

Service Manual

Player
SP-10MKII
(M), (MC)



■ SPECIFICATIONS

Type:	Direct-drive turntable	Wow & Flutter:	0.025% (JIS C5521) W.R.M.S. ±0.035% (DIN 45507), weighted, zero-to-peak
Turntable platter:	Aluminum diecast, diameter 32 cm (12-19/32 inches), weight 2.9 kg (6.4 lbs.), moment of inertia 380kg·cm ² (130 lbs·in ²)	Rumble:	60 dB (IEC 179B) 50 dB (DIN 45539A) 70 dB (DIN 45539B)
Motor:	Brushless DC motor, electronic rectification, quartz-controlled phase-locked servo circuit	Power Supply:	120V, AC 50 or 60 Hz
Platter speeds:	33-1/3, 45 and 78.3r.p.m.	Power Consumption:	20 W
Starting torque:	6 kg·cm (5.2 lbs·in)	Dimensions:	Turntable Only 36.85 (W) x 10.25 (H) x 36.85 (D) cm (14-31/64 x 4-1/64 x 14-31/64 inches)
Build-up time:	0.25 sec. (25° rotation) to 33-1/3r.p.m.	Power Unit	110 (W) x 8.35 (H) x 37.0 (D) cm
Braking time:	0.3 sec. (30° rotation) from 33-1/3r.p.m. to standstill	Weight:	Turntable Only 9.5 kg (20.9 lbs.) Power Unit 3.8 kg
Speed fluctuation by load changes:	0% within 5 kg·cm (4.3 lbs·in)		
Speed drift:	Within ± 0.002%		

Specification are subject change without notice for further improvement.

Technics
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Ontario M9W 1B5

■ PARTS IDENTIFICATION

Center Spindle (Motor Shaft) Turntable Mat

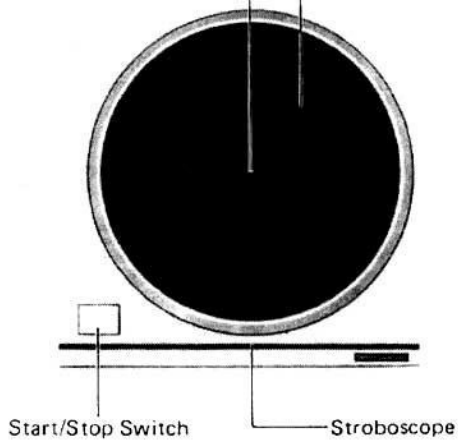


Fig. 1

Turntable Platter Main Panel

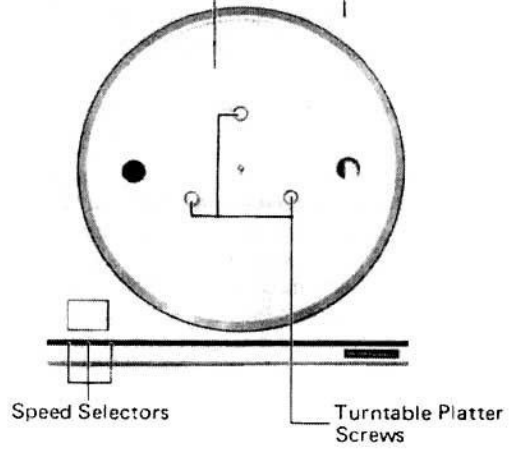
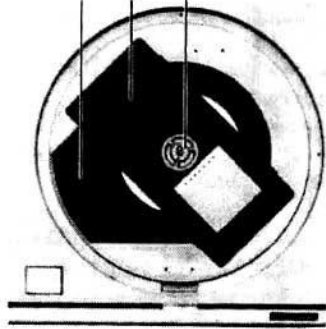


Fig. 2

Motor Clamping Plate Lubricating Hole

Brake Cover



Strobe dots Vibration Absorbing Rubber Sheet

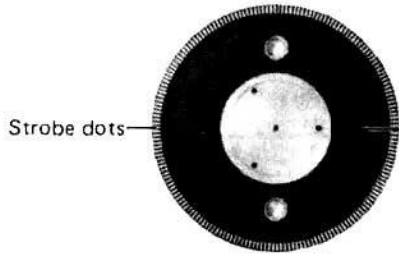


Fig. 3

Remote Control unit (SH-10R) Power Unit (SH-10E)

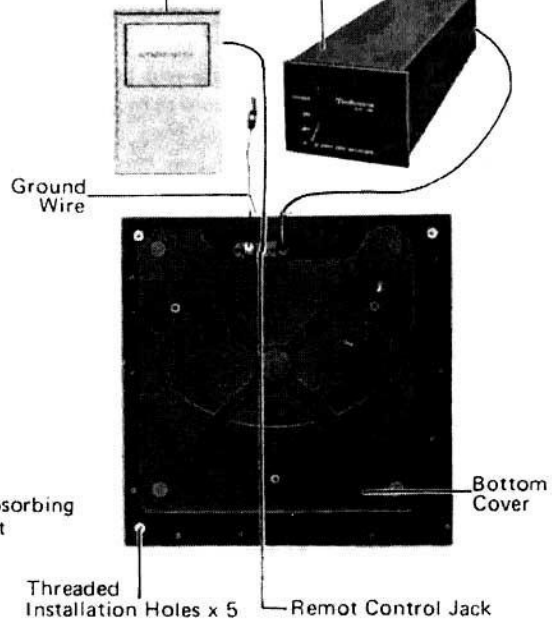
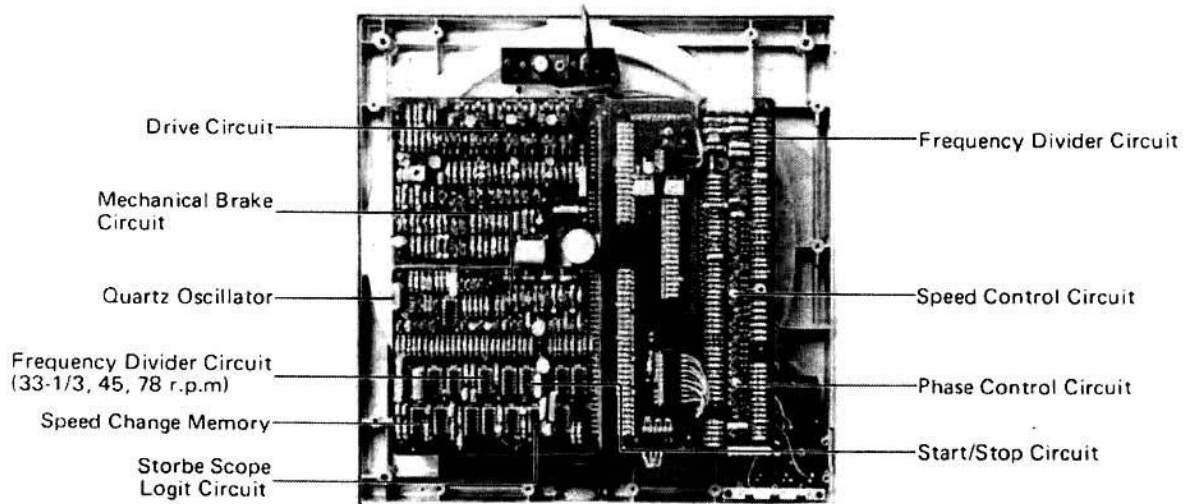


Fig. 4



2 SP-10MKII-(M/MC)

Fig. 5

■ ASSEMBLY AND SET-UP

1. Building a base or cabinet for this model

The starting torque of this model is 6Kg. cm. (5.2 lbs. in). Thus the turntable platter which is heavy (2.9kg. 6.4 lbs.) and large (32cm. 12-19/32 inches) can be started and stopped quickly. For this reason we recommend that you use durable and heavy material. The thickness of the base should be 3cm. (1-11/64 inch) or more in order to bring out the best performance of model.

Note: Use durable and stable insulators (legs) Fig. 6 shows an example of cabinet construction.

2. Drill and cutout the base according to the installation diagram.

As paper has a tendency to stretch we suggest that you check the diagram before using it as a template. Also check dimensions for printing errors. Check the tone arm mounting position for proper alignment (follow the tonearm manufacturers specifications). Also make sure to allow sufficient clearance for power connector and output terminals of the tone arm.

3. Install the unit in the cabinet

Two kinds of screws are included in the carton. Use the proper length of screw according to the thickness of the cabinet which you use. When you install the unit in the cabinet place protective material, on top of the unit to protect the center spindle from external damage. A soft cloth placed on the panel surface will protect it from scratches.

4. Remove the motor clamping plate and screws (Fig. 8)

After installation of the unit in the cabinet remove the seven blue screws and motor clamping plate.

NOTE: To protect the very delicate and important parts of the motor (spindle, motorshaft etc.) from external damage during transportation protective fittings have been installed. Be sure to remove these fittings carefully and save them for future use in case you again need to transport the unit.

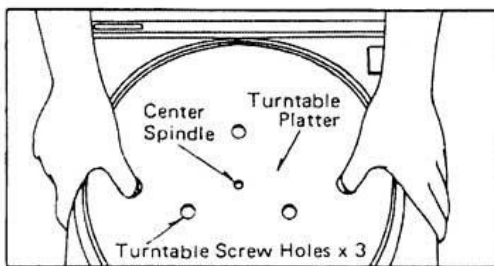


Fig. 9

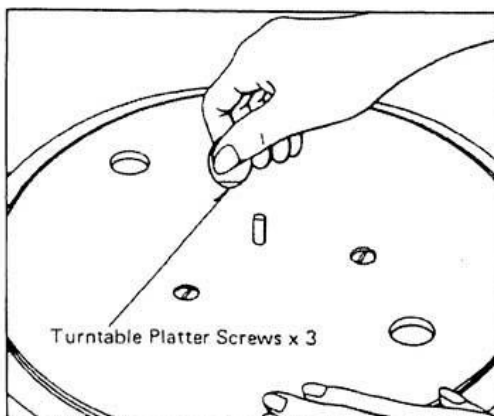


Fig. 10

NOTE: Dimensions are marked in millimeters. (25.4 mm are equal to inch.)

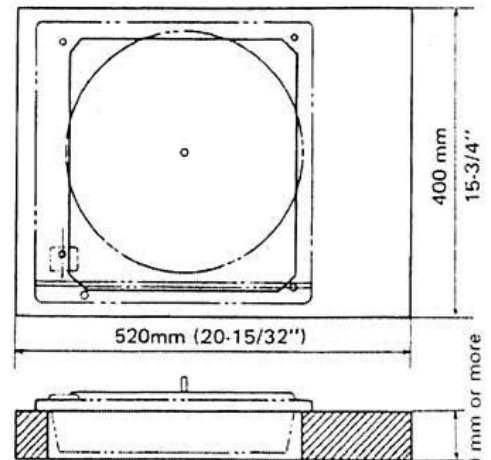


Fig. 6

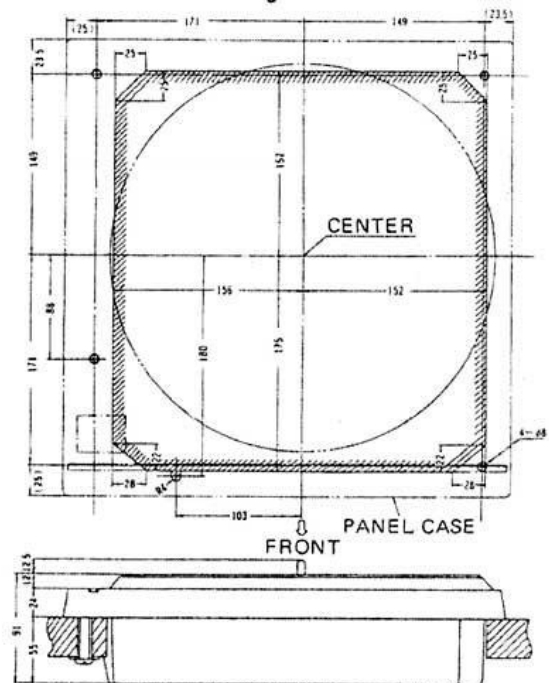


Fig. 7

5. Securing the turntable platter (Fig. 9 & 10)

Place the turntable platter on the spindle aligning holes in the platter with the rotor screw holes by eye.

Slightly lifting the turntable platter will make it easier to align the holes. Using the three screws supplied, firmly tighten the turntable platter and put the turntable mat on it.

NOTE: The turntable platter must be tightened at all three points. To assure proper operation.

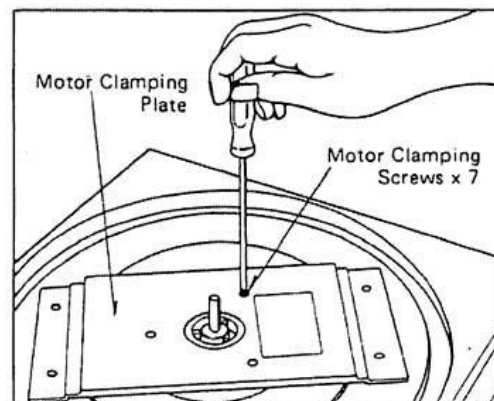


Fig. 8

■ OPERATION PRINCIPLES OF THE SP-10MKII

1. Quartz Generated Reference Signal

The quartz reference signal generator provides a reference signal which controls the action of the SP-10MKII. The oscillation of a quartz crystal is used. This oscillation is stable, highly accurate and not effected by temperature and other changes. The signal generated by the reference signal generator is split by the frequency divider into the appropriate frequency according to the speed selected.

The frequency divider is controlled by pushing the speed selector on the front panel of the unit. The selected speed information is stored in the speed change digital memory.

2. Stroboscope Logic Circuit

The stroboscope lights up the 190 stripes engraved on the platter rim. A neon lamp flashes according to instructive pulses from the stroboscope logic circuit. The circuit shapes digitally the signals from the frequency divider. This provides a sharp strobe image which is independent of external power source frequency.

3. Frequency Generator

A frequency generator is integrated with the platter drive motor. It is electromagnetic structure using a push-pull design cancels external induction. It converts accurately the platter rotation speed into a frequency. The output of the frequency generator is fed to the speed and the phase control circuits.

4. Phase Control Circuit

The phase control circuit detects a phase difference between a reference signal and a frequency generator signal and generates a control voltage. This circuit makes it possible to lock the rotation of the turntable platter to a reference signal. It improves considerably speed stability and speed control characteristics for load conditions when compared with the conventional direct-drive motor having only speed control as shown in Fig. 11 & 12.

5. Speed Control Circuit

The speed control circuit includes a sample-hold circuit, which converts the output of the frequency generator into an electrical voltage. This is the control voltage which maintains the platter rotation speed.

6. Drive Circuit

Two control signals are composed and applied to the drive circuit to maintain a forward motor-rotation. The drive circuit supplies fullwave drive current doubling current efficiency. It supplies drive current in both directions for a symmetrical rotation in either a forward or reverse direction.

The drive circuit rotates the turntable platter with quick response and large starting torque.

7. Start/stop Circuit

When the unit is started by the switch on the front panel or by the remote control, the start/stop circuit activates the forward drive. When the unit is switched off, the start/stop circuit activates the reverse drive and the mechanical brake actuating-circuits to perform a quick stop action.

8. Mechanical Brake Actuating-Circuit

The mechanical brake actuating-circuit operates a solenoid plunger which pushes a brake shoe against the platter. Working in conjunction with the reverse drive current, the mechanical brake can bring the platter to a complete stop quickly and smoothly. A half-braking force is maintained after the platter has stopped making it easy to accomplish accurate cueing of a record.

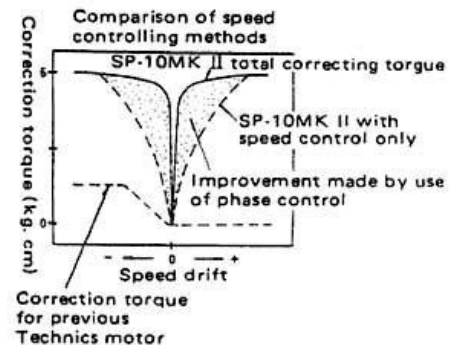


Fig. 11

Comparison of stability against load variations.

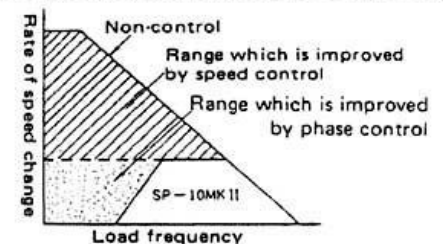


Fig. 12

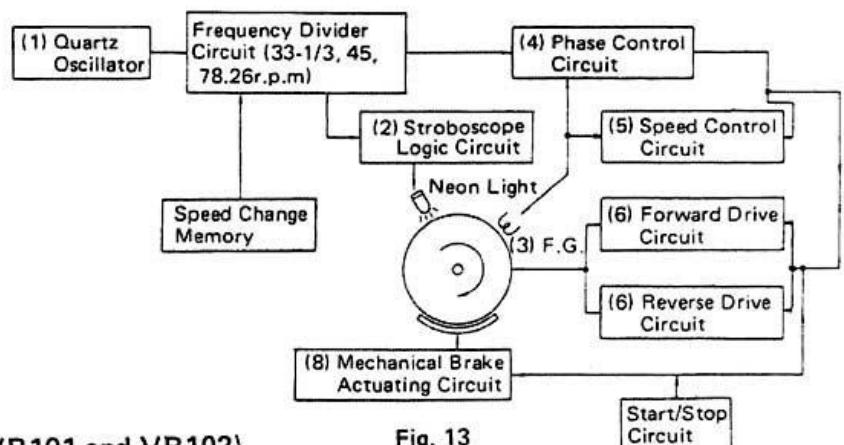


Fig. 13

■ THE PERIOD ADJUSTMENT METHOD (VR101 and VR102)

Note: If you repair the Control circuit board or the Drive Circuit board, you have to adjust VR101 and VR102.

1. Connect a dual-channel oscilloscope to points T and S on the circuit board.
Point O is for the ground wire of the Control Circuit board.
2. Please refer to fig. 14 for the phase relation of the 2 waves for the adjustment of VR101 and VR102.
3. Please adjust in the order: 33-1/3r.p.m, 45r.p.m, 78r.p.m.

Speed Selector	Time	Adjustment Point
33-1/3 r.p.m.	$6.3 \pm 0.2\text{ms}$	VR101
45 r.p.m.	$4.7 \pm 1.3\text{ms}$	Confirm
78 r.p.m.	$2.7 \pm 0.1\text{ms}$	VR102

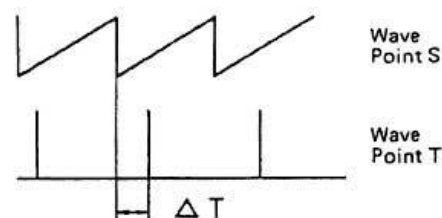


Fig. 14

■ BLOCK DIAGRAM

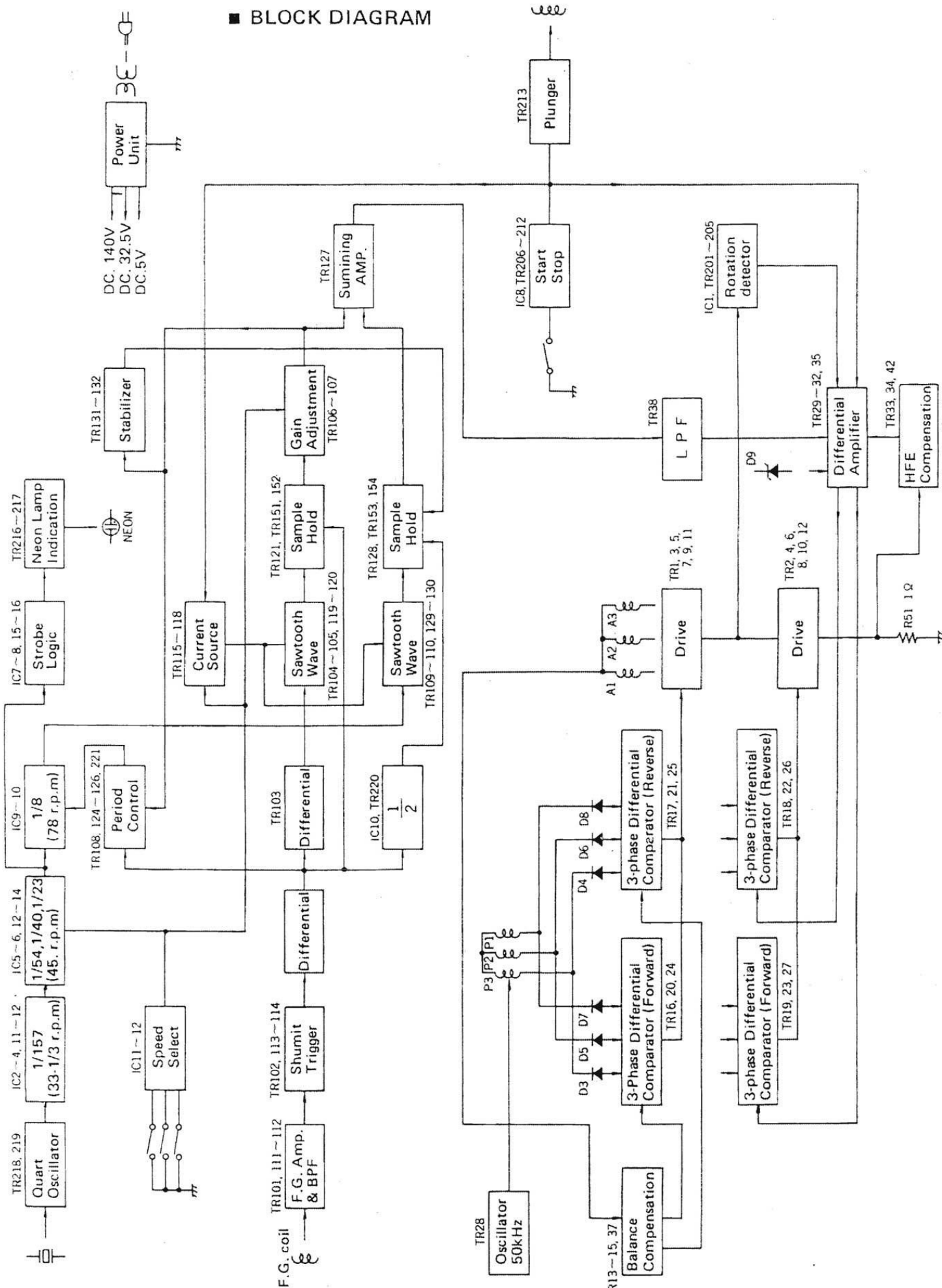
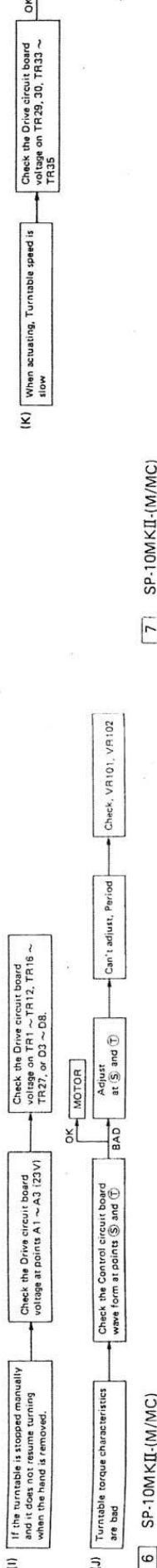
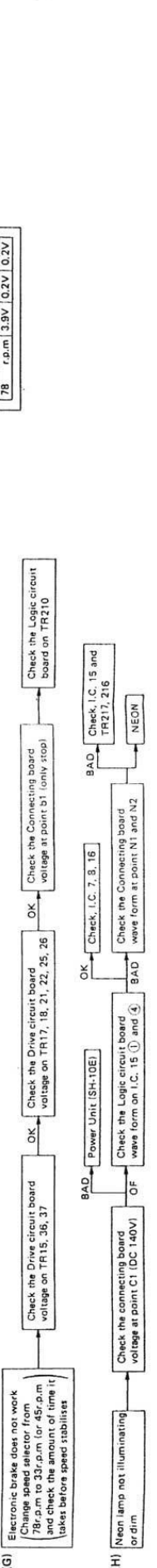
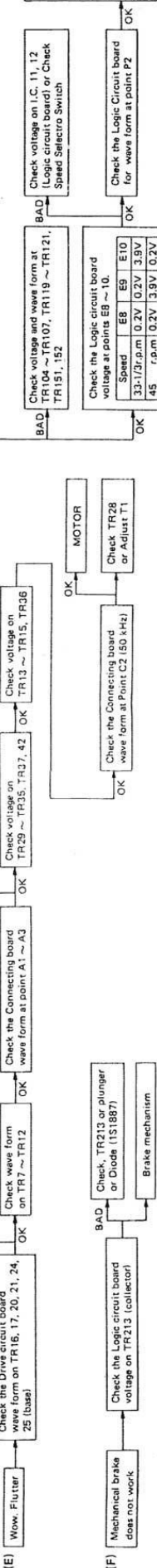
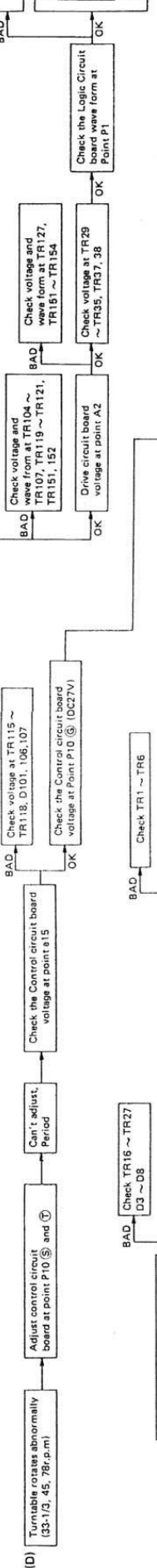
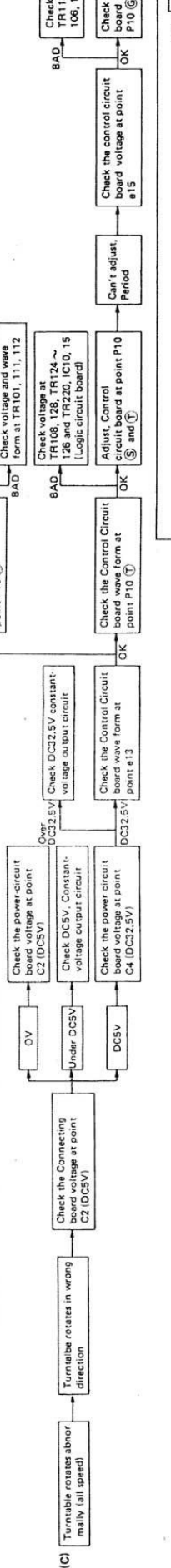
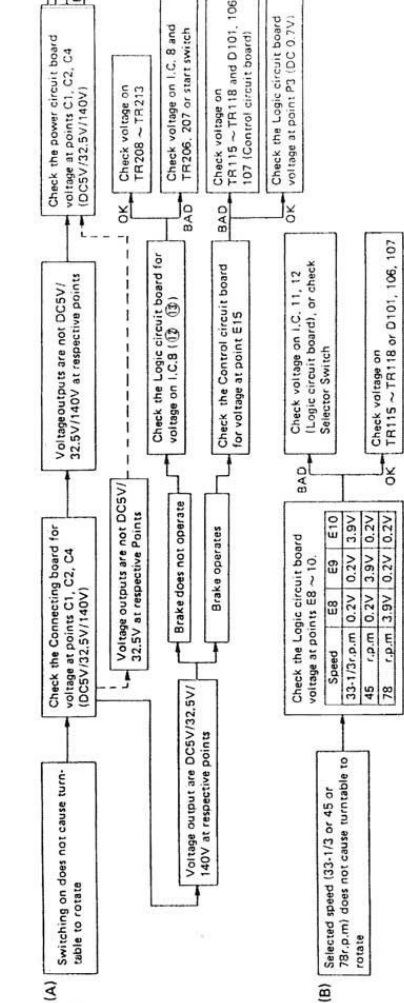


Fig. 15

Notes: (1) Be sure, when adjusting VR101 or VR102, to confirm synchronization at 3 speeds (33-1/3, 45 and 78 rpm).

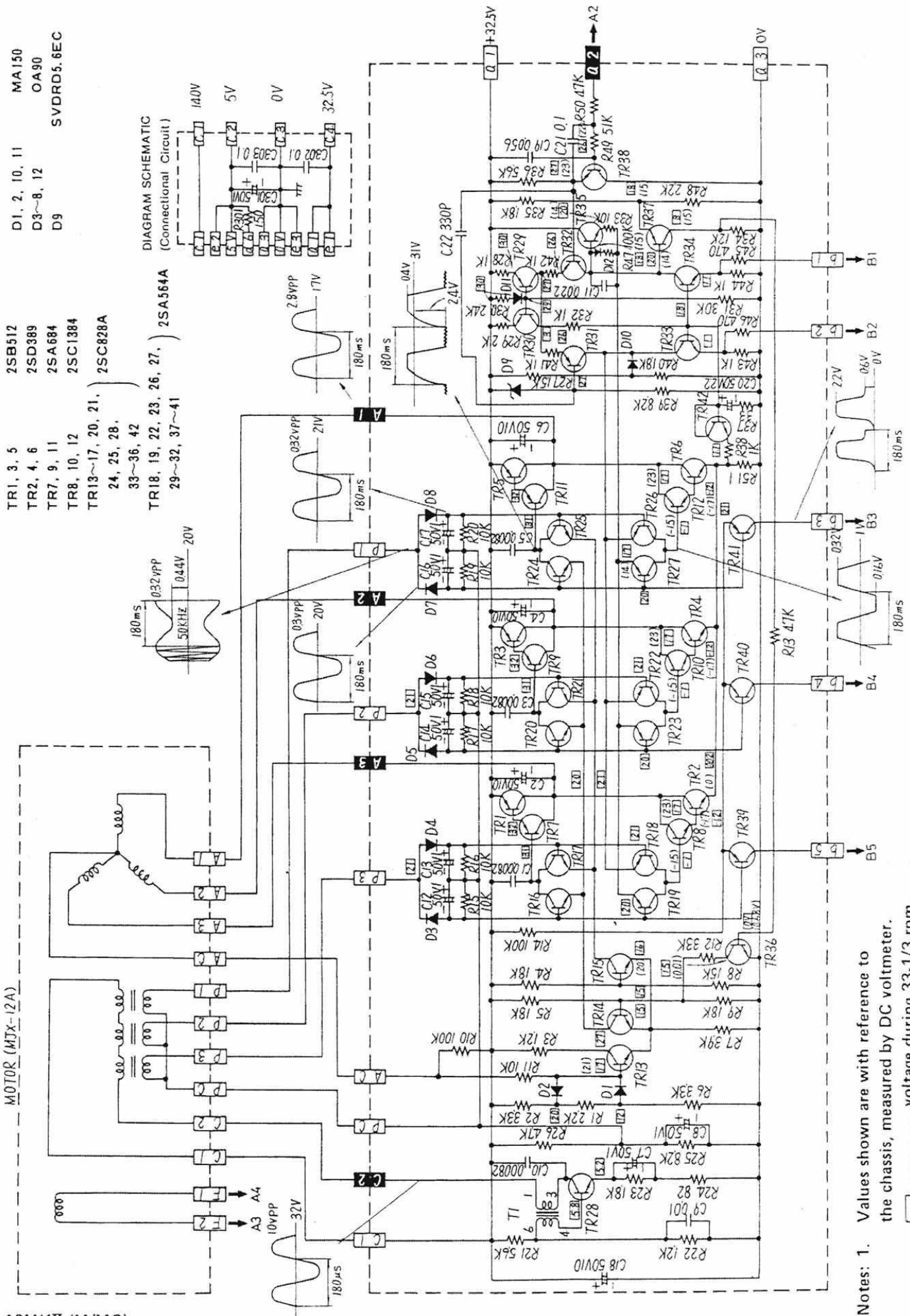
OK • DC power socket (SF8D4F)
• Lead wires
BAD Primary of transformer (SH-10E)
DCSV/32.5V constant voltage output circuit (SH-10E)



Schematic Diagram (Drive Circuit) Model SP-10MKII-(M/MC)

TRI, 3, 5 MA150
 TR2, 4, 6 OA90
 TR7, 9, 11 D9
 TR8, 10, 12 SVDRD5.8EC

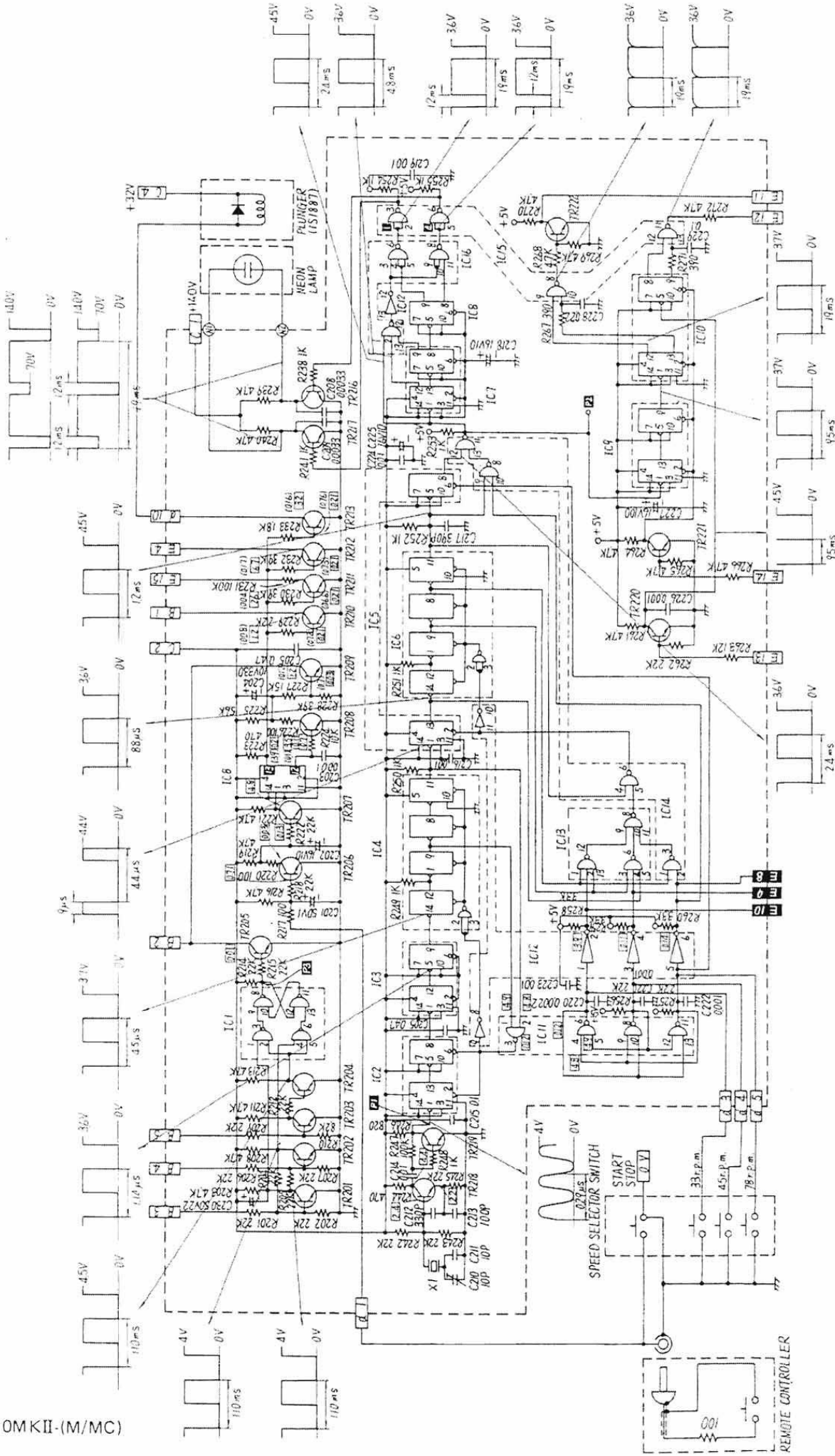
TR1, 3, 5 2SB512
 TR2, 4, 6 2SD389
 TR7, 9, 11 2SA684
 TR8, 10, 12 2SC1384
 TR13~17, 20, 21, 24, 25, 28, 33~36, 42 2SC828A
 TR18, 19, 22, 23, 26, 27, 29~32, 37~41 2SA564A



- Notes: 1. Values shown are with reference to the chassis, measured by DC voltmeter.
- voltage during 33-1/3 rpm.
 - () voltage when stopped.
- Waveforms are during 33-1/3 rpm.

This schematic diagram may be modified at any time with the development of new technology.

Schematic Diagram (Logic Circuit) Model SP-10MKII-(M/MC)

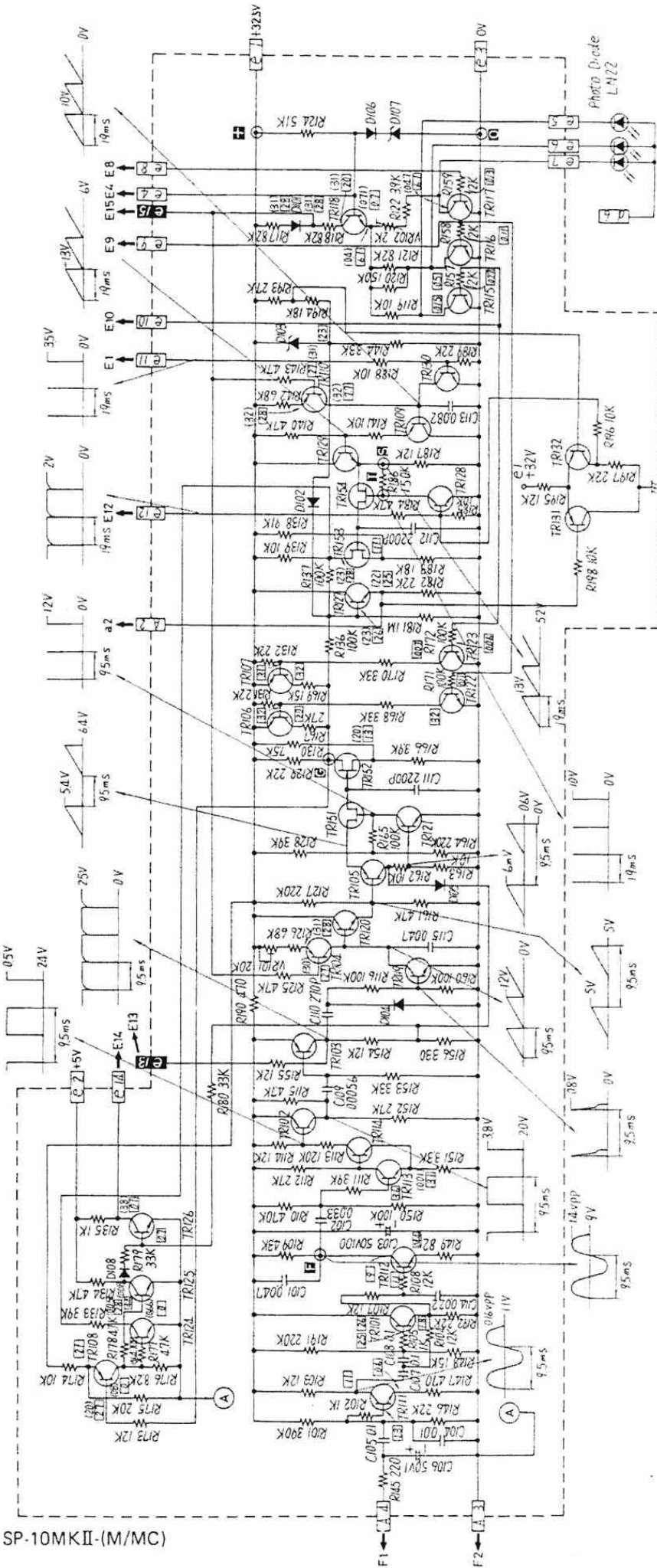


Notes: 1. Values shown are with reference to the chassis, measured by DC voltmeter.
 () voltage during 33-1/3 rpm.
 Waveforms are during 33-1/3 rpm.

IC1	SVIM53200P	TR201~212	2SC828A
IC2, 3, 5, 7, 8, 9	SVIM53273P	218~222	
IC4, 6	SVIM53293P	TR213	2SC1384
IC11	SVIM5946P	TR216, 217	2SC1573
IC12	SVIM53204P		
IC13, 16	SVIM53210P		
IC14, 15	SVIM53200P		

This schematic diagram may be modified at any time with the development of new technology.

Schematic Diagram (Control Circuit) Model SP-10MKII-(M/MC)



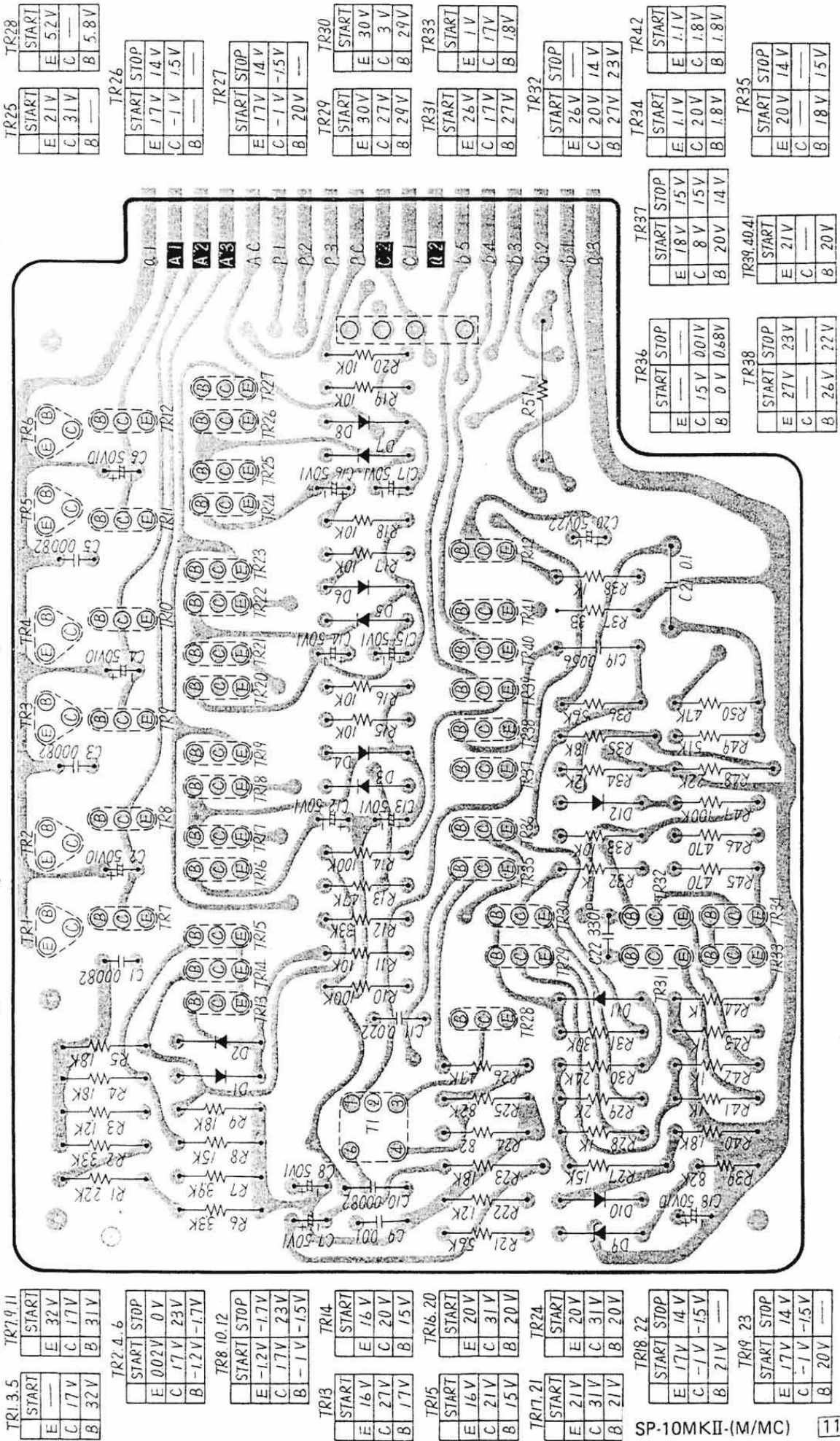
- Notes: 1.** Values shown are with reference to the chassis, measured by DC voltmeter.
- voltage during 33-1/3 rpm.
 - () voltage when stopped.
- Waveforms are during 33-1/3 rpm.

- TR102~110, 131, 132 2SA564A
- TR101, 111~130 2SC828A
- TR151~154 2SK30A
- D101, 102, 104, 105, 106, 108 MA150
- D103 SVDR09.1EBS
- D107 SVDR05.6ECS

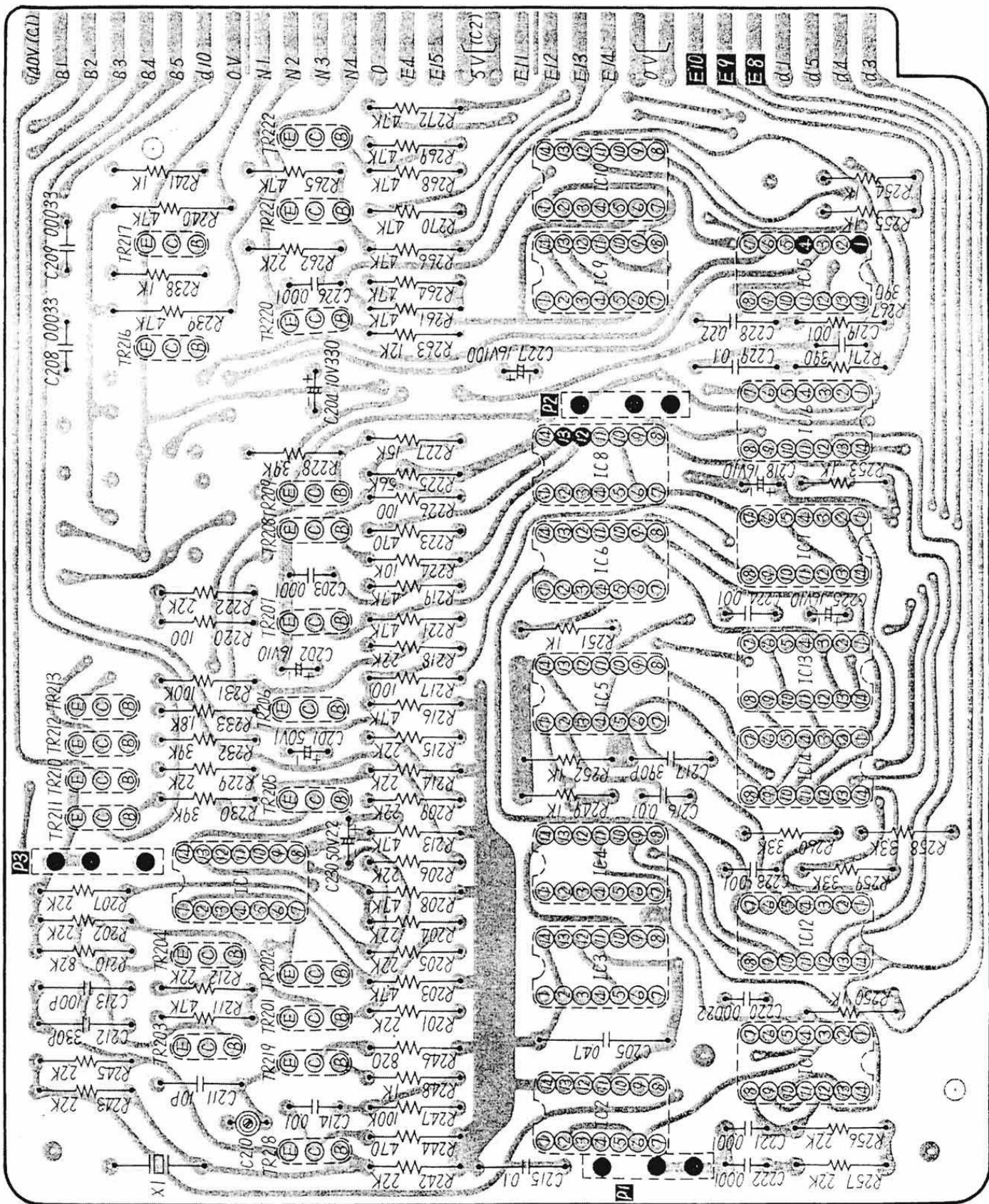
This schematic diagram may be modified at any time with the development of new technology.

Printed circuit board pattern seen from below.

Circuit Board Wiring View (Drive Circuit) Model SP-10MKII-(M/MC)



Circuit Board Wiring View (Logic Circuit) Model SP-10MKII-(M/MC)



TR205	
START	—
E	—
C	0.01V
B	—

TR206	
START	—
E	—
C	0.03V
B	0.71V

IC12	
START	—
2	3.9V
4	0.1V
6	0.14V

TR207	
START	—
E	—
C	4.8V
B	0.13V

IC8	
START	STOP
I2	3.5V 0.1V
I3	0.21V 3.9V

TR209	
START	STOP
E	—
C	1.2V 0.12V
B	0.03V 0.7V

TR210	
START	STOP
E	—
C	1.2V 0.08V
B	0.21V 0.72V

TR211	
START	STOP
E	—
C	2.6V 0.04V
B	0.21V 0.66V

TR212	
START	STOP
E	—
C	6.7V 0.17V
B	0.21V 0.73V

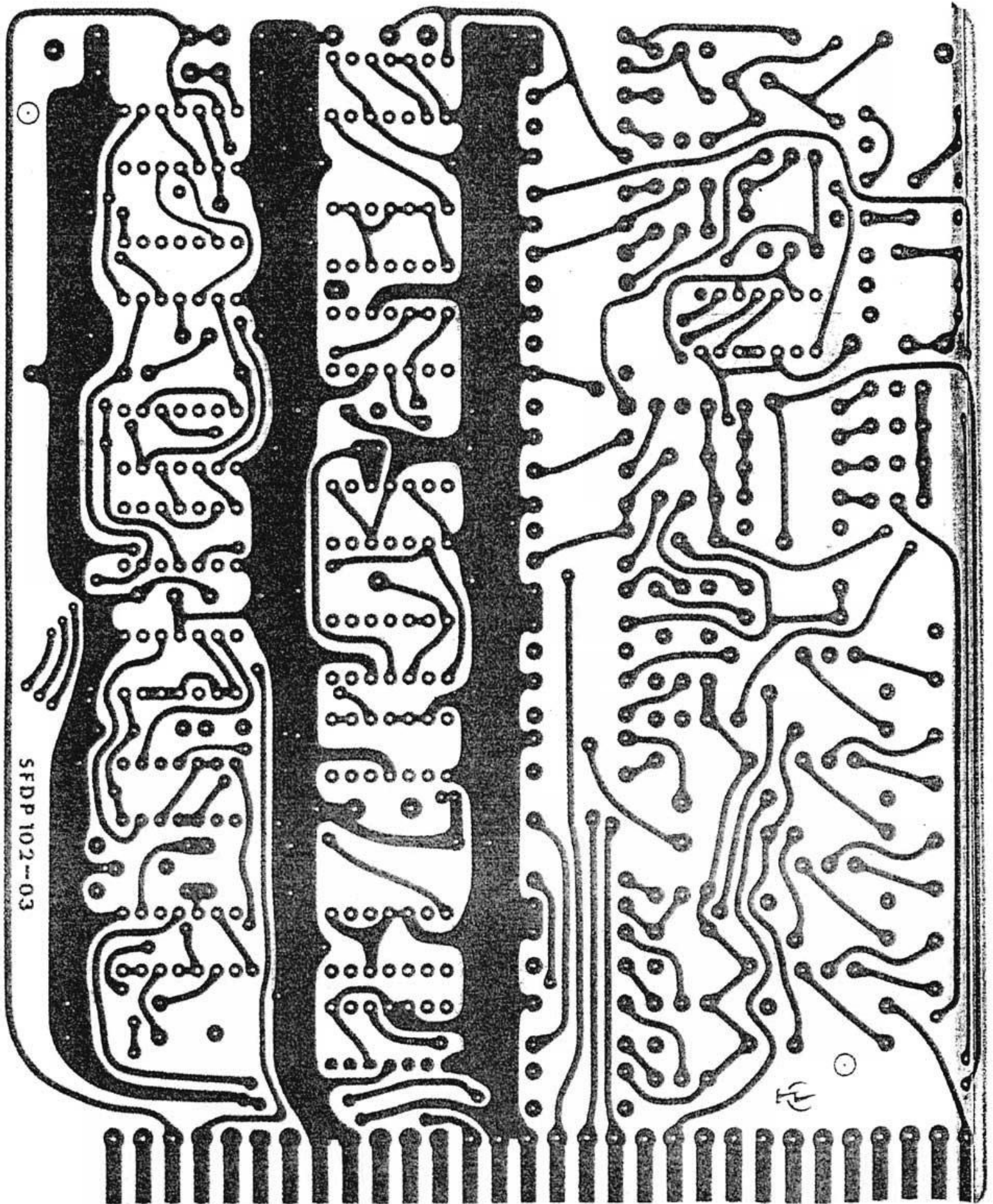
TR213	
START	STOP
E	—
C	3.2V 0.16V
B	0.21V 0.76V

IC11	
START	—
1	4.9V
2	4.8V
3	0.12V
4	4.8V
5	4.9V
6	0.12V

TR218	
START	—
E	2.2V
C	4.4V
B	2.4V

Circuit Board Wiring View (Logic Circuit)

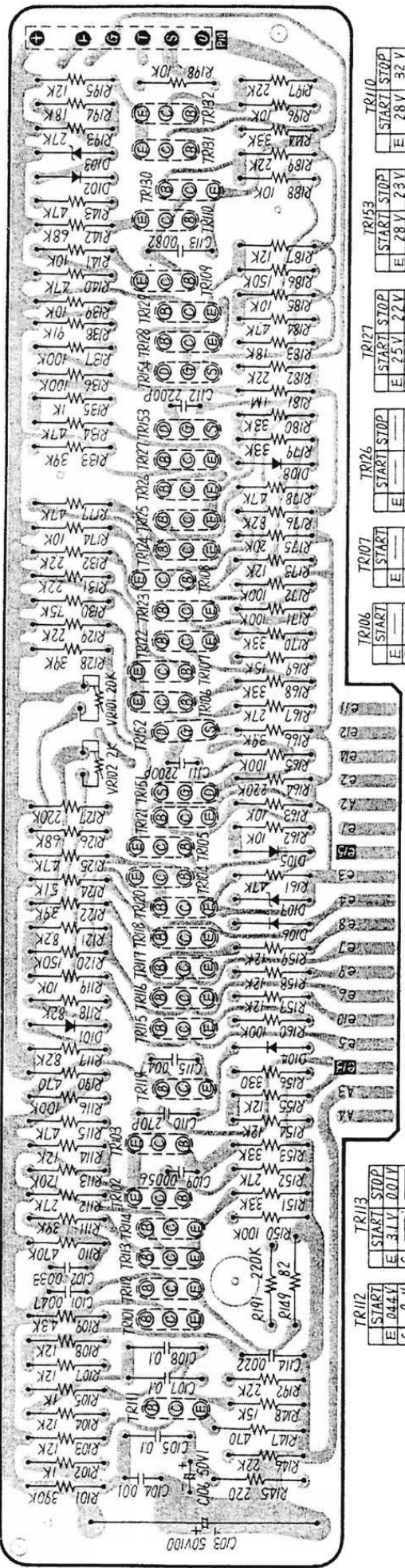
..... Model SP-10MKII-(M/MC)



SFDP 102-03

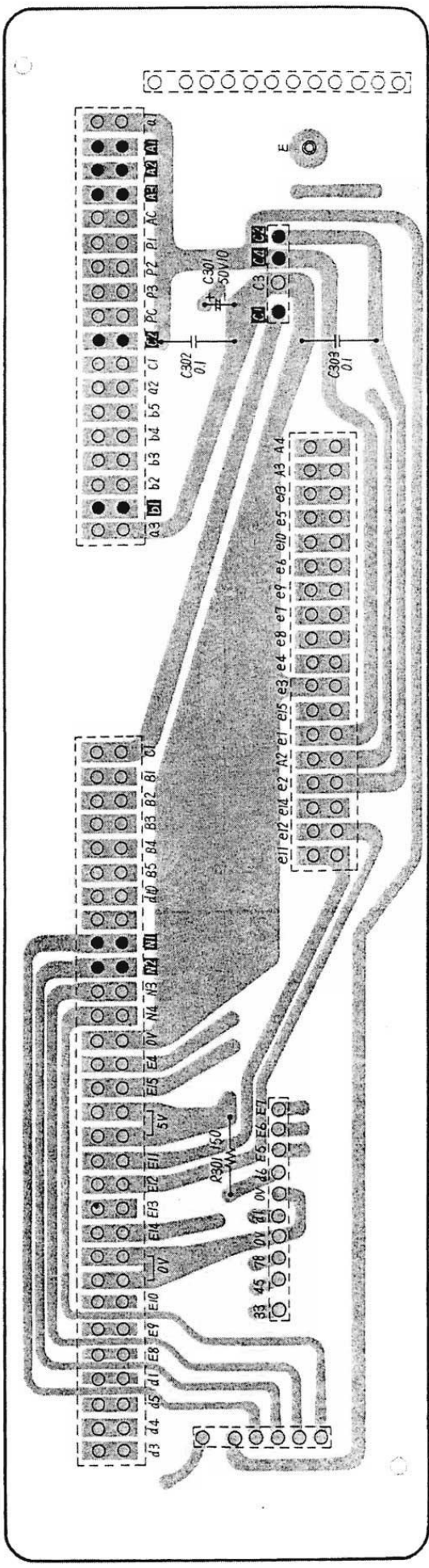
Circuit Board Wiring View (Control Circuit) Model SP-10MKII-(M/MC)

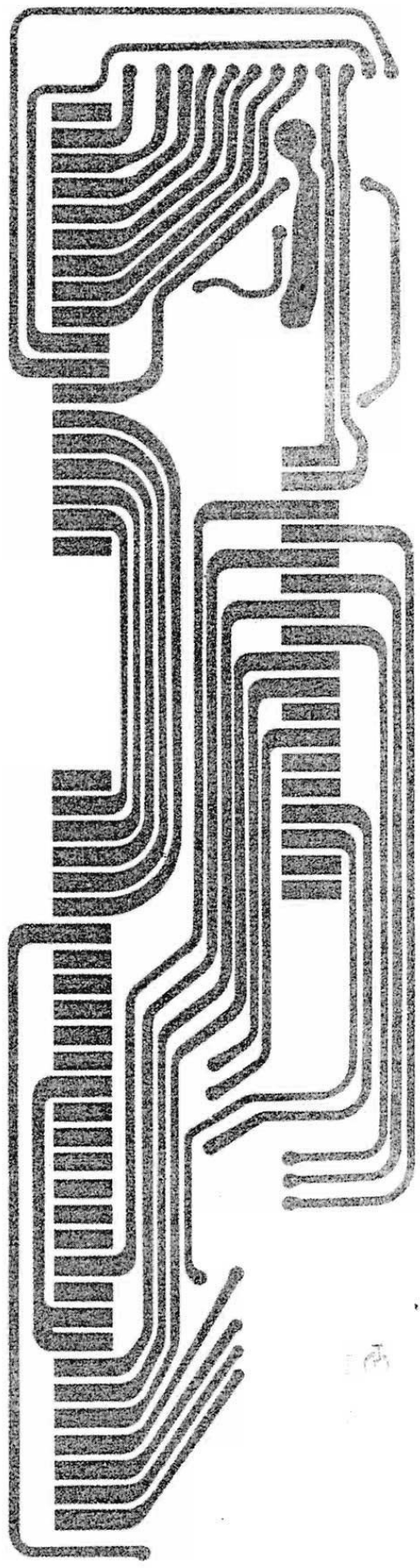
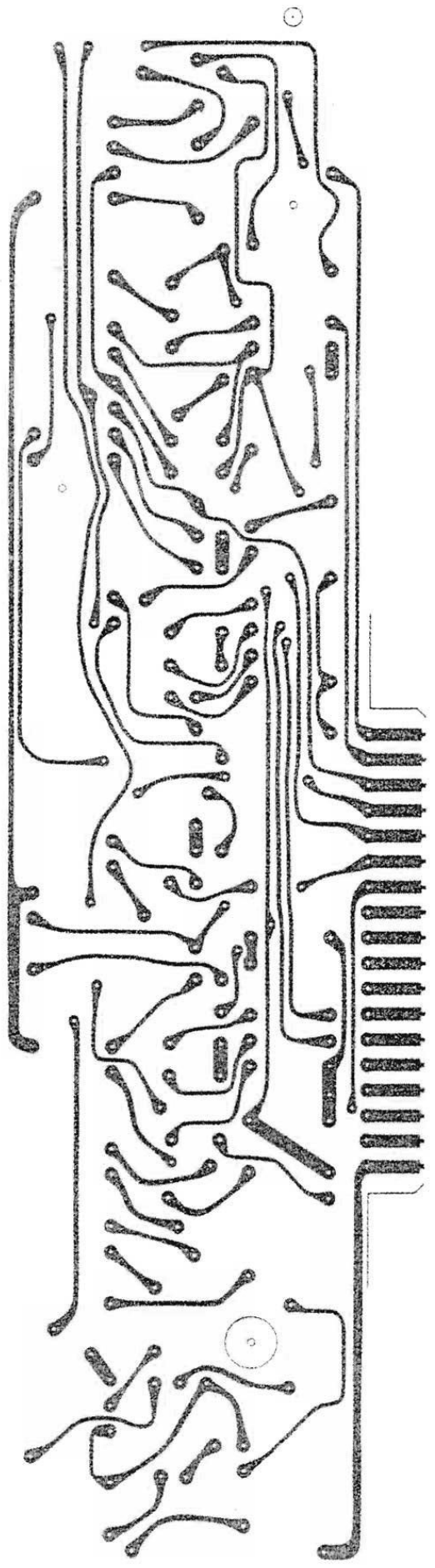
TR111	TR115	TR116	TR117	TR118	TR122	TR123	TR124	TR125
START STOP	START STOP	START STOP	START STOP	START STOP	START STOP	START STOP	START STOP	START STOP
E 0.6V	E 1.8V	E 0.5V	E 6.1V 0.41V	E 6.1V 0.41V	E 2.1V	E 0.07V	E 28V 0.05V	E 4.4V 0.08V
C 1.1V	C 0.15V	C 0.5V	C 20V 3.1V	C 20V 3.1V	C 3.2V	C 0.07V	C 0V 0.64V	C 4.4V 0.08V
B 1.3V	B 0.77V	B 0.11V	B 0.13V	B 0.7V 0.71V	B 0.11V	B 0.085V	B 0V 0.64V	B 0V 0.66V



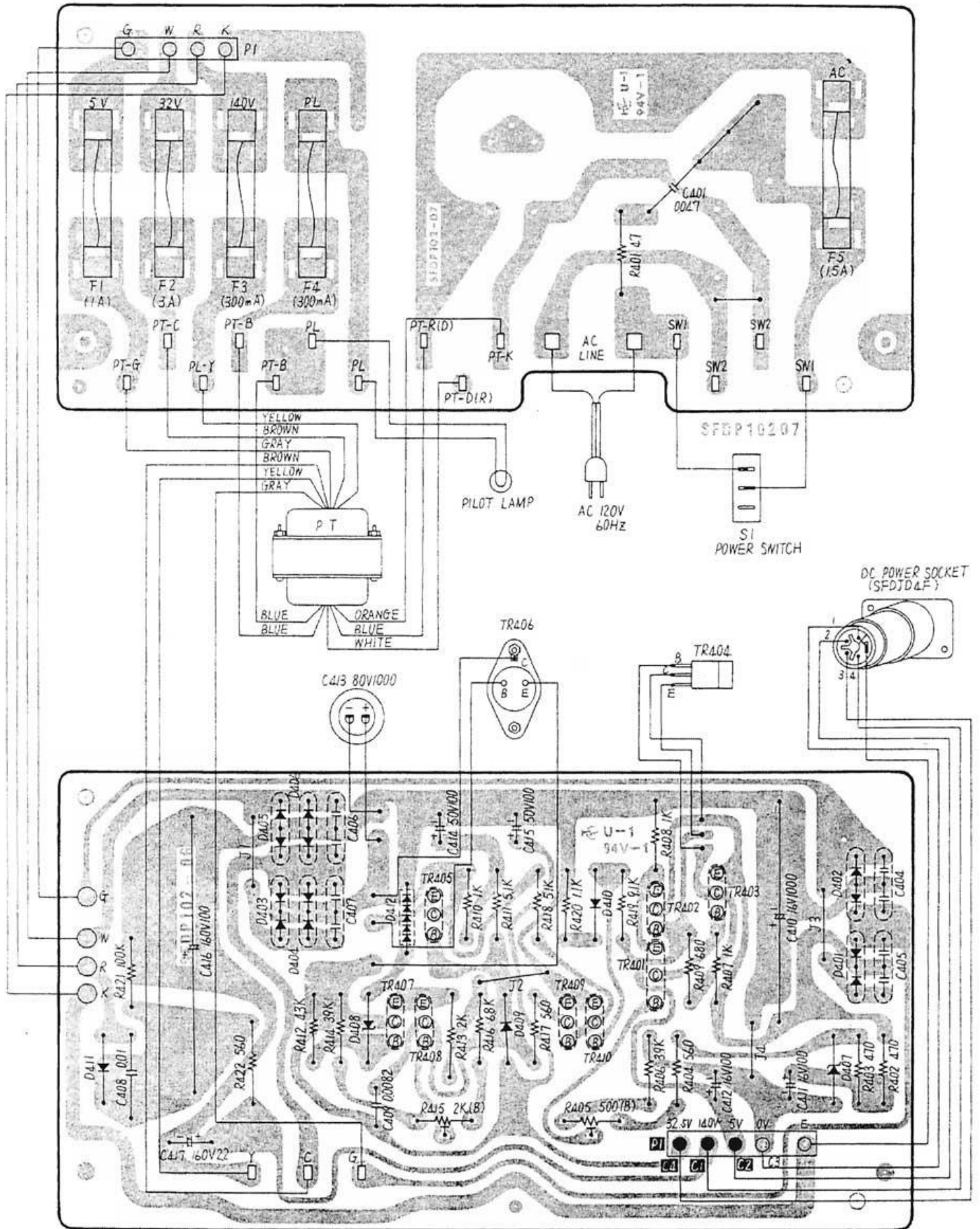
Circuit Board Wiring View (Connectional Circuit) Model SP-10MKII-(M/MC)

TR101	TR102	TR103	TR104	TR105	TR106	TR107	TR108	TR109	TR110	TR111	TR112	TR113	TR114	TR115	TR116	TR117	TR118	TR119	TR120	TR121	TR122	TR123	TR124	TR125
START STOP	START STOP	START STOP	START STOP	START STOP	START STOP	START STOP	START STOP	START STOP	START STOP	START STOP	START STOP	START STOP	START STOP	START STOP	START STOP	START STOP	START STOP	START STOP	START STOP	START STOP	START STOP	START STOP	START STOP	START STOP
E 0.44V	E 0.44V	E 0.44V	E 0.44V	E 0.44V	E 0.44V	E 0.44V	E 0.44V	E 0.44V	E 0.44V	E 0.44V	E 0.44V	E 0.44V	E 0.44V	E 0.44V	E 0.44V	E 0.44V	E 0.44V	E 0.44V	E 0.44V	E 0.44V	E 0.44V	E 0.44V	E 0.44V	
C 9.1V	C 9.1V	C 9.1V	C 9.1V	C 9.1V	C 9.1V	C 9.1V	C 9.1V	C 9.1V	C 9.1V	C 9.1V	C 9.1V	C 9.1V	C 9.1V	C 9.1V	C 9.1V	C 9.1V	C 9.1V	C 9.1V	C 9.1V	C 9.1V	C 9.1V	C 9.1V	C 9.1V	
B 1.1V	B 1.1V	B 1.1V	B 1.1V	B 1.1V	B 1.1V	B 1.1V	B 1.1V	B 1.1V	B 1.1V	B 1.1V	B 1.1V	B 1.1V	B 1.1V	B 1.1V	B 1.1V	B 1.1V	B 1.1V	B 1.1V	B 1.1V	B 1.1V	B 1.1V	B 1.1V	B 1.1V	





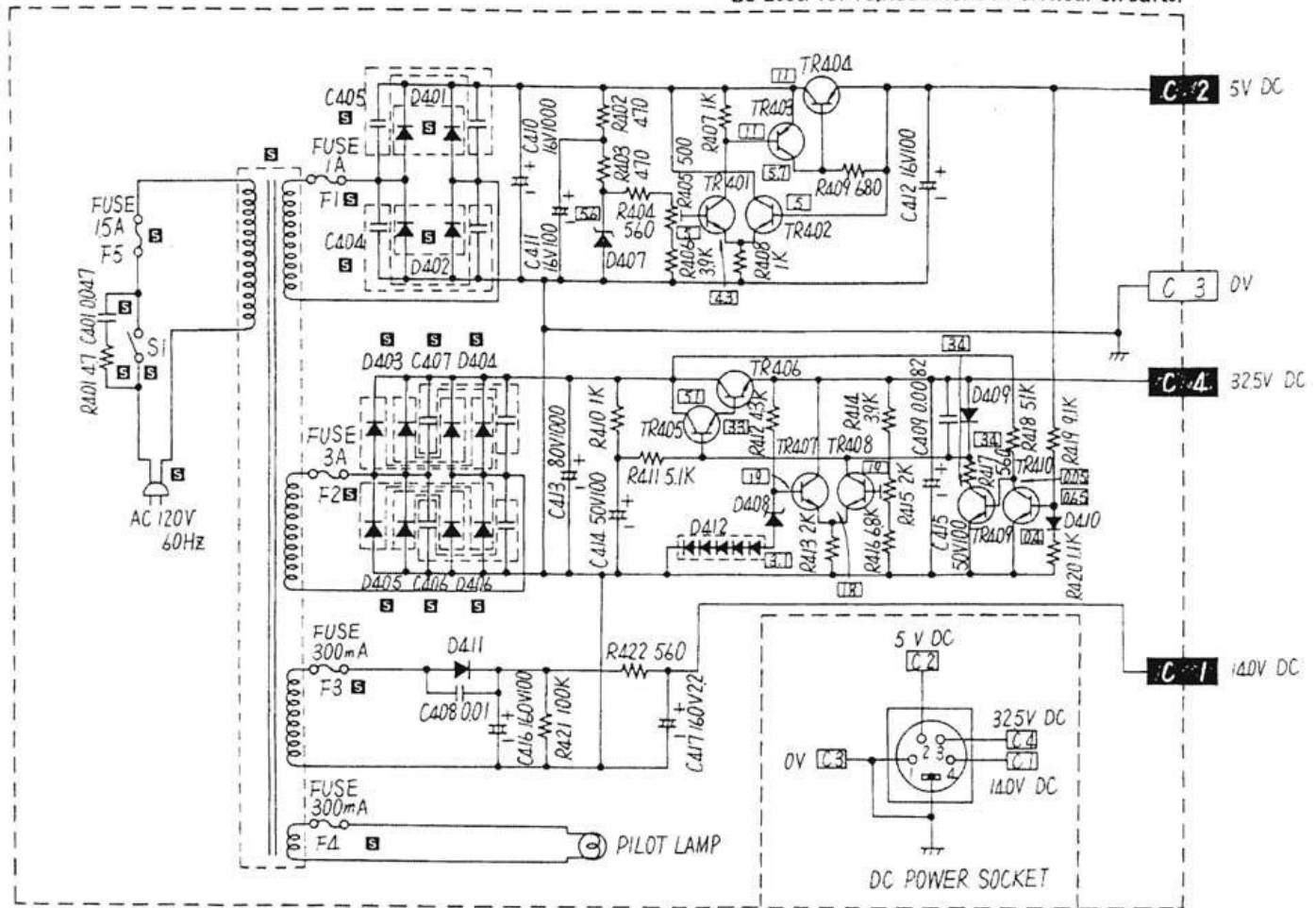
Circuit Board Wiring View Power Unit [SH-10E-(M/MC)]



TR401	TR403	TR404	TR405	TR406	TR407	TR408	TR409	TR410
START	START	START	START	START	START	START	START	START
E 43V	E 11V	E 5V	E 33V	E 325V	E 8V	E 18V	E 31V	E 31V
C 11V	C 57V	C 11V	C 51V	C 48V	C 325V	C 34V	C 34V	C 005V
B 5V	B 11V	B 57V	B 34V	B 33V	B 9V	B 19V	B 005V	B 065V

Schematic Diagram Power Unit [SH-10E-(M/MC)]

Notes: **S** indicates that only parts specified by the manufacture be used for replacement in critical circuits.



PACKING PARTS

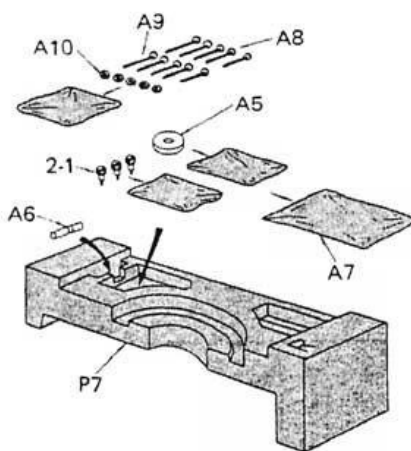


Fig. 16

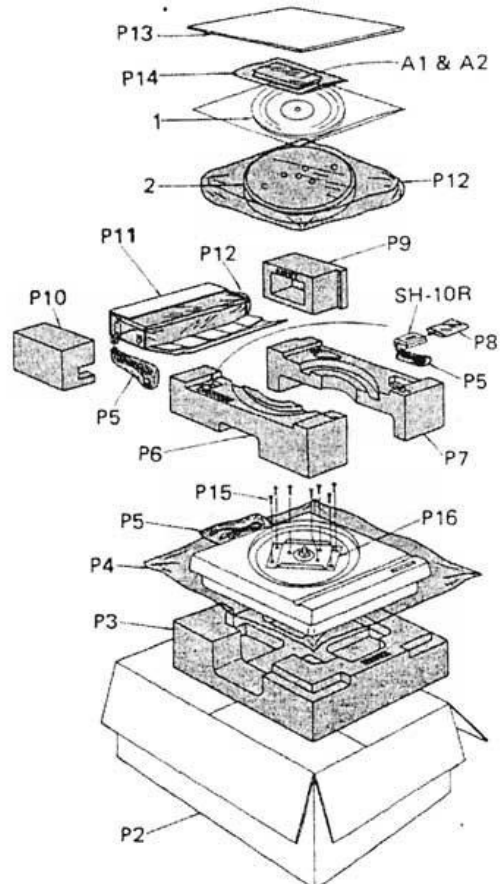
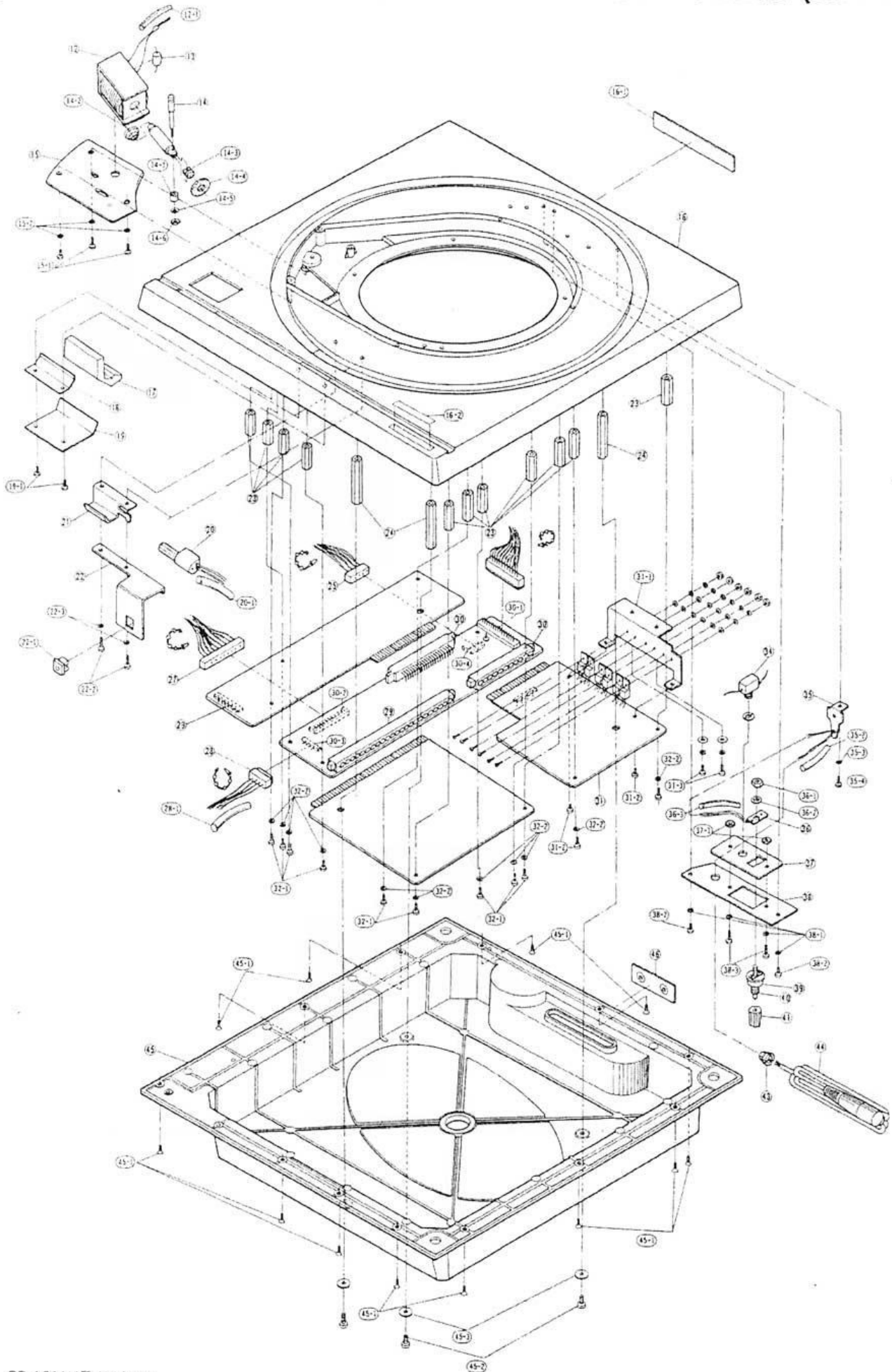


Fig. 17

Exploded View of Turntable Model SP-10MKII-(M/MC)



16 SP-10MKII-(M/MC)

Fig. 18

Exploded View of Turntable Model SP-10MKII-(M/MC))

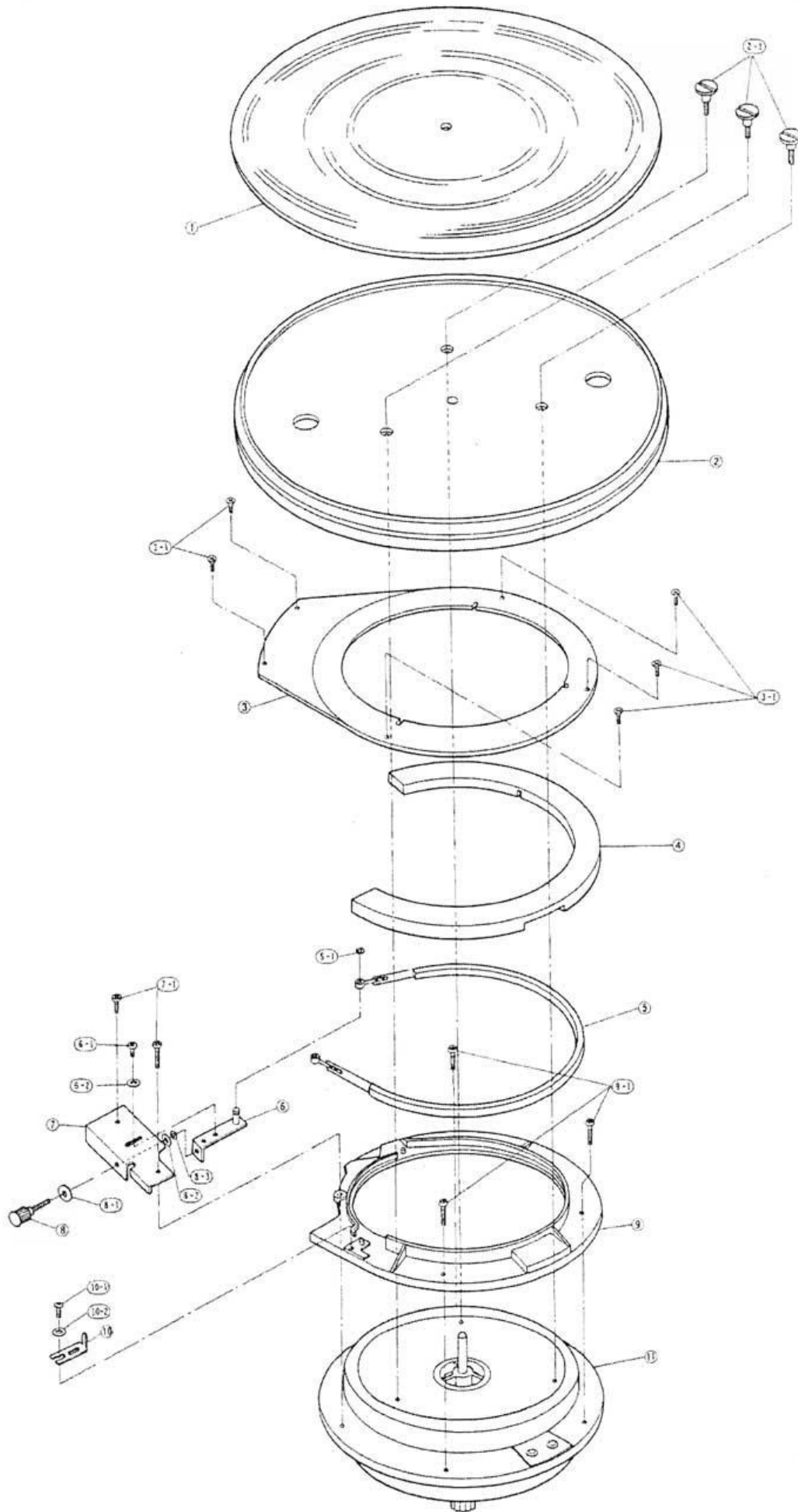


Fig. 19

Exploded View of Power Unit Model SH-10E-(M/MC)

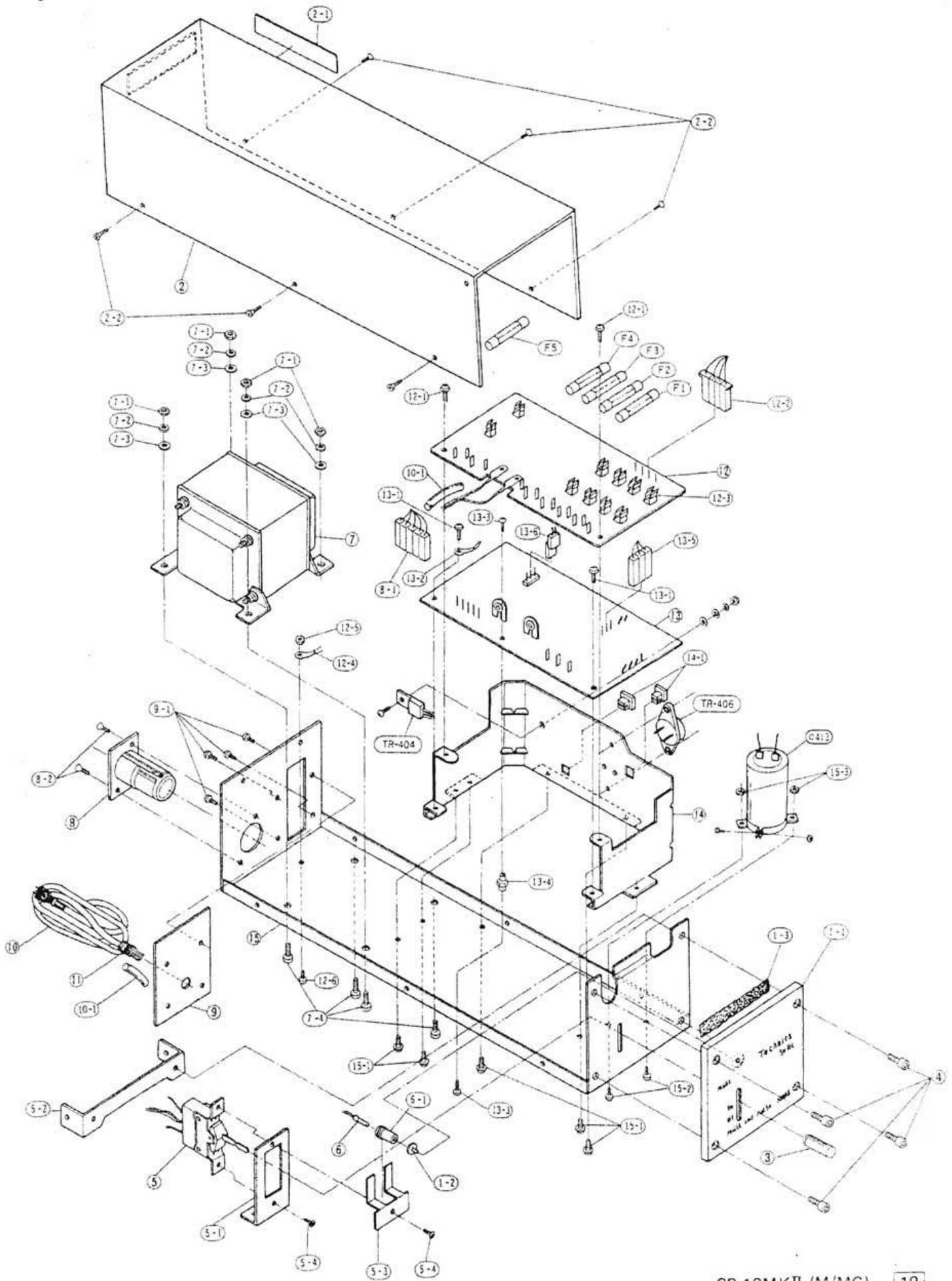


Fig. 20

Exploded View of Remote Control

Model SH-10R-(M/MC)

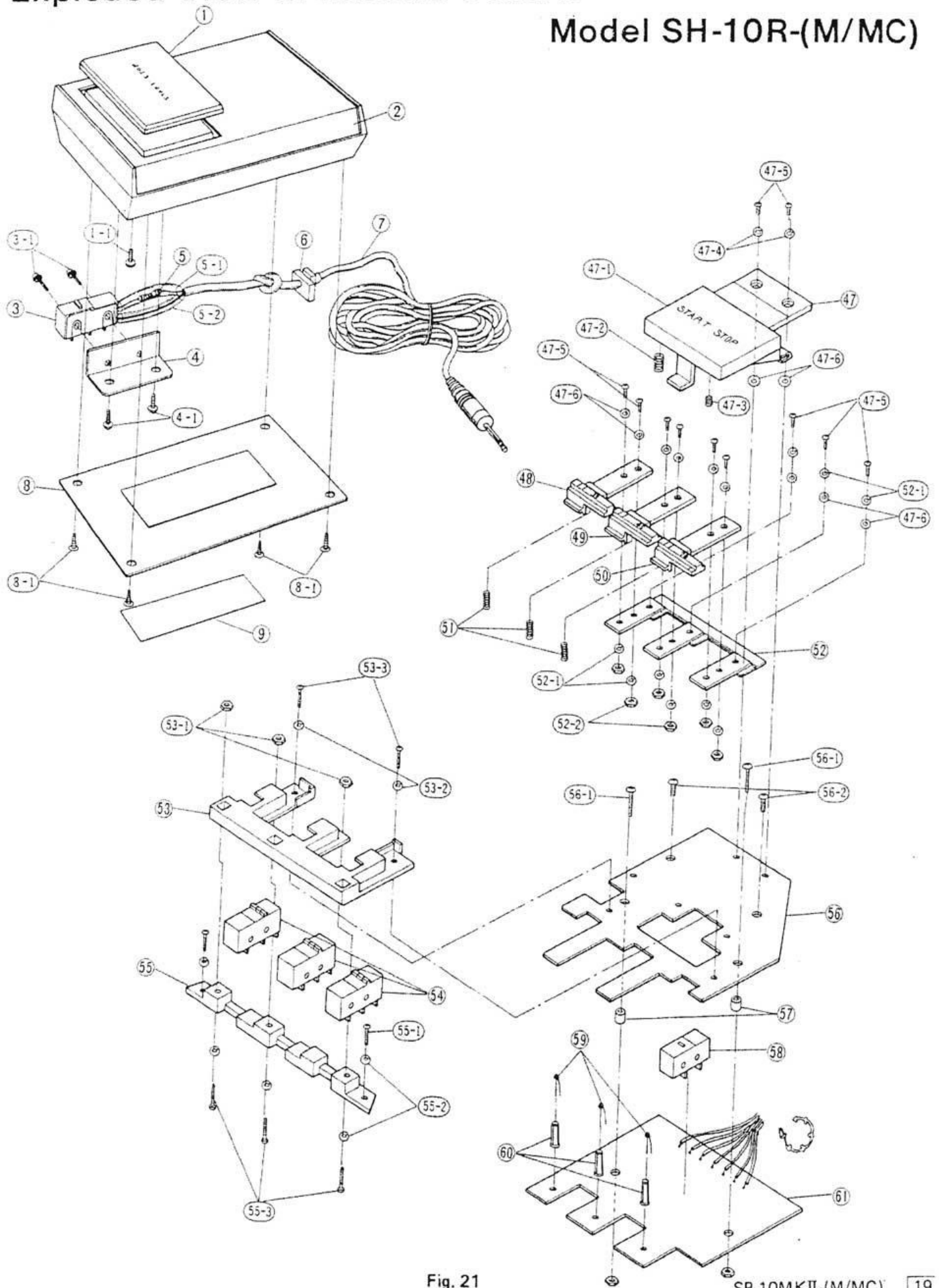


Fig. 21

REPLACEMENT PARTS LIST

- NOTES: 1. Part numbers are indicated on most mechanical parts.
 Please use this part number for parts orders.
 2. SAFETY Indicates, for safety reasons, that only parts specified in service manual be used for replacement.

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
DRIVE CIRCUIT BOARD				
Transistors				
TR1, 3, 5	25B512-P	Transistors	3	
TR2, 4, 6	25D390A-Q	Transistors	3	
TR7, 9, 11	25A752-Q	Transistors	3	
TR8, 10, 12	25C1384A-Q	Transistors	3	
TR13~17, 20, 21, 24, 25, 28 33~36, 42	25C1328-T	Transistors	15	
TR18, 19, 22, 23, 27, 29~32, 37~41	25A666A1-R	Transistors	15	
Diodes				
D1, 2, 10, 11	MA150	Diodes	4	
D3~8, 12	OA90	Diodes	7	
D9	SVDRD5.6ECS	Diode	1	
Transformer				
T1	ELM10S123	Oscillator	1	
Resistors				
R28, 38, 43, 44	ER050CKF1001	1K Ω	4	
R29	ER050CKF2001	2K Ω	1	
R31	ERX2ANJ1R0	1 Ω	1	
R37	ERD12FJ3R3	3.3 Ω	1	
R24	ERD12FJ820	82 Ω	1	
R3, 22	ERD12FJ122	1.2K Ω	2	
R7	ERD50TJ152	1.5K Ω	1	
R23, 35, 40	ERD50TJ182	1.8K Ω	3	
R48	ERD50TJ222	2.2K Ω	1	
R1	ERD25TJ222	2.2K Ω	1	
R30	ERD25TJ242	2.4K Ω	1	
R2, 6	ERD25TJ332	3.3K Ω	2	
R7	ERD25TJ392	3.9K Ω	1	
R26	ERD25TJ472	4.7K Ω	1	
R21, 36	ERD25TJ562	5.6K Ω	2	
R45, 46	ERD25TJ471	4.7K Ω	2	
R32, 41, 42	ERD25TJ102	1K Ω	3	
R25, 39	ERD25TJ822	8.2K Ω	2	
R11, 15, 16, 17 18, 19, 20, 33	ERD25TJ103	10K Ω	8	
R34	ERD25TJ123	12K Ω	1	
R8	ERD25TJ153	15K Ω	1	
R4, 5, 9	ERD25TJ183	18K Ω	3	
R31	ERD25TJ303	30K Ω	1	
R12	ERD25TJ333	33K Ω	1	
R13, 50	ERD25TJ473	4.7K Ω	2	
R49	ERD25TJ513	5.1K Ω	1	
R10, 14, 47	ERD25TJ104	100K Ω	3	
Capacitors				
C22	ECQS1331K	330pF	1	
C1, 3, 5, 10	ECQM0562KZ	0.008 μ F	4	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
C9	ECQM05103KZ	50WV \pm 10% Polyester	1	
C11	ECQM05223KZ	0.022 μ F 50WV \pm 10% Polyester	1	
C19	ECQM05563KZ	0.056 μ F 50WV \pm 10% Polyester	1	
C21	ECQM05104KZ	0.1 μ F 50WV \pm 10% Polyester	1	
C7, 8, 12, 13, 14 15, 16, 17	ECEA50V1	1 μ F 50WV Electrolytic	8	
C20	ECEA50V2R2	2.2 μ F 50WV Electrolytic	1	
C2, 4, 6, 18	ECEA50V10	10 μ F 50WV Electrolytic	4	
LOGIC CIRCUIT BOARD				
Integrated Circuits				
IC1, 14, 15	SVIM53200P	Integrated Circuit	1	
IC2, 3, 5, 7, 8, 9, 10	SVIM53273P	Integrated Circuit	7	
IC4, 6	SVIM53293P	Integrated Circuit	2	
IC11	SVIM5946P	Integrated Circuit	1	
IC12	SVIM53204P	Integrated Circuit	1	
IC13, 16	SVIM53210P	Integrated Circuit	2	
Transistors				
TR201~212 218~222	25C1328-T	Transistors	17	
TR213	25C1384A-Q	Transistor	1	
TR216, 217	25C1573-Q	Transistors	2	
Resistors				
R210, 220, 226	ERD25TJ101	100 Ω	3	
R267, 271	ERD25TJ391	390 Ω	2	
R223, 244	ERD25TJ471	470 Ω	2	
R246	ERD25TJ821	820 Ω	1	
R238, 241, 248 249, 250, 251, 252, 253, 254, 255	ERD25TJ102	1K Ω	10	
TR233	ERD25TJ182	1.8K Ω	1	
TR214, 218, 222	ERD25TJ222	2.2K Ω	7	
TR246, 256, 257, 262	ERD25TJ332	3.3K Ω	3	
TR258, 259, 260	ERD25TJ392	3.9K Ω	1	
TR228	ERD25TJ472	4.7K Ω	15	
TR203, 208, 211, 213, 216, 219, 221, 261, 264, 265, 266, 268, 269, 270, 272	ERD25TJ562	5.6K Ω	1	
TR225	ERD25TJ822	8.2K Ω	1	
TR210	ERD25TJ103	10K Ω	1	
TR224	ERD25TJ123	12K Ω	1	
TR263	ERD25TJ153	15K Ω	1	
TR227	ERD25TJ223	22K Ω	12	
TR201, 202, 204 ~207, 209, 212, 215, 229, 242, 243	ERD25TJ393	39K Ω	2	
TR230, 232	ERD25TJ104	100K Ω	2	
TR231, 247	ERG1ANJ472	4.7K Ω 1W	2	
TR239, 240				
Capacitors				
C203, 221, 222, 226	ECQM05102KZ	0.001 μ F 50WV \pm 10% Polyester	4	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
C220	ECOM05222KZ	50WV ± 10% Polyester	1	
C214, 216, 219, 223, 224	ECOM05103KZ	50WV ± 10% Polyester	5	
C215, 229	ECOM05104KZ	50WV ± 10% Polyester	2	
C228	ECOM05224KZ	50WV ± 10% Polyester	1	
C205	ECOM05474KZ	50WV ± 10% Polyester	1	
C208, 209	ECOM2332KZ	50WV ± 10% Polyester	2	
C211	ECOS5100K	50WV ± 10% Styrol	1	
C213	ECOS1101K	100pF 125WV ± 10% Styrol	1	
C212	ECOS1331K	330pF 125WV ± 10% Styrol	1	
C217	ECOS1391K	390pF 125WV ± 10% Styrol	1	
C201	ECEA50V1	50WV Electrolytic	1	
C230	ECEA50V2R2	2.2µF 50WV Electrolytic	1	
C202, 218, 225,	ECEA16V10	10µF 16WV Electrolytic	3	
C227	ECEA16V100	100µF 16WV Electrolytic	1	
C204	ECEA10V330V	330µF 10WV Electrolytic	1	
C210	ECV1ZW10X53	Variable Capacitor	1	
		10pF Ceramic trimmer		
		Crystal		
XI	TSS616-1K	3.5796MH Oscillator	1	
CONTROL CIRCUIT BOARD				
		Transistors		
TR101, 113~130	2SC1328-T	Transistors	18	
TR102~108, 110, 131, 132,	2SA666A1-R	Transistors	10	
TR109	2SA666A1-R	Transistor	1	
TR111, 112, 120,	2SC1328-T	Transistors	3	
TR151~154	2SK30A-Y	Transistors	4	
		Diodes		
D101, 102, 104, 105, 106, 108	MA150	Diodes	6	
D103	SVDRD9.1EBS	Diode	1	
D107	SVDRD5.6ECS	Diode	1	
		Resistors		
R121	ERO25CKD8201	8.2KΩ 1/4W ± 5% Metallic	1	
R119	ERO25CKD1002	10KΩ 1/4W ± 5% Metallic	1	
R174	ERO25CKF1002	10KΩ 1/4W ± 1% Metallic	1	
R175	ERO25CKF2002	20KΩ 1/4W ± 1% Metallic	1	
R149	ERD12FJ820	82 Ω 1/2W ± 5% Carbon	1	
R145	ERD12FJ221	220Ω 1/2W ± 5% Carbon	1	
R156	ERD12FJ331	330Ω 1/2W ± 5% Carbon	1	
R147	ERD12FJ471	470Ω 1/2W ± 5% Carbon	1	
R192	ERD25TJ222	2.2KΩ 1/2W ± 5% Carbon	1	
R144	ERD25TJ332	3.3KΩ 1/4W ± 5% Carbon	1	
R122, 166	ERD25TJ392	3.9KΩ 1/4W ± 5% Carbon	2	
R115	ERD25TJ472	4.7KΩ 1/4W ± 5% Carbon	1	
R124	ERD25TJ512	5.1KΩ 1/4W ± 5% Carbon	1	
R130	ERD25TJ752	7.5KΩ 1/4W ± 5% Carbon	1	
R190	ERD25TJ471	470Ω 1/4W ± 5% Carbon	1	
R102, 105, 135	ERD25TJ102	1KΩ 1/4W ± 5% Carbon	3	
R131, 132	ERD25TJ222	2.2KΩ 1/4W ± 5% Carbon	2	
R151	ERD25TJ332	3.3KΩ 1/4W ± 5% Carbon	1	
R134, 177, 178, 184	ERD25TJ472	4.7KΩ 1/4W ± 5% Carbon	4	
R117, 118, 176	ERD25TJ822	8.2KΩ 1/4W ± 5% Carbon	3	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
R139, 141, 162, 163, 185, 188, 196, 198	ERD25TJ103	10KΩ 1/4W ± 5% Carbon	8	
R103, 104, 107, 108, 114, 154, 155, 157, 158, 159, 173, 187, 195	ERD25TJ123	12KΩ 1/4W ± 5% Carbon	13	
R148, 169	ERD25TJ153	15KΩ 1/4W ± 5% Carbon	2	
R183, 194	ERD25TJ183	18KΩ 1/4W ± 5% Carbon	2	
R129, 146, 182, 189, 197	ERD25TJ223	22KΩ 1/4W ± 5% Carbon	5	
R112, 152, 167, 193	ERD25TJ273	27KΩ 1/4W ± 5% Carbon	4	
R153, 168, 170, 179, 180	ERD25TJ333	33KΩ 1/4W ± 5% Carbon	5	
R111, 128, 133	ERD25TJ393	39KΩ 1/4W ± 5% Carbon	3	
R125, 140, 143, 161	ERD25TJ473	47KΩ 1/4W ± 5% Carbon	4	
R126, 142	ERD25TJ683	68KΩ 1/4W ± 5% Carbon	2	
R109	ERD25TJ432	4.3KΩ 1/4W ± 5% Carbon	1	
R138	ERD25TJ913	91KΩ 1/4W ± 5% Carbon	1	
R116, 136, 137, 150, 160, 165, 171, 172	ERD25TJ104	100KΩ 1/4W ± 5% Carbon	8	
R113	ERD25TJ124	120KΩ 1/4W ± 5% Carbon	1	
R120, 186	ERD25TJ154	150KΩ 1/4W ± 5% Carbon	2	
R127, 164, 191	ERD25TJ224	220KΩ 1/4W ± 5% Carbon	3	
R101	ERD25TJ394	390KΩ 1/4W ± 5% Carbon	1	
R110	ERD25TJ474	470KΩ 1/4W ± 5% Carbon	1	
R181	ERD25TJ105	1MΩ 1/4W ± 5% Carbon	1	
		Variable Resistor		
VR101	EVSP1AA00E24	20KΩ	1	
VR102	EVSP1AA00E23	2KΩ	1	
		Capacitor		
C110	ECQS1271K	270pF 125W ± 10% Styrol	1	
C111, 112	ECOS1222KZ	2200pF 125W ± 10% Styrol	2	
C109	ECQM05562KZ	50W ± 10% Polyester	1	
C104	ECOM05103KZ	0.01µF 50W ± 10% Polyester	1	
C114	ECOM05223KZ	0.022µF 50W ± 10% Polyester	1	
C102	ECQM05333KZ	0.033µF 50W ± 10% Polyester	1	
C101, 115	ECOM05473KZ	0.047µF 50W ± 10% Polyester	2	
C113	ECOM05823KZ	0.082µF 50W ± 10% Polyester	1	
C105, 107, 108	ECOM05104KZ	0.1µF 50W ± 10% Polyester	3	
C106	ECEA50V1	1µF 50W Electrolytic	1	
C103	ECEB63V100	100µF 50W Electrolytic	1	
		CONNECTONAL BOARD		
R301	ERD25TJ151	150Ω 1/4W ± 5% Carbon	1	
C301	ECEA50V10	10µF 50W Electrolytic	1	
C302, 303	ECOM05104KZ	0.1µF 50W ± 10% Polyester	2	
		CABINET AND CHASSIS PARTS		
1	SFTG102M01	Turntable mat	1	
2	SFTE102-01E	Turntable	1	
2-1	SFXJ102-08E	Screw, Turntable	3	
3	SFUP102-06	Cover, Brake	1	
3-1	XSS3+8FZS	Screw, Cover	5	
4	SFTG102-03	Rubber, Brakecover	1	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
5	SFUP102-08A	Brake Band	1	
5-1	XUC3FT	Circlip, Brake band	1	
6	SFUP102-05E	Plate, Brake	1	
6-1	XYN3+C6FZS	Washer, Plate	1	
6-2	SFXW120-01	Plate, Adjustment	1	
7	SFUP102-07	Screw, Plate	2	
7-1	XYN3+C6FZS	Washer	1	
8	SFXJ102-02	Screw, Adjustment	1	
8-1	SFXW303-1	Washer	1	
8-2	SFPEW12002	Washer	1	
8-3	XUC4FT	Washer	1	
9	SFUM102-01	Brake Housing	1	
9-1	XYN4+15FZS	Screw	3	
10	SFUP102-15	Plate, Brake Adjustment	1	
10-1	XTV3+88FZ	Screw, Adjustment Plate	1	
10-2	SFXW120-01	Washer, Adjustment Plate	1	
11	SFMZ102-01E	Motor Ass'y	1	
12	SFDZSD1AC10	Plunger	1	
12-1	SFEB3UT	Tube	1	
13	SVD1S1887	Diode	1	
14	SFXJ102-03	Lever, Plunger	1	
14-1	SFXO102-01	Spacer, Plunger	1	
14-2	SFOA102-01	Spring, Brake	1	
14-3	SFGH102-01	Rubber, Plunger	1	
14-4	SFGH102-02	Rubber, Washer	1	
14-5	XWA3BER	Washer	1	
14-6	XNG3HS	Nut	1	
15	SFUP102-12	Mounting Plate, Plunger	1	
15-1	XYN3+C5FZS	Screw, Mounting Plate	3	
15-2	SFXW120-01	Washer, Mounting Plate	3	
16	SFAC102-01	Panel case	1	
16-1	SFNN102M01	Name Plate	1	
16-2	SFKB102M01	Badge	1	
17	SFUM102-02	Neon lamp base, A	1	
18	SFUP102-01	Neon lamp base, B	1	
19	SFUP102-02	Neon lamp base, C	1	
19-1	XYN3+C6FZS	Screw, Neon lamp base	2	
20	SFDNNL78WM	Neon lamp	1	
20-1	SFEB3UT	Tube	1	
21	SFUP102-08	Holder, Neon lamp	1	
22	SFUP102-17	Holder, P. C. B	1	
22-1	SFEZ196	Spacer, P. C. B	1	
22-2	XYN3+C6FZS	Screw	2	
22-3	XWA3BFR	Washer	2	
23	SFXT102-05	Spacer, P. C. B	11	
24	SFXT102-04	Spacer, Bottom Case	3	
25	SFDJ12804S	Connector, 4P	1	
27	SFDJ12810S	Connector, 10P	1	
28	SFDJ12804S	Connector, 4P	1	
28-1	SFEB2AF	Tube	1	
29	SFDJS14225	Connector	1	
30	SFDJS14223	Connector	2	
30-1	SFDJ12812P	Connector, 12P	1	
30-2	SFDJ12910P	Connector, 10P	1	
30-3	SFDJ12906P	Connector, 6P	1	
30-4	SFDJ12904P	Connector, 4P	1	
31-1	SFUP102-11	Plate, Heat sink	1	
31-2	XYN3+C6FZS	Screw	4	
31-3	XSN3+6FUS	Screw	2	
32-1	XYN3+C6FZS	Screw	9	
32-2	XWA3BFR	Washer	13	
34	RJJ10C	Jack	1	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
35	SFER1E	Mounting, Ground wire	1	
35-2	SFEB3UT	Tube	1	
35-3	XWC3BFY	Washer	1	
35-4	XYN3+C6FZS	Screw	1	
36	SJT719	Mounting Plate	1	
36-1	XNG4HS	Nut	1	
36-2	XWA4BFR	Washer	1	
36-3	SFEB3UT	Tube	1	
37	SFUZ102-05	Mounting Plate, Socket	2	
37-1	XNG3HS	Nut	2	
38	SFUP102-03	Mounting Plate, Cord	1	
38-1	XWC3BFY	Washer	4	
38-2	XYN3+C8FZS	Screw	2	
38-3	XYN3+C6FZS	Screw	2	
39	SGE103	Terminal	1	
40	SNE281-1S	Terminal screw	1	
41	SNE273-1	Knob	1	
43	SFSR5N4	Bushing, cord	1	
44	SFDJ102-01E	Plug	1	
45	SFAU102-01	Bottom case	1	
45-1	XSS3+8FZS	Screw	12	
45-2	XYN3+C8FZS	Screw	2	
45-3	SFXW120-01	Washer	2	
45-4	SFGK102-01	Rubber cap	1	
45-5	SFUZ102-03	Felt	4	
46	SFNG102-02	Label Remort	1	
47	SFKT102-01	Plate, start stop switch	1	
47-1	SFKK102-01	Ornament, start stop switch	1	
47-2	SFOA102-03	Spring, start stop switch	1	
47-3	SFXJ102-06	Adjustment screw, start stop switch	1	
47-4	XWA2BFR	Washer	2	
47-5	XSN2+6	Screw	11	
47-6	XWE2C4BN	Washer	11	
48	SFKT102-02E	Plate, select 33	1	
49	SFKT102-03E	Plate, select 45	1	
50	SFKT102-04E	Plate, select 78	1	
51	SFOA102-02	Spring, select	3	
52	SFUM102-05	Mounting Plate, Switch	1	
52-1	XWA2BFR	Washer	3	
52-2	XNG2HBW	Nut	6	
53	SFUM102-06	Switch cover	1	
53-1	XNG2HBW	Nut	3	
53-2	XWA2BFR	Washer	2	
53-3	XSN2+6	Screw	2	
54	SFDSSSL1C	Micro switch	3	
55	SFUM102-07	Switch cover	1	
55-1	XSN2+6	Screw	2	
55-2	XWA2BFR	Washer	5	
55-3	XSN2+10FU	Screw	3	
56	SFUP102-04	Mounting Plate, select switch	1	
56-1	XYN3+C10F	Screw	2	
56-2	XYN3+C6FZS	Screw	2	
57	SYXO102-02	Spacer	1	
58	SFDSSSL1C	Micro switch	1	
59	LN22	Light Emitting Diode	3	
60	SFUM102-04	Holder, Diode	3	
61	SFDP102-05	Plate ass'y	1	
62	SFUP102-18	Plate	3	

POWER UNIT (Model SH-10E-(M/MC))

Transistors

25C1328-T
408, 409, 410

6

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
TR403	ZSC666A1-R	Transistor	1	
TR405	ZSD389A-Q	Transistor	1	
TR406	ZSD334	Transistor	1	
TR404	ZSD389A-Q	Transistor	1	
Diodes				
D401, 403, 404,	RVD10DC2	Diodes	3	SAFETY
D402, 405, 406	RVD10DC2R	Diodes	3	SAFETY
D407	SVDRD5.6ECS	Diode	1	SAFETY
D408	SVDRD16EB	Diode	1	SAFETY
D409	MA150	Diode	1	
D410	OA90	Diode	1	
D411	SVDS1887	Diode	1	
D412	SVDSV05	Diode	1	
Variable Resistor				
R405	EVL50AA00B52	500Ω	1	
R415	EVL50AA00B23	2KΩ	1	
Fuse				
F1	XBA1F10NU100	1A	1	SAFETY
F2	XBA1F30NU100	3A	1	SAFETY
F3, 4	XBA1F03NU100	300mA	2	SAFETY
F5	XBA1F15NU100	1.5A	1	SAFETY
Resistors				
R401	ERD50TJ4R7	4.7Ω	1	SAFETY
R402, 403	ERD25TJ471	470Ω	1	
R404	ERD25TJ561	560Ω	1	
R406	ERD25TJ392	3.9KΩ	1	
R407, 408	ERD25TJ102	1KΩ	1	
R409	ERD25TJ681	680Ω	2	
R410	ERD12FJ102	1KΩ	1	
R411	ERD25TJ512	5.1KΩ	1	
R412	ERD25TJ432	4.3KΩ	1	
R413	ERD50TJ202	2KΩ	1	
R414	ERD25TJ392	3.9KΩ	1	
R416	ERD25TJ682	6.8KΩ	1	
R417, R422	ERD25TJ561	560Ω	1	
R418	ERD25TJ513	51KΩ	1	
R419	ERD25TJ912	9.1KΩ	1	
R420	ERD25TJ112	1.1KΩ	1	
R421	ERD25TJ104	100KΩ	1	
Capacitors				
C401	ECQU1A473MD	0.047μF	1	SP-10MKII (M)
C401	ECQU1A473MC	0.047μF	1	SP-10MKII (M)
C404, 405, 406, 407	RXAF102P22HD	0.01μF±2	4	SAFETY
C408	ECQM5103MZ	0.01μF	1	
C409	ECOM0582KZ	0.0082μF	1	
C410	ECEB16V1000V	1000μF	1	
C411, 412	ECEA16V100V	100μF	2	
C413	ECEM80R1000X	1000μF	1	SAFETY
C414, 415	ECEA63V100V	100μF	2	
C416	ECEB160V100V	100μF	1	
C417	ECEA160V22V	22μF	1	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
CABINET AND CHASSIS PARTS				
1-1	SFKK10EM01A	Panel ass'y, Front	1	
1-2	SGLA9	Lamp Indicate	1	
1-3	SFUZ10E01	Felt	1	
2	SFUP10E02E	Case	1	
2-1	SFNN10EM01	Name Plate	1	
2-2	XST3+6FZS	Screw	10	
3	SBLA4-3	Knob, Power switch	1	
4	XVE3A8FZS	Screw	4	
5	SSLA37S	Power switch	1	SAFETY
5-1	SFUP10E03	Mounting Plate, Power switch	1	
5-2	SFUP10E09	Mounting Plate, Panel	1	
5-3	SFUP10E04	Holder, Lamp	1	
5-4	XYN3+CBFZS	Screw	2	
6	XAM37T150	Lamp	1	
6-1	SMZA8091	Rubber, Lamp	1	
7	ETP76L1A	Power Transformer	1	
7-1	XNG4HS	Nut	4	SAFETY
7-2	XWA4BFR	Washer	4	
7-3	XWA4G10FU	Washer	4	
7-4	XST4+8FZS	Screw	4	
8	SFDJ-D4F	Socket, DC	1	
8-1	SJS5505	Connector, 5P	1	
8-2	XSS3+10FNS	Screw	2	
9	SFUP10E-05	Mounting Plate, AC Cord	1	
9-1	XST3+6FZS	Screw	4	
10	RJA10A	AC cord	1	SAFETY
10-1	SFEB6UT	Tube	1	
11	SFHK040L	Bushing, cord	1	
12	SFDP102-07	P. C. B. Fuse	1	
12-1	XTW3+10HFZ	Screw	2	
12-2	SJS5405	Connector, 4P	1	
12-3	RJF 107-2	Holder, Fuse	1	
12-4	SFERIC	Terminal	10	
12-5	XNG3HS	Nut	1	
12-6	XST3+6FZS	Screw	1	
13	SFDP102-06	Power P. C. B	1	
13-1	XTW3+10HFZ	Screw	2	
13-2	SHE36	Clamp, wire	1	
13-3	XST3+6FZS	Screw	2	
13-4	SFXO10E01	Spacer	1	
13-5	SJS5307	Connector, 3P	1	
13-6	SFDJ53PSHF	Connector, 3P	1	
14	SFUP10E08	Mounting Plate	1	
14-1	SFEZ196	Sporting, P. C. B	2	
15	SFUZ102-03	Case, Bottom	1	
15-1	XTW3+10HFZ	Screw	4	
15-2	XST3+6FZS	Screw	2	
15-3	XNG3HS	Nut, Capacitor	2	
REMOTE CONTROL (Model SH-10R-(M/MC)				
1	SFKK102-01	Ornament Plate, Start Stop	1	
1-1	SFXJ102-06	Screw	1	
2	SFUM10R01E	Case	1	
3	SFDS5SLIC	Micro switch	1	
3-1	XTN2+10	Screw	2	
4	SFUP10R02	Mounting Plate, Micro switch	1	
4-1	XTN2+6B	Screw	2	
5	ERD25TJ101	100Ω	1	Carbon
5-1	SFEB3UT	Tube	1	
5-2	SFEB2UT	Tube	1	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
6	SFGP10R01	Rubber, Bushing	1	
7	SFEZ10R01	Cord, Jack	1	
8	SFUP10R01	Bottom cover	1	
8-1	XTS3+8BFZ	Screw	4	
9	SFNN10RM01	Name Plate	1	
ACCESSORY PARTS				
A1	SFNU102M01	Operating instructions	1	SP-10MKII-(M)
A1	SFNU102C01	Operating instructions	1	SP-10MKII-(MC)
A5	SFWE010	45 Adaptor	1	
A6	SFWO010	Oil	1	
A7	SFYF09B15	Polyethylene Bag	1	
A8	XSN5+35S	Screw A	5	
A9	XSN5+43S	Screw B	5	
A10	SFXW650-2	Washer	5	
PACKING MATERIALS				
P2	SFHP102M01	Inside packing case	1	SP-10MKII-(M)
P2	SFHP102C01	Inside packing case	1	SP-10MKII-(MC)
P3	SFHH102-06	Bottom Pad	1	
P4	SFYC70A100	Polyethylene sheet	1	
P5	SFYF08A23	Polyethylene Bag	3	
P6	SFHH102-04	Side Pad (L)	1	
P7	SFHH102-05	Side Pad (R)	1	
P8	SFYF15A20	Polyethylene Bag	1	
P9	SFHH102-07	Side Pad, Power unit	1	
P10	SFHH102-08	Side Pad, Power unit	1	
P11	SFHD102-06	Case, Power unit	1	
P12	SFYF45A50	Polyethylene Bag	2	
P13	SFHD102-05	Top Pad, Turntable	1	
P14	SFYF27A39	Polyethylene Bag	1	
P15	XYN3+C6BS	Screw, Clumper	7	
P16	SFUP102M14E	Mounting Plate, Motor	1	