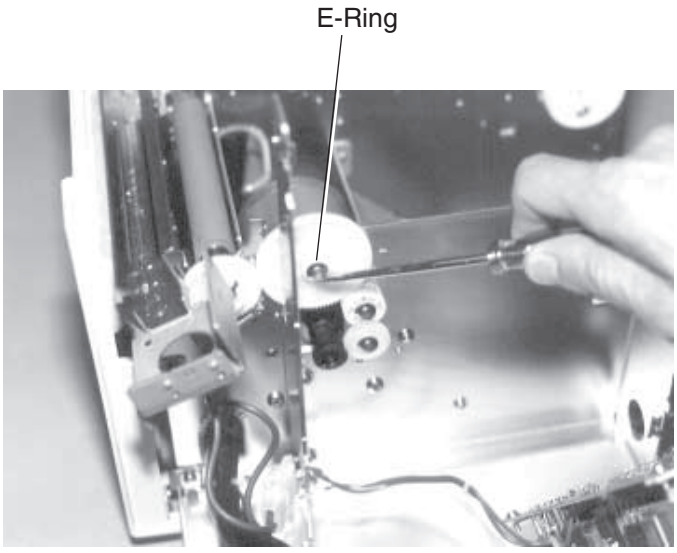


Fig. 4-39

5. Remove the three fixing screws for the LF motor.
   Cutting the cable bands, take out the LF motor.

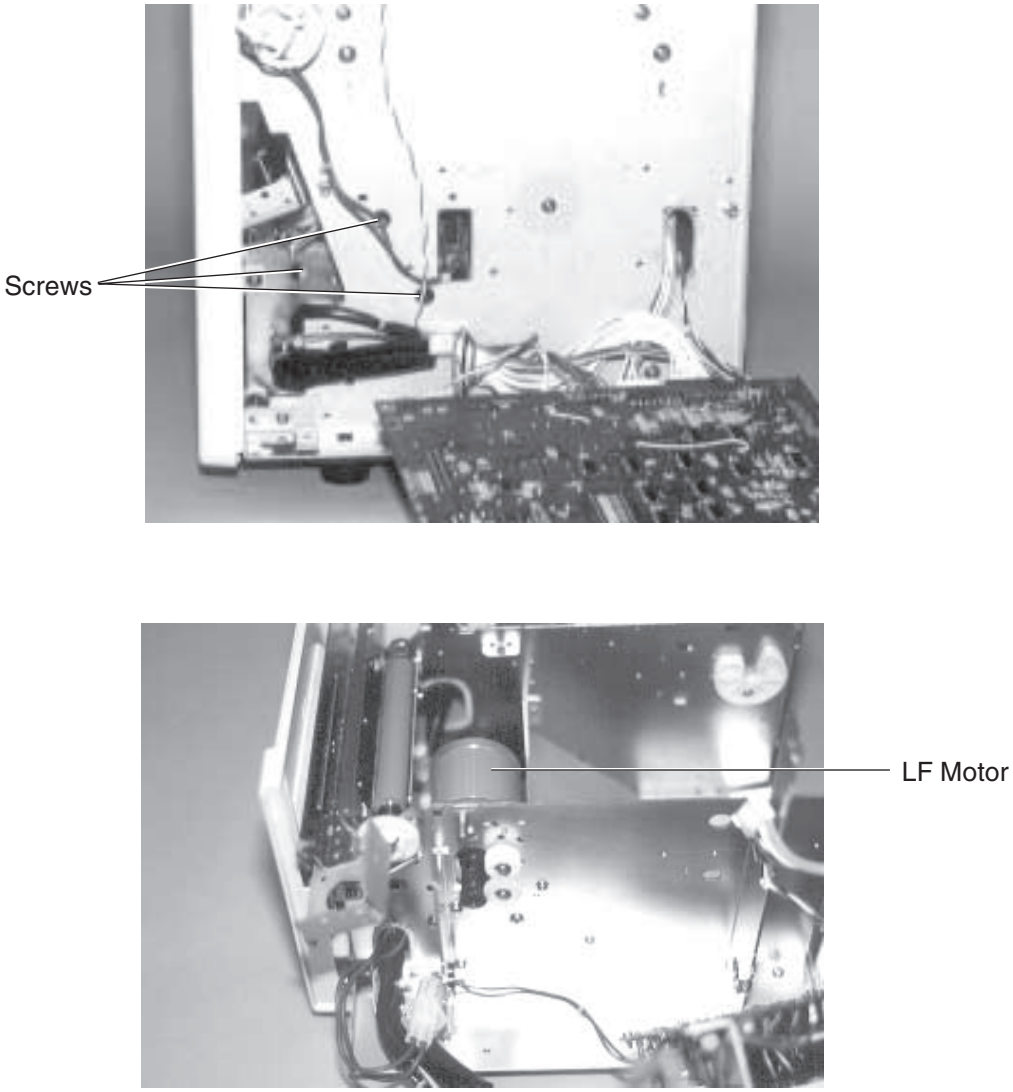


Fig. 4-40

6. Install the new LF motor by reversing the removal procedures.

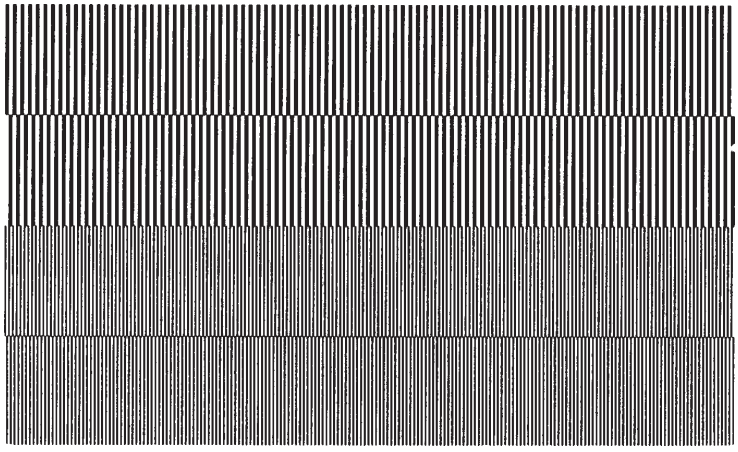
5. Test Print

The following method can be used to make a test print. Be sure to make one test print during the installation procedure before connecting the printer to a computer or terminal.

- Make sure that the paper type function is set to continuous forms mode. (DIP SW6 on the back panel should be set to ON.)
- Load 3.94" (100mm) continuous paper (either regular paper or coated paper) and 4.72" (120mm)-wide ribbon (wax/resin type) into the printer.
- To start the test print, turn the power switch to ON while pushing the Feed button on the front control panel.
- Continue pushing the Feed button on the panel until the Error LED lights.
- To stop the test, turn the power switch to OFF after pushing the Pause switch.

Test Print Examples

- At first the test print checks whether there is any abnormality in the thermal head. On the first page, there are 10 and 5mil patterns, and after that, a demo print pattern is printed on the second page.



10mil Pattern

Test Print Example

6. Changing Thermal Head Pressure

① When the label width is less than 2" (50mm), while pressing the sides of the thermal head's heat element, move the pressure change plate until it is caught under the two disks.

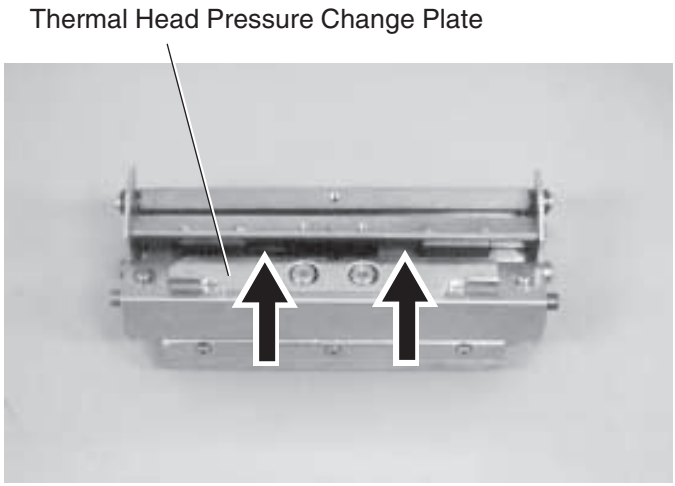


Fig. 6-1

② When the label width is 2" (50mm) or more, while pressing the sides of the thermal head's heat element, remove the pressure change plate under the two disks.

7. Maintenance

Follow this maintenance schedule in order to achieve the maximum possible life from the printer. Failure to follow this maintenance schedule may void the warranty.

⚠Warning

- All maintenance should be performed with the printer disconnected from the power source, with the power switch in the OFF position.
- Isopropyl alcohol, and methanol are flammable. Exercise extreme caution when dealing with them.
- Don't clean the thermal head when it is hot.

Caution

① The suggested solvents for cleaning the thermal head, platen, feed roller and label sensor are isopropyl alcohol or methanol. The use of solvents other than isopropyl alcohol or methanol for cleaning is likely to result in damage to the parts.

② When cleaning the printer, use a clean and untreated cloth.
Be sure not to use a chemical dustcloth.

③ Whenever working inside the printer, remove all jewelry and gloves. Also be careful not to scratch the thermal head with metal buttons, rings, bracelets, or any other metal objects.

④ Never lubricate any part of the printer. All parts are factory lubricated, and it is not necessary to lubricate again when using the printer.

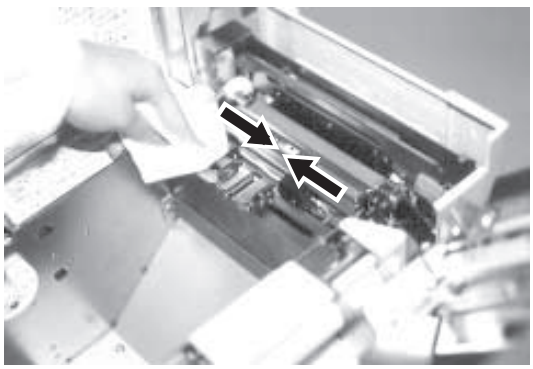
⑤ At no time should any solvent, cleaning solution, or anything else be sprayed onto, into, or around the printer. If spray gets in the printer, damage may result.

Cleaning the Inside

Turn off the power switch, unplug the power cable and open the printer's top cover. Remove the label and ribbon and clean the parts indicated in figures 7-1 to 7-6 using a clean, untreated cloth dampened with isopropyl alcohol or methanol.

7-1 Cleaning the Paper Guide

Clean the entire area while spreading and bringing together the paper guides.



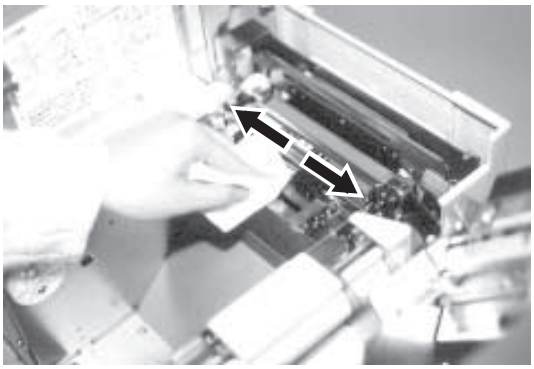


Fig. 7.1

7-2 Cleaning the Platen Roller

Wipe the platen roller while turning the gear by hand.

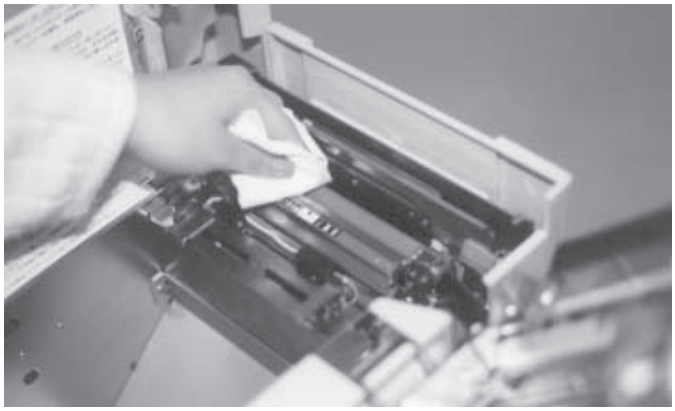


Fig. 7-2

7-3 Cleaning the Paper Sensor

Moisten a cloth with alcohol and feed it through the sensor in the same manner as with labels, then move the cloth back and forth a few times to clean the sensor.

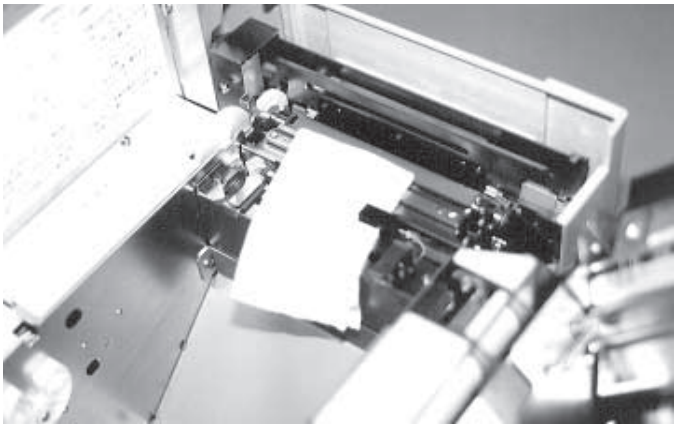


Fig. 7-3

7-4 Cleaning the Ribbon Peeling

Caution
Do not push strongly against the ribbon peeler part.

Fig. 7-4

7-5 Cleaning the Ribbon Take Up Bar

Fig. 7-5

7-6 Cleaning the Thermal Head

⚠ Caution
Note that the thermal head may be hot, even if the power is off.

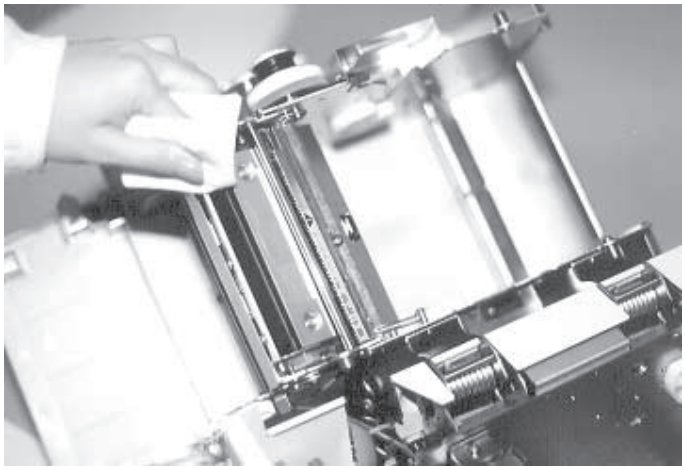


Fig. 7-6

8. Troubleshooting

This section describes check points and procedures to follow if you experience trouble with the printer.

Cannot Print Well

Printer Condition	Possible Causes	Remedy
Cannot test print.	· Not pressing paper Feed switch.	· Turn power on while pressing Feed switch.
Doesn't print.	· Ribbon installed with back side out or there is no ribbon. · Printer has no power. · Communication cable bad, or the line has become severed. · The type of supplies or density selected is not suitable. · Now in print pause state. · Supply materials have changed.	· Install the ribbon with the ink side (face) outward. · Check power cable, turn on power switch. · Replace communication cable. · Select suitable values for supplies and density. · Press the Pause until the Error LED is extinguished. · Raise the print density.
Print quality is bad or ribbon has problems.	· Supplies other than those designated are being used. · Platen roller is worn. · Thermal head is too old head. · Ribbon is wrinkled. · The ribbon is installed at an angle. · The type of supplies or density selected is not suitable. · The paper guide has been set incorrectly.	· Change to designated Supplies. · Replace platen roller. · Replace the thermal. · Install the ribbon so that no wrinkles appear. · Install the ribbon correctly. · Select suitable values for supplies and density. · Set the paper guide correctly for the paper, with no gap between paper guide and paper.

9. Parts List

Ref. No.	Part No.	No. of items	Name
1	7C36-0524	1	Thermal head: assembly
2	7C35-1341	1	Cover: Top
3	7C36-0485	1	Platen: assembly
4	7C38-0342	1	Printed circuit board: main control: assembly
5	7C36-2757	1	Electric transformer
6	7C37-0270	1	Printed circuit board: PSU: assembly
7	1204-2188	1	Interlock SW: DDIL-AILA
8	7C35-0171	1	Cover open switch: assembly
9	7C36-0483	1	Shaft: roll holder: assembly
10	1403-0736	1	Reflective type photo sensor: GP2S30
11	7C36-1025	3	Bearing shaft: guide shaft: ribbon: roll-in
12	7C42-0380	1	Printed circuit board: panel: assembly
14	7C37-0555	1	Gear: friction: roll-in: assembly
15	7C35-0106	1	Sleeve: gear: idler: assembly
16	7C38-0250	1	L/F motor: assembly
17	7C36-0280	1	Printed circuit board: noise filter: assembly
18	7C38-1356	1	Cover: right
19	7C38-1374	1	Cover: front: right: assembly
20	7C38-1380	1	Decal: control panel
21	7C35-1335	1	Cover: left: lower
22	7C37-1372	1	Cover: front: lower
23	7C37-1371	1	Cover: front: upper
24	7C37-1334	1	Cover: rear: bottom: left
25	7C35-1352	1	Handle: cover: right
26	7C31-1316	1	Handle: side cover: left: upper
27	7C37-1333	1	Cover: rear: upper
28	7C36-0562	2	Ribbon roller: assembly
29	7C37-1073	1	Cover: drive section: upper
30	7C35-5261	2	De-electrifier brush
31	7C35-1332	4	Bracket: Cover: front: lower
32	7C35-1105	1	Pressure plate: interlock SW
33	7C40-1411	2	Fixing board
34	7C35-1325	2	Bracket: cover: front: right
35	7C35-1340	1	Hinge: assembly
37	7C35-1000	1	Base:
38	7C35-1070	1	Side plate: latch
39	7C31-1060	2	Set: shaft ASSY
40	7C31-1054	2	Eccentric: Set lever
41	C203-3027	2	Stepped screw: stopper
44	7C35-1104	1	Bracket: interlock SW
45	7C36-1113	5	Stud: control board
46	7C35-3301	1	FG mesh

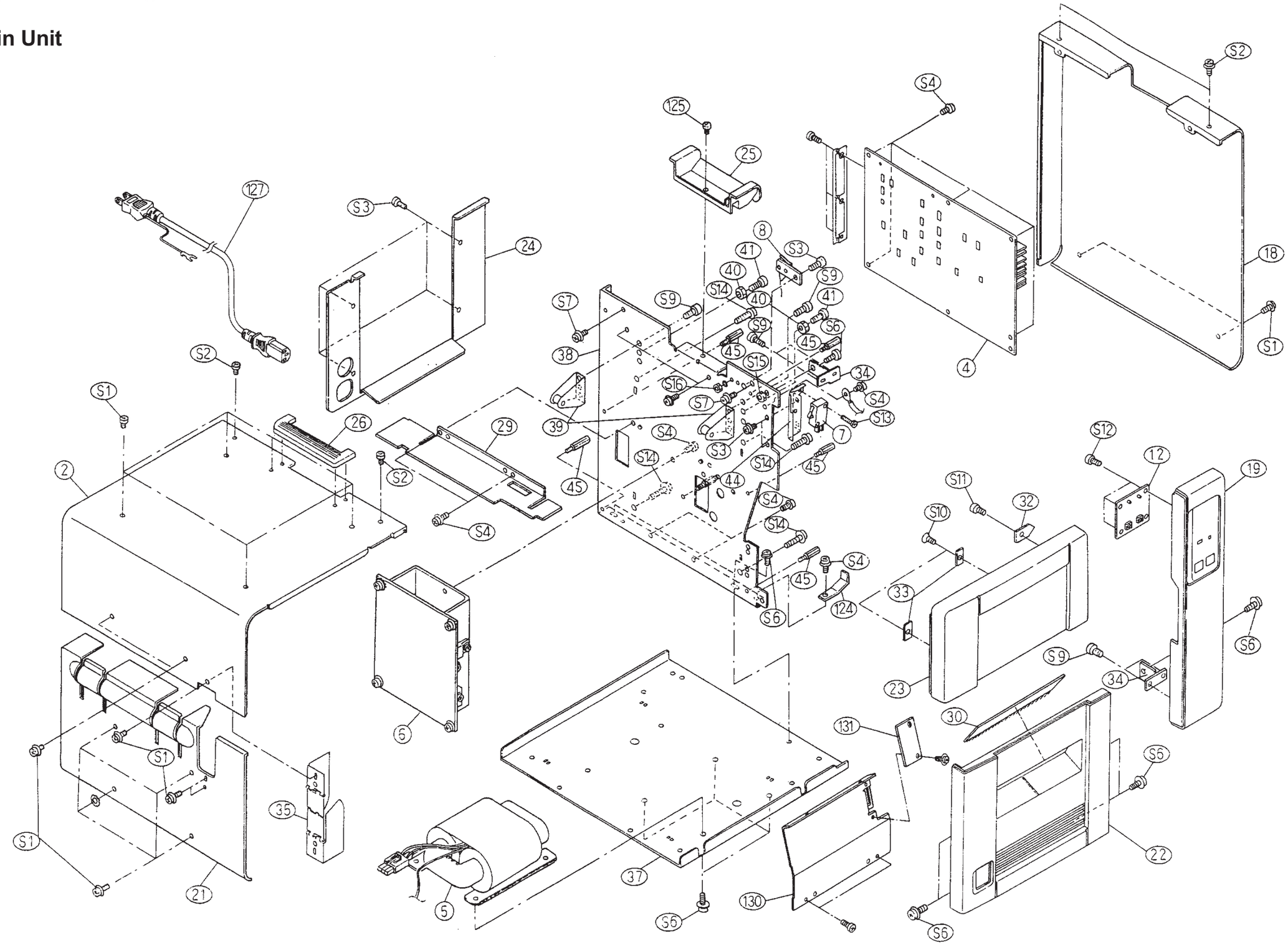
Ref. No.	Part No.	No. of items	Name
47	7C31-1059	1	Knob: set lever
48	7C31-1058	1	Set lever: frame
47	7C31-1055	2	Bracket: set lever
50	7C31-1067	1	Spring: set lever: back
51	7C31-1057	1	Shaft: set lever
52	7C35-5602	6	Catcher: ribbon
53	7C31-1033	2	Positioning pin: upper
54	7C35-1022	3	Stay: upper
55	7C35-0121	1	Side plate: upper: right: Calking
56	7C35-0120	1	Side plate: upper: left: Calking
57	7C36-1026	1	Guide shaft: ribbon: take up
58	7C31-1081	2	Reinforcement plate: upper frame
59	7C35-5506	1	Blade spring: ribbon return preventer
60	7C31-5647	1	Knob: ribbon roll-in
61	7C31-5648	1	Crescent snap ring
62	0807-4076	1	Washer: 8.2 × 6.1 × 0.3
63	7C31-5646	2	Compression spring: idler
64	7C31-5645	1	Friction pad: idler
65	7C31-5649	1	Tape: fixing: friction pad
66	7C31-4722	2	Gear: idler: roll-in: II
67	7C31-5540	1	Shaft: gear: friction
68	7C31-5541	3	Corrugatedwasher: 8
69	0807-5037	1	Washer: 8.1: t1
70	7C31-5546	1	Gear: friction, movable
71	7C31-5549	2	Friction pad: roll-in
72	7C31-5547	2	Spacer: friction
73	7C36-5509	1	Compression spring: gear
74	7C31-5551	1	Adjuster: friction: roll-in
75	0725-0160E	1	C shape 16 snap ring for shaft
76	7C40-4701	2	Gear: platen
77	7C36-5508	1	Collar: guidance: torsion
78	7C36-5507	1	Torsion coil spring: ribbon: roll-in
79	7C40-1410	2	Magnet catch: assembly
80	7C31-5590	2	Expansion spring: lever
81	7C31-5591	1	Lever: thermal head: left
82	7C31-5592	1	Lever: thermal head: right
83	7C35-1314	2	Hinge: cover: front: upper
84	7C35-1313	1	Chain
85	7C36-5263	1	Cover thermal head: harness
86	7C31-5585	3	Expansion spring: cover
87	7C35-5262	1	Step screw: M3
88	5447-2769	2	Step screw: Φ4 × M3

Ref. No.	Part No.	No. of items	Name
89	7C35-1110	1	Bracket: ribbon end sensor
90	5505-2752	4	Stay: printed circuit board
91	0807-3055	6	Washer: 7 × 4 × 1
92	1106-0266	1	Snap bushing: Φ23.8
93	1106-2979	1	Bushing: short
94	7C36-1019	2	Bracket: base: paper guide
95	7C35-1013	1	Bottom plate: roll paper
96	7C35-0110	1	Side plate: lower: left: Calking
97	7C36-0118	1	Side plate: lower: right: Calking
98	7C36-1214	1	Stay: lower
99	7C35-4720	1	Lever: platen: left
100	7C35-4721	1	Lever: platen: right
101	7C31-4721	1	Idler gear: LF
102	7C35-1071	1	Strut: side plate: latch
103	7C31-5127	2	Nut: T type: M4
104	7C35-1112	1	Bracket: power SW
105	1204-2158	1	Rocker SW
106	7C35-1106	2	Shield: electric cable
107	7C35-1040	2	Hinge: lower
108	7C35-1041	2	Hinge: upper
109	7C35-1042	1	Shaft: hinge: front
110	7C35-1044	2	Torsion spring: hinge
111	7C35-1045	4	Guide collar: torsion spring
112	1105-0322	2	Edge saddle: EDS2
113	7C35-1046	2	Shaft: spring: cap
114	7C35-1043	1	Shaft: hinge: back
115	7C31-1048	4	Friction pad: hinge
116	7C31-1085	2	Pressure plate: friction: hinge
117	7C31-1047	4	Disc spring: hinge
118	7C31-1049	1	Hex nut: M10 × 1
119	7C31-1086	1	Pin: pressure: fixing
l20	7C35-1018	1	Fixing plate: reflection sensor
121	7C38-0108	1	Paper sensor ASSY
123	7C38-0481	2	Cap plate: roll paper: assembly
124	7C35-1353	2	Bracket: cover: right
125	7C31-1327	1	Pre-coat screw
126	7C31-1051	2	Nut: T-type: M3
127	1150-0352	1	AC cable
128	7C38-0315	1	Harness: thermal head
129	7C37-1335	1	Cover: back: lower: right
130	7C37-5836	1	Cover: transformer
131	7C31-1324	1	Blank plate: side cover: right

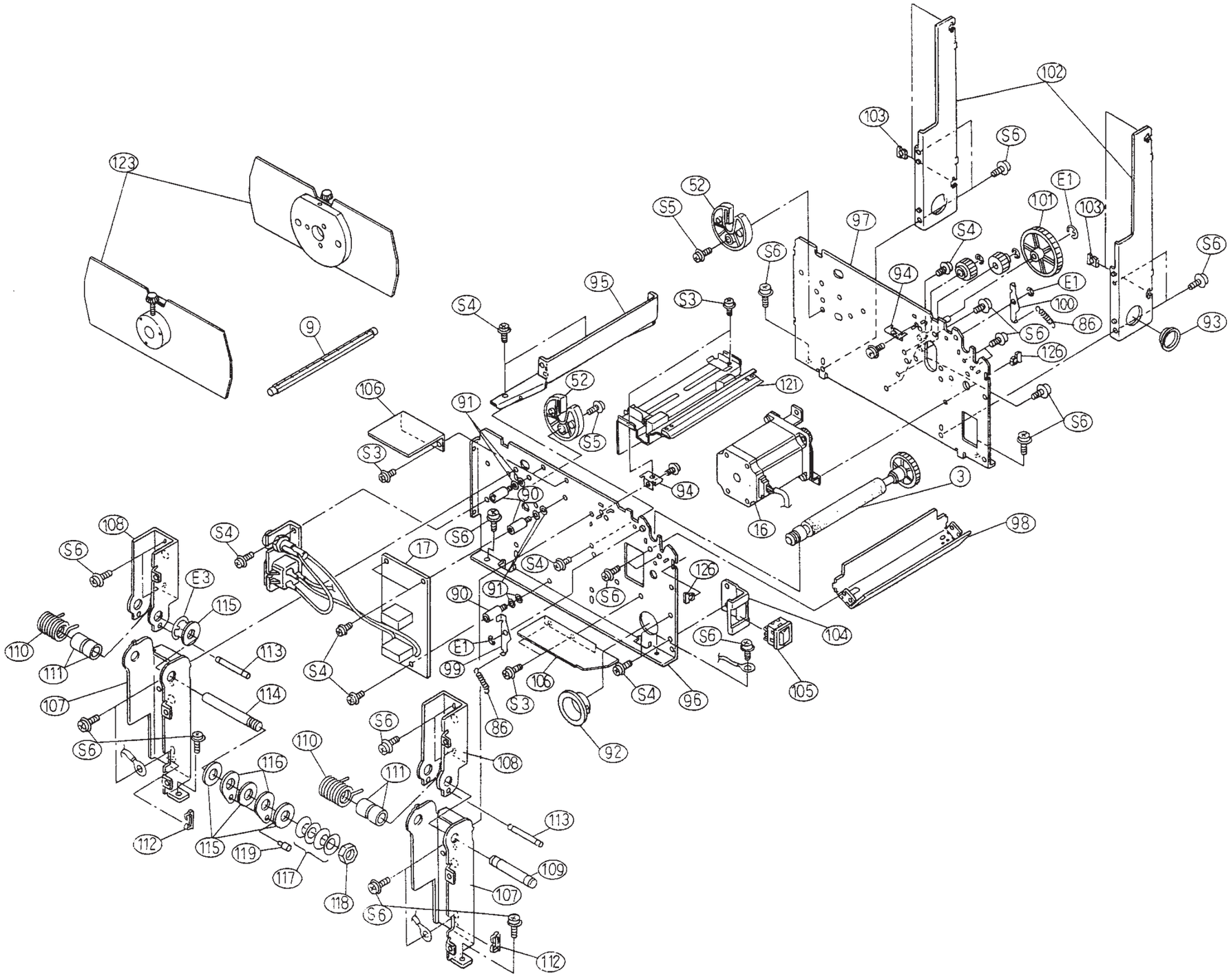
Ref. No.	Part No.	No. of items	Name
S1	7C35-1360	14	Finished screw: M3 × 6
S2	7C31-8551	4	Finished screw: jacketed
S3	0951-3004B	42	Flat smooth screw: M3 × 4
S4	0951-3006B	51	Flat smooth screw: M3 × 6
S5	0951-3008B	8	Flat smooth screw: M3 × 8
S6	0951-4006B	50	Flat smooth screw: M4 × 6
S7	0353-0060B	13	Small binding screw: M3 × 6
S8	0352-5060B	8	Small binding screw: M2.5 × 6
S9	0354-0060B	14	Small binding screw: M4 × 6
S10	0323-0060B	2	Flat countersunk head screw: M3 × 6
S11	0413-0082B	12	Self-tapping screw: M3 × 8
S12	0413-0062B	6	Self-tapping screw: M3 × 6
S13	0313-0140B	2	Small pan head screw: M3 × 140
S14	0951-4010B	7	Flat smooth screw: M4 × 10
S15	0710-0040B	1	Hex nut: M4
S16	0710-0020B	1	Hex nut: M2
S17	0553-0040E	5	Hex hole set screws: M3 × 4
E1	0720-0040E	9	E-ring: 4
E2	0720-0060E	13	E-ring: 6
E3	0720-0100E	5	E-ring: 10

10. Exploded Diagram

10-1 Main Unit



10-2 Lower Frame



10-3 Upper Frame