

CITIZEN

Service Manual

Model: iDP-3420/3421/3423

Dot Matrix Printer

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**Japan CBM Corporation
Information Systems Div.**

INTRODUCTION

This manual describes the disassembly, reassembly, and maintenance procedures of the dot impact printer iDP-3420/3421/3423. It is intended for field maintenance men.

FEATURES

This is a small-size dot impact printer developed for various data communication terminals, POS terminals, kitchen-use printers, bank card, terminals, and so on.

Its abundant built-in features allow you to widely use this printer for different applications. Prior to using it, read and understand this manual thoroughly.

- (1) Small size, light weight, and low price
- (2) High-speed print (Bi-directional)
- (3) Red and black print
- (4) Very easy paper loading by the auto loading function
- (5) Paper end detecting function

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* For the printer mechanism(DP-400/410), see the separate Service Manual.

1. HANDLING AND MAINTENANCE OF PRINTER

See the User's Manual coming with the printer body.

2. SPECIFICATIONS

2.1 Basic Specifications

Item \ Model	iDP-3420	iDP-3421	iDP-3423
Printer mechanism	DP-410 series (CITIZEN)		
Print method	Serial dot impact method (Bidirectional print)		
Print width	64 mm		
Print head	9 pins		
Print speed	Approx. 3 lines/second (At single-color continuous print)		
Print columns	40 or 42 columns (Selectable with the DIP switch)		
Character size	1.31 mm(W) × 3.1 mm(H)		
Character types	Alphanumeric, Katakana, International characters, Code page 850, 860, 863, 865, 852, 866, 857, Windows code		
Line spacing	4.23 mm(1/6 inch) or 2.82(1/9 inch) Minimum paper feed pitch: 1.41 mm(1/18 inch)		
Paper	Ordinary paper and non-carbon paper: 76 +/- 0.5 mm(W) × φ83 mm(OD); Single-sheet paper: 45 to 55 kg/1,000 sheets/1,091 × 788 mm; Copying paper: Non-carbon paper, 1 original + 1 copy, Total thickness 0.2 mm or less		
Ink ribbon	Special purpose ribbon cartridge red/black or single color(Black)		
Interface	Serial(RS-232C), Parallel(CENTRONICS compliant)		
Command system	CBM mode, STAR mode, ESC/POS mode The user can select the mode with the DIP switch and preset jumpers.		
Print function	Provided by operating the on-line, self-test, hex. dump print function power switches and LF switch		
Input buffer	6 KB or 256 bytes (Selectable with the DIP switch)		
Buffer backup function	Within 24 hours (After 10 minutes or more of printer operation)		
Drawer function	2-drawer, 1-drawer switch		
Auto loading function	Automatically feeds the paper by several lines when it is inserted.		
Paper end detection	Stops printing when the paper has run out.		
Paper near end detection	Stops printing when the paper is running out.(Settable with a command)		
Auto cutter	None	ACS-230 (Capable of partial and full cut)	
Winder	None		Special purpose winder
Supply voltage	120 V AC +/- 10 %, 50/60 Hz, 120 V AC special purpose cord set 230 V AC +/- 10 %, 50/60 Hz, 230 V AC special purpose cord set		
Power consumption	Not printing: Approx. 10 W, Printing: Approx. 30 W		
Weight	Approx. 2.4 kg	Approx. 2.6 kg	Approx. 2.8 kg
Outer dimensions	164 (W) × 248 (D) × 140 (H) mm		164 (W) 280(D) 183(H)
Operating temperature and humidity	0 to 40°C, 35 to 85 % RH (No dew condensation)		
Storage temperature and humidity	-20 to 60 °C, 10 to 90 % RH (No dew condensation)		
Reliability	Print head: 80,000,000 characters, Mechanism: MCBF 2,500,000 lines (With single-sheet recommended paper), Auto cutter: 300,000 cuts (With single-sheet recommended paper)		
EMI standard	Domestic: Vcci Class-A U.S.A.: Fcc Class-A Europe: EN55022 Class-B CE Marking		
Safety standard	U.S.A., Canada: UL, c-UL Europe: TUV, GS		

2.2 Paper Specifications

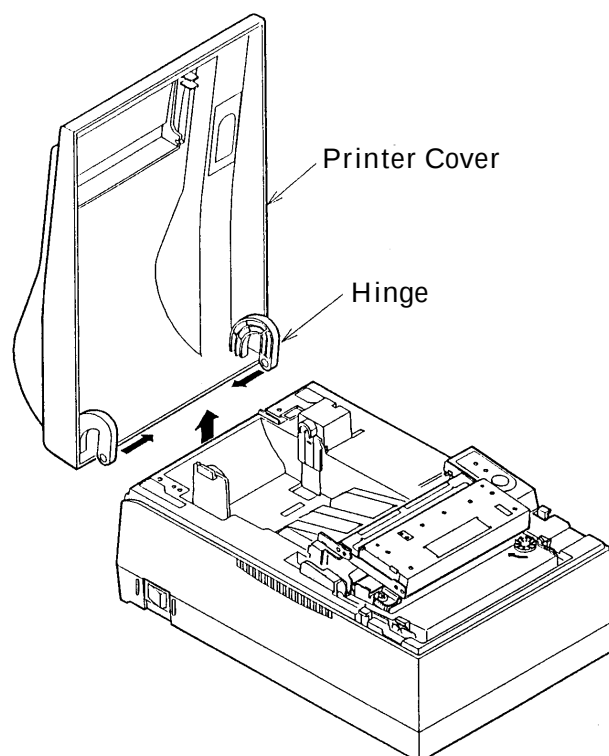
- Type : Normal paper and non-carbon paper
- Paper width : 76 +/- 0.5 mm
- Paper thickness : Single-sheet paper --- 45 to 55 kg/1,000 sheets/1,091 × 788 mm;
Copying paper --- Non-carbon paper, 1 original + 1 copy,
Total thickness 0.2 mm or less
- Roll diameter : ϕ 83 mm or less (ϕ 80 mm or less for the copying paper)
- Core : ϕ 12 mm (Inner Diameter), ϕ 18 mm (Outer Diameter)

3. DISASSEMBLY AND REASSEMBLY

3.1 Disassembly Procedure

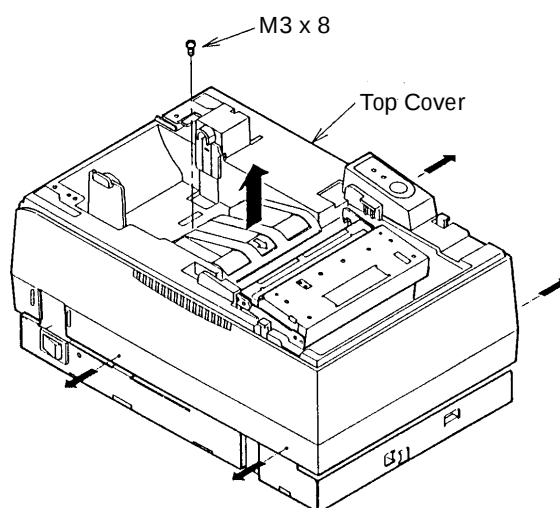
1. Removing the Printer Cover

- (1) Open the printer cover.
- (2) Remove the printer cover by bending its both hinges inwardly.



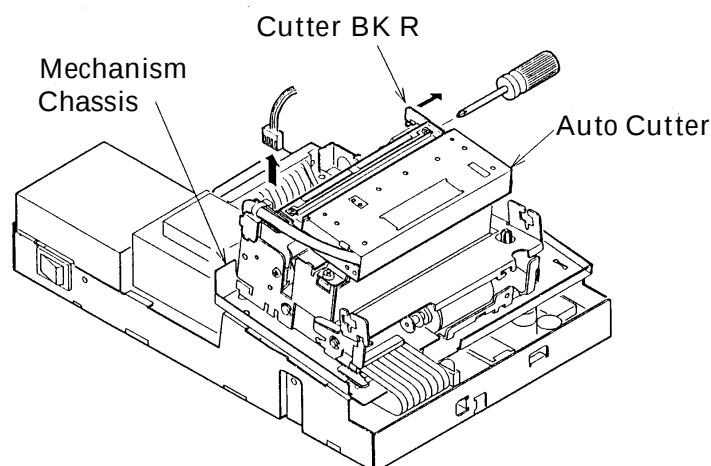
2. Removing the Top Cover

- (1) Remove the printer cover. (See item 1.)
- (2) Remove a paper roll and cassette ribbon.
- (3) Remove the one screw M3 x 8.
- (4) While spreading the four hooking parts of the top cover outwardly, lift the top cover upwardly.
- (5) While holding the control PCB assy by hand, disconnect the cables of the PE PCB assy, operation panel PCB assy and winder (for iDP-3423 only) from the connectors of the control PCB assy, and then remove the top cover.



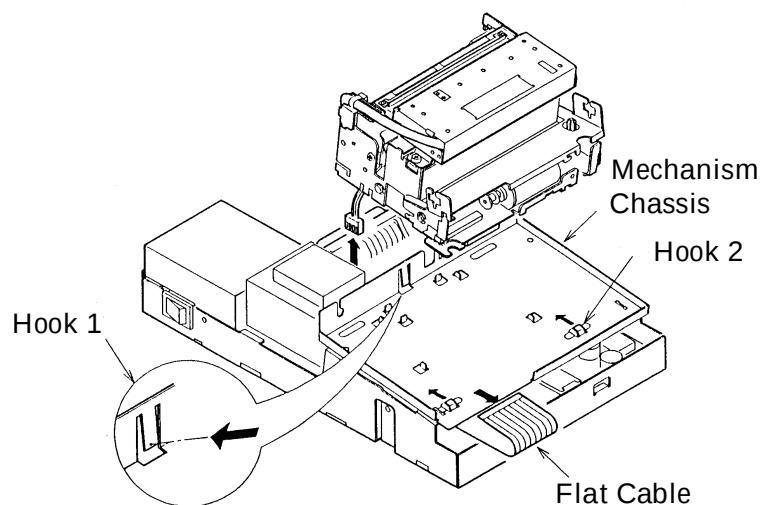
3. Removing the Auto Cutter ACS-230 (For iDP-3421/3423)

- (1) Remove the top cover. (See item 2.)
- (2) Disconnect the cable of the auto cutter from the connector of the control PCB assy.
- (3) Unhook the cable of the auto cutter from the mechanism chassis (2 places).
- (4) Remove the one screw M2.6 x 6 and take out the cutter BK R from the printer mechanism.
- (5) Remove the auto cutter from the printer mechanism.



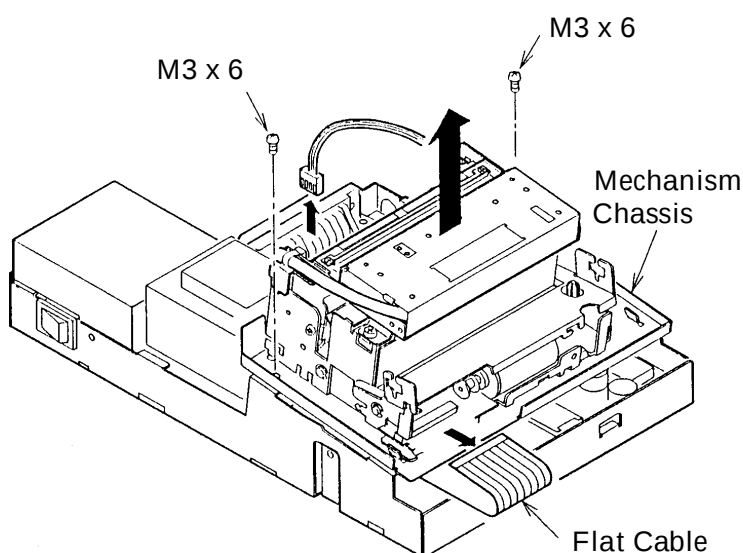
4. Removing the Printer Mechanism

- (1) Remove the top cover. (See item 2.)
- (2) Disconnect the flat cable from the connector of the printer mechanism.
- (3) Disconnect the cable of the auto cutter from the connector of the control PCB assy. (For iDP-3421/3423)
- (4) While pushing the hook 1 in the direction shown by the arrow with a flat-blade screwdriver, tweezers, or a similar tool, unhook the printer mechanism from the mechanism chassis.
- (5) While lifting the rear of the printer mechanism, remove the printer mechanism by sliding it backward until it comes off the two hooks 2 on the mechanism chassis.



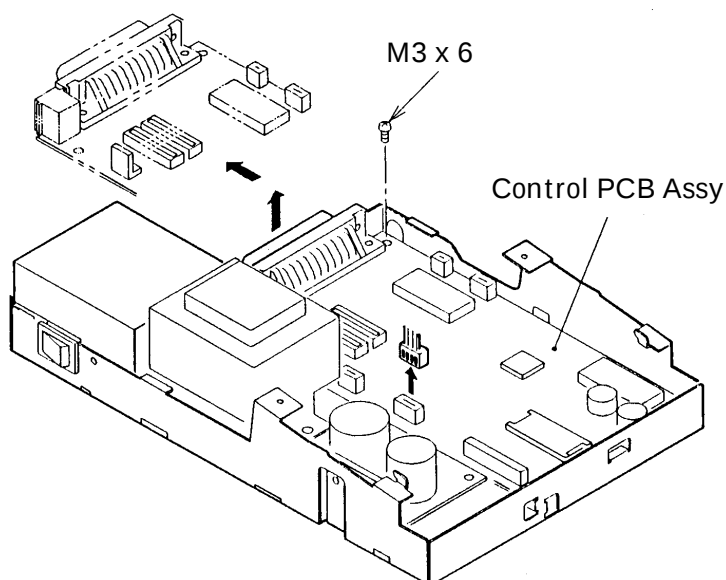
5. Removing the Mechanism Chassis with the Printer Mechanism

- (1) Remove the top cover. (See item 2.)
- (2) Disconnect the flat cable from the connector of the printer mechanism.
- (3) Disconnect the cable of the auto cutter from the connector of the control PCB Assy. (For iDP-3421/3423 only)
- (3) Remove the two screws M3 x 6 and remove the mechanism chassis with the printer mechanism.



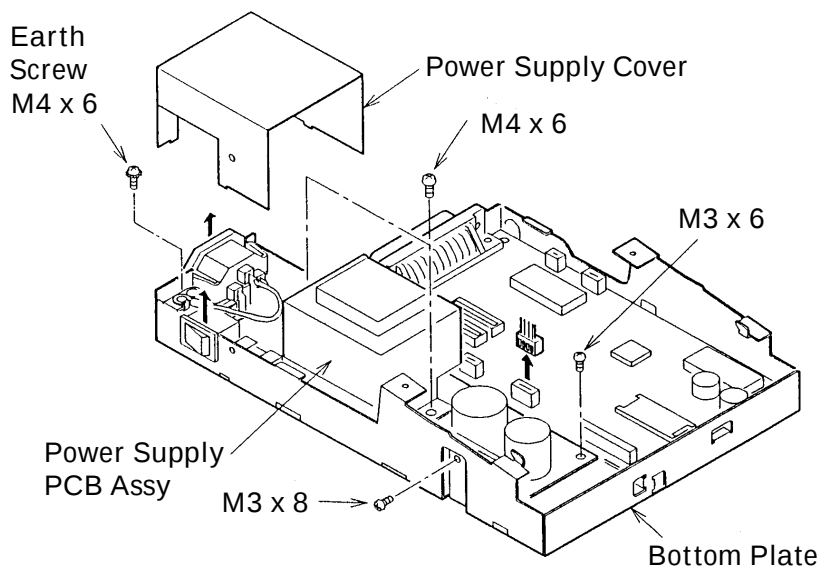
6. Removing the Control PCB Assy

- (1) Remove the mechanism chassis. (See item 5.)
- (2) Disconnect the cable of the power supply PCB Assy from the connector of the control PCB Assy.
- (3) Remove the one screw M3 x 6.
- (4) While lifting the rear of the control PCB Assy, remove the control PCB Assy by sliding it backward.



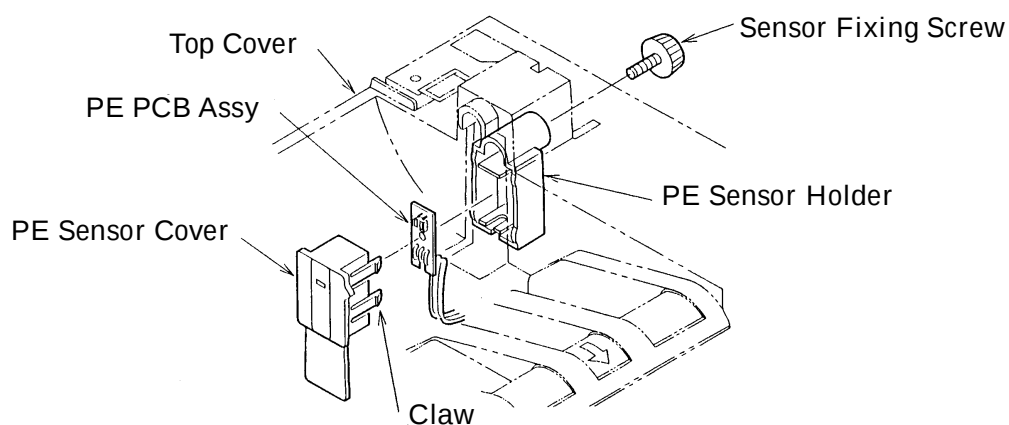
7. Removing the Power Supply PCB Assy

- (1) Remove the mechanism chassis. (See item 5.)
- (2) Disconnect the cable of the power supply PCB assy from the connector of the control PCB assy.
- (3) Remove the power supply cover.
- (4) Remove the one screw M3 x 6 and one screw M3 x 8.
- (5) Remove the two screws M4 x 6.
- (6) Remove the one earth screw M4 x 6.
- (7) Remove the power switch and inlet from the bottom plate and take out the power supply PCB assy.



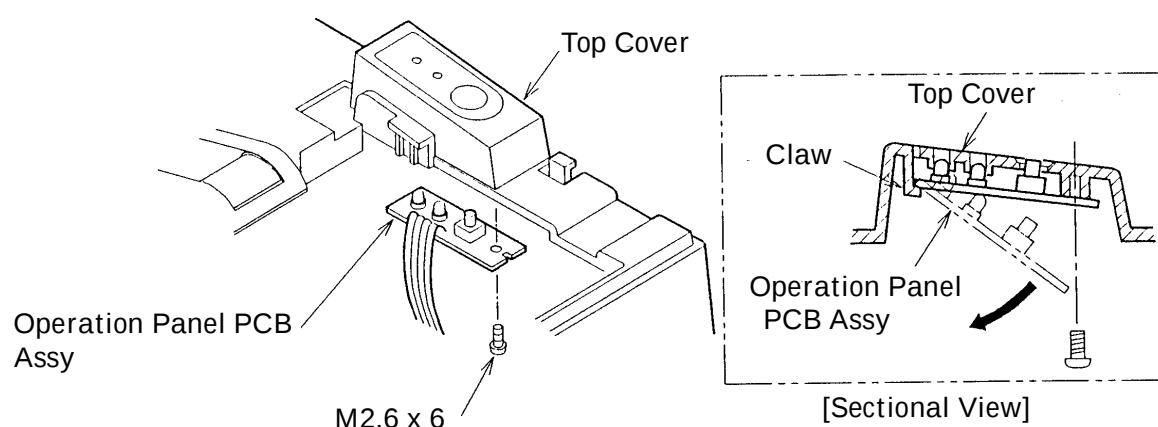
8. Removing the PE PCB Assy

- (1) Remove the top cover. (See item 2.)
- (2) Remove the sensor fixing screw.
- (3) Unhook the four claws of the PE sensor cover with tweezers, round nose pliers, or a similar tool.
- (4) Remove the PE PCB assy from the PE sensor cover.



9. Remove the Operation Panel PCB Assy

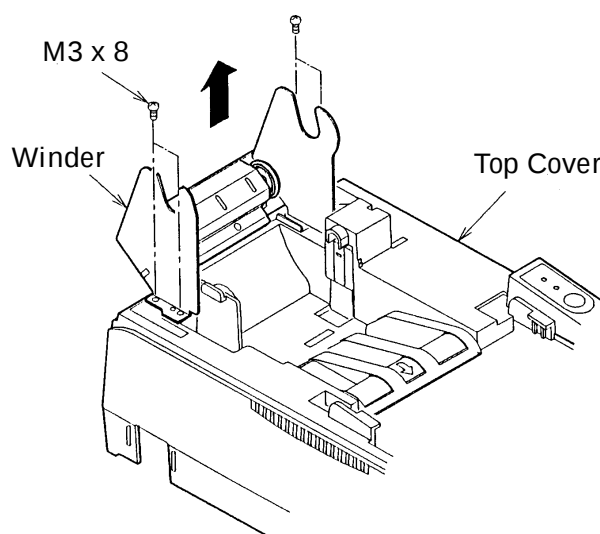
- (1) Remove the top cover. (See item 2.)
- (2) Remove the one screw M2.6 x 6.
- (3) Turn the operation panel PCB assy in the direction shown by the arrow in the sectional view. Then, remove it by unhooking it from the claw of the top cover.



10. Removing the Winder (For iDP-3423 Only)

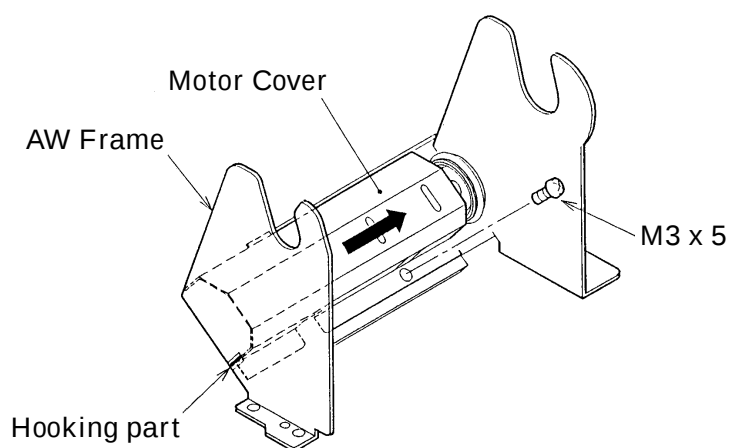
10.1 Removing the Winder

- (1) Remove the top cover. (See item 2.)
- (2) Remove the four screws M3 x 8.
- (3) Pull the winder cable out of the top cover.



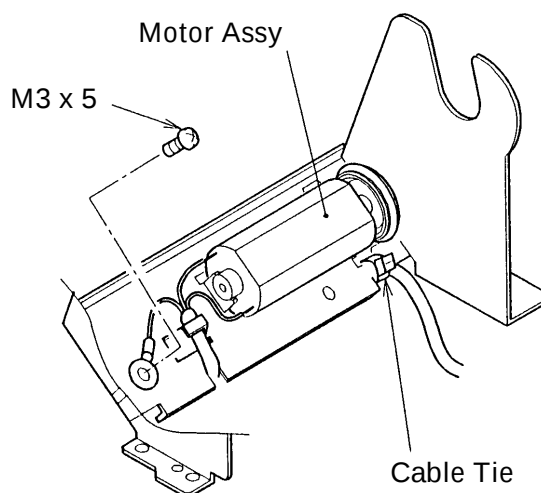
10.2 Removing the Motor Cover

- (1) Remove the one screw M3 x 5.
- (2) Slide the motor cover to the right to unhook it from the AW frame. Then, remove the motor cover.



10.3 Removing the Motor Assy

- (1) Cut the cable tie.
- (2) Remove the one earth screw M3 x 5 and take out the motor assy.



3.2 Reassembly Procedure

Reassemble each part in the reverse order of the disassembly procedure described in Section 3.1.

4. TROUBLESHOOTING

4.1 Troubleshooting Procedure

When a trouble occurs, confirm its phenomenon, locate a defective part in accordance with 4.2 Troubleshooting Guide, and troubleshoot as described below.

- **Phenomenon:** Find a trouble phenomenon in this column. If there are multiple phenomena, take all the corresponding items into consideration. This allows you to specify a hidden defective part.
- **Cause:** Lists as many possible causes as possible. Guess a trouble cause out of them and take its check method to specify the trouble cause.
- **Check Method:** Describes a check method to specify a trouble cause.
- **Remedy:** Troubleshoot by taking a remedy described in this column.

By troubleshooting in accordance with the above-mentioned procedure, you can troubleshoot efficiently with fewer misjudgments.

4.2 Troubleshooting Guide

• Power Supply Failure

Phenomenon	Cause	Check Method	Remedy
No power (POWER lamp not illuminated)	The AC cord is not connected.	_____	Connect the AC cord to the AC outlet.
	The fuse is gone.	Check whether any unspecified power has been used so far.	Use the specified AC voltage.
		Check whether the specified fuse is used.	Use the specified fuse.
The fuse immediately goes again after replacing with new one.	The printer mechanism, control PCB assy, or power supply PCB is defective.	The power is turned on by disconnecting the flat cable from the printer mechanism. (No operation is done.)	Replace the printer mechanism.
		The power is turned on by disconnecting the cable of the power supply PCB assy.	Replace the control PCB assy.
		The phenomenon does not change after the above-mentioned check.	Replace the power supply PCB assy.
	The printer mechanism or circuit drive power is abnormal.	With a DC voltmeter, measure the mechanism drive voltage and circuit drive voltage.	Replace the power supply PCB assy.

- * If the fuse is gone with the specified AC voltage supplied, it is likely that the printer mechanism, control PCB assy, or power supply PCB assy is defective. Replace either defective one. Incidentally, check the wiring of the drawer and interface cable.

• **Printing failure**

Phenomenon	Cause	Check Method	Remedy
No printing	Faulty AC supply voltage	Check whether the specified AC voltage is used.	Use the specified AC voltage.
	Faulty mounting or connection of the printer mechanism	Check mounting and connection of the printer mechanism.	Mount the printer mechanism properly.
	Faulty printer mechanism	_____	Replace the printer mechanism.
Paint printout	Non-recommended paper is used.	_____	Replace it with the specified paper.
	Faulty ink ribbon	Check wear and tear of the ink ribbon.	Replace the ink ribbon.
	Low AC supply voltage	Check the supply voltage with an AC voltmeter.	Use the AC voltage within the specified range.
Missing dots	Faulty connection of the printer mechanism	Check whether the printer mechanism cable is properly connected.	Connect the printer mechanism cable properly.
	Foreign substance is attached to the print head.	Check the head for any adhered foreign substance.	Dip a cotton swab or soft cloth in ethyl alcohol and wipe away the foreign substance.
	Faulty print head	_____	Replace the print head or printer mechanism.
Badly blurred Printout	Faulty AC supply voltage	Check whether the specified AC voltage is used.	Use the specified AC voltage.
	Foreign substance is attached to the print head.	Check the head for any adhered foreign substance.	Dip a cotton swab or soft cloth in ethyl alcohol and wipe away the foreign substance.
Bad printing quality	Faulty paper	Check whether the paper meets the specifications.	Replace it with the specified paper.
	Faulty ink ribbon	Check wear and tear of the ink ribbon	Replace the ink ribbon.
	Low AC supply voltage	Check the AC supply voltage with an AC voltmeter.	Use the AC voltage within the specified range

- **Faulty carriage mechanism**

Phenomenon	Cause	Check Method	Remedy
Abnormal sound	Faulty connection of the head connector	Check the connection of the head connector.	Connect the connector properly.
ERROR lamp illuminated	The print head does not move to the home position at power-on, or it does not move.	Check for any foreign substance within a movable range or any wear of the gear, etc.	Replace the print head or printer mechanism.
Shear in printing	The paper is jamming.	Turn off the power once, and then on it again.	If there is a shear in printing, replace the printer mechanism.
	Faulty AC supply voltage	Check whether the specified AC voltage is supplied with an AC voltmeter.	Use the specified AC voltage.
	Foreign substance in the gear	Remove the printer mechanism and check for any foreign substance caught in the gear, head motor gear, or print head moving part.	Eliminate the foreign substance.
	Broken gear	Remove the printer mechanism and check for any breakage of the gear, head motor gear, or print head moving part.	If broken, replace the printer mechanism.

- Paper feed failure

Phenomenon	Cause	Check Method	Remedy
Paper is not fed or fed irregularly	Faulty connection of the motor connector	Check connection of the motor connector.	Connect the connector correctly.
	Defective motor	Measure the supply voltage with a DC voltmeter or oscilloscope.	If the supply voltage is normal, replace the motor (printer mechanism).
	Paper feed failure (Paper jam)	Check whether or not the paper is jamming or torn and caught in the paper path.	Eliminate unnecessary paper in the paper path and set paper properly.
	Low AC supply voltage	Check the AC supply voltage with an AC voltmeter.	Use the specified AC voltage.
	Foreign substance in the gear	Remove the printer mechanism and check for any foreign substance caught in the gear or motor gear.	Eliminate the foreign substance.
	Broken gear	Remove the printer mechanism and check for any breakage of the gear or motor gear.	If broken, replace the printer mechanism.

- Faulty sensors

Phenomenon	Cause	Check Method	Remedy
Does not detect presence of paper.	Faulty paper sensor	Replace the printer mechanism and check if the replaced one functions properly. Check whether the ERROR lamp flickers when paper is out.	Replace the printer mechanism.
	Foreign substance, etc. caught by the sensor	Check for any foreign substance.	Eliminate the foreign substance.
Does not detect paper near end status.	Faulty paper near end sensor	_____	Replace the PE PCB assy.
	Faulty connection of the PE PCB assy	Check connection of the connector.	Connect the connector correctly.
	Foreign substance, etc. caught by the sensor	Check for any foreign substance.	Eliminate the foreign substance.

* If the no-paper condition is not detected while the printer is running out of the recording paper, it will print without the paper, leading to a trouble of the head, and so on.

- **Faulty auto cutter (For iDP-3421/3423 only)**

Phenomenon	Cause	Check Method	Remedy
Does not cut paper.	Faulty connection of the motor connector	Check connection of the motor connector.	Connect the connector correctly.
	Faulty AC supply voltage	Check whether the specified AC voltage is supplied with an AC voltmeter.	Use the specified AC voltage.
	Defective motor	Measure the supply voltage with a DC voltmeter or oscilloscope.	If the supply voltage is normal, replace the motor (auto cutter).
	Paper feed failure (Paper jam)	Check whether or not the paper is jamming or torn and caught in the paper path.	Eliminate unnecessary paper in the paper path and set paper properly.

- **Faulty winder (For iDP-3423 only)**

Phenomenon	Cause	Check Method	Remedy
Does not wind paper.	Paper end is not correctly inserted into the slit of the reel shaft of the winder.	_____	Insert paper into the slit correctly.
	Faulty connection of the motor connector	Check connection of the motor connector.	Connect the connector correctly.
	Faulty AC supply voltage	Check whether the specified AC voltage is supplied with an AC voltmeter.	Use the specified AC voltage.
	Paper feed failure (Paper jam)	Check whether or not the paper is jamming or torn and caught in the paper path.	Eliminate unnecessary paper in the paper path and set paper properly.
	Defective motor	Measure the supply voltage with a DC voltmeter or oscilloscope.	If the supply voltage is normal, replace the motor assy AW.

5. SERVICE PARTS LIST

5.1 Parts List for Mechanism

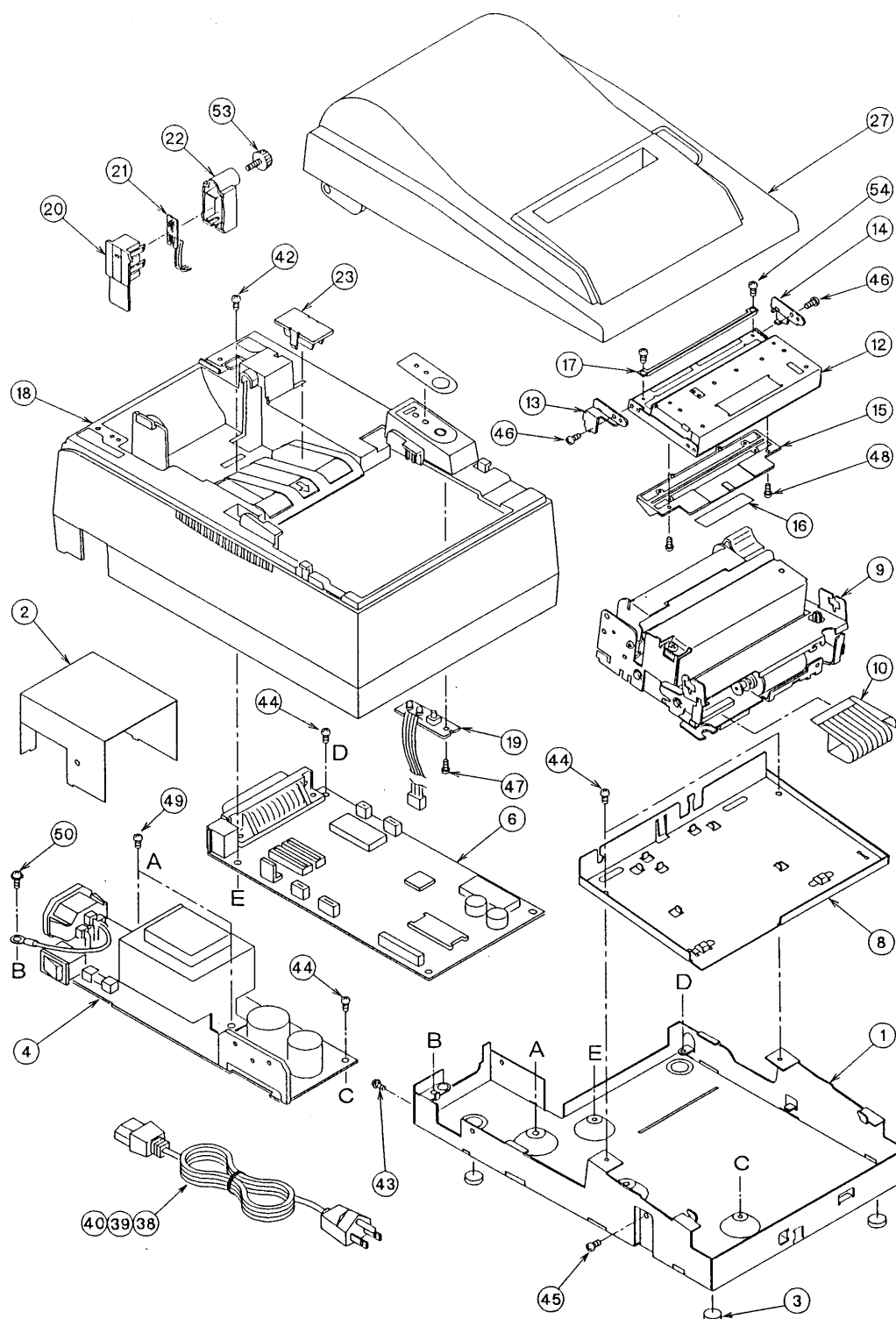
1/2

Ref. No.	Parts No.	Description	iDP-3420	iDP-3421	iDP-3423
1	E62020380	Bottom Plate	1	1	1
2	E4002-570	Power Supply Cover	1	1	1
3	E6302-420	Foot	4	4	4
4	E40000240	Power Supply PCB Assy 3420-10 (U)	(1)	(1)	(1)
	E40000250	Power Supply PCB Assy 3420-10 (E)	(1)	(1)	(1)
6	E70010980	Control PCB Assy 3420-01 (Serial I/F)	1	1	1
	E70010985	Control PCB Assy 3420-02 (Parallel I/F)	1	1	1
8	E4002-580	Mechanism Chassis	1	1	1
9	410DF	Printer DP-410	1	1	1
10	E4900-570	Mechanism Flat Cable	1	1	1
12		Auto Cutter ACS-230-E		1	1
13	E8004-110	Cutter BK L		1	1
14	E8004-120	Cutter BK R		1	1
15	E8022-120	Paper Gate		1	1
16	E8039-010	Magnet Rubber		1	1
17	E6204-660	Manual Cutter		1	1
18	E62020850	Top Cover	1	1	1
19	E40000260	Operation Panel PCB Assy	1	1	1
20	E5110-570	PE Sensor Cover	1	1	1
21	E40000270	PE PCB Assy	1	1	1
22	E6611-660	PE Sensor Holder	1	1	1
23	E5103-550	DIP Switch Cover	1	1	1
25	E62040520	Printer Cover	1		
26	E6204-650	Paper Cutter	1		
27	E62040530	Printer Cover AC		1	
28	E62040540	Printer Cover AW Assy			1
30	E8500-080	AW Frame			1
31	E8514-030	Motor Cover			1
32	E8510-010	Motor Assy AW			1
33	E8512-040	Motor Roller			1
34	O-15	O Ring P-15			1
35	E8530-040	Reel Shaft			1
36	E8531-030	Reel Flange			1
38		AC Cord for 120V	(1)	(1)	(1)
39		AC Cord for 230V	(1)	(1)	(1)
40		AC Cord for 100V	(1)	(1)	(1)

Ref. No.	Parts No.	Description	iDP-3420	iDP-3421	iDP-3423
42	76G22821	Screw PHT (ST), M3x8	1	1	1
43	76G42966	Screw PHT (INT. TW), M3x6	1	1	1
44	76G22579	Screw PHT (ST), M3x6	4	4	4
45	76G22796	Screw PHT (BT), M3x8	1	1	5
46	76G57481	Screw PHT (ST), M2.6x6		2	2
47	76G23179	Screw PHT (BT), M2.6x6	1	1	1
48	76G73082	Screw PH (ST), M2x5		4	4
49	76G73090	Screw PHT (ST), M4x8	2	2	2
50	76G42959	Screw PHT (ST), M4x6	1	1	1
51	76G73101	Nut M3	1	1	1
52	E4031-060	Insu-Lock Tie T18S	1	2	3
53	76G72849	Sensor Fixing Screw M3x12	1	1	1
54	76G57549	Screw PH (ST), M2x3		2	2
55	76G65879	Screw PH (BT), M2x4	2		
56	76G29538	Screw PHT (ST), M3x5			2
59	E8038-030	EMC Separated Core MSFC8KEX		1	1

5.2 Disassembly Drawing

5.2.1 For iDP-3421



5.3 Parts List for PCB Assy

5.3.1 Control PCB Assy 3420-01 (Serial Interface D-sub 25)

1/3

Ref. No	Parts No.	Description		iDP-3420	iDP-3421	iDP-3423
IC1	404PC-10	CPU	404PC-10	1	1	1
IC2	E104-660	EPROM	M27C512B	1	1	1
IC3	E107-350	SRAM	TC55257DPL-85L	1	1	1
IC4	E2010610	TTL-IC	SN74LS14AP	1	1	1
IC6	E2002-670	Reset IC	M51953BL	1	1	1
IC7,8	E202-950	Transmitter	MAX202CPE	2	2	2
IC9	E2010101	HCMOS	TC74HC00AP	1	1	1
IC10	E2010610	TTL-IC	SN74LS04AP	1	1	1
TA1	E390-300	Tr. Array	MTA001M F4002	1	1	1
TA2	E390-370	Tr. Array	M54567P	1	1	1
TA3		Tr. Array	TA8428K		1	1
TR1	E379-129	Transistor	2SD1292R	1	1	1
TR2-5,11, 12,14,15	E359-090	Transistor	2SC1740SR	8	8	8
TR7	E358-040	Transistor	RN1002	1	1	1
TR8,9	E359-170	Transistor	2SC4671-AN	2	2	2
TR10	E359-170	Transistor	2SC4671-AN			1
TR13	E359-200	Transistor	2SA1485	1	1	1
D1,2	E400-460	Diode	1S2076	2	2	2
ZD1	E406-505	Z. Diode	RD20EB2	1	1	1
Xtal	E501-410	X'tal	CST16.00MXW0C4	1	1	1
DSW1	E5103-490	DIP SW.	KSD-10	1	1	1
DSW2	E5103-510	DIP SW.	KSD-8	1	1	1
BZ	MEB12C5	Buzzer	MEB-12C-5	1	1	1
C1	E2010-960	El. Cap.	16YK100M	1	1	1
C2	E2010-920	El. Cap.	35YK47M	1	1	1
C3,4,12-26, CP1-5		C. Cap.	DD308-63F104Z50	22	22	22
C5-8,11,27, 28, 30		C. Cap.	DD104-63B102K50	8	8	8
C10	E2010-970	El. Cap.	35YK1000M			1
C29	E2010-970	El. Cap.	35YK1000M		1	1
C31		Cap.	FS0H-473Z	1	1	1
C32		C. Cap.	DD106-63F103Z50	1	1	1
C33-37		C. Cap.	DD104-63B471K50	5	5	5
RA1	E3500-040	Re. Array	M9-1-103J	1	1	1

Ref. No	Parts No.	Description		iDP-3420	iDP-3421	iDP-3423
RA2,6	E3500-290	Re. Array	M5-1-332J	2	2	2
RA3	E3500-300	Re. Array	M5-1-102J	1	1	1
RA4,5	E3500-050	Re. Array	M5-1-103J	2	2	2
R1		Resistor	RD25M10-1K J	1	1	1
R2		Resistor	RD25M10-22K J	1	1	1
R4,5,7,9,13, 18,19,23		Resistor	RD25M10-10K J	8	8	8
R6,14		Resistor	RD25M10-100 J	2	2	2
R8		Resistor	RD25M10-62K J	1	1	1
R10,11		Resistor	RD25M10-3.3K J	2	2	2
R12		Resistor	RD25M10-3.3K J			1
R15		Resistor	RD25M10-33K J	1	1	1
R16		Resistor	RD25M10-68K J	1	1	1
R17		Resistor	RD25M10-180 J	1	1	1
R20		Resistor	1.5 /1W	1	1	1
R22		Resistor	RD25M10-4.7K J	1	1	1
R24,25		Resistor	RD25M10-10K J		2	2
LB1-14, 22-30		Fe. Beads	BL02RN1-A62	23	23	23
LB15-17		Fe. Beads	BL02RN1-A62			3
LB18-21		Fe. Beads	BL02RN1-A62		4	4
CN1		Connector	5267-05A-X	1	1	1
CN2	E48000825	Connector	286216024000808	1	1	1
CN3	E48000880	Connector	ESDB-25S-R2N	(1) (JPN/EUR)	(1) (JPN/EUR)	(1) (JPN/EUR)
	E48000875	Connector	ESDB-25S-R1N	(1) (USA)	(1) (USA)	(1) (USA)
CN4	E48000530	Connector	TM5RJ3-66	1	1	1
CN5		Connector	5273-03A			1
CN6		Connector	5267-04A-X		1	1
CN7		Connector	5267-03A-X	1	1	1
CN8		Connector	5483-04A-X	1	1	1
JP102		Jumper	φ0.7 10mm	1	1	1
SC1	E48000860	Connector	00-8261-24-33-10-806	1	1	1
Rec1-8	E48000855	Receptacle	20-8261-0249-06-807	8	8	8
ICS	E48000870	IC Socket	87-2806S04	1	1	1
PC		PCB	3420-01	1	1	1

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Ref. No	Parts No.	Description	iDP-3420	iDP-3421	iDP-3423
		Screw Cylinder Head + Pan (ST), M3x10 (B-516)	2	2	2
		Nut (#2) M3 Fe Nip	2	2	2

5.3.2 Control PCB Assy 3420-02 (Parallel Interface)

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Ref. No	Parts No.	Description		iDP-3420	iDP-3421	iDP-3423
IC1	404PC-10	CPU	404PC-10	1	1	1
IC2	E104-660	EPROM	M27C512B	1	1	1
IC3	E107-350	SRAM	TC55257DPL-85L	1	1	1
IC4	E2010081	TTL-IC	SN74LS14AP	1	1	1
IC6	E2002-670	Reset IC	M51953BL	1	1	1
IC7	E2010630	TTL-IC	SN74LS373AP	1	1	1
IC8	E2010620	TTL-IC	SN74LS74AP	1	1	1
IC9	E2010101	HCMOS	TC74HC00AP	1	1	1
IC10,11	E2010610	TTL-IC	SN74LS04AP	2	2	2
IC12	E2010640	TTL-IC	SN74LS00AP	1	1	1
TA1	E390-300	Tr. Array	MTA001M F4002	1	1	1
TA2	E390-370	Tr. Array	M54567P	1	1	1
TA3		Tr. Array	TA8428K		1	1
TR1	E379-129	Transistor	2SD1292R	1	1	1
TR2-5,11, 12,14,15	E359-090	Transistor	2SC1740SR	8	8	8
TR7	E358-040	Transistor	RN1002	1	1	1
TR8,9	E359-170	Transistor	2SC4671-AN	2	2	2
TR10	E359-170	Transistor	2SC4671-AN			1
TR13	E359-200	Transistor	2SA1485	1	1	1
ZD1	E406-050	Z. Diode	R20EB2	1	1	1
Xtal	E501-410	X'tal	CST16.00MXW0C4	1	1	1
DSW1	E5103-490	DIP SW.	KSD-10	1	1	1
BZ	MEB12C5	Buzzer	MEB-12C-5	1	1	1
C1	E2010-960	El. Cap.	16YK100M	1	1	1
C2	E2010-920	El. Cap.	35YK47M	1	1	1
C3,4,17-21, CP1-9		C. Cap.	DD308-63F104Z50	16	16	16
C5-8,11,12, 14, 22		C. Cap.	DD104-63B102K50	8	8	8
C10	E2010-970	El. Cap.	35YK1000M			1
C13		C. Cap.	DD104-63B102K50		1	1
C15,25-29		C. Cap.	DD104-63B471K50	6	6	6
C16,24		C. Cap.	DD106-63F103Z50	2	2	2
C23	E2010-950	Cap.	FS0H-473Z	1	1	1
RA1,2	E3500-080	Re. Array	M9-1-332J	2	2	2
RA3,6	E3500-040	Re. Array	M9-1-103J	2	2	2
RA4	E3500-300	Re. Array	M5-1-102J	1	1	1
RA5,8	E3500-290	Re. Array	M5-1-332J	2	2	2

Ref. No	Parts No.	Description		iDP-3420	iDP-3421	iDP-3423
RA7	E3500-050	Re. Array	M5-1-103J	1	1	1
R1		Resistor	RD25M10-1K J	1	1	1
R2		Resistor	RD25M10-22K J	1	1	1
R4,6,8,12, 17,18,24		Resistor	RD25M10-10K J	7	7	7
R5,13,23		Resistor	RD25M10-100 J	3	3	3
R7		Resistor	RD25M10-62K J	1	1	1
R9,10,21,22		Resistor	RD25M10-3.3K J	4	4	4
R11		Resistor	RD25M10-3.3K J			1
R14		Resistor	RD25M10-33K J	1	1	1
R15		Resistor	RD25M10-68K J	1	1	1
R16		Resistor	RD25M10-180 J	1	1	1
R19		Resistor	1.5 /1W	1	1	1
R25,26		Resistor	RD25M10-10K J		2	2
LB1-14, 22-31		Fe. Beads	BL02RN1-A62	24	24	24
LB15-17		Fe. Beads	BL02RN1-A62			3
LB18-21		Fe. Beads	BL02RN1-A62		4	4
CN1		Connector	5267-05A-X	1	1	1
CN2	E48000825	Connector	286216024000808	1	1	1
CN3	E48000460	Connector	57LE-40360-730B(DC12)	1	1	1
CN4	E48000530	Connector	TM5RJ3-66	1	1	1
CN5		Connector	5273-03A			1
CN6		Connector	5267-04A-X		1	1
CN7		Connector	5267-03A-X	1	1	1
CN8		Connector	5483-04A-X	1	1	1
SC1	E48000860	Connector	00-8261-12-33-10-806	1	1	1
Rec1-4	E48000855	Receptacle	20-8261-0249-06-807	4	4	4
ICS	E48000870	IC Socket	87-2806S04	1	1	1
PC		PCB	3420-02	1	1	1
		Screw	Cylinder Head + Pan (ST), M3x10 (B-516)	2	2	2
		Nut (#2)	M3 Fe Nip	2	2	2

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Ref. No	Parts No.	Description	iDP-3420	iDP-3421	iDP-3423
FFC		FFC HCUJ(1.25)-24F-122-8S4(W)-M1(20624)	1	1	1

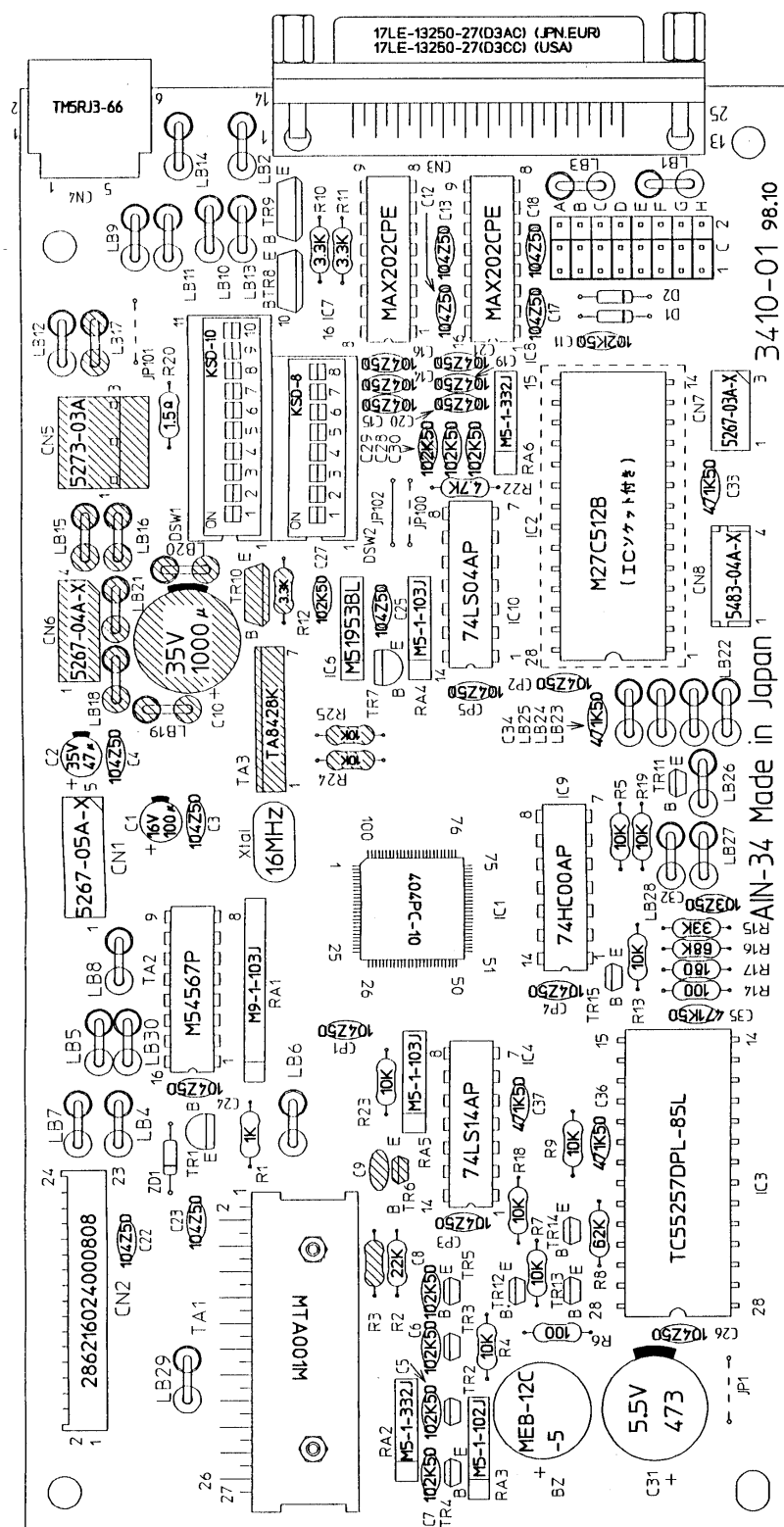
5.3.3 Power Supply PCB Assy

1/1

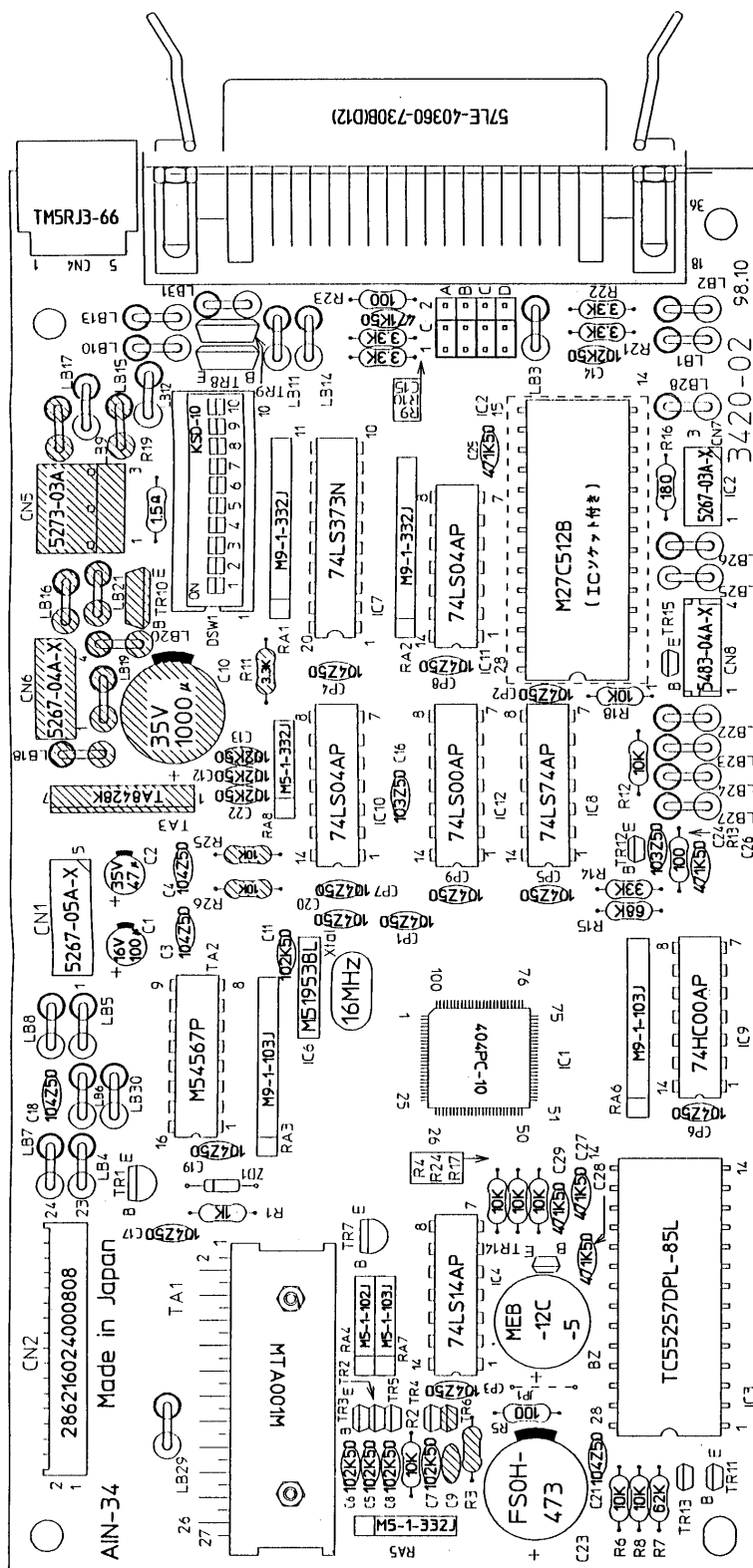
Ref. No	Parts No.	Description	Q'ty	Remarks
INR		Inlet AC-P06CN18	1	
SW		Switch SJ-W2P4A-01BB2	1	
FH		Fuse Holder UF-0033#1	4	
F1		Fuse 5MF-1A	(1) (U, J)	
		Fuse 218.500	(1) (E)	
F2		Fuse 5MF-1A	2	
NF		Noise Filter PLAA3221R0D01B1	1	
TR		Transformer 25-0173	(1) (JPN)	
		Transformer 25-0174	(1) (USA)	
		Transformer 25-0175	(1) (EUR)	
DS1		Diode Stack 2KBP02M	1	
DS2		Diode Stack KBP02M	1	
IC1		Regulator M5231TL	1	
IC2		Regulator μ PC2405HF	1	
TR1		Transistor 2SB1340	1	
C1,2		Film Cap. PA104-L	2	
C3		El. Cap. 63PN-G2200A 30x25	1	
C4		C. Cap. DD104-63B101K50	1	
C5		El. Cap. 50YK1M	1	
C6		El. Cap. 35YK470M	1	
C7		C. Cap. DD308-63F104Z25	1	
C8		El. Cap. 16YK3300M	1	
C9		El. Cap. 16YK100M	1	
R1		Resistor RD25M10-330 J	1	
R2		Resistor RD25M10-560 J	1	
R3		Resistor RNE1/4M10-20K F	1	
R4		Resistor RNE1/4M10-1.54K F	1	
CA1		Cable Assy 25-0353	1	

5.4 Parts Layout Drawing

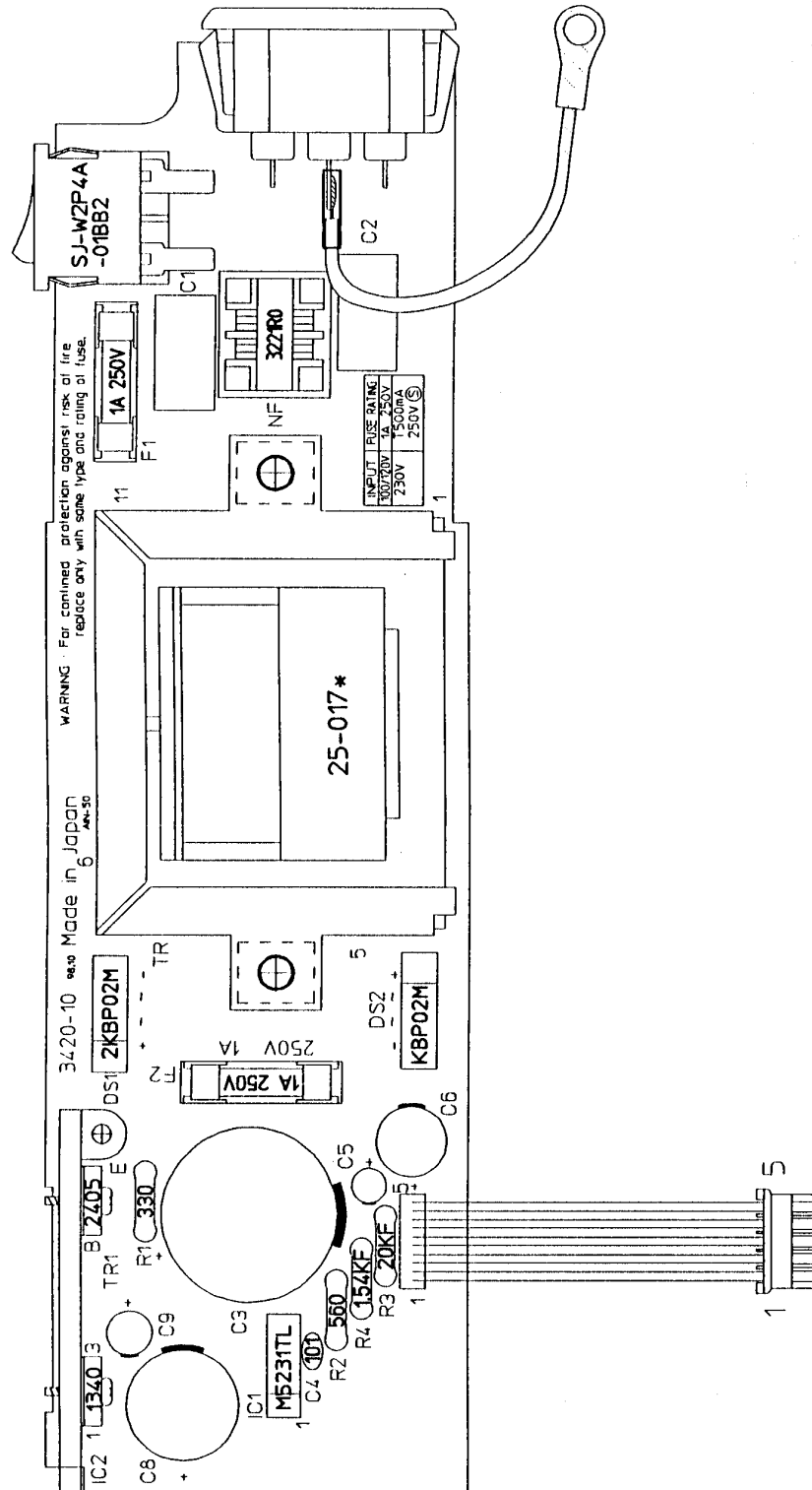
5.4.1 Control PCB Assy 3420-01 (Serial Interface D-sub 25)



5.4.2 Control PCB Assy 3420-02 (Parallel Interface)



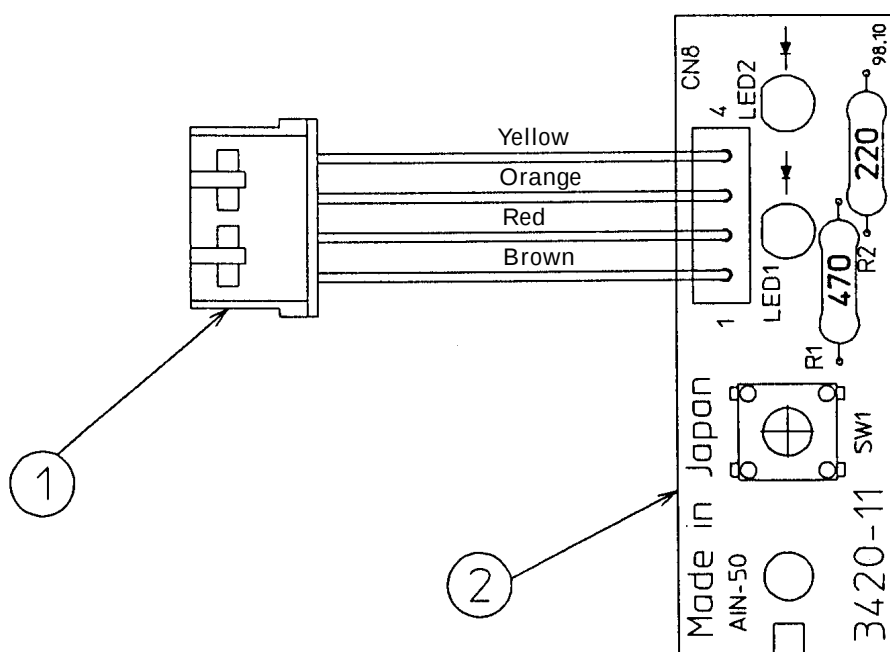
5.4.3 Power Supply PCB Assy



5.4.4 Operation Panel PCB Assy

1/1

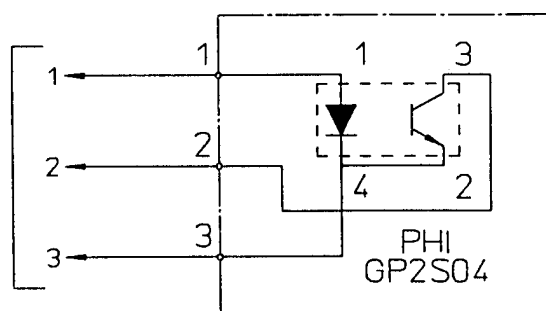
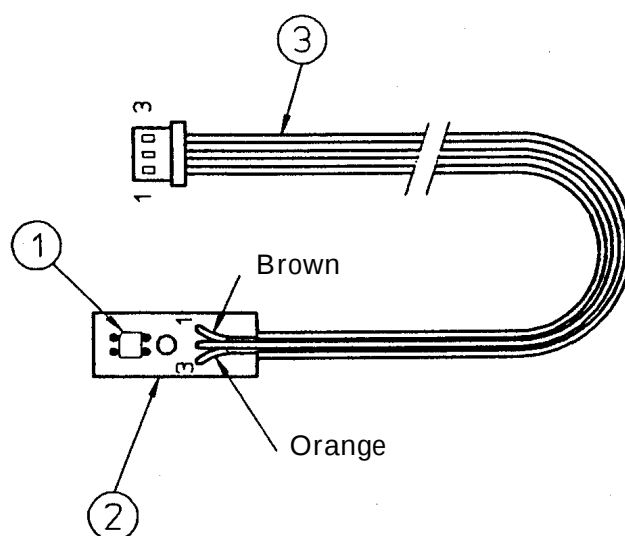
Ref. No	Parts No.	Description	Q'ty	Remarks
1		Cord Assy-CA2 (3420) SEC-2730	1	
2		PCB 3420-11	1	
LED1		LED SEL2210S	1	
LED2		LED SEL2410E	1	
R1		Resistor RD25M10-220 J	1	
R2		Resistor RD25M10-470 J	1	
SW1		Tact SW. SKHHBV	1	



5.4.5 PE PCB Assy

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Ref. No	Parts No.	Description	Q'ty	Remarks
1		Photo interrupter GP2S04	1	
2		PE PCB 910-03	1	
3		PE Harness 25-0355	1	

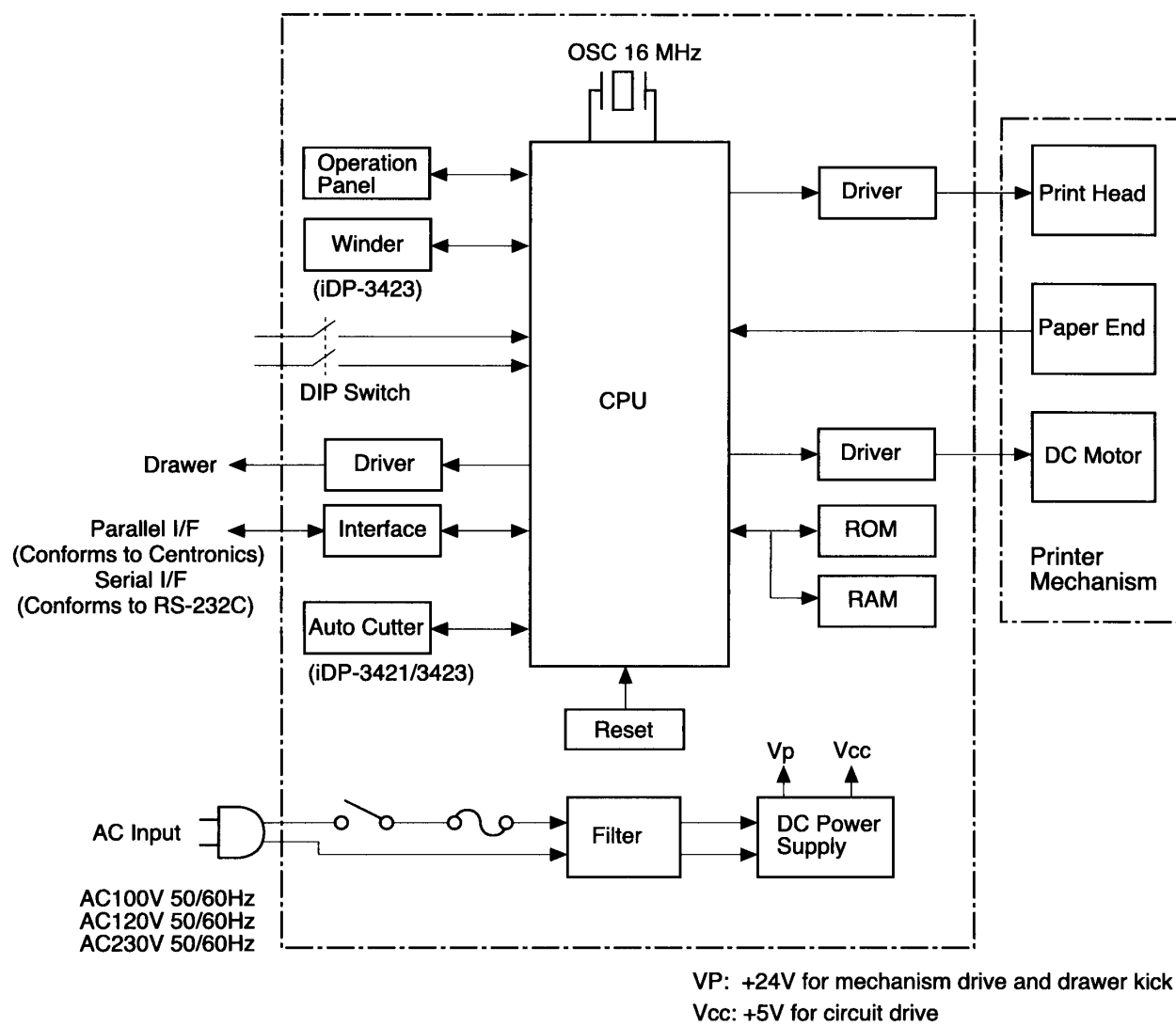


6. DRAWING

The following lists the reference drawings for maintenance, and so on.

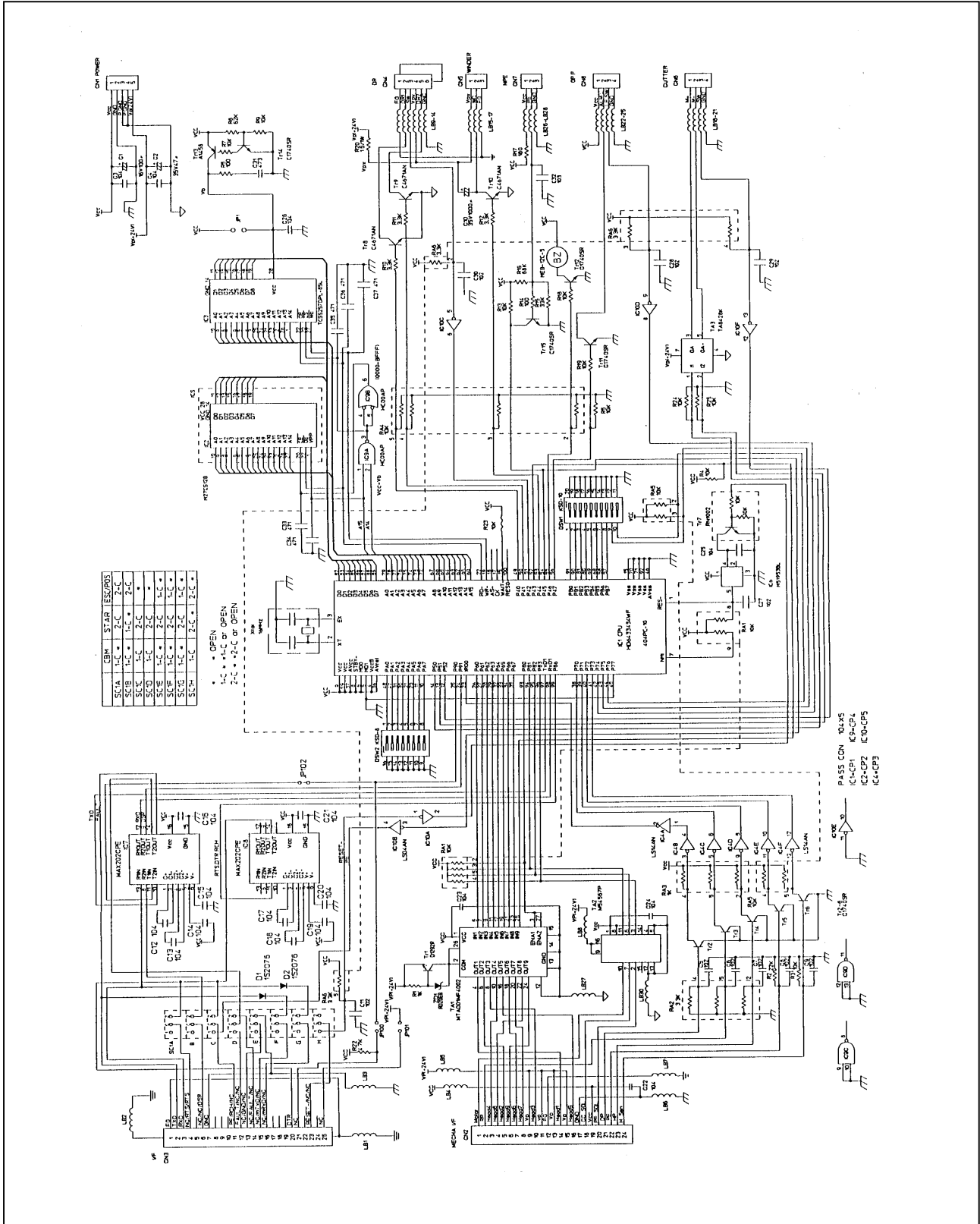
- Block diagram
- Circuit diagrams for the following circuits
 - Control PCB Assy (Serial Interface)
 - Control PCB Assy (Parallel Interface)
 - Power Supply PCB Assy
 - Operation Panel PCB Assy

6.1 Block Diagram

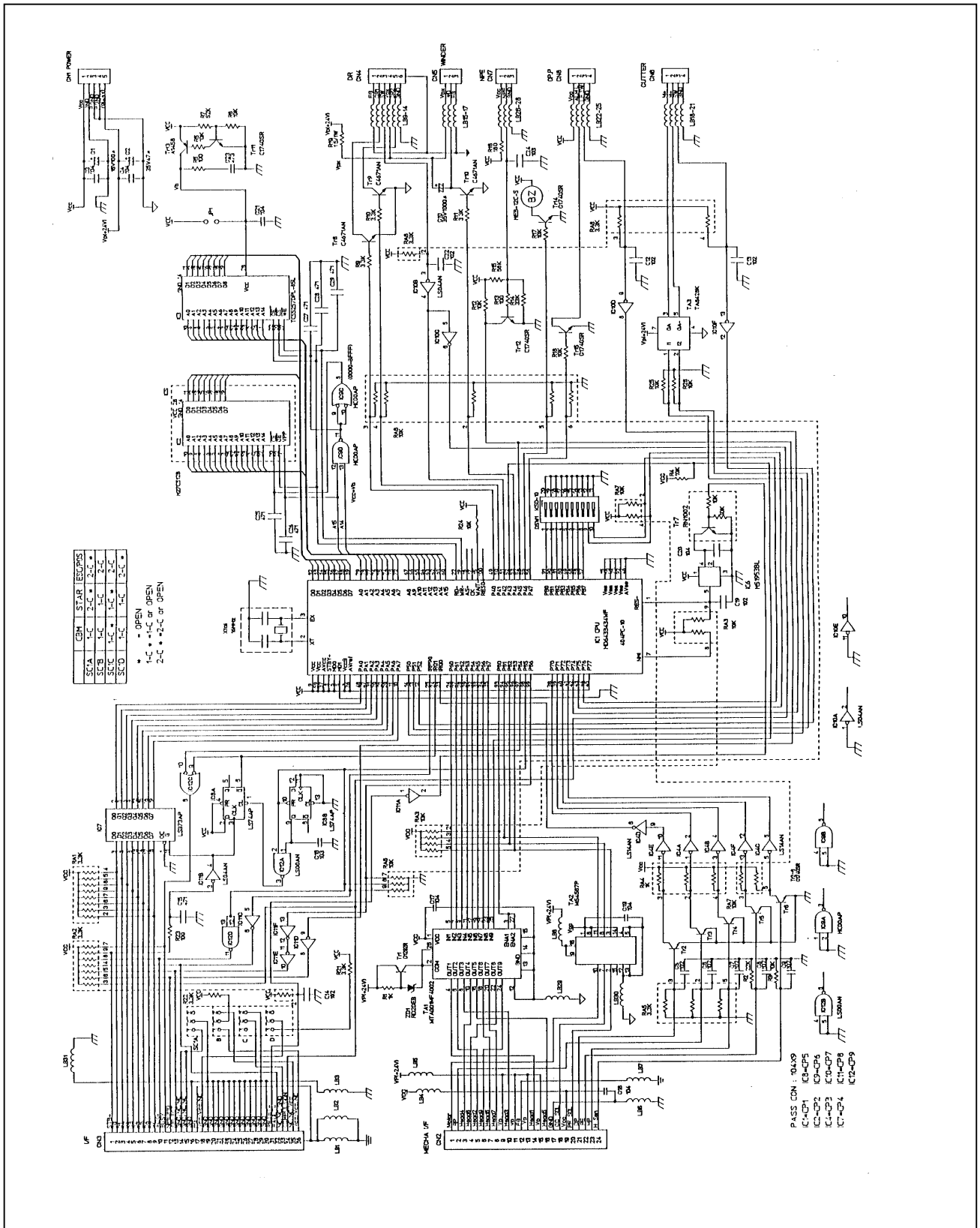


6.2 Circuit Diagram

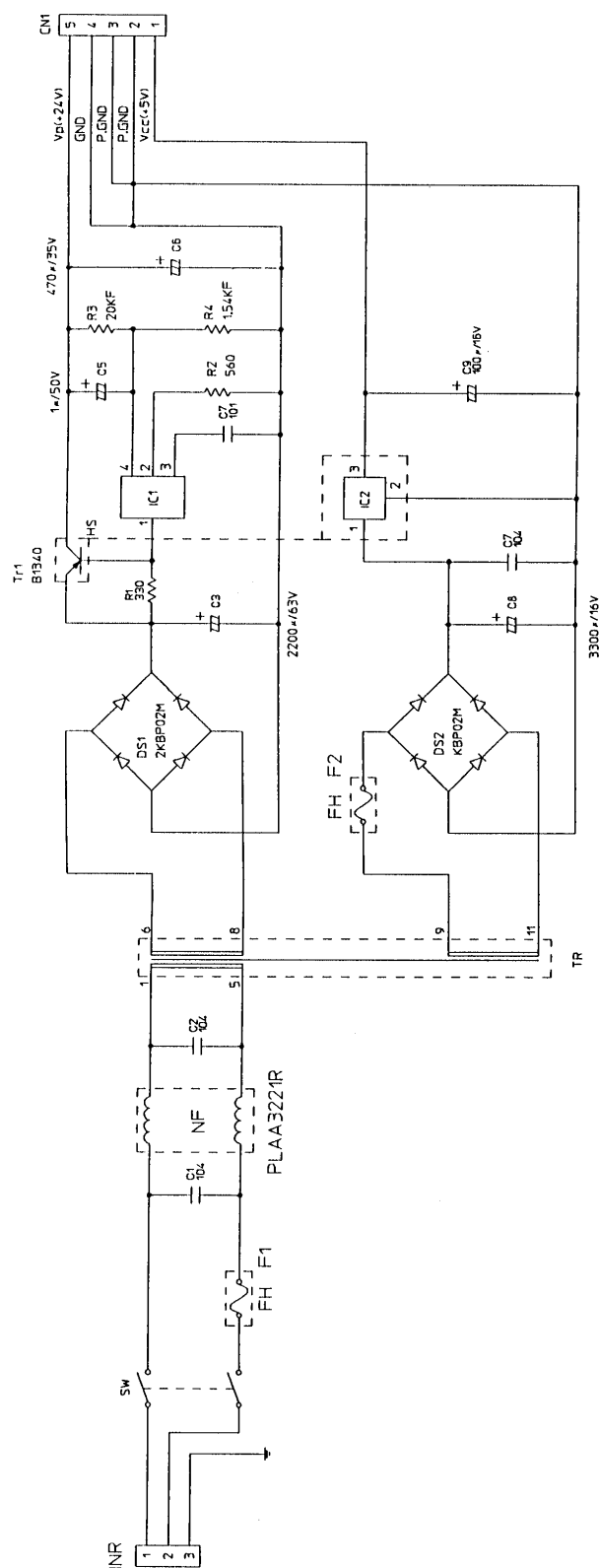
6.2.1 Control PCB Assy 3420-01 (Serial Interface D-sub 25)



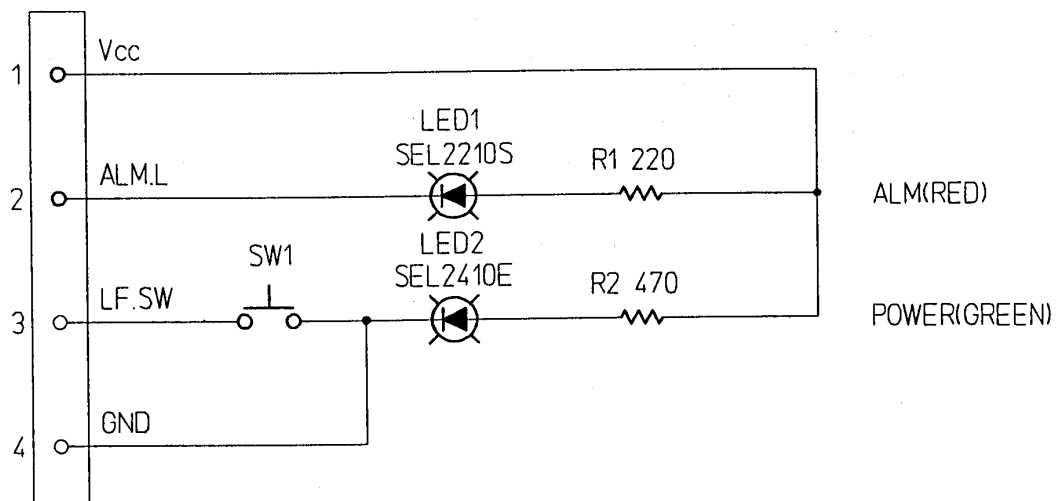
6.2.2 Control PCB Assy 3420-02 (Parallel Interface)



6.2.3 Power Supply PCB Assy



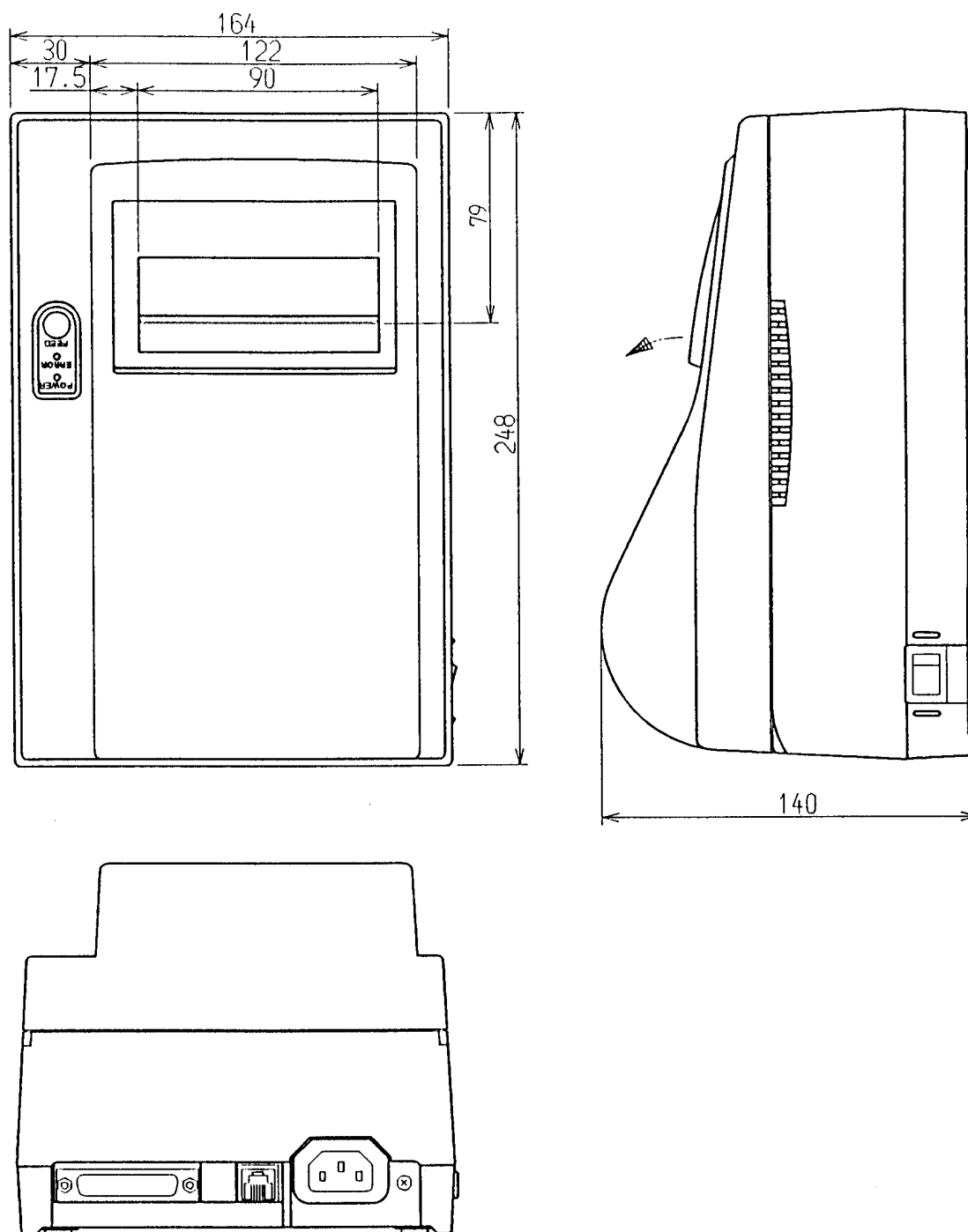
6.2.4 Operation Panel PCB Assy



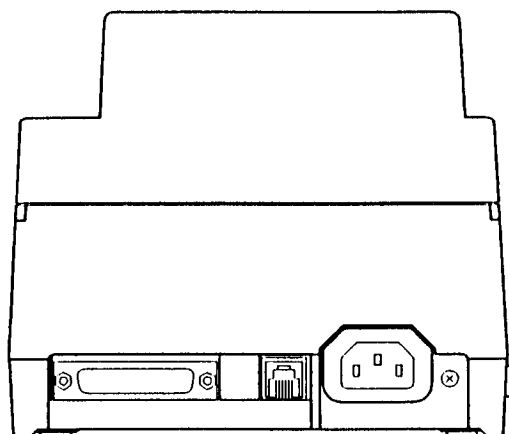
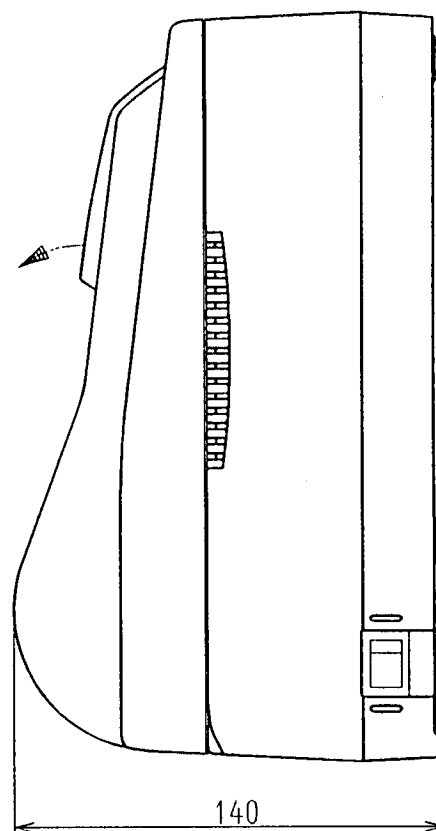
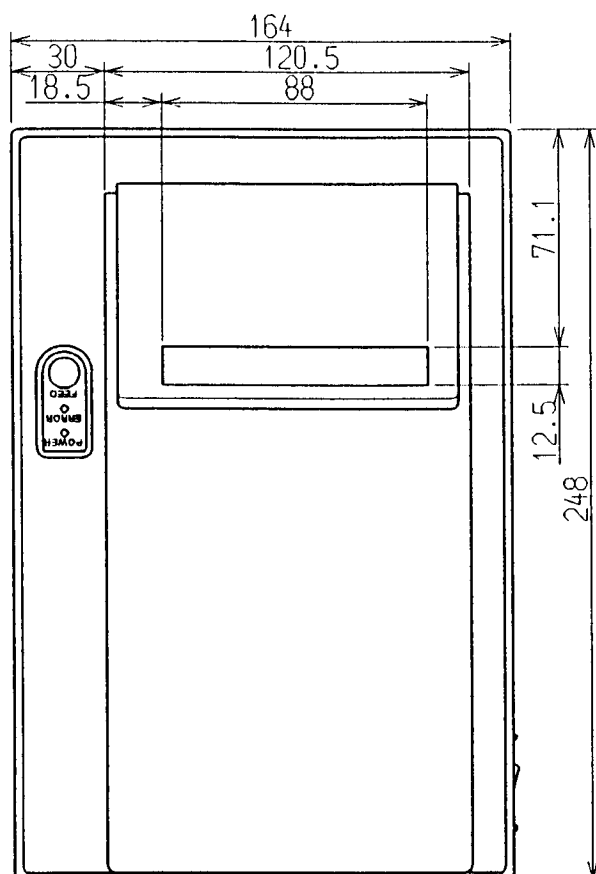
7. OUTLINE DRAWING

7.1 For iDP-3420

Unit: mm



7.2 For iDP-3421



7.3 For iDP-3423

