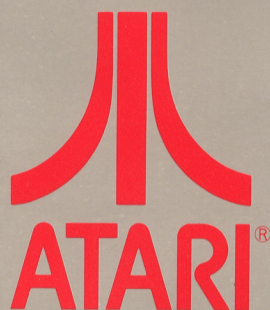




XMM801

**FIELD
SERVICE
MANUAL**



ATARI (U.S.) CORP,

CO 70435
OCT. 1985

SERVICE MANUAL

PERIPHERAL PRINTER

XMM801

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G E N E R A L

Information for Repair and Maintenance of PERIPHERAL PRINTER

Before starting repair and/or check of the printer by referring to this information, the Operation Manual of the Printer should be thoroughly read.

This manual includes all the technical information that is necessary to be referred to for performance of service at the distributor's service organization except for the subjects that are covered by the Operation Manual.

A. MODULES AND COMPONENTS

Refer to the followings for the indexes of the descriptions and locations of the parts (modules).

Figure 1. External View

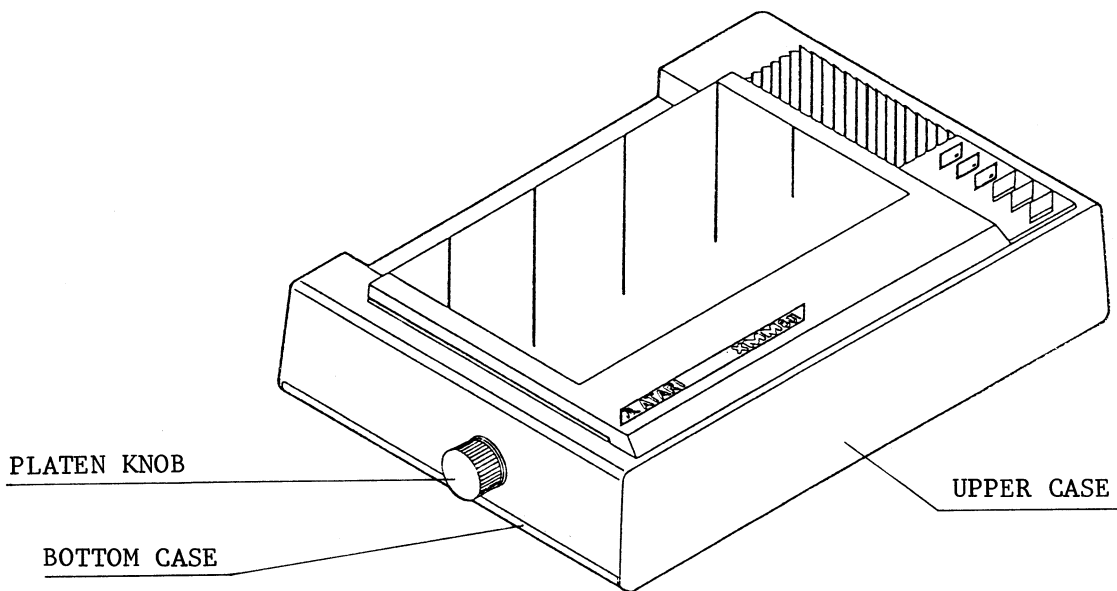


Figure 2. External View on Back Side

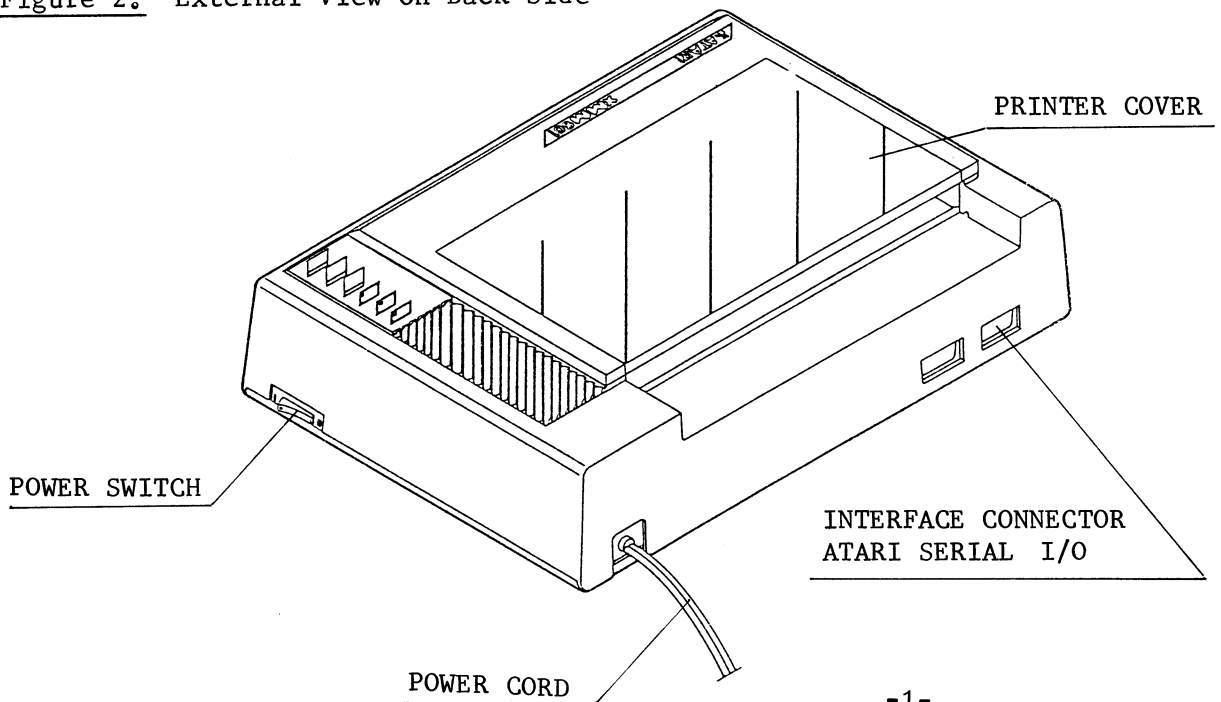
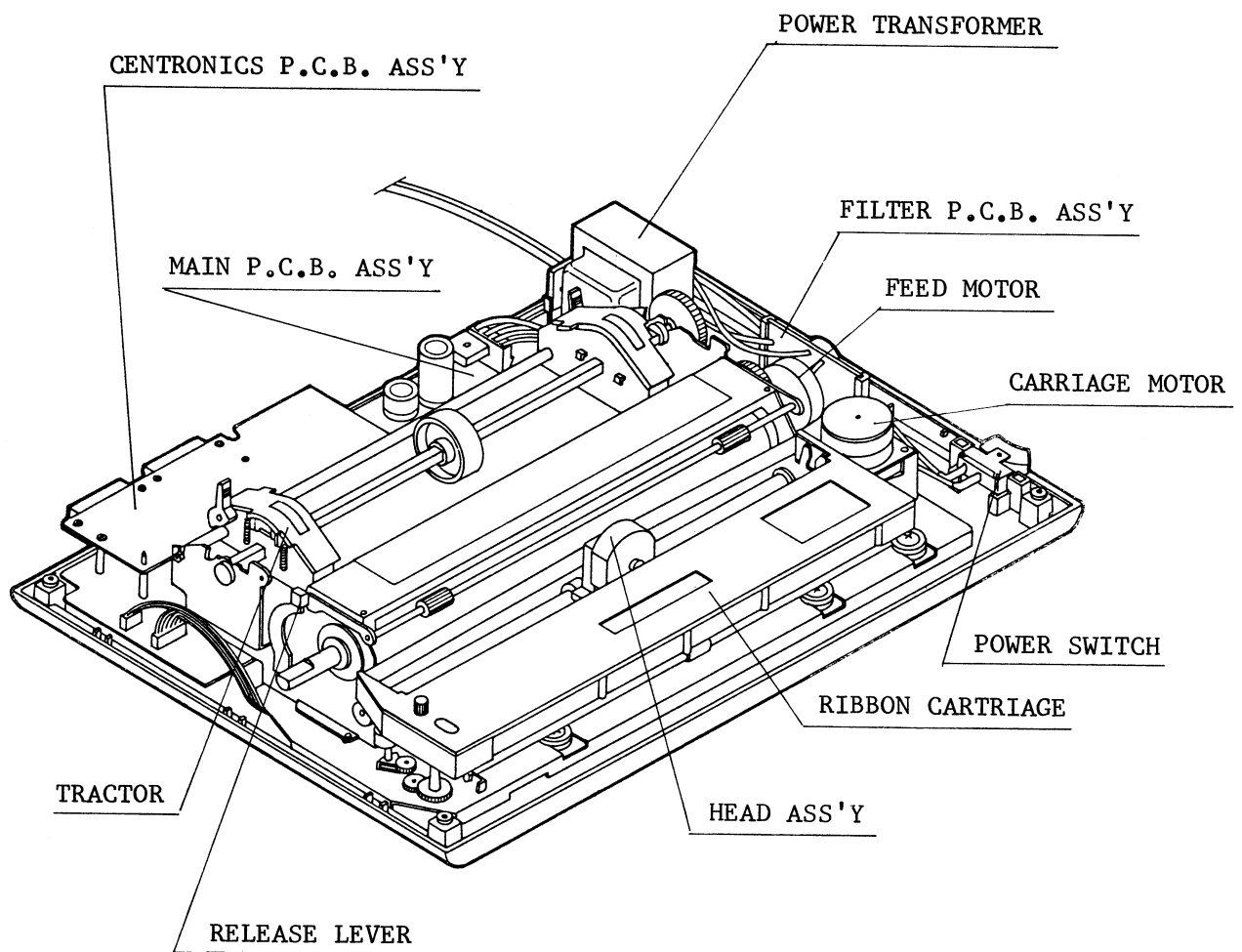


Figure 3. Internal Structure



B. BASIC STRUCTURE

1. Power-Supply

Primary - AC 50/60Hz 100 V, 115 V, 220 V or 240 V
Transformer for each AC voltage is selected at the factory.

Note: There are four types of transformer.
A selection of voltage is made at the factory-set.
in accordance with the customer's requirements.

Secondary - DC 5 Volt for TTL Logics.
DC 19 Volt for Printer Mechanism.

2. CPU and Control Circuit Block

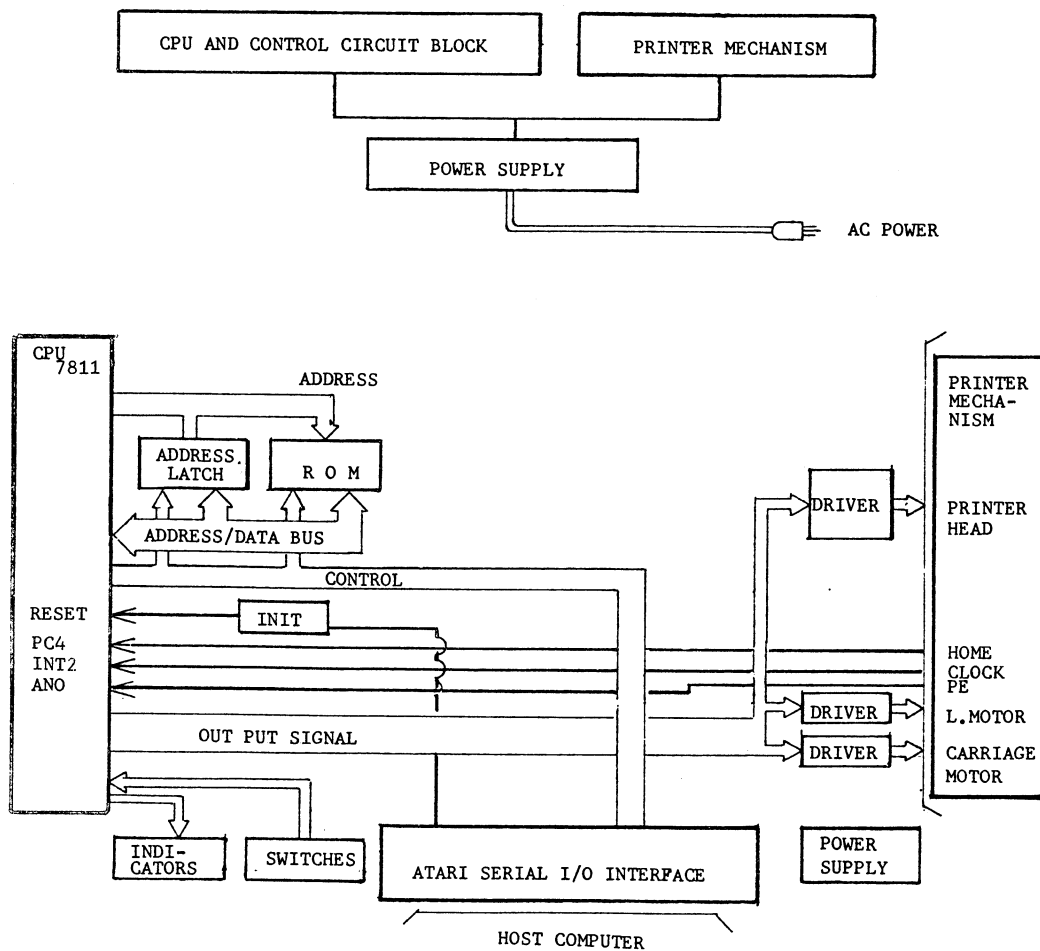
Main Control Board with CPU, ATARI SIO Interface Board and Operation Key Board.

3. Printer Mechanism

Printer Head, Head Carriage Mechanism, Paper Feed with Tractor Mechanism and Ribbon Driver Mechanism are in unit.

The Printer head is replaceable but disassembling of the other parts of unit at the field is not recommended for repair. In case of the printer mechanism is defective, the whole printer mechanism unit should be replaced, and the defective one be sent back to the factory.

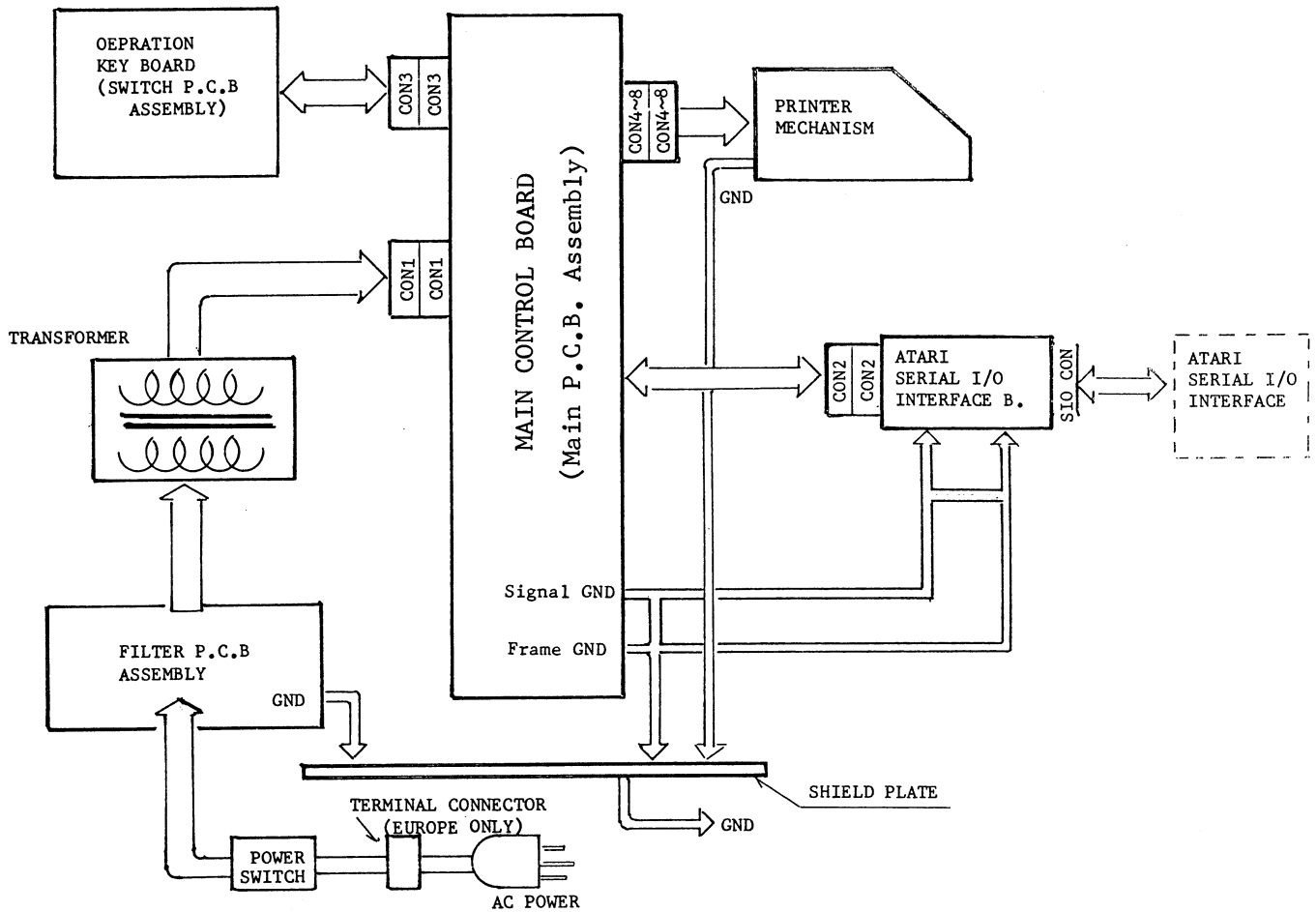
Figure 4. General Blocks of Structure



4. Connection of Circuits, between Modules

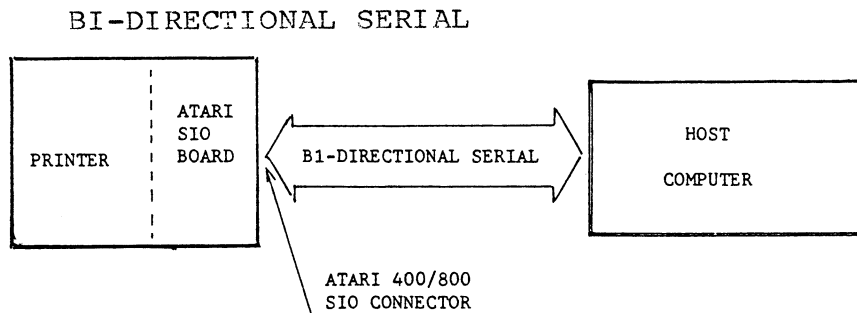
Figure 6. Connector Location, on Blocks:

Please refer to the electric circuit diagram and P.C.B. layouts.



5. Interface Outline

Figure 7. Interface Block Diagram



6. ATARI SIO BUS Timing

The bus protocol specifies that all commands must originate from the CPU and that peripherals will present data on the bus only when commanded to.

Figure 8. Data Send (to Printer)

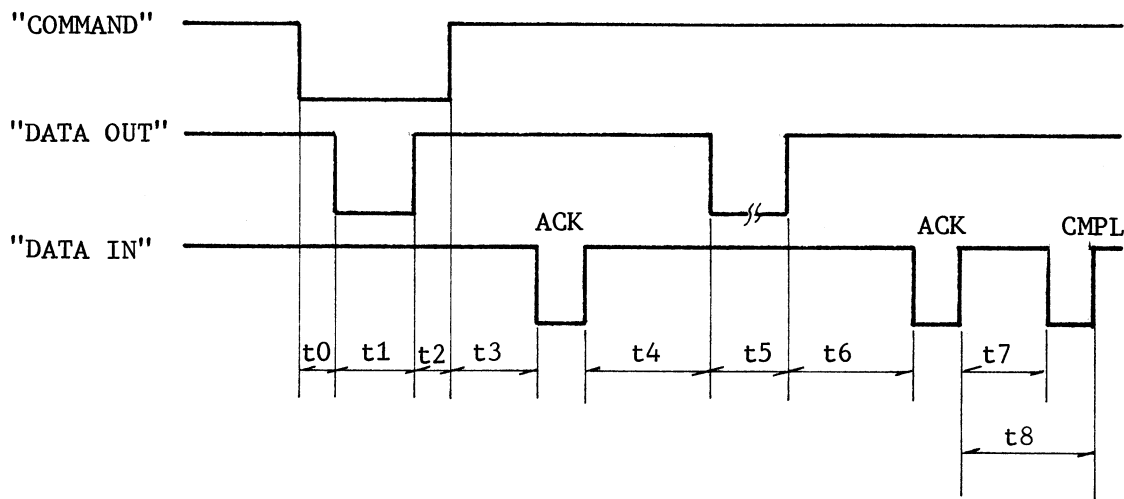
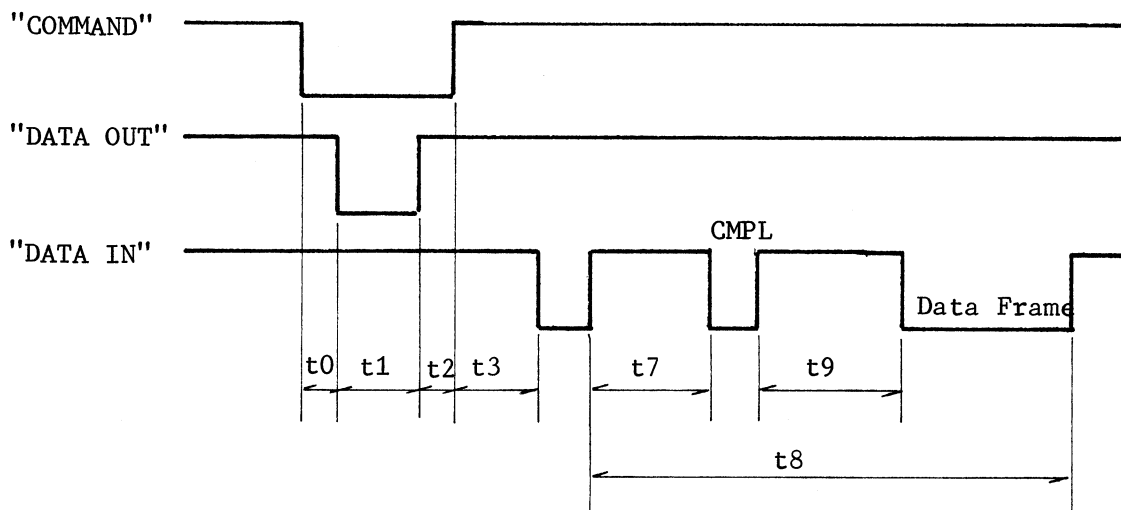


Figure 9. Data Receive (from Printer)



	min	max		min	max		max
t_0 ;	750 μ	80mS	t_4 ;	900 μ	6.7mS	t_8 ;	10Sec
t_1 ;		3.5mS	t_5 ;		24.5mS	t_9 ;	2.15mS
t_2 ;	250 μ	2.8mS	t_6 ;	2.8mS	10mS		
t_3 ;	0 μ	10mS	t_7 ;	2.95mS			

7. Functional Structure in Block Diagrams

Figure 10. Basic Data Flow between the Hardwares

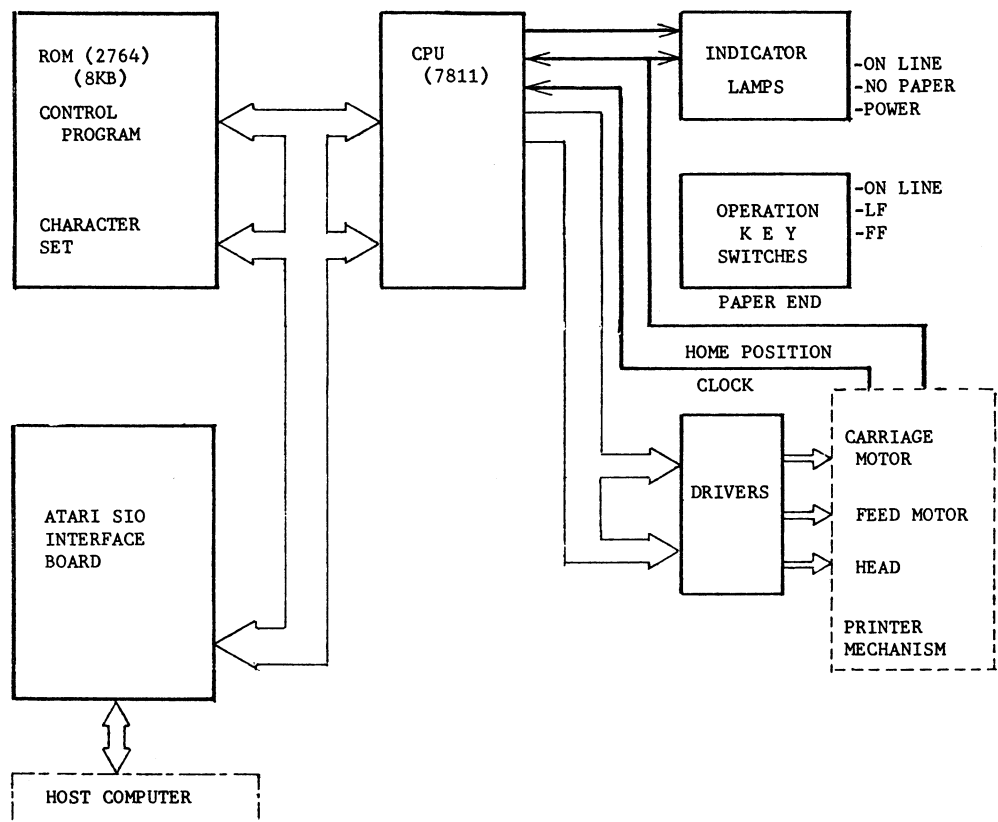
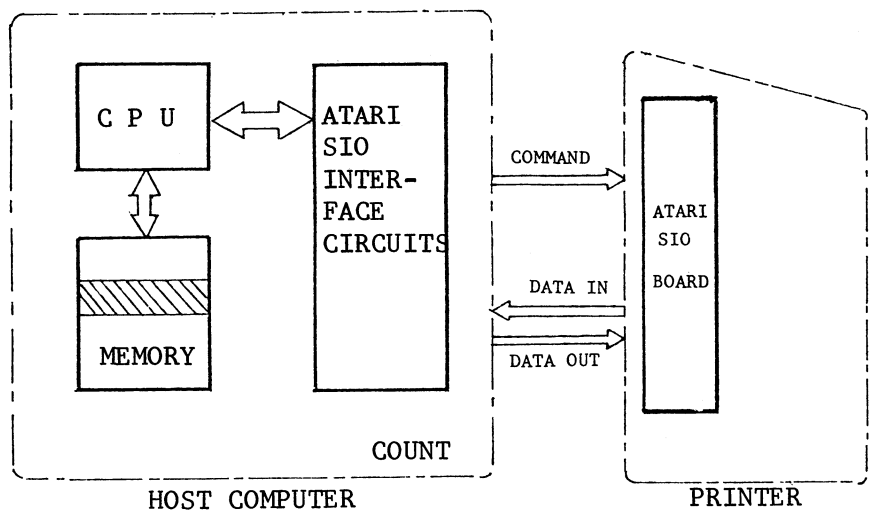
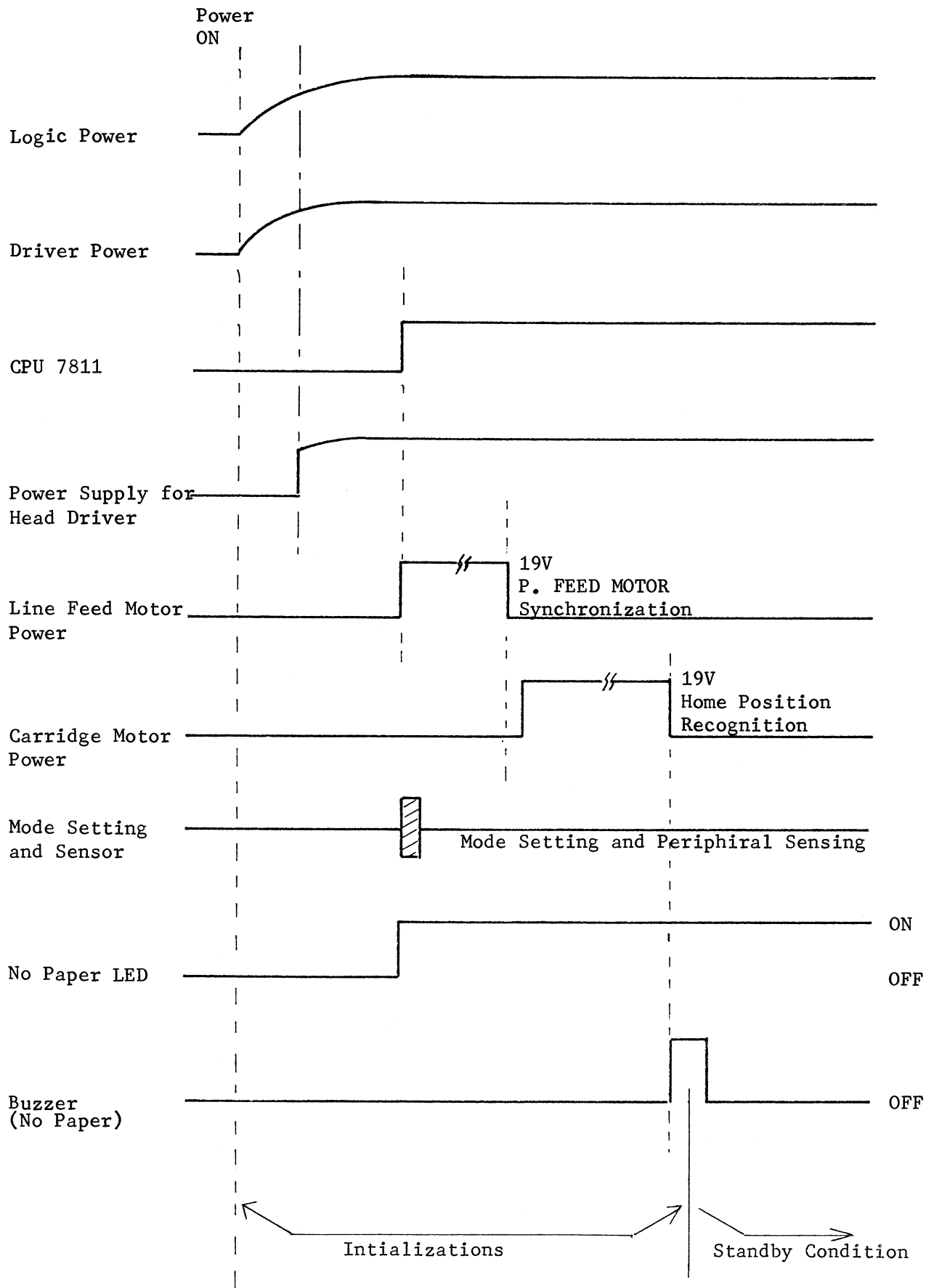


Figure 11. Basic Data Flow with the Host Computer



8. SMM 801 Timing chart at Power ON

Figure 12. Timing Chart



C. ELECTRIC CIRCUIT INFORMATION

Refer to Figure 6. for the connections between modules.

1. Power Supply (power supply assembly)
Figure 13. Circuit diagram, 220/240 Volt type

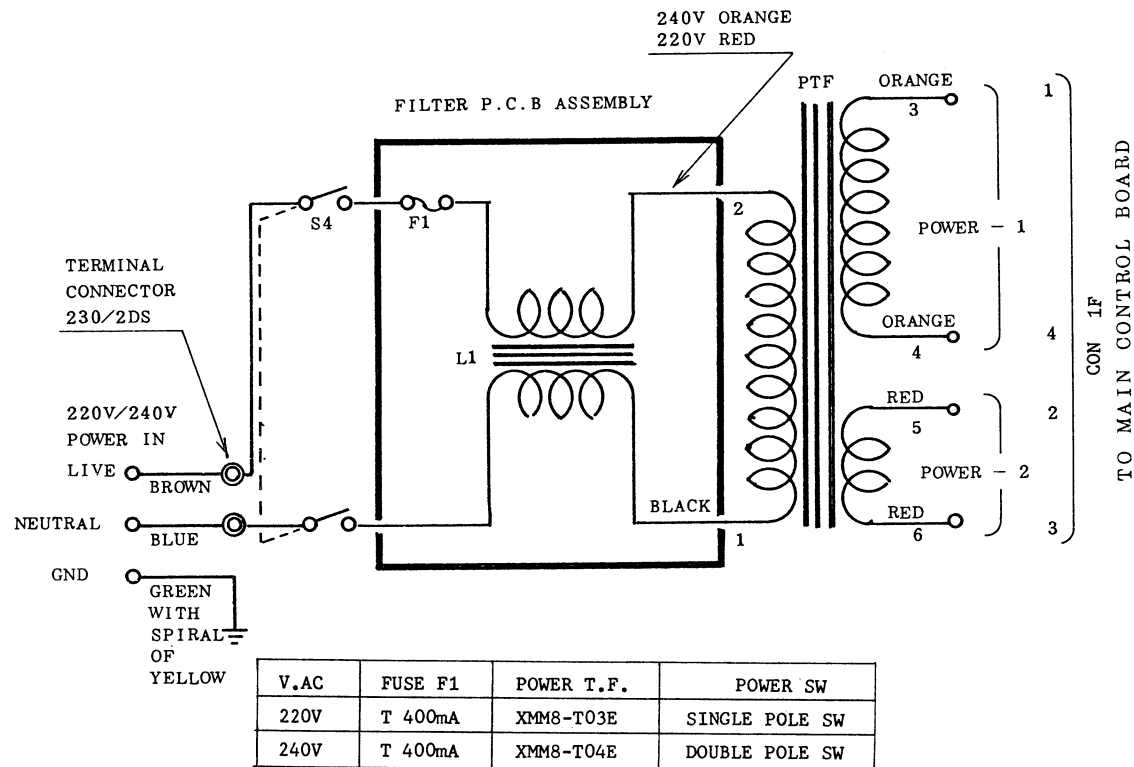


Figure 14. Circuit diagram, 100/115 Volt type

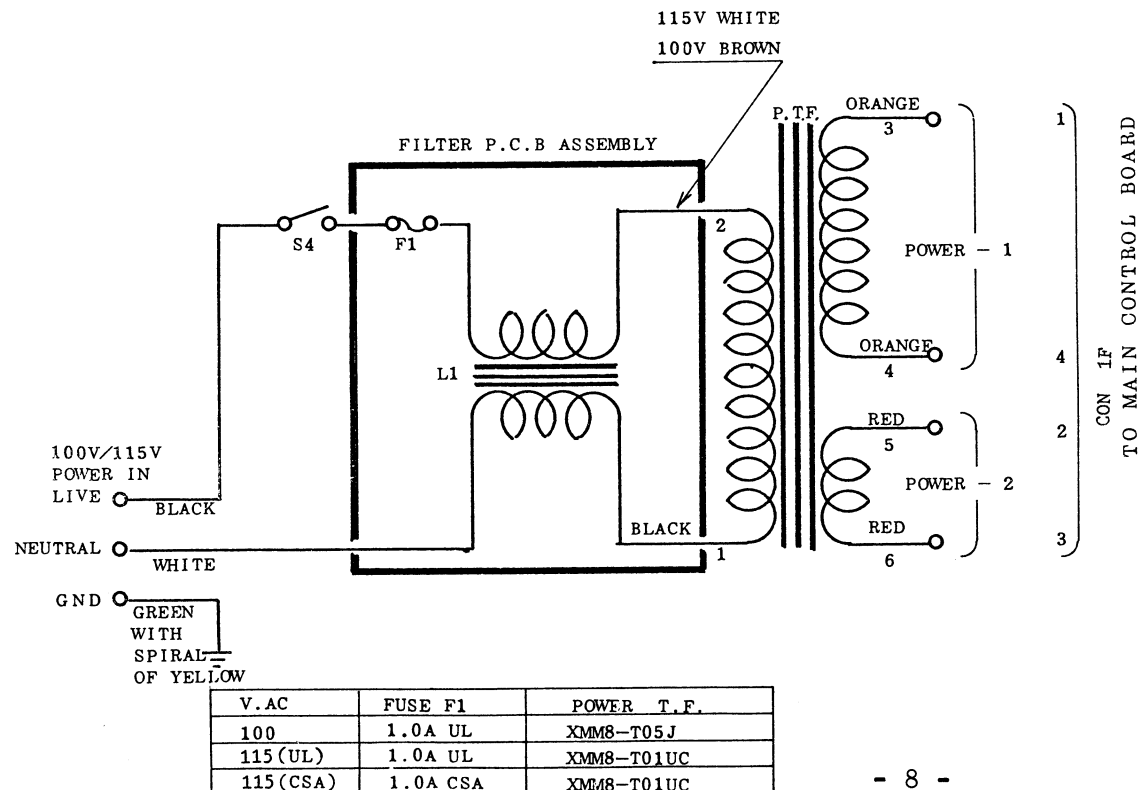
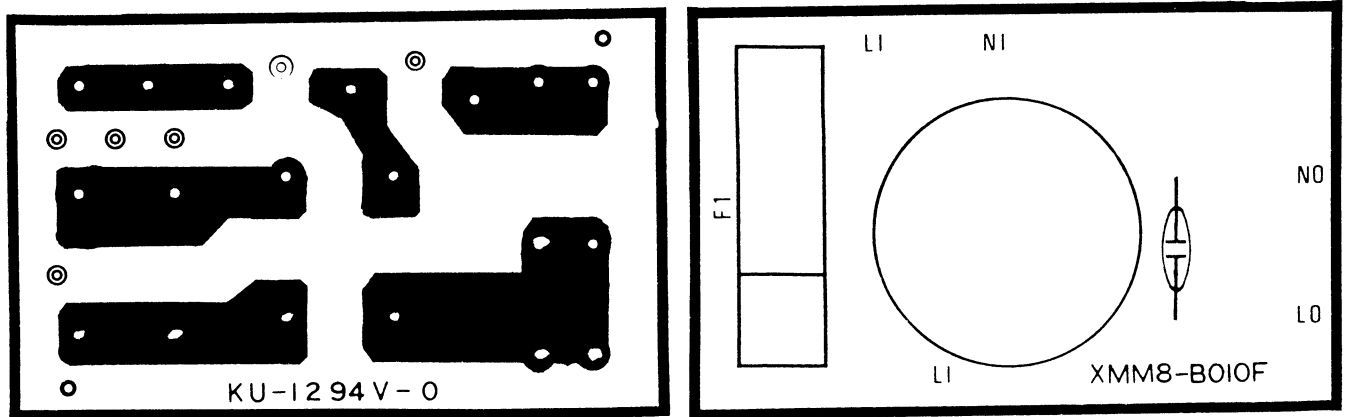


Figure 15. Parts Layout and Pattern Schematic for
Filter P.C.Board



2. Operation Key Board (Switch P.C.B. Assembly)

Figure 16. Circuit Diagram

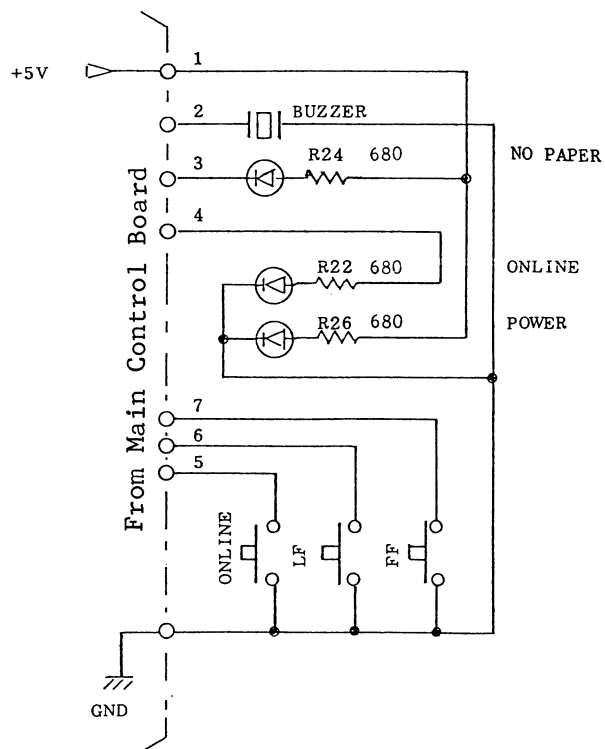


Figure 17. Parts Layout and Pattern Schematic

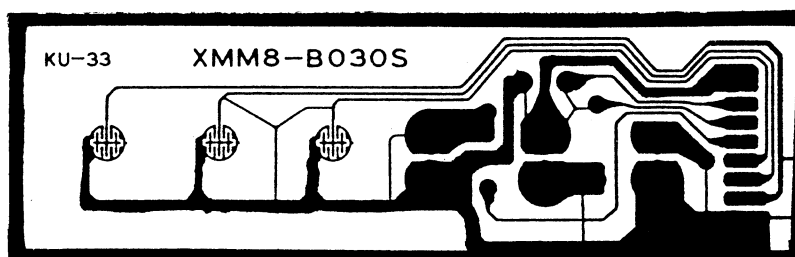


Figure 18. Circuit Diagram

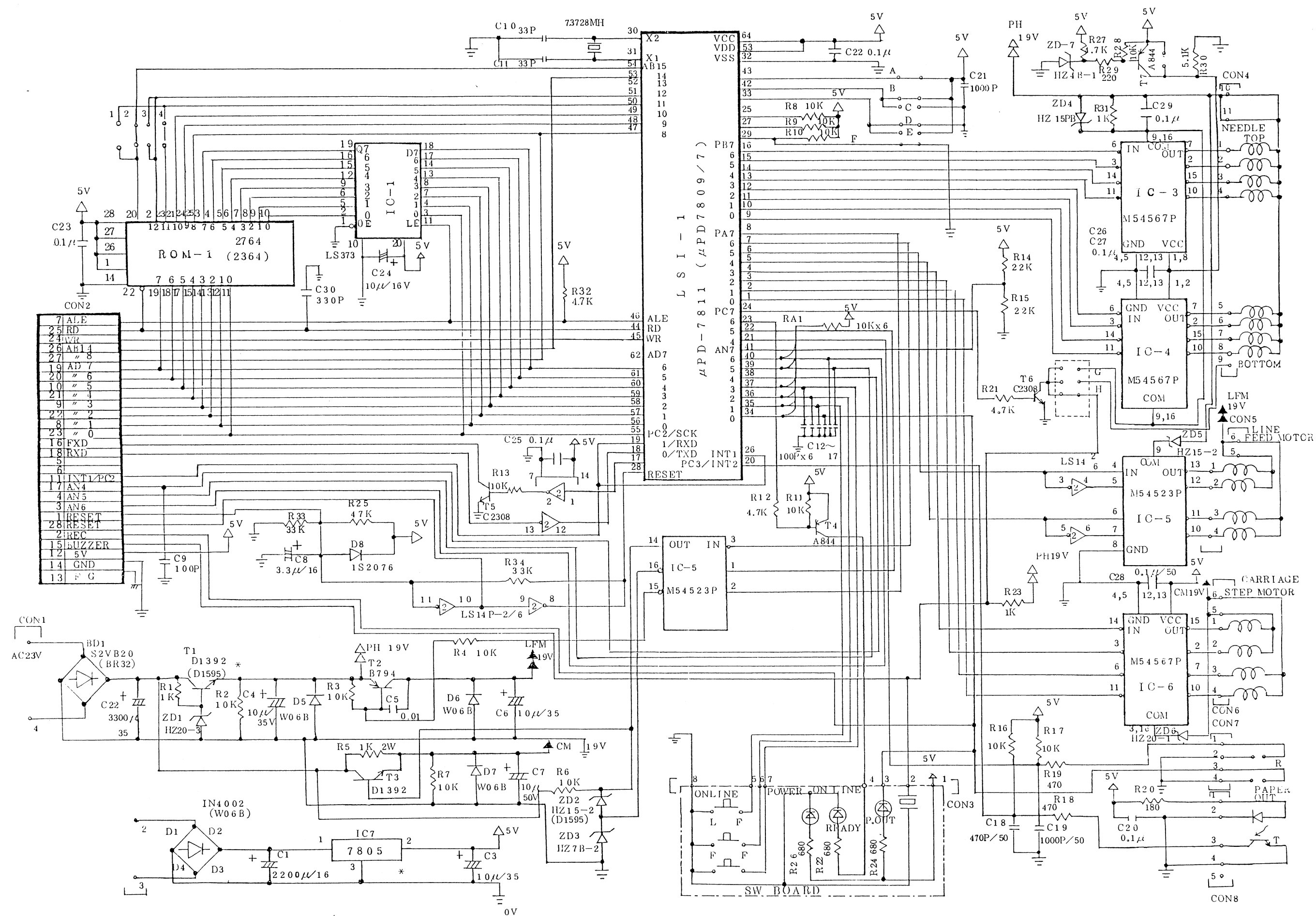


Figure 19. Parts Layout and Pattern Schematic

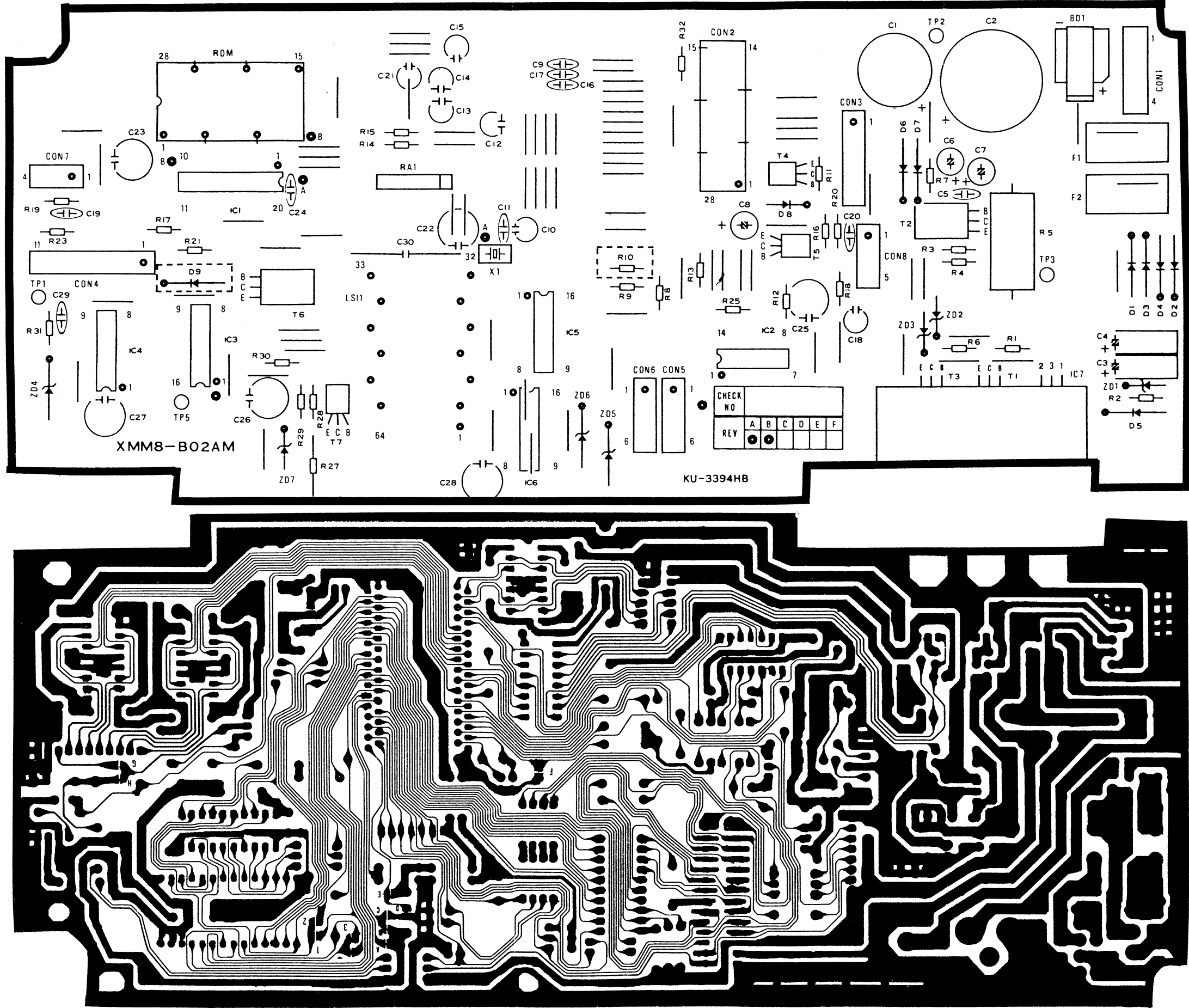
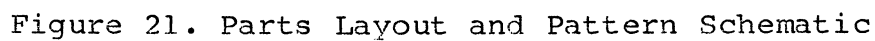
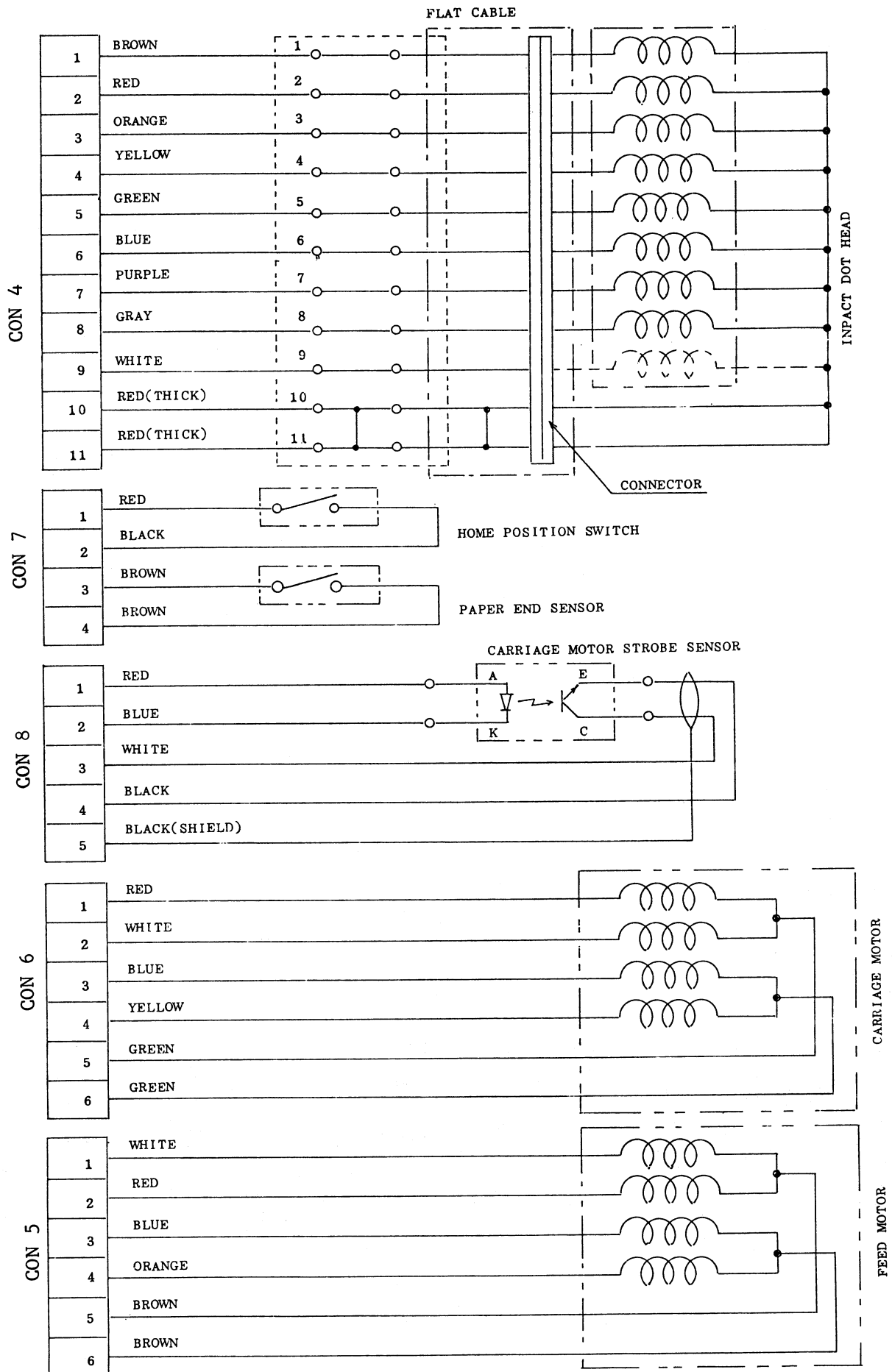


Figure 20. Circuit Diagram



5. Electric Circuit for Printer Mechanism

Figure 22. Connection Diagram



D. TROUBLESHOOTING

If the printer fails to operate properly, please solve the problem using this table.

SYMPTOM	REFERENCE
Printer is totally out of work. It does not operate when Power switch is turned ON.	Refer to CHECK FLOW, TROUBLE-1
Incorrect function on Printer. Motors are working but wrong. Motor works only occasionally. Paper feed and head carriage are OK but print is available.	Refer to CHECK FLOW, TROUBLE-2
Incorrect print. Paper feed and head carriage are ok, and print is available wrong font/matrix.	Refer to CHECK FLOW, TROUBLE-3
Feed Motor does not work, Every functions are ok but does not feed paper.	Refer to CHECK FLOW, TROUBLE-4

Note: For description of CHECK POINT, REF. Numbers are shown in the flow charts. Please refer to the Paragraph 2. Check Points for Repair, to know which to be mainly checked for repair service.

1. Check Flows for Troubleshooting

Figure 23. TROUBLE-1 PRINTER IS TOTALLY OUT OF WORK

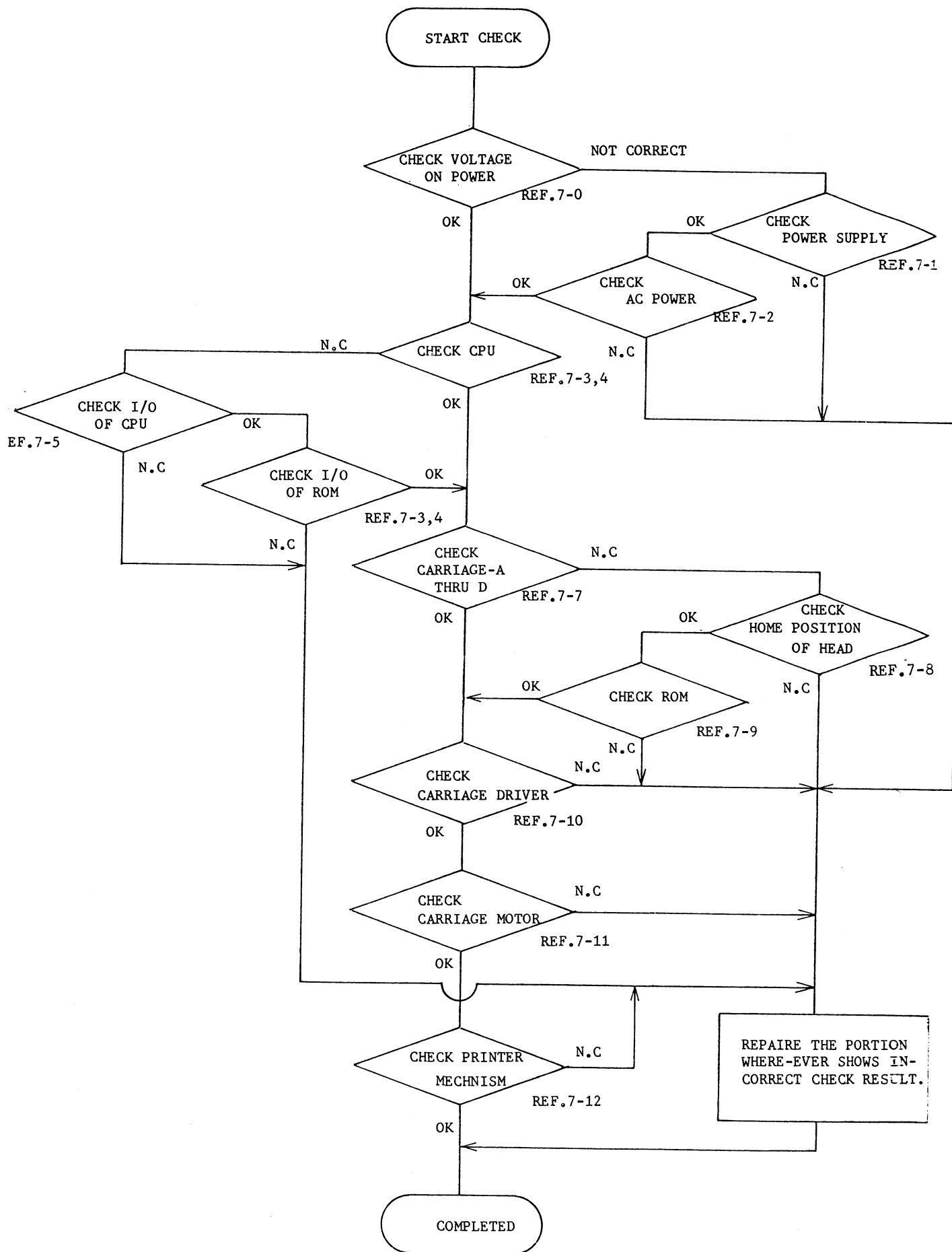


Figure 24. TROUBLE-2 INCORRECT FUNCTION ON PRINTER MECHANISM

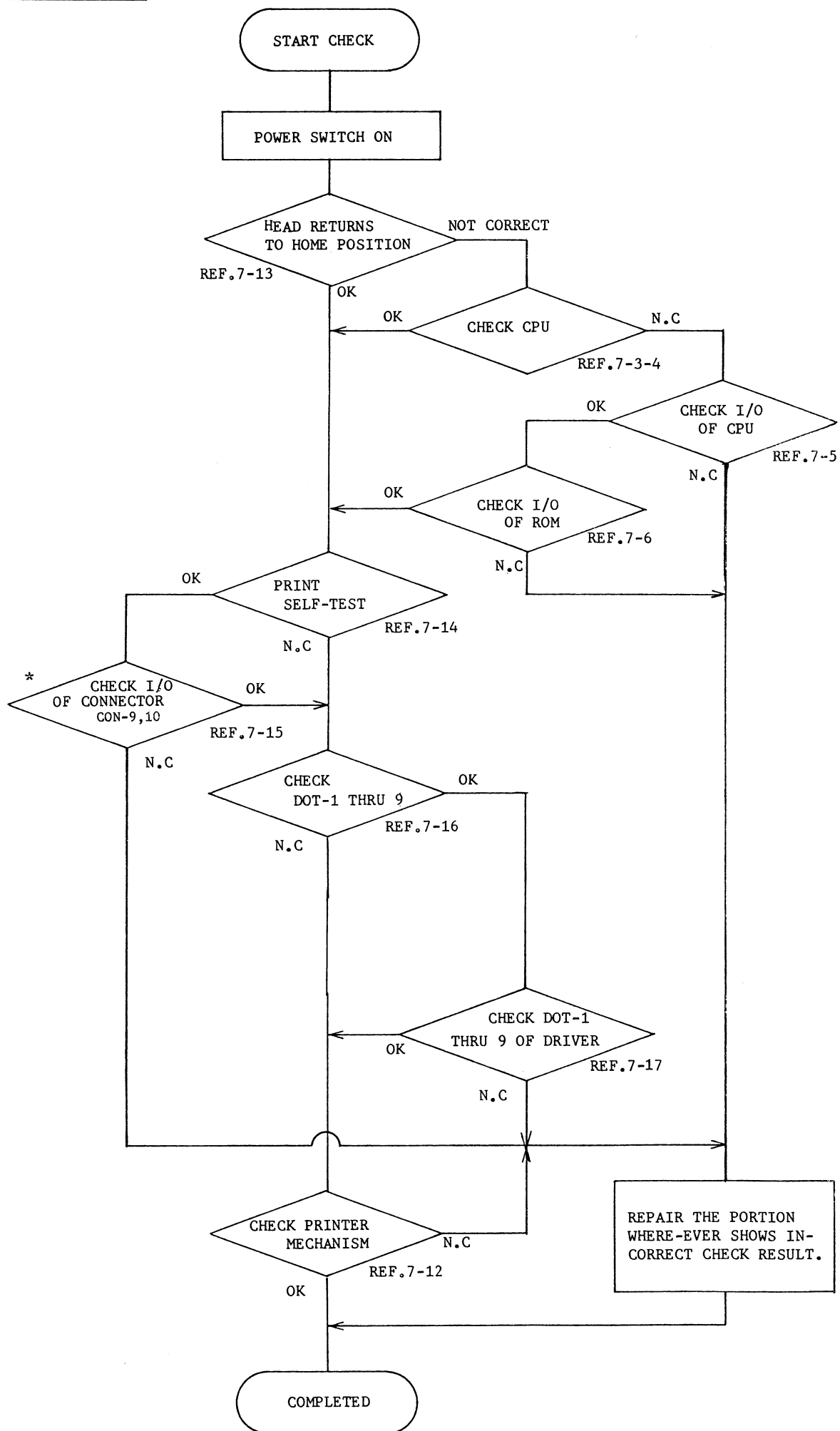
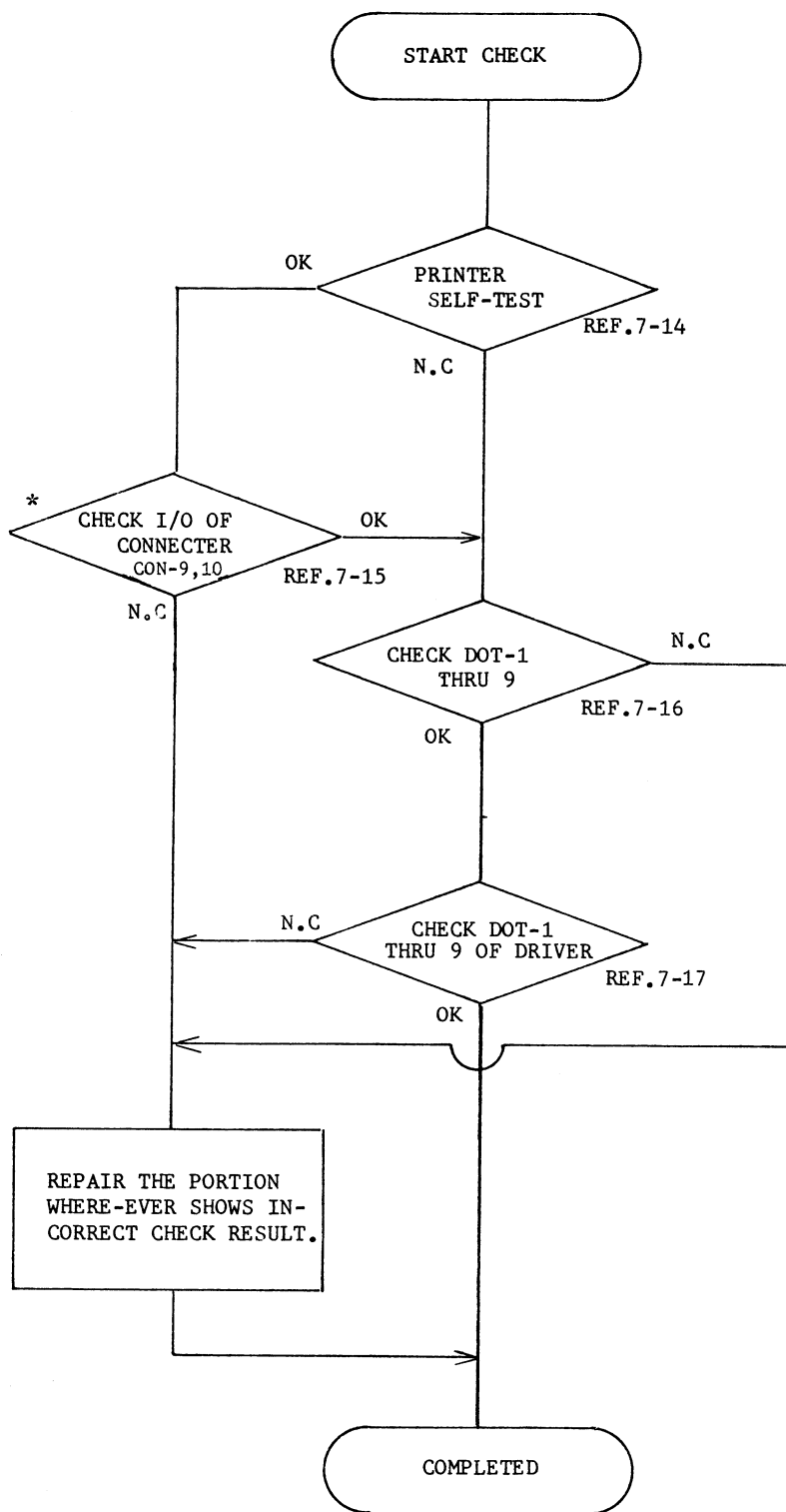


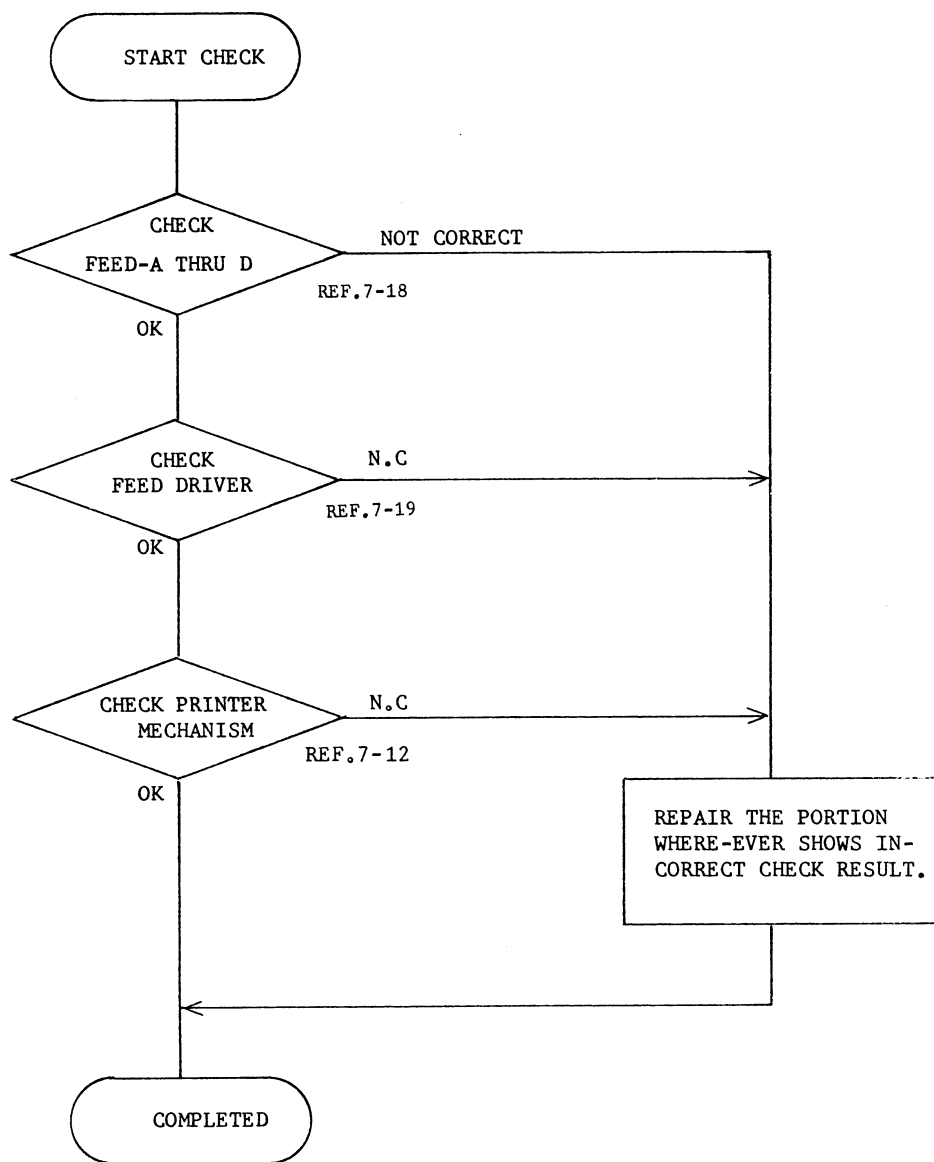
Figure 25.

TROUBLE-3 PRINT IS AVAILABLE BUT INCORRECT CHARACTER



* CON-9,10: Male Connectors on ATARI serial input/output interface board.

Figure 26. TROUBLE-4 FEED MOTOR IS NOT WORKING



2. Check Points for Repair

The followings are reflected to the markings on the check flow charts on paragraph 1.

In this description, there are the explanations as refer to FIG. a,b,c,.....showing the tested wave form on scope that can be compared with the same index in paragraph 3.

Typical wave form of signals.

When the checking operation is disturbed by the printer mechanism, it should be removed from the bottom case. The (-) leg of Diode BD-1 is useful as GND terminal for testing.

REF.7-0 Check of Voltage on Power Supply. Check while the printer is stopped. Anode side of zenner diode ZD-1 should sho the voltage of DC 21V.
-The PIN 2 of regulator IC7 should show the voltage of DC 5V +/- 5% (on the main control board).

REF.7-1 Check Power Supply Circuits and Devices, while the printer is stopped.
-The "1" leg of IC-7, located leleft hand of heat sink should show the voltage of approx. DC 11V.
-The "E" leg of transistor T1 should show the voltage of about DC 19V.
-The "E" leg of T-3 should show the voltage of DC 1 around.

REF.7-2 Check of AC Voltage, while the printer is stopped. Without the Host.
-In-put of diode BD-1 should show the sine wave with voltage range of approx. AC 23V.
-Between the anode of D3 and the cathode of D2, it should show the sine wave with voltage range of approx. AC 10V.

REF.7-3 Check for pulses at power-on reset time.
-Relation between "DC 5V" on Pin 63, 64 and "RESET" on Pin 28 of CPU (7811) should show the pulse wave, refer to FIGURE S. at turning power switch on.

REF.7-4 Check "if software is running".
-Signal ALE, on Pin 46 of CPU (7811) should show the pulse wave, refer to FIG.a.
-Signal CE, Pin 20 ROM (2764) should show;
 High level while the printer is stopped.
 Pulse wave, refer to FIG.b-Similar wave, while the printer is running.

REF.7-5 Check around main CPU (7811).
-Signal \overline{RD} , on Pin 44 of main CPU (7811) should show the pulse wave, refer to FIG.c, while the printer is stopped.
-Signal CLK, on Pin 31 of main CPU (7811) should show the wave, refer to FIG.d.
-Signal ALE, on Pin 46 of main CPU (7811) should show

- the pulse wave, refer to FIG.a.
- Signal \overline{WR} , on Pin 45 of main CPU (7811) should show the pulse wave, refer to FIG.e-Similar wave, while the printer is running.
It stays at High Level while the printer is stopped.
 - Signals on Data and Address Bus, Pin 55 thru 62 of main CPU (7811) should show the pulse wave, refer to FIG.f-Similar wave.
 - Signals on ADDRESS BUS, Pin 47 thru 54 of CPU (7811) should show the pulse wave, refer to FIG.g-Similar wave.
 - Other pins on CPU (7811) should be as follows, under condition 1.

PIN No.	LEVEL	PIN No.	LEVEL	PIN No.	LEVEL	PIN No.	LEVEL
1	L	12	H	23	L	38	L
2	H	13	H	24	L	39	H
3	L	14	H	25	H	40	H
4	H	15	H	26	L	41	F
5	L	16	H	27	H(PLS)	42,43	H(+5V)
6	L	17	H	28	H	52	H(PLS)
7	H	18	L	29,32,33	L	53	H(PLS)
8	L	19	L	34	H	63,64	H
9	H	20	H	35	H		
10	H	21	L	36	H		
11	H	22	L	37	H		

F: Floating

FIG.7-6 Check around ROM (27128)

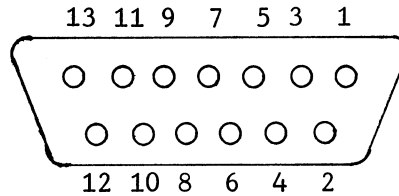
- Check the Pin of CPU, IC1 instead of the pin of ROM
- Signals on Address Bus, Pin 2 thru 10, 21 & 23-25 of ROM (27128) should show the pulse wave, refer to FIG.f-similar wave, while printer is running.
 - Signals on Data Bus, Pin 11 thru 13 and 15 thru 19 of ROM (27128) should show the pulse wave, refer to FIG.f-similar wave, while printer is running.
 - Other pins on ROM (27128) should be as follows, under condition 1.

PIN No.	LEVEL	PIN No.	LEVEL	PIN No.	LEVEL
1	H(+5V)	14	L(GND)	27	H(+5V)
26	H(+5V)	20	PULSE	28	H(+5V)

CONDITION 1; While Printer is stopped after power on reset and home positioning of Head and sound of Buzzer.
Without the Host and paper.
All Dip Switches on Centronics Parallel Interface Board are on.

- REF.7-7 Check signals to the Carriage Motor.
-At power-on Time if Head is located at home position, Pin 3,6,11,14 of IC6 should show just few pulses, refer to FIG.h just few pulses then stop.
While the head is moving, this pulse remains.
- REF.7-8 Check Signal for the head which is at Home Position.
-Level on Pin 21 of CPU (7811) should be;
When Head is on home position ----- level low.
When Head is not on home position --- level high.
- REF.7-9 Check if the contents of ROM (27128) are correct.
-Replace the ROM and see the trouble has been solved.
-If no ROM for replacement, follow the next steps of Flow Chart.
- REF.7-10 Check on Carriage Driver Circuits.
PIN 2,7,10,15 of IC6 show the step motor drive pulses refer to FIG.i.
- REF.7-11 Check for Dot Strobe.
-While the head is moving by hand or by power, Pin 20 of CPU (7811) should show the pulse, refer to FIG.k.
-While the head is moving by hand or by power, leg of R37 should show the pulse, refer to FIG.j.
"CAUTION": Moving the head by hand should not be done for long time, just few seconds only.
- REF.7-12 Check for Printer Mechanism.
-If trouble is on head, replace it and test.
-If trouble is not on head, try to replace whole printer mechanism, then check. Before replacing it, see thoroughly the mechanism to see for any mechanical damage.
NOTE: Repair of printer mechanism is not recommendable.
Special service manual for mechanism repair will be provided.
- REF.7-13 The head should return to home position at power on time, even so the head is originally located at home position it should be moved to right and returned to home position automatically at Power On.
- REF.7-14 Test print should be done when the main power switch is turned on, while the LF switch is also pressed down.

REF.7-15 Check pin status on signal connector CON 9, 10
(Pin Assignment)



- Pin 3. DATA In (to Host Computer)
- 4. GND
- 5. DATA Out (From Host Computer)
- 6. GND
- 7. Command (From Host Computer)

Low when Host Computer is sending a command frame to the printer

- 10. Ready (From Host Computer)

High when Host Computer is ready

Pin 1, 2, 8, 9, 11, 12, 13 (not used by printer)

- All 13 pins shall be deaisy chained from one SIO connector to the other, i. e. connect pin 1 to pin 1, pin 2 to pin 2 and so on.
- For reference DATA IN, DATA OUT and command should show the pulse wave, refer to FIG.1,m while printing.

REF.7-16 Check Print Signal on CPU (7811).

- While printing, Pin 9 thru 16 should show pulse wave, refer to FIG.n-similar wave.
- Pulse width is typically 600usec.

REF.7-17 Check Print signals on the driver.

- Connect plus lead of scope to Anode side of Diode ZD4 then check following points by minus lead of scope.
- Pin 7, 2, 15, 10 (IC3) 7, 2, 15, 10 (IC4) should show pulse wave refer to FIG.o-similar wave.
- "CAUTION": For this check, the scope should be floating from GND.

REF.7-18 Check paper feed signals.

- Some 2 pins in Pin 4 thru 7 of IC-5 should show High level;
- other 2 pins should show Low level when not feeding paper, and in paper feeding should show pulse, refer to FIG.q-similar wave.

REF.7-19 Check circuits for Paper Feed Motor, in feeding.
Check pin 10 thru 13 of IC-5 while paper feeding and refer to FIG.r-similar wave.

3. Typical wave Form of Signals

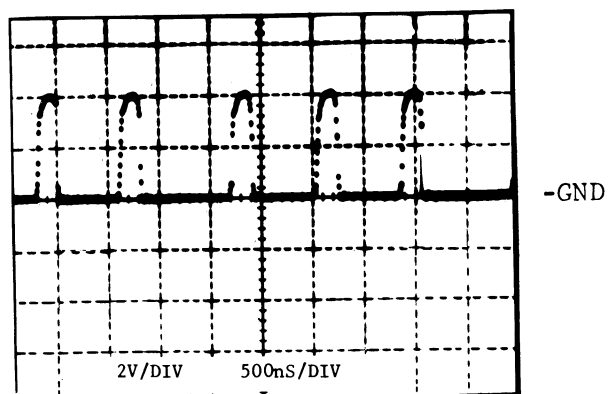


FIG.a ALE SIGNAL

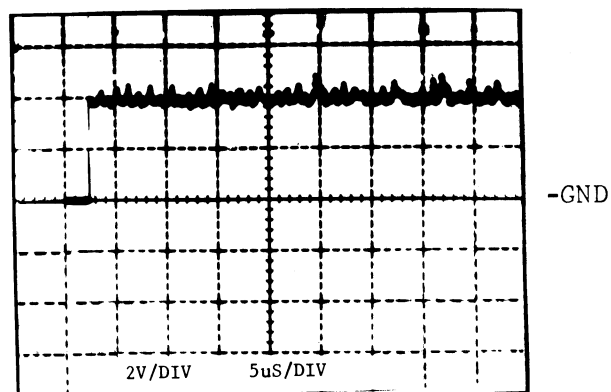


FIG.b AB15(2764) SIGNAL

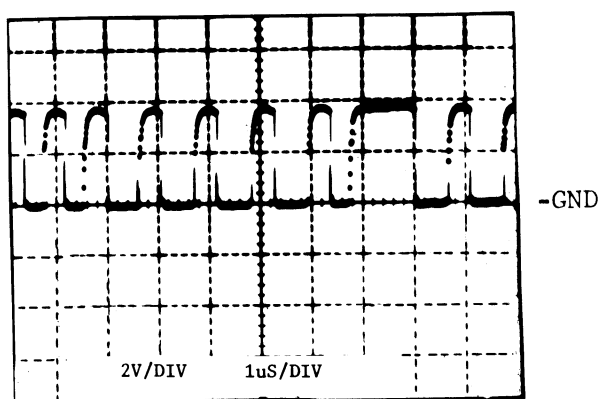


FIG.c RD SIGNAL

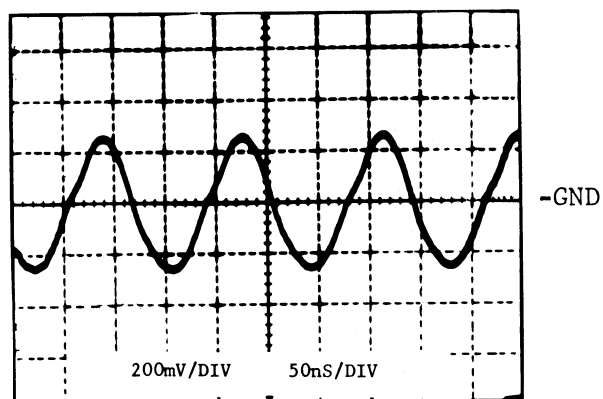


FIG.d CLOCK SIGNAL(7811)

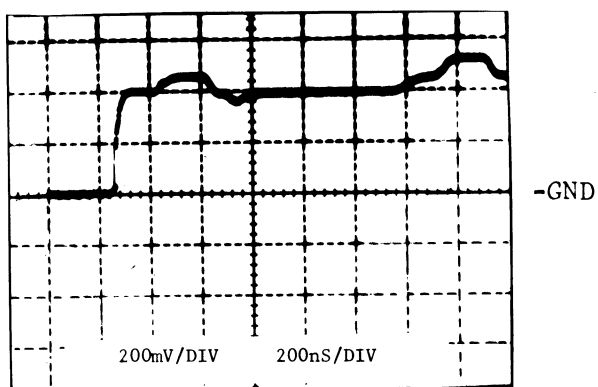


FIG.e WR SIGNAL

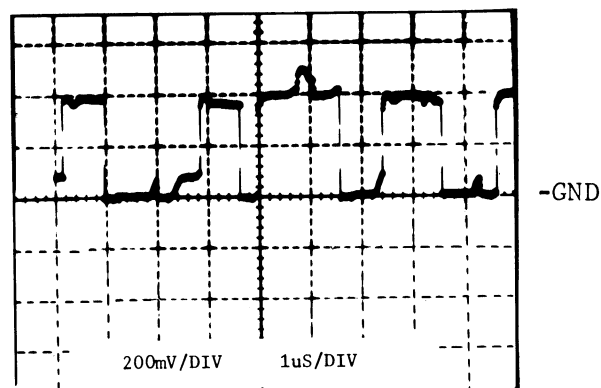


FIG.f DATA and ADDRESS BUS SIGNAL

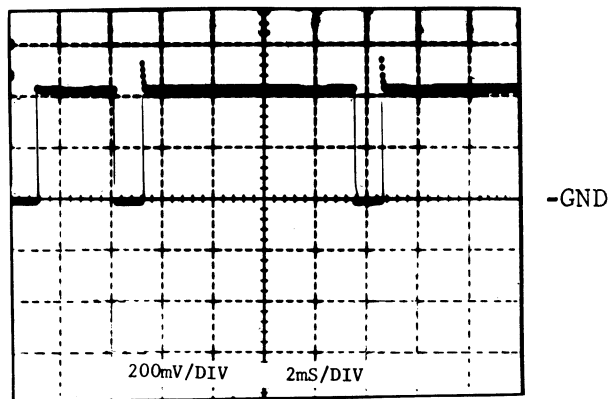


FIG.n PRINT SIGNAL

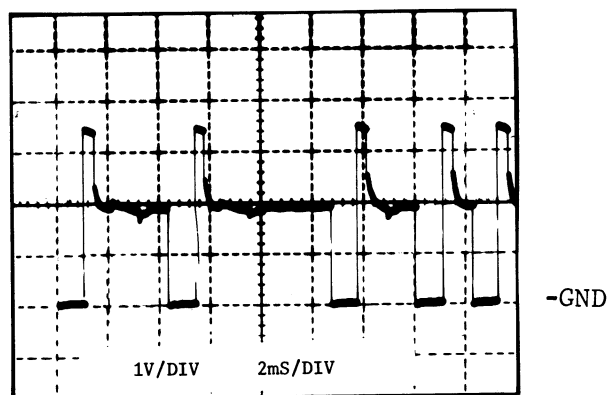


FIG.o PRINT DRIVER

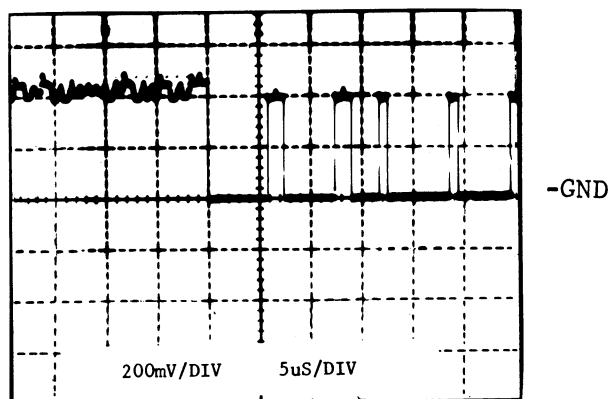


FIG.p I/O M SIGNAL

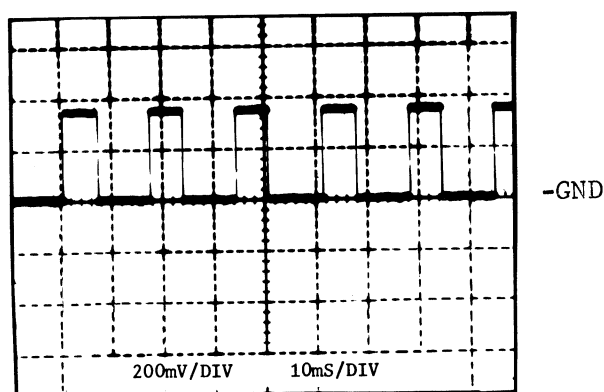


FIG.q PAPER FEED SIGNAL

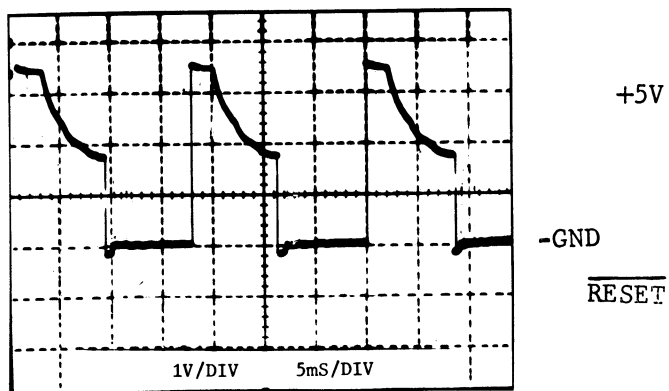


FIG.r FEED MOTOR DRIVER

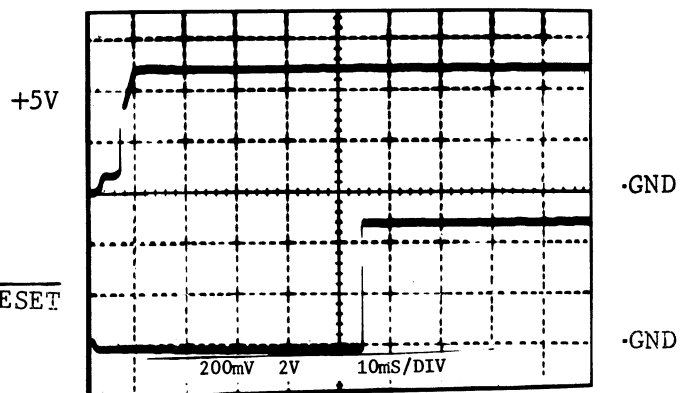


FIG.s +5V and RESET(8155)

E. PARTS LIST

The codes on the column of INDEX on the list are the guide to locate the parts on the exploded view drawing included in this paragraph.

To locate the electric and/or electronic parts on the boards, see the markings on the column of INDEX referred to in the schematics in Paragraph C. ELECTRIC CIRCUIT INFORMATION.

NOTE:

For repair of the boards, the locally available equivalents (in specifications) of the electronic devices can be used.

PARTS LIST

INDEX	PART NUMBER	DESCRIPTION	Q'TY
		MAIN P.C.BOARD ASS'Y (7811-B)	
1-1	XMM8-B02AM	Main P.C.Board, 1.6t HB Material Paper Phenol Resin	1
LSI1	L-uD7811	CPU, uPD7811	1
ROM1	RO-2764	ROM, 2764 (X801.1D)	1
IC1	I-74LS373	IC, 74LS373P	1
IC2	I-74LS14	IC, 74LS14 (or 74HC14)	1
IC3,4 6	I-M54567	IC, M54567P or M5248P	3
IC5	I-M54523	IC, M54523P or Equivalent	1
IC7	I-7805	IC, 7805 (3-Terminal Regulator)	1
T4,7	TR-2SA844	Transistor, 2SA844	2
T5,6	TR-2SC2308	Transistor, 2SC2308	2
T1,3	TR-2SD1392	Transistor, 2SD1392 (2SD1595) (with Mylar Sheet)	2
T2	TR-2SB794	Transistor, 2SB794	1
	X-C7.37M	Ceramic Resonator, 7.37MHz	1
R33,34	R-303J25CH	Resistor, 33Kohm 1/4W +/-5%	2
R25	R-473J25CH	Resistor, 47Kohm 1/4W +/-5%	1
R20	R-181J25CH	Resistor, 180 ohm 1/4W +/-5%	1
R18,19	R-471J25CH	Resistor, 470 ohm 1/4W +/-5%	2
R23,31	R-102J25CH	Resistor, 1Kohm 1/4W +/-5%	2
R8,9 11~13 16,17 28	R-103J25CH	Resistor, 10Kohm 1/4W +/-5%	3
R21,27 32	R-472J25CH	Resistor, 4.7Kohm 1/4W +/-5%	3

NOTE : We change rate value of R29 (220 ohm→100 ohm) in order to
common use IC M54567P and M5248P (Index No. IC 3,4,6).

PARTS LIST

INDEX	PART NUMBER	DESCRIPTION	Q'TY
R14,15	R-223J25CH	Resistor, 22Kohm 1/4W +/-5%	2
R30	R-512J25CH	Resistor, 5.1Kohm 1/4W +/-5%	1
R29	R-101J25CH	Resistor, 100 ohm 1/4W +/-5%	1
R1	R-102J25CH	Resistor, 1Kohm 1/4W +/-5%	1
R2~4 6,7	R-103J25CH	Resistor, 10Kohm 1/4W +/-5%	5
C20,22 23	C-104Z050CV	Ceramic Capacitor, 0.1uF/50V	3
C10,11	C-330Z050CV	Ceramic Capacitor, 33PF/50V	2
C18	C-471Z050CV	Ceramic Capacitor, 470PF/50V	1
C12~17 19,21	C-102Z050CV	Ceramic Capacitor, 1000PF/50V	3
C9	C-101Z050CV	Ceramic Capacitor, 100PF/50V	1
C5,25 ~ 29	C-105Z050CH	Ceramic Capacitor (0.01uF/50V 0.1uF/50V)	6
C30	C-331Z050CV	Ceramic Capacitor, 330PF/50V	1
C8	C-335Z050EV	Chemical Capacitor, 3.3uF/50V	1
C3,4 6,24	C-106Z035EV	Chemical Capacitor, 10uF/35V CE-04	4
C1	C-228Z016EV	Chemical Capacitor, 2200uF/16V CE-04	1
C2	C-338Z035EV	Chemical Capacitor, 3300uF/35V CE-04	1
C7	C-106Z050EV	Chemical Capacitor, 10uF/50V CE-04	1
RA1	R-103M06AV	Resistor Array, 10Kohm x 6	1
D8	D-1S2076	Switching Diode, 1S2076	1
ZD4	D-HZ-15PB	Zener Diode, HZ-15PB 0.5W	1
BD1	ST-S2VB20	Stack Diode, S2VB20 (BR-32)	1
D1~4	D-IN4002	Diode, IN4002 or Equivalent	4
	(ST-RB151	Stack Diode, RB151	1)
D5~7	D-IN4002	Diode, IN4002 or Equivalent	3

P A R T S L I S T

INDEX	PART NUMBER	DESCRIPTION	Q'TY
ZD3	D-HZ7B-2	Zener Diode, HZ7B-2	1
ZD2,5	D-HZ15-2	Zener Diode, HZ15-2	2
ZD6	D-HZ20-1	Zener Diode, HZ20-1	1
ZD1	D-HZ20-3	Zener Diode, HZ20-3	1
ZD7	D-HZ4B-1	Zener Diode, HZ4B-1	1
	SC-ICS28P	IC Socket, 28Pin	1
CON2F	SC-ICS14P	IC Socket 14P (Sub P.C.B)	2
	TM-02T1.3A	Check Terminal, RT-02T-1.3A	5
CON1M	CO-5279-4A	Connector 4P Male 5279-04A (MOLEX)	1
R5	R-102J2SH	Resistor, Metal Oxide 1Kohm 2W	1
	XMM8-P020	Heat Sink (X)	1
CON4M	CO-MMP11SBK	Connector 11P Male MMP11S-1 (Black) PH-9L (Burndy)	1
CON6M	CO-MMP6SBK	Connector 6P Male MMP6S-1 (Black) Carriage Motor (Burndy)	1
CON5M	CO-MMP6SBR	Connector 6P Male MMP6S-1 (Brown) Feed Motor (Burndy)	1
CON8M	CO-MMP5SBK	Connector 5P Male MMP5S-1 (Black) Carriage Detector (Burndy)	1
CON7M	CO-MMP4SBK	Connector 4P Male MMP4S-1 (Black) Timing Detector (Burndy)	1
CON3M	CO-MMP3SBK	Connector 3P Male MMP3S-1 (Black) Key PCB (Burndy)	1
2-1	S+ISP3012FR	Screw, M3x12 +Pan Head (Transistor)	3
2-2	N130FR	Nut, M3 (Transistor)	3
	XMM8-E090	Lead Wire, L-43 $\phi 0.12 \times 12$ Brown	1
	XMM8-E100	Lead Wire, L-56 $\phi 0.12 \times 12$ Brown	1
	TU-007010E	Tube, $\phi 0.7 \times 12$ Green	1
	C30S-E030	Lead Wire, L-50 $\phi 0.12 \times 12$ Green	1

PARTS LIST

INDEX	PART NUMBER	DESCRIPTION	Q'TY
		ATARI INTERFACE PCB ASSEMBLY	
2-3	CO-003-13P	ATARI 13P Connector, Male 003-13P-LT (JAE or HON HAI)	2
T1,2	TR-2SC2308	Transistor, 2SC2308	2
T2,3,6 7	R-104J25CH	Resistor, 100Kohm 1/4W +/-5%	4
R1,5	R-103J25CH	Resistor, 10Kohm 1/4W +/-5%	2
R4	R-473J25CH	Resistor, 47Kohm 1/4W +/-5%	1
	S+PTB2608FR	Screw, M2.6x8 PTB (JAE Connector)	4
	S+ISP3008FR	Screw, M3x8 +Pan Head	(4)
	N130FR	Nut, M3 (HON HAI Connector)	(4)
		Lead Jumper	2
2-4	XMMS-B04AA	ATARI Interface P.C.Board, 1.6t HB Material, Paper Phenol Resin	1
CON2M	VP80-M090HT	Inter Connector, 14P	2
2-5	VP80-M110HP	Spacer	2
2-6	VP80-M120HP	Guide Spacer	2
2-7	S+PTB3006FR	Screw, M3x6 +Bind P-Tapping (SUB PCB)	2
2-8	S+PTB3006FR	SCREW, M3x6 +Bind P-Tapping (Spacer)	4

P A R T S L I S T

INDEX	PART NUMBER	DESCRIPTION	Q'TY
1-2		SWITCH P.C.BOARD ASSEMBLY	
	XMM8-B030S	Switch P.C.Board	1
	XMM8-M070HN	Switch Frame	1
	LE-GL-9PR2	LED, GL-9PR2 (Red)	3
	XMM8-M060HU	Key Top	3
	VP80-IC50	Rubber Contact	3
	CO-MMH850	Connector 8P, Terminal with Lead Wire	1
R22,24 26	R-681J25CH	Resistor, 680 ohm 1/4W +/-5%	3
	XMM8-M070HN	LED Lens Cover	3
	BZ-27DA-5A	Buzzer, 27DA-5A	1
	XMM8-E060	Lead Wire UL-1007 AWG28 L-80 (Black)	1
	XMM8-E070	Lead Wire UL-1007 AWG28 L-80 (Red)	1
	S+PTB2006FR	Screw, M2x6 +PTB (SW.PCB)	4

P A R T S L I S T

INDEX	PART NUMBER	DESCRIPTION	Q'TY
		POWER SUPPLY, UL/CSA TYPE	
2-9	XMM8-T01UC	Power Transformer 115V (with Molex Connector 5058-04) UL/CSA	1
2-10	CA-SPT2WGA	Power Cord SPT-2 3Pole	1
2-11	CR-SR-4K-4	Strain Relief Bush, SR-4K-4	1
2-12	F-FIR0A6	Fuse, 1A 61M	1
	TU-05025H	Thermo Shrink Tube 820F ø5 L-25	1
	XMM8-L040	Fuse Label (250V 1A)	1
2-13	SW-T127A	Power Switch, T-127 (ATARI COLOR)	1
2-14	L880-M030UK	Cord Cover, UL-94V0 Type (ATARI Color)	1
2-15	XMM8-E010	Lead Wire, 22AWG UL-1672 L-170 (Black)	1
	TU-09090H	Thermo Shrink Tube, 820F ø9 L-90	1
2-16	CL-SC0210F	Coil Filter SC-02-10F or EC-2	1
2-17	XMM8-B010F	Filter P..Board, 1.6t V0 Material Paper Epoxy Resin	1
	TU-04025H	Thermo Shrink Tube, 820F ø4 L-25	1
2-18	H-P002	Fuse Clip, P002	2
2-19	XMM8-E080	Ground Wire, UL-1007 18AWG L-45 (Yellow/Green, Spiral)	1

P A R T S L I S T

INDEX	PART NUMBER	DESCRIPTION	Q'TY
		POWER SUPPLY, EUROPEAN TYPE	
2-9	XMM8-T03E	Power Transformer 220V (with Molex Connector, 5058-04) EUROPE	1
2-10	CA-CE3P03A	Power Cord, Class-1 3-Pole (VDE) (ATARI Color)	1
2-11	CR-SR-5P-4	Strain Relief Bush, SR-5P-4	1
2-12	F-TOR40A5	Fuse, T 400mA	1
	TU-04025H	Thermo Shrink Tube 820F ϕ 4 L-25	1
	XMM8-L050	Fuse Label (250V T 400mA)	1
2-13	SW-T322	Power Switch, T-322 (Black)	1
2-14	L880-M030HN	Cord Cover, UL-94HB (ATARI Color)	1
2-15	XMM8-E020	Lead Wire, UL-1672 22AWG L-170 (Red)	1
	CO-2302DS	Terminal Connector, 230/2DS	1
	XMM8-E030	Lead Wire, UL-1672 22AWG L-180 (Red)	1
	XMM8-E040	Lead Wire, UL-1672 22AWG L-120 (Black)	1
2-16	CL-SC0210F	Coil Filter SC-02-10F or EC-2	1
2-17	XMM8-B010F	Filter P.C.Board, 1.6t V0 Material Paper Epoxy Resin	1
	TU-04025CH	Thermo Shrink Tube, 820F ϕ 4 L-25	1
2-18	H-P002	Fuse Clip, P002	2
2-19	XMM8-E030	Ground Wire, UL-1007 13AWG L-45 (Yellow/Green, Spiral)	1

P A R T S L I S T

INDEX	PART NUMBER	DESCRIPTION	Q'TY
		POWER SUPPLY, UK TYPE	
2-9	XMM8-T04E	Power Transformer 240V (with Molex Connector, 5058-04) EUROPE	1
2-10	CA-GTBS3	Power Cord, Class-1 GTBS-3	1
2-11	CR-SR-5P-4	Strain Relief Bush, SR-5P-4	1
2-12	F-TOR40A5	Fuse, T 400mA	1
	TU-04025H	Thermo Shrink Tube 820F ϕ 4 L-25	4
	XMM8-L050	Fuse Label (250V T 400mA)	1
2-13	SW-T822	Power Switch, T-822 (Black)	1
2-14	L880-M030HN	Cord Cover, (ATARI Color)	1
2-15	XMM8-E020	Lead Wire, UL-1672 22AWG L-170 (Red)	1
	XMM8-E010	Lead Wire, UL-1672 22AWG L-170 (Black)	1
	XMM8-E110	Lead Wire, UL-1672 22AWG L-180 (Red)	1
	XMM8-E030	Lead Wire, UL-1672 22AWG L-180 (Black)	1
2-16	CL-SC0210F	Coil Filter SC-02-10F or EC-2	1
2-17	XMM8-B010F	Filter P.C.Board, 1.6t V0 Material Paper Epoxy Resin	1
	CO-2302DS	Terminal Connector, 230/2DS	1
2-18	H-P002	Fuse Clip, P002	2
2-19	XMM8-E080	Ground Wire, UL-1007 18AWG L-45 (Yellow/Green, Spiral)	1

PARTS LIST

INDEX	PART NUMBER	DESCRIPTION	Q'TY
CASE ASSEMBLY UL TYPE A			
1-3	XMM8-M010UK	Upper Case "UL-94V0"	1
1-4	XMM8-M020UK	Bottom Case "UL-94V0"	1
1-5	4023-I010	Rubber Foot, $\phi 16 \times 3t$	4
1-6	XMM8-M030HN	Printer Cover	1
1-7	XMM8-L010	Brand Plate	1
	XMM8-L020	Serial Plate (117V)	1
CASE ASSEMBLY EUROPEAN TYPE A			
1-3	XMM8-M010HM	Upper Case "UL-94HB"	1
1-4	XMM8-M020HM	Bottom Case "UL-94HB"	1
1-5	4023-I010	Rubber Foot, $\phi 16 \times 3t$	4
1-6	XMM8-M030HN	Printer Cover	1
1-7	XMM8-L010	Brand Plate	1
	XMM8-L030	Serial Plate (220V)	1

P A R T S L I S T

INDEX	PART NUMBER	DESCRIPTION	Q'TY
CASE ASSEMBLY UL TYPE B			
1-3	XMM8-M010UK	Upper Case "UL-94V0"	1
1-4	XMM8-M02AUK	Bottom Case "UL-94V0"	1
1-5	4023-I010	Rubber Foot, $\phi 16 \times 3t$	4
1-6	XMM8-M030HN	Printer Cover	1
1-7	XMM8-L010	Brand Plate	1
	XMM8-L020	Serial Plate (117V)	1
CASE ASSEMBLY EUROPEAN TYPE B			
1-3	XMM8-M010HM	Upper Case "UL-94HB"	1
1-4	XMM8-M02AHM	Bottom Case "UL-94HB"	1
1-5	4023-I010	Rubber Foot, $\phi 16 \times 3t$	4
1-6	XMM8-M030HN	Printer Cover	1
1-7	XMM8-L010	Brand Plate	1
	XMM8-L030	Serial Plate (220V)	1

P A R T S L I S T

INDEX	PART NUMBER	DESCRIPTION	Q'TY
		ASSEMBLY, UL TYPE B	
1-8	AV80-I010	Rubber Foot for Printer Head	2
1-9	XMM8-M040HU	Manual Knob	1
2-20	4023-P040	Steel Plate for Transformer	2
1-10	VP80-E010	Special Screw, M4 Tapping (Printer)	3
2-21	S+ISP4010FR	Screw, M4x10 +PH SEMS (Trans)	2
2-22	S+ISP4006FR	Screw, M4x6 +PH SEMS (Ground)	4
1-11	S+PTB3006FR	Screw, M3x6 +PTB (Buzzer, Power, Chassis)	6
2-23	S+STB3006FR	Screw, M3x6 +STB (Heat Sink)	2
1-12	S+PTP4020FR	Screw, M4x20 +PTP (Case)	4
2-24	S+PTB3008FR	Screw, M3x8 +PTB (Switch Frame 4, Main PCB 4)	8
1-13	S+ISP4015FB	Screw, M4x15 +PH SEMS "Black" (Shipping)	2
	TP80-I010	Tube (Lead Wire Stopper)	2
1-15	XMM8-I010	Lumirror Sheet	1
1-14	BL80-M010HM	Rear Cover for Printer	1
	S+ISP2506FR	Screw, M2.5x6 Cup Screw	2
2-25	C80S-P010	Shield Plate Power Supply Chassis	1
	C80S-E050	GND Wire, UL-1007 16AWG L-90 (Yellow/Green, Spiral)	1
	C80S-E040	GND Wire, UL-1007 16AWG L-60 (Yellow/Green, Spiral)	1
	S+ISP3006FR	Screw, M3x6 +PH SEMS (Ground)	3

PARTS LIST

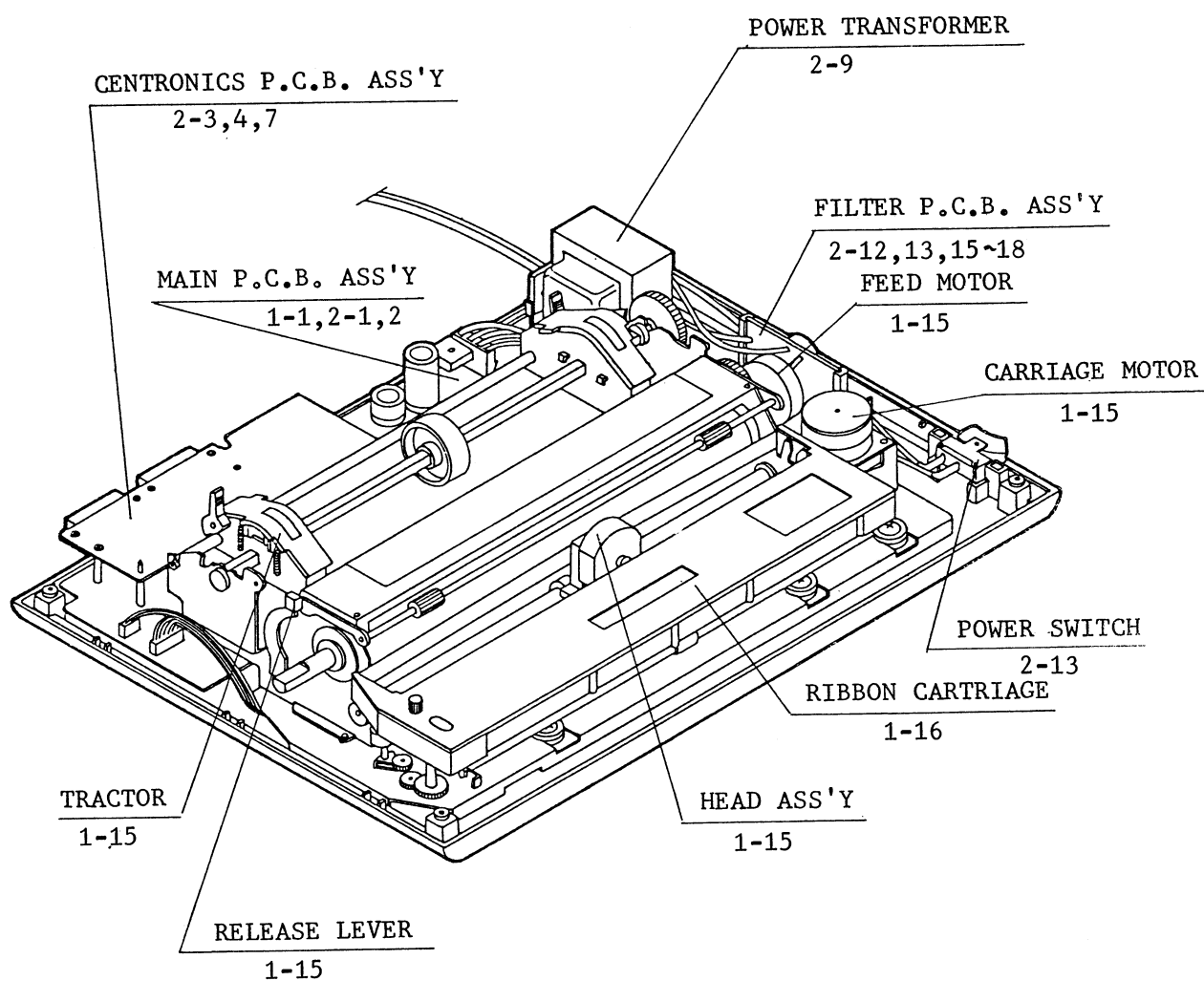
INDEX	PART NUMBER	DESCRIPTION	Q'TY
		ASSEMBLY, EUROPEAN TYPE A	
1-8	AV80-I010	Rubber Foot for Printer Head	2
1-9	XMM8-M040HU	Manual Knob	1
2-20	4023-P040	Steel Plate for Transformer	2
1-10	VP80-E010	Special Screw, M4 Tapping (Printer)	3
2-21	S+ISP4010FR	Screw, M4x10 +PH SEMS (Trans)	2
2-22	S+ISP4006FR	Screw, M4x6 +PH SEMS (Ground)	4
1-11	S+PTB3006FR	Screw, M3x6 +PTB (Buzzer, Power, Chassis)	4
2-23	S+STB3006FR	Screw, M3x6 +STB (Heat Sink)	2
1-12	S+PTP4020FR	Screw, M4x20 +PTP (Case)	4
2-24	S+PTB3008FR	Screw, M3x8 +PTB (Switch Frame 4, Main PCB 4)	8
1-13	S+ISP4015FB	Screw, M4x15 +PH SEMS "Black" (Shipping)	2
	TP80-I010	Tube (Lead Wire Stopper)	2
1-14	XMM8-I010	Lumirror Sheet	1
1-15	BL80-M010HM	Rear Cover for Printer	1
	S+ISP2506FR	Screw, M2.5x6 Cup Screw	2
	S+PTP2312FR	Screw, M2.3x12 +PTP	1
2-25	C80S-P010	Shield Plate Power Supply Chassis	1
	C80S-E050	GND Wire, UL-1007 16AWG L-90 (Yellow/Green, Spiral)	1
	C80S-E040	GND Wire, UL-1007 16AWG L-60 (Yellow/Green, Spiral)	1
	S+ISP3006FR	Screw, M3x6 +PH SEMS (Ground)	1
	S+ISP3008FR	Screw, M3x8 +PH (Shield Plate)	2
		Rubber Stopper, $\phi 11 \times \phi 4 \times 8t$	1
	4023-I010	Rubber Foot, $\phi 16 \times 3t$	2

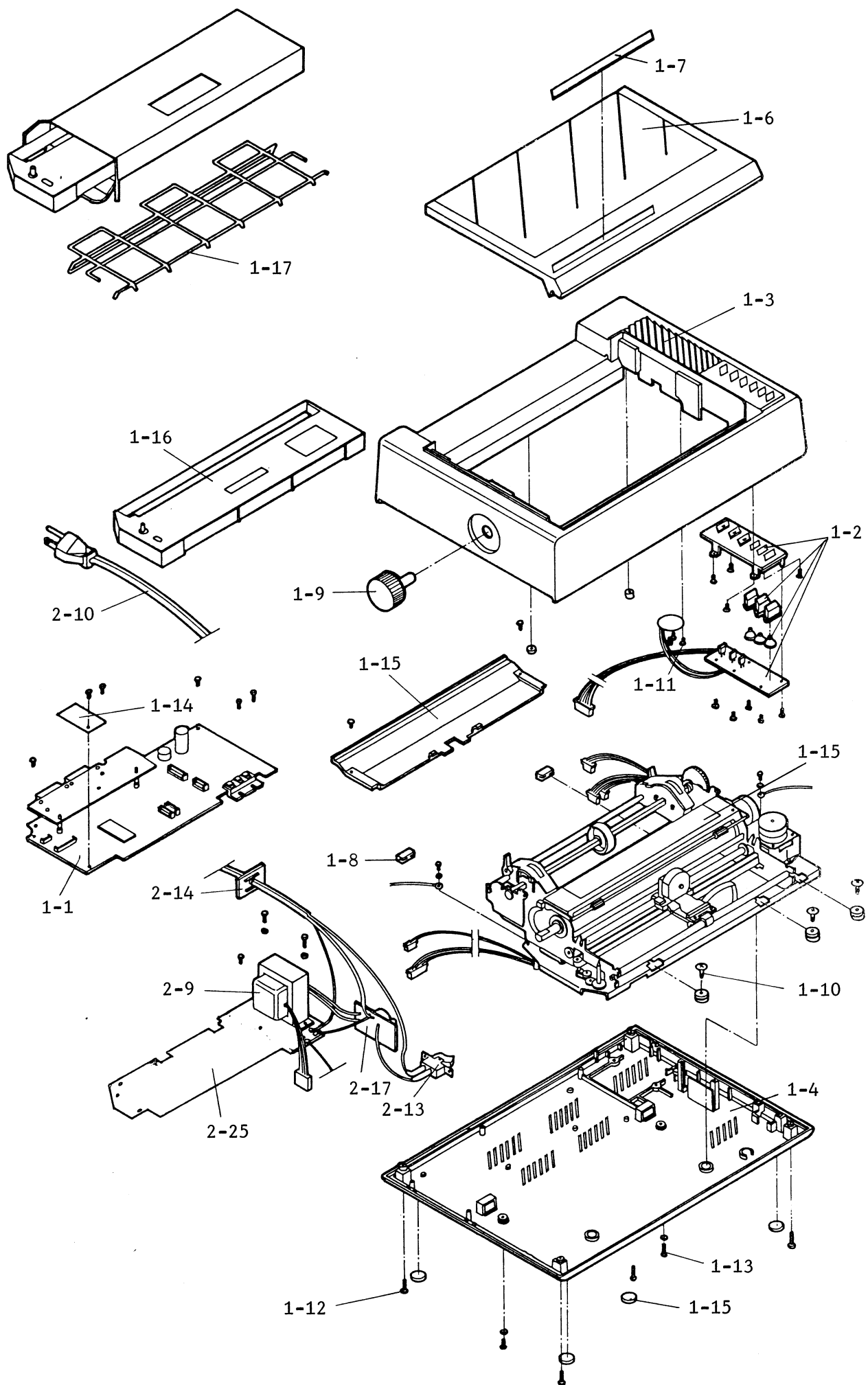
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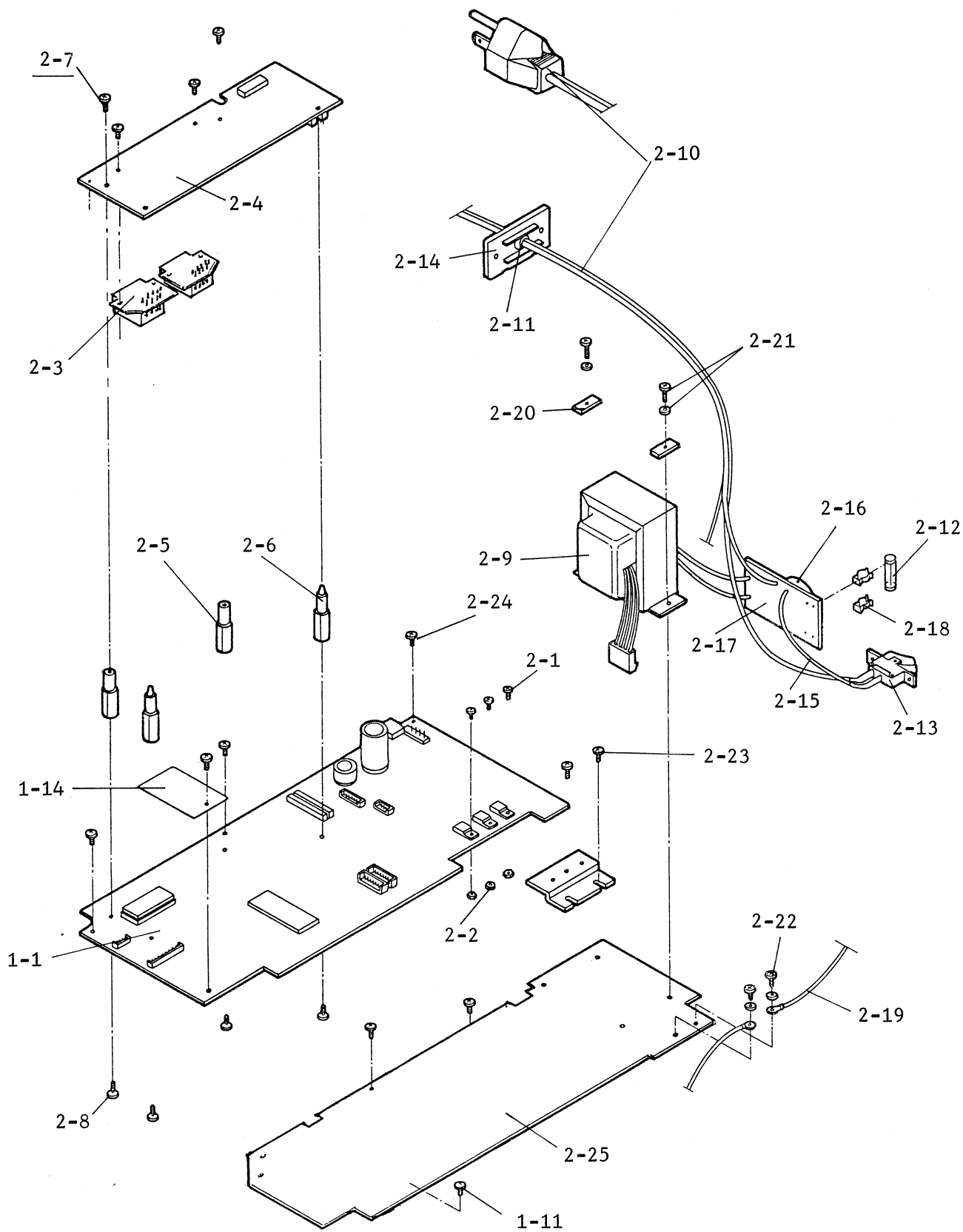
INDEX	PART NUMBER	DESCRIPTION	Q'TY
		ASSEMBLY, EUROPEAN TYPE B	
1-8	AV80-I010	Rubber Foot for Printer Head	2
1-9	XMM8-M040HU	Manual Knob	1
2-20	4023-P040	Steel Plate for Transformer	2
1-10	VP80-E010	Special Screw, M4 Tapping (Printer)	3
2-21	S+ISP4010FR	Screw, M4x10 +PH SEMS (Trans)	2
2-22	S+ISP4006FR	Screw, M4x6 +PH SEMS (Ground)	4
1-11	S+PTB3006FR	Screw, M3x6 +PTB (Buzzer, Power, Chassis)	6
2-23	S+STB3006FR	Screw, M3x6 +STB (Heat Sink)	2
1-12	S+PTP4020FR	Screw, M4x20 +PTP (Case)	4
2-24	S+PTB3008FR	Screw, M3x8 +PTB (Switch Frame 4, Main PCB 4)	8
1-13	S+ISP4015FB	Screw, M4x15 +PH SEMS "Black" (Shipping)	2
	TP80-I010	Tube (Lead Wire Stopper)	2
1-14	XMM8-I010	Lumirror Sheet	1
1-15	BL80-M010HM	Rear Cover for Printer	1
	S+ISP2506FR	Screw, M2.5x6 Cup Screw	2
	S+PTP2312FR	Screw, M2.3x12 +PTP	1
2-25	C80S-P010	Shield Plate Power Supply Chassis	1
	C80S-E050	GND Wire, UL-1007 16AWG L-90 (Yellow/Green, Spiral)	1
	C80S-E040	GND Wire, UL-1007 16AWG L-60 (Yellow/Green, Spiral)	1
	S+ISP3006FR	Screw, M3x6 +PH SEMS (Ground)	3

PARTS LIST

INDEX	PART NUMBER	DESCRIPTION	Q'TY
1-15	P-CE-80S-G	PRINTER UNIT	
		Needle Printer, Model CE-80S-G(8) or Model CE-80S-G(9)	1
1-16	IK-SP80RC	RIBBON CARTRIDGE UNIT	
		Ribbon Cartridge	1
1-17		ACCESSORY	
		XMM8-A050 Instruction Booklet	1
		XMM8-P030 Paper Tray	1
		CO-D03-13S ATARI 13P Connector Cable D03-13S-090 (1m)	1
		PACKING SET	
		XMM8-A010 Individual Box	1
		XMM8-A020 Master Carton	1/2
		XMM8-A030 Styrofoam Packing Set	1set
		XMM8-A040 Vinyl Bag (for Body Unit)	1
		VP80-A070 Head Fixer	1
		XMM8-A060 Vinyl Bag (for 13P Connector Cable)	1







Services for Printer Mechanism

The service instructions as described below are usefull for repairing in field and checking the performance of used Printer Mechanism.

Before starting adjustments and replacements for printer mechanism, following materials, tools and guages should be prepared.

a. Materials

Material	Name	Parts	Remarks
Adhesive	Loctite®	Screw	Adhesive over 1/4 of screw head and washer
Grease	Beacon 325	Special	
Alcohol			General purpose for cleaning
Solder	62Sn48Zn		with flux

b. Tools

Solder Iron	Disconnection & Connection of Wiring	15~17 watt
Screw Drivers Small Midium	Screw Screw	⊕ bit for M2~M2.6 ⊕ bit for M3~M5

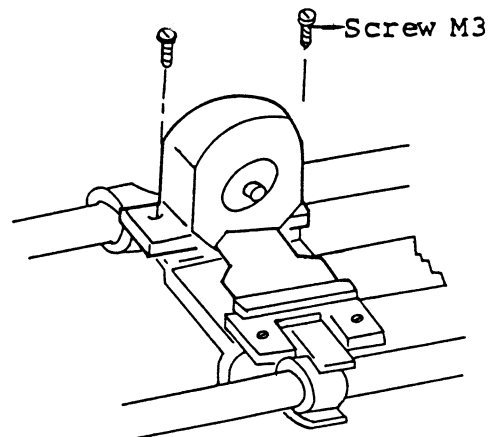
c. Gauges

Thickness Gauge	\emptyset .05mm \emptyset .15mm \emptyset .5mm \emptyset .5mm	} Paper end Sensor Head Gap	Available car use
Tension Gauge		Synchronuss Belt	\emptyset ~500gr range

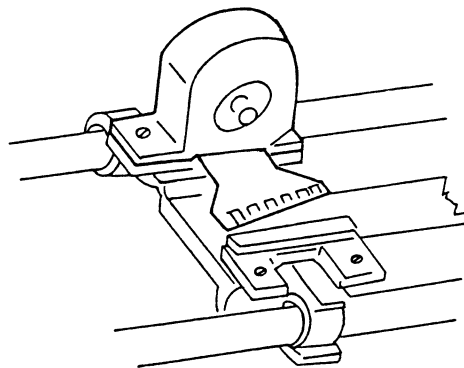
1. Adjustment & Replacement of the printer head

1-1 Disassemble and assemble

- 1) Remove two M3 Head Screws



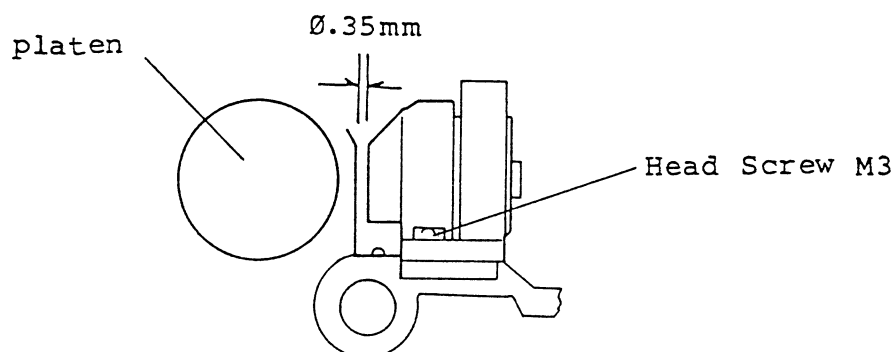
- 2) Take out the Flexible cable from connector



- 3) In case of assembling, Do reverse way of 2), 1)

1-2 Adjustment of the Head (after assembling)

- 1) Loose two M3 Head Screws
- 2) Insert the $\varnothing.35\text{mm}$ thickness gauge between Ribbon Guide and Head Nose.
With keeping this gap, fix two M3 Head Screws.

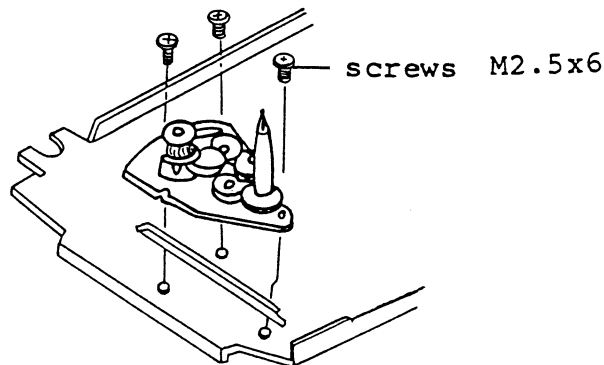


- 3) Check the gap between Ribbon Guide and Head Nose again, by inserting above thickness gauge. The gauge should be inserted smoothly. If not, back to 2).

2. Adjustment & Replacement of Ribbon Gear Ass'y

2-1 Disassemble and assemble

- 1) Remove three screws which fix the Ribbon Gear Assy on the chassis



- 2) Take out the synchronous belt from Ribbon Gear Ass'y
- 3) In Case of Assembling, Do reverse way of 2), 1)
But, Don't fix three screw completely, keep a little bit loose for adjustment of tension of synchronous Belt

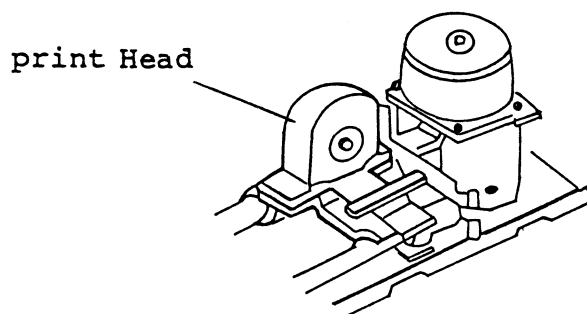
2-2 Adjustment and Lubrication

2-2-1 Lubrication

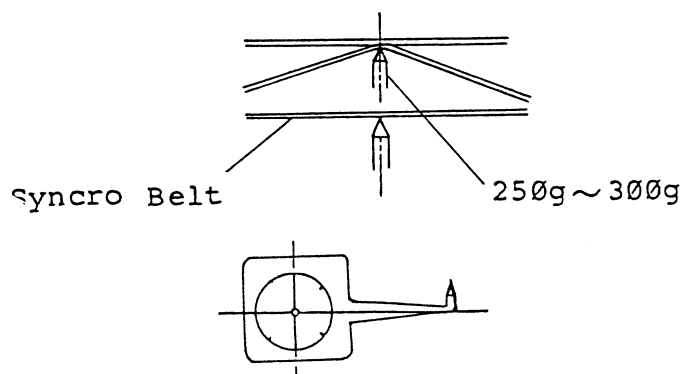
- Lubrication for Ribbon Gear Ass'y should be done before assembling on the chassis.
- Lubricate the grease (Beacon 325) to the meshing part of the gears.
- After lubricate, check the gears rotate smoothly and no eccentricity.

2-2-2 Adjustment of Tention of Synchronuss Belt

- Move the Printer Head to the right end



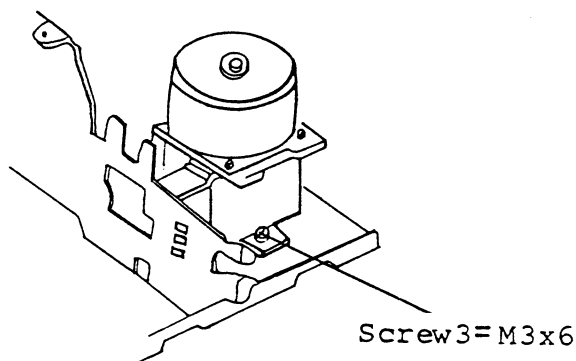
- Check the three screws which fix Ribbon Gear Ass'y on the chassis are slightly loosed.
- Push the middle of Synchronous Belt by Tension gauge until slightly touching to other side of Synchronous Belt, and check the tentions within 250g~300g. If not within the specified value, adjust the location of Ribbon Gear Ass'y.
- Then, fix the three screws firmly.



3. Replacement and Adjustment of Carriage Motor Ass'y

3-1 Disassemble and Assemble

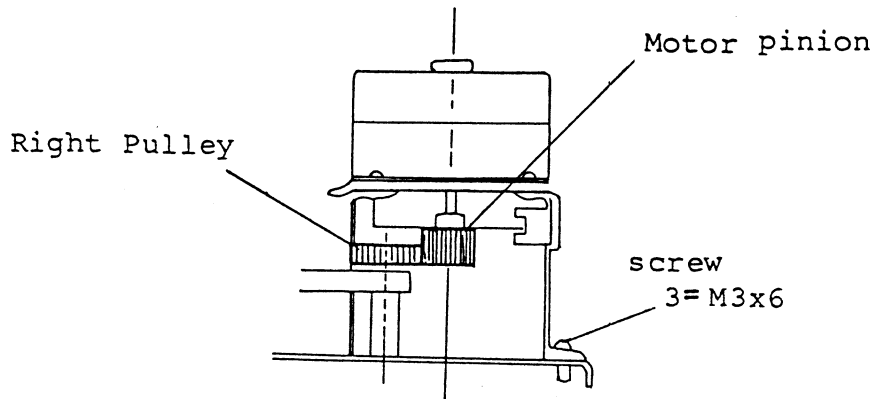
- 1) Remove the Connector CON 6, 8 (Connected from Carriage Motor) from Main P.C.B Assembly.
- 2) Take out the three M3x6 screws which fix the Carriage Motor Aassembly.



3) In case of assembling, Do reverse way of 2), 1)

3-2 Adjustment of Carriage Motor Assembly

- 1) Check the backlash of the mesh part between pinion gear of the carriage motor and right pulley by jogging horizontally the Printer Head, and adjust the carriage motor so slightly that backlash way not make even with minor force.
- 2) Fix four M3x6 screws firmly.
- 3) After above process, check once again the backlash is minor enough and Printer Head can move smoothly.



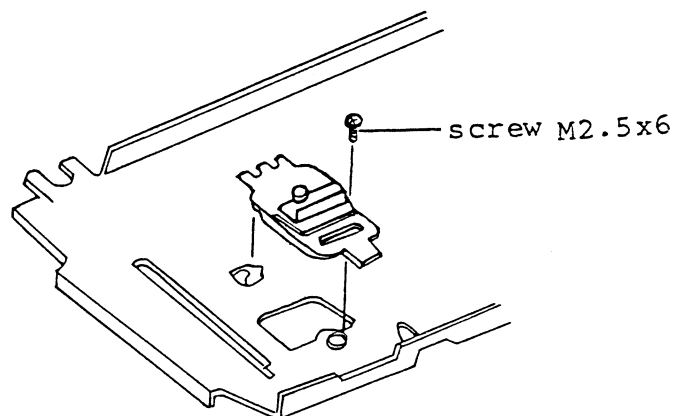
3-3 Lubirication for Carriage Motor Ass'y.

Specified grease (Beacon 325) is required to the mesh part of pinion gear of Carriage Motor and the Upper gear of Right Pulley.

4. Adjustment and Replacement of Home position Switch Ass'y

4-1 Disassemble and Assemble

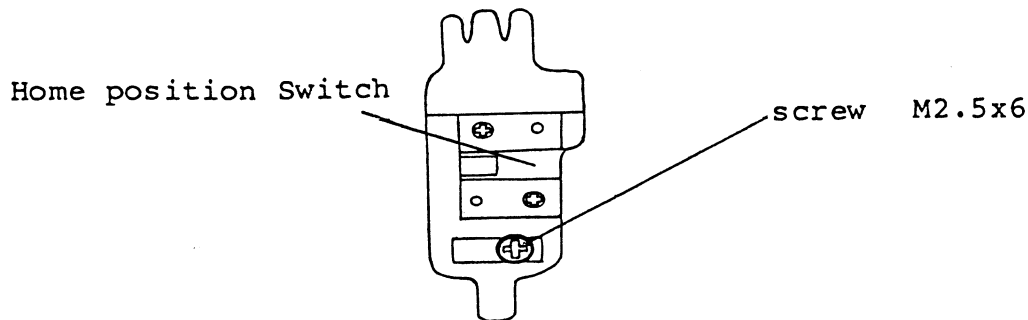
- 1) Remove the M2.5x6 screw which fix the Home position Switch Ass'y to the chassis.



- 2) Resold the lead wires from Home position Switch terminals.
- 3) In case of assembling, Do reverse way of 2), 1).

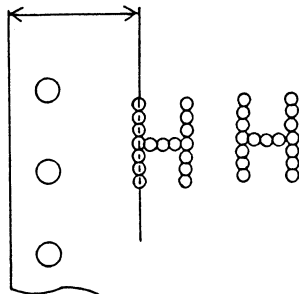
4-2 Adjustment of the Home position Switch

- 1) Lose slightly the M2.5x6 screw which fix the Home position Switch Ass'y to the chassis as possible to move by finger.



- 2) Insert the 10 inches width paper and print out. Check the left end of the printed character must be located at $25.6 \pm 0.5\text{mm}$ from left end of paper.

$25.6 \pm 0.5\text{mm}$

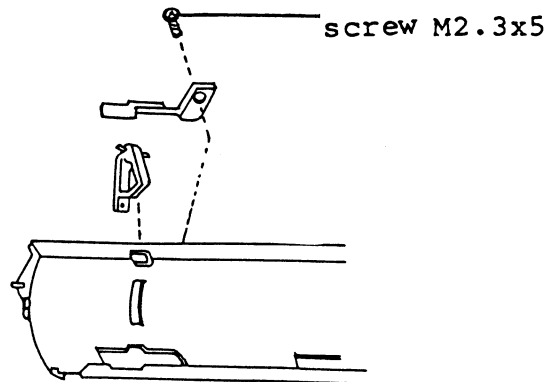


- 3) If not within the specified area, adjust the location of Home position Switch Ass'y and fix the M2.5x6 screws
- 4) After fix the M2.5x6 screw firmly, check once more the location of left end of printed character which is within the specification.

5. Replacement and Adjustment of paper End Sensor

5-1 Disassemble and assemble

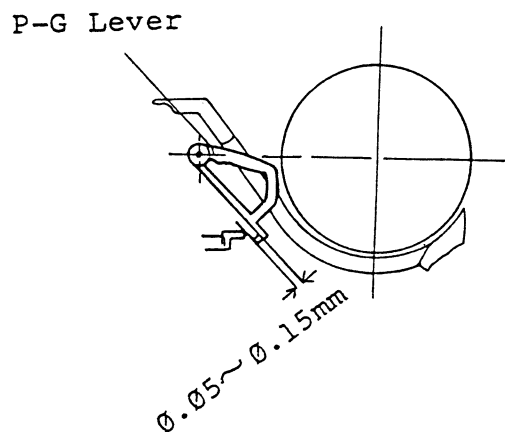
- 1) Take out the Leaf Switch Ass'y and M2.3x5 screw by loosening the screw as shown below.



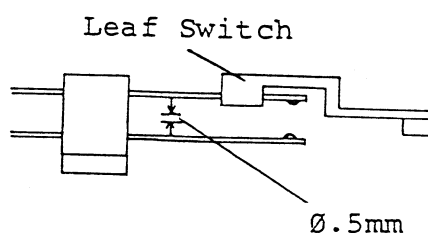
- 2) P-G Lever also is removed accordingly with the Leaf Switch Ass'y.
- 3) Resolder the lead wires from Leaf Switch terminal.
- 4) In case of assembling, Do reverse way of 3), 2), 1).

5-2 Adjustment of Paper End Sensor

- 1) With holding the P.G Lever against the Platin, check the gap between P.G Lever and the tip of Leaf Switch which is within $\varnothing.05 \sim \varnothing.15\text{mm}$ by inserting Thickness Gauge. And if not, adjust the Leaf Switch Ass'y, then fix the M2.3x6 screw firmly.

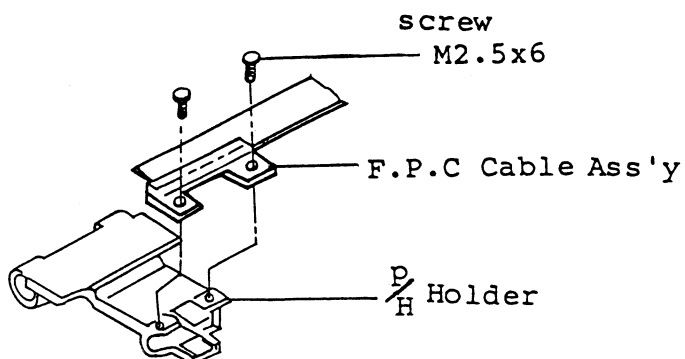


- 2) Insert the paper to print out and check the gap of the contact points of the Leaf Switch shall be more than $\varnothing.5\text{mm}$ (measured with thickness gauge).

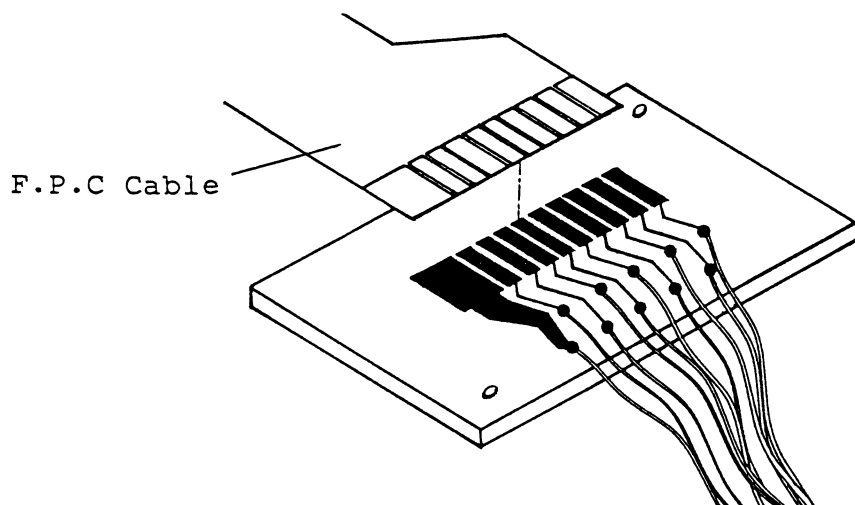


6. Replacement of F.P.C Ass'y

- 1) Remove the Flexible Cable of the Printer Head from F.P.C cable Ass'y on Printer Head Holder.
- 2) Remove two M2.5x6 screws, and take out the F.P.C Cable Ass'y from the Printer Head Holder.



- 3) Resolder the F.P.C Cable from the Connection P.C.B



- 4) In case assembling, Do reverse of 3), 2), 1)



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