

STEREOWIDE MANUAL

A-170

STEREO CASSET DECK



TEAC®

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Test Equipment & General Precautions

The Service Technician is an important link between our engineers and our customers. We, therefore, recognize the obligation we have to the service technicians throughout the world to provide clear, accurate service data. Just as we are continually striving to improve our products, so we are always reviewing the needs of our service personnel to provide the most up to date data available.

Although we appreciate the many favorable comments we receive, we also welcome questions and suggestions from the field. Feel free to contact us at any of the offices

printed on the back cover of this manual if any procedure seems too difficult to do or to understand.

This manual is written to provide a guide for the skilled technician to make the preliminary checks and adjustments on the deck and includes instructions for the replacement of many of the parts and ordering information. A block diagram of the deck is provided to help explain the overall operation and functions of the A-170. A schematic diagram is included to help in detailed trouble-shooting.

The service data in this manual is intended for qualified service personnel and as such

may be more detailed than information contained in advertising material or that found in the Owner's Manual.

The service data is subject to change with the incorporation of future improvements or modifications.

All dB values in these tests refer to 0 dB = 0.775 V. If the test equipment you are using is calibrated for 0 dB = 1 V appropriate compensation should be made. If you are using a meter that does not have a dB scale, refer to the TEAC DECIBEL TABLE distributed previously to obtain conversion of millivolts to dB.

Test Equipment & Tools

Test Tapes

For Playback Measurement:

MTT-150 Dolby Level Calibration Tone Tape. (400 Hz)

MTT-111 Tape speed & wow/flutter (3,000 Hz)

MTT-116L for Frequency Response (40 Hz - 10 kHz)

For Recording Measurement:

MTT-505 for BIAS 1/EQ 1

MTT-501 for BIAS 2/EQ 2

Spring Scale:

0 to 70 g, 0 to 400g

Frequency Generator:

range 10 Hz - 100 kHz

VTVM: ranges from 0.1mV - 300V

Distortion Analyser:

Base frequency: 400 Hz - 1 kHz

Oscilloscope: Sensitivity: 10mV/cm division, ranges from DC to 250 kHz

Wow & Flutter Meter

Meguro Denpa Co., Model MK-668A,
D & R Co., FL-4B or equivalent

Digital Frequency Counter: 10Hz - 100kHz

Bandpass Filter: 1 kHz

Other equipment:

Headphone: plug and general tools

Precaution

** Before performing any maintenance on the unit, all metal parts that the tape will come into contact with must be cleaned and demagnetized.

** For avoiding any damages it is very necessary to check that AC power line voltage of your deck matches with that in your locality.

** Standard Test Tapes and Test Equipment must be used when performing maintenance to insure reliable results.

** Procedures for preliminary checks and adjustments, unless otherwise indicated, are for the left channel.

** The output load must, unless otherwise noted, be 50 kohms or more.

** Input impedance of VTVM that is to be a load to a Dolby test point must always be more than 1 megohms.

Special Terms

The following defined terms are used in a special sense in the manual.

** **Specified Output Setting** defines the position of the Output control that gives a +3 dB level at the OUTPUT jacks when the MTT-150 test tape (Dolby Level Calibration Tone Tape) is played back and the Dolby Amplifier is set for 580 mV output at the Dolby Test Points. This setting will give a specified output level when playing back any properly recorded tape.

** **Specified Input (RECORD) Setting** defines the position of the Input controls that gives an output of 500 mV at the Dolby Test Points when a -9 dB, 400 Hz sinewave signal is applied to the LINE IN jacks, a -57 dB level is applied to the MIC jack or a -25 dB level is applied to the DIN input connector. The controls position may vary depending on the Input terminals being used. However, measurement performed in this manual are done with the RECORD controls set at the position determined when using the LINE IN jack.

** **0dB** refers to a level of 0.775V throughout this manual.

** **THD** denotes total harmonic distortion for overall tape, head and amplifier system measurement.

Specifications & Service Data

Specifications

Track System	1/4-track, 2-channel
Type of Tape	Cassette tape, C-60 and C-90 (Philips type)
Tape Speed	4.8 cm/s (1-7/8 ips)
Inputs (impedance and level)	Microphones: Min. input level: -67 dB (0.345 mV) ± 3 dB (10 Kohms or more, applicable standard: 600 ohms - 10 kohms). Line: Specified input level: -9 dB (274 mV) (50 Kohms or more) Min input level: -19 dB (86 mV) ± 3 dB * DIN: Min. input level: -35dB (13.7 mV) ± 2 dB
Outputs (impedance and level)	Line out: Max. output level: +8 dB (1.94 V) ± 2 dB (50 Kohms) Specified output level: +3 dB (1.09 V) Headphones: Specified output level: -21 dB (69.0 mV) ± 3 dB (8 ohms)
Equalization	EQ 1: 3180 μs + 70 μs (for CrO ₂ tape) EQ 2: 3180 μs + 120 μs (for regular Hi-Fi tape)
Head Configuration	1/2-track, 1-channel Erase Head 1/4-track, 2-channel Record/Playback Head
Motor	DC Servo Motor with F.G. voltage control
Bias Frequency	100 kHz
Operating Position	Horizontal
Power Requirements	100/117/220/240V AC, 50/60 Hz (General Export Models) 117V AC 60 Hz (USA/Canada Models) 220V AC 50 Hz (Europe Models)
Power Consumption	8 W
Dimensions	430 (W) x 136 (H) x 255 (D) mm [16-15/16" (W) x 5-3/8" (H) x 8-7/8" (D)]
Weight	4.5 kg (10 lbs) net, approx. * Pursuant to DIN Standards

Service Data

Mechanical

Tape Speed Deviation	3,000 Hz ± 45 Hz
Wow and Flutter	Playback: 0.12% (WRMS)
Pinch Roller Pressure	400 g ± 20 g (14 oz)
Reel Torque	Take up: 45 - 70 g (1.5 - 2.5 oz) Fast Forward: 30 g-cm Rewind: 100 g-cm or more
Fast Winding Time	90 seconds for C-60
End-stop Activate Time	4 seconds ± 2 sec.

Electrical

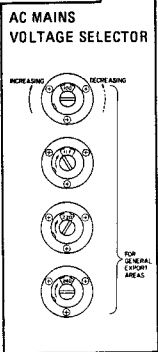
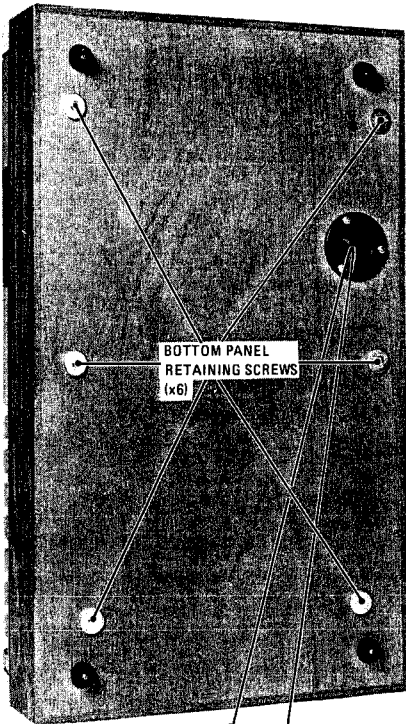
Frequency Response	Refer to frequency response limits charts on pp. 11, 13.
Signal to Noise Ratio	Playback method: 47 dB (minimum) Record/Playback Method: BIAS/EQ 1: 45 dB minimum BIAS/EQ 2: 44 dB minimum
Erase Efficiency	65 dB minimum
Channel Separation	30 dB minimum (at 1 kHz)
Crosstalk between adjacent tracks	40 dB minimum (at 125 Hz)
Total Harmonic Distortion	BIAS/EQ 1: 3.0% (maximum) BIAS/EQ 2: 2.5% (maximum)

Switch		Tape Brand	Tape Designation
BIAS	EQ		
1	1	FUJI FILM	FC-C-60 FC-C-90
		MAXELL	CR-C-60 CR-C-90
		TDK	KR-C-60 KR-C-90
		SONY	C-60-CR
		BASF	Chromdioxid C-60 C-90
		AGFA-GEVAERT	Chromdioxid C-60 C-90
2	2	SONY	C-60-HF, C-90-HF C-60, C-90
		TDK	ED-C-90 SD-C-60, SD-C-90 D-C-60, D-C-90
		FUJI FILM	FX-C-60, FX-C-90 FL-C-60
		MAXELL	UDXL-C-60 UD-C-60, UD-C-90 LN-C-60, LN-C-90
		BASF	C-60LH, C-90LH C-60, C-90
		SCOTCH	LD-C-90

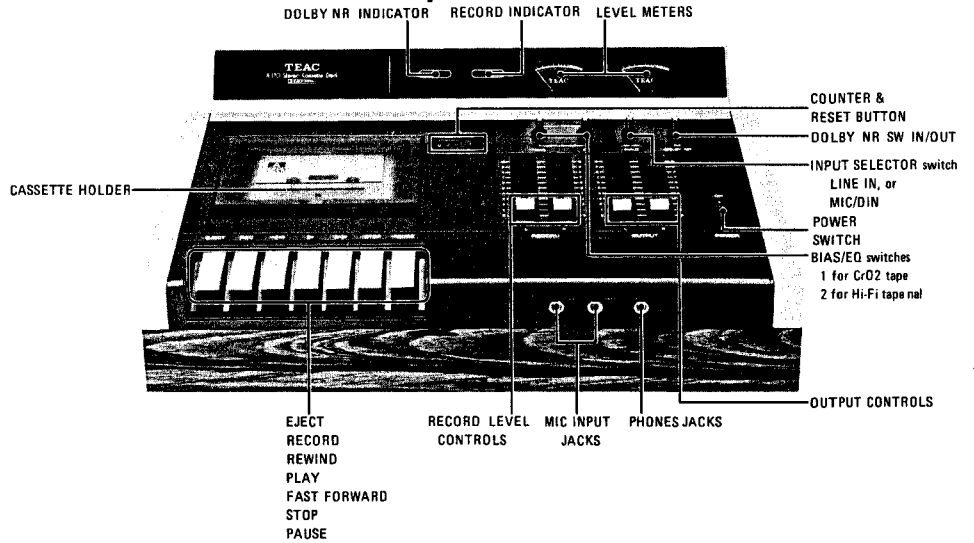
Those tapes listed or, if not available, equivalent tapes are recommended.

Location of Parts & Controls

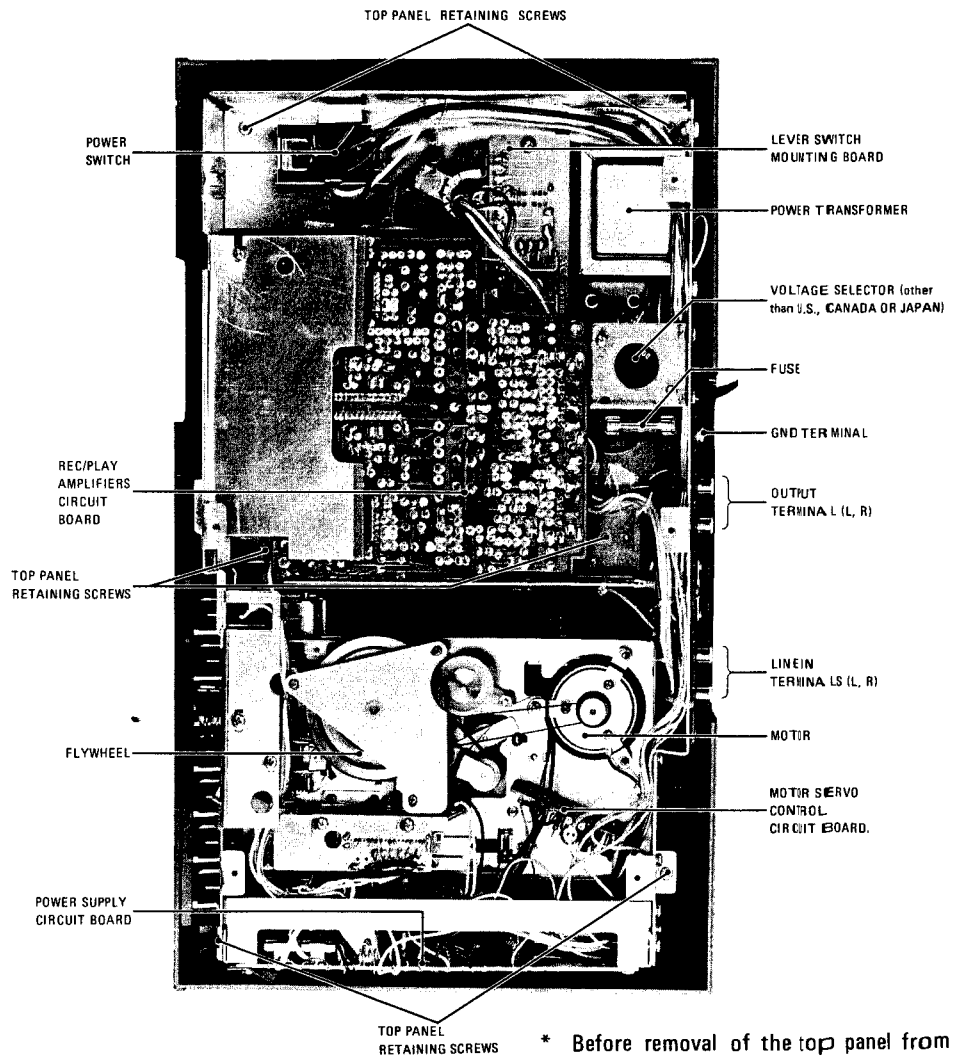
Bottom



Top Panel



Bottom View with cover removed



* Before removal of the top panel from the deck, be sure to take off both knobs of Record and- Output controls.

Checks & Adjustments -Mechanical-

Pinch Roller Pressure Measurement

1. Apply the AC power and depress the PLAY button without loading a cassette tape to let the head and capstan assembly protrude for easy servicing.
2. Attach a suitable spring scale as illustrated in Fig. 6-1 to the pinch roller shaft and gently move the scale away (in the direction of the arrow) until the capstan and pinch roller are separated.
3. Move the scale slowly toward the opposite direction of the arrow and check and read the scale at the instant the pinch roller is about to rotate.

Requirement: standard shall be 400 g \pm 20 g. (14 oz)

4. If measured value is not within these limits it is necessary to replace the pinch roller spring or pinch roller assembly.

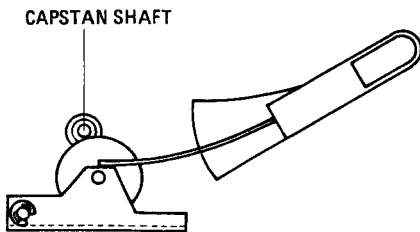


Fig. 6-1 PINCH ROLLER PRESSURE MEASUREMENT

Take-up Reel Torque Measurement

1. Remove the top panel and then apply AC power to the deck under test.
2. Attach the spring scale and special reel adaptor to the reel table as shown in Fig. 6-2.
3. Depress play button to setup playback mode with no cassette tape loaded.
4. Allow the spring scale to be slowly and smoothly drawn toward the hub.

Read the scale (before end-stop function activates).

5. Calculate the torque reading using the formula torque = force x radius.
6. If calculated value does not meet this specification, clean the reel table and tension pulley shaft with the cleaning kit (TEAC TZ-261B) or replace tension pulley ass'y.

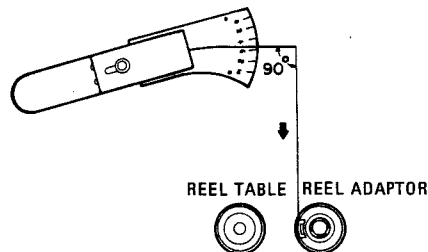


Fig. 6-2 TAKE UP and F.F. REEL TORQUE MEASUREMENT

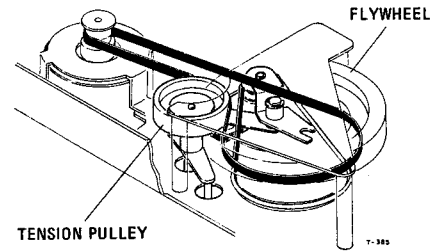


Fig. 6-4 TENSION PULLEY SECTION

F.F. & Rewind Torque

1. Attach the spring scale and reel adaptor to the left or right reel table as shown. Refer to Fig. 6-2 for F.F., Fig. 6-5 for REW.
 2. Select F.F. or REW. Allow the spring scale to be slowly drawn toward the reel table. Read the scale when the reading becomes steady.
 3. Calculate the torque value using the formula torque = force x radius
- Requirement:** value should be 80 g.cm or more for F.F., 100 g.cm or more for REW.
4. If calculated value does not meet this specification, clean the reel table and idler with the cleaning kit (TZ-261B) See Fig. 6.6

Note concerning torque procedures.

Torque measurements are calculated using the formula:

$$\text{Torque (in g-cm)} = \text{Force (in grams)} \times \text{radius (in cm)}$$

Force is the measurement in grams read directly from the spring scale.

The reel adaptor in this procedure is a stack of 4 to 6 reels from old cassettes which have a radius of 1.1 cm.

The torque measurements may also be taken with a calibrated cassette torque gauge, in which case the torque measurement may be read directly on the torque gauge.

The torque measurements can be easily done by use of the Cassette Torque Meter indicated below.

For take-up torque measurement, 0 to 70 grams gauge, at least, is required.

For F.F. and REW torque measurements: 0 - 160g.cm

By this use, it is possible to directly obtain

the torque value without calculation, and to do the measurement simply with no removal of any parts.

If necessary, repair with the cabinet and the front panel removed.

Load the meter on the deck and read the pointer indication on the dial scale.



EXAMPLE OF THE QUICK-CHECK "CASSETTE TORQUE METER"

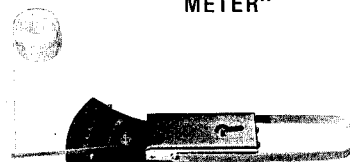


Fig. 3 REEL ADAPTOR & SPRING SCALE TORQUE GAUGE

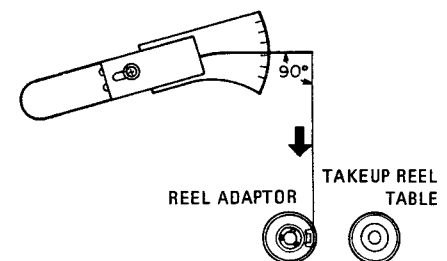


Fig. 6-5 REWIND TORQUE MEASUREMENT

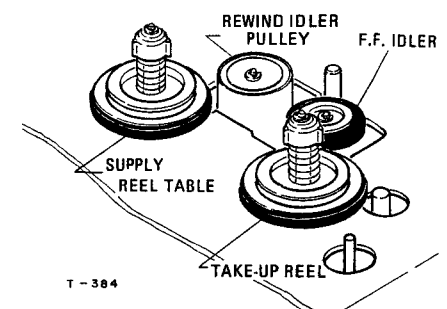


Fig. 6-6 REEL TABLE & IDLER

Tape Speed Deviation & Wow/Flutter Measurement

1. Connect a wow/flutter meter and digital frequency counter to the OUTPUT terminals as illustrated in Fig. 7-1.
2. Load and play a TEAC Test Tape MTT-111 (a 3,000 Hz pre-recorded signal).

Requirement: indication on the digital frequency counter should read 3000 Hz ± 45 Hz.

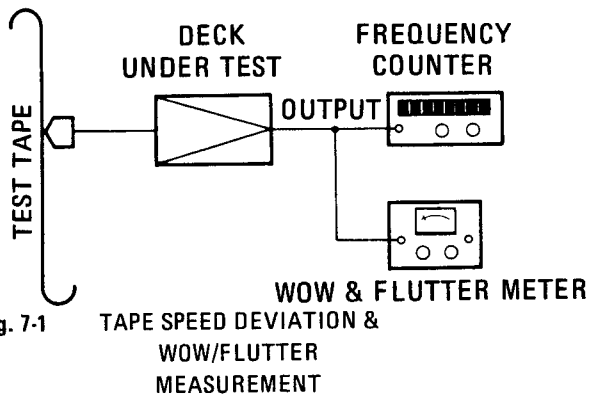


Fig. 7-1 TAPE SPEED DEVIATION & WOW/FLUTTER MEASUREMENT

3. To adjust: VR-1 the semi-fixed resistor control for the motor speed adjustment. see Fig. 7-2.
4. Read and determine the indication on the wow/flutter meter.

Requirement: 0.12% WRMS or less.

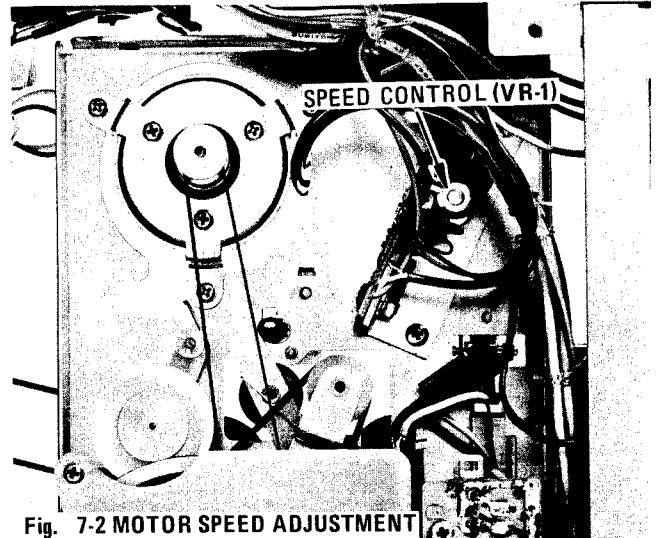


Fig. 7-2 MOTOR SPEED ADJUSTMENT

Partial Dis-assembly & Re-assembly Guide

Disassembly Precautions

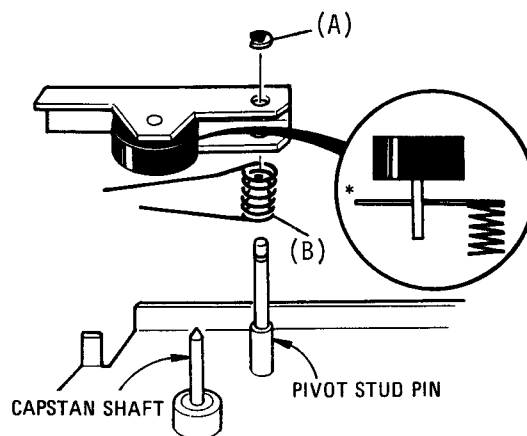
- Use the right tools. Demagnetize the tools before use.
- If any screws that were coated with locking paint are moved or adjusted, relock them using locking paint after they are set or adjusted to prevent them moving due to vibration or handling of the deck.
- Do not attempt partial adjustment of the factory adjusted ass'y.
- When mounting or removing a spring, pay heed to the position (direction) of the anchor or hook. The wrong position may result in a change in the tension.

Pinch Roller Ass'y

1. Remove top panel, see Fig. 5-3 on page 5 for screws to be removed.
2. Set the deck under test to STOP mode.
3. Remove the E-ring (A) from pivot stud pin.
4. Gently lift up pinch roller ass'y from pivot.
5. Take off spring (B).

Note:

- When removing E-ring pay special attention not to lose it.
- Be careful not to bend, scratch or otherwise damage capstan shaft.
- During reassembly, place top end of spring (B) as illustrated behind pivot stud pin, and use special care that * marked portion is firmly anchored.



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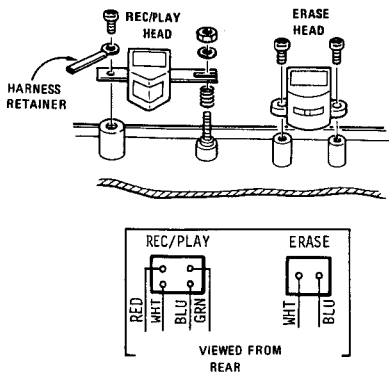
Fig. 8-1 REMOVAL OF PINCH ROLLER ASS'Y

Head Ass'y

1. Remove top panel.
2. Unsolder lead wires from the head.
3. Lift up REC/PLAY head or erase head as in Fig. 8-2.

Note:

Refer to color code identifier if necessary. When remounting REC/PLAY head, be sure to confirm the head physical alignment to tape by using cassette tape run test. Then check head alignment using procedure on page 11.



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Fig. 8-2 HEAD ASSY

Motor Ass'y

1. Unplug the AC power to the deck.
2. Take out drive belt (D) from motor pulley.
3. Remove grounding lug (C) from motor clamp.
4. Unsolder the red and the black wires from the motor servo circuit board.
5. Loosen and take off 3 retaining nuts (B) which fastened the clamp.
6. Unscrew 2 retaining screws from motor servo circuit board.
7. Lift up the motor body and the servo circuit board together out of the chassis.

Note:

- Never forget to clean the pulley after taking off the belt (TZ-261 TEAC Cleaner kite).
- When re-attaching drive belt to the pulley pay attention to avoid twisting belt.
- Belt should always be attached right in predetermined place.

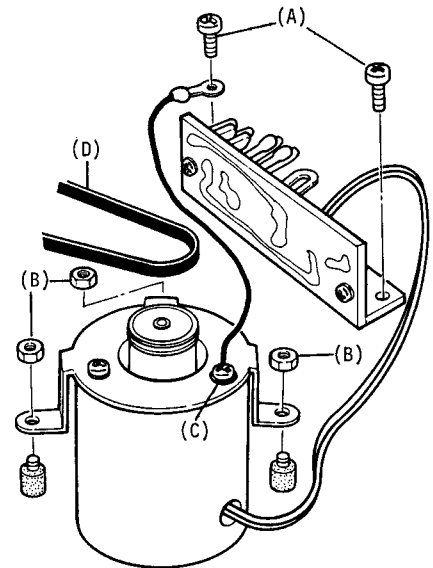


Fig. 8-3 MOTOR ASSY

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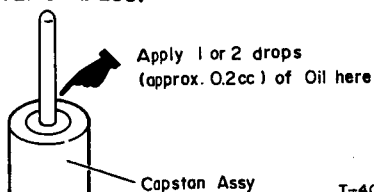
Capstan Ass'y and Drive Belt

1. Prepare by removing bottom panel and set the deck in the STOP mode.
2. Loosen 3 screws out of (A) flywheel bearing plate ass'y.
3. Take off two drive belts (C) and (D).
4. Gently lift and take out capstan ass'y (B) from capstan shaft bearing stud (G).

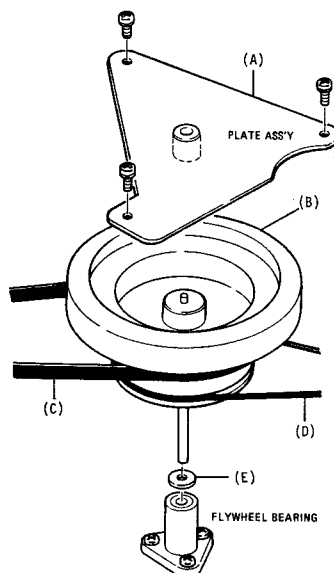
3 "don't's": Be careful of the following:

- do not bend capstan shaft as this will increase wow/flutter or speed deviation.
- during re-assembly do not re-attach twisted drive belt.
- do not forget to insert washer (E) when remounting parts.

Lubrication: Generally, it is necessary only once in every 1000 hours of use. However, when required apply one or two drops (about 0.2 cc) of good quality oil e.g., TEAC TZ-255.



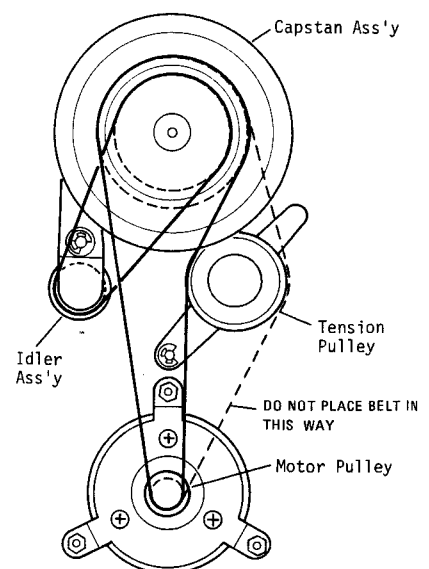
T-408



T-431

Fig. 8-4 CAPSTAN ASSY & DRIVE BELTS

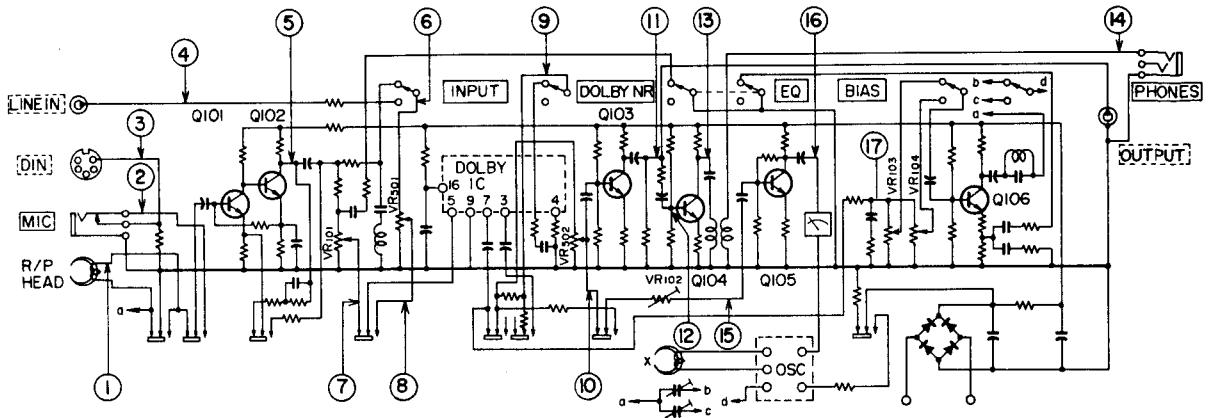
RE-ATTACHING DRIVE BELT



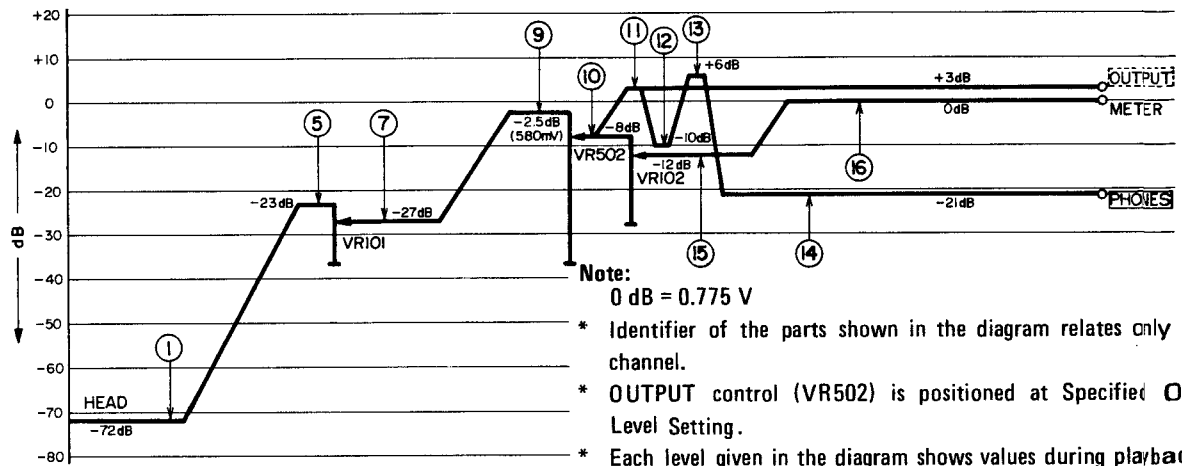
T-432

Fig. 8-5 RE-ATTACHING DRIVE BELTS

Level Diagram



Playback System

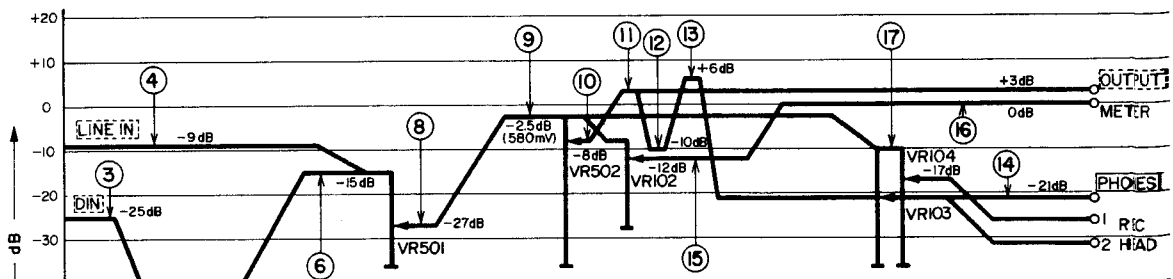


Note:

0 dB = 0.775 V

- * Identifier of the parts shown in the diagram relates only to left channel.
- * OUTPUT control (VR502) is positioned at Specified Output Level Setting.
- * Each level given in the diagram shows values during playback with MTT-150 Test Tape (DOLBY Level Calibration Tone)
- * VR101: playback (OUTPUT) level control.

Recording & Playback System



- * Identifier of the parts shown in the diagram relates only to the left channel.
- * 0dB = 0.775V
- * OUTPUT control (VR502) is positioned at Specified Output Level Setting.
- * RECORD control (VR501) is positioned at Specified Input Level Setting.
- * Each level given in the diagram shows values when a 400 Hz Reference Input Level is applied.
- * VR102: Meter calibration control (Semi-fixed).
- * VR103: Semi-fixed control of recording level (2).
- * VR104: Semi-fixed control of recording level (1).

Checks & Adjustments -Electrical-

Monitoring System

Minimum Required Input Level

1. Turn the RECORD level controls to maximum and apply a 400 Hz signal into each input terminal (MIC, DIN, LINE IN) successively.
2. Confirm the input signal level which produces a 580mV output at the Dolby Test Point (see Fig. 10-2).
Standards specified must be values listed below.

Input Terminals	Minimum Input Level Required
LINE IN	-19dB ±3dB
MIC	-67dB ±3dB
DIN	-35dB ±3dB

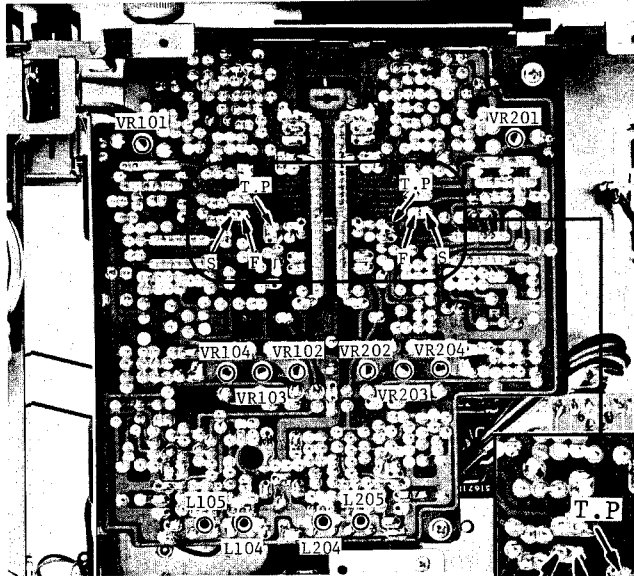


Fig. 10-1 REC/PLAY AMP ADJ. POINT
Checking the Headphone Output Standard

*This check should be done after confirming the specified output level on next page.

1. With the Specified Input Level setup (see preceding paragraph above), connect a phone plug with 8 ohms load resistors as illustrated, to the PHONES jack.

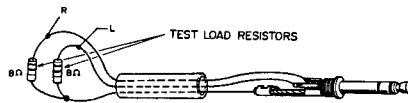


Fig. 10-4 HEADPHONE PLUG WITH LOAD RESISTORS

Gain Alignment on Dolby IC Amplifier

On checking the preceding Minimum Required Input Level, if a 1.5dB or more difference between left and right channel is found, solder together (short) the two terminals indicated in Fig. 10-2 for the higher reading channel.

After aligning levels of both channels, re-confirm that the specified minimum input levels are exactly within the limits specified above.

* Input impedance of VTVM that is to be load to a Dolby test point must always be more than 1 megohms.
* 0dB = 0.775 V

Note:
Short these two terminals if the L-chan is reading higher.

Short these two terminals if the R-chan is reading higher.

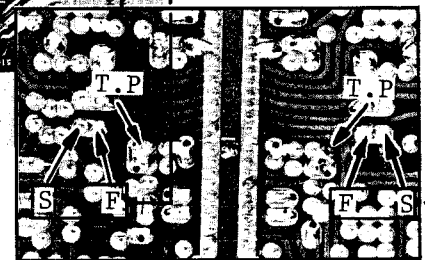


Fig. 10-2 DOLBY T.P.

2. Measure level across resistors to determine output voltages on each channel.
Requirement: Standard -21 dB ±2 dB (69 mV)

Calibration of Input Level Meter Indication

With the Specified Input Level, set as previously described, align VR102/202 so that a +3VU reading (\square) is obtained on the level meter.

Specified Input (RECORD) Level Setting

1. Load an MTT-505 Test tape.
2. Apply a 400 Hz, -9dB signal to the LINE IN jacks and select the REC/PAUSE mode. Fig. 10-3.
3. Set the RECORD control (L. channel) so that a voltage of 580 mV appears at the Dolby T.P. Fig. 10-2.
4. Repeat procedure for the right channel.

Note: After this setup, do not move RECORD controls until all adjustments are made.

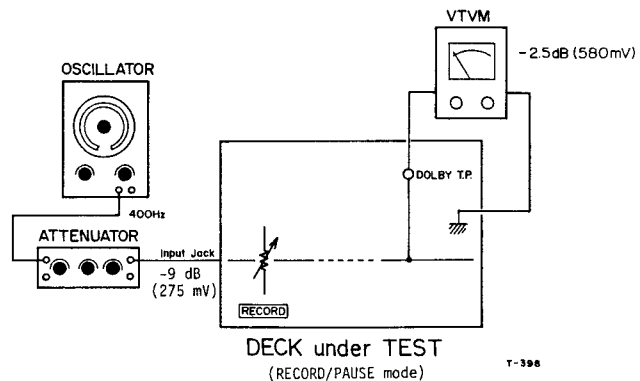


Fig. 10-3 SPECIFIED INPUT LEVEL

Checks & Adjustments -contd-

Playback System

General: To achieve alignments of playback system stages, BIAS and EQ switches must always be set in position 2 and Dolby NR switch set to OUT.

Record/playback Head Azimuth Alignment

Channel Phase Difference

1. Set up the test connections for the deck under test with the scope and VTVM as illustrated.
2. Playback the MTT-150 test tape and confirm that displayed phase of L & R channels on scope is kept within the 45 degrees standard with the 400 Hz tone.

Optimum Azimuth for Maximized Output

1. Connect VTVM to the Line OUTPUT terminal (first L-channel then R-channel) of the deck under test.
2. Play the 10kHz portion of the MTT-116L test tape.
3. Align the azimuth screw to obtain a maximum reading on VTVM. Check both channels and compromise the setting if necessary to get the optimum reading for both channels.

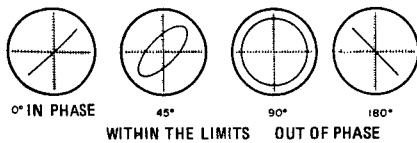


Fig. 11-1 CHANNEL PHASE DIFFERENCE

REC/PLAY HEAD AZIMUTH ADJ.

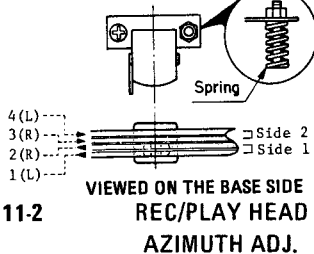


Fig. 11-2

Setup of Specified Standard Output Level

1. Load and playback the MTT-150 test tape. Connect the VTVM to the Dolby Test Point and adjust VR101/201 to obtain the specified voltage of 580mV.
2. Connect the VTVM to the OUTPUT jack of the deck under test.

3. Set the OUTPUT controls to maximum and confirm that +8 dB \pm 1 dB is obtained at OUTPUT jacks.
4. Set OUTPUT controls again for +3 dB (1.09 V) specified level.

Note: After this setup, do not move OUTPUT controls until all amplifier adjustments are made.

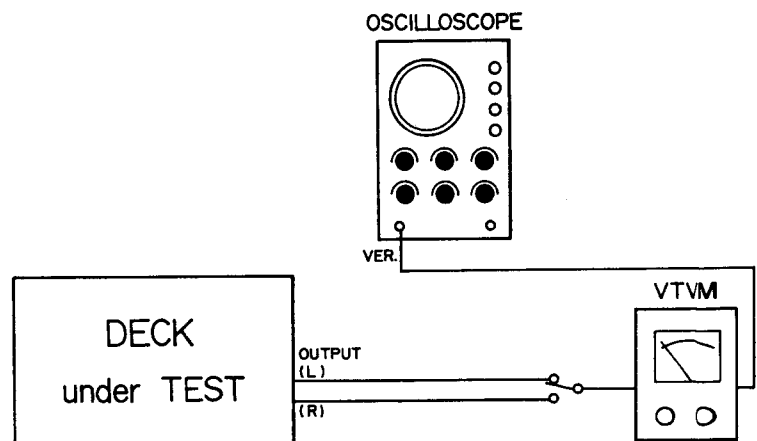


Fig. 11-3 SPECIFIED OUTPUT LEVEL

Checking Level Meter Indication

After setting up the Standard Output Level, confirm that the VU meters read +3 VU \pm 1.5 VU.

Checking the Frequency Response - Playback -

1. Make connections as shown in Fig. 11-3
2. Play the MTT-116L test tape.
3. With the 333Hz \pm 10dB signal of the test tape as a reference, confirm the output level of each frequency from 40Hz to 10kHz is within the limits shown on the chart. Fig. 11-4

Signal-to-noise Ratio - Playback -

1. Make the connections shown in Fig. 11-3 and set the deck in the Play/PAUSE mode.
2. Measure the noise at the OUTPUT jacks.
3. Compare this to the specified output level of +3 dB and obtain the signal to noise ratio.

Note: If the polarity of the plug when connected to the wall outlet affects this reading, the inferior reading in this test must be within the specified values below.

Requirement: better than 41dB. Difference between channels must be 5dB or less.

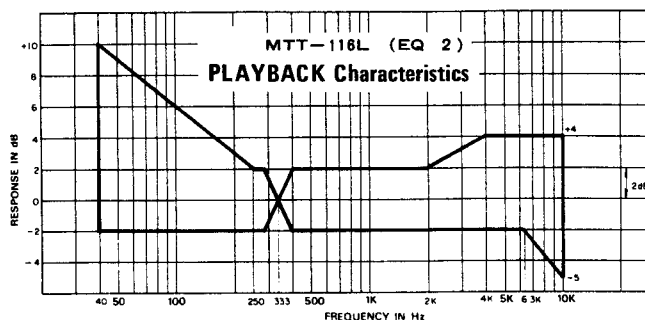


Fig. 11-4 Frequency Response - Playback -

Checks & Adjustments -contd-

Recording System

Setting up Recording Bias

Bias Trap Adjustment

1. Load an MTT-505 Test Tape.
2. Connect VTVM between the junction of L104/204 and C139/239 and ground of the deck under test.
3. Set the deck in the REC/PAUSE mode with no signal applied.
4. Align L104/204 for minimum output reading on the VTVM.
5. See P.C. board photo below. fig. 12-4

Setting up Specified Recording Level

1. Make the connections as illustrated in Fig. 12-1.
2. Record a 400 Hz, -12 dB (194 mV) signal on the MTT-505 or MTT-501 test tape.

Position 1 (CrO₂ tape)

1. Connect the deck under test as illustrated in Fig. 12-1.
2. Place BIAS and EQ switches in position 1.
3. Load a MTT-505 test tape and set the deck in RECORD mode.
4. Apply two tone signals of 1 kHz, -42 dB (6.2mV) and 10 kHz -42 dB, in turn, into LINE IN jacks and record each signal for several seconds.
5. Rewind and playback the tape to compare output levels of 1 kHz and 10 kHz signals.
6. Check and adjust for a 2 dB lower output for the 10 kHz than that of 1 kHz signal.
7. Repeat procedure to adjust PC301/303, if necessary, to achieve this.

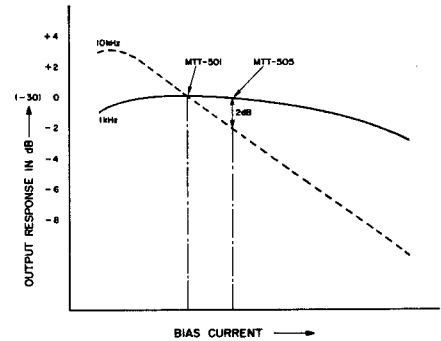


Fig. 12-2 BIAS CURRENT vs OUTPUT RESPONSE CHART

Position 2 (Hi-Fi Tape)

1. Set BIAS/EQ switches in position 2.
2. Apply two frequency signals; 1 kHz, -42 dB and 10 kHz, -42 dB into the LINE IN jacks.
3. Record the signals on the MTT-501 Test Tape this time.
4. Playback and check these signals. There should be no difference in playback level between these two signals.
6. Repeat procedure to adjust PC302/304, if necessary, to achieve this.

Note: PC301/302/303/304 affect record, therefore, if any of these adjustments are made the tape should be recorded and then played back to check effects of adjustment.

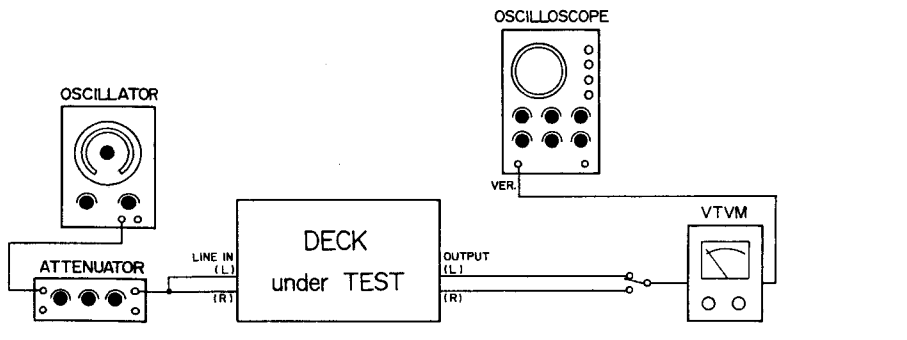


Fig. 12-1 SPECIFIED RECORDING LEVEL

3. Rewind the tape and play it back.
4. Check to see if a 0 dB output is obtained on OUTPUT jacks.
5. Adjust the semi-adjustable resistors VR103/203 for position 1 (BIAS/EQ for MTT-505) and VR104/204 for position 2 (of BIAS/EQ switches for MTT-501) until this specified output is obtained.

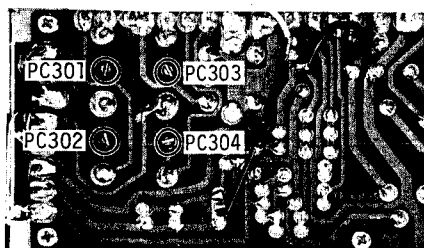


Fig. 12-3 POWER SUPPLY P.C. BOARD (51671760)

Location of the Adjustment Controls

Designation of Controls

- VR101/201: Playback level
- VR102/202: calibration of meter indication
- VR103/203: recording level (1)
- VR104/204: recording level (2)
- L104/204: bias trap tuned tank
- L105/205: record equalizer
- PC302/304: bias (2)
- PC301/303: bias (1)

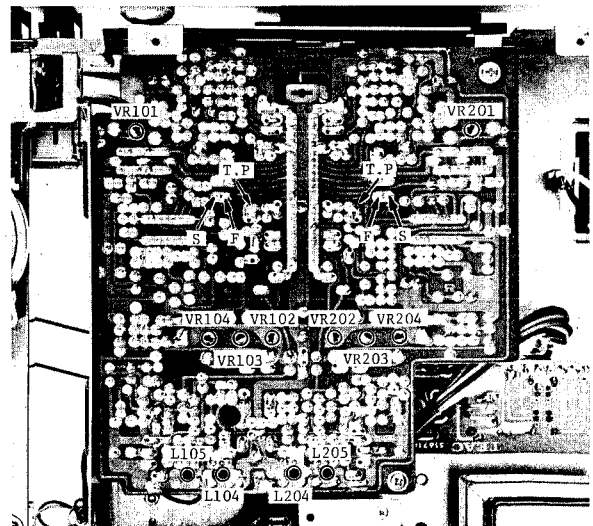


Fig. 12-4 RECORD/PLAYBACK AMPLIFIER P.C. BOARD (51671750)

Checks & Adjustments -contd-

Recording System

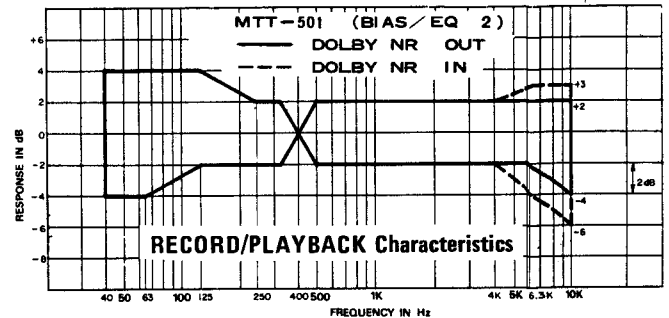
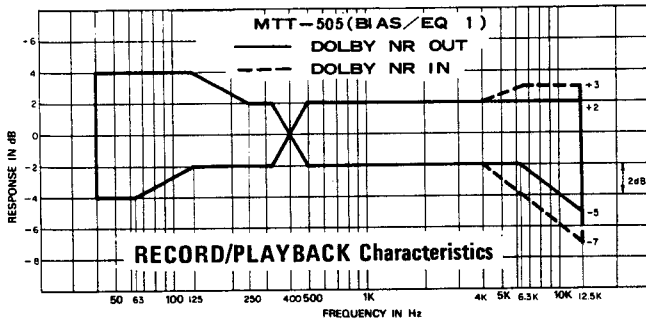
Frequency Response (overall)

This test should be run on MTT-505 and MTT-501 test tapes or equivalent. See the chart. Set the BIAS/EQ Switches as noted:
 MTT-505 BIAS/EQ 1
 MTT-501 BIAS/EQ 2 positions.
 Dolby NR switch OUT and IN.

1. Apply a 400 Hz signal at -42 dB (6.2 mV) level (for reference level).
2. Begin recording and sweep the signal generator from 40 Hz to 12.5 kHz (for MTT-505) or from 40 Hz to 10 kHz (for MTT-501).

3. Rewind the tape to the beginning of the recording and playback the tape.
4. Output shall be within limits shown on applicable chart (Fig. 13-1, 13-2) (in ref. to 400 Hz level).
5. If frequency response is not within limits shown in chart, adjust L105/205 for fine high frequency tuning.

Fig. 13-1 FREQUENCY RESPONSE LIMIT CHART Fig. 13-2



Total Harmonic Distortion Measurement

1. Connect a distortion analyser to the OUTPUT jacks of the deck under test as illustrated.
2. Apply a 400 Hz/ -12 dB (194 mV) sine wave signal at LINE IN terminals.
3. Record and playback on each of the test

tapes listed below and check that the distortion is within the limits listed below.

Requirement:

- BIAS/EQ 1: 3.0% or less with MTT-505 tape
- BIAS/EQ 2: 2.5% or less with MTT-501 tape

Channel Separation Test

1. Apply a 1 kHz signal at -9 dB (274 mV) to the LINE IN L jack and record this signal.
2. Rewind the tape and play it back.
3. Measure the OUTPUT of the L channel through a 1 kHz bandpass filter for a reference level.
4. Measure the OUTPUT of the R channel through the same band pass filter (leakage from the left channel).
5. Compare the levels between steps 3. & 4. for separation factor.

Requirement: greater than 30 dB separation factor.

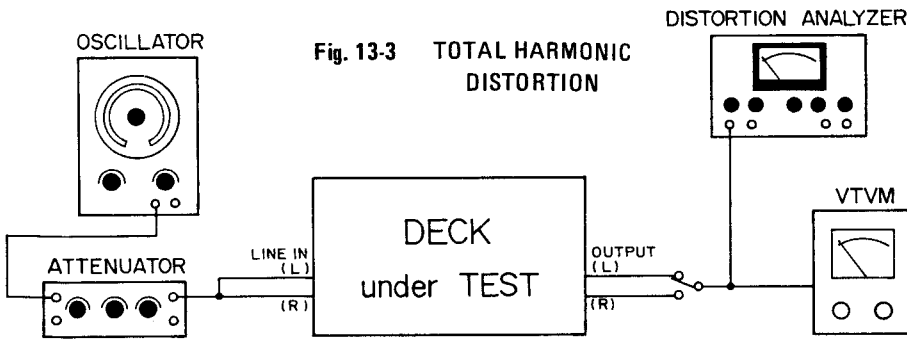


Fig. 13-3 TOTAL HARMONIC DISTORTION

Erasure Efficiency

1. Set BIAS & EQ switches to position 1.
2. Apply a 1 kHz, $+1$ dB (or 869 mV) signal to the LINE IN terminal and record it on MTT-505 test tape for about 30 seconds.
3. Rewind the tape halfway back through the previously recorded signal and record again over the last half of the original portion without applying any input signal (only to erase the portion).
 Rewind the tape to the beginning of the original recording.
4. Connect the OUTPUT through a 1 kHz bandpass filter to a VTVM.

5. Playback the tape. Use the original signal (unerased portion) as a reference level. When the tape reaches the erased portion (recorded with no input signal) the level will suddenly decrease. Measure this level

and compare it with the reference level.
 Requirement: difference should be greater than 65 dB.

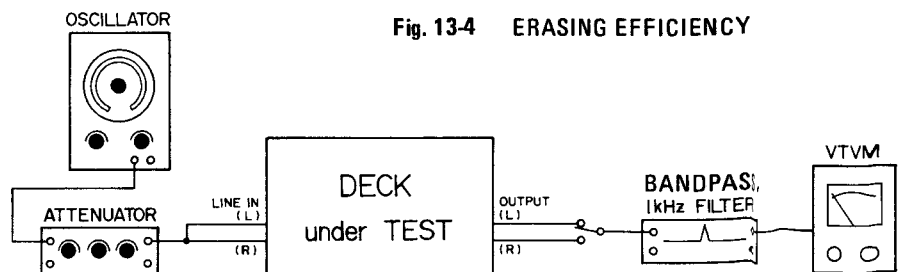
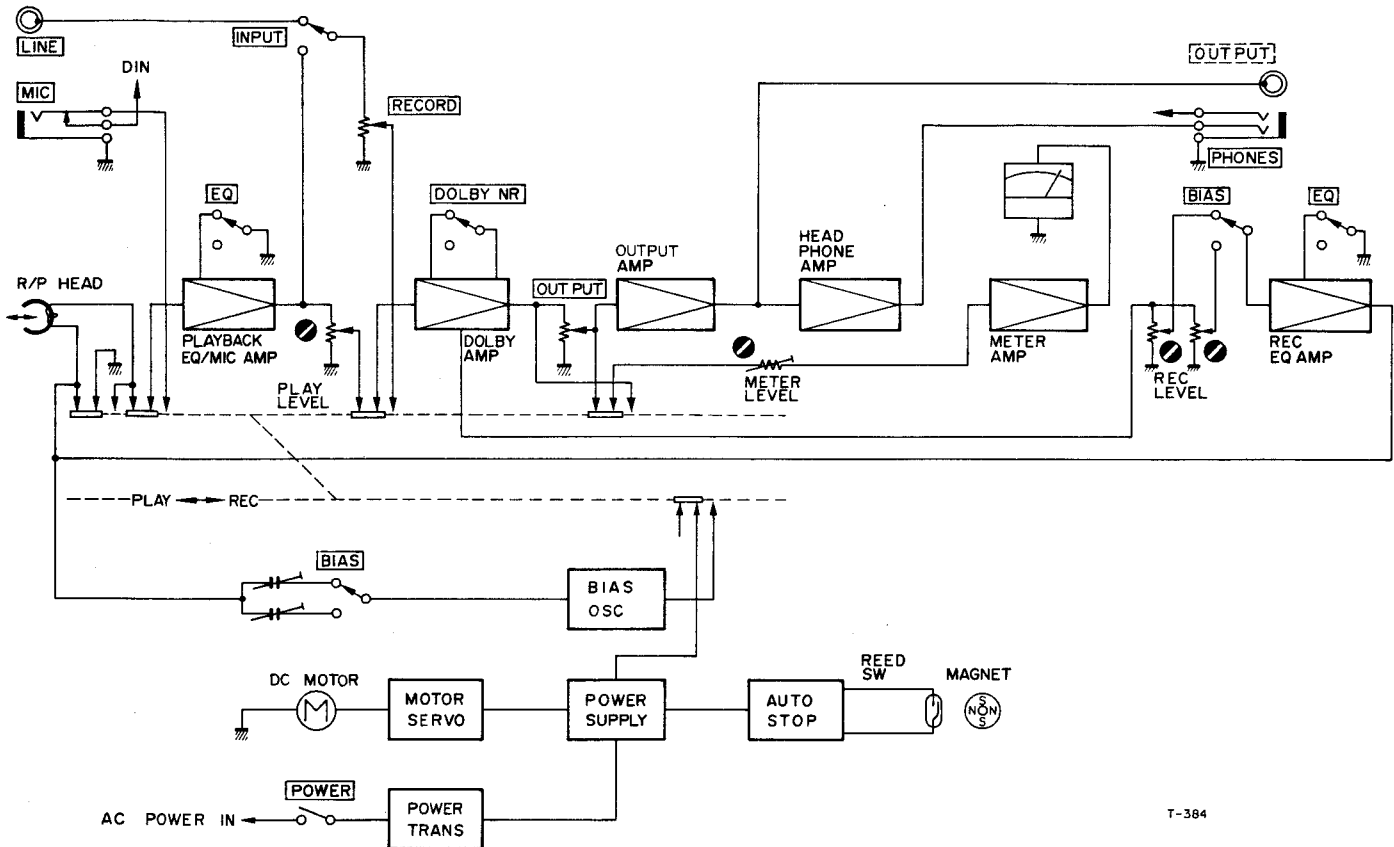


Fig. 13-4 ERASING EFFICIENCY

System Functional Diagram



T-384

Checks & Adjustments -contd- Recording System

Dolby NR Effect Measurement

1. Set the RECORD level controls to the Specified Input level setting.
2. Apply a 1 kHz at -29 dB (27 mV) signal to the LINE IN terminal of the deck.
3. Set the Dolby NR switch to OUT position and record this signal.
4. Play the tape back and check the level difference when turning the Dolby NR switch from IN to OUT position in turn. Read indication on VTVM at same time.

Requirement: allowable difference level standard must be within 3.5 dB – 7.5 dB. Repeat the above procedure using a 10 kHz signal.

Requirement: difference must be 8 – 12 dB.

Signal to Noise Ratio (overall)

1. Record on each of the designated test tapes with no input signal.
2. Play the recorded portion back and obtain a ratio compared to the Standard specified Output Level ($+3$ dB or 1.09 V).

Requirement:

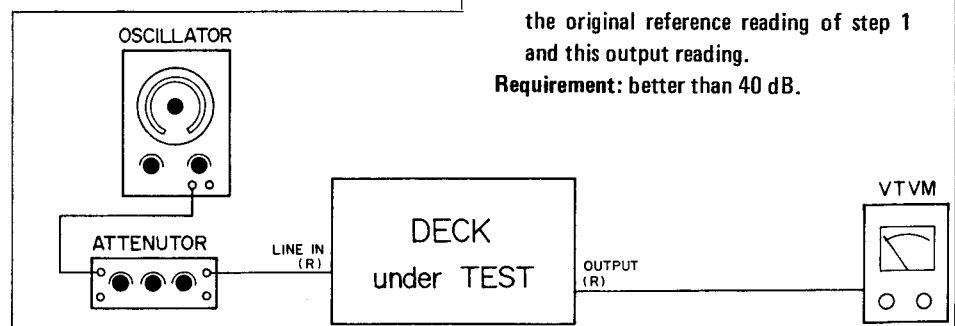
BIAS/EQ 1: better than 45 dB with MTT-505

BIAS/EQ 2: better than 44 dB with MTT-501

Crosstalk Measurement

1. Load a bulk erased MTT-505 test tape on the deck.
2. Apply and record a 125 Hz/ -9 dB (274 mV) level signal to the LINE IN R channel. Then rewind the tape, play it back and measure the R channel for a reference level.
3. Turn over the cassette tape and playback the R channel to obtain a ratio between the original reference reading of step 1 and this output reading.

Requirement: better than 40 dB.



Trouble-shooting Guide

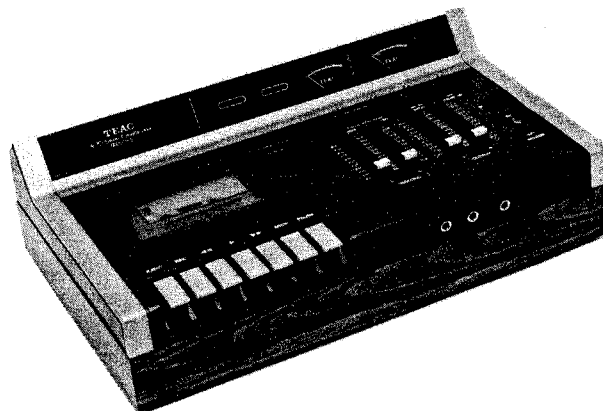
Malfunction	Symptom	Diagnosis
Mechanical		
1. Fuse blows when power turned on		defective power transformer
2. Inoperative auto-stop from FF or REW	a) no B+ voltage between pin A and GND of SCR	defective R303
	b) no solenoid operation even when A to K of SCR is on	defective S501 or solenoid
	c) no solenoid operation even with A-G of SCR shorted	defective SCR
3. Tape winds on capstan		1) pinch roller defective or defective take-up reel table assy 2) slippage of idler 3) mis-aligned tape guide
4. Excessive wow & flutter		1) defective pinch roller itself or incorrect pinching pressure 2) defective or oil on capstan drive belt
5. No rotation of capstan shaft		1) capstan drive belt slipped off 2) defective motor
6. Counter does not advance		1) insufficiently depressed reset button 2) counter drive belt slipped off
Electrical		
1. No playback sound	a) noise heard when lead wires connected to head are touched	1) defective soldering 2) defective head
	b) recording monitor operative	1) defective REC/PLAY SW 2) defective Q101, Q102 or associated parts
	c) inoperative monitor	defective Q101, Q102, Q103, Dolby NR amp., or associated parts
2. No meter deflection during playback		1) defective meter 2) defective Q105, VR102 or associated parts
3. Poor high-frequency region response during playback	a) extremely poor response	defective Q102 or EQ stage
	b) several dB poorer response than normal	dirty head or defective head
	c) level fluctuations with inferior high-end response with dropouts	1) poor head-to-tape contact 2) defective or dirty tape path
4. Inferior S/N ratio in playback	a) excessive hum	eliminated if C101 removed—defective head eliminated if mounting angle changed on REC/PLAY amplifier circuit board—defective power transformer
	b) excessive noise	defective head, Q101, Q102 or associated components
	c) erratic wave shape	defective Q102, C102, C108, Q101 or associated parts
5. No recording	a) resumes if BIAS sw selection changed	defective BIAS sw, VR103, VR104 or associated parts
	b) no erasing	defective bias oscillator unit assy
	c) erasure O.K.	normal monitoring can be done—dirty head, defective Q106, REC/PLAY slide sw or associated parts

Note: Described components identifiers are shown only for the L-channel.
Refer to the schematics and parts list for related R-channel identifiers if necessary.



TEAC®

A-170 STEREO CASSETTE DECK PARTS LIST



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PARTS ORDERING INFORMATION

Spare parts are available through your nearest TEAC Authorized Service Center or directly from the TEAC office, the address of which is written on the back cover. When ordering parts, always include the following information:

- | | |
|--------------|--------------------|
| 1. MODEL | 4. DESCRIPTION |
| 2. REF. NO. | 5. UNIT SERIAL NO. |
| 3. PARTS NO. | 6. MANUAL CODE NO. |

NOTICE REGARDING PARTS ORDERS

1. Do not order by only REF. NO.
2. In some instances, individual minor parts are not available. In such a case, the entire assembly including the part requested will be sent to you.

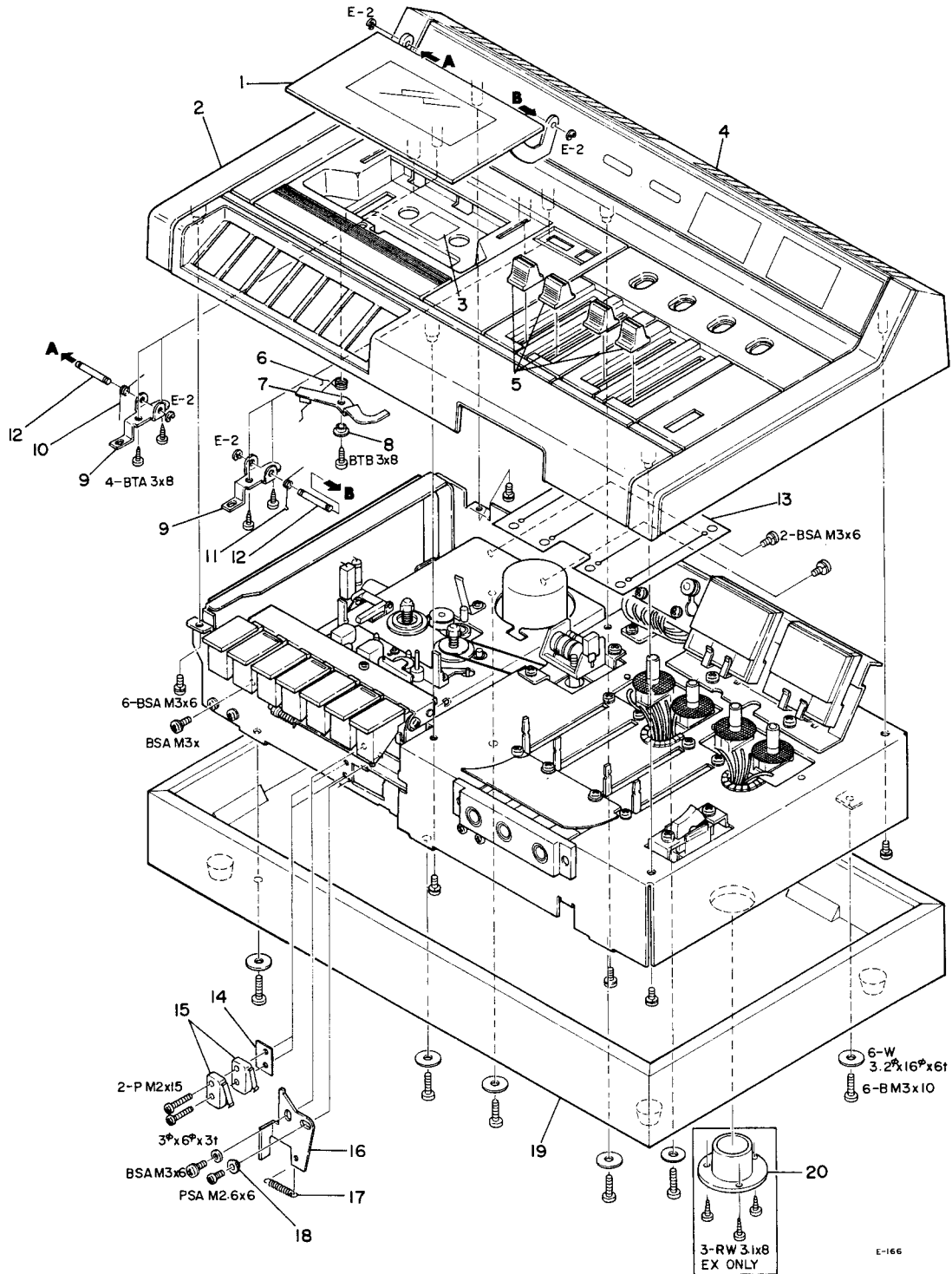
PARTS IDENTIFICATION CODING

Parts are identical between the different models with the exceptions as coded by the designations explained below.

- | | |
|--------|---|
| DM | Domestic (Japan) market decks only. |
| TCA | TEAC Corporation of America, U.S.A. version only. |
| EUROPE | European market decks (except United Kingdom). |
| EX | All decks not specified above (incl. U.K.) |

EXPLODED VIEWS AND PARTS LIST

1. BASIC DISASSEMBLY



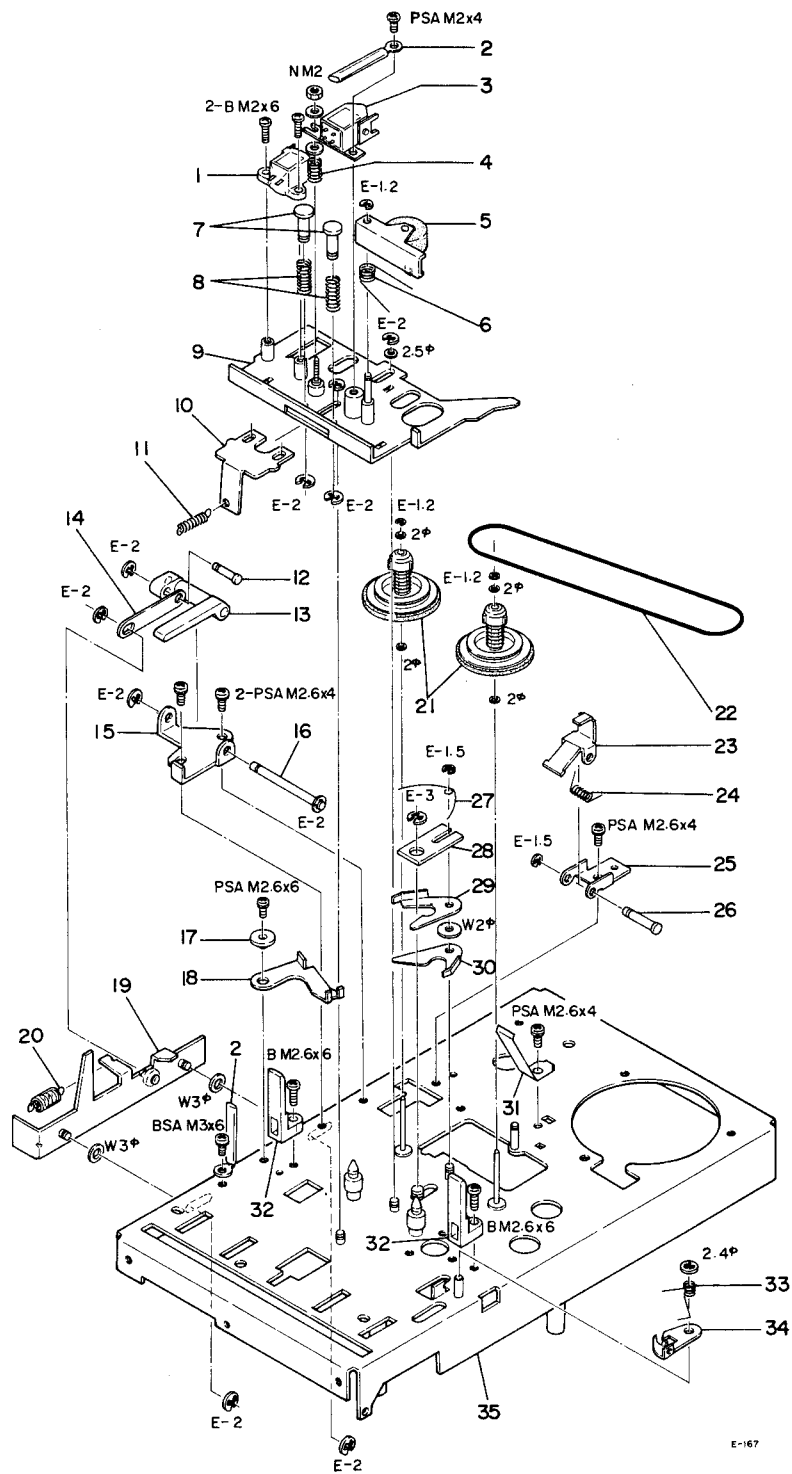
Parts marked with * require longer delivery time than regular parts.

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
1- 1	55330100	Cover, Cassette	
1- 2	* 55310022	Case, Top	
1- 3	* 55542530	Plate, Reflective	
1- 4	* 55320080	Name Plate	
1- 5	55340900	Knob, Pot.	
1- 6	55240151	Spring, Cassette Cover Release	
1- 7	* 55542520	Lever, Hook; Cassette Cover Release	
1- 8	* 55441200	Washer, Shoulder	
1- 9	* 55542511	Bracket, Retaining; Cassette Cover Shaft	
1-10	55240180	Spring, Cassette Cover	
1-11	55202670	Spring, Cassette Cover; Right	
1-12	* 50828580	Shaft, Cassette Cover	
1-13	* 55542500	Mask, Pot.	
1-14	* 55500251	Spacer, Insul. Paper	
1-15	50446540	SW, Micro (S510, S511)	
1-16	* 55542820	Lever, Micro SW	
1-17	55202580	Spring, Micro SW	
1-18	* 55400480	Washer, Shoulder; Hook Lever Arm	
1-19	* 55020350	Case Assy, Wooden; B	EX, EUROPE
	* 55020330	Case Assy, Wooden; A	DM, TCA
1-20	* 55340890	Cover, Voltage Selector	EX, EUROPE

INCLUDED ACCESSORIES

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
	51280010	Cords, Input-output Connection, 2 used	
	57100300	Cleaning Stick (TZ-275)	
	50291350	Silicone Cloth	
	51013330	A-170 Owner's Manual	DM
	51013340	A-170 Owner's Manual	EX, EUROPE
	51013350	A-170 Owner's Manual	TCA
	51013450	Information Supplement, Cassette	

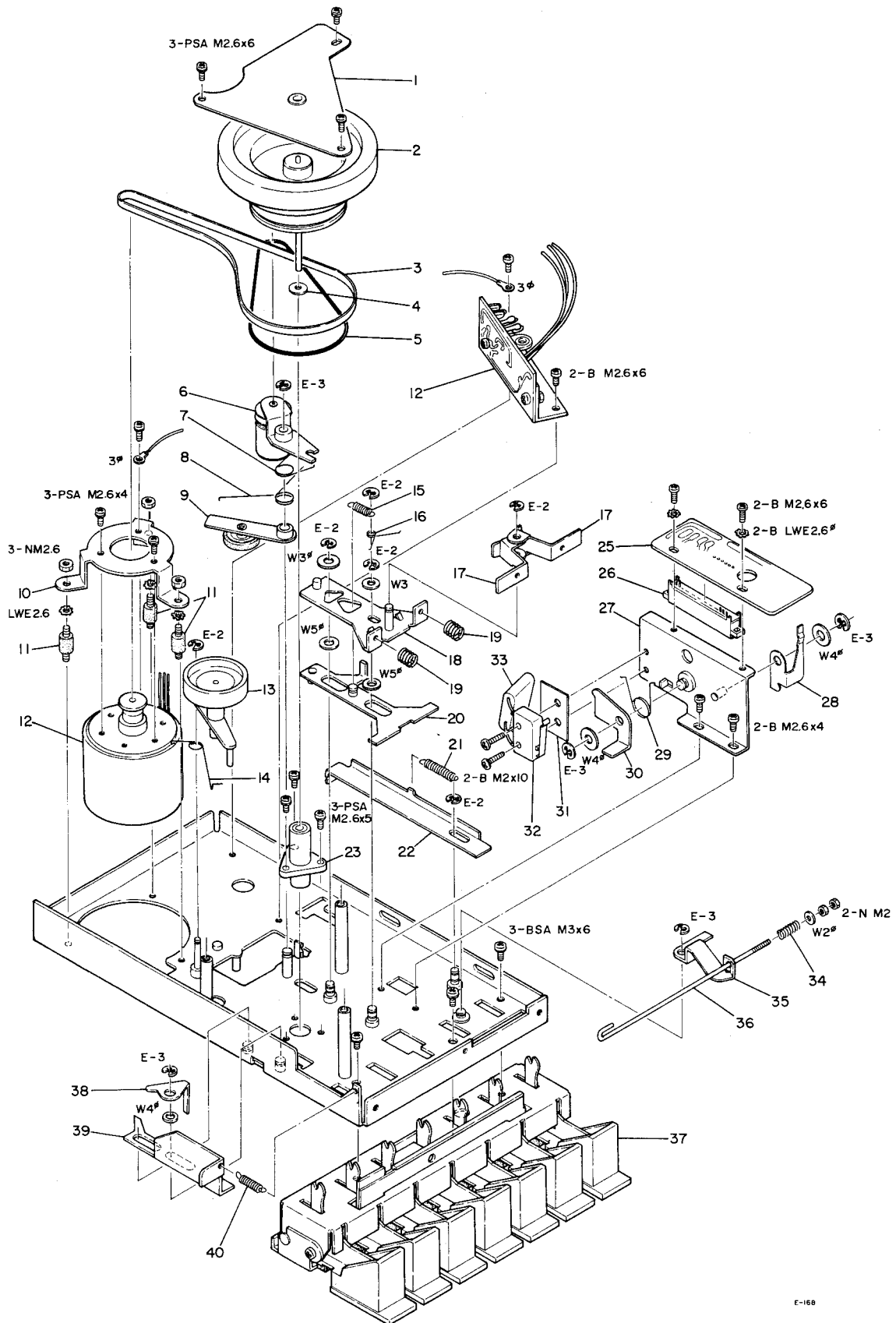
2. TRANSPORT SECTION A -TOP VIEW-



Parts marked with * require longer delivery time than regular parts.

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
2- 1	50660470	Head, Erase	
2- 2	* 50279870	Retainer, Head Lead; D	
2- 3	50660210	Head, R/P	
2- 4	50845540	Spring, R/P Head	
2- 5	55040700	Pinch Roller Assy	
2- 6	55202590	Spring, Pinch Roller	
2- 7	* 50845631	Shaft, Head Actuator	
2- 8	50845620	Spring, Head Actuator	
2- 9	* 55040690	Plate Assy, Head Base	
2-10	* 50845610	Plate, Head Base Actuator	
2-11	50846241	Spring, Head Base	
2-12	* 55441160	Shaft, Cassette Lifting; B	
2-13	* 55340790	Arm, Cassette Lifting; A	
2-14	* 55542330	Lever, Cassette Lifting; C	
2-15	* 55542320	Bracket, Cassette Lifting; B	
2-16	* 55441150	Shaft, Cassette Lifting; A	
2-17	* 55400480	Washer, Shoulder; Hook Lever Arm	
2-18	* 55542260	Lever, Stopper	
2-19	* 55040730	Lever Assy, Cassette Lifting; E	
2-20	55240110	Spring, Lever	
2-21	55040720	Reel Table Assy	
2-22	55340850	Belt, Counter	
2-23	* 55542220	Bracket, Safety; B	
2-24	55240120	Spring, Safety Bracket	
2-25	* 55542210	Bracket, Safety; A	
2-26	* 55441080	Shaft, Safety Bracket	
2-27	50845452	Spring, Brake Lever	
2-28	* 55542230	Bracket, Brake Retainer	
2-29	* 50845430	Lever, Brake; Left	
2-30	* 50845440	Lever, Brake; Right	
2-31	55240130	Plate, Spring	
2-32	* 55340750	Cassette Guide	
2-33	50845502	Tension Spring, Pause Lock	
2-34	50846431	Plate, Pause Lock	
2-35	* 55020302	Chassis Assy	

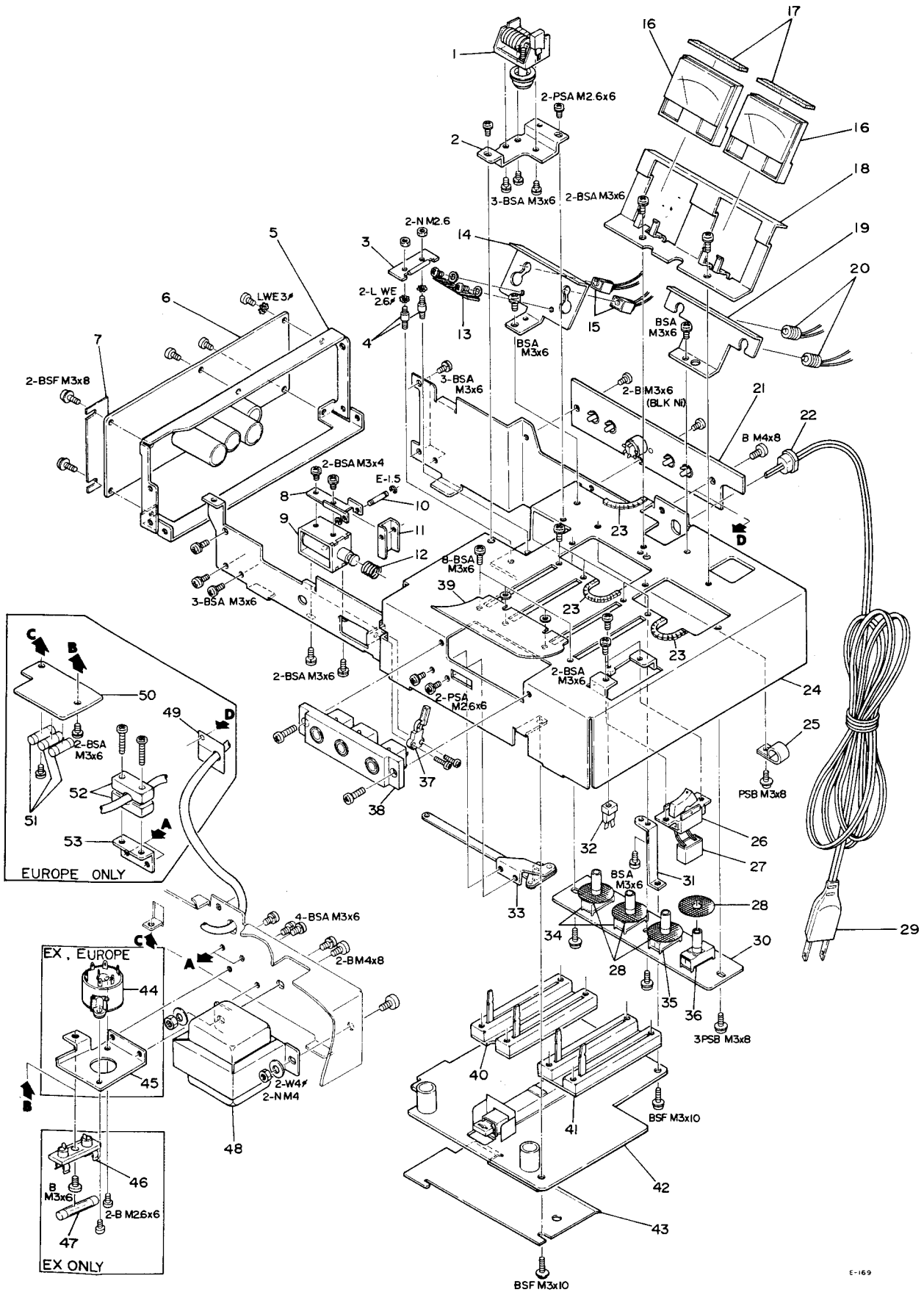
3. TRANSPORT SECTION B -BOTTOM VIEW-



Parts marked with * require longer delivery time than regular parts.

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
3- 1	* 55040710	Plate Assy, Flywheel Bearing	
3- 2	55040800	Flywheel Assy	
3- 3	55340930	Belt, Capstan	
3- 4	* 55500310	Washer, Thrust	
3- 5	55340951	Belt, Fast Wind	
3- 6	55040942	Idler Assy, A	
3- 7	55202620	Spring, Idler; A	
3- 8	55202560	Spring, Idler; B	
3- 9	55040950	Idler Assy, B	
3-10	* 55542280	Plate, Mount.; DC Motor	
3-11	71111900	Cushion, Rubber	
3-12	71051060	DC Motor Assy	
3-13	55040780	Pulley Assy, Tension	
3-14	50846191	Spring, Tension Pulley	
3-15	55202610	Spring, Actuator Lever Return	
3-16	55202601	Spring, Fast Wind Return	
3-17	* 55542170	Lever, Fast Wind Actuator	
3-18	* 55040660	Plate Assy, Fast Wind	
3-19	55202580	Spring, Fast Wind	
3-20	* 55040671	Plate Assy, SW Actuator	
3-21	55240110	Spring, Lever	
3-22	* 55542180	Plate, Record Mode Lock Out	
3-23	55040910	Capstan Housing Assy	
3-24	* 50182152	Cushion, Tension Arm	
3-25	51681790	PC Board Assy, Muting	
3-26	* 51310300	SW, Slide (S504)	
3-27	* 55040770	Plate Assy, SW	
3-28	* 55542750	Lever, Slide SW	
3-29	55240160	Spring, Micro SW Lever	
3-30	* 55542740	Lever, Micro SW	
3-31	* 55500251	Spacer, Insul. Paper	
3-32	50446540	SW, Micro (S501)	
3-33	50529050	Spark Killer 0.1 μ F + 120 Ω 400V (C502)	
3-34	50845420	Spring, Wire Linkage	
3-35	* 55542190	Lever, Record	
3-36	* 50845412	Wire Linkage	
3-37	55020312	Pushbutton Assy	
3-38	* 55542250	Arm, Pause	
3-39	* 55542240	Lever, Pause	
3-40	55240140	Spring, Pause Lever	

4. MAIN CHASSIS

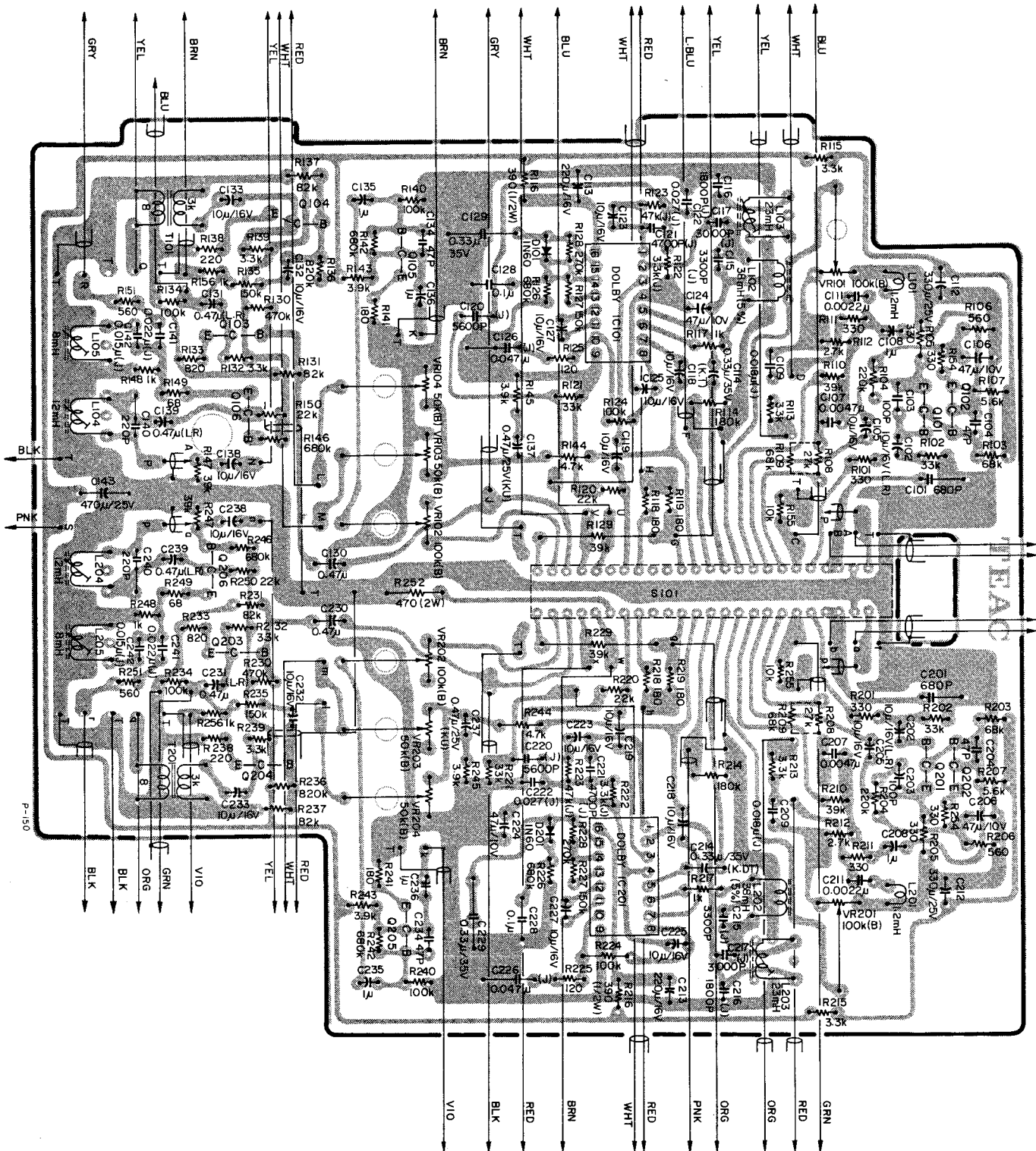


Parts marked with * require longer delivery time than regular parts.

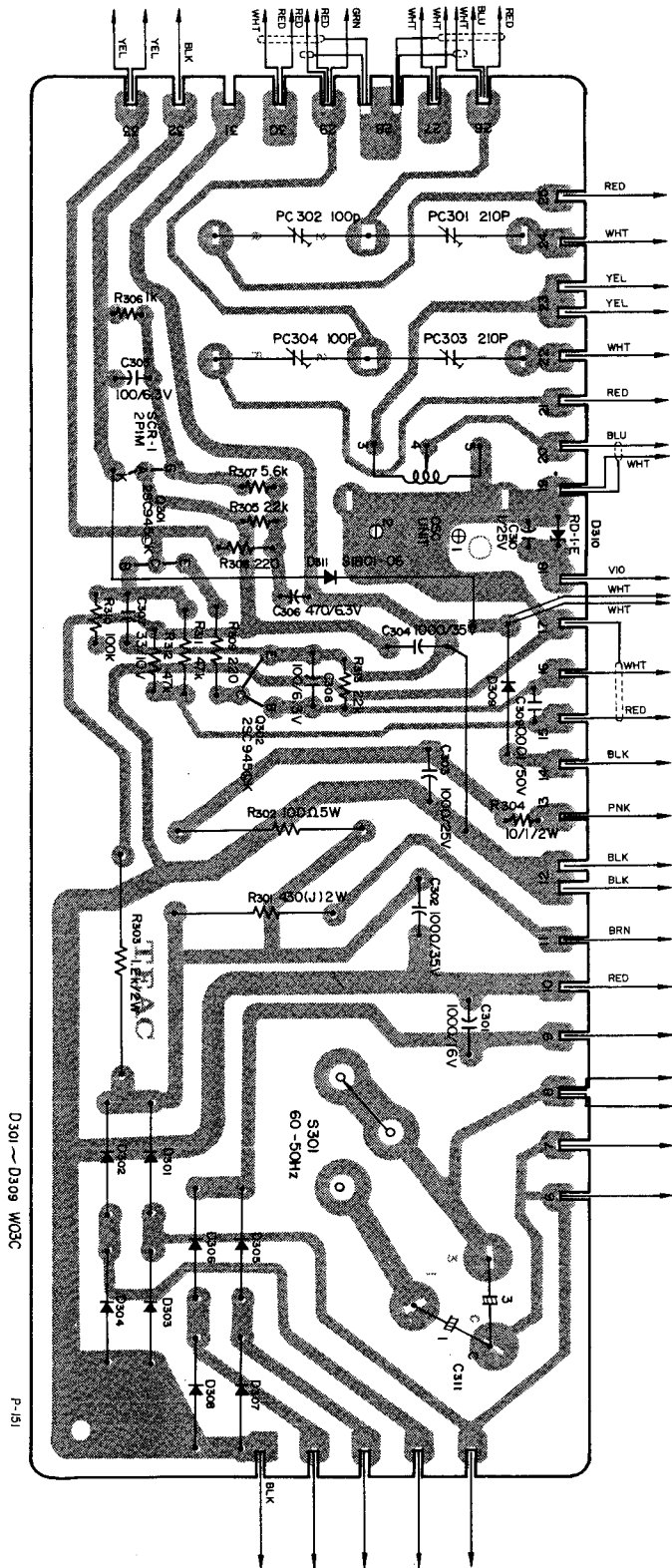
REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
4- 1	55030250	Counter Assy	
4- 2	* 55542491	Plate, Counter	
4- 3	* 51681890	PC Board Assy, Reed SW	
4- 4	71111900	Cushion, Rubber	
4- 5	* 55530370	Bracket, Power Supply PC Board Assy	
4- 6	51681760	PC Board Assy, Power Supply	
4- 7	* 55542900	Shield Paper, Side	
4- 8	* 55542410	Base Plate, Auto Stop	
4- 9	50630070	Solenoid	
4-10	* 50845211	Shaft, Auto Stop Lever	
4-11	* 55542420	Lever, Auto Stop	
4-12	50846200	Spring, Solenoid	
4-13	* 50452530	Terminal Strip (2L3P)	
4-14	* 55542450	Bracket, Lamp: B	
4-15	51420920	Lamp, Pilot	
4-16	51650030	VU Meter	
4-17	* 55305400	Dust Sealing Tape	
4-18	* 55530380	Plate, VU Meter	
4-19	* 55542440	Bracket, Lamp; A	
4-20	51420860	Lamp (VU Meter)	
4-21	* 50451280	Plate, Connector Assy	
4-22	* 55300470	Strain Relief, AC Cord	
4-23	* 50332850	Grommet, Plastic	
4-24	* 55510040	Chassis Assy, Main	
4-25	* 55340410	Clamp, Wire; A	
4-26	51380000	SW, Rocker; Power (S502)	DM, EX
	51380010	SW, Rocker; Power (S502)	TCA
	51380020	SW, Rocker; Power (S502)	
4-27	50529050	Spark Killer, 0.1 μ F + 120 Ω 400V (C501)	DM
	50529060	Spark Killer, 0.1 μ F + 120 Ω 400V, (C501)	TCA
	50529070	Spark Killer, 0.01 μ F + 300 Ω 400V (C501)	EX
	51890010	Spark Killer, 4700pF (C501)	EUROPE
4-28	* 55500790	Boot, Control Switch	
4-29	* 50471652	Cord, AC	DM, EX
	* 50471661	Cord, AC	TCA
	* 51280170	Cord, AC	EUROPE
4-30	* 51681800	PC Board Assy, Lever SW	
4-31	* 55542430	Angle, PC Board	
4-32	* 51260140	Terminal, Power Cord Connecting	
4-33	* 55040740	Lever Assy, SW Actuator	
4-34	51320080	SW, Lever; BIAS, EQ (S507, S508)	
4-35	51320070	SW, Lever; INPUT (S505)	
4-36	51320090	SW, Lever; DOLBY NR (S506)	
4-37	50446530	SW, Sensing (S503)	
4-38	51240150	Jack Assy	
4-39	* 55542580	Shield Paper, Jack Assy	
4-40	51501140	Pot., Slide Type; 100k Ω x 2 RECORD	
4-41	50535231	Pot., Slide Type; 20k Ω x 2 OUTPUT	
4-42	51681750	PC Board Assy, Record/Playback Ampl.	
4-43	* 55542571	Shield Paper, Record/Playback Ampl.	
4-44	* 51330080	Voltage Selector	EX
	* 51330040	Voltage Selector	EUROPE
4-45	* 55542470	Plate, Voltage Selector	EX, EUROPE
4-46	* 50412340	Holder, Fuse	EX
4-47	50411010	Fuse, 1A (F501)	EX
	50411130	Fuse, 0.5A (F501)	EX
4-48	51520320	Transformer, Power (T501)	DM
	51520330	Transformer, Power (T501)	TCA
	51520350	Transformer, Power (T501)	EX
	51520360	Transformer, Power (T501)	EUROPE
4-49	* 55542590	Sheet, Insulating	
4-50	* 51681780	PC Board Assy, Fuse	
4-51	51420880	Fuse, Miniature; 250mA 250V	
4-52	* 55340840	Clamp, AC Cord	
4-53	* 55542460	Bracket, Clamp	

PC BOARD SECTION (Diagram)

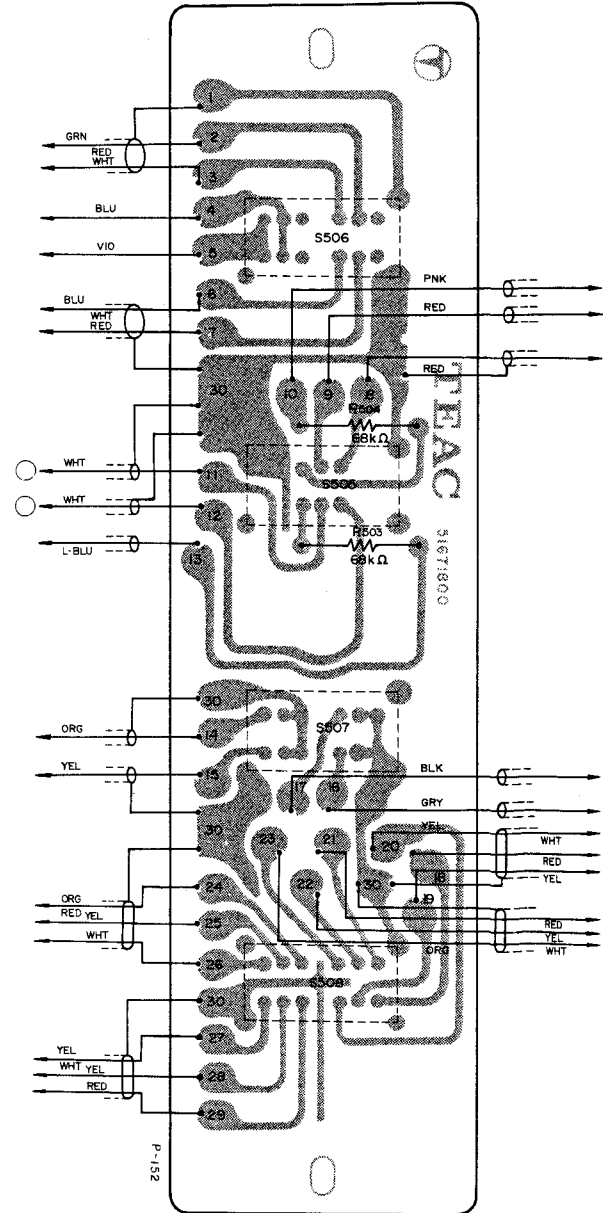
1. RECORD / PLAYBACK AMPLIFIER



2. POWER SUPPLY



3. LEVER SWITCH



PC BOARD SECTION (Parts List)

1. RECORD / PLAYBACK AMPLIFIER

REF. NO.	PARTS NO.	DESCRIPTION
	51681750	PC Bd. Assy
	51671750	PC Board (only)
DOLBY IC's		
IC101/IC201	50427280	NE545B
TRANSISTORS		
Q101/Q201	51450340	2SC900-UA
Q102/Q202	51450340	2SC900-UA
Q103/Q203	51450360	2SC945L-K
Q104/Q204	51450360	2SC945L-K
Q105/Q205	51450360	2SC945L-K
Q106/Q206	51450360	2SC945L-K
DIODES		
D101/D202	50422130	IN60
CARBON RESISTORS		
All resistors are rated $\pm 5\%$ tolerance, 1/4 watt and of carbon type unless otherwise noted.		
R101/R201	50570700	330 Ω
R102/R202	50571180	33k Ω
R103/R203	50571260	68k Ω
R104/R204	50571370	220k Ω
R105/R205	50570700	330 Ω
R106/R206	50570760	560 Ω
R107/R207	50571000	5.6k Ω
R108/R208	50571160	27k Ω
R109/R209	50571260	68k Ω
R110/R210	50571200	39k Ω
R111/R211	50570700	330 Ω
R112/R212	50570920	2.7k Ω
R113/R213	50570940	3.3k Ω
R114/R214	50571340	180k Ω
R115/R215	50570940	3.3k Ω
R116/R216	50516290	390 Ω
R117/R217	50570810	1k Ω
R118/R218	50570640	180 Ω
R119/R219	50570640	180 Ω
R120/R220	50571140	22k Ω
R121/R221	50571180	33k Ω
R122/R222	50570940	3.3k Ω
R123/R223	50571220	47k Ω
R124/R224	50571300	100k Ω
R125/R225	50570600	120 Ω
R126/R226	50571500	680k Ω
R127/R227	50571340	150k Ω
R128/R228	50571400	270k Ω
R129/R229	50573200	39k Ω
R130/R230	50571460	470k Ω
R131/R231	50571280	82k Ω
R132/R232	50570940	3.3k Ω
R133/R233	50570800	820 Ω
R134/R234	50571300	100k Ω

1/2W 10%

REF. NO.	PARTS NO.	DESCRIPTION
R135/R235	50571340	150k Ω
R136/R236	50571520	820k Ω
R137/R237	50571280	82k Ω
R138/R238	50570660	220 Ω
R139/R239	50570940	3.3k Ω
R140/R240	50571300	100k Ω
R141/R241	50570640	180 Ω
R142/R242	50571500	680k Ω
R143/R243	50570960	3.9k Ω
R144/R244	50570980	4.7k Ω
R145/R245	50570960	3.9k Ω
R146/R246	50571500	680k Ω
R147/R247	50571200	39k Ω
R148/R248	50570820	1k Ω
R149/R249	50570540	68 Ω
R150/R250	50571140	22k Ω
R151/R251	50570760	560 Ω
R252	50527050	Metal Film 470 Ω 2W
R153/R253		(not used)
R154/R254	50570700	330 Ω
R155/R255	50571060	10k Ω
R156/R256	50570820	1k Ω
CAPACITORS		
C101/C201	50547470	Dip. Mica 680pF 50V 10%
C102/C202	51700770	Elec. 10 μ F 16V (LR)
C103/C203	50547440	Dip. Mica 100pF 50V 10%
C104/C204	50547420	Dip. Mica 47pF 50V 10%
C105/C205	50554050	Elec. 10 μ F 16V
C106/C206	50555540	Elec. 47 μ F 10V
C107/C207	50548910	Mylar 0.0047 μ F 50V 5%
C108/C208	50554540	Elec. 1 μ F 50V
C109/C209	50548970	Mylar 0.018 μ F 50V 5%
C110/C210		(not used)
C111/C211	50548450	Mylar 0.0022 μ F 50V 10%
C112/C212	50554960	Elec. 330 μ F 25V
C113/C213	50554390	Elec. 220 μ F 16V
C114/C214	51703000	Dip. Tant. 0.33 μ F 35V 10%
C115/C215	50596800	Polyst. 3300pF 50V 5%
C116/C216	50543990	Polyst. 1800pF 50V 5%
C117/C217	50596810	Polyst. 3000pF 50V 5%
C118/C218	50554050	Elec. 10 μ F 16V
C119/C219	50554050	Elec. 10 μ F 16V
C120/C220	50548920	Mylar 0.0056 μ F 50V 5%
C121/C221	50548910	Mylar 0.0047 μ F 50V 5%
C122/C222	50548990	Mylar 0.027 μ F 50V 5%
C123/C223	50554050	Elec. 10 μ F 16V
C124/C224	50555540	Elec. 47 μ F 10V
C125/C225	50554050	Elec. 10 μ F 16V
C126/C226	50547380	Mylar 0.047 μ F 50V 5%
C127/C227	50554050	Elec. 10 μ F 16V
C128/C228	50548040	Mylar 0.1 μ F 50V 10%
C129/C229	51703000	Dip. Tant. 0.33 μ F 35V 10%
C130/C230	50554970	Elec. 0.47 μ F 50V
C131/C231	51700850	Elec. 0.47 μ F 50V (LR)
C132/C232	50554050	Elec. 10 μ F 16V
C133/C233	50554050	Elec. 10 μ F 16V
C134/C234	50547420	Dip. Mica 47pF 50V 10%
C135/C235	50554540	Elec. 1 μ F 50V
C136/C236	50554540	Elec. 1 μ F 50V

REF. NO.	PARTS NO.	DESCRIPTION
C137/C237	50549650	Elec. 0.47 μ F 25V (KU)
C138/C238	50554050	Elec. 10 μ F 16V
C139/C239	51700850	Elec. 0.47 μ F 50V (LR)
C140/C240	*50547450	Dip. Mica 220pF 50V 10%
C141/C241	50548980	Mylar 0.022 μ F 50V 5%
C142/C242	50548870	Mylar 0.015 μ F 50V 5%
C143	50554420	Elec. 470 μ F 25V
*Interchangeable with:		
C140/C240	50543420	Polyst. 220pF 50V 10%

VARIABLE RESISTORS

VR101/VR201	50534490	Semi-fixed, 100k Ω -B
VR102/VR202	50534490	Semi-fixed, 100k Ω -B
VR103/VR203	50534480	Semi-fixed, 50k Ω -B
VR104/VR204	50534480	Semi-fixed, 50k Ω -B

COILS/TRANSFORMERS

L101/L201	50566611	Coil, Choke; 1.2mH
L102/L202	50566660	Coil, Choke; 38mH 5% (Fixed)
L103/L203	50566650	Coil, Choke; 23mH (Adjustable)
L104/L204	50566550	Coil, Trap; 12mH
L105/L205	50566350	Coil, Record EQ; 8mH
T101/T201	50562260	Transformer, Output; 3k Ω :8 Ω

MISCELLANEOUS

S101	51310290	SW, Slide 16PDT
	57240420	Pin, F3 Type (3 used)
	55542600	Plate, Shield; A
	51470160	Socket, IC; 16P

2. POWER SUPPLY

REF. NO.	PARTS NO.	DESCRIPTION
	51681760	PC Bd. Assy
	51671760	PC Board (only)
TRANSISTORS		
Q301,Q302	51450360	2SC945L-K
SCR		
SCR-1	51430900	2P1M

REF. NO.	PARTS NO.	DESCRIPTION
DIODES		
D301~D309	51430890	W03C
D310	51430860	Zener, RD-13E
D311	50422570	S1B01-06

RESISTORS

R301	50578730	Metal Film 430 Ω	2W	5%
R302	50520290	Cement 100 Ω	5W	
R303	50527340	Metal Film 1.2k Ω	2W	
R304	50516090	Carbon 10 Ω	1/2W	10%
R305	50571140	Carbon 22k Ω	1/4W	5%
R306	50570820	Carbon 1k Ω	1/4W	5%
R307	50571000	Carbon 5.6k Ω	1/4W	5%
R308,R309	50570660	Carbon 220 Ω	1/4W	5%
R310	50571300	Carbon 100k Ω	1/4W	5%
R311,R312	50571220	Carbon 47k Ω	1/4W	5%
R313	50571140	Carbon 22k Ω	1/4W	5%

CAPACITORS

C301	50554890	Elec. 1000 μ F	16V
C302,C304	51700110	Elec. 1000 μ F	35V (S L)
C303	50555580	Elec. 1000 μ F	25V
C305,C308	50554230	Elec. 100 μ F	6.3V
C306	50554600	Elec. 470 μ F	6.3V
C307	50554240	Elec. 33 μ F	10V
C309	50548320	Mylar 0.001 μ F	50V 10%
C310	50546890	Dip. Tant. 1 μ F	25V

TRIMMER CAPACITORS

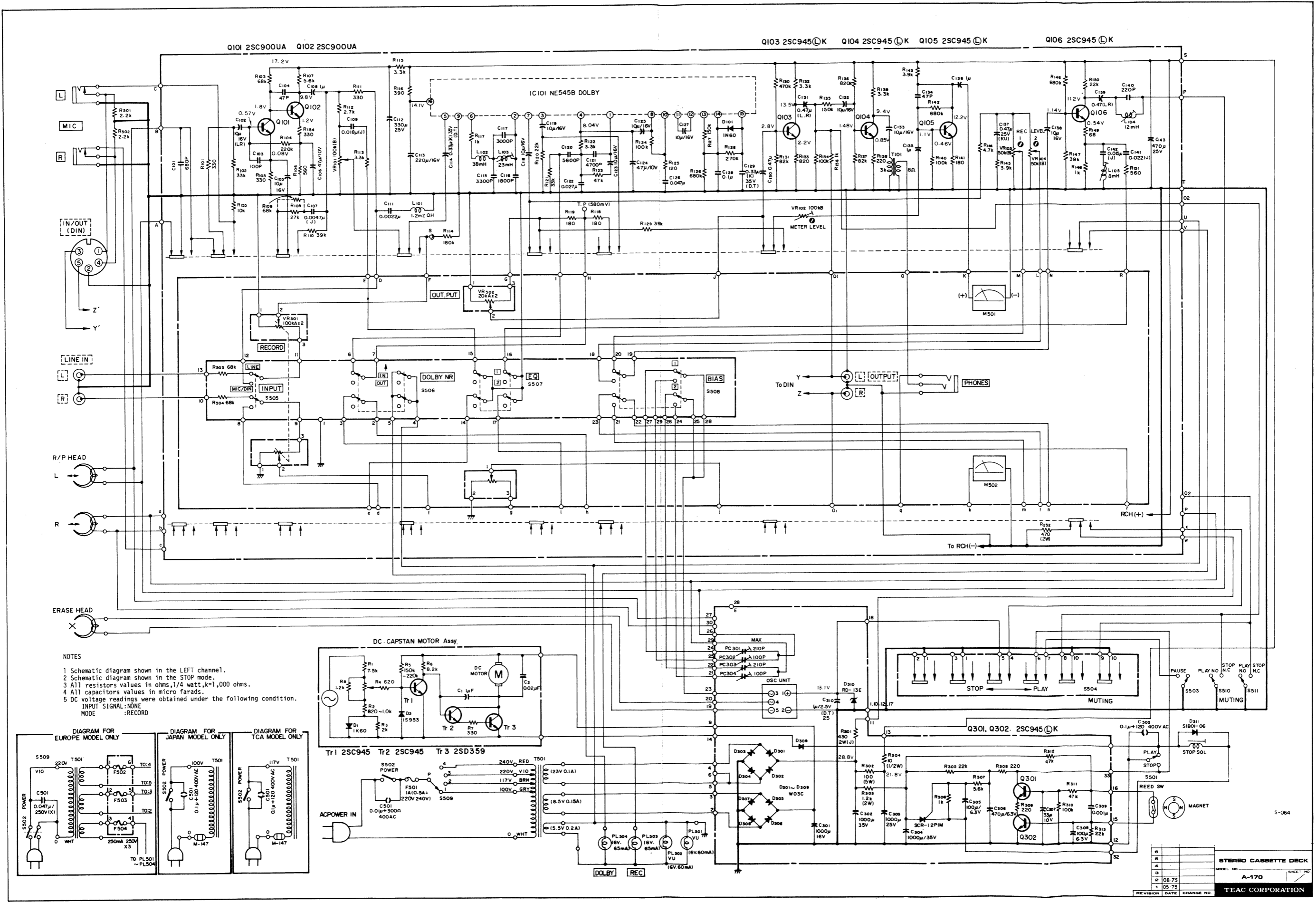
PC301,PC303	50547060	210pF Max.
PC302,PC304	50547070	100pF Max.

50400810 Oscillator Unit, 100kHz

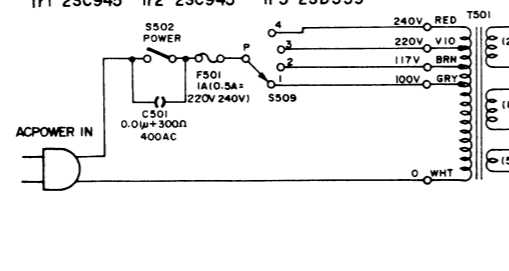
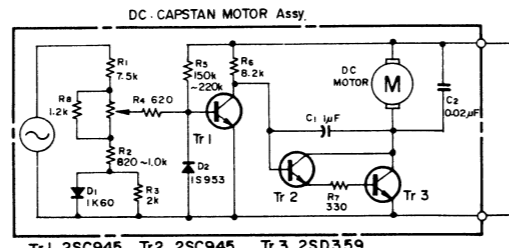
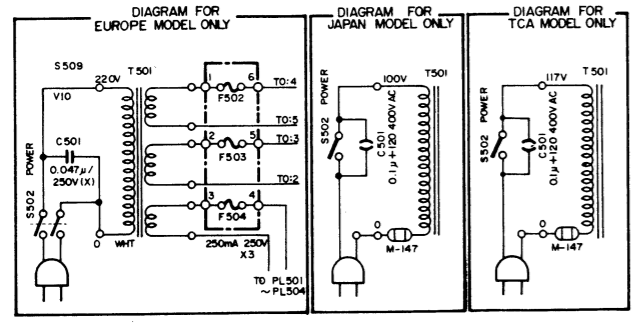
3. LEVER SWITCH

REF. NO.	PARTS NO.	DESCRIPTION
	51681800	PC Bd. Assy
	51671800	PC Board (only)
S505	51320070	Switch, Lever; DPDT
S506	51320090	Switch, Lever; 4PDT
S507,S508	51320080	Switch, Lever; 4PDT
R503,R504	50573260	Carbon 68k Ω 1/4W 5%





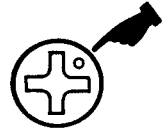
NOTES
 1 Schematic diagram shown in the LEFT channel.
 2 Schematic diagram shown in the STOP mode.
 3 All resistors values in ohms, 1/4 watt, k=1,000 ohms.
 4 All capacitors values in micro farads.
 5 DC voltage readings were obtained under the following condition.
 INPUT SIGNAL: NONE
 MODE: RECORD



STEREO CASSETTE DECK		
MODEL NO.	A-170	
SHEET NO.	1	
REVISION	DATE CHANGE NO.	
1	05.75	
2	08.75	
3		

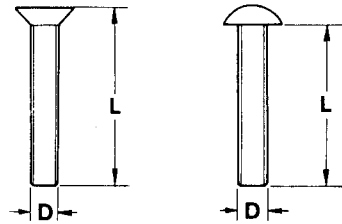
ASSEMBLING HARDWARE CODING LIST

All screws conform to ISO standards, and have cross-recessed heads, unless otherwise noted. ISO screws have the head inscribed with a point as in the figure to the right.



FOR EXAMPLE :

B M.3 x 6
 ----- Length in mm (L)
 ----- Diameter in mm (D)
 ----- Type of Head



	Code	Full Name	Type		Code	Full Name	Type
MACHINE SCREW	R	Round Head Screw		TAPPING SCREW	BTA	Binding Head Tapping Screw(A Type)	
	P	Pan Head Screw			BTB	Binding Head Tapping Screw(B Type)	
	T	Stove Head Screw (Truss)			RTA	Round Head Tapping Screw(A Type)	
	B	Binding Head Screw			RTB	Round Head Tapping Screw(B Type)	
	F	Flat Countersunk Head Screw		SETSCREW	SF	Hex Socket Setscrew(Flat Point)	
	O	Oval Countersunk Head Screw			SC	Hex Socket Setscrew(Cup Point)	
WOOD SCREW	RW	Round Head Wood Screw		SS	Slotted Socket Setscrew(Flat Point)		
	FW	Flat Countersunk Wood Screw		WASHER	E	E-Ring (Retaining Washer)	
	OW	Oval Countersunk Wood Screw			W	Flat Washer (Plain)	
SEMS SCREW	BSA	Binding Head SEMS Screw(A Type)			SW	Lock Washer (Spring)	
	BSB	Binding Head SEMS Screw(B Type)			LWI	Lock Washer (Internal Teeth)	
	BSF	Binding Head SEMS Screw(F Type)			LWE	Lock Washer (External Teeth)	
	PSA	Pan Head SEMS Screw(A Type)		TW	Trim Washer (Countersunk)		
	PSB	Pan Head SEMS Screw(B Type)		NUT	N	Hex Nut	