

TEAC®

AN-180

NOISE REDUCTION UNIT

OPERATING INSTRUCTIONS

Your new TEAC Noise Reduction Unit has been manufactured under the strictest quality control procedures. Each unit has been thoroughly tested at the factory, should any damage have been incurred during transit or should you have any doubts as to its performance, contact your dealer as soon as possible. It is important that you thoroughly read and understand this manual prior to placing the unit in operation.

SERVICE

Should the equipment need repair, contact the dealer where it was purchased, or the Authourized TEAC Service Center nearest you.

- 1) The Warranty period is described in the enclosed warranty card, read the card for complete details.
- 2) For repairs after expiration of the warranty period a service charge will be made in addition to the price of repair parts.
- 3) If only repair parts are required, place your order with your dealer, nearest TEAC Authourized Service Center.

NOTE

Although the unit may still be under the warranty period, you may be charged for repairs made necessary by misuse, or damage incurred as a result of improper operation.

The TEAC model AN-180 makes available to the owner of any good tape recorder, the many benefits of the DOLBY Audio Noise Reduction System.

By greatly reducing the inherent tape noise and hiss while recording at any speed, the Dolby System produces a better overall signal to noise ratio and a background virtually free of noise or hiss.

Noise reduction permits the use of a much lower recording speed without degradation of sound quality. Advantages of slower speed recording are two fold, tape economy is doubled, tape cost is halved and the life of your recording head is doubled. Of course recording and playback time is also doubled making tape recording far more convenient.

CONTENTS

Function of controls..... 1

Connecting AN-180 to your audio system..... 2

Playback and recording circuit calibration..... 3

Recording instructions..... 5

Playback instructions..... 6

Changing the power line setting..... 6

Specifications..... 7

Characteristic chart..... 8

Function of controls

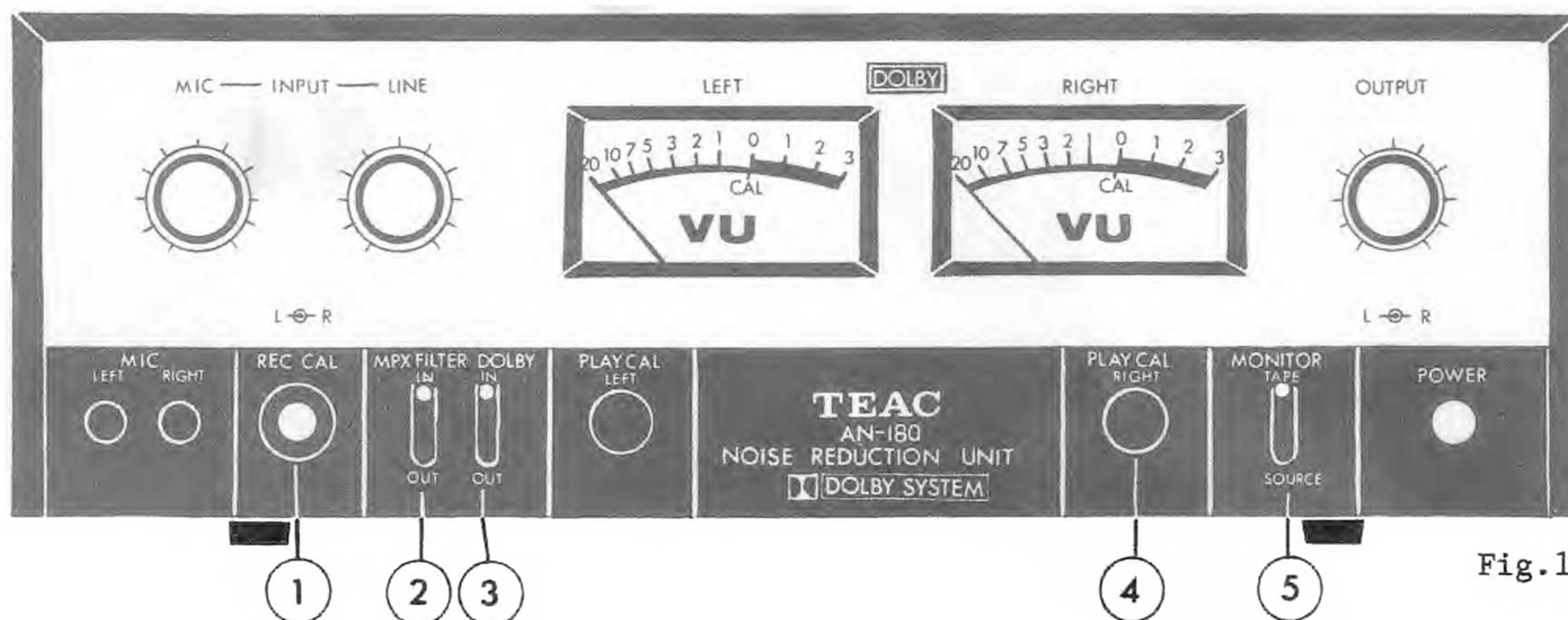


Fig.1

1. REC CAL TONE:

This switch is used only during the Record Calibration procedure of the Dolby System. It feeds a 400Hz tone from an oscillator in the Model AN-180 to your tape recorder.

2. MPX FILTER:

"IN" position selects a 19kHz and a 38kHz notch filter to prevent beating of FM multiplex subcarriers with tape recorders bias oscillator. Normal position is "OUT" except when recording from a FM tuner.

With MPX FILTER IN response is less than 1dB down at 15kHz, greater than 30dB down at 19kHz and greater than 20dB down at 38kHz.

3. DOLBY SWITCH:

Disables Dolby circuitry when placed to OUT position for playback of NON Dolbyized tapes.

4. PLAY CAL:

These controls are used only during the Playback Calibration.

Note: For playback calibration use only TEAC YTT-5001(open reel) and MTT-112B (cassette) Dolby level test tape. Use of other tapes will result in inaccurate calibration. The TEAC test tape YTT-5001(open reel) and MTT-112B(cassette) represents the standard Dolby level used in all Dolby Systems. It is the level standard used to calibrate your entire recording system. Treat this tape with respect. Do not expose it to strong magnetic fields such as the transformers of your equipment, head or bulk demagnetizers or speaker magnets. Exposure to strong magnetic fields may result in partial demagnetization with a subsequent standard level change.

5. MONITOR:

When AN-180 is connected to a 3 head tape deck - this switch provides TAPE or SOURCE signal monitoring.

6. TEST POINT:

Provides check point for Dolby level test oscillator.

Connect VTVM from test point to ground terminal. Depress meter CAL button on rear panel. VTVM should indicate $100\text{mV} \pm 1.5\text{dB}$ at average room temperature.

7. METER CAL:

Provides a check of meter calibration. Depress METER CAL button both VU meters should indicate CAL position $\pm 1.5\text{dB}$ at average room temperature.

Note: Should your unit fail either of the above checks, return it to the nearest TEAC service center for adjustment.

Connecting AN-180 to your audio system

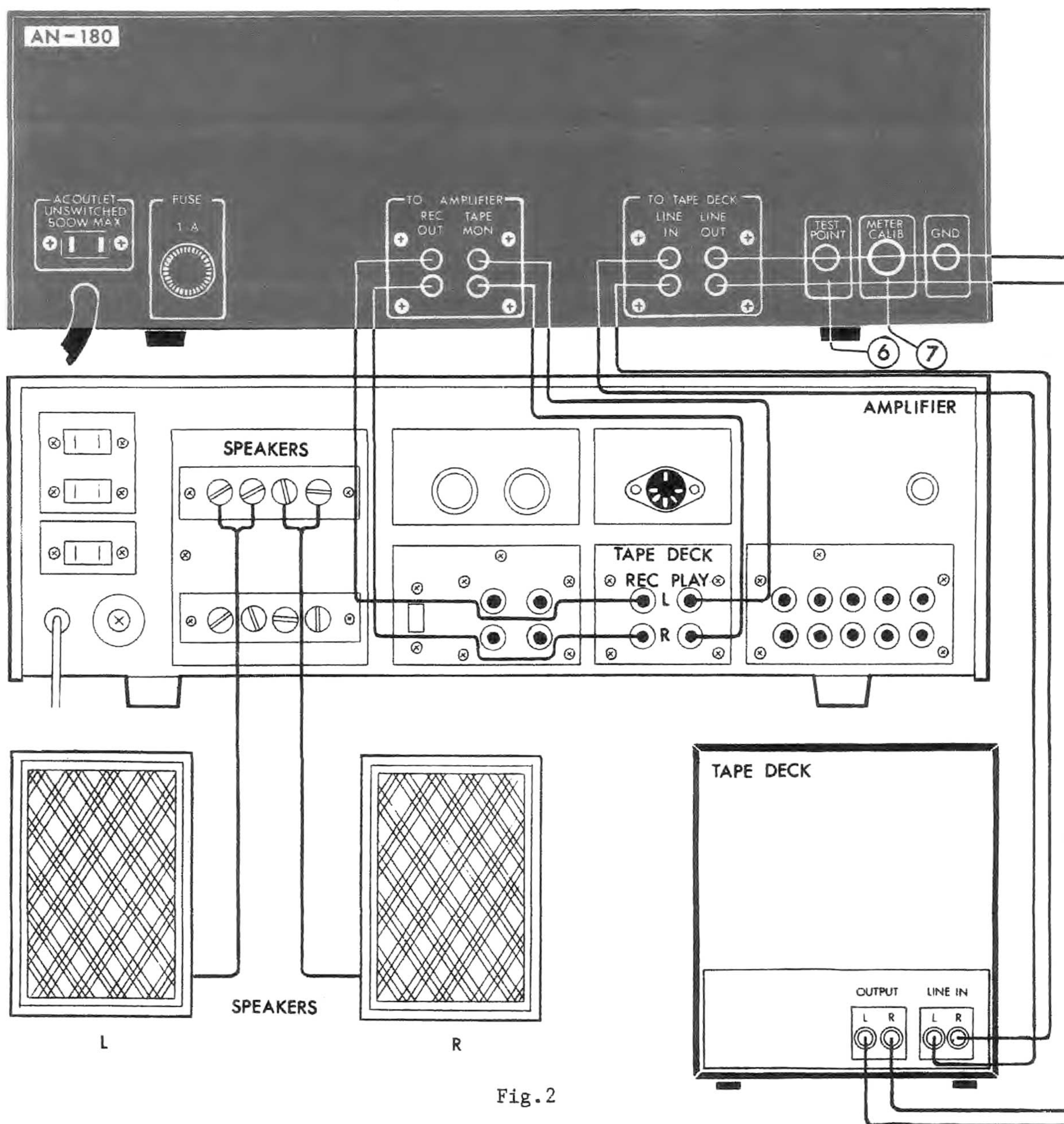


Fig.2

Connect cables to tape deck, Noise Reduction Unit and amplifier as shown in figure 2.

Playback and recording circuit calibration

Calibration (adjustment) is necessary when noise reduction unit is first added to your audio system. After calibration procedures are correctly performed they need not be done again unless you change to a different type of recording tape or change tape decks. After extended periods of use a periodic recheck of the calibration should be accomplished.

3 Head Tape Deck

Playback Circuit Calibration

1. Place MPX FILTER and DOLBY switches to IN position. Place MONITOR switch to TAPE position.
2. Apply AC power to AN-180 and tape deck.
3. Thread test tape on tape deck. Set deck to speed of 7-1/2 ips and play the test tape. Set tape deck output control to read a level of "0" VU on the deck's VU meters.
4. Adjust PLAY CAL knobs (left and right) so that both AN-180 VU meter needles indicate CAL position ("0" VU). After completing procedure remove test tape from deck.
5. After completing this procedure do not disturb the position of the tape deck output controls or the setting of the PLAY CAL knobs. You may prefer to mark the settings with a felt tip pen. If control settings are disturbed, reaccomplish steps 1 through 4.

Recording Calibration

1. Thread deck with a blank tape. Place deck in recording mode. Place tape deck MIC level control fully CCW. Place deck monitor switch to TAPE position.
2. Depress REC CAL button on AN-180. Adjust record level controls of tape deck until both meters of the AN-180 indicate CAL position.
3. Mark position of tape deck record level controls. The recording calibration is now completed. From this point forward all signal level control is accomplished with the MIC and LINE input controls of the AN-180. Recording level should be monitored on the AN-180 VU meters. The only tape deck controls to be operated are those that control the mechanical functions.
4. Remove test tape or rewind to beginning. After completing this procedure mark the position of the tape deck LINE IN level controls. If settings are disturbed recalibration should be accomplished.

From this point forward the MIC-LINE input controls and the OUTPUT level control of the AN-180 provide all audio adjustments. TAPE DECK level control settings should not be disturbed, the AN-180 becomes the recording control center.

2 Head Tape Deck

Playback Circuit Calibration

Same as section 2-1.

Recording Calibration

1. Thread deck with a blank tape. Place deck in recording mode. Place tape deck MIC level control fully CCW.
2. Depress REC CAL button on AN-180. Adjust record level controls of tape deck until both meters of the tape deck register approximately "0" VU. You are now recording a 400Hz test tone on the tape.
3. Rewind tape to zero on index counter. Playback the test tone recording. DO NOT disturb the PLAY CAL control settings. While playing back test recording observe the VU meters of the AN-180. They should read at or near the CAL position. Chances of their doing so the first time are small.

Since this is a critical adjustment several test recordings may be necessary. During each recording adjust the tape deck line level control to bring the playback indication on the AN-180 nearer the CAL position. When playback of the test tape results in both AN-180 VU meters reading at the CAL position, mark the position of the recorders line input level controls with a felt tip pen. Remove test tape from deck.

4. From this point forward the MIC LINE input controls and the OUTPUT level control of the AN-180 provide all audio adjustments. Tape deck level control should not be disturbed. The AN-180 becomes the control center.

Recording instructions

1. Use only the AN-180 INPUT level controls. Recorder controls should be left at calibration settings.
Do not disturb PLAY CAL settings of AN-180.
2. Set MIC INPUT control fully CCW.
3. Set LINE INPUT control to MID position.
4. If recording from a tuner place MPX FILTER switch "IN".
5. Place DOLBY switch IN, Dolby indicator light centered above VU meters will illuminate.
6. Using the LINE INPUT level control on AN-180 set recording level using either the AN-180 or your recorder's VU meters so that average recording signal centers around the "0" VU point on the meter scale.
7. If your recorder has a monitor function place monitor switch in TAPE position.
8. Place deck in Record mode and record the tape in the same manner as usual, since there is a wide variation between types of tape and between different tape decks, experimentation with your particular deck will enable you to determine the proper recording signal level for your system.

MIC-LINE Mixing

MIC line mixing can be readily accomplished with the AN-180. Simply insert MIC plugs into front panel jacks and set the desired signal level with the MIC INPUT level controls.

DO NOT plug microphones directly into tape deck as Dolby process would be by passed.

Playback instruction

Playback is accomplished in the same manner as if the AN-180 were not connected with the following exceptions.

- A: Dolby switch is placed to IN position for playback of Dolby processed tapes, to "OUT" position for prerecorded NON Dolby processed tapes.
- B: Output level control is accomplished with the OUTPUT control of the AN-180. NOT with tape deck output controls.
Do not disturb the PLAY CAL(left and right) settings.

Changing the power line setting

The AC power source voltage to this equipment can be changed to either 100,117, 220 or 240 volts by re-inserting the Voltage Selector Plug in the power transformer primary. It is set at the voltage indicated on the tag and outside of carton, before shipment from the factory but can be changed to one of the other voltages mentioned above. To re-set the voltage, the plug is pulled out, the arrow on the plug matched with the required voltage indication, and re-inserted. After making this voltage conversion, always double check to see that it is correct.

* US Model is 117V only.



Fig.3

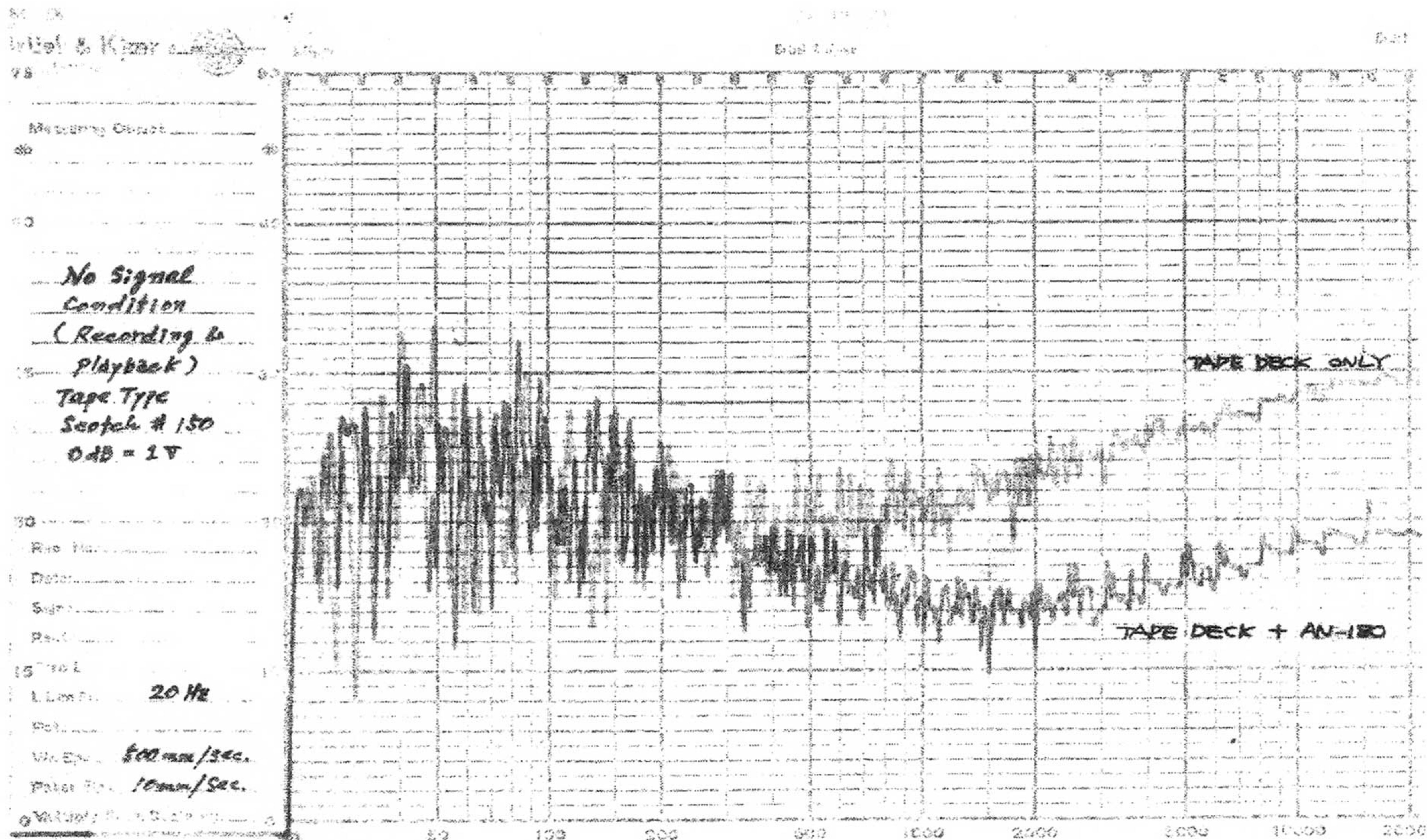
Specifications

Frequency response:	20 - 15,000 Hz \pm 1.5 dB
Increased SN ratio:	10 dB at 10,000 Hz 5 dB at 1,000 Hz better than 6 dB overall ("B" weighting network)
Input sensitivity:	Microphone: -72 dB (0.25mV) Line : 0.1V
Input impedance:	Microphone: 600 ohms Line : 100,000 ohms
Outputs:	To tape deck input: 0.5V Line : 1V
Harmonic distortion:	below 0.3%
Multiplex filter:	better than -35 dB at 19k Hz better than -30 dB at 38k Hz
Signal to noise ratio:	better than 65 dB
Channel separation:	better than 55 dB
Oscillator output level:	0.1V
Tone oscillator:	400 Hz
Power requirements:	100/117/220/240V AC, 50/60 Hz (US Model is 117V only.)
Power consumption:	6W
AC outlet:	500W (maximum)
Dimensions:	141(H) x 410(W) x 328(D)mm 5-1/2"(H) x 16-1/8"(W) x 12-3/4"(D)
Weight:	7 kg, 15-1/2 lbs. net

Standard Accessories	Test tape(open reel)..... 1
	Test tape(cassette) 1
	Input output connection cords 2
	Fuse 2
	Hex wrench 1
	Silicon cloth 1
	Instruction manual 1

Features and specifications subject to change without notice.

Noise Level Comparison Chart with and without Dolby Process



TEAC CORPORATION
TEAC CORPORATION OF AMERICA
TEAC EUROPE N.V.

SALES OFFICE: SHINJUKU BLDG., 1-8-1, NISHI-SHINJUKU, SHINJUKU-KU, TOKYO PHONE: (03) 343-5151
7733 TELEGRAPH ROAD, MONTEBELLO, CALIFORNIA 90640 PHONE: (213) 726-0303
KABELWEG 45-47, AMSTERDAM-W. 2 NETHERLANDS PHONE: 020-12 44 04

PRINTED IN JAPAN 067181-D-1652