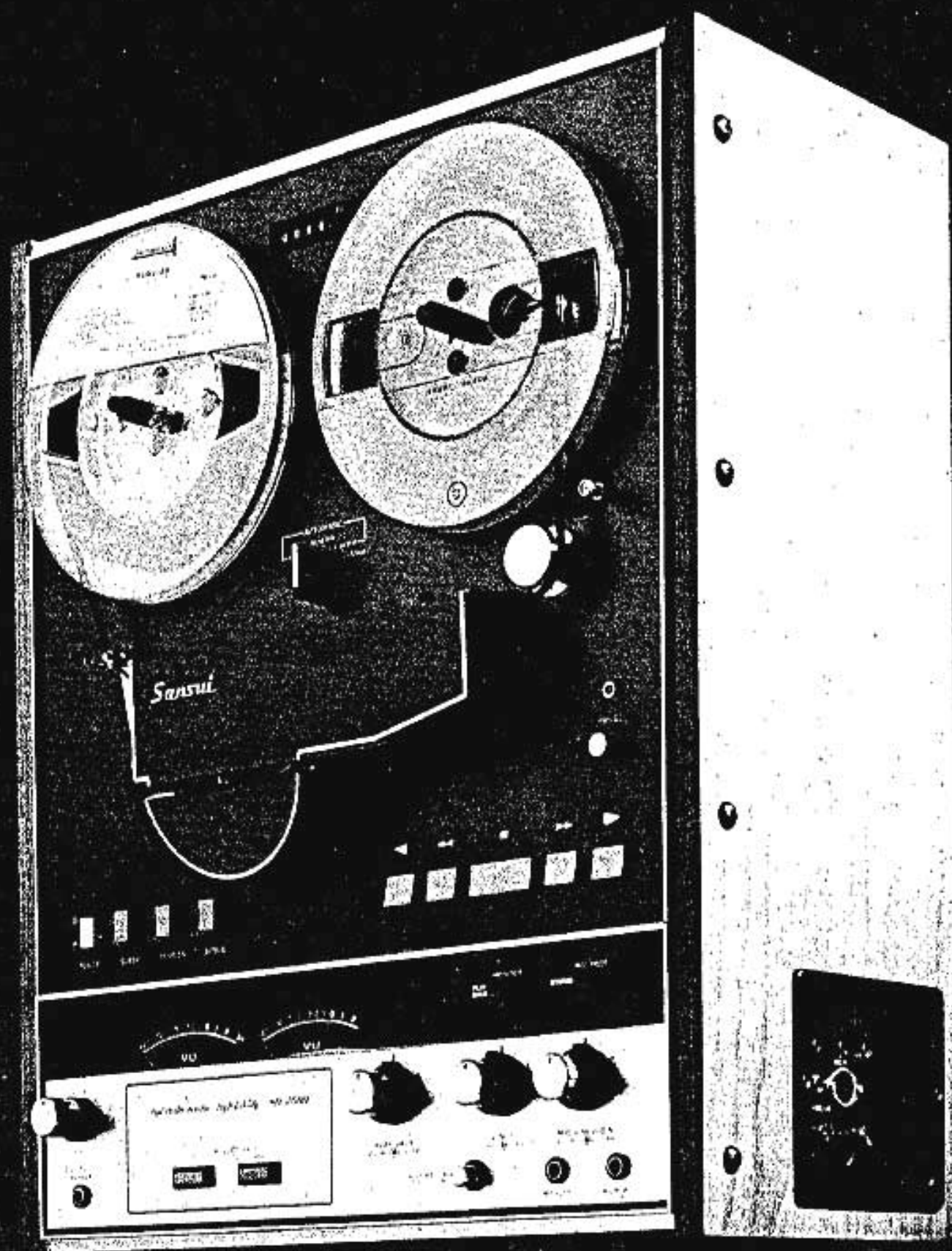




SD-7000 SERVICE HANDBOOK

Sansui SANSUI ELECTRIC COMPANY LIMITED

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1 SPECIFICATIONS

Recording system: 4-track 2-channel stereophonic recording

Reel: 7-inch reel maximum

Tape speed: 19 cm/sec and 9.5 cm/sec (7½ ips and 3¾ ips)

Tape speed accuracy: ±0.5% (19 cm/sec, 9.5 cm/sec)

Head: Erase head — 4-track 2-channel
Record head — 4-track 2-channel
Forward playback head — 4-track 2-channel
Reverse playback head — 4-track 2-channel

Motor: Capstan motor — 2-speed 4-or 8-pole hysteresis synchronous motor
Two reel motors — Capacitor starting 6-pole induction motor

Rewind/Fast Forward time: Approximately 100 seconds (550 meter tape)

Wow and Flutter: 0.06% WRMS (19 cm)
0.1% WRMS (9.5 cm)

Frequency response: 15 to 25,000 Hz at 19 cm/sec, tape speed (20 to 20,000 Hz ±2 dB)

Signal-to-noise ratio: Greater than 60 dB (at 3% total RMS distortion level, weighted)

Crosstalk: Greater than 45 dB (1,000 Hz between channels)
Greater than 60 dB (1,000 Hz between adjacent tracks)

Distortion: Playback preamplifier — Less than 0.15% (at 1 kHz, 1.2 V output)
Tape record/playback — Less than 1.2% (at 1 kHz, 0 VU)

Erase effect: Greater than 60 dB

Inputs: Microphone — 0.5 mV minimum (50 kΩ)
0.05 mV minimum (600 Ω using microphone transformers)
LINE-1,2 — 70 mV minimum (100 kΩ)
DIN — 14 mV minimum (100 kΩ)

Outputs: LINE, DIN — 1.2 V maximum (0 VU = 0.775 V or 0.245 V switchable)
HEADPHONES — 10 mW, 8 Ω

Bias Frequency: 100 kHz

Mixing: Between MIC and LINE-1
Between LINE-1 and LINE-2
Between LINE-1 and DIN

Power requirements: 100 V, 110 V, 120 V, 200 V, 220 V and 240 V AC (by voltage selector)
50/60 Hz

Power consumption: 130 watts

Dimensions: 535 x 260 x 435 mm
(21" x 10" x 17")

Weight: 27 kg (5.9 lbs)

Note: Specifications may change without notice.

Semiconductors: 36 transistors, 2 FETs, 23 diodes and 1 zener diode.

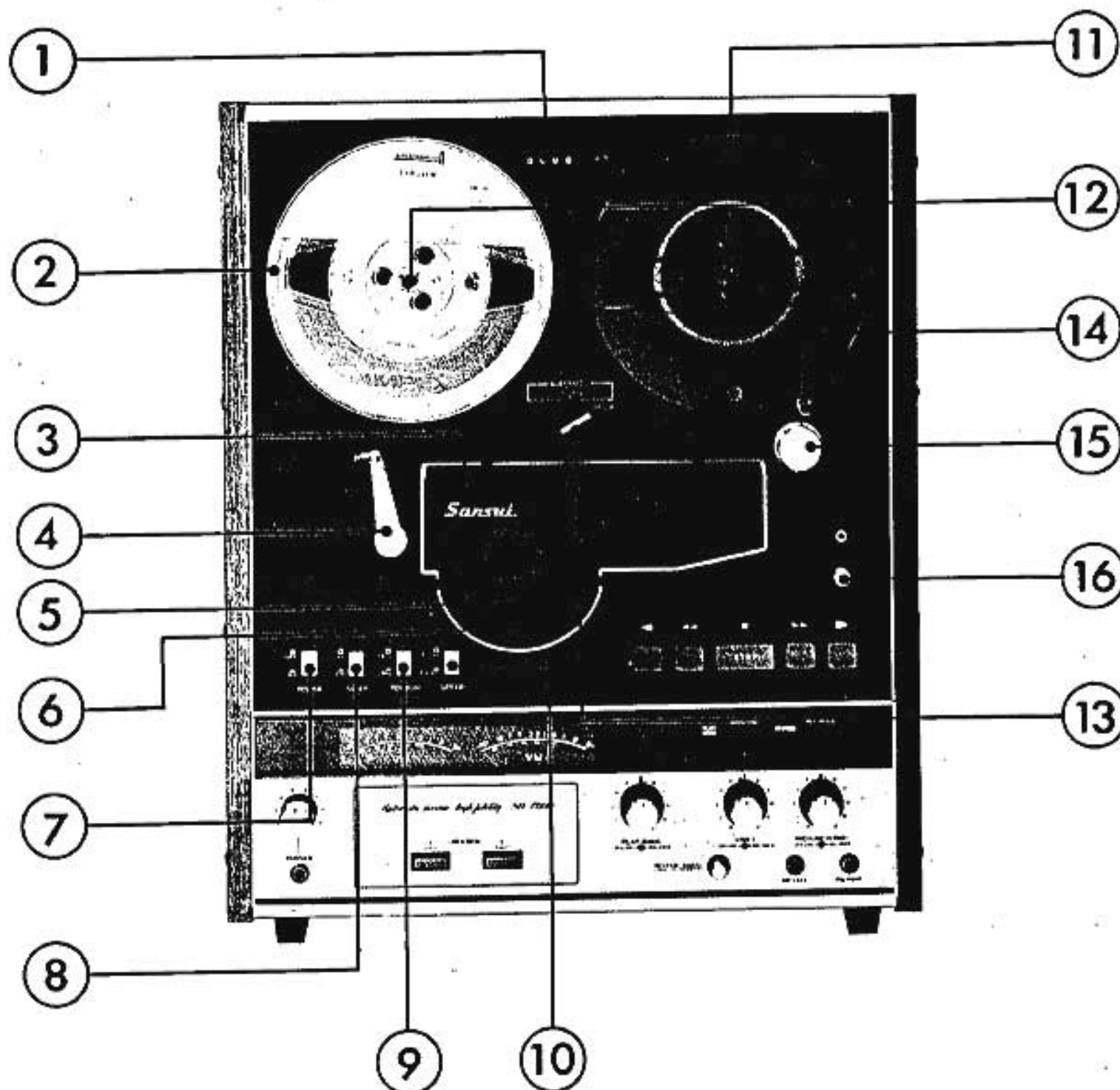
2SC708A	2 pcs
2SC870	28 pcs
2SC871	6 pcs
2SK24	2 pcs
1N34A	5 pcs
10D4	17 pcs
BS-B-2	1 pc

Accessories:

1. Dust cover — 1 pc
2. Empty reel — RS-7
3. Cleaner — 60-cc fluid and 40 cleaning tips
4. Oil — MOBILE DTE 24 (5 cc)
5. Splicing tape — tape width of ¾ inch
6. Tape-sensing foil — 6 mm (W) x 15 mm (15 pcs)
7. Pin plug cord — 1.5 m 2 pcs
8. Fuse — glass-cartridge type (30 mm) 2A 2 pcs
9. Reel spacer — 0.3mm thick 2 pcs
10. Polishing cloth — 1 pc
11. Operating Instructions — 1 pc
12. Instruction Sheet — 1 pc

2 CONTROLS INDICATORS AND OTHERS

2-1. Upper Front(1)



① Counter

The counter reading is used to locate desired or selected portions of the tape approximately. The counter can be reset to the "0000" position by the counter reset button located to the right of the counter.

② Left Reel

Reels up to 7 inches can be used.

③ Head Housing

Head housing contains 4 heads; erase, record, reverse playback and forward playback from the left.

④ Left Tension Arm

Tension arm performs two main functions. The first is to take away any excessive tape slack during the starting and stopping of tape motion, and caused by the change of diameter of wound tape. Proper tape tension can be maintained during all modes. Secondly this arm is used to stop the system at the end of tape as the arm slides down and motor power is turned off.

⑤ Capstan

Precision machined capstan drives the tape, pulling the tape through the tape path at a constant speed during record and playback modes.

⑥ Pinch Roller Housing

Contains the Pinch Roller to hold the magnetic tape tightly against the capstan.

⑦ Power Switch (POWER)

Turns the power on or off when the unit is connected to an AC source. Push the button to switch on. When the unit is powered, the VU Meter will light. To turn off the unit, push the button again.

⑧ Sleep Switch (SLEEP)

Push the button before going to bed. All the powers, including those of the amplifier unit, the tuner unit etc. connected to the AC socket of the unit are turned off when the tape is perfectly rewound onto the reel.

⑨ Tension Selector (TENSION)

Selects the tension applied by the Tension Arm. Tension of 1 MIL (with 100 type tape) without the button pushed, and ½ MIL (with 200 tape, 300 type tape) with the button pushed.

⑩ Tape Speed Selector (SPEED)

Changes tape speed from 19 cm/sec (7 ½ ips) to 9.5 cm/sec (3¾ ips), by pushing the selector.

⑪ Right Reel

Use the same reel as the left.

⑫ Reel-Clamper

Fix the reel onto the Reel Clamper. To secure

the reel, pull and turn the clamper by about 60 degrees.

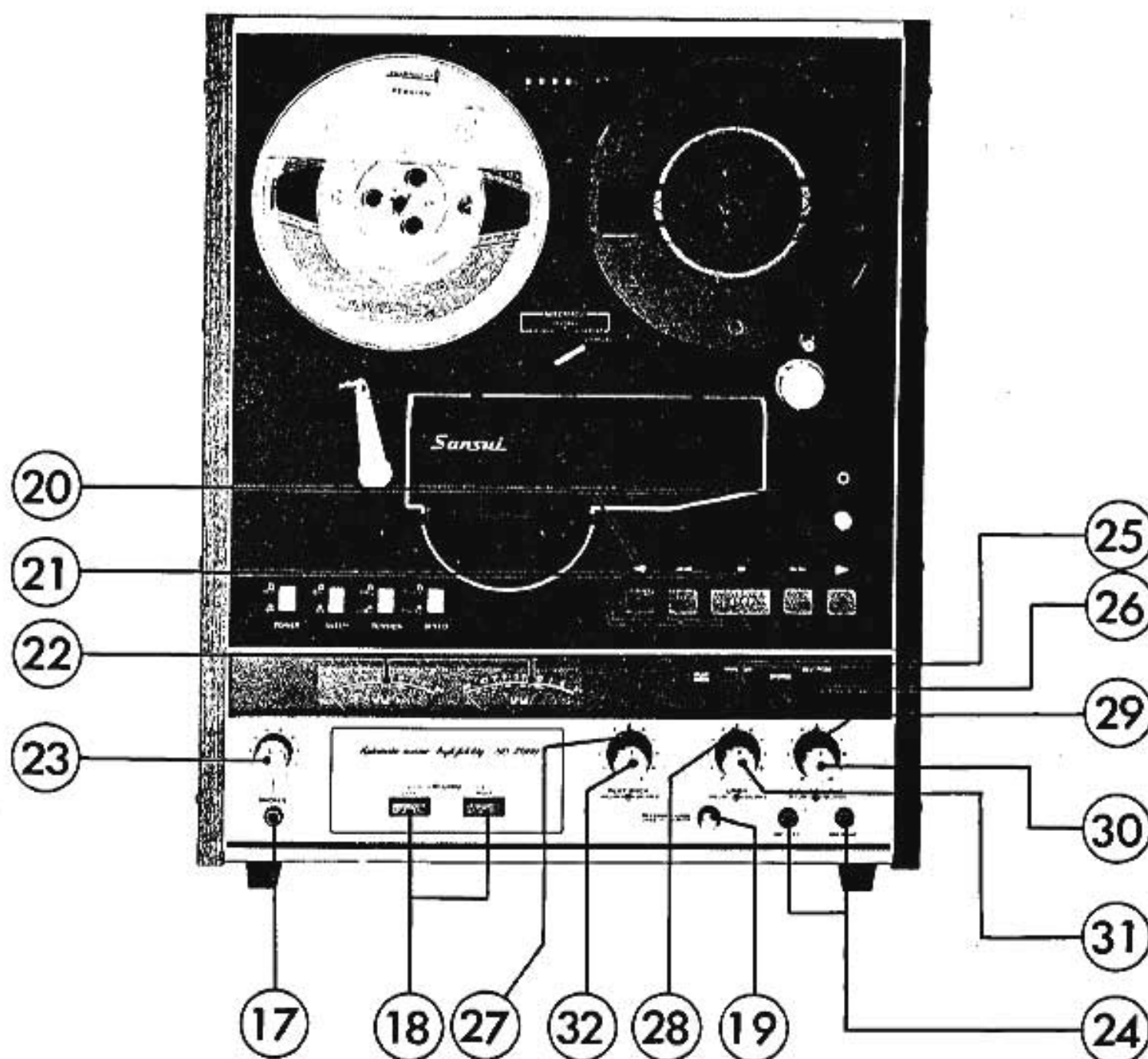
⑬ Automatic Switch (AUTOMATIC)

The following operations can be obtained by recording 20 Hz reversing signal or by applying a tape-sensing foil to the required position of tape.

***AUTO REWIND**

When the reverse signal is played back after the tape is wound onto the right reel in the forward playback mode, the tape is rewound onto the left reel automatically.

2-2. Lower Front(2)



①⑦ Phone Jack (PHONE)

Connect a headphone set having 8 Ω impedance (SANSUI SS-2 or SS-20). The output signal from the LINE OUT can be monitored.

①⑧ Record Button (RECORD)

Push the Forward Button "▶" with the desired channel of the Record Button pressed simultaneously, to set the unit in the record mode. The Record Button lights to indicate that the unit is in the record mode. The monophonic recording can be done, because both channels can be recorded separately.

①⑨ Reverse Signal Button (REVERSE SIGNAL)

This button is used to record 20 Hz reverse signal for the automatic operation. Press the Forward Button "▶" with the Reverse Signal Button pulled. The 20 Hz signal recording will

be completed by pressing the stop button after tape running of one second.

②① Track and Running Direction Indicator (◀ ▶)

This lamp indicates the active track and the direction of the tape running.

"▶" Tape runs from the left to the right reel. Active tracks are the first and the third.

"◀" Tape runs from right to left, and tracks 2 and 4 are active.

Tape shall run to the indicated direction instantaneously from the stop position.

②② Tape Transport Control Button

Reverse Button (◀)

Tape runs from right to left in the reverse playback mode.

Rewind Button (◀◀)

Tape runs from right to left rapidly to be rewound onto the left reel.

Stop Button (STOP)

This button stops the tape movement. Push the Fast Forward Button "▶▶" to slow down the tape speed before the rewind mode is stopped. Likewise push the Rewind Button "◀◀" and, then Stop Button to stop the tape from the fast forward.

Fast Forward Button (▶▶)

Tape runs from left to right rapidly, and is wound onto the right reel.

Forward Button (▶)

Tape runs from left to right. This button is used in the forward record and playback.

②② VU meter (VU)

These meters indicate record input level and the playback output level. The left meter is for the left channel and the right for the right channel. Adjust the Volume Control so that the pointer reads the position from 1 to 2 of the red region in the maximum output level.

②③ Headphone Volume Control (PHONE)

Controls the output level from the headphones. The sound can be heard even if this control is turned fully counterclockwise.

②④ Microphone Jack (MIC)

This jack accepts a high impedance microphone (10 to 50 kΩ). Use the right jack for the right-channel microphone, and the left for the left-channel microphone. When a low impedance microphone (600 Ω) is in use, see "4 Dummy Plug for Microphone Transformer" in the Section 2-3.

②⑤ Monitor Switch (MONITOR)

This switch switches the sounds to be recorded and sound playback off the tape in the record mode for monitoring the recording.

(SOURCE) : The sound to be recorded.

(PLAY BACK) : The sound played back off the tape.

②⑥ Mode Switch (REC MODE)

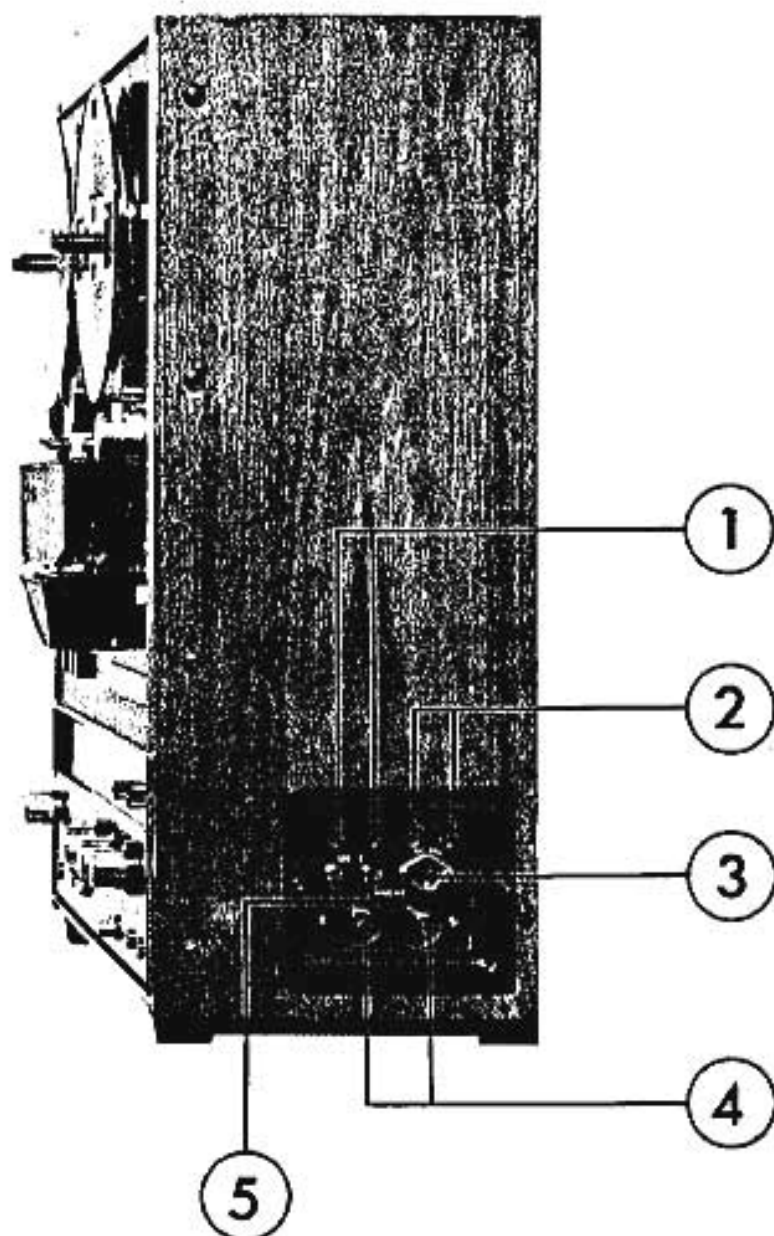
This switch is used only in the record mode.

(MONO L + R): This switch is used when the stereo signal is to be recorded in the mono mode, and is also used to check for the balance of the signal levels in the stereophonic recording. This switch does not work when the signal is supplied from the microphone.

(STEREO) : In the stereo mode this switch should not be pushed.

</

2-3. Side Panel



① Line Input Jack (LINE-1)

This jack is to be connected to the Recording Output Jack (REC) of the stereo amplifiers or the tuner unit with a pin plug cord (supplied). L jack is for the left channel, and R for the right.

② Line Output Jack (LINE OUT)

In the playback mode, connect this jack to the Tape Input Jack (TAPE MONITOR) of the stereo amplifier unit. Set the Tape Monitor Switch of the amplifier unit to ON.

③ DIN Connector (REC/PB)

This connector is set according to the German DIN Standard. In the record and the playback modes, this is connected with the stereo ampli-

fier unit with a 5-pin cable. Adjust the record input level by the microphone Input Volume Control, and the playback output level by the Playback Output Volume Control.

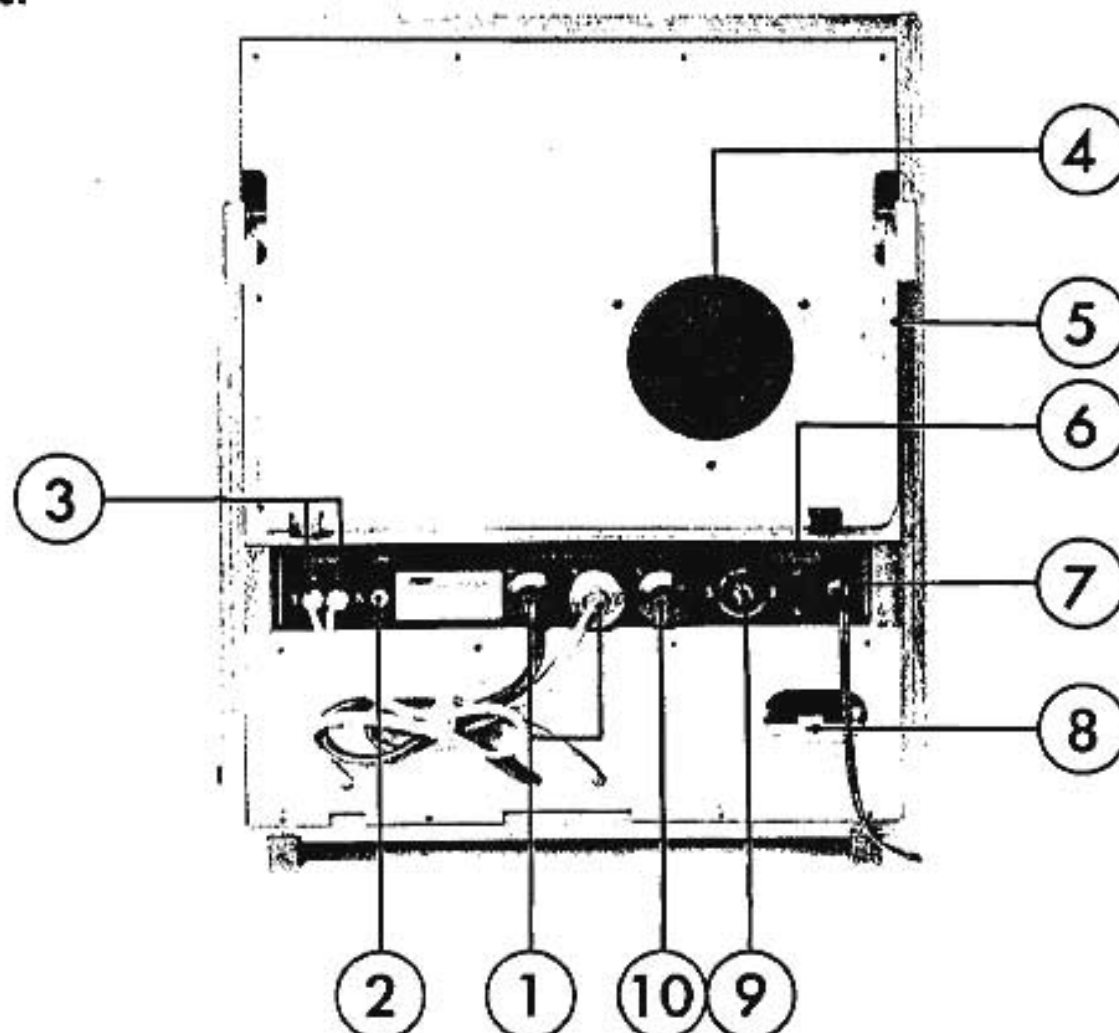
④ Dummy Plug for Microphone Transformer (MIC)

This plug is used on a high-impedance microphone (10 to 50 k Ω) recording. When a low impedance microphone (600 Ω) is in use, replace this plug with a microphone transformer (SANSUI A-603). L is for the left channel and R for the right.

⑤ Line Input Jack (LINE-2)

Mixing can be done between LINE-1 and LINE-2.

2-4. Rear Panel



① Amplifier Connector (TO AMP)

It is connected to the preamplifier section of the unit.

② Ground Terminal (GND)

To eliminate the hum when the unit is connected with the stereo amplifier unit or the tuner unit, connect this ground terminal to that of the other equipment with a pvc wire.

③ Equalizer Connector (EQ OUT)

Connects the output from the equalizer amplifier (equalizer for the playback head) to the line amplifier.

④ Ventilator

Ventilates the inner air of the unit. Be careful not to place the unit close to the wall.

⑤ Reclining Stand

This facilitates the operation of the unit easily when the unit placed at very low position.

⑥ AC Outlet (UNSWITCHED)

This is connected to the power plug from the stereo amplifier unit or the tuner unit. Maximum

power is 300 W. Press the Sleep Switch of the Front Panel before going to sleep. All the powers of the connected equipment are turned off automatically when the tape is wound onto the reel.

⑦ Power Cord

Plug this cord to an AC outlet in the room, after checking for the power voltage and frequency.

⑧ Output Voltage Attenuator Selector

Select this switch to LOW (-10 dB), when the sound from the speaker distorted due to the too high output level.

⑨ Power Fuse and Voltage Selector Connector (FUSE)

See Section 9-1. "Maintenance".

⑩ Remote Connector (REMOTE)

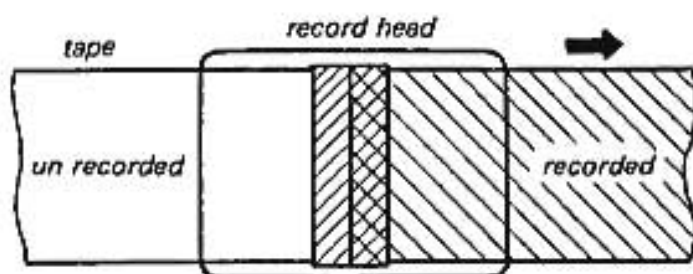
For remote operation in the forward and reverse playback, fast forward, rewind and pause modes, remove the Dummy Plug from the receptacle and connect the remote control unit (SRC-1). Remote operation can be done four meters apart.

3 4-TRACK RECORDING AND PLAYBACK

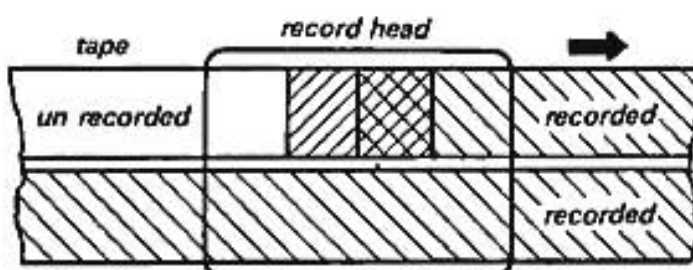
3-1. Tracking Pattern

Recording is made on non-glare side of the tape by the recording head. As the tape is passed across the head, the recording pattern will be on its longitudinal. The pattern is called a track. There are several types of tracking pattern such as a full track, 2-track and 4-track. The number of track changes depending on the type of head.

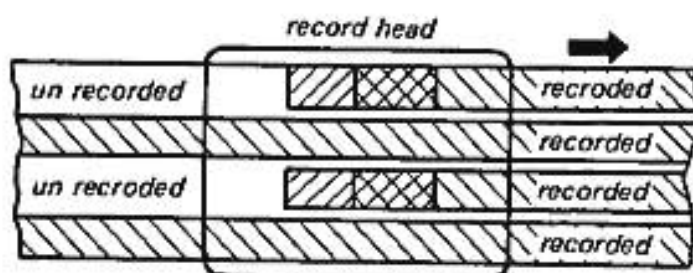
Full Track



2-Track (MONOPHONIC RECORD)

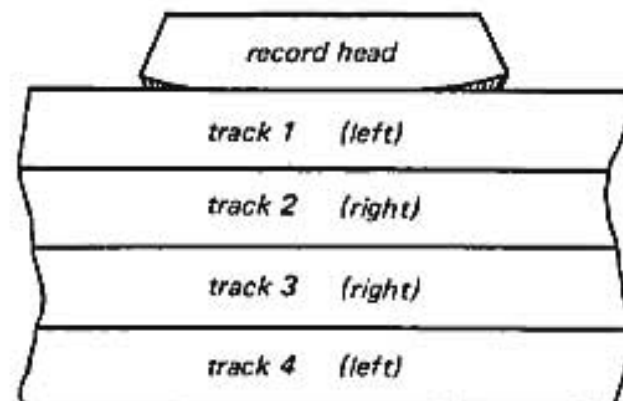


4-Track (STEREOPHONIC RECORD)



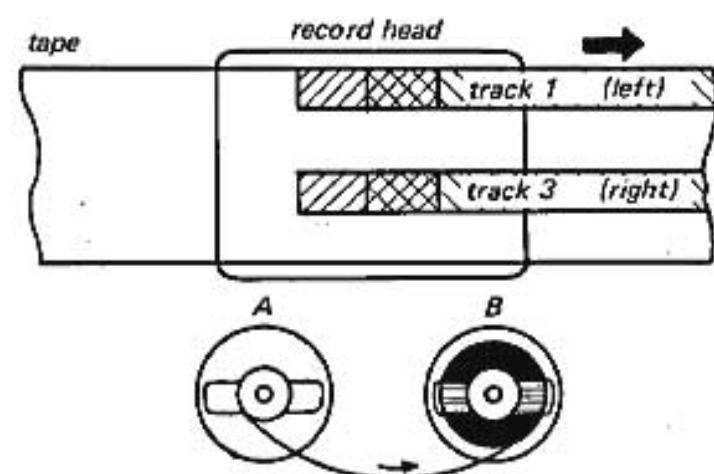
3-2. Tracking Number

The 2-tracks, one for left channel and the other for right channel, are laid down at one time during forward recording. The 4-tracks are called, from top to bottom, 1, 2, 3, and 4 when viewed from the glare side of the tape. The signal for left channel is recorded on tracks 1 and 4 while that for right channel on tracks 2 and 3.



3-3. 4-Track 2-Channel Stereophonic Recording

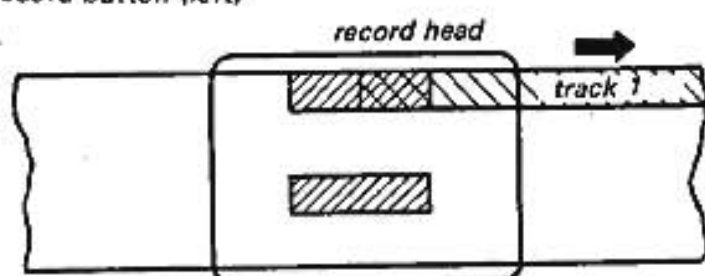
The signal for left channel is recorded on track 1 and that for right channel on track 3 at the same time during recording. When the tape on the left reel has been taken up completely, change the locations of the right and left reels to each other. After that, the signal for left channel is recorded on track 4 and that for right channel on track 2. Be careful that the non-glare side of the tape comes in contact with the head.



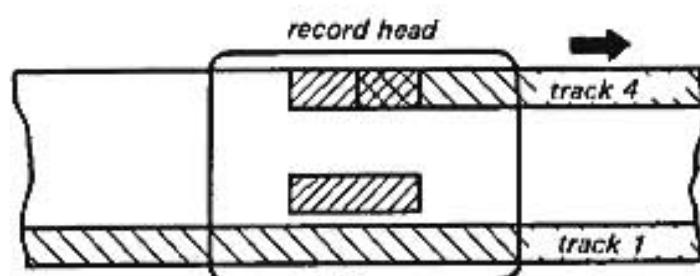
3-4. Monophonic Recording in 4-Track Pattern

Monophonic recording in the 4-track pattern can be done four times in one tape by pressing either channel button of the Record Button. Reels should be changed at each time. Record the signal on track 1. Tape runs from left to right. Use track 4, the next is track 3, and the forth track 2. The left Record Button is for tracks 1 and 4, and the right for tracks 2 and 3.

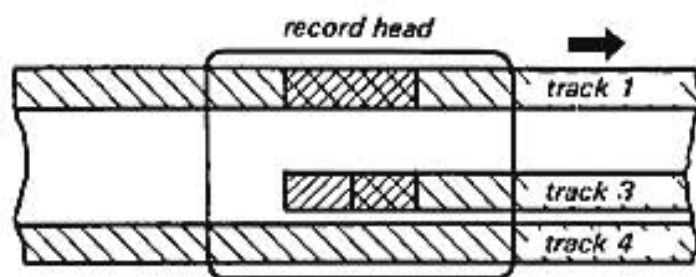
*First
record button (left)*



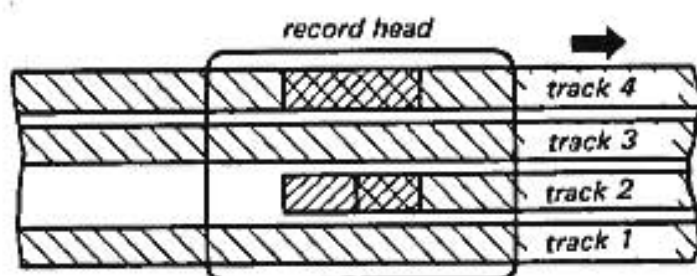
*Second
record button (left)*



*Third
record button (right)*



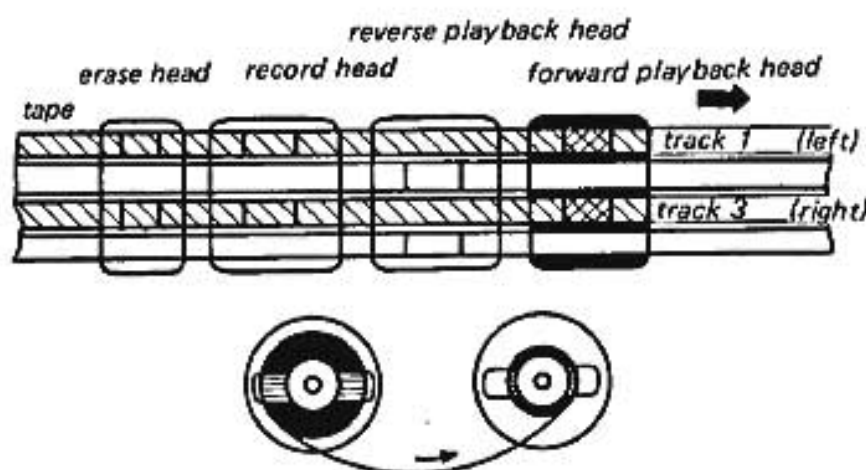
*Fourth
record button (right)*



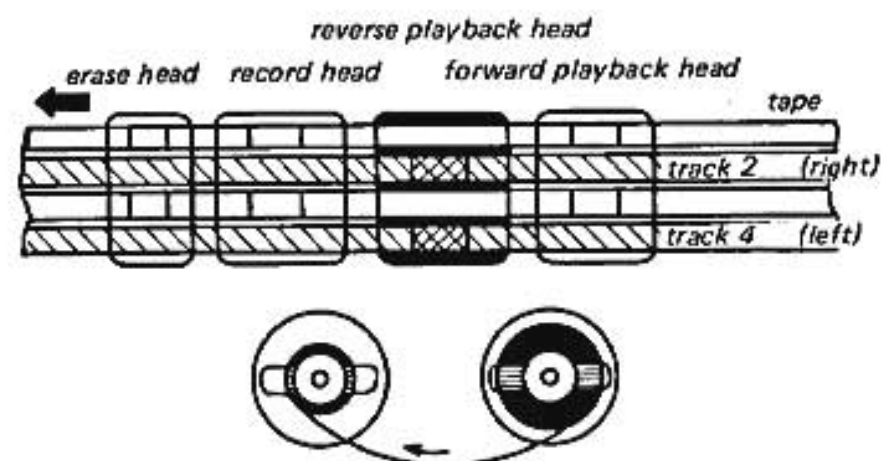
3-5. 4-Track 2-Channel Stereophonic Playback

Forward playback is performed on tracks 1 (left) and 3 (right) by the forward playback head. Tape runs from the left to the right reel. Reverse playback is made on tracks 2 (right) and 4 (left) by the reverse playback head. Tape runs from right to left.

Forward Playback ▶



Reverse Playback ◀



For operation of relays RL802, RL803, RL801 and RL806, see Section 4-2 "Reverse Operation".

During reverse operation relays RL901, RL903 and RL801 move when 20 Hz signal is detected.

- 1) When RL901 is actuated, the contact RL901-1 is closed. The discharging current from C923 flows to RL903, as the contact RL803-1 is switched, RL903-2 is opened. The self-holding of RL802-2 is cut off, then, RL802, RL803 and RL806 are returned to their original positions.
- 2) RL806 is actuated by the discharging current of C704 and the solenoids of pinch roller, lifter and brake are in cut off state temporarily. Then, the microswitch (S714) linked with the pinch roller solenoid is cut off and the remaining charge of C923 is discharged to zero.
- 3) When the delay relay RL806 is returned, the unit is set in the forward operation instantaneously as the relay RL801 is actuated.
- 4) See 4-1 "Forward Operation" for the movement of RL801.

Note: The automatic operation with a sensing foil is as same as the operation using the 20 Hz signal. The sensing post detecting the foil is located on the right tension arm.

4-8. Record Button Operation

The relay, RL501 and RL502 are actuated when both record buttons (S005, S006) and forward button "►" (S706) are pressed simultaneously. See 4-1 "Forward Operation" for the relay movements of the forward operation when the forward button is depressed.

- 1) The contacts, RL501-3 and RL502-3 are in self-hold.
- 2) The contacts, RL501-2 and RL502-2 are switched. The oscillator starts operation and supplies the bias current to the recording head.
- 3) The erasing current is supplied to the erase head by switching the contacts, RL501-1 and RL502-1.
- 4) The record lamps light by switching the contacts, RL501-4 and RL502-4.

4-9. Speed Switching Operation

The relay RL401 is actuated when the tape speed switch (S703) is pushed.

(19 cm/sec = 7 ½ ips, 9.5 cm/sec = 3 ¾ ips)

- 1) When the contacts RL401-1 and RL401-2 are closed the pre-emphases circuit of the recording amplifier section is switched from the one for 19 cm/sec to 9.5 cm/sec.

Note: The equalizer characteristics of the playback equalizer amplifier are switched by pushing the switch. Also, the speed of the capstan motor is changed. (the number of poles of the motor changes from 4 to 8)

4-10. Stop Button Operation

(See Fig. 4-1 Operation Schematic)

5-9. Tape Head Adjustment

The quality of the unit depends upon the very critical adjustment of heads. When the head is replaced as an assembly, "1. Preliminary Adjustment" is not necessary to be performed, because the head assembly is factory-adjusted.

1. Preliminary Adjustment

Run a tape in the forward direction at 9.5 cm/sec (3 3/4 ips). Adjust the screws shown in Fig. 5-6 for the following specifications.

- 1) The surface of tape should contact closely parallel with that of head.
- 2) Untouched core spaces with tape are shown in the list of Fig. 5-7. (See Fig. 5-6 Adjusting Screws).

2. Forward Playback Head Adjustment

Set the tape speed to 19 cm/sec (7 1/2 ips). Connect VTVMs to the EQ OUTs. Thread a tape (AMPEX standard tape 01-31321-04) recorded 700 Hz and 15 kHz signals. Set the unit in the forward playback mode.

1) Tracking Adjustment

In the playback of 700 Hz signal, adjust M, N and O of Fig. 5-6 for maximum output at a VTVM.

2) Dihedral Adjustment

In the playback of 15 kHz signal, adjust P of Fig. 5-6 for maximum output.

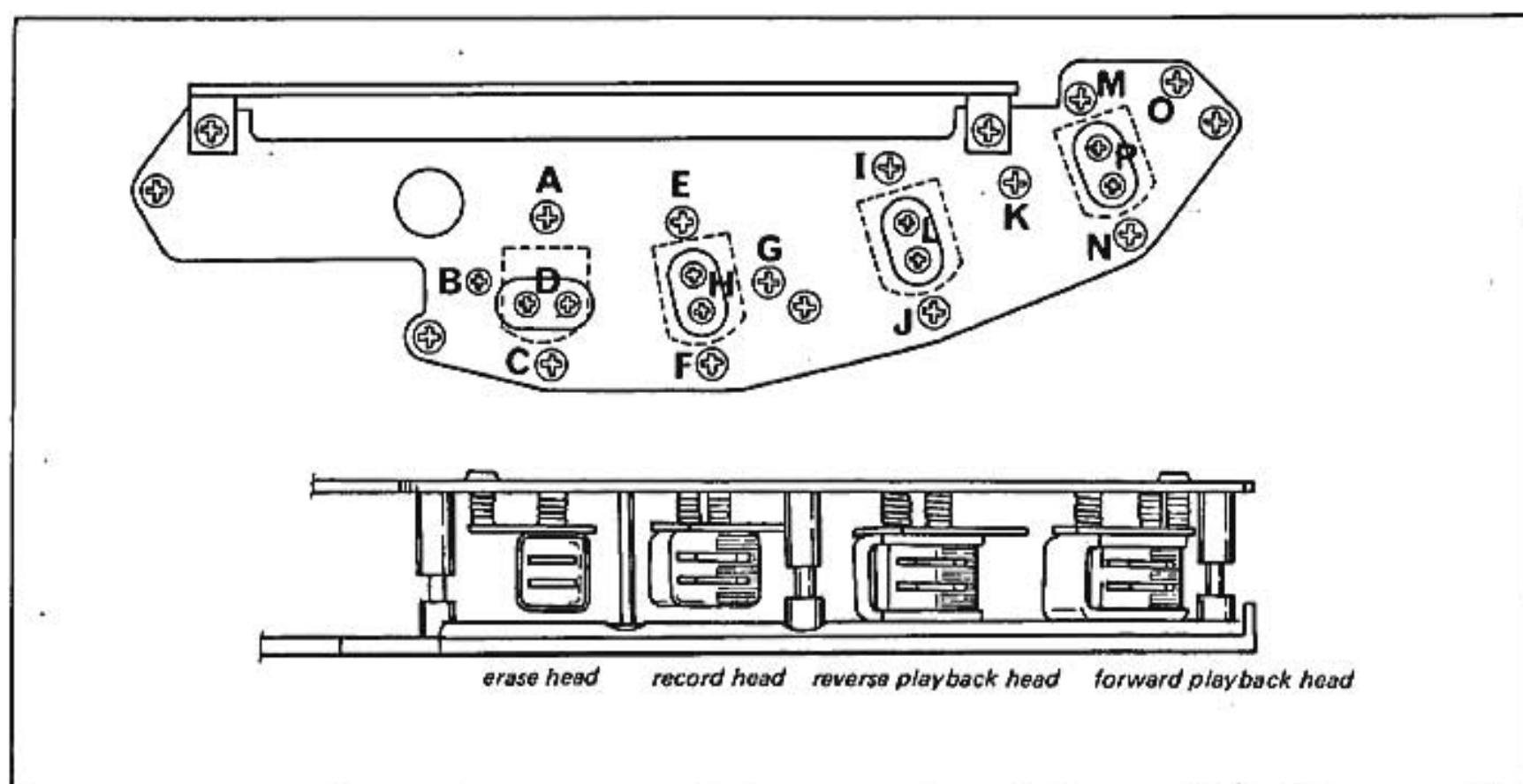
- * Within ± 1.5 dB of maximum output difference.
- * Apply locking paint to the adjusting screws after adjustment.

3. Reverse Playback Head Adjustment

Set up the unit as in "2. Forward Playback Adjustment". And set the unit in the reverse playback mode.

- 1) Perform the adjustments as in "Forward Playback Head Adjustment." Adjust I, J and K of Fig. 5-6 for tracking adjustment, and L of Fig. 5-6 for dihedral adjustment.

- * Within ± 1.5 dB of maximum output difference.
- * Apply locking paint to the adjusting screws after adjustment.



4. Recording Head Adjustment

Set the tape speed to 19 cm/sec (7 ½ ips). Connect VTVMs to the LINE OUTs of both channels.

- 1) Supply 1,000 Hz, 7 mV, output from the audio signal generator to the LINE-1 terminals. Set the unit to the recording mode.

- 2) Tracking Adjustment

Adjust E, F and G of Fig. 5-6 for maximum output levels.

- 3) Dihedral Adjustment

Change the output frequency to 15 kHz. Adjust H of Fig. 5-6, for maximum output levels.

- * Within ± 1.5 dB of maximum output difference.
- * Apply locking paint to the adjusting screws after adjustment.

5. Erase Head Adjustment

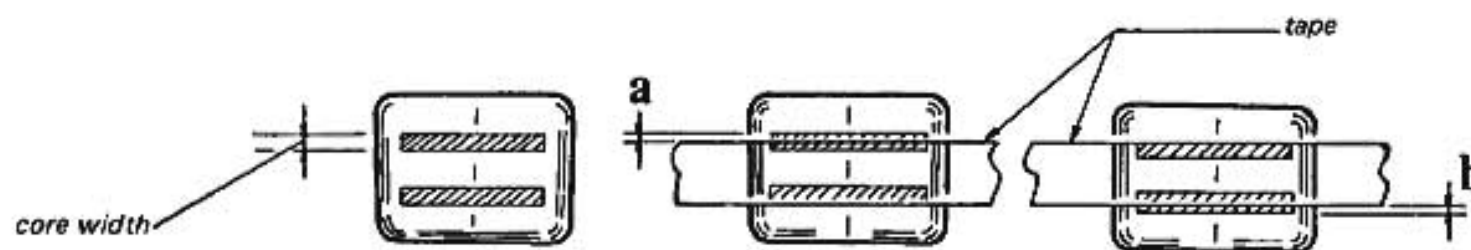
Connect VTVMs to the LINE OUTs of both channels.

- 1) Set the Tape counter to "0000". Supply 1,000 Hz, 7 V signal to the LINE-1 terminals. Set the unit to the recording mode. Push the Stop Button, when the Tape Counter reads "0015". Push the Reverse Button to obtain "0000" in the counter.

- 2) Disconnect the input from the LINE-1 terminals, and set the unit in the record mode until the Tape Counter reads "0015".

- 3) Obtain the difference between the levels measured from the output (7 V input) and that without input signals. Adjust A, B and C of Fig. 5-6 for tracking adjustment and D of Fig. 5-6 for dihedral adjustment.

- * Within ± 1.5 dB of the erasing difference.
- * Apply locking paint to the adjusting screws after the adjustments.



6-2. Reel Motor Voltage Adjustment in FAST FORWARD (See Fig. 6-3)

Proceed as follows with the Shut Off Switch (linked with the left tension arm) turned on.

- 1) Connect an AC voltmeter on 100 V range as in Fig. 6-3.
- 2) Push the FAST FORWARD button marked "▶▶". Adjust the slider band for a voltmeter reading of 30 V.

- Notes: 1 After the above voltage adjustment, thread a tape on the set and alternately repeat the FAST FORWARD and REWIND operations several times. Check the starting of the tape.
- 2 Apply the locking paint to the slider band and the screw securing it.

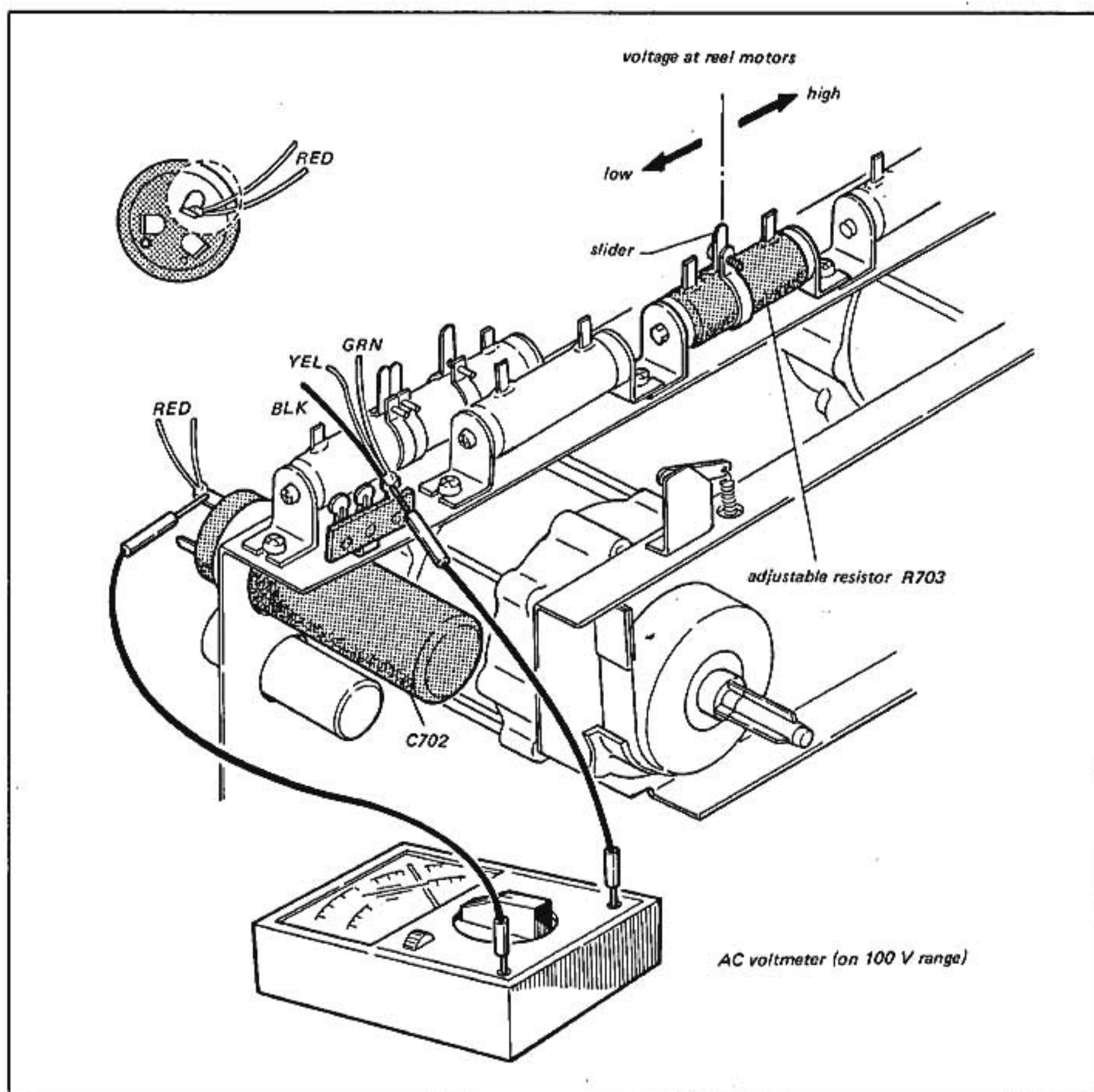


Fig. 6-3 Voltage adjustment for the reel motor

- 3) After tightening both the adjusting and locking nuts completely, thread a tape on the set. Check if the capstan pressure does not change by repeating the FORWARD to STOP process about ten times.

Note: Apply the locking paint to the adjustment nut.

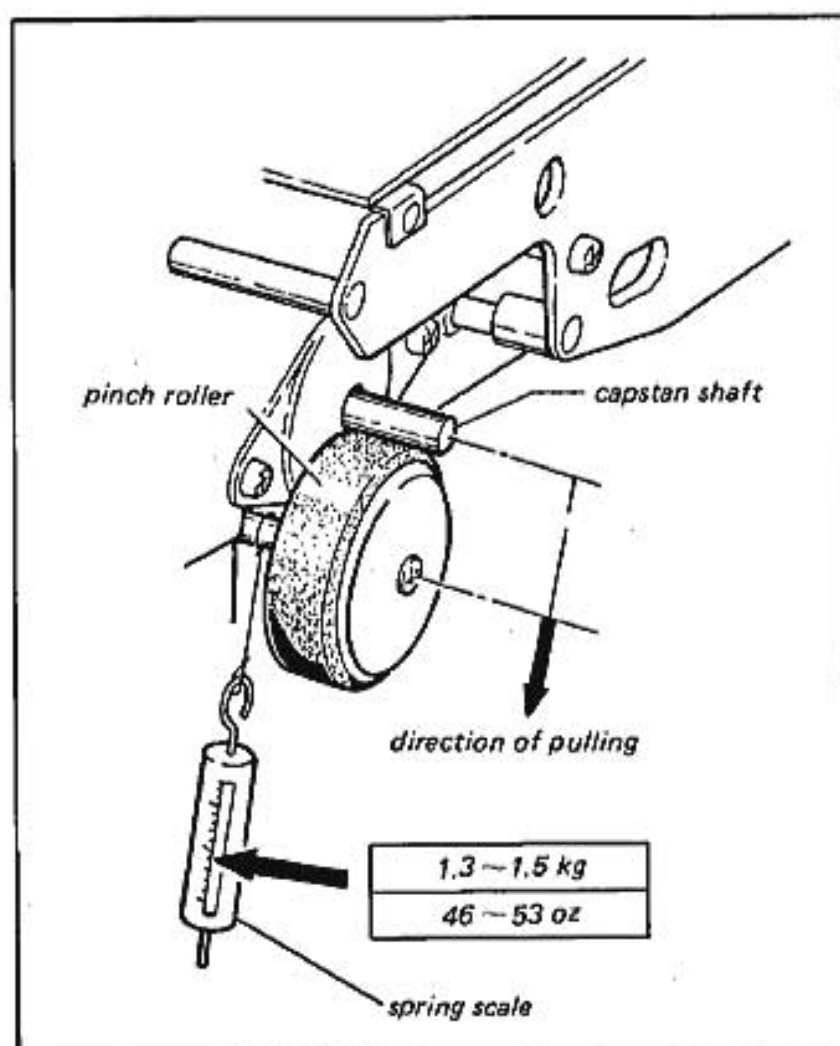


Fig. 6-5 Pinch roller pressure adjustment

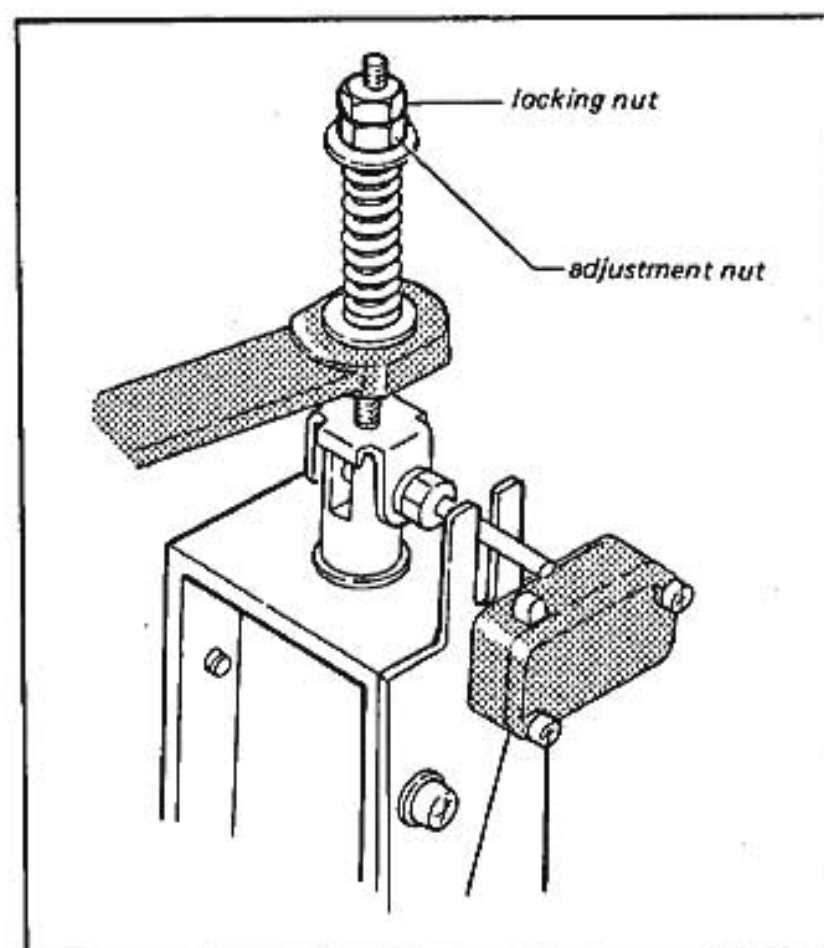


Fig. 6-6 Location of the locking & adjustment nuts.

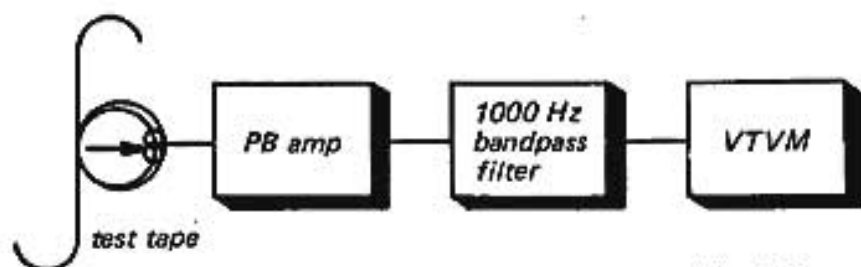


Fig. 8-3

8-5. Channel Separation

- 1) Supply 1,000 Hz, 70 mV signal from the audio signal generator to the LINE-1 terminal of L-channel (R-channel) in the record mode. Supply only a bias to the R-channel (L-channel) without signal.
 - 2) Make connections of both channel outputs to the bandpass filter as shown in Fig. 8-4. Channel separation can be obtained from the ratio of the playback output voltages between both channels from a VTVM.
- See Fig. 8-6 for the response of the bandpass filter.

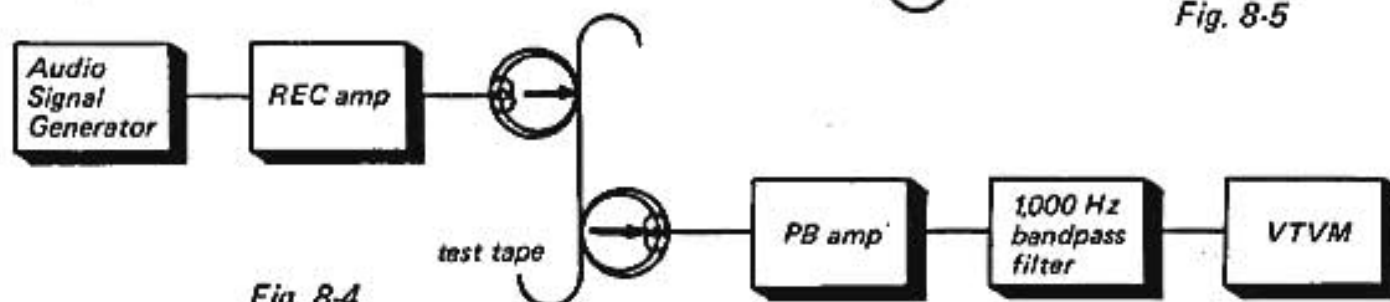


Fig. 8-4

8-6. Wow and Flutter

1. Tape Speed of 19 cm/sec (7½ ips)
(See Fig. 8-5)
- 1) Play back 3,000 Hz signal of a test tape (AMPEX standard tape 01-31326-01.)
- 2) With a wow and flutter meter, check the wow and flutter three times at the beginning, middle and end of a tape wound on 17 cm (7 inch) reel for ten seconds each time. Deviations above the specifications within three times are not counted as wow and flutter.
- 3) Perform this checking in both forward and reverse playback modes.
2. Tape Speed of 9.5 cm/sec (3¾ ips)

Thread a test tape (AMPEX standard tape 01-31336-02). Perform the check as in step 1 "Tape Speed of 19 cm/sec".

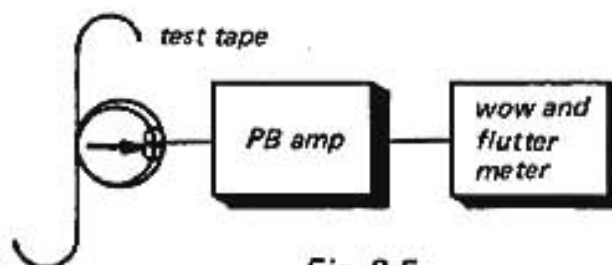


Fig. 8-5

8-7. Response of 1,000 Hz Bandpass Filter

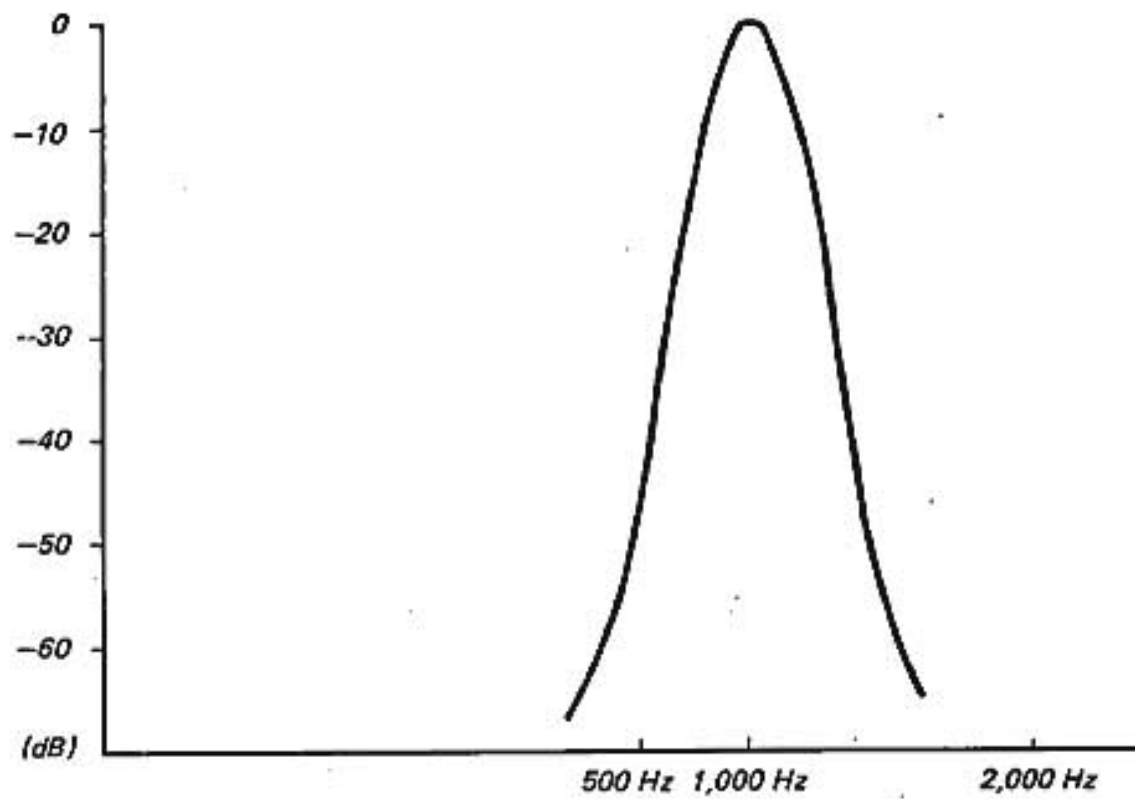


Fig. 8-6. Response of 1,000 Hz bandpass filter

frequency	response
300 Hz	-68 dB
500 Hz	-58 dB
1,000 Hz	0 dB
1,500 Hz	-17 dB
2,000 Hz	-37 dB
2,500 Hz	-65 dB

8-8. Response of Equalizer Circuit

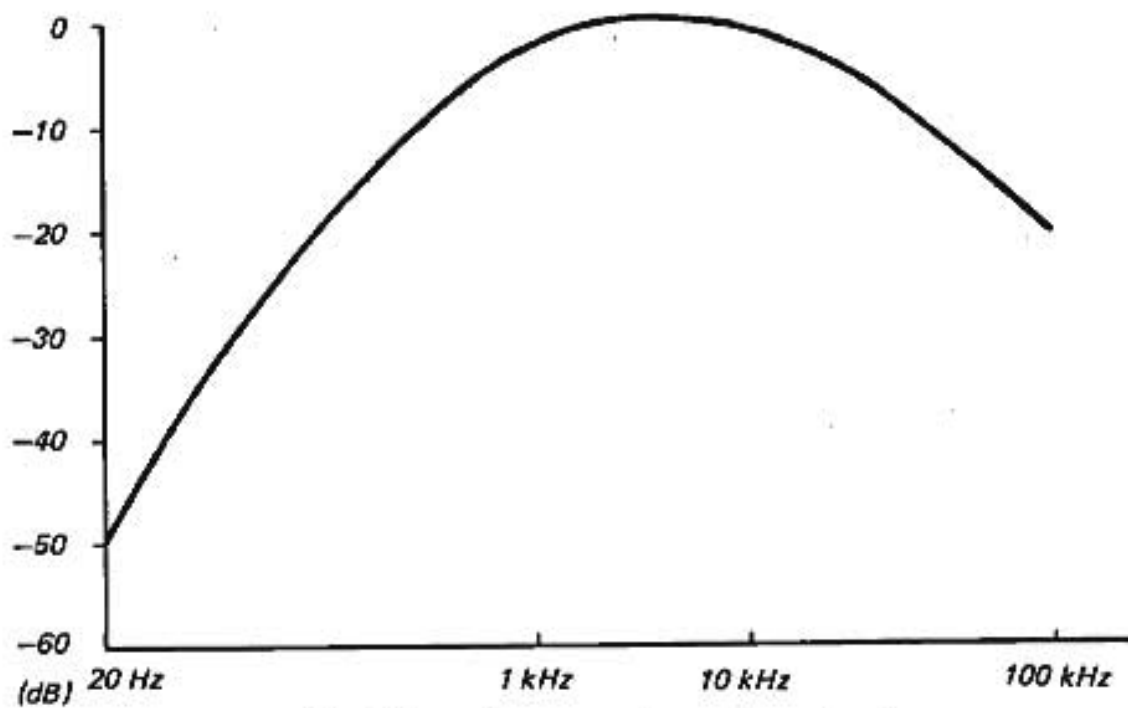


Fig. 8-7. Response of equalizer circuit

frequency	response
20 Hz	-50 dB
50 Hz	-31 dB
100 Hz	-19.5 dB
150 Hz	-6 dB
1,000 Hz	0 dB
1,500 Hz	-0.1 dB
10 kHz	-2.5 dB
15 kHz	-15 dB
100 kHz	-21 dB

9-6. Tape Splicing

(See Fig. 9-8)

The tape are designed strong enough to withstand the various stresses. However, if splitting the tape occurs accidentally or cutting the tape is necessary for the editing purposes, tape splicing is easily made as follows.

Requirements:

1. Scissors:

Use a scissors demagnetized through the use of a head or bulk eraser.

2. Splicing tape:

Use only the supplied splicing tape or the splicing tape for recording tape use. Any substitutional adhesive tapes easily cause various tape troubles such as damage or scratches of tape in motion. Therefore, never use the substitutional tapes.

Procedure:

- 1) Overlap the desired two tapes with the reverse (glare side) upward respectively. Cut the ends of the tapes at 45 degrees. See Fig. 9-8 (a)
- 2) On a flat work bench, bring the cut tapes face to face so that the joints fit together perfectly.

Apply the splicing tape to the joints of the spliced tape. See Fig. 9-8 (b). And rub the splicing tape with the finger(s) so that the joints and the applied splicing tape stick together firmly.

- 3) Cut the unnecessary portions of splicing tape so that the splicing tape applied is a bit in from top and bottom ends of the spliced tape.

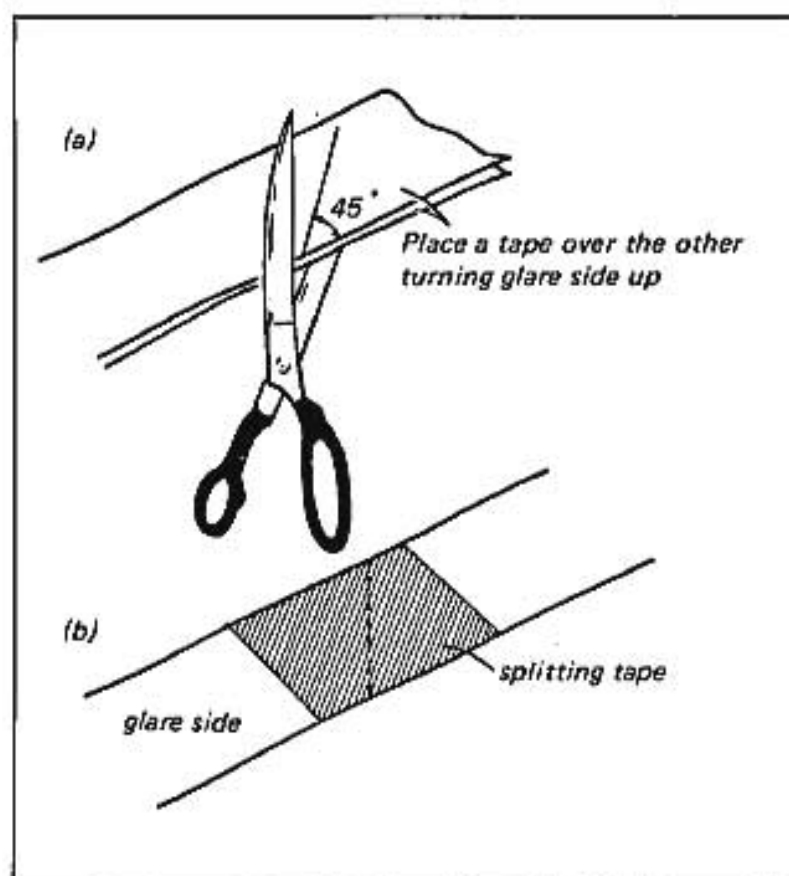


Fig. 9-8

10-7. Impedance Roller Replacement

1. Disassembly (See Fig. 10-16)

For replacement of a defective impedance roller, proceed as follows:

- 1) Remove the two S type screws ④⑨ , ⑤⑩ and the wheel ⑤⑪ . At this time, be careful not to drop the impedance roller to the floor as it has come out free.
- 2) Remove the bearing case ⑤⑬ by loosening off the nut ⑤⑭ securing the case.

2. Assembly (See Fig. 10-16)

- 1) Install the bearing case ⑤⑬ in place by tightening the nut ⑤⑭ . At this time, be careful not to drop the impedance roller to the floor.
- 2) Insert the flywheel ⑤⑮ into the impedance roller and secure the wheel in place by tightening the two S type screws ④⑨ , ⑤⑩ . Note that the screw ⑤⑩ is tightened first and then the screw ④⑨ is tightened.

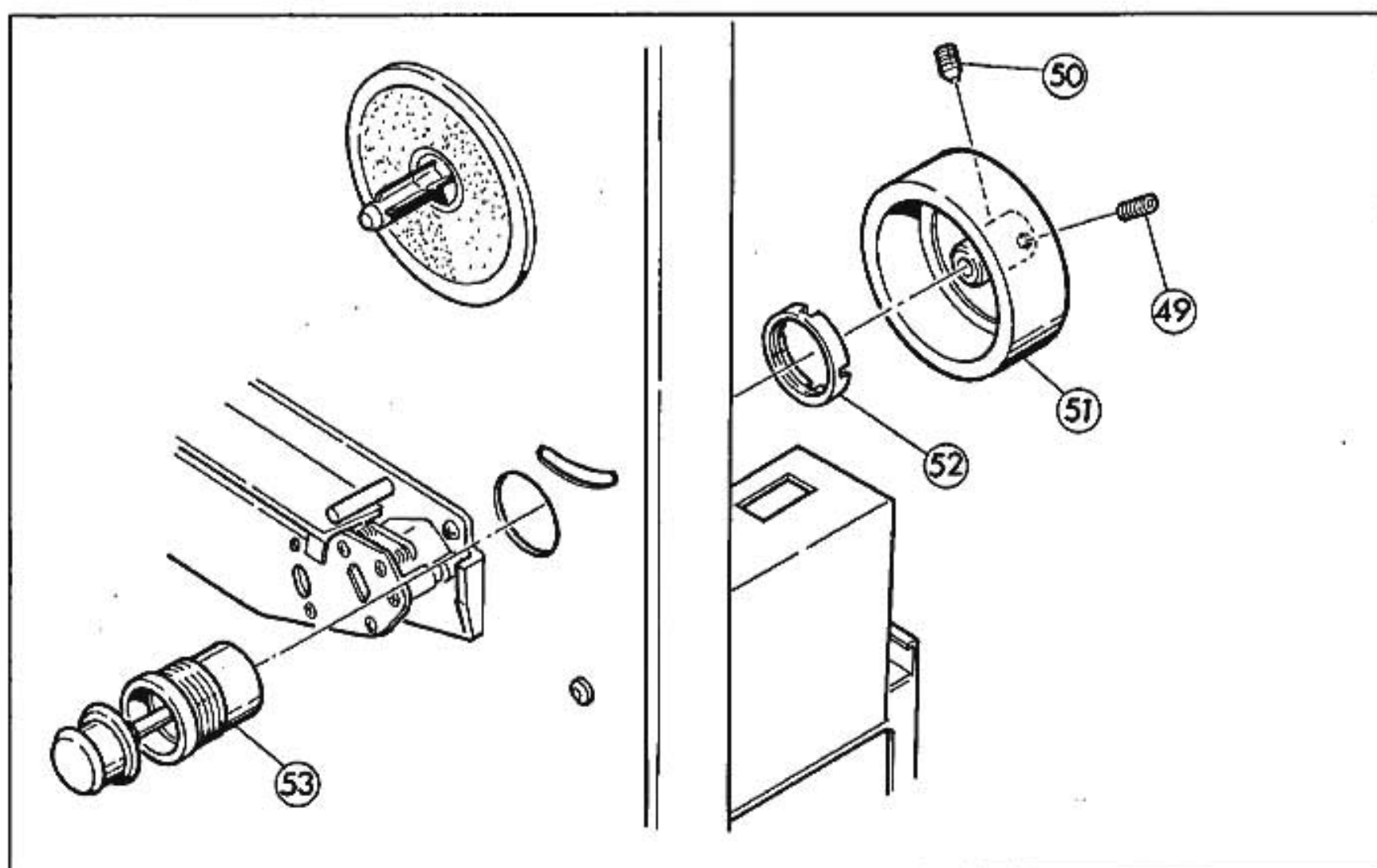


Fig. 10-16

11 TROUBLESHOOTING TABLE OF CONTENTS

11-1. Table of Contents

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TROUBLESHOOTING ON THE AMPLIFIER SECTION

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2. HEADPHONE Volume Control Maximum
3. MONITOR Switch PLAYBACK
4. MODE Switch STEREO
5. PLAYBACK Volume Control Maximum
6. BALANCE Volume Control Center
7. LINE (1, 2) Volume Control Minimum

Record Mode

1. LINE 1 Input 70 mV
2. HEADPHONE Volume Control Maximum
3. MONITOR Switch SOURCE
4. MODE Switch STEREO
5. PLAYBACK Volume Control Maximum
6. BALANCE Volume Control Center
7. LINE 1 Volume Control Maximum
8. MIC Volume Control Maximum

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 - 4) Output present at LINE OUT 11-16

3. Recording System Troubles

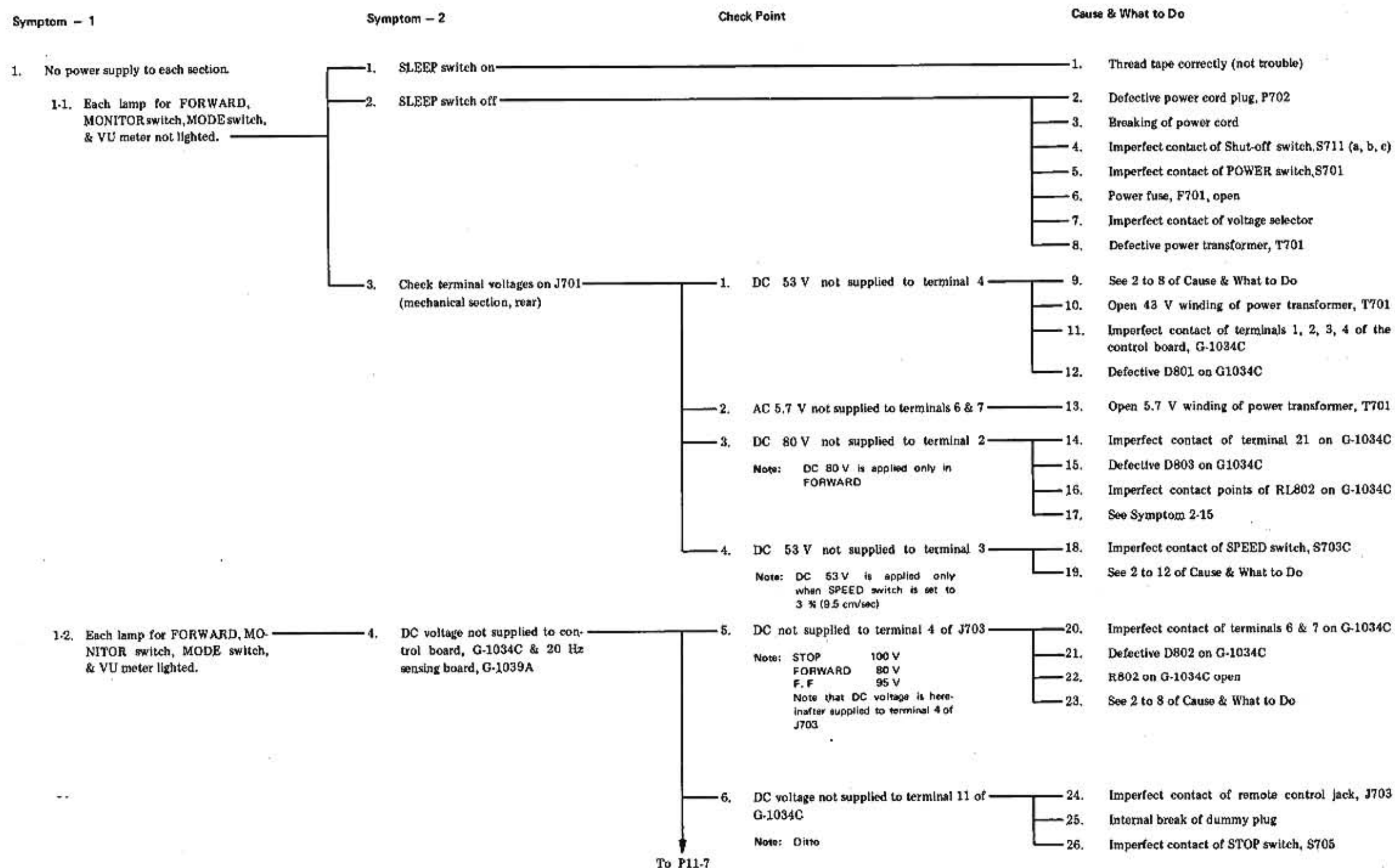
- 3-1. Output 700 mV absent at LINE OUT 11-16
 - 5) Output 5.4 mV absent at terminal 12 (13) of G-1041A 11-16
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 - 7) Output 120 mV absent at terminal D (N) of G-1020C 11

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11-2. How to Keep the Recorder Out of the Following Symptoms

Symptom	Probable Cause & Reference Data
No tape movement or incorrect tape speed	PAUSE switch is operated to stop tape movement; excessive tape slack causing tension arms to stop the recorder; 11-pin dummy plug for REMOTE connector disconnected (on the control indicator, rear); tape speed in playback different from that in record
Weak or no sound (on either one or both channels)	MONITOR switch turned to SOURCE; improper setting of input and output balancing or level controls; wrong or incomplete connections between connectors
Weak or no sound through headphones	Dirty heads; improper setting of output level control in playback; improper setting of the headphone volume
No erase of previous	Dirty erase head
Microphone inoperative	Incomplete connection of dummy plug (s) and microphone jack (s) (right side, cabinet); incorrect impedance of microphone
Opposite lamp indication against tape movement in FAST FORWARD and REWIND	Normal - playback head operative in the direction shown by the arrow and capstan ready for operating in the same direction
Inoperative AUTOMATIC mechanism	Note that AUTOMATIC system works 10 seconds after from the start of tape movement; unrecording of 20 Hz reversing signal
Power off with POWER switch pushed	SLEEP switch pressed; left tension arm head down

11-3. Troubleshooting on the Mechanical Section

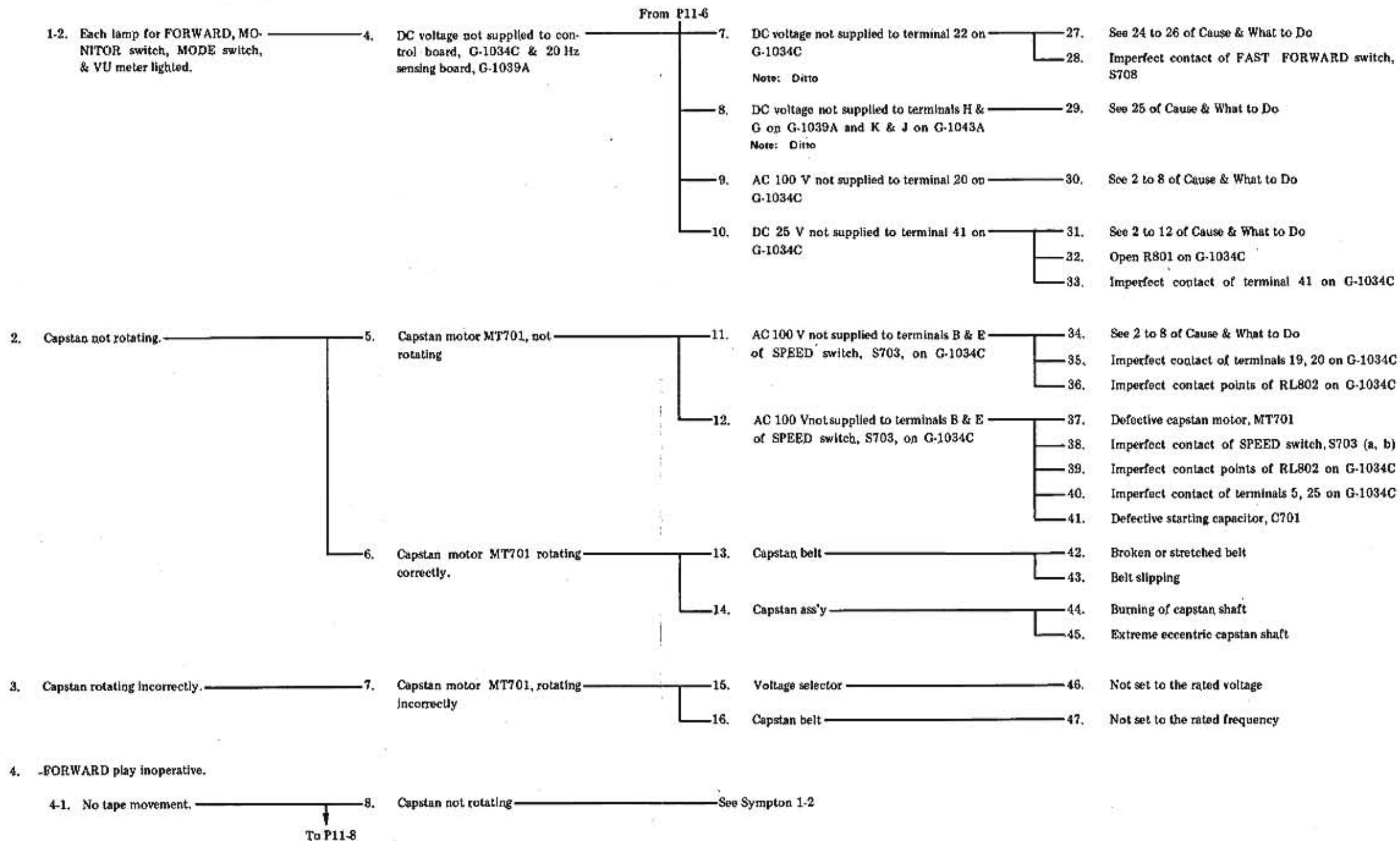


Symptom — 1

Symptom — 2

Check Point

Cause & What to Do

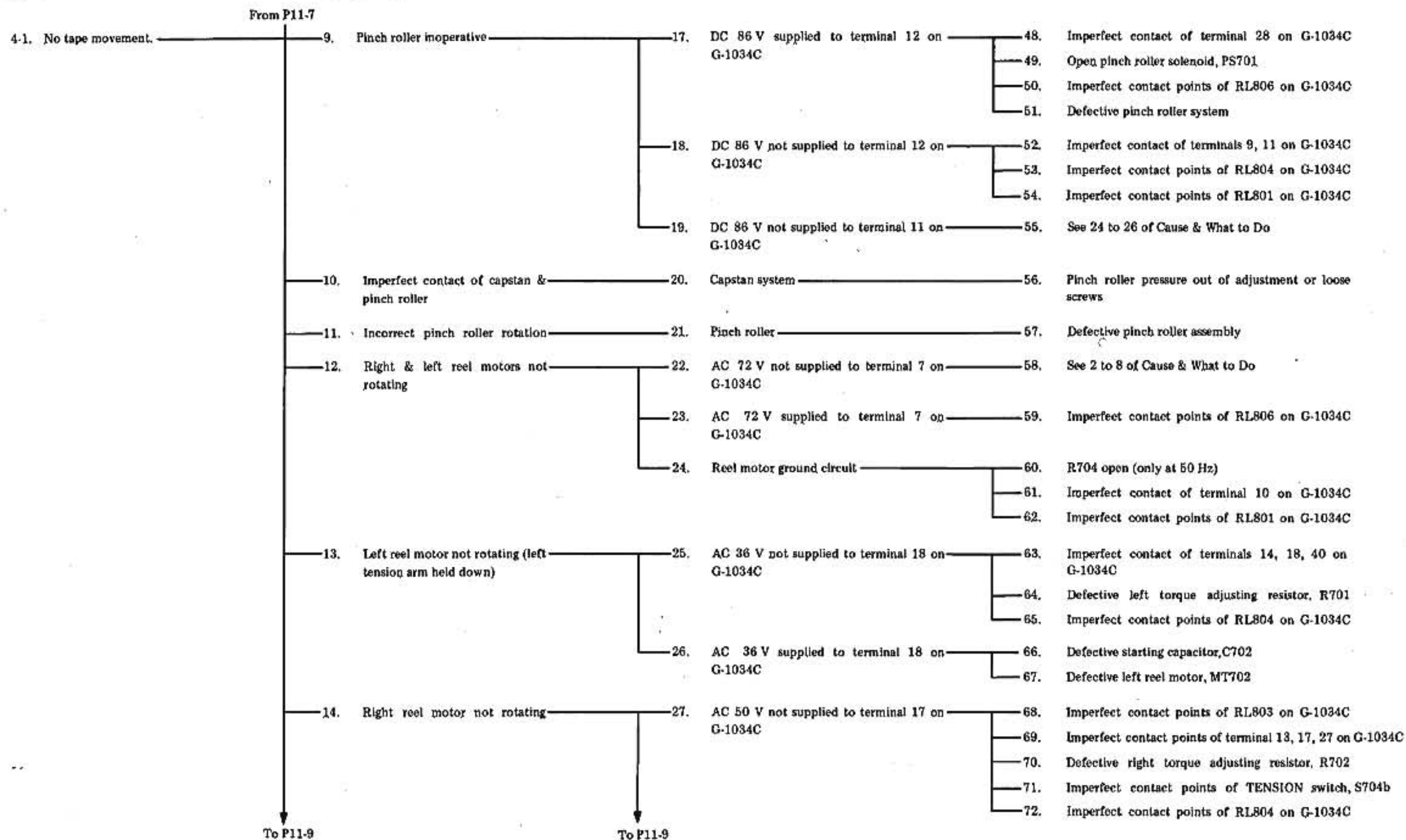


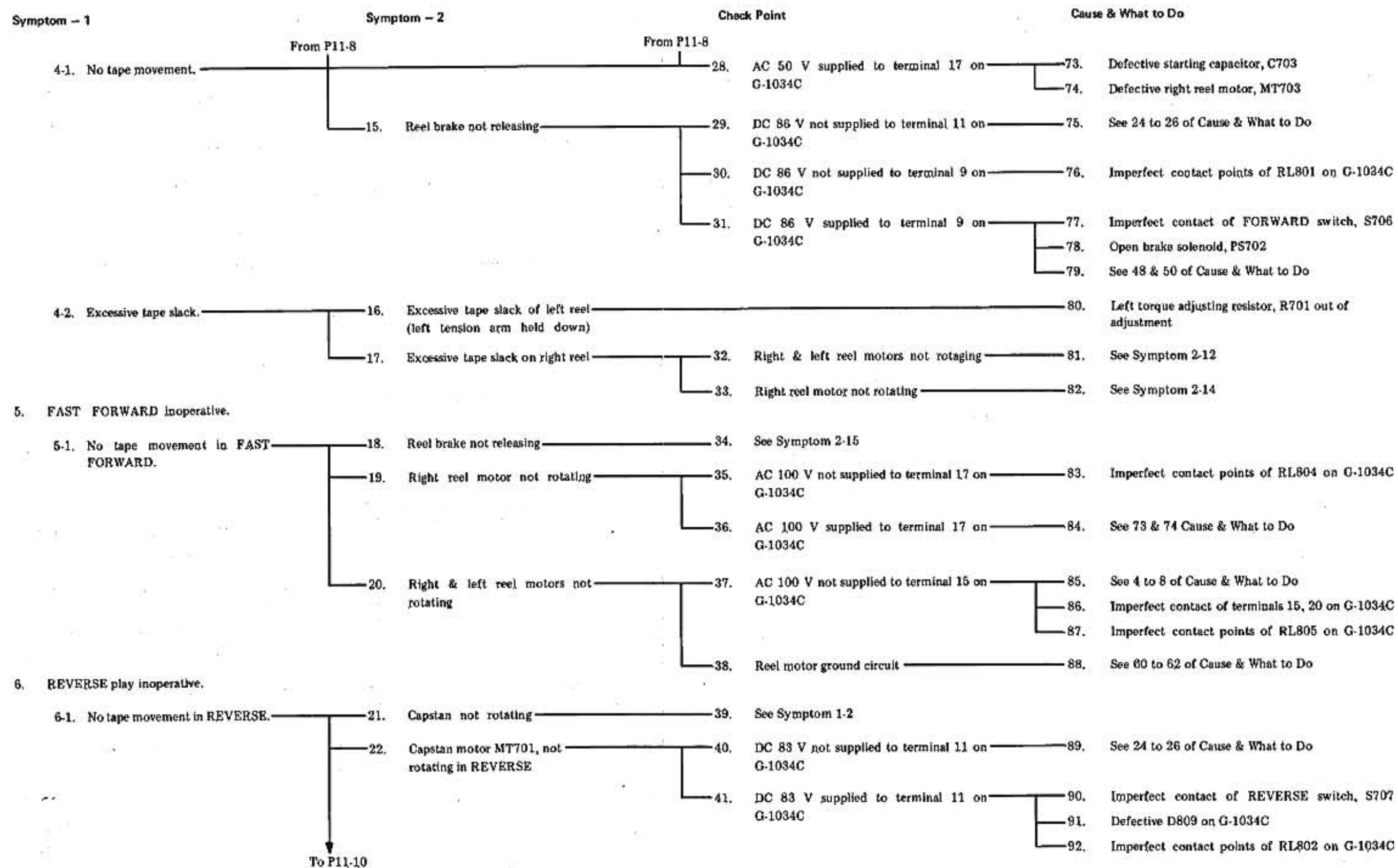
Symptom - 1

Symptom - 2

Check Point

Cause & What to Do



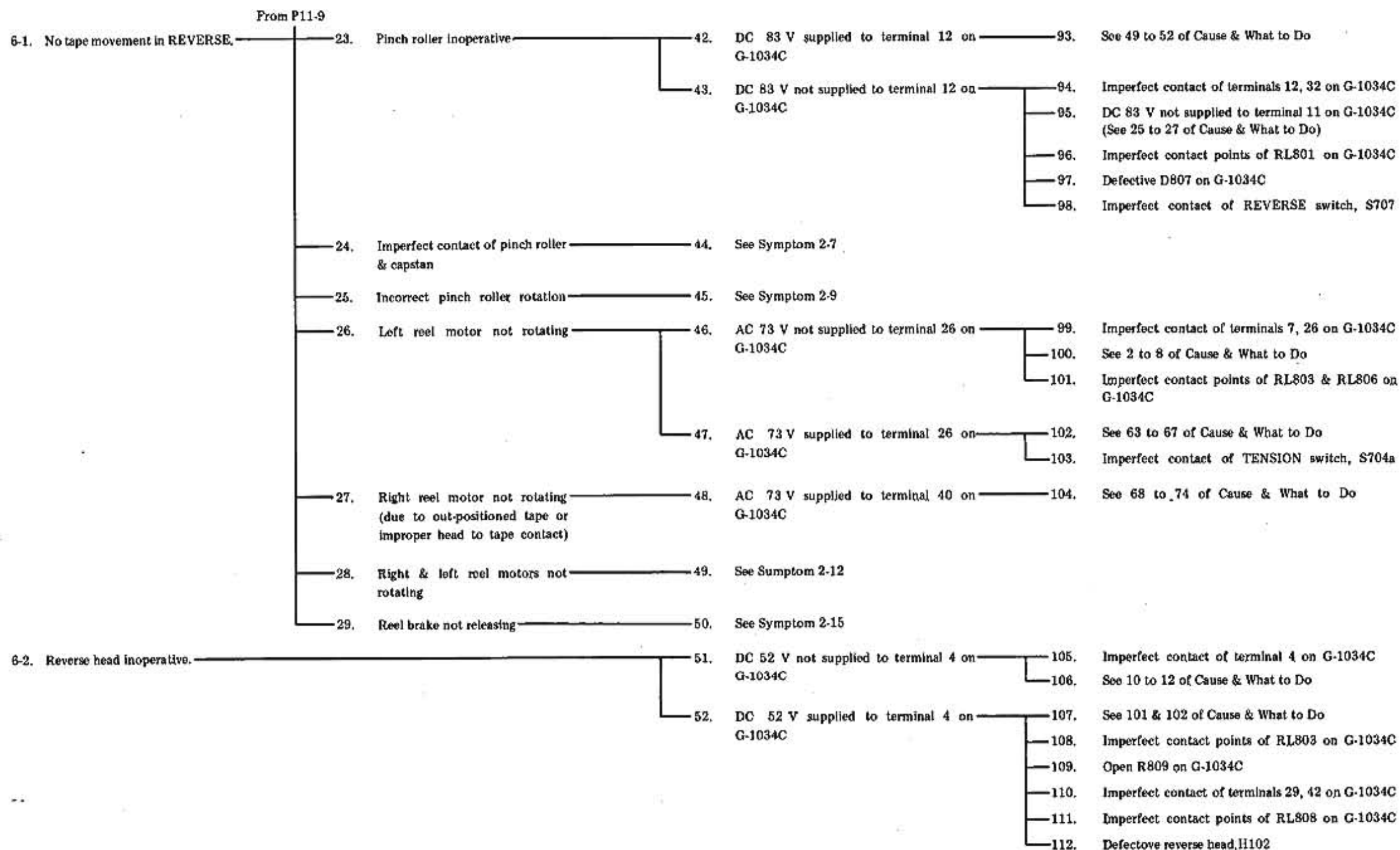


Symptom - 1

Symptom - 2

Check Point

Cause & What to Do



Symptom - 1

Symptom - 2

Check Point

Cause & What to Do

6-3. Lamp for REVERSE operation not lighted.

53. AC 5.7 V not supplied to terminal 38 on G-1034C — 113. See 13 of Cause & What to Do

54. AC 5.7 V supplied to terminal 38 on G-1034C — 114. Imperfect contact points of RL803 on G-1034C

115. Imperfect contact of terminals 28, 36 on G-1034C

116. Reverse lamp, PL702 open

117. Imperfect contact of PL702 and lamp socket

6-4. Excessive tape slack.

30. Excessive tape slack on left reel (shut off switch is switched off)

55. Left reel motor not rotating — 118. See Symptom 2-13

31. Excessive tape slack on right reel (improper head-to-contact tape)

56. Right reel motor not rotating — 119. See Symptom 2-14

7. REWIND inoperative.

7-1. No tape movement in REWIND.

32. Left reel motor not rotating

57. AC 100 V not supplied to terminal 18 on G-1034C — 120. Imperfect contact of terminal 18 on G-1034C

121. Imperfect contact points of RL804 on G-1034C

58. AC 100 V supplied to terminal 18 on G-1034C — 122. See 66 & 67 of Cause & What to Do

33. Right reel motor not rotating

59. AC 31 V not supplied to terminal 17 on G-103

