HITACHI
Hitachi, Ltd. Tokyo Japan

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)
1⅞ ips (4.75cm/s)

TAPE REEL ····· 7″ (18cm), 5″ (13cm) & 3 1/3″(8.5cm)

RECORDING OR PLAYING TIME·····Stereo (using 7″, 35μ tape)
1.5hr at 7½ ips speed
3hr at 3¾ ips speed
6hr at 1⅞ ips speed
Monoural (using 7″, 35μ tape)
3hr at 7½ ips speed
6hr at 3¾ ips speed
12hr at 1⅞ 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) × 7 5/16″(D)
(40.8 × 39.6 × 18.5cm)

WEIGHT ·····21 lbs (9.5kg)

CONTROLS AND JACKS

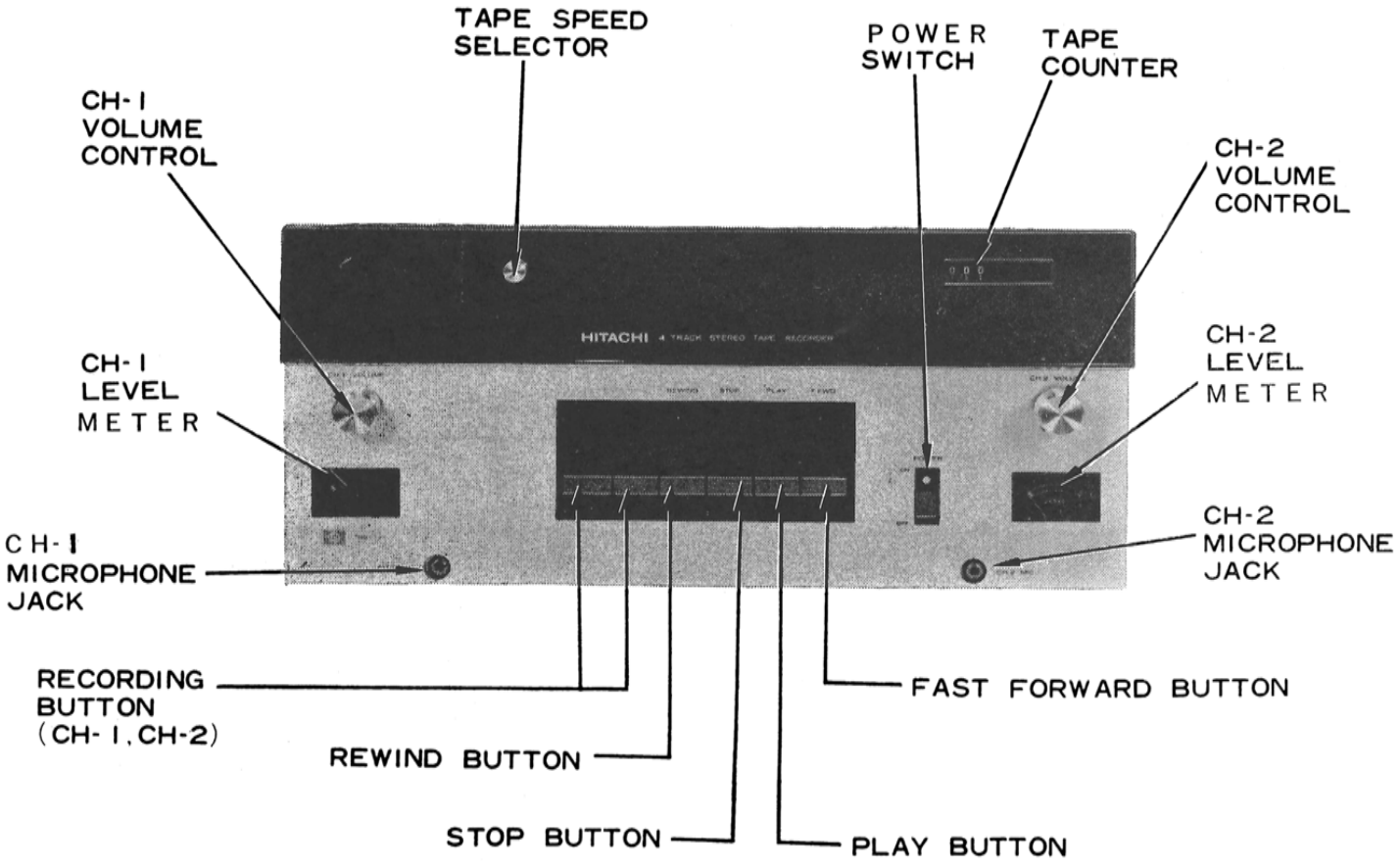


Fig. 1

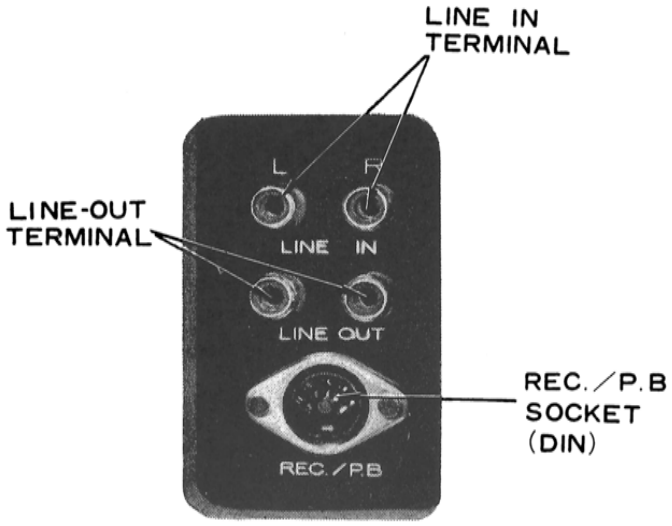


Fig. 2

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.

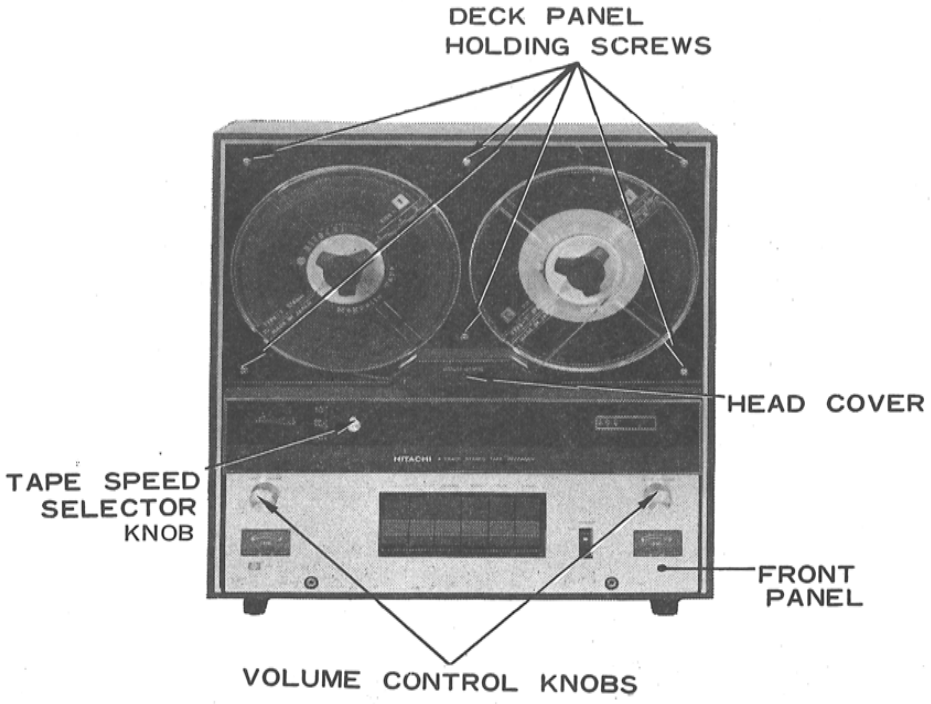


Fig. 3

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,

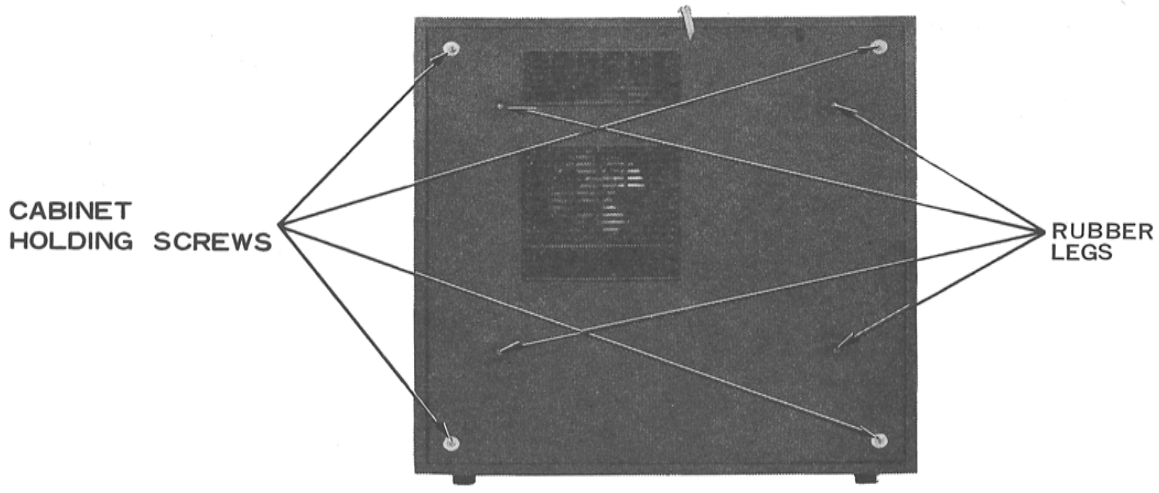


Fig. 4

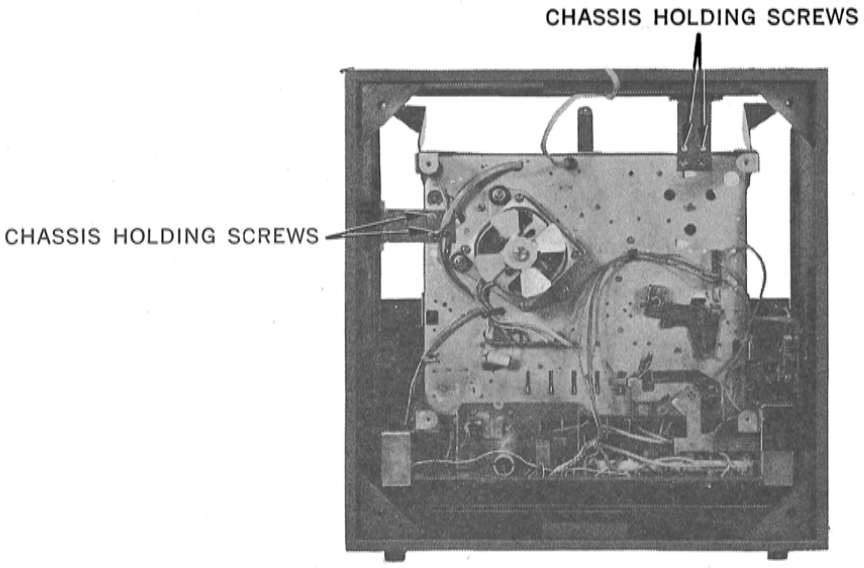


Fig. 5

3. Removing the circuit board

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

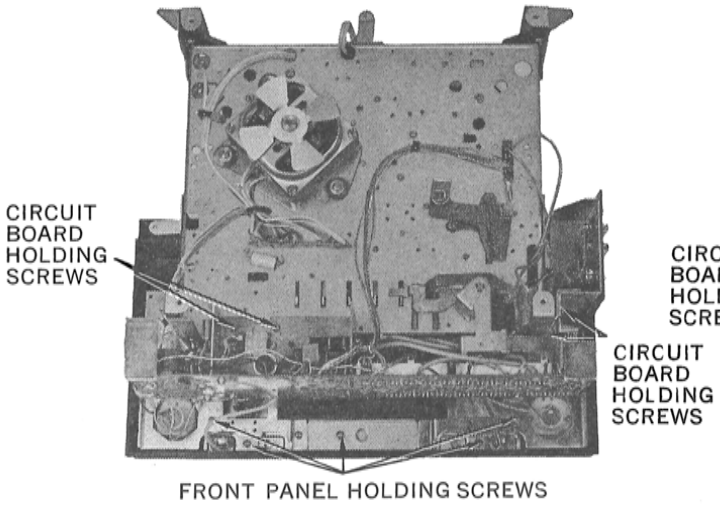


Fig. 6

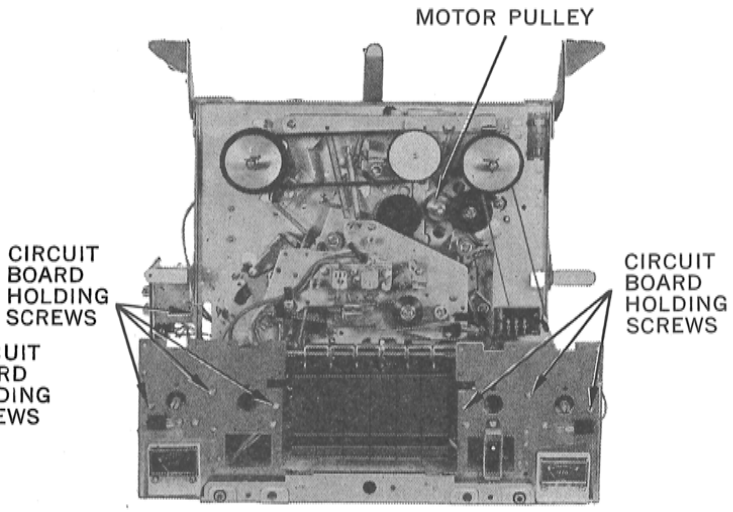


Fig. 7

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.

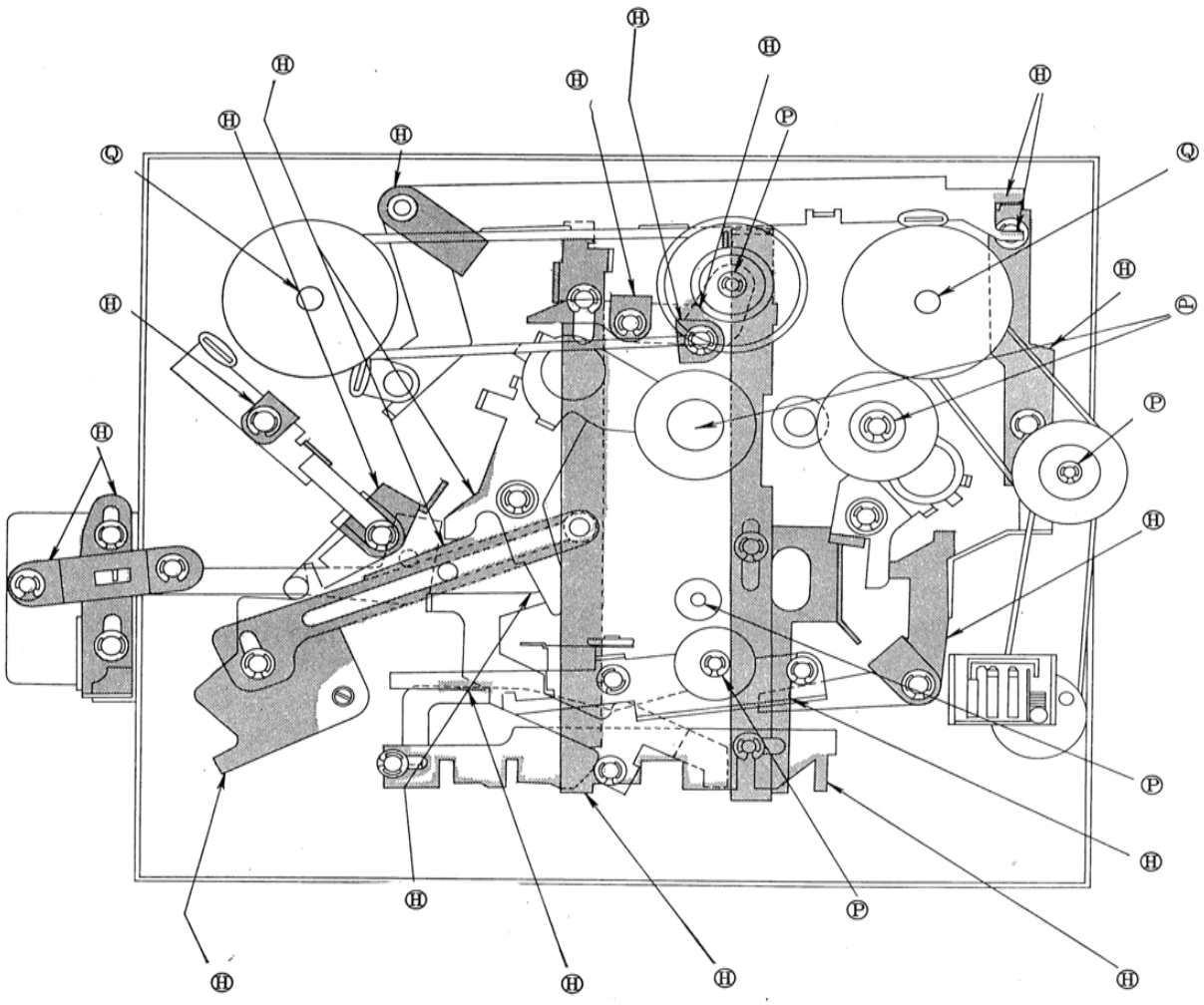


Fig. 8

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).

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

Prepare a standard tape for angle adjustment (NAB 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.

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).

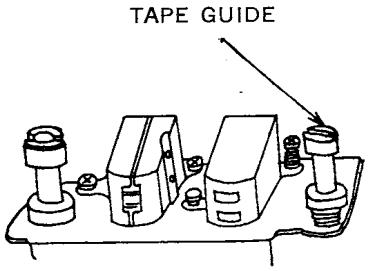


Fig. 9

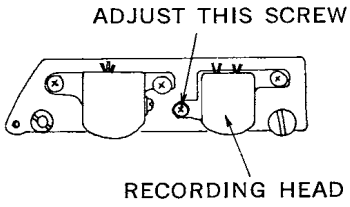


Fig. 10

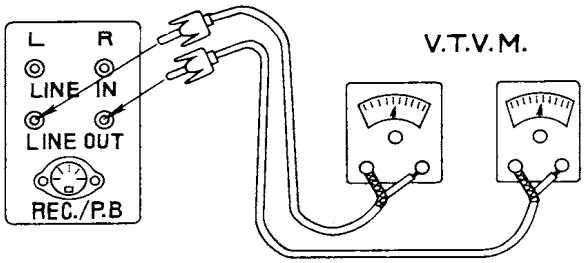


Fig. 11

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 theV.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 { VR2 for channel 1 (CH-1)
VR4 for channel 2 (CH-2)

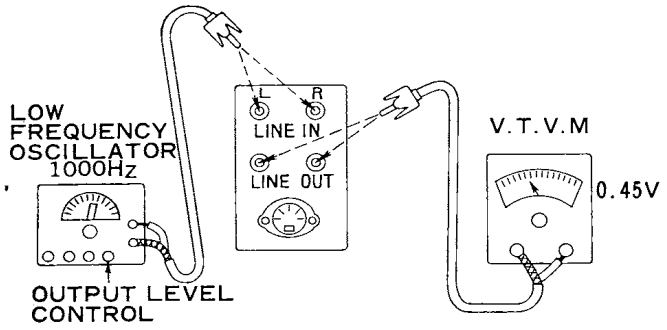


Fig. 12

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.

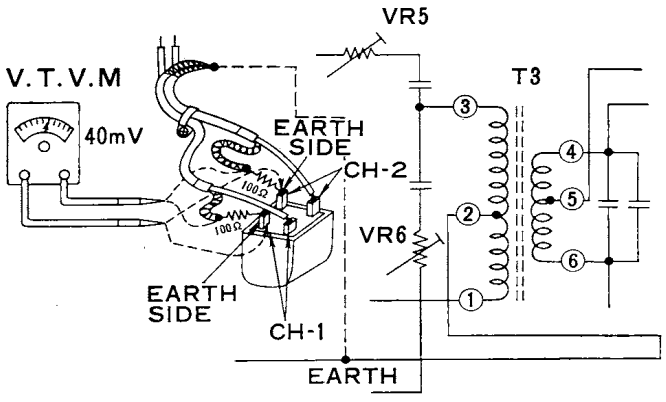
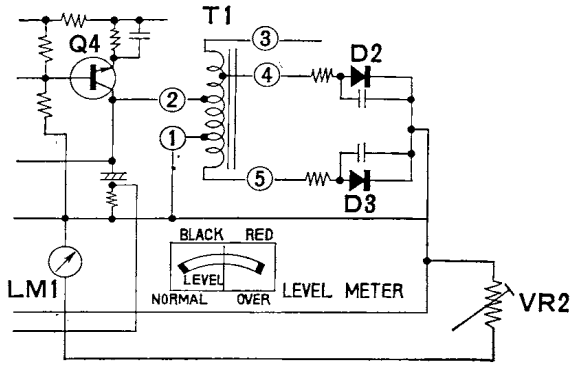


Fig. 14



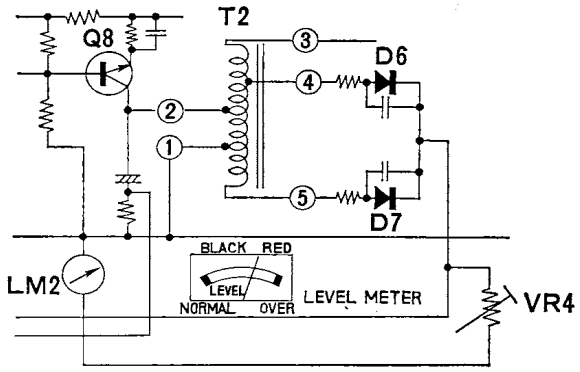


Fig. 13

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.

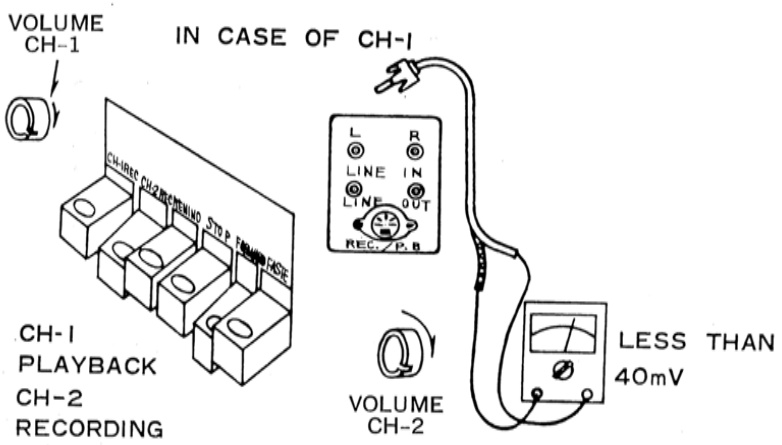


Fig. 15

2. **Adjustment for mechanical sections**

1) Pressing force on each section

a) Pinch roller Pressing force·····1.0kg $^{+0.2}_{-0.1}$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).

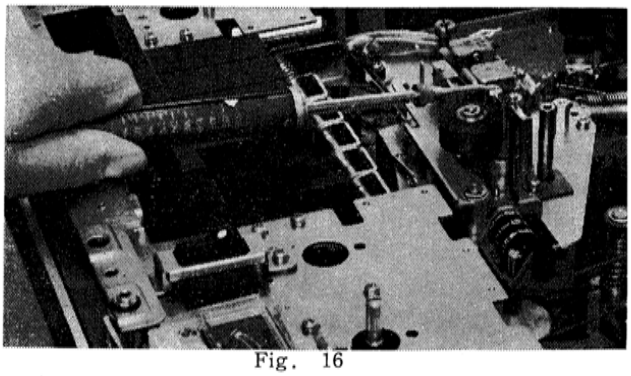


Fig. 16

b) Pad pressing force 50gr±10gr

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.

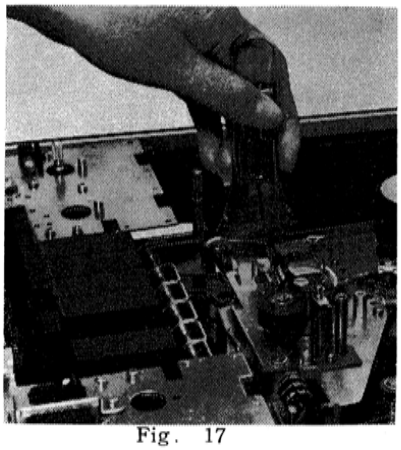


Fig. 17

c) Winding idler pressing force 150gr±30gr

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

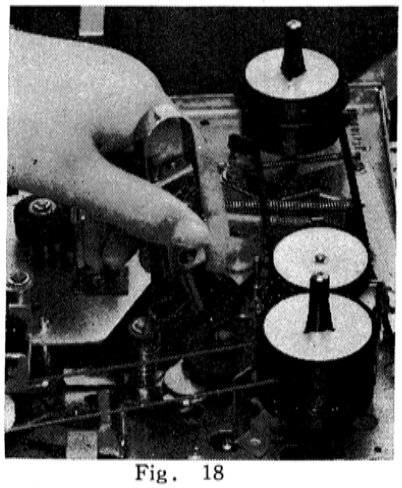


Fig. 18

d) Playback idler pressing force

When the tape speed is 19 cm/sec·····200gr ±40gr
When the tape speed is 9.5 cm/sec ···175gr ±40gr
When the tape speed is 4.75 cm/sec ···150gr ±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.

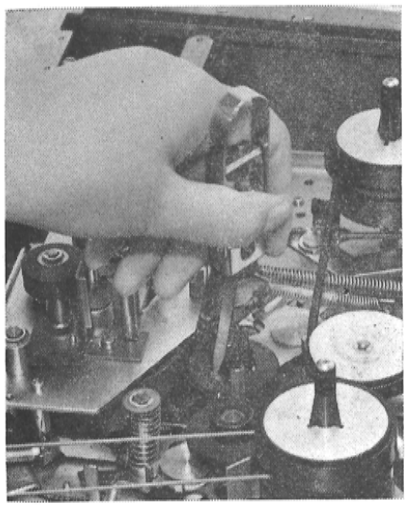


Fig. 19

e) Rewinding (R) idler pressing force·····450gr ±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.

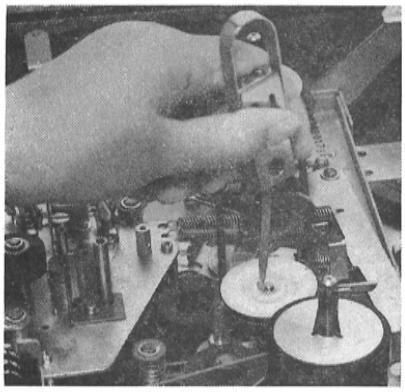


Fig. 20

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.

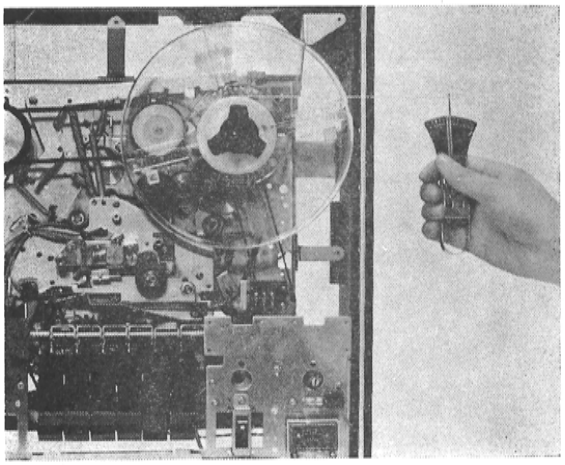


Fig. 21

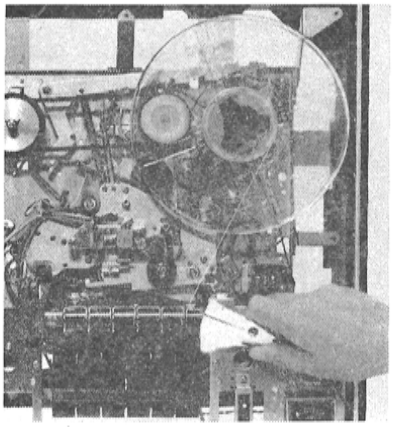


Fig. 22

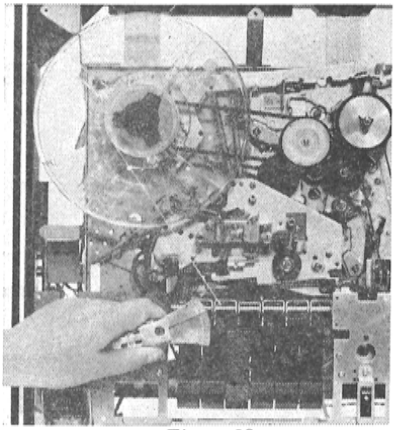


Fig. 23

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.

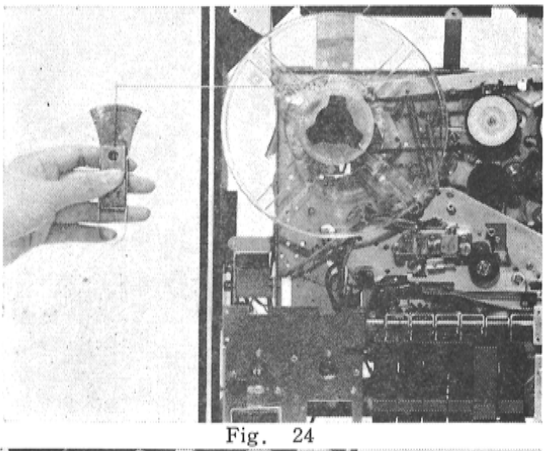


Fig. 24

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.

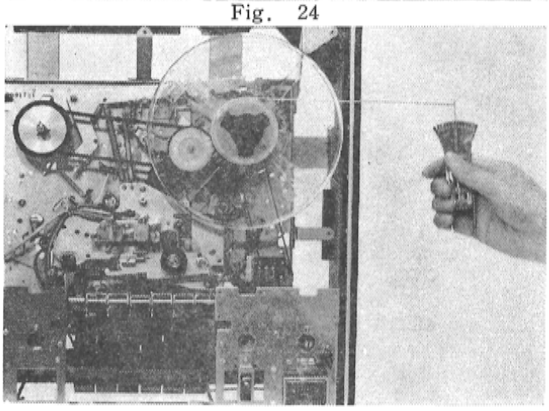


Fig. 25

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.

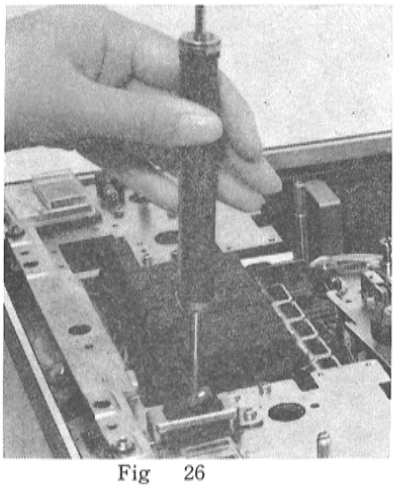


Fig 26

3) Adjustment of installation position

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

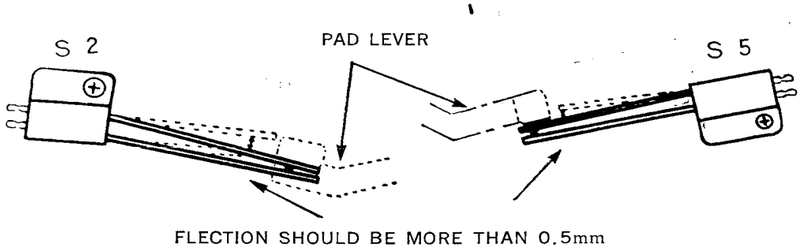


Fig. 27

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

The standard distance between the chassis and the motor pulley is 2 ± 0.1mm. 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.

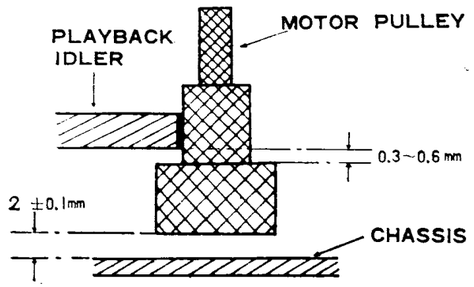


Fig. 28

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.

MODEL TRQ-727 SERVICE MANUAL

REPLACEMENT PARTS

Symbol No.	Stock No.	Description		
CAPACITORS:				
C 1 C 101	0252213	Electrolytic	3μF	6WV
C 2 C 102	0274113	Polyester film	0.002μF ±20%	
C 3 C 103	0274114	Polyester film	0.0033μF ±20%	
C 4 C 104	0252211	Electrolytic	1μF	6WV
C 5 C 105	0252213	Same as C1		
C 6 C 106	0275014	Polyester film	0.033μF ±10%	
C 7 C 107	0275012	Polyester film	0.015μF ±10%	
C 8 C 108	0275012	Same as C7		
C 9 C 109	0252225	Electrolytic	50μF	6WV
C 10 C 110	0252213	Same as C1		
C 11 C 111	0252321	Electrolytic	10μF	10WV
C 12 C 112	0252535	Electrolytic	500μF	15WV
C 13 C 113	0252213	Same as C1		
C 14 C 114	0252232	Electrolytic	200μF	6WV
C 15 C 115	0252223	Electrolytic	30μF	6WV
C 16 C 116	0274014	Polyester film	0.003μF ±10%	
C 17 C 117	0275013	Polyester film	0.022μF ±10%	
C 18 C 118	0252213	Same as C1		
C 19 C 119	0275011	Polyester film	0.01μF ±10%	
C 20 C 120	0252331	Electrolytic	100μF	10WV
C 21 C 121	0252211	Same as C4		
C 22 C 122	0274116	Polyester film	0.0068μF ±20%	
C 23 C 123	0274116	Same as C22		
C 24 C 124	0233054	Ceramic	220pF ±5%	
C 25 C 125	0274012	Polyester film	0.0015μF ±10%	
C 26 C 126	0233054	Ceramic	470pF ±5%	
C 27 C 127	0233010	Ceramic	100pF ±10%	50WV
C 29 C 129	0274115	Polyester film	0.0047μF ±20%	
C 203	0252635	Electrolytic	500μF	25WV
C 204	0252625	Electrolytic	50μF	25WV
C 206	0259652	Electrolytic	1000μF	15WV
C 207	0275013	Same as C17		
C 208	0275013	Same as C17		
C 209	0247886	Ceramic	47pF ±10%	500WV
C 210	0247886	Same as C209		
C 211	0275016	Polyester film	0.068μF ±10%	
C 212	0252635	Same as C203		
C 214	0275111	Polyester film	0.01μF ±20%	
C 215	0218159	Paper	0.047μF ±20%	400WV
C 216	0275011	Same as C19		
RESISTORS:				
R 1 R 101	0122369	Carbon film	1.2kΩ ±10%	RD¼L
R 2 R 102	0122539	Carbon film	120kΩ ±10%	RD¼L
R 4 R 104	0122462	Carbon film	22kΩ ±10%	RD¼L
R 5 R 105	0122456	Carbon film	18kΩ ±10%	RD¼L
R 6 R 106	0122463	Carbon film	27kΩ	RD¼L
R 7 R 107	0122460	Carbon film	12kΩ ±10%	RD¼L
R 8 R 108	0122464	Carbon film	33kΩ ±10%	RD¼L
R 9 R 109	0137853	Carbon film	1.5kΩ ±10%	SRD¼SD
R 10 R 110	0137609	Carbon film	2.2kΩ ±5%	SRD¼SD
R 11 R 111	0137611	Carbon film	2.7kΩ ±5%	SRD¼SD
R 12 R 112	0137667	Carbon film	47kΩ ±5%	SRD¼SD
R 13 R 113	0137901	Carbon film	10kΩ ±10%	SRD¼SD
R 14 R 114	0137903	Carbon film	15kΩ ±10%	SRD¼SD
R 15 R 115	0137952	Carbon film	120kΩ ±10%	SRD¼SD
R 16 R 116	0137671	Carbon film	68kΩ ±5%	SRD¼SD
R 17 R 117	0137801	Carbon film	100Ω ±10%	SRD¼SD
R 18 R 118	0137858	Carbon film	3.9kΩ ±10%	SRD¼SD
R 19 R 119	0137859	Carbon film	4.7kΩ ±10%	SRD¼SD
R 20 R 120	0137857	Carbon film	3.3kΩ ±10%	SRD¼SD
R 21 R 121	0137908	Carbon film	39kΩ ± 10%	SRD¼SD
R 22 R 122	0137905	Carbon film	22kΩ ± 10%	SRD¼SD
R 23 R 123	0137852	Carbon film	1.2kΩ ±10%	SRD¼SD
R 24 R 124	0137861	Carbon film	6.8kΩ ±10%	SRD¼SD
R 25 R 125	0137859	Same as R19		
R 26 R 126	0137764	Carbon film	27Ω ±10%	SRD¼SD
R 27 R 127	0134081	Composition	1kΩ ±5%	RC½GF
R 28 R 128	0134081	Same as R27		
R 30 R 130	0137856	Carbon film	2.7kΩ ±10%	SRD¼SD
R 31 R 131	0137951	Carbon film	100kΩ ±10%	SRD¼SD
R 32 R 132	0137908	Same as R21		
R 33 R 133	0137807	Carbon film	330Ω ±10%	SRD¼SD
R 34 R 134	0137809	Carbon film	470Ω ±10%	SRD¼SD
R 35 R 135	0137856	Same as R30		
R 36 R 136	0137811	Carbon film	680Ω ±10%	SRD¼SD
R 37 R 137	0137853	Same as R9		
R 38 R 138	0137707	Carbon film	180kΩ ±5%	SRD¼SD
R 39 R 139	0137669	Carbon film	56kΩ ±5%	SRD¼SD
R 40 R 140	0137667	Same as R12		
R 42 R 142	0134377	Composition	2.2kΩ ±10%	RC½GF
R 43 R 143	0134377	Same as R42		
R 201	0137811	Same as R36		
R 204	0134286	Composition	5.6Ω ±10%	RC½GF
R 207	0137851	Carbon film	1kΩ± 10%	SRD¼SD
R 208	0137851	Same as R207		
R 209	0137854	Carbon film	1.8kΩ ±10%	SRD¼SD
R 210	0137803	Carbon film	150Ω ±10%	SRD¼SD
R 211	0134290	Composition	12Ω ±10%	RC½GF
VR 1	0153174	Variable	50kΩ(A)	
VR 2	0151160	Semi variable	5kΩ(B)	
VR 3	0153174	Same as VR1		
VR 4	0151160	Same as VR2		
VR 5	0159024	Semi variable	500kΩ(B)	
VR 6	0159024	Same as VR5		
TRANSISTORS:				
Q 1	0573018	Transistor	2SB73(B)	
Q 2	0573066	Transistor	2SB281(C)	
Q 3	0573125	Transistor	2SB75(F)	
Q 4	0573066	Same as Q2		
Q 5	0573018	Same as Q1		
Q 6	0573066	Same as Q2		
Q 7	0573125	Same as Q3		
Q 8	0573066	Same as Q2		
Q 9	0573022	Transistor	2SB370(A)	
Q 10	0573023	Transistor	2SB370(B)	
Q 11	0573023	Same as Q10		
TH 1	0576057 0551029	Thermistor Selen rectifire	D-1E	
D 1	0575001	Diode	1N34A	
D 2	0575001	Same as D1		
D 3	0575001	Same as D1		
D 5	0575001	Same as D1		
D 6	0575001	Same as D1		
D 7	0575001	Same as D1		
TRANSFORMERS:				
T 1	0451108	Output		
T 2	0451108	Same as T1		
T 3	0316534	Oscillator coil		
COILS:				
TC 1	0324066	Trap coil		
TC 2	0324066	Same as TC1		

Chassis assembly

①	611C841	Deck assembly
		Washer-3mm⌀ washer Washer-3mm⌀ spring washer (5 req'd)
		Screw-3mm⌀×8mm pan head screw Screw-3mm⌀×5mm pan head screw (2 req'd) for deck plate mounting
②	6210211	Plate-deck plate
		Screw-3mm⌀×8mm binding screw(2 req'd) Screw-3mm⌀×5mm binding screw(4 req'd) for deck plate mounting
③	6111061	Cabinet
④	7660022	Rubber base
⑤	0020305	Stay
		Screw-3.1mm⌀×20mm wood screw (4 req'd) for rubber base mounting
⑥	6111181	Bottom cover
		Washer-3mm⌀ washer Screw-3.1mm⌀×13mm wood screw (2 req'd) for staple mounting
⑦	0971279	Rubber base (4 req'd)
		Washer-4mm⌀ washer Screw-4mm⌀×20mm pan head screw (4 req'd) for rubber base
		Washer Screw-4mm⌀×25mm pan head screw (4req'd) for bottom cover

CIRCUIT DIAGRAM

Q1, 5
2SB73 (B)X2

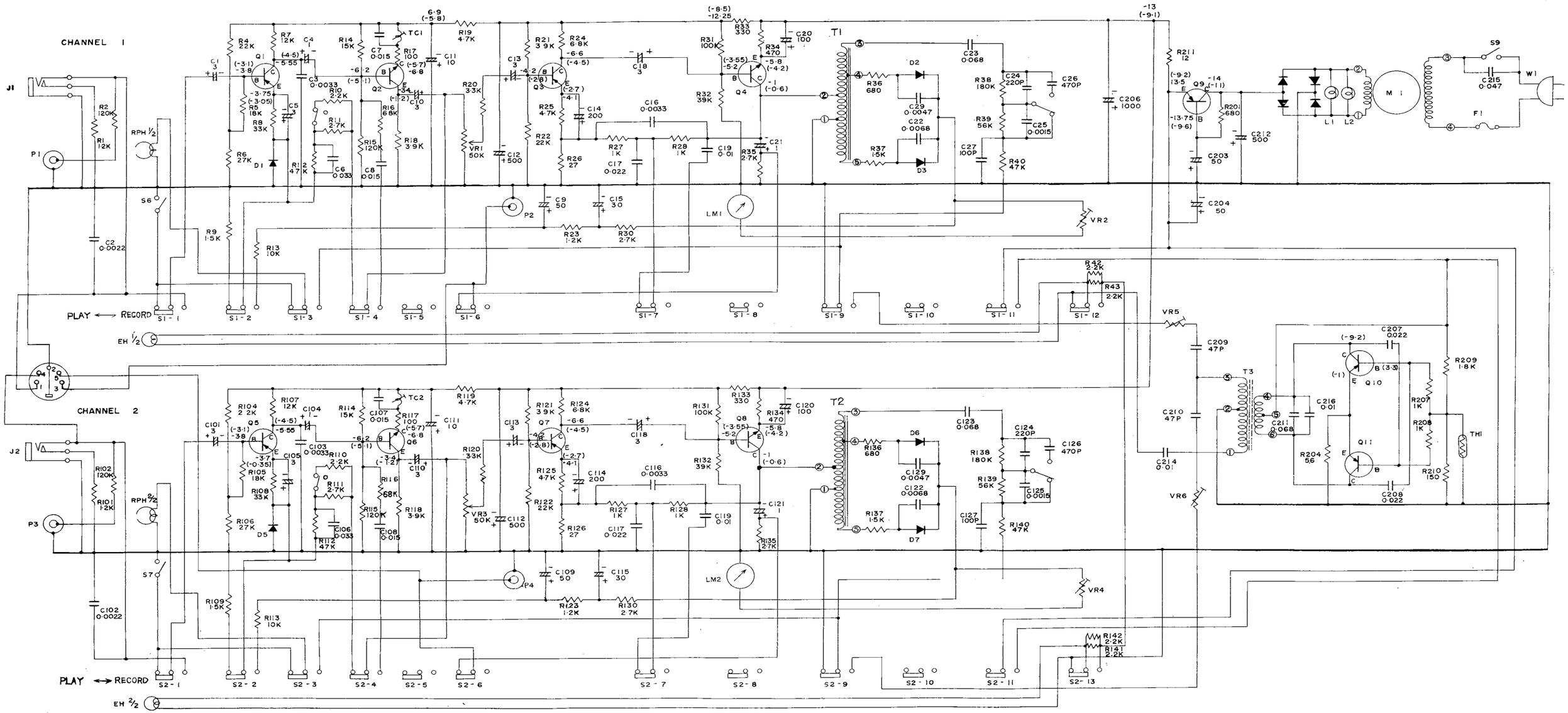
Q2, 4, 6, 8
2SC281 (C)X4

Q3, 7
2SB75 (F)X2

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

Q9
2SB370(A)

Q10, 11
2SB370(B)X2

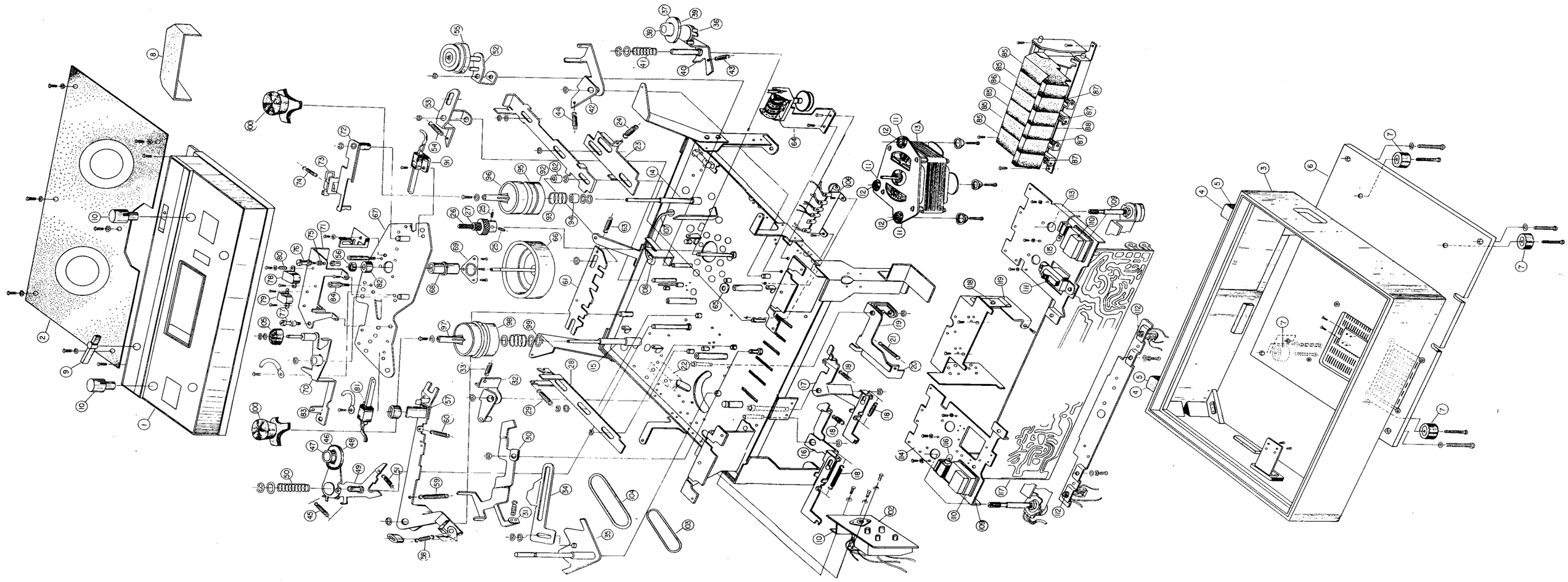


PRINTED CIRCUIT BOARD DIAGRAM

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

ERASE HEAD EH
RECORD PLAY HEAD RPH
CH1-VOLUME VR1
CH1 MIC JACK J1
R1
CH1 LEVELMETER LM1
COMPENSATION SWITCH S5
J3 DIN JACK
CH1 MUTING SWITCH S6
LAMP L1
LAMP L2
FUSE HOLDER
POWR SWITCH S9
S1 CH1 RECORD PLAY SWITCH
8-LCM
SELEN REC
S2 CH2 RECORD PLAY SWITCH
S7
CH2 MUTING SWITCH
CH2 MIC JACK J2
VR2
LM2 CH2LEVEL METER
CH2 VOLUME
INDUCTION MOTOR M1

DISASSEMBLED DIAGRAM



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

Symbol No.	Stock No.	Description
(104)	0971126	Belt-rewinding belt
(105)	0971100	Roller-pressure roller
	0636553	Washer-rewinding washer
	0941258	Washer-"E" type retaining washer
(106)	0544404	Terminal-6P terminal
		Screw-3mmø×6mm tapping screw (2 req'd)
(108)	0043793	Bushing
		Screw-3mmø×6mm tapping screw (3 req'd)
	0591167	Fuse-fuse 1A
		Screw-3mmø×6mm pan head screw (7 req'd)
		Washer-3mmø spring washer (7 req'd)
		Washer-3mmø washer
		Screw-3mmø×6mm tapping screw (2 req'd)
	0944689	Pulley
	0944779	Pulley
	0542184	Plug-shunt plug
	0541313	Socket-voltage change over socket
		Screw-3mmø×6mm tapping screw (2 req'd)
(107)	0593366	Cord-power cord
	0593558	Cord-power cord
	0593443	Cord-power cord
	0542215	Plug-AC plug
		Screw-3mmø×6mm tapping screw (2 req'd) for plug mounting
		Amplifier block assembly
(109)	0948778	Cushon-level meter cushon (2 req'd)
(110)	5550131	Meter-level meter (2 req'd)
		Screw-3mmø×6mm pan head screw Washer-3mmø spring washer Washer-3mmø washer (2 req'd) for switch plate mounting

Symbol No.	Stock No.	Description
		Screw-3mmø×6mm pan head screw Washer-3mmø spring washer for switch mounting (2 req'd)
(111)	0533161	Switch-power switch
		Screw-3mmø×4mm pan head screw Washer-3mmø washer for jack plate mountiug (2 req'd)
	0635594	Washer-jack washer (2 req'd)
(112)	0543082	Jack-jack (red) (2 req'd)
		Screw-3mmø×6mm pan head screw Washer-3mmø spring washer for volume holder mounting (4 req'd)
(113)	0941823	Holder-volume holder (right)
(114)	0941708	Holder-volume holder (left)
(115)	0594112	Lamp-pilot lamp
(116)	0594114	Lamp-pilot lamp
	0532178	Switch-slide switch (2 req'd)
		Washer-3mmø washer
		Washer-3mmø spring washer
		Screw-3mmø×6mm pan head screw
		Washer-3mmø washer
		Washer-3mmø spring washer
		Screw-3mmø×6mm pan head screw
		Washer-3mmø spring washer
		Screw-3mmø×6mm pan head screw
		Screw-3mmø×6mm pan head screw
		Washer-3mmø spring washer
(118)	0941207	Washer-3mmø washer
(119)	0629902	Radiator
		Screw-3mmø×6mm pan head screw
		Washer-3mmø spring washer
		Washer-3mmø washer
	0680157	Radiator-PL radiator

HITACHI
Hitachi, Ltd. Tokyo Japan

Head Office : 4,1-chome, Marunouchi, Chiyoda-ku, Tokyo
Tel. Tokyo (212) 1111 (80 lines)
Cable Address: "HITACHY" TOKYO
Codes : All Codes Used

Printed in Japan