



CIRCUIT EXPLANATION

GENERAL DESCRIPTION.

Because this model is a 3 speed High Fidelity Tape-recorder for home use, we made pretty many efforts on improvements of Frequency Characteristics and Distortion. Gain and frequency characteristics are varied in one amplifier by means of switching R-C circuit on and off to obtain desirable characteristics corresponding to recording amplifier and playback amplifier.

Generally, comparison of output voltage from magnetic recording head and microphone shows that the latter exceeds about 10 dB. This means that the gain of recording amplifier may be less than that of playback amplifier by 20 dB. Following are explanations on Negative Feedback and Tone Control circuit in the first stage, RC circuit employed between 2nd and 3rd stage, newly developed levelmatic circuit and finally Bias Oscillator circuit.

THE FIRST STAGE.

There is no difference from other Hitachi Tape-recorders, as far as the input circuit of the first stage is concerned. R2 and C1 is to eliminate radio broadcast signal at places near a transmitting station and R4 is a series resistor to raise input impedance and to regulate base signal current of first stage so that it would not be varied much in accordance with signal frequency.

At the time of playback, C7 and VR2 are constituting series tone-control circuit in collector circuit through DC blocking capacitor C4. S2 in parallel with the tonecontrol circuit is to eliminate hissing sound, generated mainly at first stage at stop condition, and is switched on and off together with function selector keys. (Fig. 1-A)

At the time of recording, a negative feedback is given to base of first stage from collector of the same stage.

The frequency characteristics of this NF is flat i. e. regardless of frequencies. (Fig. 1-B)

In emitter circuit, R9 (820 Ω) and C33 parallel circuit is connected but, as value of C33 is so small (0.022 mF), considerably bigger voltage in low and middle frequency are fed back negatively to boost up the high frequency components. (Fig 2, 3)

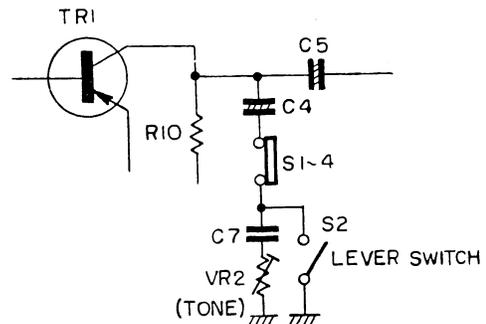


Fig. 1-A

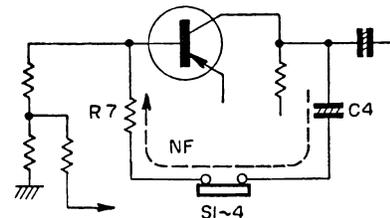


Fig. 1-B

At the time of recording, instead of NF type high frequency booster, levelmatic circuit is brought into emitter circuit. This will be explained later.

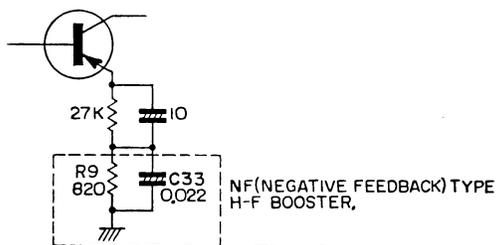


Fig. 2

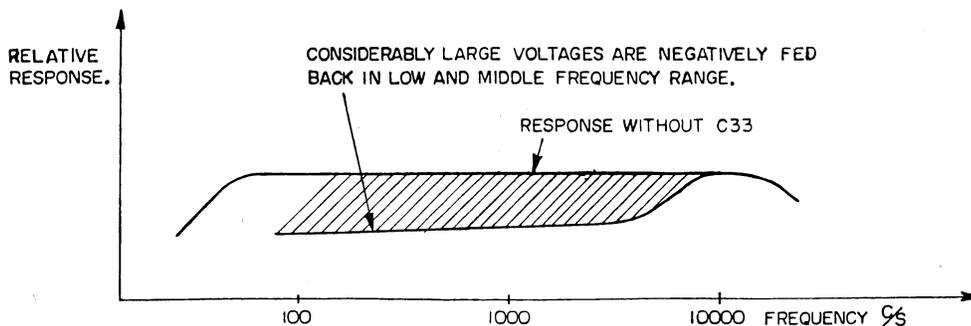


Fig. 3 HIGH FREQUENCY BOOSTING.

2nd AND 3rd STAGES.

Quite a complicated RC feedback circuit is employed between emitter circuit of 2nd stage and collector circuit of 3rd stage, but among these capacitors and resistors, there are such components as R14 and C13 to prevent oscillation only. Here, for simplicity, let us eliminate R14, C13 in circuitry explanation.

In recording, current feedback takes place by a RC parallel circuit of R15, C9. With this circuit, as was explained in high frequency boosting of the first stage, much NF voltage is fed back in low and middle frequency range.

The result is high frequency boosting. At the same time, NF from the collector of third stage feeds more voltage in higher frequency range to boost lower frequency. Resultant frequency characteristics of recording amplifier, as far as the 2nd and 3rd stages were concerned, will be as shown in Fig. 5.

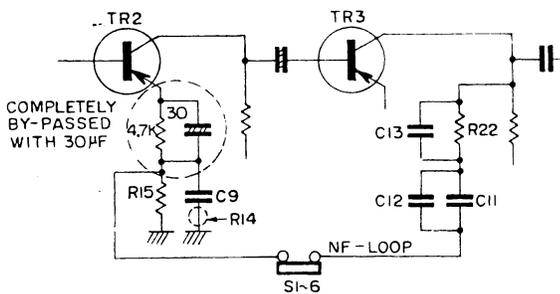


Fig. 4

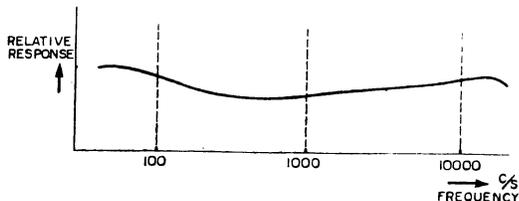


Fig. 5

FREQUENCY CHARACTERISTICS OF RECORDING AMPLIFIER.

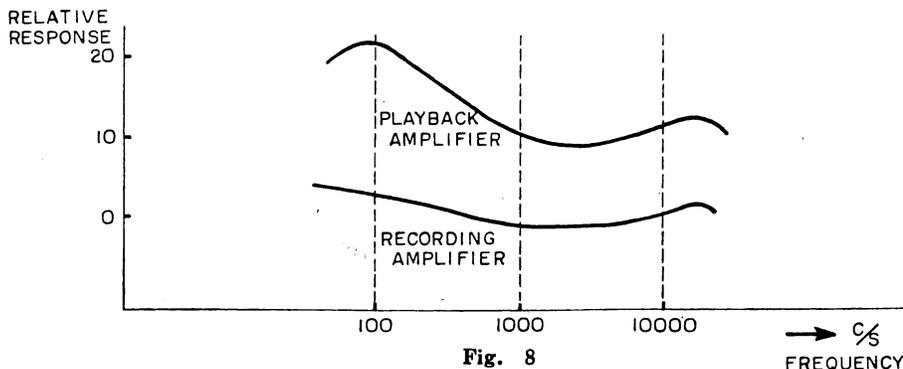


Fig. 8

At the time of playback, C11 now is disconnected to reduce the amount of feedback at low frequencies to get low booster characteristics ; resultant frequency characteristics of this stage will be as shown in Fig. 7.

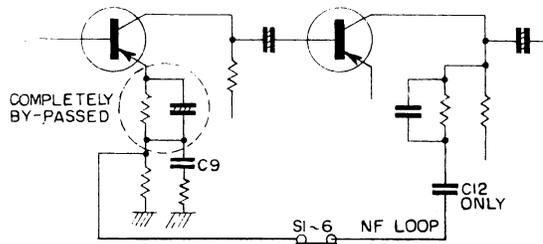


Fig. 6

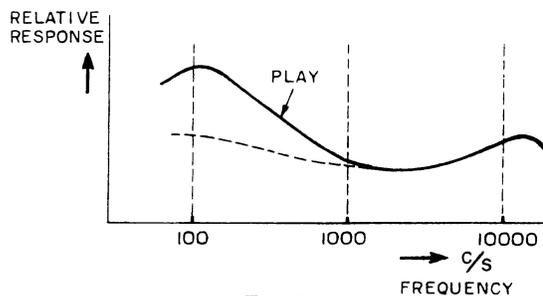


Fig. 7

In conclusion, frequency characteristics of recording amplifier and that of playback amplifier will be as illustrated in Fig. 8. The gain difference between those two amplifiers is about 12 dB but it is variable with volume control.

NEWLY DEVELOPED LEVELMATIC CIRCUIT.

Because it is a High Fidelity home use Tape-recorder, its wider frequency characteristics and distortionless amplification must not be spoiled or affected by any additional circuit such as levelmatic. Hitachi developed new levelmatic circuit which skillfully uses the "Non linear impedance characteristics" of a tiny diode 1N34A which changes its forward bias impedance in accordance with bias.

Fig. 9. illustrates the current and impedance change of 1N34A according to its forward bias voltage. From the graph, one may easily understand that the forward impedance does not reduce linearly when we increase the voltage.

If we can vary the forward bias voltage in proportion to the signal strength, we can use the diode as a variable resistor which changes its value against applied voltage, i. e., audio signal strength.

In TRQ-700, a diode 1N34A is inserted in the emitter circuit and is originally biased forward. This forward bias is partly cancelled with DC backward voltage obtained from rectification of audio signal drawn out from secondary winding of output transformer.

Because of increased impedance of diode D1, amount of current feedback is increased. This reduces down the gain of TR1. Also, because of the negative feedback, distortion is eliminated by a great amount as is illustrated in Fig. 11.

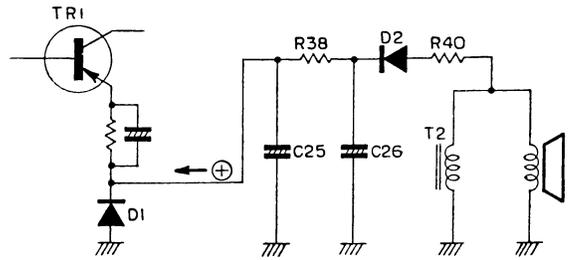
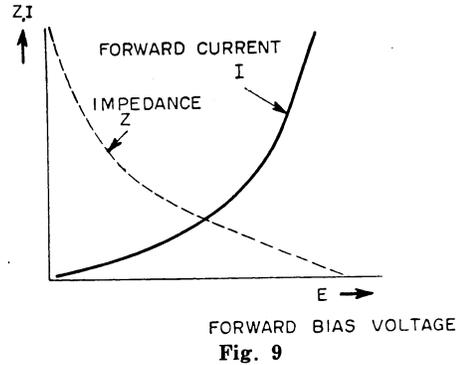
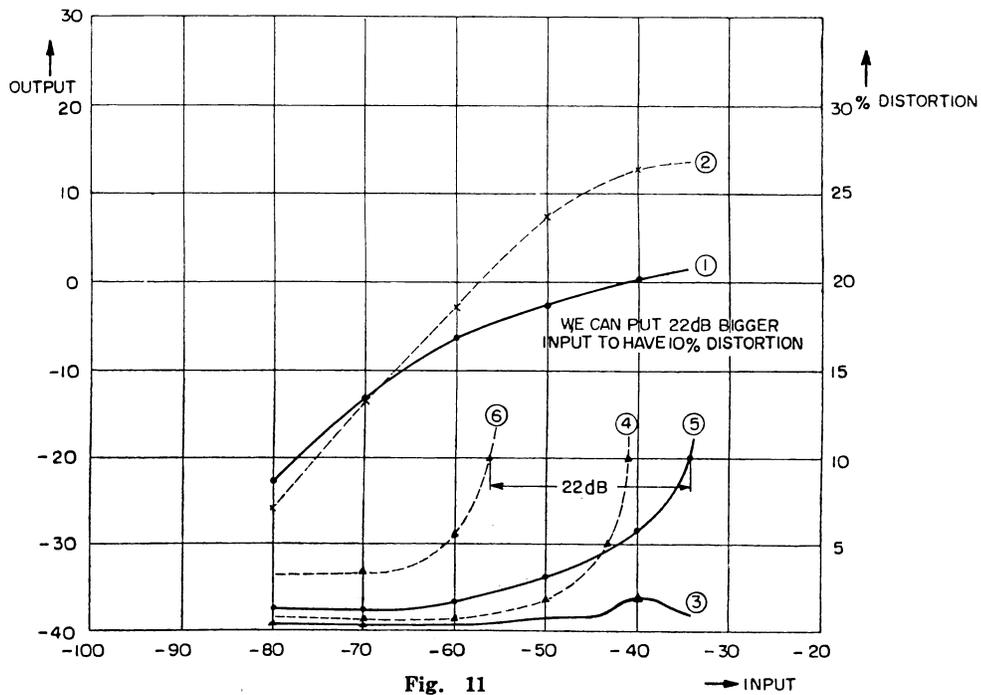


Fig 10 : D2 rectifies audio signal obtained at secondary of T2. Rectified positive voltage is smoothed out with R38 and C25 filter circuit and is given to anode of D1 as cancellation voltage of original forward bias on it.



- ① Output with levelmatic.
- ② Output without levelmatic.
- ③ Distortion of amplifier itself with levelmatic.
- ④ Distortion of amplifier itself without levelmatic.
- ⑤ Synthetic distortion adding the distortion of magnetic tape and recording amplifier at 1k% with levelmatic.
- ⑥ Synthetic distortion adding the distortion of magnetic tape and recording amplifier at 1k % without levelmatic.

PUSH-PULL BIAS OSCILLATOR CIRCUIT.

Different from other models of Hitachi Tape-recorder, a push-pull oscillator circuit which presents large and distortionless oscillation voltage is employed. It is only a simple oscillator which feeds signal from the collector of one transistor to the base of the other half of push-pull configuration, and vice versa. Oscillation frequency, that is about 50k %, is determined with equivalent inductance of primary winding of T3 and C29 (0.015  $\mu$ F).

R44 and R53 divides dc supply voltage to obtain the desired bias voltage. R49 in emitter is the temperature stabilizer. R46 and R45 are inserted to obtain cleaner oscillation wave form. R47, C27 series circuit as also R48, C28 are the feedback channels for the sake of oscillation.

Resultant ac bias voltage (or current) is given to the recording head together with audio signal through C30 and VR3 which has to be adjusted to obtain proper bias current of 800  $\mu$ A through recording head.

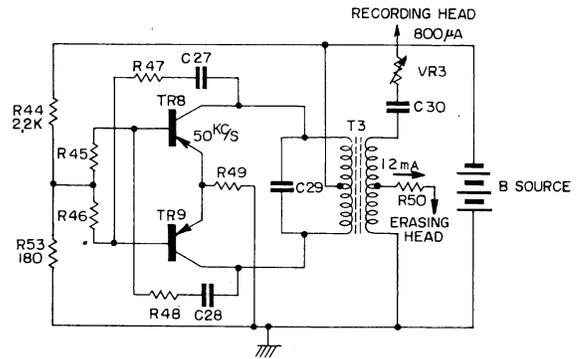


Fig. 12  
BIAS OSCILLATION CIRCUIT.

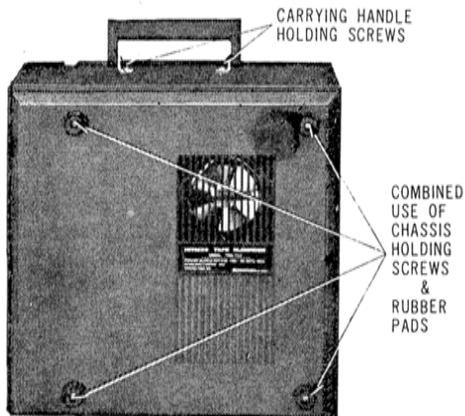
**SERVICE POINTS**

**1. HOW TO REMOVE THE CHASSIS (To inspect the electric circuit)**

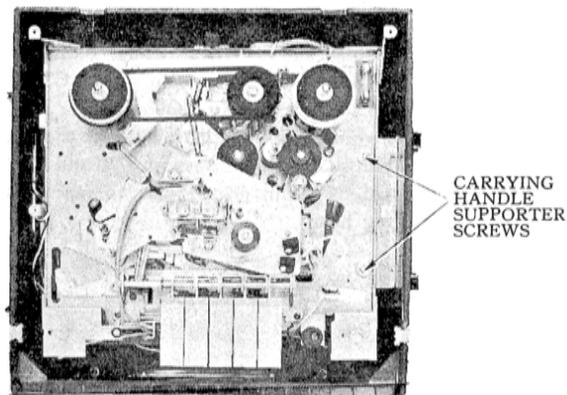
Remove the 4 rubber pads at the case bottom and two screws holding chassis on inner metal plate at opposite side of the carrying handle (carrying handle supporter screws in Fig 14), then the chassis is removed.

In this case, be care lest the speaker code should be caught by chassis. To do this, lift the chassis from opposite side where the speaker is located, then chassis will be removed easily.

The condition after the removal of chassis is shown in Fig. 15.



**Fig. 13**



**Fig. 14**

**2. HOW TO REMOVE THE PRINTED CIRCUIT BOARD**

(To replace parts)

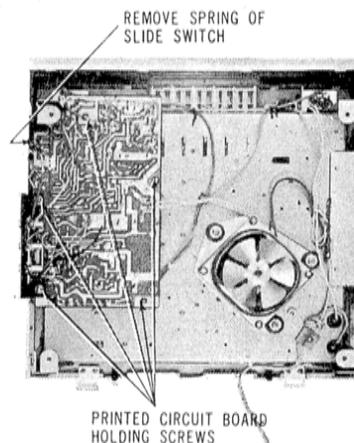
Remove 5 screws and spring at the slide switch shown in Fig. 15.

**3. HOW TO REMOVE THE UPPER PANEL (DECK)**

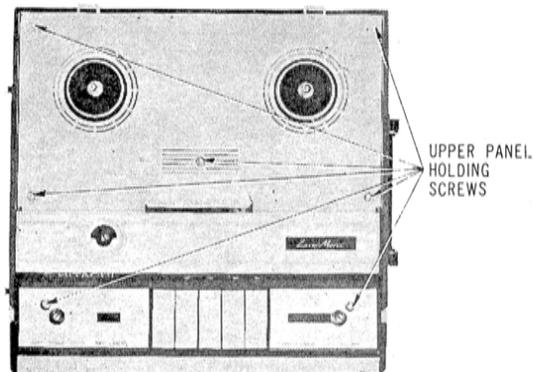
(To inspect the mechanism)

Pull the volume control, tone control and speed change-over switch knobs out of the cabinet and 7 decoration screws shown in Fig. 16, and the upper panel (deck) is removed so that the inner mechanism can be inspected. See Fig. 14.

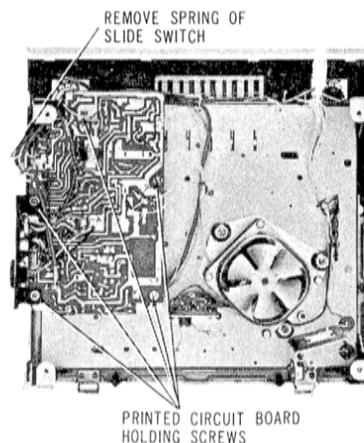
To remove chassis from this stage, remove 4 screws (Fig. 13) at the case bottom and 2 screws holding the carrying handle (Fig. 14).



**Fig. 15-A (U)**



**Fig. 16**



**Fig. 15-B (E)**

**4. HOW TO LUBRICATE**

At servicing, perform lubrication according to Fig. 17.  
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 away with alcohol.

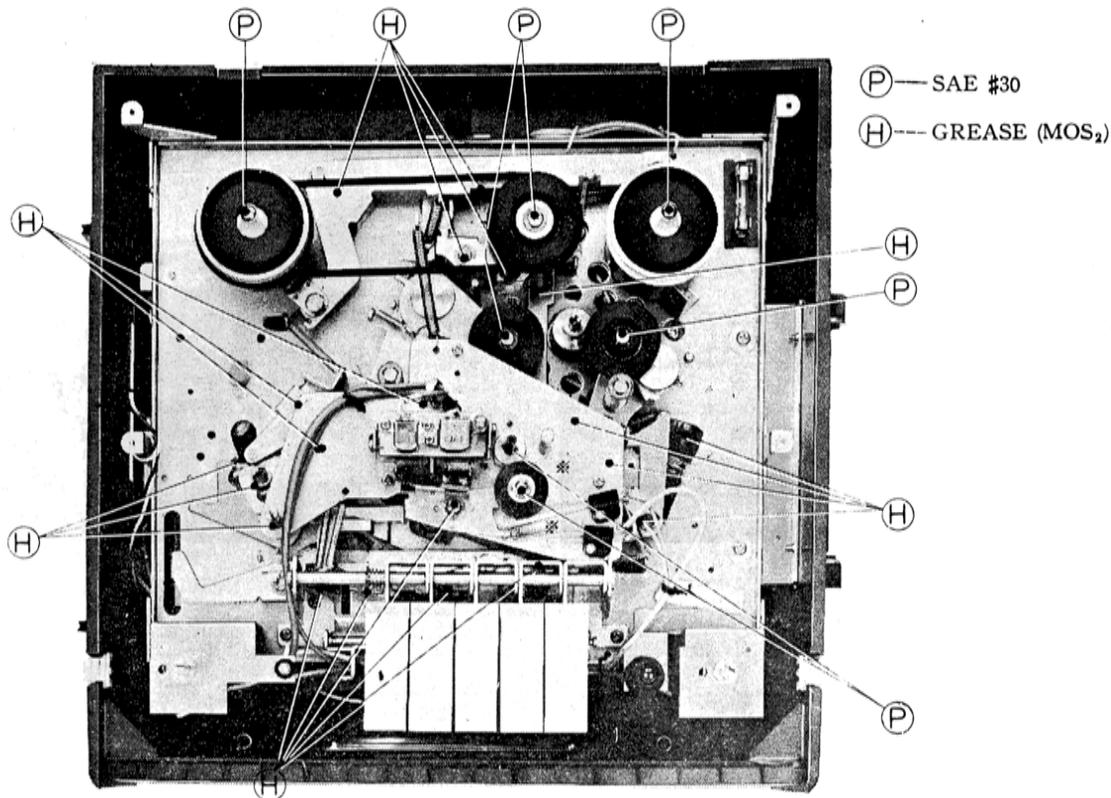


Fig. 17

**5. ADJUSTMENT AND CHECKING.**

As it is power mains operate type Tape-recorder, adjustment of mechanical components are not so much critical as in case of battery operated type, however, at each time having finished a service work, check the following items and if those values were not satisfying the specification, adjust them according to the values listed in the attached table.

Electrically, only AC bias current adjustment is necessary.

ADJUSTMENT TABLE FOR TRQ-700

ITEMS	VALUES	METHODS
PRESSURE ROLLER PRESSURE.	2-2.9lbs(900-1,300g)	See photograph. (Fig. 18)
PAD PRESSURE	0.13±0.02lbs(60±10g)	See photograph. (Fig. 19)
TAKE-UP FORCE	0.12-0.21lbs(55-90g)	See photograph. (Fig. 20)
REWINDING FORCE	0.33-0.55lbs(150-250g)	See photograph. (Fig. 21)
FAST FORWARD FORCE	0.33-0.9lbs(150-400g)	Same to TAKE-UP FORCE, except for position of function selector key.
BACK TENSION FORCE	0.022-0.05lbs(10-23g)	Same to REWINDING FORCE, except for position of function selector key.
RECORDING BIAS CURRENT	800 micro ampere.	Insert a series resistor and measure the voltage across it and convert into current by means of Ohm's law. Suitable value of resistance is 10 ohm or so.

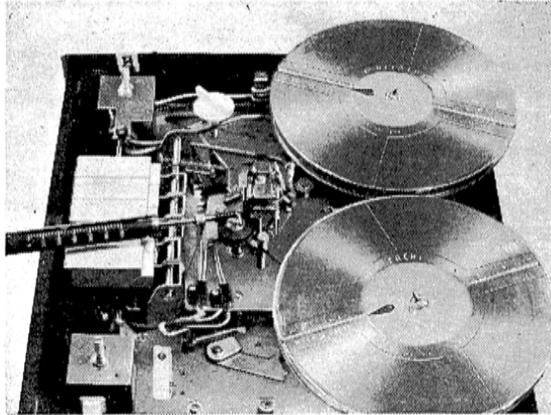


Fig. 18

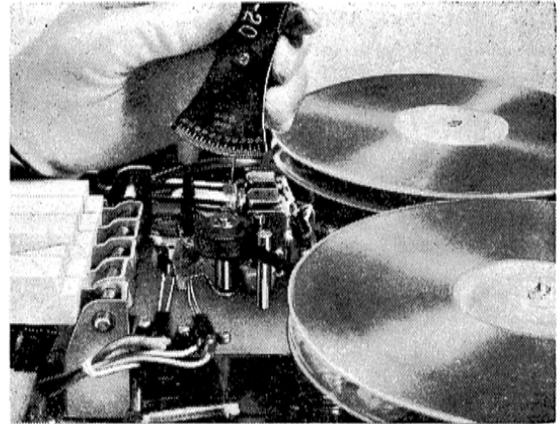


Fig. 19



Fig. 20

**TAKE-UP FORCE**  
Use 7" vacant reel which has diameter of inner wall of  $2\frac{3}{8}$  inch.

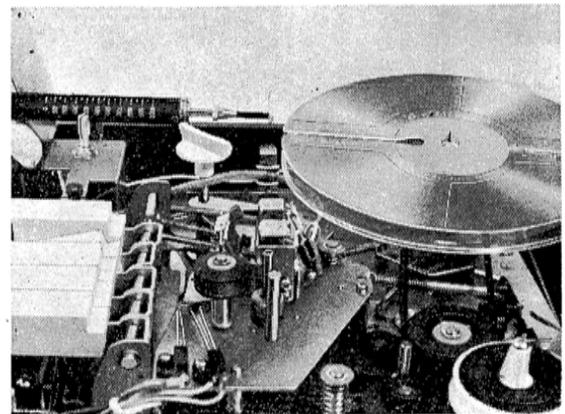


Fig. 21

**REWINDING FORCE**  
SAME TO TAKEUP FORCE

**6. MECHANICAL CHECKING MEMOS.**

In case of Wow.

- 1) Have you finished the "Lubrication" ?
- 2) Have you finished the "Cleaning of rotating portions" ?
- 3) Have you checked the "Pressure" according to table ?
- 4) Have you inspected the "Excessive abrasion of rubber wheel" ?
- 5) Have you checked the "Contact position of idler wheel" ?
- 6) Are there no "Bias" or "Bent" on fly-wheel shaft ?
- 7) Are there no "Deformation" of tape-guide ?

In case of "No fast forwarding operation".

- 1) Do you have enough "Motor torque" ? (So long as rewinding is OK when the sender reel is almost full, motor torque may be thought of as normal.)
- 2) Did you checked "Take-up force" ?
- 3) Have you checked the "Contact position of F. F. idler

wheel" ?

- 4) Is "Pad" detached from heads ?
- 5) Are there no "Deformation" of tape guide ?
- 6) Did you checked the "Back tension force" of sender reel base ?

In case of "No rewinding operation".

- 1) Do you have enough "Motor torque" ? (If the set operate under mains voltage of 20% less than specified, motor may be regarded as normal.)
- 2) Do you obtain proper "Rewinding force" ?
- 3) Is "Rewinding idler" pressed tightly toward motor pulley ?
- 4) Is "Pad" detached from heads ?
- 5) Are there no "Deformation" of tape guide ?
- 6) Did you cleaned the "Rust on bushing of take-up reel base" ?

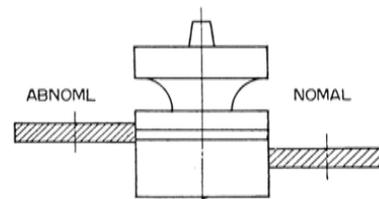
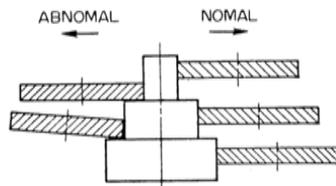
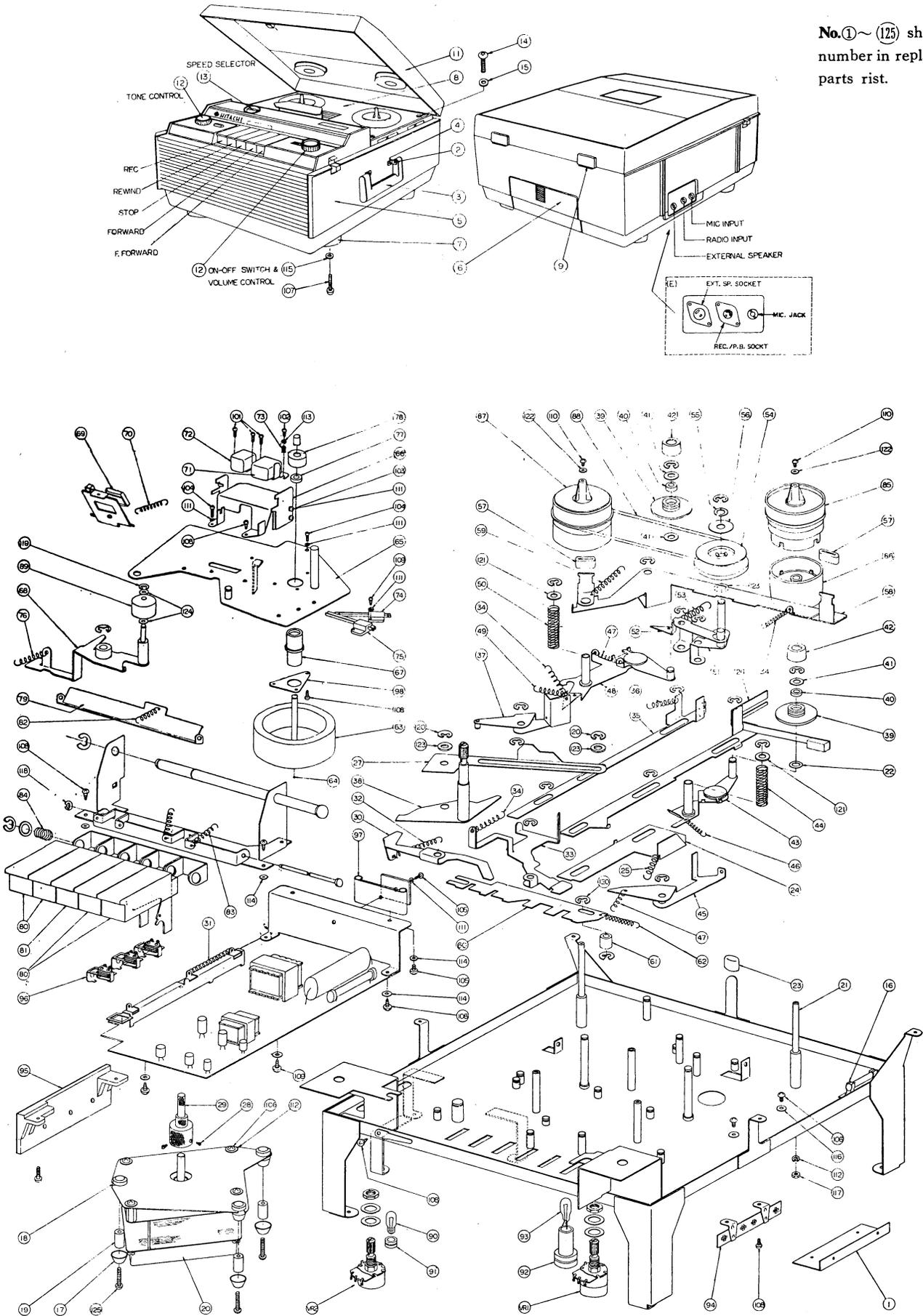
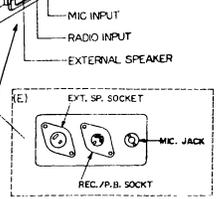


Fig. 22

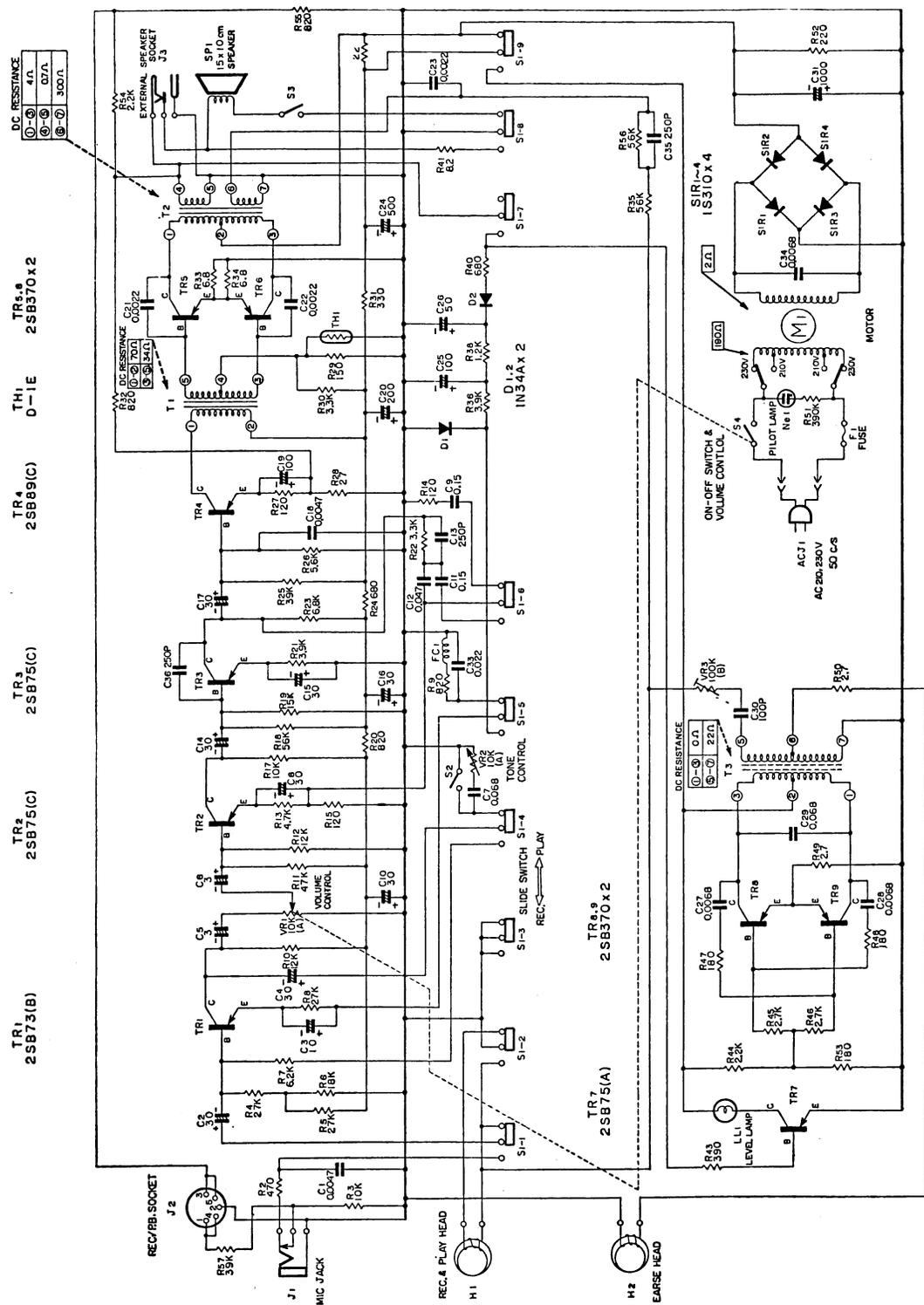
# MECHANICAL PARTSVIEW



No. ① ~ ⑫⑵ show the number in replacement parts list.

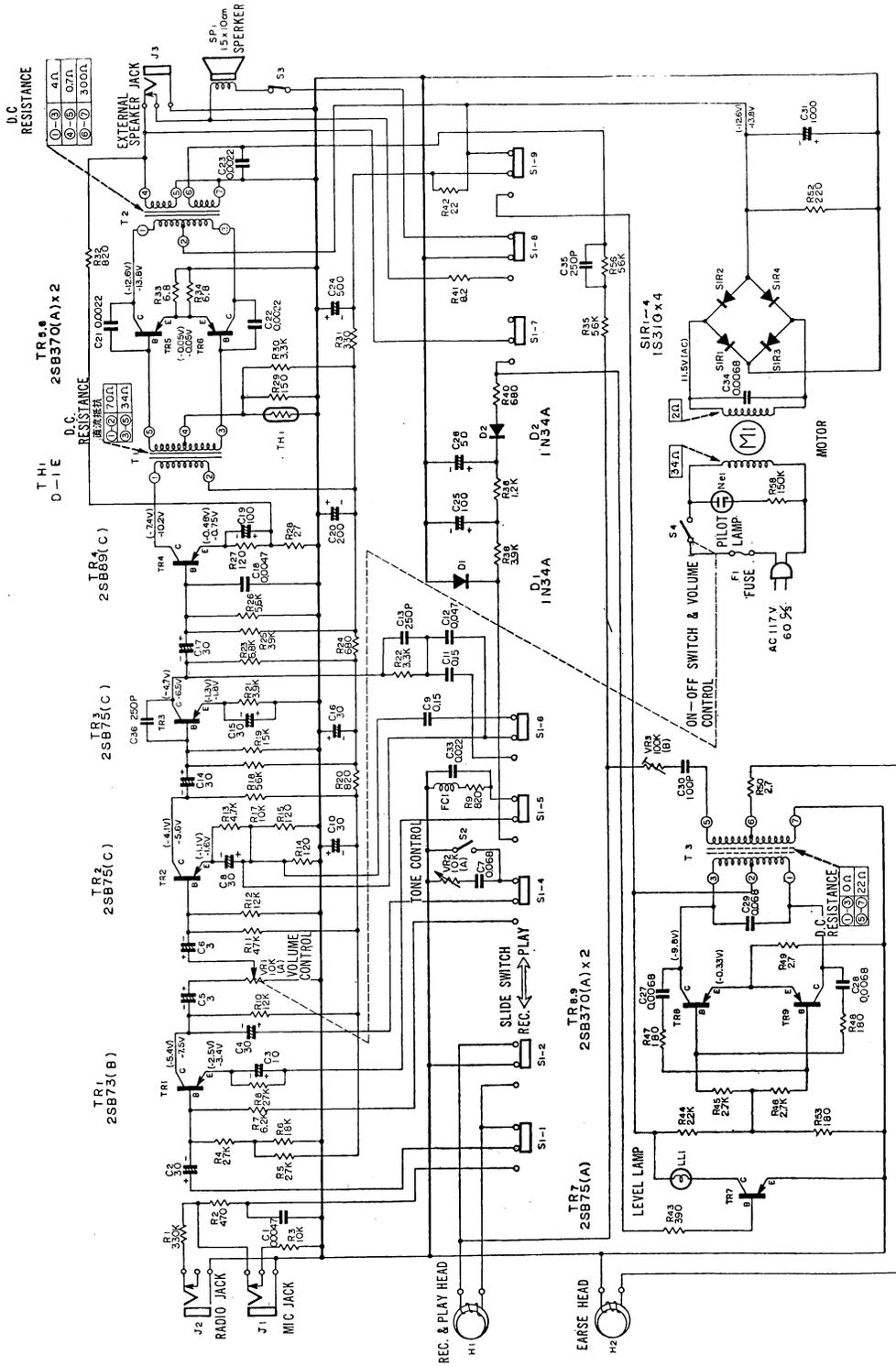


CIRCUIT DIAGRAM (E)

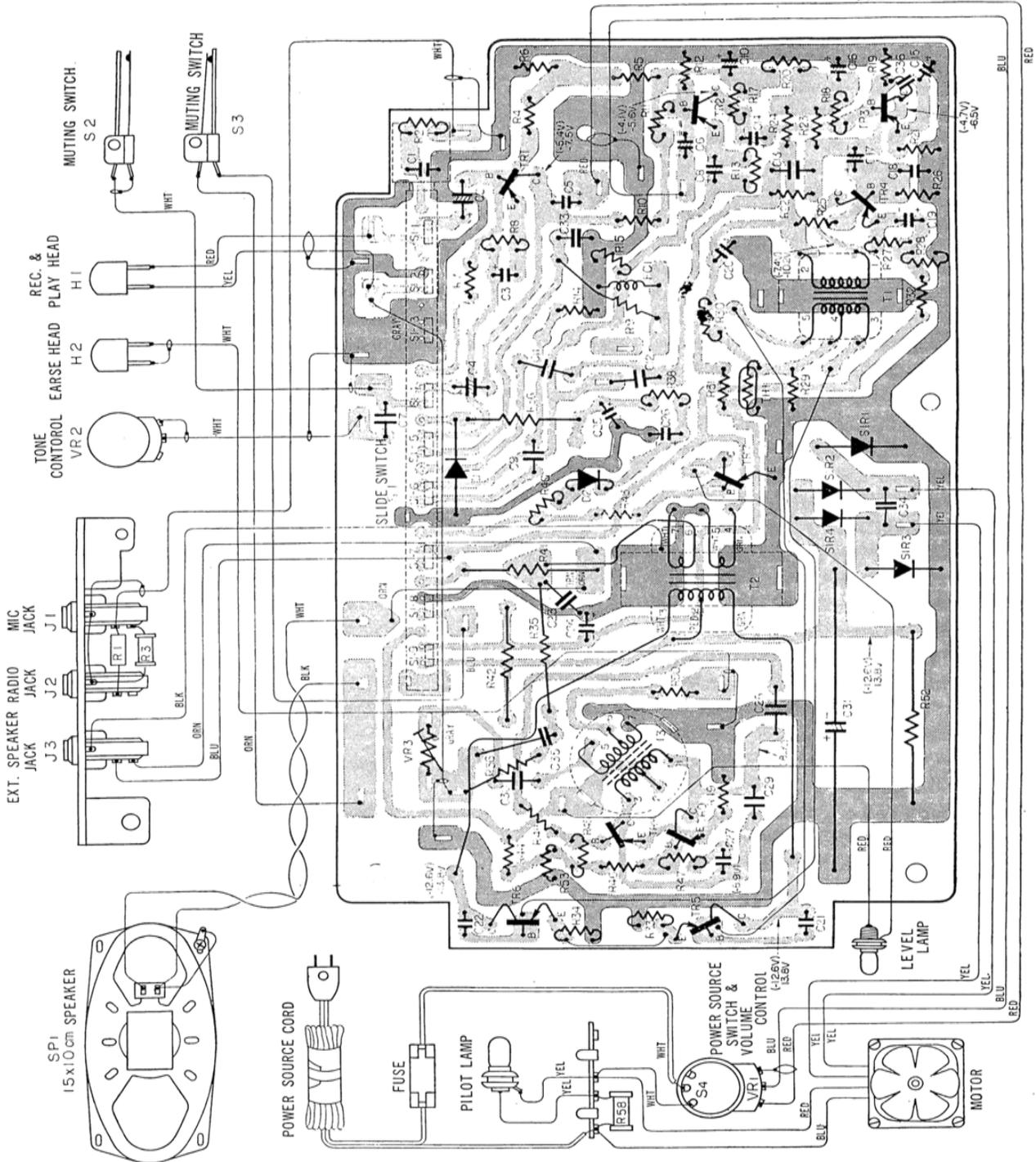




CIRCUIT DIAGRAM (U)



CIRCUIT BOARD DIAGRAM (U)



REPLACEMENT PARTS

Symbol No.	Stock No.	Description	Symbol No.	Stock No.	Description
<b>AMPLIFIER CHASSIS :</b>			R 46	137856	carbon film 2.7kΩ ± 10% SRD¼SD
T 1	441115	Transformer-Input	R 47	137804	carbon film 180Ω ± 10% SRD¼SD
T 2	452037	Transformer-Audio output	R 48	137804	carbon film 180Ω ± 10% SRD¼SD
T 3	316530	Transformer-Oscillator	R 49	137752	carbon film 2.7Ω ± 10% SRD¼SD
<b>RESISTORS :</b>			R 50	137752	carbon film 2.7Ω ± 10% SRD¼SD
(U)R 1	132527	composition 330kΩ ± 10% RC¼BE	(E)R 51	122581	carbon film 390kΩ ± 10% RD¼L
R 2	137809	carbon film 470Ω ± 10% SRD¼SD	R 52	126294	carbon film 220Ω ± 10% RD2L
R 3	122441	carbon film 10kΩ ± 10% DR¼L	R 53	137804	carbon film 180Ω ± 10% SRD¼SD
R 4	137906	carbon film 27kΩ ± 10% SRD¼SD	(E)R 54	133365	composition 2.2kΩ ± 10% RC½BE
R 5	137906	carbon film 27kΩ ± 10% SRD¼SD	(E)R 55	133292	composition 820Ω ± 10% RC½BE
R 6	137904	carbon film 18kΩ ± 10% SRD¼SD	R 56	133450	composition 56kΩ ± 10% RC½BE
R 7	137620	carbon film 6.2kΩ ± 10% SRD¼SD	(E)R 57	132446	composition 39kΩ ± 10% RC¼BE
R 8	137906	carbon film 27kΩ ± 10% SRD¼SD	(U)R 58	122536	carbon film 150kΩ ± 10% RD¼L
R 9	132287	carbon film 820Ω ± 10% RC¼BE	VR 1	153578	variable, carbon 10kΩ (A)
R 10	137902	carbon film 12kΩ ± 10% SRD¼SD	VR 2	153152	variable, carbon 10kΩ (A)
R 11	137909	carbon film 47kΩ ± 10% SRD¼SD	VR 3	159023	semi variable carbon 100kΩ (B)
R 12	137902	carbon film 12kΩ ± 10% SRD¼SD	<b>TRANSISTORS :</b>		
R 13	137859	carbon film 4.7kΩ ± 10% SRD¼SD	TR 1	573018	2S B 73 (B)
R 14	137802	carbon film 120Ω ± 10% SRD¼SD	TR 2	573153	2S B 75 (C)
R 15	137802	carbon film 120Ω ± 10% SRD¼SD	TR 3	573153	2S B 75 (C)
R 17	137901	carbon film 10kΩ ± 10% SRD¼SD	TR 4	573118	2S B 89 (C)
R 18	137910	carbon film 56kΩ ± 10% SRD¼SD	TR 5	573022	2S B 370 (A)
R 19	137903	carbon film 15kΩ ± 10% SRD¼SD	TR 6	573022	2S B 370 (A)
R 20	137812	carbon film 820Ω ± 10% SRD¼SD	TR 7	573101	2S B 75 (A)
R 21	137858	carbon film 3.9kΩ ± 10% SRD¼SD	TR 8	573022	2S B 370 (A)
R 22	137857	carbon film 3.3kΩ ± 10% SRD¼SD	TR 9	573022	2S B 370 (A)
R 23	137861	carbon film 6.8kΩ ± 10% SRD¼SD	D 1	575001	Diode-Germanium 1N34A
R 24	137811	carbon film 680Ω ± 10% SRD¼SD	D 2	575001	Diode-Germanium 1N34A
R 25	137908	carbon film 39kΩ ± 10% SRD¼SD	SIR 1	552010	Rectifier-Silicon 1S 310
R 26	137860	carbon film 5.6kΩ ± 10% SRD¼SD	SIR 2	552010	Rectifier-Silicon 1S 310
R 27	137802	carbon film 120Ω ± 10% SRD¼SD	SIR 3	552010	Rectifier-Silicon 1S 310
R 28	137764	carbon film 27Ω ± 10% SRD¼SD	SIR 4	552010	Rectifier-Silicon 1S 310
R 29	137803	carbon film 150Ω ± 10% SRD¼SD	TH 1	576044	Thermistor D-1E
R 30	137857	carbon film 3.3kΩ ± 10% SRD¼SD	<b>CAPACITORS :</b>		
R 31	137807	carbon film 330Ω ± 10% SRD¼SD	C 1	274115	mylar 0.0047μF ± 20% 50WV
R 32	137812	carbon film 820Ω ± 10% SRD¼SD	C 2	252323	electrolytic 30μF 10WV
R 33	133207	composition 6.8Ω ± 10% RC½BE	C 3	252221	electrolytic 10μF 6WV
R 34	133207	composition 6.8Ω ± 10% RC½BE	C 4	252323	electrolytic 30μF 10WV
R 35	133450	composition 56kΩ ± 60% RC½BE	C 5	252313	electrolytic 3μF 10WV
R 36	112107	carbon film 3.9kΩ ± 5% RD¼P	C 6	252313	electrolytic 3μF 10WV
R 38	137852	carbon film 1.2kΩ ± 10% SRD¼SD	C 7	275116	mylar 0.068μF ± 20% 50WV
R 40	137811	carbon film 680Ω ± 10% SRD¼SD	C 8	252123	electrolytic 30μF 3WV
R 41	133208	composition 8.2Ω ± 10% RC½BE	C 9	276012	mylar 0.15μF ± 10% 50WV
R 42	125211	carbon film 22Ω ± 10% RD1L			
R 43	137808	carbon film 390Ω ± 10% SRD¼SD			
R 44	137855	carbon film 2.2kΩ ± 10% SRD¼SD			
R 45	137856	carbon film 2.7kΩ ± 10% SRD¼SD			

Symbol No.	Stock No.	Description		Symbol No.	Stock No.	Description
C 10	252323	electrolytic	30 $\mu$ F	10WV	17	941291 Supporter-Motor cushion supporter (3 req' d)
C 11	276012	mylar	0.15 $\mu$ F $\pm$ 10%	50WV	18	971120 Cushion-Motor cushion (3 req' d)
C 12	275015	mylar	0.047 $\mu$ F $\pm$ 10%	50WV	19	944450 Collar-Motor cushion collar (3 req' d)
C 13	233018	ceramic, cylindric	250pF $\pm$ 10%	50WV	(E) 20	514135 Motor-HVA-7SIC induction motor, 210/230V 50%
C 14	252323	electrolytic	30 $\mu$ F	10WV	(U) 20	514134 Motor-HVA-7SB induction motor 117V 60%
C 15	252123	electrolytic	30 $\mu$ F	3WV	21	944451 Shaft-Reel base shaft (2 req' d)
C 16	252323	electrolytic	30 $\mu$ F	10WV	22	630135 Washer-Fiber washer (1 req' d)
C 17	252323	electrolytic	30 $\mu$ F	10WV	23	971107 Pad-Rubber pad (1 req' d)
C 18	274115	mylar	0.0047 $\mu$ F $\pm$ 20%	50WV	24	941141 Lever-Forward lever
C 19	252131	electrolytic	100 $\mu$ F	3WV	25	662124 Spring-Forward lever spring (2 req' d)
C 20	252532	electrolytic	200 $\mu$ F	15WV	26	941142 Lever-Brake function lever assembly
C 21	274113	mylar	0.0022 $\mu$ F $\pm$ 20%	50WV	27	941292 Lever-Speed changing lever
C 22	274113	mylar	0.0022 $\mu$ F $\pm$ 20%	50WV	28	944452 Screw (2 req' d)
C 23	274113	mylar	0.0022 $\mu$ F $\pm$ 20%	50WV	(E) 29	944688 Pulley-Drive pulley 50 cyeles
C 24	252535	electrolytic	500 $\mu$ F	15WV	(U) 29	944689 Pulley-Drive pulley 60 cycles
C 25	252231	electrolytic	100 $\mu$ F	6WV	30	941147 Lever-Recording lever
C 26	252225	electrolytic	50 $\mu$ F	6WV	31	662143 Spring(1)-Slide switch spring (1 req' d)
C 27	274016	mylar	0.0068 $\mu$ F $\pm$ 10%	50WV	32	662146 Spring(2)-Slide switch spring (1 req' d)
C 28	274016	mylar	0.0068 $\mu$ F $\pm$ 10%	50WV	33	941309 Lever-Play function lever assembly
C 29	275016	mylar	0.0068 $\mu$ F $\pm$ 10%	50WV	34	948316 Spring-Play function lever spring (1 req' d)
C 30	233474	ceramic, cylindric	100pF $\pm$ 10%	500WV	35	941150 Lever-Rewind function lever
C 31	259652	electrolytic	1000 $\mu$ F	15WV	36	948637 Spring-Rewind function lever spring (1 req' d)
C 33	275013	mylar	0.022 $\mu$ F $\pm$ 10%	50WV	37	941151 Lever-Stepping lever assembly
C 34	274116	mylar	0.0068 $\mu$ F $\pm$ 20%	50WV	38	941294 Cam-Speed Changing Cam assembly
C 35	233018	ceramic, cylindric	250pF $\pm$ 10%	50WV	39	971150 Wheel-Idler wheel (1 req' d)
C 36	233018	ceramic, cylindric	250pF $\pm$ 10%	50WV	40	948601 Washer-Oil washer (1 req' d)
					41	948595 Washer-Nylon washer (2 req' d)
					42	971105 Cap-Idler cap (1 req' d)
					43	941159 Lever-Forward idler lever assembly
					44	948631 Spring-Compression spring (1 req' d)
					45	941162 Lever-Forward function lever
					46	662126 Spring-Forward function lever spring (1 req' d)
					47	662128 Spring-Play idler spring (1 req' d)
					48	941315 Idler-Play idler assembly
					49	662129 Spring-Play idler lever spring (1 req' d)
					50	662127 Spring-Compression spring (1 req' d)
					51	941310 Lever-Rewind idler lever assembly
					52	941170 Lever-Rewind lever (2)
					53	662125 Spring-Rewind idler lever spring (1 req' d)
					54	971099 Wheel-Rewind idler wheel
					55	948633 Washer-Rewind idler washer (1 req' d)
					56	958067 Washer-Rewind oil washer (3 req' d)
					57	971048 Rubber-Brake rubber
					58	941479 Lever-Brake lever assembly
					59	662130 Spring-Brake lever spring (1 req' d)
					60	941175 Plate-Function safty plate
					61	944467 Collar-Retaining collar (1 req' d)
					62	639391 Spring-Function safty plate spring (1 req' d)
					63	944468 Flywheel-Capstan drive flywheel assembly
<b>TAPE TRANSPORT MECHANISM</b>						
	950177	Label				
	592092	Microphone-Dynamic microphone NDM-15				
	—	Tape				
	—	Reel-Empty reel				
1	950158	Supporter-Carring handle supporter (1 req' d)				
2	590159	Holder-Carring handle holder (2 req' d)				
3	015068	Handle-Carring handle				
4	954043	Screw (2) (2 req' d)				
(U) 5	611593	Case-Case assembly				
(E) 5	611594	Case-Case assembly				
6	619321	Cover of store				
7	971148	Base-Rubber base (4 req' d)				
8	611599	Deck-Deck assembly				
9	958161	Hinge-Lower hinge (2 req' d)				
11	611605	Cover-Case cover assembly				
12	619326	Knob-Volume control knob (2 req' d)				
13	619327	Knob-Speed changing knob (1 req'd)				
14	954041	Screw (1) (7 req' d)				
15	941277	Washer (7 req' d)				
16	591157	Holder-Fuse holder 1P (1 req' d)				

# MODEL TRQ-700 SERVICE MANUAL

Symbol No.	Stock No.	Description	Symbol No.	Stock No.	Description
64	948275	Bearing-Ball bearing	(U)	593464	Cord-AC Cord and plug
65	941191	Plate-Base plate assembly	(E)	593443	Cord-AC Cord and plug
66	941430	Base-Head base assemldy	(E)	542133	Socket-AC Socket
67	944473	Bearing-Oilless bearing for flywheel (1 req' d)		592079	Earphone-Magnetic earphone
68	941176	Arm-Pressure roller arm assembly		591167	Fuse-Fuse 1A (1 req' d)
69	941178	Plate-Pad plate assembly		638651	Piece-Wire styling piece
	630161	Pad-Felt pad		542109	Plug-Plug (2 req' d) for speaker
70	948461	Spring-Pad plate spring (1 req' d)	(E)	542184	Plug-Changing of voltage plug
71	513280	Head-Record/playbaek head	(E)	541313	Socket-Changing of voltage socket
72	513233	Head-Erase head	SP	526161	Speaker-6" x 4" PM speaker 8Ω
73	948102	Spring-Head adjust spring (1 req' d)		532159	Switch-Slide switch
74	539063	Switch-Muting switch		544449	Terminal-Printed base plate terminal (13 req' d)
75	539087	Switch-Muting switch	101	—	Screw-2.6mmφ x 6mm screw
76	662071	Spring-Pressure roller arm spring (1 req' d)	102	—	Screw-2.6mmφ x 12mm screw
77	948634	Washer-Bearing oil washer (1 req' d)	103	—	Screw-3mmφ x 5mm screw
78	941296	Cap-Oil cap	104	—	Screw-3mmφ x 6mm screw
79	941304	Plate-Lock plate	105	—	Screw-3mmφ x 8mm screw
80	015051	Button-Pushbutton	106	—	Screw-4mmφ x 8mm screw
81	619330	Button-Stop pushbutton	107	—	Screw-4mmφ x 16mm screw
82	662062	Spring-Pushbutton spring (1 req' d)	108	—	Screw-3mmφ x 6mm tapping screw
83	662131	Spring-push lever spring (2 req' d)	109	—	Screw-3mmφ x 8mm tapping screw
84	662132	Spring-Pushbutton shaft spring (1 req' d)	110	944493	Screw-Special screw
85	619331	Base-Takeup reel base assembly	111	—	Washer-3mmφ spring washer
86	619334	Pulley-Takeup pulley assembly	112	—	Washer-4mmφ spring washer
87	619337	Base-Supply reel base assembly	113	—	Washer-2.6mmφ washer
88	971126	Belt-Rewind belt	114	—	Washer-3mmφ washer
89	971104	Roller-Pressure roller	115	—	Washer-4mmφ washer
90	594088	Lamp-Pilot lamp	116	649948	Washer-4mmφ washer
91	948295	Holder-Pilot lamp holder	117	—	Nut-4mmφ nut
92	940432	Holder-Neon lamp holder	118	941257	Washer-"E" type retaining washer (2φ)
93	594070	Lamp-Neon lamp	119	941258	Washer-"E" type retaining washer (3φ)
94	544384	Plate-4P terminal plate	120	941259	Washer-"E" type retaining washer (4φ)
(E) 95	015073	Plate-Jack plate assembly	121	948675	Washer-Fiber washer
(U) 95	619346	Plate-Jack plate assembly	122	948482	Washer-Fiber washer
96	543082	Jack	123	948544	Washer-Fiber washer
97	680175	Plate-Transistor cooling plate	124	636553	Washer-Rewind washer
98	638150	Holder-Bearing holder	125	954020	Screw-4mmφ x 18mm screw

 **Hitachi Sales Corp.**

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