2670

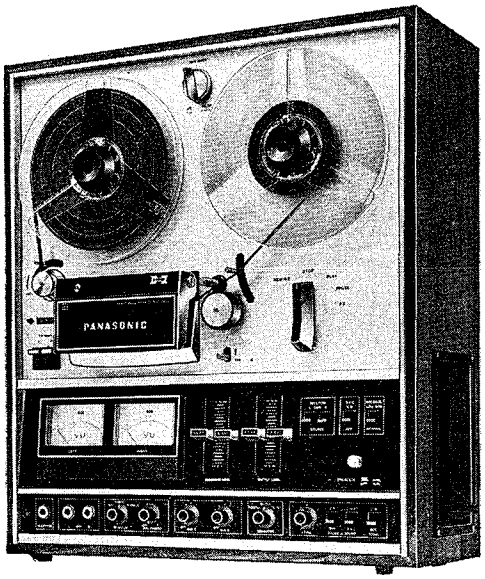
ORDER NO. ARD-7007062

MODEL RS-736US

PANASONIC® Service Manual

4 TRACK STEREO TAPE DECK WITH 3 HEADS AND WIDE FREQUENCY RESPONSE

MODEL RS-736US



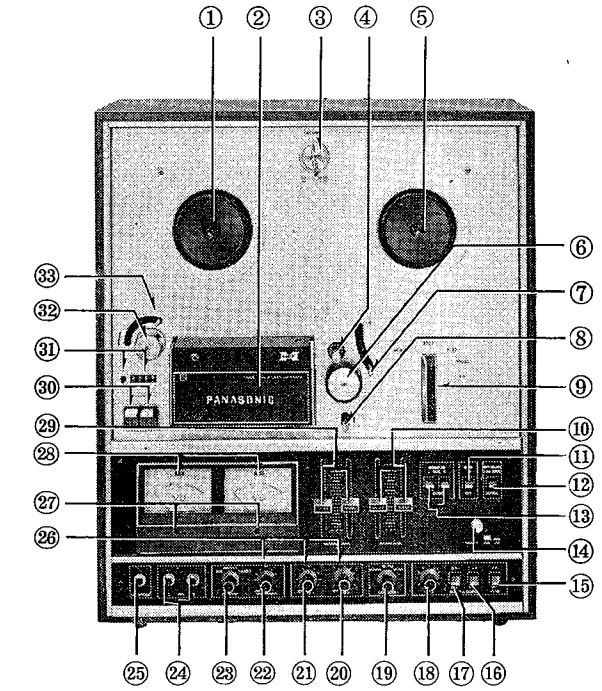
SPECIFICATIONS

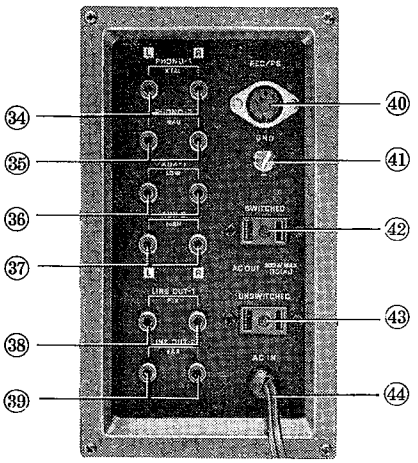
Power Source:	AC : 120 volts 60 Hz
Power Consumption:	Approx. 50 W
Motor:	4 poles synchronous with center floating motor
Recording System:	AC bias 200 kHz
Erasing System:	AC erase
Track System:	4 track 2 channel system
Tape Speeds:	3 speeds, 15, 7-1/2 and 3-3/4 ips
Maximum Reel Size:	7″
Signal-Noise Ratio:	53 dB or more
Fast Forward Time:	Less than 150 seconds for 7″ standard tape (1200 ft)
Rewind Time:	Less than 175 seconds for 7″ standard tape (1200 ft)

Frequency Response:	20~32,000 Hz at 15 ips 20~28,000 Hz at 7-1/2 ips 20~20,000 Hz at 3-3/4 ips	
Wow & Flutter:	Below 0.09% at 15 ips Below 0.09% at 7-1/2 ips Below 0.13% at 3-3/4 ips	
Inputs:	2 "MIC" inputs 2 "PHONO-1" inputs 2 "PHONO-2" inputs 2 "AUX-1" inputs 2 "AUX-2" inputs	20 KΩ 1 MΩ 47 KΩ 250 KΩ 50 KΩ
Outputs:	2 "LINE OUT-1" outputs 2 "LINE OUT-2" outputs 1 "HEADPHONE" output	1 V 1 V 55 mV
Record/Playback Connector:	CES standard	
Dimensions:	17″(W)×8-1/2″(H)×18-1/2″(D)	
Weight:	33 lbs	

MATSUSHITA ELECTRIC CORP. OF AMERICA Pan-Am Bldg., 200 Park Ave., New York, N.Y. 10017
MATSUSHITA ELECTRIC OF HAWAII, INC. 320 Waiakamilo Road Honolulu, Hawaii 96817
MATSUSHITA ELECTRIC OF CANADA LTD. 40 Ronson Drive, Rexdale, Ont.

LOCATION OF PARTS





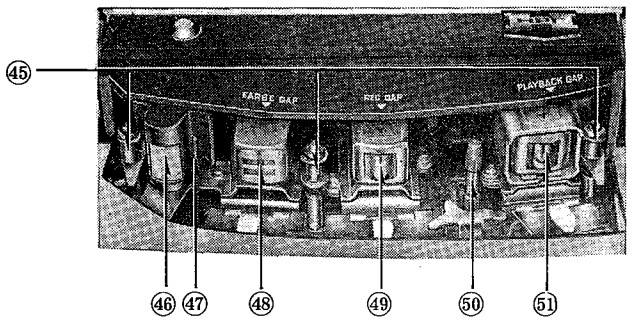


Fig. 1

① Supply Reel Table
② Head Cover
③ Tape Speed Selector knob
④ Capstan
⑤ Takeup Reel Table
⑥ Pressure Roller
⑦ Right Tension Arm
⑧ Cue Lever
⑨ Function knob
⑩ Output Adjustment Controls
⑪ NFD Switch
⑫ Tape Selector
⑬ Monitor Changeover Switches
⑭ Power Switch
⑮ Echo Switch
⑯ Sound-on-Sound Channel Changeover Switch
⑰ Sound-on-Sound Switch
⑱ Sound-on-Sound & Echo Adjustment Control
⑲ Equalizer Changeover Switch
⑳ AUX-2 Input Level Adjustment Control
㉑ AUX-1 Input Level Adjustment Control
㉒ MIC (Phono) Input Level Adjustment Control
㉓ Input Changeover Switch
㉔ Microphone Jacks
㉕ Headphone Jack
㉖ Recording Input Indicator Lamps
㉗ VU Meter Zero-point Adjustment Screws
㉘ VU Meters
㉙ Recording Level Controls
㉚ Record Buttons
㉛ Tape Counter & Reset Button
㉜ Guide Roller
㉝ Left Tension Arm
㉞ Phono-1 (X'TAL) Input Jacks
㉟ Phono-2 (MAG) Input Jacks
㊱ AUX-1 Input Jacks
㊲ AUX-2 Input Jacks
㊳ Line Out-1 (FIX) Jacks
㊴ Line Out-2 (VAR) Jacks
㊵ Record/Playback Connector
㊶ Ground Terminal
㊷ Power Socket-A
㊸ Power Socket-B
㊹ Power Cord (120 V, 60Hz)
㊺ Tape Guides
㊻ Tape Cleaner
㊼ Shut-off Lever
㊽ Erase Head
㊾ Recording Head
㊿ Tape Shifter
(51) Playback Head

DISASSEMBLY INSTRUCTIONS

HOW TO REMOVE PANEL

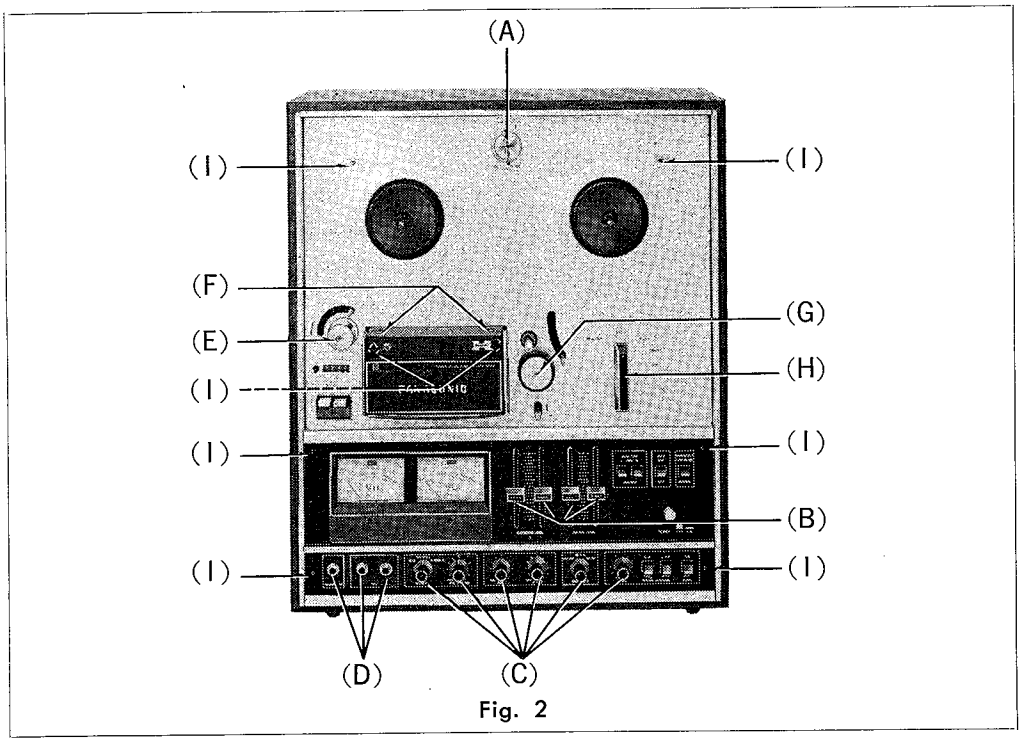


Fig. 2

1. Remove Tape Speed Selector Knob (A), 4 Control Knobs (B) and 6 Knobs (C).
2. Remove 3 Jack Holding Nuts (D), Guide Roller (E), 2 Head Cover Holding Screws (F), Pressure Roller (G) and Function Knob (H).
3. Remove 8 Panel Holding Screws (I) and take out Panel.

HOW TO REMOVE BODY CASE

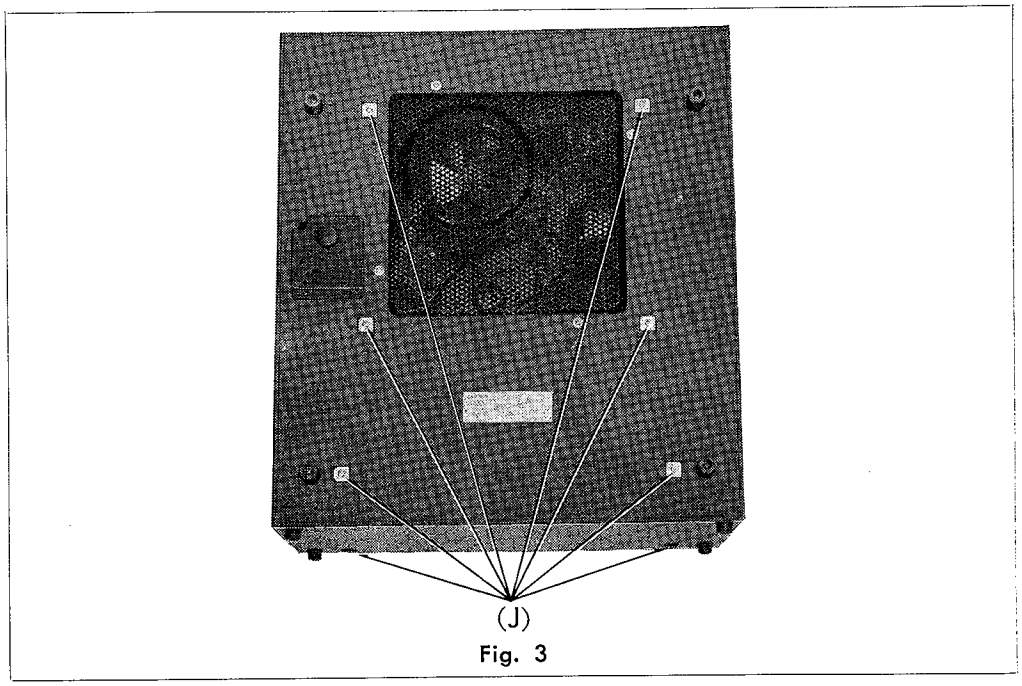


Fig. 3

1. Remove 8 Body Case Holding Screws (J).
2. Remove the Body Case slowly lifting it.

MECHANICAL ADJUSTMENTS

PRESSURE OF PRESSURE ROLLER

As the Pressure Roller is pressed against the Capstan, the Capstan rotation is transmitted to the Tape between Pressure Roller and Capstan. But when pressure of the Pressure Roller against the Capstan is insufficient, slipping occurs and the Capstan rotation is not conveyed smoothly. Therefore, this pressure should always be kept moderate. Given hereunder are the measurement and adjustment methods.

Measuring Method:

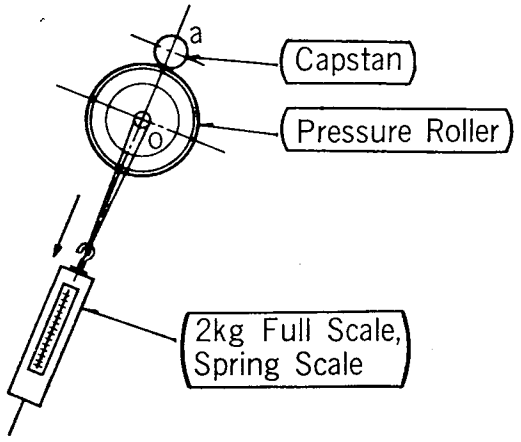
Instruments Required: Spring Scale, Strong Thread

1. Thread the Tape and place the set into the Playback mode.
2. Make a loop of the thread and hook the Pressure Roller Shaft to the Spring Scale with it.
3. Pull the Spring Scale slowly along the straight line between the Pressure Roller Shaft and the Capstan Shaft, and read the value on the Spring Scale when the Tape stops running or when the Pressure Roller moves away from the Capstan.
4. The standard pressure (value on the Spring Scale) is: (1.3~1.7 kg)

NOTE: The Capstan and the Pressure Roller should be in parallel. If they are not in parallel, the Tape moves up and down between the Pressure Roller and the Capstan, or only a side of the Tape is tensioned. The adjustment is made by correcting the bent Pressure Roller Shaft.

Adjusting Method:

Make the adjustment by use of elongation and contraction of the Pressure Roller Lever Spring.
Measure pressure of the Pressure Roller and check if it satisfies the specified value. (Fig. 4)



NOTE: Pull it along the extension of a-o

Fig. 4

Make the adjustment by use of elongation and contraction of the Pressure Roller Lever Spring. (Fig. 5)

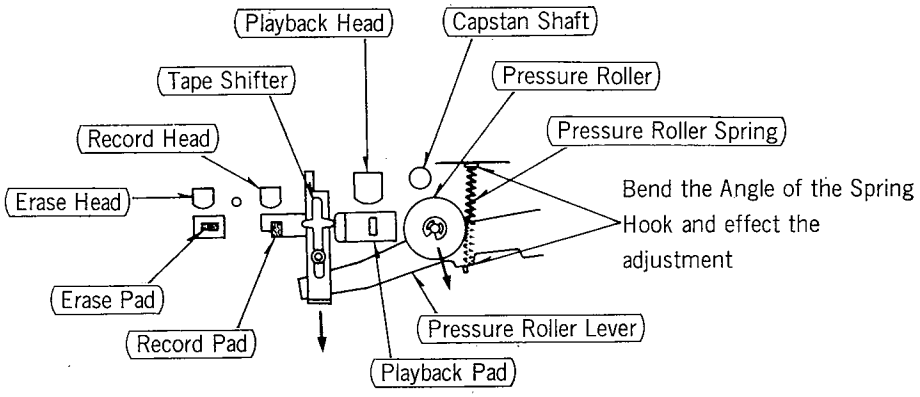


Fig. 5

TAKEUP TENSION DURING RECORD/PLAYBACK OR FAST FORWARD

Though the Capstan rotates and the Tape runs, the Tape is not taken up if takeup torque is too small. Especially when this torque is small, the Tape loosens and when too big, the Tape is elongated or broken. Therefore, takeup torque should be controlled suitably.

Measuring Method:

Instruments Required: Tension Gauge, Splicing tape

1. Place a full reel of 7″ Tape on the Takeup Reel Table and make a loop of the Tape end by using Splicing Tape.
2. Hook the Tension Gauge to the loop of Tape end and unreel about 30″ of Tape.
3. Place the set into the Playback mode. (If the Takeup Tension of Fast Forward is to be measured, place the set into the Fast Forward mode.) Allow the Gauge to follow the taking up force. When the value on the Tension Gauge becomes constant, read the graduation. Repeat this procedure several times and take an average.
4. Conduct the measurement with the Tape fully wound on the 7″ Reel. The standard Takeup Tension should be:

   Takeup Tension during Recording/Playback (25~35 gr)

   Takeup Tension during Fast Forward (more than 140 gr)

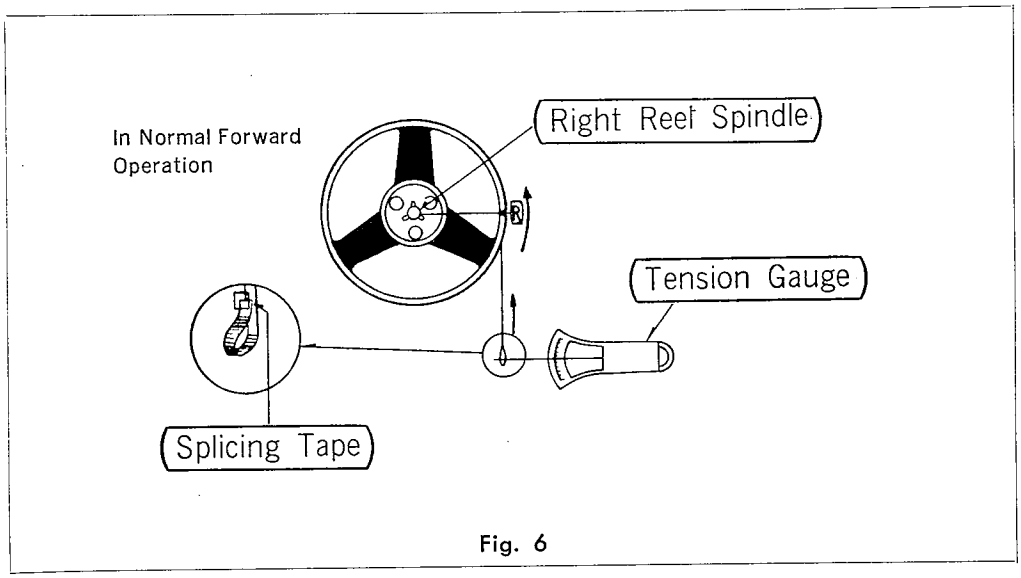


Fig. 6

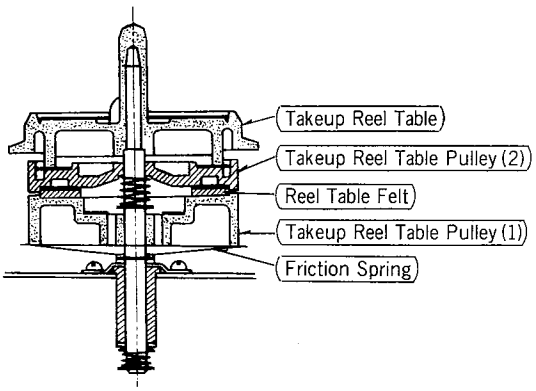


Fig. 7

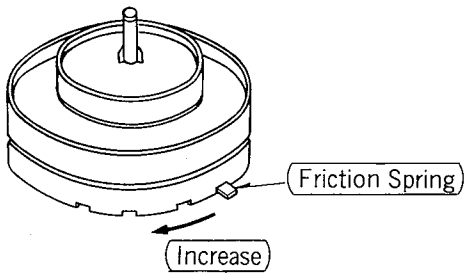


Fig. 8

Adjusting Method:

For Recording/Playback, adjustment is done by using the Friction Spring which is under the Takeup Reel Table Pulley.

For too strong Takeup Tension ..... Turn the Friction Spring counter-clockwise (viewed from below) to decrease the tension.

For too weak Takeup Tension ..... Turn the Spring clockwise to increases the tension.

The takeup tension may increase or decrease when the Reel Table Shaft is out of oil or the Friction Washer gets stained with oil.

In Fast Forward the Felt between the Reel Table Pulleys may get stained with oil or dust, lowering the takeup tension. The standard conditions are obtained by wiping off the stains completely.

BRAKE POWER ADJUSTMENT

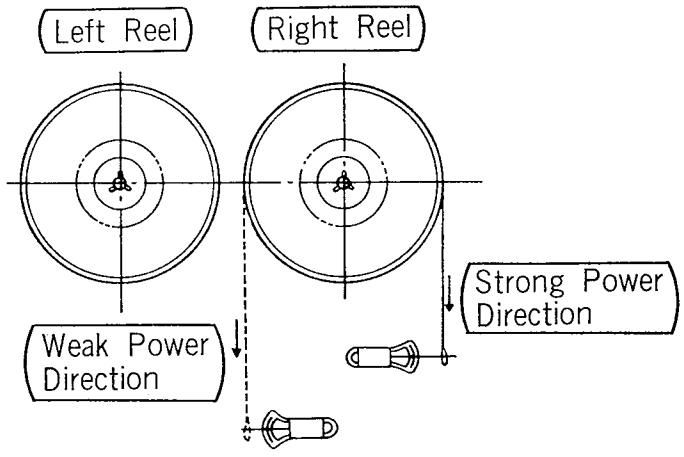


Fig. 9

Abnormal tension may sometimes be applied to the tape if the brake fails in timing. It is, of cource, necessary to provide sufficient brake power to stop the tape, but it is all the more necessary to pay attention to the timing.

Specified Value: Strong Power Direction 100~250 g
Weak Power Direction 40~70 g

The difference in brake power between the strong power direction and weak power direction should be more than 100 g. (One side Strong Power Direction, and the other side Weak Power Direction)

Measuring Method:

Instruments Required: Tension Gauge, Splicing Tape

Suspend a tension gauge from the end of the 7″ Reel Tape in the stop mode, pull it and read the average value for a turn of the Reel. (Fig. 9)

Brake power differs according to the reel table rotating direction, viz., either clockwise or counter-clockwise. Therefore, the measurement should be taken in both cases.

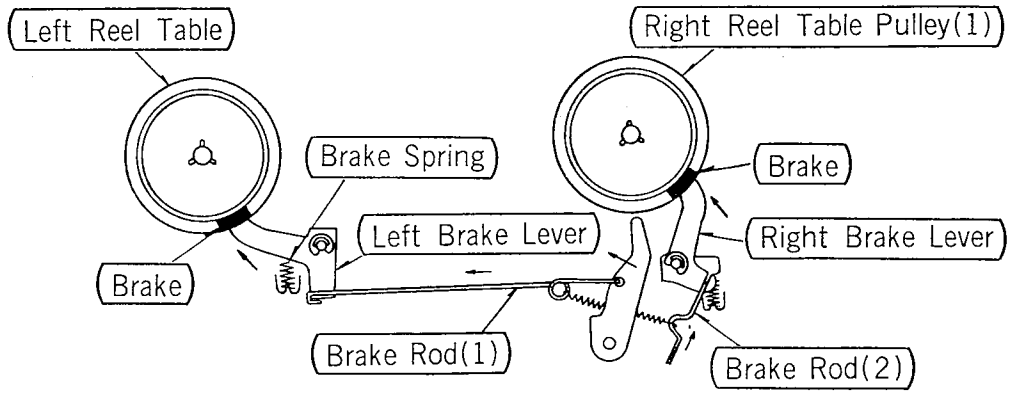


Fig. 10

Adjusting Method:

Make the adjustment by use of elongation and contraction of the Right and Left Brake Springs. (Fig. 10)
Brake Timing: During FF or PLAY mode, brake should be applied earlier on the Supply Reel side than the Takeup Reel side. The reverse applies during the REW or REVERSE mode.

BACK TENSION DURING RECORD/PLAYBACK OR FAST FORWARD

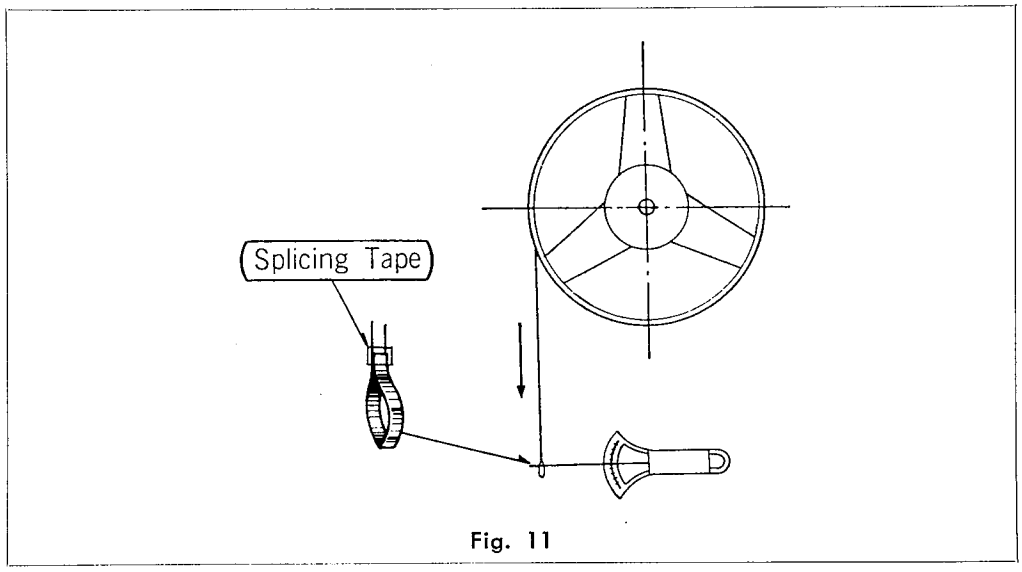


Fig. 11

Back Tension has a relation to Tape Driving Power of the Capstan. Too high or too low Back Tension exerts bad effect on tape speed and increases wow and flutter, preventing the Tape from running smoothly. Back Tension should therefore be adjusted carefully.

Measuring Method:

Instruments Required: Tension Gauge, Splicing Tape

1. Place a full reel of 7″ Tape on the Supply Reel Table. While unreeling theTape, make the measurement in the same way as for measurement of takeup tension during Recording Playback.
2. When the Tape is fully wound on the 7″ Reel, the standard Back Tension is:
   Back Tensien during Recording/Playback: 10~25 gr
   Back Tension during Fast Forward: 10~25 gr

Adjusting Method:

1. If Back Tension is high: The Supply Reel Table Shaft is dirty or is out of oil or stain.
2. If Back Tension is low: The tension of Rewind Belt or of Counter Belt is too low. Therefore, it should be replaced.

TAKEUP TENSION AND BACK TENSION DURING REWIND

Instruments Required: Tension Gauge, Splicing Tape

1. In order to measure the Takeup Tension, place a full reel of 7″ Tape on the Supply Reel Table and place the set into the Rewind mode. Then measure it in the same way as for measurement Takeup Tension during Record/Playback.
2. In order to measure the Back Tension, place a full reel of 7″ Tape on the Right Reel Table and place the set into the Rewind mode. Then measure it in the same way as for measurement during Record/Playback.
3. Tekeup Tension and Back Tension during Rewind, when the Tape is fully wound on the 7″ Reel, are as follows:

Takeup Tension during Rewind: more than 100 gr
Back Tension during Rewind: 5~12 gr

As a matter of course, the Tape Reel must be of the maximum diameter applicable to the set.

Adjusting Method:

If the Takeup Tension is too low, the causes might be either low Rewind Belt tension insufficient Rewind Pulley pressure, lack of oil on the Supply Reel Table Shaft, oil on the Belt and the Motor Pulley, etc. It the Back Tension is abnormal, the causes might be either that the Spring under the Takeup Reel Table Shaft is dirty or needs oil.

PAD PRESSURE

An excess of Pad Pressure exerts a subtle influence on tape speed wow and flutter, and abrasion of head. On the contrary, too low pad pressure brings about bad contact between Head and Tape, and also deteriorates sensitivity and frequency response. Attention should therefore be paid to this Pad Pressure.

Mesuring Method:

Instrument Required: Tension Gauge

1. Place the set into the Playback mode without loading the Tape.
2. Apply the Tension Gauge to the center of the Pad and move the Pad away from the Head slowly. Read the value when it first separates.
3. The standard Pad Pressure is:
   Pad Pressure during Recording/Playback: 20~30 gr
   Pad Pressure for Erasing: 15~25 gr

Adjusting Method:

Adjust the Pad Spring
(In order to increase the Pad Pressure)

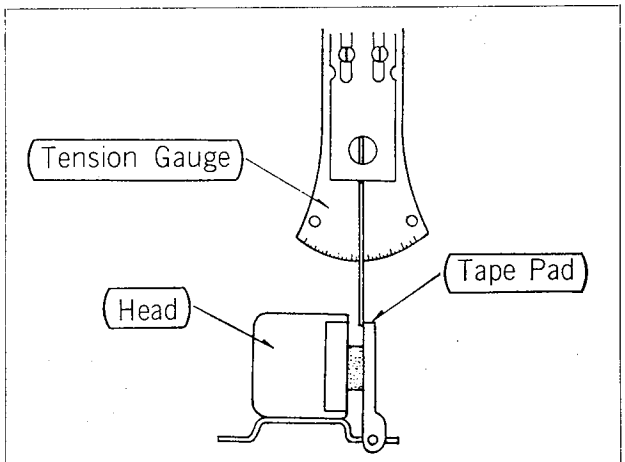


Fig. 12

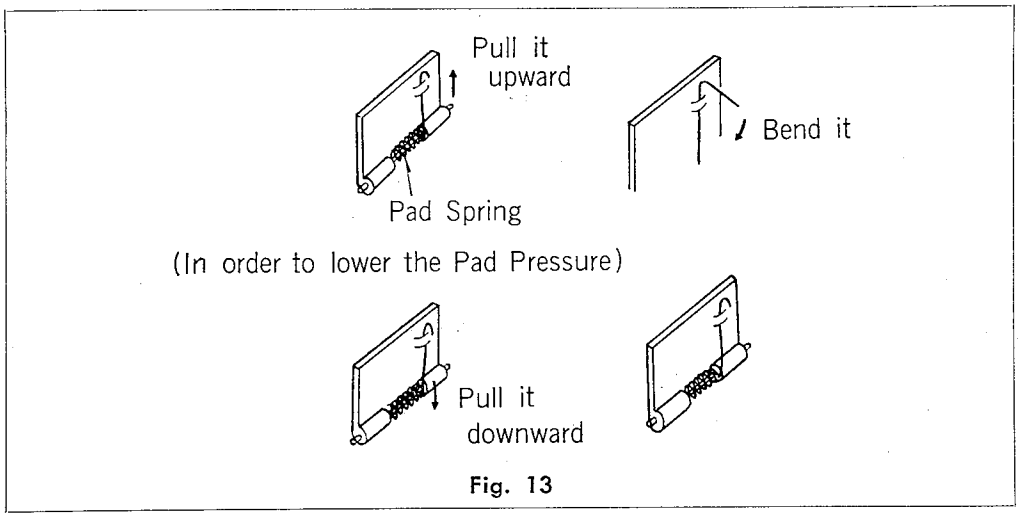


Fig. 13

HEAD ADJUSTMENTS

ADJUSTING ORDER

Head Height → Playback Head Azimath → Record Head Azimath

HEAD HEIGHT

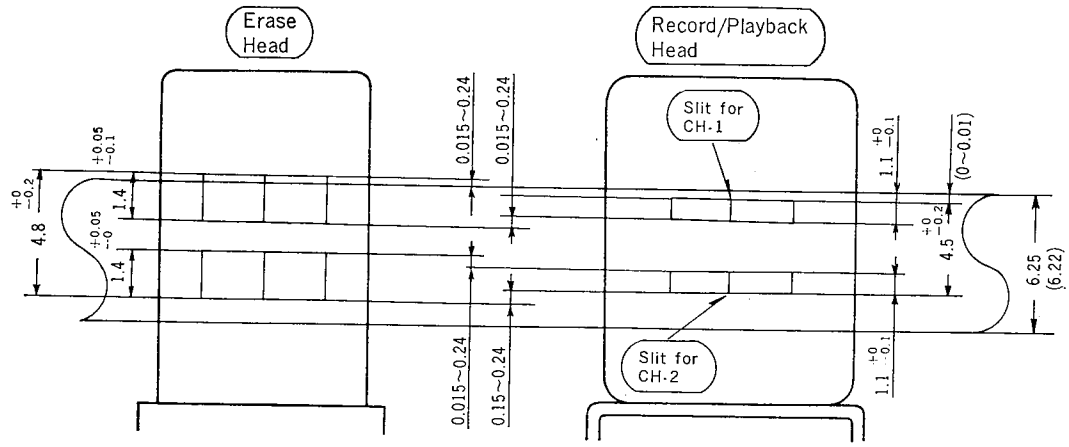


Fig. 14

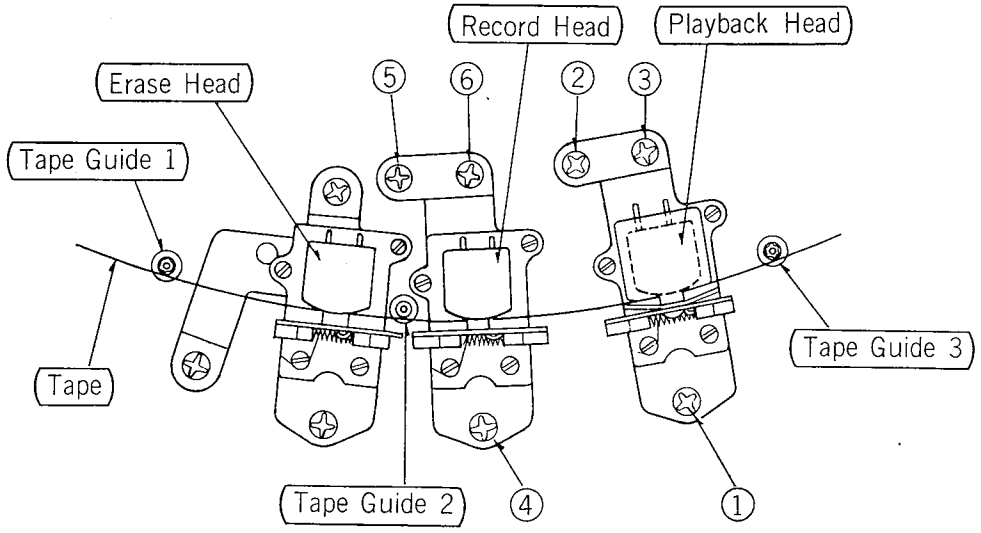


Fig. 15

1. Regarding the rerative positions of Head and Tape, the Erase Head Core should be so adjusted as to come out about 0.015~0.24 mm from the Tape. This is usually conducted by use of transparent tape and observing with the named eye. Likewise adjust the Record and Playback Heads so that they become ca. 0~0.01 interior from the tape.
2. The adjustments are effected with Screws ①~③. The Screw ① should be mainly used for the purpose.

AZIMATH ADJUSTMENT

PLAYBACK HEAD

1. Connect a VTVM to the LINE OUT terminal of each channel.
2. By using an Angle Adjusting Standard Tape (7-1/2 ips, 7 kHz), playback 7 kHz signals at 7-1/2 ips tape speed and turn the Adjusting Screws ② and ③ shown in Fig. 15 so that the max. output is obtained at both channels. In case it is difficult to adjust the slit angle between CH-1 and CH-2, seek for the middle point. (The measuring circuit is shown in Fig. 16)

RECORD HEAD

1. Adjust its angle after adjusting the Playback Head Angle.
2. Connect a Standard Oscillator to the AUX IN terminal of each channel and a VTVM to the LINE OUT terminal.
3. Keep the oscillation frequency at 15~20 kHz and the recording level lower by 10 dB than the standard recording level, and place the unit in the RECORD mode.
4. Record the specified signal with the Record Head while playing it back with the Playback Head, and adjust the Record Head Adjusting Screws ⑤ and ⑥ so that each output becomes maximum.

NOTE: At this time, do not adjust the Playback Head. (The measuring circuit is shown in Fig. 17)

Cautions in Measurement:

Move finely the Adjustment Screws ② and ③, ③ and ② alternately.

* After the adjustment, lock the screw heads with lacquer.

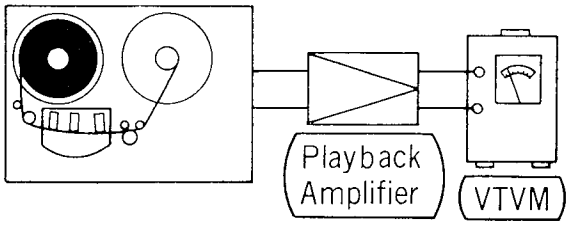


Fig. 16

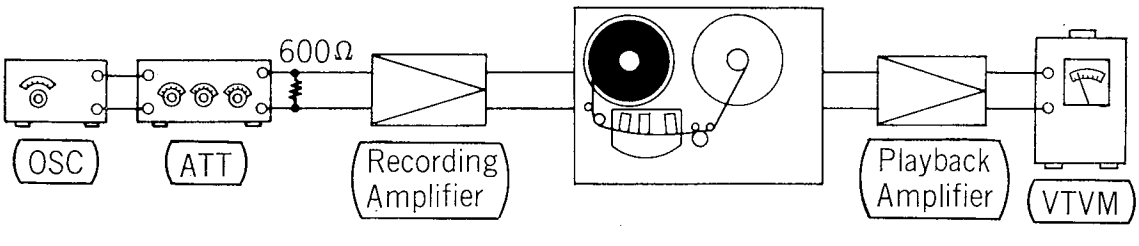


Fig. 17

AMPLIFIER ADJUSTMENTS

After adjusting the head, adjust the amplifier section according to the following procedure, and then adjust the overall frequency response with the tape speed set at 3-3/4 ips and then again at 15 ips.
Especially when the head, the recording equalizer/playback equalizer adjustment volume and coil, etc. are replaced, make the general adjustments listed below.

ADJUSTMENT ORDER

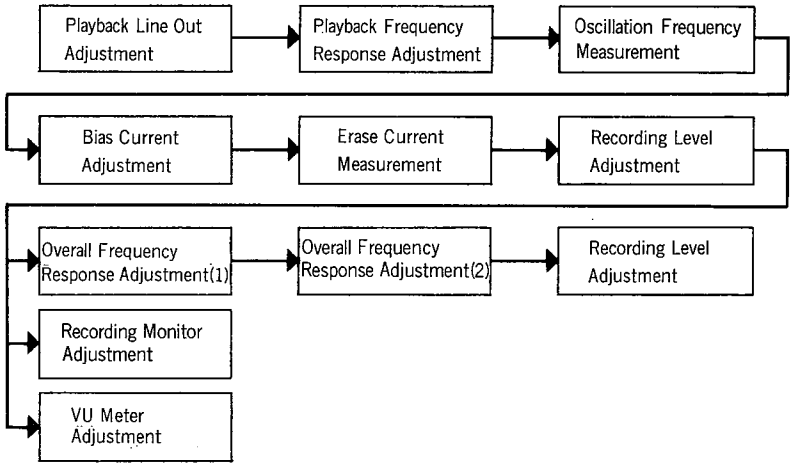


Fig. 18

PLAYBACK LINE OUTPUT

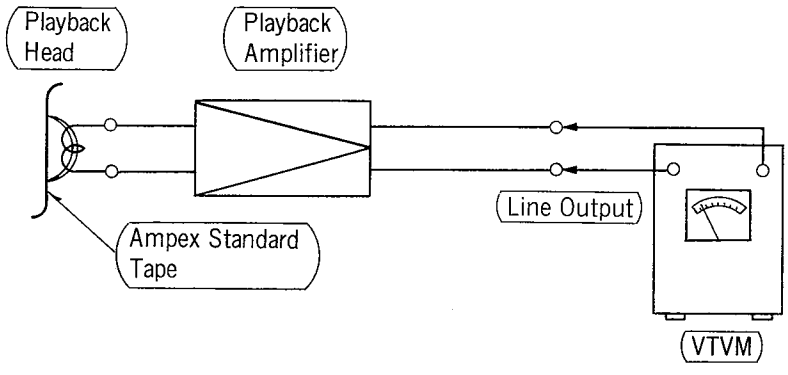


Fig. 19

Instruments required: VTVM, standard tape

Playback the Ampex standard tape with a max. frequency of 700 Hz and adjust the semi-fixed volume resistors VR23 and VR24 until the LINE-1 output becomes 1 V. (Set the speed selector knob to 7-1/2 ips.) Keep the TAPE/SOURCE selector switch set to TAPE.

PLAYBACK FREQUENCY RESPONSE ADJUSTMENT AT 7-1/2 ips, 3-3/4 ips TAPE SPEED

Instruments required: VTVM, Ampex standard tape for frequency response test.

1. Make the connections shown in Fig. 19.
2. Playback the Ampex standard tape at 7-1/2 ips tape speed, and adjust the high frequency response (7.5 kHz, 10 kHz and 12 kHz) with VR19 (CH-1) and VR20 (CH-2), thereby keeping the deviation within 3 dB.
3. After the adjustment, assure that the following conditions are satisfied.
   STANDARD: 100 Hz~10 kHz ..... Deviation 3 dB
   50 Hz~12 kHz ..... Deviation 5 dB
4. Playback the Ampex standard tape at 3-3/4 ips tape speed, adjust the high frequency response (5 kHz and 7.5 kHz) with VR17 (CH-1) and VR18 (CH-2), thereby keeping the deviation within 3 dB.
5. After the adjustment, assure that the following conditions are satisfied.
   STANDARD: 100 Hz~ 5 kHz ..... Deviation
   50 Hz~12 kHz ..... Deviation

PLAYBACK FREQUENCY RESPONSE ADJUSTMENT AT 15 ips TAPE SPEED

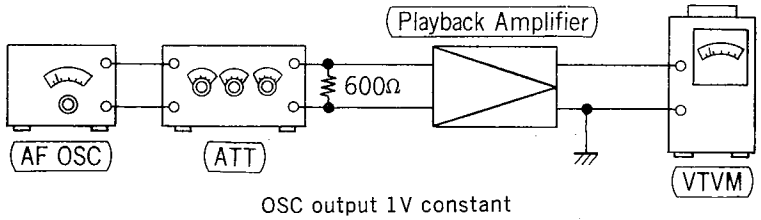


Fig. 20

Instruments required: VTVM, oscillator, attenuator
Due to lack of a test tape for 15 ips, adjust the frequency response of the playback amplifier when the tape speed is 15 ips.

1. Make the connections shown in Fig. 20.
2. Remove the playback head, supply a 1 kHz signal to both ends of the amplifier input line, and adjust the attenuator until the Line Out output becomes 1 V. At this time, set the playback volume to maximum.
3. Change the input signal to 10 kHz, and adjust the attenuator until the Line Out output becomes 1 V.
4. Read the difference between the attenuator indications.
   STANDARD: 10 kHz -11.5 ± 0.5 dB
   (1 kHz at a level of 0 dB)
5. If the value read is not within the standard range, adjust VR21 and VR22.

BIAS OSCILLATOR FREQUENCY

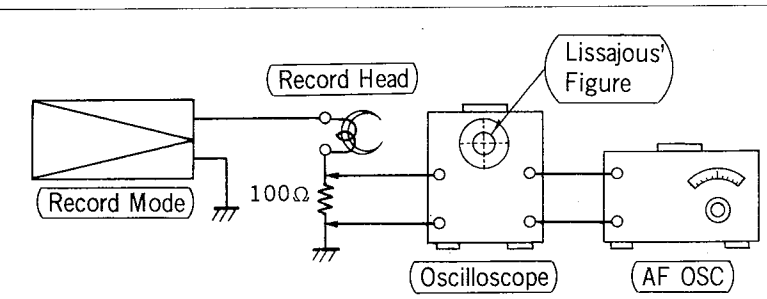


Fig. 21

Instruments required: Audio frequency oscillator, oscilloscope, 100Ω resistor

1. Remove the ground lead wire connected to the recording head, and attach a 100Ω resistor in series.
2. Connect the AF oscillator and the oscilloscope to both ends of the 100Ω resistor.
3. Place the set in the recording mode.
4. Adjust the audio frequency oscillator to obtain the frequency of bias oscillation which will be noted by resonance.
5. The resonance point is where the Lissajous' figure becomes stationary, and the oscillation frequency is indicated on the scale of the audio frequency oscillator.
6. The standard oscillation frequency is 170~190 kHz.

BIAS OSCILLATOR CURRENT & BIAS TRAP ADJUSTMENT

Instruments required: VTVM, 10Ω resistor

1. Remove the lead wire (which is on ground when recording) connected to the recording head, and attach a 10Ω resistor in series.
2. Connect a VTVM to both ends of the 10Ω resistor, and measure the voltage.

$$\text{Bias current} = \frac{\text{Voltage value}}{\text{Resistance value (10Ω)}}$$

3. The standard bias current is 1.5~2.3 mA.

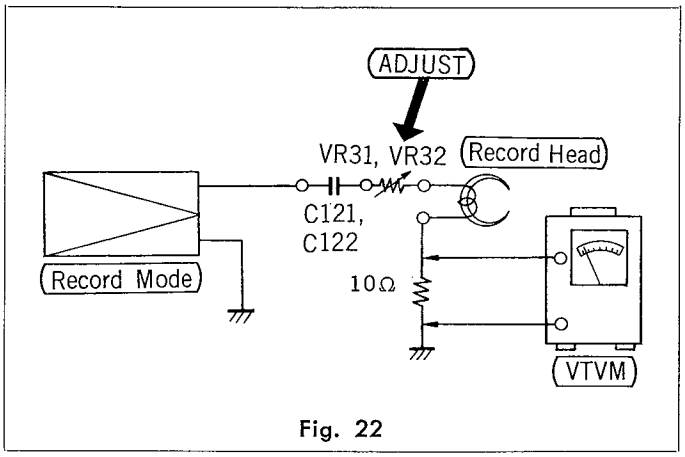


Fig. 22

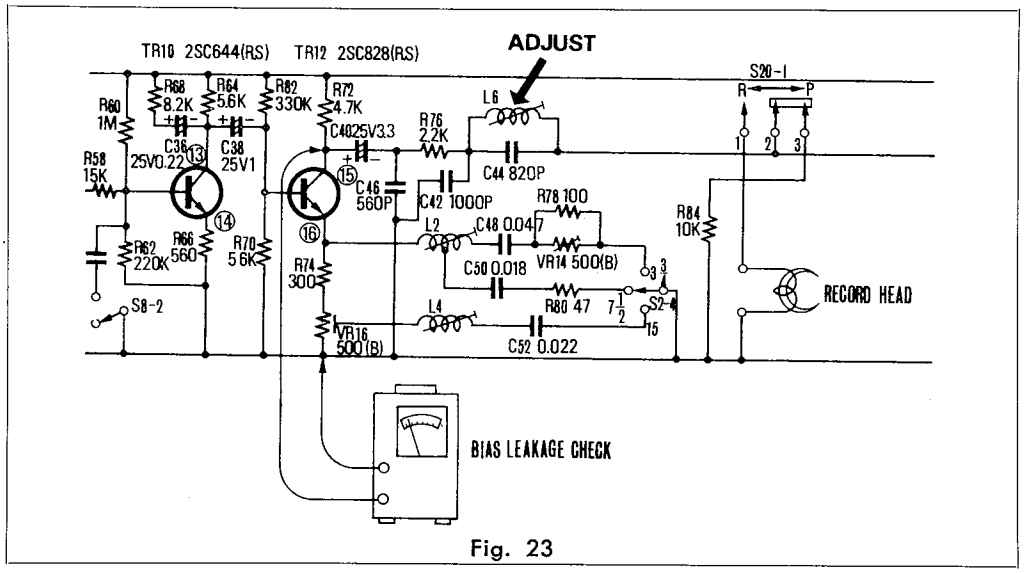


Fig. 23

Adjustment method:

1. Place the unit in the stereo recording mode and adjust the peaking coils, L5 and L6, to minimize bias leakage. (Check points: collector terminals of Tr12 and Tr25)
2. Adjust VR31 and VR32 until the bias current shows the standard value.

ERASE CURRENT

Instruments required: VTVM, 10Ω resistor.

1. Remove the ground lead wire connected to the erase head, and attach a 10Ω resistor in series.
2. Connect a VTVM to both ends of the 10Ω resistor, and measure the voltage value.

$$\text{Erase current} = \frac{\text{Voltage value}}{\text{Resistance value (10Ω)}}$$

3. The standard erasing current is 55~75 mA.

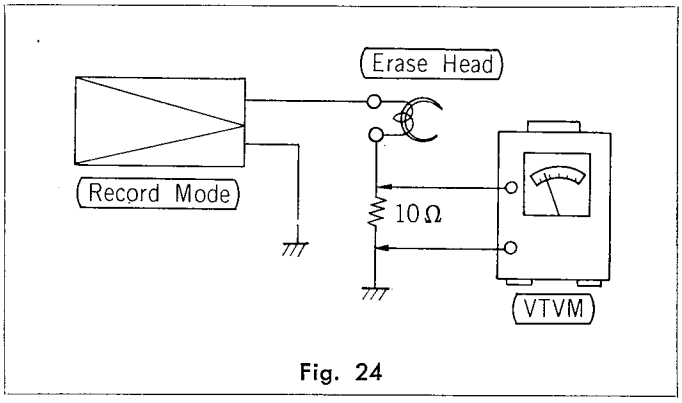


Fig. 24

RECORDING LEVEL ADJUSTMENT & VU METER ADJUSTMENT

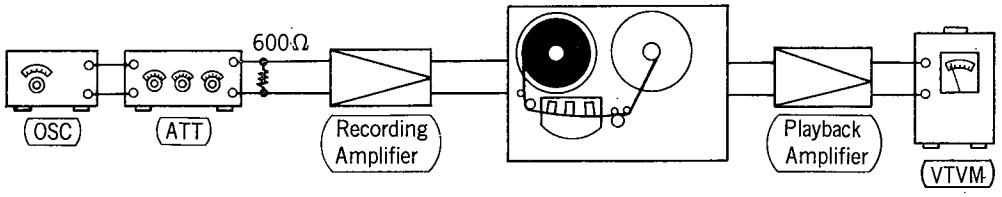


Fig. 25

Instruments required: Oscillator, attenuator, VTVM

Recording level adjustment:

1. Set tape speed to 7-1/2 ips, place the unit in the recording mode, and make a recording by supplying a −20 dB (1 kHz) to the Aux-2 input terminal.
2. Set the tape/source selector switch to TAPE, and adjust VR9 (CH-1) and VR10 (CH-2) until the output of Line Out-1 becomes 1.0 V.

VU meter adjustment:

1. In this condition, set the tape/source selector switch to SOURCE, and adjust VR29 and VR30 until the VU meter deflects around 0 VU.

Recording monitor level adjustment:

1. In the same condition as above, move the selector switch to SOURCE and adjust VR11 and VR12 until the output of Line Out-1 becomes 1 V.

OVERALL FREQUENCY RESPONSE ADJUSTMENT (1)

Instruments required: Oscillator, attenuator, VTVM (see Fig. 25)

For 7-1/2 ips tape speed:

1. Supply an input signal of −35 dB to Aux-2, and, after recording and playback, re-adjust the bias current until the 10 kHz output becomes the same level as the output of Line Out-1 at 1 kHz. (Adjustment points: VR31, VR32)
2. Record 30 Hz ~ 25 kHz signals, and adjust the peaking coils, L1 and L2, until the frequency response during playback conforms to the standard.

STANDARD

7-1/2 ips	200 Hz~ 10 kHz	Deviation 3 dB
	30 Hz~ 23 kHz	Deviation 9 dB
3-3/4 ips	60 Hz~7.5 kHz	Deviation 3 dB
	30 Hz~ 12 kHz	Deviation 5 dB
15 ips	100 Hz~ 10 kHz	Deviation 3 dB
	30 Hz~ 30 kHz	Deviation 10 dB

For 3-3/4 ips tape speed:

Record 30 Hz~12 kHz at a −35 dB level to Aux-2 in the same way as for the 7-1/2 ips tape speed adjustment, and adjust VR13 and VR14 until the frequency response during playback conforms to the standard.

For 15 ips tape speed:

Record 30 Hz~30 kHz, and adjust L3 and L4 until the frequency response during playback conforms to the standard.

For frequency response about 30 kHz, adjust VR15 and VR16.

RECORDING LEVEL RE-ADJUSTMENT

When the bias current is adjusted during the overall frequency response adjustment, re-adjust the recording level.

CAUTIONS WHEN MOUNTING HEAD AFTER REPLACEMENT

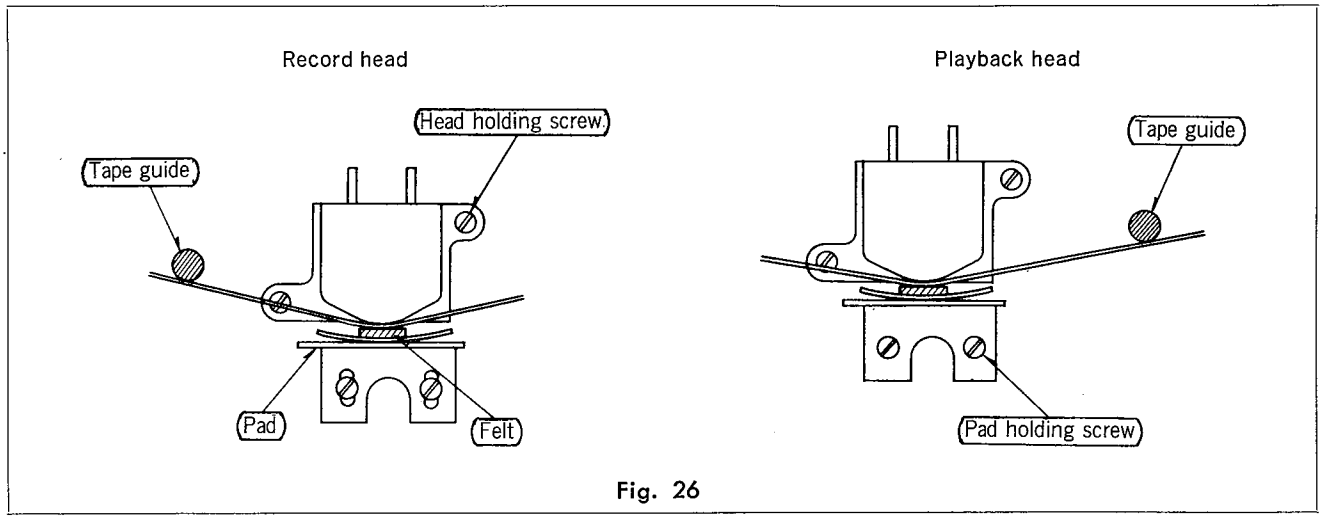


Fig. 26

Please read the following very carefully before adjusting the head height and azimuth.

1. Make sure that the tape properly contacts the head. When mounting the head to the head base plate, use care with the following:
   1-1. Position relationship between the head, tape and pad:
   1-2. Mounted head angle adjustments:
      a) Adjust the position of the head (recrod head, playback head) until ∠A and ∠B, shown in Fig. 27, and equal.
         ∠A = ∠B
      b) The felt contacts, the pad plate, and the most protruding part of the head front are at a right angle, as described in 1-2 a above, and in the surface contact, as shown in Fig. 28.

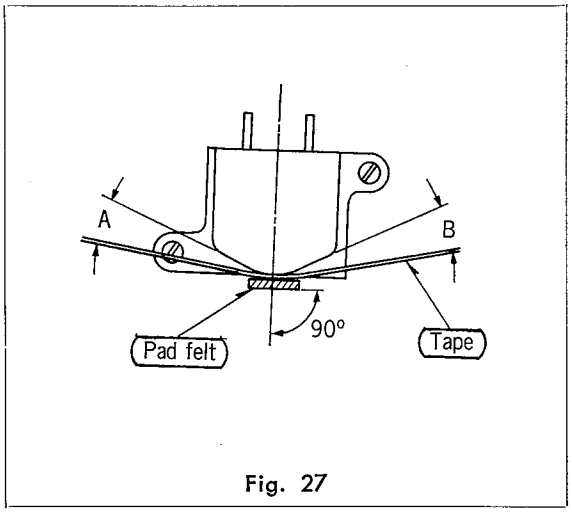


Fig. 27

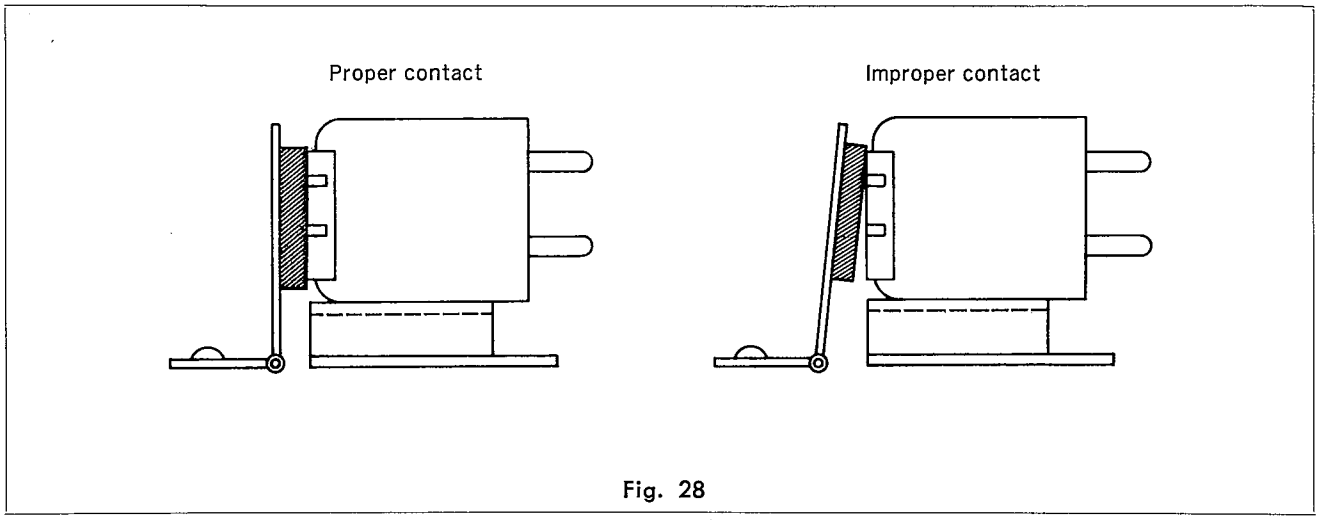


Fig. 28

2. Electrical confirmation of the condition of the mounted head:
Make the following adjustments in addition to those listed in the mechanism head adjustment specifications.

2-1. If the head output voltage exceeds 1 dB when the pad plate is pressed in the direction of the arrow, as shown in Fig. 29, it is probable that the mounted head angle adjustments (1-2 a and b) have not been properly made, there is some positioning deviation between the most protruding part of the head front and the slit. If the cause is proven to be the first, re-adjust 1-2 a and b; and if it is the second, adjust the position according to the procedure given below.

a) Loosen the head holdiag screw, shown in Fig. 26, move the head to the right or the left, as shown in Fig. 30 and, when the playback output is maximum, determine the head fixing position. Confirm the conditions of 2-1. (including the back/forth adjustment)

b) If method (a) is difficult or insufficient, loosen the pad holding screws, shown in Fig. 26, and adjust the pad by moving it to the right or the left, as shown in Fig. 31, and confirm the conditions of 2-1.
(including the back/forth adjustment)

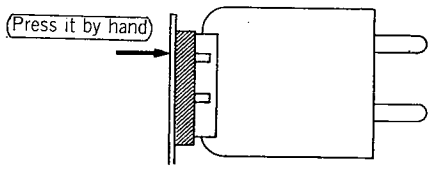


Fig. 29

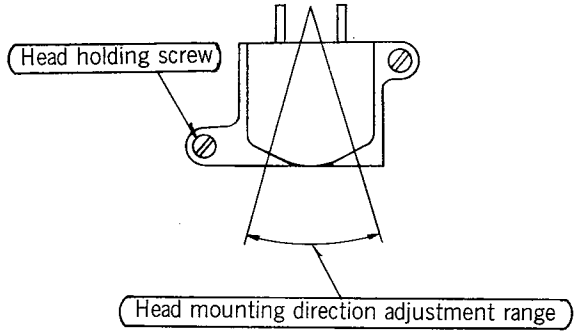


Fig. 30

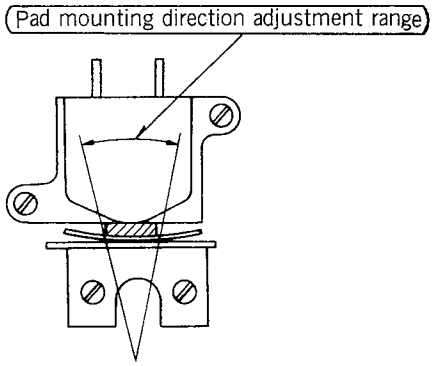


Fig. 31

CUE SWITCH MOUNTING POSITION ADJUSTMENT

Adjustment:

1. Stop the mechanism.
2. Move the cue switch angle in the direction of arrow C.
3. Move the cue switch until part A contacts the cue lever, and with the cue switch lever pressed in at the right end of the cue lever, mount the cue switch.
4. After mounting the switch, place the unit into the FF or REW mode, and make sure that there is an interval of more than 0.5 mm between the right end of the cue lever and the cue switch lever when the cue lever knob is fully pressed in the direction of arrow B.

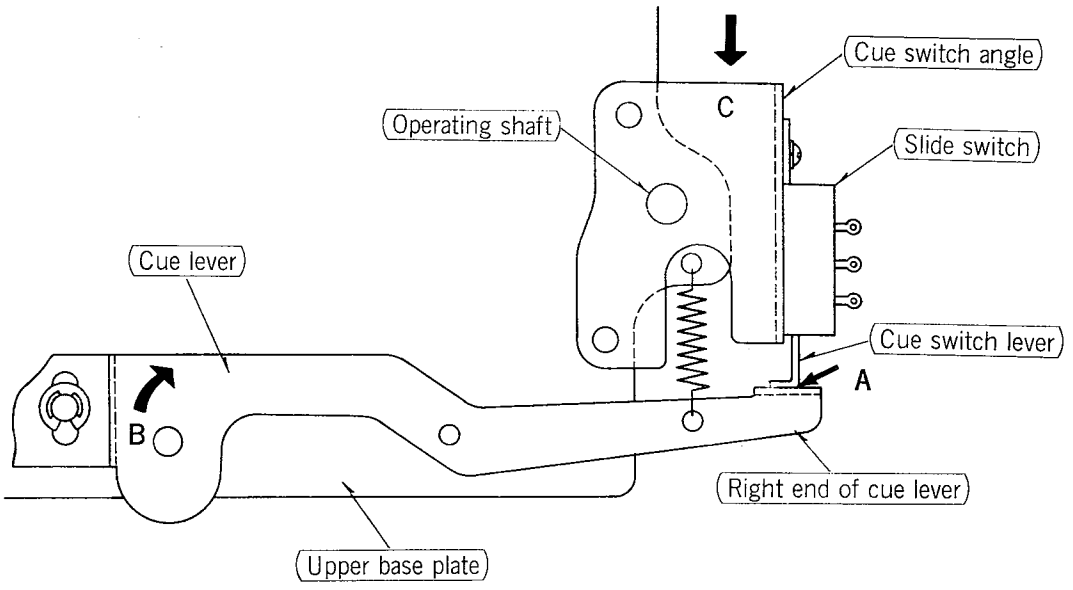


Fig. 32

HOW TO CHANGE TAPE SPEED

When changing the tape speed, do so in the following order.

The tape speed of this unit can be changed to either 3-3/4 ips or 7-1/2 ips by simply moving the tape speed selector.

By mounting the adaptor (included), the unit can be used to record and playback at 15 ips.
(Be sure that the function lever is in the STOP position before changing the tape speed.)

(1) Set the tape speed selector to the desired position.
(2) Set the equalizer changeover switch to the desired tape speed (same as (1) above).

How to install the 15 ips adaptor:

For 15 ips speed, the pressure roller and capstan for 15 ips must be used in addition to items (1) and (2) above.

1. Remove the capstan screw (small).
2. Remove the screw at the center of the pressure roller, remove the pressure roller cap (large), fiber washer (thick), the pressure roller (large), and the fiber washer (thin).
3. Remove, from the adaptor compartment at the rear of the unit, the capstan screw (large), the capstan sleeve, the pressure roller cap (small) and the pressure roller (small).
4. Insert the capstan sleeve onto the capstan shaft and tighten with the capstan screw (large).
5. Next install the fiber washer (thin), pressure roller (small), as well as the fiber washer (thick) and pressure roller cap (small) onto the pressure roller shaft.

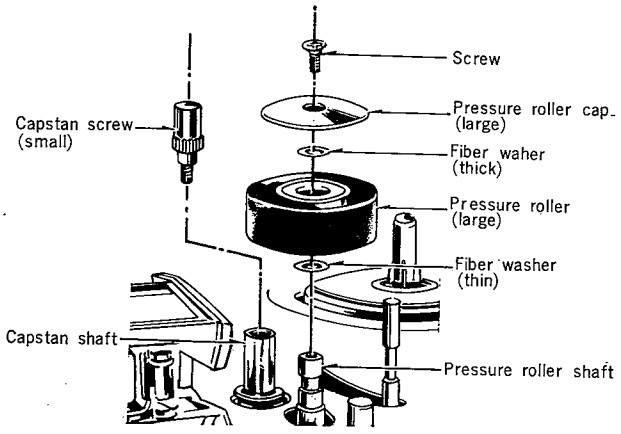
By following steps 1~5 above, and then setting the tape speed selector to the 7-1/2 ips position and the equalizer changeover switch to the 15 ips position, the unit can be used at the 15 ips tape speed.

NOTE: The 7-1/2 ips speed can also be used, without changing the capstan, etc., by simply setting the tape speed selector to the 3-3/4 ips position and the equalizer changeover switch to the 7-1/2 ips position.

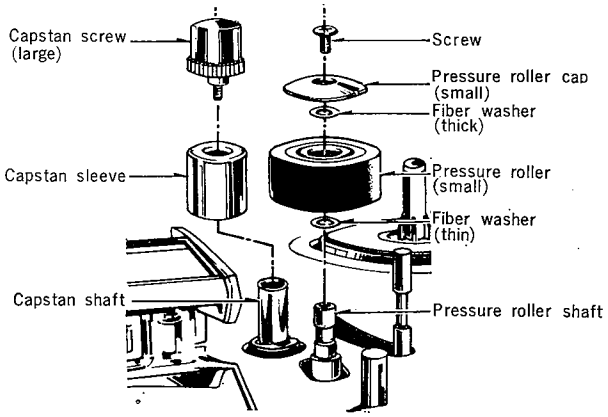
The capstan screw (small), the pressure roller (large) and the pressure roller cap (large) should be placed in the adaptor compartment at the rear of the unit.

§ To change from 15 ips (B) to 7-1/2 ips and 3-3/4 ips (A), reverse the above steps.

A For 3-3/4 and 7-1/2 ips



B For 15 (7-1/2) ips



TAPE SPEED	Tape Speed Selector	Equalizer Changeover Switch	Installation of Pressure Roller and Capstan
3-3/4 ips	"3-3/4"	"3-3/4"	A
7-1/2 ips	"7-1/2"	"7-1/2"	A
	"3-3/4"	"7-1/2"	B
15 ips	"7-1/2"	"15"	B

REPLACEMENT PARTS LIST

ATTENTION: Parts which are not listed are part of an assembly and are not stocked as a separate item.
To obtain parts not listed, order the entire assembly.

RESISTORS

Ref. No.	Description			Part No.
R1, 2	Carbon Resistor	27 KΩ	1/4 W	ERD14TJ273
R3, 4	Carbon Resistor	1 MΩ	1/4 W	ERD14TJ105
R5, 6	Carbon Resistor	3.9 KΩ	1/4 W	ERD14TJ392
R7, 8, 37, 38 ...	Carbon Resistor	22 KΩ	1/4 W	ERD14TJ223V
R9, 10, 123, 124, 161, 162, 180, 181	Carbon Resistor	150 KΩ	1/4 W	ERD14TJ154V
R11, 12	Carbon Resistor	82 KΩ	1/4 W	ERD14TJ823V
R13, 14, 127, 128	Carbon Resistor	1 KΩ	1/4 W	ERD14TJ102V
R15, 16, 17, 18, 27, 28, 95, 96	Carbon Resistor	33 KΩ	1/4 W	ERD14TJ333V
R19, 20, 119, 120	Carbon Resistor	3.3 KΩ	1/4 W	ERD14TJ332V
R21, 22, 65, 66, 158, 174, 175	Carbon Resistor	560Ω	1/4 W	ERD14TJ561V
R23, 24, 163, 166	Carbon Resistor	100 KΩ	1/4 W	ERD14TJ104V
R25, 26, 139, 140	Carbon Resistor	1 MΩ	1/4 W	ERD14TJ105V
R29, 30	Carbon Resistor	33 KΩ	1/4 W	ERD14TJ333A
R31, 32	Carbon Resistor	220 KΩ	1/4 W	ERD14TJ224
R33, 34, 45, 46, 59, 60, 137, 138, 155 ...	Carbon Resistor	470 KΩ	1/4 W	ERD14TJ474V
R35, 36, 61, 62, 69, 70, 121, 122, 156 ...	Carbon Resistor	56 KΩ	1/4 W	ERD14TJ563V
R39, 40, 75, 76, 99, 100, 133, 134	Carbon Resistor	2.2 KΩ	1/4 W	ERD14TJ222V
R41, 42, 149, 150	Carbon Resistor	39 KΩ	1/4 W	ERD14TJ393A
R43, 44	Carbon Resistor	27 KΩ	1/4 W	ERD14TJ273A
R47, 48, 107, 108, 131, 137	Carbon Resistor	68 KΩ	1/4 W	ERD14TJ683V
R49, 50, 201, 202	Carbon Resistor	18 KΩ	1/4 W	ERD14TJ183V
R51, 52, 91, 92, 136	Carbon Resistor	1.8 KΩ	1/4 W	ERD14TJ182V
R53, 54	Carbon Resistor	270Ω	1/4 W	ERD14TJ271V
R55, 56, 109, 110, 115, 116, 160	Carbon Resistor	1.2 KΩ	1/4 W	ERD14TJ122V
R57, 58, 89, 90, 173	Carbon Resistor	15 KΩ	1/4 W	ERD14TJ153V
R63, 64, 111, 112, 113, 114, 125, 126, 157 ...	Carbon Resistor	5.6 KΩ	1/4 W	ERD14TJ562V
R67, 68, 143, 144	Carbon Resistor	8.2 KΩ	1/4 W	ERD14TJ822V
R71, 72, 97, 98	Carbon Resistor	4.7 KΩ	1/4 W	ERD14TJ472V
R73, 74, 93, 94	Carbon Resistor	330Ω	1/4 W	ERD14TJ331V
R77, 78	Carbon Resistor	100Ω	1/4 W	ERD14TJ101V
R79, 80, 178 ...	Carbon Resistor	47Ω	1/4 W	ERD14TJ470V
R81, 82	Carbon Resistor	330 KΩ	1/4 W	ERD14TJ334V
R83, 84, 141, 142, 164, 165	Carbon Resistor	10 KΩ	1/4 W	ERD14TJ163V
R85, 86, 87, 88	Carbon Resistor	220 KΩ	1/4 W	ERD14TJ224V
R101, 102, 105, 106, 117, 118	Carbon Resistor	180 KΩ	1/4 W	ERD14TJ184A

Ref. No.	Description			Part No.
R103, 104 ...	Carbon Resistor	120 KΩ	1/4 W	ERD14TJ124V
R129, 130, 153, 154	Carbon Resistor	47 KΩ	1/4 W	ERD14TJ473V
R135	Carbon Resistor	220Ω	1/4 W	ERD14TJ221V
R145, 146, 147, 148	Carbon Resistor	15 KΩ	1/4 W	ERD14TJ153A
R151, 152 ...	Carbon Resistor	100 KΩ	1/4 W	ERD14TJ104A
R159	Carbon Resistor	39Ω	1/4 W	ERD14TJ390V
R167	Carbon Resistor	2.7 KΩ	1/4 W	ERD14TJ272A
R168	Carbon Resistor	12 KΩ	1/4 W	ERD14TJ123A
R169	Carbon Resistor	6.8Ω	1/4 W	ERD14TJ6R8A
R170	Solid Resistor	150Ω	1 W	ERC1GK151
R171	Solid Resistor	100Ω	1 W	ERC1GK101
R172	Carbon Resistor	33Ω	1/4 W	ERD14TJ330V
R176	Solid Resistor	4.7Ω	1/2 W	ERC12GM4R7

VARIABLE RESISTORS

VR1, 2, 3, 4, 7, 8	Variable Resistor	20 KΩ (B)	EVFN1DL35B24
VR5, 6	Variable Resistor	20 KΩ (B)	EVA09AA01B24
VR9, 10	Semi-fixed Variable Resistor	1 KΩ (B)	QVL00AA00B13
VR11, 12, 23, 24	Semi-fixed Variable Resistor	20 KΩ (B)	EVL42AA00B24
VR13, 14	Semi-fixed Variable Resistor	500Ω (B)	QVL00AA00B52
VR15, 16	Semi-fixed Variable Resistor	500Ω (B)	EVL42AA00B52
VR17, 18	Semi-fixed Variable Resistor	10 KΩ (B)	EVL42AA00B14
VR19, 20, 21, 22	Semi-fixed Variable Resistor	5 KΩ (B)	EVL42AA00B53
VR25, 26	Variable Resistor	10 KΩ (B)	EVA09AA01B14
VR27, 28	Variable Resistor	100 KΩ (B)	EVFK1AL35B15
VR29, 30	Semi-fixed Variable Resistor	100 KΩ (B)	EVL42AA00B15
VR31, 32	Semi-fixed Variable Resistor	20 KΩ (B)	QVL00AA00B54

CAPACITORS

C1, 2, 55, 56 ...	Aluminum Capacitor	3.3μF	ECEAG16V3R3
C3, 4, 129, 130, 131, 132 ...	Ceramic Capacitor	100 pF	ECCD05101K
C5, 6, 17, 18, 25, 26, 57, 67, 68, 73, 74, 103, 104, 106, 108	Electroytic Capacitor	10μF	ECEA16V10N
C7, 8, 61, 62 ...	Electroytic Capacitor	100μF	ECEA16V100N
C9, 10, 79, 80, 127, 128 ...	Ceramic Capacitor	22 pF	ECCD05220K
C11, 12, 65, 65, 105	Electrolytic Capacitor	47μF	ECEA6V47N
C13, 14, 110 ...	Mylar Capacitor	0.0022μF	ECQM05222KZ
C15, 16	Mylar Capacitor	0.01μF	ECQM05103KZ
C19, 20, 75, 76	Electrolytic Capacitor	220μF	ECEA16V220N
C21, 22, 39, 40, 77, 78, 83, 84, 95, 96, 97, 98, 99, 100, 122	Electrolytic Capacitor	3.3μF	ECEA25V3R3N
C23, 24, 29, 30, 58, 85, 86, 87, 88, 91, 92, 93, 94	Electrolytic Capacitor	10μF	ELECA25V10N
C27, 28, 59, 60	Electrolytic Capacitor	33μF	ECEA6V33N
C31, 32, 37, 38	Electrolytic Capacitor	1μF	ECEA25V1N
C33, 34, 71, 72	Mylar Capacitor	0.001μF	ECQM05102KZ
C35, 36	Electrolytic Capacitor	0.22μF	ECEA25V0R22M
C41, 42	Styrol Capacitor	1000 pF	ECQS1102KZ
C43, 44	Styrol Capacitor	820 pF	ECQS1821KZ
C45, 46	Sryrol Capacitor	560 pF	ECQS1561KZ
C47, 48	Mylar Capacitor	0.047μF	ECQM05473KZB
C49, 50	Mylar Capacitor	0.018μF	ECQM05183KZ
C51, 52	Mylar Capacitor	0.022μF	ECQM05223KZ
C63, 64	Ceramic Capacitor	47 pF	ECCD05470K
C69, 70	Mylar Capacitor	0.027μF	ECQM05273KZB
C81, 82	Electrolytic Capacitor	10μF	ECEA10V10N
C89, 90	Electrolytic Capacitor	33μF	ECEA25V33N
C101, 102, 114, 115	Electrolytic Capacitor	220μF	ECEA25V220N
C102	Electrolytic Capacitor	100μF	ECEA25V100N
C107, 109 ...	Electrolytic Capacitor	47μF	ECEA16V47N
C111	Styrol Capacitor	2200 pF	ECQS1222KZ
C113	Electrolytic Capacitor	470μF	ECEA25V470N
C116	Electrolytic Capacitor	1000μF	ECEA25V1000N

Ref. No.	Description		Part No.
C119	Ceramic Capacitor	820 pF	ECQS5821JZ
C120, 121 ...	Styrol Capacitor	220 pF	ECQS1221KZ
C123, 124, 125, 126	Titanic Capacitor	470 pF	ECKD05471MF
C150	Styrol Capacitor	150 pF	ECQS515K
C200	Motor Capacitor	0.9μF	AF450VR9U

COMBINATION PARTS

CR1, 2	CR Combination	QCR0003

TRANSISTORS

Tr1, 2, 3, 4, 5, 6, 7, 8, 9, 10 ...	Transistor	2SC644(R,S)
Tr11, 12	Transistor	2SC828(R,S)
Tr13, 14, 15, 16, 17, 18, 19, 20	Transistor	2SC644(R,S,T)
Tr21, 22, 23, 24, 25, 26, 27 ...	Transistor	2SC828
Tr28	Transistor	2SA550
Tr29, 30	Transistor	2SC881(E,L,F)
Tr31	Transistor	2SD204

DIODES

D1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13	Diode	OA90Z
D14	Diode	1S1850

TRANSFORMERS

T1	Headphone Transformer	QLA0349
T2	Oscillator Transformer	QLB0140
T3	Power Transformer	QLP0516U

COILS

Ref. No.	Description	Part No.
L1, 2	Peaking Coil	QLH2008
L3, 4, 5, 6... ...	Peaking Coil	QLH2009
L7	Erase Head Dummy Coil	QLH9011

SWITCHES

S1	Input Selector Switch	ESRE143L35Z
S2	Equalizer Switch	ESRE283L36AS
S3, 4, 5, 6, 7 ...	Lever Switch	QST0014S
S8, 17	Lever Switch	QST0020S
S12	Micro Switch	QSM0025
S14	Push Switch	QSW0108S
S15	Stop Switch	QSS1105
S19, 20	Record/Playback Selector Switch	QSS1067

ELECTRICAL PARTS

E1	Main Amp Complete Assembly	QEM1134S
E2	Oscillator Circuit Bord Assembly	OEI0247
E3	VU Meter	QSL0063
E4	Jack	QJA0227
E5	Jack	QJA0229
E6	Pilot Lamp	XAMQ2S
E7	Pilot Lamp	XAM30T
E8	Pilot Lamp Socket	QJS0101
E9	AC Power Cord	QFC1016A
E10	Cord Bushing	QTD1129
E11	Jack Board Assembly	QEJ0114
E12	Lug Board 4P	QJT4001
E13	Cord Cramper	QTD1110
E14	Lug Board 6P	QJT6003
E15	Lug Board 2P	QJT2003
E16	Tapping Screw ⊕3×8	XTN3+8
E17	Heat Sink	QTH1067S

Ref. No.	Description	Part No.
E18	Hot Pressed Ferrite Playback Head	WY450W
E19	Hot Pressed Ferrite Record Head	WY451W
E20	Erase Head	WY553W

MECHANICAL PARTS

Ref. No.	Description	Part No.
M1	60 Hz Capstan Cap	QMQ1111S
M2	Stop Ring E7ϕ	XUC7FK
M3	Rubber Packing	QBG1156
M4	Head Cover Holding Angle	QMA1484S
M5	Screw ⊕3×6	XSN3+6S
M6	Spring Washer SW3ϕ	XWA313
M10	Screw ⊖2×4	XSN2−4
M11	Spring Washer SW2ϕ	XWA2B
M12	Pad Felt 4×7×3	QAP1137
M13	Playback Pad Plate	QAP1162
M14	Record/Playback Pad Retainer	QAP1163
M15	Record/Playback Pad Spring	QAP1018
M16	Record/Playback Shaft	QAP1164
M17	Recording Pad Plate	QAP1163
M18	Eraseing Pad Plate	QAP1159
M19	Screw ⊕3×10	XSN3+10S
M20	Screw ⊕3×8	XSW3+8N
M21	Spring Washer SW3ϕ	XWA3B
M22	Record/Playback Head Plate	QMZ1041
M23	Erase Head Plate Assembly	QMZ1061S
M24	Tape Cleaner Guide	QBJ1566
M25	Tape Cleaner Felt	QBF1186
M26	Screw ⊕3×6	XSC3+6BCS
M27	Guide Roller Cap	QMQ1093
M28	Fiber Washer 6.2×8.2×0.25	QBK7046
M29	Guide Roller	QMQ1332
M30	Stop Ring E4ϕ	XUC4FK
M31	Fiber Washer 5.2×10×0.25	QBK7129
M32	Guide Roller Shaft	QMS1484S
M33	Tension Arm-D Aseembly	QXA0103
M34	Tension Arm-C Spring	QBT1373
M35	Tension Arm-D Spring	QBP1258
M36	Screw ⊕3×6S	XSN3+6S
M37	Spring Washer 3ϕ	XWA3B
M38	Tension Arm Guide Assembly	QXM0082
M39	Nut 2.6ϕ	XNG26E
M40	Tape Limiter	QAG1107
M41	Tape Retainer	QAG1158
M42	Record/Palyback Plate Spring	QBP1171
M43	Screw ⊕4×8	XSN4+8S
M44	Spring Washer SW 4ϕ	XWA4B
M45	Tape Shifter Lever Assembly	QXL0403
M46	Screw ⊕3×8	XSN3+8S
M47	Shifter Lever Guide	QMP1266
M48	Pad Shifter	QAS1041S
M49	Idler Lever Spring	QBT1361
M50	Screw ⊕4×8	XSN4+8S
M51	Spring Washer SW4ϕ	XWA4B
M52	Screw ⊕3×6	XSC3+6BCS
M53	Pressure Roller Cap	QMQ1094
M54	Pressure Roller Felt	QBF1154
M55	Pressure Roller	QDP1245
M56	Tension Arm Guide	QXA0088
M57	Tension Arm-D Spring	QBT1338
M58	Screw ⊕4×8	XSN+8S
M59	Spring Washer SW4ϕ	XWA4B
M60	Screw ⊕3×6	XSN+6S
M61	Spring Washer SW3ϕ	XWA3B
M62	Stopper	QBG1137
M63	Tension Arm Guide	QFM1291
M64	Cue Lever Assembly	QXL0401
M65	Cue Lever Spring	QBT1447
M66	Stop Ring E3ϕ	XUC3FK
M67	Fiber Washer	QBK7007
M68	Stop Ring E5ϕ	XUC5FK
M69	Fiber Washer 4.2×7×1	QBK7082
M70	Fiber Washer 4.2×6×0.5	QBK7075
M71	Tension Arm-C Boss	QMB1024

Ref. No.	Description	Part No.
M72	Fiber Washer 4.2×6×0.5	QBK7075
M73	Flat Washer 3φ	XWG3BN
M74	Nut 3φ	XNG3ES
M75	Stop Ring E3φ	XUC3FK
M76	Fiber Washer 4.2×6×0.5	QBK7075
M77	Speed Selector Lever-2	QML1607
M78	Speed Selector Lever Bush	QMB1017S
M79	Serew ⊕3×10	XSN3+10S
M80	Mechanism Reinforcement Plate Assembly	QXH0063S
M81	Speed Selector Lever Assembly	QXL0400
M81-1	Speed Selector Cliker Spring	QBP1171
M81-2	Thrust Ball	QDK1003
M81-3	Speed Selector Lever	QML1607
M82	Spring Hanger	QMA1169
M83	Idler Arm Spring Assembly	QXJ0037
M84	Takeup Idler Spring Assembly	QBT1228T
M85	Tapping Screw ⊕3×8	XTN3+8
M86	Takeup Reel Table Assembly	QXP0297
M86-1	Takeup Reel Table	QDR1047
M86-2	Poly Slider 6.2×9×0.25	QBJ3042
M86-3	Takeup Pulley Spring	QBC1152
M86-4	Fiber Washer 6.2×11×0.5	QBK7003
M86-5	Fiber Washer 0.2×8.2×1	QBK7014
M86-6	Stop Ring E5φ	XUC5FK
M86-7	Takeup Reel Pulley-2	QDP1383
M86-8	Friction Spring	QBP1091
M86-9	Fiber Washer 6.8×8×0.25	QBK7046
M87	Reel Table Metal Retainer	QMH1046
M88	Reel Table Metal	QMM1020
M89	Backtension Washer	QBJ3015
M90	Fiber Washer 6.2×8.2×1	QBK7014
M91	Backtension Spring	QBC1064
M92	Stop Ring E5φ	XUC5FK
M93	Stop Ring E6φ	XUC6FK
M94	Rewind Lever Assembly	QXL0397
M94-1	Stop Ring E5φ	XUC5FK
M94-2	Fiber Washer 5.2×10×0.5	QBK7027
M94-3	Rewind Pulley Washer	QBF1155
M94-4	Rewind Pulley	QDP1247
M94-5	Fiber Washer 5.2×10×0.5	QBK7027
M95	Takeup Idler Lever Assembly	QXI0041
(M95	New Takeup Idler Lever Assembly	QXI0046)
(Please refer to Exploded Views on page 27)		
M95-1	Stop Ring E4φ	XUC4FK
M95-2	Fiber Washer 5.2×10×0.25	QBK7129
M95-3	Idler Washer	QWM1104
M95-4	Pulley Felt	QBF1156
M95-5	Takeup Idler Assembly	QXI0026
M95-6	Poly Slider	QBJ3042
M95-7	Poly Slider	QBJ3042
M95-8	Stop Ring E5φ	XUC5FK
M96	Stop Ring E6φ	XUC6FK
M97	Takeup Idler Spring	QBT1234M
M98	Right Brake Assembly	QUV1024
M98-1	Brake Shoe	QBG1134
M99	Stop Ring E5φ	XUC5FK
M100	Brake Spring	QBC1071
M101	Brake Rod-2	QMR1064
M102	Brake Rod-1	QMR1057
M103	Stop Lever Assembly	QXL0109
M104	Stop Lever Spring	QxJ0045
M105	Left Brake Assembly	QUV1025
M106	60 Hz Motor Pulley ⊕	QDP1327
M106	60 Hz Motor Pulley (Standard)	QDP1322
M106	60 Hz Motor Pulley ⊖	QDP1328
M107	Motor Pulley Holding Screw	XSN2−8
M108	Supply Reel Table Assembly	QXP0298
M109	Poly Slider 6.2×9×0.25	QBJ3042
M110	Reel Table Pulley Pressure Spring	QBC1152
M111	Fiber Wesher 6.2×11×1	QBK7130
M112	Stop Ring E5φ	XUC5FK
M113	Reel Table Spring Guid	QMA1641
M114	Fiber Washer 6.2×9×2	QBK7083
M115	Fiber Washer 6.2×8.2×0.5	QBK7013

Ref. No.	Description	Part No.
M116	Screw ⊕3×6	XSN3+6S
M117	Tapping Screw ⊕3×8	XTN3+8
M118	Reel Table Angle	QMA1130
M119	Reel Table Counter Pulley Assembly	QXP0261S
M119-1	Screw ⊕4×8	XSN4+8S
M120	Fiber Washer 6.2×8.2×1.0	QBK7014
M121	Counter Belt	QDB0061
M122	Counter Assistant Belt	QDB0097
M123	Counter Assistant Pulley	QDP1302
M124	Stop Ring E3φ	XUC3FK
M125	Fiber Washer 4.2×9×0.25	QBK7007
M126	Flywheel Idler Assembly	QXI0039
M126-1	Flywheel Idler-A Assembly	QXI0040
M127	Pressure Roller Lever Assembly	QXL0402S
M127-1	Pressure Roller Shaft	QMS1480
M127-2	Stop Ring E4φ	XUC4FK
M127-3	Click Roller	QDP1126
M128	Pressure Roller Spring	QBT1186M
M129	Flywheel Assembly	QXF0067S
M130	Stop Ring E5φ	XUC5FK
M131	FF Lever Spring	QBC1060
M132	FF Lever	QML1275
M133	Function Cam Assembly	QXH0069
M134	Click Arm	QML1974
M135	Clicker Spring	QBT1377M
M136	Clicker Roller	QDP1125
M137	Stop Ring E5φ	XUC5FK
M138	Spring Hanger Plate	QMF1295
M139	Release Lever Spring	QBT1228T
M140	Stop Ring E5φ	XUC5FK
M141	Fiber Washer 6.2×11×0.25	QDP7003
M142	Record Lock Plate	QMF1294
M143	Record Lock Spring	QBT1190
M144	Release Lever-5	QMA1825
M145	Release Lever Guide	QMS1322
M146	Stop Ring E3φ	XUC3FK

Ref. No.	Description	Part No.
M148	Release Lever Assembly	QXC0370
M149	Release Lever-6	QML1826S
M150	Tape Counter	QDC0028S
M151	Counter Angle	QMA1520
M152	Mecha Holding Angle	QMA1285S
M153	Mecha Holding Angle	QMA1278S
M154	Mecha Holding Angle	QMA1279S
M155	Mecha Holding Angle	QMA1276S
M156	Screw ⊕3×8	XSN3+8S
M157	Tapping Screw ⊕3×8	XTN3+8
M158	Flat Washer 3φ	XWG3BN
M159	Motor	4KSC20FPL
M160	Motor Oil Cap Felt	QBF1026
M161	Tapping Screw ⊕3×8	XTN3+8
M162	Shut off Angle Assembly	QXE0015
M163	Fiber Washer 5.5×10×0.25	QBK7044
M164	Tapping Scerew ⊕3+8	XTN3+8
M165	Shut off Pin	QMQ1064
M166	Fiber Washer 5.5×10×0.25	QBK7044
M167	Stop Ring E5φ	XUC5FK
M168	Spring Washer 3φ	XWA3B
M169	Screw ⊕2×14	XSN2+14
M170	Rewind Arm	QML1280
M171	Sub Cam Plate Assembly	QXH0063S
M172	Screw ⊕2×8	XSN3+8S
M173	Idler off Arm Assembly	QXA0044
M174	Stop Ring E5φ	XUC5FK
M175	Fiber Washer 0.2×11×0.5	QBK7003
M176	Fiber Washer 6.2×11×0.5	QBK7003
M177	Record Lock Arm Assembly	QML1550
M178	Stop Switch Angle Assembly	QXE0095S
M178-1	Stop Ring E4φ	XUC4FK
M178-2	Stop Switch Spring	QBN1065
M178-3	Stop Switch Lever	QML1563
M178-4	Stop Switch Angle	QMA1264S

CABINT PARTS

Ref. No.	Description	Part No.
G1	Body Case Assembly	QYJ1170S
G2	Front Panel Assembly	QYP0230S
G3	Panel Assembly	QYP0233
G4	Head Cover Assembly	QYR0116
G5	Function Knob Assembly	QGT2031S
G6	Knob Assembly	QYT0157
G7	Speed Selector Knob Assembly	QYT0154
G8	Record Button-L Assembly	QXB0062S
G9	Record Button-R Assembly	QXB0061S
G10	Button Assembly	QYT0114
G11	Volume Control Knob-L Assembly	QYT0183
G12	Volume Control Knob-R Assembly	QYT0184
G13	Top Cover Assembly	QYA0096
G14	Screw ⊕4×25	XSN4+25S
G15	Screw ⊕3×8	XSN+8FZS
G16	Screw ⊕3×8	XSN3+8FCS
G17	Washer	QWQ1083
G18	Screw ⊕4×16	XC4+16FNCS
G19	Washer W3	XWG3
G20	Rubber Foot	QKA1054B
G21	Case Foot	QKA1050
G22	Storage Pocket Lid	QKD1022C
G23	Screw ⊕3.8×20	XMM38+20
G24	Screw ⊕3.8×13	XMM38+13

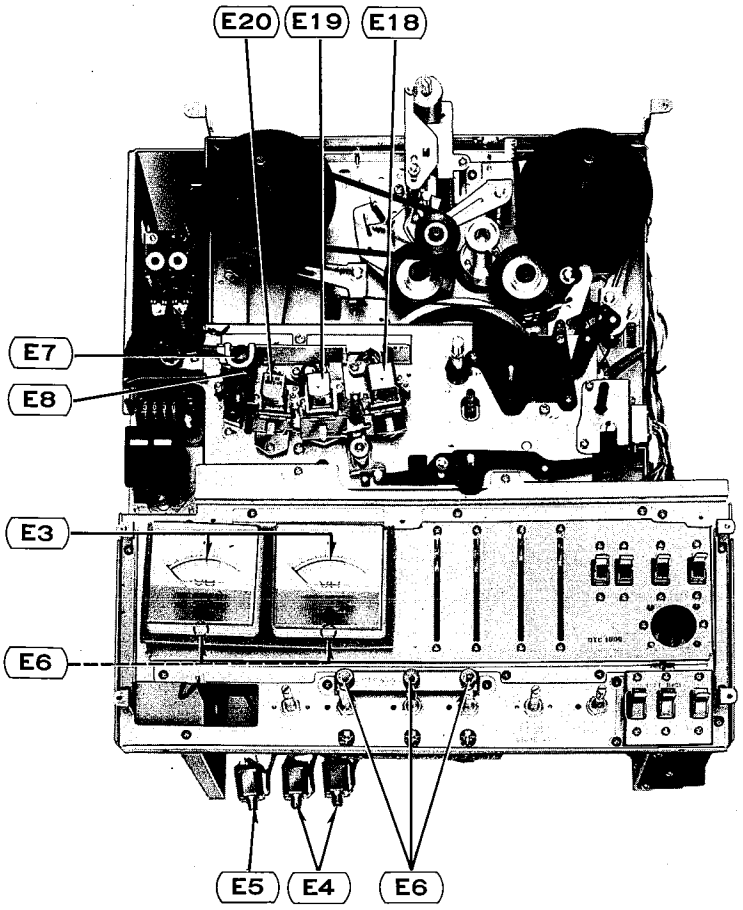
ACCESSORIES

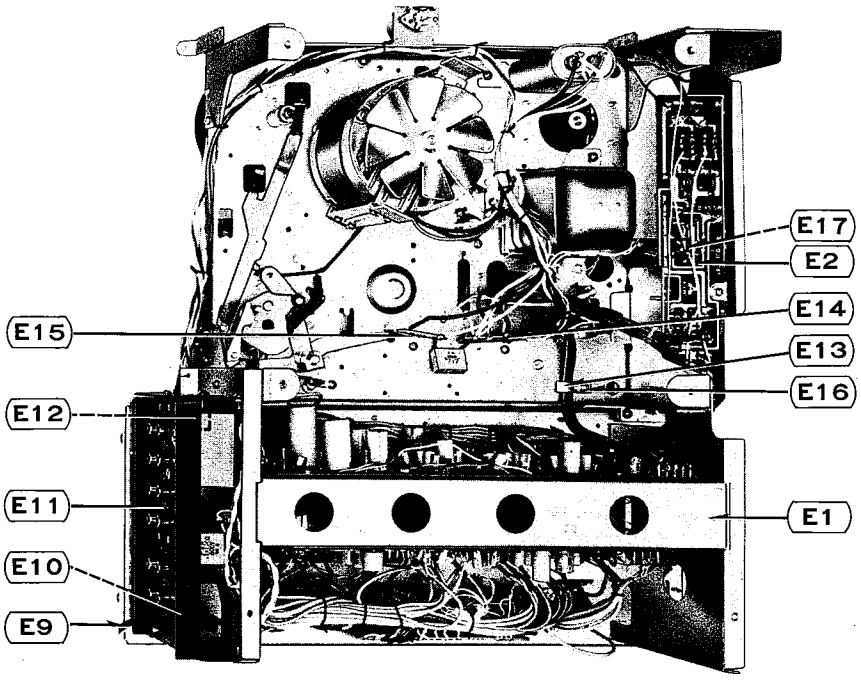
Ref. No.	Description	Part No.
A1	7″ Empty Reel	QFR71PZ
A2	Connection Cord-G	QEB0060P
A3	Tape Cleaner Felt	QBF1186
A4	Splicing Tape	QFS2
A5	Reel Holder	QBG1030
A6	Head Cleaning Ribon	QFQ1015
A7	Instruction Book	QQT1308
(A7)	Instruction Book (French)	(QQT1336)
A8	Capstan Cap-H	QMS1692S
A9	Capstan Sleeve-H	QMS1691
A10	Pressure Roller Cap-H	QMQ1073
A11	Pressure Roller-H	QDP1320

PACKINGS

P1	Inner Packing	QPN2157
P2	Inner Cushion-A	QPN2158
P3	Inner Cushion-B	QPN2159
P4	Pad Spacer	QPN2080
P5	Accessory Bag	QFV0047
P6	Dust Cover	QFD0114

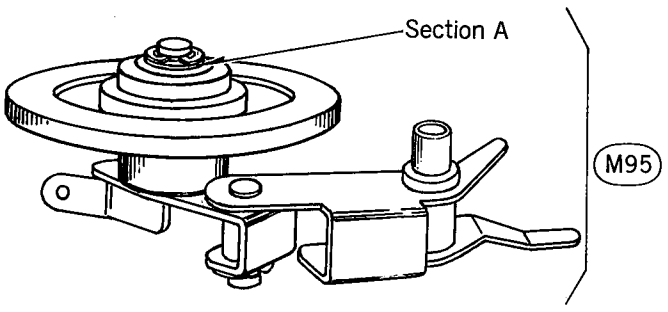
ELECTRICAL PARTS LOCATION



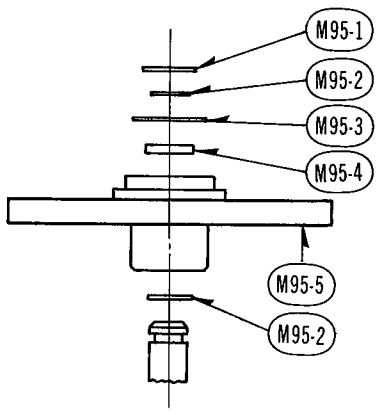


※ (M95)

New Takeup Idler Lever Assembly

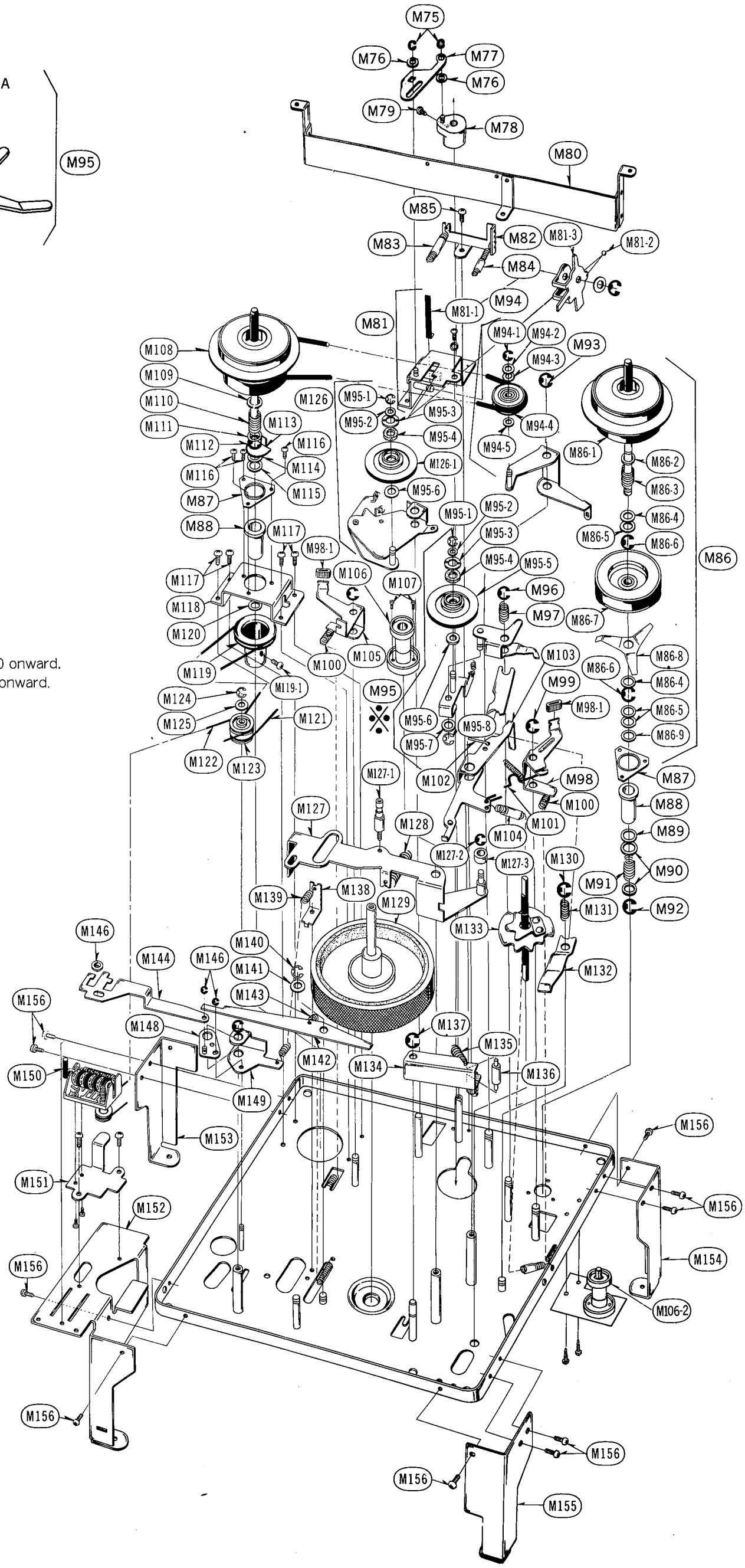


Detailed Section A

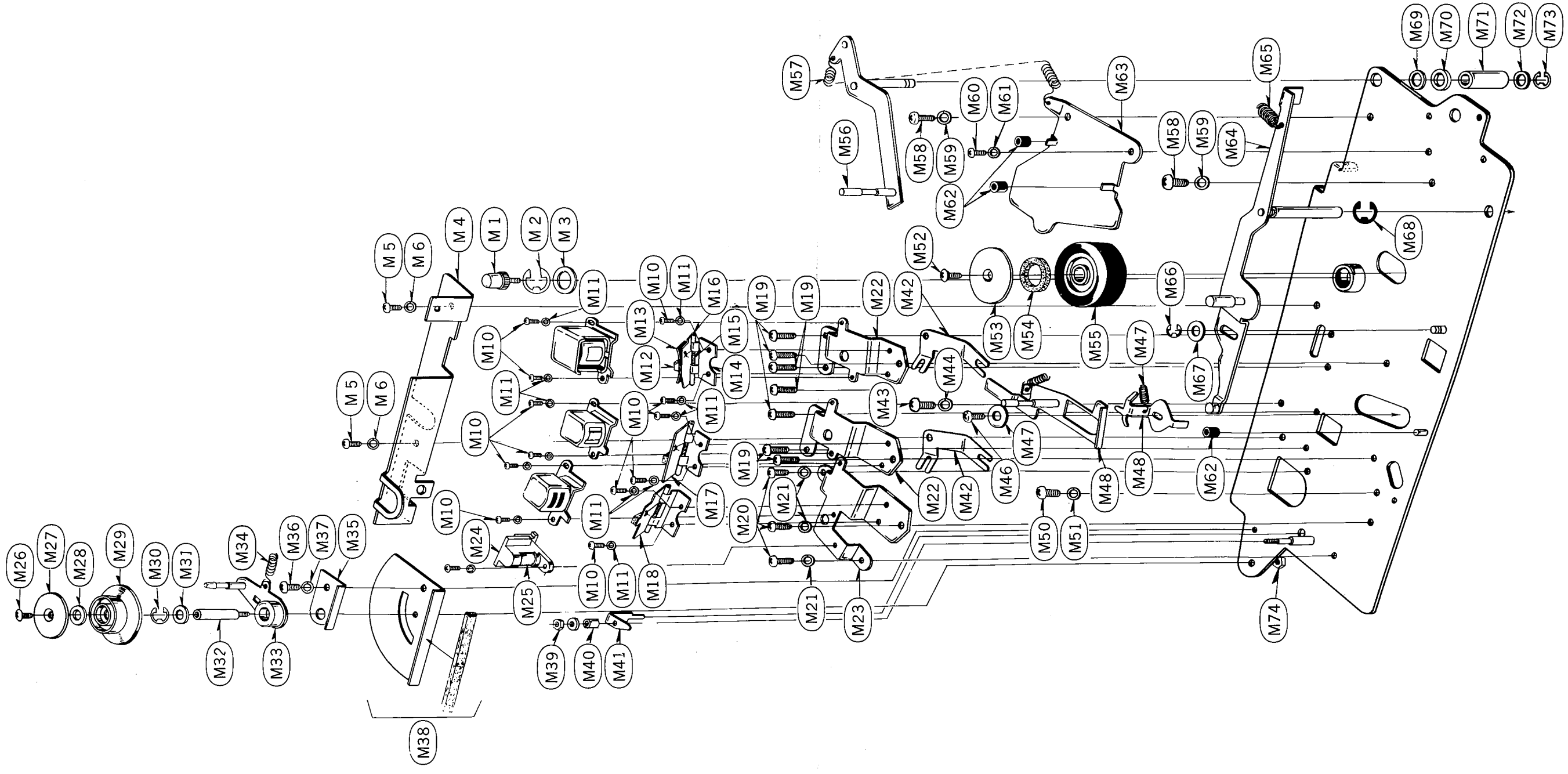


Modifications

1. M95-1～M95-5 remain unchaged.
2. M95-7 and M95-8 are discontinued.
3. No interchageability between new parts and former parts of Takeup Idler Lever Assembly (M95).
4. Changeover Time: Production in Nov., '70 onward.
   Serial No. SJ001403 onward.

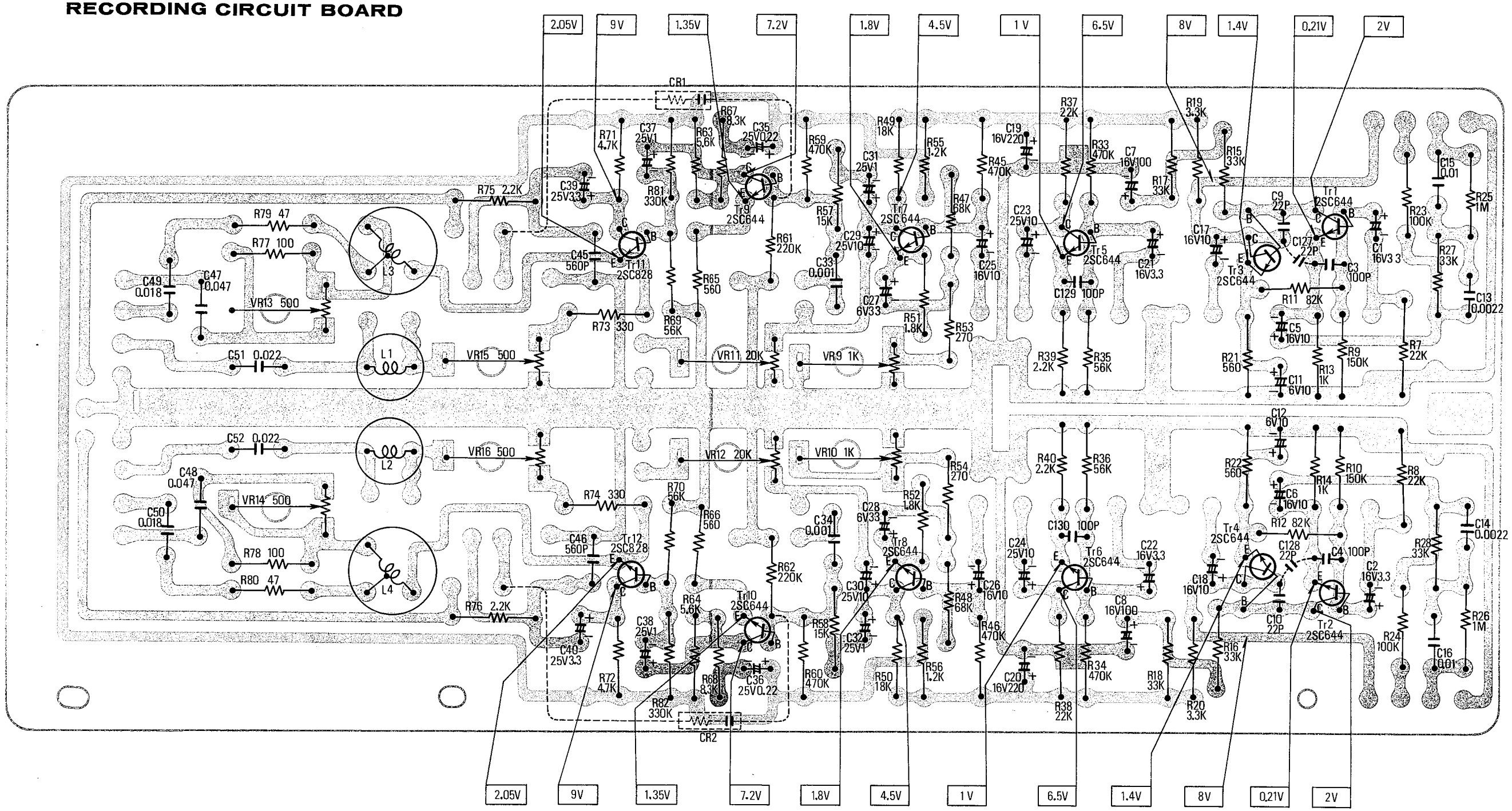


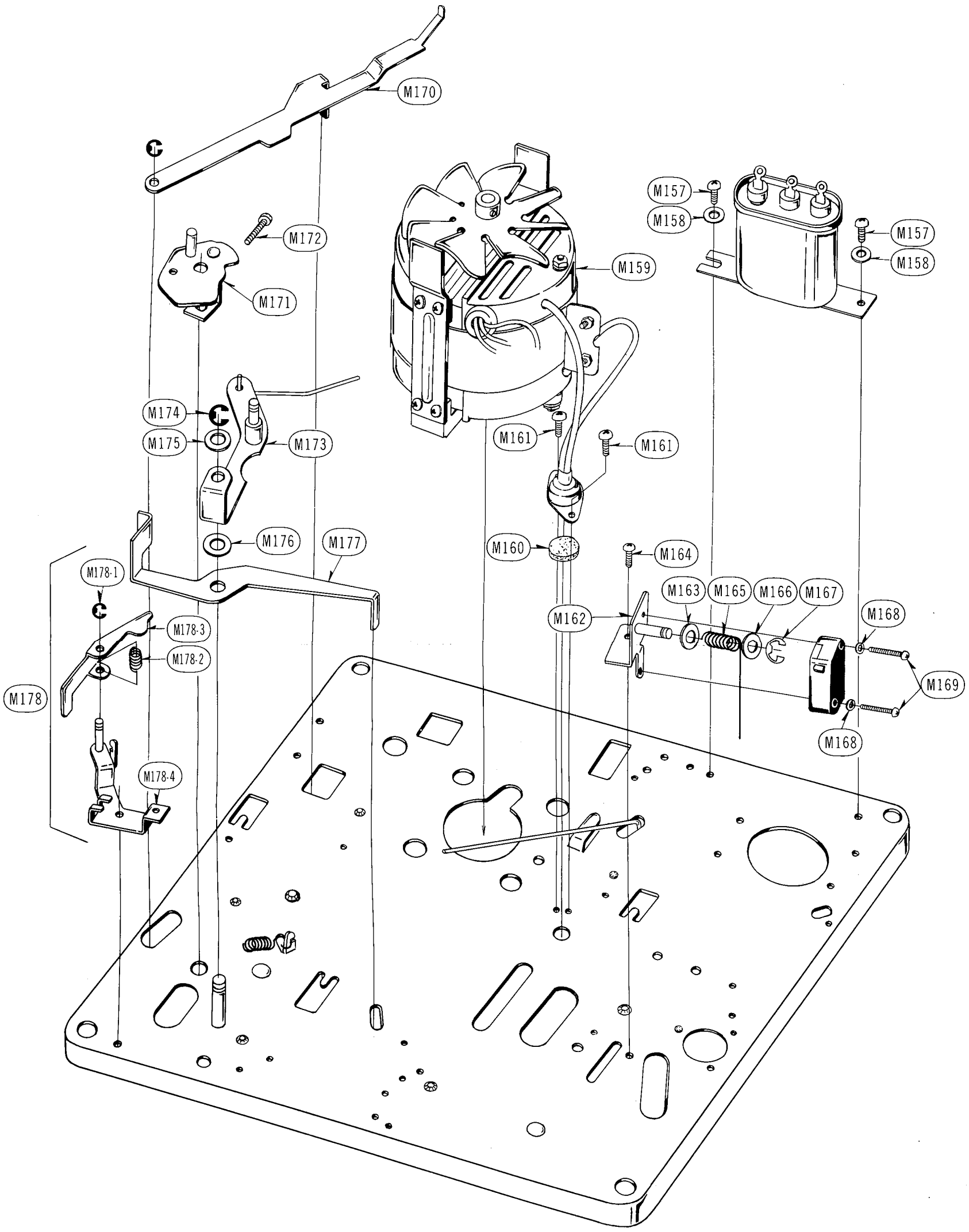
EXPLODED VIEWS



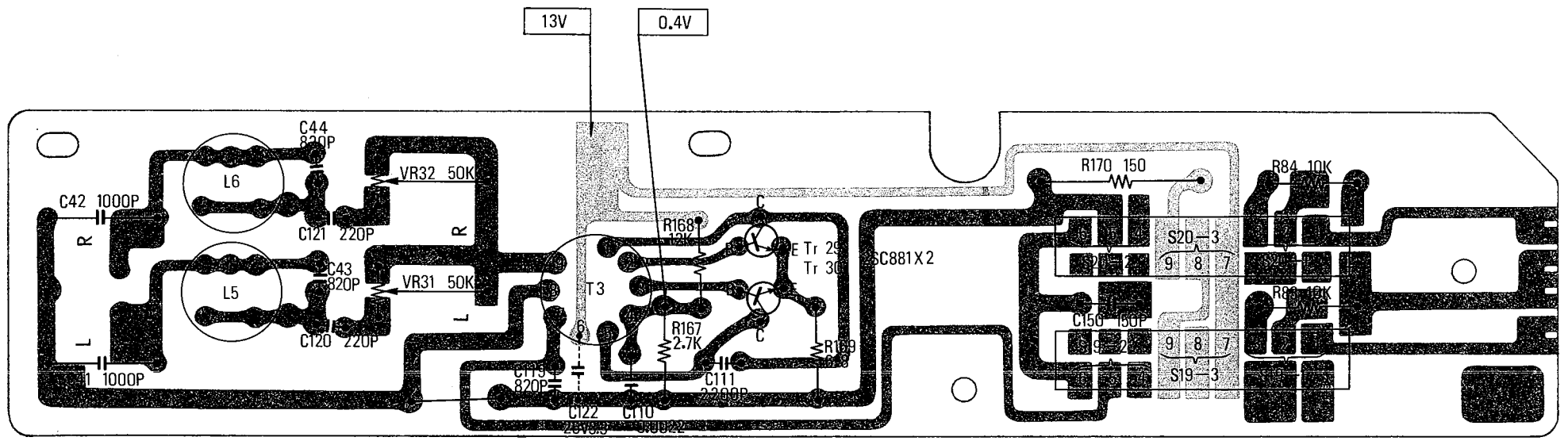
CIRCUIT BOARD

RECORDING CIRCUIT BOARD

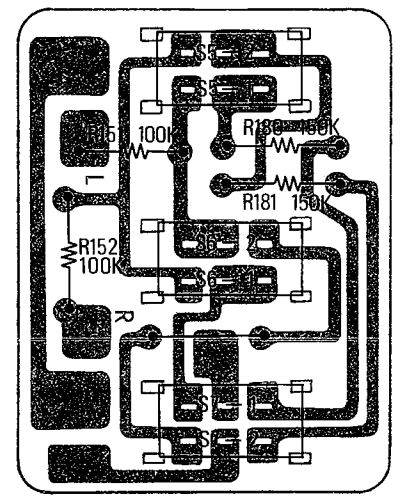



M170
M172
M171
M174
M175
M173
M176
M177
M178-1
M178-3
M178-2
M178
M178-4
M159
M161
M161
M160
M164
M162
M163
M165
M166
M167
M168
M169
M168
M157
M158
M157
M158

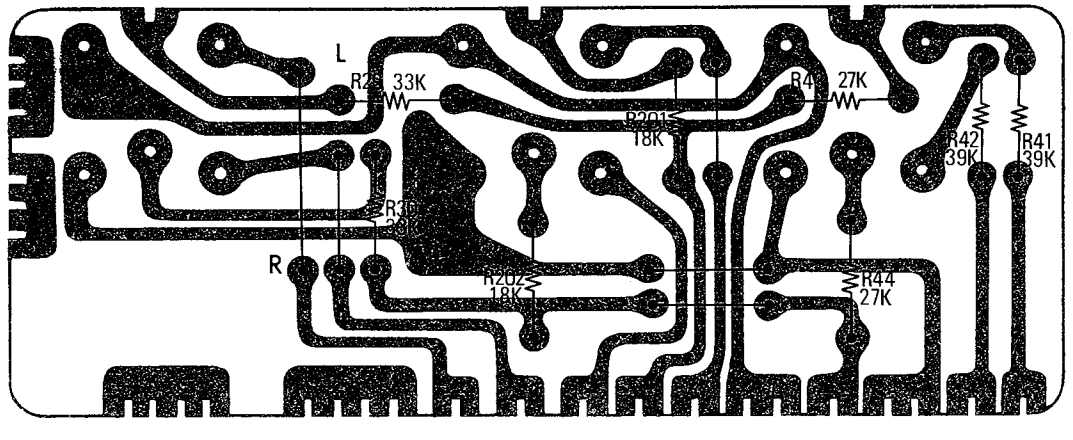
OSCILLATOR CIRCUIT BOARD



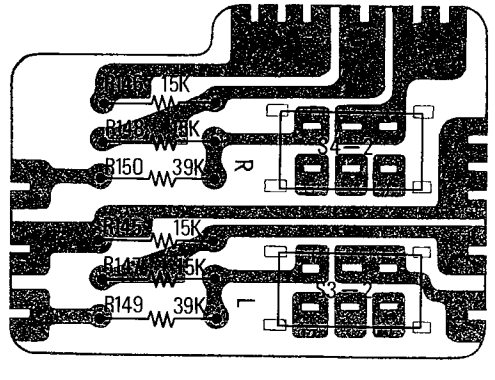
ECHO CIRCUIT BOARD



MIXING CIRCUIT BOARD



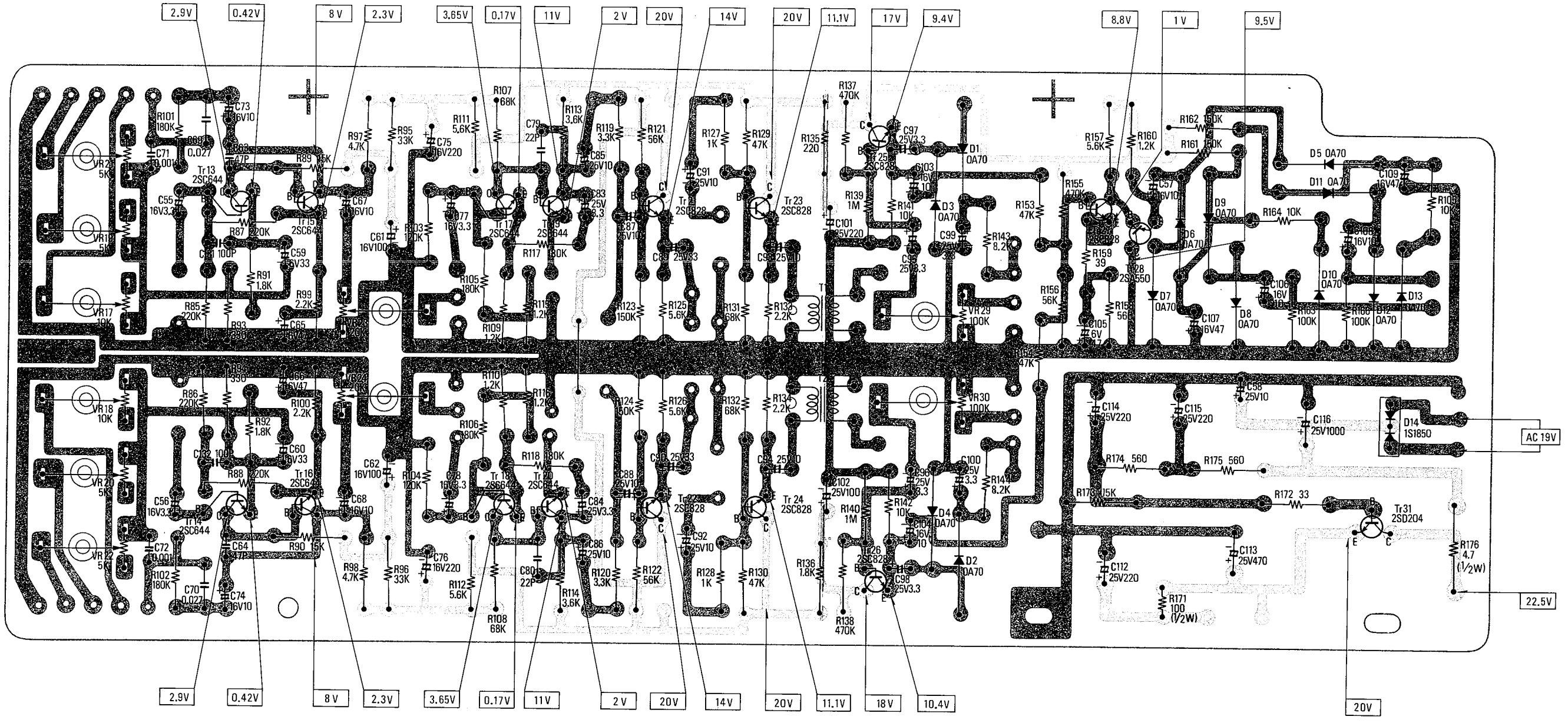
MONITOR CIRCUIT BOARD



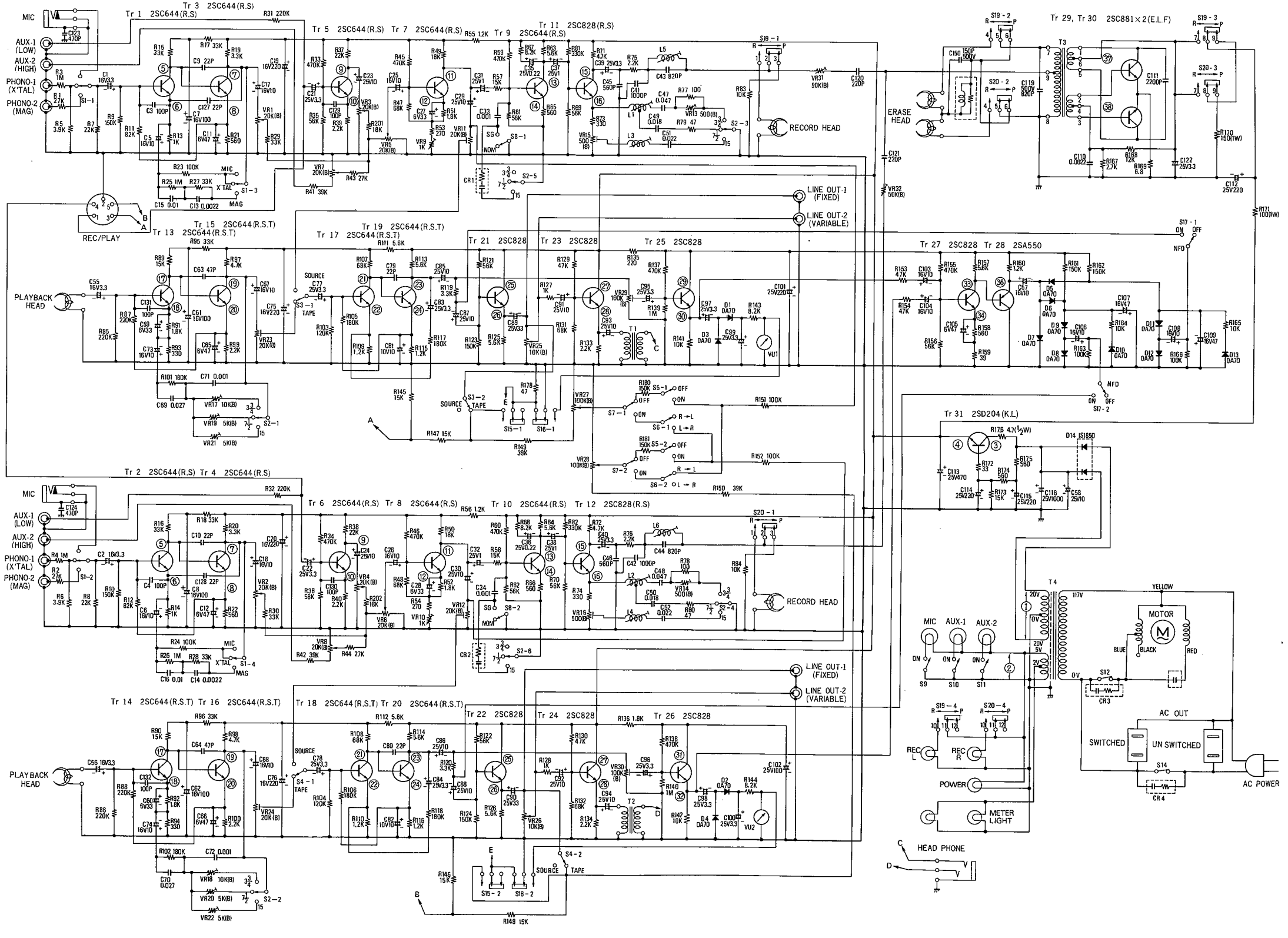
NOTE:

The circuit shown in red on the conductor side is +B circuit.
Values indicated in ▭ are DC voltages between the chassis and electrical parts.

PLAYBACK CIRCUIT BOARD



SCHEMATIC DIAGRAM MODEL RS-736US



STANDARD VOLTAGE/CURRENT CHART

Check Point	Voltage	Check Point	Voltage
①	AC 19 V	⑳	2.3 V
②	AC 5 V	㉑	3.65 V
③	22.5 V	㉒	0.17 V
④	20.0 V	㉓	11 V
⑤	2 V	㉔	2.0 V
⑥	0.21 V	㉕	20 V
⑦	8 V	㉖	14 V
⑧	1.4 V	㉗	20 V
⑨	6.5 V	㉘	11.1 V
⑩	1.0 V	㉙	17 V
⑪	4.5 V	㉚	9.4 V
⑫	1.8 V	㉛	18 V
⑬	7.2 V	㉜	10.4 V
⑭	1.35 V	㉝	8.8 V
⑮	9 V	㉞	1.0 V
⑯	2.05 V	㉟	9.5 V
⑰	2.9 V	㊱	13 V
⑱	0.42 V	㊲	0.4 V
⑲	8 V		

NOTE: All measurements are under no signal condition with volume at minimum position.
Use M-type VTVM for AC voltage measurements and P-type VTVM for DC voltage measurements.

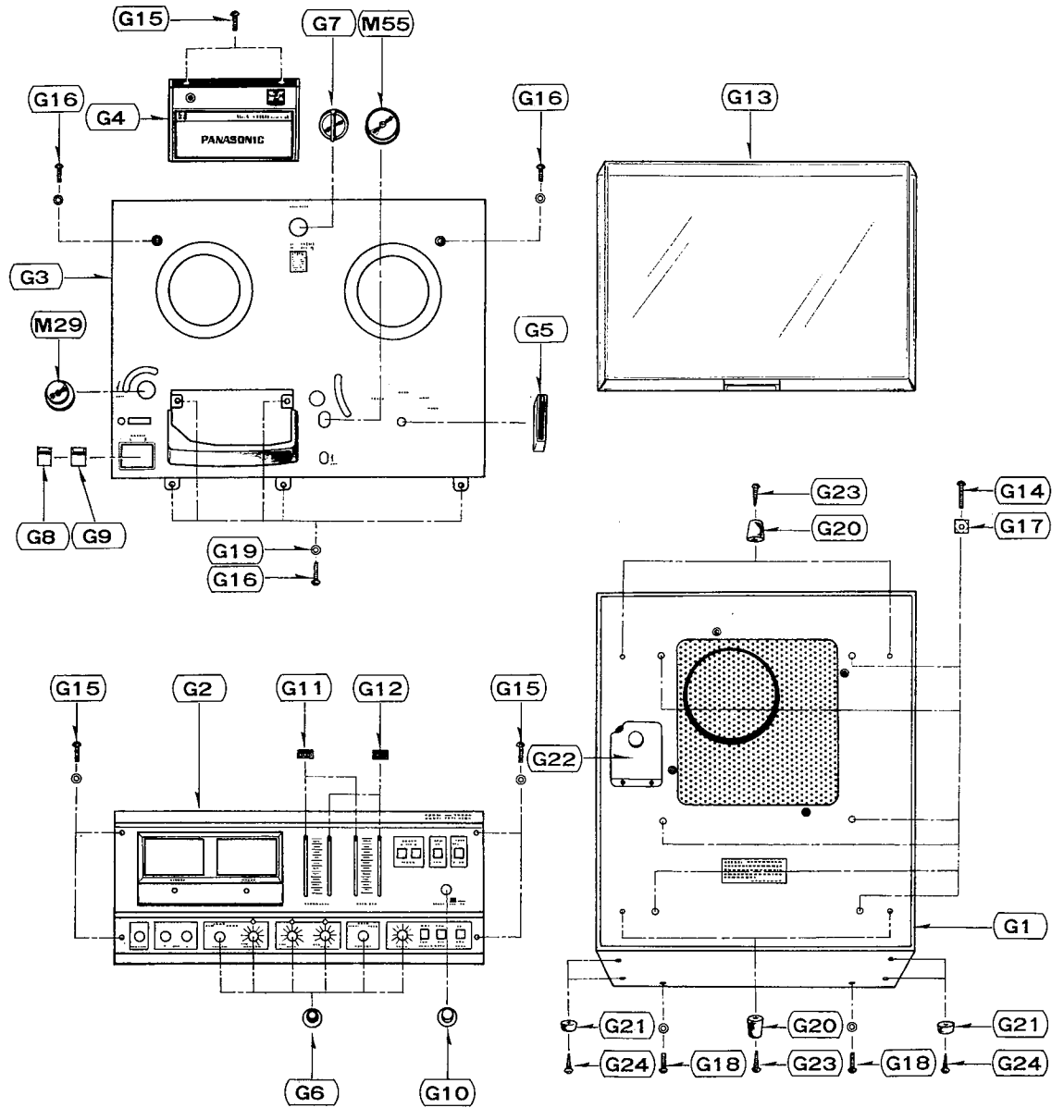
NOTE:

1. S1-1～S1-4 ..... Input Selector Switch.
2. S2-1～S2-6 ..... Equalizer Selector Switch (Shown in 7-1/2 ips).
3. S3-1, S3-2 ..... Left Monitor Selector Switch.
4. S4-1, S4-2 ..... Right Monitor Selector Switch.
5. S5-1, S5-2 ..... Echo ON/OFF Switch.
6. S6-1, S6-2 ..... Sound on Sound Selector Switch.
7. S7-1, S7-2 ..... Sound on Sound ON/OFF Switch.
8. S8-1, S8-2 ..... Tape Selector Switch.
9. S9 ..... Mixing Indication Switch (Coupled with VR1 and VR2).
10. S10 ..... Mixing Indication Switch (Coupled with VR3 and VR4).
11. S11 ..... Mixing Indication Switch (Coupled with VR7 and VR8).
12. S12 ..... Shut off Switch.
13. S14 ..... Power Switch.
14. S15-1, S15-2 ... Stop Switch.
15. S16-1, S16-2 ... Cue Switch.
16. S17-1, S17-2 ... NFD ON/OFF Switch.
17. S19-1～S19-4 ... Record/Playback Selector Switch (Left).
18. S20-1～S20-4 ... Record/Playback Selector Switch (Right).
19. Resistors are ohms (Ω), 1/4 watt unless specified otherwise.
    K=1,000Ω, M=1,000,000Ω.
20. Capacitors are microfarad (μF) unless specified otherwise.
    P=Micro-microfarads.
21. Encircled numbers (○) show the checkpoints for voltage and current.
    The values are marked in the standard voltage/current chart.

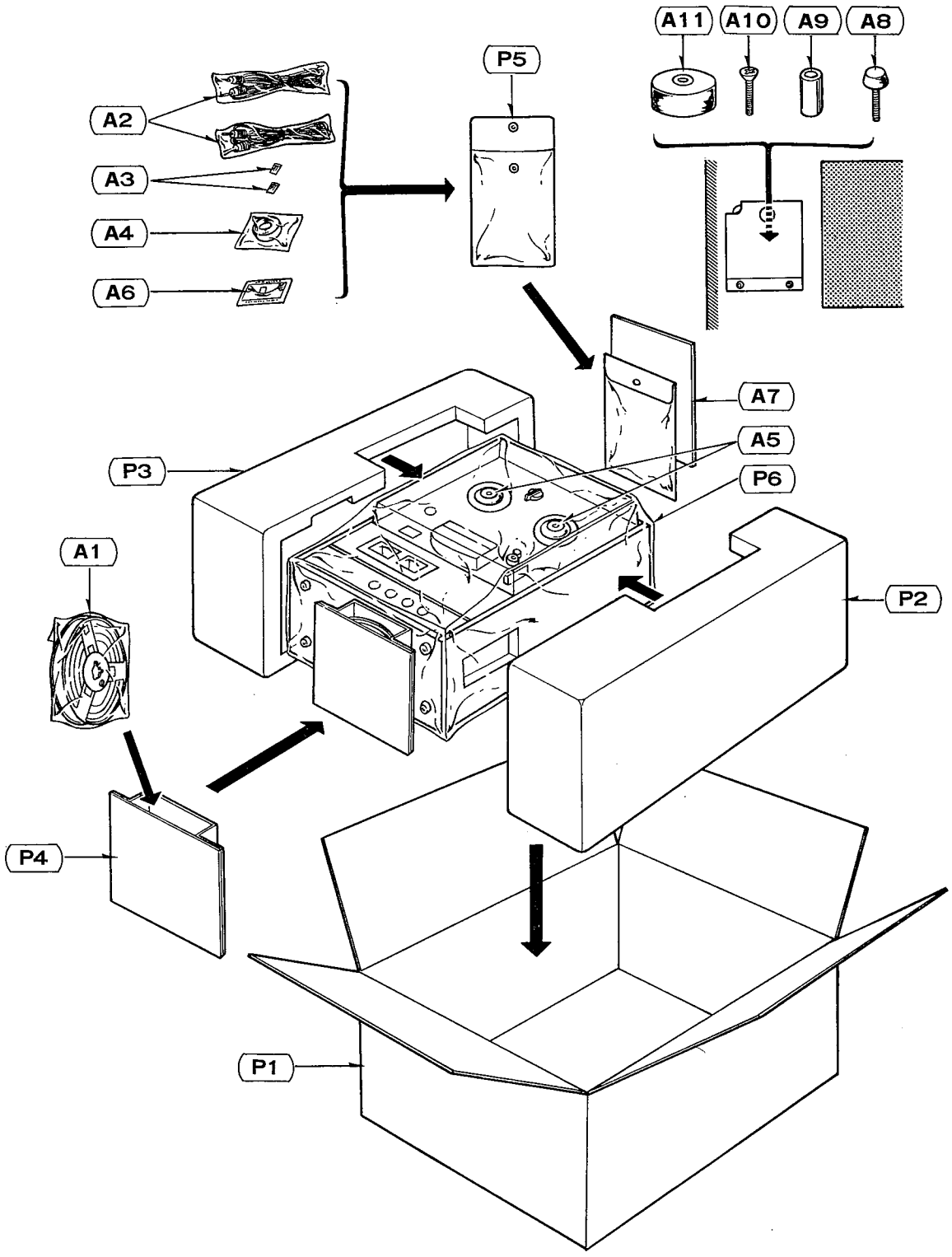
ADJUSTMENT POINTS

★ VR1, 2.....Microphone input level ②.
★ VR3, 4.....Aux-1 level ③.
★ VR5, 6.....Recording level ⑨.
★ VR7, 8.....Aux-2 level ⑧.
VR9, 10 .....Recording level.
VR11, 12 .....Recording monitor.
VR13, 14 .....Overall frequency response at 3-3/4 ips.
VR15, 16 .....Overall frequency response at 15 ips.
VR17, 18 .....Playback frequency response at 3-3/4 ips.
VR19, 20 .....Playback frequency response at 7-1/2 ips.
VR21, 22 .....Playback frequency response at 15 ips.
VR23, 24.....Playback line output level.
★ VR25, 26.....Line output ⑩.
★ VR27, 28.....Echo level ⑥.
VR29, 30.....VU meter.
VR31, 32.....Bias current.
L1, 2.....Overall frequency response at 7-1/2 ips
L3, 4.....Overall frequency response at 15 ips.
L5, 6.....Bias leakage.
For volumes marked ★, knobs are provided on the front panel so that the adjustment can be made from the outside. Encircled numbers correspond to reference numbers in the location of parts (Page 1).

CABINET PARTS



COMPONENT PACKING



Printed in Japan