

TEAC[®]

A-1250 A-2500 STEREO TAPE DECK SERVICE MANUAL



TEAC CORPORATION

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1 GENERAL DESCRIPTION

The TEAC A-2500 is a high quality 2 speed, 4 track 2 channel tape deck employing the famous TEAC 3 motor tape transport.

3 heads (1 composite erase/record head) provide all the functions of a 4 head configuration.

The ultra wide band preamplifier circuits use all silicon transistors. Independent circuits are provided for recording, monitoring, meter amplifier, and playback functions.

The A-2500 may be used with any good quality amplifier or high fidelity sound system.

This service manual is designed to assist service engineers by providing procedures and corrective measures for adjustment, care and maintenance, and the ordering procedures for needed parts.

If adjustments or repairs are too complicated and are difficult for you to correct, or if you have any technical questions, please contact the nearest TEAC dealer or TEAC Corporation or affiliated corporations.

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2 SERVICE DATA

MECHANICAL

Heads: 4 track 2 channel stereophonic.
Erase/Record combination head;
Erase section,
1.8kohm/100kHz, erase current approx. 30mA
Record section,
100ohm/1kHz, bias current approx. 2mA
Playback,
3kohm/1kHz -53dB

Tape width: Standard 1/4inch tape

Tape speed: 3-3/4ips and 7-1/2ips(±0.5%)

Motors: 4/8-pole dual speed hysteresis synchronous motor
for capstan drive.
6-pole eddy current motors for reel drive.

Wow and Flutter: 0.12% at 7-1/2ips.
0.15% at 3-3/4ips.
Wow and flutter measured according to weighted
NAB standard using TEAC flutter free tape.

Fast Winding Time: Approx. 100 second or less for 1,200 feet.

Operating Position: Horizontal or vertical.

Power Requirements: 100/117/200/220/240V AC (Model 1250, 117V 60Hz)
50/60Hz 140W

Weight: 37.51bs (17.3kg)

ELECTRICAL

Transistors: 2SC732(BL) x 2 2SA494(Y) x 2
2SC733(Y) x 2 2SC369(BL) x 6
2SC372(Y) x 10 2SC971 x 2

Diodes: FR-1MD x 2
FR-2 10 x 1

Frequency Response: Overall from recording INPUT to playback
OUTPUT.
7-1/2ips, ±2dB 50Hz - 10kHz
3-3/4ips, ±2dB 50Hz - 5kHz

Equalization: NAB equalization
7-1/2ips 50u sec. 3-3/4ips 90u sec

Input: MIC: 0.3mV/10kohm(-68dB)
LINE: 0.1V/100kohm(-18dB)

Output:	LINE: approx. 0.3V/10kohm or more HEADPHONE: 0.3mW/8ohm
Bias Freq:	100kHz push-pull oscillator
Signal to Noise Ratio:	50dB or more Peak record level to unweighted noise
Cross talk Rejection:	40dB Channel to channel at 1kHz 35dB Adjacent track at 100Hz
Erase Efficiency:	60dB or more at 7-1/2ips

These specifications are indispensable information and are required to service the equipment properly. They may differ slightly from those printed in the advertising brochures or the operation manual.

NOTE

As a result of continuing changes and improvements during the production run, minor differences may be found between early and later machines refer to manual change sheets for information concerning modifications.

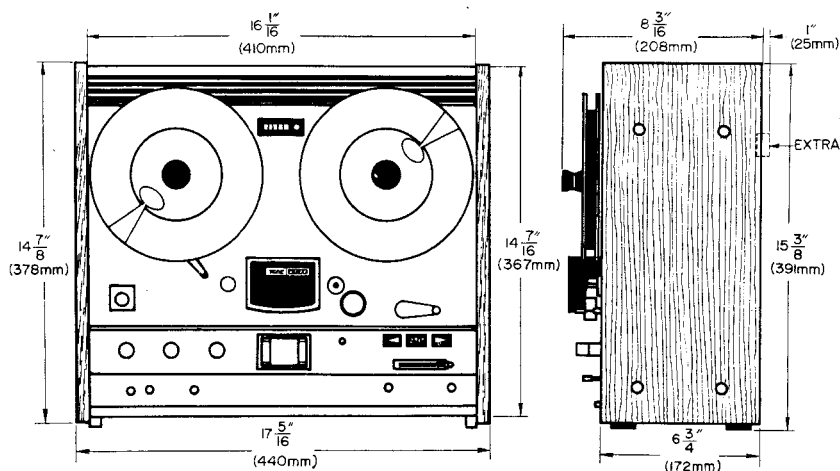


Fig. 2-1 Dimensions

Specifications and components subject to change without notice.

4 EQUIPMENT REQUIRED

FOR MECHANICAL MEASUREMENT

SPRING SCALE: 0 - 3kg(0 - 8lbs)
0 - 300g(0 - 10oz)

TEST TAPE: TEAC YTT-2003 (7-1/2ips)
TEAC YTT-2002 (3-3/4ips)

FLUTTER METER: SENTINEL INC FL-3D-1

DIGITAL FREQ. COUNTER: Capable of 0 to 5kHz indication.

TOOLS: General, 2mm nut driver, Hex head allen wrench

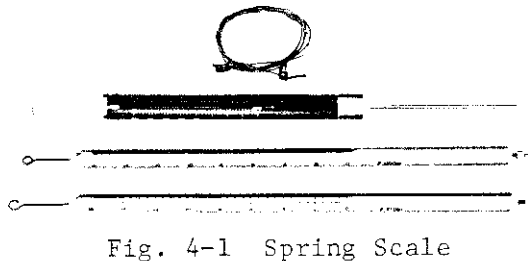


Fig. 4-1 Spring Scale

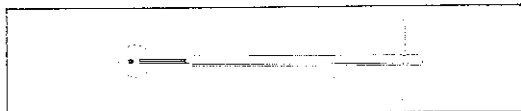


Fig. 4-2 TEAC Hex Allen Wrench



Fig. 4-3 TEAC Test Tapes

FOR ELECTRICAL MEASUREMENT

TEST TAPE: TEAC YTT-1003 for 7-1/2ips
TEAC YTT-1002 for 3-3/4ips
SCOTCH 203 and 150 for recording test.

EMPTY REEL: TEAC RE-702(2" hub)
TEAC RE-701(4" hub)

TEST SET: TEAC M-826A test set

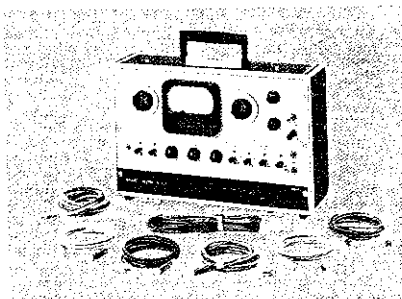


Fig. 4-4 TEAC Test Set

NOTE

Use of the TEAC M-826A test set is recommended. This set incorporates an AC VTVM, Audio Oscillator, Channel Selecting switch, Variable Attenuator, Monitor Speaker and Cables.

TEAC M-826A measures the RMS value of the Voltage(0dB=0.775V). Characteristics of this test set are similar to the standard VU-meter.

BAND PASS FILTER: TEAC M-206A(1kHz)

VTVM: hp model 4302B or equivalent

RESISTOR: Non inductive type 8ohm/1W

OSCILLOSCOPE: General

5 PARTIAL DISASSEMBLY

CAUTION

Do not attempt complete disassembly of any of the subassemblies.

The list of individually replaceable parts in the exploded view should be used as a guide to disassembly limits.

REMOVING THE BOTTOM PLATE

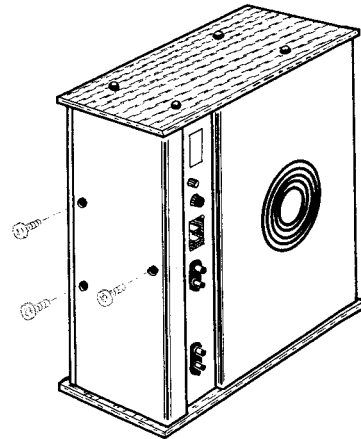
- Place the unit upside down.
- Remove the three screws in the bottom plate.
- Lift off bottom plate.

NOTE

All amplifier checks and adjustment can be made from the bottom with the plate removed

CAUTION

These adjustments should be performed by experienced technicians, and then only when going through the complete test and check procedures on the unit which is being tested.

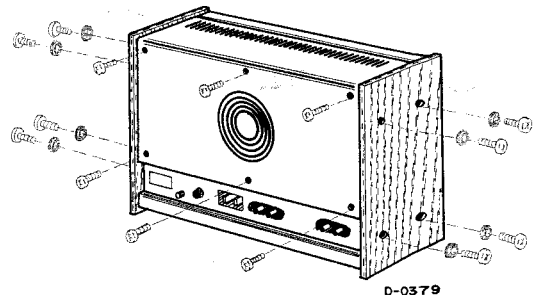


D-0360

Fig. 5-1 Removing The Bottom Plate

REMOVING THE REAR PANEL AND WOODEN SIDES

- Loosen the four screws on each wooden side.
- Remove the six screws holding the rear panel.
- Lift off rear panel.
- Remove the eight screws in the two wooden sides.
- Remove the wooden sides.



D-0379

Fig. 5-2 Removing The Rear panel And Wooden Side

HEAD REPLACEMENT

CAUTION

Power to the unit must be switched off when removing the heads, this to prevent transient pulses from passing through the heads causing strong magnetization or damage to the delicate windings. After head replacement, thorough demagnetization is recommended.

NOTE

The heads of the A-2500 can be changed either as a complete assembly or individually depending on the need.

HEAD ASSEMBLY REPLACEMENT

To change the head assembly as a unit, remove the two mounting screws, (one on each end).

Note the positions of the wires on the circuit board before unsoldering.

Solder the wires of the new heads in exactly the same positions.

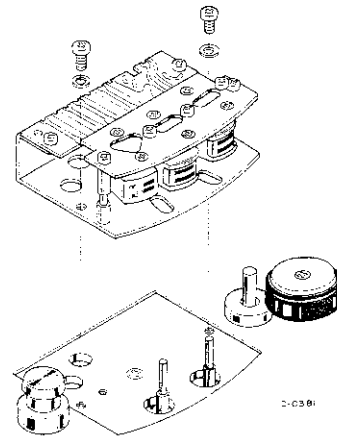
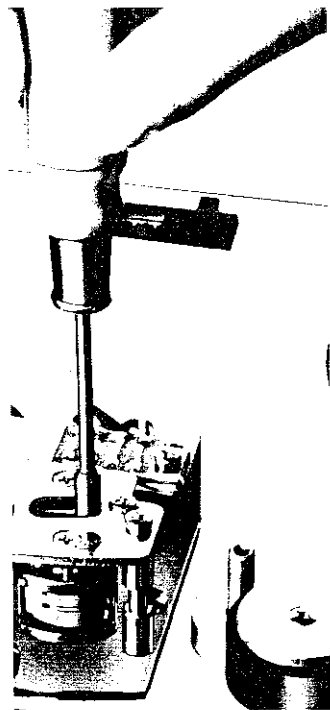


Fig. 5-3 Head Assy

INDIVIDUAL HEAD REPLACEMENT



To replace a single head, a special 2mm nut driver is required. Remove the two nuts on the defective head through the access hole provided, this releases the head from the mounting plate. Note the position of the wires on the circuit board. Connect the new head in the same manner.

Replace the nuts securing the new head to the plate, perform head alignment before operation.

Head installation mounting provides for left or right positioning. After installing heads, determine proper position while recording or playing back a tape.

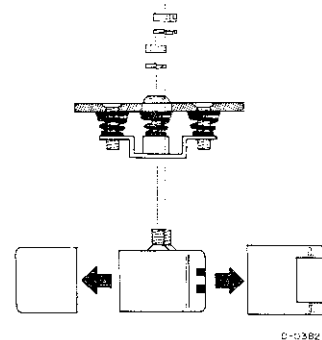


Fig. 5-4
Individual Heads

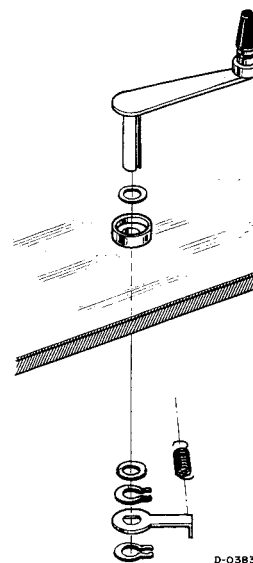
TENSION ARM ASSY - LEFT -

- Remove the snap ring first.
- Disconnect one end of the spring B and remove the spring hang.
- Remove the upper snap ring and flat washer from the arm shaft.
- Pull off the tension arm assy with flat washer

To reassemble, reverse the previous procedures.

IMPORTANT

A special grease (MULTI DIA SS-10) must be used between the shaft and busing to maintain proper tension arm damping when installing tension arm.

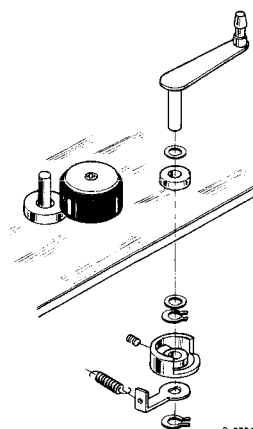


TENSION ARM ASSY - RIGHT -

- Remove the snap ring.
- Disconnect spring C and remove the spring hang.
- Remove the snap ring (upper) and flat washer.
- Pull off the tension arm assy with flat washer.

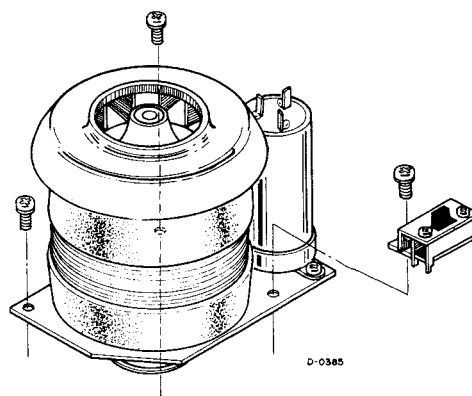
NOTE

Be sure that hex head screw is retight retightened when remounting tension arm.



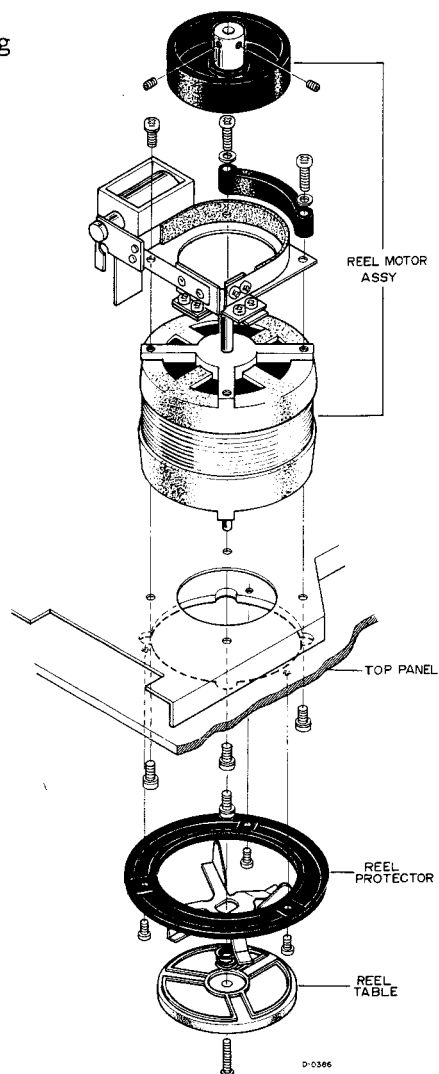
CAPSTAN MOTOR ASSY

- To remove the capstan assy from the top panel remove three screw in each corner mounting plate.



REEL MOTOR ASSY

- To remove the reel motor assy. the reel table assy and reel protector must be removed.
- Remove the four reel motor mounting screw at under top panel.



6 HEAD MECHANICAL ALIGNMENT

NOTE

Head alignment is adjusted at the factory to very critical tolerances. Normally HEAD ASSEMBLY replacement will require only minor alignments or adjustments. Complete readjustment should only be necessary after an individual head is replaced. The adjustments are made as follows:

ERASE HEAD SECTION

The erase head pole should be above the edge of a threaded tape by the width of heavy pencil line.

RECORD HEAD SECTION

The record head pole should be above the edge of a threaded tape by the width of a thin pencil line.

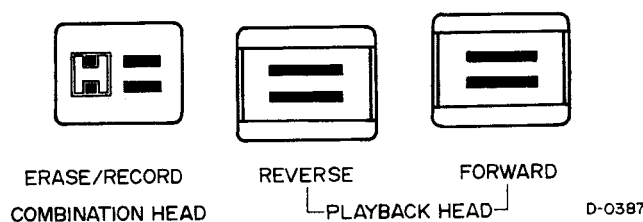


Fig. 6-1 Head Alignment

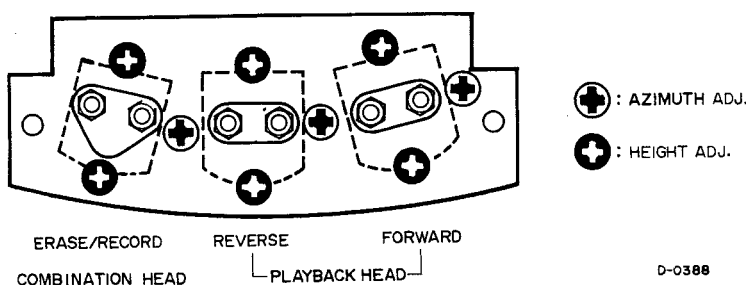


Fig. 6-2 Adjustable Screw

PLAYBACK HEAD -FORWARD-

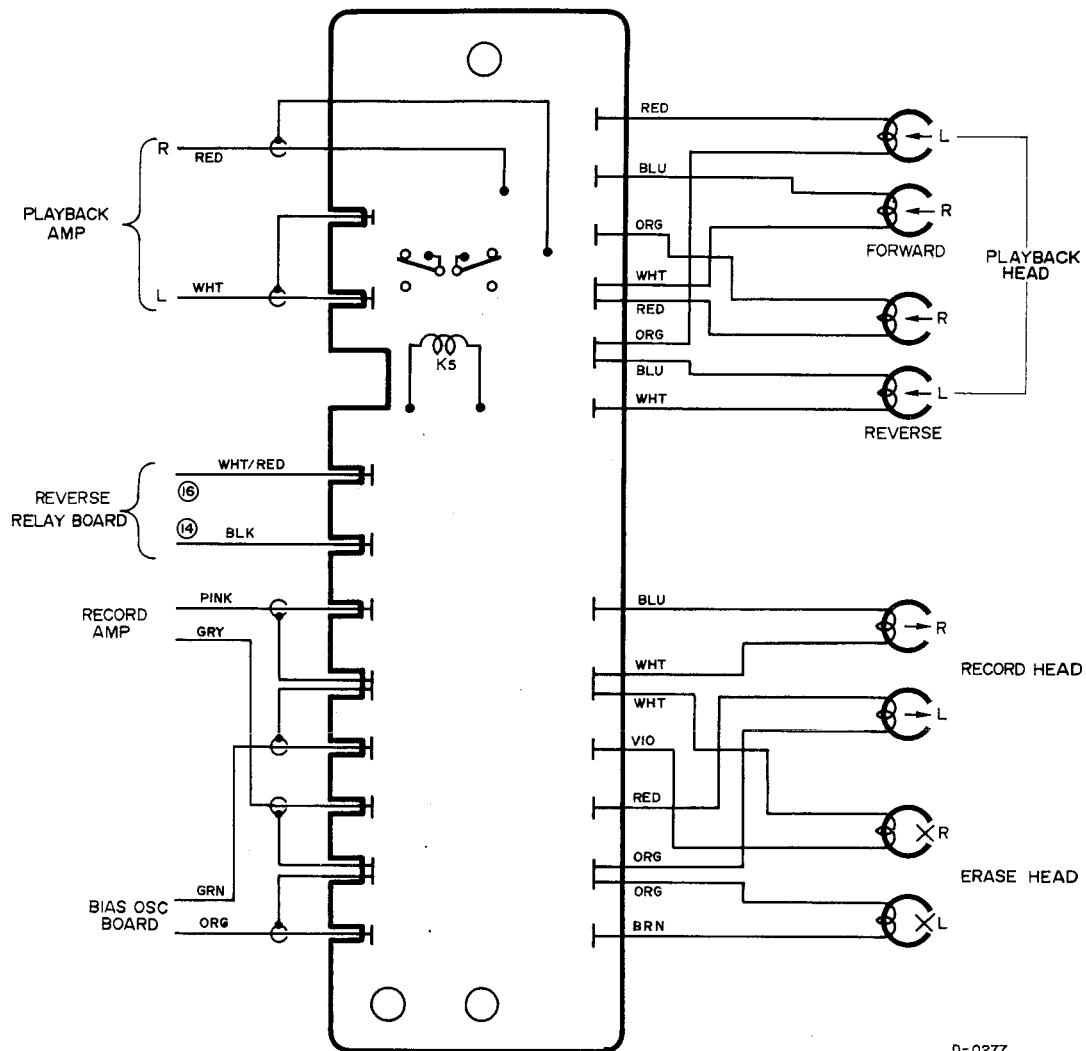
The pole of the playback head should be even with the top of a threaded tape.

PLAYBACK HEAD -REVERSE-

The pole of the playback head should be even with the bottom of a threaded tape.

NOTE

Azimuth adjustments are given in the section on MEASUREMENT AND ADJUSTMENT -ELECTRICAL-



D-0277

HEAD WIRING

7 MEASUREMENT AND ADJUSTMENT

-MECHANICAL-

NOTE

The TEAC A-2500 uses a highly reliable three motor drive system and should require a minimum of mechanical maintenance or adjustment.

These adjustments are made at factory. Readjustment should only be required after many hours of operation or component replacement.

PINCH ROLLER PRESSURE

NOTE

Pinch roller pressure is supplied by pinch roller spring arm only and it is most important that the solenoid plunger be fully bottomed before taking pressure measurement.

1. Load tape or lock the shut-off arm in the on position.
2. Attach a suitable spring scale to the pinch roller shaft.
3. Place the unit in the (▶) PLAY mode, and holding the spring scale as illustrated, slowly draw it away from the pinch roller.
4. Do not allow the string to rub against the pinch roller.
5. Note the reading on the spring scale at the instant the pinch roller stops rotating.
6. The scale should indicate 2.0 - 2.2kg (5.0lbs - 5.6lbs).
7. If adjustment is necessary, loosen the three screws on the capstan solenoid and position the solenoid for optimum pressure.
8. Adjust stopper position so that the gap between capstan shaft and pinch roller is approximately 7mm(9/32inch).

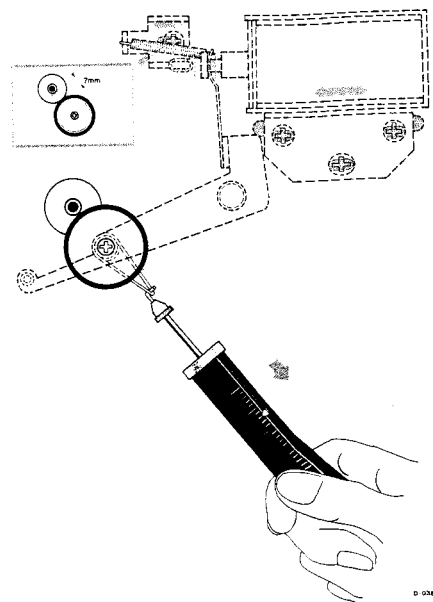


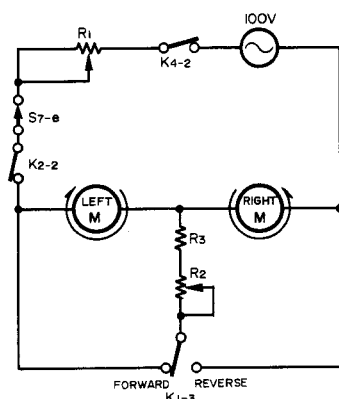
Fig. 7-1 Pressure Measurement
-Pinch Roller-

TORQUE ADJUSTMENT PROCEDURE

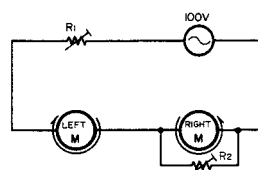
NOTE

Adjustable resistors for both reel motors are wired as shown in the figure. R-1 is common to both motors and R-2 is switched between motors. Perfect adjustment of one motors tension may result in the other motors tension exceeding allowable limits. In this case a compromise should be made.

Position R-1, R-2 for optimum torque of both motors.

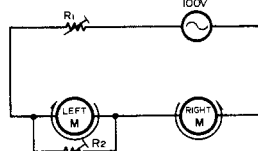


D-0394



SHOWN IN REVERSE PLAY (◀)

D-0396



SHOWN IN FORWARD PLAY (▶)

D-0395

Fig. 7-2 Torque Operation

Perform following adjustments with unit in Forward Play.

1. Measure the back tension of the left reel motor and the take-up torque of the right reel motor.
2. Adjust R-1 (50 ohms) if measurement value of right or left reel motor exceeds the specified limits. (Coarse adjustment)
3. After adjusting R-1, adjust R-2 to bring back tension and takeup torque to exact specified limits.

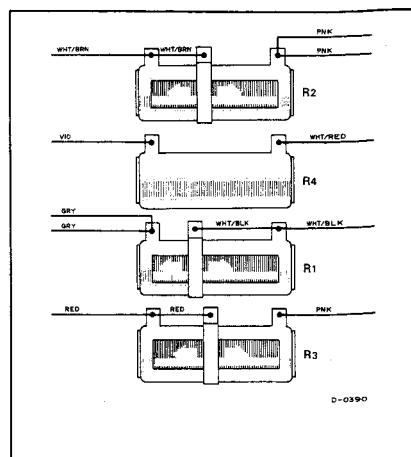
NOTE

Adjustments will interact. Several adjustments may be required to bring both motors within specifications.

4. After adjusting R-1 and R-2 in forward play mode, switch to reverse mode and check back tension(Right) and torque(Left).

Operation should be within specified limits. If not perform adjustment 1 - 3 again for reverse operation.

5. Recheck forward operation as in step 1 above. If forward operation can be satisfactorily adjusted but reverse operation cannot, a new motor may be required.



D-0390

Fig. 7-3 Adjustable Location
-Tension Resistors-

TORQUE MEASUREMENT PROCEDURE

IMPORTANT

Be sure the full required line voltage is applied and that the unit is set to the proper line frequency.

BACK TENSION - Forward

1. Load tape or block the shut-off arm in the on position.
2. Place an empty 7" reel with a 2" diameter hub on left reel table.
3. Rotate the reel and wind several turns of string around the hub. Attach spring scale to string.
4. Place the unit in the (▶) play mode.
5. Pull the scale away from the reel against the motor torque, with a steady smooth motion.
6. Note the scale reading while it is in steady motion.
7. Make sure the string does not rub against the reel flanges.
8. The reading should be approximately 180 - 220g/cm (2.8 - 3.1oz-inch).

Reverse:

9. To check the reverse back tension, place the reel and spring scale on the right reel table (see figure) and repeat above procedure pressing (◀) play button.

TAKE-UP TORQUE - Forward

1. Place the empty reel and attached spring scale on the right reel table.
2. Place the unit in the (▶) play mode.
3. Allow the rotation of the reel to slowly draw the scale toward the hub.
4. Hold the spring scale with enough force to allow a steady reading.
5. It should be approximately 360 - 400g/cm (4.1 - 4.8oz-inch).

Reverse:

6. Place the empty reel and spring scale on the left reel table and select (◀) reverse play mode.
7. The measurement of reverse take-up torque is as above with the exception that rotations are clockwise.

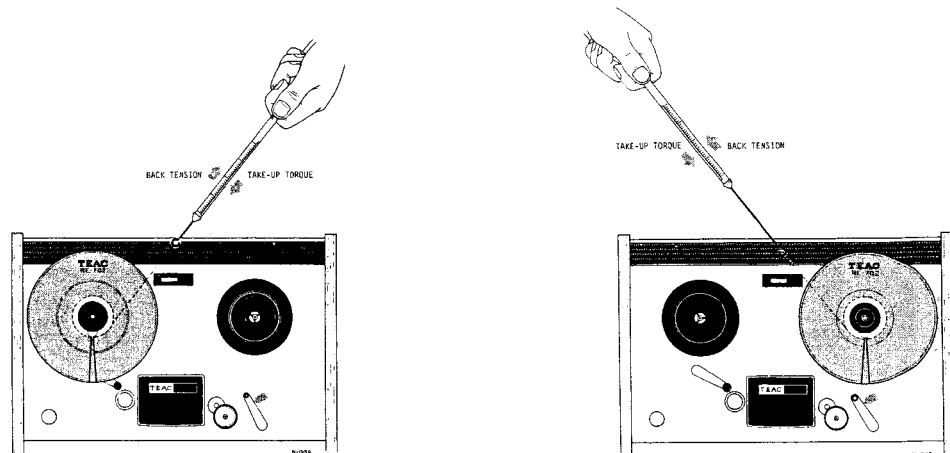
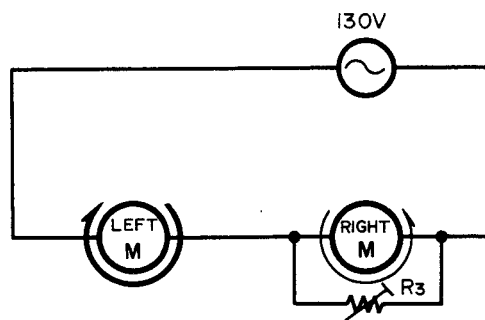


Fig. 7-4 Torque Measurement

REWIND BACK TENSION

1. Load a full 1,800ft reel of tape on the right reel table.
2. Place the empty reel with 2" hub on the left reel table.
3. Place the unit in the fast rewind mode, (◀).
4. At this time observe the right tension arm. Adjust R3 so that the arm moves approx. 1" to the right and remains there.



SHOWN IN REWIND MODE

D-0397

Fig. 7-5 Torque Operation

BRAKE TORQUE

NOTE

The brake torque is actuated mechanically. Pressure is set by the variable spring force.

While making this measurement and adjustment, be careful not to bend the brake bands.

The cleaning of the brake-drum or the brake-shoe is required only when necessary. Because the brake-torque may change by the cleaning. When necessary, use TEAC Cleaner TZ-251B. Never use other cleaning kit. After cleaning, make running enough, then check the brake-torque in the stable state.

1. Brake adjustments are made with no power applied to the unit.
2. Place an empty 4" hub reel on the left reel table, and fasten one end of a 30" length of string to the reel anchor.
3. Wind several turns of string counterclockwise around the hub and attach a suitable spring scale to the free end of the string.
4. Pull the spring scale away from the reel, making sure that the string does not rub the reel flanges.
5. Take a reading only when the reel is in steady motion since the force required to overcome static friction will produce a false, excessively high initial reading.
6. The reading should be 900 - 1,100g-cm(13 - 14oz-inch).
7. If adjustment is required, loosen the two screws shown and position the brake for optimum torque.
8. The adjustment of the right brake is the same, with the exception that rotations are clockwise.

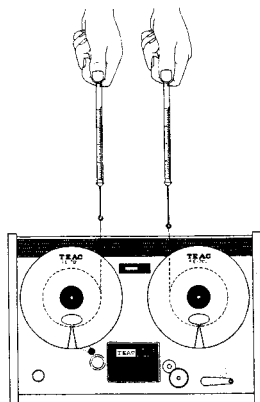


Fig. 7-6 Torque Measurement
-Brake-

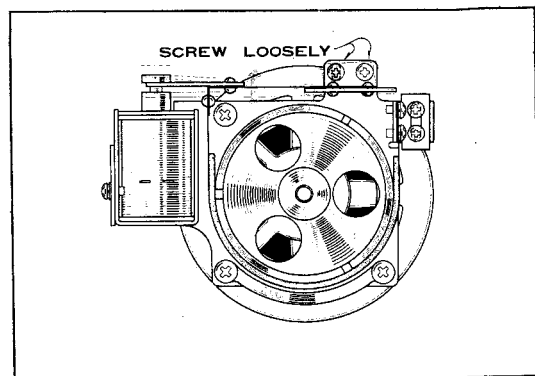


Fig. 7-7 Adjustable Location
-Brake-

IMPORTANT

The difference in torques between the right and left brake should be kept within 50g-cm(0.7oz-inch).

REEL HEIGHT ADJUSTMENT

Adjustment of reel height should be necessary only after a motor has been replaced.

The following procedure should be closely followed.

Coarse Adjustment

NOTE

Coarse adjustment of reel height is accomplished by loosening the two hex head allen screws on the motor shaft collar. TEAC allen (hex head) wrench is required (order No. 50860210).

- Access to these screws is from the top of the unit.
- After loosening these screws slide the shaft to the desired height, using the motor mounting plate as a reference.
- Turn fine adjustment screw to full clockwise.

Fine Adjustment

- If perfect alignment cannot be obtained in this manner, a vernier (fine) adjustment is provided.
- The screw in the outer end of the motor shaft can be used to correct up to approximately 0.004 inches.

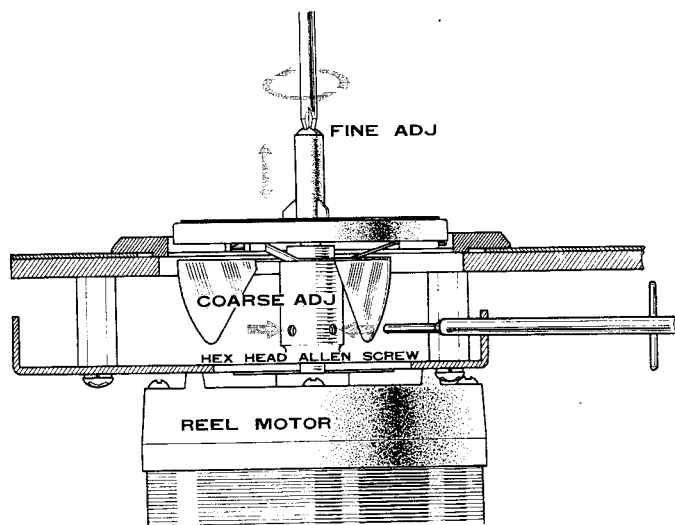


Fig. 7-8 Adjustment -Reel Table High-

BRAKE TORQUE

NOTE

The brake torque is actuated mechanically. Pressure is set by the variable spring force.

While making this measurement and adjustment, be careful not to bend the brake bands.

The cleaning of the brake-drum or the brake-shoe is required only when necessary. Because the brake-torque may change by the cleaning. When necessary, use TEAC Cleaner TZ-251B. Never use other cleaning kit. After cleaning, make running enough, then check the brake-torque in the stable state.

1. Brake adjustments are made with no power applied to the unit.
2. Place an empty 4" hub reel on the left reel table, and fasten one end of a 30" length of string to the reel anchor.
3. Wind several turns of string counterclockwise around the hub and attach a suitable spring scale to the free end of the string.
4. Pull the spring scale away from the reel, making sure that the string does not rub the reel flanges.
5. Take a reading only when the reel is in steady motion since the force required to overcome static friction will produce a false, excessively high initial reading.
6. The reading should be 900 - 1,100g-cm(13 - 14oz-inch).
7. If adjustment is required, loosen the two screws shown and position the brake for optimum torque.
8. The adjustment of the right brake is the same, with the exception that rotations are clockwise.

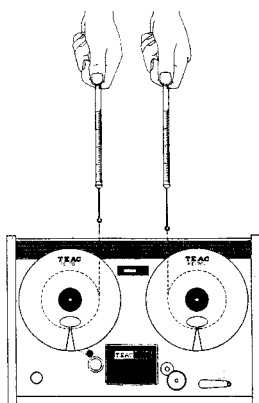


Fig. 7-6 Torque Measurement
-Brake-

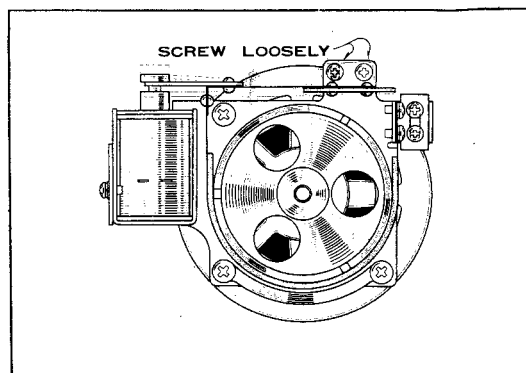


Fig. 7-7 Adjustable Location
-Brake-

IMPORTANT

The difference in torques between the right and left brake should be kept within 50g-cm(0.7oz-inch).

REEL HEIGHT ADJUSTMENT

Adjustment of reel height should be necessary only after a motor has been replaced.

The following procedure should be closely followed.

Coarse Adjustment

NOTE

Coarse adjustment of reel height is accomplished by loosening the two hex head allen screws on the motor shaft collar. TEAC allen (hex head) wrench is required (order No. 50860210).

- Access to these screws is from the top of the unit.
- After loosening these screws slide the shaft to the desired height, using the motor mounting plate as a reference.
- Turn fine adjustment screw to full clockwise.

Fine Adjustment

- If perfect alignment cannot be obtained in this manner, a vernier (fine) adjustment is provided.
- The screw in the outer end of the motor shaft can be used to correct up to approximately 0.004 inches.

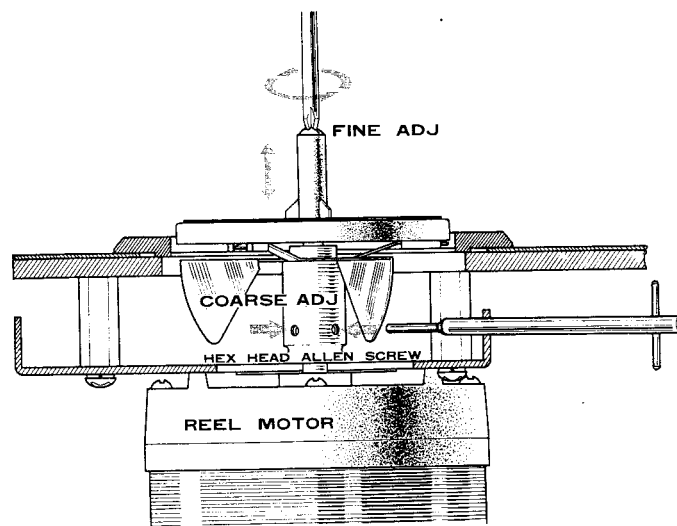


Fig. 7-8 Adjustment -Reel Table High-

BRAKE TORQUE

NOTE

The brake torque is actuated mechanically. Pressure is set by the variable spring force.

While making this measurement and adjustment, be careful not to bend the brake bands.

The cleaning of the brake-drum or the brake-shoe is required only when necessary. Because the brake-torque may change by the cleaning. When necessary, use TEAC Cleaner TZ-251B. Never use other cleaning kit. After cleaning, make running enough, then check the brake-torque in the stable state.

1. Brake adjustments are made with no power applied to the unit.
2. Place an empty 4" hub reel on the left reel table, and fasten one end of a 30" length of string to the reel anchor.
3. Wind several turns of string counterclockwise around the hub and attach a suitable spring scale to the free end of the string.
4. Pull the spring scale away from the reel, making sure that the string does not rub the reel flanges.
5. Take a reading only when the reel is in steady motion since the force required to overcome static friction will produce a false, excessively high initial reading.
6. The reading should be 900 - 1,100g-cm(13 - 14oz-inch).
7. If adjustment is required, loosen the two screws shown and position the brake for optimum torque.
8. The adjustment of the right brake is the same, with the exception that rotations are clockwise.

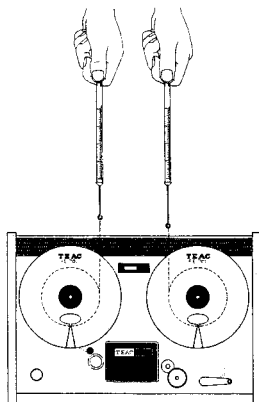


Fig. 7-6 Torque Measurement
-Brake-

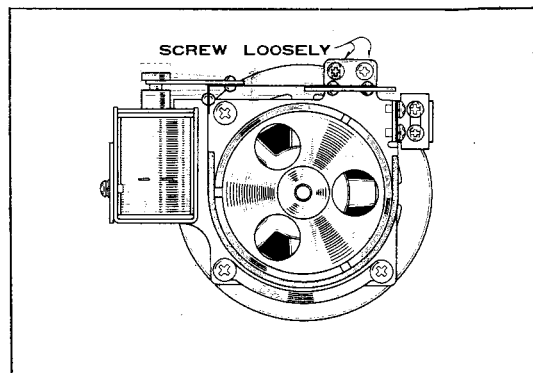


Fig. 7-7 Adjustable Location
-Brake-

IMPORTANT

The difference in torques between the right and left brake should be kept within 50g-cm(0.7oz-inch).

REEL HEIGHT ADJUSTMENT

Adjustment of reel height should be necessary only after a motor has been replaced.

The following procedure should be closely followed.

Coarse Adjustment

NOTE

Coarse adjustment of reel height is accomplished by loosening the two hex head allen screws on the motor shaft collar. TEAC allen (hex head) wrench is required (order No. 50860210).

- Access to these screws is from the top of the unit.
- After loosening these screws slide the shaft to the desired height, using the motor mounting plate as a reference.
- Turn fine adjustment screw to full clockwise.

Fine Adjustment

- If perfect alignment cannot be obtained in this manner, a vernier (fine) adjustment is provided.
- The screw in the outer end of the motor shaft can be used to correct up to approximately 0.004 inches.

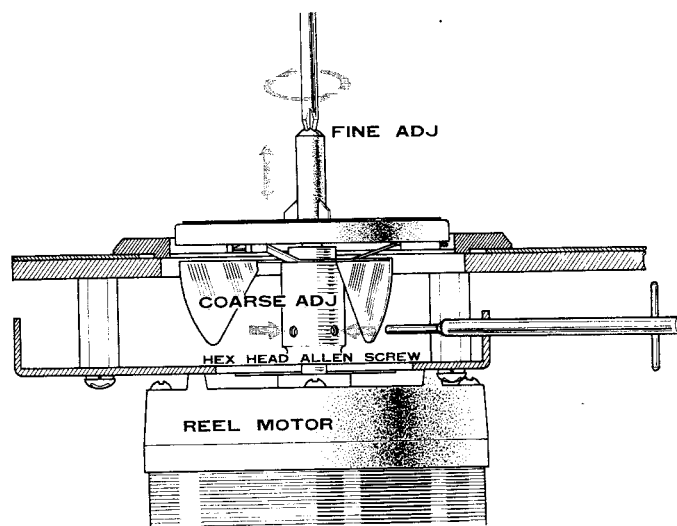


Fig. 7-8 Adjustment -Reel Table High-

BRAKE TORQUE

NOTE

The brake torque is actuated mechanically. Pressure is set by the variable spring force.

While making this measurement and adjustment, be careful not to bend the brake bands.

The cleaning of the brake-drum or the brake-shoe is required only when necessary. Because the brake-torque may change by the cleaning. When necessary, use TEAC Cleaner TZ-251B. Never use other cleaning kit. After cleaning, make running enough, then check the brake-torque in the stable state.

1. Brake adjustments are made with no power applied to the unit.
2. Place an empty 4" hub reel on the left reel table, and fasten one end of a 30" length of string to the reel anchor.
3. Wind several turns of string counterclockwise around the hub and attach a suitable spring scale to the free end of the string.
4. Pull the spring scale away from the reel, making sure that the string does not rub the reel flanges.
5. Take a reading only when the reel is in steady motion since the force required to overcome static friction will produce a false, excessively high initial reading.
6. The reading should be 900 - 1,100g-cm(13 - 14oz-inch).
7. If adjustment is required, loosen the two screws shown and position the brake for optimum torque.
8. The adjustment of the right brake is the same, with the exception that rotations are clockwise.

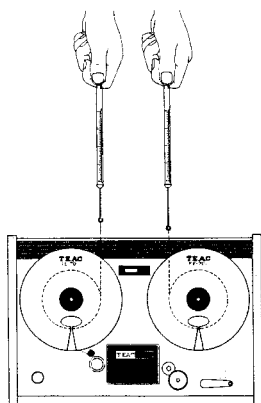


Fig. 7-6 Torque Measurement
-Brake-

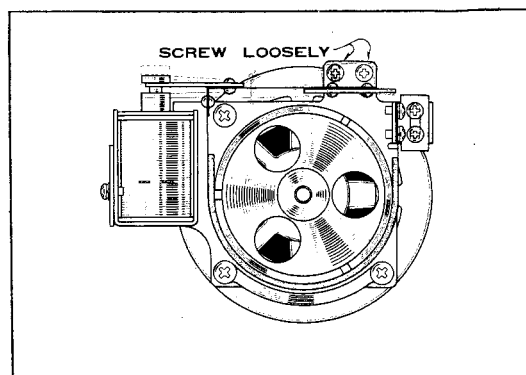


Fig. 7-7 Adjustable Location
-Brake-

IMPORTANT

The difference in torques between the right and left brake should be kept within 50g-cm(0.7oz-inch).

REEL HEIGHT ADJUSTMENT

Adjustment of reel height should be necessary only after a motor has been replaced.

The following procedure should be closely followed.

Coarse Adjustment

NOTE

Coarse adjustment of reel height is accomplished by loosening the two hex head allen screws on the motor shaft collar. TEAC allen (hex head) wrench is required (order No. 50860210).

- Access to these screws is from the top of the unit.
- After loosening these screws slide the shaft to the desired height, using the motor mounting plate as a reference.
- Turn fine adjustment screw to full clockwise.

Fine Adjustment

- If perfect alignment cannot be obtained in this manner, a vernier (fine) adjustment is provided.
- The screw in the outer end of the motor shaft can be used to correct up to approximately 0.004 inches.

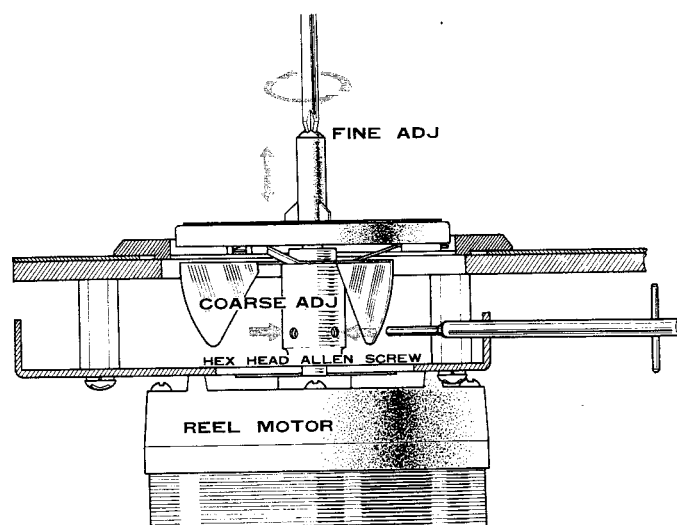


Fig. 7-8 Adjustment -Reel Table High-

FLUTTER

Flutter should be measured in playback mode using a TEAC flutter free tape YTT-2003•2002 and a Sentinel Inc model FL-3D-1 flutter meter.

Measurement of flutter should be made in accordance with NAB standards.

Values obtained by a different standard or equipment cannot be compared.

Flutter should not exceed 0.12% for 7-1/2ips and 0.15% for 3-3/4ips. These figures apply to any tape position and direction (such as full take-up reel, full supply reel or about mid point). If flutter is excessive, refer to trouble shooting chart in this manual.

TAPE SPEED

The tape speed should be measured using TEAC flutter free tape, model YTT-2003•2002

These tapes contain a highly accurate 3kHz tone.

Connect a digital frequency counter to either line OUTPUT jack.

The indicated frequency should be 3kHz $\pm 0.5\%$ for all speeds.

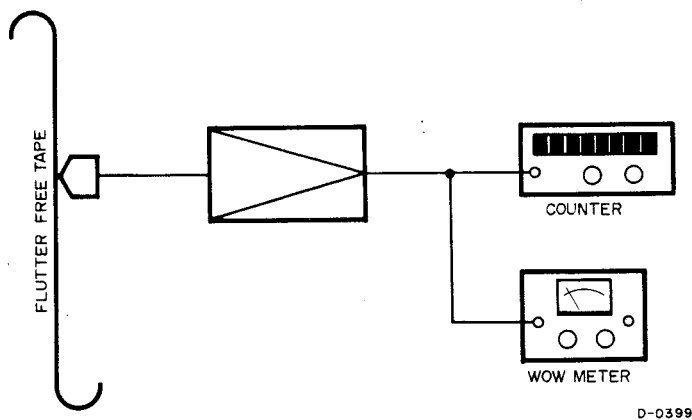


Fig. 7-9 Test Equipment Set-Up Flutter And Tape Speed

FAST WIND TIME

NOTE

Clean all tape guide components and check for proper AC line voltage.

Using a 1,200 foot tape on a 7" reel, the fast wind time (fast forward or fast rewind) should be 100 seconds or less.

VOLTAGE AND FREQUENCY CONVERSION

Unit must be set to the power line frequency available. Improper frequency setting will result in a 20% error between the tape speed and reel motors torque.

NOTE

US Model is preset to 117V AC and 60Hz. No frequency conversion is required. If it should be necessary to convert the A-2500 unit it may be easily accomplished as follows:

Voltage Conversion

The A-2500 may be set for 100, 117, 200, 220 or 240 volts. To change the voltage unscrew the fuse in the center of the voltage selector plug. Pull out the plug and reinsert it so the desired voltage shows in the cutout. Reinstall the fuse.

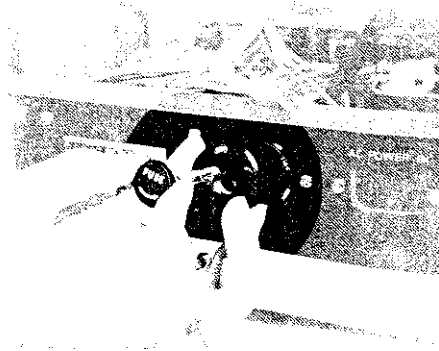


Fig. 7-10 Voltage Conversion

Frequency Conversion

1. Set frequency selector switch on the rear of the unit to the required frequency. The slide switch in the figure, changes reel motor torque by changing the value of the starting capacitor. Set the slide switch to match line frequency in your area.
2. Remove the rear plate. (Refer to "REMOVING THE REAR PLATE".)
3. Move the drive belt on the pulley and flywheel. In this equipment, the motor pulley has two steps, permitting frequency change by simply moving the drive belt from one step to the other. The belt moving process should begin from the flywheel when converting from 60 to 50Hz operation, or from the pulley when converting from 50 to 60Hz operation. Following completion of the process, turn the flywheel manually to ensure that the belt has been positioned properly. The smaller diameter portion of the motor pulley is for 60Hz operation.

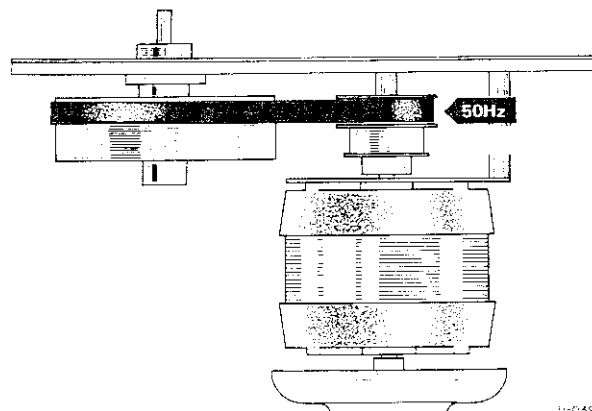


Fig. 7-11 Frequency Conversion

8. MEASUREMENT AND ADJUSTMENT

- ELECTRICAL -

GENERAL NOTICE

Before performing maintenance on this unit, thoroughly clean and demagnetize the entire tape path.

It is important that the unit be set to the proper voltage and frequency for your locality.

TEAC specified standard test tapes and test equipment must be used when performing maintenance to insure reliable results.

Procedures for checks and adjustments, unless otherwise indicated, are for the left channel at a tape speed of 7-1/2ips. The same procedures are to be applied to the right channel and again for both channels at 3-3/4ips, and both directions of playback.

All controls mentioned in this book will be printed in bold letters and will be exactly as they appear on the unit.

Double designated symbol numbers refer to left channel/right channel.

T H D : Third Harmonic Distortion.

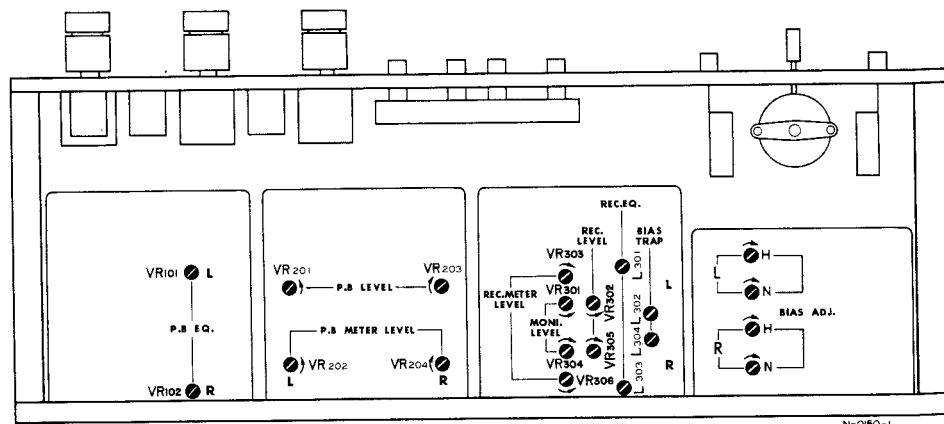
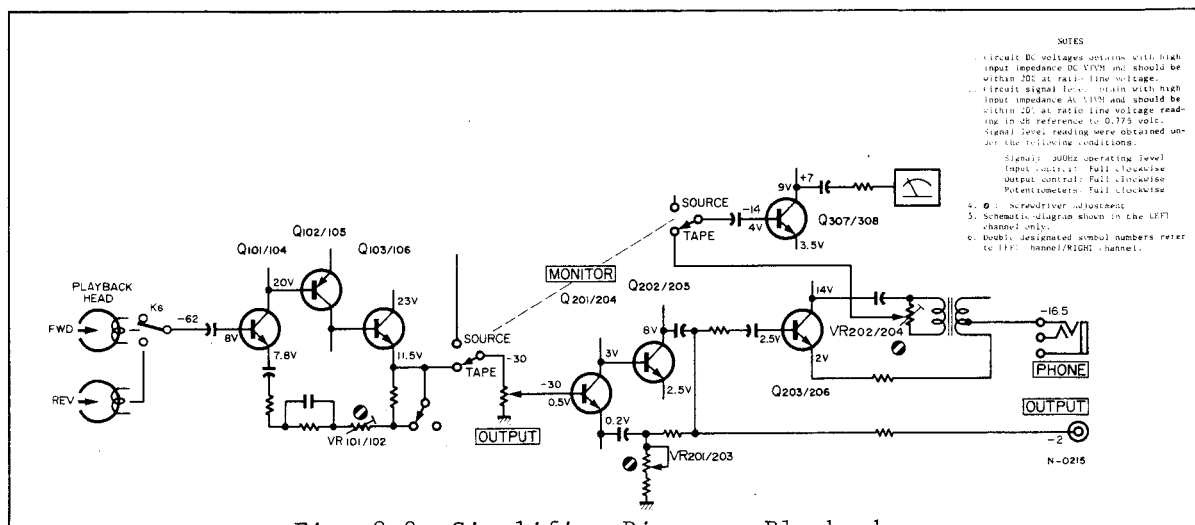


Fig. 8-1 Adjustable Parts Location

PLAYBACK PERFORMANCE



PLAYBACK HEAD AZIMUTH ADJUSTMENT

Coarse Adjustment

1. Connect a level meter to either OUTPUT jack.
2. Thread a TEAC test tape YTT-1003 on the unit.
3. Play the 15kHz test tone in section 2 of the test tape.
4. Slowly rotate the azimuth screw until maximum indication is obtained on the level meter. Repeat step 4, procedure for reverse head.

NOTE

If during playback, a slight pressure on the heads results in a rise of the reading of the level meter, head alignment adjustments should be accomplished.

Fine Adjustment

CAUTION

After coarse adjustment, do not make large corrections, turn Azimuth screw 1/4 turn or less.

5. It is absolutely essential to accomplish the coarse adjustment before using this method to avoid phase errors larger than 45°.
6. Connect the test equipment as shown in Fig. 8-11
7. Play a 10kHz signal and adjust the azimuth screw until the oscilloscope shows that the signals are less than 45° in phase. Repeat above step for reverse head.
8. Secure the screw with a drop of LOCTITE.

SPECIFIED OUTPUT LEVEL SET

NOTE

Connect a 10kohm load to the output jacks when not using the TEAC M-826A

9. Play the 400Hz tone in section 1 of the test tape. This tone is

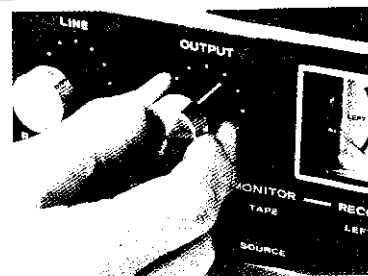
- recorded at operating reference level (1% of the THD level).
10. Turn the OUTPUT controls to the one o'clock position.
 11. Adjust VR201/203 for -8dB reading on level meter.

NOTE

Level differences during forward and reverse playback should not exceed 2dB. If larger, clean and demagnetize heads, check the head alignment.

IMPORTANT

This is the specified output level set. Do not disturb this setting until the remaining adjustments have been completed.



VU METER CALIBRATION - PLAYBACK -

12. While playing the 400Hz tone (1% THD) in section 1 of the test tape, adjust VR201 (left channel) and VR202 (right channel) for reading of 0 VU on the VU meters.

FREQUENCY RESPONSE

13. Play the test tones from 15kHz down to 50Hz. (Recorded at 10dB below operating reference level.)
14. Compare the readings obtained on the level meter with the response limits given in Fig 8-3.
15. In case of any deviation in the response curve, check head azimuth alignment, clean the heads, then adjust VR101 (left channel) and VR102 (right channel) for the best response.

NOTE

Setting of VR-101/102 should be done in forward mode, at 7-1/2 ips. Do not adjust in reverse mode or at 3-3/4ips.

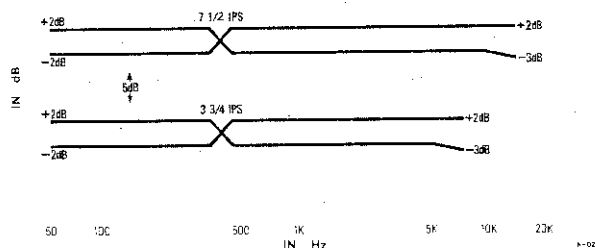
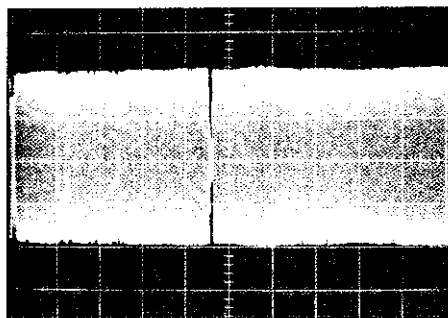


Fig. 8-3 Frequency Response Limits

LEVEL VARIATION

16. With a level meter connected to the OUTPUT jacks and using the TEAC test tape the readings listed above should be obtained at the specified frequency and tape speed.



7-1/2ips:	0.5dB at 500Hz
	1.0dB at 10kHz
3-3/4ips:	1.0dB at 5kHz

Fig. 8-4 Level Variation Wave Form

SIGNAL TO NOISE RATIO

IMPORTANT

Output control should be at specified output level.
 The signal to noise ratio must meet factory standards.
 The values given are obtained using an unweighted level meter while the supply and take up motors are running.
 The values are with reference to a 3% THD level.

1. Thread a tape on the unit, leaving the tape outside the capstan and pinch roller.
2. Place the unit in the PLAY mode (▶) (the tape will not move).
3. The level meter connected to the OUTPUT jacks should indicate -56dB or less.
4. This corresponds to a signal to noise ratio of 48dB (difference between residual noise -56dB and specified output level -8dB for 1% THD).
 For a 3% THD signal to noise ratio, 6dB is added, giving 54dB (3% THD is 6dB above 1% THD level).

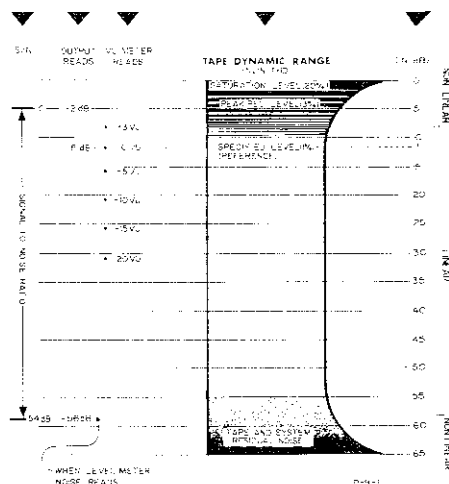


Fig. 8-5 Signal/Noise Computation

MONITOR PERFORMANCE

MINIMUM INPUT LEVEL ADJUSTMENT

LINE Input

1. Connect an AF oscillator to the LINE IN jacks.
2. Apply a 500Hz signal at -18dB.
3. Place the MONITOR switch in the SOURCE position and turn the LINE controls fully clockwise.
4. Adjust VR301/304 to obtain a specified output level of -8dB at OUTPUT jacks.

MIC Input

5. After adjusting VR301/304, apply a 500Hz signal at -68dB to the MIC IN jacks.
6. Rotate the MIC controls fully clockwise.
7. The output should be -8dB(specified output level).

NOTE

Mic input requires no adjustment, only an operational check. After completing the check rotate mic controls fully counter-clockwise to eliminate noise from mic jacks or mic preamplifiers.

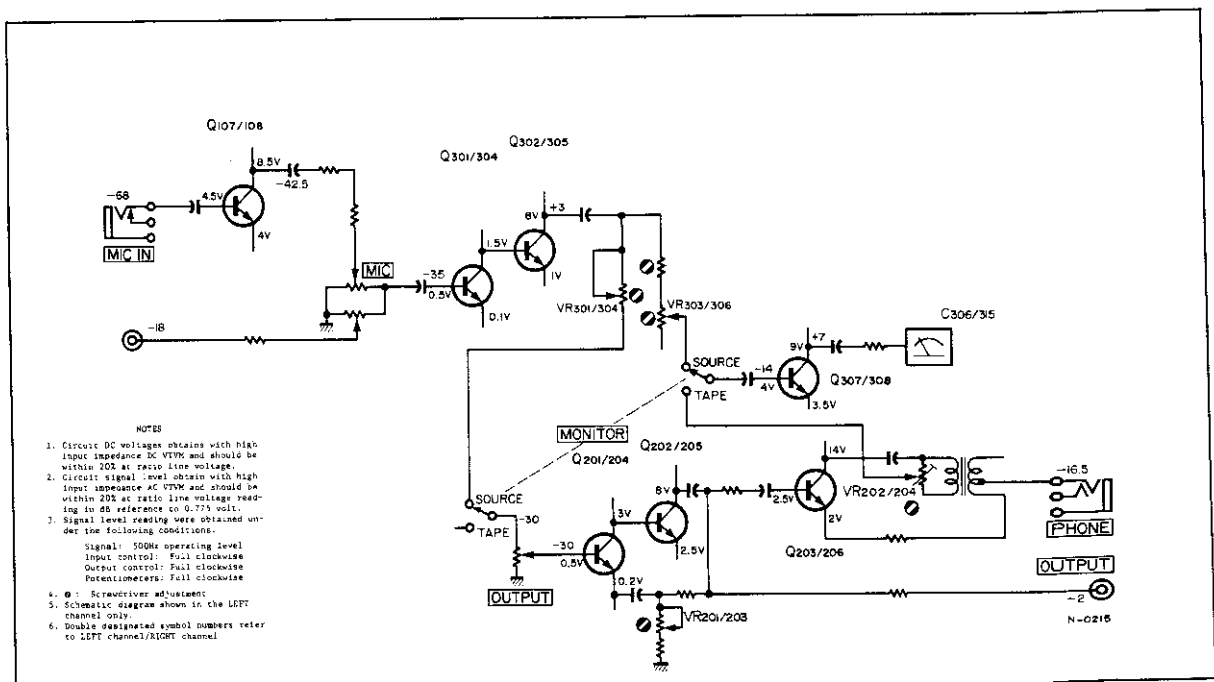


Fig. 8-6 Simplified Diagram -Monitor-

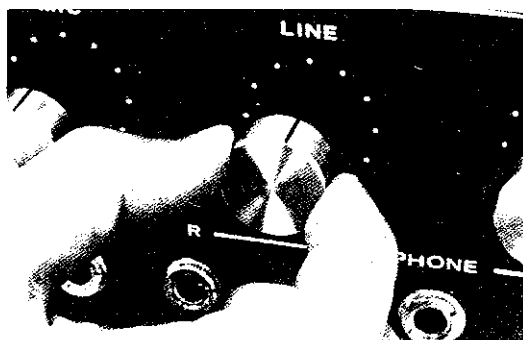
SPECIFIED INPUT LEVEL SET

8. Apply a 500Hz signal at -8dB to the LINE IN jacks.
9. Turn the LINE controls for -8dB at the OUTPUT jacks.

NOTE

Do not disturb the specified input level position of these controls until the remaining checks and adjustments are completed.

The difference between the channels must not exceed 2dB as indicated on the level meter. If it is not within limits, readjust VR301/304.



VU METER CALIBRATION -RECORD-

10. With the same 500Hz signal at -8dB applied and the MONITOR switch in SOURCE, adjust VR303/VR306 for 0 VU on meters.

RECORD PERFORMANCE

IMPORTANT

Before making any adjustments on the record amplifier, be sure that all tests in the HEAD ALIGNMENT, PLAYBACK and MONITOR PERFORMANCE sections have been accomplished and that all adjustments are correct.

Optimum recording performance (Bias levels, recording levels and frequency response) is dependent upon tape characteristics. The TEAC A-2500 (1250) is factory set for Scotch type 203 tape. Service data is based upon the use of Scotch 203 or equivalent tape.

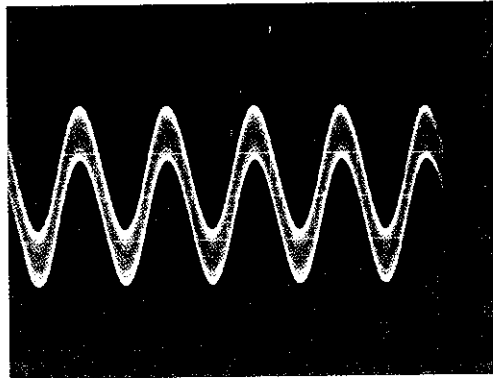


Fig. 8-7 Bias Leakage

BIAS TRAP ADJUSTMENT

NOTE

The bias trap tank circuit keeps the bias signal from reaching the record and monitor amplifier and under normal no signal conditions, voltage should not be present at the OUTPUT jacks.

1. Thread blank tape or block tension arm in on position.
2. Place the unit in STEREO RECORD mode and PAUSE with no signal applied.
3. Connect a VTVM to the junction of C308, L302.
4. Adjust L302 for a minimum reading.
5. Connect the VTVM to the junction of C317, L304. Adjust L304 for a minimum reading.

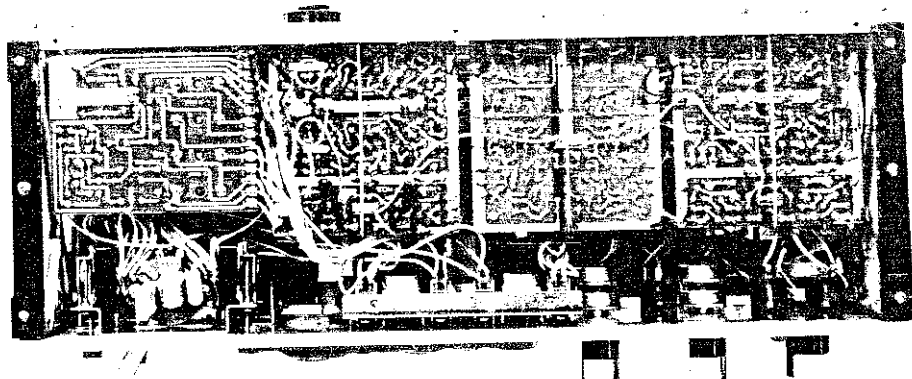


Fig. 8-8 Check Point -Bias Traps-

BIAS ADJUSTMENT

NOTE

These adjustment are made only at 7-1/2ips tape speed.

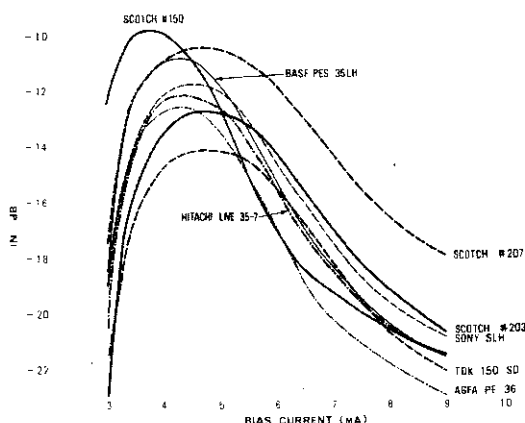
HIGH position

1. Thread record test tape scotch 203 on the unit.
2. Connect a level meter to the OUTPUT jacks.
3. Connect an AF oscillator to the LINE IN jacks.
4. Set the AF oscillator for 500Hz at -10dB with the LINE control at specified input level position.
5. Place the BIAS switch to HIGH position.
6. Place the unit in the STEREO RECORD mode with the MONITOR switch in the TAPE position.
7. Adjust capacitor VC401/403 for a peak on the level meter.
8. Turn the capacitors clockwise until a decrease of 0.5dB is obtained.

NORMAL position

9. Thread a Scotch 150 tape on the unit.
10. Place the BIAS switch in NORMAL position.
11. Repeat the above procedure for capacitors VC402/404.
12. After completing the adjustments, return the BIAS switch to HIGH position.

in figure below.



hFE

Fig. 8-9 Bias Current Characteristic

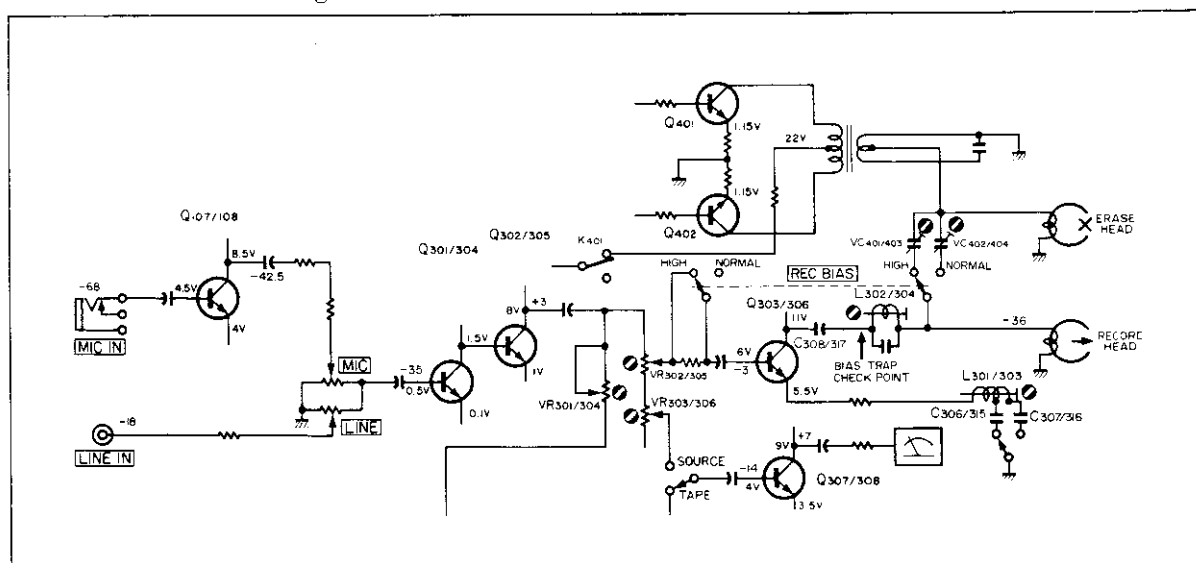


Fig. 8-10 Simplified Diagram -Record-

RECORD HEAD AZIMUTH ADJUSTMENT

Coarse Adjustment

NOTE

The effect of turning the azimuth screw will not immediately register on the level meter. A slight delay will be noticed. Therefore, the screw must be rotated slightly, and then pause to see the effect.

1. Connect a Level Meter to the OUTPUT jacks and an AF oscillator to the LINE IN jacks.
2. Place the MONITOR switch to SOURCE and adjust the AF oscillator to obtain a signal of 15dB below the specified output level. (The level meter will indicate -23dB.)
3. Make certain that the LINE control is at the specified input level position, then set the AF oscillator to 10kHz.
4. Thread a record test tape on the unit and place the unit in the STEREO RECORD mode.
5. Place the MONITOR switch in the TAPE position.
6. Adjust the azimuth screw for maximum indication of the level meter.

Fine Adjustment

NOTE

It is absolutely essential to accomplish the coarse adjustment before using this method, to avoid phase error larger than 45° .

7. Connect the test equipment as shown in Fig
8. Apply a 7.5kHz signal at -23dB to the LINE IN jacks and record this signal.
9. Carefully adjust the azimuth screw until the oscilloscope shows the signal to be in phase.
10. Secure the screw with a drop of LOCTITE.

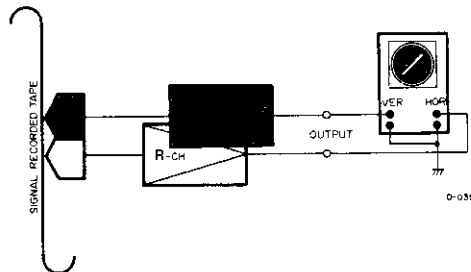


Fig. 8-11 Fine Adjustment Set-Up -Head Azimuth-

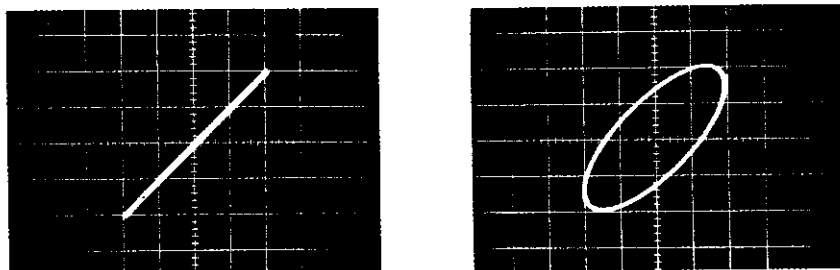


Fig. 8-12 Phase Shift

RECORD LEVEL SET

1. The OUTPUT controls must be at the specified output level position (-8dB at OUTPUT jacks).
2. Apply a 500Hz signal at -8dB to the LINE IN jacks.
3. Thread record test tape Scotch 203 on the unit, then set the BIAS switch to HIGH position.
4. Place the unit in the STEREO RECORD mode with the MONITOR switch in the TAPE position.
5. Adjust VR302/305 for a reading of 0 VU on the VU meters (-8dB at the OUTPUT jacks).

NOTE

Adjustment of REC level VR302/305 or VU meter VR303/306 calibration will interact, after adjusting VR302/305, recheck VR303/306 to ascertain that it is still correct.

OVERALL FREQUENCY RESPONSE

IMPORTANT

To avoid saturation of the tape, these checks should be made at least 15dB below the specified input level.

Any bias signal feeding into the test equipment should be filtered out by adjusting the external bias trap. A broad band VTVM may be used on the output of the unit for this adjustment.

1. Adjust the AF oscillator to obtain an output level of -23dB(approx. 15dB below specified output level) at OUTPUT jacks.
2. Place BIAS switch in HIGH position, thread Scotch 203 tape on machine.
3. Apply a signal swept from 50Hz to 15kHz and record it on the test tape.
4. Repeat the above procedure for 3-3/4ips using a signal swept from 50Hz to 7.5kHz. Refer to Fig 8-3 for response limits.

Since response of TEAC M-826 falls off sharply above 20kHz the extra bias trap is not required.

NOTE

If the response is not uniform, the heads should be checked for accumulated oxide and dirt.

Then, if no dirt is found, the REC equalization coils L301(L-CH) and L303(R-CH) should be adjusted.

5. If adjustment is required at 3-3/4ips tape speed, C307(left channel) and C316(right channel) must be changed. If the high end response is too high, a lower value capacitor must be installed.

OVERALL FREQUENCY RESPONSE CHECK, *BIAS IN NORMAL POSITION*

NOTE

Operational check only. No adjustment required.

6. Thread deck with Scotch 150 tape.
7. Place BIAS switch in NORMAL position.
8. Repeat the overall response check at both tape speeds.
9. The record equalization should give the proper frequency response.
10. After completing this check, return BIAS switch to HIGH position.

OVERALL SIGNAL TO NOISE RATIO

IMPORTANT

Clean and demagnetize the heads before proceeding. It is extremely important that all tests described in the proceeding paragraphs have been completed and that all controls adjusted are left unaltered.

1. Thread a record test tape (Scotch 203) on the unit.
2. Remove the AF oscillator from the LINE IN jacks.
3. Place the unit in the RECORD mode with no signal applied.

NOTE

Noise readings, when taken while recording, may be affected by the bias signal which could be leaking through. It is therefore good practice to rewind the no signal recorded section and take the noise reading during playback.

4. Note the point on the index counter where recording begins.
5. Rewind the tape and play it back.
6. The noise level as indicated on the level meter should be -52dB or less.

NOTE

Bias, erase and playback amplifier noise are all included in this measurement.
All frequencies between 50Hz and 15kHz are measured unweighted.

ERASE EFFICIENCY

NOTE

To measure erase efficiency, a 1kHz narrow band filter (TEAC M204 CL filter) must be used.

Due to the high level of this signal, it is recommended that only a short recording be made (approximately 30 seconds) to prevent damage to the VU meter.

1. Apply a 1kHz signal at 0dB to the LINE IN jacks.
2. Place the unit in RECORD mode and record this signal.
3. Rewind the recording to the beginning and remove the AF oscillator from the LINE IN jack.
4. Place the unit in RECORD and record over this portion of tape again.
5. Rewind the tape to the starting point and connect a level meter to the OUTPUT jack, through the 1kHz band pass filter.
6. Play the erased portion of the tape.
7. The level meter should indicate -60dB or less.

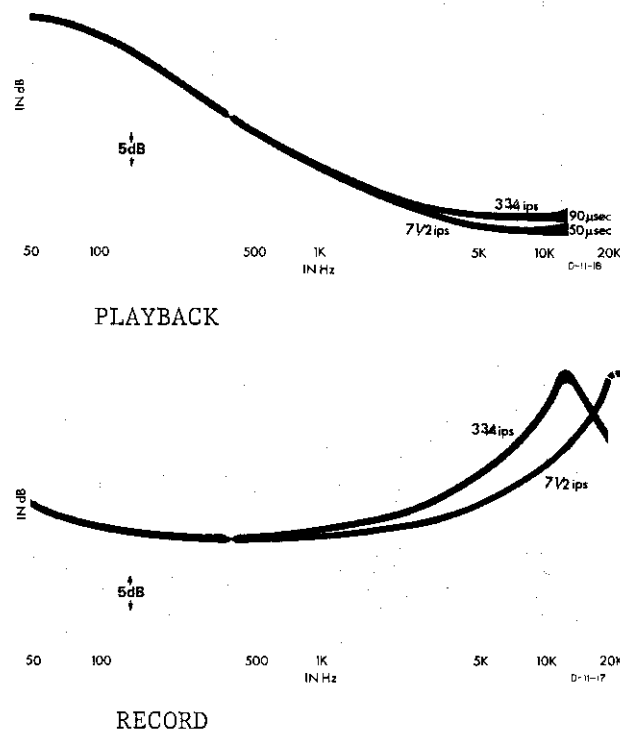


Fig. 8-13 Typical Response Curve

9 PREVENTIVE MAINTENANCE

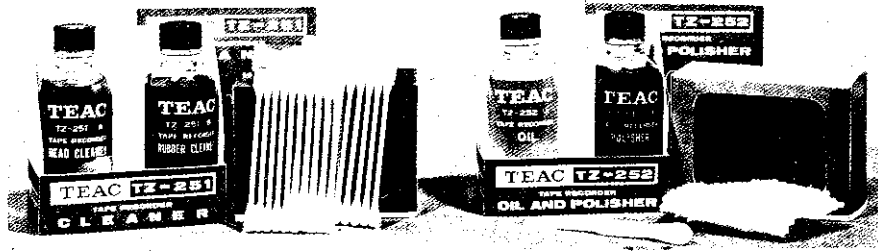


Fig. 9-1 Maintenance Equipment

CLEANING

When excess oxide accumulates on the surface of components where tape passes, normal operation and characteristics cannot be expected. Periodical cleaning should be done with proper cleaning materials. Refer to Operating Instructions.

DEMAGNETIZATION

Metal parts incontact with the tape will become magnetized after long periods of use (except erase head). Magnetization of record/playback head causes noise in recording and reproduction and it should be demagnetized at every 50 hours of use, and before any important recording is done. Refer to Operating Instructions.

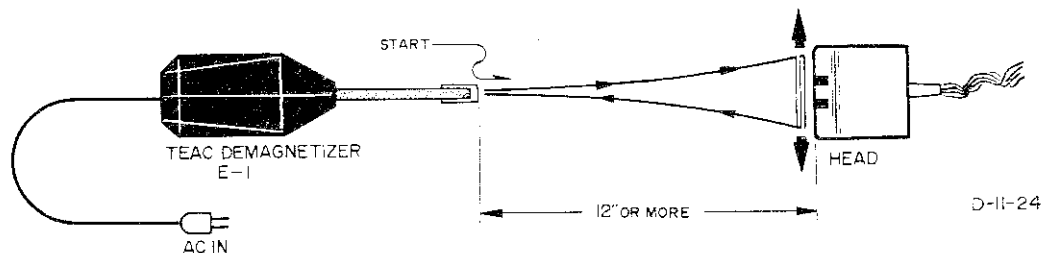


Fig. 9-2 Demagnetization

LUBRICATION

Under normal conditions the unit will not require lubrication. Most of the bearings and bushings are of the oilless type. Since there are many rubber parts in the transport mechanism, excessive or improper lubrication could cause problems. If lubrication is required, the following points should be lubricated:

Capstan bearing, pinch roller shaft. 1 drop
Motor 1 - 2 drops in the plastic tube

Parts to be lubricated should be cleaned and old oil and dirt removed before relubricating. Observe instructions as to type of oil, points to be lubricated and amount of lubrication required.

Motors should be lubricated immediately after use while still warm. After oiling motors keep the unit in the horizontal position for 2-3 hours to allow thorough absorption of oil.

VENTILATION

During use the face plate of the A-2500 may become quite warm to the touch, this is entirely normal.

As long as the air vents in the rear plate are unobstructed, the unit will not overheat.

However, if the unit is placed snugly against a wall, or free air eventually cause trouble.

10 TROUBLE SHOOTING

NOTE

About 50% of the units that are returned for repair do not function properly due to poor connections, dirty heads, poor tape, or improper operation.

Therefore, read your operating instructions and take a minute to carefully check the machine yourself before shipping it back for repair.

The following guide lists specific difficulties that could occur in the A-2500.

Several possible causes are listed for each malfunction.

Visually inspect the unit for any damage such as broken or burned components or wiring, loose connections, etc.

TRANSPORT SECTION

UNIT COMPLETELY INOPERATIVE

- AC plug
- Fuse
- Voltage selector
- Power switch(SW-1)

TAPE WILL NOT MOVE IN "PLAY" MODE

Capstan Does Not Turn

- Belt off
- Tension arm switch SW-2
- Capstan motor
- Phase advance capacitor C-6
- Tape speed switch SW-8
- Reverse Relay K-3

Pinch Roller Fails To Engage Capstan

- Capstan solenoid
- STOP button SW-4
- Lever switch SW-7
- PLAY button (◀ ▶)
- Improper arm stoper adjustment

RIGHT REEL DOES NOT ROTATE

- Phase advance capacitor C-5
- Brake solenoid

LEFT REEL MOTOR DOES NOT ROTATE

- Phase advance capacitor C-4
- Brake solenoid

FAST WIND DOES NOT WORK

- Relay K-1

TAPE SPEED WRONG

- Belt on wrong pulley

EXCESSIVE WOW AND FLUTTER

- Belt stretched or oily
- Capstan shaft dirty
- Pinch roller dirty or pressure incorrect
- Reel torque (back tension) improper
- Left reel motor
- Supply reel height

DOES NOT REVERSE

- Sensing pole dirty
- Foil Defective
- Sensing relay K-5

TAPE DAMAGE IN PLAY MODE

- Warped reel
- Reel table height

EXCESS SLACK WHEN STOPPING FROM FAST MODE

- Brake torque unbalanced

TAPE SQUEAL

- Tape path components dirty
- Tape defective

PLAYBACK SECTION

NO PLAYBACK

- MONITOR switch in SOURCE
- Back connections loose
- OUTPUT control fully counter clockwise
- Tape lifters actuated
- Preamplifier

LOSS OF HIGH FREQUENCIES

- Playback head dirty
- Playback head worn or out of alignment (azimuth)
- Playback equalization network
- Reel torque(back tension) improper

TAPE HISS

- Improper tone control setting on amplifier

NOTE

A highly efficient tweeter in the speaker system will cause this hiss to be prominent.

UNBALANCED CHANNELS ON VU METER

- Record levels of tape unbalanced
- Heads dirty
- Output controls
- VU meter

RECORD SECTION

NO RECORD

Record Lamp Does Not Light

- Record relay K-401
- Record mode switch S503, S504

VU Meter Not Indicating

NO RECORD, NO ERASE
(VU Meter Indicating)

- Tape lifters
- Heads dirty
- Bias oscillator

DROP OUT, HISSING NOISE

- Tape faulty
- Heads magnetized
- Bias adjustment improper

UNBALANCED CHANNELS

- Heads dirty
-

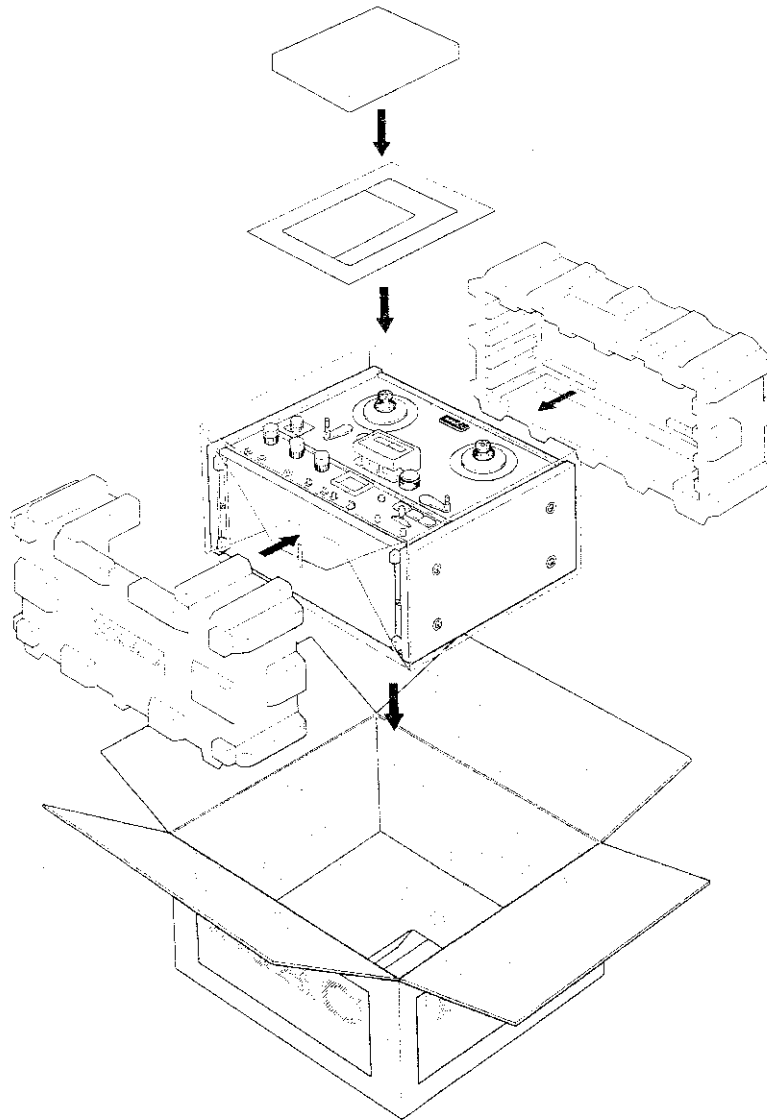
11 WARRANTY

Your TEAC equipment has been manufactured under strictest quality control. Its normal operation is under warranty. However, warranty terms may vary with the country(area) in which it was purchased and for different models of equipment. The warranty terms are fully described in the enclosed warranty card. Please read the card for complete details.

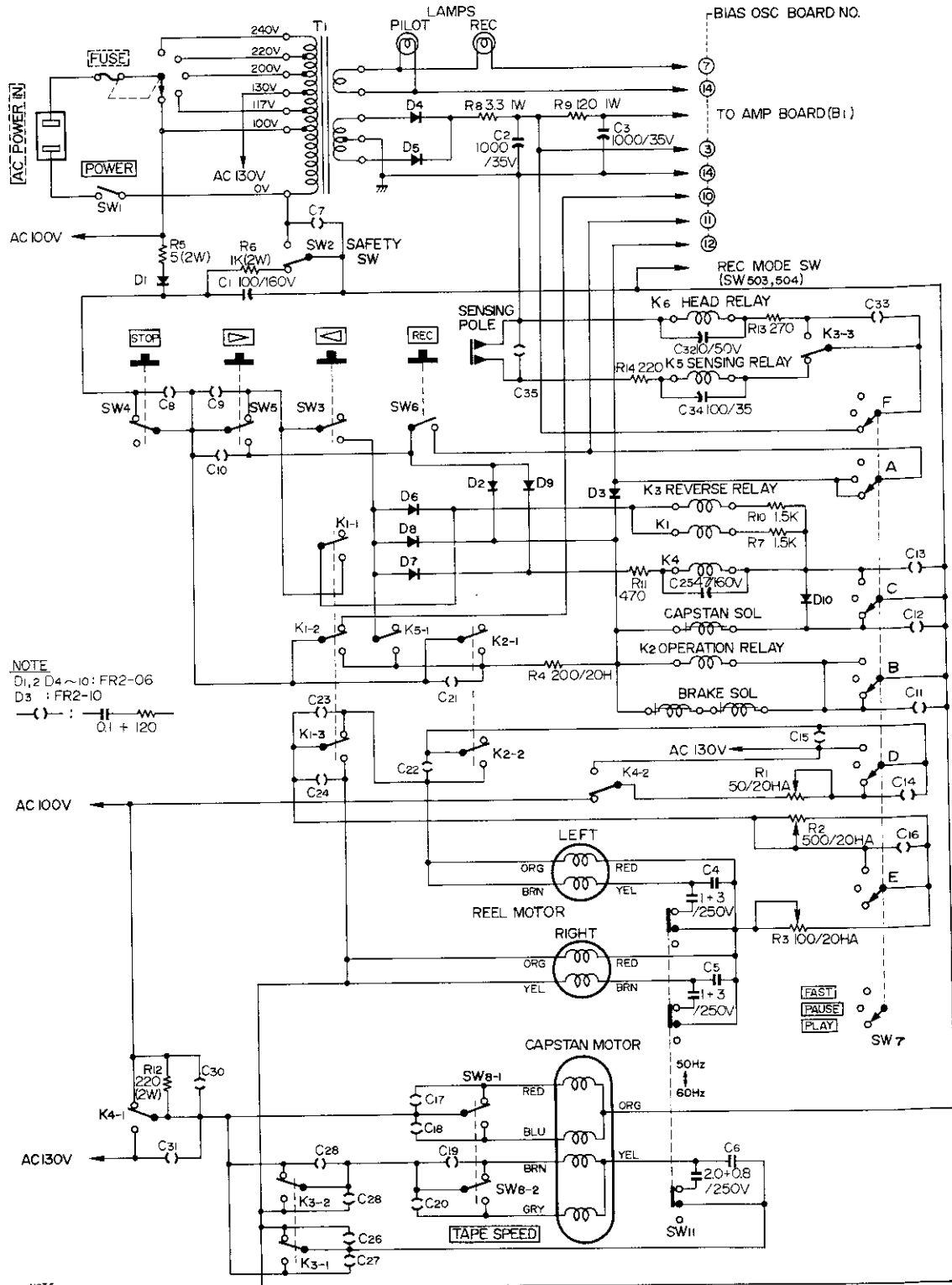
12 PACKING FOR SHIPMENT

SHIPPING INSTRUCTIONS

If the unit is to be sent back to the TEAC factory (service department) for repair, carefully pack as shown below.



13 SCHEMATIC DIAGRAMS



NOTE
D1, 2 D4~10: FR2-06
D3 : FR2-10
—()— : 0.1 + 120

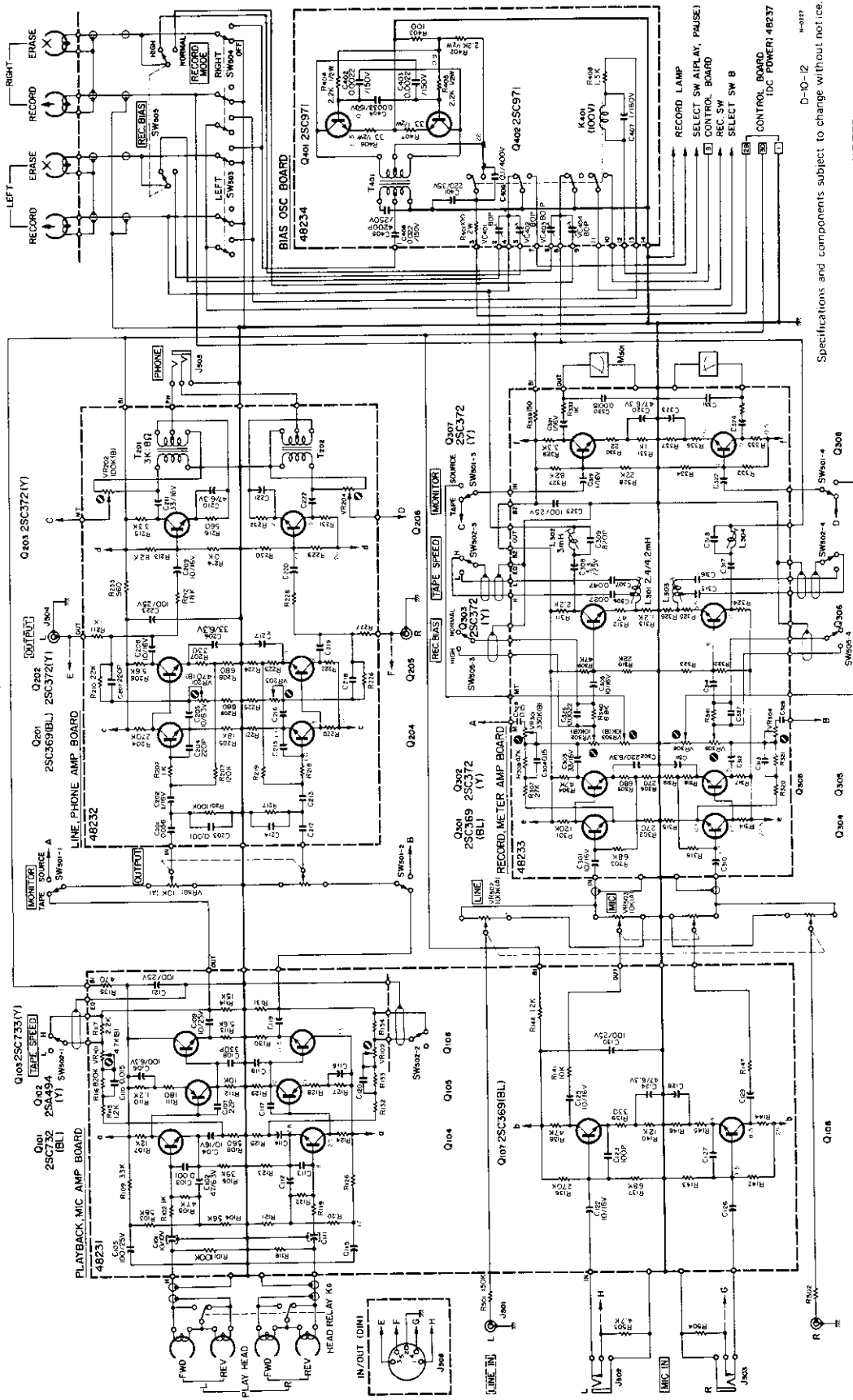
NOTE
CIRCUIT CONDITIONS
1. EQUALIZATION RELAY 71.1
2. ALL RELAYS SHOWN NOT ENERGIZED

Specifications and components subject to change without notice.

TEAC A-2500 SCHEMATIC DIAGRAM TAPE TRANSPORT



TEAC A-2500 SIMPLIFIED DIAGRAM



Specifications and components subject to change without notice.

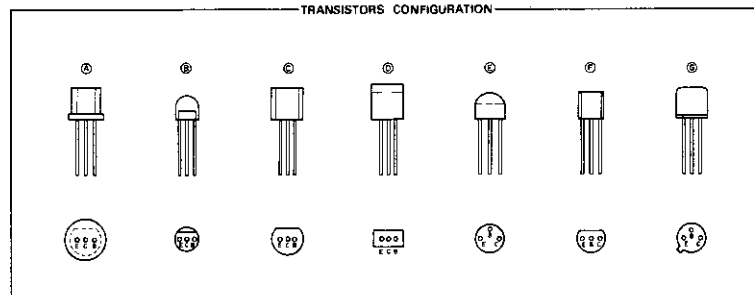
NOTES

Schematic diagram shown in **PLAYBACK** mode.
 Unless otherwise specified:
 All resistors values in ohms, $\%$ watt, $K = 1,000$ ohms
 All capacitors values, in micro farads
 Q Screwdriver adjustment

on front panel, on rear panel

TEAC A-2500 SCHEMATIC DIAGRAM PREAMPLIFIER

14 PRINTED CIRCUIT BOARD AND PARTS LIST



SILICON TRANSISTORS

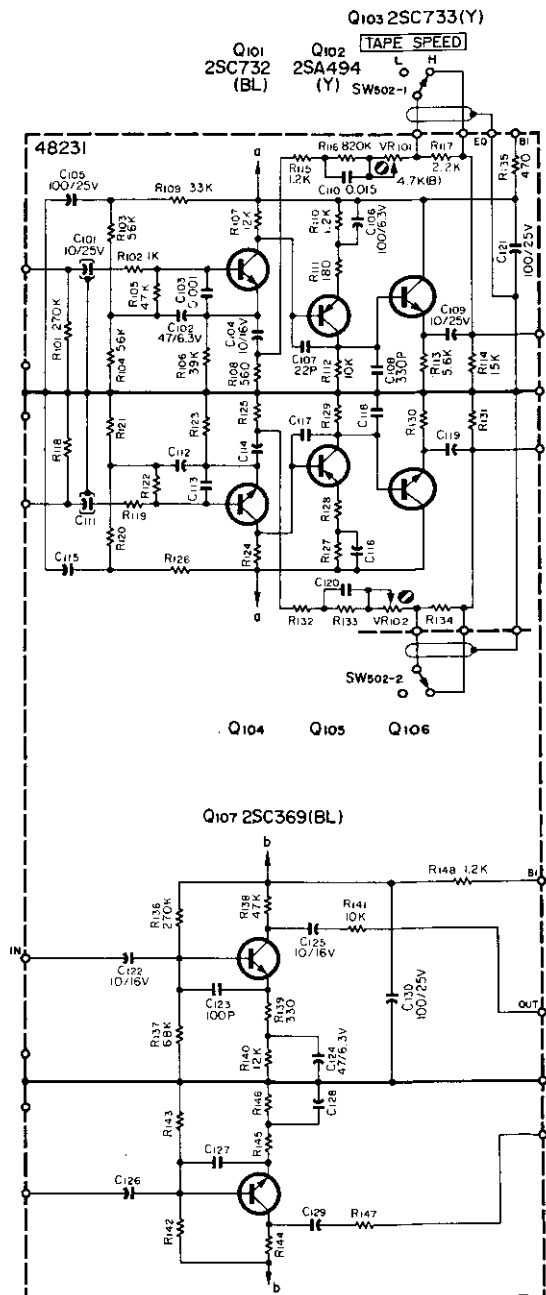
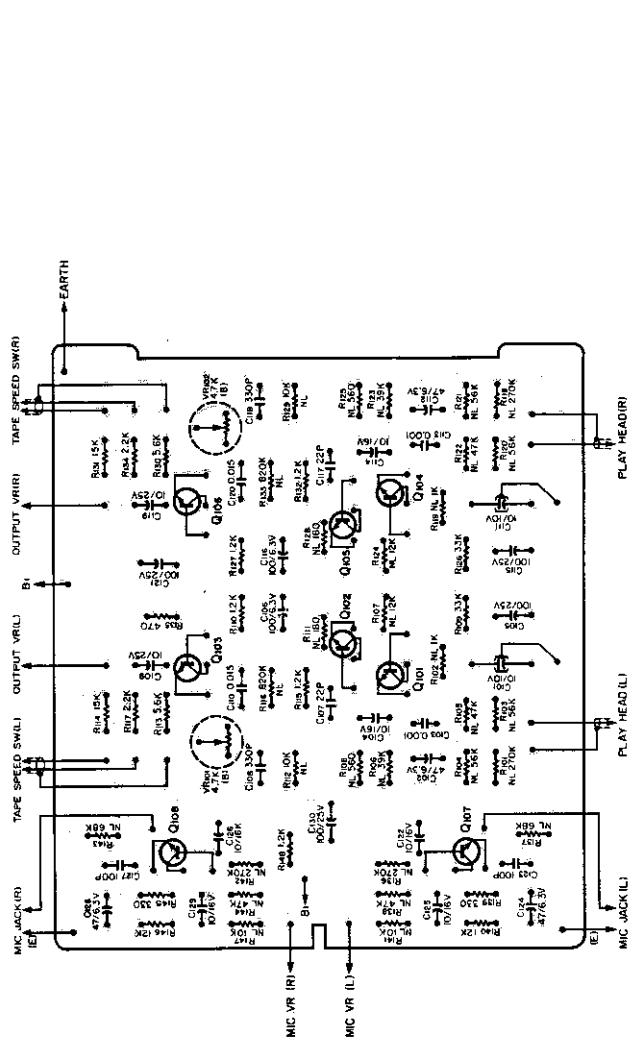
	DESCRIPTION		APPEAR- ANCE
PNP Type Low Noise	2SA494 (Y)	120- 240	A
	MPS6518	150- 300	F
	2SA666 (I) (S)		
	2SA572		
	2SA		
PNP Type General	MPS6518 2SA564	150- 300	F
NPN Type Power	2SC971	200- 400	
	2SC491	30- 250	
	2SC840		
	2SD235	40- 240	
	2SC1226A		
NPN Type Low Noise	2SC732 (V)	600-1200	A
	2SC693 (G) (U)	280- 560	B
	2SC693 (G) (D)	280- 560	B
	2SC693 (F) (U)	160- 320	B
	2SC644 (R)	180- 360	C
	2SC644 (S)	260- 520	C
	2SC644 (T)	360- 700	C
	2SC458 (L) (G)	60- 500	D
	2SC1084		G
	2SC1000 (B) (L)		A
NPN Type Low Noise	2SC369 (G) (R)	200- 400	A
	2SC369 (B) (L)	350- 700	A
	MPS6571	250-1000	F
	CDC13000-1 (C)	240- 400	E
NPN Type General	2SC828 (P)	90- 180	C
	2SC828 (Q)	130- 260	C
	2SC372 (Y)	120- 240	A
	2SC733 (Y)	120- 240	A
	2SC458 (L)	60- 320	D
	2SC536 (F)	160- 320	B
	2SC536 (E)	100- 200	B

PART LIST

MIC AND PLAYBACK EQ. AMPLIFIER

CIRCUIT REF NO.	PARTS NO.	DESCRIPTION	1ST	2ND
	50482311	PC Board	50482312	
		SILICON TRANSISTORS		
Q101/104	50423660	2SC732 BL		
Q102/105	50423650	2SA494		
Q103/106	50423510	2SC733 Y		
Q107/108	50423660	2SC732 BL		
		CARBON RESISTORS		
ALL RESISTORS IN OHMS, 10% TOLERANCE, 1/4 WATTS UNLESS OTHERWISE NOTED				
R111.128	50515250	180		
R102.119	50515340	1k		
R112.141	50515490	10k		
R129.147	50515490	10k		
R140.146	50515500	12k		
R106.123	50515580	39k		
R122.144	50515590	47k		
R105.138	50515590	47k		
R104.121	50515610	56k		
R103.120	50515610	56k		
R137.143	50515620	68k		
R136.142	50515700	270k		
R101.118	50515700	270k	50515640 100k	
R116.132	50515770	820k		
R135	50515300	470		
R108.125	50515310	560		
R127.148	50515350	1.2k		
R110.115	50515350	1.2k		
R132	50515350	1.2k		
R113.130	50515460	5.6k		
R140.146	50515500	12k		
R109.126	50515570	33k		
R114.131	50515510	15k		
R139.145	50515910	330		
R117.134	50515380	2.2k 5%		
VR101.102	50533460	Potentiometer 4.7k 100		
		CAPACITORS		
ALL CAPACITORS IN MICRO FARADS UNLESS OTHERWISE NOTED				
C102.124	50554030	Electrolytic 47 6.3V		
C112.128	50554030	Electrolytic 47 6.3V		
C106.116	50554230	Electrolytic 100 6.3V		
C122.129	50554050	Electrolytic 10 16V		
C104.114	50554050	Electrolytic 10 16V		
C125.126	50554050	Electrolytic 10 16V		
C115.130	50554170	Electrolytic 100 25V		
C105.121	50554170	Electrolytic 100 25V		
C109.119	50554510	Electrolytic 10 25V	50554040 10uF	
		CAPACITORS continued		
C101.111	50546010	Tantalum 10 10V		
C103.113	50548320	Mylar 0.001 50V		
C110.120	50548420	Mylar 0.015 50V		
C107.117	50543330	High Q 22pF 50V		
C123.127	50543420	High Q 100pF 50V		
C108.118	50543340	High Q 330pF 50V		

MIC AND PLAYBACK EQ. AMPLIFIER



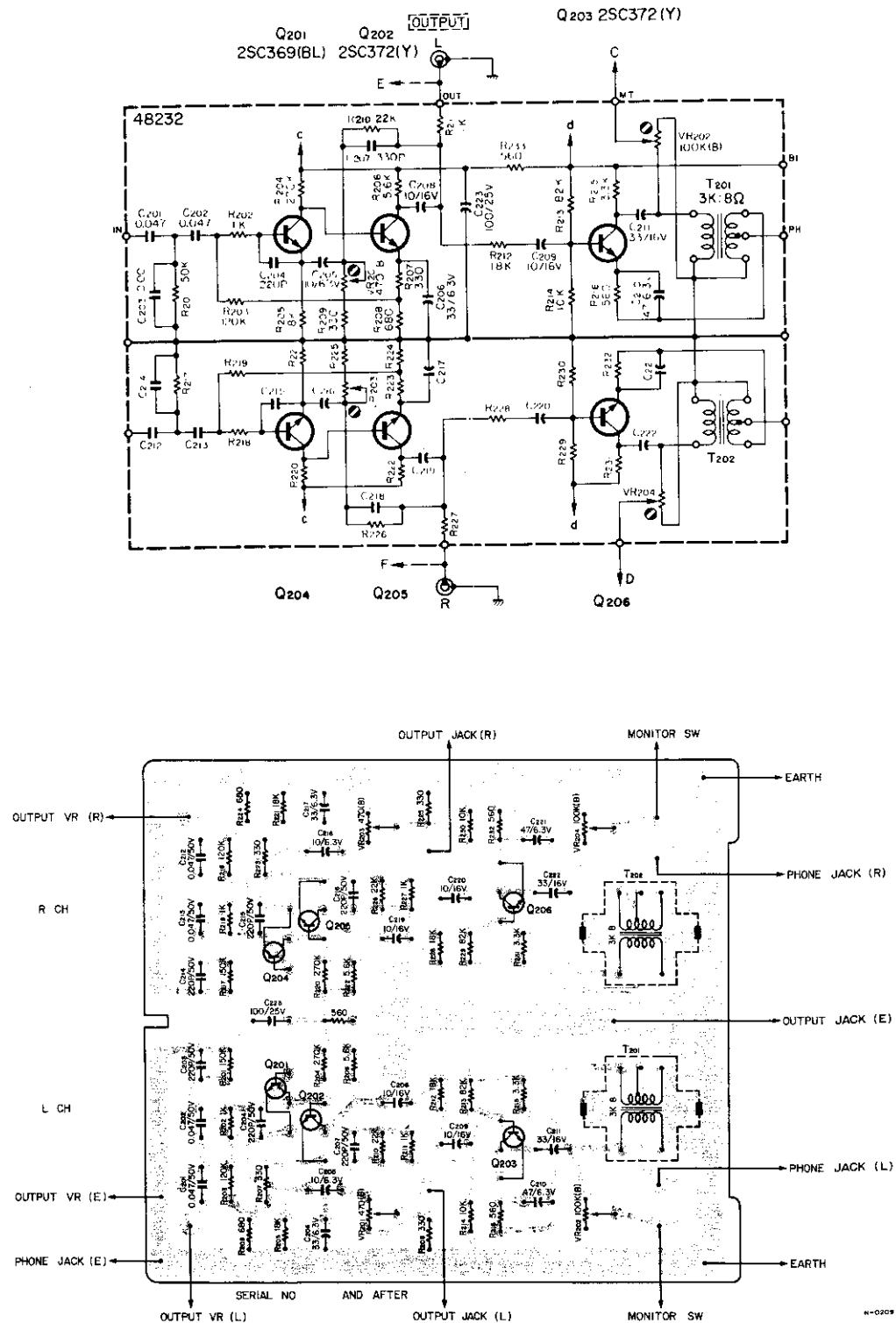
PART LIST

LINE OUT AND PHONE AMPLIFIER

CIRCUIT REF NO.	PARTS NO.	DESCRIPTION	1ST	2ND
	50482322	PC Board	50482323	
T201•202	50562140	Output Xformer 3k ohms: 8 ohms		
	SILICON TRANSISTORS			
Q201•204	50423300	2SC693(F/G) or 2SC369(BL)		
Q202•205	50423310	2SC536(E/F) or 2SC372(Y)		
Q203•206	50423310	2SC536(E/F) or 2SC372(Y)		
	CARBON RESISTORS			
ALL RESISTORS IN OHMS, 10% TOLERANCE, 1/4 WATTS UNLESS OTHERWISE NOTED				
R207•223	50515280	330		
R209•225	50515280	330	50515320 680	50515310 560
R216	50515310	560		
R232•233	50515310	560		
R208•224	50515320	680		
R202•218	50515340	1k		
R211•227	50515340	1k		
R215•231	50515410	3.3k		
R206•222	50515460	5.6k		
R214•230	50515490	10k		
R212•228	50515520	18k		
R205•221	50515520	18k		
R210•226	50515540	22k		
R213•229	50515630	82k		
R203•219	50515650	120k		
R201•217	50515660	150k	50515640 100k	
R204•220	50515270	270k		
R107•124			ADDED 50515500 12k	
*VR201•203	50533440	Potentiometer 470 (B) 10 ϕ (Std. only)		
VR202•204	50533490	Potentiometer 100k (B) 10 ϕ		
	CAPACITORS			
C205•216	50554250	Electrolytic 10uF 6.3V		
C206•217	50554240	Electrolytic 33uF 6.3V		
C210•221	50554030	Electrolytic 47uF 6.3V		
C209•220	50554050	Electrolytic 10uF 16V		
C211•222	50554260	Electrolytic 33uF 16V		
C223	50554170	Electrolytic 100uF 25V		
C202•213	50548270	Mylar 0.047uF 50V	50557030 Electrolytic 1uF 16V 50548460 0.056uF	
C201•212	50548270	Mylar 0.047uF 50V		
C203•214	50548320	Mylar 0.001uF 50V		
C207•218	50543340	High Q 330pF 50V		
C204•215	50543420	High Q 220pF 50V		
*2 Truck only				
VR201•203	50533640	Potentiometer 2.2k ohms (B)	50533450 1.5k	

LINE OUT AND PHONE AMPLIFIER

1ST EDITION



PART LIST

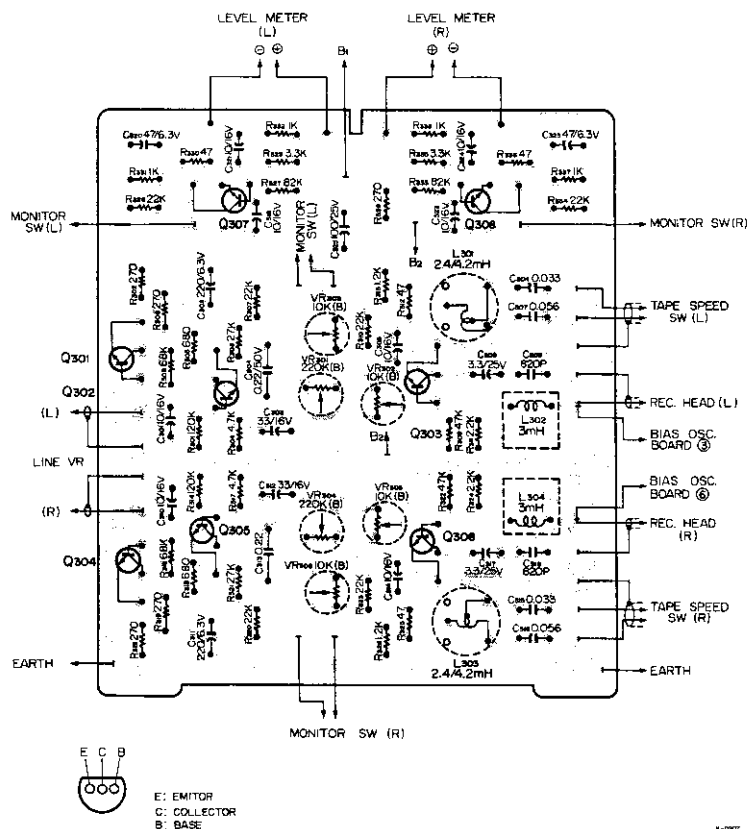
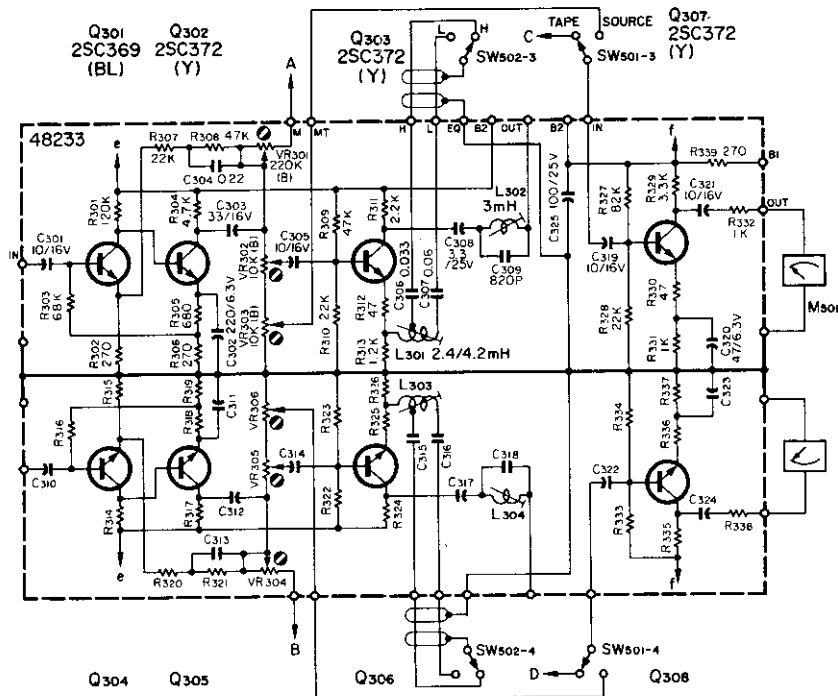
METER AND REC. EQ. AMPLIFIER

CIRCUIT REF NO.	PARTS NO.	DESCRIPTION	1ST	2ND
	50482331	PC Board	50482332	
	COILS			
L302•304	50566300	Trap Coil 3mH		
L301•303	50566371	REC EQ Coil 2.4/4.2mH		
	SILICON TRANSISTORS			
Q301•304	50423300	2SC693(F/G) or 2SC369(BL)		
Q302•306	50423310	2SC536(E/F) or 2SC372(Y)		
Q303•305	50423310	2SC536(E/F) or 2SC372(Y)		
Q307•308	50423310	2SC536(E/F) or 2SC372(Y)		
	CARBON RESISTORS			
ALL RESISTORS IN OHMS, 10% TOLERANCE, 1/4 WATTS UNLESS OTHERWISE NOTED				
R312•325	50515170	47		
R330•336	50515170	47	50513000	22
R302•306	50515270	270		
R319•339	50515270	270	50515240	150
R315	50515270	270		
R305•318	50515320	680		
R331•337	50515340	1k		
R332•338	50515340	1k		
R313•326	50515350	1.2k		
R311•324	50515380	2.2k		
R329•335	50515410	3.3k		
R304•317	50515440	4.7		
R307•320	50515540	22k	50515560	27k
R310•328	50515540	22k		
R323•334	50515540	22k		
R308•321	50515590	47k		
R309•322	50515590	47k		
R303•316	50515620	68k		
R327•333	50515630	82k		
R301•314	50515650	120k		
R341•340			ADDED 50515470	6.8k
R403	50515220	100		
R402•405	50514920	2.2k		
R404	50514920	2.2k		
R406•407	50514990	33		
R408	50514450	1.5k		
R401	50525770	Metal Oxide Resistor 680 2W		
VR302•305	50533480	Potentiometer 10k (B) 10 ϕ		
VR301•304	50533570	Potentiometer 220k (B) 10 ϕ	50533670	330k

CONTINUE TO FOLLOWING PAGE

METER AND REC. EQ. AMPLIFIER

1ST EDITION



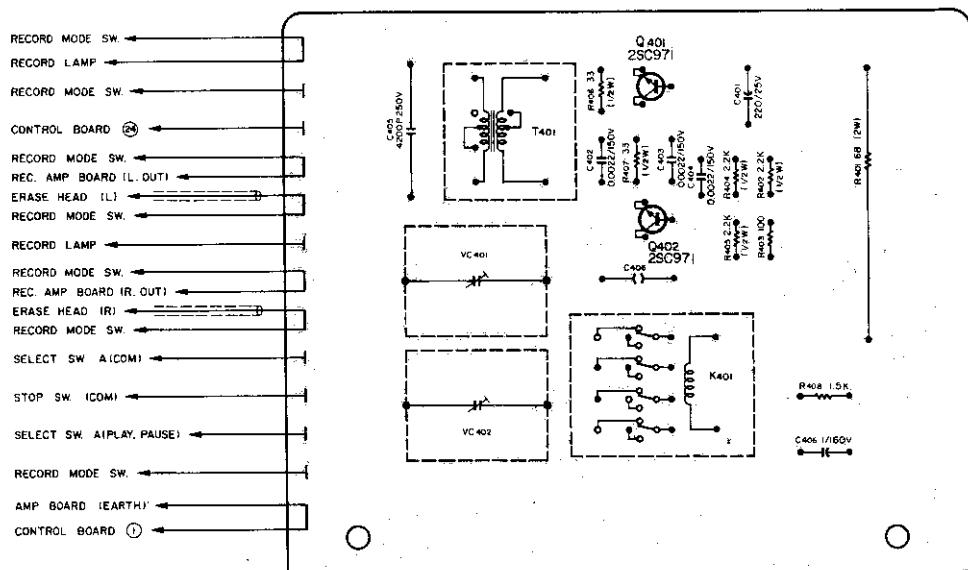
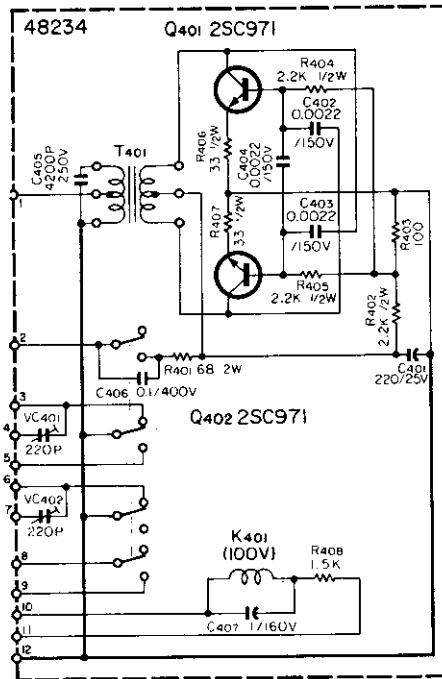
PART LIST

BIAS OSC. AND REC. RELAY -1-

CIRCUIT			1ST	2ND
REF NO.	PARTS NO.	DESCRIPTION		
	50482341	PC Board		
Q401•402	50423850	Transistor 2SC971		
		Heat Sink		
T401	50563120	Bias OSC Coil		
K401	50610620	Relay 4T DC 100V MY40		
	RESISTORS			
R403	50515220	Carbon 100 ohms 1/4W	50610730 MY4-0	
R404	50514920	Carbon 2.2k ohms 1/2W		
R406•407	50514990	Carbon 33 ohms 1/2W		
R408	50514450	Carbon 1.5k ohms 1/2W		
R401	50525770	Metal Oxide Resistor 68 ohms 2W		
	CAPACITORS			
VC401•402	50547060	Trimmer 30 - 210pF		
C401	50554180	Electrolytic 220uF 25V		
C407	50555310	Electrolytic 1uF 160V		
C402•403	50548210	Mylar 0.0022uF 150V		
C404	50548210	Mylar 0.0022uF 150V		
C406	50548390	Mylar 0.1uF 400V		
C405	50544040	Mica 0.0042uF 250V		
continued METER AND REC. EQ. AMPLIFIER				
	CAPACITORS			
ALL CAPACITORS IN MICRO FARADS UNLESS OTHERWISE NOTED				
C325	50554170	Electrolytic 100 25V		
C302•311	50554330	Electrolytic 220 6.3V		
C320•323	50554030	Electrolytic 47 6.3V		
C301•310	50554050	Electrolytic 10 16V		
C305•314	50554050	Electrolytic 10 16V		
C319•322	50554050	Electrolytic 10 16V	50557030 1uF	
C321•324	50554050	Electrolytic 10pF 16V	50557030 1uF	
C303•312	50554260	Electrolytic 33 16V		
C308•317	50554220	Electrolytic 3.3 25V		
C306•315	50548100	Mylar 0.033 50V	50548330 0.027uF	
C307•316	50548510	Mylar 0.06 50V	50548270 0.047uF	
C304•313	50548360	Mylar 0.22 50V	50548310 0.15uF	50548040 0.1uF
C309•318	50543440	Styrofoam 820pF 50V		
C325•326			ADDED 50548450	
			Mylar 0.0022uF 50V	

BIAS OSC. AND REC. RELAY -1-

1ST EDITION



PART LIST

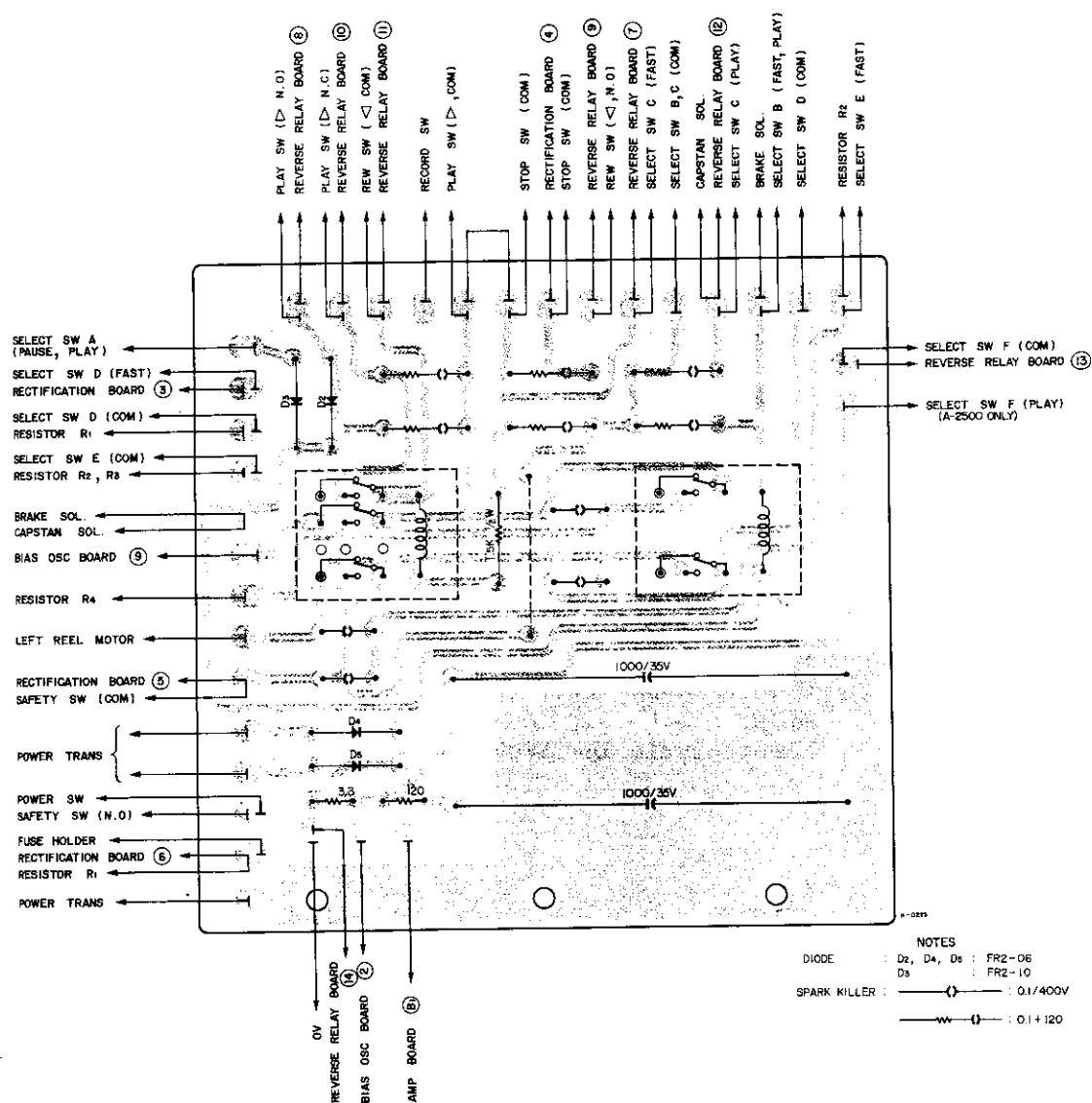
CONTROL BOARD

CIRCUIT REF NO.	PARTS NO.	DESCRIPTION	1ST	2ND
	50482391	PC Board		
K1	50610730	Relay 4T DC 100V MY4-0		
K2	50610750	Relay 2T DC 100V MY2-0		
D2-4-5	50422360	Diode FR2-06		
D3	50422380	Diode FR2-10		
	50233930	PC Board Mount Angle B		
	RESISTORS			
R5-11	50574860	Carbon 1.5k ohms 1/2W		
R6	50525440	Wire Wound 3.3 ohms 1W		
R7	50525890	Wire Wound 120 ohms 1W		
	CAPACITORS			
C2-3	50555110	Electrolytic 1000uF 35V		
C8 - 13	50529050	Spark-Killer 0.1uF+120 ohms 400V		
C21 - 24	50548390	Mylar 0.1uF 400V		

CONTROL BOARD

SERIAL NO. 13000 AND AFTER

2ND EDITION



NOTES

- DIODE : D2, D4, D5 : FR2-06
 D3 : FR2-10
 SPARK KILLER : ———— 0.1/400V
 ———— 0.1+120

PART LIST

BIAS OSC.AND REC.RELAY - 2 -

CIRCUIT REF NO.	PARTS NO.	DESCRIPTION	1ST	2ND
	50482412	PC Board		
Q401-402	50423830	Transistor 2SC971		
		Heat Sink		
T401	50563170	Bias OSC Coil		
K401	50610730	Relay 4T DC 100V MY4-0		
RESISTORS				
ALL RESISTORS ARE FIXED CARBON FILM TYPE				
UNLESS OTHERWISE NOTED				
R401	50525900	Metal Oxide Film R 100 ohms 2W		
R403	50515220	100 ohms 1/4W		
R404	50514920	2.2k ohms 1/2W		
R406-407	50514990	33 ohms 1/2W		
R408	50514450	1.5k ohms 1/2W		
CAPACITORS				
VC401-402	50547070	Trimmer Max 80pF		
C401	50554380	Electrolytic 220uF 35V		
C402-403	50548790	Mylar 0.0022uF 150V		
C404	50548530	Mylar 0.0033uF 150V		
C405	50544040	Mica 0.0042uF 250V		
C406	50548390	Mylar 0.1uF 400V		
C407	50555310	Electrolytic 1uF 160V		

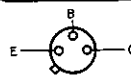
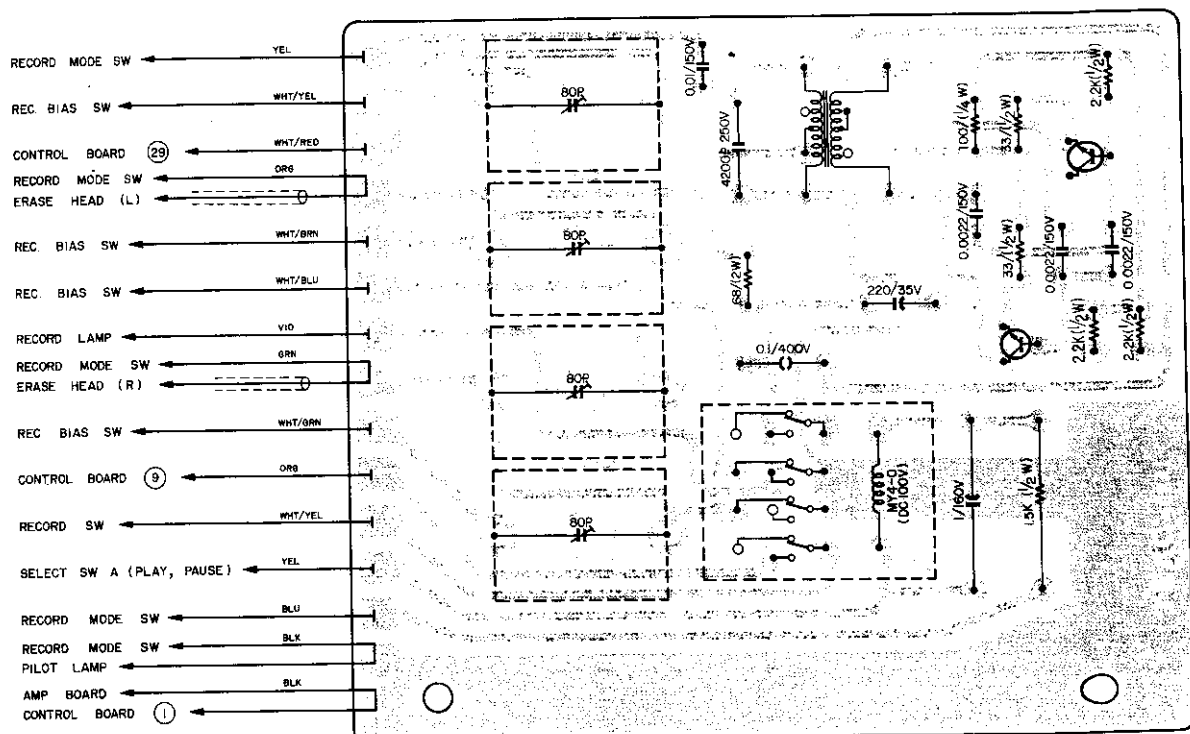
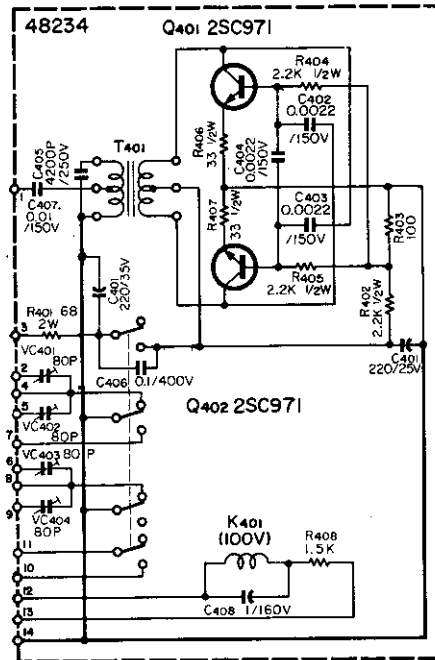
BIAS OSC. AND REC. RELAY - 2 -

2ND EDITION

VIEW FROM FOIL SIDE

SERIAL No 13000 AND AFTER

BIAS OSC BOARD



E - EMITTER
B - BASE
C - COLLECTOR

N-0224

PART LIST

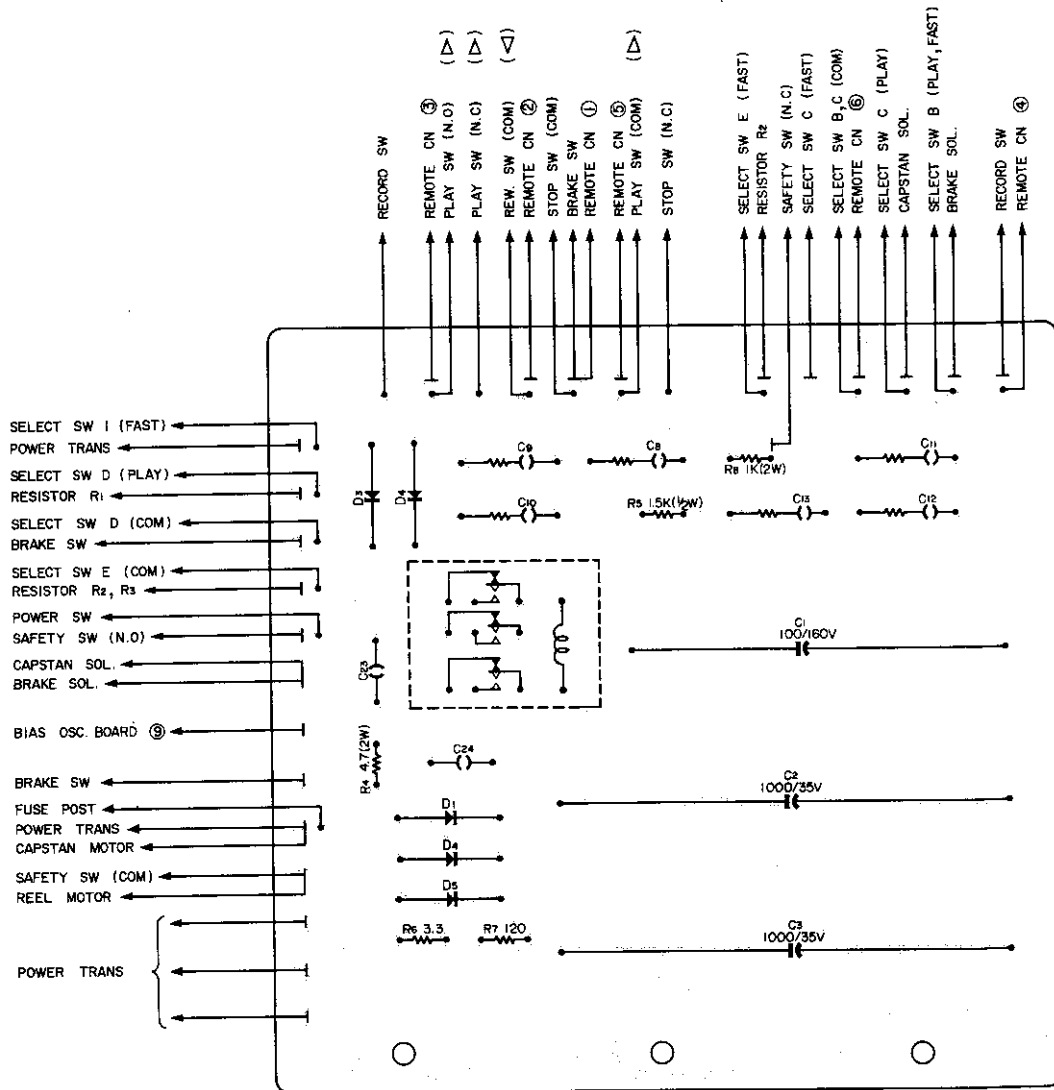
REWIND RELAY AND RECTIFIERS

CIRCUIT REF NO.	PARTS NO.	DESCRIPTION	1ST	2ND
	50482370	PC Board		
K1	50610730	Relay 4T DC 100V MY40		
D1-2	50422360	Diode FR2-06(FR-1MD)		
D4-5	50422360	Diode FR2-06(FR-1MD)		
D3 -	50422380	Diode FR2-10(FR1-K)		
CARBON RESISTORS				
R4	50578260	4.7 ohms 2W		
R5	50514450	1.5k ohms 1/2W		
R6	50515030	3.3 ohms 1/4W		
R7	50515230	120 ohms 1/4W		
R8	50578820	1k ohms 2W		
CAPACITORS				
C2-3	50555110	Electrolytic 1000uF 35V		
C1	50555250	Electrolytic 100uF 160V		
C7 - 24	50548390	Mylar 0.1uF 400V		
C8-9	50529050	Spark-Killer 0.1uF+120 ohms 400V		
C10-11	50529050	Spark-Killer 0.1uF+120 ohms 400V		
C12-13	50529050	Spark-Killer 0.1uF+120 ohms 400V		



REWIND RELAY AND RECTIFIERS

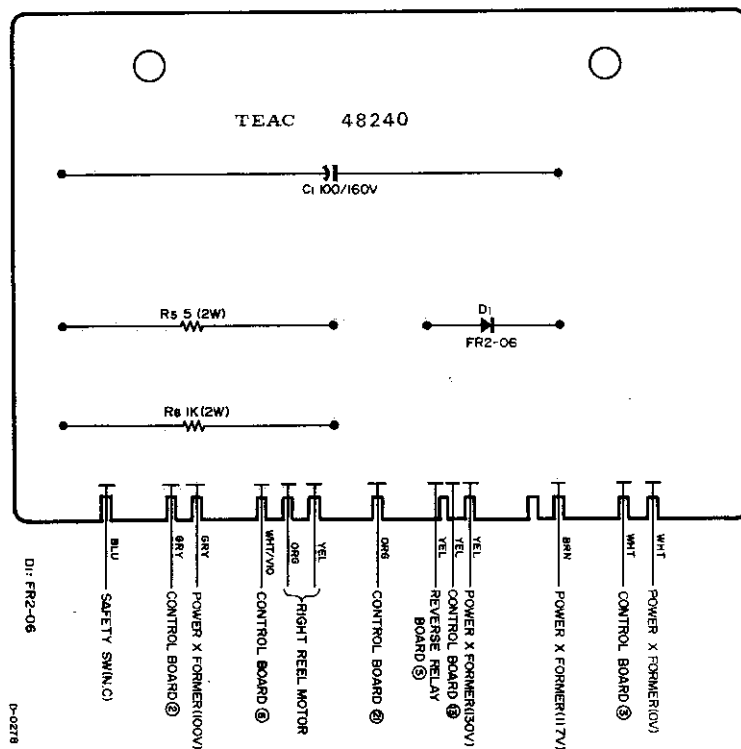
1ST EDITION



SERIAL NO AND AFTER

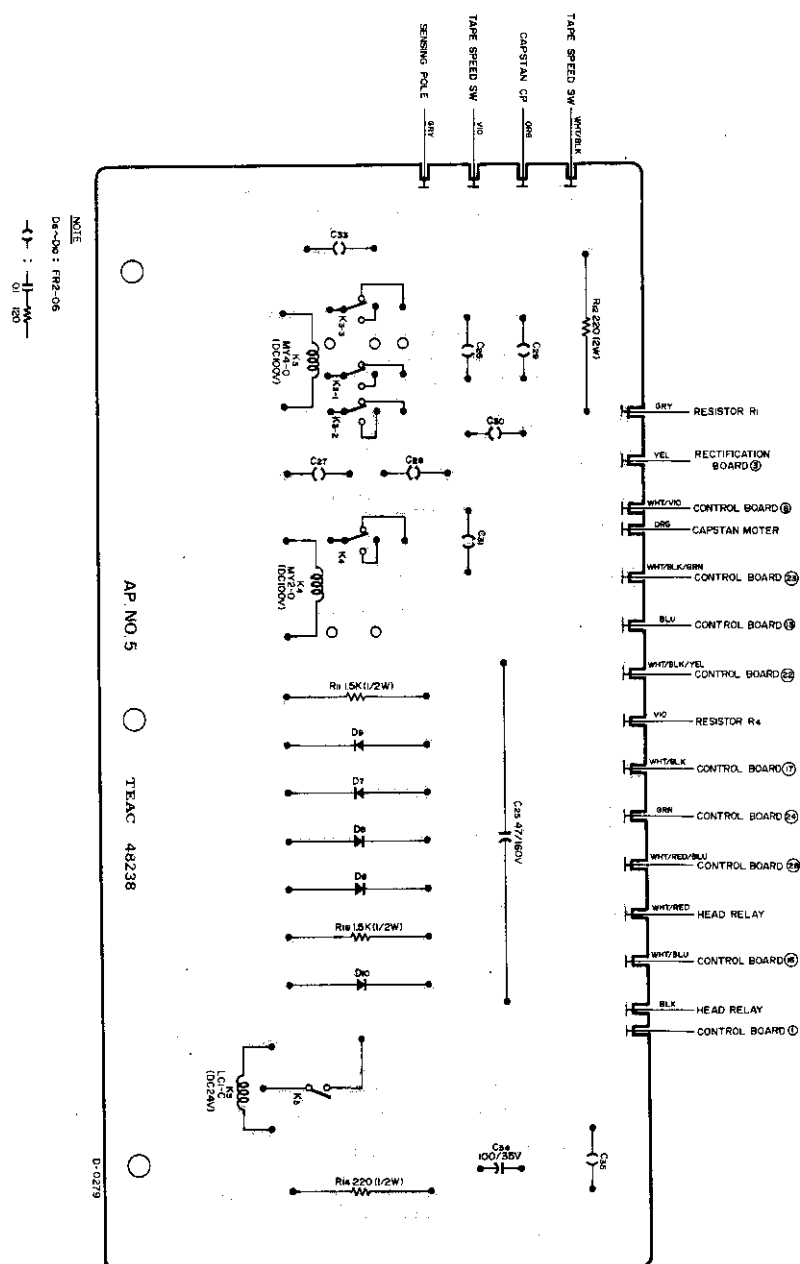
K-0210

RECTIFIER



CIRCUIT REF NO.	PARTS NO.	DESCRIPTION	1ST	2ND
	50482400	PC Board		
C1	50555250	Electrolytic 1000uF 160V		
R4	50526030	Carbon Resistor 5 ohms 2W		
R8	50578820	Carbon Resistor 1k ohms 2W		
D1	50422360	Diode FR2-06		

REVERSE RELAY



CIRCUIT REF NO.	PARTS NO.	DESCRIPTION	1ST	2ND
	50482381	Reverse Relay PC Board		
	50610750	Relay MY2-0 DC100V		
	50610730	Relay MY4-0 DC100V		
	50610280	Relay MRP-100E-02M		
	50574860	Carbon Resistor 1.5k ohms 1/2W		
	50578580	Carbon Resistor 100 ohms 2W		
	50555330	Capacitor 47uF 160V		
	50529050	Spark-Killer 0.1uF 400V		
	50422360	Diode FR2-06		

15 EXPLODED VIEW AND PART LIST

REPLACEMENT INFORMATION

Replacement part are available through your nearest TEAC dealer or directly from the TEAC office. Changes are constantly being made to make TEAC products better and more reliable. Therefore, when ordering parts, always include the following information:

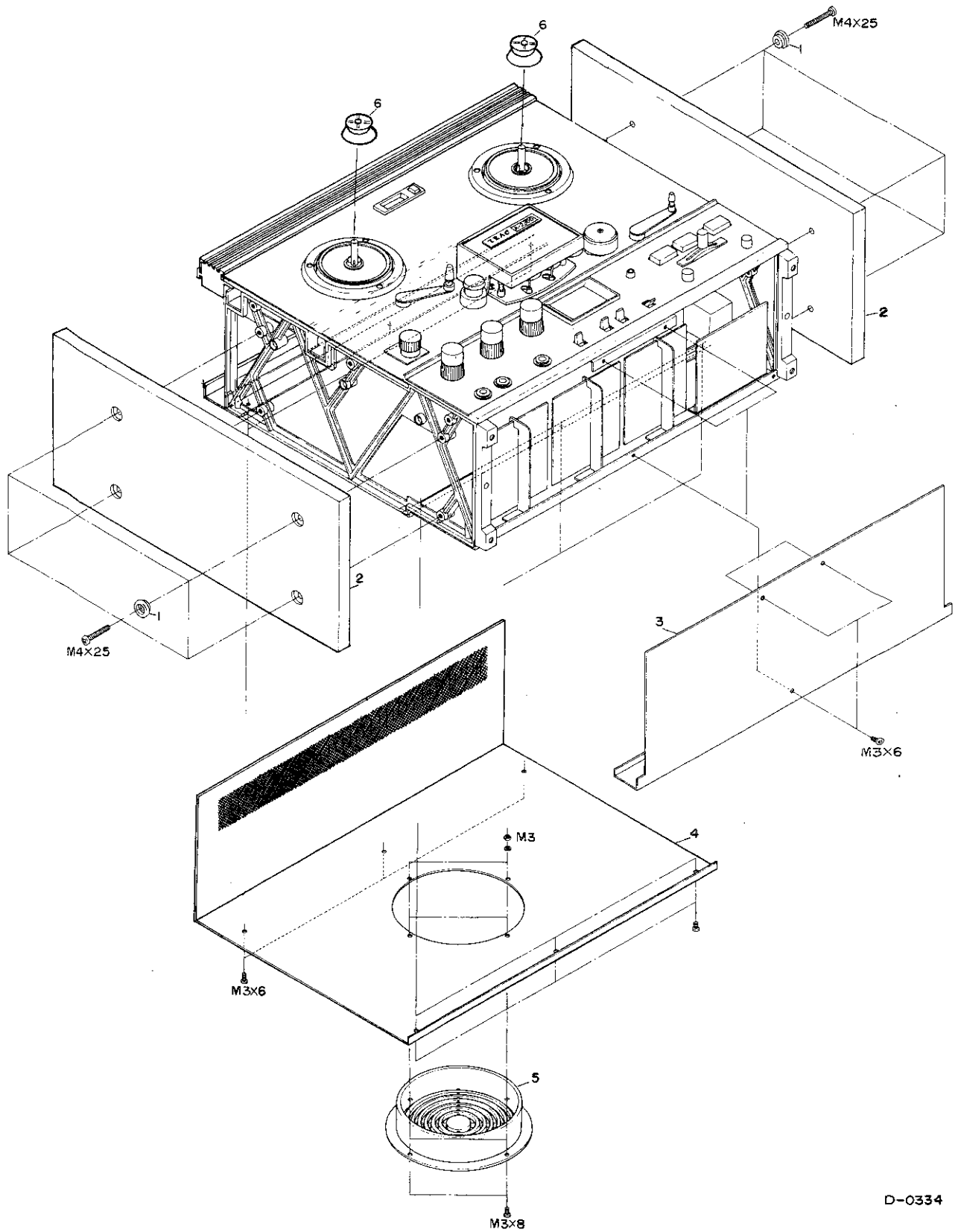
MODEL. SERIAL NO. REF NO. PART NO. DESCRIPTION

NOTE

The basic design of the A-2500 is highly similar to that of the A-2300, therefore information in this exploded view may be applied to the A-2500.

The A-2500 differs from the A-2300 in that it includes an automatic reverse system. Refer to last page of this section for additional parts to the A-2500.

TRIM PARTS



TRIM PARTS

REF NO.	PARTS NO.	DESCRIPTION	1ST	2ND	3RD
1-1	50296930	Washer			
1-2	50286230	Wooden Plate (ST only)	50286232		
1-2	50941231	Wooden Plate (BL only)			
1-3	50296730	Bottom Cover			
1-4	50286630	Rear Cover Assy (ST only)			
1-4	50941240	Rear Cover Assy (BL only)	50941242		
1-5	50276960	Fan Cover	50276961		
1-6	50161580	Reel Holder			

NOTE

ST: Standard

BL: Black

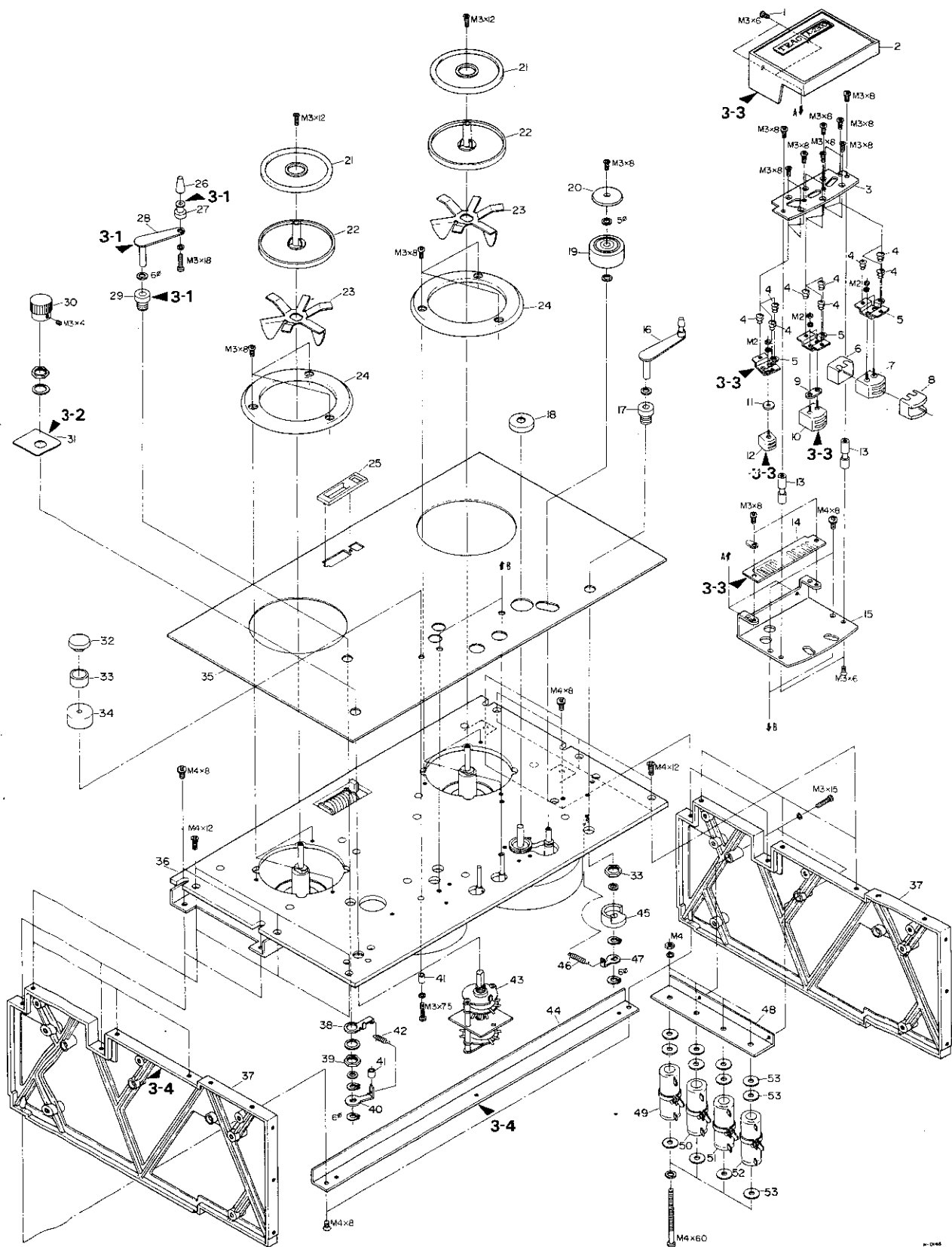
DM: Domestic

EX: Export

CONTROL PANEL

REF NO.	PARTS NO.	DESCRIPTION	1ST	2ND	3RD
2- 1	50253080	Knob (A) (ST only)	50253081		
2- 1	50253390	Knob (Outer) (BL only)			
2- 2	50253090	Knob (B) (ST only)			
2- 2	50253400	Knob (Inner) (BL only)			
2- 3	50583110	Meter Escutcheon	50583120		
2- 4	50253140	Lever Switch Button	50253470		
2- 5	50449900	Lever Switch Cover			
2- 6	50277110	Trim Washer	50277111		
2- 7	50419060	Pilot Holder			
2- 8	50272610	Insulate Washer	50272620		
2- 9	50112641	AMP Trim Panel(ST only)	50112642		
2- 9	50113140	AMP Trim Panel(BL only)			
2-10	50252190	Push Button			
2-11	50581200	VU Meter			
2-12	50112631	AMP Panel	50112633		
2-13	50277060	Switch Base			
2-14	50415120	Lamp Holder			
2-15	50414131	8V Pilot Lamp			
2-16	50415030	Pilot Lamp Socket	50419050		
2-17	50276900	SW Mount Plate Assy	50277130	50234890	
2-18	50432440	3P Jack			
2-19	50430230	Single Jack			
2-20	50537100	Double Potentiometer			
2-21	50537090	Double Potentiometer			
2-22	50447120	Lever Switch			
2-23	50277030	Control Base Plate	50277780		
2-24	50442350	Rotary Switch (Lever)			
2-25	50443210	Push Switch (Lock)			
2-26	50443410	Push Switch (Non Lock)			
2-27	50277240	Rubber Plate Collar			
2-28	50252190	Operation Button	50253210		
2-29	50252450	Operation Button Stop	50253200		
2-30	50253110	Push Button Base	50253113		
2-31	50277010	Control Plate			
2-32	50241120	Control Collar			
2-32	50241130	Control Collar	50277540		
2-33		Micro Switch			
2-34	50277070	Cushion Plate	50279560		
2-35	50233770	Meter Stop Plate			
2-36	50152452	Lifter Receive Angle			
2-37	50414131	8V Pilot Lamp			
2-38	50415030	Pilot Lamp Socket			
2-39	50276980	Case Leg			
2-40	50277000	PC Board Fixed Angle	DISCONTINUED		
2-41		Control PC Board Assy			
2-42	50276850	L Bracket (B)			
2-43	50233760	AMP Stop Plate			
2-44		REC Meter AMP PC Board Assy			
2-45		Line Phone AMP PC Board Assy			
2-46		Playback Mic AMP PC Board Assy			
2-47		Terminal Strip 1L-2P			
2-48	50434630	Double Pin Jacks	50434631		
2-49	50431050	AC Socket			
2-50	50419010	Fuse Post Adaptor			
2-51	50412170	Fuse Holder			
2-52	50276840	L Bracket (A)			
2-53		Bias Oscillator PC Board Assy			
2-54	50233730	AMP Chassis	50233732	50234700	
2-55	50263100	Connector Plate (DM)	50263103		
2-55	50263140	Connector Plate (EX)	50263142	50264620	

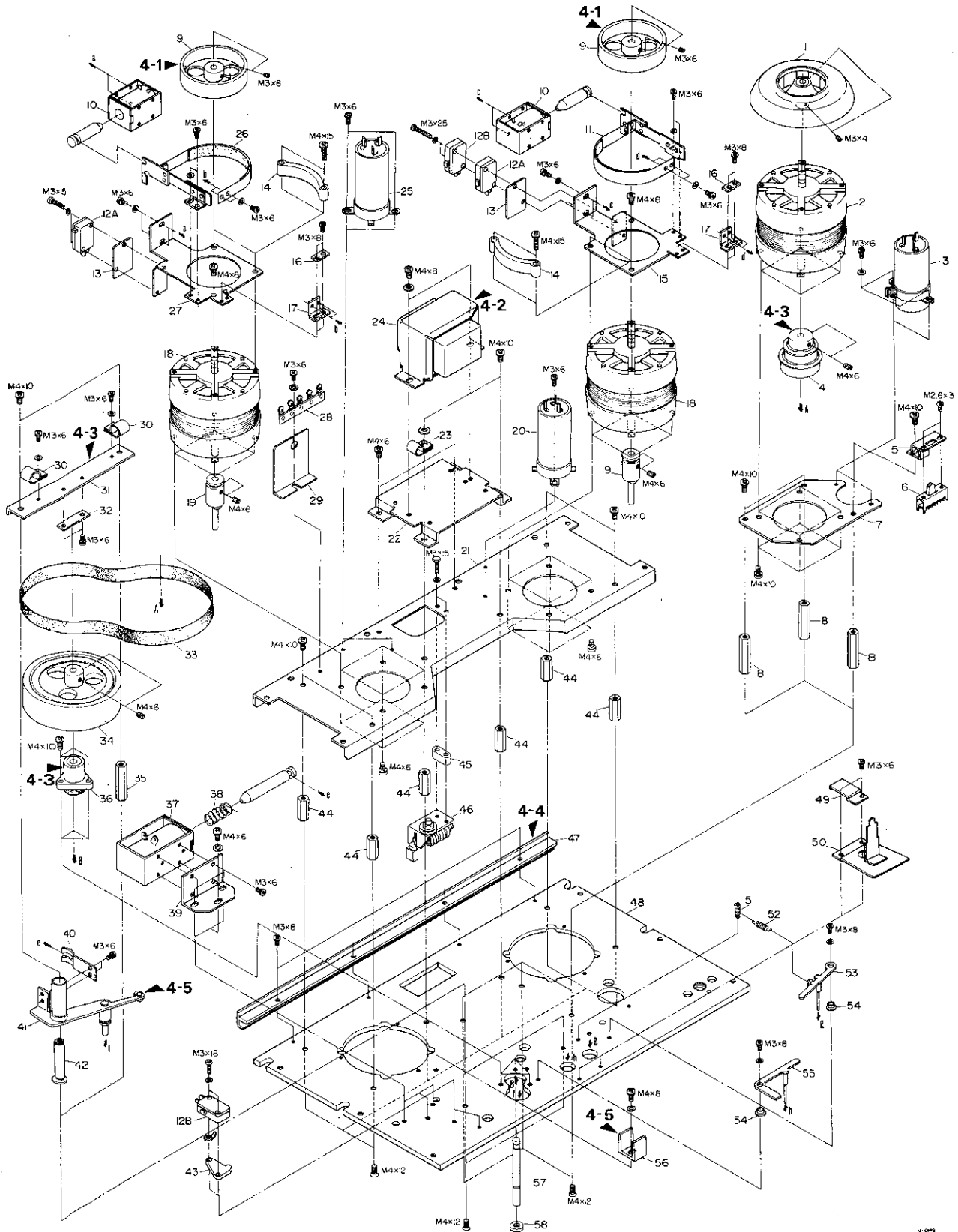
ABOVE MAIN CHASSIS



ABOVE MAIN CHASSIS

REF NO.	PARTS NO.	DESCRIPTION	1ST	2ND	3RD
3- 1	50210270	Housing Stop Screw			
3- 2	50134340	Head Housing	50134341		
3- 3	50134400	Head Angle Plate			
3- 4	50220500	Spring			
3- 5	50134370	Head Mount Plate			
3- 6	50133900	Shield Case (B)			
3- 7	50669040	Playback Head	50669041		
3- 8	50133891	Shield Case (A)			
3- 9	50134390	REC Head Spacer			
3-10	50666041	REC Head			
3-11	50134380	Erase Head Spacer			
3-12	50663030	Erase Head			
3-13	50182670	Guide Pin	50182672		
3-14	50482352	PC Board (Head)			
3-15	50134350	Head Plate			
3-16	50180430	Tension Arm Assy (Right)	50180431		
3-17	50182700	Arm Holder	50182701		
3-18	50123970	Metalized Cap	50123971		
3-19	50141750	Pinch Roller			
3-20	50141760	Pinch Roller Cap			
3-21	50820350	Reel Table Cover			
3-22	50161920	Reel Table	50161981		
3-23	50221140	Height Adj. Spring (A)	50221170	50221180 Coiled Spring	
3-24	50161940	Reel Protector			
3-25	50277020	Counter Escutcheon			
3-26	50134360	Guide Cap			
3-27	50182690	Guide Pin (B)			
3-28	50180440	Tension Arm Assy (Left)	50180442		
3-29	50182700	Arm Holder (A)	50182701		
3-30	50253100	Knob (C) (ST only)	50253102		
3-30	50253390	Knob (Outer) (BL only)			
3-31	50263090	Name Plate	50263170		
3-32	50123910	Guide Ring Cap			
3-33	50123930	Guide Ring			
3-34	50123920	Guide Ring Base			
3-35	50112660	Face Panel	50112662		
3-36	50112670	Top Panel	50112672		
3-37	50112710	Side Frame	50112712		
3-38	50276870	Spring Hanger			
3-39	50276920	9/16 Nut			
3-40	50182750	Tension Arm Stopper			
3-41	50276990	Rubber Collar			
3-42	50221110	Rubber Collar	DISCONTINUED		
3-43	50442360	Rotary Switch			
3-44	50286220	Angle (ST only)	50286222		
3-44	50277310	Angle			
3-45	50182740	Tension Arm Drum	50182742	50182990	
3-46	50221120	Spring (C)	50221121		
3-47	50276860	Spring Hang (Right)			
3-48	50276860	Resistor Mount Plate	50276890	50277750	
3-49	50524320	Wire Wound Resistor, 500 ohms 20HA	50524321		
3-50	50522190	Wire Wound Resistor, 200 ohms 20HA			
3-51	50524310	Wire Wound Resistor, 150 ohms 20HA	50522211 50 ohms 20HA		
3-52	50524200	Wire Wound Resistor, 100 ohms 20HA	50524201		

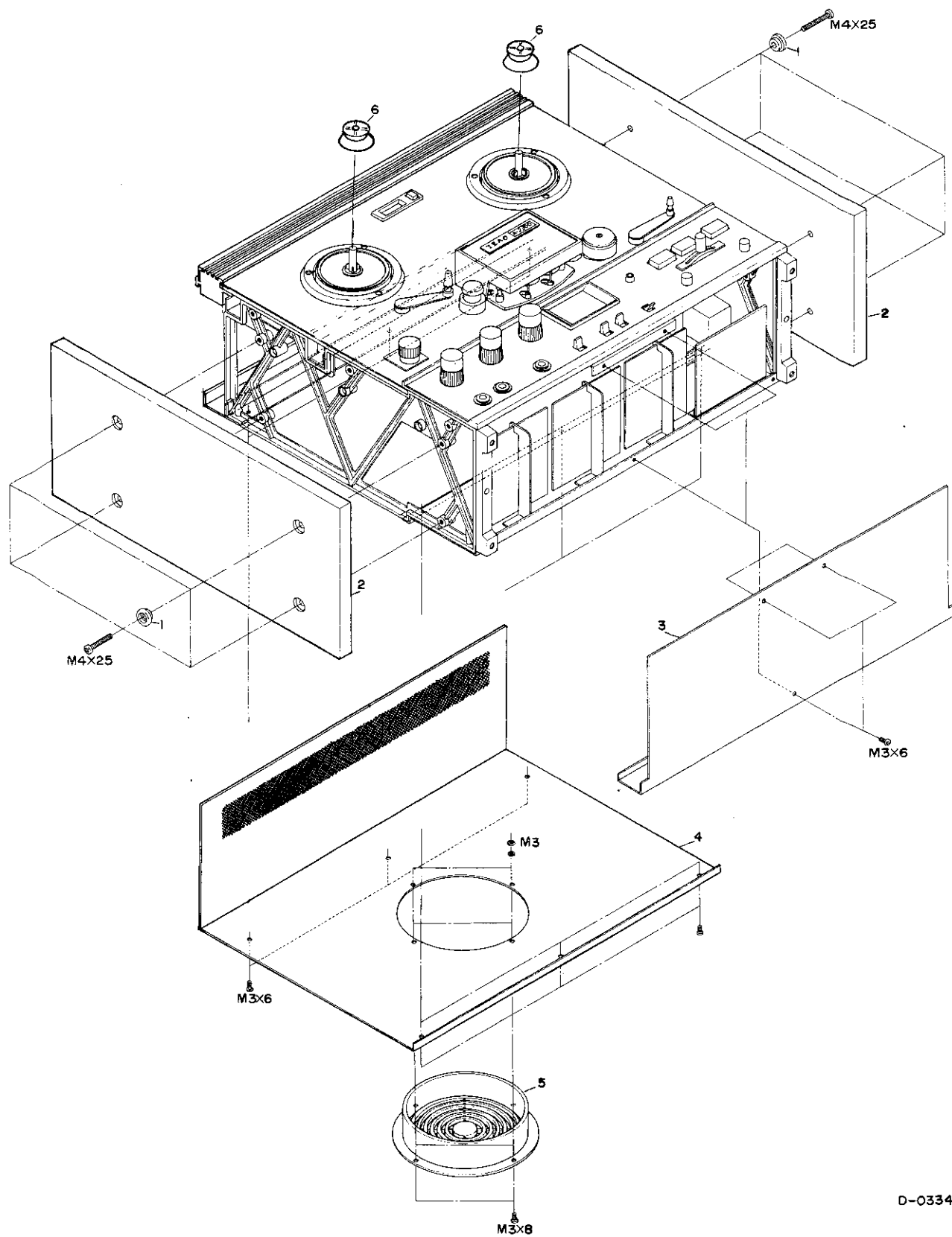
BELOW MAIN CHASSIS



BELOW MAIN CHASSIS

REF NO.	PARTS NO.	DESCRIPTION	1ST	2ND	3RD
4- 1	50123980	Fan			
4- 2	50701190	Capstan Motor	50701342		
4- 3	50545650	MP Cap, 2uF+0.8uF 250V			
4- 4	50123840	Motor Pulley	50124002		
4- 5	50276910	Slide Switch Mount Plate			
4- 6	50444170	Slide Switch			
4- 7	50123870	Motor Mount Plate			
4- 8	50123850	Pole (Capstan)			
4- 9	50172540	Brake Drum	50172631	50172831	
4-10	50616370	Solenoid			
4-11	50170170	Brake Belt Assy (A)	50170181		
4-12	50446100	Micro Switch	50446180		
4-12	50446130	Micro Switch			
4-13	50271790	Insulate Panel			
4-14	50172550	Brake Receiver			
4-15	50172600	Brake Mount Plate (A)	50172602		
4-16	50170150	Belt Pressure			
4-17	50170160	Belt Mount Angle			
4-18	50702251	Reel Motor			
4-19	50161930	Reel Shaft			
4-20	50545660	MP Cap, 3uF+1uF 250V			
4-21	50233740	Motor Chassis	50233741	50233921	
4-22	50233750	X former Mount Plate			
4-23	50276280	Cord Pressure (Large)			
4-24	50561700	Power Supply X former	50561701		
4-25	50545660	MP Capacitor			
4-26	50170140	Brake Belt Assy	50170143		
4-27	50172610	Brake Mount Plate (B)	50172612		
4-28		Terminal Strip 114P	50482400	Rectifier PC Board	
4-29	50276880	Insulate Plate			
4-30	50276290	Thrust Angle			
4-31	50277050	Thrust Angle	50277151		
4-32	50272851	Thrust Plate	50277230		
4-33	50123830	Capstan Belt			
4-34	50123800	Flywheel	50123801		
4-35	50123860	Pole (Flywheel)			
4-36	50120200	Metallized Holder Assy	50120211	50123821	
4-37	50616340	Solenoid			
4-38	50221130	Return Spring	50221131	50220441	
4-39	50277080	Solenoid Mount Plate			
4-40	50221150	Pressure Spring	50221151		
4-41	50140230	Pinch Roller Arm Assy	50140235		
4-42	50141770	Roller Arm Shaft	50141820		
4-43	50182730	Tension Arm Limiter			
4-44	50161950	Pole (Reel Motor)			
4-45	50276950	Counter Spacer			
4-46	50585090	Tape Counter			
4-47	50112680	Sush (ST only)	50112682		
4-47	50113001	Top Grille (BL only)			
4-47	50112980	Top Grille (2T only)			
4-48	50112670	Top Panel	50112671		
4-49	50152450	Lifter Angle			
4-50	50233770	Meter Stop Plate			
4-51	50123140	Spring Angle Pin			
4-52	50221100	Spring (A)			
4-53	50150250	Lifter Arm (B) Assy	50150251		
4-54	50152500	Lifter Arm Shaft	50152501		
4-55	50150240	Lifter Arm (A) Assy	50150241		
4-56	50141800	Pinch Roller Stopper	50141801	50141841	
4-57	50123691	Capstan Shaft			
4-58	50123900	Oil Seal			

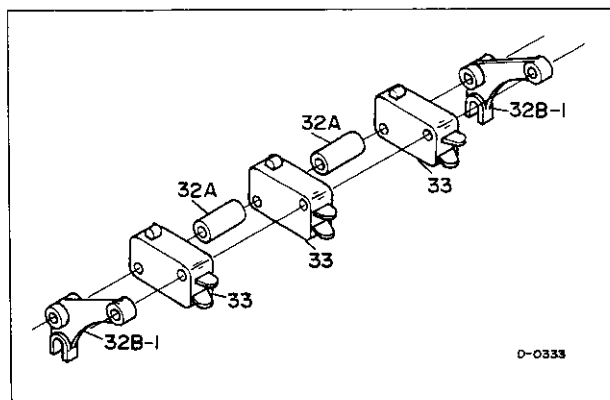
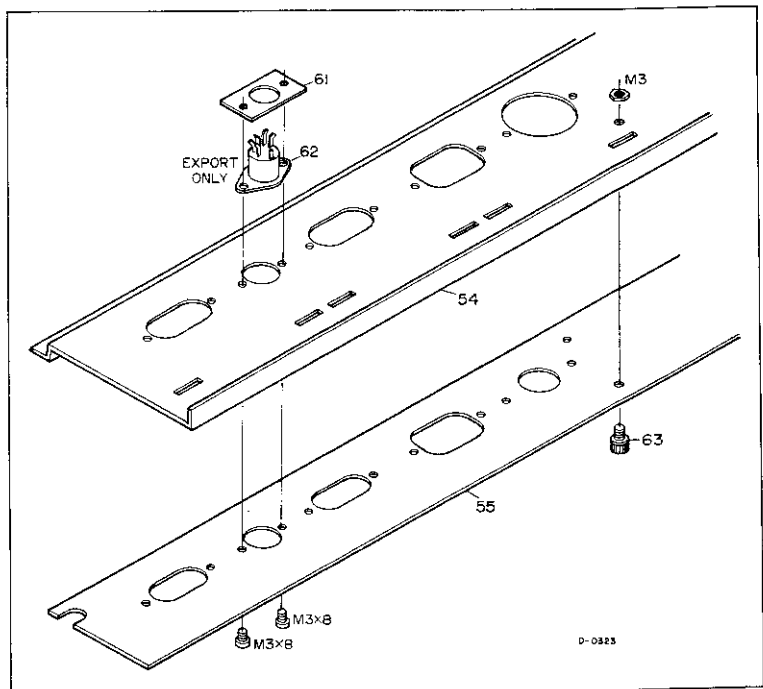
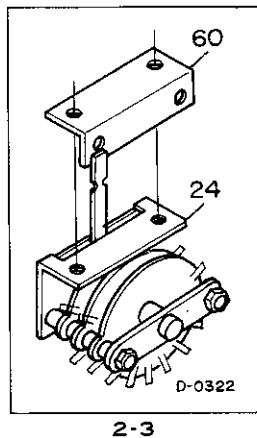
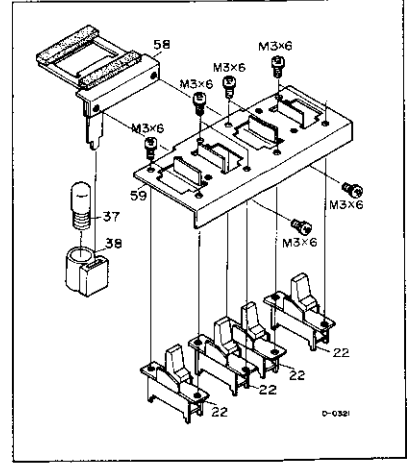
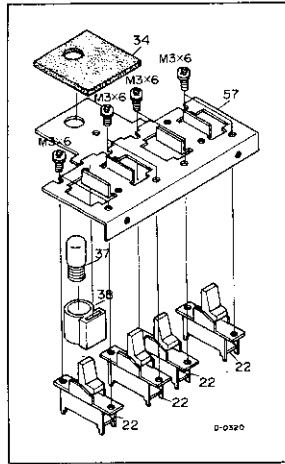
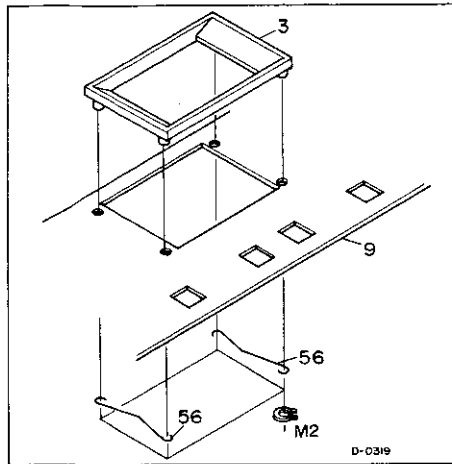
TRIM PARTS



TRIM PARTS

REF NO.	PARTS NO.	DESCRIPTION	1ST	2ND
1-1	50296930	Washer		
1-2	50941230	Wooden Plate		
1-3	50296730	Bottom Cover		
1-4	50941242	Rear Cover Assy		
1-4	50941251	Rear Cover		
1-4	50941260	Nylon Net		
1-5	50276961	Fan Cover		
1-5	50941270	Fan Cover Plate		
1-6	50161580	Reel Holder		

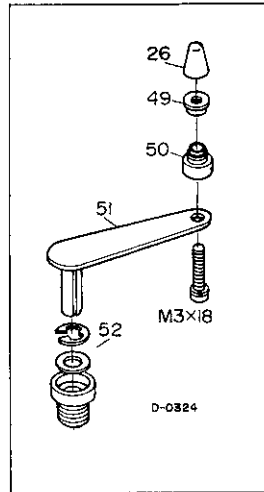
CONTROL PANEL PARTIAL



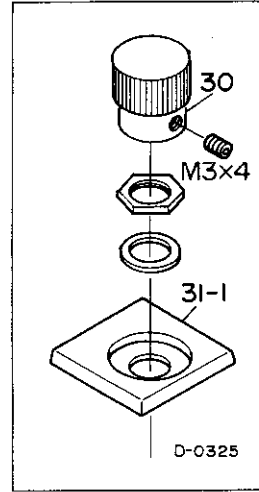
CONTROL PANEL
PARTIAL

REF NO.	PARTS NO.	DESCRIPTION	1ST	2ND
[2-1]				
2- 3	50583120	Meter Escutcheon		
2- 9	50112642	Amp Trim Panel		
2-56	50583130	Clip Pin		
[2-3]				
2-24	50442350	Rotary Switch (Lever)		
2-60	50277770	Rotary Switch Mount Plate		
[2-2-1]				
2-22-1	50447120	Lever Switch		
2-34-1	50279560	Cushion Plate		
2-37-1	50414131	8V Pilot Lamp		
2-38-1	50415030	Pilot Lamp Socket		
2-57-1	50234820	Switch Mount Plate		
[2-2-2]				
2-22-2	50447120	Lever Switch		
2-37-2	50414131	8V Pilot Lamp		
2-38-2	50415030	Pilot Lamp Socket		
2-58-2	50234840	Meter Retainer		
2-59-2	50234820	Switch Mount Plate		
[2-4]				
2-54	50233730	Amp Chassis		
2-55	50264620	Connector Plate (DM)		
		Connector Plate (EX)		
2-61	50233530	DIN Connector Holder		
2-62	50430010	DIN Connector		
2-63	50454071	Ground Terminal		
[2-5]				
2-32	50241120	Control Collar		
2-32	50277540	Base Plate Holder		
2-33	50446090	Micro Switch		

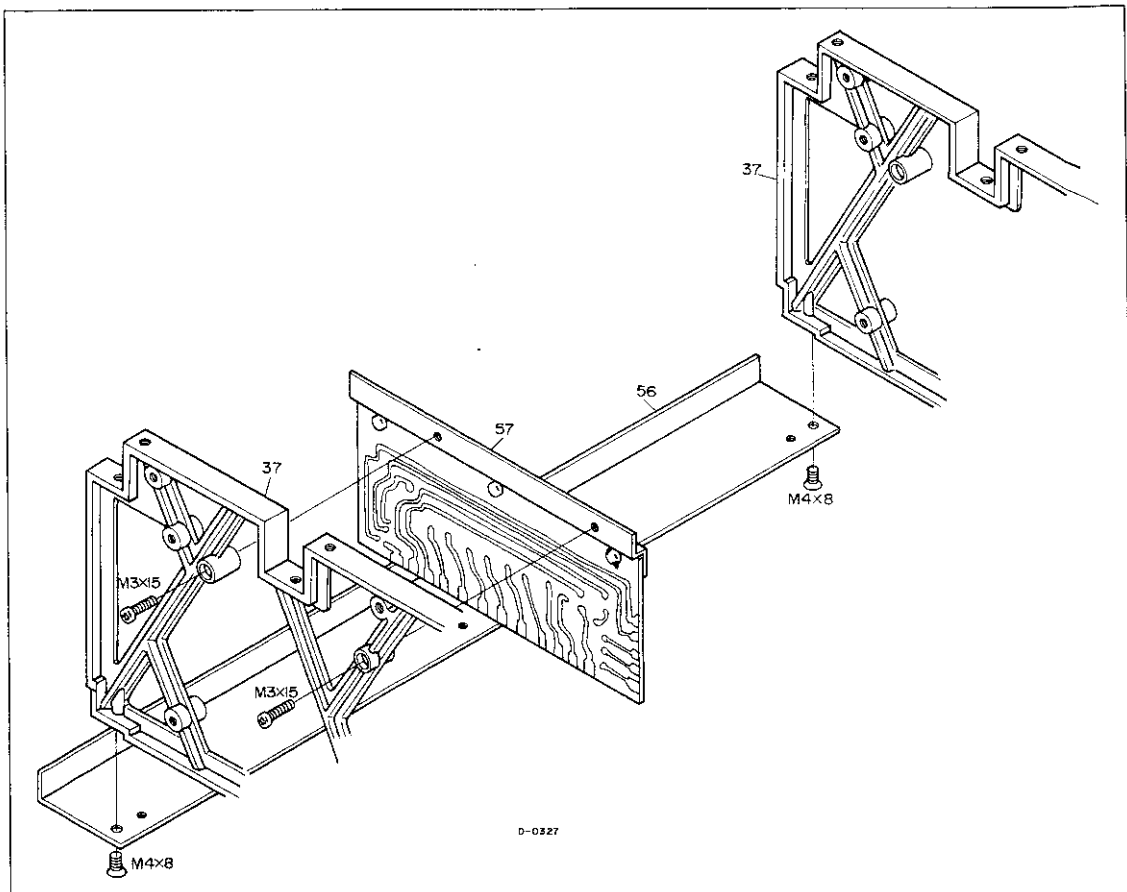
ABOVE MAIN CHASSIS PARTIAL



3-1



3-2

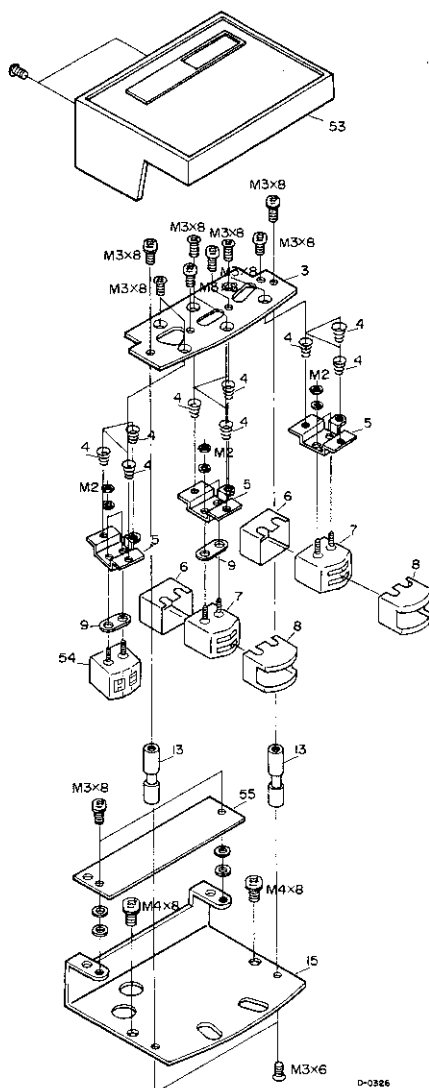


3-4

ABOVE MAIN CHASSIS
PARTIAL

REF NO.	PARTS NO.	DESCRIPTION	1ST	2ND
[3-1]				
3-26	50134360	Guide Cap		
3-49	50182780	Guide C		
3-50	50182770	Guide D		
3-51	50182821	Tension Arm Assy (Left)		
	50183040	Arm PC Board		
3-52	50182800	Arm Holder (Left)		
[3-2]				
3-30	50253102	Knob C		
3-31-1	50263170	Tape Speed Name Plate		
[3-4]				
3-51	501129122	Side Frame		
3-56	50277310	Cover Angle Plate		
3-57	50482640	Reverse PC Board		
3-57	50277250	PC Board Angle Retainer		

HEAD ASSEMBLY



3-3

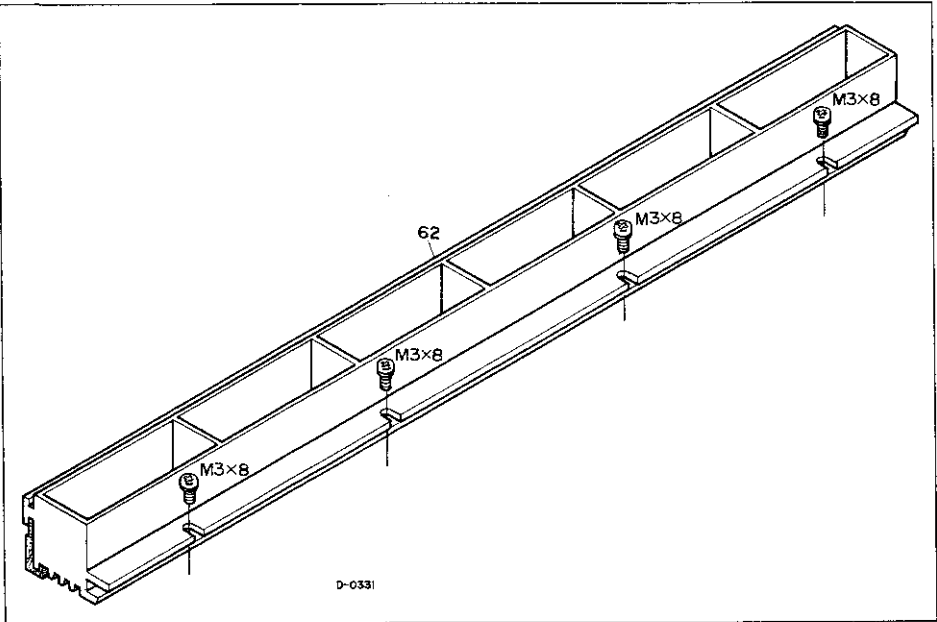
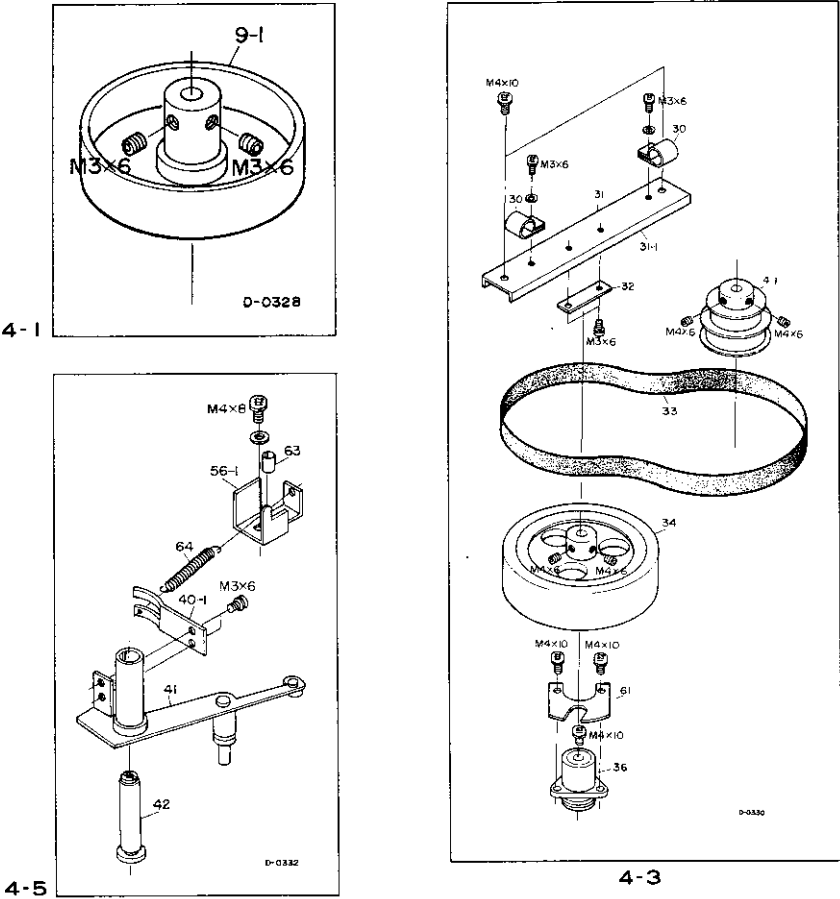
REF NO.	PARTS NO.	DESCRIPTION	1ST	2ND
3- 3	50134400	Head Angle Plate		
3- 4	50220500	Spring		
3- 5-1	50134420	E/R Head Mount Plate		
3- 6	50133900	Shield Case (B)		
3- 7	50669041	Playback Head		
3- 8	50133891	Shield Case (A)		
3- 9	50134390	REC Head Spacer		
3-13	50182672	Guide Pin		
3-15	50134350	Head Plate		
3-53	50135290	Head Housing		
3-54	50663410	E/R Head		
3-55	50482361	PC Board (Head)		

HEAD CONFIGURATION

APPLICABLE ON MODEL	T C A	A-1230 A-2100 A-2300 BLK	A-1250		
	DOMESTIC	A-2300 A-2300 BLK A-2100	A-2500 A-2500 BLK	A-2300 2T PORTABLE	A-2400
	EXPORT	A-2100 A-2300	A-2500	A-2300 2T PORTABLE	A-2400
	T E N V	A-2100 A-2300	A-2500	A-2300 2T WOODEN	

REF. NO.	DESCRIPTION	PARTS NO.	QT.	PARTS NO.	QT.	PARTS NO.	QT.	PARTS NO.	QT.
	HEAD ASSY	50130300	1	50130490	1	50130520	1	50130530	1
3-15	HEAD PLATE	50134350	1	50134350	1	50134350	1	50134530	1
3- 3	HEAD ANGLE PLATE	50134400	1	50134400	1	50134400	1	50134520	1
3-14	PC BOARD	50482352	1	50482361	1	50482352	1	50482420	1
3-13	GUIDE PIN	50182672	2	50182672	2	50182672	2	50182672	4
	RELAY			50610760	1				
	RESISTOR			50515270	1				
	ELECTROLYTIC CAP 10u/150V			50554350	1				
	HEAD MOUNTING PLATE	50134370	3	50134370	2	50134370	3	50134370	1
	E/R HEAD MOUNTING PLATE			50134420	1				
3-12	ERASE HEAD	(4TR-2CH) 50663030	1			(2TR-2CH) 50662030	1		
3-10	REC HEAD	(4TR-2CH) 50666040	1			(2TR-2CH) 50665040	1		
	E/R HEAD			(4TR-2CH) 50663410	1				
3- 7	PLAY HEAD	(4TR-2CH) 50669040	1	50669040	2	(2TR-2CH) 50668050	1	(4TR-4CH) 50664310	1
3-11	ERASE HEAD SPACER	50134380	1			50134380	1		
3- 9	REC HEAD SPACER	50134390	1	50134390	2	50134390	1	50134390	1
3- 8	SHIELD CASE (A)	50133891	1	50133891	2	50133891	1		
3- 6	SHIELD CASE (B)	50133900	1	50133900	2	50133900	1		
3- 4	SPRING	50220500	9	50220500	9	50220500	9	50220500	3

BELOW MAIN CHASSIS (1)
PARTIAL



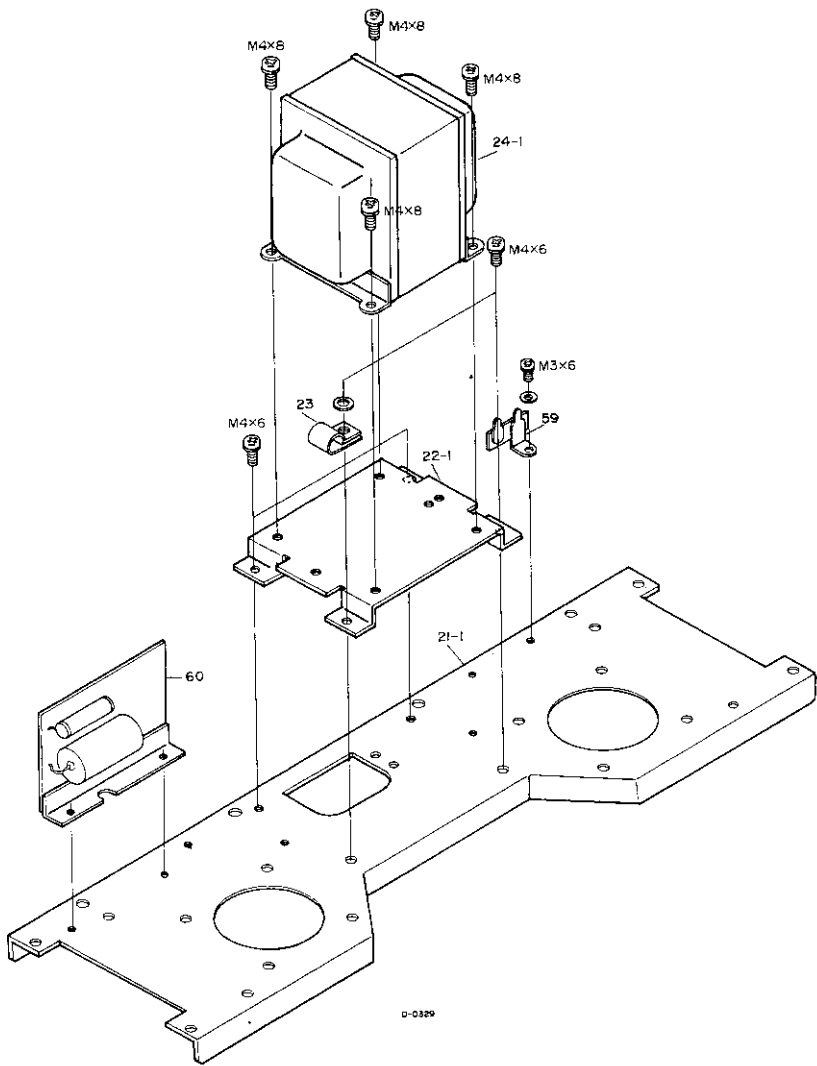
BELOW MAIN CHASSIS (1)
PARTIAL

REF NO.	PARTS NO.	DESCRIPTION	1ST	2ND
[4-1]				
4-9-1	50172831	Brake Drum		
[4-3]				
4- 1	50124002	Motor Pulley		
4-30	50276290	Cord Pressure (Small)		
4-31-1	50277150	Thrust Angle		
4-32	50277230	Thrust Plate		
4-33	50123830	Capstan Belt		
4-34	50123801	Flywheel		
4-36	50120211	Metallized Holder Assy		
4-61	50141830	Holder Supporter		
[4-4]				
4-62	50941280	Top Grille		
[4-5]				
4-40-1	50221151	Pressure Spring		
4-41	50140233	Pinch Roller Arm Assy		
4-42	50141770	Roller Arm Shaft		
4-56-1	50141841	Pinch Roller Stopper		
4-63	50275690	Cushion Rubber		
4-64	50220441	Return Spring		

BELOW MAIN CHASSIS (1)
PARTIAL

REF NO.	PARTS NO.	DESCRIPTION	1ST	2ND
[4-1]				
4-9-1	50172831	Brake Drum		
[4-3]				
4- 1	50124002	Motor Pulley		
4-30	50276290	Cord Pressure (Small)		
4-31-1	50277150	Thrust Angle		
4-32	50277230	Thrust Plate		
4-33	50123830	Capstan Belt		
4-34	50123801	Flywheel		
4-36	50120211	Metallized Holder Assy		
4-61	50141830	Holder Supporter		
[4-4]				
4-62	50941280	Top Grille		
[4-5]				
4-40-1	50221151	Pressure Spring		
4-41	50140233	Pinch Roller Arm Assy		
4-42	50141770	Roller Arm Shaft		
4-56-1	50141841	Pinch Roller Stopper		
4-63	50275690	Cushion Rubber		
4-64	50220441	Return Spring		

BELOW MAIN CHASSIS (2)
PARTIAL



REF NO.	PARTS NO.	DESCRIPTION	1ST	2ND
[4-2]				
4-21-1		Motor Chassis		
4-22-1	50233751	Xformer Mount Plate		
4-23	50276280	Cord Pressure (Large)		
4-24-1	50561710	Power Supply Xformer		
4-59		Terminal 1L1P		
4-60	50482400	PC Board		
4-60	50233930	PC Board Mount Angle (B)		

16 MANUAL CHANGES

REVISIONS

Change notices, recommended modifications etc. will be issued for the models in this manual, when appropriate.

This sheet is in loose leaf form and should be filed behind this page for convenient reference.