

# SONY STEREO TAPECORDER TC-155

OWNER'S INSTRUCTION MANUAL



## TABLE OF CONTENTS

The SONY Model TC-155 is a beautifully designed and compact Solid State Stereo Tape Deck for playing 4-track stereo or monophonic tapes.

Neatly mounted in walnut finish base. This model is a most effective component to compliment your high fidelity sound system.

Read this Instruction Manual carefully before operating and save it for future reference.

### Features:

The 4-track Stereophonic and Monophonic Tape Playing Deck uses a low noise preamplifier of all silicon transistors.

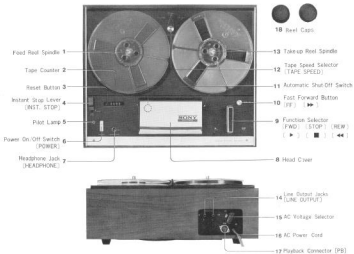
Three speed operation, Automatic Shut-Off Switch, four digit Tape Counter, Headphone Jack, AC Voltage Selector, and Playback Connector are provided.

The recorder can be placed in either horizontal or vertical position.

Diagram of Controls .....	1
Operation of Controls .....	2
How to Play Back Pre-recorded Tape Programs .....	3
Connections	
Tape Threading	
To Play Back 4-track Stereo Tape	
To Play Back 4-track Monophonic Tape	
Monitoring	
How to Mount the Tape Deck .....	5
Mounting Dimensions .....	6
Splicing Tape .....	6
Adaptation to the Local Power Line .....	7
To Change Motor Pulley	
To Change Tapping of the Motor Capacitor Terminal	
Notes .....	8
Maintenance .....	8
Cleaning the Head	
Demagnetizing the Head	
Lubrication .....	9
Specifications .....	9
Schematic Diagram .....	10
Optional Accessories .....	11

## DIAGRAM OF CONTROLS

Refer to "Operation of Controls" on page 2~3.



Before connecting the set to the AC power line, be sure to check whether the deck is set for operating AC voltage and line frequency identical to the local power supply in your area.

## OPERATION OF CONTROLS

### 1 Feed Reel Spindle

Place a full reel of tape on this spindle.

### 2 Tape Counter

Indicates the amount of tape played.

### 3 Reset Button (Tape Counter)

Located at the left side of the Tape Counter. To reset the Tape Counter, push this button; four zeros (0000) will then appear on the counter.

### 4 Instant Stop Lever (INST. STOP)

To stop tape motion instantly.

Pull the lever toward you (▼), the lever will then be locked (LOCK) and tape motion will instantly stop. To start the tape in motion again, press the lever slightly downward.

Note: \* This lever is functional only when the Function Selector is placed in Forward (▶) position.

\* If the Function Selector is placed in Stop (■) position while the Instant Stop Lever is locked, the lever will be released automatically.

### 5 Pilot Lamp

Located at the left side of the Power On/Off Switch. When the set is turned on, the green lamp will light.

### 6 Power On/Off Switch (POWER)

To turn the recorder on (■) or off.

### 7 Headphone Jack (HEADPHONE)

This jack has 8Ω impedance.

To monitor the program being played back, plug the SONY Headphone DR-4A or DR-5A (optional accessory) into the Headphone Jack. The line output level of this jack is always constant.

### 8 Head Cover

To protect the head.

### 9 Function Selector (FWD) (STOP) (REW)

(▶) (■) (◀)

All tape motions are controlled by the Function Selector.

(FWD) position

To move the tape at normal speed, turn the selector to (▶) position.

(STOP) position

To stop tape motion, turn the selector to (■) position.

(REW) position

To rewind the tape, turn the selector to (◀) position.



### 10 Fast Forward Button (FF) (▶▶)

For fast forward tape motion, turn the Function Selector to Forward (▶) position while holding the Fast Forward Button (▶▶) down.

### 11 Automatic Shut-Off Switch

This switch is controlled by a wire lever located under the Head Cover. In Stop (■) position, the shut-off switch recedes into a slot to facilitate easy tape threading. After tape is threaded and the mechanism is placed in either Forward,

(▶), Fast Forward (▶▶) or Rewind (◀) mode, the lever contacts the tape and is held in this position.

At such time as the tape either runs out or breaks, the lever will automatically fall forward and activate a micro switch which stops tape motion; however, the power switch remains on and should be turned off if the recorder is to be left inactive for an extended period of time.



### 12 Tape Speed Selector (TAPE SPEED)

To select the desired tape speed of either 19 cm/s (7½ ips.), 9.5 cm/s (3¾ ips.) or 4.8 cm/s (1½ ips.)

Set this selector to the tape speed with corresponds with the prerecorded tape speed.

### 13 Take-up Reel Spindle

Place an empty reel of tape on this spindle.

### 14 Line Output Jacks (LINE OUT)

The Line Output Jacks have an output level of 0.775V and the most suitable load impedance is 100Ω.

## HOW TO PLAY BACK PRERECORDED TAPE PROGRAMS

Connect these jacks to the recorder inputs, line inputs, or auxiliary input jacks of an integrated stereo amplifier or other component (containing power amplifiers) using the supplied connecting cord RK-74.

For duplication of prerecorded tapes, connect the Line Output Jacks to the auxiliary (tuner) input jacks of another tape recorder.

### 15 AC Voltage Selector

Located near the Line Output Jacks, the AC Voltage Selector selects the operating AC power line voltage of either 100, 110, 117, 125, 220 or 240 volts.

Before operating, check whether or not the recorder is set for the operating AC voltage identical to your local power line voltage. If the resetting of the voltage selector is necessary, pull out the round selector cap and firmly reinsert it to the AC Voltage Selector with the proper voltage figure appearing in the output selector cap.

### 16 AC Power Cord

### 17 Playback Connector (PB)

Connect the Playback Connector to the matching connector of an integrated stereo amplifier to listen to the prerecorded tape programs.

Use a single cable SONY connector cable RC-2 (optional accessory) for connection.

### 18 Reel Caps

Hold the reels for vertical use.

### Connections

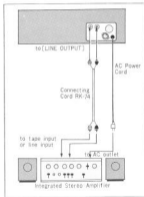
#### With the use of the Line Output Jacks

Connect the Line Output Jacks of the tape deck to tape input, line input or auxiliary input jacks of an integrated stereo amplifier or other component (containing power amplifier) using the supplied connecting cord RK-74.

#### With the use of the Playback Connector

Connect the Playback Connector to the matching connector of an integrated stereo amplifier using a SONY connector cable RC-2 (optional accessory).

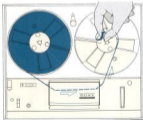
Plug in the AC Power Cord to an outlet of the household power line or an AC outlet of the connected stereo amplifier. Turn the Power On/Off Switch to (●) position, the Pilot Lamp will then light.



## Tape Threading

1. Place a full reel of tape on the Feed Reel Spindle with side (I) up and an empty reel on the Take-up Reel Spindle.
2. Draw the leader of tape from the full reel of tape and thread the tape through the tape path of the Head Cover. Wrap it around the hub of the empty Take-up Reel.

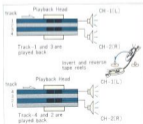
**Note:** When the deck is used in vertical position, place the supplied Reel Caps on the spindles to hold the tape reels firmly in position.



## To Play Back 4-track Stereo Tape

1. Set the tape speed by turning the Tape Speed Selector to correspond with the pre-recorded tape speed.
2. Set the Tape Counter to (0000) by pushing the Reset Button.
3. Turn the Function Selector to Forward (▶) position.
4. Adjust volume and tone on the connected stereo amplifier for your listening preference.

**Note:** To listen to a desired position of a pre-recorded program, turn the Function Selector to Stop (■) position, then turn it again to Rewind (◀◀) position or to Forward (▶) position by pushing the Fast Forward Button (▶▶) until the desired position is reached. The figures on the Tape Counter will help to catalogue and relocate the desired position.



## To Play Back 4-track Monophonic Tape

The following playback procedure is recommended for monophonic tape with a recorded sequence of: track-1, track-4, track-3, track-2.

1. Place a full reel of tape on the Reel Feed Spindle with side (I) up.
2. Repeat the operation of steps 1, 2 and 3 of the section "To Play Back 4-track Stereo Tape".

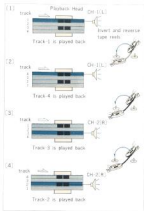
**Note:** Adjust volume and tone of the connected amplifier to reproduce the left channel (CH-1) sound.

3. When the end of the tape is reached, do not rewind the tape.
4. Invert and reverse the tape reels to play back track-4.
5. Repeat the operation of steps 1, 2 and 3.
6. Invert and reverse the tape reels to play back track-3.
7. Adjust volume and tone of the connected amplifier to reproduce the right channel (CH-2) sound.
8. Repeat the operation of steps 2 and 3.
9. Invert and reverse the tape reels to play back track-2.
10. Repeat the operation of steps 2 and 7.
11. When the sequence is finished, turn the Function Selector to Stop (■) position.

## Monitoring

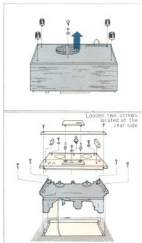
For private listening of tape programs, plug the SONY Stereo Headphone DR-4A or DR-5A, 8Ω (optional accessory) into the Headphone Jack.

## HOW TO MOUNT THE TAPE DECK



The model TC-155 can be placed in either horizontal or vertical position.

1. Cut hole of 342 x 276 mm (13 1/2 x 10 7/8 inches) in desired mounting location.
2. Remove the deck from the wooden base by unscrewing four rubber legs and the screw located near the ventilation grill from the bottom of the wooden base.
3. Remove the Head Cover and Function Selector by removing the screws located on the rear of each respectively, then remove the Tape Speed Selector, Instant Stop Lever and the seven screws from the top panel of the deck.
4. Lift up the panel.
5. Mount the deck in new location and fasten with four wood screws.
6. Place the top panel on top of the deck and replace the parts which were removed in step 3.





## ADAPTATION TO THE LOCAL POWER LINE

The recorder can be set for operating on an AC power line voltage by resetting the AC Voltage Selector. Refer to "Operation of Controls" on page 2. And if the line frequency differs from what the recorder is adjusted for, the Motor Pulley and tapping of the Motor Capacitor Terminals must be altered.

### To Change Motor Pulley

Remove the top cover panel as described in "How to Mount the Tape Deck" on page 5. The Motor Pulley is located at the center of the drive mechanism. Remove the rubber belt from the idler wheel and the Motor Pulley. Loosen the screw on the Motor Pulley and remove it by holding the idler wheel on one side. Replace the other Motor Pulley supplied with the recorder and tighten the screw. Thread the rubber belt on the Motor Pulley and the idler wheel and then, place the top cover panel.

### To Change Tapping of the Motor Capacitor Terminals

The Motor Capacitor is located at the rear side of the drive mechanism. Loosen four rubber legs and the screw located near the ventilation grill and remove the cabinet. Change the tapping of the terminals by soldering as illustrated.




50Hz



60Hz



## NOTES

1. Keep the tape deck away from an extremely hot place.
2. Do not place the deck on a soft surface. Obstruction of the ventilation grill located on the bottom of the deck will result in a detrimental heat rise inside the deck.
3. When the tape deck is placed in vertical position, put the supplied *Reel Caps* on the spindles.
4. Keep the head clean. Deposits of oxide and dust on the head prevents perfect playback.
5. When the set is not in use, make sure to place the Function Selector to Stop  position. Dust Protector DP-155 designed for this set is available as an optional accessory.
6. To arrange the connecting cords when the set is used in vertical position, pass the cords through the cut located at the bottom of the recorder.

### Note on the supplied Non-skid Pads.

It is helpful to use the supplied Non-skid Pads when setting the TC-155 vertically on a smooth surface; peel off the small paper posted on the adhesive side of the pads, then attach it at the bottom of the cabinet.

## MAINTENANCE

### Cleaning the Head

Intimate contact between the head and tape is important for optimum performance. Generally, cleaning the head after every ten hours of use will be sufficient.

Take the supplied Head Cleaning Tip and carefully wipe the portion of the head over which the tape travels.

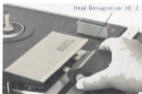
Note: In case the deposits on the head cannot be removed, dampen the head cleaning tip with denatured alcohol and repeat the cleaning.

The same procedure is recommended for cleaning the Capstan and Pinch Roller surfaces.



### Demagnetizing the Head

Through continuous use, residual magnetism will gradually be built up on the head and the excessive residual magnetism will produce noise while the tape is being played. Therefore, periodic use of the SONY Head Demagnetizer HE-2 (optional accessory) or equivalent is recommended for best possible performance.



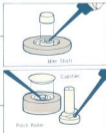
## LUBRICATION

Use light machine oil and lubricate Capstan, Pinch Roller and Idler Shafts every 6 months as illustrated.

Avoid excessive lubrication. It will cause slippage in the mechanism and contamination of your tape. Remove the Head Cover by loosening the screws located at the rear side of the Head Cover.

Remove the Function Selector, Tape Speed Selector, Instant Stop Lever and seven screws from the top panel of the recorder and lift up the panel.

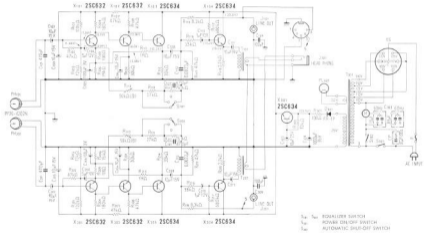
Lubricate the Capstan with 3 drops, and the Pinch Roller and the Idler Shafts with 1 drop each of light machine oil.



## SPECIFICATIONS

<b>Power requirements:</b>	25 watts, 50/60 Hz AC 100 V, 110 V, 117 V, 120 V, 220 V, 240 V
<b>Tape Speed:</b>	19 cm/s (7 1/2 ips), 9.5 cm/s (3 7/8 ips), 4.8 cm/s (1 7/8 ips) with automatic switching for equalization changes.
<b>Reels:</b>	17.8 cm (7") or smaller
<b>Frequency response:</b>	30 - 18,000 at 19 cm/s (7 1/2 ips) 50 - 15,000 $\pm$ 3 dB at 19 cm/s (7 1/2 ips)
<b>Signal to noise ratio:</b>	Better than 50 dB
<b>Flutter and wow:</b>	Less than 0.15% at 19 cm/s (7 1/2 ips) Less than 0.25% at 9.5 cm/s (3 7/8 ips)
<b>Fast forward and rewind time:</b>	Within 2 min. 30 sec. with 1200' tape
<b>Outputs:</b>	Line Output Jacks Output level 0 dB (0.775 V) Suitable load impedance 100 $\Omega$ Headphone Jack Impedance 8 $\Omega$ Playback Connector Output level -1 dB (0.7 V) Impedance 8.5 k $\Omega$
<b>Transistors:</b>	2SC682 $\times$ 4 2SC634 $\times$ 5
<b>Weight:</b>	8 kg (17 lb. 10 oz)
<b>Dimensions:</b>	390 W $\times$ 170 H $\times$ 315 D mm (15 3/8 W $\times$ 6 3/4 H $\times$ 12 3/8 D inch)
<b>Supplied Accessories:</b>	Connecting Cord RK-74 (1) Reel (1) Head Cleaning Tip (3) Reel Cap (2) Motor Pulley (1) Non-skid Pad (4)

# SCHEMATIC DIAGRAM



## OPTIONAL ACCESSORIES



### **Stereo Headphone DR-4A**

High quality dynamic Bohm headphone with a standard phone plug for private stereo listening.



### **Head Demagnetizer HE-2**

For quick and easy demagnetizing of the magnetic head to keep the recorder in the best reproducing condition.



### **Dust Protector DP-155**

Protects the recorder. Specially designed for TC-155.



### **Connector Cable RC-2**

Connector cable with 5-pin connector for reproducing the tape programs through an integrated amplifier (pre-amp/amplifier).