

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	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
Power Consumption:	Approx. 50 W	Wow & Flutter:	Below 0.09% at 15 ips Below 0.09% at 7-1/2 ips Below 0.13% at 3-3/4 ips
Motor:	4 poles synchronous with center floating motor	Inputs:	2 "MIC" inputs 20 K Ω 2 "PHONO-1" inputs 1 M Ω 2 "PHONO-2" inputs 47 K Ω 2 "AUX-1" inputs 250 K Ω 2 "AUX-2" inputs 50 K Ω
Recording System:	AC bias 200 kHz	Outputs:	2 "LINE OUT-1" outputs 1 V 2 "LINE OUT-2" outputs 1 V 1 "HEADPHONE" output 55 mV
Erasing System:	AC erase	Record/Playback Connector:	CES standard
Track System:	4 track 2 channel system	Dimensions:	17" (W) $\times$ 8-1/2" (H) $\times$ 18-1/2" (D)
Tape Speeds:	3 speeds, 15, 7-1/2 and 3-3/4 ips	Weight:	33 lbs
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)		

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LOCATION OF PARTS

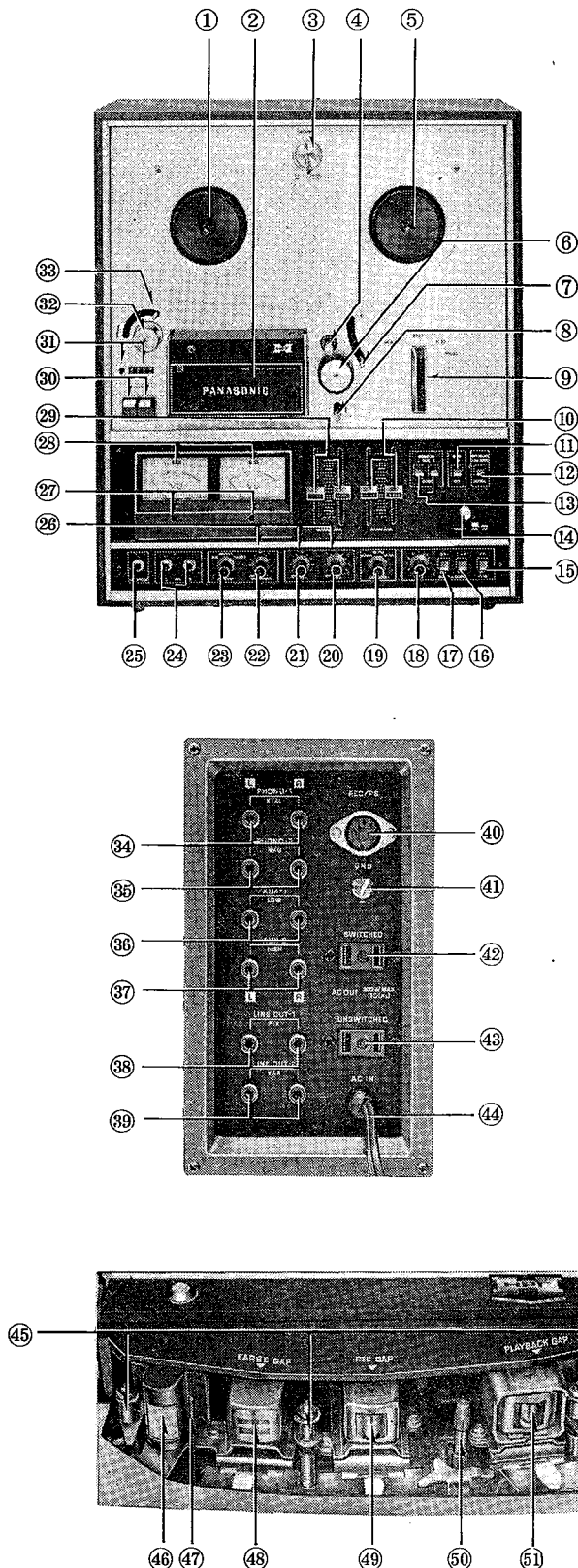


Fig. 1

- 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
- 1 Playback Head

DISASSEMBLY INSTRUCTIONS

HOW TO REMOVE PANEL

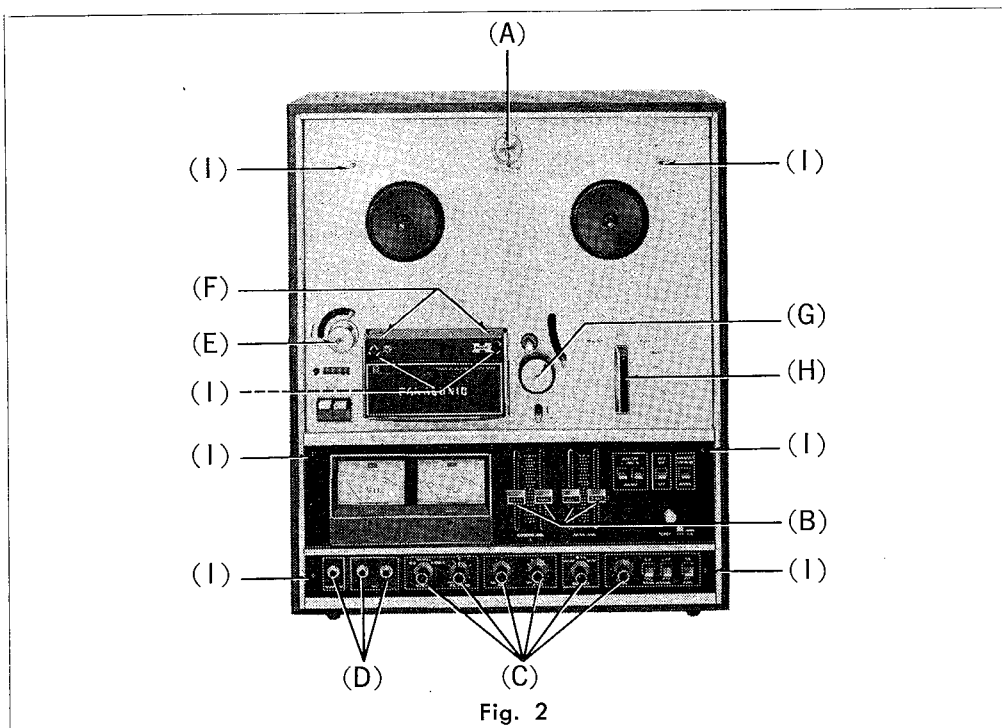


Fig. 2

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

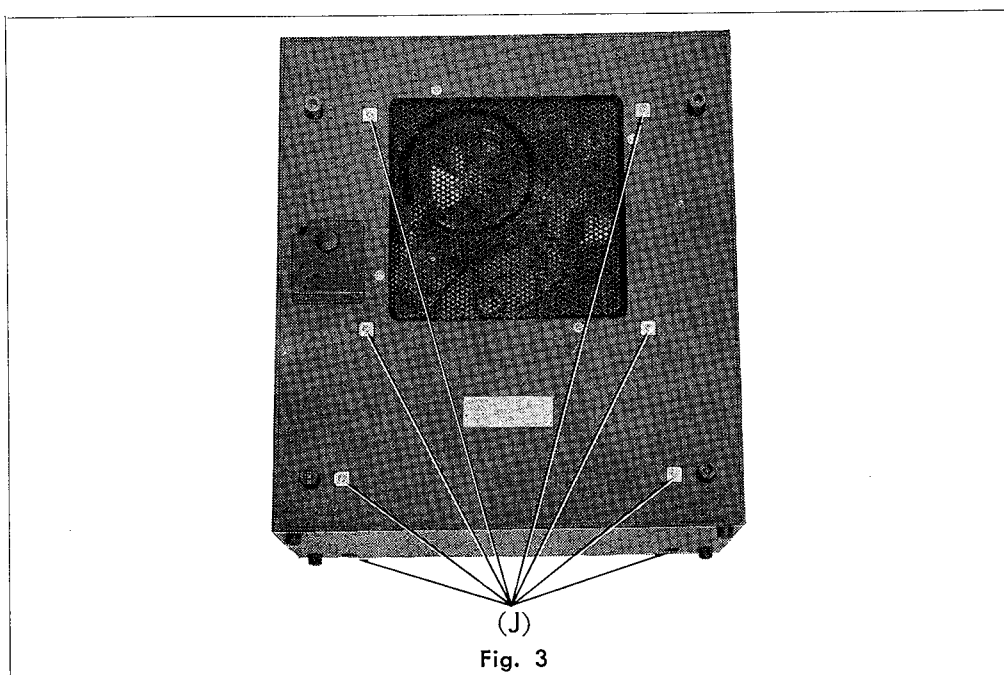


Fig. 3

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

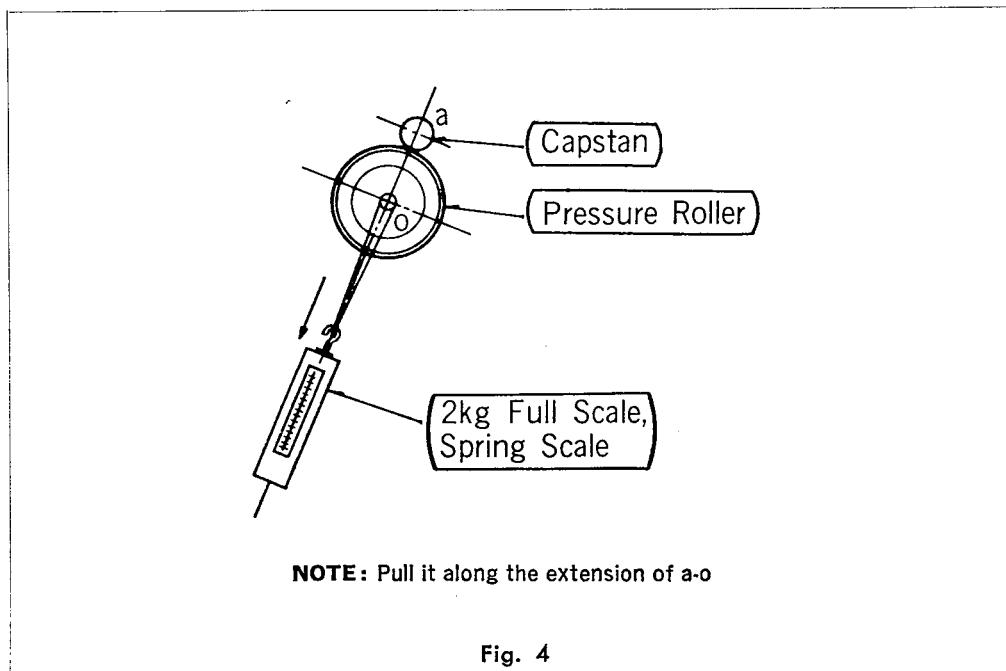
Shaft, and read the value on the Spring Scale when the Tape stops running or when the Pressure Roller moves away from the Capstan.

4. The standard pressure (value on the Spring Scale) is: (1.3~1.7 kg)

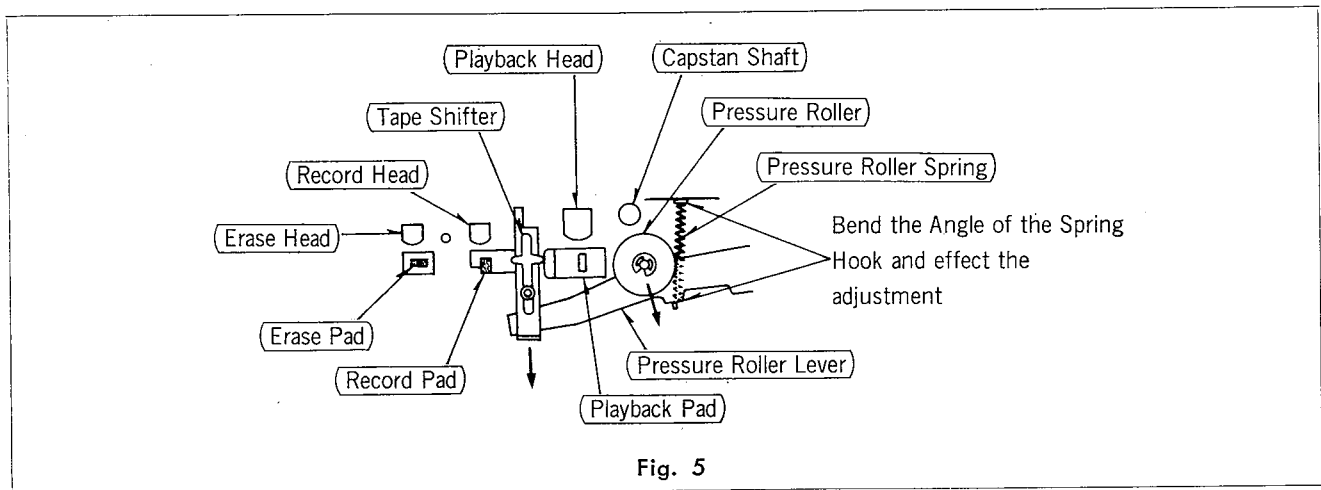
NOTE: The Capstan and the Pressure Roller should be in parallel. If they are not in parallel, the Tape moves up and down between the Pressure Roller and the Capstan, or only a side of the Tape is tensioned. The adjustment is made by correcting the bent Pressure Roller Shaft.

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)



Make the adjustment by use of elongation and contraction | of the Pressure Roller Lever Spring. (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

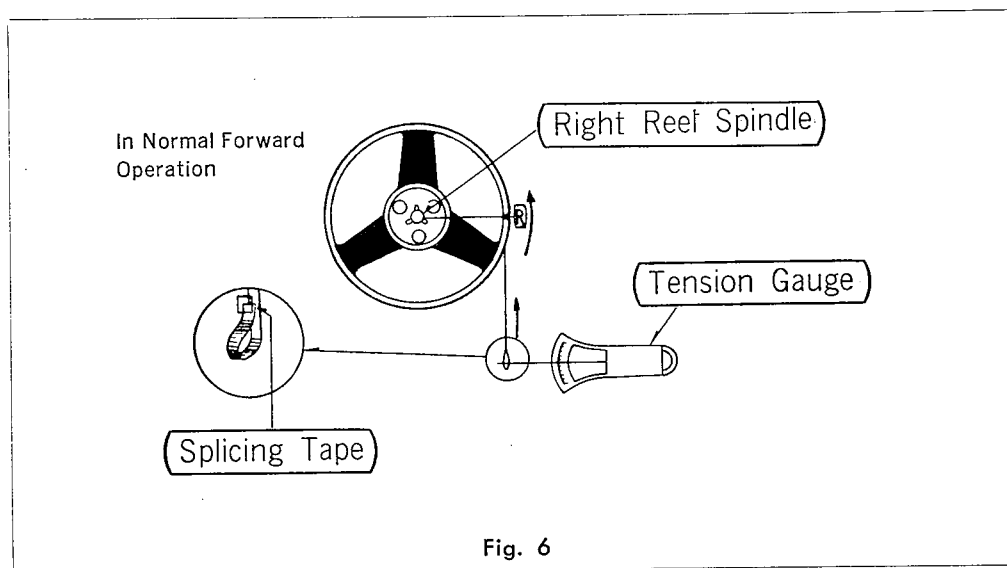
1. Place a full reel of 7" Tape on the Takeup Reel Table and make a loop of the Tape end by using Splicing Tape.
2. Hook the Tension Gauge to the loop of Tape end and unreel about 30" of Tape.

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)



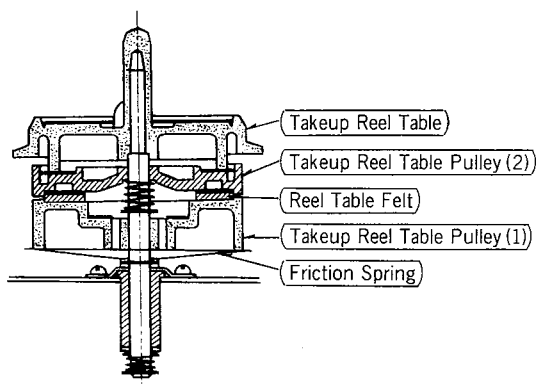


Fig. 7

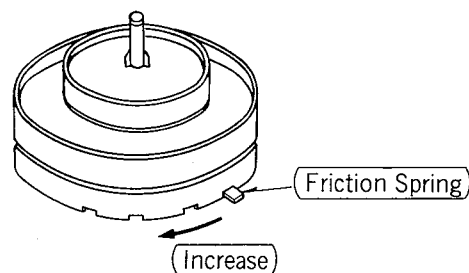


Fig. 8

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 increase 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

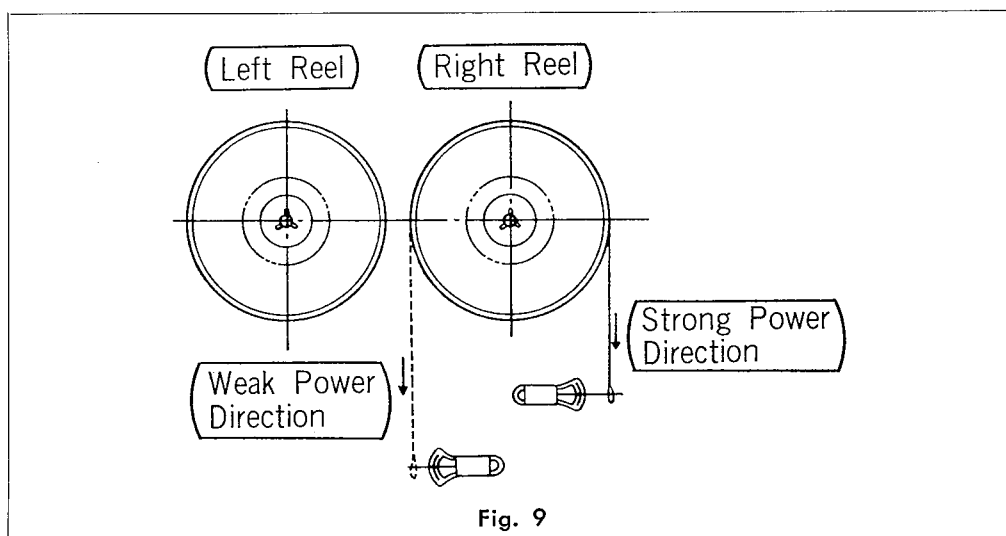


Fig. 9

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

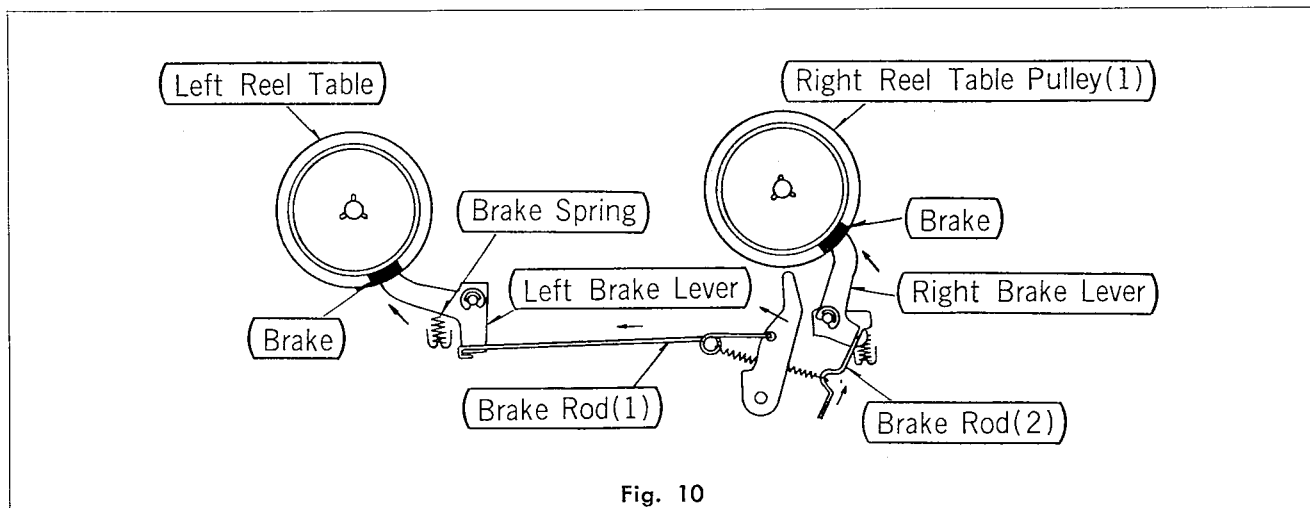
Specified Value: Strong Power Direction 100~250 g
Weak Power Direction 40~70 g

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.



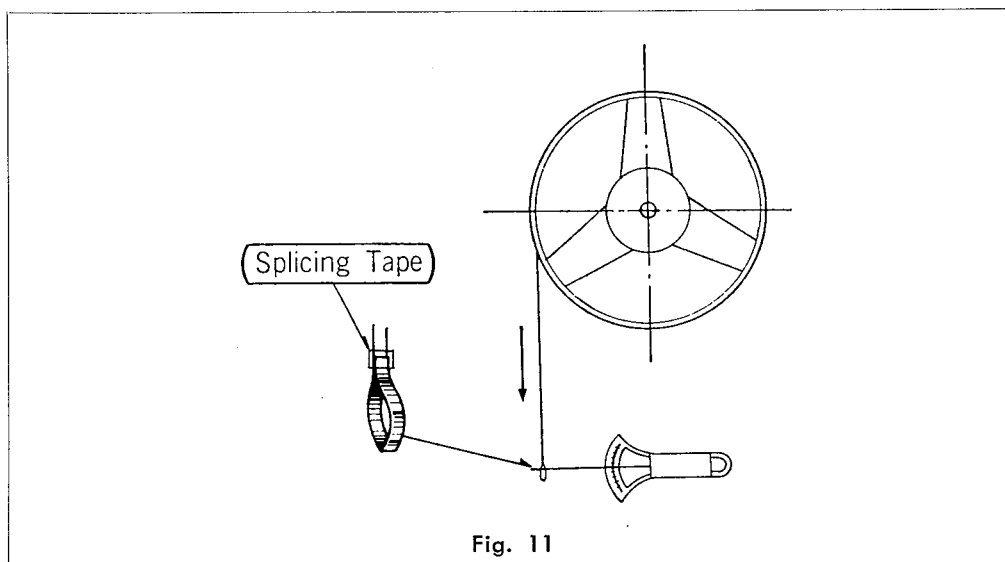
Adjusting Method:

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



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 the Tape, 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 Tension 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. Takeup 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. If 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:

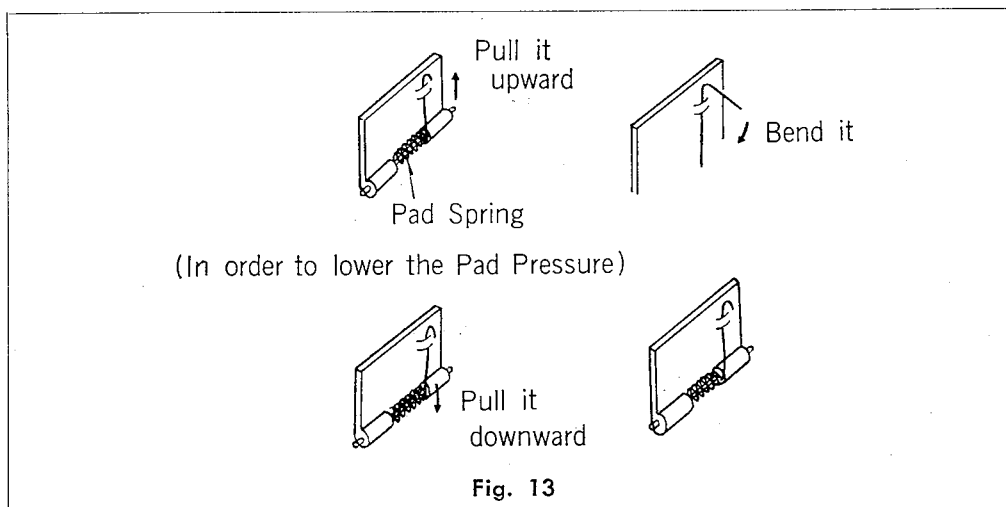
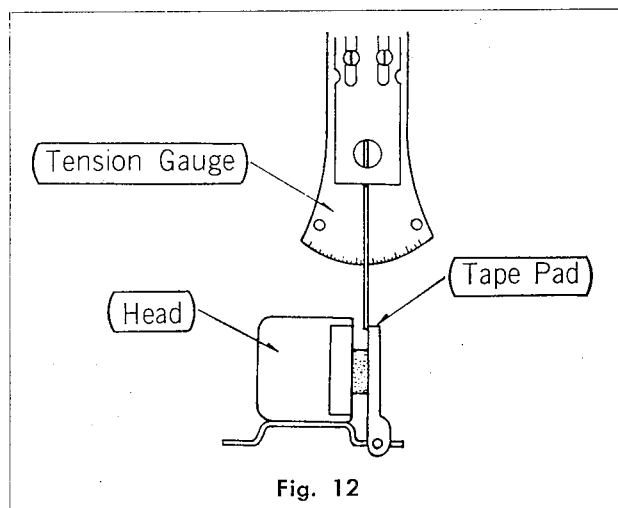
20~30 gr

Pad Pressure for Erasing: 15~25 gr

Adjusting Method:

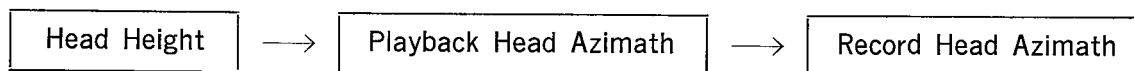
Adjust the Pad Spring

(In order to increase the Pad Pressure)



HEAD ADJUSTMENTS

ADJUSTING ORDER



HEAD HEIGHT

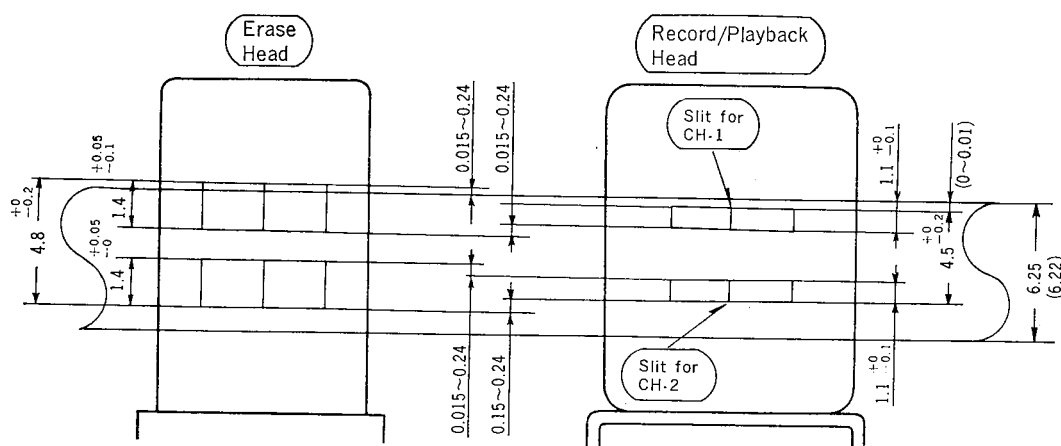


Fig. 14

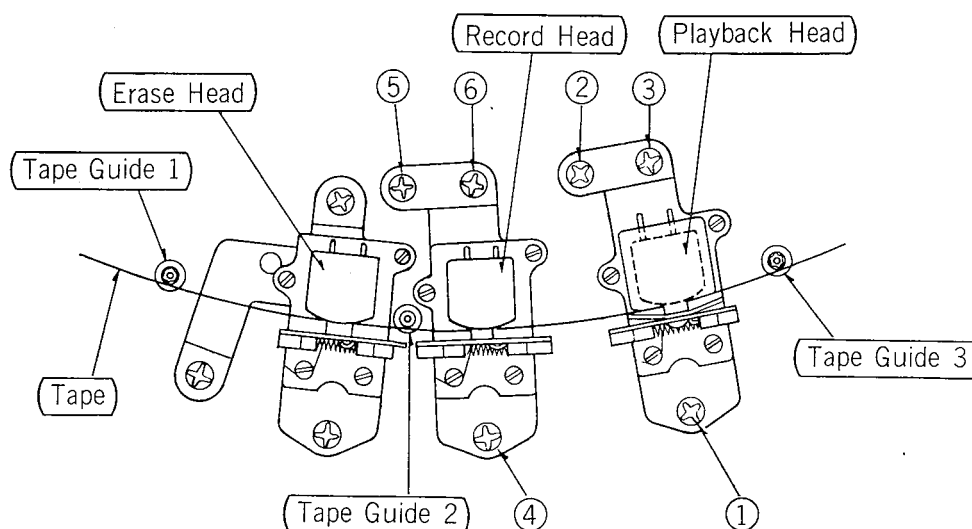


Fig. 15

1. Regarding the relative 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.

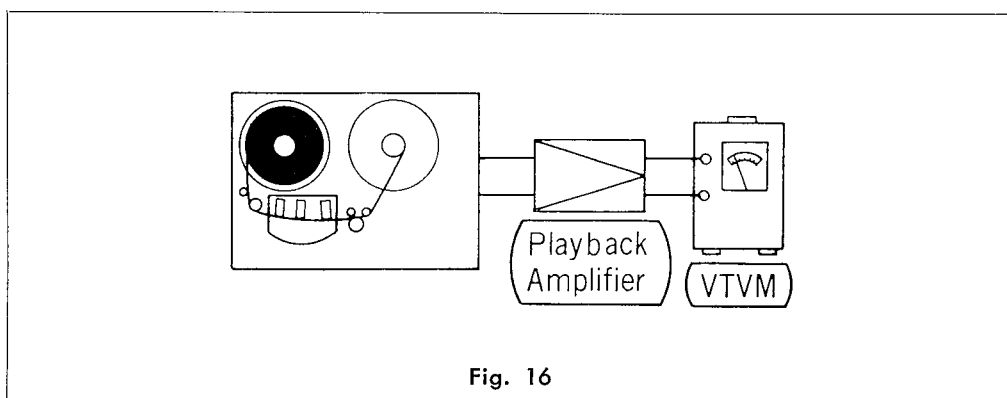


Fig. 16

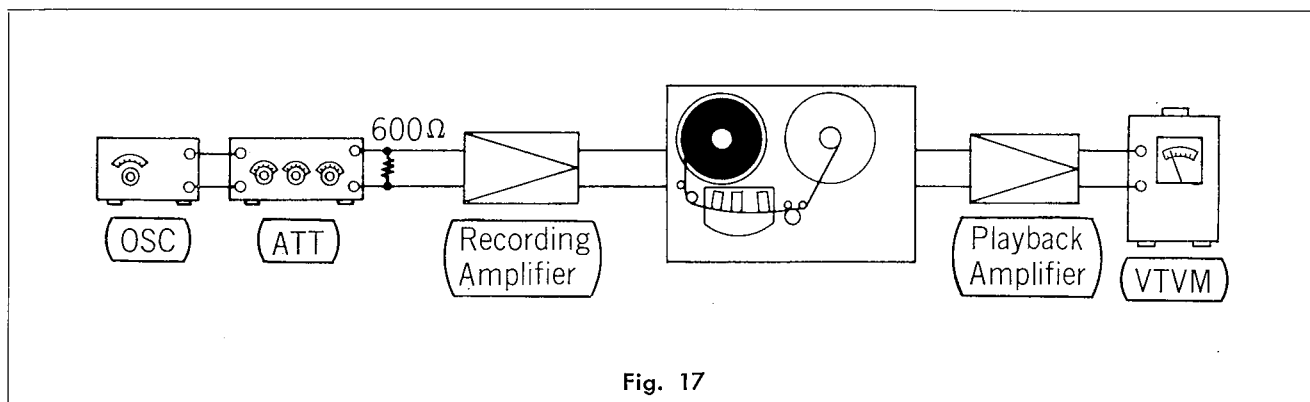


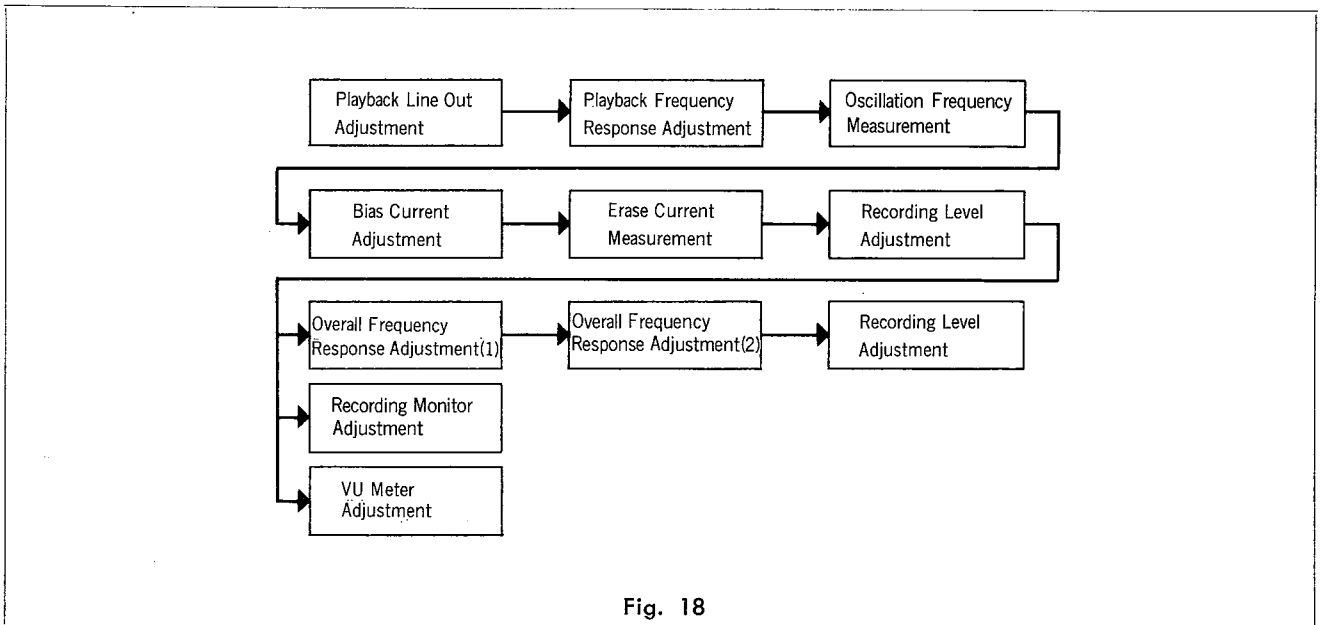
Fig. 17

AMPLIFIER ADJUSTMENTS

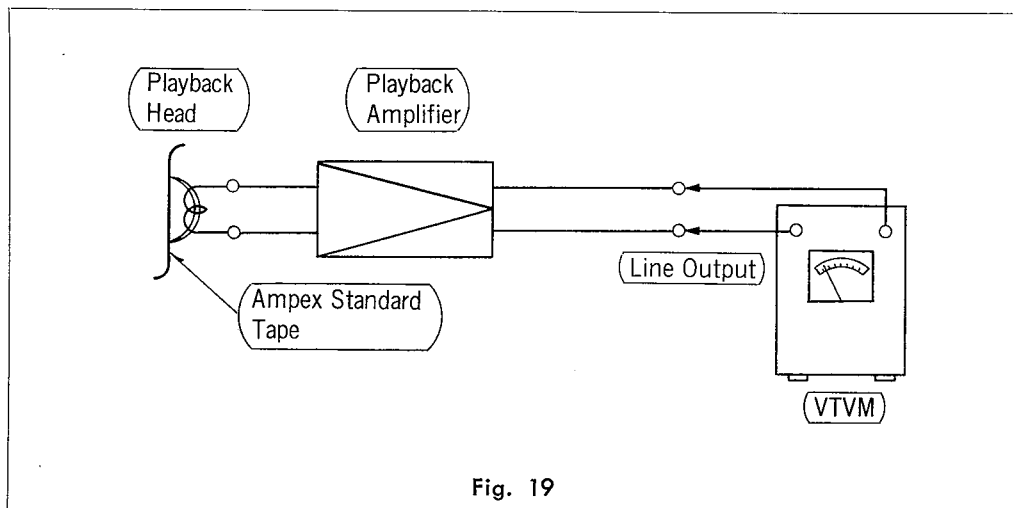
After adjusting the head, adjust the amplifier section according to the following procedure, and then adjust the overall frequency response with the tape speed set at 3-3/4 ips and then again at 15 ips.

Especially when the head, the recording equalizer/playback equalizer adjustment volume and coil, etc. are replaced, make the general adjustments listed below.

ADJUSTMENT ORDER



PLAYBACK LINE OUTPUT



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

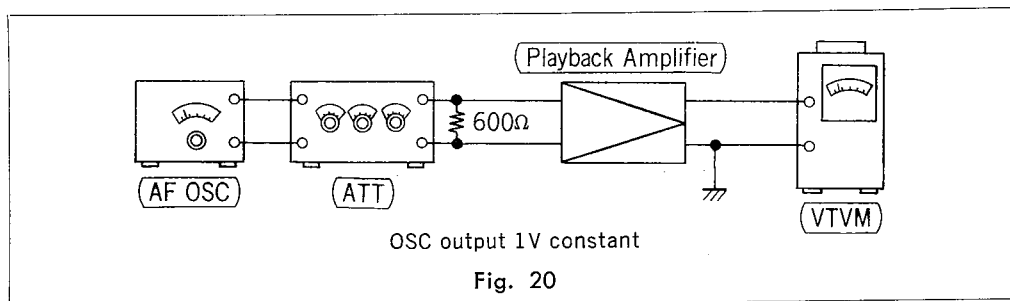
Instruments required: VTVM, Ampex standard tape for frequency response test.

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

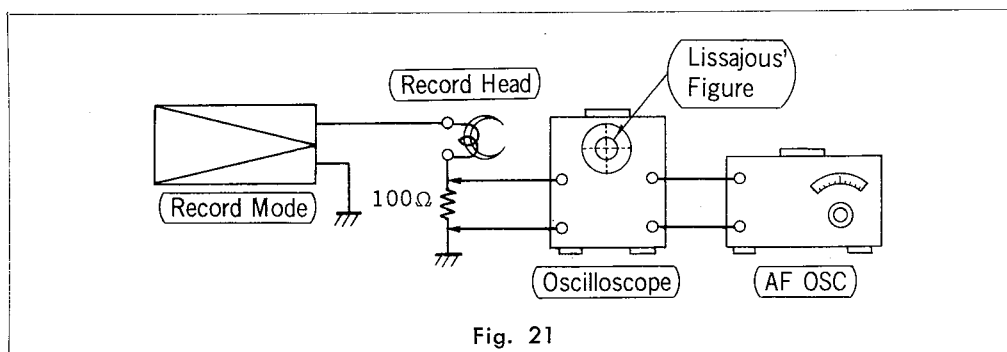


Instruments required: VTVM, oscillator, attenuator
Due to lack of a test tape for 15 ips, adjust the frequency response of the playback amplifier when the tape speed is 15 ips.

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



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.

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

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

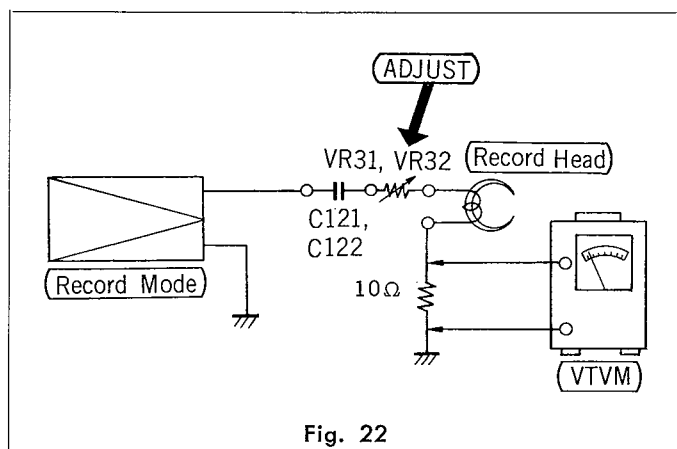


Fig. 22

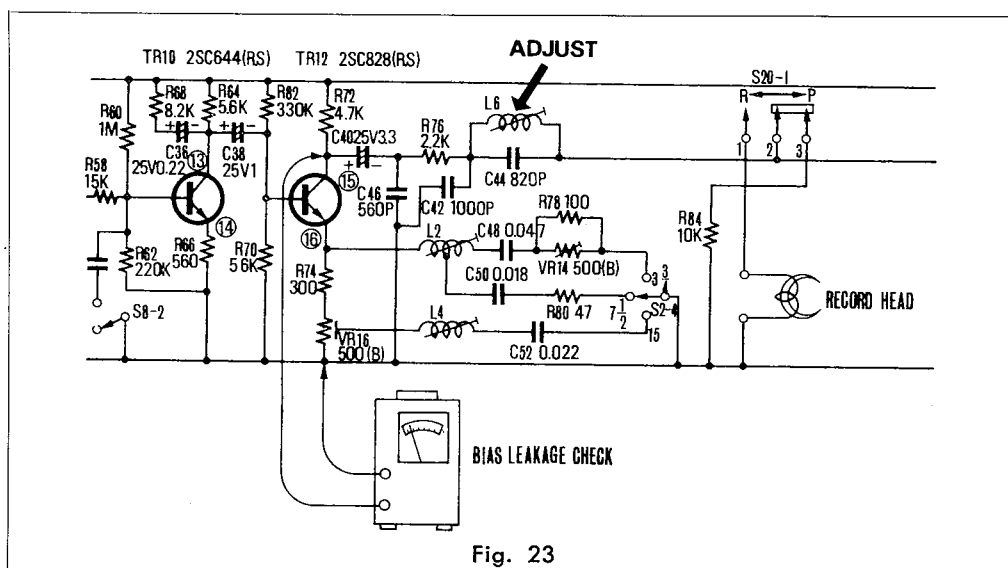


Fig. 23

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.

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

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

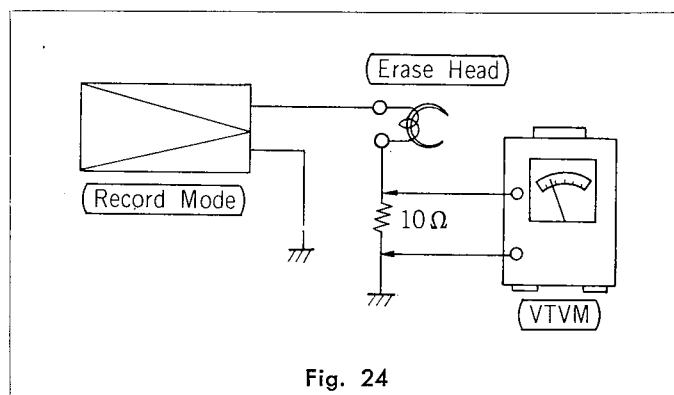


Fig. 24

RECORDING LEVEL ADJUSTMENT & VU METER ADJUSTMENT

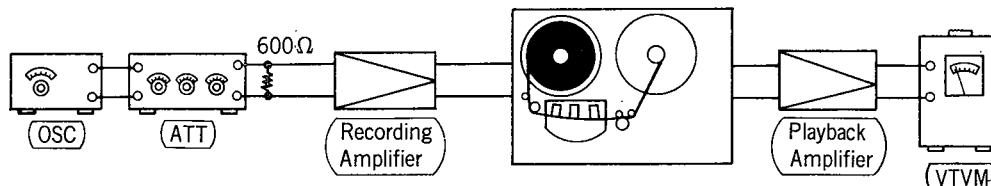


Fig. 25

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

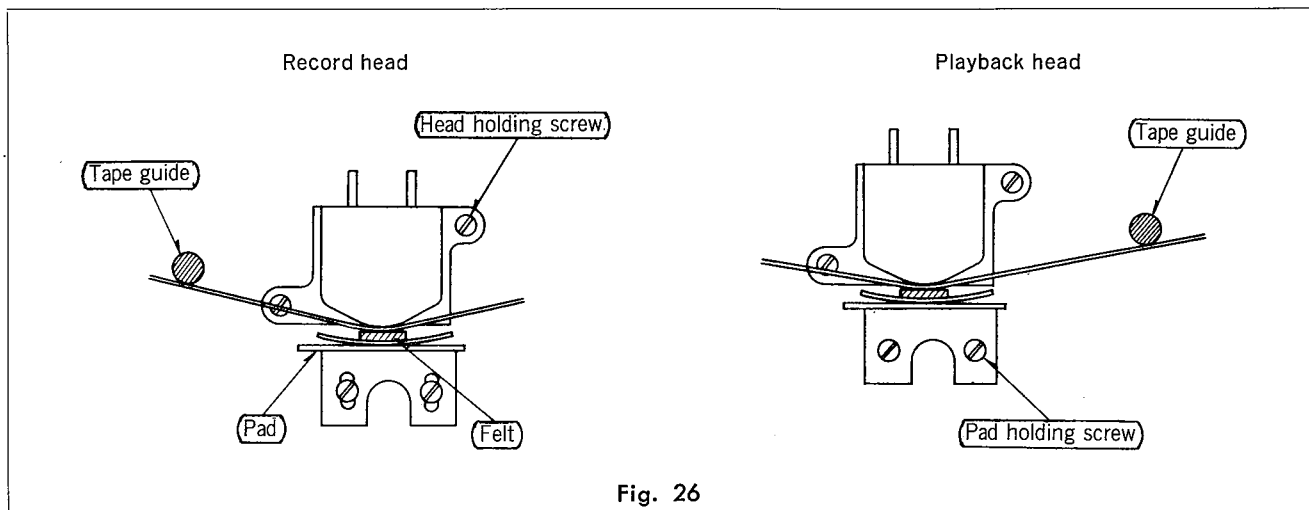


Fig. 26

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 $\angle A$ and $\angle B$, shown in Fig. 27, and equal.
 $\angle A = \angle B$
 - 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.

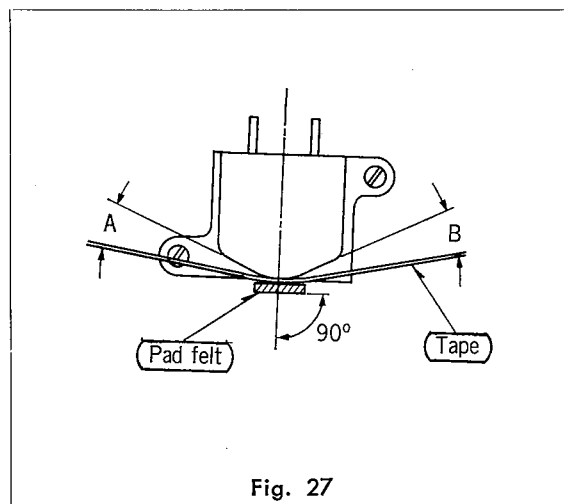


Fig. 27

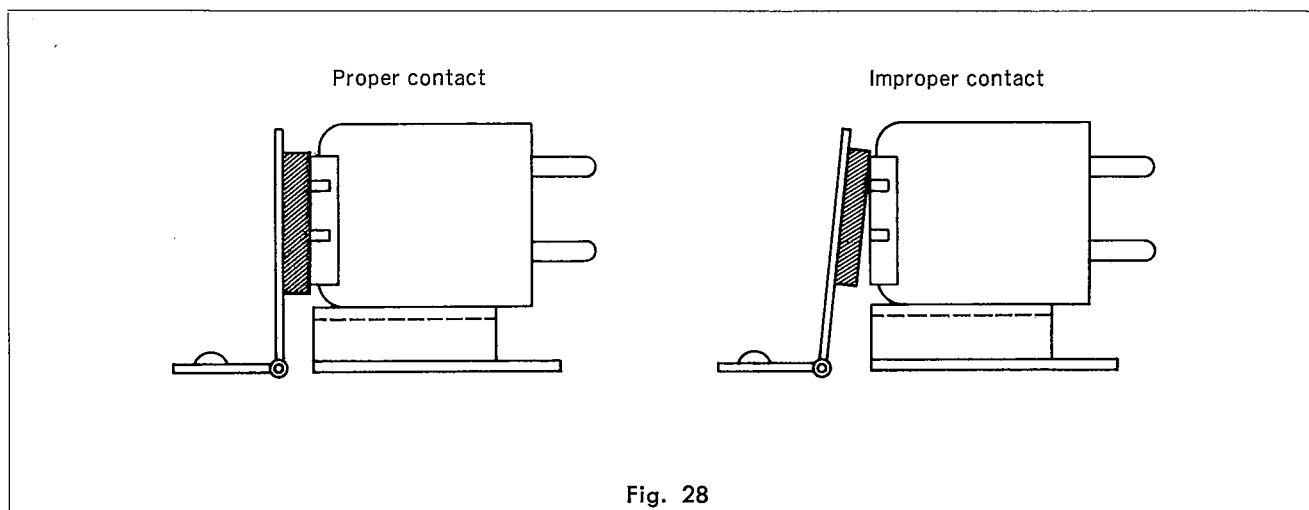


Fig. 28

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 holding screw, shown in Fig. 26, move the head to the right or the left, as shown in Fig. 30 and, when the play-back 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)

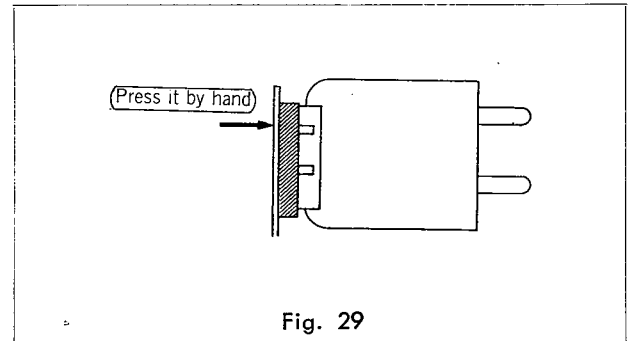


Fig. 29

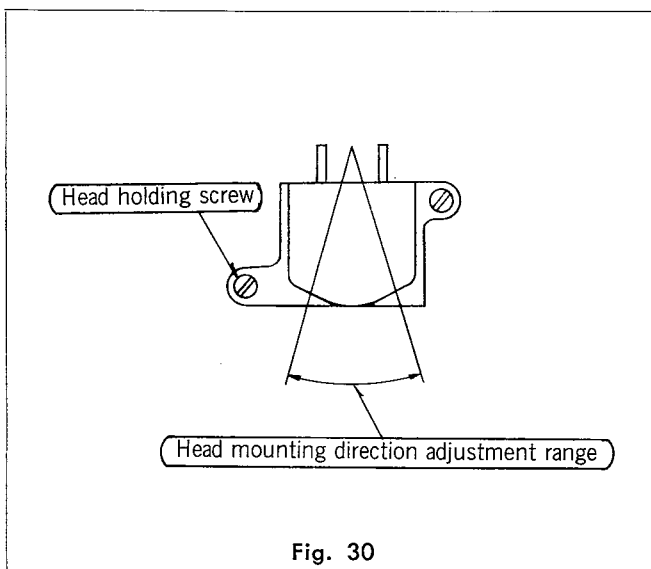


Fig. 30

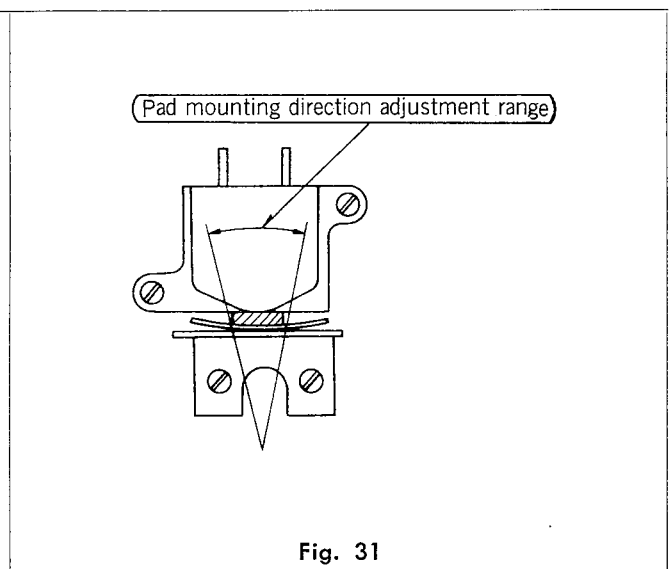
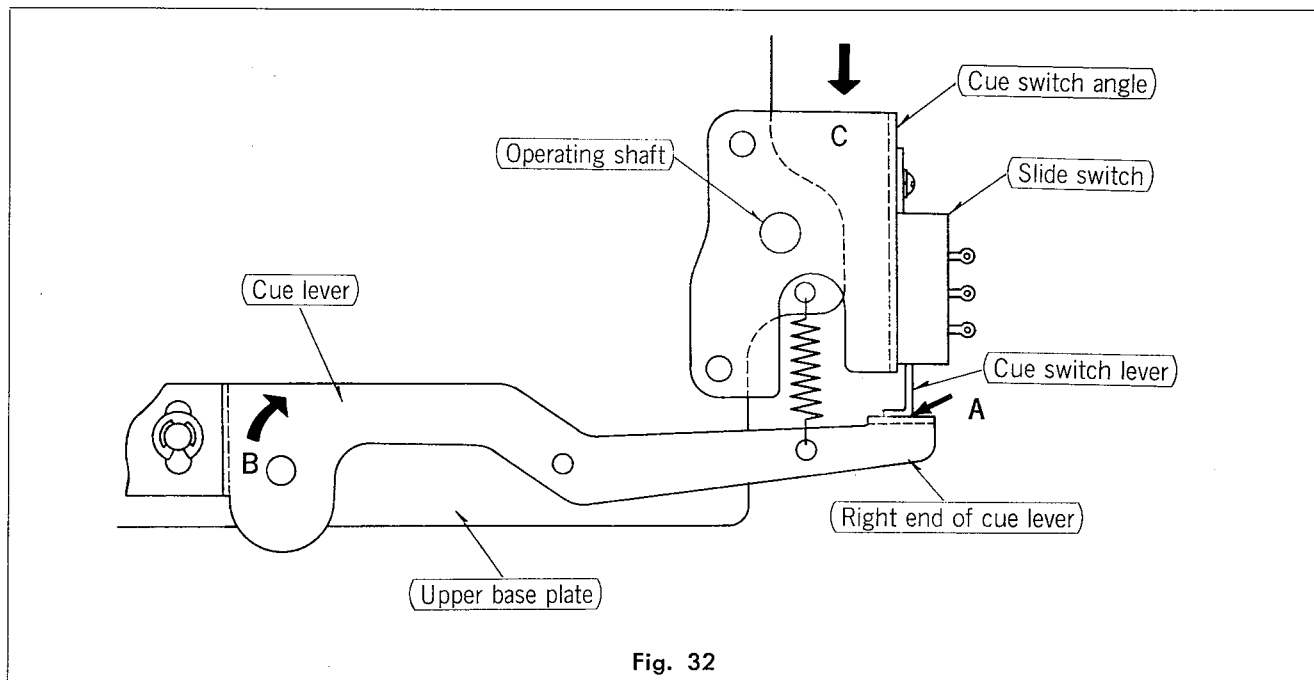


Fig. 31

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.



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.

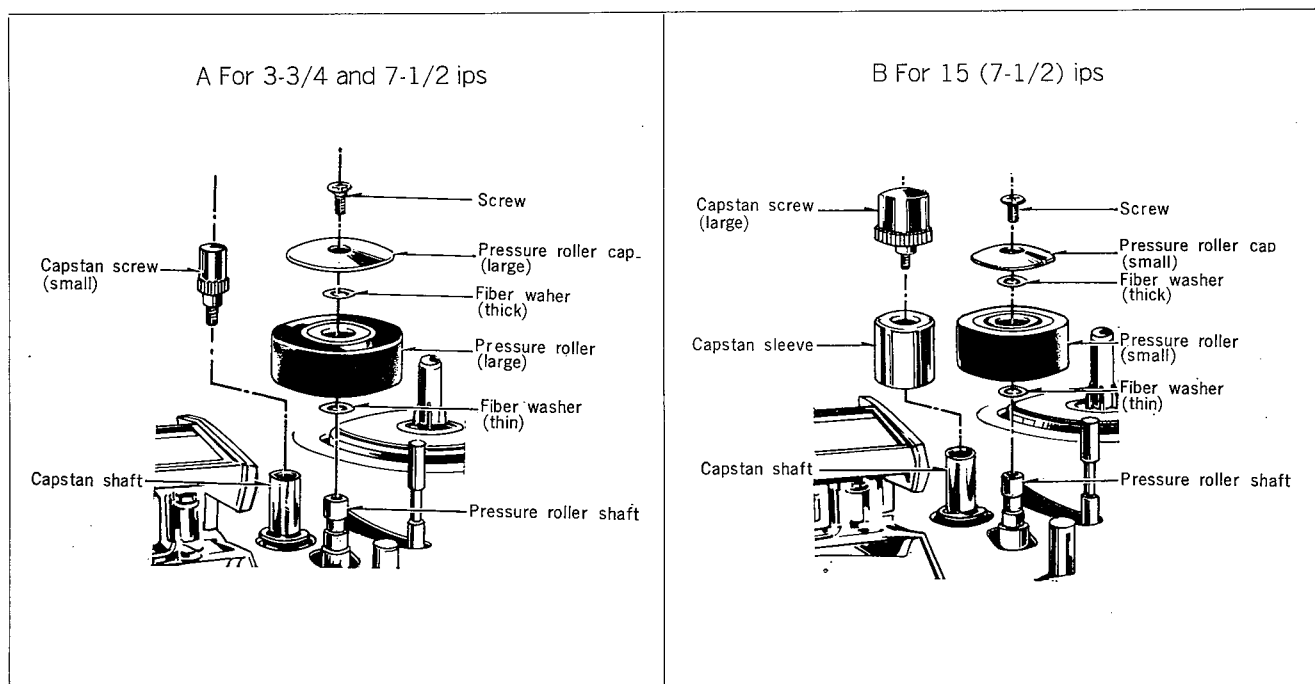
1. Remove the capstan screw (small).
2. Remove the screw at the center of the pressure roller, remove the pressure roller cap (large), fiber washer (thick), the pressure roller (large), and the fiber washer (thin).
3. Remove, from the adaptor compartment at the rear of the unit, the capstan screw (large), 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.



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

Ref. No.	Description	Part No.
R103, 104 ...	Carbon Resistor	ERD14TJ124V
R129, 130, 153, 154 ...	Carbon Resistor	ERD14TJ473V
R135 ...	Carbon Resistor	ERD14TJ221V
R145, 146, 147, 148 ...	Carbon Resistor	ERD14TJ153A
R151, 152 ...	Carbon Resistor	ERD14TJ104A
R159 ...	Carbon Resistor	ERD14TJ390V
R167 ...	Carbon Resistor	ERD14TJ272A
R168 ...	Carbon Resistor	ERD14TJ123A
R169 ...	Carbon Resistor	ERD14TJ6R8A
R170 ...	Solid Resistor	ERC1GK151
R171 ...	Solid Resistor	ERC1GK101
R172 ...	Carbon Resistor	ERD14TJ330V
R176 ...	Solid Resistor	ERC12GM4R7

VARIABLE RESISTORS

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

CAPACITORS

C1, 2, 55, 56 ...	Aluminum Capacitor	3.3 μ F	ECEA16V3R3
C3, 4, 129, 130, 131, 132 ...	Ceramic Capacitor	100 pF	ECCD05101K

Ref. No.	Description	Part No.
C5, 6, 17, 18, 25, 26, 57, 67, 68, 73, 74, 103, 104, 106, 108	Electrolytic Capacitor	10 μ F ECEA16V10N
C7, 8, 61, 62 ...	Electrolytic Capacitor	100 μ F ECEA16V100N
C9, 10, 79, 80, 127, 128 ...	Ceramic Capacitor	22 pF ECCD05220K
C11, 12, 65, 65, 105 ...	Electrolytic Capacitor	47 μ F ECEA6V47N
C13, 14, 110 ...	Mylar Capacitor	0.0022 μ F ECQM05222KZ
C15, 16 ...	Mylar Capacitor	0.01 μ F ECQM05103KZ
C19, 20, 75, 76	Electrolytic Capacitor	220 μ F ECEA16V220N
C21, 22, 39, 40, 77, 78, 83, 84, 95, 96, 97, 98, 99, 100, 122	Electrolytic Capacitor	3.3 μ F ECEA25V3R3N
C23, 24, 29, 30, 58, 85, 86, 87, 88, 91, 92, 93, 94 ...	Electrolytic Capacitor	10 μ F ELECA25V10N
C27, 28, 59, 60	Electrolytic Capacitor	33 μ F ECEA6V33N
C31, 32, 37, 38	Electrolytic Capacitor	1 μ F ECEA25V1N
C33, 34, 71, 72	Mylar Capacitor	0.001 μ F ECQM05102KZ
C35, 36 ...	Electrolytic Capacitor	0.22 μ F ECEA25V0R22M
C41, 42 ...	Styrol Capacitor	1000 pF ECQS1102KZ
C43, 44 ...	Styrol Capacitor	820 pF ECQS1821KZ
C45, 46 ...	Stryol Capacitor	560 pF ECQS1561KZ
C47, 48 ...	Mylar Capacitor	0.047 μ F ECQM05473KZB
C49, 50 ...	Mylar Capacitor	0.018 μ F ECQM05183KZ
C51, 52 ...	Mylar Capacitor	0.022 μ F ECQM05223KZ
C63, 64 ...	Ceramic Capacitor	47 pF ECCD05470K
C69, 70 ...	Mylar Capacitor	0.027 μ F ECQM05273KZB
C81, 82 ...	Electrolytic Capacitor	10 μ F ECEA10V10N
C89, 90 ...	Electrolytic Capacitor	33 μ F ECEA25V33N
C101, 102, 114, 115 ...	Electrolytic Capacitor	220 μ F ECEA25V220N
C102 ...	Electrolytic Capacitor	100 μ F ECEA25V100N
C107, 109 ...	Electrolytic Capacitor	47 μ F ECEA16V47N
C111 ...	Styrol Capacitor	2200 pF ECQS1222KZ
C113 ...	Electrolytic Capacitor	470 μ F ECEA25V470N
C116 ...	Electrolytic Capacitor	1000 μ F ECEA25V1000N

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 Crimper	QTD1110
E14	Lug Board 6P	QJT6003
E15	Lug Board 2P	QJT2003
E16	Tapping Screw $\varnothing 3 \times 8$	XTN3+8
E17	Heat Sink	QTH1067S

Ref. No.	Description	Part No.
C119	Ceramic Capacitor	EQQS5821JZ
C120, 121	Styrol Capacitor	EQQS1221KZ
C123, 124, 125, 126	Titanic Capacitor	ECKD05471MF
C150	Styrol Capacitor	EQQS515K
C200	Motor Capacitor	AF450VR9U

COMBINATION PARTS

CR1, 2	CR Combination	QCR0003
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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

Ref. No.	Description	Part No.	Ref. No.	Description	Part No.
E18	...	WY450W	M35	...	QBP1258
E19	Hot Pressed Ferrite Playback Head	WY451W	M36	Tension Arm-D Spring	XSN3+6S
E20	Hot Pressed Ferrite Record Head	WY553W	M37	Screw $\oplus 3 \times 6S$	XWA3B
	Erase Head		M38	Spring Washer 3 ϕ	QXM0082
			M39	Tension Arm Guide Assembly	XNG26E
			M40	Nut 2.6 ϕ	QAG1107
			M41	Tape Limiter	QAG1158
			M42	Tape Retainer	QBP1171
			M43	Record/Palyback Plate Spring	XSN4+8S
			M44	Screw $\oplus 4 \times 8$	XWA4B
			M45	Spring Washer SW 4 ϕ	QXL0403
			M46	Tape Shifter Lever Assembly	XSN3+8S
			M47	Screw $\oplus 3 \times 8$	QMP1266
			M48	Shifter Lever Guide	QAS1041S
			M49	Pad Shifter	QBT1361
			M50	Idle Lever Spring	XSN4+8S
			M51	Screw $\oplus 4 \times 8$	XWA4B
			M52	Spring Washer SW4 ϕ	XSC3+6BCS
			M53	Screw $\oplus 3 \times 6$	QMQ1094
			M54	Pressure Roller Cap	QBF1154
			M55	Pressure Roller Felt	QDP1245
			M56	Pressure Roller	QXA0088
			M57	Tension Arm Guide	QBT1338
			M58	Tension Arm-D Spring	XSN+8S
			M59	Screw $\oplus 4 \times 8$	XWA4B
			M60	Spring Washer SW4 ϕ	XSN+6S
			M61	Screw $\oplus 3 \times 6$	XWA3B
			M62	Spring Washer SW3 ϕ	QBG1137
			M63	Stopper	QFM1291
			M64	Tension Arm Guide	QXL0401
			M65	Cue Lever Assembly	QBT1447
			M66	Cue Lever Spring	XUC3FK
			M67	Stop Ring E3 ϕ	QBK7007
			M68	Fiber Washer	XUC5FK
			M69	Stop Ring E5 ϕ	QBK7082
			M70	Fiber Washer 4.2 $\times$ 7 $\times$ 1	QBK7075
			M71	Fiber Washer 4.2 $\times$ 6 $\times$ 0.5	QMB1024
				Tension Arm-C Boss	
MECHANICAL PARTS					
M1	60 Hz Capstan Cap	QMQ1111S			
M2	Stop Ring E7 ϕ	XUC7FK			
M3	Rubber Packing	QBG1156			
M4	Head Cover Holding Angle	QMA1484S			
M5	Screw $\oplus 3 \times 6$	XSN3+6S			
M6	Spring Washer SW3 ϕ	XWA313			
M10	Screw $\ominus 2 \times 4$	XSN2-4			
M11	Spring Washer SW2 ϕ	XWA2B			
M12	Pad Felt 4 $\times$ 7 $\times$ 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 $\oplus 3 \times 10$	XSN3+10S			
M20	Screw $\oplus 3 \times 8$	XSW3+8N			
M21	Spring Washer SW3 ϕ	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 $\oplus 3 \times 6$	XSC3+6BCS			
M27	Guide Roller Cap	QMQ1093			
M28	Fiber Washer 6.2 $\times$ 8.2 $\times$ 0.25	QBK7046			
M29	Guide Roller	QMQ1332			
M30	Stop Ring E4 ϕ	XUC4FK			
M31	Fiber Washer 5.2 $\times$ 10 $\times$ 0.25	QBK7129			
M32	Guide Roller Shaft	QMS1484S			
M33	Tension Arm-D Asembly	QXA0103			
M34	Tension Arm-C Spring	QBT1373			

Ref. No.	Description	Part No.	Ref. No.	Description	Part No.
M72	Fiber Washer 4.2 x 6 x 0.5	QBK7075	M94-3	... Rewind Pulley Washer	QBF1155
M73	Flat Washer 3φ	XWG3BN	M94-4	... Rewind Pulley	QDP1247
M74	Nut 3φ	XNG3ES	M94-5	... Fiber Washer 5.2 x 10 x 0.5	QBK7027
M75	Stop Ring E3φ	XUC3FK	M95	... Takeup Idler Lever Assembly	QX10041
M76	Fiber Washer 4.2 x 6 x 0.5	QBK7075	(M95	... New Takeup Idler Lever Assembly	QX10046)
M77	Speed Selector Lever-2	QML1607	(Please refer to Exploded Views on page 27)		
M78	Speed Selector Lever Bush	QMB1017S	M95-1	... Stop Ring E4φ	XUC4FK
M79	Screw ⊕3 x 10	XSN3+10S	M95-2	... Fiber Washer 5.2 x 10 x 0.25	QBK7129
M80	Mechanism Reinforcement Plate Assembly	QXH0063S	M95-3	... Idler Washer	QWM1104
M81	Speed Selector Lever Assembly	QXL0400	M95-4	... Pulley Felt	QBF1156
M81-1	Speed Selector Clker Spring	QBP1171	M95-5	... Takeup Idler Assembly	QX10026
M81-2	Thrust Ball	QDK1003	M95-6	... Poly Slider	QBJ3042
M81-3	Speed Selector Lever	QML1607	M95-7	... Poly Slider	QBJ3042
M82	Spring Hanger	QMA1169	M95-8	... Stop Ring E5φ	XUC5FK
M83	Idler Arm Spring Assembly	QXJ0037	M96	... Stop Ring E6φ	XUC6FK
M84	Takeup Idler Spring Assembly	QBT1228T	M97	... Takeup Idler Spring	QBT1234M
M85	Tapping Screw ⊕3 x 8	XTN3+8	M98	... Right Brake Assembly	QUV1024
M86	Takeup Reel Table Assembly	QXP0297	M98-1	... Brake Shoe	QBG1134
M86-1	Takeup Reel Table	QDR1047	M99	... Stop Ring E5φ	XUC5FK
M86-2	Poly Slider 6.2 x 9 x 0.25	QBJ3042	M100	... Brake Spring	QBC1071
M86-3	Takeup Pulley Spring	QBC1152	M101	... Brake Rod-2	QMR1064
M86-4	Fiber Washer 6.2 x 11 x 0.5	QBK7003	M102	... Brake Rod-1	QMR1057
M86-5	Fiber Washer 0.2 x 8.2 x 1	QBK7014	M103	... Stop Lever Assembly	QXL0109
M86-6	Stop Ring E5φ	XUC5FK	M104	... Stop Lever Spring	QXJ0045
M86-7	Takeup Reel Pulley-2	QDP1383	M105	... Left Brake Assembly	QUV1025
M86-8	Friction Spring	QBP1091	M106	... 60 Hz Motor Pulley ⊕	QDP1327
M86-9	Fiber Washer 6.8 x 8 x 0.25	QBK7046	M106	... 60 Hz Motor Pulley (Standard)	QDP1322
M87	Reel Table Metal Retainer	QMH1046	M106	... 60 Hz Motor Pulley ⊖	QDP1328
M88	Reel Table Metal	QMM1020	M107	... Motor Pulley Holding Screw	XSN2-8
M89	Backtension Washer	QBJ3015	M108	... Supply Reel Table Assembly	QXP0298
M90	Fiber Washer 6.2 x 8.2 x 1	QBK7014	M109	... Poly Slider 6.2 x 9 x 0.25	QBJ3042
M91	Backtension Spring	QBC1064	M110	... Reel Table Pulley Pressure Spring	QBC1152
M92	Stop Ring E5φ	XUC5FK	M111	... Fiber Wesher 6.2 x 11 x 1	QBK7130
M93	Stop Ring E6φ	XUC6FK	M112	... Stop Ring E5φ	XUC5FK
M94	Rewind Lever Assembly	QXL0397	M113	... Reel Table Spring Guid	QMA1641
M94-1	Stop Ring E5φ	XUC5FK	M114	... Fiber Washer 6.2 x 9 x 2	QBK7083
M94-2	Fiber Washer 5.2 x 10 x 0.5	QBK7027	M115	... Fiber Washer 6.2 x 8.2 x 0.5	QBK7013

Ref. No.	Description	Part No.	Ref. No.	Description	Part No.
M116 ...	Screw $\oplus 3 \times 6$	XSN3+6S	M148 ...	Release Lever Assembly	QXC0370
M117 ...	Tapping Screw $\oplus 3 \times 8$	XTN3+8	M149 ...	Release Lever-6	QML1826S
M118 ...	Reel Table Angle	QMA1130	M150 ...	Tape Counter	QDC0028S
M119 ...	Reel Table Counter Pulley Assembly	QXP0261S	M151 ...	Counter Angle	QMA1520
M119-1 ...	Screw $\oplus 4 \times 8$	XSN4+8S	M152 ...	Mecha Holding Angle	QMA1285S
M120 ...	Fiber Washer $6.2 \times 8.2 \times 1.0$	QBK7014	M153 ...	Mecha Holding Angle	QMA1278S
M121 ...	Counter Belt	QDB0061	M154 ...	Mecha Holding Angle	QMA1279S
M122 ...	Counter Assistant Belt	QDB0097	M155 ...	Mecha Holding Angle	QMA1276S
M123 ...	Counter Assistant Pulley	QDP1302	M156 ...	Screw $\oplus 3 \times 8$	XSN3+8S
M124 ...	Stop Ring E3 ϕ	XUC3FK	M157 ...	Tapping Screw $\oplus 3 \times 8$	XTN3+8
M125 ...	Fiber Washer $4.2 \times 9 \times 0.25$	QBK7007	M158 ...	Flat Washer 3 ϕ	XWG3BN
M126 ...	Flywheel Idler Assembly	QXI0039	M159 ...	Motor	4KSC20FPL
M126-1 ...	Flywheel Idler-A Assembly	QXI0040	M160 ...	Motor Oil Cap Felt	QBF1026
M127 ...	Pressure Roller Lever Assembly	QXL0402S	M161 ...	Tapping Screw $\oplus 3 \times 8$	XTN3+8
M127-1 ...	Pressure Roller Shaft	QMS1480	M162 ...	Shut off Angle Assembly	QXE0015
M127-2 ...	Stop Ring E4 ϕ	XUC4FK	M163 ...	Fiber Washer $5.5 \times 10 \times 0.25$	QBK7044
M127-3 ...	Click Roller	QDP1126	M164 ...	Tapping Scerew $\oplus 3 + 8$	XTN3+8
M128 ...	Pressure Roller Spring	QBT1186M	M165 ...	Shut off Pin	QMQ1064
M129 ...	Flywheel Assembly	QXF0067S	M166 ...	Fiber Washer $5.5 \times 10 \times 0.25$	QBK7044
M130 ...	Stop Ring E5 ϕ	XUC5FK	M167 ...	Stop Ring E5 ϕ	XUC5FK
M131 ...	FF Lever Spring	QBC1060	M168 ...	Spring Washer 3 ϕ	XWA3B
M132 ...	FF Lever	QML1275	M169 ...	Screw $\oplus 2 \times 14$	XSN2+14
M133 ...	Function Cam Assembly	QXH0069	M170 ...	Rewind Arm	QML1280
M134 ...	Click Arm	QML1974	M171 ...	Sub Cam Plate Assembly	QXH0063S
M135 ...	Clicker Spring	QBT1377M	M172 ...	Screw $\oplus 2 \times 8$	XSN3+8S
M136 ...	Clicker Roller	QDP1125	M173 ...	Idler off Arm Assembly	QXA0044
M137 ...	Stop Ring E5 ϕ	XUC5FK	M174 ...	Stop Ring E5 ϕ	XUC5FK
M138 ...	Spring Hanger Plate	QMF1295	M175 ...	Fiber Washer $0.2 \times 11 \times 0.5$	QBK7003
M139 ...	Release Lever Spring	QBT1228T	M176 ...	Fiber Washer $6.2 \times 11 \times 0.5$	QBK7003
M140 ...	Stop Ring E5 ϕ	XUC5FK	M177 ...	Record Lock Arm Assembly	QML1550
M141 ...	Fiber Washer $6.2 \times 11 \times 0.25$	QDP7003	M178 ...	Stop Switch Angle Assembly	QXE0095S
M142 ...	Record Lock Plate	QMF1294	M178-1 ...	Stop Ring E4 ϕ	XUC4FK
M143 ...	Record Lock Spring	QBT1190	M178-2 ...	Stop Switch Spring	QBN1065
M144 ...	Release Lever-5	QMA1825	M178-3 ...	Stop Switch Lever	QML1563
M145 ...	Release Lever Guide	QMS1322	M178-4 ...	Stop Switch Angle	QMA1264S
M146 ...	Stop Ring E3 ϕ	XUC3FK			

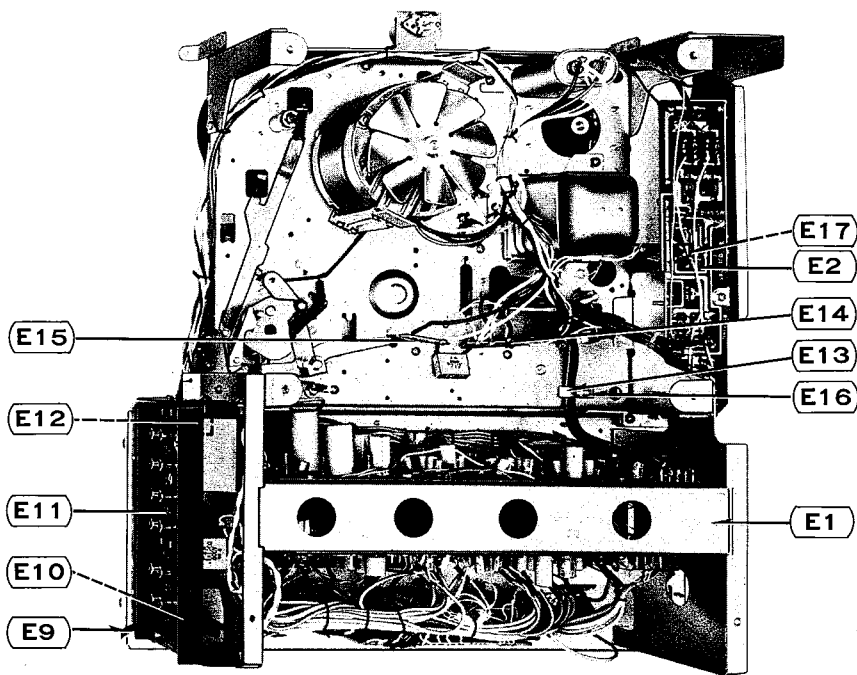
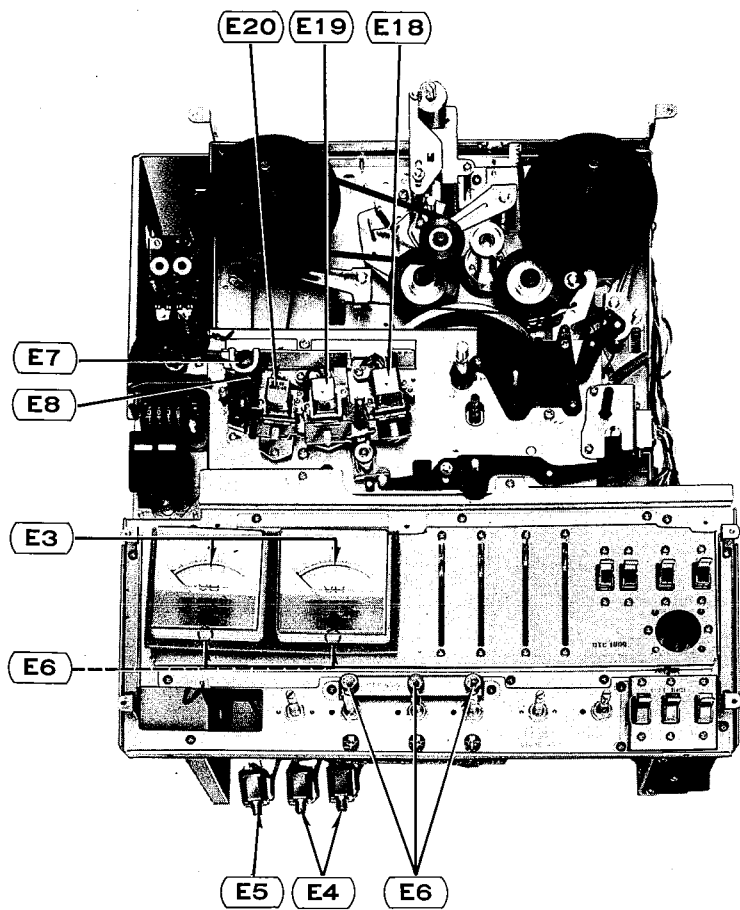
CABINET PARTS

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 $\varnothing 4 \times 25$	XSN4+25S
G15	Screw $\varnothing 3 \times 8$	XSN+8FZS
G16	Screw $\varnothing 3 \times 8$	XSN3+8FCS
G17	Washer	QWQ1083
G18	Screw $\varnothing 4 \times 16$	XC4+16FNCS
G19	Washer W3	XWG3
G20	Rubber Foot	QKA1054B
G21	Case Foot	QKA1050
G22	Storage Pocket Lid	QKD1022C
G23	Screw $\varnothing 3.8 \times 20$	XMM38+20
G24	Screw $\varnothing 3.8 \times 13$	XMM38+13

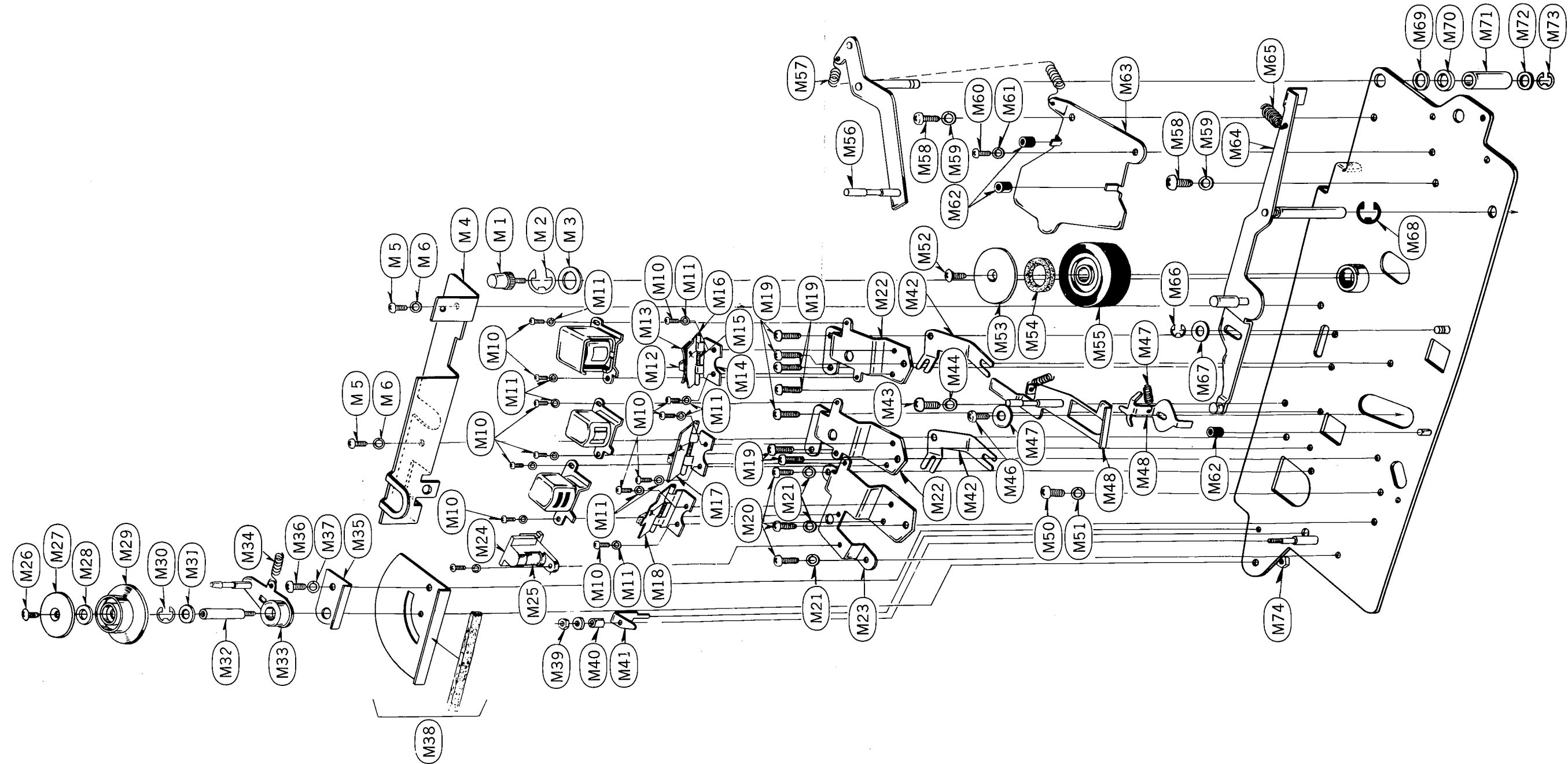
ACCESSORIES

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

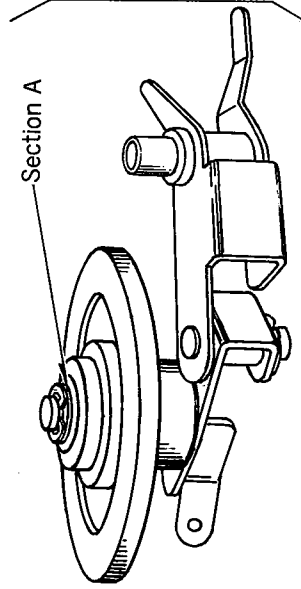


EXPLODED VIEWS

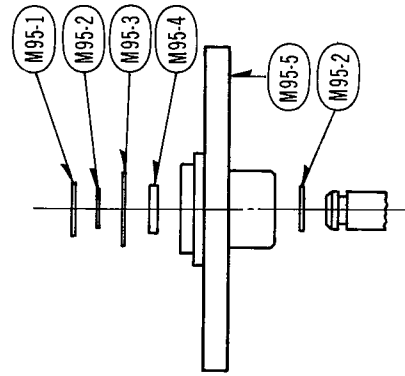


※ M95

New Takeup Idler Lever Assembly

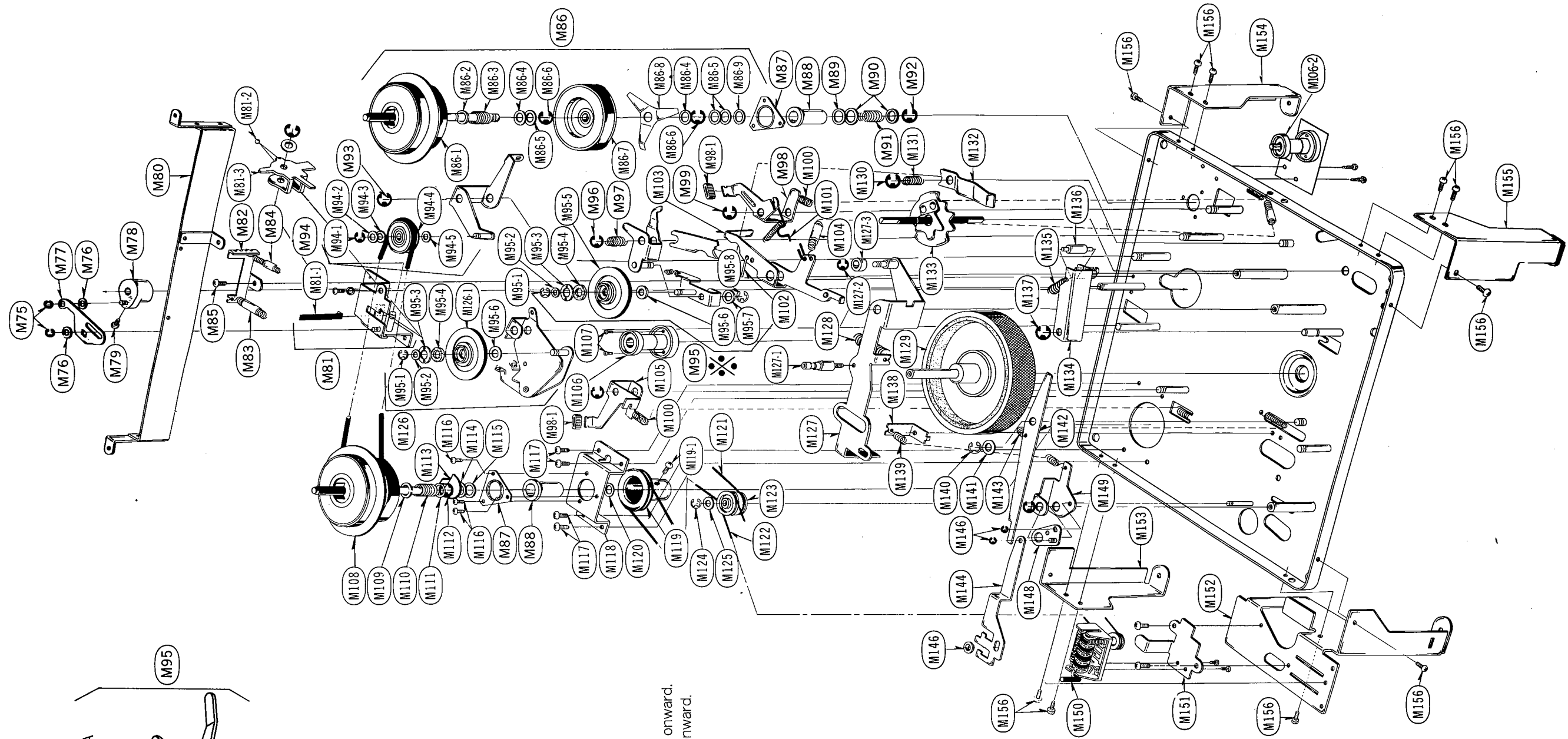


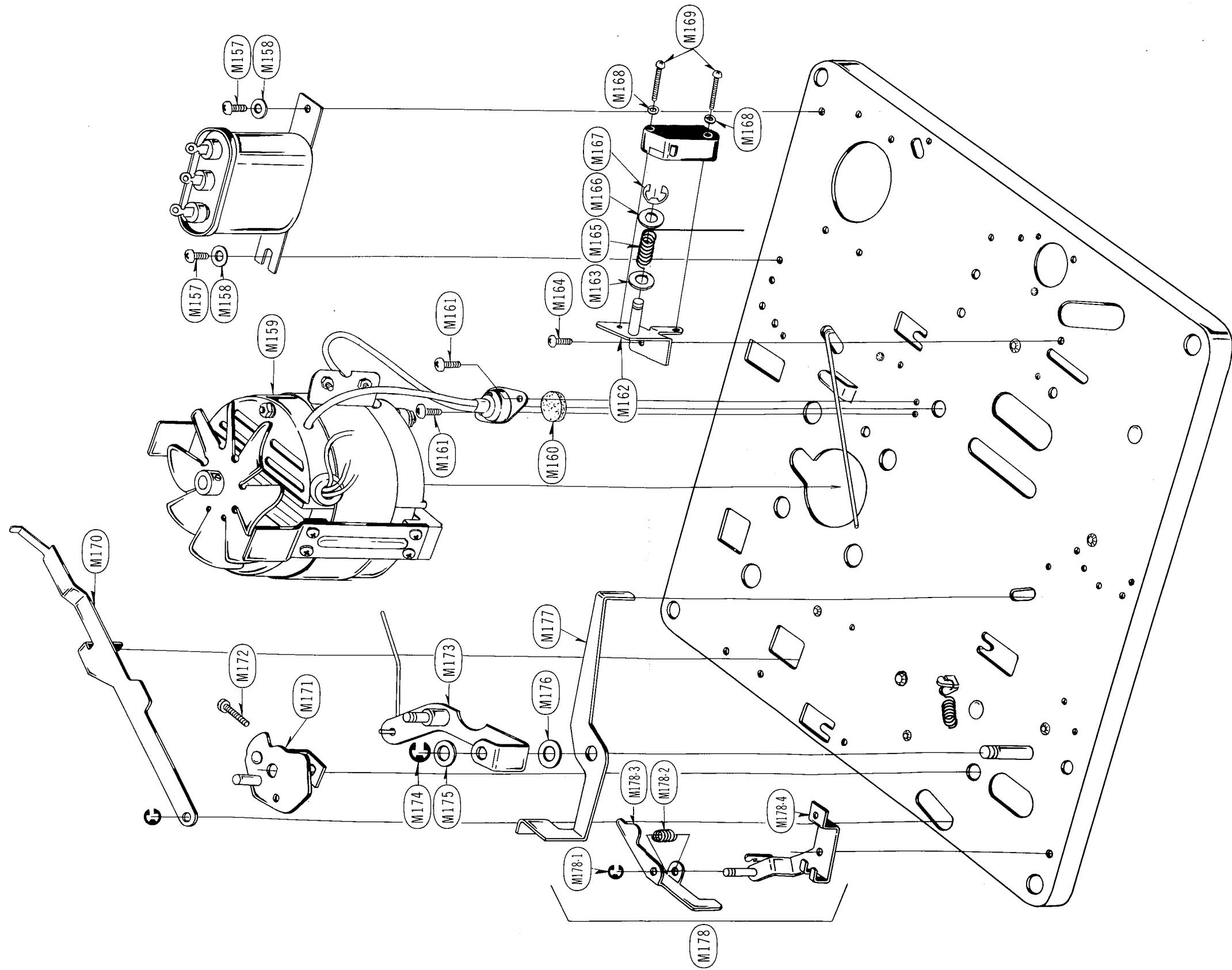
Detailed Section A



Modifications

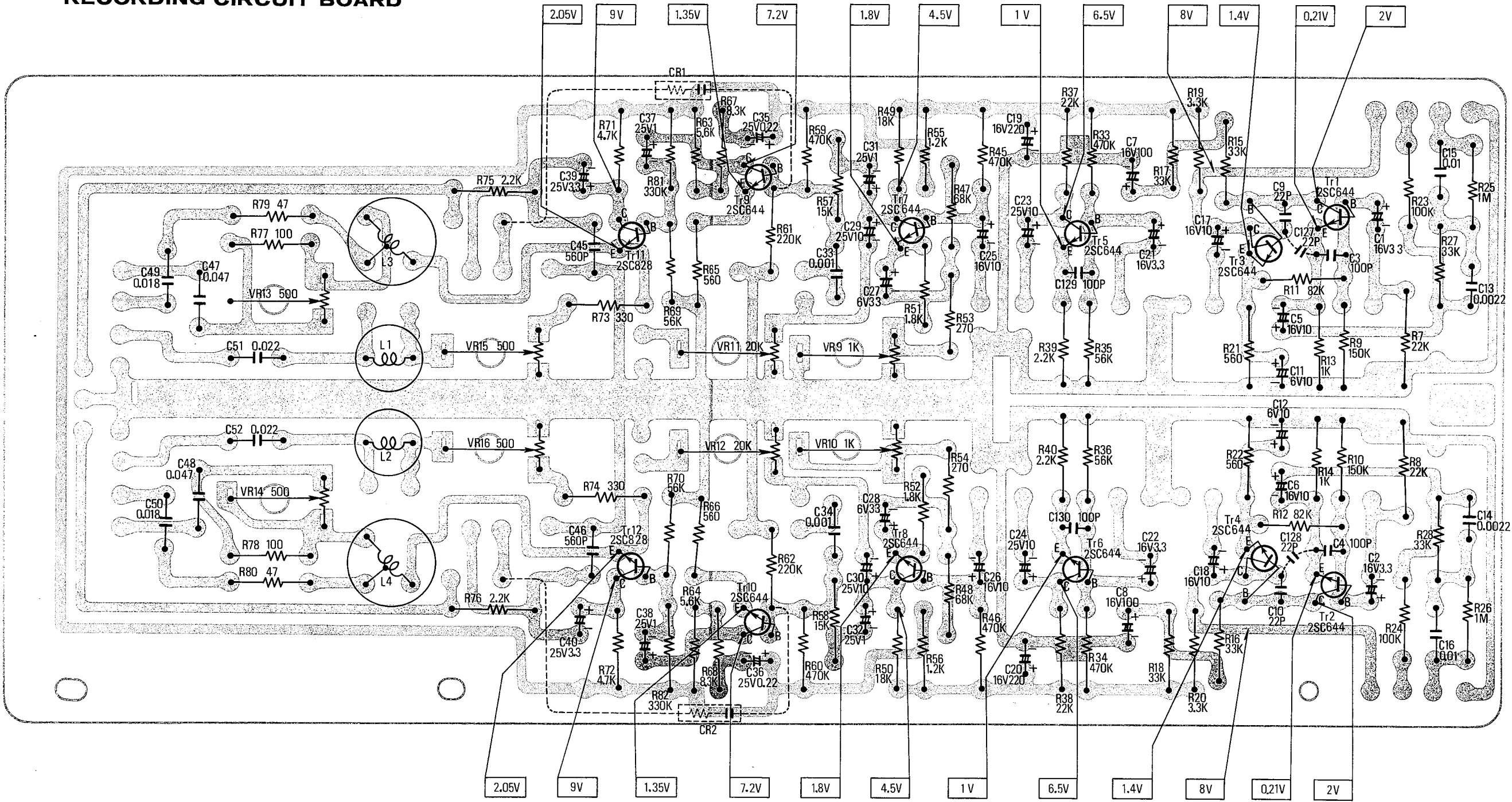
1. M95-1~M95-5 remain unchanged.
2. M95-7 and M95-8 are discontinued.
3. No interchangeability between new parts and former parts of Takeup Idler Lever Assembly (M95).
4. Changeover Time: Production in Nov., '70 onward.
Serial No. SJ001403 onward.



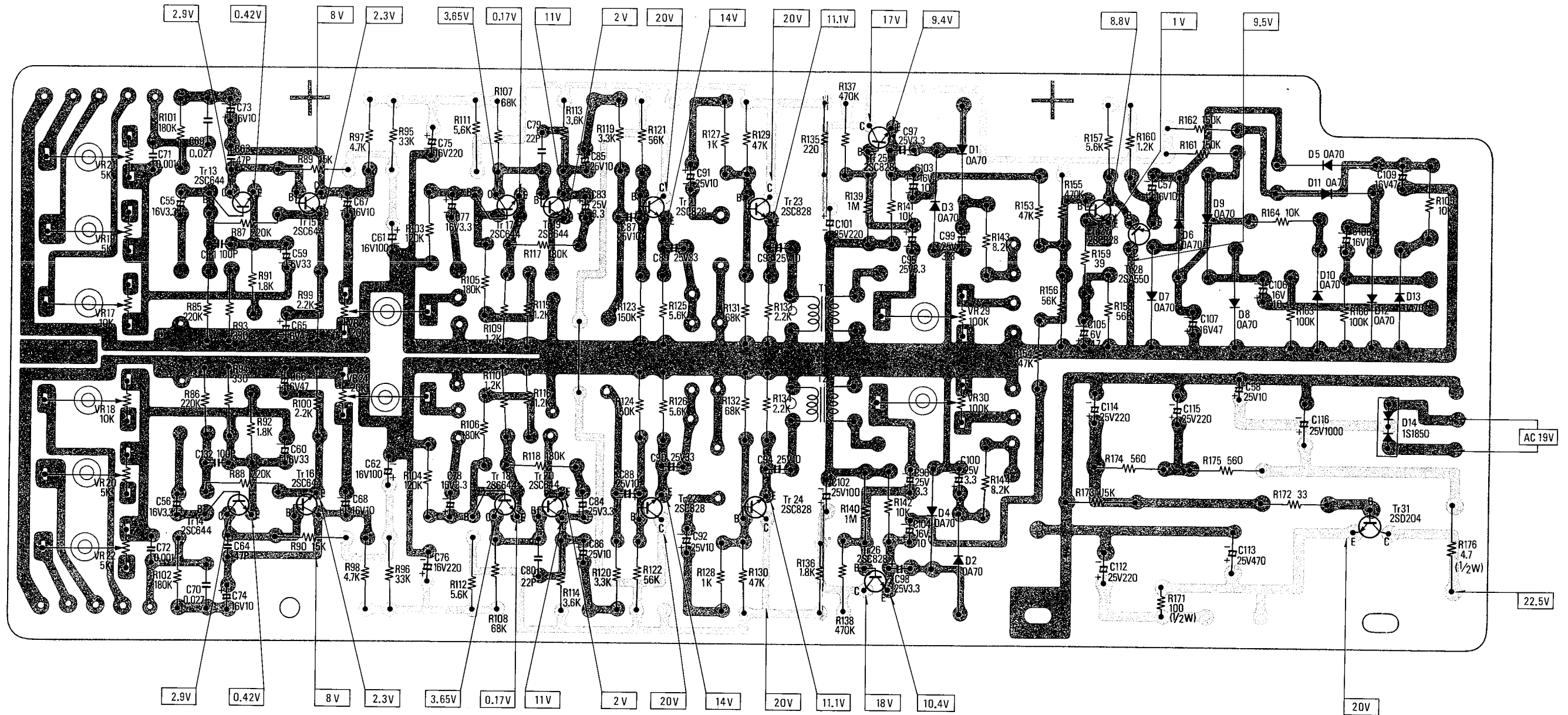


CIRCUIT BOARD

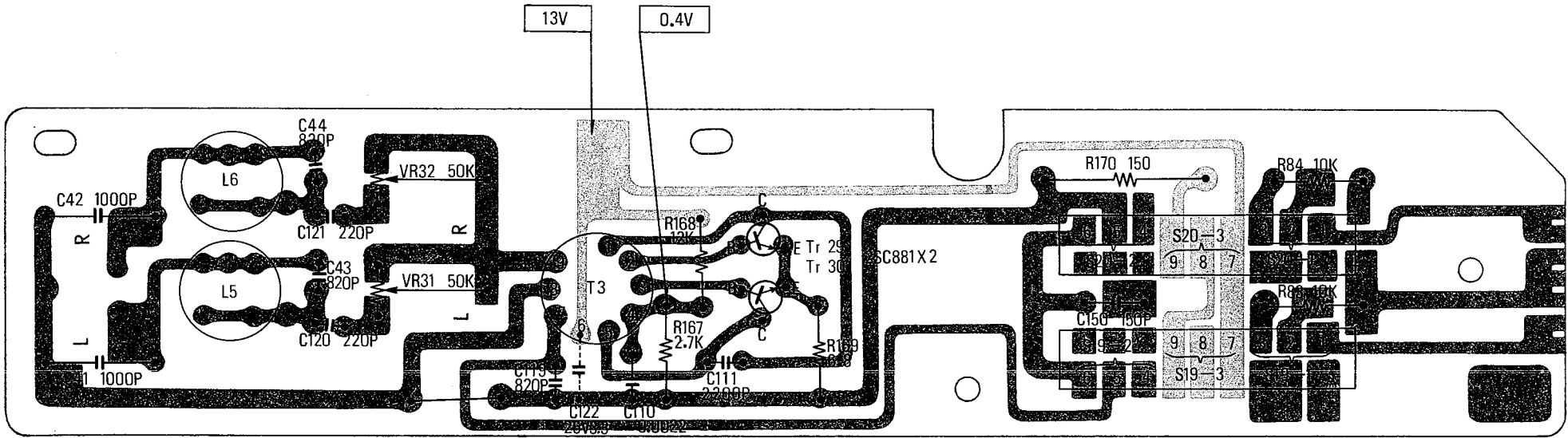
RECORDING CIRCUIT BOARD



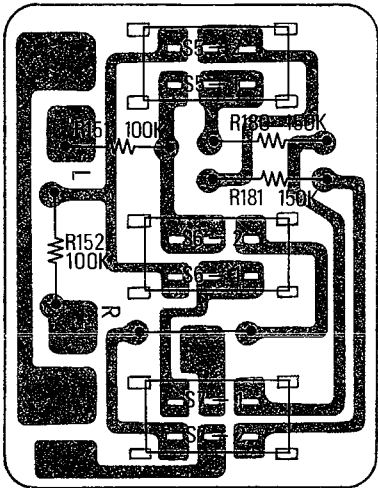
PLAYBACK CIRCUIT BOARD



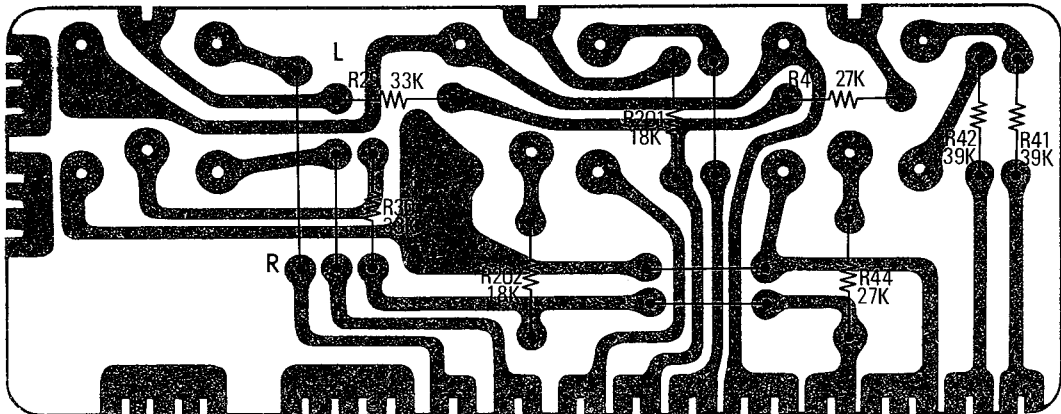
OSCILLATOR CIRCUIT BOARD



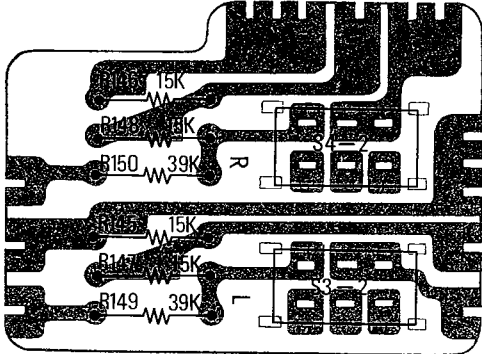
ECHO
CIRCUIT BOARD



MIXING CIRCUIT BOARD

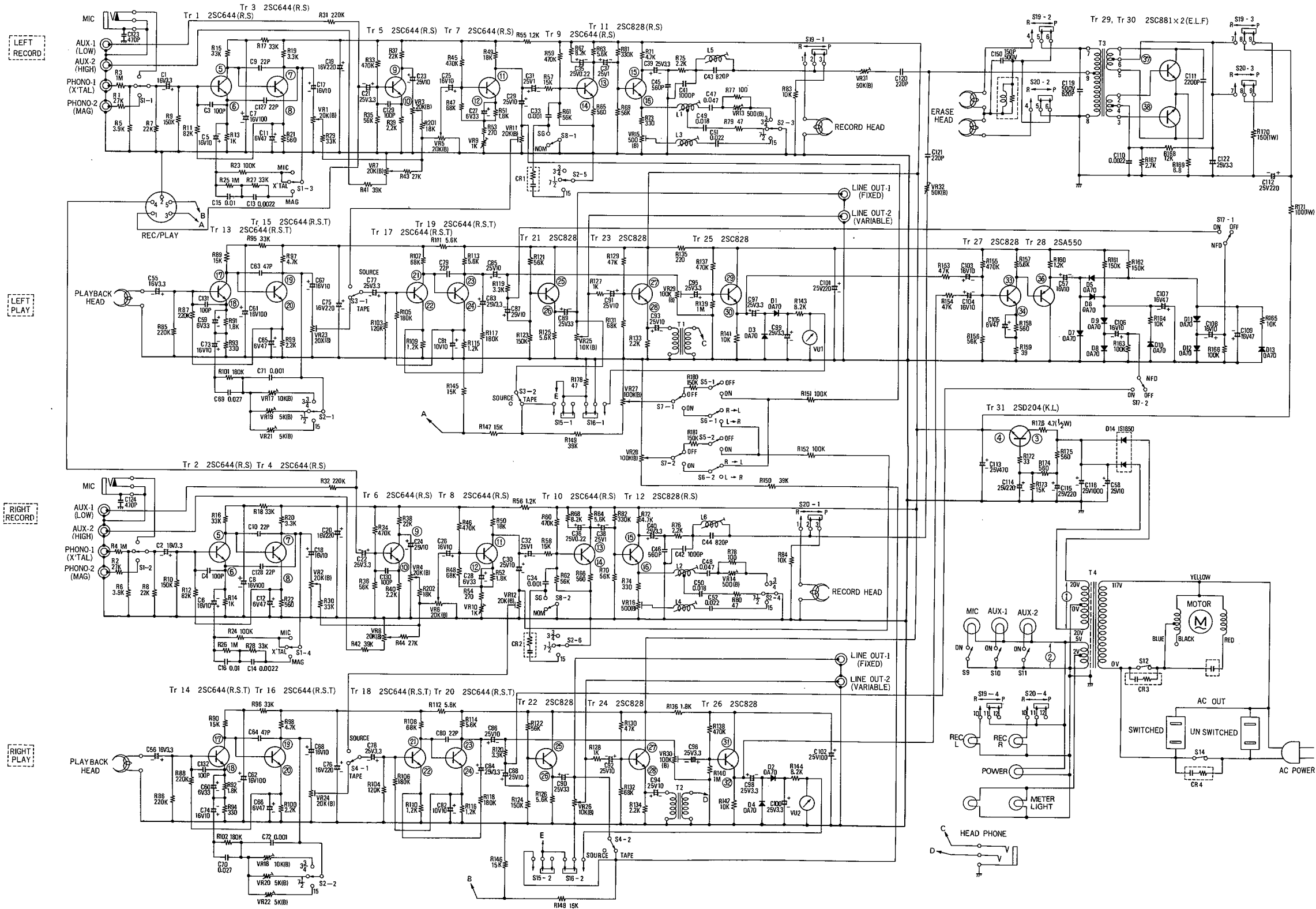


MONITOR CIRCUIT BOARD



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.

SCHEMATIC DIAGRAM MODEL RS-736US



STANDARD VOLTAGE/CURRENT CHART

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

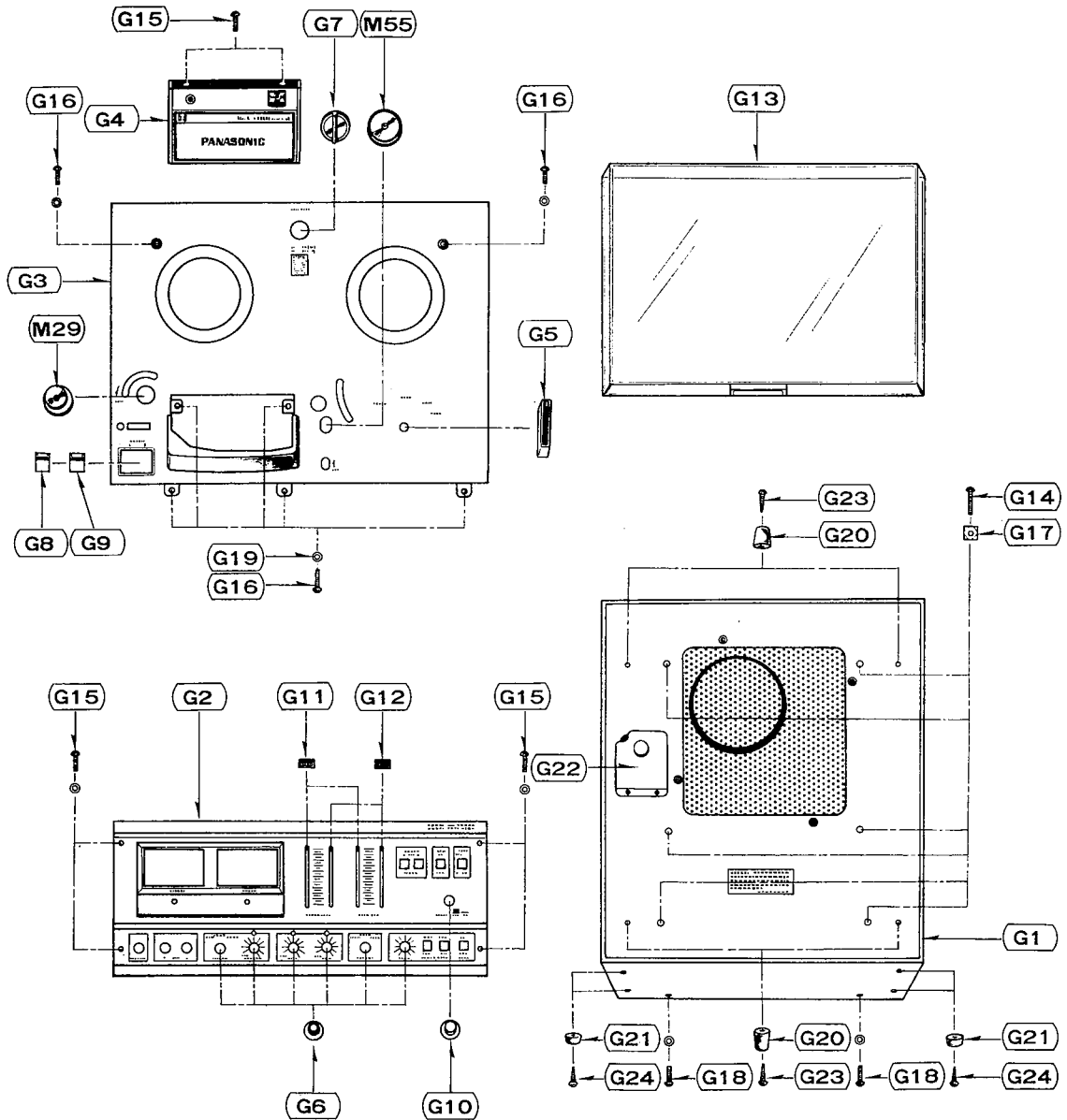
NOTE: All measurements are under no signal condition with volume at minimum position. Use M-type VTVM for AC voltage measurements and P-type VTVM for DC voltage measurements.

- NOTE:
- S1-1~S1-4 Input Selector Switch.
 - S2-1~S2-6 Equalizer Selector Switch (Shown in 7-1/2 ips).
 - S3-1, S3-2 Left Monitor Selector Switch.
 - S4-1, S4-2 Right Monitor Selector Switch.
 - S5-1, S5-2 Echo ON/OFF Switch.
 - S6-1, S6-2 Sound on Sound ON/OFF Switch.
 - S7-1, S7-2 Sound on Sound ON/OFF Switch.
 - S8-1, S8-2 Tape Selector Switch.
 - S9 Mixing Indication Switch (Coupled with VR1 and VR2).
 - S10 Mixing Indication Switch (Coupled with VR3 and VR4).
 - S11 Mixing Indication Switch (Coupled with VR7 and VR8).
 - S12 Shut off Switch.
 - S14 Power Switch.
 - S15-1, S15-2 Stop Switch.
 - S16-1, S16-2 Cue Switch.
 - S17-1, S17-2 NFD ON/OFF Switch.
 - S19-1~S19-4 Record/Playback Selector Switch (Left).
 - S20-1~S20-4 Record/Playback Selector Switch (Right).
 - Resistors are ohms (Ω), 1/4 watt unless specified otherwise. K=1,000 Ω , M=1,000,000 Ω .
 - Capacitors are microfarad (μ F) unless specified otherwise. P=Micro-microfarads.
 - 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 ④.
 - ★ VR7, 8 Aux-2 level ⑤.
 - ★ VR9, 10 Recording level.
 - VR11, 12 Overall frequency response at 3-3/4 ips.
 - VR13, 14 Overall frequency response at 15 ips.
 - VR15, 16 Playback frequency response at 3-3/4 ips.
 - VR17, 18 Playback frequency response at 15 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 ⑥.
 - ★ VR27, 28 Echo level ⑦.
 - 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

