



SERVICE MANUAL

1970

Head cleaning tips4
Patch cord.....1
(for USA only)

CONTROLS

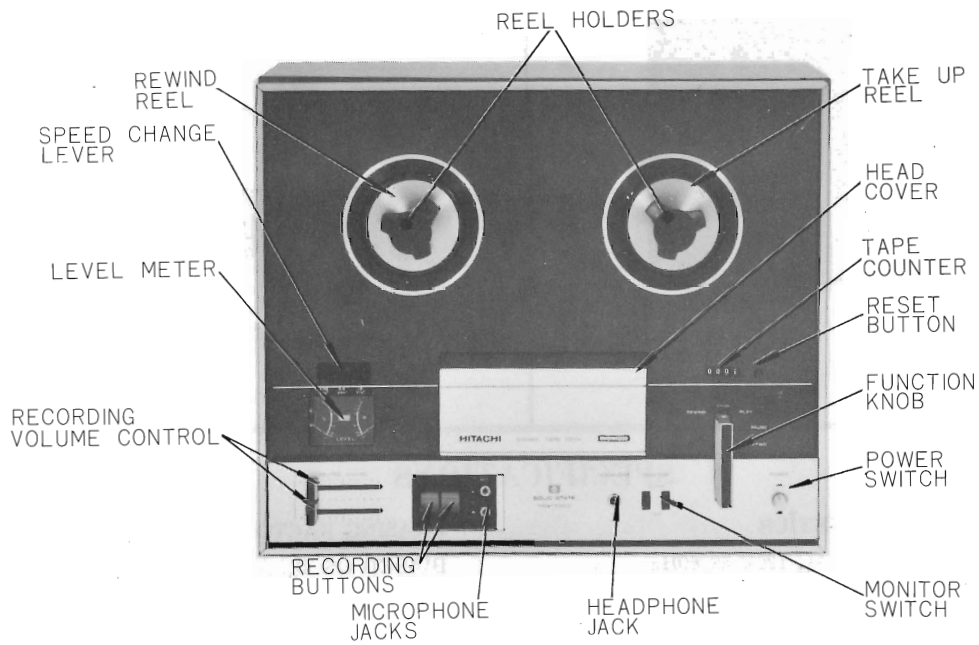
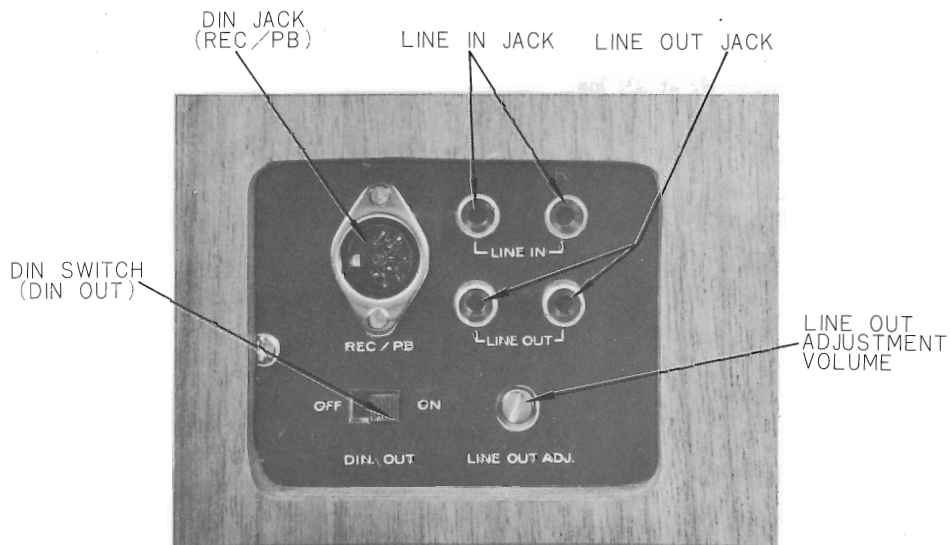


Fig. 1



(TERMINALS ARRANGED ON THE LEFT SIDE AS)
(SEEN FROM THE FRONT)

Fig. 2

BLOCK DIAGRAM

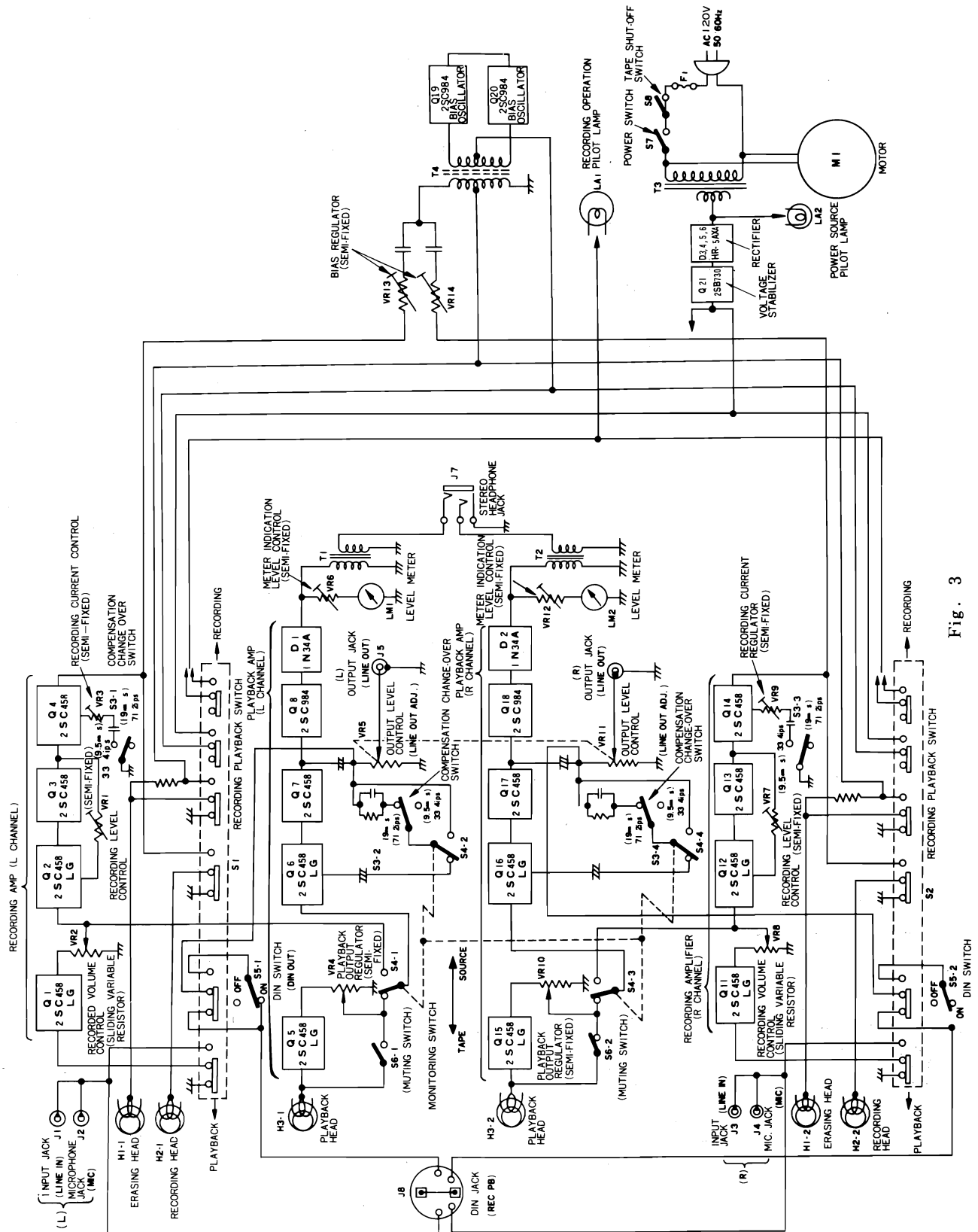


Fig. 3

DISASSEMBLY

When inspecting, repairing or lubricating, disassemble the machine in the following manner.

1. Removal of rear cover

Remove four screws holding rear cover and four screws holding chassis shown in Fig. 4.

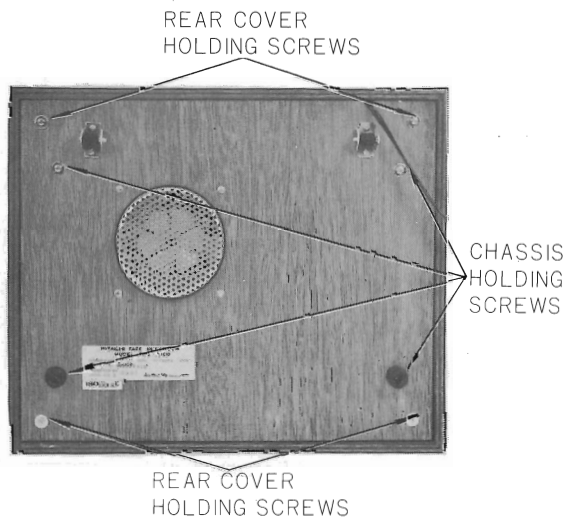


Fig. 4

2. Removal of cabinet

Remove four screws holding chassis and one screw holding power cord shown in Fig. 5.

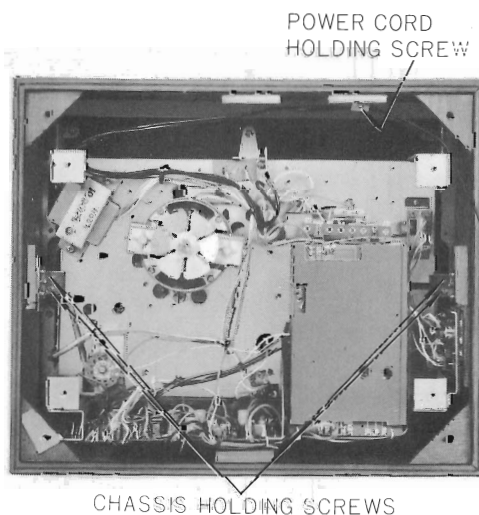


Fig. 5

3. Removal of front panel

- 1) Remove one screw holding head cover shown in Fig. 6.
- 2) Remove eight screws holding front panel shown in Figs. 7 and 8.



Fig. 6

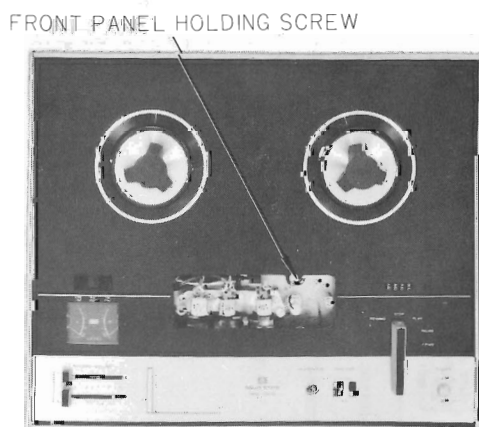


Fig. 7

LUBRICATION

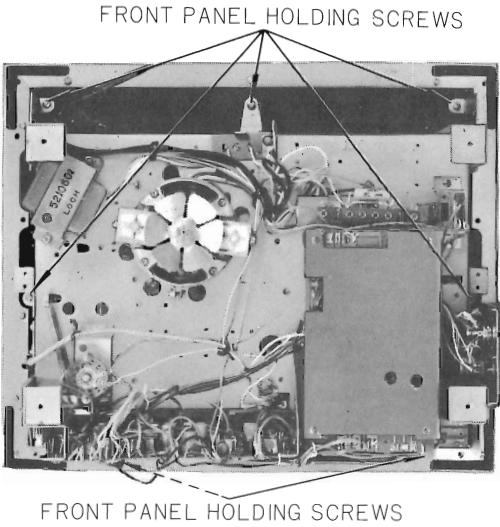


Fig. 8

4. Removal of circuit board

Note: Take care with the wires connecting several parts of circuit board.

1) Circuit board for amplifier block: Remove five screws holding circuit board shown in Fig. 9.

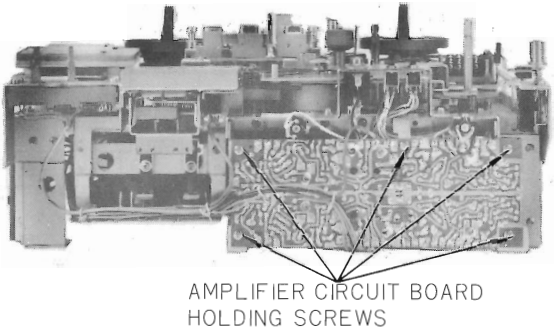


Fig. 9

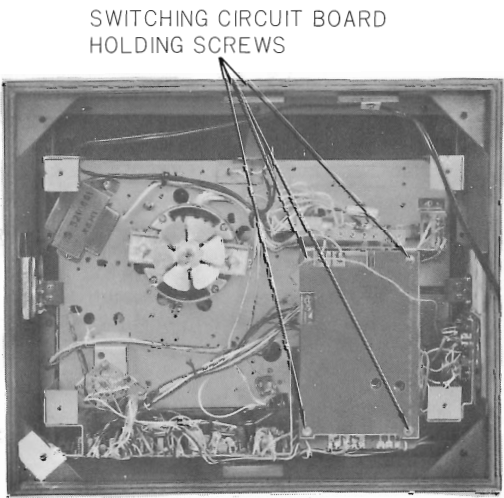


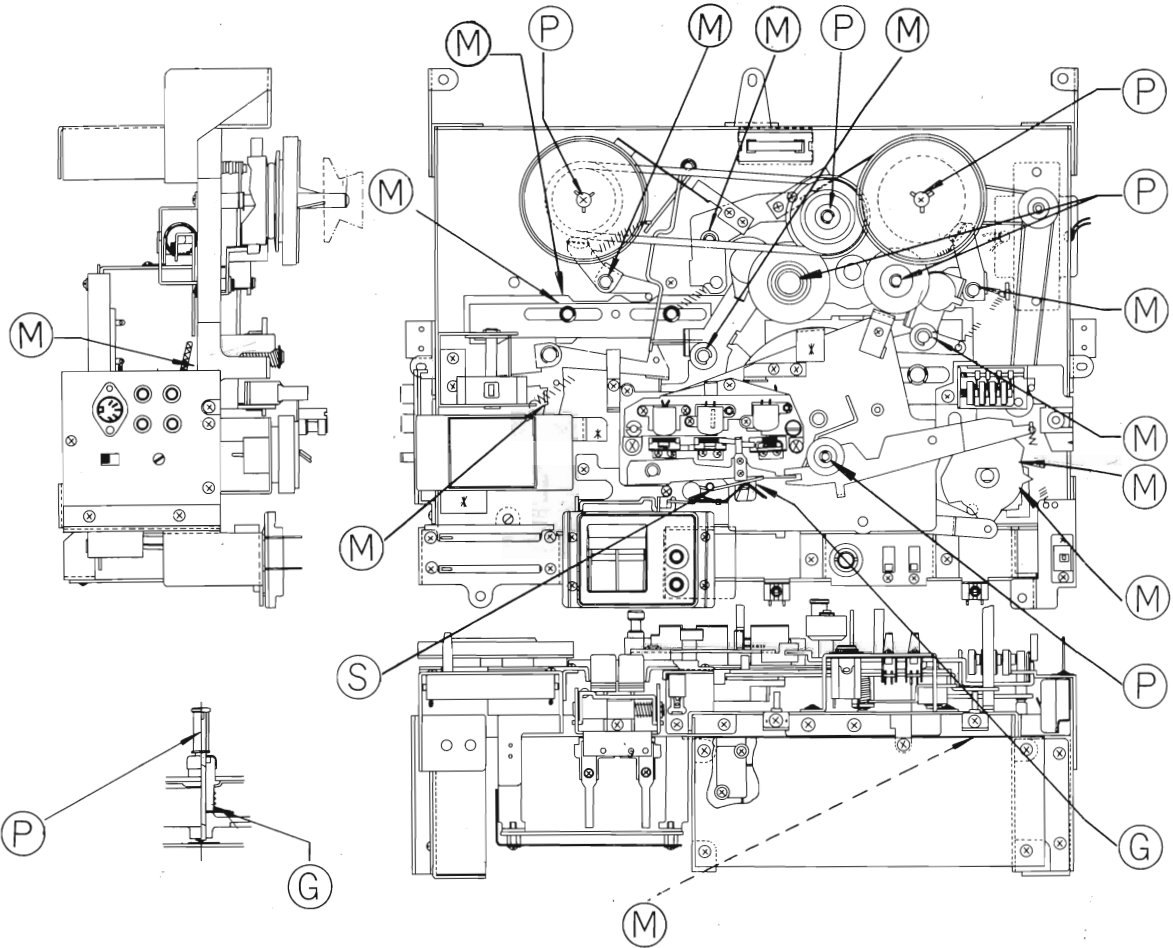
Fig. 10

2) Circuit board for switching block: Remove four screws holding circuit board shown in Fig. 10.

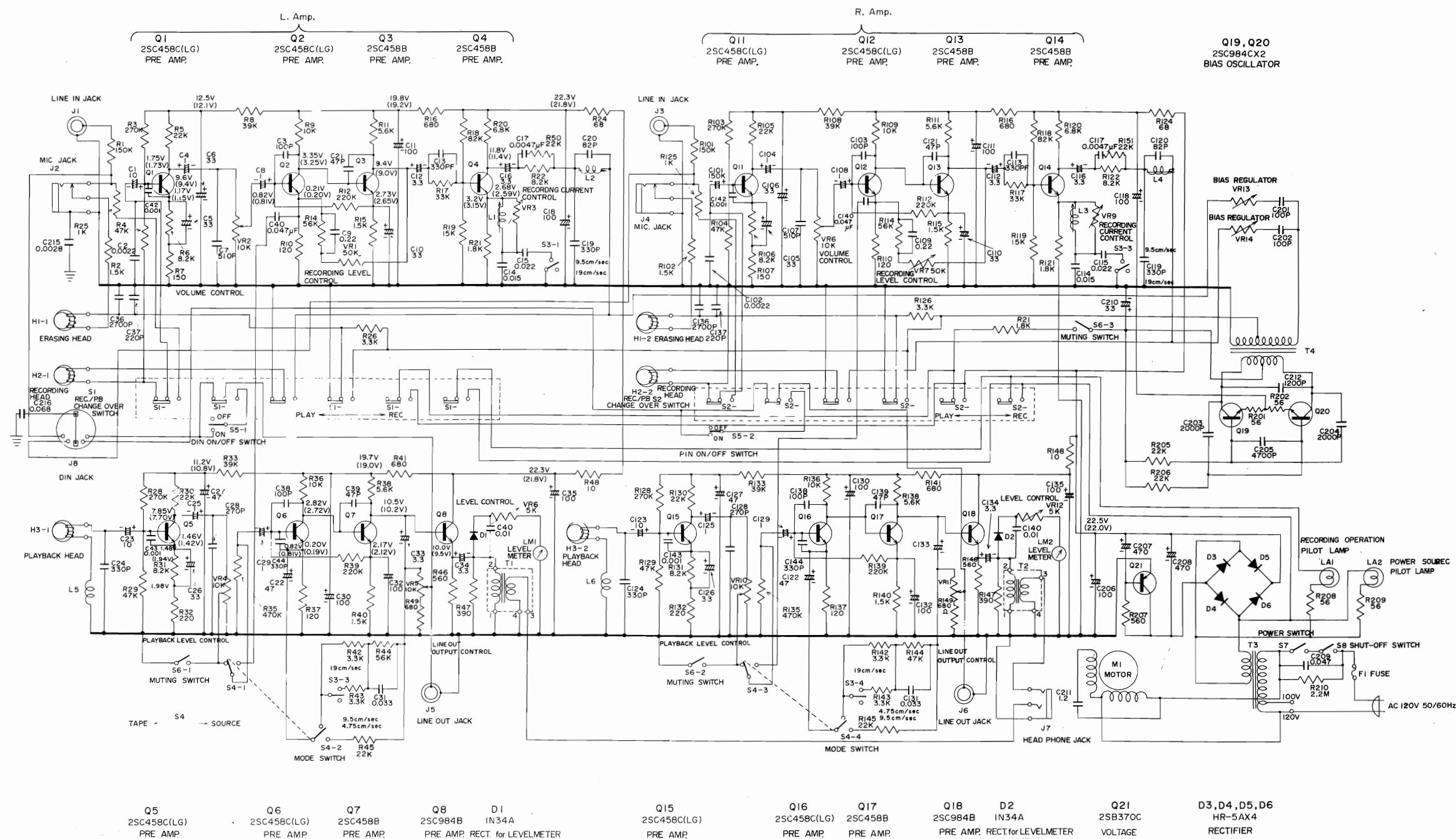
Lubricate each part shown in Fig.11, when repairing. Lubricate to each revolving part with one drop of pan motor oil and use a suitable quantity of grease on each sliding part. On the shafts of the idler, pinch roller and capstan, oilless metal is used, ensuring stable operation without the use of feeding oil.

(Note) If oil is deposited on belts, idler, capstan, pinch roller and so on, they will slip. Be sure to remove the oil with alcohol.

- ⒶSAE#30
- ⓂMACHINE OIL
- ⓈSONIC SLIDUS OIL#30 (SAE#30)
- ⒸGRASE

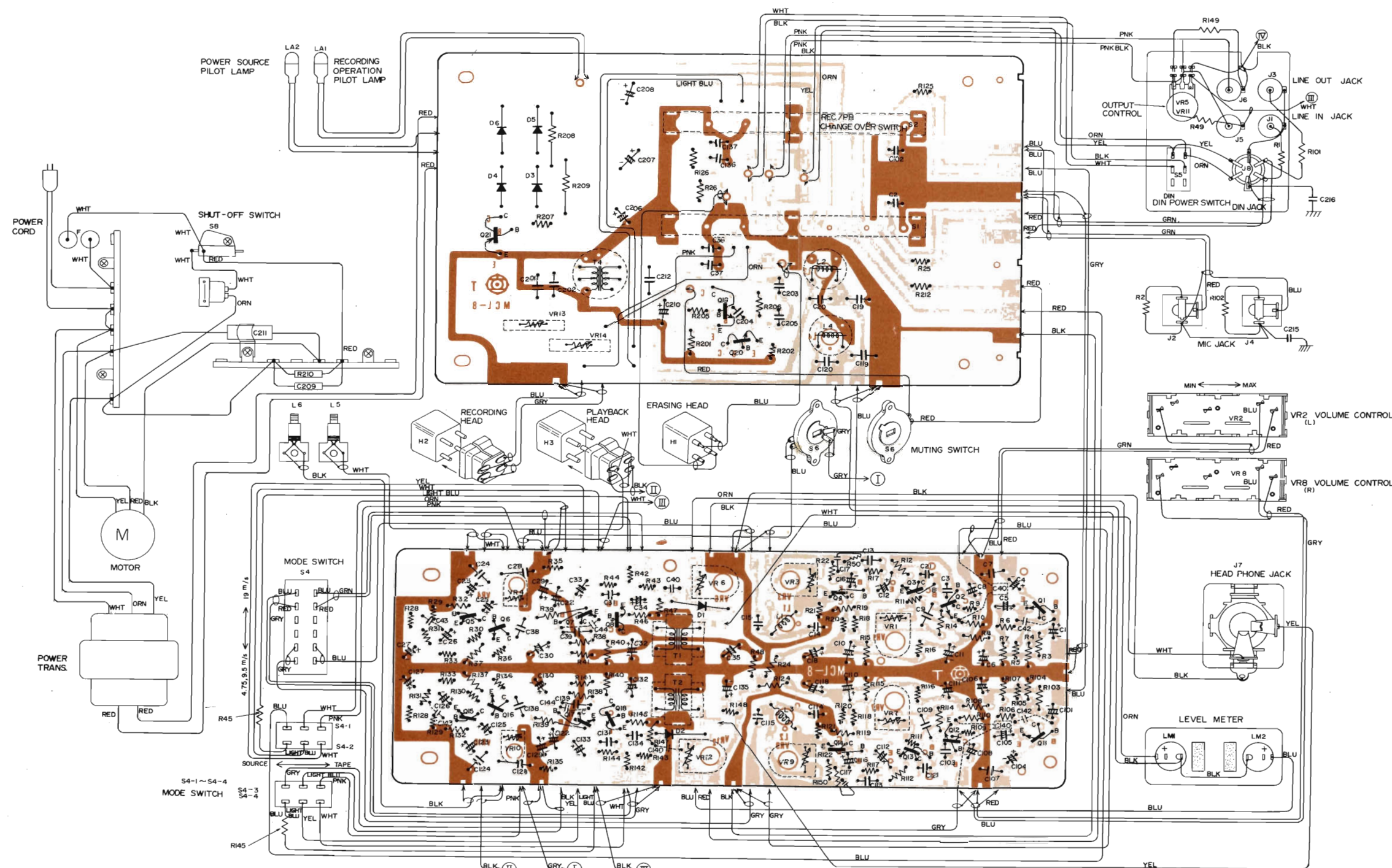


CIRCUIT DIAGRAM



NOTE: 1. VOLTAGE MEASURED WITH VOLTMETER AT 120V AC, BASE OF - SIDE POWER SUPPLY.
VOLUME CONTROL AT MINIMUM AND NO SIGNAL.
VOLTAGE SHOWN IN () ARE IN RECORDING CONDITION.
2. ALL RESISTANCE VALUES IN OHMS, K=1000 M=1000K
3. ALL CAPACITANCE VALUES IN μ F EXCEPT *P* NOTED. P= μ F-PF

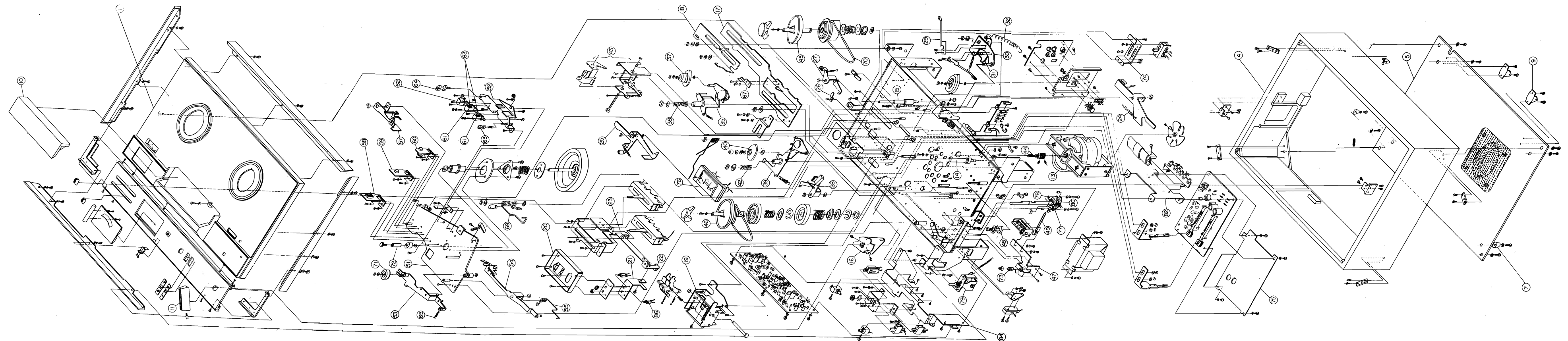
CIRCUIT BOARD DIAGRAM



REPLACEMENT PARTS

Symbol No.	Stock No.	Description	Symbol No.	Stock No.	Description
CAPACITORS:					
C 1	101	0252621	Electrolytic	10μF	6.3V
C 2	102	0274013	Mylar	0.0022μF ± 10%	50V
C 3	103	0248724	Ceramic, discal	100pF ± 10%	16V
C 4	104	0256004	Electrolytic	1.0μF	6.3V
C 5	105	0252223	Electrolytic	33μF	16V
C 6	106	0252523	Electrolytic	33μF	50V
C 7	107	0249515	Ceramic, discal	510pF ± 10%	0.22μF ± 10%
C 8	108	0256004	Same as C4, 104		
C 9	109	0276013	Mylar		
C10	110	0252223	Same as C5, 105		
C11	111	0252631	Electrolytic	100μF	25V
C12	112	0252613	Electrolytic	3.3μF	25V
C13	113	0248736	Ceramic, discal	330pF ± 10%	50V
C14	114	0275012	Mylar	0.015μF ± 10%	
C15	115	0275013	Same as C12, 112		
C16	116	0252613	Same as C11, 111		
C17	117	0274015	Same as C13, 113		
C18	118	0252631	Same as C11, 111		
C19	119	0248736	Same as C13, 113		
C20	120	0248722	Ceramic, discal	82pF ± 10%	50V
C21	121	0248716	Ceramic, discal	47pF ± 10%	50V
C22	122	0252525	Electrolytic	47μF	16V
C23	123	0252621	Electrolytic	10μF	25V
C24	124	0248736	Ceramic, discal	300pF	50V
C25	125	0256004	Same as C4, 104		
C26	126	0252223	Electrolytic	33μF	6.3V
C27	127	0252525	Electrolytic	47μF	16V
C28	128	0248734	Ceramic, discal	270pF	50V
C29	129	0256004	Same as C25, 125		
C30	130	0252631	Electrolytic	100μF	25V
C31	131	0275014	Mylar	0.033μF ± 10%	6.3V
C32	132	0252231	Electrolytic	100μF	25V
C33	133	0252613	Same as C33, 133		
C34	134	0252613	Same as C33, 133		
C35	135	0252631	Same as C30, 130		
C36	136	0221345	Styrol film	2700pF	
C37	137	0221319	Styrol film	220pF	
C38	138	0248724	Ceramic, discal	100pF	50V
C39	139	0248716	Ceramic, discal	47pF	50V
C40	140	0275111	Mylar	0.01μF ± 20%	
C42	142	0274111	Mylar	0.001μF ± 20%	
C43	143	0274111	Same as C42, 142		
C44	144	0248736	Same as C13, 113		
C45	145	0275115	Mylar	0.047μF ± 20%	
C 201	0247894	Ceramic, discal	100pF ± 10%	500V	
C 202	0247894	Same as C201			
C 203	0221342	Styrol film	2000pF		
C 204	0221342	Same as C203			
C 205	0221351	Styrol film	4700pF		
C 206	0252631	Same as C11, 111			
C 207	0256008	Electrolytic	470μF	25V	
C 208	0256008	Same as C207			
C 209	0215045	Paper	0.047μF ± 20%	400V	
C 210	0252623	Electrolytic	33μF	25V	
C 211	0256929	MP	1.2μF	300V	
C 212	0221337	Styrol film	1200pF		
C 215	0274113	Mylar	0.0022μF ± 10%		
C 216	0275116	Mylar	0.068μF ± 20%		
RESISTORS:					
R 1	101	0131803	Composition	150KΩ	1/4GF
R 2	102	0131693	Composition	1.5KΩ	1/4GF
R 3	103	0137956	Carbon film	270KΩ	1/4SD
R 4	104	0137909	Carbon film	47KΩ	1/4SD
R 5	105	0137905	Carbon film	22KΩ	1/4SD
R 6	106	0137862	Carbon film	8.2KΩ	1/4SD
R 7	107	0137803	Carbon film	150Ω	1/4SD
R 8	108	0137908	Carbon film	39KΩ	1/4SD
R 9	109	0137901	Carbon film	10KΩ	1/4SD
R10	110	0137553	Carbon film	120Ω	1/4SD
R11	111	0137860	Carbon film	5.6KΩ	1/4SD
R12	112	0137955	Carbon film	220KΩ	1/4SD
R14	114	0137910	Carbon film	56KΩ ± 10%	1/4SD
R15	115	0137853	Carbon film	1.5KΩ	1/4SD
R16	116	0137811	Carbon film	680Ω	1/4SD
R17	117	0137907	Carbon film	33KΩ	1/4SD
R18	118	0137912	Carbon film	82KΩ	1/4SD
R19	119	0137903	Carbon film	15KΩ	1/4SD
R20	120	0137861	Carbon film	6.8KΩ	1/4SD
R21	121	0137607	Carbon film	1.8KΩ	1/4SD
R22	122	0137623	Carbon film	8.2KΩ	1/4SD
R24	124	0137769	Carbon film	68Ω ± 10%	1/4SD
R25	125	0137851	Carbon film	1.0KΩ	1/4SD
R26	126	0134379	Composition	3.3KΩ	1/2GF
R28	128	0137956	Carbon film	270KΩ	1/4SD
R29	129	0137909	Carbon film	47KΩ	1/4SD
R30	130	0137905	Carbon film	22KΩ	1/4SD
R31	131	0137862	Carbon film	8.2KΩ	1/4SD
R32	132	0137805	Carbon film	220Ω	1/4SD
R33	133	0137909	Carbon film	39KΩ	1/4SD
R35	135	0137959	Carbon film	470KΩ	1/4SD
R36	136	0137901	Carbon film	10KΩ	1/4SD
R37	137	0137553	Carbon film	120Ω	1/4SD
R38	138	0137860	Carbon film	5.6KΩ	1/4SD
R39	139	0137955	Carbon film	220KΩ	1/4SD
R40	140	0137853	Carbon film	1.5KΩ	1/4SD
R41	141	0137811	Carbon film	680Ω	1/4SD
R42	142	0137613	Carbon film	3.3KΩ	1/4SD
R43	143	0137613	Same as R42, 142		
R44	144	0137669	Carbon film	5.6KΩ	1/4SD
R45	145	0137659	Carbon film	22KΩ	1/4SD
R46	146	0137810	Carbon film	560Ω	1/4SD
R47	147	0137808	Carbon film	390Ω	1/4SD
R48	148	0137759	Carbon film	10Ω	1/4SD
R49	149	0131659	Composition	680Ω ± 10%	1/2GF
R50	150	0137905	Same as R30, 130		
R 201	0137768	Carbon film	56Ω ± 10%	1/4SD	
R 202	0137768	Same as R201			
R 205	0137905	Same as R5, 105			
R 206	0137905	Same as R5, 105			
R 207	0137810	Carbon film	560Ω	1/4SD	
R 208	0134298	Composition	56Ω	1/2GF	
R 209	0134298	Same as R208			
R 210	0134413	Composition	2.2MΩ ± 10%	1/4GF	
R 212	0137759	Carbon film	10Ω	1/4SD	
VR 1	0151362	Semi variable	50KΩ	RS10A	
VR 2	0171523	Slide volume	10KΩ (A)	RV45A	
VR 3	0151362	Same as VR1			
VR 4	0151821	Semi variable	50KΩ	RS10A	
VR 5	0151370	Variable resistor	5KΩ	RV16B	
VR 6	0192006	Semi variable		RS10A	
VR 7	0151362	Same as VR1			
VR 8	0171523	Same as VR2			
VR 9	0151362	Same as VR1			
VR 10	0151821	Same as VR4			
VR 11	0151370	Same as VR5			
VR 12	0192006	Same as VR6			
VR 13	0151129	Semi variable	250KΩ	RS16A	
VR 14	0151129	Same as VR13			
TRANSISTORS:					
Q1	11	5320023	2SC458 si 10KHz	200mW	
Q2	12	5320023	Same as Q1, 11		
Q3	13	0573480	2SC458 si 10KHz	200mW	
Q4	14	0573480	Same as Q3, 13		
Q5	15	5320023	Same as Q1, 11		
Q6	16	5320023	Same as Q1, 11		
Q7	17	0573480	Same as Q3, 13		
Q8	18	5320372	2SC984 si 10KHz	500mW	
Q 19	5320373		2SC984 si 10KHz	500mW	
Q 20	5320373	Same as Q19			

DISASSEMBLED DIAGRAM



Symbol No.	Stock No.	Description		Symbol No.	Stock No.	Description
Q 21	0573024		2SB370 Ge 10KH z200mW	⑩	7178654 0941259	Function can assembly ∅E' ring-4mmφ
D 1	0575001	Diode	1N34A Ge 455KH z	⑪	7178691	Function bar assembly
D 2	0575001	Same as D1		⑫	7178721	Tape speed exchange arm assembly
D 3	5330041	Diode	HR-5A si 60Hz			
D 4	5330041	Same as D3			0948810	Fiber washer-8.1mmφ×12mm
D 5	5330041	Same as D3			0948603	Fiber washer
D 6	5330041	Same as D3			0948544	Fiber washer
TRANSFORMERS:					0941259	∅E' ring-4mmφ
T 3	5210601	Power	TRQ-730A		7711403	Fiber washer-8.1mmφ×12mm
T 3	5210661	Power	TRQ-730W		0941561	∅E' ring-5mmφ
T 4	5260022	Oscillator		⑬	7193471	Recording assembly
	5250671	Audio output				
COILS:				⑭	6712041	Recording button case
L 1	5270031	Variable coil	6mH		7714962	Case sheet
L 2	5270001	Variable coil	133mH		0711306	Pan head screw-2.6mmφ×6mm
L 3	5270031	Same as L1			8781438	Tapping screw-3mmφ×8mm
L 4	5270001	Same as L2				
L 5	5270061	Balance			0662126	F idler lever spring
L 6	5270061	Same as L5		⑮	7178774	Record slide plate (L) assembly
MISCELLANEOUS:				⑯	7178792	Record slide plate (R) assembly
for Final assembly					0948544	Fiber washer
①	6119941	Escutcheon assembly			0941259	∅E' ring-4mmφ
	0941277	Escutcheon washer			0662211	Slide plate spring
	7771274	Escutcheon screw		⑰	7178821	Pressure roller arm plate
	8811114	Washer-3mmφ (11req'd)			0662211	H slide plate spring
	8813124	Spring washer-3mmφ (11req'd)			0948544	Fiber washer
	8711408	Pan head screw-3mmφ×8mm (9req'd) for escutcheon cabinet mounting			0941259	∅E' ring-4mmφ
	8711410	Pan head screw-3mmφ×10mm (2req'd) for escutcheon mounting		⑱	7180111	P function plate assembly
④	6117802	Cabinet assembly			8781438	Tapping screw-3mmφ×8mm
	0948483	Staple		⑲	7178833	Brake lever (L) assembly
	8812114	Washer-3mmφ			0662129	P idler lever spring
	8751413	Wood screw-3.1mmφ×13mm			0941259	∅E' ring-4mmφ
⑦	7662191	Rubber base		⑳	7178853	Brake lever (R) assembly
	8812116	Washer-4mmφ			0662211	H Slide plate spring
	8711618	Pan head screw-4mmφ×18mm			0941259	∅E' ring-4mmφ
	0645201	Special washer-4mmφ			0948544	Fiber washer
	8711625	Pan head screw-4mmφ×25mm		㉑	7114561	Back tension assembly
⑨	6710651	Switch knob			8711404	Pan head screw-3mmφ×4mm
	7178472	Roller assembly		㉒	7178872	R idler lever assembly
	8751410	Wood screw-3.1mmφ×10mm		㉓	0971191	R idler assembly
⑩	6164942	Head cover assembly		㉔	6313121	R idler lever spring
	0747306	Binding screw-2.6mmφ×6mm			0941259	∅E' ring-4mmφ
	8813123	Spring washer-2.6mmφ for head cover mounting		㉕	0948544	Fiber washer
⑪	6263522	Selector knob assembly			0958067	Felt for push switch
	7777142	Set screw			0948633	R idler washer
	6265621	Volume control knob assembly			0630564	Flywheel holder
for Chassis assembly					7180792	Voltage change-over holder ass'y
⑬	5570032	Motor assembly		F 3	0591163	Fuse (2A) (TRQ-730D(W))
	8813126	Spring washer-4mmφ		F 3	0591162	Fust (1A)
	8711610	Pan head screw-4mmφ×10mm (2 req') for motor ass. mounting			8781436	Tapping screw-3mmφ×6mm
⑭	7500502	Take up reel stand shaft			0971120	Motor cushion
⑮	7500522	Rewind reel stand shaft			7178891	F idler lever assembly
	8821116	Nut-4mmφ		㉖	0948631	F idler change-over spring
	8813126	Spring washer-4mmφ			0948675	Fiber washer
					0941259	∅E' ring-4mmφ
					0662193	Pause lever spring
				㉗	7178931	P idler lever assembly
				㉘	6314271	Change-over spring

Symbol No.	Stock No.	Description	Symbol No.	Stock No.	Description
	0948675 0941259	Fiber washer ∅E' ring-4mmφ		6370331 6313332 7715551 0941259	Flywheel assembly Take up spring Flywheel washer ∅E' ring-4mmφ
⑬	6312101 7178971 8781438	P lever spring Tape speed change over ass'y Tapping screw-3mmφ×8mm (3 req'd) for tape speed change-over holder mounting	⑦	7180121 8711408	F idler stopper Pan head screw-3mmφ×8mm (4 req'd) for chassis mounting
⑭	6340628 7771252	Motor pulley Set screw	⑧	7506122 0941258	Shut off lot assembly ∅E' ring-3mmφ
⑮	6410583	Rewind reel stand assembly		0637119 0948634 0941183	Fibber washer Flywheel washer Oil cap
⑯	6410612	Take up reel stand assembly	⑩	0971126 6380171 0636553 0941258	Rewinding belt Pressure roller Rewind washer ∅E' ring-3mmφ
	0948595 0948482 7771312 7660261	Nylon washer Fiber washer Special screw Reel supporter	⑪	6360028 6360023 6360011	Capstan Capstan (TRQ-730D(W)) Capstan screw
⑰	7179031	Countor holder assembly		7715951 8781440	Capacitor shield plate Tapping screw-3mmφ×10mm (2 req'd) for 6P terminal board, capacitor mounting
⑱	6340341 0636553 0941258	Counter pulley Rewind washer ∅E' ring-3mmφ	⑫	0971002 0594110	Lamp cushion Pilot lamp
㉑	7660162 0971236 0662222	Counter belt (large) Counter belt (large) Brake lever spring	⑬	6313052 0941258	Balance spring ∅E' ring
	5210601 5210661 8711606 8811116 8813126	Power transformer (TRQ-730D(A)) Power transformer (TRQ-730D(W)) Pan head screw-4mmφ×6mm Washer-4mmφ Spring washer-4mmφ	⑭	7179221 0941259 0639391	Equaliger arm assembly ∅E' rinz-4mmφ Motor spring
②	7113694 7179052	Chassis assembly Head plate assembly		0544404 0923972	6P terminal board Staple
③	7179072 7196971	P roller arm assembly Lock arm assembly	⑮	7715401 0745303 8811114	Shield plate Binding screw-2.6mmφ×3mm Washer-3mmφ
④	6313591 0941259	Arm spring ∅E' ring-4mmφ		8711406	PCB shield plate mounting Pan head screw-3mmφ×6mm for PCB holder mounting
⑤	7732081 7196881 8711406 0923972	Felt for flywheel brake Cover holder assembly Pan head screw-3mmφ×6mm Staple		7714961 7714771 8781438	Case sheet Fuse sheet Tapping screw-3mmφ×8mm (14 req'd) for equalizer holder jack holder PCB holder mounting
⑥	7179112	T shifter arm assembly	⑯	7197941 5550252 0680772	M jack holder Level indicator Level indicator cushion
⑦	0941259 7586331	∅E' ring-4mmφ Tape guide	⑰	7161314 7511781 7585852	Switch assembly Switch collar Switch shaft
⑧	7179142 7191301 7191331	Pad assembly Pad assembly Pad assembly	⑱	8811113 8813123 0821233	Washer-2.6mmφ Spring washer-2.6mmφ Nut-2.6mmφ (2 req'd) for rotary switch mounting
⑨	8711405	Pan head screw-3mmφ×5mm (6 req'd) for pad plate mounting		8813124 8711406	Spring washer-3mmφ Pan head screw-3mmφ×6mm (2 req'd) for switch holder mounting
⑩	5440531 5440511 0944741 0948154 7505216	Recording playback head Erase head Tape guide (right) Tape guide spring Tape guide (left)		8711625	Pan head screw-4mmφ×25mm TRQ-730W for capstan mounting
⑪	0711306 0821233 0948102 8811233	Pan head screw-2.6mmφ×6mm Nut-2.6mmφ Head adjust spring Washer-2.6mmφ		0711316	Pan head screw-2.6mmφ×16mm (2 req'd) for balance mounting
⑫	6312081	Pressure roller spring		7204451 7771873 5630922	Push switch sheet Screw with spring washer-3mmφ Push switch
⑬			⑲	5610251	Rotary switch

Symbol No.	Stock No.	Description	Symbol No.	Stock No.	Description
S ② 4 J 2 4	5610252	Rotary switch	J 7	5670282	Headphone jack
	5741286	Power cord	③	5650261	Head socket
	0043793	Bushing	④	7195331	PCB supporter
	for Printed circuit board assembly			7663721	Rubber sheet
	7512391	PCB shaft	S 5	0532161	Slide switch
	5620183	Slide switch		0721306	Flat screw-2.6mmφ×6mm
	7715351	Slide switch sheet	⑤	5670431	pin jack
	5670331	Jack		8745406	Binding screw-3mmφ×6mm
	8811114	Washer-3mmφ (2 req'd) for P.C.B. shield plate mounting		7508221	Volume screw
	0948771	Insulating washer		0544186	Lug terminal
	8711406	Pan head screw-3mmφ×6mm	S 1 2	5620602	Slide switch
	8813124	Spring washer-3mmφ		0948570	Radiator plate
		slide volume mounting			
	7710091	Fiber washer			
	8745406	Binding screw-3mmφ×6mm			
		PCB holder mounting			



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Codes : All Codes Used