

TEAC[®]

A-1200

STEREOPHONIC
TAPE DECK

OPERATING INSTRUCTIONS



TEAC CORPORATION

INTRODUCTION

The TEAC A-1200 tape deck is designed to serve those audiophiles who are critical in sound. The fidelity of sound recording and reproduction, the design of the transport mechanism, the electronics, and the arrangement of the controls, all meet the requirements of the professional user.

Some of the important professional features of the A-1200 are :

- Three professional quality heads
- Four preamplifiers
- Monitoring from source or tape while recording
- Three motor design
- Full pushbutton operation
- Remote control
- Input mixing of line and microphone levels
- Pushbutton sound on sound and echo effects

Please read the following instructions carefully before operating your recorder.

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SPECIFICATIONS

Heads: Three, 4 track 2 channel; Erase, Record, Forward Playback
Tape Speed: 7½ and 3¼ips (±0.5%)
Motors: 1 dual speed hysteresis synchronous motor for capstan drive
2 eddy current type outer-rotor motors for reel turntable
Frequency Response: 7½ips 30 to 20,000Hz (±3dB, 50 to 15,000Hz)
3¼ips 30 to 15,000Hz (±3dB, 50 to 10,000Hz)
Signal to Noise Ratio: 50dB
Monitoring Headphones: 10,000ohms minimum
Reel Size: 7" maximum
Wow and Flutter: 3¼ips 0.15%, 7½ips 0.12%
Fast Winding Time: Approximately 100 seconds for 1,200ft
Crosstalk: 50dB channel to channel at 1,000Hz 40dB between adjacent tracks at 100Hz
Input: Microphone: 10,000ohms, 1mV minimum Line: 10,000ohms, 0.1V minimum
Output: 10,000ohms minimum (Load impedance), 1V
Power Requirement: 100/115/200/220V AC, 50/60Hz, 110W nominal
Dimensions and weight: 17" x 15½" x 9¾", 41lbs.

CONTROLS AND SWITCHES

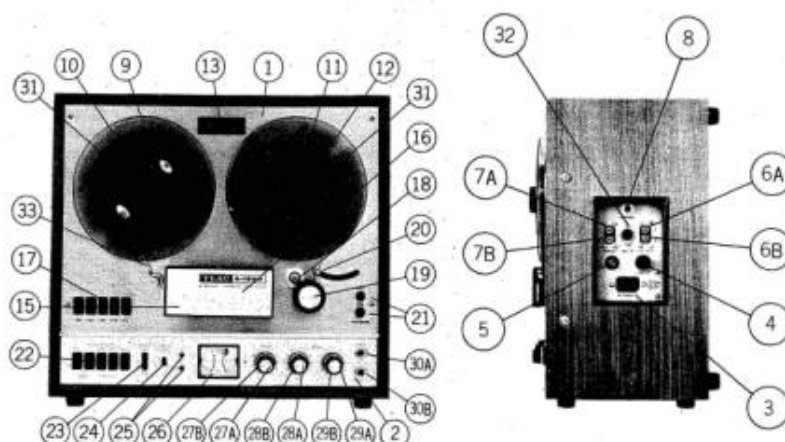


FIG. 1.

1. TAPE TRANSPORT MECHANISM
2. AMPLIFIERS
3. AC POWER IN: Power cord receptacle
4. REMOTE CONTROL: Remote control socket; a dummy plug is inserted when the remote control plug is not in use.
5. FUSE 2 AMP. : Replace only with 2 ampere fuse.
- 6A. LINE INPUT A: Line input jack for Channel A
- 6B. LINE INPUT B: Line input jack for Channel B
Phono preamplifier, tuner and other sources may be connected to this input.
- 7A. OUTPUT A: Output jack for Channel A
- 7B. OUTPUT B: Output jack for Channel B
8. MONITOR: Jack for high impedance stereo headphone.
9. LEFT REEL TURNTABLE
10. LEFT REEL TURNTABLE SHAFT
11. RIGHT REEL TURNTABLE
12. RIGHT REEL TURNTABLE SHAFT
13. INDEX COUNTER: for numerical reference within a reel of tape.
15. HEAD ASSEMBLY
16. TAPE LIFTER: lifts tape from heads during fast wind operations.
17. TRANSPORT SELECTOR SWITCHES: select tape operation, << (rewind), STOP, >> (fast forward), PLAY, REC (record).
18. CAPSTAN: drives tape for recording and playback.
19. PINCH ROLLER: engages tape to capstan during recording and playback.
20. AUTOMATIC SHUT-OFF LEVER: shuts off power to transport when tape runs out, and also restores transport selector-switches to a neutral mode.
21. TAPE SPEED: Tape speed selector pushbutton switch; electrically changes motor speed and selects appropriate equalizer circuit.
22. RECORD SELECTOR: selects various recording functions.
 CHAN A: for monophonic recording on channel A
 CHAN B: for monophonic recording on channel B
 STEREO: for stereophonic recording on channels A and B, both A and B are depressed.
 ADD 1: for sound on sound recording (channels A to B)
 ADD 2: for sound on sound recording (channels B to A)
 STEREO ECHO: for stereo echo effect when both ADD 1 and ADD 2 are depressed.
 SAFETY: safety interlock switch to prevent accidental erasure. Also used to restore record selectors to neutral mode.
23. POWER: AC power switch turns recorder on or off.
24. MONITOR: SOURCE position: During recording, the input signal to be recorded can be monitored through headphones or speaker system while the VU meter indicates the level.

TAPE Position: During playback or while recording, recorded signal on the tape can be monitored.

25. RECORD INDICATORS: Indicate energizing of record and erase circuits, and the record mode which has been selected.
26. LEVEL INDICATORS: VU type dual meter, indicates record level or playback output level dependent on the position of monitor selector. The dual meter indicates correct levels for recording without regard to the setting of the output level control. With the MONITOR selector in SOURCE position, meter indication of zero VU (0 VU) represents that the output level is 1 volt when the control is at maximum (clockwise) position.
- 27A. OUTPUT: Output level for Channel A
- 27B. OUTPUT: Output level control for Channel B
- 28A. LINE INPUT: Line input level control for Channel A
- 28B. LINE INPUT: Line input level control for Channel B
- 29A. MIC INPUT: Microphone input level control for Channel A
- 29B. MIC INPUT: Microphone input level control for Channel B
- NOTE: Level controls (27) (28) and (29) above, are dual potentiometers. Inner knob (Channel A) is friction coupled with outer knob (Channel B) to be operated together or separately.
- 30A. MIC IN: Microphone input jack for Channel A
- 30B. MIC IN: Microphone input jack for Channel B
31. REEL HOLDERS
32. REC/PB: Line input and output socket for DIN connection.
33. TENSION ARM

CONNECTIONS

AC POWER

1. Remove AC power cord from lid.
2. Connect cord to AC POWER IN receptacle (3) at the right side of the recorder case.



3. Press POWER switch (23). VU meter illumination indicates equipment is energized.



CONNECTING TO OTHER EQUIPMENT

The TEAC A-1200 is a "basic recorder". It possesses the circuitry required to record and reproduce program material, but it does not contain any power amplifier or speaker. To reproduce sound from the A-1200 it is necessary to use headphones or external power amplifier and speakers.

Headphones used with the A-1200 should be a high quality crystal or dynamic type of 10,000 ohms or higher impedance. Standard 8 ohm stereo headphones cannot be used to monitor the A-1200.

When monitoring, Channel A should be monitored with the left ear and Channel B with the right ear. The headphone cable should be equipped with a stereo phone plug (3 contact type).

To connect the A-1200 for playback through a high fidelity music system, use figure 2 as a guide. Check carefully against instructions supplied with the power amplifier and other equipment for proper connection.

Figure 3 represents an alternate method of using the A-1200 with other high fidelity equipment. This system takes advantage of the flat frequency response of the TEAC A-1200 deck and does not incorporate any facilities for tone control. The performance of this system will depend on the quality of the accessory high fidelity components.

REC/PB CONNECTION: There are a number of Hi-Fi stereo amplifiers equipped with DIN 5 pin coupling to connect tape recorder by cable. In event of optional accessory, connect to REC/PB Connector (32) on left side of recorder.

NOTE: In some cases different types of amplifiers using DIN connectors may cause insufficient level or loss in tone quality. In such case, do not use the DIN connector but make 4 wire connections with Line Inputs (6) and Output Jacks (7).

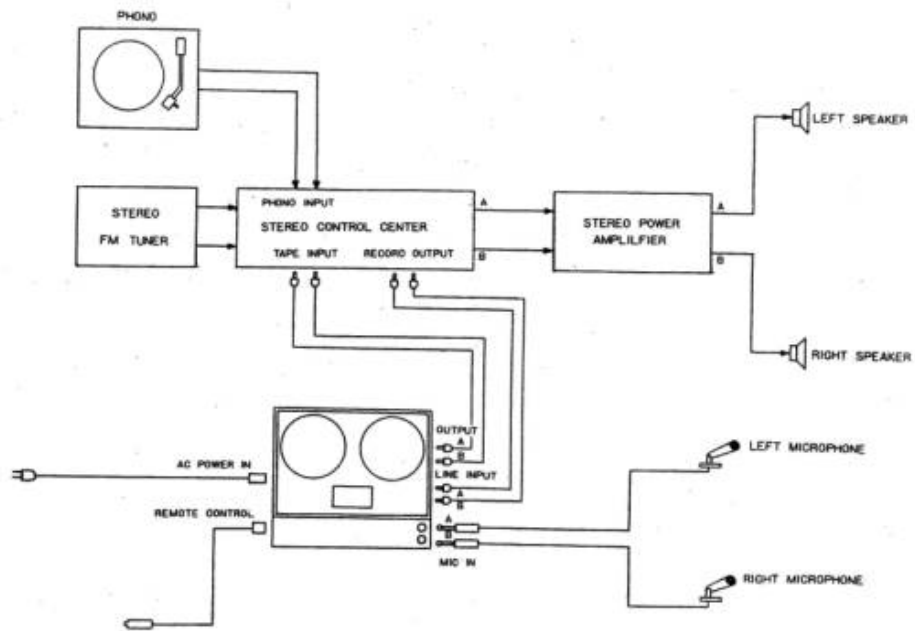


FIG. 2 TYPICAL INTERCONNECTING DIAGRAM

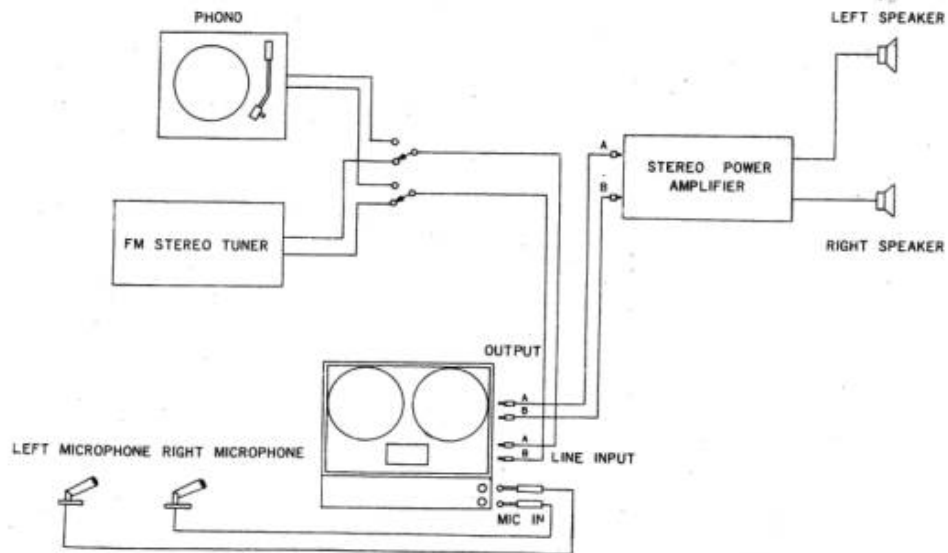


FIG. 3 BASIC SYSTEM

OPERATION

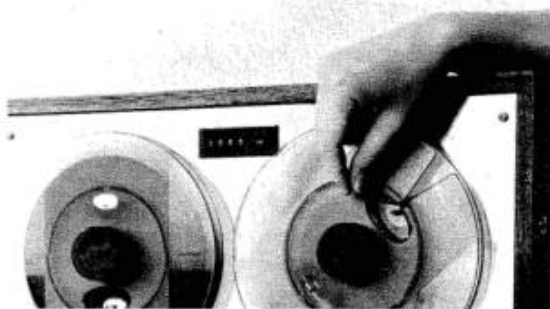
TAPE THREADING

To thread the A-1200 with tape, center the reel of tape onto the left reel turntable (9) and press a reel holder (31) over the reel shaft (10) to secure the reel. Unwind approximately two feet of tape from the reel by hand.



NOTE: Remove any tabs, gummed labels or adhesive that may be found on the first few feet of the tape, as this may contaminate the heads and guides of the tape transport, or cause layers of wound tape to stick, resulting in erratic operation.

Place empty reel of equal diameter to the full one onto the right reel turntable (11).



Thread tape through various tape handling elements, and secure tape end to empty reel hub (method of securing tape to hub varies with reel manufacturers). Install reel



holder to secure empty reel. Rotate empty (take-up) reel in a counterclockwise direction to remove slack in tape. Be sure to set shut-off lever (20) in proper operating position.

PLAYING A RECORDED TAPE

1. Install the A-1200 into your audio system. Refer to figure 2 (or 3), in regard to connections.
2. Press SAFETY button. This eliminates the possibility



of accidental erasure.

3. Press TAPE SPEED SELECTOR Button (21) to select either the $3\frac{3}{4}$ IPS or $7\frac{1}{2}$ IPS.



At recording, the higher speed provides the best fidelity. Recordings of excellent fidelity can be made on the TEAC A-1200 deck at the $3\frac{3}{4}$ IPS to provide tape economy or longer playing time.

4. Set MONITOR switch (24) to tape position.



5. Pre-set OUTPUT level controls (27) to minimum (extreme counterclockwise).



6. Press PLAY pushbutton (17).



7. Advance OUTPUT level controls clockwise until a satisfactory setting is reached for your amplifying equipment.
8. If necessary, balance the channels independently by adjusting one of the friction coupled knobs.



9. For monophonic playback, advance only one channel OUTPUT level control.

RECORDING

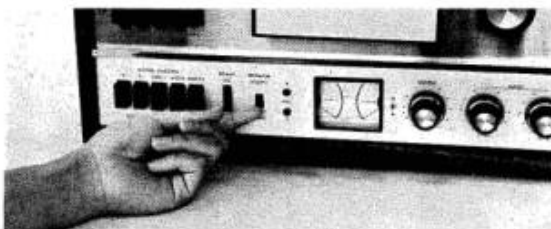
A. STEREOPHONIC RECORDING FROM LINE INPUTS

For recording from an FM tuner, another tape recorder, or a phonograph.

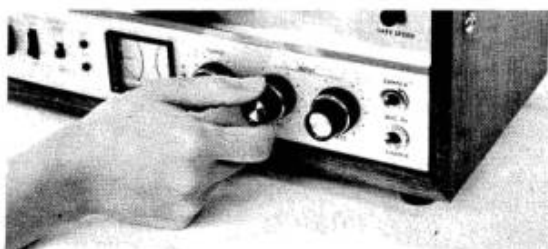
1. Press RECORD SELECTOR (22) STEREO (both A and B) buttons.
2. Connect the program source to the LINE INPUT (6A) and (6B).



3. Thread tape on the deck.
4. Switch MONITOR selector (24) to SOURCE.



5. Adjust LINE INPUT level controls (28) while watching the VU meter (26). The VU meter should deflect to the 0 VU position on the loudest portions of the program material. Do not allow the meter to deflect past that point, as distortion in recording will result.



6. Advance OUTPUT level control knobs (27) until program is comfortably heard in the reproducing system. (See Fig. 2 or Fig. 3)
7. Press REC button, then press PLAY button (17) while holding REC button.



8. Re-adjust LINE INPUT level control for normal level if necessary. Avoid extreme changes while recording.
9. Set MONITOR selector (24) to TAPE for monitoring recorded program while recording.

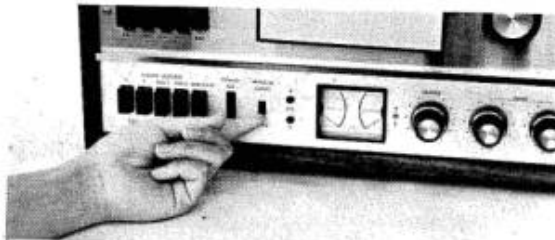
B. STEREOPHONIC RECORDING FROM MICROPHONES

To make a live stereo recording with microphones, use the following check-list.

1. Press RECORD SELECTOR (22) STEREO (both A and B) buttons
2. Connect a high impedance microphone (10kΩ) from the left side of the sound stage to CHAN A MIC IN jack (30A) and a high impedance microphone from the right side of the sound stage to CHAN B MIC IN jack (30B) (if low impedance microphones are to be used, it is necessary to use external matching transformers). Physical separation of the two microphones must be determined by trial and error to secure best results under different circumstances.



3. Thread tape on the deck.
4. Switch MONITOR selector (24) to SOURCE.



5. Adjust MIC INPUT level controls (29) until program deflects level indicators (26) to 0 VU. Adjust independent balancing if necessary.



NOTE: Do not use amplifiers and loud-speakers when monitoring a live pick-up unless the loud-speakers are acoustically separated from the microphones, because severe re-entrant feedback may result. If a loud-speaker system is connected, output level control (27) should be turned down. In either case, the meter indication will not be affected.

6. Press REC button, then PLAY button (17) while holding REC button.
7. Re-adjust MIC INPUT level controls (29) for proper level if necessary. Avoid extreme changes while recording.
8. Set MONITOR selector (24) to tape for monitoring recording quality by using headphones.

FOUR TRACK RECORDING

Use of four parallel lanes of a magnetic tape, each lane (track) carrying the recording from a single source. For stereo recording, two tracks are used simultaneously.

CHANNEL

Channel is a term used similarly as "track", to generally indicate which track is being referred to, such as "Channel A" or "Channel B". This definition includes the equipment associated with the recording or playback for each track. The left-hand channel is referred to as channel "A" and the right as "B".

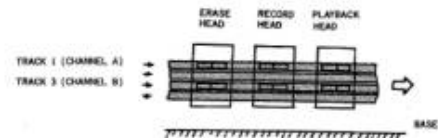


FIG. 5 HEAD ARRANGEMENT

DESIGNATION OF TRACKS

1 to 4 consecutively counting from the top to edge closest to face of recorder. (see illustration above).

FOUR TRACK MONOPHONIC

All four tracks can be used for monophonic signals. Normal order of track usage is 1, 4, 3 and 2.

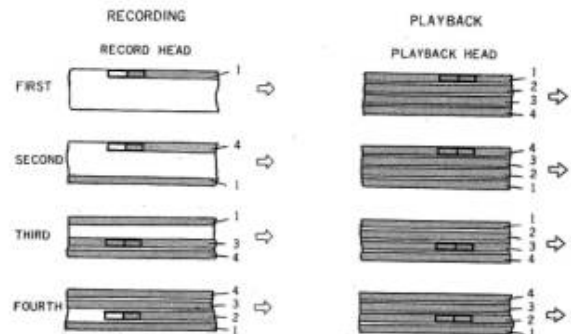


FIG. 6 MONOPHONIC RECORDING AND PLAYBACK PROCEDURE

FOUR TRACK STEREOPHONIC

Two tracks are used simultaneously to record two channels of signals from a stereophonic source. The normal combination of usage is, tracks 1 and 3, and 4 and 2. Tracks 1 and 4 carry the recording from the left-hand side, as viewed from the audience (or "stage-left"), while tracks 3 and 2 carry the recording from the right (or "stage-right").

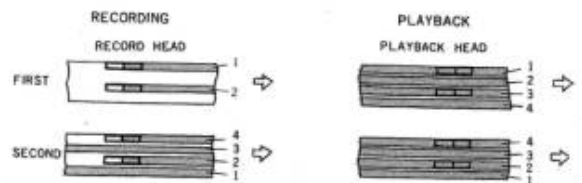


FIG. 7 STEREOPHONIC RECORDING AND PLAYBACK

C. MONOPHONIC RECORDING

The accepted sequence at recording a monophonic program source is as follows: Track 1, Track 4, Track 3, Track 2. Use the following check-list.

1. Press RECORD SELECTOR Channel A Button (22).
2. Connect the program source to LINE INPUT A (6A) jack or CHAN A MIC IN (30A) jack.



3. Thread tape on the deck.
4. Switch MONITOR selector (24) to SOURCE.
5. Adjust Channel A LINE INPUT (28A) or MIC INPUT (29A) level controls until program volume deflects indicator meter (26) (Channel A) to 0 VU on loudest portions of program.
6. Advance OUTPUT LEVEL control (27A) until program is audible in headphones or reproducing system.

NOTE: When microphone(s) is used for recording, care should be taken to avoid feedback as described in B-5 above.

7. Press REC button, then press PLAY button(17) while holding REC button.
8. Re-adjust LINE INPUT or MIC INPUT level controls for proper level, if necessary. Avoid extreme changes while recording.
9. Set MONITOR selector (24) to TAPE for monitoring recorded program.

After the recording on track 1 is completed, track 4 can be recorded simply by exchanging the reels.

Track 3 is recorded next, with the full reel again on the supply or left reel turntable. But this time RECORD SELECTOR CHAN B (22) button is depressed and signal inputs are transferred to Channel B. The completion of the program may be recorded on track 2 by again exchanging the reels while in this mode.

NOTE: If two microphones are available, they may be plugged into the two inputs so that the input connection need not be transferred when switching between the various tracks.

The chart (figure 8) will be helpful in making four track monophonic recordings.

FIG. 8 FOUR TRACK MONOPHONIC RECORDING PROCEDURE

	FIRST RECORDING	SECOND RECORDING	THIRD RECORDING	FOURTH RECORDING
Track	1	4	3	2
Microphone or line in	Channel A	Channel A	Channel B	Channel B
Record Selector	Channel A	Channel A	Channel B	Channel B
Input Level Control	Channel A	Channel A	Channel B	Channel B
Volume Indicator	Channel A	Channel A	Channel B	Channel B
Left Reel	On Supply Hub	On Takeup Hub	On Supply Hub	On Takeup Hub
Right Reel	On Takeup Hub	On Supply Hub	On Takeup Hub	On Supply Hub
Output Level Control	Channel A	Channel A	Channel B	Channel B
Output	Channel A	Channel A	Channel B	Channel B

D. MULTIPLE RECORDINGS, SOUND-ON-SOUND, ETC.

By using ADD button of the RECORD SELECTOR switch, it is possible to add existing recording on track 1 (Channel A) to track 3 (Channel B) or track 3 (Channel B) to track 1 (Channel A)

This is a particularly useful function for such applications as language training, "sound-on-sound" or "sound-on-sound-on-sound..."

1. Press RECORD SELECTOR Channel A button (22).
2. Connect microphone to CHAN A MIC IN jack (30A).
3. Load the deck with tape.
4. Switch MONITOR selector (24) to SOURCE.
5. Adjust Channel A MIC INPUT level control (29A) while speaking into microphone, until voice deflects level indicators (26) (CHAN A) properly.
6. Press REC button, then press PLAY button (17) while holding REC button.
7. Sing melody for recording on track 1.
8. Rewind and stop at beginning of recording.



9. Press RECORD SELECTOR (22) ADD 1 position.
10. Remove left microphone plug from CHAN A MIC IN jack (30A). Connect microphone plug to CHAN B MIC IN jack (30B).
11. Switch MONITOR switch (24) to TAPE.
12. Same as NO. 6

13. Adjust Channel A OUTPUT level control (27A) for approximately 40% deflection on CHAN B level indicators (26).

14. Make recording on track 3 by singing harmony to original on track 1 heard in headphone (left ear).

NOTE: The composite sounds may now be re-played on Channel B. If the results are not satisfactory, a second or third "TAKE" may be made, since the original solo on track 1 has been preserved. Don't forget to make use of the index counter (13) to help "cue you in" to beginning of your solo.

If additional recording is desired over mixed signals in track 3, set RECORD SELECTOR at ADD 2 position, a composite signal can now be recorded on track 1 by using Channel B amplifier and controls.

The following chart will be helpful in making sound-on-sound recordings (figure 9).

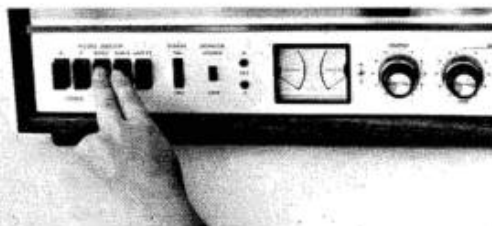


FIG. 9 SOUND-ON-SOUND RECORDING PROCEDURE

	Original Recording	Second Recording	Third Recording
Microphone Input	Channel A	Channel B	Channel A
Mic Input Level Control	Channel A	Channel B	Channel A
Record Selector	Channel A	Add 1	Add 2
Monitor Selector	Source or Tape	Tape	Tape
Volume Indicator	Channel A	Channel B	Channel A
Out put Level Control	Channel A	Channel A	Channel B
Stereo Head phone	Left	Left	Right

E. STEREO ECHO

To make a stereophonic recording with echo effects, press both ADD 1 and ADD 2 buttons on RECORD SELECTOR (22) and proceed as described under "stereophonic recording from microphones" (page 6).



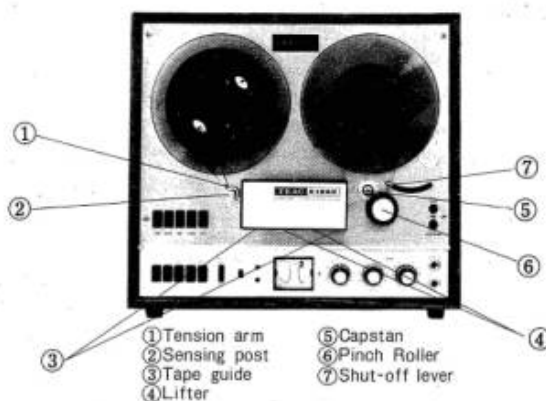
The amount of echo effect is controlled by OUTPUT level control (27). It is recommended that these controls be first set for "minimum" and gradually increased to "optimum" amount of echo as desired.

CAUTION: Do not press RECORD SELECTOR button (22) in "Record" mode or head magnetization may result. Always select the record mode after the mechanism has been stopped.

During recording, the erase head will automatically erase any previously recorded material on the tracks being used. To completely erase a tape prior to record, a bulk eraser may be used.

MAINTENANCE

CLEANING



To prevent the loss of high frequency response or insufficient erasure, the heads should be cleaned frequently under average operating conditions, cleaning the heads after each eight to ten hours of use will insure against the loss of high frequency response. To clean the head, moisten a clean, lint free cloth with alcohol. Carefully wipe the face of each head and the following components to remove all traces of dirt and magnetic oxide deposits.

NOTE: Do not use silicon polishing cloth to clean capstan shaft, pinch roller and reel furtable shafts.

DEMAGNETIZATION



TEAC E-1 HEAD DEMAGNETIZER

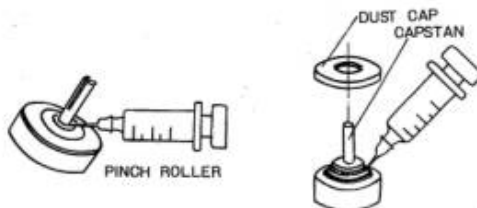
The tape heads should be demagnetized at least once in every 50 hours of operation to maintain the best possible performance of the equipment and to prevent the possibility of gradual deterioration of your prerecorded tapes.

1. Turn the equipment off.
2. Attach protective covering on tip of **TEAC** model E-1 head demagnetizer.
3. Energize demagnetizer.
4. Place the tip of the demagnetizer against upper pole pieces of head, slowly move the tip downward toward lower pole pieces of the head. Alternate between the two set of pole pieces while slowly withdrawing the demagnetizer.
5. Repeat this process on each heads.
6. Remove the power from the demagnetizer when it is at least one foot away from the equipment.

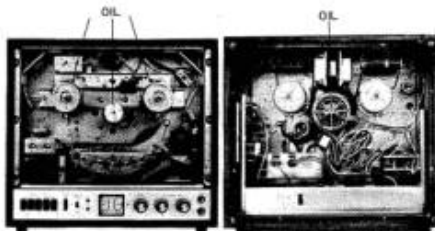
NOTE: Do not allow the demagnetizer to come in close proximity with the level indicator meter, as permanent damage to the meter may result.

LUBRICATION

The following parts should be lubricated after operation of approximately 1000 hours, or at least once a year with **TEAC #29228 Oil (Mobil DTE Heavy Medium)**.



- Capstan Shaft2 drops
Remove the dust cap by turning counterclockwise and wet oil chamber.
- Pinch Roller Shaft1 drop
Pull off the pinch roller and lubricate the shaft.



- Motors (three)approximately 1-cc for each bearing, or 0.5cc when the equipment is not frequently used.

- NOTE:** 1. Wipe off any excess oil from rubber parts and drive belt with cloth dampened with alcohol.
2. Lubricate the equipment immediately after operation while it is warm.

POWER SOURCE

The equipment is normally adjusted to operate on an electric power source at the voltage and frequency specified on the tag.

If it should be necessary to convert the A-1200 tape deck to operate from a power source of a different voltage or frequency, it may be easily accomplished as follows:

VOLTAGE CONVERSION

This equipment permits selection of the power supply of 100V, 115V, 200V or 220V. For changing the voltage of power supply, use a screwdriver to set the **VOLTAGE SELECT** switch 37, located on the side of the deck.

FREQUENCY CONVERSION

The conversion may be made in the following sequence:

1. Remove the front panel (Fig. 10).
 - A Remove the rubber mats and the screws (three each) on the left and right reel turntables, and remove the tables.
 - B Remove one screw at the top of the head housing and remove the housing.
 - C Remove the four mounting screws at the corner of the front panel and the two mounting screws under the reel turntable.
 - D Loosen the set screw and pull off collar from the guide post.
 - E Pull out the pinch roller.
 - F Turn the dust cap of the capstan counterclockwise for removal.
 - G Loosen the screw and pull off the left tension arm.
 - H Remove the panel carefully.
2. Set the **C/S SELECT** switch 38 on the rear of the deck to the required frequency.
3. Move the drive belt on the pulley and flywheel (Fig. 11). In this equipment, the motor pulley and the flywheel each have 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. Following completion of the process, turn the flywheel manually to ensure that the belt has been attached properly. The smaller diameter portion of the motor pulley is for 60 cycle operation.

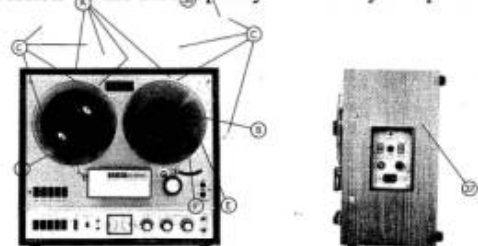


FIG. 10 REMOVING THE FRONT PANEL

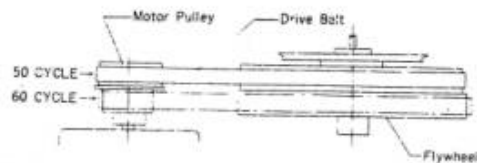
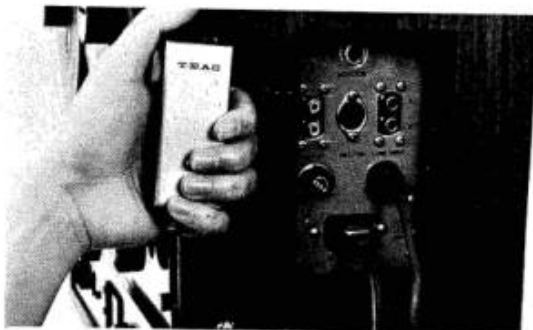


FIG. 11 MOVING THE DRIVE BELT POSITION

REMOTE CONTROL

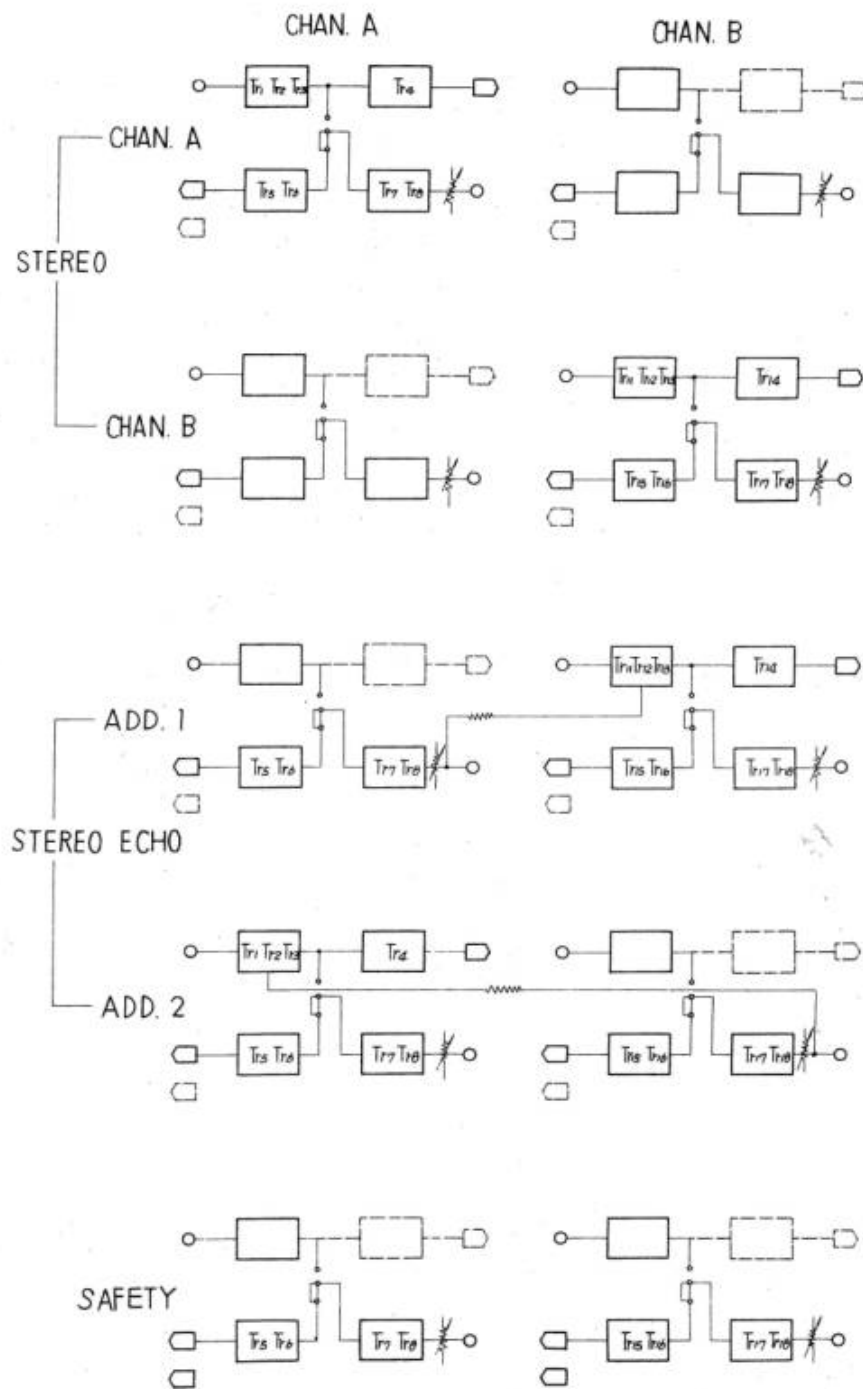
TEACA-1200 can be controlled from a distant location by using an optional remote control unit. The unit has a push-button switch and indicator lamp to start or stop recorder in any preselected mode. It is particularly useful while recording from a tuner to eliminate recording commercials.



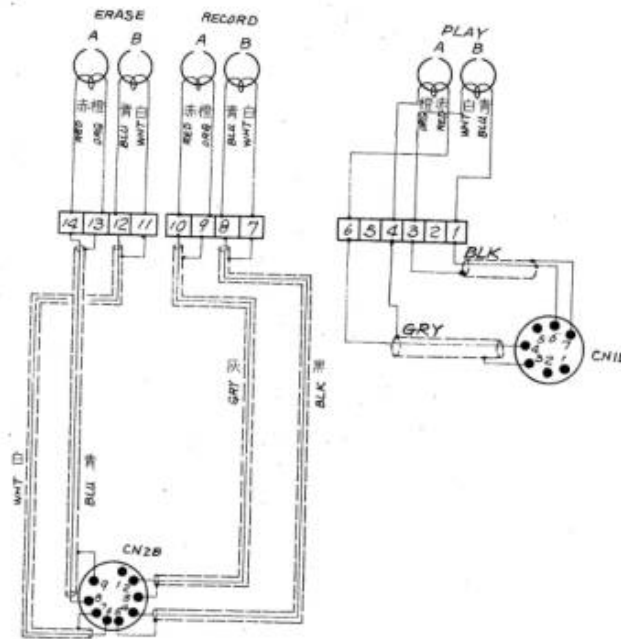
INSTANT OFF-THE-TAPE MONITORING

While you are recording, the original signal from the program source and the recorded signal can be almost simultaneously compared one another by **MONITOR** switch, through your headphones or monitor speakers. When **MONITOR** switch is set to **SOURCE** position, you will hear the input signal from the program source that you are going to record. (VUmeters show the levels of incoming signals) When you set the switch to **TAPE** position, you are now listening the result of your recording as the output signal. (VU meters now show the levels of the recorded signals) This is possible with **TEAC A-1200** because a separate playback head is installed right next to a separate recording head, (Remember most of the tape recorders on the market has just a single head for recording and playback and simultaneous operation of recording and playback is physically impossible) and playback is always activated simultaneously to recording.

Thus, you can monitor the recorded signal about 0.15 second after recording (at 7-1/2 ips) without interruption of recording function.



BLOCK DIAGRAM



A-1200

HEAD ASSY SCHEMATIC DIAGRAM

ACCESSORIES

Empty reel	1	Splicing tape	1
Reel clamber	2	Silicon cloth	1
AC cord	1	Fuse (2A)	1
Input/Output cables	2	Reel height adjusting shim	2
Oil and oiler	1	Operating Instructions	1
Sensing foil	1	Others	

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