

SHARP SERVICE MANUAL



1. PRODUCTS OUTLINE

The CE-126P printer is an optional printer with the cassette interface designed for use with the pocket computer models PC-1245, PC-1250, PC-1251, and PC-1401 (EL-5500).

2. SPECIFICATIONS

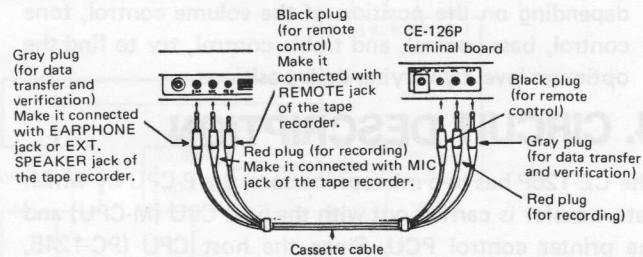
Printer type:	Dot matrix thermal printer (MTP-201), identical to the one used for the CE-125
Printing positions:	24 printing positions
Print speed:	Approx. 0.8 lines/second
Paper feed speed:	Approx. 0.8 lines/second
Recording paper:	CPAPR1025CC05 (EA1250P, identical to the one used for the CE-125) Thermal recording paper (paper roll with outer diameter of 18 mm, maximum, and width of 58mm)
Power supply:	Uses four UM3 (AA) dry cell batteries. Options: AC adaptor (EA-23E) NiCd battery (EA-27B) (use of the EA-23E for recharge)
Power consumption:	3 watts
Battery life:	UM3: Approx. 2000 lines SUM3: Approx. 3000 lines EA-27B: Approx. 5000 lines (recharge time: about 15 hours)
Physical dimensions:	140.5(W) x 116(D) x 23(H) mm

3. TAPE RECORDER INTERFACING METHOD



CODE : 00ZCE126PSM/E

MODEL CE-126P



- Use of the CE-125 Tape Recorder exclusively designed for the Pocket Computer is recommended.

Cassette Tape Recorder

The following is a description of the minimum tape recorder specifications necessary for interfacing with the CE-126P.

Item	Requirements
1. Recorder Type	Any tape recorder, standard cassette or micro-cassette recorder, may be used in accordance with the requirements outlined below.
2. Input Jack	The recorder should have a mini-jack input labeled "MIC". Never use the "AUX" jack.
3. Input Impedance	The input jack should be a low impedance input (200 ~ 1,000 OHM.)
4. Minimum Input Level	Below 3 mV or -50 dB.
5. Output jack	Should be a minijack labeled "EXT. (EXTernal speaker)", "MONITOR", "EAR (EARphone)" or equivalent.
6. Output impedance	Should be below 10 OHM.
7. Output level	Should be above 1V (practical maximum output above 100 mW)
8. Distortion	Should be within 15% within a range of 2 kHz through 4 kHz.
9. Wow and Flutter	0.3% maximum (W.R.M.S)
10. Other	Recorder motor should not fluctuate speed.

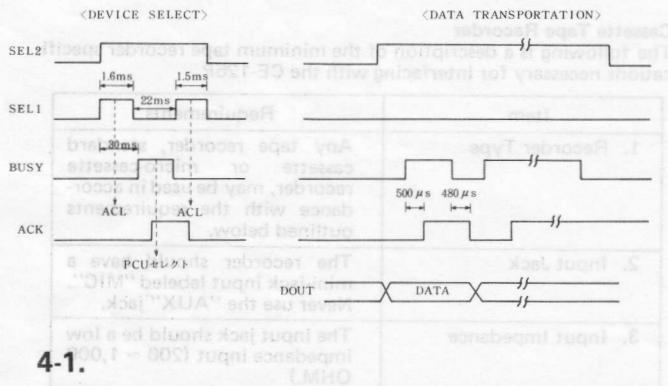
NOTES:

- Some of tape recorders may not operate properly owing to different specification or electrical characteristics affected by signal distortion, electrical noise, level dropout caused after long years of use.
- When using the tape recorder fitted with the mixing feature, it needs to disable the mixing function for both recording and playback.
- Depending on the tape recorder used, better reading result may be attained when the red plug is unplugged from the MIC jack.
- As it may impede proper data transfer and verification depending on the position of the volume control, tone control, bass control, and treble control, try to find the optimum level by varying their positions.

4. CIRCUIT DESCRIPTION

The CE-126P has two microprocessors; the P-CPU by which data transfer is carried out with the host CPU (M-CPU) and the printer control PCU. Since the host CPU (PC-1245, 1250, 1251, 1401, (EL5500) have different CPU actions, the CE-126P CPU therefore performs different action.

M-CPU to P-CPU data transfer method (for PC-1245, 1250, 1251)

**4-1.**

What action should the P-CPU take prior to data transfer is dependent on the state of SEL1 and SEL2 from the M-CPU. (DEVICE SELECT)

M-CPU SEL1	SEL2	Action
L	L	Nop
L	H	PCU select
H	L	Remote ON
H	H	ACL

4-2.

The following actions take place before data transfer.

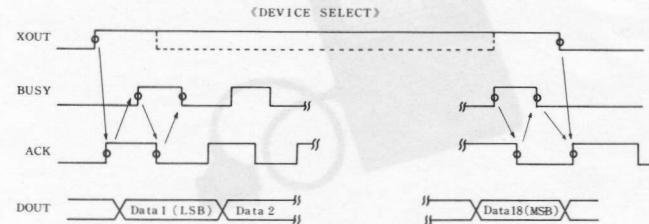
- (1) SEL1 goes low and SEL2 high.
- (2) BUSY from the M-CPU turns high level.
- (3) Upon receipt of BUSY, ACK of the P-CPU is set high and the data is received to the P-CPU.

Since the data is transferred in bit by bit serial mode, above steps (2) and (3) are repeated eight times to complete transfer of one data. For instance, those steps are repeated for 192 times (24 x 8) in order to transfer a 24 digits data. The print command, however, is sent out to the P-CPU at the end of the data in a form of the code "OD"

4-3.

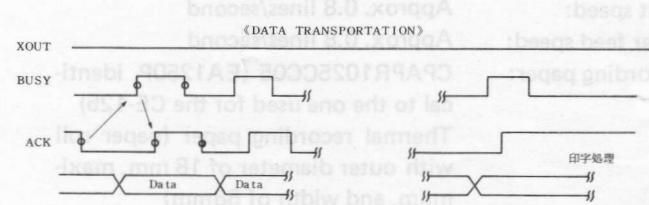
M-CPU to P-CPU data transfer method (for PC-1401, EL5500)

Since there are no SEL1 and SEL2 used for the PC-1401 and EL5500, DEVICE SELECT is dependent on the contents of data.

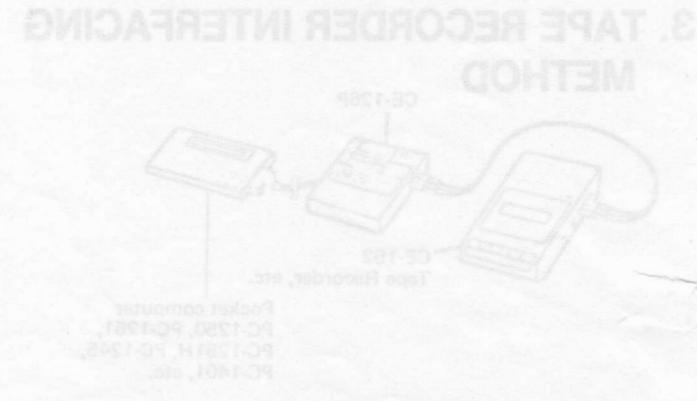


- (1) For DEVICE SELECT, XOUT becomes high.
- (2) As the P-CPU receives a high state of XOUT, it sends ACK to the M-CPU.
- (3) As the M-CPU receives ACK, it sends back BUSY.
- (4) Data is received to the P-CPU with a high state of BUSY. ACL, REMOTE ON, CPU select actions is carried out depending on the contents of data.

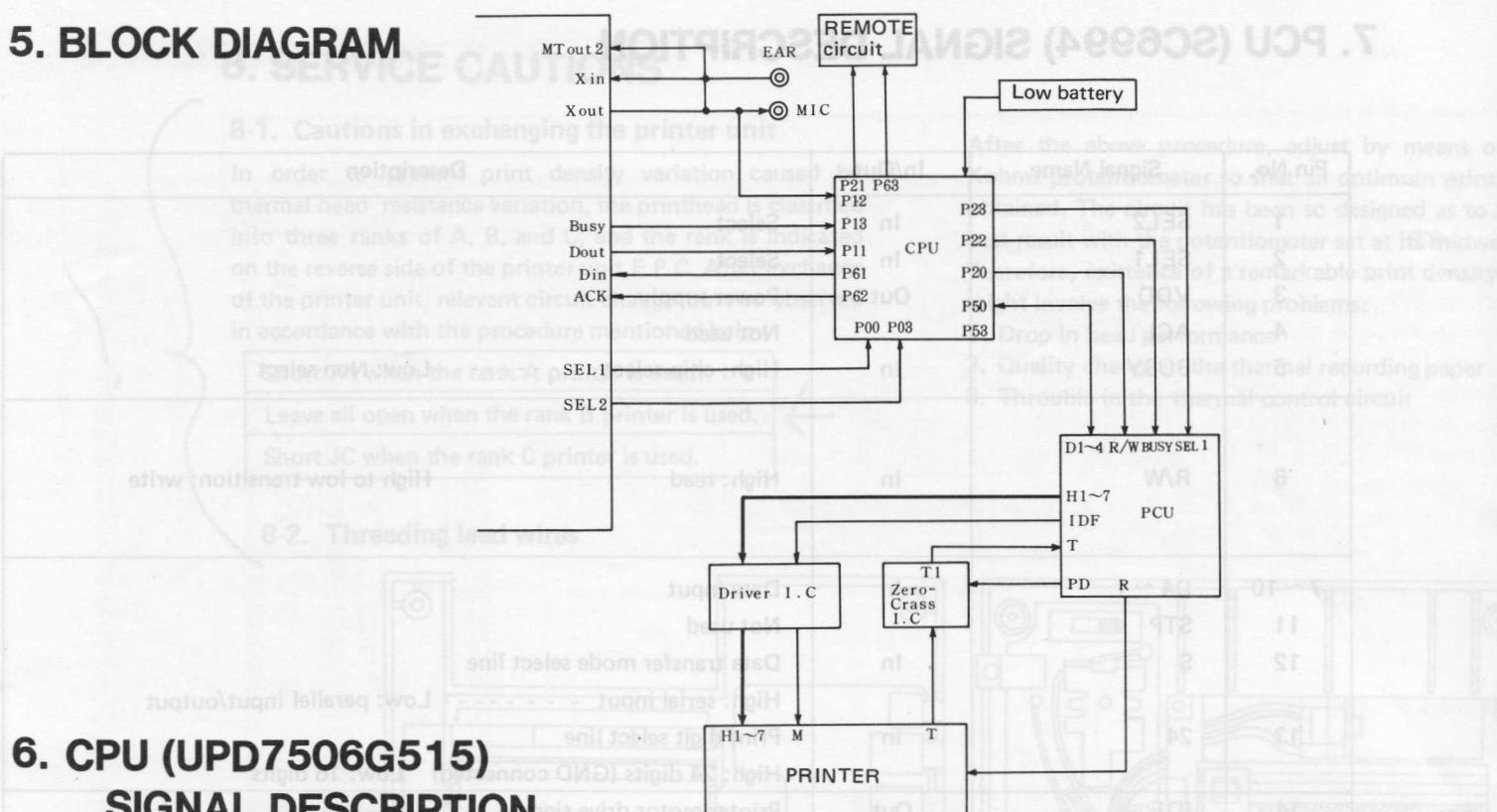
4-4. Print data transfer



XOUT goes low when the print data is transferred. Data transfer is done in a manner identical to those of the PC-1250.



5. BLOCK DIAGRAM



6. CPU (UPD7506G515) SIGNAL DESCRIPTION

Pin No.	Signal Name	In/Out	Description
P03	SEL2	In	Select
P00	SEL1	In	Select
P13	BUSY	In	Handshake, active high
P12	XOUT	In	Device select, active high
P11	DOUT	In	Data, active high
P10	DOUT	In	Printer error
P23	ACL/SEL1	Out	High: ACL Low: normal
P22	CS/SEL2	Out	High: chip select Low: non-select
P21	REMO2	Out	Remote off Remote off pulse generation
P20	R/W	Out	High: read, "High to low transition": write
P43	P/S	In	Data transfer mode High: parallel Low: serial
P42	NORMAL PAPER/ THERMAL PAPER	In	PCU select High: normal paper PCU Low: thermal paper PCU
P41	LOW BATTERY	In	Low battery check High: normal Low: low battery
P40	ACK	In	Handshake (PCU to printer CPU)
P53	D3	In/Out	Data line between CPU and PCU MSB (High 1, Low 0)
P52	D2	In/Out	Data line between CPU and PCU (High 1, Low 0)
P51	D1	In/Out	Data line between CPU and PCU (High 1, Low 0)
P50	D0	In/Out	Data line between CPU and PCU LSB (High 1, Low 0)
P63	REMO1	Out	Remote on Remote on pulse generation
P62	ACK	Out	Handshake (to host CPU), active high
P61	DIN	Out	Printer error (to host CPU) High: printer error Low: normal
P60	BUSY	Out	Handshake (printer CPU to PCU), active high

7. PCU (SC6994) SIGNAL DESCRIPTION

2. BLOCK DIAGRAM

Pin No.	Signal Name	In/Out	Description
1	SEL2	In	Select and M-CPU. Since there are two types of CPU (M-CPU and P-CPU), DEVICE SELECT is dependent on the contents of data.
2	SEL1	In	Select
3	VDD	Out	Power supply
4	ACL		Not used
5	BUSY	In	High: chip select ----- Low: Non-select
6	R/W	In	High: read High to low transition: write
7 ~ 10	D4 ~ 1	In	Data input
11	STP		Not used
12	S CU	In	Data transfer mode select line High: serial input ----- Low: parallel input/output
13	24	In	Print digit select line High: 24 digits (GND connected) Low: 16 digits
14	IDF	Out	Printer motor drive signal
15	H7	Out	Printhead element on pulse
16	H6	Out	Printhead element on pulse
17	GND	In	Power supply
18 ~ 22	H5 ~ H1	Out	Printhead element on pulse
23	R	In	Printer reset (printhead home position detect)
24	PD	Out	Power down (in supply during printer operating cycle, otherwise, power is not supplied to the printer drive circuit.)
25	T	In	Printer timing (generated from the tachogenerator of the motor)
26 ~ 28	TS1 ~ 3	In	Test pins
29	VP1	Out	Printer control circuit supply power
30 ~ 32	BC1 ~ 3	In/Out	PCU frequency control
33	CCK	Out	Clock test pin
34	HA	In	Not used → (Print density adjust pin...JA and JB pin connection varies according to the printhead rank).
35	HB		
36	HC	In	
37, 38	CL1, 2	In	Basic clock pulse control resistor fitting pin
39	PF	In	Paper feed key input
40	NP	In	GND Connected
41	ACL	In	All clear input
42	OP3	Out	ACL select (high when on)
43	OP2		Not used.
44	OP1		Not used.
45	D3	Out	
46	D2	Out	
47	D1	Out	
48	D0	Out	
49	ACK		
50	REMOT		
51	DIN		
52	BUSY		
53	B80		
54	B81		
55	B82		
56	B83		

8. SERVICE CAUTIONS

8-1. Cautions in exchanging the printer unit

In order to prevent print density variation caused by thermal head resistance variation, the printhead is classified into three ranks of A, B, and C, and the rank is indicated on the reverse side of the printer unit F.P.C. After exchange of the printer unit, relevant circuit change must be observed in accordance with the procedure mentioned below.

Short JA when the rank A printer is used.

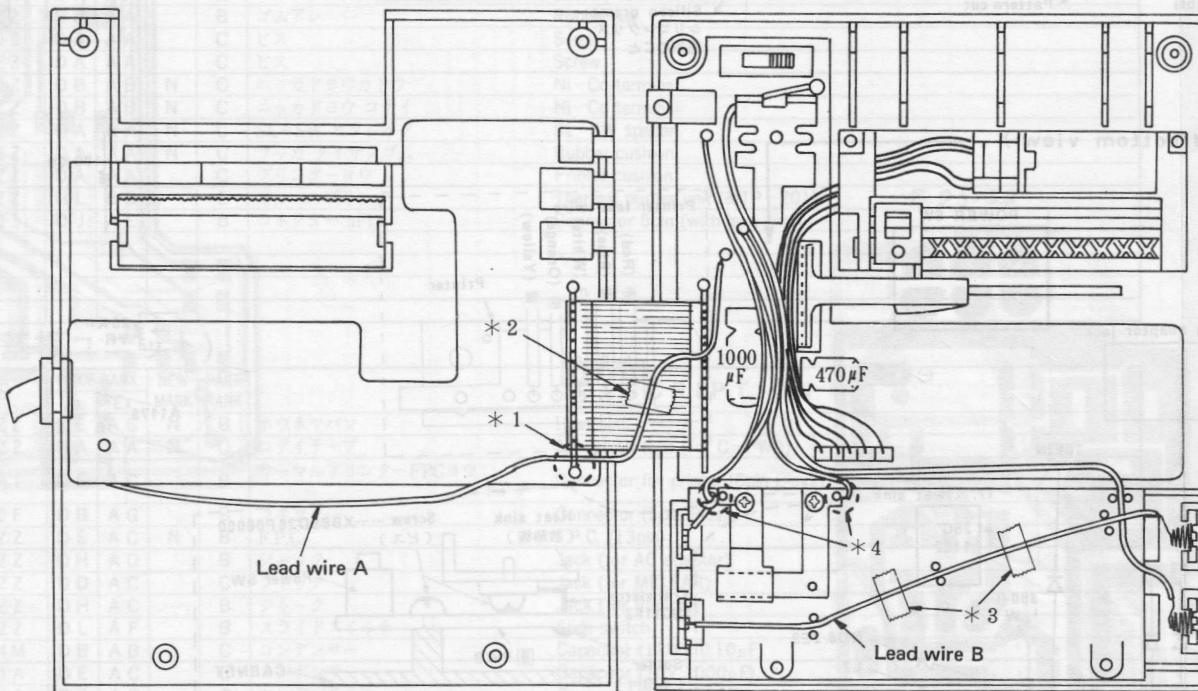
Leave all open when the rank B printer is used.

Short JC when the rank C printer is used.

After the above procedure, adjust by means of the 20-Kohms potentiometer so that an optimum print quality is obtained. The circuit has been so designed as to attain the best result with the potentiometer set at its midway. Therefore, existence of a remarkable print density variation might involve the following problems:

1. Drop in head performance
2. Quality change in the thermal recording paper
3. Trouble in the thermal control circuit

8-2. Threading lead wires



- Be sure to observe the following cautions in installing lead wire.

*1,*2: The lead wire A must be threaded under the cotton wire and fixed on the F.P.C. using the adhesive tape.

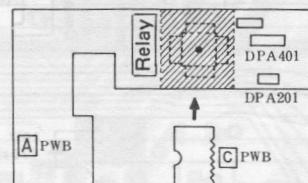
*3: The lead wire B should be fixed with the adhesive tape along the rib of the bottom cabinet.

*4: Do not allow the strayed lead wire and solder to extend out of the Ni-Cd battery terminal to the printer unit, when the lead wire is being soldered to the NiCd battery terminal.

Unless lead wires A and B are threaded properly, it may cause to recharge the dry battery (UM3 or AA) because of slack lead wires, when the AC adaptor is used with dry batteries in installation.

8-3. **C** Installing PWB

- (1) Set the lead wire to the given location of the **A** PWB and solder it.
- (2) As shown in the figure, apply the double tack adhesive tape over the CPU (UPD7506G) on the **A** PWB, then set the **C** PWB over it with the hole facing the relay.
- (3) After the installation of the **C** PWB, solder the lead wire to the **C** PWB.

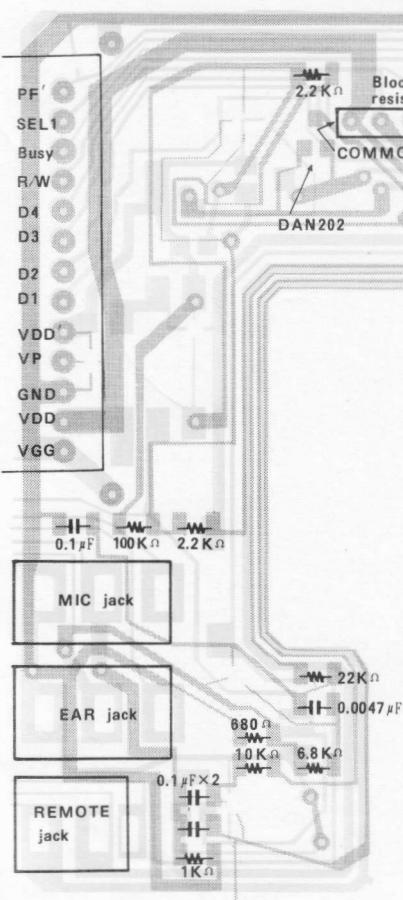


8-4. Connecting **A** with **B**

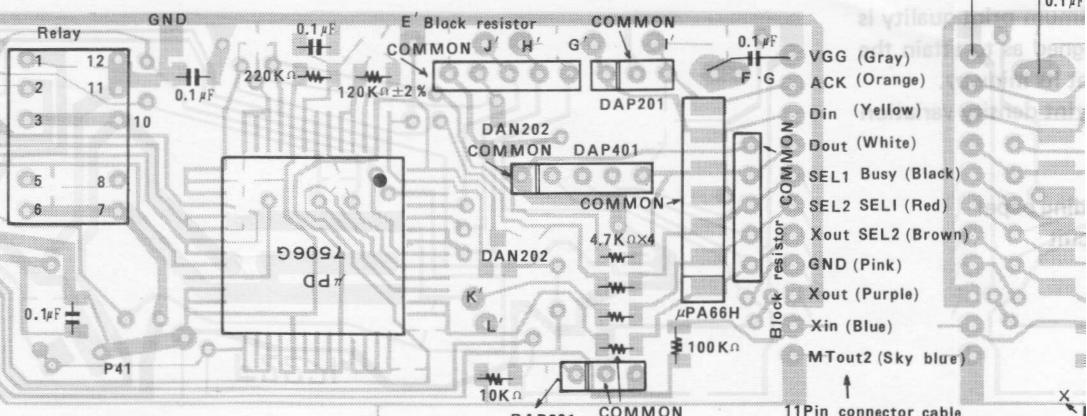
As shown in the figure, fix the 13-pin F.P.C. with the cotton wire. The cotton wire also has to be soldered in a same manner as the F.P.C.

9. PARTS & SIGNALS POSITION

F. P. C (13 Pins)



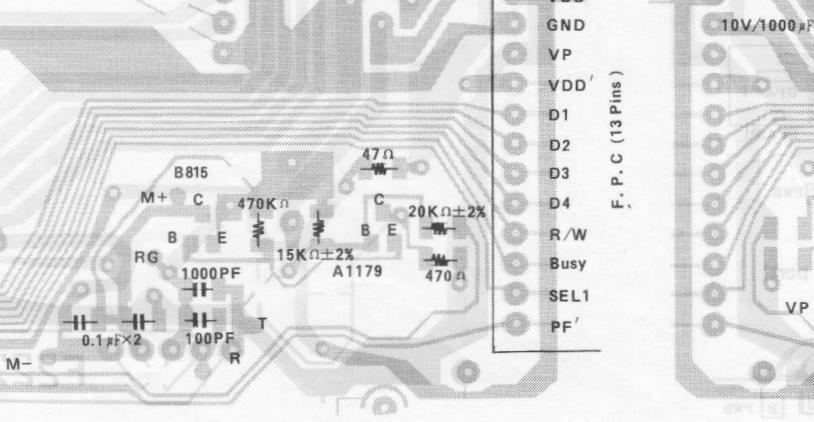
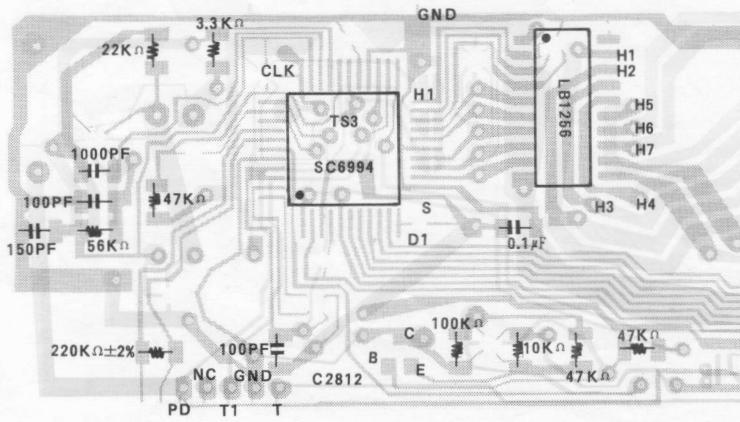
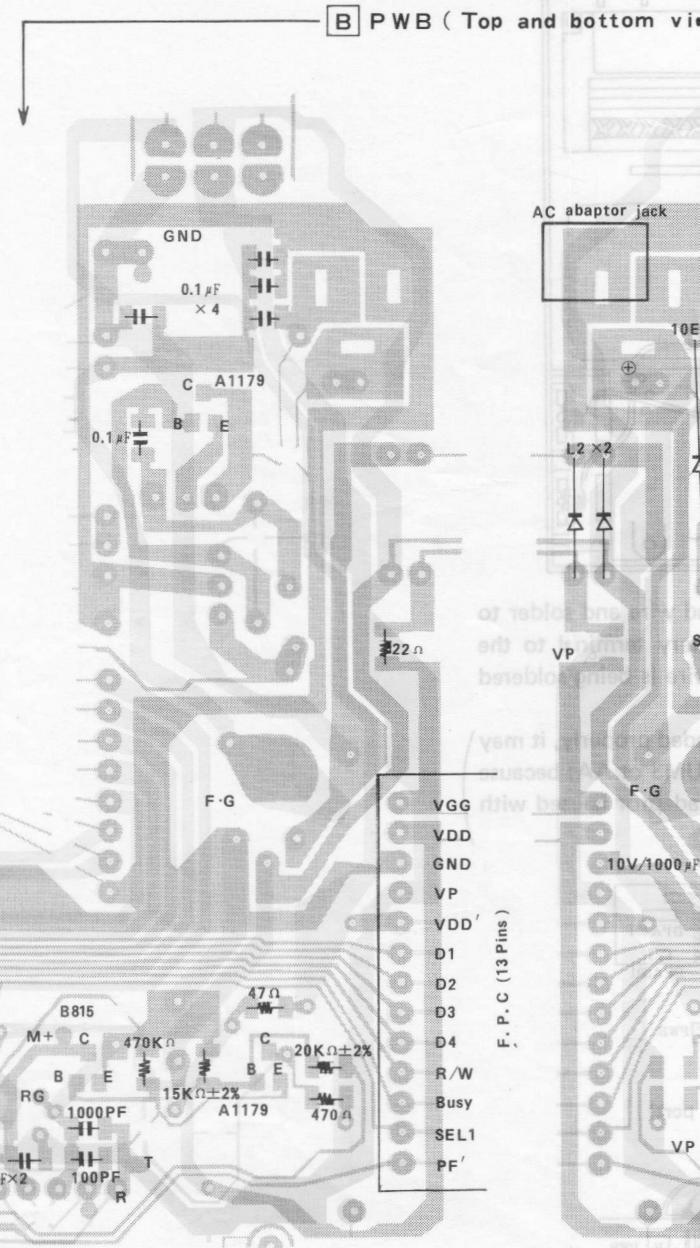
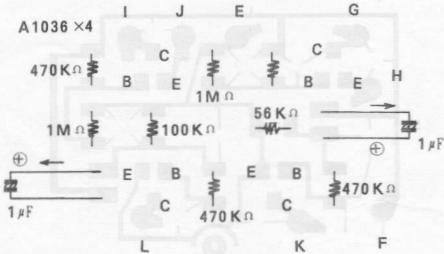
A PWB (Top and bottom view)



Chip diode DAN202

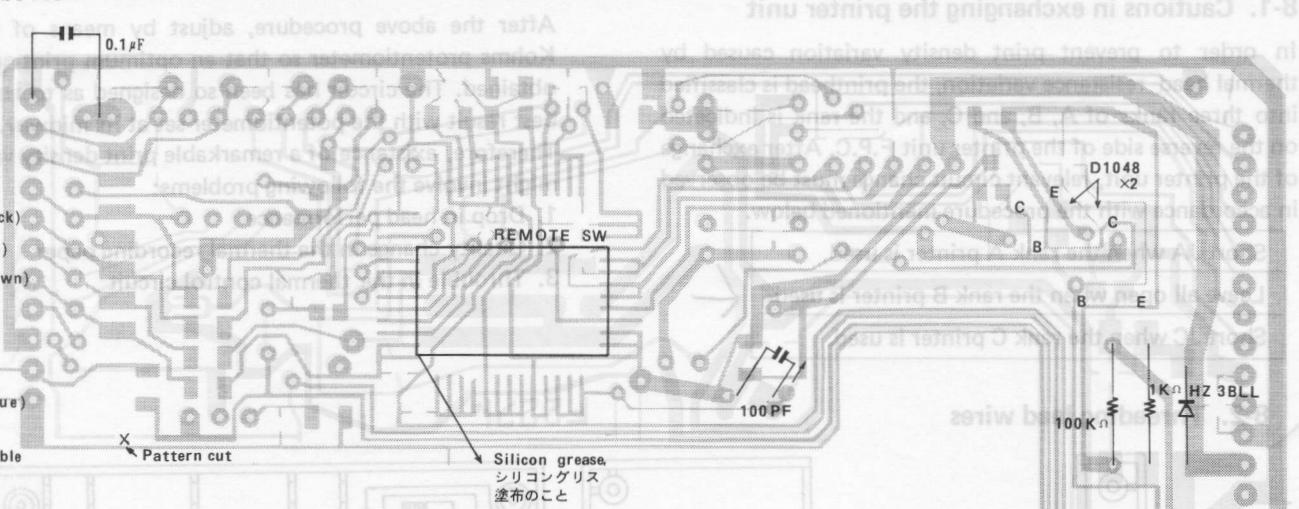


C PWB (Top view)

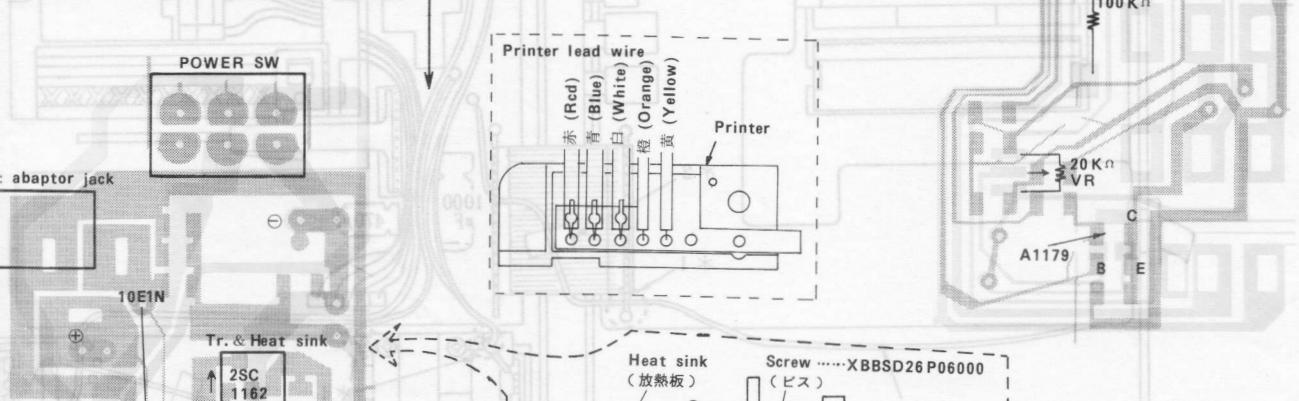


8. SERVICE CAUTIONS

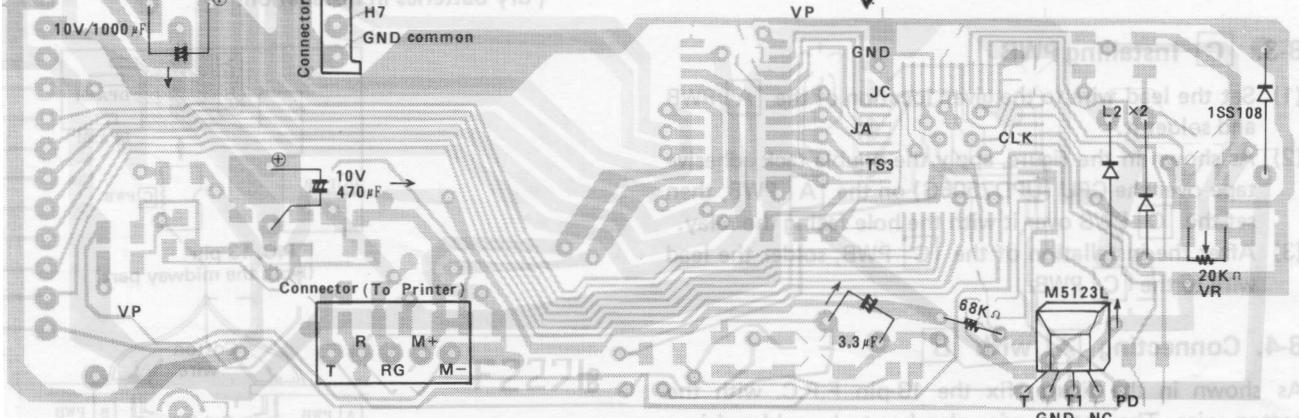
bottom view)



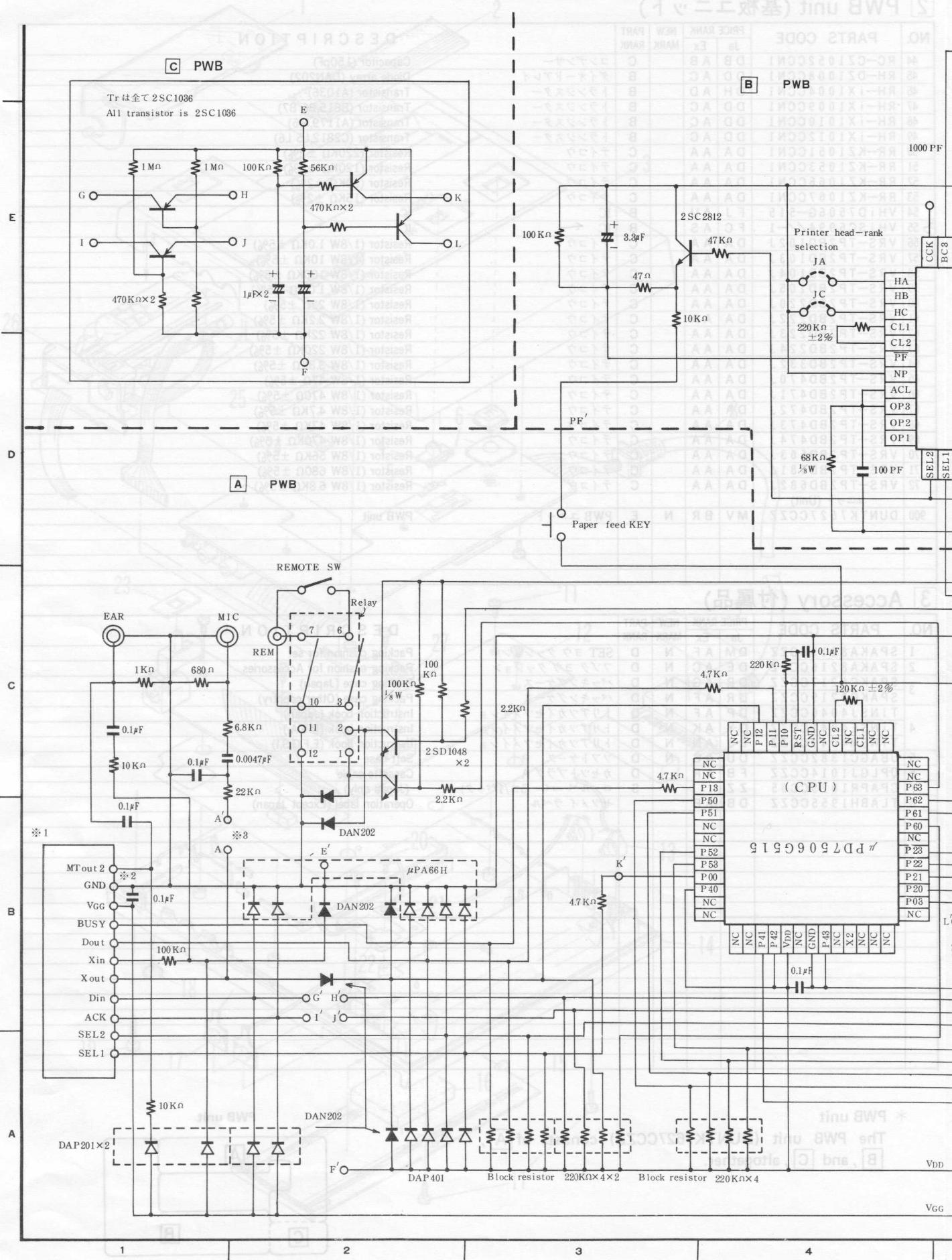
bottom view)

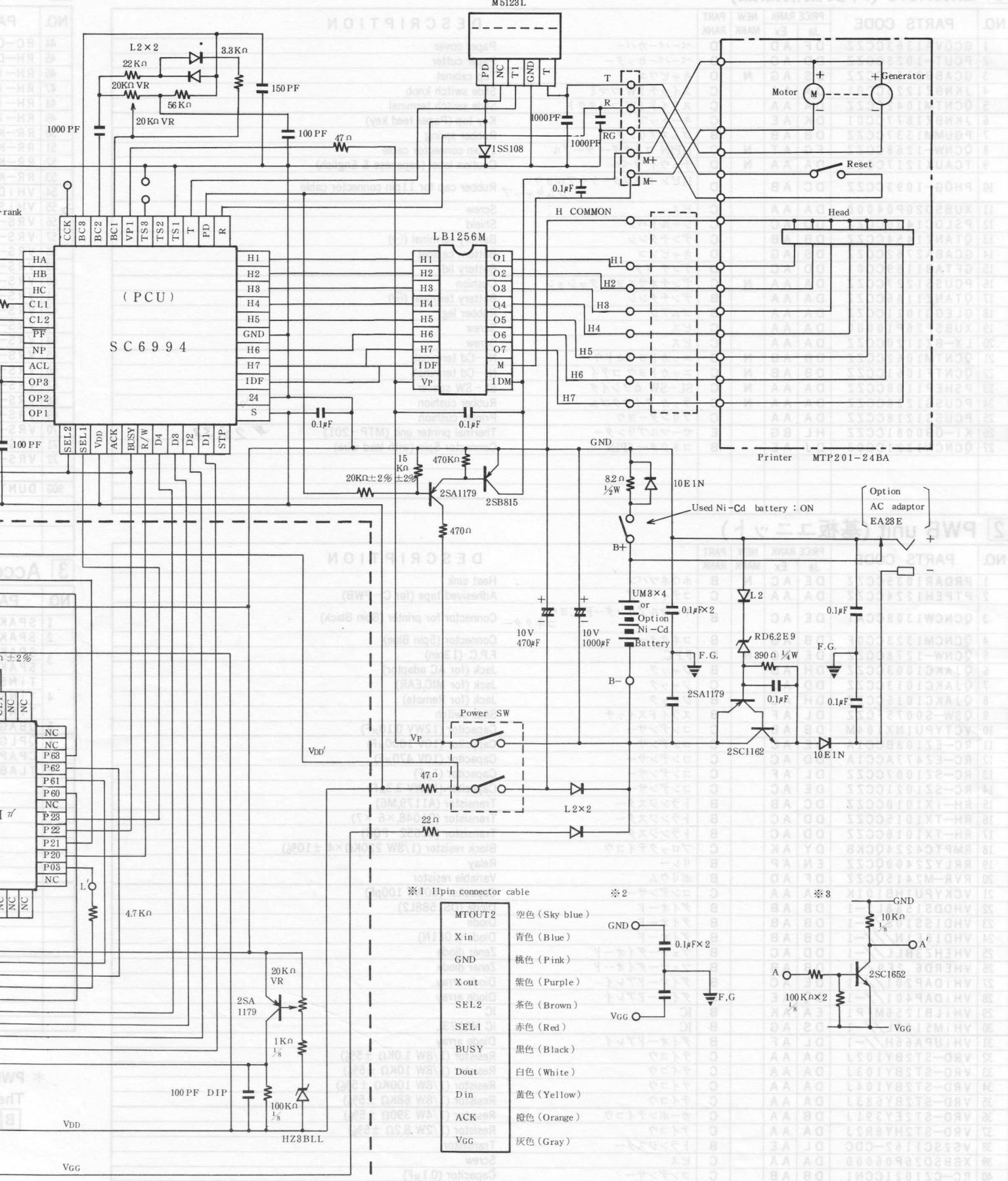


Chip transistor parts code	Tr name	hfe rank
RH-IX1010CCN1	A1179	M6, M7
RH-IX1012CCN1	C2812	L5, L6
RH-IX1009CCN1	B 815	B6, B7
RH-IX1004CCN1	A1036	HP, HQ, HR
RH-TX1015CCN1	D1044	X6, X7



10. CIRCUIT DIAGRAM





11. PARTS LIST & GUIDE

1 Exteriors (外装機構部品)

NO.	PARTS CODE	PRICE RANK		NEW MARK	PART RANK	DESCRIPTION	
		Ja	Ex				
1	GC0VA1363CCZZ	D F	A D		D	ペーパーカバー	Paper cover
2	PCUT-1025CCZZ	D D	A C		D	ペーパーカッター	Paper cutter
3	GCABB2761CCZZ	D S	A G	N	D	キャビエ	Top cabinet
4	JKNBZ1225CC01	D A	A A		C	スイッチ SW ツマミ	Slide switch knob
5	QCNTM1042CCZZ	D A	A A		C	スライド SW コンタクト	Slide switch terminal
6	JKNBZ1877CC01	D K	A E		C	キートップ	Key top (Paper feed key)
7	PGUMM1337CCZZ	D B	A B		B	ゴムスプリング	Rubber spring
8	QCNW-1268CCZZ	F G	A T	N	C	11PIN コネクター ケーブル	11pin connector cable
9	TCAUK1217CCZZ	D A	A A	N	D	チュウイラベル	Caution label (Japanese & English)
10	PH0G-1093CCZZ	D C	A B		D	11ピン コネクター ケーブル ヨウ ゴムキャップ	Rubber cap for 11pin connector cable
11	XUBSD20P04000	D A	A A		C	ビス	Screw
12	PSLDC1430CCZZ	D D	A C		C	シールドバン	Shield
13	QTANZ1454CCZZ	D B	A B		C	デンチタンシ	Battery terminal (-)
14	GCABA2762CCZZ	D S	A G		D	キャビソコ	Bottom cabinet
15	GFTAB189CC01	D D	A C		D	デンチフタ	Battery lid
16	PCUSS1227CCZZ	D A	A A	N	C	デンチオサエヨウ クッション	Cushion
17	QTANZ1186CCZZ	D A	A A		B	デンチタンシ	Battery terminal (+)
18	GLEGG1011CCZZ	D A	A A		B	ゴムアシ	Rubber leg
19	XUBSF26P10000	D A	A A		C	ビス	Screw
20	LX-BZ1120CCZZ	D A	A A		C	ビス	Screw
21	QCNTM1062CCZZ	D B	A B	N	C	ニッカドヨウカドウ	Ni-Cd terminal
22	QCNTF1061CCZZ	D B	A B	N	C	ニッカドヨウ コテイ	Ni-Cd terminal
23	PSHEP1108CCZZ	D A	A A	N	C	SL-SW カクシイタ	SL-SW spacer
24	PCUSG1228CCZZ	D A	A A	N	C	ラッカタイサクゴム	Rubber cushion
25	PCUSS1218CCZZ	D A	A A		C	プリンターヨウ	Printer cushion
26	Ki-OB0081CCZZ	H L	B G		E	サーマルプリンター	Thermal printer unit (MTP-201)
27	QCNCW1321CC03	D J	A E		B	コネクター 5PIN	Connector 5pin (with lead wire)

25-33

2 PWB unit (基板ユニット)

NO.	PARTS CODE	PRICE RANK		NEW MARK	PART RANK	DESCRIPTION	
		Ja	Ex				
1	PRDAR1035CCZZ	D E	A C	N	B	ホウネツバン	Heat sink
2	PTPEH1224CCZZ	D A	A A	N	C	コティテープ	Adhesive tape (for C-PWB)
3	QCNCW1308CCAi	D E	A C		B	サーマルプリンターFPCヨウ コネクター	Connector for printer (8pin Black)
4	QCNCM1323CCOF	D B	A G		B	コネクター	Connector (5pin Blue)
5	QCNW-1278CCZZ	D E	A C	N	B	F.P.C.	F.P.C. (13pin)
6	QJAKC1003CCZZ	D H	A D		B	ジャック	Jack (for AC adaptor)
7	QJAKC1013CCZZ	D D	A C		C	ジャック	Jack (for MIC,EAR)
8	QJAKC1016CCZZ	D H	A C		B	ジャック	Jack (for Remote)
9	QSW-S0075FCZZ	D L	A F		B	スライドスイッチ	Slide switch
10	VCTYPU1NX104M	D B	A B		C	コンデンサー	Capacitor (12WV 0.10μF)
11	RC-EZ108BCC1A	D E	A C		C	コンデンサー	Capacitor (10V 1000μF)
12	RC-EZ477ACC1A	D D	A C		C	コンデンサー	Capacitor (10V 470μF)
13	RC-SZ1007CCZZ	D L	A F		C	コンデンサー	Capacitor (1μF)
14	RC-SZ1021CCZZ	D E	A C		C	コンデンサー	Capacitor (10WV 3.3μF)
15	RH-iX1010CCZZ	D C	A B		B	トランジスター	Transistor (A1179,M6)
16	RH-TX1015CCZZ	D D	A C		B	トランジスター	Transistor (D1048,×6 ×7)
17	RH-TX1016CCZZ	D D	A C		B	トランジスター	Transistor (C1652-PQR)
18	RMPTC4224QCKB	D Y	A K		C	ブロックテイコウ	Block resistor (1/8W 220KΩ×4 ±10%)
19	RRLYZ2400QCZZ	E N	A P		B	リレー	Relay
20	RVR-M2415QCZZ	D F	A D		B	ボリウム	Variable resistor
21	VCKYPU1HB101K	D A	A A		C	コンデンサー	Capacitor (50WV 100pF)
22	VHDDSI588L2-1	D B	A B		B	ダイオード	Diode (DS1588L2)
23	VHD1SS108//-1	D B	A B		B	ダイオード	Diode
24	VHD10E1N//-/1	D B	A B		B	ダイオード	Diode (10E1N)
25	VHEHZ3BLL//-/1	D D	A C		B	ツェーダイオード	Zener diode
26	VHERD6.2E9//-/1	D B	A B		B	ツェーダイオード	Zener diode
27	VHiDAP201//-/1	D E	A C		B	ダイオードアレイ	Diode array
28	VHiDAP401//-/1	D Q	A E		B	ダイオードアレイ	Diode array
29	VHiLB1256MFPI	E A	A K		B	IC	IC
30	VHiM5123L//-/1	D S	A G		B	IC	IC M5123L
31	VHiUPA6H//-/1	D L	A F		B	ダイオードアレイ	Diode array
32	VRD-ST2BY102J	D A	A A		C	ティコウ	Resistor (1/8W 10KΩ ±5%)
33	VRD-ST2BY103J	D A	A A		C	ティコウ	Resistor (1/8W 10KΩ ±5%)
34	VRD-ST2BY104J	D A	A A		C	ティコウ	Resistor (1/8W 100KΩ ±5%)
35	VRD-ST2BY683J	D A	A A		C	ティコウ	Resistor (1/8W 68KΩ ±5%)
36	VRD-ST2YE391J	D B	A A		C	カーボンティコウ	Resistor (1/4W 390Ω ±5%)
37	VRD-ST2HY8R2J	D A	A A		C	ティコウ	Resistor (1/2W 8.2Ω ±5%)
38	VS2SC1162-CDC	D L	A E		B	トランジスター	Transistor
39	XBBSD26P06000	D A	A A		C	ビス	Screw
40	RC-CZ1021CCN1	D B	A B		C	コンデンサー	Capacitor (0.1μF)
41	RC-CZ1031CCN1	D B	A B		C	コンデンサー	Capacitor (1000pF)
42	RC-CZ1035CCN1	D B	A B		C	コンデンサー	Capacitor (100pF)
43	RC-CZ1039CCN1	D B	A B		C	コンデンサー	Capacitor (4700pF)

2 PW	
NO.	PA
44	RC-C
45	RH-C
46	RH-i
47	RH-i
48	RH-i
49	RH-i
50	RR-K
51	RR-K
52	RR-K
53	RR-K
54	VH-iC
55	VH-iS
56	VRS-
57	VRS-
58	VRS-
59	VRS-
60	VRS-
61	VRS-
62	VRS-
63	VRS-
64	VRS-
65	VRS-
66	VRS-
67	VRS-
68	VRS-
69	VRS-
70	VRS-
71	VRS-
72	VRS-
900	DUNT

* PW
The
B

2 PWB unit (基板ユニット)

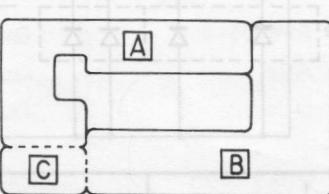
NO.	PARTS CODE	PRICE RANK		NEW MARK	PART RANK	DESCRIPTION
		Ja	Ex			
44	RC-CZ1052CCN1	DB	AB	C	コンデンサー	Capacitor (150pF)
45	RH-DZ1008CCN1	DD	AC	B	ダイオードアレイ	Diode array (DAN202)
46	RH-iX1004CCN1	DH	AD	B	トランジスター	Transistor (A1036)
47	RH-iX1009CCN1	DD	AC	B	トランジスター	Transistor (B815,B6 B7)
48	RH-iX1010CCN1	DD	AC	B	トランジスター	Transistor (A1179,M6)
49	RH-iX1012CCN1	DD	AC	B	トランジスター	Transistor (C2812,L5 L6)
50	RR-KZ1051CCN1	DA	AA	C	ティコウ	Resistor (220kΩ ±2%)
51	RR-KZ1053CCN1	DA	AA	C	ティコウ	Resistor (120kΩ ±2%)
52	RR-KZ1066CCN1	DA	AA	C	ティコウ	Resistor (20kΩ ±2%)
53	RR-KZ1067CCN1	DA	AA	C	ティコウ	Resistor (15kΩ ±2%)
54	VHiD7506G-515	FJ	AU	B	IC	IC
55	VHiSC6994// -1	FC	AS	B	IC ←	IC
56	VRS-TP2BD102J	DA	AA	C	ティコウ	Resistor (1/8W 1.0kΩ ±5%)
57	VRS-TP2BD103J	DA	AA	C	ティコウ	Resistor (1/8W 10kΩ ±5%)
58	VRS-TP2BD104J	DA	AA	C	ティコウ	Resistor (1/8W 100kΩ ±5%)
59	VRS-TP2BD105J	DA	AA	C	ティコウ	Resistor (1/8W 1.0MΩ ±5%)
60	VRS-TP2BD220J	DA	AA	C	ティコウ	Resistor (1/8W 22Ω ±5%)
61	VRS-TP2BD222J	DA	AA	C	ティコウ	Resistor (1/8W 2.2kΩ ±5%)
62	VRS-TP2BD223J	DA	AA	C	ティコウ	Resistor (1/8W 22kΩ ±5%)
63	VRS-TP2BD224J	DA	AA	C	ティコウ	Resistor (1/8W 220kΩ ±5%)
64	VRS-TP2BD332J	DA	AA	C	ティコウ	Resistor (1/8W 3.3kΩ ±5%)
65	VRS-TP2BD470J	DA	AA	C	ティコウ	Resistor (1/8W 47Ω ±5%)
66	VRS-TP2BD471J	DA	AA	C	ティコウ	Resistor (1/8W 470Ω ±5%)
67	VRS-TP2BD472J	DA	AA	C	ティコウ	Resistor (1/8W 4.7kΩ ±5%)
68	VRS-TP2BD473J	DA	AA	C	ティコウ	Resistor (1/8W 47kΩ ±5%)
69	VRS-TP2BD474J	DA	AA	C	ティコウ	Resistor (1/8W 470kΩ ±5%)
70	VRS-TP2BD563J	DA	AA	C	ティコウ	Resistor (1/8W 56kΩ ±5%)
71	VRS-TP2BD681J	DA	AA	C	ティコウ	Resistor (1/8W 680Ω ±5%)
72	VRS-TP2BD682J	DA	AA	C	ティコウ	Resistor (1/8W 6.8kΩ ±5%)
ユニック (Unit)						
900	DUNTK7627CCZZ	MV	BR	N	E	PWB ユニック
						PWB unit

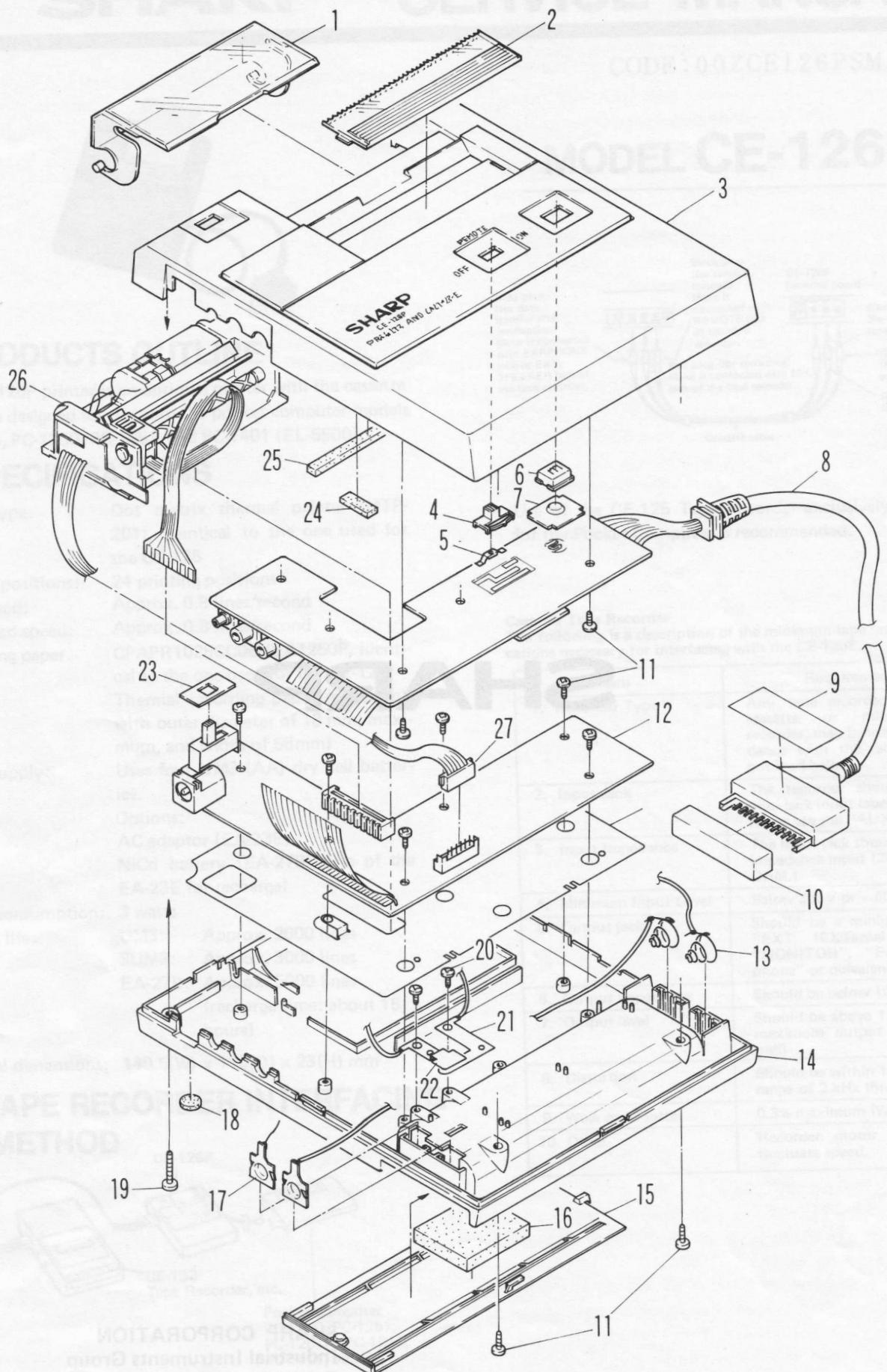
3 Accessory (付属品)

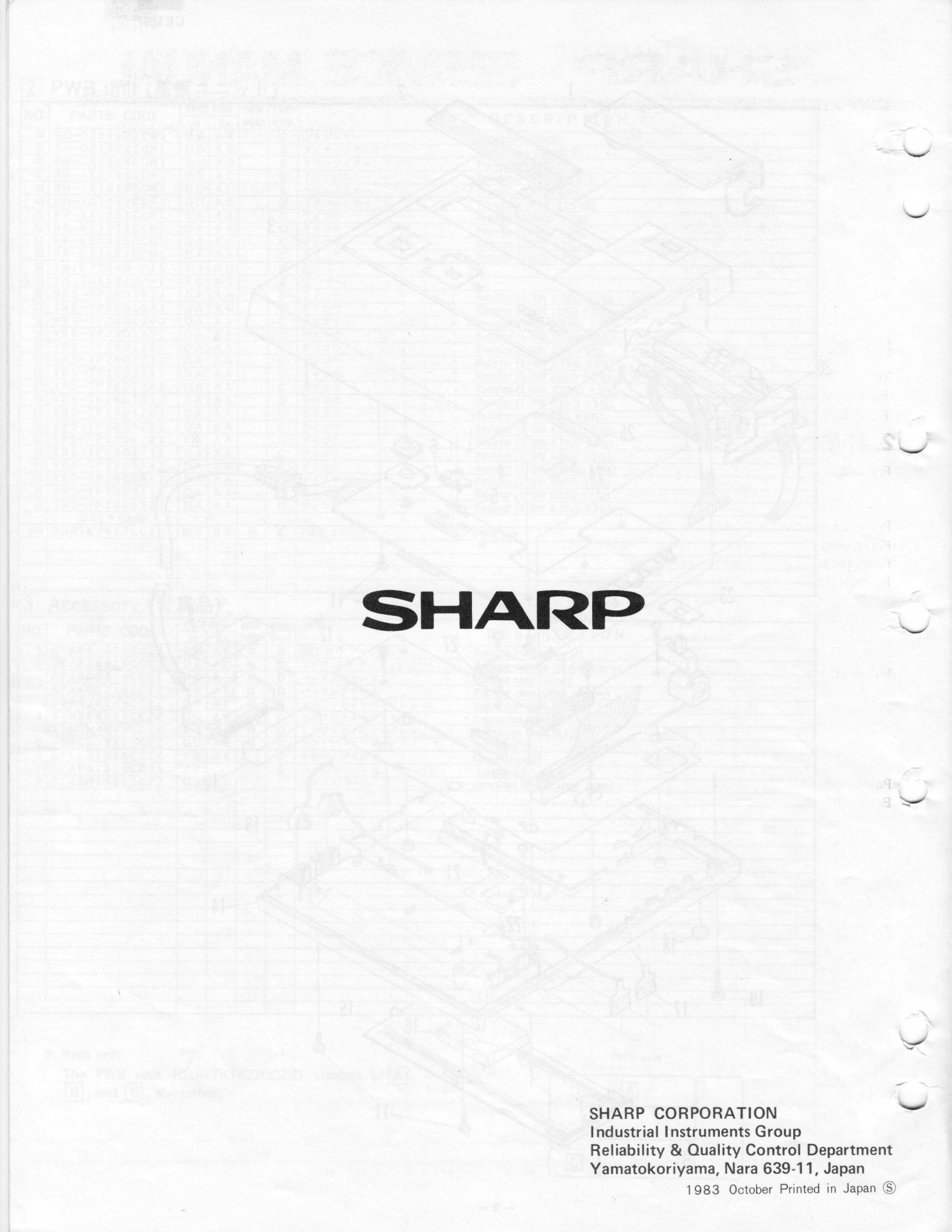
NO.	PARTS CODE	PRICE RANK		NEW MARK	PART RANK	DESCRIPTION	
		Ja	Ex				
1	SPAKA8215CCZZ	DM	A F	N	D	SET ヨウ クッション	
2	SPAKA8216CCZZ	D E	A C	N	D	ワゾク ヨウ クッション	
3	SPAKC8217CCZZ	DR	A G	N	D	パッキングケース	
	SPAKC8219CCZZ	DR	A F	N	D	パッキングケース	
TiNSJ4040CCZZ	DP	A F	N	D	トリアツカイセツメイショ	Instruction book (Japan)	
4	TiNSE4041CCZZ	DY	A K	N	D	トリアツカイセツメイショ	Instruction book (U.S.A.)
TiNSM4043CCZZ	E J	A N	N	D	トリアツカイセツメイショ	Instruction book (E,F,G,S,I)	
5	UBAGC1382CCZZ	D U	A G	N	D	ソフトケース	Soft case
6	QPLGJ1014CCZZ	F B	A R		D	カセットプラグ A	Cassette cable
7	CPAPR1025CC05	Z Z		S		ロールペーパー (5コ/1パック) (Japan only)	
8	TLABH1955CCZZ	DB	A B			セツメイ ラベル	Operation label (Except Japan)

* PWB unit

The PWB unit (DUNTK7627CCZZ) consists of [A], [B], and [C], altogether.







SHARP

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Industrial Instruments Group
Reliability & Quality Control Department
Yamatokoriyama, Nara 639-11, Japan

1983 October Printed in Japan ©

REMOVING PAPER JAMS FROM CE126P

If the printer becomes jammed with paper please follow these steps to open the case and remove the jam.

1. Remove paper roll by cutting it off at the back. Do not pull paper from back. Doing so might damage paper-advance rollers.

2. Remove four screws as indicated on diagram. Two from inside battery compartment and two from top corners of the bottom section to the case.

3. Pry gently in the slot between the two pieces (top and bottom) of the case. Plastic catches hold it together. One is beside the smoked plastic cover of the paper roll near the off/on power switch, the other three are in the center of the other three sides of the case. See diagram.

4. Fold open the two parts of the case like a book, with computer connector cord ending up on your left.

5. Pick up printer unit without disconnecting its cables. It sits on two plastic pins and is held down by the cover when assembled.

6. Turn the largest black plastic gear on the right end of the printer unit either way to move print head away from paper jam. A thumb nail works fine for this.

7. Pick out the bits of paper. Be very careful with printer platen. If damaged or broken the whole unit must be replaced. Present cost: \$60.00.

~ ~ ~ ~ ~

If printer must be replaced, please note that there are three printer unit configurations, and any replacement must match. A letter: A, B, or C, appears on the bottom of the amber plastic cable at the end attaching to the printer, indicating the configuration of your printer. (See "Letter ID" on the diagram.)

Removing the amber cable and the blue five-wire connector will remove the printer mechanism from the machine.

SHARP SERVICE MANUAL

CODE: 00ZCE126PCC/E

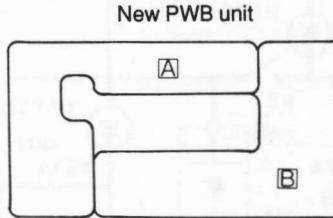
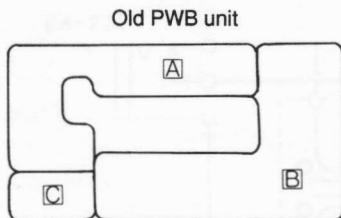
MODEL CE-126P

NEW PWB CIRCUIT & PARTS LAYOUT (Applicable from 1987 November production)

- Modification was made on the CE-126P PWB unit and its CPU and embodied from 1987 November production. For interchangeability of new and old parts, see the table below:

Old PWB	New PWB
DUNTK7871CCZZ	CPWBF1072EC01 Interchangeable

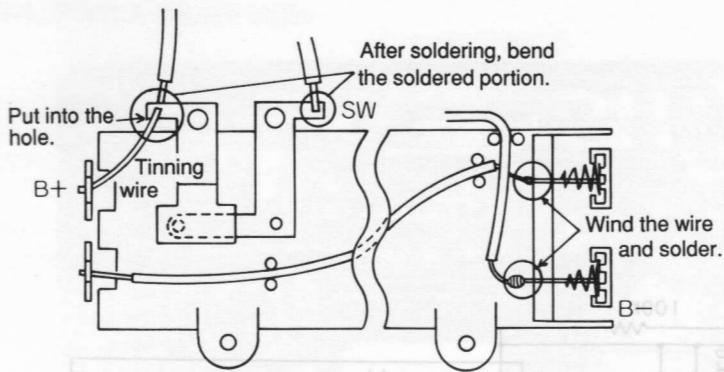
- The PWB unit (CPWBF1072EC01) is composed of a pair of PWB **A** and **B** as shown below:
PWB **C** in the old PWB unit is incorporated in PWB **A** in the new PWB unit.



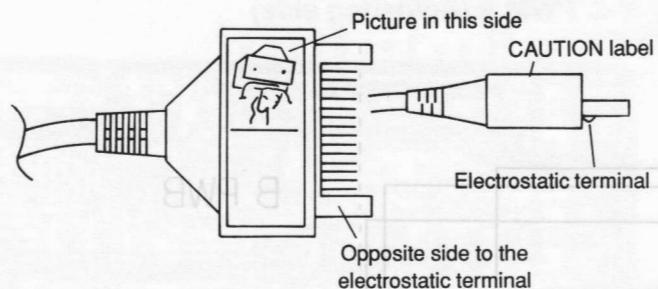
Old PWB	New PWB	CPWBF1072EC01	
		[A] PWB	[B] PWB
DUNTK7871CCZZ	[A] PWB	x	x
	[B] PWB	x	x
	[C] PWB	x	x

- For modified parts, refer to the corresponding Technical Reports P-061.

1. Note for assembly

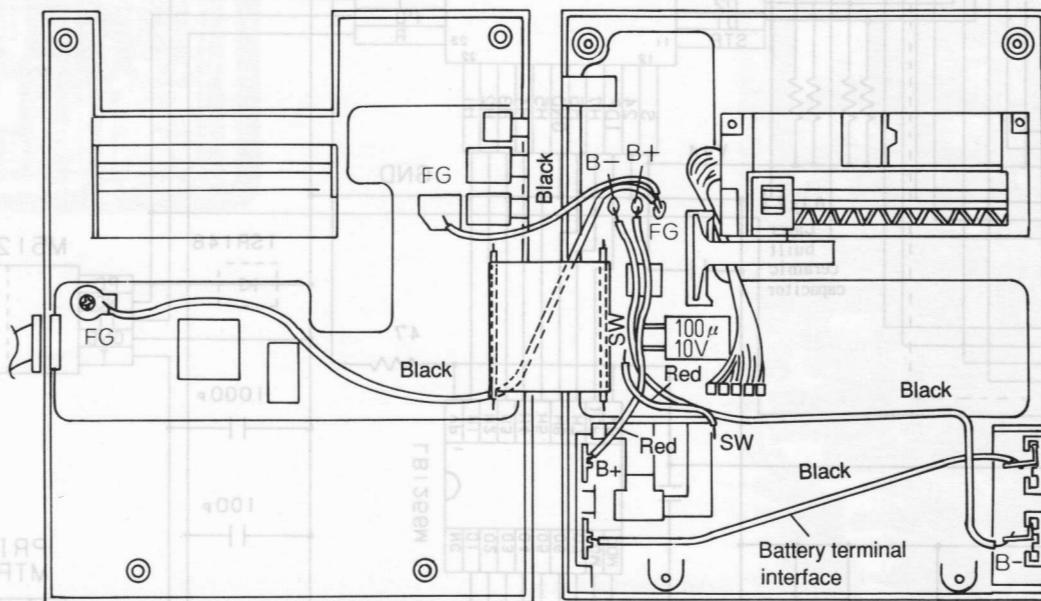
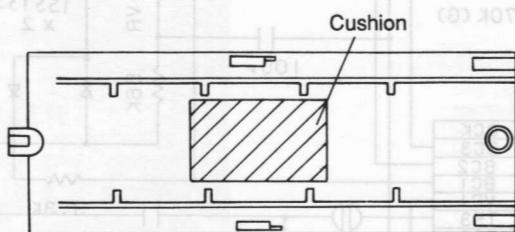


● CAUTION label attachment



● Battery cushion attachment

- Attach at the center.

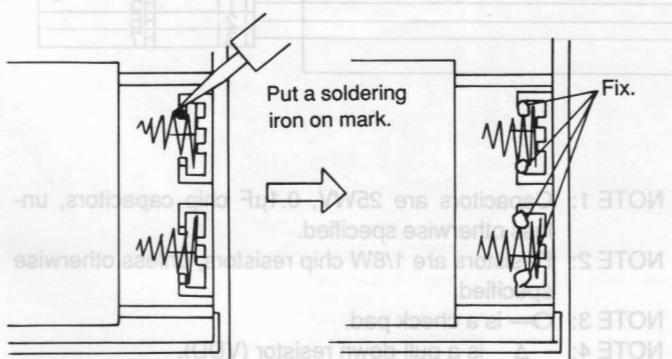


1) Insert 5-pin cable of the printer between 8-pin connector and the printer.

2) Pass the lead wires (B+ and B-) between 8.2Ω 1/8W and 10-pin.

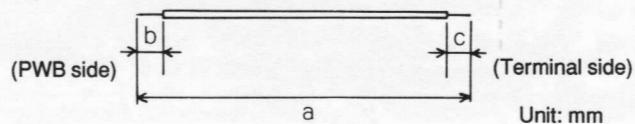
3) Pass the lead wire of FG under the cotton wire.

● (-) terminal soldering

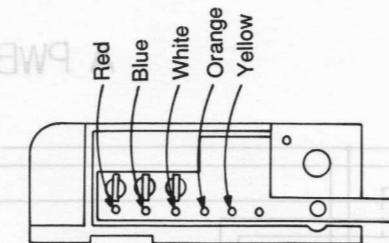
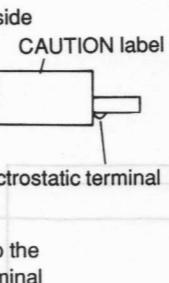


● Ni-Cd SW, battery terminals, FG wire treatment

Signal name	Color	a	b	c
B+	Red	70	3	5
B-	Black	170	3	5
SW	Red	40	3	5
Battery terminal interface	Black	90	5	5
FG	Black	160	3	3
FG	Black	60	3	3



● Printer lead wire soldering



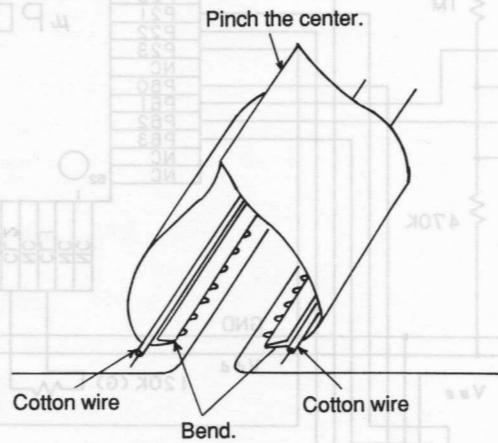
- Pass the lead wire from the upper side.
- Perform the following procedure according to the mark on FPC:

A: Solder and short the JA pad.

B: Do nothing.

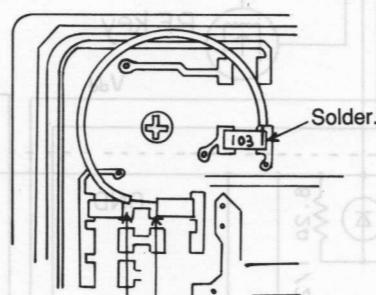
C: Solder and short the JC pad.

● Rectangular jumper treatment

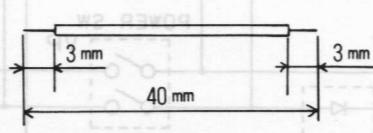


● Shorting the pad with the jumper wire

Short the chips of $10k\Omega$ and 680Ω , 0.7μ with jumper wires.



1. Jumper wire treatment



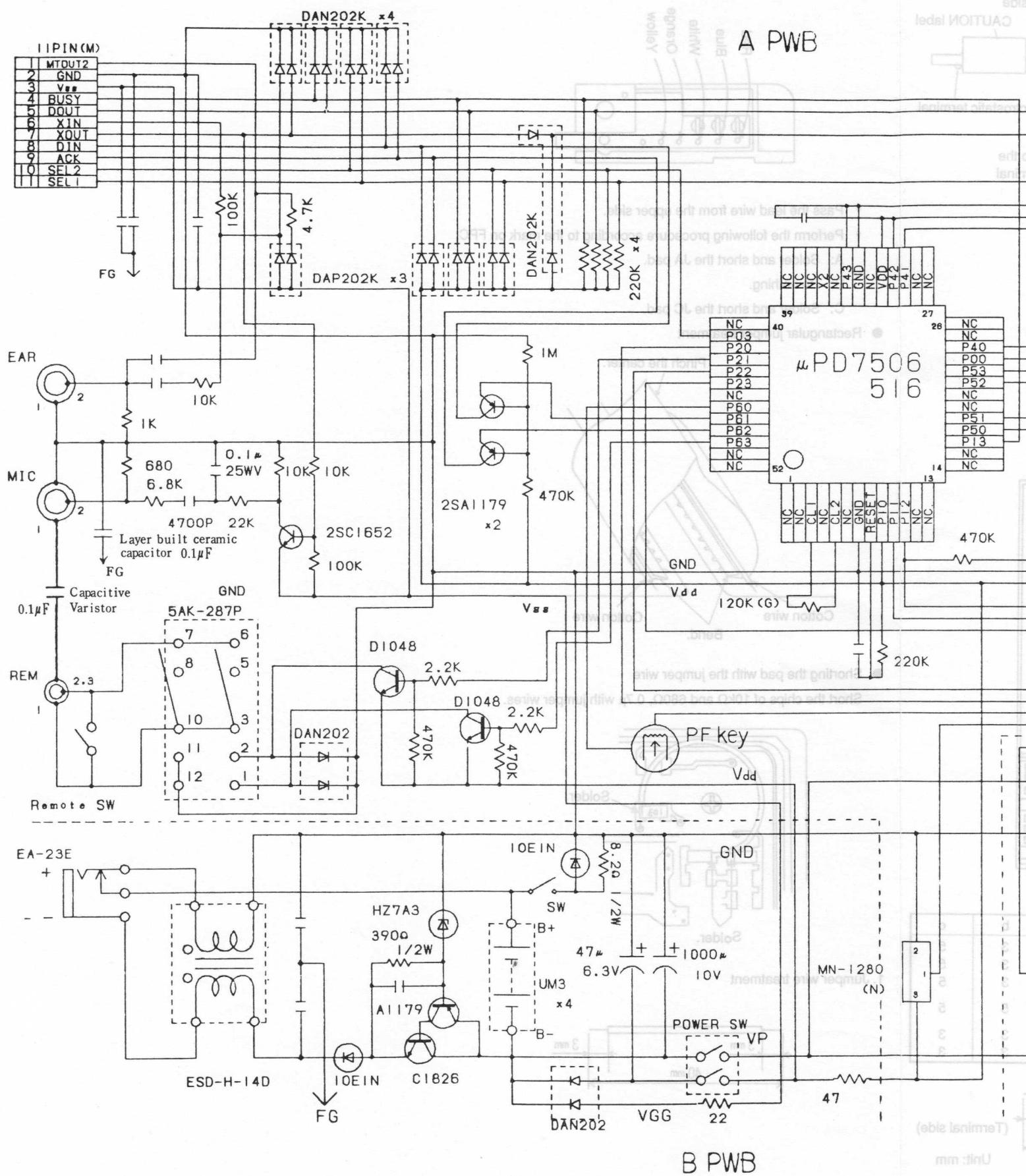
b	c
3	5
3	5
3	5
5	5
3	3
3	3

(Terminal side)

Unit: mm



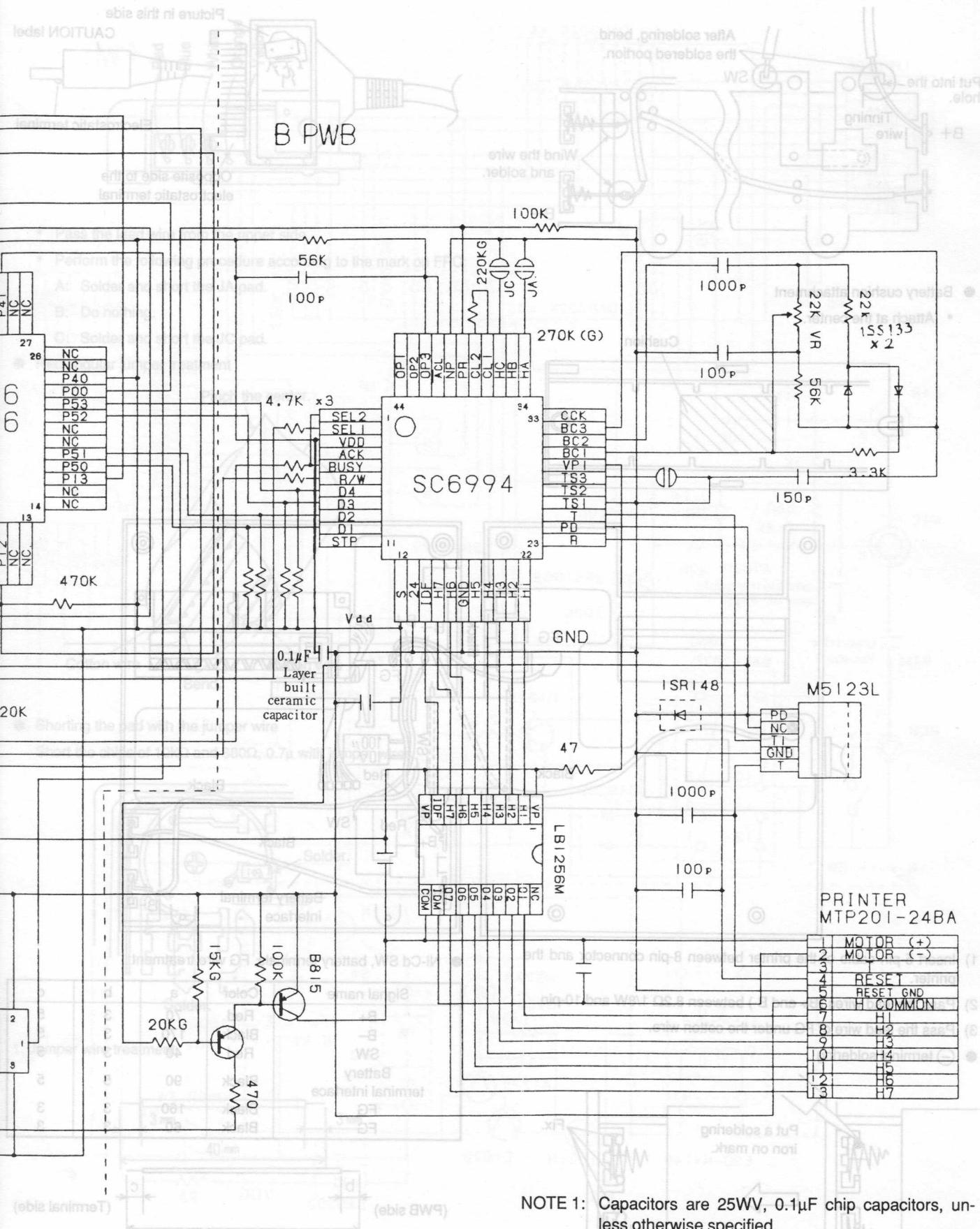
2. Circuit Diagram



● Printer lead wire soldering

● CAUTION! Lead soldering equipment

1. Notes for assembly



NOTE 1: Capacitors are 25WV, 0.1µF chip capacitors, unless otherwise specified.

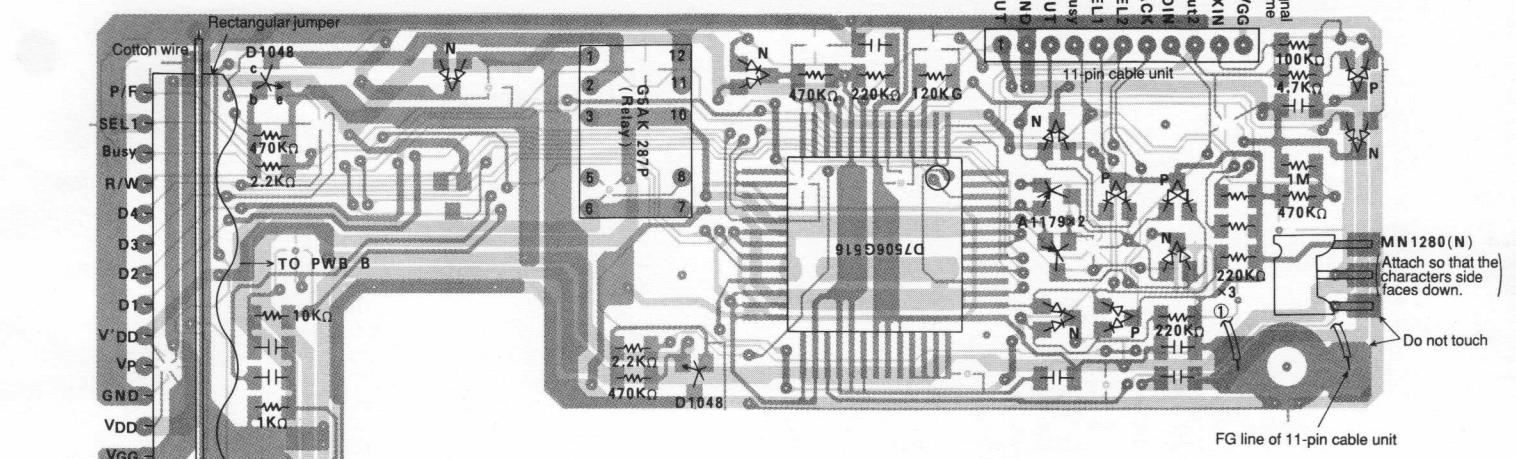
NOTE 2: Resistors are 1/8W chip resistors, unless otherwise specified.

NOTE 3: ○ is a check pad.

NOTE 4: △ is a pull-down resistor (VDD).

3. Parts Arrangement Plan

3-1. PWB A (Parts side)

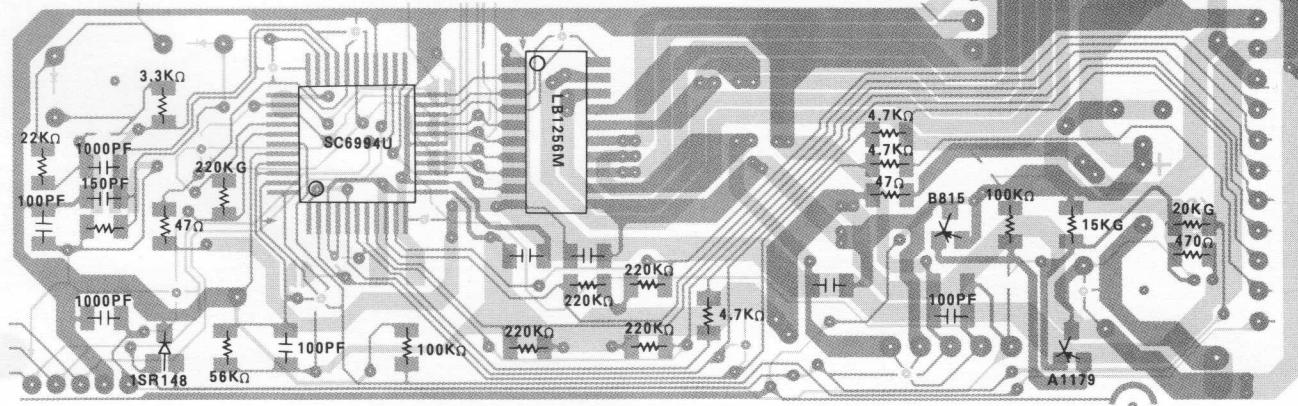
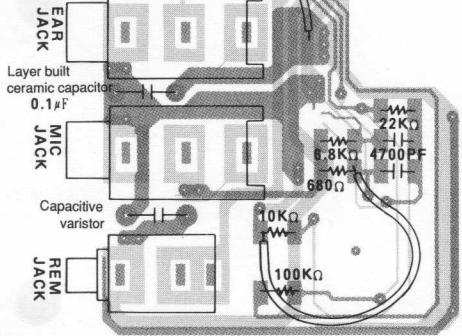


①, ② to PWB FG line

* Chip capacitors are $0.1\mu F$ 25V (A5), unless otherwise specified.

** Chip diode N is DAN202K.
Chip diode P is DAP202K.

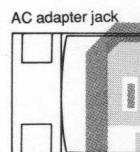
3-3. PWB B (Parts side)



* Chip capacitors are $0.1\mu F$ 25V (A5), unless otherwise specified.

** Chip diode N is DAN202K.
Chip diode P is DAP202K.

3-4. PWB



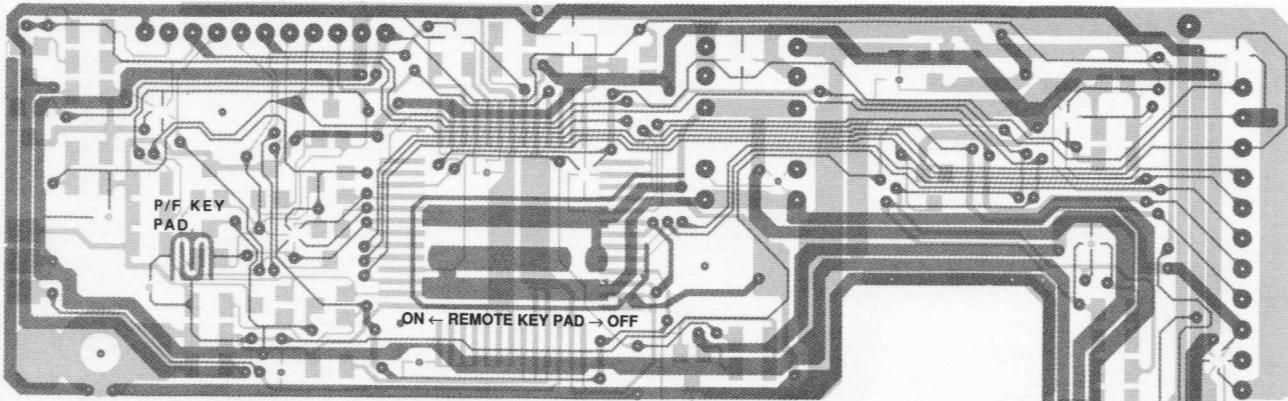
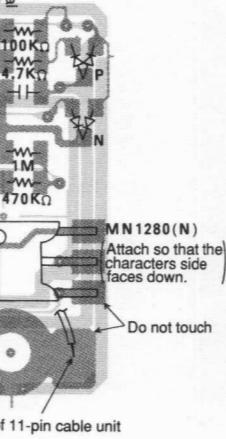
Transistor
fixing jump

Do not extrude
from the pattern

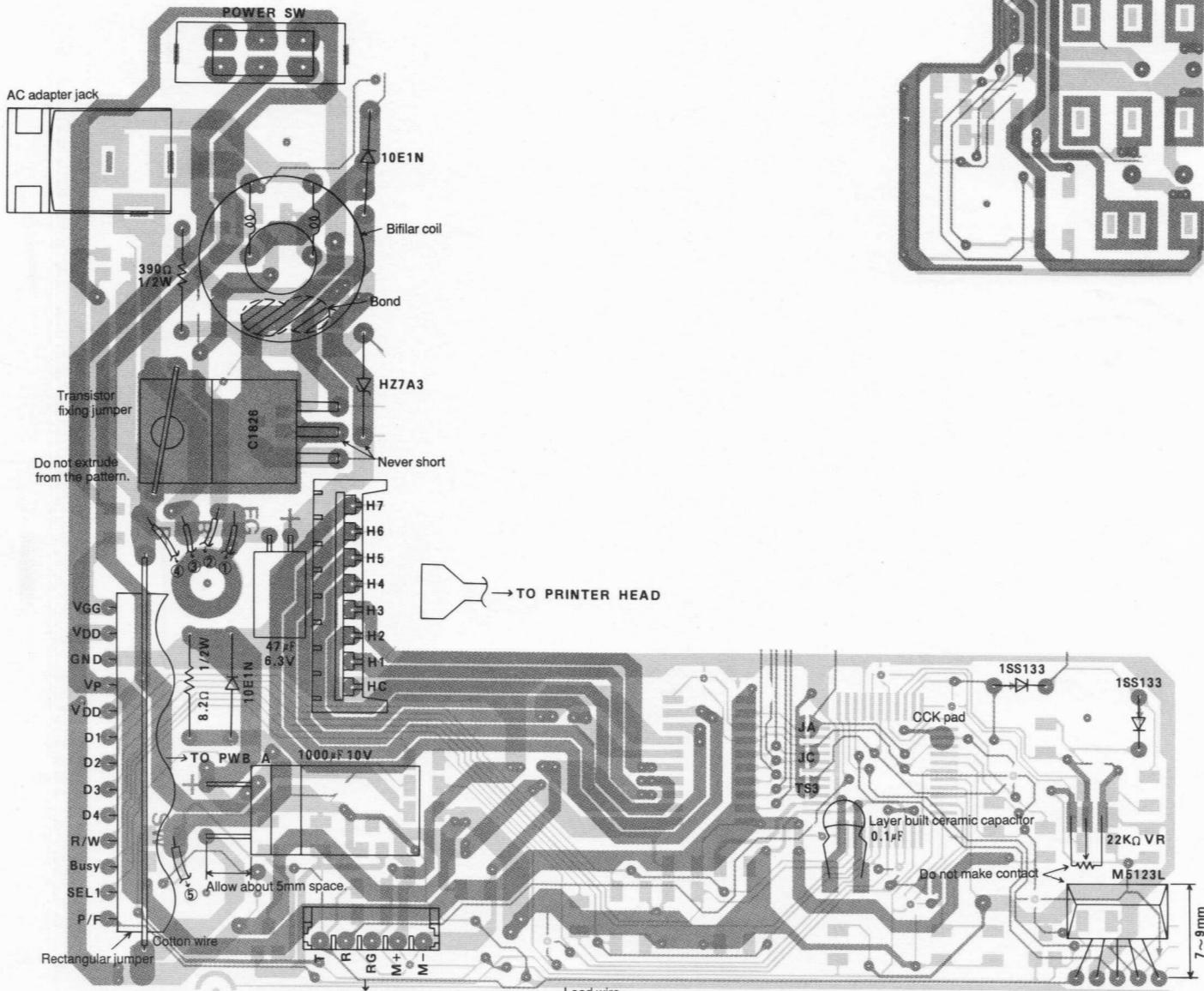
VGG
VDD
GND
VP
VDD
GND
D1
D2
D3
D4
R/W
Busy
SEL1
P/F

Rectangular

3-2. PWM A (Soldering side)



3-4. PWB B (Soldering side)



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