



**TRANSISTOR  
STEREO TAPE DECK  
MODEL TRQ-727**

# **SERVICE MANUAL**

No. 190

1968

## SPECIFICATIONS

### ELECTRICAL CHARACTERISTICS

POWER SUPPLY RATING.....AC : 120V 50/60 Hz (U)  
210V/230V 50 Hz (E)

POWER CONSUMPTION.....55W

RECORDING SYSTEM .....AC bias

ERASING SYSTEM .....AC erase

FREQUENCY RANGE .....30~18,000 Hz at 7½ ips speed  
30~13,000 Hz at 3¾ ips speed

### INPUT IMPEDANCE

MICROPHONE TERMINAL...10 K ohms

LINE-IN TERMINAL.....120 K ohms

REC./P.B. TERMINAL .....1.2 K ohms

### OUTPUT IMPEDANCE

LINE-OUT TERMINAL .....2.7 K ohms

REC./P.B. TERMINAL .....2.7 K ohms

OUTPUT VOLTAGE.....0.775V

### MECHANICAL CHARACTERISTICS

TAPE SPEED.....7½ ips (19cm/s)  
3¾ ips (9.5cm/s)  
1¾ ips (4.75cm/s)

TAPE REEL ..... 7" (18cm), 5" (13cm) & 3⅓"(8.5cm)

### RECORDING OR PLAYING

TIME.....Stereo (using 7", 35μ tape)

1.5hr at 7½ ips speed

3hr at 3¾ ips speed

6hr at 1¾ ips speed

Monoural (using 7", 35μ tape)

3hr at 7½ ips speed

6hr at 3¾ ips speed

12hr at 1¾ ips speed

REWINDING TIME .....4 min. less than using 7", 50μ tape

FAST FORWARDING TIME...4 min. less than using 7", 50μ tape

### COMPONENTS USED

TRANSISTORS .....2SB73(B) × 2, 2SC281(C) × 4  
2SB75(F) × 2, 2SB370(B) × 2  
2SB370(A) × 1

DIODES.....1N34A × 6

SELENIUM RECTIFIER ...1

THERMISTOR .....D-1E × 1

MICROPHONE.....Dynamic microphone

### MISCELLANEOUS

TRACK SYSTEM .....4-track stereo system

DIMENSIONS .....16⅛"(H) × 15⅝"(W) × 7⅝"(D)  
(40.8 × 39.6 × 18.5cm)

WEIGHT .....21 lbs (9.5kg)

**CONTROLS AND JACKS**

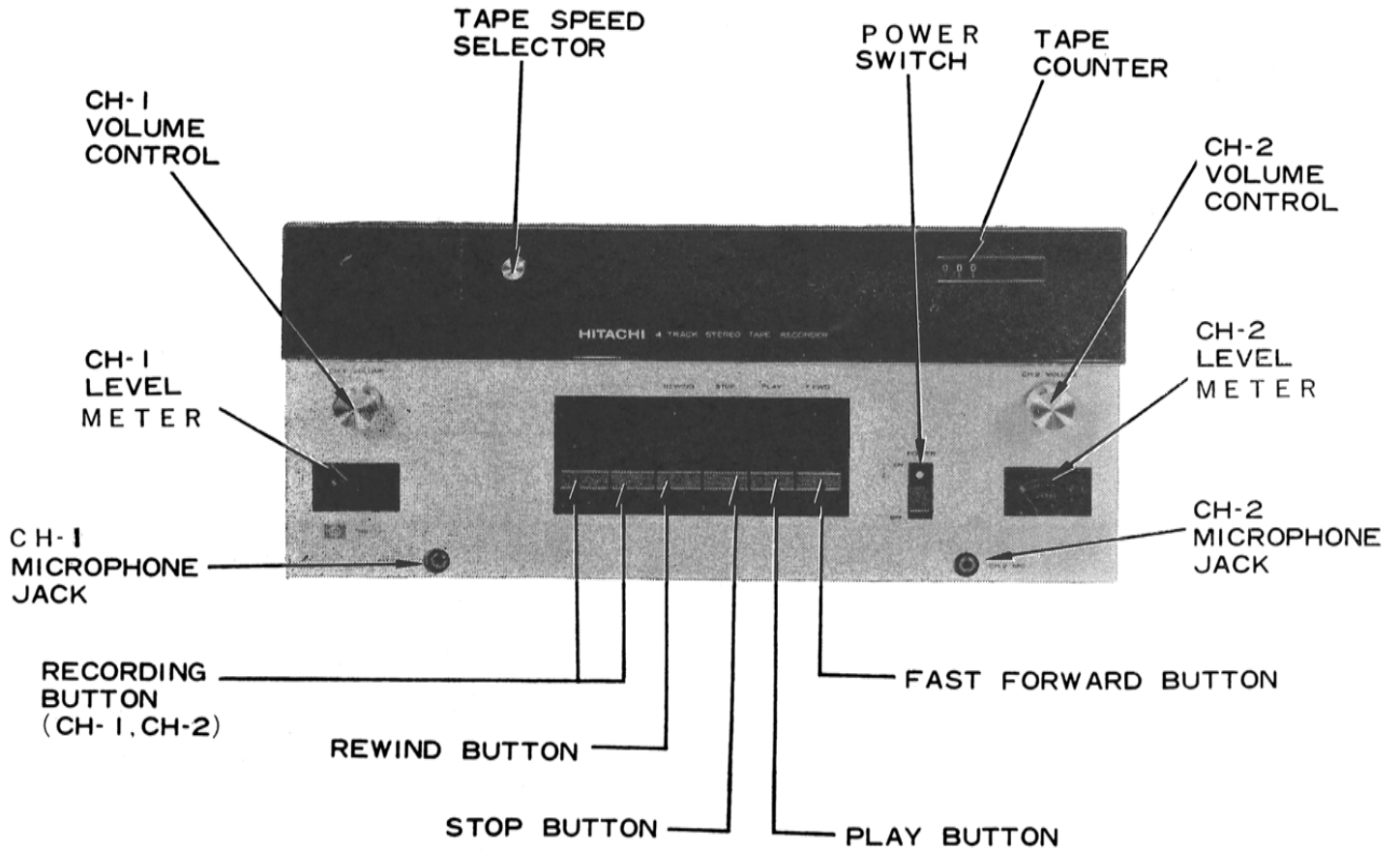


Fig. 1

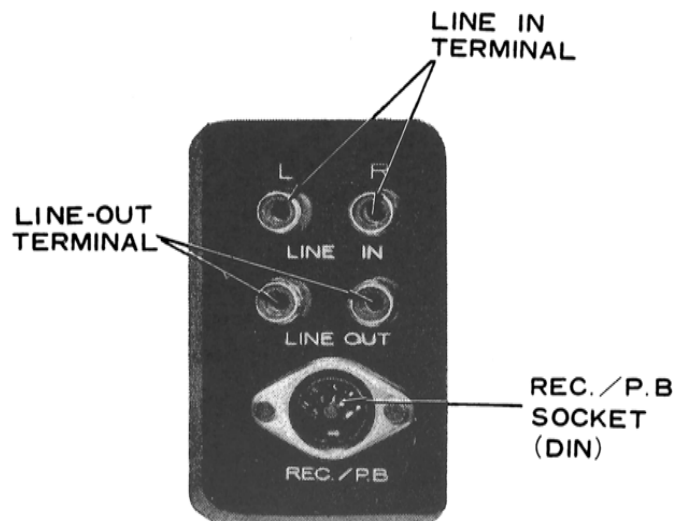


Fig. 2

## DISASSEMBLY

When inspecting, repairing and lubricating, disassemble the machine in the following manner:

### 1. Removing the deck panel.

Remove setscrews (6 pcs) as shown in Fig.3 after removing the volume control knobs, tape speed selector knob and head cover.

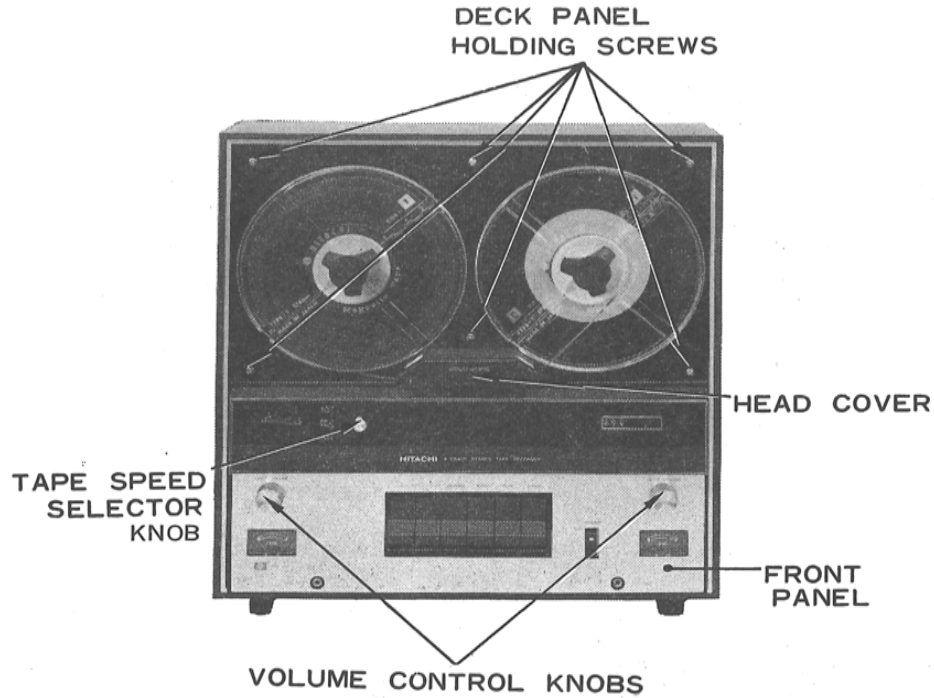


Fig. 3

### 2. Pulling out the chassis

Upon removing the rubber legs and Cabinet holding setscrews (4 pcs) located on the bottom of the case shown in Fig. 4 and rubber legs (4 pcs) shown in Fig. 4, the chassis can be removed from the case body.

Remove front panel holding screws (5 pcs) as shown in Fig. 6,

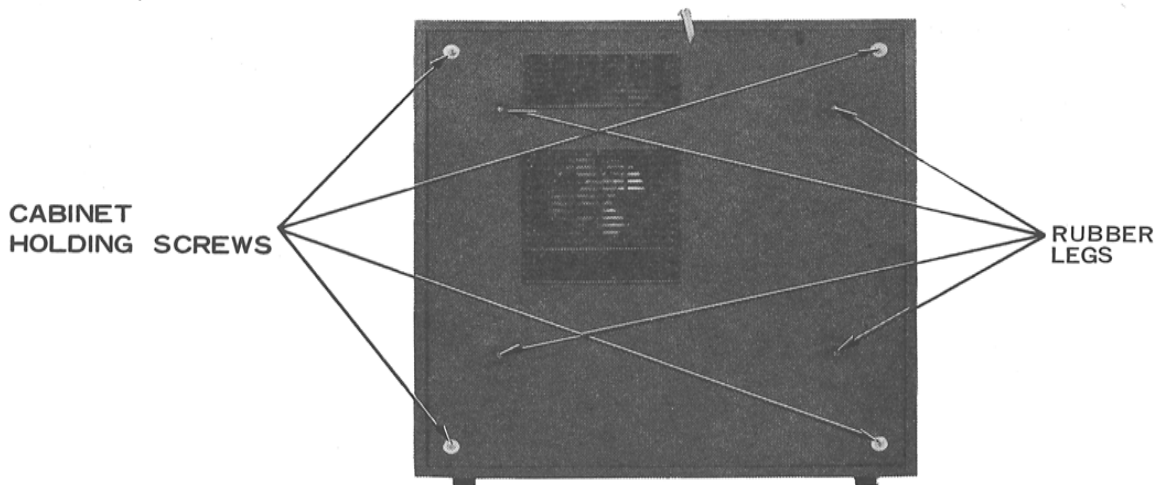


Fig. 4

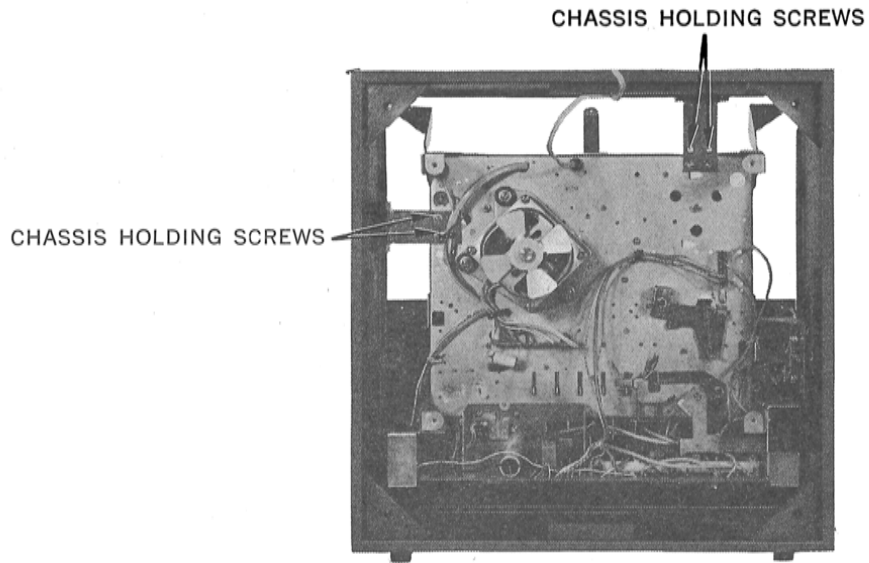


Fig. 5

3. Removing the circuit board

Remove screws (4 pcs) shown in Fig. 6 and screws (7 pcs) shown in Fig. 7.

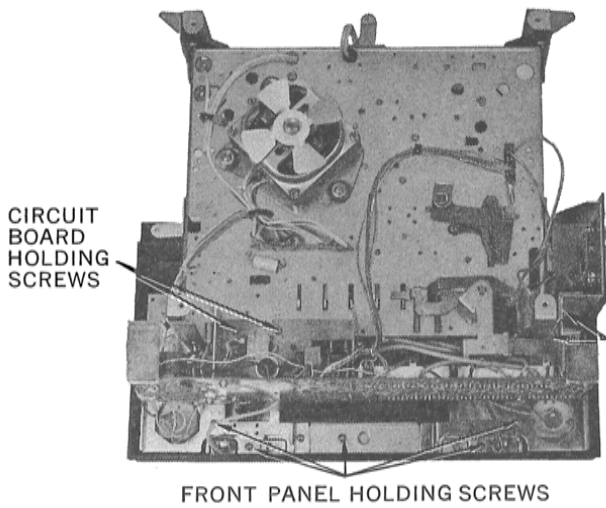


Fig. 6

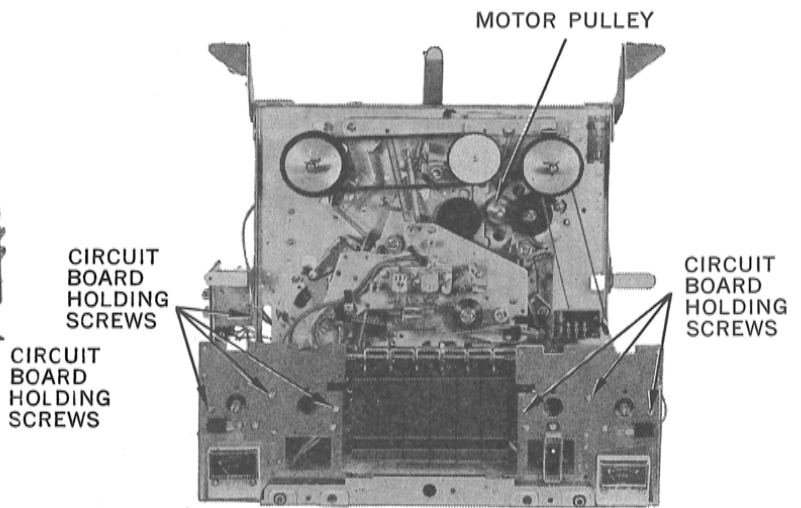


Fig. 7

**LUBRICATING**

At servicing, perform lubrication according to Fig. 8.

Lubricate a drop of SAE grade #30 or its equivalent oil to rotating parts respectively.

To idler, pressure roller and capstan shaft, it is not always necessary to lubricate.

**LUBRICATION POINT**

1. Reel base shaft.....Remove the screw and reel base to lubricate around shaft.
2. Idler .....Spread on felt.
3. Fly wheel shaft.....Open oil cap and lubricate.
4. Sliding portion .....Wipe dirty oil and lubricate while pushing the push-button.

**CAUTION**

Belt, idler, capstan and pinch roller may slip, when they catch oil. Wipe them with alcohol.

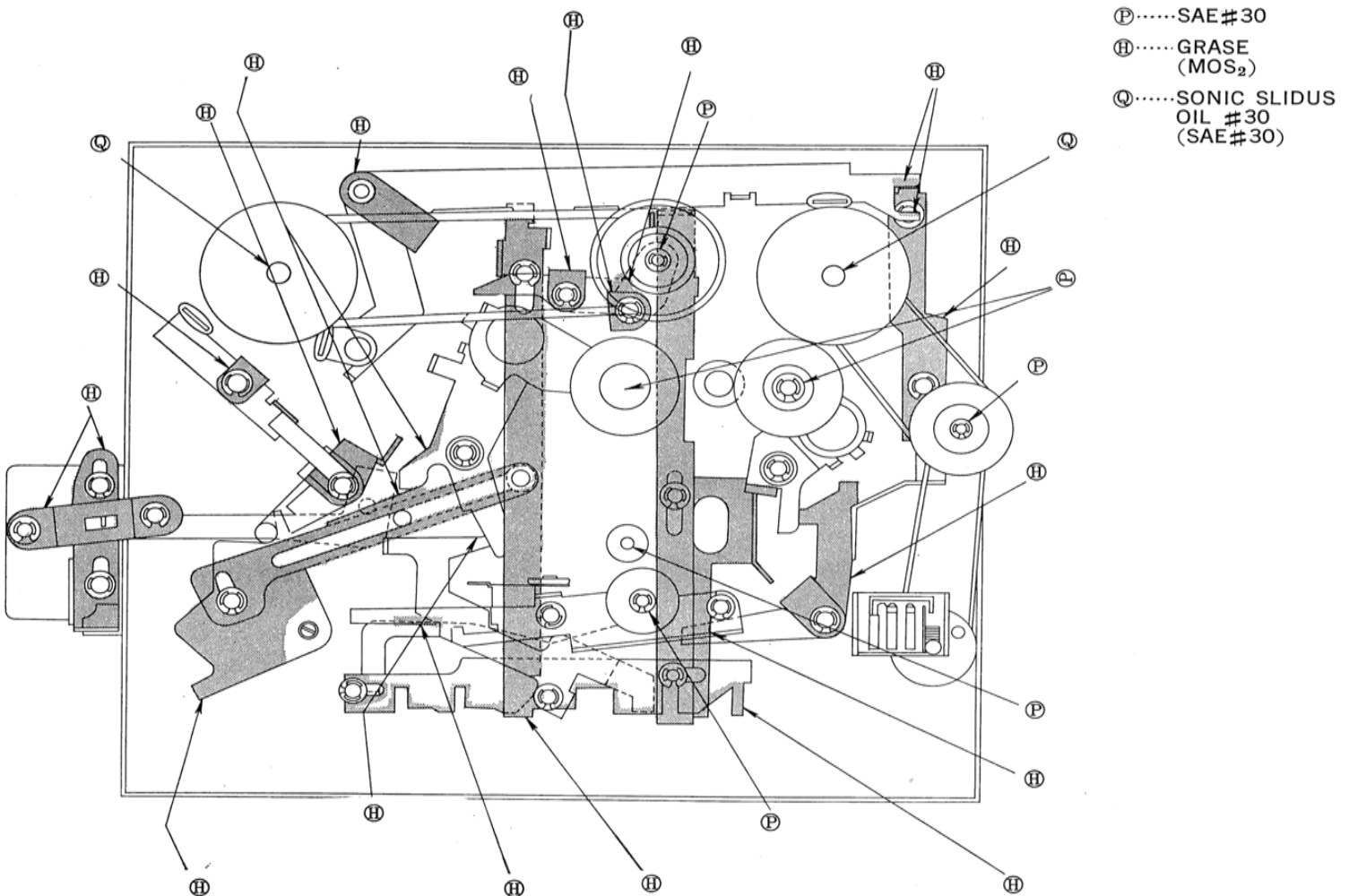


Fig. 8

## ADJUSTMENT

### 1. Adjustment of electric circuit

- 1) Angle adjustment of recording and playback head
  - a) Adjustment of tape position

Check whether or not the tape is correctly positioned on the recording and playback head. This adjustment can be made by regulating the height of the tape guide (⊖ screw).

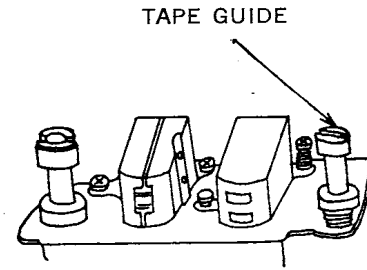
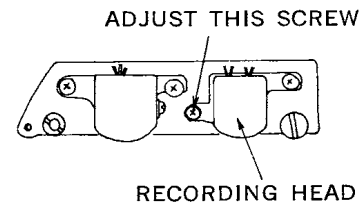


Fig. 9

- b) Angle adjustment of the tape record/play back head

Prepare a standard tape for angle adjustment (N AB standard, 4-track) and adjust the screw for angle adjustment so that the voltage of the reproducing output reaches the maximum. Further, connect the V.T.V.M. (vacuum tube voltmeter) on each output side of channel 1 and channel 2 to measure respective voltage, and at the same time, check whether or not there is a large difference in the output between both channels. Pay special attention to the pad pressing force and check to see if it is the same for both channels. After the adjustment, the output level should not change excessively if the pad is slightly pressed manually.



RECORDING HEAD

Fig. 10

When using an ordinary recorded tape (4-track, 2-channel), adjust the volume of the right and left channels according to the desired volume of sound.

Adjustment is made under conditions of maximum sound volume and high-pitched by turning the volume control knob (VOLUME) completely to the right (clockwise).

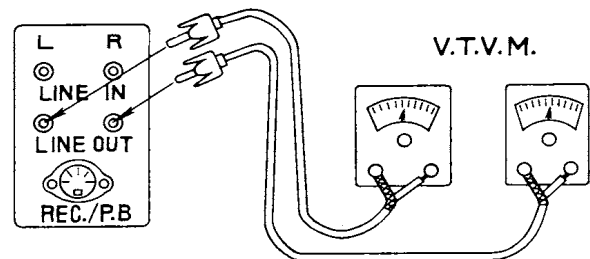


Fig. 11

- 2) Sensivity adjustment of level meter

- a) Place the machine in the recording condition and transmit 1000 Hz low-frequency signals from the low-frequency oscillator to the microphone terminal or LINE IN terminal.

- b) Place turn the volume control knob (VOLUME: CH-1 or CH-2) completely to the right (clockwise) to gain maximum volume. Then connect the V.T.V.M. (vacuum tube voltmeter) to the LINE OUT JACK as shown in Fig.11. Adjust the output of the low frequency oscillator so that the output voltage reaches 0.45V (Adjust the intensity of input signals). Even when decreasing the input, if the output voltage does not decrease to the predetermined

value (0.45V), try to decrease the volume output by turning the volume control knob (VOLUME) to the left (counterclockwise).

- c) In this condition, adjust the semi-fixed resistors (VR2, VR4) so that deflection of the level meter pointer indicates a borderline position between black and red.

Adjust  $\left( \begin{array}{l} \text{VR2 for channel 1 (CH-1)} \\ \text{VR4 for channel 2 (CH-2)} \end{array} \right)$

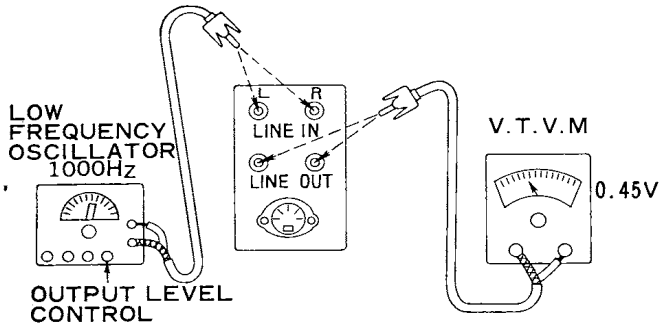


Fig. 12

3) Bias adjustment

Bias oscillating frequency of TRQ-727 is approx. 60KHz. Adjust the bias in the following way:

- a) Place the machine in both channels recording condition.
- b) Remove the ground side lead wire of the recording and playback head terminal, then connect the resistor (100Ω) and connect the resistor to the ground side.
- c) Measure the voltage after connecting V.T.V.M. (vacuum tube voltmeter) as shown in Fig.14, and adjust the semi-fixed resistors (VR5, VR6) so that the voltage shows the value indicated below.

Adjust (VR5 for channel 1  
VR6 for channel 2

- Erasing current of the erasing head is normal when it is within 13-30mA.

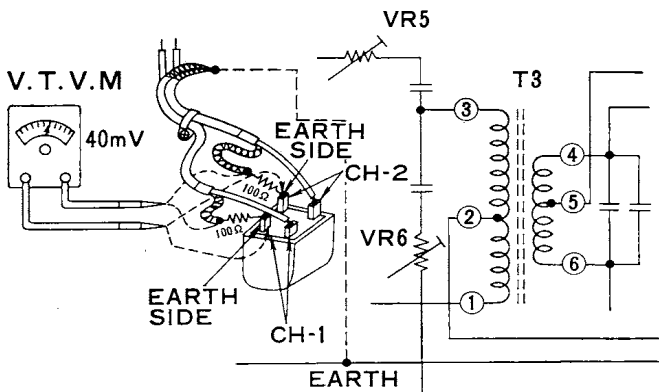


Fig. 14

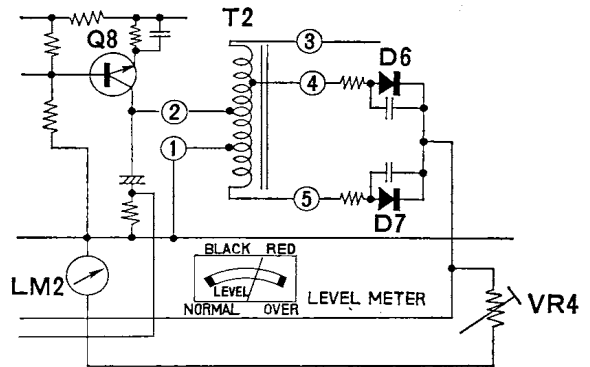
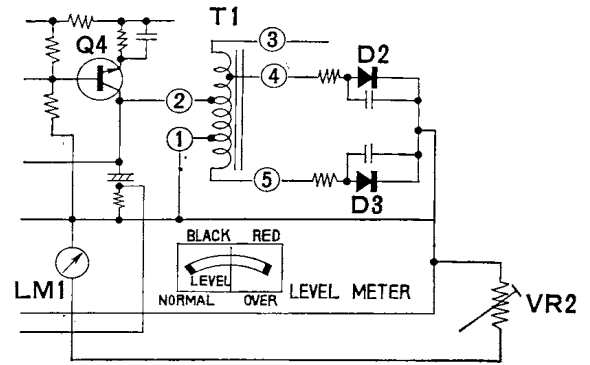


Fig. 13

4) Bias trap adjustment..... Fig. 15

This adjustment is made to eliminate high-frequency which leaks into the audio amplifier circuit from the bias oscillating circuit (oscillating frequency: 50-60KHz).  
Adjusting order

- This is begun from No.1 channel (CH-1).
- a) Place the No.1 channel (CH-1) in a playback condition and also place the No.2 channel (CH-2) in a recording condition. Do not insert the microphone and auxiliary cord into the mic-jack (MIC) or the input jack (LINE IN) in a condition without applying the jack.
- b) Turn the volume control knob (CH-1 VOLUME, CH-2 VOLUME) completely clockwise to produce a maximum output.
- c) Connect V.T.V.M. (Vacuum tube voltmeter) to the No.1 channel (CH-1) LINE-OUT terminal (L side). A high-frequency voltage leaking from the oscillating circuit is indicated in this condition. Turn the core of the TRAP COIL (TC1) to produce minimum voltage (under 40mV).
- Next, adjust the TRAP COIL (TC2) for No.2 channel (CH-2) LINE-OUT terminal (R side) following the same procedures as used in No.1 channel (CH-1) adjustment.

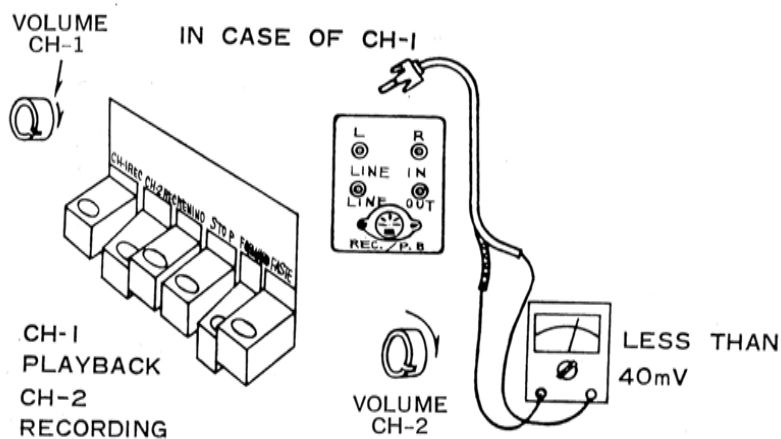


Fig. 15

## 2. Adjustment for mechanical sections

### 1) Pressing force on each section

- a) Pinch roller Pressing force..... $1.0\text{kg} \begin{matrix} +0.2 \\ -0.1 \end{matrix}\text{kg}$ .

#### Measuring method

Arrange so that the pinch roller presses against the capstan shaft (playback condition), and pull the pinch roller in a right angle direction against the pinch roller arm. Then measure the slight value remaining, occasioned by using a bar pressure of the pinch roller against the capstan shaft, gauge (rating 3kg or 5kg).

- b) Pad pressing force  $50\text{gr} \pm 10\text{gr}$

#### Measuring method

This is a pad-pressing force for the purpose of pressing the tape against the head surface. The value is measured when the pad is disengaged from the head surface by applying the tension gauge (rating 100gr) to the pad center and upper end.

- c) Winding idler pressing force  $150\text{gr} \pm 30\text{gr}$

#### Measuring method

Lock the machine by depressing the play button (PLAY) (play condition).

Measure the value when the winding idler disengages from the motor pulley and the winding pulley at the same time

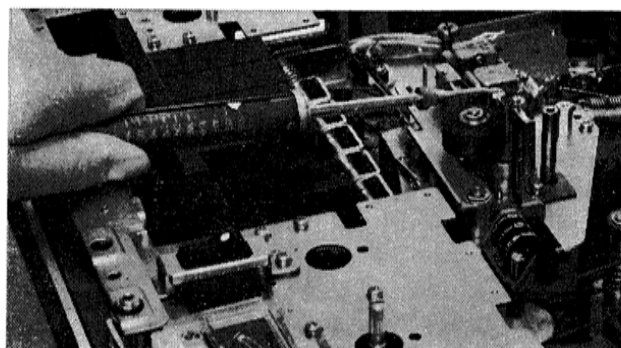


Fig. 16

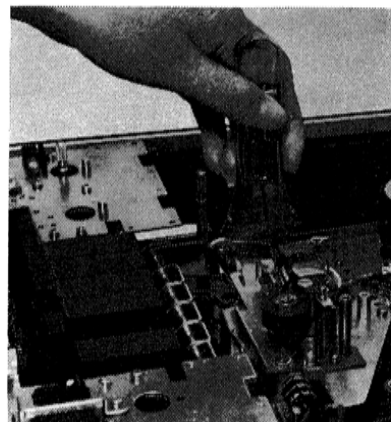


Fig. 17

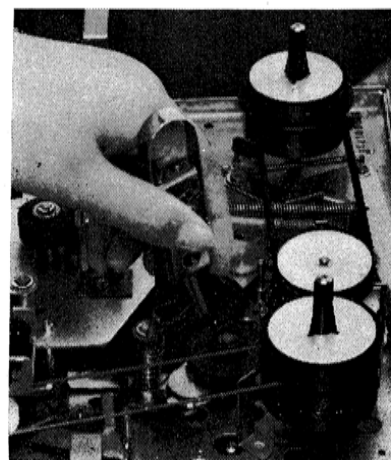


Fig. 18



d) Playback idler pressing force

When the tape speed is 19 cm/sec.....200gr  $\pm$ 40gr

When the tape speed is 9.5 cm/sec ...175gr  $\pm$ 40gr

When the tape speed is 4.75 cm/sec ...150gr  $\pm$ 40gr

Measuring method

Lock the machine by depressing the play button (PLAY) (play condition). Measure the value when the playback idler disengages from the flywheel and the motor pulley at the same time.

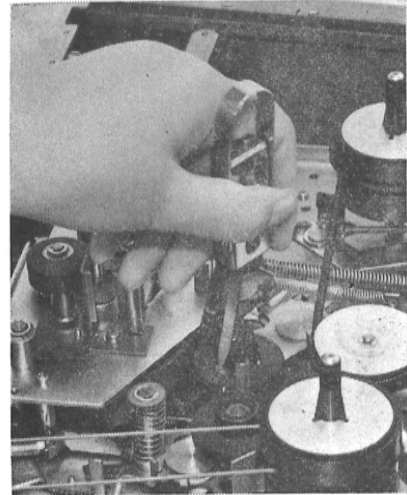


Fig. 19

e) Rewinding (R) idler pressing force.....450gr  $\pm$ 50gr

Measuring method

Lock the machine by depressing the rewinding button (REWIND) (rewinding condition). Measure the value when the rewinding idler disengages from the motor pulley.

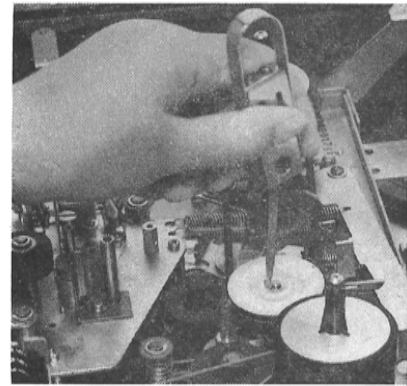


Fig. 20

2) Torque of each section

a) Winding torque.....45~80gr-cm

Measuring method

Place the machine in a horizontal position and turn the power source to ON position: then place the 7" empty reel on the winding side reel shaft. Wind a thread inside it and measure the winding torque in a play condition (PLAY).

b) Winding and supplying friction coupling torque

Takeup or rewinding torque...200~300gr-cm

Measuring method

Place the machine in a vertical position, and throw the power source to ON position. Wind a thread inside the 7" empty reel and measure the torque in a fast forwarding condition of the takeup. Place in a rewinding condition for the rewinding.

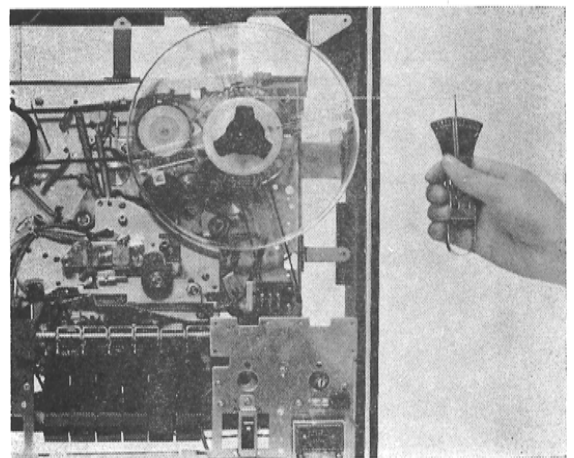


Fig. 21

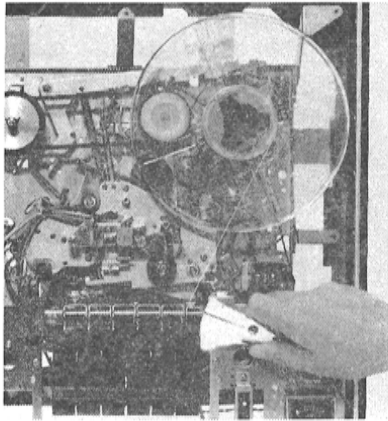


Fig. 22

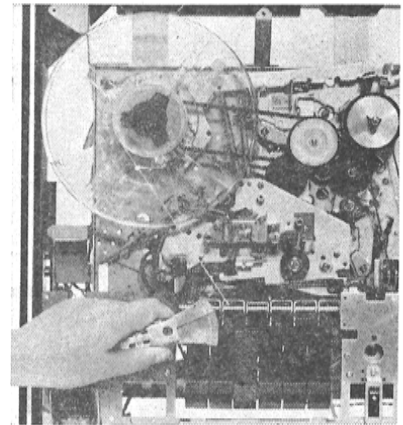


Fig. 23

- c) Back tension.....15-36gr-cm

Place empty reel on the rewinding reel shaft after winding a thread. Set the machine to play condition. Measure the force when pulling out the thread.

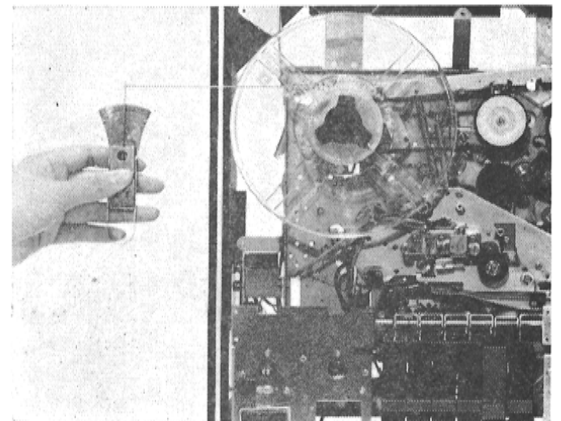


Fig. 24

- d) Takeup back tension.....15~35gr

Place 7" empty reel on the takeup reel shaft after winding a thread. Set the machine to rewinding condition. Measure the force when pulling out the thread.

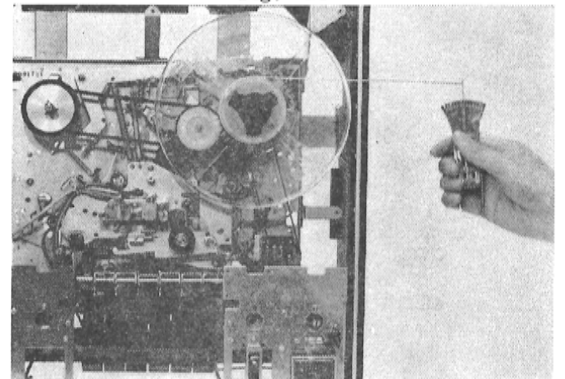


Fig. 25

- e) Push button operating force.....Under 3.2kg

Place the machine in a horizontal position. Apply the bar gauge to the tip of the push button and measure the force until the button is locked.

Note) When applying the bar gauge directly to the push button, the push button may be damaged. To prevent any possible damage, use a rubber sheet between the gauge and the button.

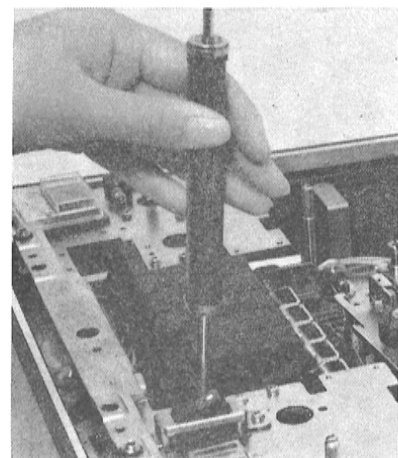


Fig. 26

3) Adjustment of installation position

a) Installation position of the muting switch (Fig.27)

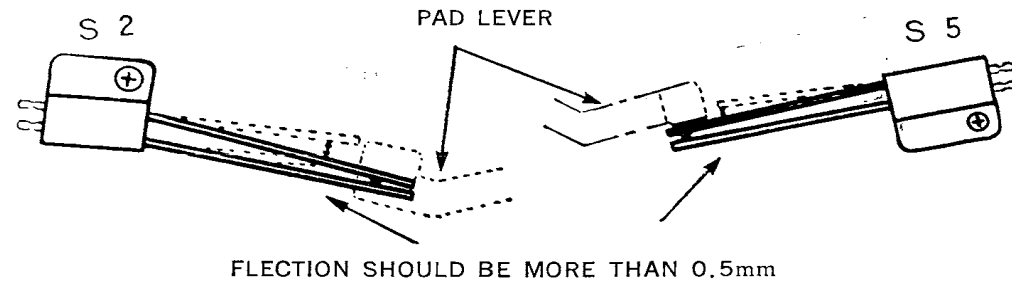


Fig. 27

b) Installation position of motor pulley (Fig.28)

The standard distance between the chassis and the motor pulley is  $2 \pm 0.1\text{mm}$ . After installing the pulley in this position, try the speed change and adjust the position, while confirming that the Playback idler correctly enters each stage of the motor pulley.

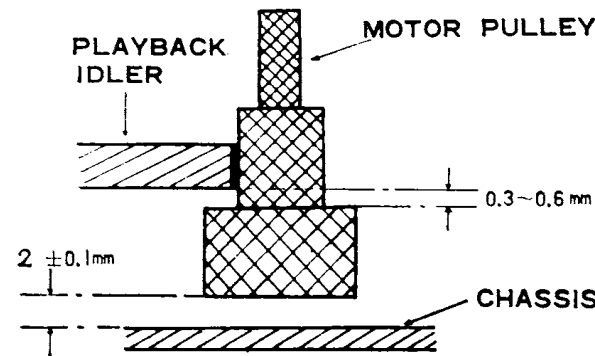


Fig. 28

TROUBLE-SHOOTING

The following are important malfunctions and their countermeasures.

While reproducing	Cause	Countermeasures
Tape does not run.	Pinch roller does not press, or it slips.	Is pressing force normal? Is the spring disconnected? Does oil adhere to the pinch roller and the capstan?
Speeds do not coincide. Unstable revolution	Heights of the playback idler and the motor pulley do not coincide. Winding torque is large. Insufficient oil on the capstan shaft.	Pulley is lowered because of loose screwing of the motor pulley. Check the pressing force on each section. Check relative mechanisms of the winding reel base Oiling.
Disabled fast forward	Check the supply back tension. Check the winding coupling torque.	Oiling. When the torque and tension are too weak, replace the assembly.
Disabled rewinding	Check slipping portion. Check the supply coupling torque and winding side back tension. Check the pressing force of playback idler.	When it is weak and does not conform to designated value, replace the assembly. Oiling. Confirm any deformation of the spring.

REPLACEMENT PARTS

Symbol No.	Stock No.	Description	Symbol No.	Stock No.	Description
<b>CAPACITORS:</b>					
C 1	C 101	0252213 Electrolytic	R 37	R 137	0137853 Same as R9
C 2	C 102	0274113 Polyester film	R 38	R 138	0137707 Carbon film
C 3	C 103	0274114 Polyester film	R 39	R 139	0137669 Carbon film
C 4	C 104	0252211 Electrolytic	R 40	R 140	0137667 Same as R12
C 5	C 105	0252213 Same as C1	R 42	R 142	0134377 Composition
C 6	C 106	0275014 Polyester film	R 43	R 143	0134377 Same as R42
C 7	C 107	0275012 Polyester film	R 201	R 137811	0137811 Same as R36
C 8	C 108	0275012 Same as C7	R 204	R 134286	0134286 Composition
C 9	C 109	0252225 Electrolytic	R 207	R 137851	0137851 Carbon film
C 10	C 110	0252213 Same as C1	R 208	R 137851	0137851 Same as R207
C 11	C 111	0252321 Electrolytic	R 209	R 137854	0137854 Carbon film
C 12	C 112	0252535 Electrolytic	R 210	R 137803	0137803 Carbon film
C 13	C 113	0252213 Same as C1	R 211	R 134290	0134290 Composition
C 14	C 114	0252232 Electrolytic	VR 1	0153174	0153174 Variable
C 15	C 115	0252223 Electrolytic	VR 2	0151160	0151160 Semi variable
C 16	C 116	0274014 Polyester film	VR 3	0153174	0153174 Same as VR1
C 17	C 117	0275013 Polyester film	VR 4	0151160	0151160 Same as VR2
C 18	C 118	0252213 Same as C1	VR 5	0159024	0159024 Semi variable
C 19	C 119	0275011 Polyester film	VR 6	0159024	0159024 Same as VR5
C 20	C 120	0252331 Electrolytic	<b>TRANSISTORS:</b>		
C 21	C 121	0252211 Same as C4	Q 1	0573018	0573018 Transistor
C 22	C 122	0274116 Polyester film	Q 2	0573066	0573066 Transistor
C 23	C 123	0274116 Same as C22	Q 3	0573125	0573125 Transistor
C 24	C 124	0233054 Ceramic	Q 4	0573066	0573066 Same as Q2
C 25	C 125	0274012 Polyester film	Q 5	0573018	0573018 Same as Q1
C 26	C 126	0233034 Ceramic	Q 6	0573066	0573066 Same as Q2
C 27	C 127	0233010 Ceramic	Q 7	0573125	0573125 Same as Q3
C 29	C 129	0274115 Polyester film	Q 8	0573066	0573066 Same as Q2
C 203	0252635	0252635 Electrolytic	Q 9	0573022	0573022 Transistor
C 204	0252625	0252625 Electrolytic	Q 10	0573023	0573023 Transistor
C 206	0259652	0259652 Electrolytic	Q 11	0573023	0573023 Same as Q10
C 207	0275013	0275013 Same as C17	TH 1	0576057	0576057 Thermistor
C 208	0275013	0275013 Same as C17		0551029	0551029 Selen rectifire
C 209	0247886	0247886 Ceramic	D 1	0575001	0575001 Diode
C 210	0247886	0247886 Same as C209	D 2	0575001	0575001 Same as D1
C 211	0275016	0275016 Polyester film	D 3	0575001	0575001 Same as D1
C 212	0252635	0252635 Same as C203	D 5	0575001	0575001 Same as D1
C 214	0275111	0275111 Polyester film	D 6	0575001	0575001 Same as D1
C 215	0218159	0218159 Paper	D 7	0575001	0575001 Same as D1
C 216	0275011	0275011 Same as C19	<b>TRANSFORMERS:</b>		
R 1	R 101	0122369 Carbon film	T 1	0451108	0451108 Output
R 2	R 102	0122539 Carbon film	T 2	0451108	0451108 Same as T1
R 4	R 104	0122462 Carbon film	T 3	0316534	0316534 Oscillator coil
R 5	R 105	0122456 Carbon film	<b>COILS:</b>		
R 6	R 106	0122463 Carbon film	TC 1	0324066	0324066 Trap coil
R 7	R 107	0122460 Carbon film	TC 2	0324066	0324066 Same as TC1
R 8	R 108	0122464 Carbon film	<b>Chassis assembly</b>		
R 9	R 109	0137853 Carbon film	①	611C841	Deck assembly
R 10	R 110	0137609 Carbon film			Washer-3mm $\phi$ washer } (5 req'd)
R 11	R 111	0137611 Carbon film			Washer-3mm $\phi$ spring washer } (5 req'd)
R 12	R 112	0137667 Carbon film			Screw-3mm $\phi$ $\times$ 8mm pan head screw } (2 req'd)
R 13	R 113	0137901 Carbon film			Screw-3mm $\phi$ $\times$ 5mm pan head screw } (2 req'd)
R 14	R 114	0137903 Carbon film			for deck plate mounting
R 15	R 115	0137952 Carbon film	②	6210211	Plate-deck plate
R 16	R 116	0137671 Carbon film			Screw-3mm $\phi$ $\times$ 8mm binding screw (2 req'd)
R 17	R 117	0137801 Carbon film			Screw-3mm $\phi$ $\times$ 5mm binding screw (4 req'd)
R 18	R 118	0137858 Carbon film			for deck plate mounting
R 19	R 119	0137859 Carbon film	③	6111061	Cabinet
R 20	R 120	0137857 Carbon film	④	7660022	Rubber base
R 21	R 121	0137908 Carbon film	⑤	0020305	Stay
R 22	R 122	0137905 Carbon film			Screw-3.1mm $\phi$ $\times$ 20mm wood screw (4 req'd)
R 23	R 123	0137852 Carbon film			for rubber base mounting
R 24	R 124	0137861 Carbon film	⑥	6111181	Bottom cover
R 25	R 125	0137859 Same as R19			Washer-3mm $\phi$ washer } (2 req'd)
R 26	R 126	0137764 Carbon film			Screw-3.1mm $\phi$ $\times$ 13mm wood screw } (2 req'd)
R 27	R 127	0134081 Composition			for staple mounting
R 28	R 128	0134081 Same as R27	⑦	0971279	Rubber base (4 req'd)
R 30	R 130	0137856 Carbon film			Washer-4mm $\phi$ washer } (4 req'd)
R 31	R 131	0137951 Carbon film			Screw-4mm $\phi$ $\times$ 20mm pan head screw } (4 req'd)
R 32	R 132	0137908 Same as R21			for rubber base
R 33	R 133	0137807 Carbon film			Washer } (4 req'd)
R 34	R 134	0137809 Carbon film			Screw-4mm $\phi$ $\times$ 25mm pan head screw } (4 req'd)
R 35	R 135	0137856 Same as R30			for bottom cover
R 36	R 136	0137811 Carbon film			

CIRCUIT DIAGRAM

Q1, 5  
2SB73 (B)X2

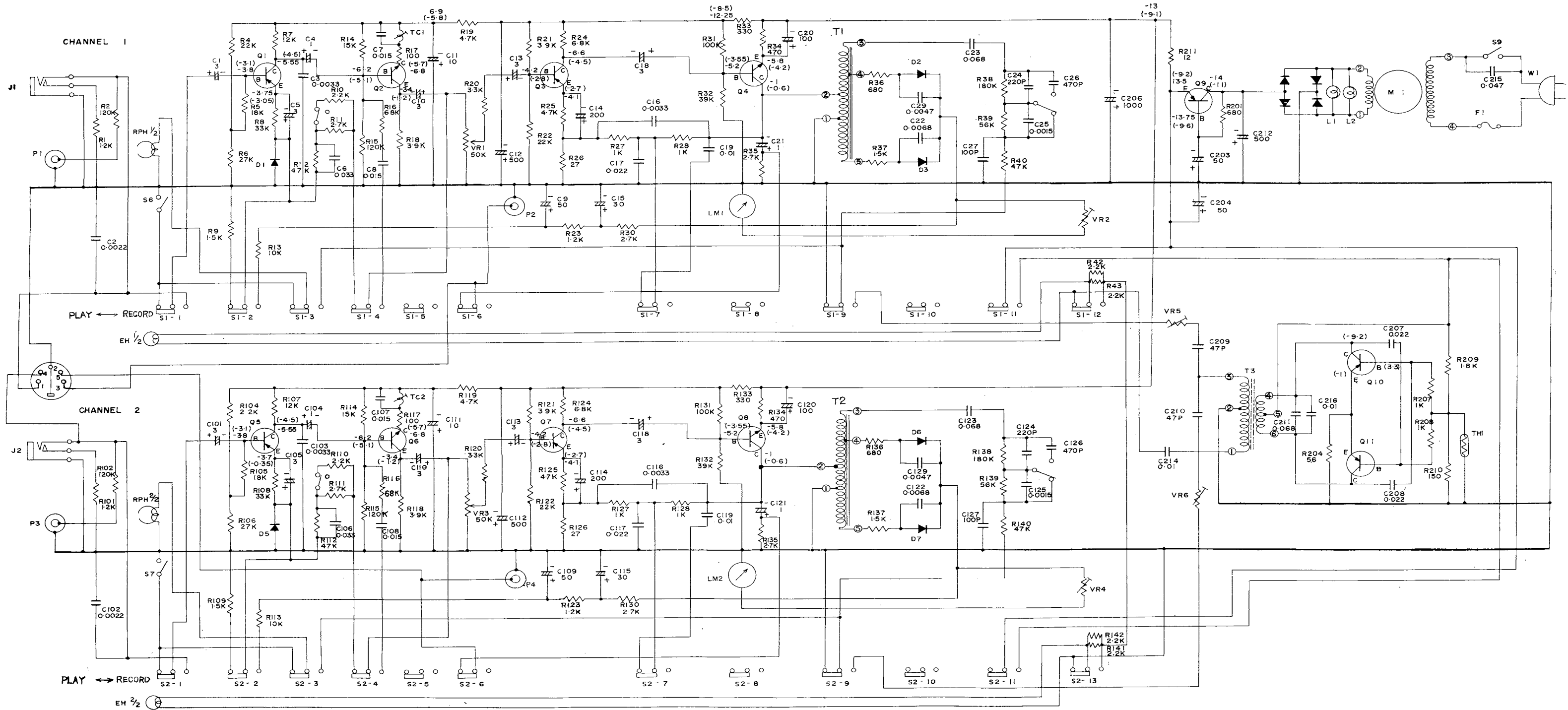
Q2, 4, 6, 8  
2SC281 (C)X4

Q3, 7  
2SB75 (F) X2

D1, 2, 3, 5, 6, 7  
1N34A X6

Q9  
2SB370 (A)

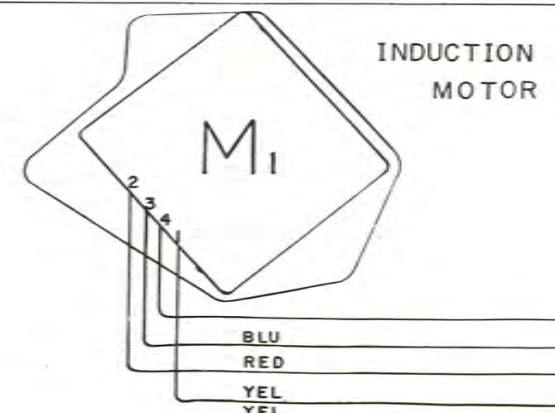
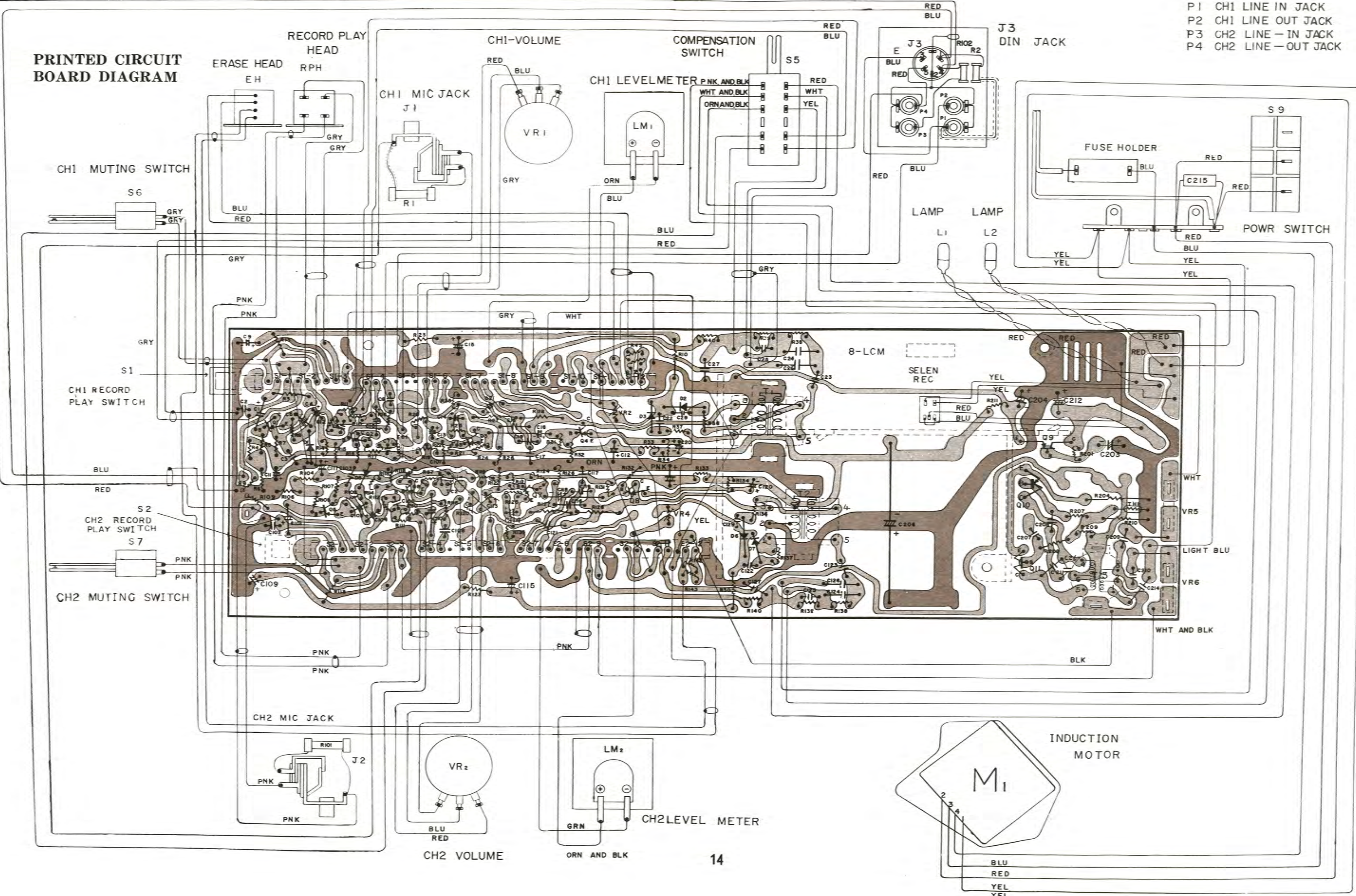
Q10, 11  
2SB370 (B)X2





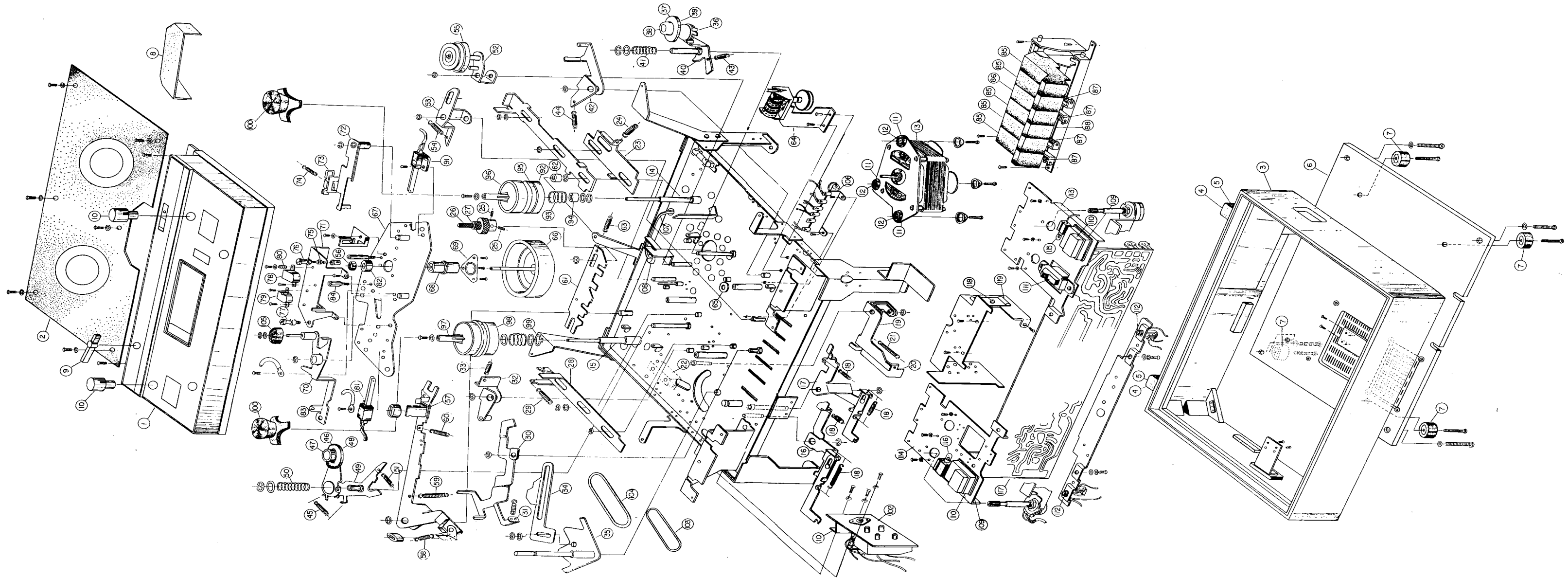
**PRINTED CIRCUIT BOARD DIAGRAM**

- P1 CH1 LINE IN JACK
- P2 CH1 LINE OUT JACK
- P3 CH2 LINE - IN JACK
- P4 CH2 LINE - OUT JACK





DISASSEMBLED DIAGRAM



Symbol No.	Stock No.	Description	Symbol No.	Stock No.	Description
⑧	6160271	Cover-head cover	57	7160951	Brake lever assembly
⑨	6260331	Speed selector knob assembly	58	0662130	Spring for brake
⑩	6260762	Volume knob assembly	59	0662222	Spring for brake lever
		<b>Chassis assembly</b>	60	0639391	Spring
		Washer-4mm $\phi$ spring washer	61	0941175	Plate-timing plate
		Screw-4mm $\phi$ $\times$ 18mm pan head screw } (3 req'd)	62	0944467	Collar
		Screw-4mm $\phi$ $\times$ 8mm pan head screw	63	0639391	Spring for timing plate
		Washer-4mm $\phi$ spring washer } (4 req'd) for motor plate mounting	64	7162323	Counter assembly
11	0971120	Cusion-motor cusion (3 req'd)	65	0630564	Plate-flywheel plate
12	7500212	Collar-collar for cusion (3 req'd)	66	0971258	Flywheel assembly
14	7500501	Takeup reel shaft	67	7162352	Sub chassis plate assembly
15	7500521	Sending reel shaft	68	0944832	Screw-3mm $\phi$ $\times$ 5mm tapping screw
		Nut-4mm $\phi$ nut	69	0638150	Bearing
		Washer-4mm $\phi$ spring washer } (2 req'd) for shaft	70	0941176	Holder-metal holder
		Washer-fiber washer (2 req'd)	71	0941716	Screw-3mm $\phi$ $\times$ 6mm tapping screw } (4 req'd)
13	0514137	Induction motor 120V 50/60Hz	72	0941176	Pressure roller arm assembly
	0514138	Induction motor 210V/230V 50Hz	73	0941716	Head plate assembly
		Screw-3mm $\phi$ $\times$ 6mm pan head screw	74	0941805	Pad lever assembly
		Washer-3mm $\phi$ spring washer (4 req'd) }	75	0942049	Pad assembly
		Screw-3mm $\phi$ $\times$ 6mm pan head screw }	76	0662183	Spring for pad lever
		Washer-3mm $\phi$ spring washer } (3 req'd) for stay mounting	77	0948154	Spring for tape guide
16	0941749	Recording lever assembly (left)	78	0944741	Tape guide (right)
17	0941751	Recording lever assembly (right)	79	0945008	Tape guide (left)
	0941259	Washer-"E" type retaining washer	80	0513293	Head-recording playback head
18	0662187	Spring-spring for slide switch	81	0513222	Head-erase head
19	0941763	Switch function plate	82	0948102	Screw-2.6mm $\phi$ $\times$ 6mm pan head screw } (3 req'd)
20	0941931	Switch function plate	83	0539087	Spring-head adjust spring
21	0662187	Spring-spring for slide switch	84	0948102	Screw-2.6mm $\phi$ $\times$ 16mm pan head screw
22	0533159	Switch-push switch	85	0539087	Switch-muting switch
		Screw-2.6mm $\phi$ $\times$ 4mm pan head screw	86	0539087	Screw-3mm $\phi$ $\times$ 8mm tapping screw
		Washer-2.6mm $\phi$ spring washer	87	0539087	Washer-2.6mm $\phi$ washer
		Washer-2.6mm $\phi$ washer	88	0539087	Washer-3mm $\phi$ washer
23	0941141	Fast forward lever	89	0539087	Washer-3mm $\phi$ spring washer
24	0662124	Spring	90	0948634	Screw-3mm $\phi$ $\times$ 6mm pan head screw
	0948544	Washer-fiber washer	91	0948634	Washer-flywheel washer
25	0944452	Screw-set screw	92	0941183	Cap
28	0941150	Rewind idler function lever	93	0662199	Spring for pressure roller arm
		Washer-fiber washer	94	0662199	Screw-3mm $\phi$ $\times$ 8mm pan head screw } Washer-3mm $\phi$ spring washer } (3 req'd) for chassis mounting
29	0948637	Rewinding lever assembly	95	0015445	Button-push button
30	0941829	Playing lever assembly	96	0015446	Button-stop push button
31	0948316	Spring	97	0662131	Spring
32	0941970	Adjusting lever assembly	98	0662062	Spring-spring for switch
33	0948316	Spring-spring for adjust lever	99	0662173	Spring-spring for shaft
34	0941292	Tape speed exchange lever	100	0942304	Plate-reinforcement plate
35	0941786	Tape speed exchange cam assembly	101	0941259	Washer-"E" type retaining washer
36	0941157	Fast forward idler lever assembly	102	0941257	Washer-"E" type retaining washer
37	0971150	Idler wheel	103	0941257	Screw-3mm $\phi$ $\times$ 6mm tapping screw } (4 req'd)
	0948601	Washer idler oil washer	91	0539063	Switch-muting switch
	0948595	Washer-nylon washer	92	0539063	Screw-3mm $\phi$ $\times$ 8mm pan head screw
38	0971105	Idler cap	93	6700751	Pulley-takeup pulley (B)
39	0958064	Felt for push button	94	6310311	Spring
40	0941159	Fast forward idler lever assembly	95	7500511	Collar-takeup collar
41	0948631	Spring	96	7600241	Washer-nylon washer
	0948675	Washer-fiber washer	97	7161437	Washer-"E" type retaining washer
42	0941162	Fast forward idler lever	98	6410661	Takeup pulley (A) assembly
43	0662126	Spring for fast forward idler lever	99	6410051	Takeup reel base assembly
44	6310531	Spring for fast forward idler lever	100	7710151	Washer
	0662128	Spring	101	6310301	Spring for reel base
46	0971223	Idler wheel (R)	102	6410081	Sending reel base assembly
	0948601	Washer-idler oil washer	103	0015172	Sending pulley
	0948727	Washer-nylon washer	104	0940048	Washer for sending pulley (2 req'd)
47	0971215	Idler cap	105	0948234	Spring for sending reel base
48	0958067	Felt for push button	106	0948662	Snap
49	0941818	Playing idler lever assembly	107	7660261	Holder-reel holder (2 req'd)
50	0662127	Spring	108	7163651	Supporter-jack plate supporter
		Washer-fiber washer	109	5670081	Screw-3mm $\phi$ $\times$ 6mm tapping screw (3 req'd)
51	0662129	Spring for idler lever	110	5670081	Jack-pin jack
52	0941726	Rewind idler lever assembly	111	5670081	Washer-3mm $\phi$ spring washer } Screw-3mm $\phi$ $\times$ 6mm pan head screw } (4 req'd)
53	0941170	Rewind idler lever (2)	112	6350001	Belt-counter belt
54	0662257	Spring for idler lever			
55	0015408	Rewind pulley assembly			
	0636553	Washer-rewind washer			
	0948578	Washer-nylon washer			
56	0948755	Felt			

Symbol No.	Stock No.	Description	Symbol No.	Stock No.	Description
(104)	0971126	Belt-rewinding belt			Screw-3mm $\phi$ $\times$ 6mm pan head screw
(105)	0971100	Roller-pressure roller			Washer-3mm $\phi$ spring washer } (2 req'd)
	0636553	Washer-rewinding washer			for switch mounting
	0941258	Washer-"E" type retaining washer	(111)	0533161	Switch-power switch
(106)	0544404	Terminal-6P terminal			Screw-3mm $\phi$ $\times$ 4mm pan head screw } (2 req'd)
		Screw-3mm $\phi$ $\times$ 6mm tapping screw (2 req'd)			Washer-3mm $\phi$ washer
(108)	0043793	Bushing			for jack plate mounting
		Screw-3mm $\phi$ $\times$ 6mm tapping screw	(112)	0635594	Washer-jack washer (2 req'd)
		(3 req'd)		0543082	Jack-jack (red) (2 req'd)
	0591167	Fuse-fuse 1A			Screw-3mm $\phi$ $\times$ 6mm pan head screw } (4 req'd)
		Screw-3mm $\phi$ $\times$ 6mm pan head screw (7 req'd)			Washer-3mm $\phi$ spring washer
		Washer-3mm $\phi$ spring washer (7 req'd)			for volume holder mounting
		Washer-3mm $\phi$ washer	(113)	0941823	Holder-volume holder (right)
		Screw-3mm $\phi$ $\times$ 6mm tapping screw	(114)	0941708	Holder-volume holder (left)
		(2 req'd)	(115)	0594112	Lamp-pilot lamp
	0944689	Pulley	(116)	0594114	Lamp-pilot lamp
	0944779	Pulley		0532178	Switch-slide switch (2 req'd)
	0542184	Plug-shunt plug			Washer-3mm $\phi$ washer
	0541313	Socket-voltage change over socket			Washer-3mm $\phi$ spring washer
		Screw-3mm $\phi$ $\times$ 6mm tapping screw (2 req'd)			Screw-3mm $\phi$ $\times$ 6mm pan head screw
(107)	0593366	Cord-power cord			Washer-3mm $\phi$ washer
	0593558	Cord-power cord			Washer-3mm $\phi$ spring washer
	0593443	Cord-power cord			Screw-3mm $\phi$ $\times$ 6mm pan head screw
	0542215	Plug-AC plug			Washer-3mm $\phi$ spring washer
		Screw-3mm $\phi$ $\times$ 6mm tapping screw (2 req'd)			Screw-3mm $\phi$ $\times$ 6mm pan head screw
		for plug mounting			Washer-3mm $\phi$ spring washer
		<b>Amplifier block assembly</b>	(118)	0941207	Washer-3mm $\phi$ washer
(109)	0948778	Cushon-level meter cushon (2 req'd)	(119)	0629902	Radiator
(110)	5550131	Meter-level meter (2 req'd)			Screw-3mm $\phi$ $\times$ 6mm pan head screw
		Screw-3mm $\phi$ $\times$ 6mm pan head screw			Washer-3mm $\phi$ spring washer
		Washer-3mm $\phi$ spring washer			Washer-3mm $\phi$ washer
		Washer-3mm $\phi$ washer			Radiator-PL radiator
		(2 req'd) for switch plate mounting		0680157	



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