Radio Shack®

Service Manual

26-1190A

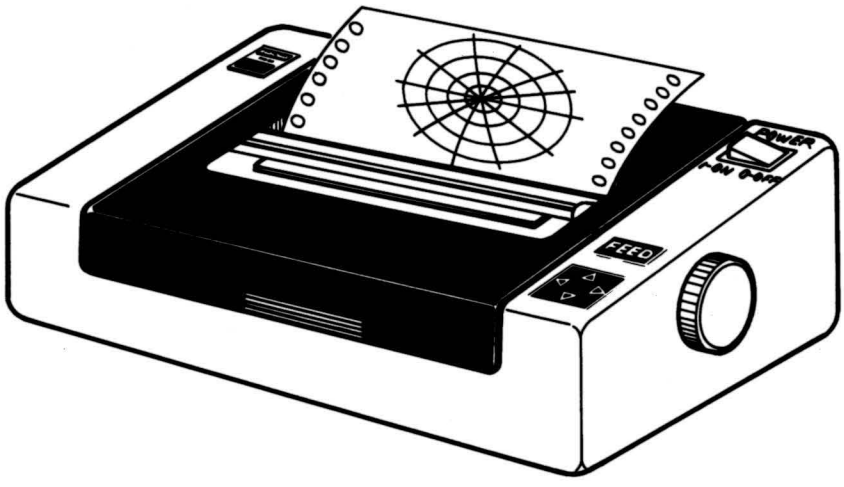
SUPPLEMENT

TRS-80

PLOTTER/PRINTER

Catalog Number: 26-1190A

When servicing 26-1190A, refer to the original Service Manual for 26-1190 as well as this supplement. The main differences are change in power supply unit and in ROM.



CUSTOM MANUFACTURED FOR RADIO SHACK TC A DIVISION OF TANDY CORPORATION

SERVICE MANUAL FOR PLOTTER/PRINTER

Table of Contents

See Page 1.

1. SPECIFICATIONS

Printing system	Ball-point pen recording system
Printing speed	Average 10 characters/sec (fixed character)
Step-by-step speed	667 steps/sec
Step-by-step distance	0.09525 mm (0.00375")/step
Codes used	64 ASC11 codes 13 Special codes
Maximum number of printed characters	80 characters (with auto wraparound)
Print character spacing	Approx. 2.3 mm (0.1"); 24 steps
Line feed spacing	Approx. 4.2 mm (0.165"); 44 steps
Size of character	Approx. 1.6 x 3.0 mm (0.0629" x 0.11"); 16 x 30 steps
Number of copies	3 sheets
Width of paper	9 inches
Effective width of paper	7–3/8" (max. 80 characters)
Form of paper	Roll paper with sprockets, Cat. No. 26–1407
Input voltage	120 V AC, 60 Hz (US type) 240/220 V AC, 50 Hz
Power consumption	120 W or less (operating)
Dimensions	405 x 312 x 162 mm (15.7" x 12.3" x 6.4")
Weight	Approx. 7 kg (15 lbs.)
Ambient temperature in operation	5 to 40°C (41 to 104°F)
Ambient temperature in storage	–10 to 50°C (14 to 122°F)
Relative accuracy	0.15 % or less
CR speed	400 mS or less

Important Note:
Page Numbers at the top of each page of this manual refer to a page in the original 26-1190 service manual.

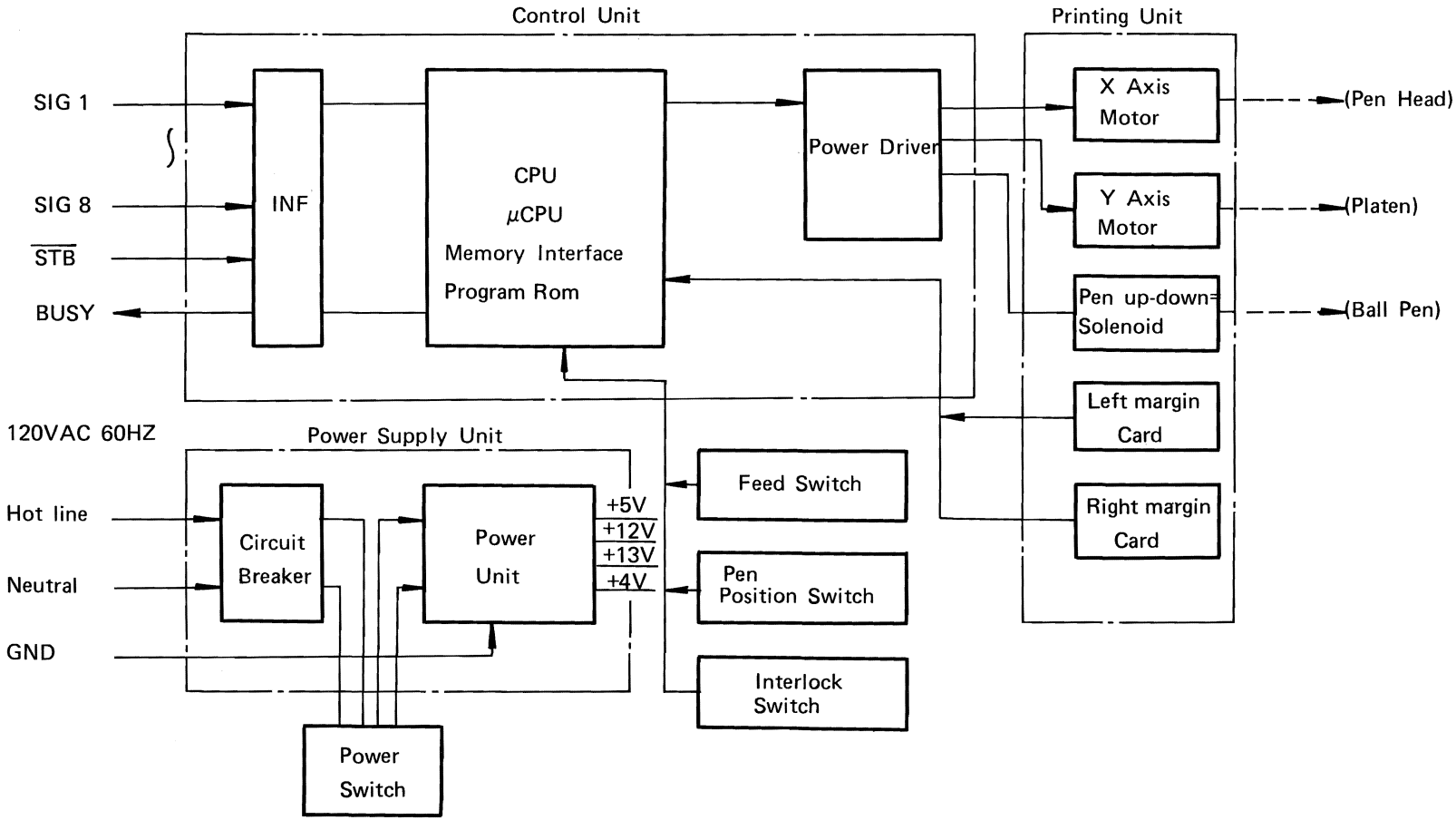

Control Unit
Printing Unit
SIG 1
SIG 8
STB
BUSY
INF
CPU
μCPU
Memory Interface
Program Rom
Power Driver
X Axis Motor
Y Axis Motor
Pen up-down Solenoid
(Pen Head)
(Platen)
(Ball Pen)
Left margin Card
Right margin Card
120VAC 60HZ
Power Supply Unit
Hot line
Neutral
GND
Circuit Breaker
Power Unit
+5V
+12V
+13V
+4V
Feed Switch
Pen Position Switch
Interlock Switch
Power Switch

Figure 2

See Page 4.

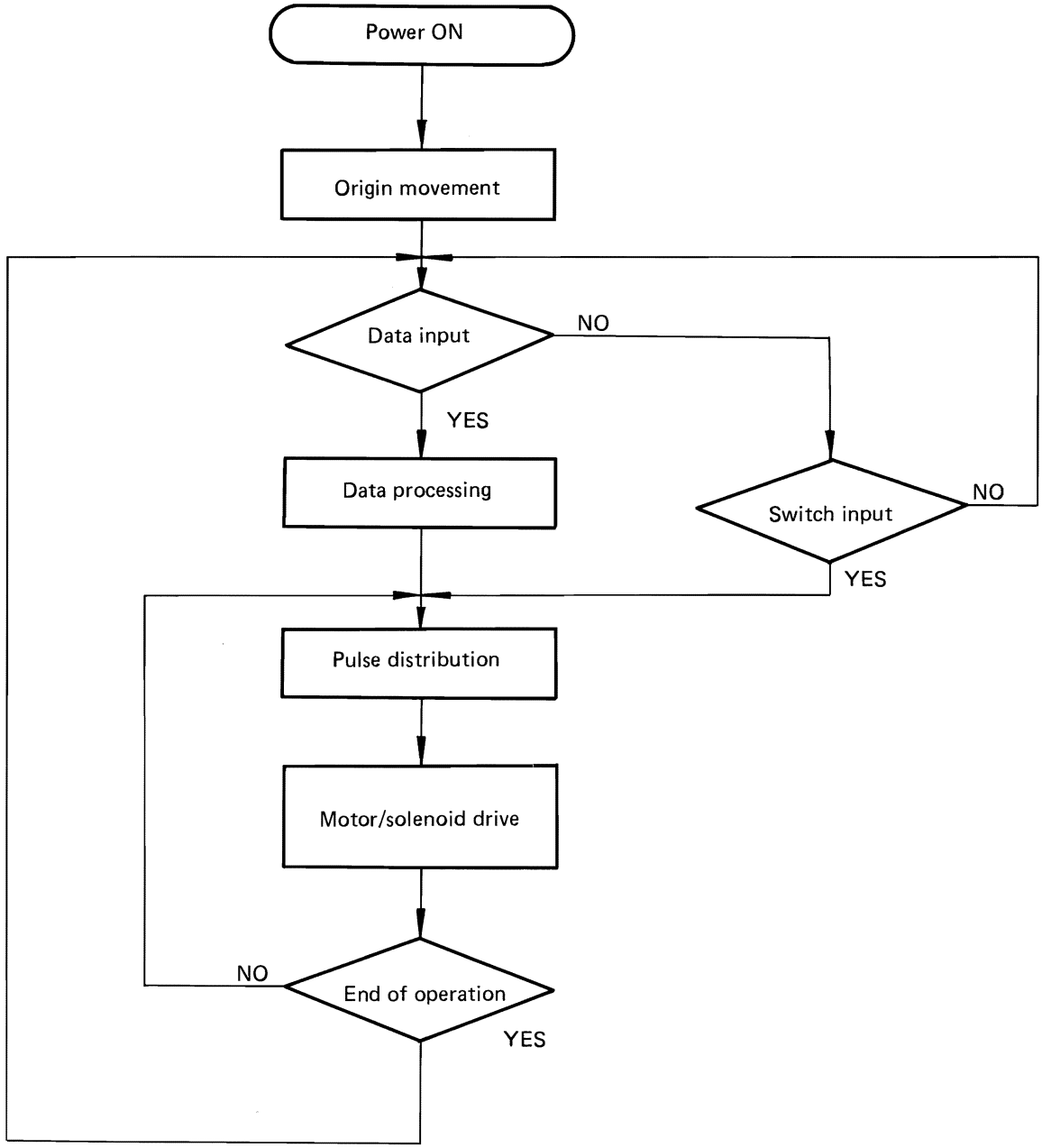


Figure 3. General Operation Flow Chart

See Page 5.

3. OPERATIONAL DESCRIPTION OF CONTROL UNIT

Following is a brief explanation of the symbols used in the operational explanation or the circuit diagrams.

	Symbol	Description
(1)	SIG 1 (IN) ⟨ SIG 8	Input data signal.
(2)	$\overline{\text{STB}}$ (IN)	Timing signal of input data.
(3)	BUSY (OUT)	A signal which indicates that the Printer is Busy (not ready to receive data).
(4)	$\overline{\text{PX+}}$ (IN) $\overline{\text{PX−}}$ (〃) $\overline{\text{PY+}}$ (〃) $\overline{\text{PY−}}$ (〃)	Input signals of +X, −X, +Y and −Y direction movements from position switch.
(5)	$\overline{\text{FEED}}$ (IN)	An input signal from the FEED switch.
(6)	$\overline{\text{ILS}}$ (IN)	An input signal from the microswitch mounted on the top cover.
(7)	$\overline{\text{EG}}$ (OUT)	A signal for informing the power supply unit that the drive circuit in the control unit has failed.
(8)	+5 V (L)	+5 V power supply for logic.
(9)	+12 V (L)	+12 V power supply for logic.
(10)	+4 V (M)	+4 V power supply for motor.
(11)	+13 V (M)	+13 V power supply for motor.
(12)	LGND	Ground of logic circuit.
(13)	MGND	Ground of motor circuit.
(14)	CLK	System clock of CPU circuit.
(15)	RMC 0 ⟨ RMC 4	ROM Command signal of CPU system.
(16)	DB 0 ⟨ DB 7	Data bus signals of CPU system.
(17)	AD 0 ⟨ AD 12	Address signals for ROM.
(18)	$\overline{\text{CPUR}}$	Timing signal for inputting from ROM.
(19)	$\overline{\text{LM}}$	Left margin signal.
(20)	$\overline{\text{RM}}$	Right margin signal.
(21)	$\overline{\text{Z}}$	A pull-in signal for the pen up-down solenoid.
(22)	$\overline{\text{ZS}}$	Rise signal for pull-in of the pen up-down solenoid.
(23)	$\overline{\text{CRS}}$	A motor exciting phase changeover signal during high-speed CR.
(24)	$\overline{\text{XHV}}$	A high voltage application signal to the X-axis motor.
(25)	$\overline{\text{YHV}}$	A high voltage application signal to the Y-axis motor.
(26)	$\overline{\text{ZE}}$	An input signal of $\overline{\text{ZS}}$ time to the EG circuit.

See Page 6.

(27) XA, XA', $\overline{XB}$, $\overline{XB'}$ — A drive signal to each transistor of the X-axis motor.

(28) YA, YA', $\overline{YB}$, $\overline{YB'}$ — A drive signal to each transistor of the Y-axis motor.

Circuit Configuration

The control circuit consists of IC's, transistors, diodes, resistors, and capacitors, etc. which are mounted on one printed circuit board (36502001).

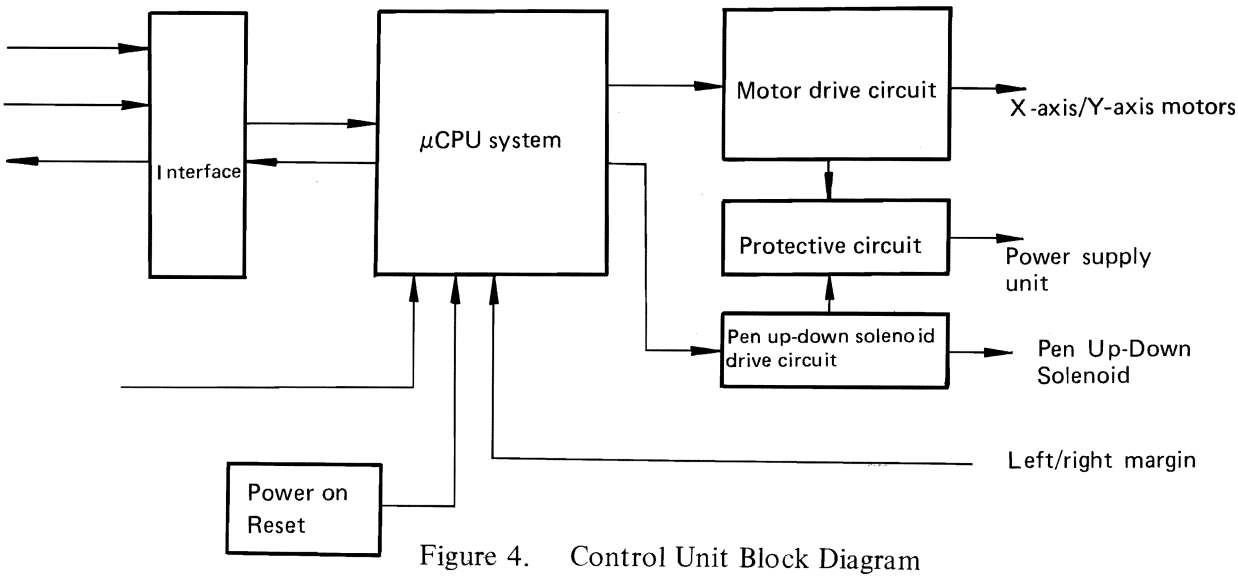


Figure 4. Control Unit Block Diagram

Power ON Reset

A reset signal is inputted to the CPU through a resistor and capacitor when power is supplied to the control unit with the power switch turned ON.

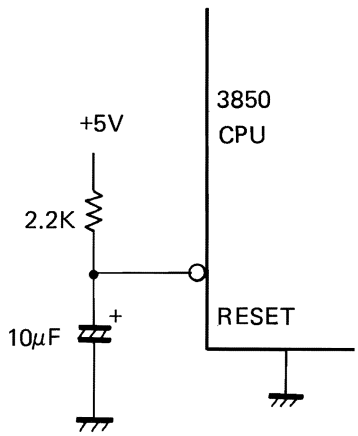


Figure 5. Reset Circuit

See Page 7.

Interface Circuit

There are a total of ten data input/output lines from the main body as shown below.

SIG 1 ~ SIG 8	8 lines	active high
$\overline{\text{STB}}$	1 line	active low
BUSY	1 line	active high

The signal flow sequence of these lines is as follows;

(1) With the BUSY line "L", when data is set and "L" $\overline{\text{STB}}$ signal is inputted, it is applied through the inverter in IC14 to the CK input (12) of F/F in IC15, and thus latched. The BUSY signal then goes "H", thus the unit enters the "busy" condition.

(2) Although the CPU waits for the $\overline{\text{STB}}$ input signal, it must also check switch conditions, etc., so it takes some time to execute the instruction.
When the CPU receives the $\overline{\text{STB}}$ signal latched by F/F in IC15, an "L" signal is outputted from I/O 1–1 which is applied to CR of IC15, and thus F/F in IC15 is cleared. At this point the data input by the the CPU is identified.

(3) When the data is then processed in the CPU, an "H" signal is output from I/O 1–1, and thus the busy signal goes "L" and the unit enters a "ready" condition.

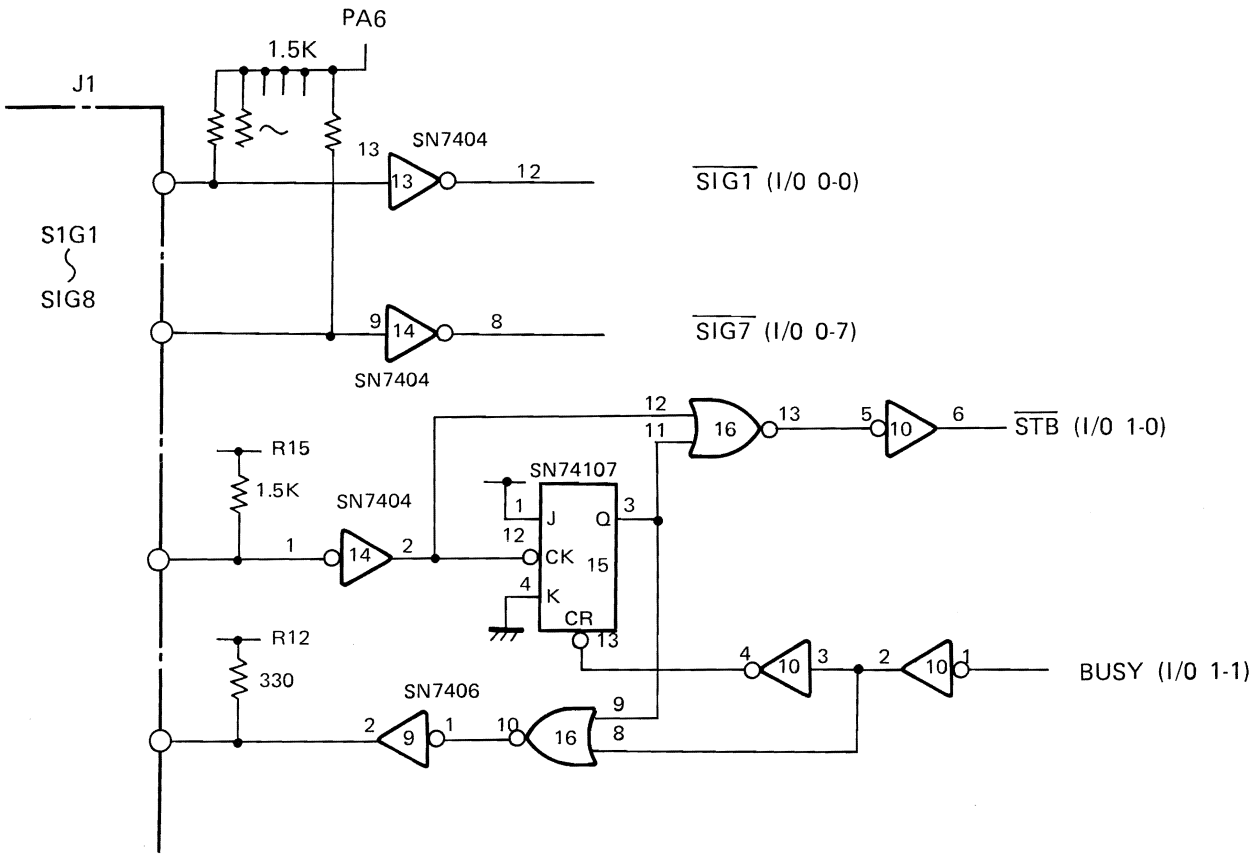


Figure 6. Input/Output Circuit

See Page 8.

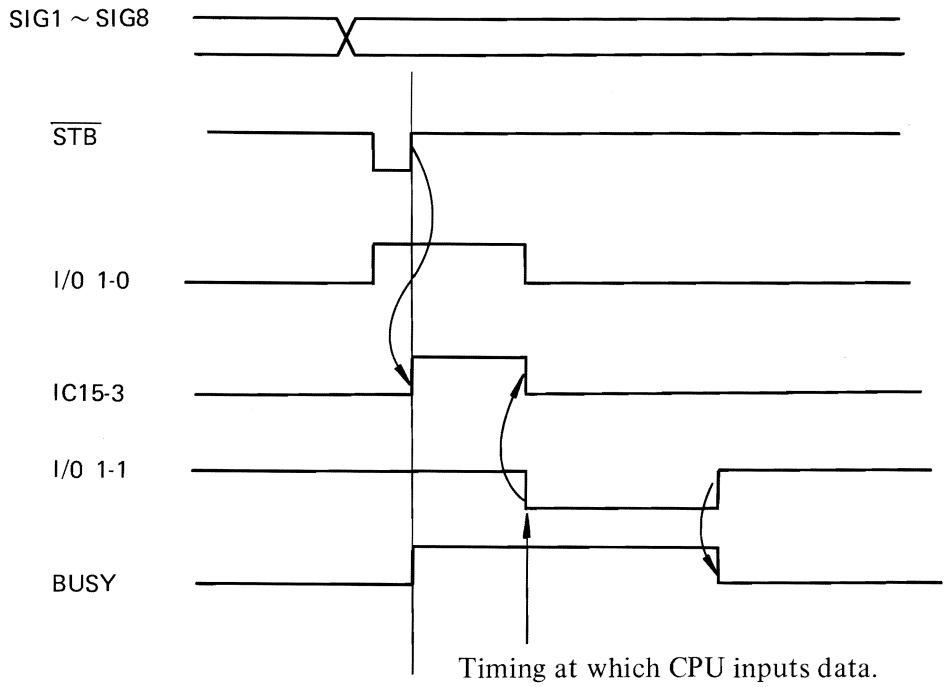


Figure 7. Input/output Timing

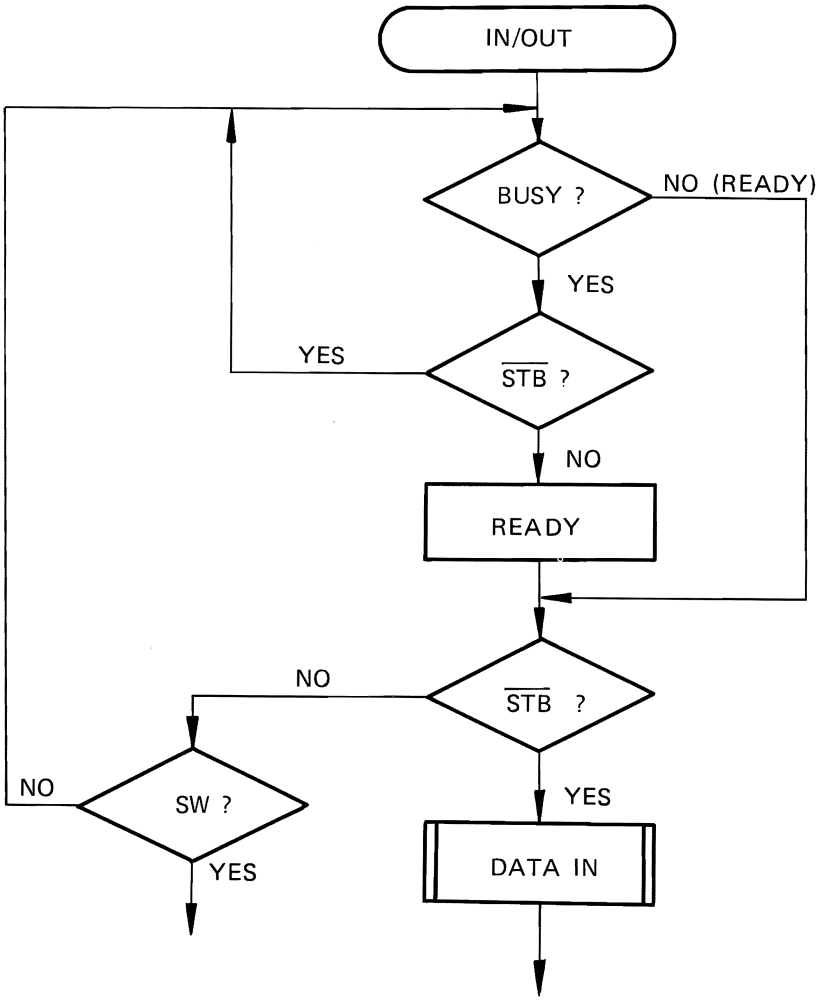


Figure 8. D ATA INPUT/STATUS OUTPUT

See Page 9.

Switch Circuit

This unit incorporates the following switches;

a)	One feed switch	Paper feed
b)	Four pen positions	Movement of pen position
c)	One interlock switch	Stops operation when the front cover is open.

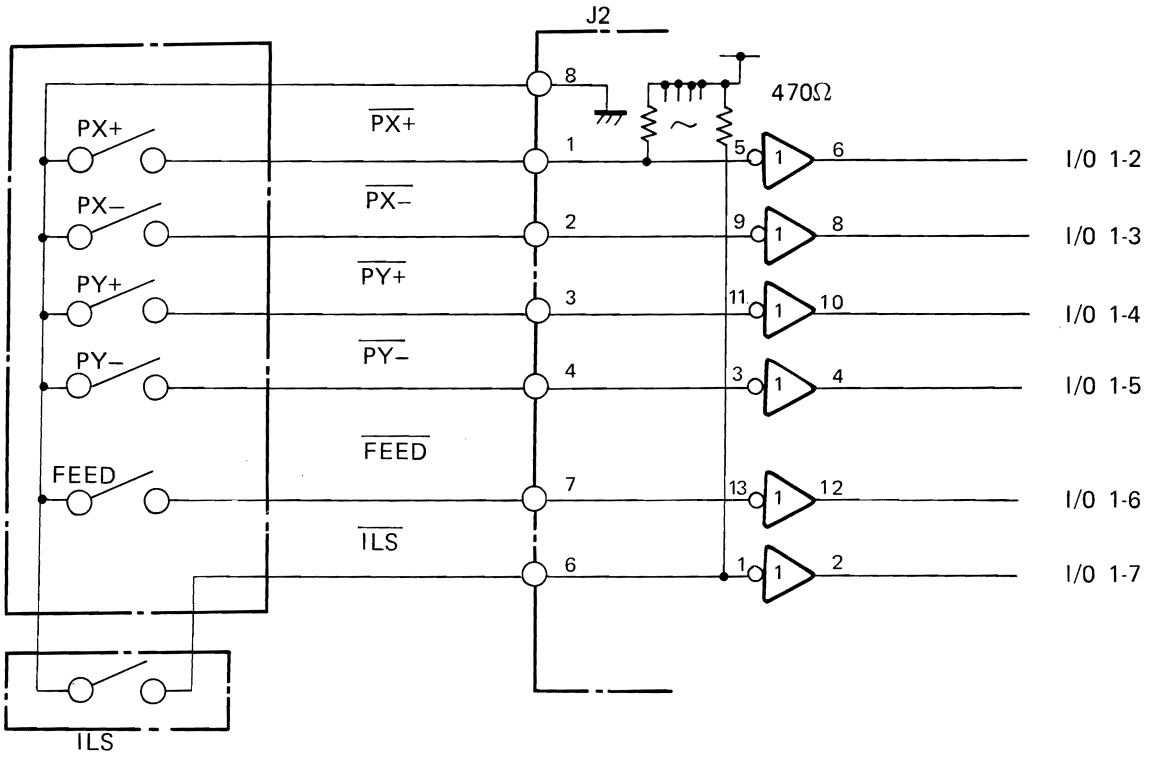


Figure 9. Switch Input Circuit

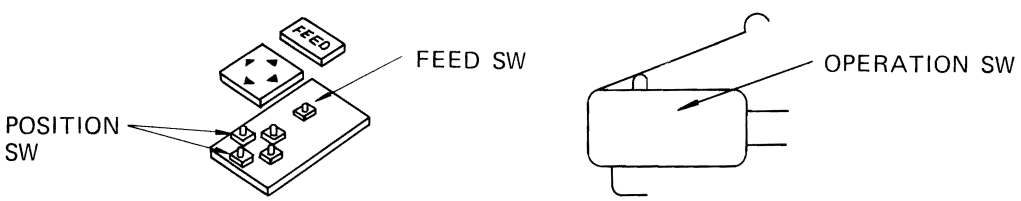


Figure 10.

See Page 10.

(1) Each switch is normally-open. When the feed switch or one pen position switch is pushed, an "L" signal is applied to the input of IC1, and the resulting "H" is inputted to the I/O of CPU. When the front cover is opened, the interlock switch is closed, and an "H" signal is input to CPU through IC1.

(2) The CPU checks for reception of the switch input signals: if the conditions are met, a command corresponding to the switch input signal is issued to each motor and 105 solenoid, and the ready status is switched over to "busy" status.

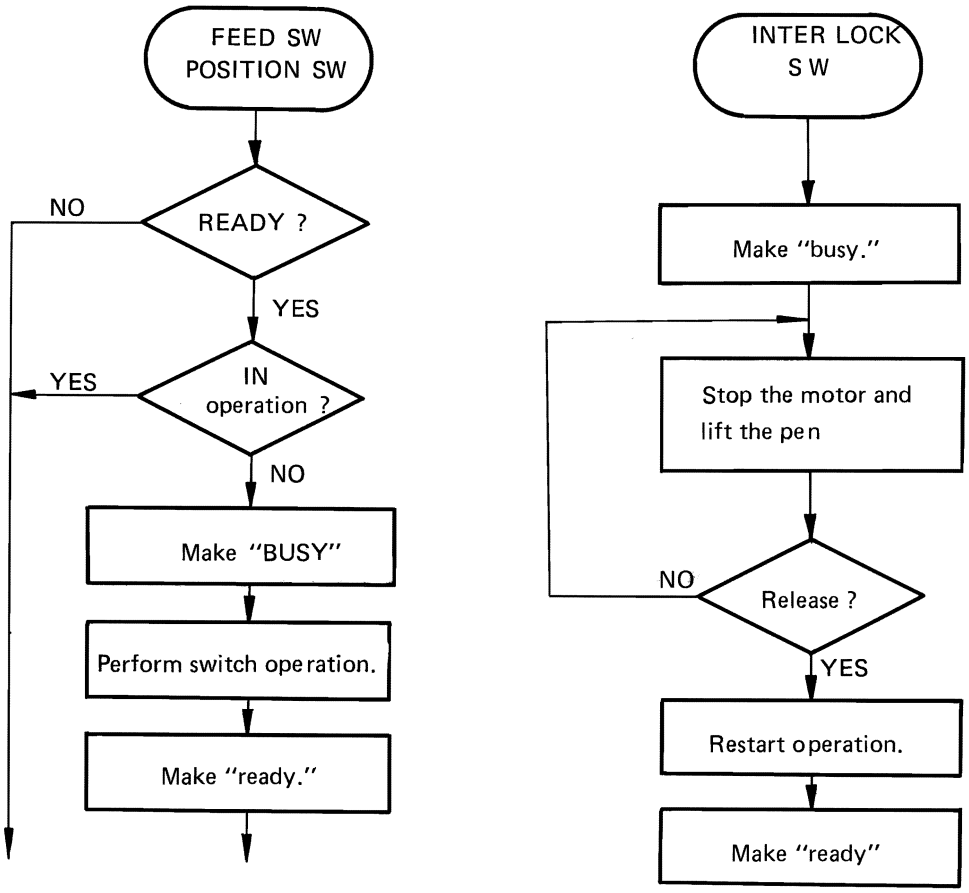


Figure 11. Switch Operation

Motor Drive Circuit

This unit uses two phase-exciting pulse motors (W1 and W2).
A total of 12 lines come out of each motor; 8 drive lines and 4 common lines. These lines are connected to the drive circuit through connectors J4 and J5.

(1) Data concerning the exciting phase of the motor is written to the ROM (consisting of IC2 and IC3) to drive the X-axis and Y-axis motors. The exciting phase of the X-axis motor is specified by 0 to 3 of I/O 4, and the phase of the Y-axis motor is specified by 4 to 7 of I/O 4, and as each data bus is activated the relevant transistor is turned ON to drive the motor.

(2) There are three types of voltages applied to each motor.
a) Plotter Mode
+4 V is applied to the motor through D11 to D13 shown in Figure 12, and thus operates the motor.

See Page 11.

b) Character Mode

When the excitation of the motor is to be changed to perform printing, an "L" signal is sent from I/O 5–5 of PIO, as shown in Figure 12. An inverter turns it to "H" and TR25 turns on, and thus transistor TR23 turns ON, and +13 VM is supplied to the motor through D10. However, this is only for the initial 100 μS for changing over the exciting phase as shown in Figure 12 (2).

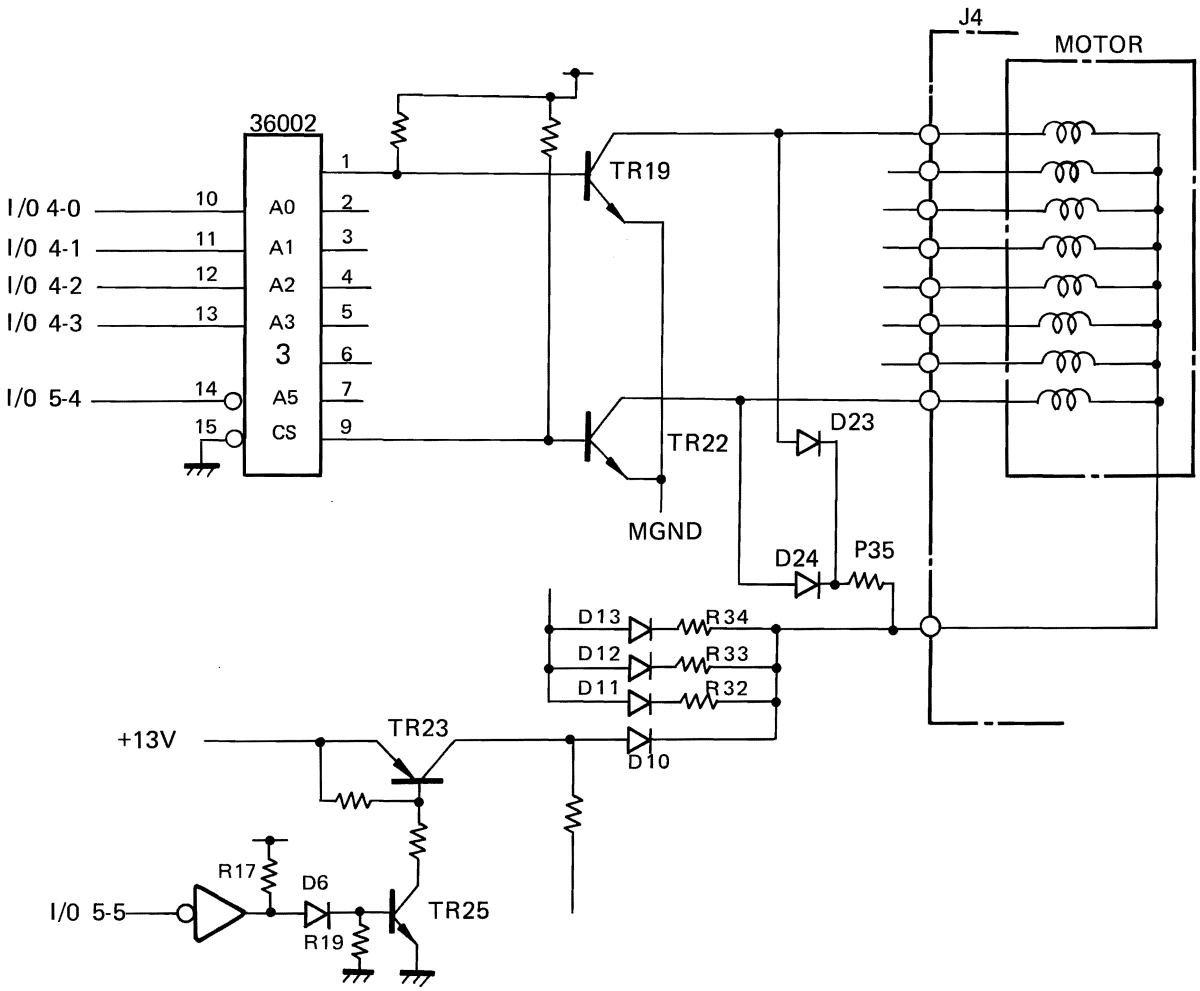
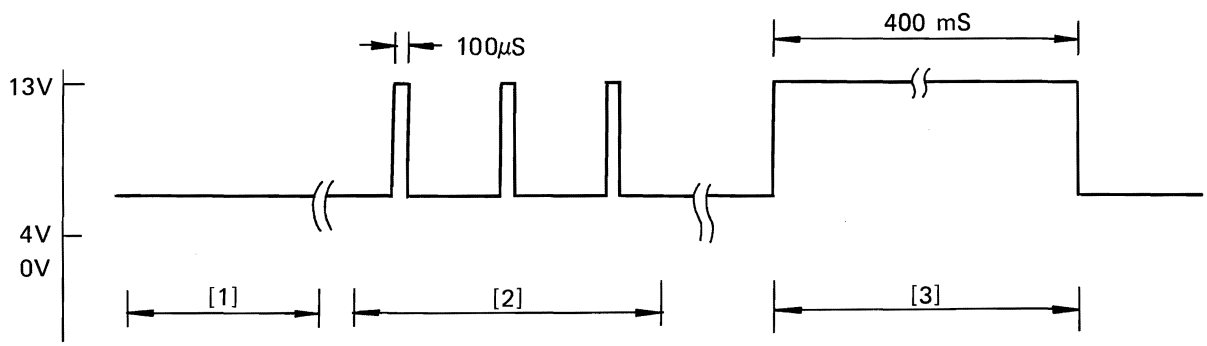


Figure 12. Motor Drive Circuit



[1] Plotter mode
[2] Character mode
[3] Carriage mode

Figure 13.

See Page 12.

c) Carriage Mode
When a CR code is inputted, high-speed CR is accomplished when the carriage is shifted more than 192 steps from the left margin. +13 VM is then supplied to the motor for up to 400 mS. The CR mode is limited to the X-axis motor only.

Pen Up-Down Solenoid Drive Circuit

One pen up-down solenoid is used to press the ball-point pen onto the paper. The circuit is shown in Figure 14.
On start-up a ZS signal is sent out of I/O 5–3, and the solenoid is driven directly as TR14 turns ON. The duration is approx. 6 mS. After the lapse of 6 ms, a $\overline{Z}$ signal is sent out of I/O 5–2 keeping TR24 ON. The output of TR24 is voltage-divided by R31, and the resultant voltage is applied to the solenoid to hold the ball-point pen.

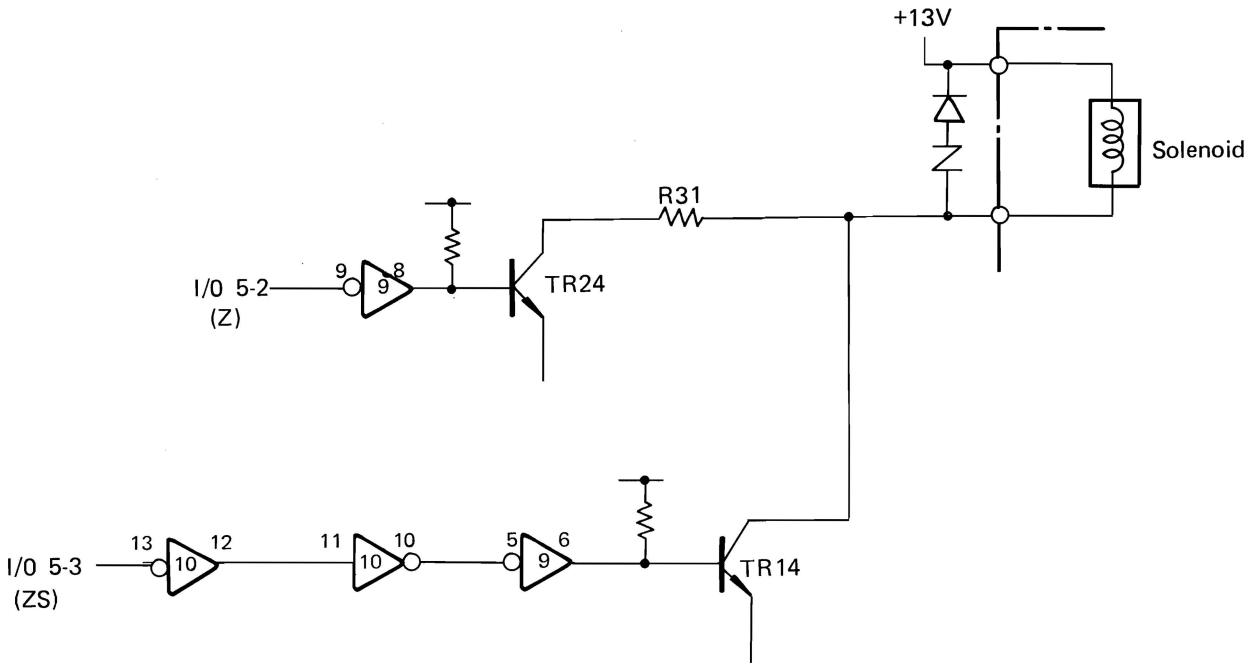


Figure 14. Pen Up-Down Solenoid Drive Circuit

Emergency Gate (EG)

The EG circuit is energized to turn off all power supply voltages when a higher voltage is applied to the pulse motors or solenoid for a longer time than specified.
In Figure 15, D2 and D3 are connected to the collector of the switching transistor, applying 13 VM to both the X-axis and Y-axis motors.
Normally, the anodes of D2 and D3 are kept at 0 V. When an higher voltage is applied to a motor, the anode voltages become 9 ~ 12 V, and thus TR3 turns ON and TR2 OFF. Thus, C2 is charged up through R2.
When this charge voltage reaches 8 to 9 V (or more), TR1 turns ON generating $\overline{EG}$ signal. The $\overline{EG}$ signal duration should be 700 to 1400 mS; if shorter than this, C2 is discharged by TR2 through R1.
The $\overline{ZE}$ signal is to operate the CR timer so the $\overline{EG}$ circuit does not operate while the $\overline{ZS}$ (max. 6 mS) of the magnet drive circuit is applied.

See Page 13.

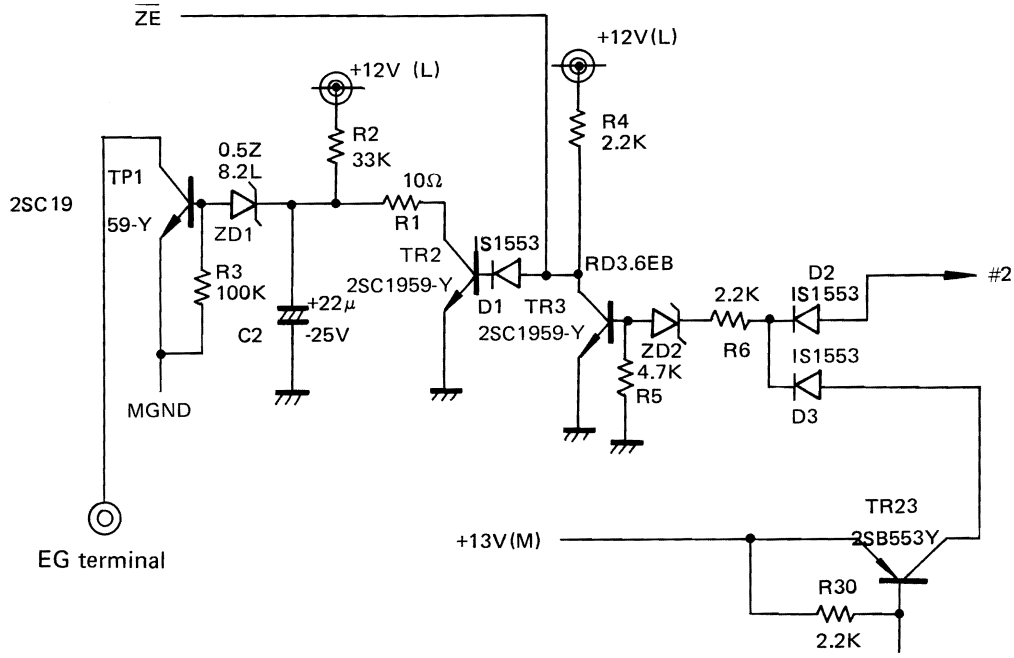
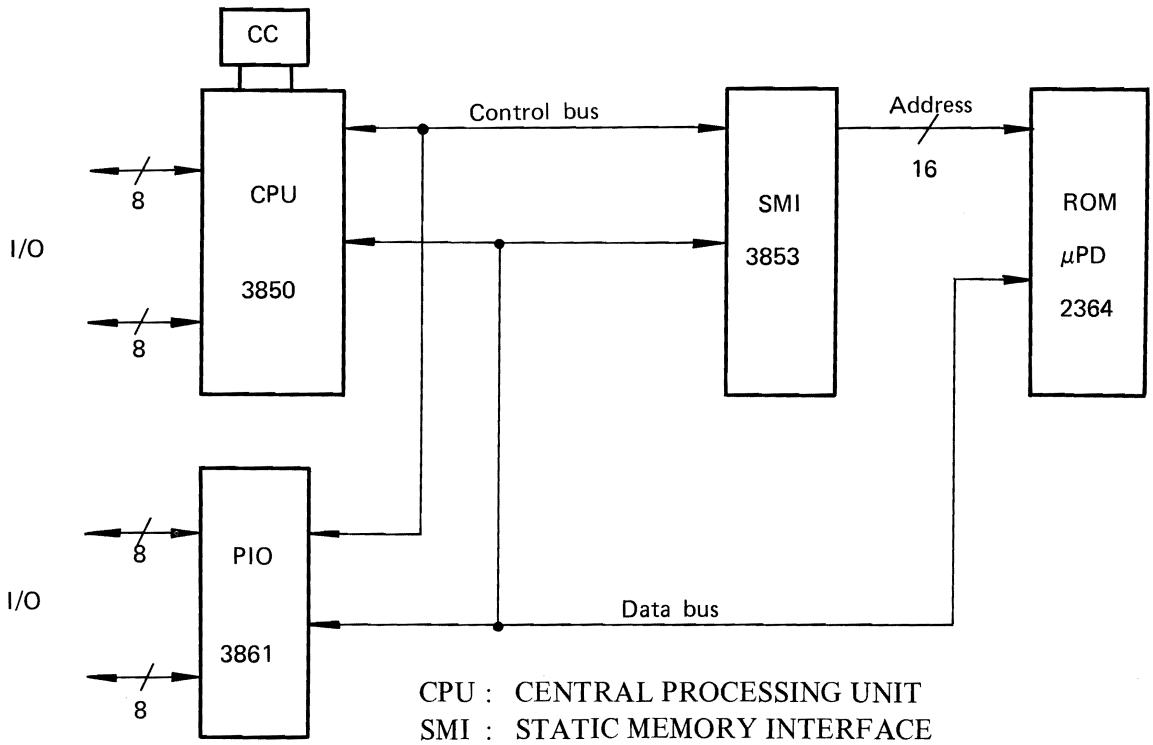


Figure 15. EG Circuit

CPU Circuit

This unit uses an F8 as the control μP.

(1) Configuration



CPU : CENTRAL PROCESSING UNIT
SMI : STATIC MEMORY INTERFACE
PIO : PERIPHERAL INPUT/OUTPUT
ROM: READ ONLY MEMORY
CC : CLOCK CIRCUIT

Figure 16. F8 System

See Page 14.

(2) Oscillator Circuit (cc)

The system clock oscillator uses an quartz oscillator (output frequency is 1.79 MHz ±30 kHz.)

The output frequency of this oscillator can be checked at No. 1 pin of the CPU (3850) as shown in Figure 17.

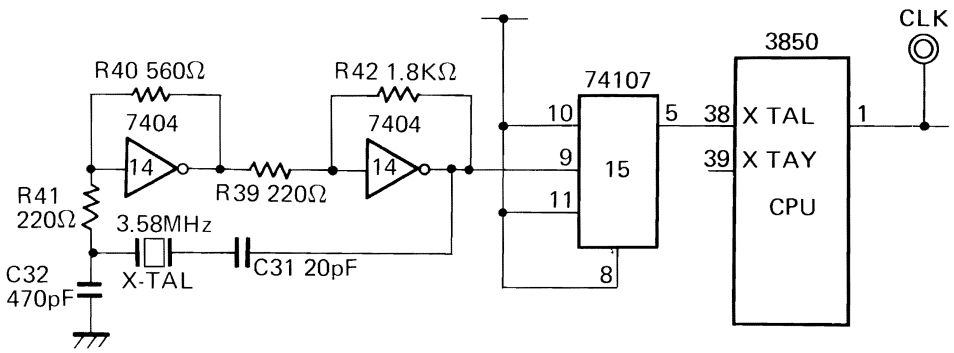


Figure 17.

(3) CPU (3850)

The CPU is provided with ROM of 64 bytes to perform various arithmetic operations, as well as with two 8-bit I/O's. In addition, the CPU has the function of controlling the peripheral IC's.

(4) SMI (3853)

In the F8 system, the SMI supplies addresses (16 bits) to the external memories.

(5) PIO (3861)

The PIO is an expansion I/O, which contains two 8-bit I/O ports.

(6) ROM (μPD2364)

A mask ROM of 8 K bytes, which contains control programs.

4. POWER SUPPLY UNIT

DC Output

Item \ Name	Voltage	Purpose
+ 5V (LOGIC)	+ 5V ± 0.25V	TTL IC. μCPU
+12V (LOGIC)	+ 12V ± 0.6V	μCPU
+ 4V (LOGIC)	+ 4V ± 0.3V	Motor
+13V (LOGIC)	12.6V ± 0.5V	Motor Magnet

Note : The output voltages are measured during non-operation time.

See Page 15.

Control Input EG (Emergency Gate)

The DC output is reduced, when the level at the EG input terminal goes "L", with a high voltage applied to the motors or magnetic circuit for more than the specified time.

Protective Circuits

(1) Protection of DC output
If even one output is short circuited or an overcurrent flows, all the output voltages are reduced, and the current is suppressed.

(2) Protection of Primary
If an input current of 2.5 A or more flows continuously, the circuit breaker operates, to shut off the primary.

Connectors for Input/Output

Refer to the general Wiring Diagram.

See Page 17.

PLOTTER/PRINTER ASSEMBLIES

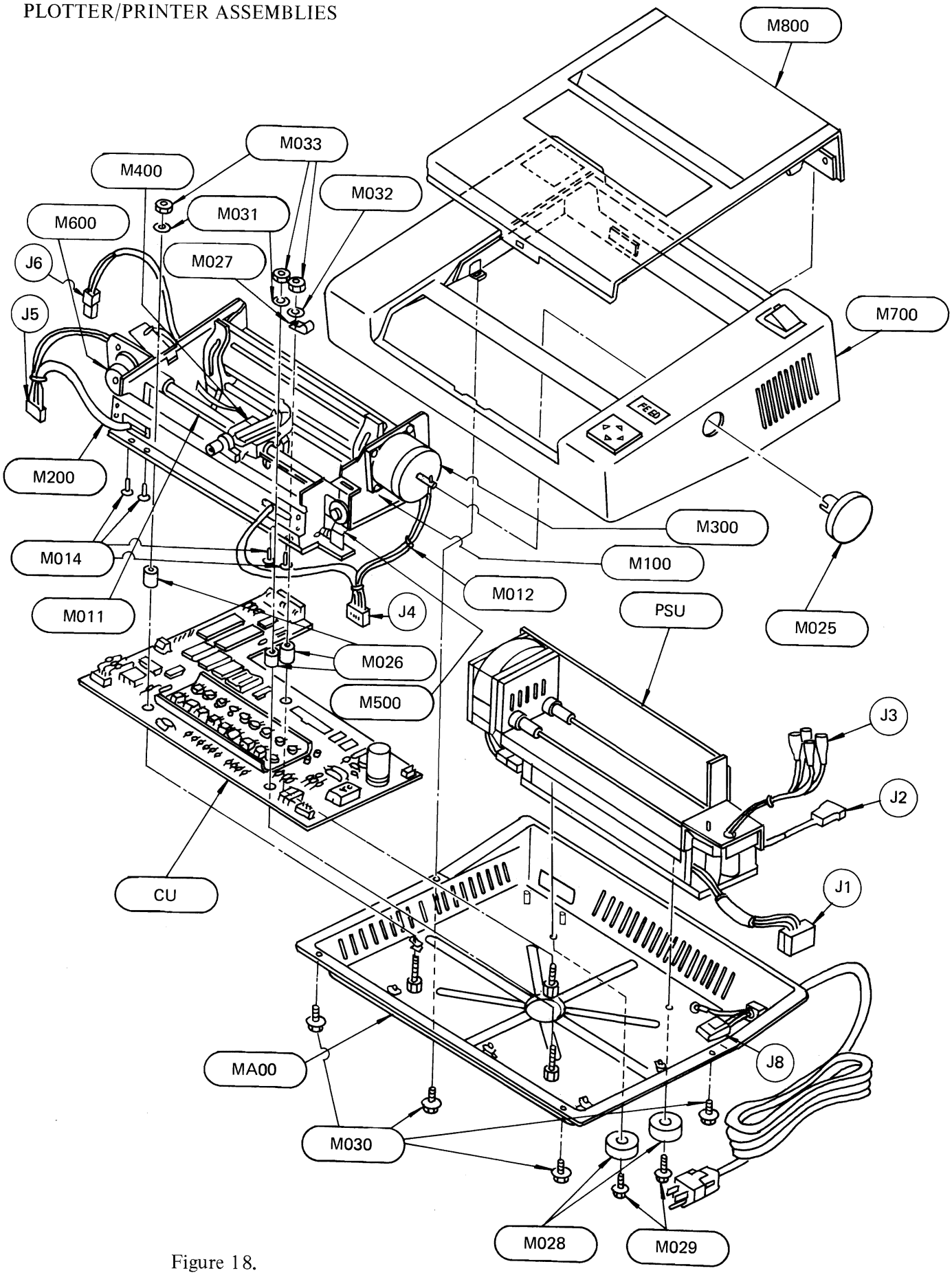


Figure 18.

See Page 19.
PRINTER UNIT ASSEMBLIES

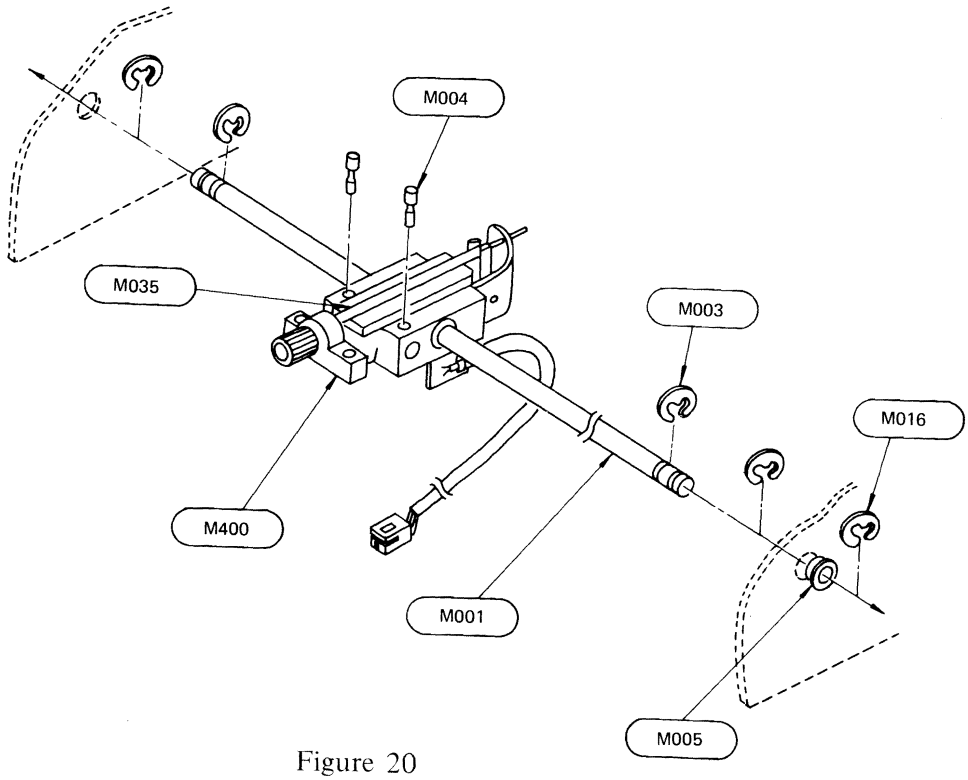


Figure 20

See Page 21.
BOTTOM COVER ASSEMBLIES

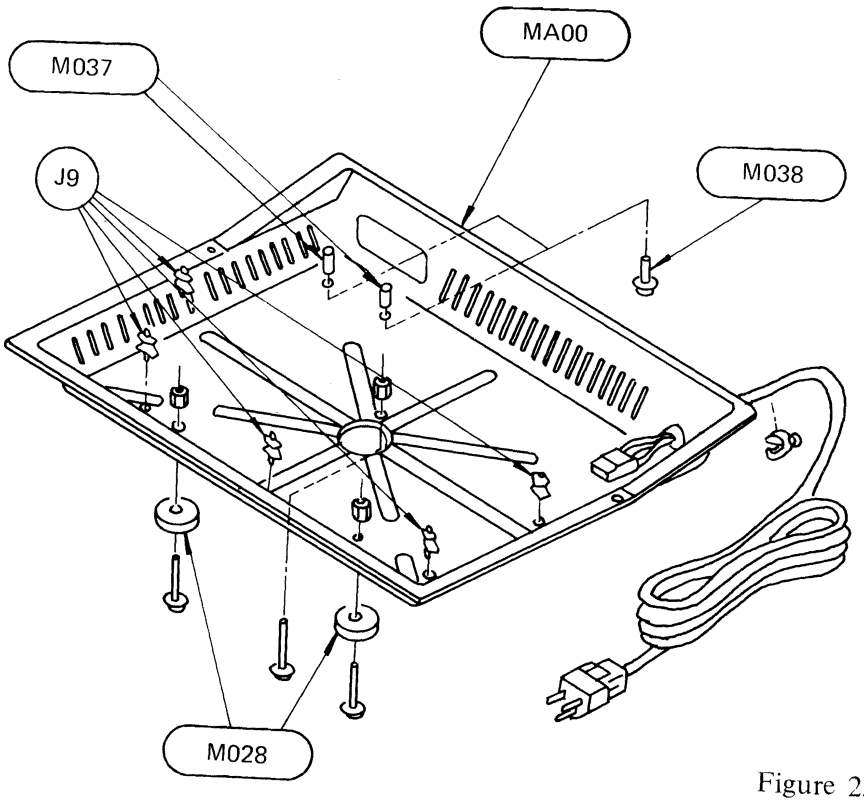


Figure 23

See Page 31-35.

6. PARTS LIST (Electrical parts list)

Ref. No.	Description				Manufacturer Part Number
CU	Control Unit				36502000
C1	Electrolytic Capacitor	25V	4700μF	+30% −10%	E6035023
C2	Electrolytic Capacitor	25V	22μF	+50% −10%	E6033050
C3	Ceramic Capacitor	50V	0.1μF	+80% −20%	E6031044
C4	Ceramic Capacitor	50V	0.1μF	+80% −20%	E6031044
C5	Ceramic Capacitor	50V	0.1μF	+80% −20%	E6031044
C6	Ceramic Capacitor	50V	0.1μF	+80% −20%	E6031044
C7	Ceramic Capacitor	50V	0.1μF	+80% −20%	E6031044
C8	Ceramic Capacitor	50V	0.1μF	+80% −20%	E6031044
C9	Ceramic Capacitor	50V	0.1μF	+80% −20%	E6031044
C12	Ceramic Capacitor	50V	0.1μF	+80% −20%	E6031044
C13	Ceramic Capacitor	50V	0.1μF	+80% −20%	E6031044
C14	Ceramic Capacitor	50V	0.1μF	+80% −20%	E6031044
C15	Ceramic Capacitor	50V	0.1μF	+80% −20%	E6031044
C16	Ceramic Capacitor	50V	0.1μF	+80% −20%	E6031044
C17	Tantalum Electrolytic Capacitor	10V	10μF	± 20%	E6033051
C18	Ceramic Capacitor	50V	0.1μF	+80% −20%	E6031044
C19	Ceramic Capacitor	50V	0.1μF	+80% −20%	E6031044
C23	Electrolytic Capacitor	25V	22μF	+50% −10%	E6033050
C24	Tantalum Electrolytic Capacitor	20V	47μF	± 20%	E6033035
C25	Tantalum Electrolytic Capacitor	20V	47μF	± 20%	E6033035
C26~C30	Ceramic Capacitor	50V	0.1μF	+80% −20%	E6031044
C31	Plastic Film Capacitor	150V	20pF	± 10%	E6030014
C32	Plastic Film Capacitor	150V	47pF	± 10%	E6030009
C33	Plastic Film Capacitor	630V	0.1μF	± 10%	E6031057
C34~C43	Ceramic Capacitor	50V	470pF	± 10%	E6030029

Ref. No.	Description		Manufacturer Part Number
C44	Plastic Film Capacitor	630V 0.01μF ± 20%	E6031056
CLK	P.C.B. Check Pin	171255–1	E1020076
GND	P.C.B. Check Pin	171255–1	E1020076
D1	Diode	1S1553	E4020004
D2	Diode	1S1553	E4020004
D3	Diode	1S1553	E4020004
D4	Diode	1S1553	E4020004
D5	Diode	1S2080	E4022001
D6	Diode	1S1553	E4020004
D7	Diode	3BZ61	E4022005
D8	Diode	3BZ61	E4022005
D9	Diode	3BZ61	E4022005
D10	Diode	3BZ61	E4022005
D11	Diode	3BZ61	E4022005
D12	Diode	3BZ61	E4022005
D13	Diode	3BZ61	E4022005
D14	Diode	3BZ61	E4022005
D15	Diode	1S2080	E4022001
D16	Diode	1S2080	E4022001
D17	Diode	1S2080	E4022001
D18	Diode	1S2080	E4022001
D19	Diode	1S2080	E4022001
D20	Diode	1S2080	E4022001
D21	Diode	1S2080	E4022001
D22	Diode	1S2080	E4022001
D23	Diode	1S2080	E4022001
D24	Diode	1S2080	E4022001
D25	Diode	1S2080	E4022001
D26	Diode	1S2080	E4022001
D27	Diode	1S2080	E4022001
D28	Diode	1S2080	E4022001
D29	Diode	1S2080	E4022001
D30	Diode	1S2080	E4022001
HSI	Heat Sink		36002002
IC1	IC	SN7404 or Equivalent	E4030009
IC2	ROM	R36002	R3600002
IC3	ROM	R36002	R3600002
IC4	PIO	MK3861	E4033019
IC8	ROM	R36021	R3600021
IC9	IC	SN7406 or Equivalent	E4030012
IC10	IC	SN7404 or Equivalent	E4030009

Ref. No.	Description		Manufacturer Part Number
IC11	MI	MK3853	E4033018
IC12	CPU	MK3850	E4033017
IC13	IC	SN7404 or Equivalent	E4030009
IC14	IC	SN7404 or Equivalent	E4030009
IC15	IC	SN74107 or Equivalent	E4030011
IC16	IC	SN7402 or Equivalent	E4030029
J1	Connector	57L-40360-17 (36PIN)	E1022251
J2	Connector	HKP-8M2-3AT (8PIN)	E1020130
J3	Connector	350539-1 (2PIN)	E1022170
J4	Connector	HKP-16M2-6AT (16PIN)	E1020129
J5	Connector	HKP-16M2-6AT (16PIN)	E1020129
J6	Connector	1-380991-0 (10PIN)	E1022171
PCB	Control P.C.B.		36502001
R1	Carbon Resistor	1/4W 10Ω J	E6010030
R2	Carbon Resistor	1/4W 33KΩ J	E6014023
R3	Carbon Resistor	1/4W 100KΩ J	E6015017
R4	Carbon Resistor	1/4W 2.2KΩ J	E6013028
R5	Carbon Resistor	1/4W 4.7KΩ J	E6013032
R6	Carbon Resistor	1/4W 2.2KΩ J	E6013028
R7	Carbon Resistor	1/4W 1KΩ J	E6013025
R8	Carbon Resistor	1/4W 2.2KΩ J	E6013028
R9	Metal Film Resistor	1W 150Ω J	E6012043
R10	Carbon Resistor	1/4W 2.2KΩ J	E6013028
R11	Carbon Resistor	1/4W 10KΩ J	E6014013
R12	Carbon Resistor	1/4W 330Ω J	E6012037
R13	Carbon Resistor	1/4W 2.2KΩ J	E6013028
R14	Carbon Resistor	1/4W 1.5KΩ J	E6013026
R16	Carbon Resistor	1/4W 1KΩ J	E6013025
R17	Carbon Resistor	1/4W 1KΩ J	E6013025
R18	Carbon Resistor	1/4W 1KΩ J	E6013025
R19	Carbon Resistor	1/4W 2.2KΩ J	E6013028
R20	Metal Film Resistor	1W 150Ω J	E6012043
R21	Carbon Resistor	1/4W 2.2KΩ J	E6013028
R22	Carbon Resistor	1/4W 1KΩ J	E6013025
R23	Carbon Resistor	1/4W 470Ω J	E6012026
R24	Carbon Resistor	1/4W 1KΩ J	E6013025
R25	Carbon Resistor	1/4W 1KΩ J	E6013025
R26	Wire Wound Resistor	2W 0.1Ω K	E6010020
R27	Wire Wound Resistor	2W 0.1Ω K	E6010020
R28	Wire Wound Resistor	2W 0.1Ω K	E6010020
R29	Carbon Resistor	1/4W 1KΩ J	E6013025

Ref. No.	Description	Manufacturer Part Number
R30	Carbon Resistor 1/4W 2.2KΩ J	E6013028
R31	Wire Wound Resistor 5W 33Ω J	E6010019
R32	Wire Wound Resistor 2W 0.1Ω K	E6010020
R33	Wire Wound Resistor 2W 0.1Ω K	E6010020
R34	Wire Wound Resistor 2W 0.1Ω K	E6010020
R35	Wire Wound Resistor 2W 0.5Ω K	E6010026
R36	Carbon Resistor 1/4W 1KΩ J	E6013025
R37	Carbon Resistor 1/4W 220Ω J	E6012025
R38	Carbon Resistor 1/4W 2.2KΩ J	E6013028
R39	Carbon Resistor 1/4W 220Ω J	E6012025
R40	Carbon Resistor 1/4W 560Ω J	E6012062
R41	Carbon Resistor 1/4W 220Ω J	E6012025
R42	Carbon Resistor 1/4W 1.8KΩ J	E6013027
RA1	Resistor Array 1/8W 6 x 470Ω K	E6012045
RA2	Resistor Array 1/8W 8 x 1KΩ K	E6013059
RA3	Resistor Array 1/8W 8 x 1KΩ K	E6013059
RA4	Resistor Array 1/8W 8 x 4.7KΩ K	E6013069
RA6	Resistor Array 1/8W 8 x 1.5KΩ K	E6013071
TR1	Transistor 2SC1959-Y	E4000005
TR2	Transistor 2SC1959-Y	E4000005
TR3	Transistor 2SC1959-Y	E4000005
TR4	Transistor 2SC1959-Y	E4000005
TR5	Transistor 2SD633	E4003007
TR6	Transistor 2SD633	E4003007
TR7	Transistor 2SD633	E4003007
TR8	Transistor 2SD633	E4003007
TR9	Transistor 2SD633	E4003007
TR10	Transistor 2SD633	E4003007
TR11	Transistor 2SD633	E4003007
TR12	Transistor 2SD633	E4003007
TR13	Transistor 2SD633	E4003007
TR14	Transistor 2SD633	E4003007
TR15	Transistor 2SB553-Y	E4003009
TR16	Transistor 2SD633	E4003007
TR17	Transistor 2SD633	E4003007
TR18	Transistor 2SD633	E4003007
TR19	Transistor 2SD633	E4003007
TR20	Transistor 2SD633	E4003007
TR21	Transistor 2SD633	E4003007
TR22	Transistor 2SD633	E4003007
TR23	Transistor 2SB553-Y	E4003009

Ref. No.	Description		Manufacturer Part Number
TR24	Transistor	2SD633	E4003007
TR25	Transistor	2SC1959-Y	E4000005
TR26	Transistor	2SC1959-Y	E4000005
TR27	Transistor	2SC1959-Y	E4000005
ZD1	Zener Diode	05Z 8.2L	E4040015
ZD2	Zener Diode	RD3.6EB	E4040017
ZD3	Zener Diode	RD3.6EB	E4040017
ZNR1	Surge Absorber	ERZ-C14DK330	E6040019
X-TAL	Quartz Oscillator	3.579545MHz (HC-18C)	E2080006

See Page 36 and 37.
(Mechanical parts list)

Ref. No.	Description		Manufacturer Part Number
M100	Frame Unit Ass'y		36508000
M200	Margin Card Ass'y		36001800
M300	Platen Ass'y		36001200
(M301)	Pulse Motor		36001209
(M302)	Platen		36001220
(M303)	Contact	HKP-F113	E1022093
(M304)	Connector	HKP-16FS02-6AT (16PIN)	E1022110
(M305)	Hex Socket Headless Set-Screw (Black) M3 x 6		0507300608
(M306)	Spring Pin	ϕ2 x 6	0602201600
M400	Pen Head Ass'y		36501100
M500	Tension Pulley Ass'y		36501300
M600	Motor Pulley Ass'y		36001900
(M601)	Motor Pulley		36001901
(M602)	Contact	HKP-F113	E1022093
(M603)	Connector	HKP-16FS02-6AT (16PIN)	E1022110
(M604)	Pulse Motor	23PR-E202-02	E2002007
(M605)	Hex Socket HD. Set-Screw (Black) M4 x 6		0507400608
M700	Top Cover Ass'y		36504100
M800	Front Cover Ass'y		36114200
M900	Switch Board Ass'y		36004300
MA00	Bottom Cover Ass'y		36500100
M001	Guide Shaft		36501002
M003	Retaining Ring	E-6	0703006000
M004	Wire Clamp Shaft		36001008
M005	Guide Shaft Holder		36001009
M006	Tension Spring		36001013
M007	Spring Holder		36501003
M008	Motor Clamp		36001015
M009	Motor Clamp		36001016
M010	Motor Spacer		36001017
M011	Tension Wire		36001019
M012	Wire Clamp (Convex) CV–70		E0025011
M013	Pan HD. Screw with SP. Washer M4 x 10		
M014	Pan HD. Screw with SP. Washer and Washer M3 x 6		
M016	Retaining Ring	E-6	0703006000
M017	X Y Switch Panel		36114001
M018	Feed Switch Panel		36114002
M019	Power Switch	2-WIXII/WR	E2020051
M020	Micro Switch	VM-32PDM3	E2022036
M021	Pan HD. Screw with SP. Washer M3 x 16		0100301611

Ref. No.	Description		Manufacturer Part Number
M022	Pan HD. Screw with SP. Washer and Washer M3 x 6		0300300611
M023	Name Plate		36110001
M024	Rating Plate		36500001
M025	Platen Knob		36110003
M026	Frame Collar		36000005
M027	Clip (Nylon)	SN-2A	E0025009
M028	Rubber Foot	N-309	M1000008
M029	Pan HD. Screw with Washer M4 x 10		0200401011
M030	Pan HD. Screw with SP. Washer and Washer M4 x 10		0300401011
M031	Spring Washer	M4	0700004021
M032	Washer	M4	0700104011
M033	Hex Nut	M4	0702004011
M034	Dust Cover		36000002
M035	Space Pen (Black)		Z0000005
M036	Rolled Paper	30m	Z0000002
M037	Connector Support		36500102
M038	Pan HD. Screw with SP. Washer M3 x 5		0100300511

Additional (Power Supply Parts List 120V AC, 100V AC Model Only)

Ref. No.	Description		Manufacturer Part Number
PSU	Power Supply Unit	(120V AC Model)	36503000
	Power Supply Unit	(100V AC Model)	36533000
	Holder Shaft		36003001
	Holder Collar		36003002
	Retaining Ring E-3		0703003000
	Power Supply Assy PS-465	(120V AC Model)	36503100
	Power Supply Unit PS-467	(100V AC Model)	36533100
Q1	Transistor 2SC2834		S0000005
Q2	Transistor 2SA1008-L		S0000002
Q3	Transistor 2SA1008-L		S0000002
Q4	Transistor 2SC1815-GR		S0000003
Q5	Transistor 2SC1815-GR		S0000003
Q6	Transistor 2SC1815-GR		S0000003
Q7	Transistor 2SC1815-GR		S0000003
Q8	Transistor 2SC1815-GR		S0000003
Q9	Transistor 2SC1815-GR		S0000003
Q10	Transistor 2SC1815-GR		S0000003
Q11	Transistor 2SA950-Y		S0000004
IC1	IC μPC78M12H		S2800001
IC2	IC TL430CLP		S2800002
TH1	Thermister ERT-D7FFK8RO		S0108001
PH1	Photo Coupler ON3110-Q		S0005001
PH3	Photo Coupler ON3110-Q		S0005001
PH2	Photo Coupler S13MD1		S0005002
DZ1	Zener Diode 05Z12u		S0004001
DZ2	Zener Diode 05Z5.6u		S0004002
DZ3	Zener Diode 05Z6.2u		S0004003
DZ4	Zener Diode 05Z6.2u		S0004003
DZ5	Zener Diode 05Z2.7Y		S0004004
RC1	Diode 4G4B41		S0003002
RC2	Diode ESAC83-004		S0003003
RC3	Diode 5CH2M		S0003001
RC4	Diode 5CH2M		S0003001
D1	Diode 1S1835		S0002001
D2	Diode 3DZ61		S0002002
D3	Diode 1SS54		S0002003
D4	Diode 1S1835		S0002001
D5	Diode 1S1835		S0002001
D6	Diode 1SS54		S0002003
D7	Diode 1SS54		S0002003
D8	Diode 1SS54		S0002003

Ref. No.	Description				Manufacturer Part Number
D9	Diode 1S1887				S0002004
D10	Diode 1S1887				S0002004
D11	Diode 1SS54				S0002003
D12	Diode 1S1835				S0002001
D13	Diode 1SS54				S0002003
D14	Diode 1SS54				S0002003
D15	Diode 1S1835				S0002001
CR1	Thyristor 5P05M				S0001001
C1	Ceramic Capacitor	400V AC	4700PF	+80% −20%	S0320001
C2	Ceramic Capacitor	400V AC	4700PF	+80% −20%	S0320001
C3	Plastic Film Capacitor	125V	0.1μF	± 20%	S0321001
C4	Electrolytic Capacitor	200V	470μF	+100% − 10%	S0318001
C5	Plastic Film Capacitor	250V	2.2μF	± 10%	S0312001
C6	Plastic Film Capacitor	200V	0.047μF	± 10%	S0311001
C7	Ceramic Capacitor	2KV	1000PF	± 10%	S0319001
C8	Ceramic Capacitor	2KV	1000PF	± 10%	S0319001
C9	Electrolytic Capacitor	50V	10μF	± 20%	S0304001
C10	Electrolytic Capacitor	250V	1μF	± 20%	S0305001
C11	Plastic Film Capacitor	50V	0.01μF	± 5%	S0311003
C12	Electrolytic Capacitor	50V	10μF	± 20%	S0304001
C13A	Electrolytic Capacitor	16V	1000μF	± 20%	S0315001
C13B	Electrolytic Capacitor	16V	1000μF	± 20%	S0315001
C13C	Electrolytic Capacitor	16V	1000μF	± 20%	S0315001
C13D	Electrolytic Capacitor	16V	1000μF	± 20%	S0315001
C14A	Electrolytic Capacitor	35V	1000μF	± 20%	S0304006
C14B	Electrolytic Capacitor	35V	1000μF	± 20%	S0304006
C15	Electrolytic Capacitor	25V	22μF	± 20%	S0304002
C16	Plastic Film Capacitor	50V	3300PF	± 5%	S0311002
C17	Electrolytic Capacitor	25V	220μF	± 20%	S0304003
C18	Electrolytic Capacitor	16V	470μF	± 20%	S0304004
C19A	Electrolytic Capacitor	25V	470μF	± 20%	S0304007
C19B	Electrolytic Capacitor	25V	470μF	± 20%	S0304007
C20	Electrolytic Capacitor	16V	100μF	± 20%	S0304005
C21	Electrolytic Capacitor	50V	1μF	± 20%	S0310001
C22	Electrolytic Capacitor	50V	0.1μF	± 20%	S0316001
C23	Electrolytic Capacitor	16V	330μF	± 20%	S0315002
C24	MD Capacitor	630V	0.01μF	± 20%	S0322001
C25	MD Capacitor	630V	0.01μF	± 20%	S0322001
C26	Electrolytic Capacitor	50V	0.1μF	± 20%	S0316001

Ref. No.	Description				Manufacturer Part Number
R1A	Metal Film Resistor	3W	33KΩ	J	S0105506
R1B	Metal Film Resistor	3W	33KΩ	J	S0105506
R2	Metal Film Resistor	1W	56Ω	J	S0105501
R3	Carbon Resistor	1/4W	10KΩ	J	E6014013
R4	Wire Wound Resistor	5W	100Ω	J	S0104002
R5	Wire Wound Resistor	2W	0.22Ω	K	S0104001
R6	Carbon Resistor	1/4W	1KΩ	J	E6013025
R7	Carbon Resistor	1/4W	1KΩ	J	E6013025
R8	Carbon Resistor	1/4W	6.8KΩ	J	E6013008
R9	Metal Film Resistor	1W	270Ω	J	S0105507
R10	Metal Film Resistor	1W	1Ω	J	S0105001
R11A	Metal Film Resistor	3W	33KΩ	J	S0105506
R11B	Metal Film Resistor	3W	33KΩ	J	S0105506
R12	Metal Film Resistor	2W	47KΩ	G	S0105503
R13	Carbon Resistor	1/4W	100Ω	J	E6012001
R14	Carbon Resistor	1/4W	4.7KΩ	J	E6013005
R15	Carbon Resistor	1/4W	100KΩ	J	E6015017
R16	Carbon Resistor	1/4W	1.5KΩ	J	E6013012
R17	Carbon Resistor	1/4W	10KΩ	J	E6014013
R18	Metal Film Resistor	1W	100Ω	J	S0105502
R19	Carbon Resistor	1/4W	100Ω	J	E6012001
R20	Wire Wound Resistor	20W	22Ω	J	S0104003
R21	Carbon Resistor	1/4W	10KΩ	J	E6014013
R22	Carbon Resistor	1/4W	220Ω	J	E6012025
R23	Carbon Resistor	1/4W	22KΩ	J	E6014004
R24	Metal Film Resistor	2W	10Ω	J	S0105504
R25	Carbon Resistor	1/4W	620Ω	J	S0107012
R26	Metal Film Resistor	2W	1.5Ω	J	S0105002
R27	Carbon Resistor	1/4W	2.2KΩ	J	E6013082
R28	Carbon Resistor	1/4W	470Ω	J	E6012026
R29	Carbon Resistor	1/4W	4.7KΩ	J	E6013005
R30	Carbon Resistor	1/4W	100Ω	J	E6012001
R31	Carbon Resistor	1/4W	100Ω	J	E6012001
R32	Carbon Resistor	1/4W	6.8KΩ	J	E6013008
R33	Carbon Resistor	1/4W	10KΩ	J	E6014013
R34	Carbon Resistor	1/4W	2.2KΩ	J	E6013082
R35	Carbon Resistor	1/4W	470Ω	J	E6012026
R36	Carbon Resistor	1/4W	100Ω	J	E6012001
R37	Carbon Resistor	1/4W	1KΩ	J	E6013025
R38	Carbon Resistor	1/4W	620Ω	J	S0107012
R39A	Metal Film Resistor	2W	47Ω	J	S0105505

Ref. No.	Description		Manufacturer Part Number
R39B	Metal Film Resistor	2W 47Ω J	S0105505
R40	Wire Wound Resistor	2W 5.6Ω K	S0104004
RV1	Potentiometer WJ6S 1KΩ		S0204001
T1	Transformer T-0651S		S1900001
L1	Reactor R-0651S	(120V AC model only)	S1900002
L2	Reactor R-0601S		S2701001
CN3-1	Connector RTB-1.5-2 (2 PIN)		S0905001
CN4-1	Connector B4P-SHF-1AA (4 PIN)		S0904003
CN5-1	Connector 1-380999-0 (6 PIN)		S0901001
CN6-1	Connector B2P-SHF-1AA (2 PIN)		S0904002
PCB	Print Circuit Board P-137		S0400137
CN1	Connector 1-480305-0 (3 PIN)		S0901002
	Contact 60618-1		S0901003
CN2	Connector 1-480285-0 (10 PIN)		S0901004
CN3	Connector 2P-SVF (2 PIN)		S0905011
CN4	Connector H4P-SHF-AA (4 PIN)		S0904013
CN5	Connector 1-480270-0 (6 PIN)		S0901011
CN6	Connector H2P-SHF-AA (2 PIN)		S0904012
NF1	Noise Filter LF-202U	(120V AC model)	S1800001
	EUL-MKB3B2	(100V AC model)	S1800002
CB1	Braker NW-2S		S3000001
FAN	Motor Fan UN3901N (AC 120V)	(120V AC model)	S1600001
	N3901 (AC 100V)	(100V AC model)	S1600002
①	Power Supply Frame		S9900001
②	Paper Guard		S9900002
③	Heat Sink A		S9900003
④	Heat Sink B		S9900004
⑤	Heat Sink Set Plate		S9900005
⑥	Insulator		S9900006

(Power Supply Parts List 220V AC, 240V AC Model Only)

Ref. No.	Description		Manufacturer Part Number
PSU	Power Supply Unit	(220V AC Model)	36513000
	Power Supply Unit	(240V AC Model)	36523000
	Holder Shaft		36003001
	Holder Collar		36003002
	Retaining Ring E-3		0703003000
	Power Supply Assy PS-466	(220V AC Model)	36513100
	Power Supply Assy PS-468	(240V AC Model)	36523100
Q1	Transistor 2SC2791		S0000006
Q2	Transistor 2SA1008-L		S0000002
Q3	Transistor 2SA1008-L		S0000002
Q4	Transistor 2SC1815-GR		S0000003
Q5	Transistor 2SC1815-GR		S0000003
Q6	Transistor 2SC1815-GR		S0000003
Q7	Transistor 2SC1815-GR		S0000003
Q8	Transistor 2SC1815-GR		S0000003
Q9	Transistor 2SA950-Y		S0000004
Q10	Transistor 2SC1815-GR		S0000003
Q11	Transistor 2SC1815-GR		S0000003
Q12	Transistor 2SC1815-GR		S0000003
IC1	IC μPC78M12H		S2800001
IC2	IC TL430CLP		S2800002
PH1	Photo Coupler ON3110-Q		S0005001
PH2	Photo Coupler TLP541G		S0005003
PH3	Photo Coupler ON3110-Q		S0005001
DZ1	Zener Diode 05Z12u		S0004001
DZ2	Zener Diode 05Z5.6u		S0004002
DZ3	Zener Diode 05Z6.2u		S0004003
DZ4	Zener Diode 05Z6.2u		S0004003
DZ5	Zener Diode 05Z2.7u		S0004004
RC1	Diode 4J4B41		S0003004
RC2	Diode ESAC83-004		S0003003
RC3	Diode 5CH2M		S0003001
RC4	Diode 5CH2M		S0003001
D1	Diode 1S1835		S0002001
D2	Diode 3DZ61		S0002002
D3	Diode 1SS54		S0002003
D4	Diode 1S1835		S0002001
D5	Diode 1S1835		S0002001
D6	Diode 1SS54		S0002003
D7	Diode 1SS54		S0002003
D8	Diode 1SS54		S0002003

Ref. No.	Description				Manufacturer Part Number
D9	Diode 1SS54				S0002003
D10	Diode 1SS54				S0002003
D11	Diode 1S1888				S0002005
D12	Diode 1S1888				S0002005
D13	Diode 1SS54				S0002003
D14	Diode 1SS54				S0002003
D15	Diode 1S1835				S0002001
D16	Diode 3BH61				S0002006
D17	Diode 1SS54				S0002003
CR1	Thyristor 5P05M				S0001001
C1	Ceramic Capacitor	400V AC	4700PF	+80% −20%	S0320001
C2	Ceramic Capacitor	400V AC	4700PF	+80% −20%	S0320001
C3	Plastic Film Capacitor	1KV	0.1μF	±20%	S0312002
C4	Electrolytic Capacitor	200V	220μF	+100% − 10%	S0318002
C5	Electrolytic Capacitor	200V	220μF	+100% − 10%	S0318002
C6	Electrolytic Capacitor	350V	4.7μF	±20%	S0304008
C7	Ceramic Capacitor	2KV	1000PF	±10%	S0319001
C8	Plastic Film Capacitor	200V	0.047μF	±10%	S0311001
C9	Ceramic Capacitor	2KV	1500PF	±10%	S0319002
C10	Ceramic Capacitor	2KV	470PF	±10%	S0319003
C11	Electrolytic Capacitor	50V	10μF	±20%	S0304001
C12	Electrolytic Capacitor	450V	1μF	±20%	S0305002
C13	Plastic Film Capacitor	50V	0.01μF	± 5%	S0311003
C14	Electrolytic Capacitor	50V	10μF	±20%	S0304001
C15	Electrolytic Capacitor	50V	0.1μF	±20%	S0316001
C16A	Electrolytic Capacitor	16V	1000μF		S0315001
C16B	Electrolytic Capacitor	16V	1000μF		S0315001
C16C	Electrolytic Capacitor	16V	1000μF		S0315001
C16D	Electrolytic Capacitor	16V	1000μF		S0315001
C17A	Electrolytic Capacitor	35V	1000μF		S0304006
C17B	Electrolytic Capacitor	35V	1000μF		S0304006
C18	Electrolytic Capacitor	25V	22μF		S0304002
C19	Plastic Film Capacitor	50V	3300PF		S0311002
C20	Electrolytic Capacitor	25V	100μF		S0304009
C21	Electrolytic Capacitor	25V	220μF		S0304003
C22	Electrolytic Capacitor	16V	470μF		S0304004
C23A	Electrolytic Capacitor	16V	470μF		S0315003
C23B	Electrolytic Capacitor	16V	470μF		S0315003

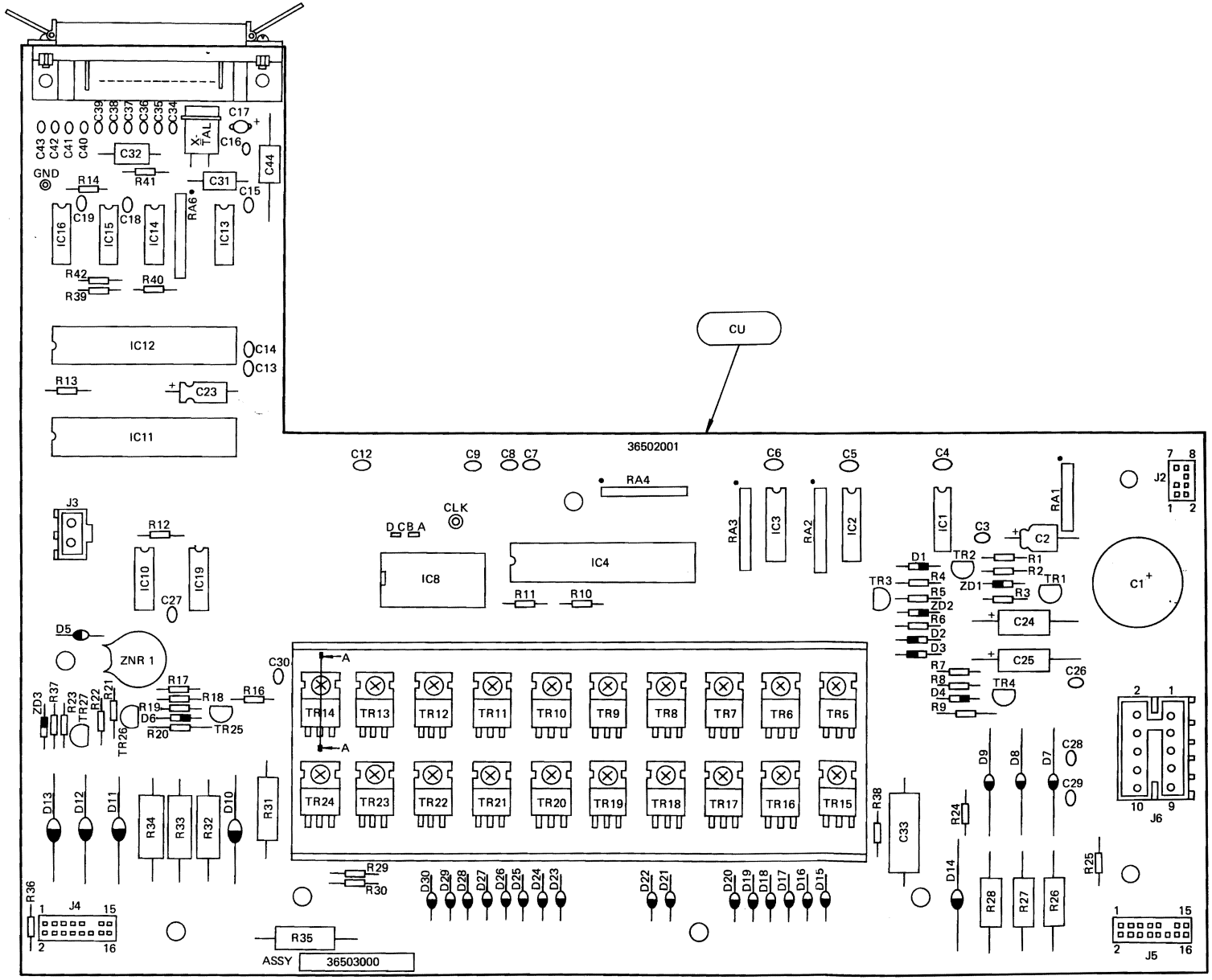
Ref. No.	Description			Manufacturer Part Number
C24	Electrolytic Capacitor	16V	100μF	S0315004
C25	Electrolytic Capacitor	50V	1μF	S0310001
C26	Electrolytic Capacitor	50V	0.1μF	S0316001
C27	Electrolytic Capacitor	16V	330μF	S0315002
C28	MD Capacitor	630V	0.01μF	S0322001
C29	MD Capacitor	630V	0.01μF	S0322001
R1	Metal Film Resistor	2W	56KΩ J	S0105508
R2	Metal Film Resistor	2W	56KΩ J	S0105508
R3A	Metal Film Resistor	3W	33KΩ J	S0105506
R3B	Metal Film Resistor	3W	33KΩ J	S0105506
R3C	Metal Film Resistor	3W	33KΩ J	S0105506
R3D	Metal Film Resistor	3W	33KΩ J	S0105506
R4	Carbon Resistor	1/2W	10Ω J	S0106001
R5	Metal Film Resistor	1W	56Ω J	S0105501
R6	Metal Film Resistor	1W	1.2Ω J	S0105003
R7	Metal Film Resistor	1W	220Ω J	S0105509
R8	Carbon Resistor	1/4W	10KΩ J	S0107001
R9A	Wire Wound Resistor	5W	220Ω J	S0104006
R9B	Wire Wound Resistor	5W	220Ω J	S0104006
R10	Carbon Resistor	1/4W	6.8KΩ J	S0107003
R11	Wire Wound Resistor	2W	0.33Ω K	S0104007
R12	Carbon Resistor	1/4W	1KΩ J	S0107002
R13	Carbon Resistor	1/4W	1KΩ J	S0107002
R14	Carbon Resistor	1/4W	22KΩ J	S0107006
R15A	Metal Film Resistor	3W	39KΩ J	S0105510
R15B	Metal Film Resistor	3W	39KΩ J	S0105510
R15C	Metal Film Resistor	3W	39KΩ J	S0105510
R15D	Metal Film Resistor	3W	39KΩ J	S0105510
R16	Carbon Resistor	1/4W	100Ω J	S0107004
R17	Carbon Resistor	1/4W	100KΩ J	S0107010
R18A	Metal Film Resistor	3W	47KΩ J	S0105511
R18B	Metal Film Resistor	3W	47KΩ J	S0105511
R19	Carbon Resistor	1/4W	4.7KΩ J	S0107005
R20	Carbon Resistor	1/4W	1.5KΩ J	S0107007
R21	Carbon Resistor	1/4W	10KΩ J	S0107001
R22	Metal Film Resistor	1W	100Ω J	S0105502
R23	Carbon Resistor	1/4W	100Ω J	S0107004
R24A	Wire Wound Resistor	10W	47Ω J	S0104008
R24B	Wire Wound Resistor	10W	47Ω J	S0104008
R25	Carbon Resistor	1/4W	10KΩ J	S0107001
R26	Carbon Resistor	1/4W	220Ω J	S0107008

Ref. No.	Description				Manufacturer Part Number
R27	Carbon Resistor	1/4W	22KΩ	J	S0107006
R28	Metal Film Resistor	2W	10Ω	J	S0105504
R29A	Wire Wound Resistor	3W	240Ω	J	S0105512
R29B	Wire Wound Resistor	3W	240Ω	J	S0105512
R30	Wire Wound Resistor	2W	1.5Ω	K	S0104005
R31	Carbon Resistor	1/4W	2.2KΩ	J	S0107009
R32	Carbon Resistor	1/4W	560Ω	J	S0107013
R33	Carbon Resistor	1/4W	470Ω	J	S0107011
R34	Carbon Resistor	1/4W	100Ω	J	S0107004
R35	Carbon Resistor	1/4W	100Ω	J	S0107004
R36	Carbon Resistor	1/4W	6.8KΩ	J	S0107003
R37	Carbon Resistor	1/4W	10KΩ	J	S0107001
R38	Carbon Resistor	1/4W	2.2KΩ	J	S0107009
R39	Carbon Resistor	1/4W	470Ω	J	S0107011
R40	Carbon Resistor	1/4W	100Ω	J	S0107004
R41	Carbon Resistor	1/4W	1KΩ	J	S0107002
R42	Carbon Resistor	1/4W	560Ω	J	S0107013
R43A	Metal Film Resistor	2W	47Ω	J	S0105505
R43B	Metal Film Resistor	2W	47Ω	J	S0105505
R44	Wire Wound Resistor	2W	12Ω	J	S0104009
RV1	Potentiometer WJ6S 1KΩ				S0204001
TH1	Thermister ERT-D7FFK160X				S0108002
T1	Transformer T-0661S				S1900003
L1	Reactor R-0601S				S1900002
L2	Reactor SC-02-200				S1900004
L3	Reactor SN-85-400				S1900005
L4	Reactor SN-85-400				S1900005
CN3-1	Connector RTB-1.5-2 (2 PIN)				S0905001
CN4-1	Connector B4P-SHF-1AA (4 PIN)				S0904003
CN5-1	Connector 1-380999-0 (6 PIN)				S0901001
PCB	Print Circuit Board P-138-01				S0400138
CN1	Connector 1-480305-0 (3 PIN)				S0901002
	Contact 60618-1				S0901003
CN2	Connector 1-480285-0 (10 PIN)				S0901004
CN3	Connector 2P-SVF (2 PIN)				S0905011
CN4	Connector H4P-SHF-AA (4 PIN)				S0904013
CN5	Connector 1-480270-0 (6 PIN)				S0901011
CB1	Braker NW-2S				S3000001
FAN	Motor Fan WE49B4 (240V AC model)				S1600003
	Motor Fan WE52B4 (220V AC model)				S1600004
①	Power Supply Frame				S9900016

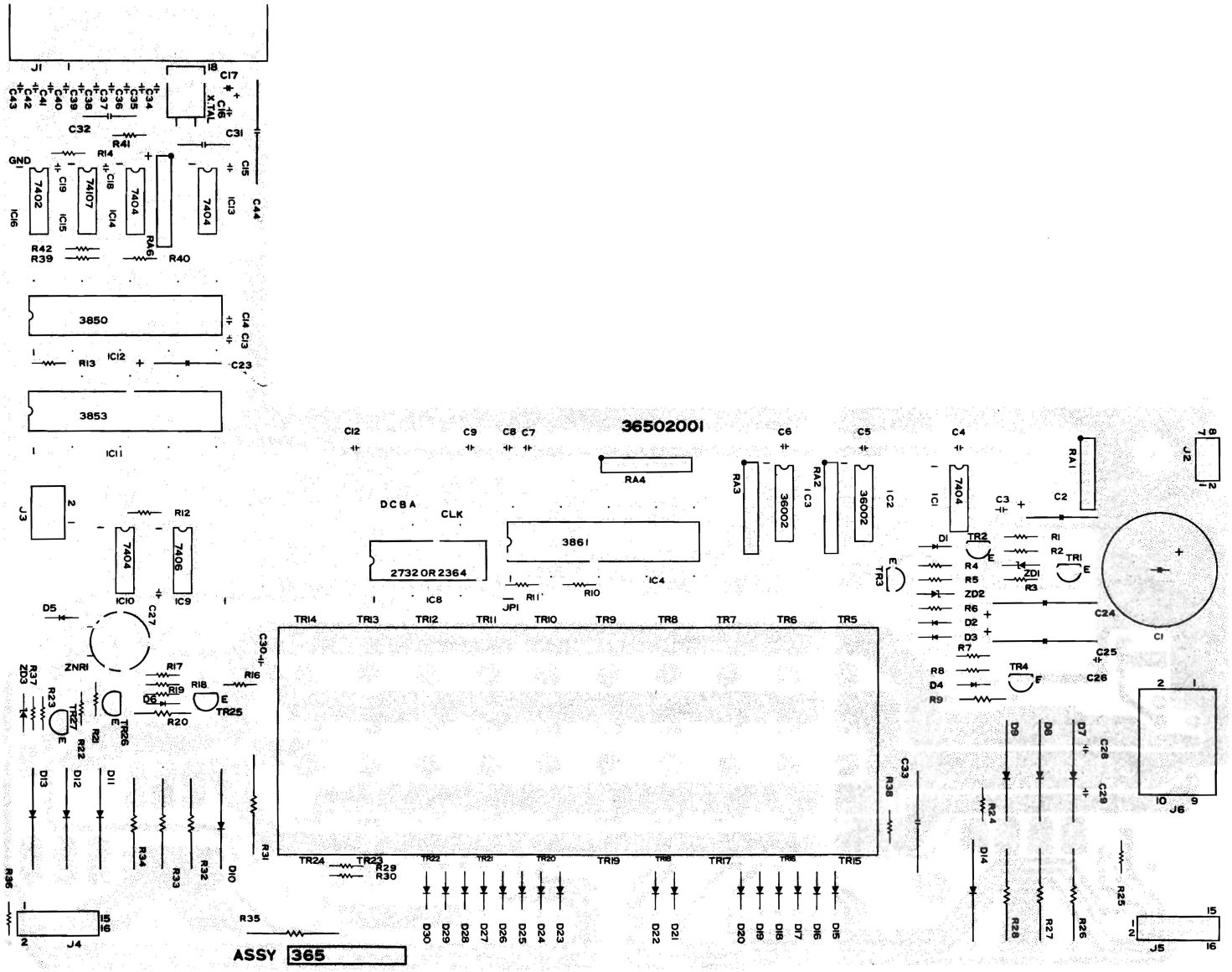
Ref. No.	Description	Manufacturer Part Number
②	Paper Guard	S9900017
③	Heat Sink B	S9900004
④	Heat Sink A	S9900010
⑤	Heat Sink Set Plate	S9900015
⑥	Insulator	S9900019
⑦	Spacer B	S9900012
⑧	Support B	S9900014
⑨	Support A	S9900013
⑩	Spacer A	S9900011
⑪	Finger Guard	S9900018
⑫	Print Circuit Board P139-01	S0400139

See Page 41.

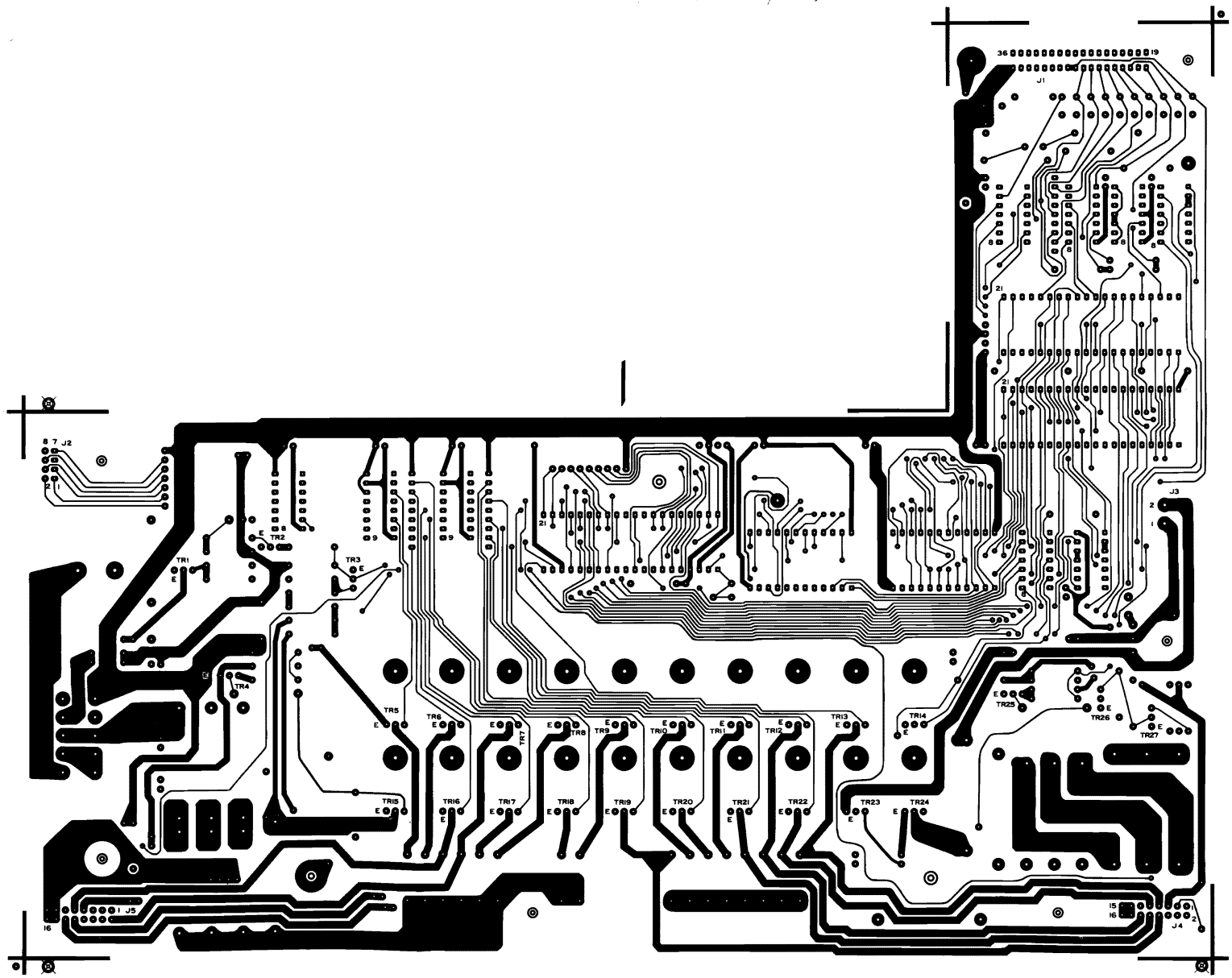
7. CONTROL UNIT ASSEMBLIES DRAWING



CONTROL PRINT CIRCUIT BOARD (TOP VIEW)

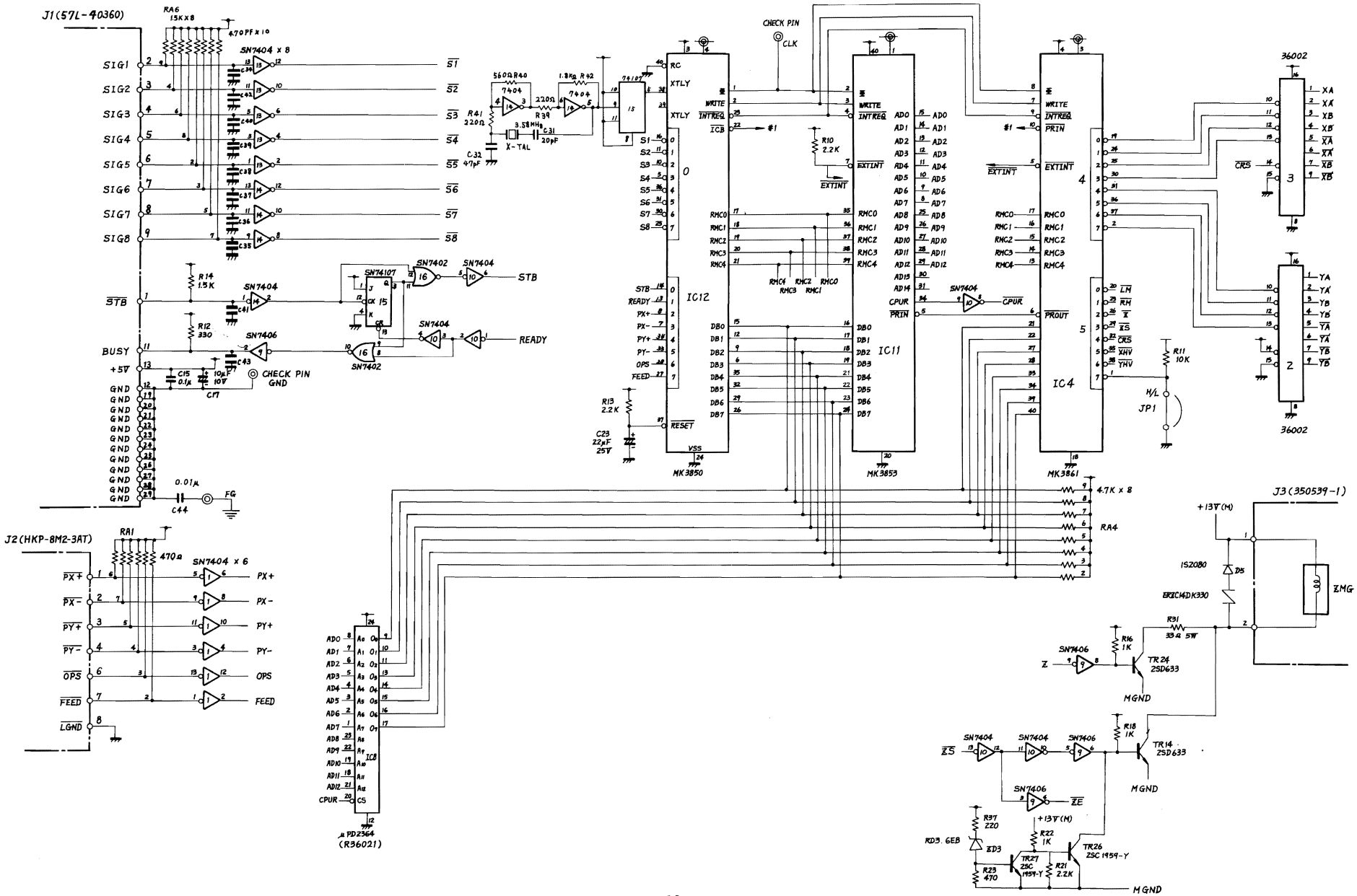


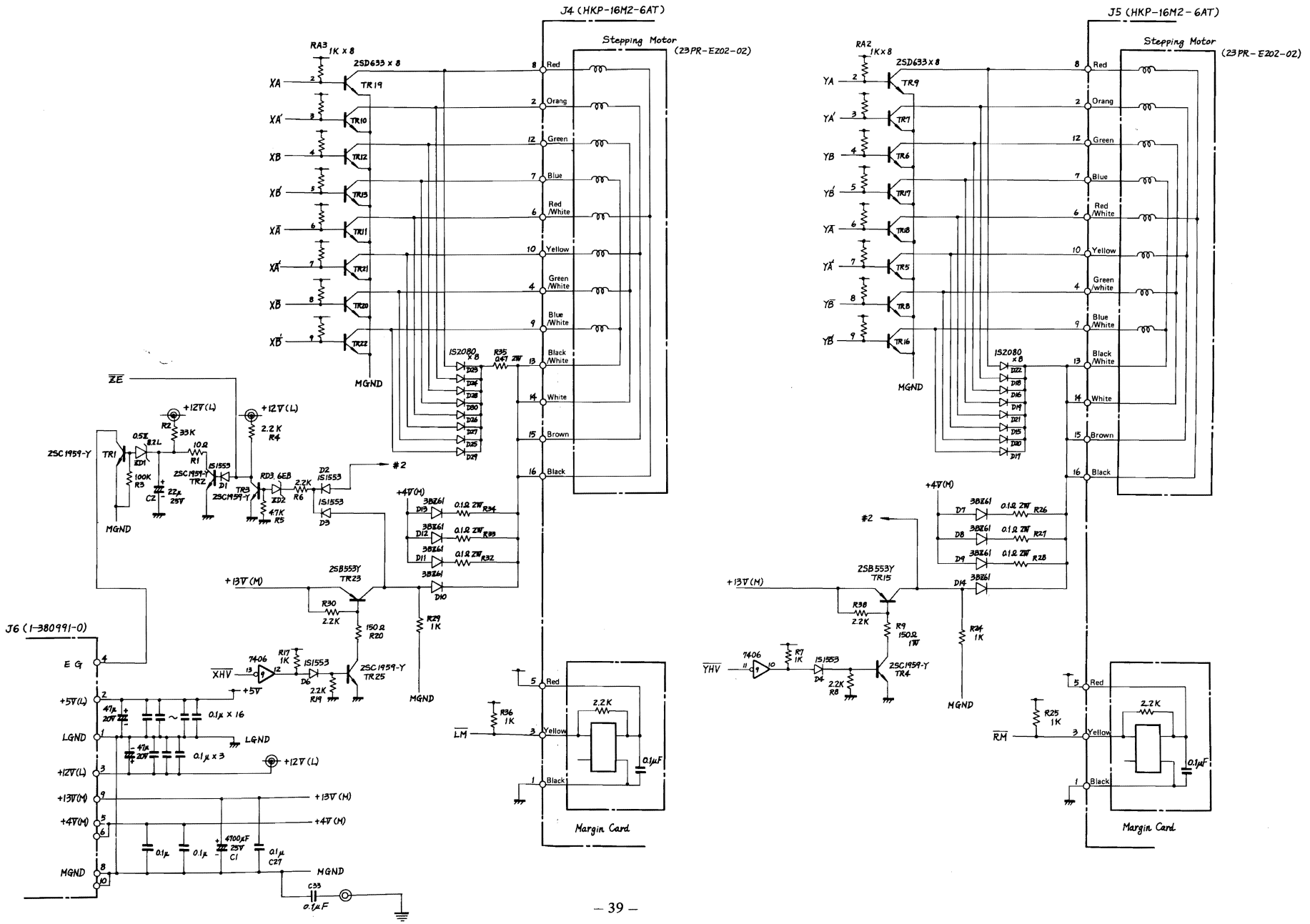
CONTROL PRINT CIRCUIT BOARD (BOTTOM VIEW)



See Page 44-45

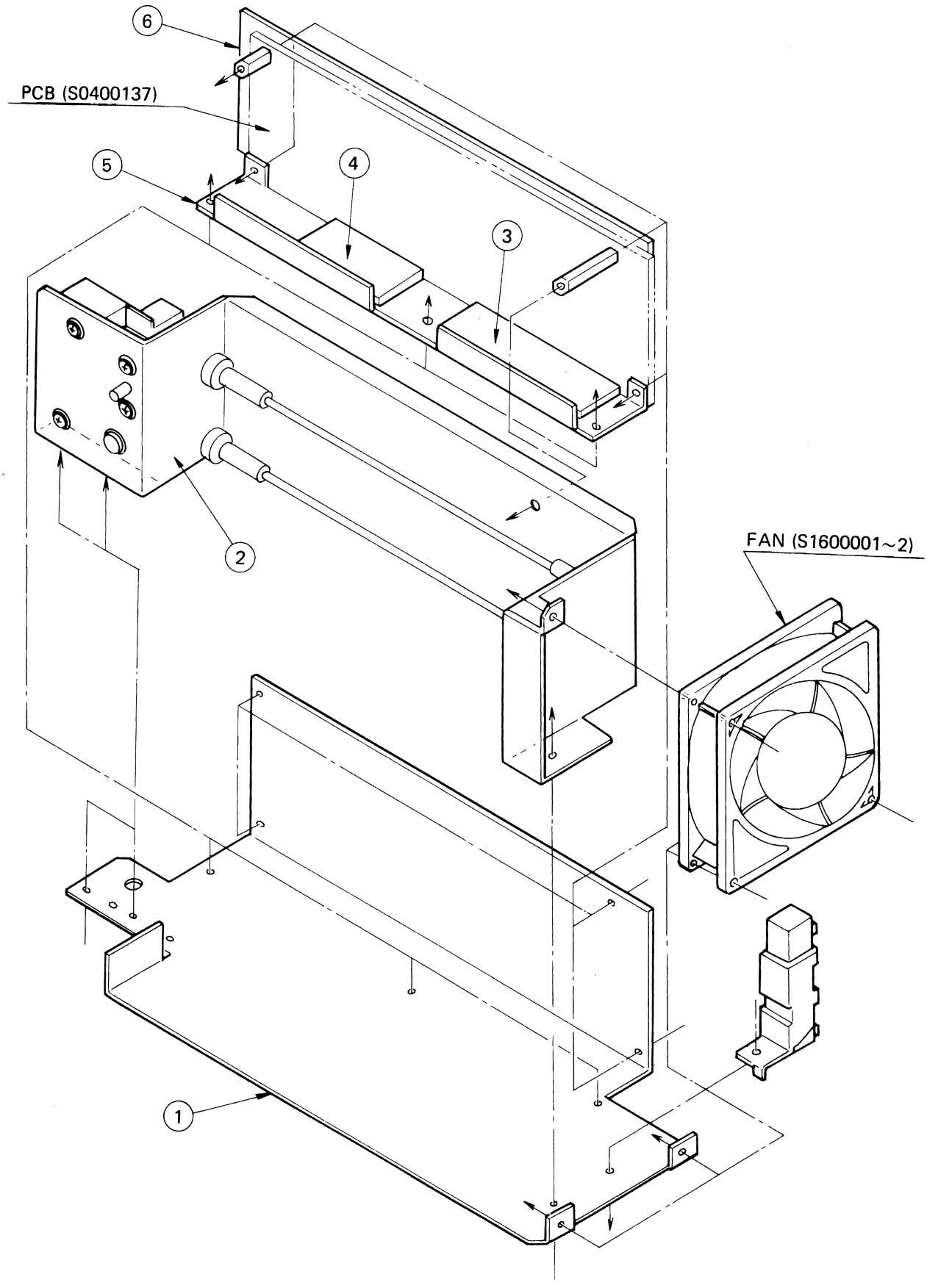
8. CONTROL UNIT CIRCUIT DIAGRAM



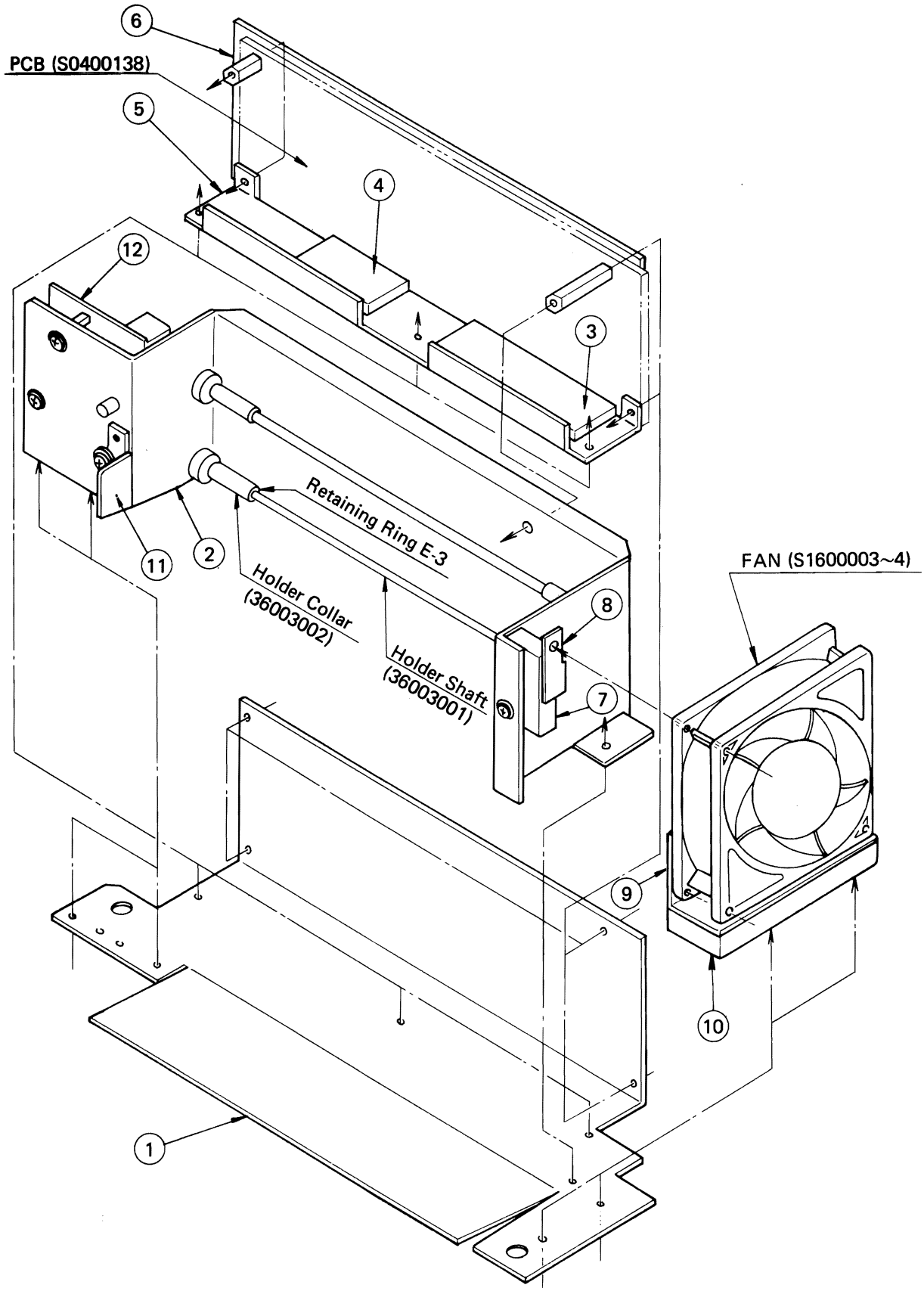

J4 (HKP-16M2-6AT)
Stepping Motor
(23PR-E202-02)
RA3 1K x 8
2SD633 x 8
XA
XA'
XB
XB'
XĀ
XA'
XB̄
XB'
TR19
TR10
TR12
TR13
TR11
TR21
TR20
TR22
MGND
8 Red
2 Orang
12 Green
7 Blue
6 Red /White
10 Yellow
4 Green /White
9 Blue /White
13 Black /White
14 White
15 Brown
16 Black
IS2080 x 8
R35 0.47 2W
ZE
+12V(L)
R2 33K
2.2K R4
0.5K B2L
10Ω R1
2SC1959-Y
TR1
100K R5
22μ 25V C2
IS1553 D1
2SC1959-Y TR2
TR3 2SC1959-Y
RD3.6EB ZD2
4.7K R5
2.2K R6
D2 IS1553
IS1553 D3
#2
+47V(M)
3BZ61 D13
3BZ61 D12
3BZ61 D11
3BZ61 D10
0.1Ω 2W R34
0.1Ω 2W R33
0.1Ω 2W R32
+13V(M)
2SB553Y TR23
R30 2.2K
150Ω R20
R29 1K
7406
R17 1K
IS1553 D6
2.2K R19
XHV
+5V
2SC1959-Y TR25
J6 (1-380991-0)
E G
+5V(L)
LGND
+12V(L)
+13V(M)
+47V(M)
MGND
47μ 20V
0.1μ x 16
0.1μ x 3
0.1μ
4700μF 25V C1
0.1μ C27
C33 0.1μF
LM
R36 1K
2.2K
0.1μF
Margin Card
J5 (HKP-16M2-6AT)
Stepping Motor
(23PR-E202-02)
RA2 1K x 8
2SD633 x 8
YA
YA'
YB
YB'
YĀ
YA'
YB̄
YB'
TR9
TR1
TR6
TR7
TR8
TR5
TR8
TR16
MGND
8 Red
2 Orang
12 Green
7 Blue
6 Red /White
10 Yellow
4 Green /white
9 Blue /White
13 Black /White
14 White
15 Brown
16 Black
IS2080 x 8
+47V(M)
3BZ61 D7
3BZ61 D8
3BZ61 D9
3BZ61 D14
0.1Ω 2W R26
0.1Ω 2W R27
0.1Ω 2W R28
#2
+13V(M)
2SB553Y TR15
R38 2.2K
R9 150Ω 1W
R24 1K
7406
R7 1K
IS1553 D4
2.2K R8
YHV
2SC1959-Y TR4
RM
R25 1K
2.2K
0.1μF
Margin Card

9. POWER SUPPLY ASSEMBLIES

(120V AC, 100V AC Model Only)

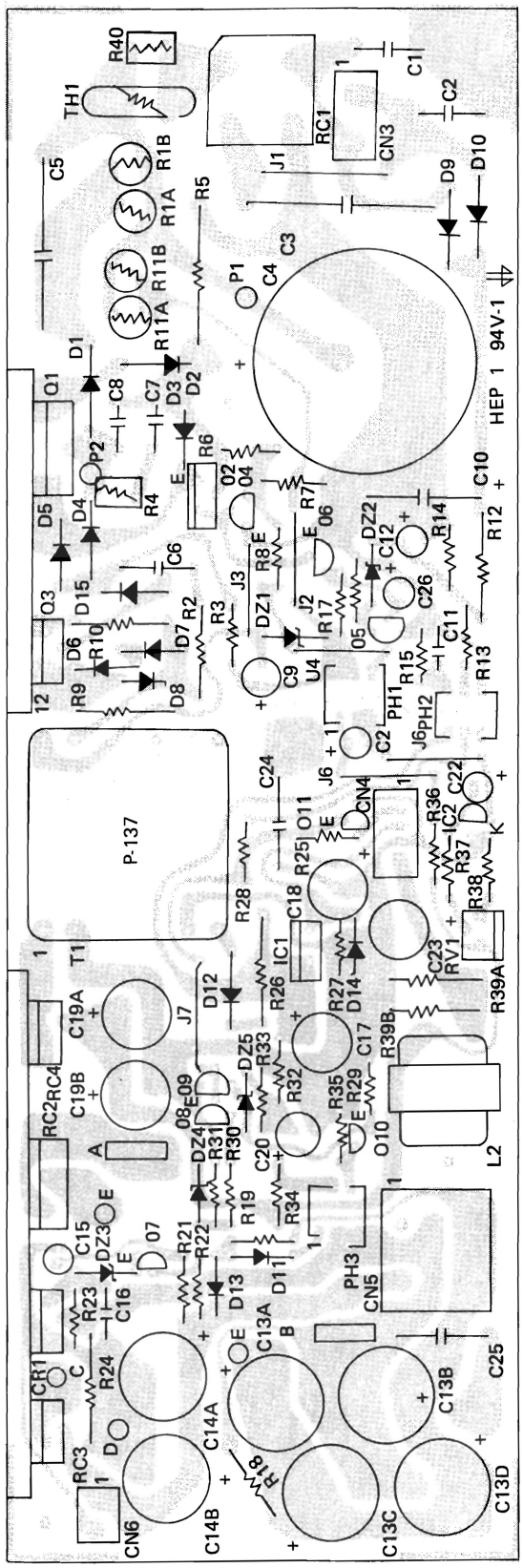


POWER SUPPLY ASSEMBLIES
(220V AC, 240V AC Model Only)

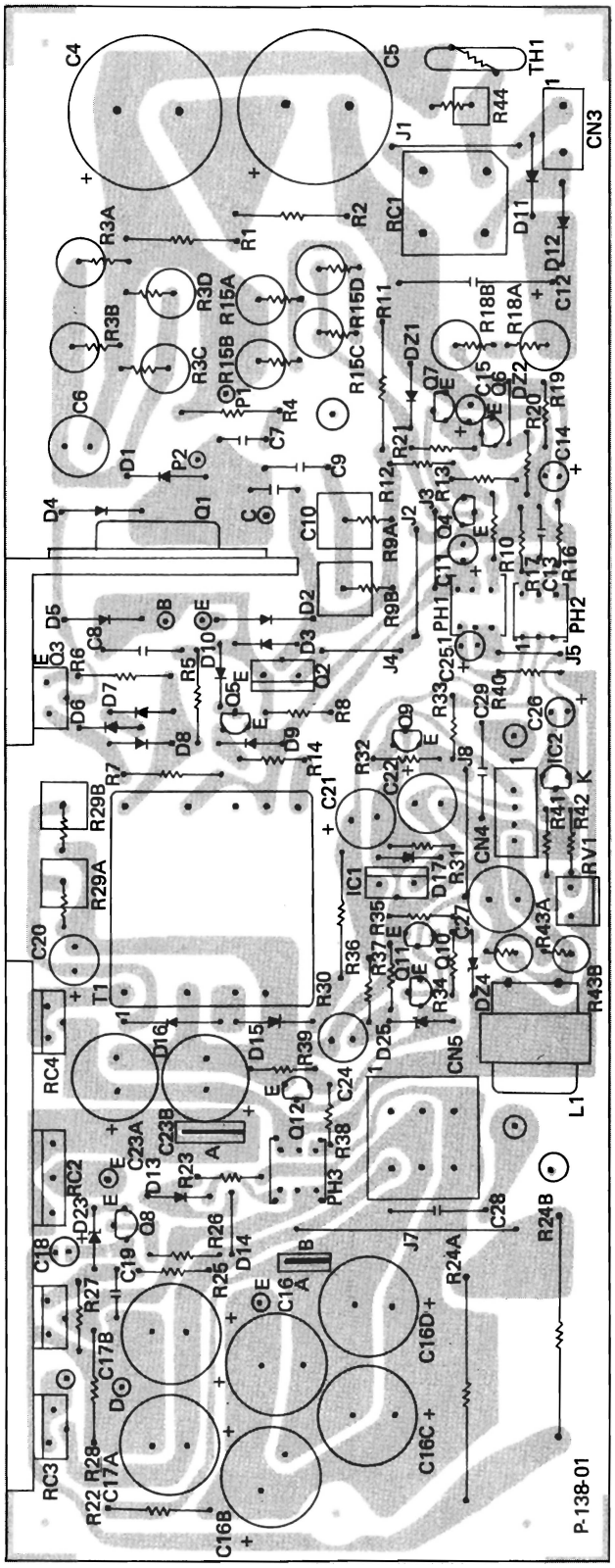


10. POWER SUPPLY UNIT PCB TOP VIEW

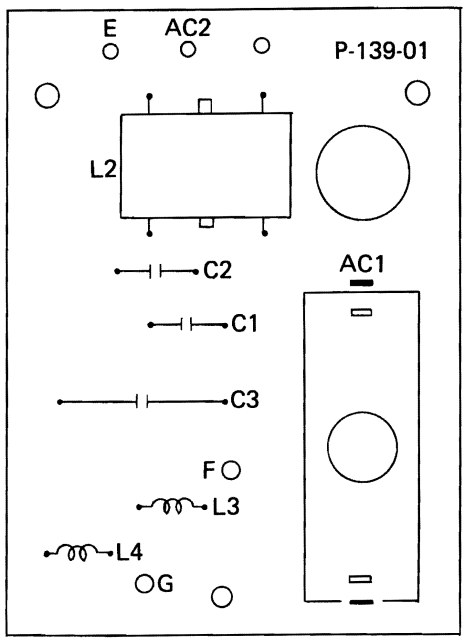
(120V AC, 100V AC Model Only)

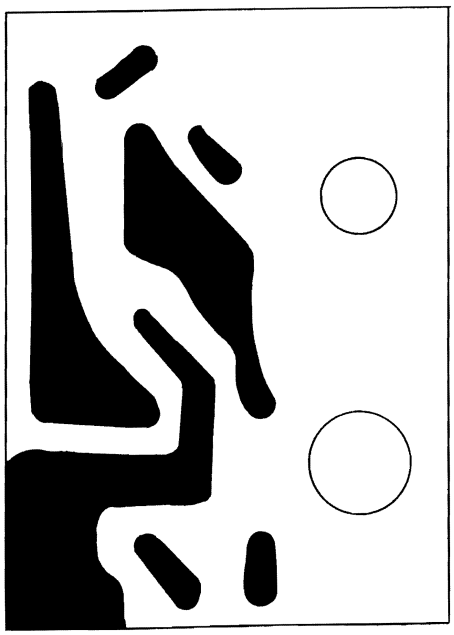


POWER SUPPLY UNIT PCB TOP VIEW
(220V AC, 240V AC Model Only)

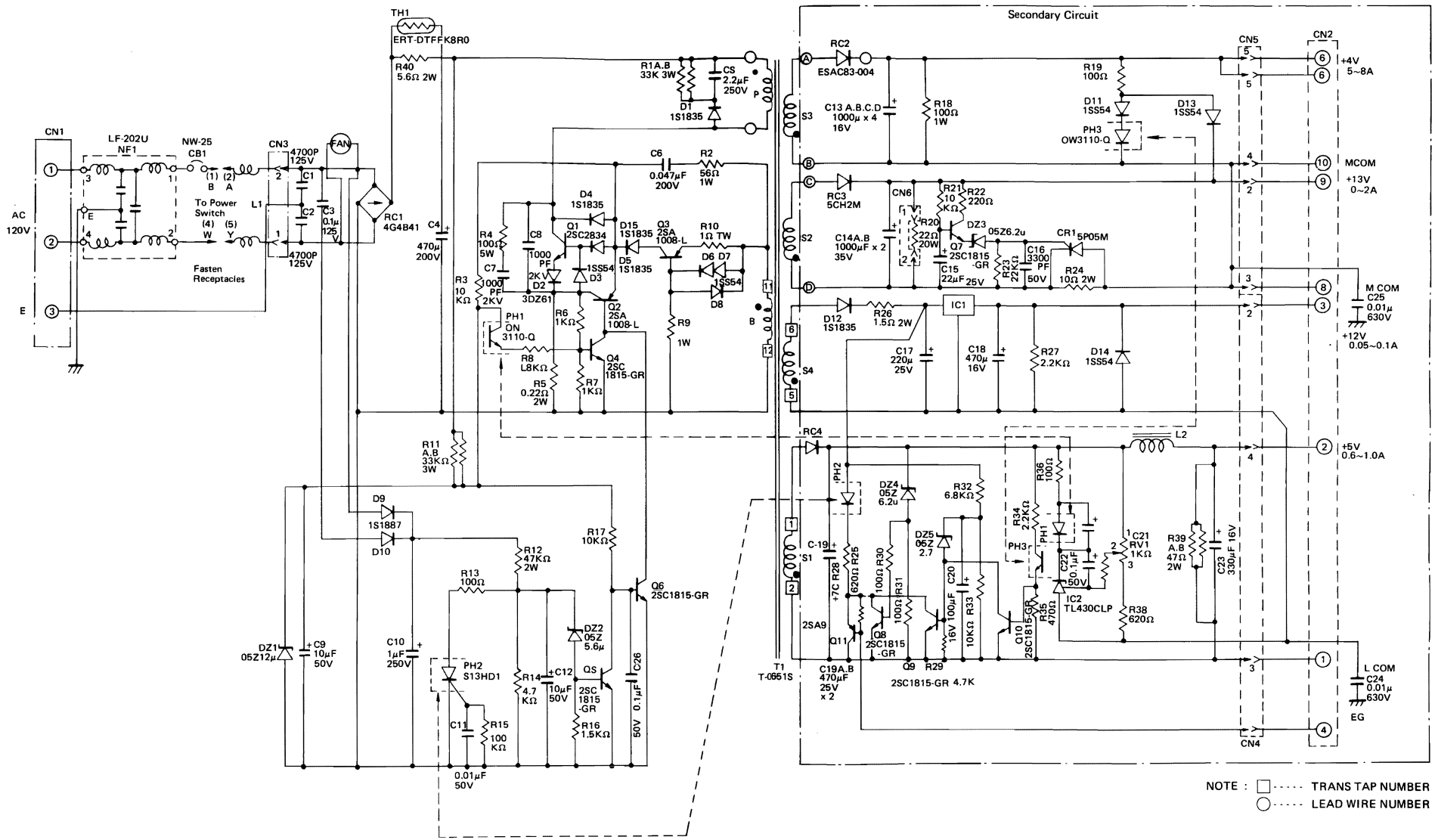


PRINT CIRCUIT BOARD
(220V AC, 240V AC Model Only)



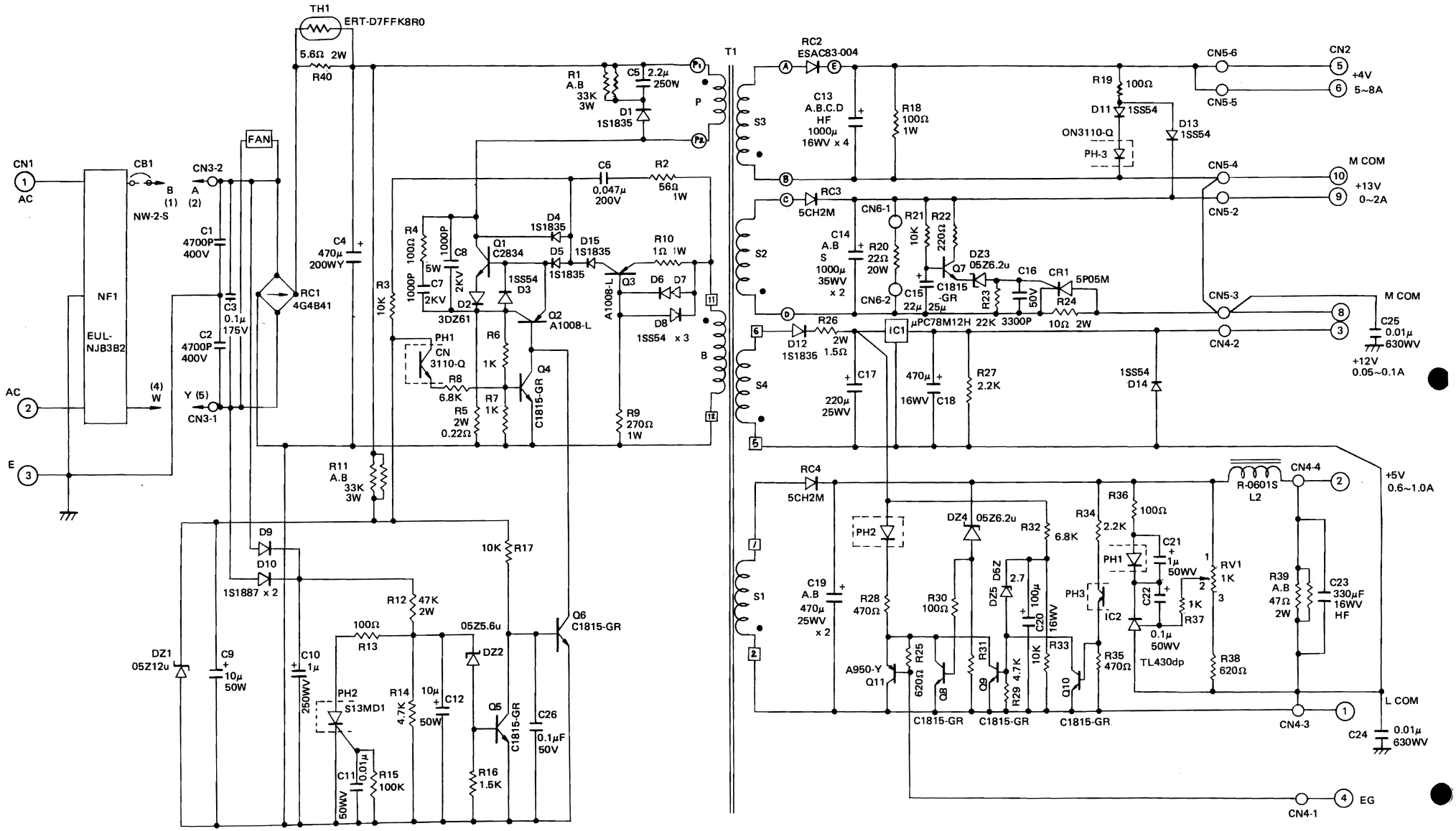


11. POWER SUPPLY UNIT CIRCUIT DIAGRAM (120V AC. MODEL)



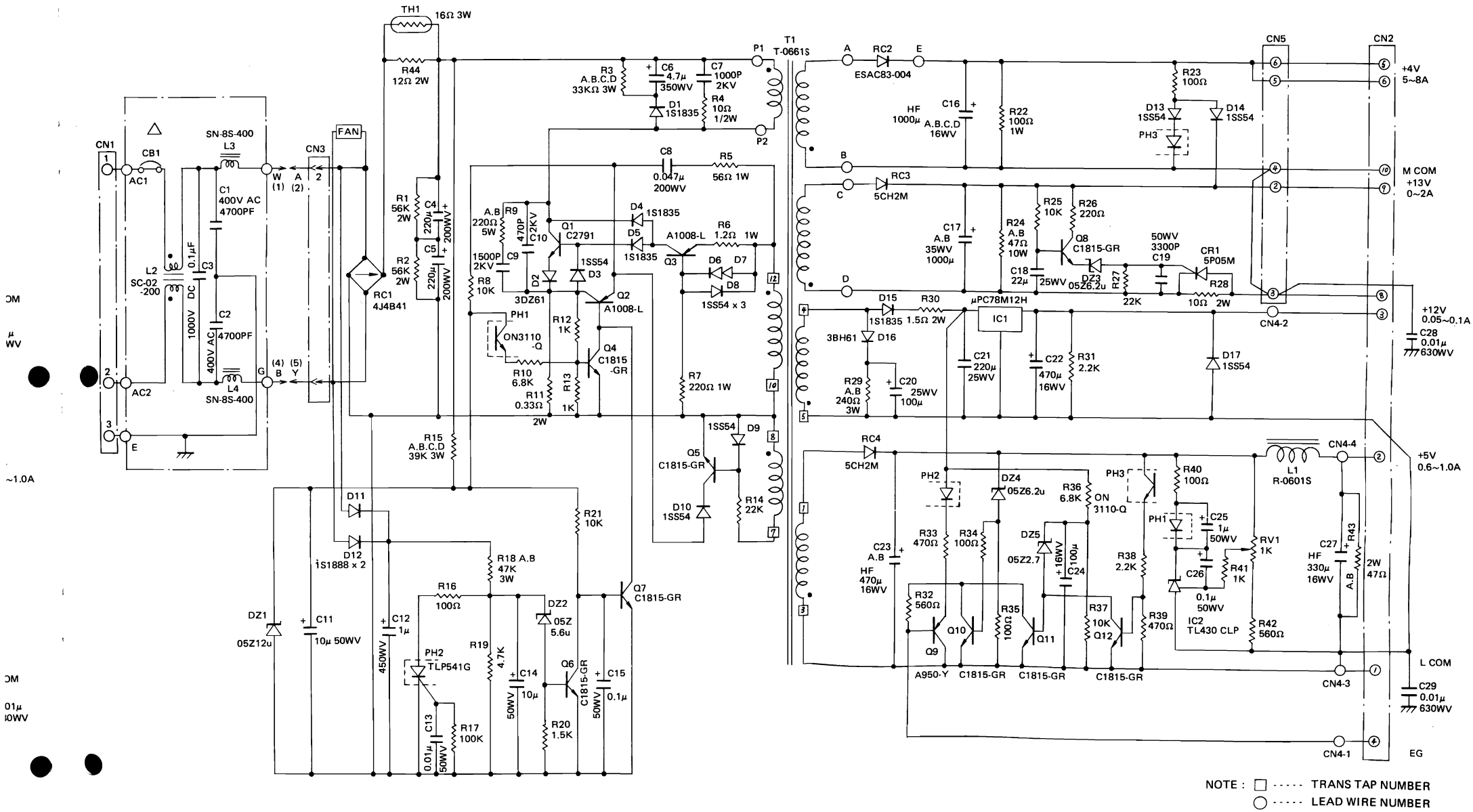
NOTE : □ ····· TRANS TAP NUMBER
○ ····· LEAD WIRE NUMBER

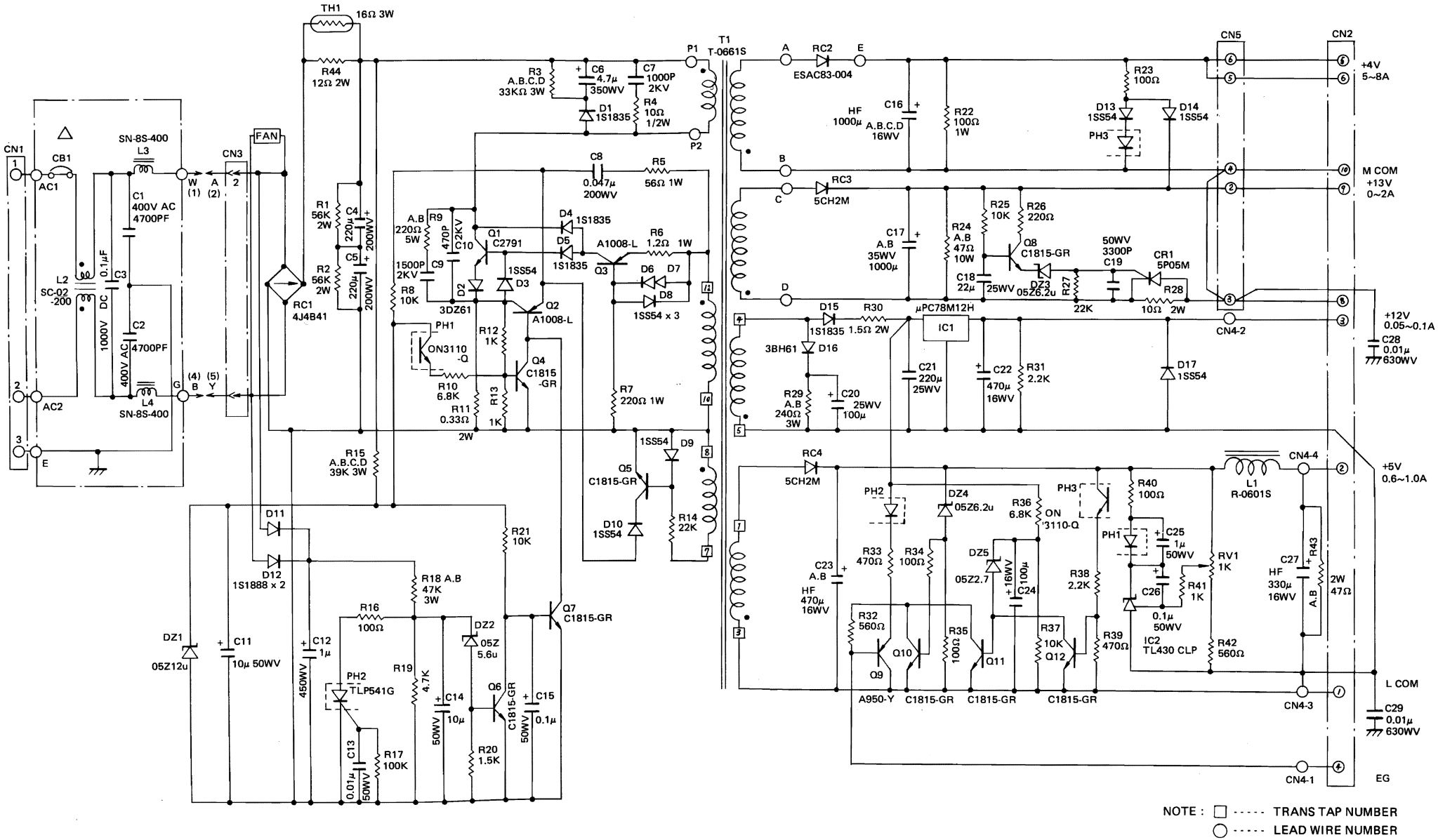
POWER SUPPLY UNIT CIRCUIT DIAGRAM (100V AC MODEL)



NOTE : □----- TRANS TAP NUMBER
○----- LEAD WIRE NUMBER

POWER SUPPLY UNIT CIRCUIT DIAGRAM (220V AC MODEL)




TH1 16Ω 3W
R44 12Ω 2W
CN1
CB1
AC1
AC2
E
SN-8S-400
L3
L4
C1 400V AC 4700PF
C2 4700PF
C3 0.1μF
L2 SC-02 -200
1000V DC
400V AC
FAN
CN3
W (1) A (2)
(4) B (5) Y
G
RC1 4J4B41
R1 56K 2W
R2 56K 2W
C4 220μ 200WV
C5 220μ 200WV
R3 A.B.C.D 33KΩ 3W
C6 4.7μ 350WV
C7 1000P 2KV
D1 1S1835
R4 10Ω 1/2W
P1
P2
T1 T-0661S
C8 0.047μ 200WV
R5 56Ω 1W
R9 A.B 220Ω 5W
C10 470P 2KV
C9 1500P 2KV
R8 10K
Q1 C2791
D2 3DZ61
D3 1SS54
D4 1S1835
D5 1S1835
Q3 A1008-L
R6 1.2Ω 1W
D6 D7
D8 1SS54 x 3
PH1 ON3110 -Q
R10 6.8K
R11 0.33Ω 2W
R12 1K
R13 1K
Q4 C1815 -GR
Q2 A1008-L
R7 220Ω 1W
R15 A.B.C.D 39K 3W
D9 1SS54
Q5 C1815-GR
D10 1SS54
R14 22K
D11
D12 1S1888 x 2
R21 10K
R18 A.B 47K 3W
R16 100Ω
DZ1 05Z12u
C11 10μ 50WV
C12 1μ 450WV
PH2 TLP541G
R19 4.7K
C13 0.01μ 50WV
R17 100K
DZ2 05Z 5.6u
C14 10μ 50WV
Q6 C1815-GR
R20 1.5K
C15 0.1μ 50WV
Q7 C1815-GR
A
RC2
E
ESAC83-004
HF 1000μ A.B.C.D 16WV
C16
R22 100Ω 1W
R23 100Ω
D13 1SS54
D14 1SS54
PH3
B
C
RC3 5CH2M
C17 A.B 35WV 1000μ
R24 A.B 47Ω 10W
R25 10K
R26 220Ω
Q8 C1815-GR
50WV 3300P C19
CR1 5P05M
C18 22μ 25WV
DZ3 05Z6.2u
R27 22K
R28 10Ω 2W
D
D15 1S1835
R30 1.5Ω 2W
μPC78M12H
IC1
3BH61 D16
R29 A.B 240Ω 3W
C20 25WV 100μ
C21 220μ 25WV
C22 470μ 16WV
R31 2.2K
D17 1SS54
RC4 5CH2M
PH2
DZ4 05Z6.2u
R36 6.8K
ON 3110-Q
PH3
PH1
R40 100Ω
C25 1μ 50WV
C26 0.1μ 50WV
RV1 1K
R41 1K
R42 560Ω
IC2 TL430 CLP
C23 A.B HF 470μ 16WV
R33 470Ω
R34 100Ω
DZ5 05Z2.7
C24 100μ 16WV
R38 2.2K
R39 470Ω
R32 560Ω
Q9 A950-Y
Q10 C1815-GR
R35 100Ω
Q11 C1815-GR
R37 10K
Q12 C1815-GR
L1 R-0601S
C27 HF 330μ 16WV
R43 A.B 2W 47Ω
CN5
CN2
CN4-2
CN4-4
CN4-3
CN4-1
+4V 5~8A
M COM
+13V 0~2A
+12V 0.05~0.1A
C28 0.01μ 630WV
+5V 0.6~1.0A
L COM
C29 0.01μ 630WV
EG
NOTE : □ ----- TRANS TAP NUMBER
○ ----- LEAD WIRE NUMBER

RADIO SHACK A DIVISION OF TANDY CORPORATION

U.S.A.: FORT WORTH, TEXAS 76102
CANADA: BARRIE, ONTARIO L4M 4W5

TANDY CORPORATION

AUSTRALIA	BELGIUM	U. K.
280-316 VICTORIA ROAD RYDALMERE, N.S.W. 2116	PARC INDUSTRIEL DE NANINNE 5140 NANINNE	BILSTON ROAD, WEDNESBURY WEST MIDLANDS WS10 7JN

3A1

Printed in Japan