

SONY

TAPE RECORDER

TC-600

OWNER'S INSTRUCTION MANUAL





You are now the owner of a complete music system that both records and plays 4-track Stereophonic tapes. The precise performance and professional features of the Model 600 will introduce you to an exciting new world of "living sound". This owner's manual will explain the controls, operation and maintenance of your new Model 600. Read this information carefully before operating. Save this manual for future reference.

Diagram of Controls

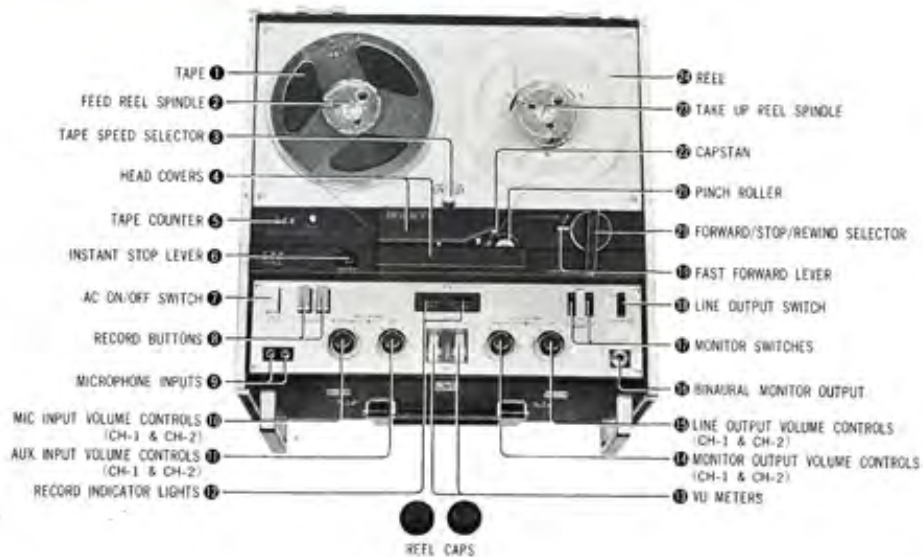
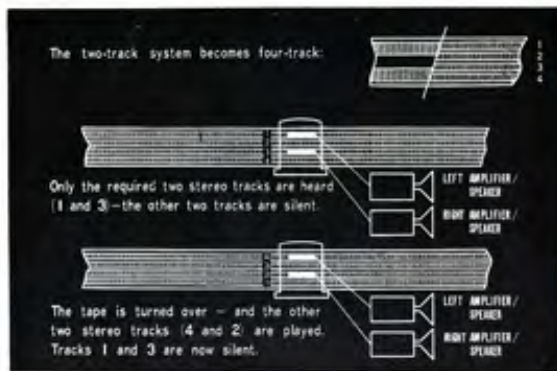


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HOW FOUR-TRACK WORKS



Chart courtesy of

MAGNETIC RECORDING INDUSTRY ASSOCIATION

What is 4-Track Stereo

4-Track Stereo is the method in which twice as much recorded material can be obtained on $\frac{1}{4}$ " magnetic tape by recording 2 separate pairs of stereo tracks on the tape.

In order to accomplish this, the size and spacing of the magnetic head poles had to be changed to conform with the placement of 4-Tracks within the area of $\frac{1}{4}$ " tape.

The above diagram shows the comparison of track placement between 2-Track stereo and 4-Track stereo.

Operation of Controls

1. DRIVE MECHANISM CONTROLS

All controls for complete operation of tape drive mechanism and speed selection are located on the black control panel.

a. FORWARD STOP/REWIND SELECTOR

This three position selector is controlled by the large knob located on the right of the black control panel. FORWARD/STOP/REWIND functions are indicated in raised letters directly below the knob.

TO OPERATE

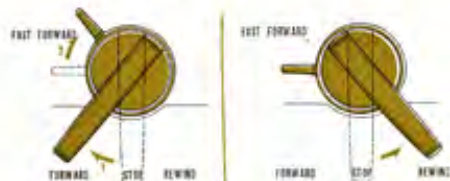
For FORWARD function turn the knob CLOCKWISE.

For REWIND function turn the knob COUNTERCLOCKWISE.

NOTE: (1) Selection of FORWARD or REWIND must be made from CENTER or STOP position of the knob.

Do not change from FORWARD to REWIND (or vice versa) until tape comes to a complete stop.

(2) Be sure to keep the tape tight against the Automatic Shut-off Lever inside the HEAD COVER, otherwise the tape will not start.



b. FAST FORWARD LEVER

Fast forward selection is controlled by the chrome plated spring loaded lever located at the immediate left of the FORWARD/STOP/REWIND Selector Knob. It is indicated in raised letters "FAST FORWARD" with a silver arrow pointing upward. The FAST FORWARD LEVER operates in both 3 1/4" and 7 1/2" ips.

TO OPERATE

After the Model 600 is placed in normal forward motion at either speed, push the FAST FORWARD LEVER upwards, with a smooth quick movement until the lever clicks into position, then release the lever. To stop FAST FORWARD motion, turn the FORWARD/STOP/REWIND Selector Knob to STOP position.

c. INSTANT STOP LEVER

This control is the lever located on the left of the black control panel. It is indicated in raised letters "INST. STOP".

When applied, this lever instantly and safely stops normal forward motion of the tape for editing and cueing. Both reels can still be rotated by hand in either direction while the lever is applied.

TO OPERATE

Push the lever to the left and hold until ready to release. Upon releasing the lever, the tape will immediately pick up normal forward speed.

NOTE: Do not apply Instant Stop while in Fast Forward or Rewind operation.

d. TAPE SPEED SELECTOR ④

Speed selection is controlled by the small knob ④ located in the center directly behind the head cover ③. This knob selects the desired speed of either 3 1/2 ips or 7 1/2 ips (9.5 or 19 centimeters per second), and automatically sets the proper recording and playback characteristics for each speed.

TO OPERATE

Your Model 600 is shipped with the TAPE SPEED Selector in 3 1/2 ips.

To change from 3 1/2 ips to 7 1/2 ips, press down the SPEED SELECTOR Knob and turn clockwise to 7 1/2 ips position.

- NOTE: (1) Do not turn the speed selector knob clockwise from 3 1/2 ips to 7 1/2 ips without first pressing the knob down. To change from 7 1/2 ips to 3 1/2 ips simply turn the SPEED SELECTOR Knob counterclockwise from 7 1/2 ips position to 3 1/2 ips position and allow the knob to rise.
- (2) Do not change speed while tape is in motion.

e. TAPE COUNTER ⑤

Located at the left of the black control panel and is equipped with a white RESET button adjacent to the numerals.

TO OPERATE

Press the RESET button when a full reel of tape is loaded. This will set the Counter to Zero so that it is in position to start indicating the amount of tape used in either record or playback.

- NOTE: Do not press the RESET button while tape is in motion.



f. AUTOMATIC SHUT-OFF SWITCH

This switch is activated by the wire lever adjacent to the left tape guide under the head cover. In STOP position, the wire lever recedes into a slot to facilitate easy tape threading. After tape is threaded and the mechanism is placed in either FORWARD or REWIND mode, the wire lever contacts the tape and is held in this position. At such time as the tape either runs out or breaks, the wire lever will automatically fall forward and activate a micro switch, which shuts off the AC current to the Model 600.



2. ELECTRONIC CONTROLS

All controls for complete operation of recording amplifiers, playback pre-amplifiers and monitor amplifiers with the exception of MAG. CARTRIDGE/AUX. switch ⑫ are located on the silver front control panel of the Model 600.

a. AC ON/OFF SWITCH ⑦

Located at the extreme left of the silver panel and operated by the white push button ⑦. It is designated "POWER ON/OFF".

TO OPERATE

Push the button down to turn the recorder on or off.

b. INPUT VOLUME CONTROLS ⑩ ⑪

Two coaxially mounted double knobs ⑩ ⑪ are located on the left of the silver control panel indicated "INPUT VOLUME". The left knobs ⑩ indicated "MICROPHONE" have the following two functions.

- (1) To control sound level of microphone inputs. Upper knob for CH-1 (Channel 1), lower knob for CH-2.
- (2) To control sound level of magnetic cartridge when MAG. CARTRIDGE/AUX. switch ⑫ is in MAG. CARTRIDGE position. Upper knob for CH-1, lower knob for CH-2.

The right knobs ⑪, indicated "AUX.", control the sound level of auxiliary inputs when MAG. CARTRIDGE/AUX. switch ⑫ is in AUX. position. Upper knob for CH-1, lower knob for CH-2.

NOTE: The feature of separate level controls for microphone and auxiliary inputs provides the facilities to mix "live"

microphone recording simultaneously with recordings made from stereo tuners, stereo discs or any other auxiliary source (see page 12).



c. OUTPUT VOLUME CONTROLS ⑬ ⑭

These two coaxially mounted double knobs ⑬ ⑭ are located on the right of the silver control panel.

The left knobs ⑬, indicated "MONITOR", control the sound volume of "Binaural Monitor". Upper knob for CH-1, lower knob for CH-2. The right knobs ⑭, indicated "LINE", control the sound volume of line outputs. Upper knob for CH-1, lower knob for CH-2.

d. RECORD BUTTONS ③

Located at the left of the silver control panel and designated in black letters "RECORD", "CH-1" and "CH-2" directly below the buttons.

TO OPERATE

Press the desired button ("CH-1" for channel 1, "CH-2" for channel 2 or both for stereophonic recording) and hold down until the Model 600 is placed into FORWARD position. Recording levels can be adjusted before the mechanism is set in motion when MONITOR SWITCHES ① are set to SOURCE position.

NOTE: The RECORD BUTTON ③ is equipped with a mechanical safety interlock to prevent accidental erasure of pre-recorded tapes. The RECORD BUTTON ③ can only be pressed while mechanism is in STOP position.

e. LINE OUTPUT SWITCH ②

This 2-position seesaw type switch ② is located on the extreme right of the silver control panel.

It is designated "LINE OUTPUT-ON-OFF" in black letters. This switch controls the output of the LINE OUTPUTS in record mode. It is used to turn on or off amplifiers which may be connected to the LINE OUTPUT jacks ④.

NOTE: This switch does not operate in playback mode.

f. MONITOR SWITCHES ①

These 2-position seesaw type switches ① are located on the right of the silver control panel. They are designated "MONITOR

"CH-1" and "CH-2" respectively in black letters. The respective position is indicated, one "SOURCE", the other "TAPE". On "SOURCE" position, input source will be monitored, and on "TAPE" position, the recorded tape will be monitored by binaural monitor output and LINE OUTPUTS.

NOTE: For playback these switches ① must be on TAPE position.



g. VU METERS ⑤

Located at the center of the silver control panel and designated in black letters "LEVEL", "CH-1" and "CH-2". These meters ⑤ are provided with the Model 600 for extremely accurate recording and playback level indication.

When the MONITOR SWITCHES ① are set to SOURCE position, these meters, as in the professional studio type recorders, are controlled by a vacuum tube circuit that is activated through the input stage. This insures meter indication of only the incoming source. These meters are calibrated to NAB standards to allow the maximum recording level without distortion.

For best recording results, the level controls should be adjusted so that the deflection of the VU indicator needle does not continually exceed 100%. It is normal for transient peaks to deflect the needle into the red zone; however, the level should be lowered slightly if these transient peaks cause the needle to remain in the red zone.

These meters ② also indicate playback level when in PLAYBACK mode; or in RECORD mode with the MONITOR switch ① in TAPE position. These meters are designed to indicate the same value for recording level and playback level; therefore, the recorder may be switched from TAPE to SOURCE without causing change in level indication.

NOTE: The indicated value of the level meter in PLAYBACK mode is not related to the sound volume of line output and the binaural monitor output.

h. RECORD INDICATOR LIGHTS ③

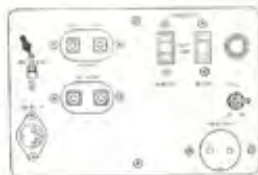
Located on the center of the silver control panel and indicated "REC" on the lamps ③ themselves and "CH-1", "CH-2" in raised letters directly below the lamps.

When the desired RECORD BUTTON ④ is pressed, the respective red LAMP will light up indicating in which Channel the Model 600 is in recording mode. (RECORD BUTTON CH-1 and CH-2 for RECORD LAMP CH-1 and CH-2 respectively, or both BUTTONS for both LAMPS.)

i. MAG. CARTRIDGE/AUX. SWITCH ⑤

A slide switch ⑤ is located on the extreme upper left rear of the chassis and designated "MAG. CARTRIDGE-AUX.": Move the slide switch in the direction of AUX. when recording from AM/FM tuners, TV, Tape Recorders or recorder outputs of pre-amplifiers through AUX. input. Move the slide switch in the direction of MAG. CARTRIDGE when recording directly from a record player or phonograph equipped with a Magnetic Cartridge without the use of pre-amplifiers. This will automatically compensate the response characteristics of the Magnetic Cartridge.

IMPORTANT: (1) Do not insert microphones when recording directly from a record player or phonograph.
(2) Keep the slide switch set at AUX. except when recording from a phonograph or record player.
(3) When recording directly from Magnetic Cartridge, record level must be controlled by MICROPHONE INPUT VOLUME ⑥.



Input and Output Connectors

All input and output facilities with the exception of microphone inputs ① and binaural monitor jacks ② are located on the rear of the Model 600.

1. MICROPHONE INPUTS ①

There are two microphone inputs ① located on the left of the silver front panel and indicated "MICROPHONE" in black letters. CH-1 and CH-2 are indicated respectively. These input jacks are of the "Mini-jack" variety and accept the standard 1/8" tip "Mini" type plug. The microphone input impedance is engineered for the attached Sony F-87 Microphone or any high quality dynamic microphone of low impedance variety.

2. AUXILIARY INPUTS ③

The two auxiliary inputs ③ are located on the upper left at the rear of the chassis, and designated "AUX. INPUT". They are used as follows:

(1) For auxiliary inputs

When MAG. CARTRIDGE/AUX. switch ④ is set in AUX. position, these inputs are high impedance and are used for recording from any components that deliver a signal of not less than 0.15 volt, such as: AM/FM tuners, TV, Tape Recorders or pre-amplifier "RECORDE" outputs.

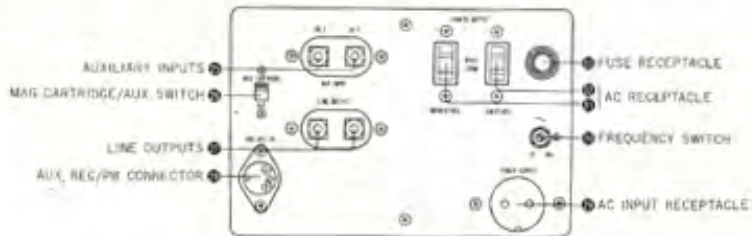
(2) For magnetic cartridge inputs

When MAG. CARTRIDGE/AUX. switch ④ is set in MAG. CARTRIDGE position, these inputs are used for recording directly from record players equipped with magnetic cartridge that deliver a signal of not less than 3 mV without connecting through any pre-amplifiers.

3. LINE OUTPUTS ⑤

The two Line Outputs ⑤ are located on the lower left at the rear of the chassis, and are designated "LINE OUTPUT".

These outputs are high level (Max. 1.7V) 600 ohm impedance and



are used to connect the Model 600 to external power amplifiers.

Proper Connection to External Amplification

It is important when using external pre-amplifiers and power amplifiers from LINE OUTPUTS that the LINE level controls on Model 600 be properly adjusted. It is recommended that these level controls be adjusted at a point below Number 7 on the dial. Control of volume can then be accomplished with the volume controls of the external amplifiers.

Keeping the output level of the Model 600 relatively low avoids the possibility of overloading the input capacities of the external pre-amplifier or power amplifier, thereby avoiding distortion and hum.

4. AC RECEPTACLES (A) (B) (C)

There are three AC receptacles located on the rear of the chassis. The lower round receptacle (A) is for connection of the main power cord. The other two rectangular receptacles (B) (C), designated "POWER OUTPUT", are for convenient power connection of other components. The left receptacle (B), designated "UNSWITCHED", is a direct connector and is "hot" even though the power switch to the Model 600 is off.

The right receptacle (C), designated "SWITCHED", is for convenient connection of large power consuming units such as a power amplifier. It is operative only when the power switch and automatic shut-off switch of the Model 600 are "ON". This receptacle will handle an AC load of up to 300 watt consumption.

5. FUSE RECEPTACLE (D)

Located on the extreme right rear of the chassis, the fuse holder

accommodates a 2 amp. fuse of the normal or "slow blow" variety.

6. BINAURAL MONITOR (E)

BINAURAL MONITOR Jack (E) is located on the right of the silver front panel and designated "BINAURAL MONITOR".

This output is used for stereo earphone monitoring of recording or playback.

For proper results, use a high impedance stereo headset, such as Sony Model DR-1C.

7. AUXILIARY RECORD PLAYBACK CONNECTOR (F)

(DIN® CONNECTOR)

This is the 5-pin socket located on the lower left rear of the chassis and designated AUX. REC/PB directly above the connector. This socket is an optional feature and is used for the interconnection of the Model 600 high level inputs and line outputs with outside pre-amp amplifiers utilizing the special Sony connector cable, RC-2, that is available as an accessory. (Deutsche Industrie Normen)

NOTE: 1. In applying the Sony RC-2 connector cable, the external pre-amplifier or power amplifier must be equipped with the corresponding 5-pin connector.

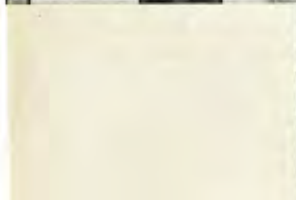
2. Recording level (volume) can be adjusted only by the MICROPHONE INPUT VOLUME CONTROLS of the Model 600 in record mode without relation to sound volume of the external amplifiers.
3. Playback level of the Model 600 can be adjusted only by the volume controls of the external amplifier without relation to sound volume of the Model 600.

Tape Loading Procedure

For Horizontal Operation

The Model 600 accommodates reel sizes from 3" to 7" in diameter. Reels of the same size are recommended for use to obtain optimum performance. Loading and threading is the same for all sizes.

1. Place take-up reel **2** on the right spindle **1**. Rotate until the three spindle spokes engage with the corresponding slots of the take-up reel.
2. Place reel of tape **1** on the left spindle **2** and engage as described in Step 1.
3. Unwind approximately 1 1/2 feet of the tape or leader from the full reel.
4. Hold the unwound portion of the tape (leader) loosely with shiny surface to the outside. Insert the leader from left to right through the head cover slot. Direct the left side of the tape into the tape guide on the left side of the head cover **3** and between the capstan **4** and the pinch roller **5** on the right side of the head cover **3**. (See photo.)
5. Wrap leader around the hub of take-up reel **2**, or insert the end into the slot provided on the reel.
Tape is now ready for playing or recording.



For Vertical Operation

The Model 600 accommodates reel sizes from 3" to 7" in diameter. Reels of the same size are recommended for use to obtain optimum performance. Loading and threading is the same for all sizes.

1. Place take-up reel ② on the right spindle ③. Rotate until the three spindle spokes engage with the corresponding slots of the take-up reel ②.
2. Place reel of tape ① on the left spindle ④ and follow the same procedure as described in Step 1.
3. Unwind approximately 2 feet of the tape or leader from the full reel.
4. Wrap the leader around the hub of take-up reel ② or insert the end into the slot provided on the reel. Take up slack tape with the take-up reel ② until there is a loop from one reel to the other which extends about 1 inch below the head cover.
5. Install special snap on the rubber reel caps which are furnished.
6. Insert the loop of tape into the head cover slot. Direct the left side of the tape onto the tape guide track on the left side of the head cover ①.

While holding the tape against the tape guide track with the left forefinger, guide the tape between the capstan ⑤ and the pinch roller ⑥ and take up whatever slack remains by rotating the take-up reel ② counterclockwise. Tape is now ready for playing or recording.

NOTE: Do not use the rubber reel caps when the recorder is in Horizontal position.

They are for use in Vertical position only.



Complete Recording and Playback Procedure

NOTE: In all recording modes the erase head will pre-erase the tracks for the corresponding tracks of the recording head. Erasure only occurs when the RECORD BUTTON **1** is down.

4-TRACK STEREO RECORDING

1. Select desired speed.
2. Connect stereo source to proper inputs on CH-1 and CH-2.
3. Thread tape.
4. Set MONITOR SWITCHES **7** on SOURCE position and adjust proper INPUT VOLUME controls **10** **11** for desired recording level.
(See VU meters page 5.)
5. Keep RECORD BUTTONS depressed and turn FORWARD/STOP/REWIND knob **20** to FORWARD position. Record button **1** will remain down until mechanism is returned to STOP position.
6. When end of tape is reached do not rewind. You will have recorded two tracks on the upper portion of each half of the tape. To record the other two tracks on the lower portion of each half of the tape, proceed with the following.
7. Reverse reels (loaded take-up reel is inverted and placed on the feed spindle **2** and empty reel is placed on the take-up spindle **3**).
8. Repeat operations 4 and 5.
9. When end of tape is now reached, you will have recorded 2 stereo tracks in each direction.

4-TRACK STEREO PLAYBACK

1. Set TAPE SPEED Selector at the recommended speed of the pre-recorded tape, and set MONITOR switches **7** on TAPE position.
2. Thread 4-track pre-recorded tape and turn FORWARD/STOP/REWIND Selector **20** to FORWARD position.
3. Adjust OUTPUT VOLUME controls **12** **13** for desired volume and stereo balance.
4. When end of tape is reached, do not rewind. Reverse reels and repeat operations 2 and 3 to play side 2 of the tape.

NOTE: The use of an external amplifier/speaker system is necessary for the Model 600 to accomplish both stereophonic and monophonic reproduction. (See LINE OUTPUTS page 7.) The BINAURAL MONITOR jack is, however, ready for complete stereophonic reproduction with a high impedance stereo headset for private listening, instantly.

4-TRACK MONOPHONIC RECORDING

NOTE: The use of pre-erased or bulk erased tape is necessary for 4-track monophonic recording.

PROCEDURE

1. Connect monophonic source (microphone, tuner, TV, etc.) to CH-1 input for source used.
2. Turn all CH-2 level controls to Zero position.
3. Set CH-1 MONITOR switch on SOURCE, and adjust recording level on CH-1. Keeping RECORD BUTTON depressed, place the mechanism in motion to proceed with recording.

4. When end of tape is reached, do not rewind the tape. Remove both reels and reverse them. The loaded take-up reel will be inverted and placed on the feed spindle, and the empty reel will be placed on the take-up spindle.
5. Repeat operations 1 through 3.
6. When end of tape is again reached, do not rewind. You will now have recorded 2 monophonic tracks.
7. Change source connection from CH-1 to CH-2.
8. Turn all CH-1 level controls to Zero position.
9. Set CH-2 MONITOR switch on SOURCE and adjust recording level on CH-2 and proceed with recording.
10. When end of tape is reached, do not rewind. Reverse reels and repeat operation 9.
When end of tape is now reached, you will have recorded four separate monophonic tracks.

NOTE: Playback sequence of each track should conform to the sequence of recording, i. e.

Playback

- 1st recorded track (Track 1) CH-1
- 2nd recorded track (Track 4) CH-1
- 3rd recorded track (Track 3) CH-2
- 4th recorded track (Track 2) CH-2

PROCEDURE FOR "MIX" RECORDING

As described on page 4, the feature of separate level controls for microphone and auxiliary inputs permits you to simultaneously record with microphones and other sources such as AM/FM tuners, stereo discs or TV.

PROCEDURE (The use of a headset is necessary for "mixed" source recording.)

1. Connect microphones and other source to proper inputs.
2. Using the VU meters for indication, adjust the recording level of the predominant source desired (for example: if recording a narration or solo performance, and a musical background is desired, the microphone would be the predominant source. If recording from a tuner or stereo disc and narration is secondary, the predominant source would be the auxiliary input).
3. After adjusting desired recording level of predominant source, adjust volume control of secondary source until desired balance of both sources is audible through the headset connected to LINE OUTPUT (1) or BINAURAL MONITOR (2).
4. You are now ready to proceed with recording.

NOTE: (1) Mixing can be utilized for both Stereo and Monophonic recording.

- (2) It is impossible to mix auxiliary input and microphone input when MAG. CARTRIDGE/AUX. switch (3) is set in MAG. CARTRIDGE position. (See page 6.)

Sound-on-Sound Recording

The Model 600 is equipped to produce high quality professional "Sound-on-Sound" composite recordings. A small amount of practice with the following procedures will enable the user to become expert in the many fascinating uses of "Sound-on-Sound" facilities.

PROCEDURE

1. Connect the recording source (Microphone, tuner, TV, etc.) to the proper input jack for CH-2.
2. Turn all four CH-1 input and output volume controls to Zero position.
3. Set both CH-1 and CH-2 MONITOR switches to SOURCE.
4. Adjust the input level of CH-2 by seeing the level meter of CH-2.
5. Plug the headset into BINAURAL MONITOR jack **10**. Adjust CH-2 monitor output to the desired volume.
6. Keeping CH-2 RECORD button depressed, place the mechanism in motion to proceed with recording. Make the first recording on CH-2.
7. Rewind the tape to the beginning of the first recording.
8. Connect between jacks "LINE OUT CH-2" and "AUX. INPUT CH-1" located on the rear of the chassis, with connecting cord. (Sony accessory cord RK-55)
9. Set the CH-2 monitor switch to "TAPE"
10. Set LINE OUTPUT switch **11** to "ON". Set CH-2 line output volume control knob on approximately Number 7 on the dial and start the tape in playback mode. Turn the CH-1 AUX. input volume control knob and adjust CH-1 recording level

according to the level meter of CH-1.

11. Adjust CH-1 monitoring output volume by turning CH-1 MONITOR volume control knob. On finishing the adjustment, the CH-2 MONITOR volume position should be almost the same as CH-1 position.
 12. Plug the microphone into CH-1 and adjust MIC input level of CH-1 by seeing the level meter of CH-1. Keeping CH-1 RECORD button depressed, place the mechanism in normal forward motion; then sound-on-sound recording will be obtained on CH-1.
- NOTE: In case that considerable difference between the levels of first recorded source and second input source, adjust the input volume **10** **11** and not the MONITOR volume control knobs **10**.
13. Rewind the tape again and play back the composite recording on CH-1.

NOTE: (1) If the above procedure is made additionally the third source can be recorded on already mixed material from CH-1 to CH-2.

(2) "Sound-on-Sound" recording on the tape of CH-2 from the recorded tape of CH-1 can be made in the same procedure as described above.

(3) The Model 600 will pre-erase whichever channel is activated on the RECORD button **8**; therefore, if CH-1 pre-recorded material is to be preserved, use only CH-2 RECORD button when in RECORD mode. If CH-2 pre-recorded material is to be preserved, use only CH-1 RECORD button when in RECORD mode.


Tape Teaching

The Model 600 provides facilities to play back one track while the other track is being recorded. This exclusive feature enables the language student to listen to a pre-recorded lesson on one track while repeating and recording the same onto the other track. Both tracks can later be played back separately or simultaneously for comparison.

Master Recording

- (1) Connect Microphone to Jack "MICROPHONE CH-1" (in case of recording from radio or other sources, connect to Jack "AUX. INPUT CH-1"), and record teacher's master on CH-1 by pressing "CH-1 RECORD BUTTON".
(cf. 4-TRACK MONOPHONIC RECORDING PROCEDURE)

Practice Recording

- (2) Rewind the tape back to the beginning of the master recording. Connect a stereo headset to "BINAURAL MONITOR" Jack .
- (3) Change the microphone input connection from "MIC. CH-1" to "MIC. CH-2". Set CH-1 MONITOR switch to "TAPE".
- (4) Press CH-2 RECORD button and record your practice on CH-2 by repeating the master recording which is heard through the stereo headset.

Simultaneous Playback

- (5) Rewind the tape again. Without pressing the Record Button, play back the tape. The master recording and the practice recording will then be heard simultaneously. In the above method, the master and the practice recordings are made separately on different channels, so that the practice material can be repeatedly recorded without damaging the master recording.

Adaptation to the Local Power Line

AC VOLTAGE SELECTOR

The black round selector cap located on the bottom of the Model 600 cabinet selects the operating AC power line voltage of either 100, 110, 117, 125, 220 or 240 volts. It is designated in white letters "AC VOLTAGE SELECTOR" on the lid.

TO OPERATE

Check whether or not the Model 600 is set for the operating AC voltage identical to your local power line voltage.

To reset the Voltage Selector, pull out the black selector cap. Then, firmly insert the three-prong selector cap to the Voltage Selector socket with the correct voltage figure appearing in the cutout of the selector cap.

NOTE: Check the Model 600 operating voltage with the local AC power line voltage every time the recorder is moved to the different power line system area. The checking and resetting of the selector must be done before connecting the Model 600 to the AC power line.

AC FREQUENCY SWITCH

The small switch located below the fuse receptacle on extreme right of the chassis selects the operating AC power line frequency of either 50 or 60 cps for the motor. It is designated "50" and "60".

TO OPERATE

Check whether or not the Model 600 is set for the operating AC frequency identical to your local power line frequency.

To reset the Frequency Switch, turn the switch with a screwdriver counterclockwise to the 60 cps position.

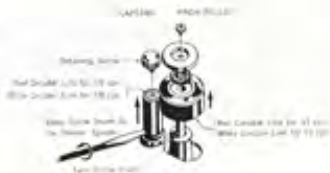
clockwise to the 50 cps position.

- NOTE:**
1. Identify the Model 600 operating AC frequency with the local AC power line frequency every time the Model 600 is moved to the different power line system area. The checking and the resetting of the switch must be done before connecting the Model 600 to the AC power line.
 2. The Frequency Switch selects only the operating AC frequency for the motor. When the Frequency Switch is reset, Capstan and Pinch Roller also must be replaced with correct ones. The Capstan and the Pinch Roller for 60 cps are inscribed with WHITE circular lines on the top and bottom surfaces respectively. The circular lines are RED on the Capstan and the Pinch Roller for 50 cps.

60 cps position



50 cps position



Maintenance

CLEANING HEADS

A clean contact between heads and tape is important for optimum performance. Recording companies customarily clean heads before each recording. Generally, cleaning heads after every 10 hours of use will be sufficient.

TO CLEAN





Take a piece of soft, clean fabric or Q-Tip; dampen with denatured alcohol and carefully wipe the portion of the heads over which the tape travels. The same procedure is recommended for cleaning the capstan and pinch roller surfaces. This prevents oxide deposits from causing wow and flutter.



DEMAGNETIZING HEADS

Through continuous use, the varying magnetic fields will gradually build up a residual magnetism on the gap of the head. Excess of residual magnetism on the head will produce noise on tape being played. Therefore, it is advisable to demagnetize the head from time to time. The periodic use of any popular head demagnetizer is recommended for the best signal-to-noise results.

Lubrication Chart

Parts to lubricate	Quantity of oil	Type of oil	Remarks	Figures
Capstan bearings	3 drops once a month	light machine oil	Don't stain Capstan surface.	
Pinch roller bearings	1 drop once a month	light machine oil	Don't stain rubber surface.	
Reel shafts	1 drop once a month	light machine oil		
idler shafts	1 drop once a month	light machine oil	Remove top cover panel to gain access.	

- NOTE:
- (1) Avoid excessive lubrication. It will cause slippage in the mechanism and contamination of your tape.
 - (2) If stalling occurs in FAST FORWARD motion, clean each rubber idler wheel under the top panel with a soft cloth moistened with denatured alcohol.

Technical Specifications

Power Requirement: 100V, 110V, 117V, 125V, 220V or 240V
80 watts, 50/60 cycles

Tape Speeds: Instantaneous selection 7 1/2 ips or 3 1/2 ips
(19 or 9.5 centimeters per second)

Frequency Response: 30-18,000 cps at 7 1/2 ips
±2 db 50-15,000 cps at 7 1/2 ips
30-13,000 cps at 3 1/2 ips

Signal-to-Noise Ratio: Better than 50 db
(Per Channel)

Flutter and Wow: Less than 0.15% at 7 1/2 ips
Less than 0.20% at 3 1/2 ips

Harmonic Distortion: 1.5% at 0 db line output

Erase Head: In-line (stacked) quarter track, EF18-2902

Record Head: In-line (stacked) quarter track, RP30-2902

Playback Head: In-line (stacked) quarter track, PF30-4202L

Bias Frequency: Approx. 100 Kc

Level Indication: Two VU meters (calibrated to 0 db at
12 db below saturation)

Input: Low impedance microphone inputs—Transistorized (will accommodate any Microphone from 250 to 1K ohm impedance.)

Sensitivity -72 db

High impedance auxiliary inputs

Sensitivity 0.15V

Output: High impedance line outputs (max. 1.5V)

Binaural monitor output

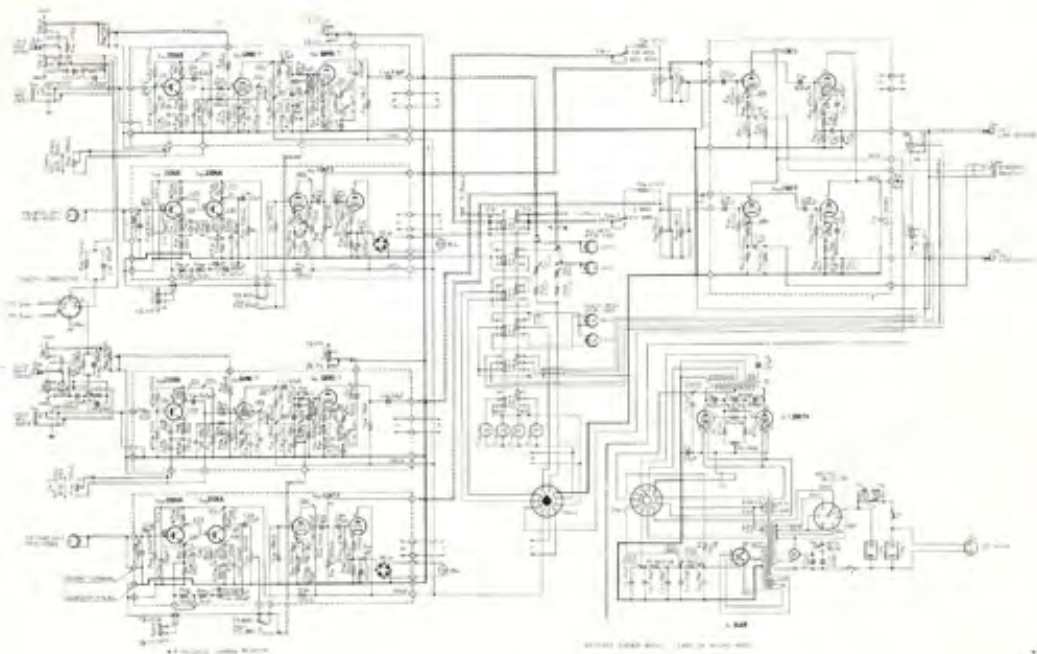
Tube Complement: 2-6AN8, 4-12AT7, 1-12BH7A, 1-6CA4

Transistors: 6-2SD64

Weight: Approx. 48 pounds (22kg)

Dimensions: 16 1/2" W × 18 1/2" D × 10 1/2" H
(423W × 461D × 272H mm)

Schematic Diagram



Recommended Accessories



Plug Adaptor, PC-1

Use when the jack on the tape recorder is of a miniature size, while you want to make a connection with the standard phono plug.



Plug Adaptor, PC-2

Use when the jack on the tape recorder is of the standard, while you want to make a connection with a miniature size plug.



Microphone Mixer, MX-600

3-channel, 600 ohm MIC and/or LINE INPUT mixer with independent volume controls for each channel.



Extension Cord, EC-5M, -10M, -25M (EC-5M 15 meter long), EC-10M (10 meter long), EC-25M (25 meter long) Series of microphone cords for extension of microphone.



SONY REC.PB Cord, RC-2

Connecting cord with 5-pin connector for recording from or reproducing through a Hi-Fi amplifier.



Telephone Pick-up, TP-45

For recording of telephone conversation on tape.

SONY CORP. TOKYO JAPAN