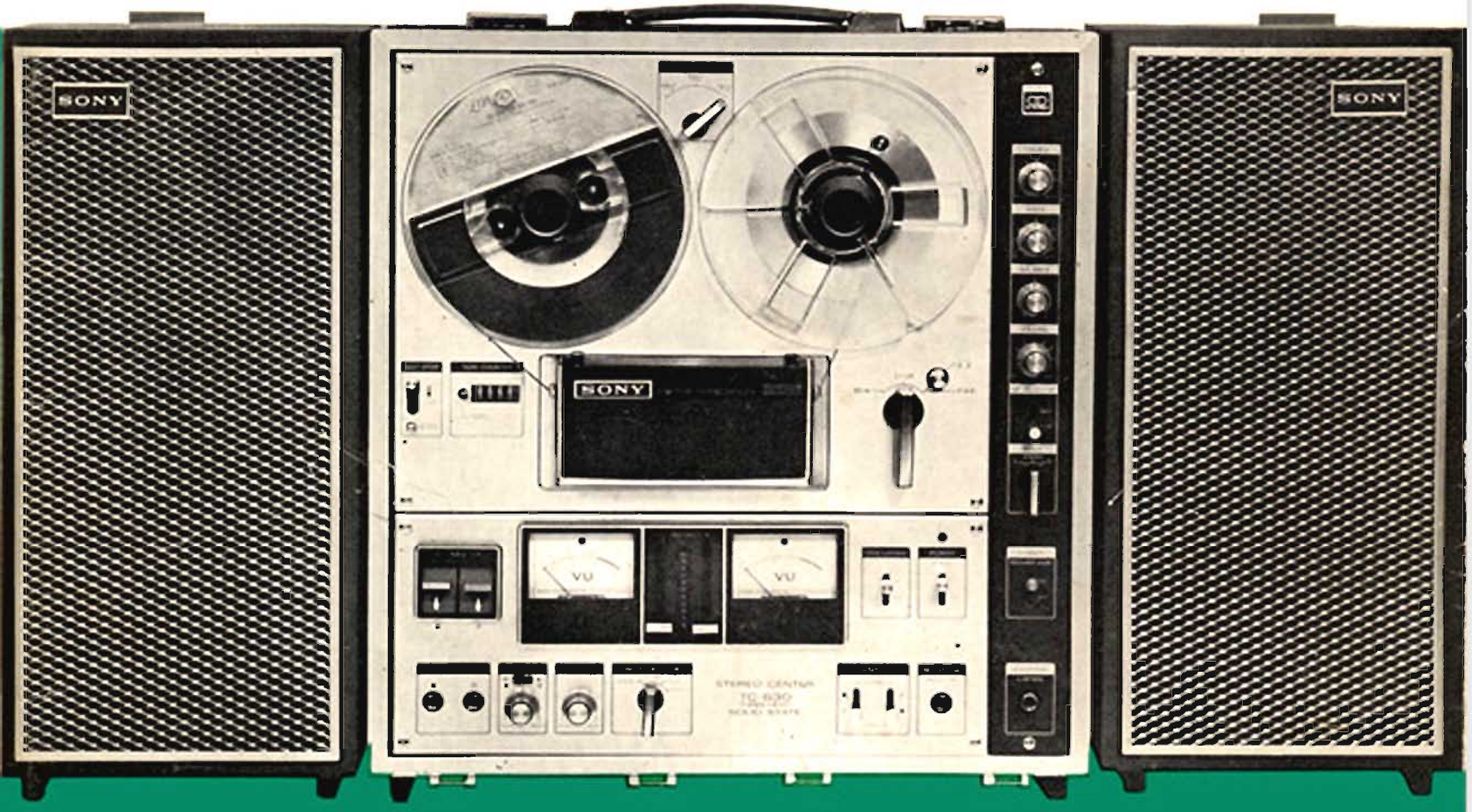
SONY

STEREO TAPECORDER TC-630

OWNER'S INSTRUCTION MANUAL/BEDIENUNGSANLEITUNG/MODE D'EMPLOI



INTRODUCTION

Welcome to the world of superb listening pleasure with your new SONY complete stereo music control center TC-630.

This compact, but incredibly powerful stereo music control center consists of an amplifier utilizing quality SONY silicon transistors, a precision three head tape deck and high performance speaker systems. Silicon transistors and selected power transistors assure lowest possible audio distortion and uniform gain characteristics throughout its operating ranges and also improve signal-to-noise ratio.

Four pairs of stereo inputs—phonograph, tuner, microphone and auxiliary—correspond to the settings of the source selector on the front panel. Line outputs and stereo headphone jacks are provided for versatility.

The tape transport mechanism is designed to provide flutter-free, stable tape drive either in vertical or horizontal operation. The symmetrically arranged slide volume levers and the precise VU meters will be convenient for record volume setting.

Other features are.....automatic sentinel shut-off device, retractable pinch roller for easy tape threading, instantaneous comparison of source and tape, noise suppressor for undesirable high frequency noise, sound-on-sound and echo effect for the professional recording techniques.

Before operating the set, read this manual thoroughly to become familiar with the features and the capabilities of the set. Keep this instruction booklet handy for future reference.

PRECAUTIONS

- Keep the TC-630 away from extreme heat or moisture. · Do not block the ventilation grille at the bottom of the set. Avoid any heavy mechanical shock.
- Keep the heads clean to get best possible performance of the recorder.
  For cleaning information, refer to pages 20-21.
- Be sure the SOUND-ON-SOUND CONTROL and the ECHO CONTROL are turned off when these recordings are not being made.

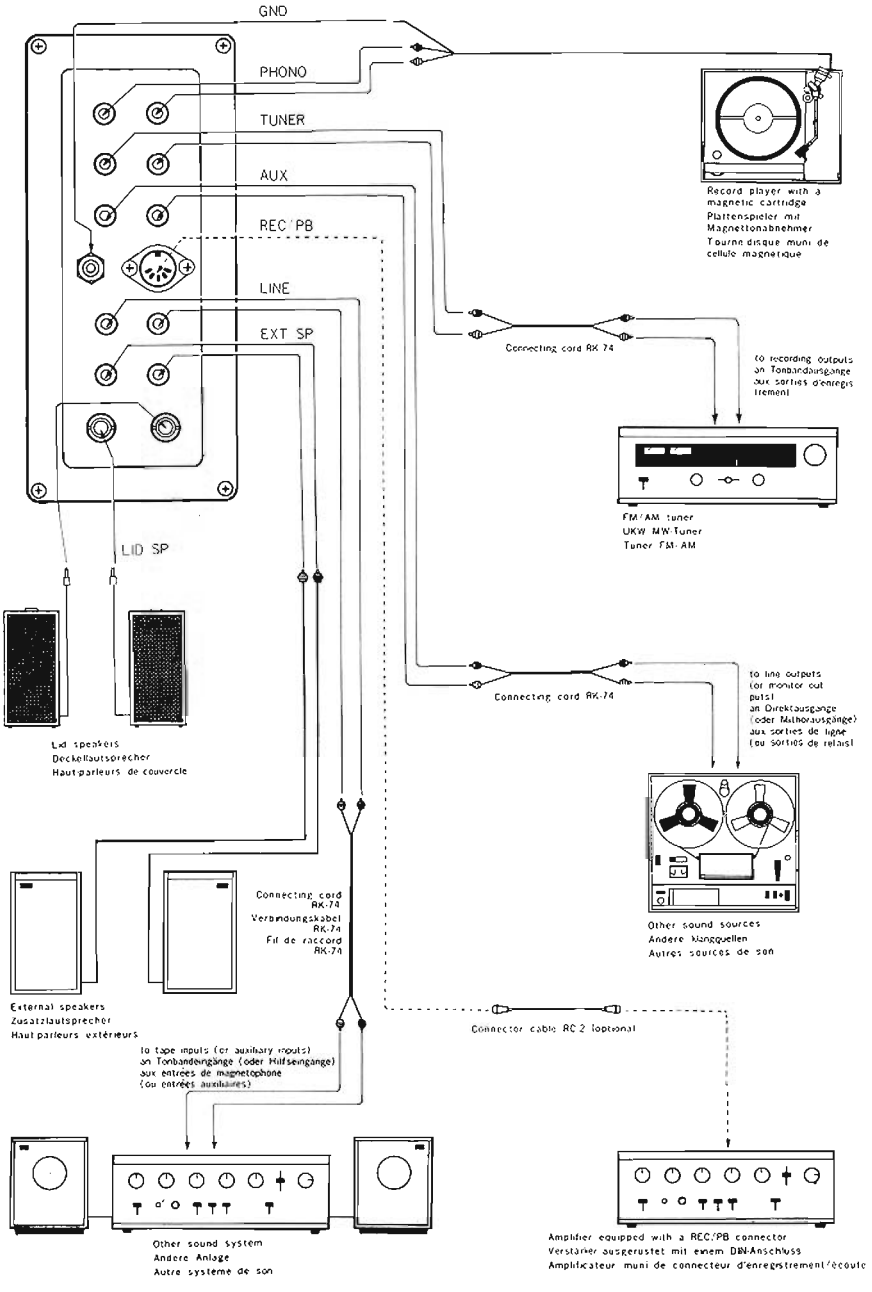
TABLE OF CONTENTS

Connections 2
Operation of controls 3
As a stereo center 6
  To reproduce phono, FM/AM or other auxiliary programs
  Balancing the speakers
Tape threading 6
Tape transport 7
Playback procedure 7
  Stereo playback
  Monophonic playback
Recording procedure 7
  Stereo recording
  Monophonic recording
  For language training
  Sound-on-sound recording
Erasing tape 10
Splicing tape 10
Owner's trouble shooting guide 11
Adaptation to your local power line 11
Maintenance 12
Technical specifications 13
Recommended accessories 14
SONY audio components 14
Schematic diagram .....attached

NOTES ON AC CONNECTION

The SONY Model TC-630 comes in two types.

1. For use in SWEDEN, FINLAND, DENMARK, NORWAY and SWITZERLAND
   In compliance with the safety rules of SEMKO (Sweden), FINKO (Finland), DEMKO (Denmark), NEMKO (Norway) and SEV (Switzerland), the set is fixed to operate on ac 220 V, 50 Hz power line. Do not attempt to move the Voltage Selector.
   The right-side connector panel has been changed as follows; equipped with a built-in ac power cord, 220 V fixed Voltage Selector. The set does not have an ac input and ac outlets. The fuse is equipped inside the set.
   Please remember these changes when referring all information about ac connection.
2. For use in OTHER COUNTRIES
   The set can be adjustable for operating on either ac 100, 110, 117, 125, 220 or 240 V and either 50 or 60 Hz.
   Before operating the set, check that the operating voltage and frequency of the TC-630 are correctly set to operate on your local power line. As to further instructions for this adjustment, see "Adaptation to your local power line" on page 19.



CONNECTIONS

The input and output connectors are arranged in pairs; the upper jacks marked (L) are for LEFT channel and the lower jacks marked (R) for RIGHT channel.

Phono inputs (PHONO) ㉗
Connect a record player equipped with a magnetic cartridge to these inputs. The maximum sensitivity of these inputs is 2 millivolts. These inputs are equalized for RIAA characteristics.

Tuner inputs (TUNER) ㉘
Connect an FM/AM tuner. These inputs have a maximum sensitivity of 60 millivolts and an input impedance of 100 k ohms. The frequency response is flat. The SONY FM Stereo Tuners ST-5000 or ST-5000 FW are recommended.

Auxiliary inputs (AUX) ㉙
Connect any external sound source which have an output level of at least 35 millivolts. The input impedance is higher than 100 k ohms and the frequency response is flat.

Line outputs (LINE) ㉚
Use these outputs for dubbing tape, or for reproducing programs through an external amplifier. The input impedance of the equipment connected to these outputs should be at least 100 k ohms. The output voltage of these outputs is 0.775 volt.

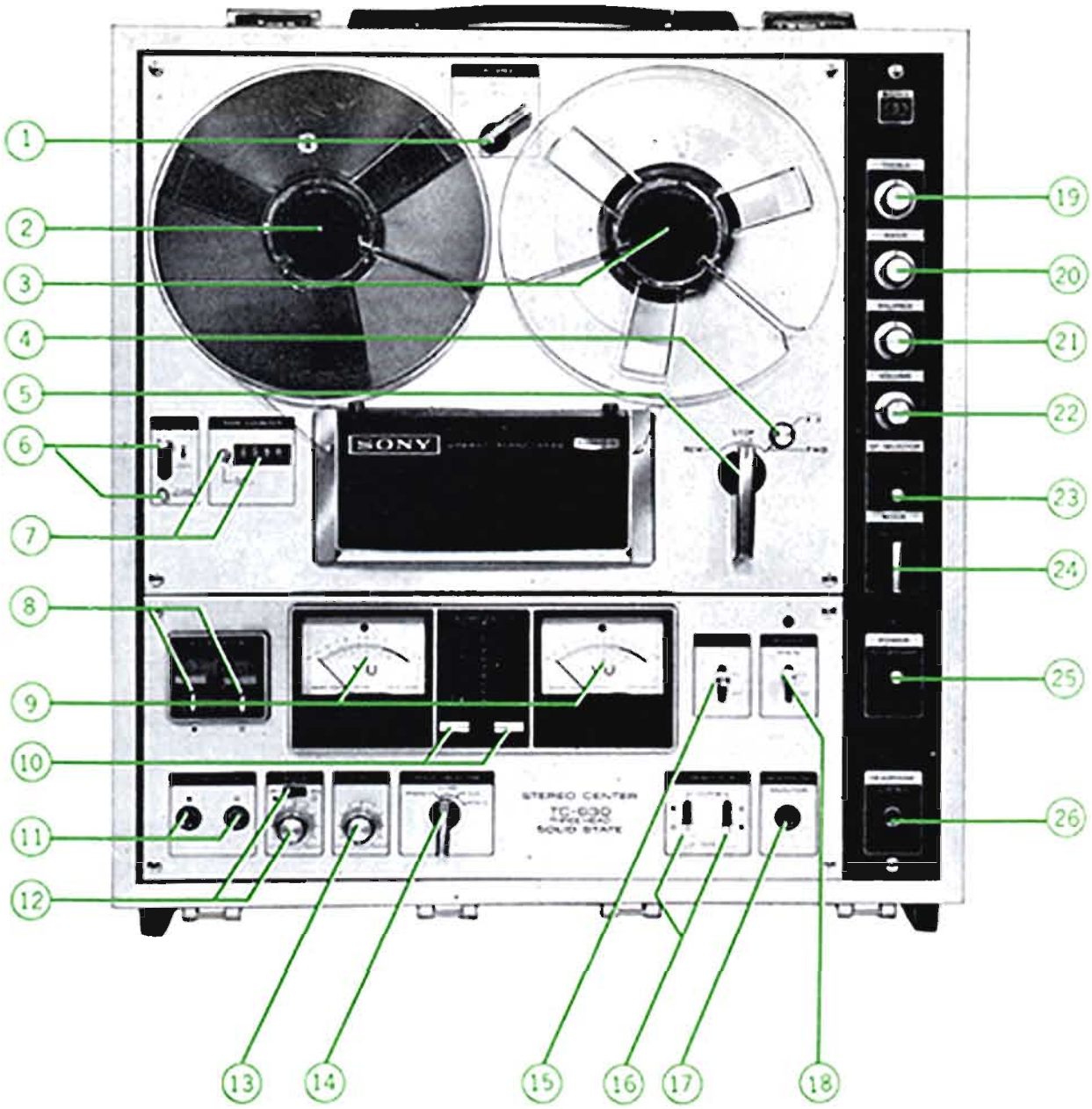
Speaker outputs (EXT SP) (LID SP) ㉜ ㉝
Connect the lid speakers to the LID SP connectors. The EXT SP connectors accept 8 ohm speakers: Either system can be selected by the SPEAKER SELECTOR on the front panel.

Record/playback connector (REC/PB) ㉛
If an amplifier has the same type connector as that on the TC-630, the record/playback connections can be made with a single cable, SONY Connector Cable RC-2 (optional).
To use the input of this connector, set the INPUT SELECTOR to the AUX position.
Note: Do not plug this connector and the AUXILIARY INPUTS simultaneously.

Ground terminal (GND) ㉞
Connect the ground wire of the turntable or other equipment of a sound system to this terminal. If residual hum is present, connect this terminal to a convenient external ground, or directly to earth.

Microphone inputs (MIC) ⑪
(located on the front panel)
These inputs accept microphone with impedance of less than 600 ohms and output levels of 0.2 millivolts or more.

LOCATION OF CONTROLS AND CONNECTORS



Tape transport panel

① Tape speed selector
② Supply reel spindle
③ Take-up reel spindle
④ Fast forward button
⑤ Function Selector
⑥ Instant stop lever and release button
⑦ Tape counter and reset button

Record amplifier panel

⑧ Record levers
⑨ Volume meters
⑩ Record volume controls
⑪ Microphone inputs
⑫ Sound-on-sound control and selector
⑬ Echo control
⑭ Input selector
⑮ Noise suppressor
⑯ Monitor selector
⑰ Headphone connector (monitor)
⑱ Main power switch

Power amplifier panel

⑲ Treble tone control
⑳ Bass tone control
㉑ Balance control
㉒ Volume control
㉓ Speaker Selector
㉔ Mode selector
㉕ Power-amp power switch
㉖ Headphone connector (listen)

Input and output connector panel

㉗ Phono inputs
㉘ Tuner inputs
㉙ Auxiliary inputs
㉚ Grounding terminal
㉛ Record/playback connector
㉜ Line outputs
㉝ External speaker outputs
㉞ Lid speaker outputs

Power connector panel

㉟ Frequency selector
* ㊱ Fuse post
* ㊲ Voltage selector
* ㊳ Ac outlets
* ㊴ Ac input

*The set available in SWEDEN, FINLAND, DENMARK, NORWAY and SWITZERLAND does not have those parts indicated No. ㊴, ㊲, ㊳ and ㊴.

Headphone outputs [HEADPHONE MONITOR] [HEADPHONE LISTEN] ⑰ ㉖ (on the front panel)
These outputs accept headphones of 8 ohms equipped with a standard binaural headphone plug.
Source monitoring and tape monitoring can be done by selecting the setting of the MONITOR SELECTOR.
The speakers remain live when the output marked MONITOR is connected.
At the output marked LISTEN, the sound quality of the headphone can be adjusted by the controls on the power amp panel MODE SELECTOR, VOLUME, BALANCE, BASS, TREBLE CONTROLS. When this output is connected, the speakers are automatically disconnected.

Ac input connector [POWER SUPPLY] ㉙*
Connect the TC-630 to your local power line.

Ac outlets [SWITCHED] [UNSWITCHED] ㉘*
Each outlet supplies ac power maximum 300 watts to another components such as turntable or other equipments of your sound system. The outlet marked SWITCHED is controlled by the front panel MAIN POWER SWITCH. The outlet marked UNSWITCHED is not controlled by the MAIN POWER SWITCH.

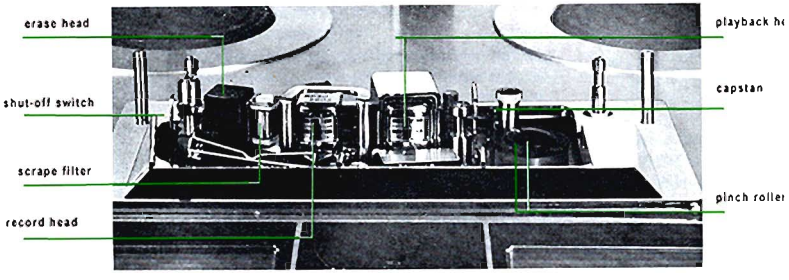
Instant stop lever and release button [INST STOP] ⑥
Instantly stops tape motion while the recorder is in either record or playback mode.
Pull the lever toward you until it locks into position. To release, press the release button, TC-630 will immediately return to the original operating mode.

Tape counter and reset button [TAPE COUNTER] ⑦
Indexes the tape used in record or playback. Press the reset button; four zeros will appear in the window to register starting point of tape.

Function selector [REW STOP FWD] ⑤
Controls all tape motion:
REW position ....to rewind the tape.
STOP position....to stop the tape.
FWD position ....to start the tape in either record or playback mode.

Fast forward button [FF] ④
While pressing this button, turn the FUNCTION SELECTOR to FWD position. This button will then be locked and the tape will rapidly move forward. To stop fast tape motion, turn the FUNCTION SELECTOR to STOP position.

head cover



Voltage selector ㉗*
Selects the operating ac power line voltage of 100, 110, 117, 125, 220 or 240 volts. For the adaptation to your local power line, refer to page 19.

Frequency selector [50~] [60~] ㉜
Selects the operating ac power line frequency. Refer to page 20.

Fuse post ㉕*
Contains a 2 ampere fuse.

*These parts (㉕, ㉗, ㉘, ㉙) are not equipped with the set available in SWEDEN, FINLAND, DENMARK, NORWAY and SWITZERLAND.

Scrape filter
Eliminates vibrations on the tape to assure flutter-free operation.

Capstan and pinch roller
Apply tape drive motion. For adaptation to your local power line, replace the capstan. For details, see page 19-20 'Adaptation to Your Local Power Line'.

Automatic shut-off switch
The automatic shut-off switch is activated by a wire lever under the head cover. When the tape is threaded, the lever contacts the tape and is held in operating position. If the tape runs out or breaks, the lever will fall forward and activates the shut-off switch which stops the tape transport. However, the amplifier section remains on.

Erase head
Erases previous recordings.

OPERATION OF CONTROLS

Tape transport section

Tape speed selector [TAPE SPEED] ①
7½ ips and 3¾ ips are ideal for recording music and when best sound quality is desired. 1⅞ ips is ideal for speech especially when longer recording time is desired.
In playback mode, set the tape speed corresponding to the speed of the prerecorded tape.
Change the tape speed only when the FUNCTION SELECTOR is in the STOP position.

Record amplifier section

Record levers [REC] ⑧
For recording, pull the levers toward you, and while keeping the levers in the locked position, turn the FUNCTION SELECTOR to the FWD position. The red lamps in the VOLUME METERS will light, indicating that the recorder is in record mode.

Volume meters ⑨
While recording (when setting the MONITOR SELECTOR to SOURCE position) or reproducing external signals, the swing of the needle indicates the input sensitivity through the input connectors. During playback of tapes (when setting the MONITOR SELECTOR to TAPE position), the meter indicates the output level at the LINE OUTPUTS. 0 VU reading on the meter corresponds to an output level of 0.775 volt.

Record volume controls [REC VOL] ⑩
For record volume level control, set the INPUT SELECTOR to the desired source input and set the MONITOR SELECTOR to the SOURCE position, then slide these RECORD VOLUME CONTROLS so that the needles of the VOLUME METERS deflect to the boundary of the red and the black zones at the peak of the signal.

Sound-on-sound control and selector [SOS] ⑫
To activate the sound-on-sound recording system, turn on the control knob. The selector switches the signal direction; when setting to the [L→R] position, the composite recordings are made on the right channel, and when setting to the [L←R] position, the recordings are made on the left channel.
The record volume level of the basic program can be adjusted by the SOUND-ON-SOUND CONTROL; clockwise rotation will increase the volume. The volume level of the second program can be adjusted by the RECORD VOLUME CONTROL as usual.
Note: Be sure that the knob is set to the OFF position. when this system is not used.

Echo control [ECHO] ⑬
This knob adds echo effect on your recordings; clockwise rotation increases the echo level. The echo control system is operative only when the TC-630 is in record mode.

Input selector [INPUT SELECTOR] ⑭
Selects inputs for recording or for reproducing external sources except for tape program.
PHONO....disc programs connected to the PHONO INPUTS.
TUNER....FM/AM programs connected to the TUNER INPUTS.
AUX.....any external sound sources connected to the AUXILIARY INPUTS, (or an amplifier connected to the RECORD/PLAY-BACK CONNECTOR).
MIC.....microphones connected to the MICROPHONE INPUTS.

Monitor selector [MONITOR] ⑯
For playback tapes, set the selector to the TAPE position. For reproducing other sound sources—PHONO, TUNER, AUX, MIC, set the selector to the SOURCE position.
While recording, the TAPE position makes tape monitoring and the SOURCE position makes source monitoring.
Record volume adjustment can be obtained by setting these selectors to the SOURCE position, without locking the RECORD LEVERS.

Noise suppressor [NOISE SUPPRESS] ⑮
When this switch is set to the ON position during reproducing, the distracting high-frequency noise such as record scratch or tape hiss is removed from the program material. This suppressor does not affect response frequencies below 9 kHz allowing full pass-band for the major part of the audio frequency range.

Main power switch and pilot lamp ⑱ [POWER MAIN]
When the recorder is on, the pilot lamp above the switch lights green.

Power amplifier section

Treble tone control [TREBLE] ⑲
Turn this knob clockwise to increase the high-frequency response in both channels.

Bass tone control [BASS] ⑳
Turn this knob clockwise to increase the low-frequency response in both channels.

Balance control [BALANCE] ㉑
This knob regulates the level of either left or right channels to produce the optimum stereo effect. Clockwise rotation decreases the left channel volume, counterclockwise rotation decreases the right channel volume.

Volume control [VOLUME] ㉒
This knob regulates the sound level of both channels of the speakers or of the headphone connected to the HEADPHONE CONNECTOR marked LISTEN. Clockwise rotation increases loudness.

Speaker selector [SP SELECTOR]
This selector switches the speakers of either the lid speakers or the external speakers connected to the associated outputs.

Mode selector [MODE]
For stereophonic sound reproduction, set the selector to the STEREO position.
For monophonic sound reproduction, set the selector to either L or R position; with L position, monophonic L sound is applied to both channel speakers. With R position, monophonic R sound is applied to both channel speakers.

Power amp power switch [POWER POWER-AMP]
Turns on or off the power amplifier section of the TC-630. When the power amplifier is on, the pilot lamp above the switch lights green.

AS A STEREO CENTER

To reproduce phono, FM/AM or other auxiliary programs

For tape playback, refer to page 12 'Playback Procedure'.
Before turning on the TC-630, turn the VOLUME CONTROL all the way down.

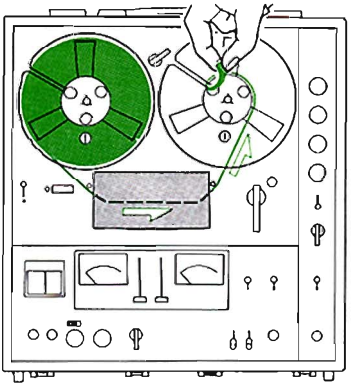
1. Complete the connections between the TC-630, speakers and sound sources. Refer to page 5 'Connections'.
2. Set the SPEAKER SELECTOR.
3. Set the MODE SELECTOR to the STEREO position.
4. Set the INPUT SELECTOR.
5. Turn on the two POWER SWITCH of the TC-630, and turn on the source equipment.
6. Set the MONITOR SELECTOR to SOURCE position.
7. Adjust the input volume level by sliding the RECORD VOLUME CONTROLS so that the VOLUME METERS reads up to the boundary of the black and red zones at the peak of the signal.
8. Adjust the VOLUME, BALANCE, BASS and TREBLE CONTROLS to your preference.

- For private listening, connect the headphone to the HEADPHONE CONNECTOR marked LISTEN, and the speakers are automatically disconnected.
- When high-frequency noise such as record scratch is observed, turn on the NOISE SUPPRESSOR.
- While using the TC-630 as an amplifier of disc or fm/am programs, if a tape is placed on the recorder, keep a little slack on the tape transport. Because, if the tape is threaded tighty, the wire lever (which is coupled with the automatic shut-off switch under the head cover) will be held in operating position and the motor will be in motion.

Balancing the speakers

The feeling of direction and depth that stereophonic sound produces is greatly affected if the levels of both channels are not balanced.
Set the MODE SELECTOR to STEREO position and adjust the BALANCE CONTROL for equal output from both speakers.
The stereo phenomenon is also influenced by the acoustics of the room. Carpets, furniture placement, and room size and shape, have definite effects upon the quality of the sound.

TAPE THREADING



Place an empty reel on the right reel spindle (TAKE-UP REEL SPINDLE) and a full reel on the left reel spindle (SUPPLY REEL SPINDLE). Thread the tape from left to right by passing under the head cover and wrap the tape around the hub of the right reel or insert the end of the tape into the reel slot. Rotate the reels a few times to take up the slack of the tape so that the AUTOMATIC SHUT-OFF SWITCH assumes playing position.
It is recommended that reels of the same size be used for both supply and take-up.
Place the supplied reel caps to keep the reels in place when the TC-630 is used in a vertical position.

TAPE TRANSPORT

All tape motions are controlled by the FUNCTION SELECTOR: For playback, set the selector to the FWD position. For recording, set the selector to the FWD position while keeping the RECORD LEVERS to the locked position. For fast forwarding, set the selector to the FWD position while pressing the FAST FORWARD BUTTON. For rewinding, set the selector to the REW position.

To pause the tape while recording, pull the INSTANT STOP LEVER towards you. The tape will be stopped instantly without releasing the RECORD LEVERS. To release the INSTANT STOP LEVER, press the button located under the lever; the tape will return to original operation.

The INSTANT STOP LEVER can also be used as a 'standby' system. Pull the RECORD LEVER to the locked position. Pull the INSTANT STOP LEVER to the locked position. While holding the RECORD LEVER to the locked position, set the FUNCTION SELECTOR to FWD position. The TC-630 is ready for recording. To start recording, press the release button.

Note: Do not activate the INSTANT STOP LEVER while fast forwarding. Or the tape will be affected with excessive tape tension.

PLAYBACK PROCEDURE

Stereo playback

1. Thread a 4-track stereo prerecorded tape.
2. Set the TAPE SPEED SELECTOR to the position which matches the prerecorded tape. The supplied tape is recorded in 7½ ips.
3. Turn on the MAIN and POWER-AMP POWER SWITCHES.
4. Set the SPEAKER SELECTOR to the position to be used.
5. Set the MODE SELECTOR to the STEREO position.
6. Set the MONITOR SELECTORS to the TAPE position.
7. Set the FUNCTION SELECTOR to the FWD position. Playback of track-1 and -3 will begin. Adjust the VOLUME, BALANCE, BASS and TREBLE CONTROLS to your preference.
8. At the end of the tape, set the FUNCTION SELECTOR to the STOP position. Do not rewind the tape. Reverse the reel positions.
9. Set the FUNCTION SELECTOR to the FWD position. Playback of track-4 and -2 will begin.

- If undesirable noise occurs during playback, set the NOISE SUPPRESSOR to the ON position.

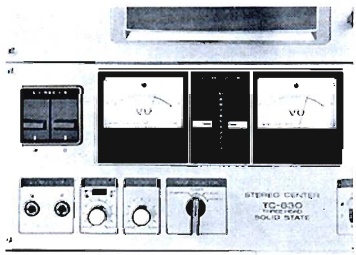
Monophonic playback

Monophonic playback procedures are the same as the stereo playback except for the MODE SELECTOR setting. Playback sequence of the tape should conform to the sequence of recording, i.e. track-1, track-4, track-3, and track-2. For the track-1 and -4, set the MODE SELECTOR to the L position and for the track-3 and -2 set the selector to the R position. At the end of each track, do not rewind the tape. Reverse reel positions and proceed with playback. For orientation of playback track and channel, refer to the chart below.

Playback track	Upper side of the tape	Set the MODE SELECTOR
Track-1	Side 1	to the L position
Track-4	Side 2	
Track-3	Side 1	to the R position
Track-2	Side 2	

RECORDING PROCEDURE

Stereo recording



1. Connect the desired source program to the input connectors. Refer to the 'Connections' on page 5.
2. Set the INPUT SELECTOR to the position which corresponds to the input source to be recorded.
3. Thread a tape and set the TAPE COUNTER to 0000 by pressing the reset button.
4. Turn on the TC-630 and the source equipment.

5. Adjust the recording level; set the MONITOR SELECTORS to the SOURCE position, and while watching the VOLUME METERS, adjust the RECORD VOLUME CONTROLS so that the needles of the meters deflect to the boundary of the red and the black zones at the peak of the signal.
6. While keeping the RECORD LEVERS into the locked position, set the FUNCTION SELECTOR to the FWD position. Recording will begin. The lamp on the VOLUME METERS will light indicating that the TC-630 is in record mode.
7. At the end of the tape, set the FUNCTION SELECTOR to the STOP position. Do not rewind the tape. Reverse the reel positions.
8. While keeping the RECORD LEVERS to the locked position, set the FUNCTION SELECTOR to the FWD position. Recording on track-4 and track-2 begins.
9. At the end of the recording (end of the side 2 of the tape), do not rewind the tape. Reverse the reel positions and the tape will be ready for playback.

Howling

If howling (whistle like sound) occurs between the speaker and the microphone, reduce the speaker volume with the VOLUME CONTROL or turn off the speakers and use the headphones.

Monitor while recording

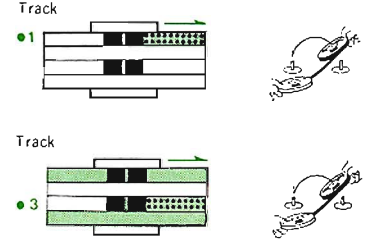
The professional feature of separate record and playback heads permits monitoring of recorded results, even during recording, by setting the MONITOR SELECTORS to the TAPE position. Instantaneous comparison of source signals and the recorded program is possible by setting the selector alternately to the TAPE and the SOURCE positions.

Echo effect on recordings

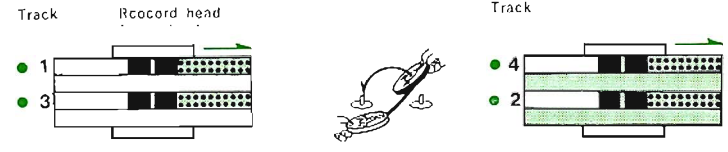
To make more resonant recording, use the ECHO CONTROL as follows. Set the MONITOR SELECTOR to the TAPE position and while monitoring the recorded results, turn on the ECHO CONTROL and adjust the knob; clockwise rotation will increase the echo level.

Monophonic recording

● Portion now being recorded



Stereo



The sequence of monophonic recording should be track-1, track-4, track-3 and track-2. Monophonic recording employs either channel left or right respectively. Therefore, when changing from left channel to right channel, reconnect the source signal to the right channel input, and adjust the right RECORD VOLUME CONTROL, and while keeping the right RECORD LEVER into the locked position set the FUNCTION SELECTOR to the FWD position. For orientation of recording track and the channel, refer to the chart below.
At the end of each track, do not rewind the tape. Reverse the reel positions.

For language training

With the feature of independent RECORD LEVERS for each channel, the TC-630 provides the facility to playback one track while recording the other track. This feature will be ideal for language students who wish to listen to a prerecorded lesson on one track while recording the answers or repetitions on the other track. Both tracks can later be played back separately or simultaneously for comparison.

Sound-on-sound recording

The sound-on-sound facility of the TC-630 makes possible high quality composite recording from left channel to right channel, and vice versa. The marks (● ○) at the RECORD LEVERS, MICROPHONE INPUTS, SOUND-ON-SOUND SELECTOR and MONITOR SELECTOR indicate the procedure of sound-on-sound recording.

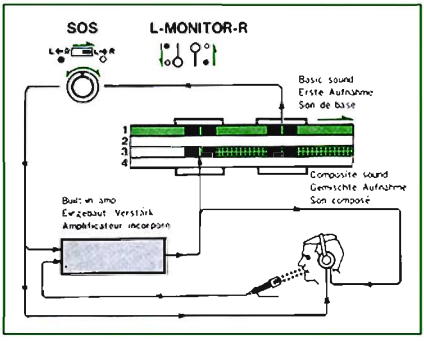
Recording track	Upper side of the tape	Input connection	Lock the RECORD LEVER	For monitoring, set the MODE SELECTOR
Track-1	Side 1	to left input	left lever	to the L position
Track-4	Side 2			
Track-3	Side 1	to right input	right lever	to the R position .
Track-2	Side 2			

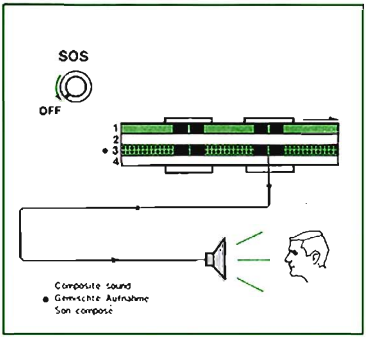
For monitoring during this recording, connect the headphone to the HEADPHONE CONNECTOR marked LISTEN. If the speakers are to be used for monitoring, place the microphone apart from the speakers so that the microphone will not pick up the feed-back sound from the speakers.

- To make sound-on-sound recording on the right channel, follow the mark [○].

SOUND-ON-SOUND CONTROL.

- To playback this tape, rewind the tape to the beginning. Set the MODE SELECTOR to the R position and set the right MONITOR SELECTOR to the TAPE position.
- To make sound-on-sound recording on the left channel, follow the mark [●]. The recording procedure is the same as described above except for the channel used in each step.
- Triple or more composite recording can be made by repeating these procedures from left to right and right to left.





1. Record the basic program on the left channel and rewind the tape to the beginning.
2. Connect a microphone to the right MICROPHONE INPUT, and set the INPUT SELECTOR to the MIC position.
3. Set the MODE SELECTOR to the STEREO position.
4. Set the MONITOR SELECTORS; the left selector to the TAPE and the right selector to the SOURCE positions.
5. Set the SOUND-ON-SOUND SELECTOR to the {L→R} position and turn on the SOUND-ON-SOUND CONTROL.
6. Adjust the after-recording (right) sound by sliding the right RECORD VOLUME CONTROL.
7. Set the FUNCTION SELECTOR to the FWD position while keeping the right RECORD LEVER into the locked position.
8. While listening to both channel sound, adjust the basic (left) sound level by turning the SOUND-ON-SOUND CONTROL so that both sounds are matched adequately.
   Through the left speaker the basic sound will be heard, and through the right speaker the after-recording sound will be heard.
   The left meter indicates the recorded level of the basic sound and the right meter indicates the recording level of the right channel.

- When the sound-on-sound recording is completed, be sure to turn off the

ERASING TAPE

The erase head operates in record mode, therefore, every time a recording is made, any previous recording on the tape is automatically erased. A tape can also be erased without adding a new recording as described below.

1. Thread the recorded tape which is to be erased.
2. Slide down the RECORD VOLUME CONTROLS all the way and set the MONITOR SELECTORS to the TAPE position.
3. While keeping the RECORD LEVERS into the locked position, set the FUNCTION SELECTOR to the FWD position. While the tape is in motion, side 1 of the tape will be erased. Tape speed of 7½ ips is recommended.
4. When the end of side 1 of the tape is reached, reverse the reel positions. Repeat the step 3, and side 2 of the tape will be erased.

SPLICING TAPE

1. Use splicing tape and a pair of scissors. Do not use ordinary cellophane tape as it tends to deteriorate.
2. Overlap the tapes to be spliced and make a diagonal cut across the overlapped portion.
3. Place a piece of splicing tape on a flat surface. Then place the two diagonal ends together over the splicing tape, shiny side down. Be careful to make the ends meet, but not overlap.
4. Trim off the excess splicing tape.

OWNER'S TROUBLE SHOOTING GUIDE

The following will be helpful to correct any trouble which may occur with the TC-630. If you have any difficulties that cannot be rectified by going over this guide consult your SONY dealer.

The tape does not move when the FUNCTION SELECTOR is set to the FWD position.

- Check whether the tape is threaded properly. Make sure there is no slack in the threaded tape.

Unclear or distorted recordings or too much wow and flutter.

- Clean the heads.
- Clean the capstan and pinch roller.
- Check whether the scrape filter is inclined or not. If it is, reinsert vertically.
- In 50 Hz frequency area, retighten the capstan sleeve.

No sound

- Check the connections between the TC-630 and the speakers.
- Check the setting of the VOLUME CONTROL and the MODE SELECTOR.
- Check the setting of the MONITOR SELECTOR; for tape playback set the selector to the TAPE position. For other source reproduction or recording, set the selector to the SOURCE position and check the setting of the INPUT SELECTOR.

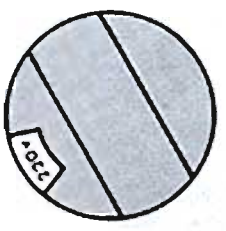
Severe hum or noise

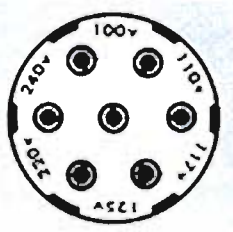
- Use shielded connection cables. Avoid long horizontal runs. Keep cables away from transformers or generators. Reverse the ac plug in the receptacle. Ground the TC-630.

ADAPTATION TO YOUR LOCAL POWER LINE

For use in SWEDEN, FINLAND, DENMARK, NORWAY and SWITZERLAND
In compliance with the safety rules of SEMKO (Sweden), FINKO (Finland), DEMKO (Denmark), NEMKO (Norway) and SEV (Switzerland), the set is fixed to operate on ac 220 V. Do not attempt to move the Voltage Selector.

Voltage selection





The VOLTAGE SELECTOR is used for selecting the operating ac power line voltage of either 100, 110, 117, 125, 220 or 240 volts. To reset the selector, pull out the selector cap and firmly reinsert it to the selector plate with the proper voltage figure appearing in the cutout of the cap.

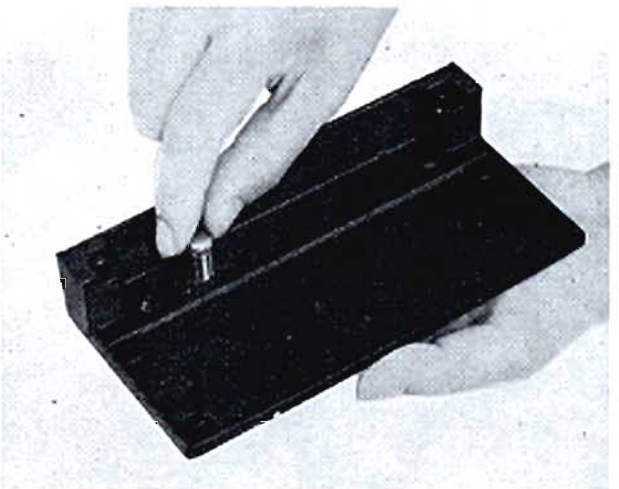
Frequency adaptation

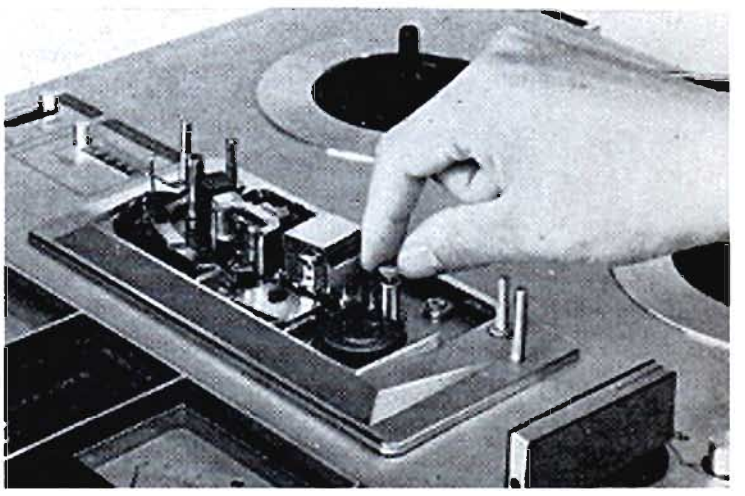
For 50 Hz line

Set the FREQUENCY SELECTOR to the [50∿] with the use of a screw driver so that the slot of the screw head points to the mark [50∿].
Attach the capstan sleeve to the CAPSTAN:
Take out the capstan sleeve from the sleeve holder located at the inside of the HEAD COVER by loosening the retainer screw.
Attach the capstan sleeve to the CAPSTAN by inserting the sleeve and securing it by the retainer screw.

For 60 Hz line

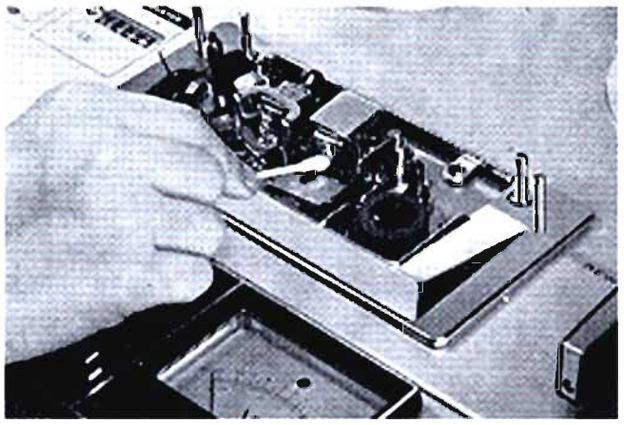
Set the FREQUENCY SELECTOR to the [60∿] position.
Remove the capstan sleeve from the CAPSTAN:
Turn the capstan clockwise, and while the capstan is in motion, quickly turn the knurled upper portion of the retainer screw counterclockwise. The screw thread of the capstan will loosen. Then remove the capstan sleeve and place it on the capstan sleeve holder at the inside of the HEAD COVER.





MAINTENANCE

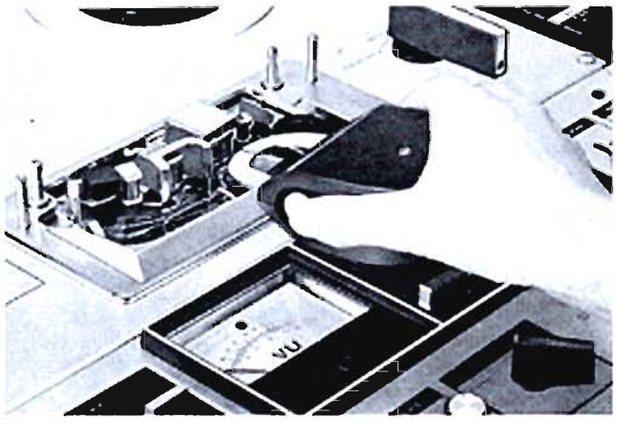
Cleaning heads and tape path



For optimum performance of the recorder, it is compulsory to keep clean all surfaces over which the tape travels; contamination on heads, capstan, pinch roller, tape guides or scrape filter will impair an intimate contact between heads and tape, or disturb the uniform tape transportation. Cleaning will be required after every 10 hours of use. The use of inferior brands of tape is not recommended as it will cause almost immediate contamination of the tape path.

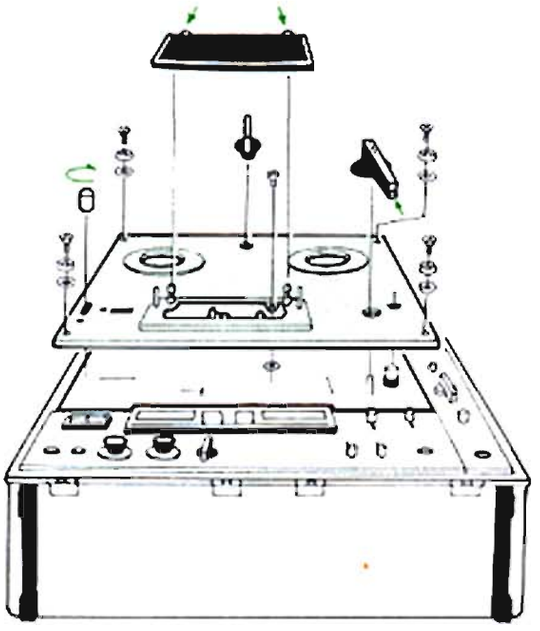
Remove the head cover by loosening the screws located at the rear of the head cover. Take the supplied head cleaning tip or a soft cloth and wipe the heads and other surfaces where the tape travels. When the deposits are difficult to remove, moisten the tip or the cloth with denatured alcohol and repeat cleaning.

Demagnetizing heads



With continuous use, residual magnetism will gradually be built up on the heads. This excessive residual magnetism will produce noise while the tape is being played. Therefore, periodic use of the SONY Head Demagnetizer HE-2 (optional) or equivalent is recommended.

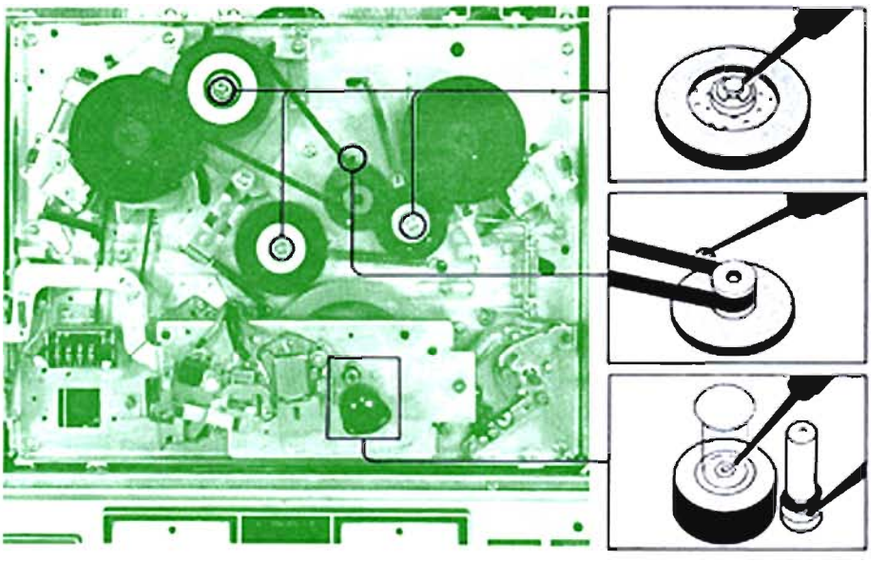
Lubrication



Use light machine oil and lublicate the CAPSTAN, PINCH ROLLER, IDLER SHAFTS and motor lubricating hole every 6 months. Avoid excessive lubrication. It will cause slippage of the mechanism and contamination of your tape. Make sure all excess oil is wiped off completely.

Remove the HEAD COVER. Pull out the FUNCTION SELECTOR and the TAPE SPEED SELECTOR. To remove the INSTANT STOP LEVER, turn the lever clockwise. Remove the four screws at the corners of the tape transport panel and the one screw under the head cover. Lift up the panel.

Lubricate the CAPSTAN and the motor lubricating hole with 3 drops, and the IDLER SHAFTS and the PINCH ROLLER SHAFT with 1 drop each of light machine oil.



TECHNICAL SPECIFICATIONS

Power requirements
100, 110, 117, 125, 220 or 240 volts
50 Hz or 60 Hz
(The set available in Sweden, Finland, Denmark, Norway and Switzerland . . . fixed to 220 V)

Power consumption
85 watts

Semiconductors
transistors 40, diodes 7

Recording system
4-track stereophonic or monophonic

Tape speed
7½ ips, 3¾ ips, 1⅞ ips

Recording time
6 hours, stereo, at 1⅞ ips, with 1815 ft tape

Reels
7 inches or smaller

Heads
Record head 1, Erase head 1, Playback head 1

Input

	Sensitivity	Impedance
Microphone inputs	0.2 mV (−72 dB)	250 Ω
Auxiliary inputs	35 mV (−27 dB)	560 kΩ
Tuner inputs	60 mV (−22 dB)	100 kΩ
Phono inputs	2 mV (−52 dB)	(accept moving coil type or moving magnet type cartridge)

Output

	Output level	Load impedance
Line outputs	0.775 V (0 dB)	100 kΩ
Speaker outputs (LID SP)		16 Ω
(EXT SP)		8 Ω
Headphone outputs (MONITOR)	31 mV (−28 dB)	8 Ω
(LISTEN)		8 Ω

Frequency response
30-22,000 Hz at 7½ ips
30-13,000 Hz at 3¾ ips
30-10,000 Hz at 1⅞ ips

Wow and flutter
0.09% at 7½ ips
0.12% at 3¾ ips
0.16% at 1⅞ ips

Signal-to-noise ratio
50 dB

Harmonic distortion
1.2%

Power output

	Dynamic power output	Rated power output
With 8 ohm speakers	20 watts × 2	15 watts × 2
With 16 ohm speakers (lid speakers)	10 watts × 2	7.5 watts × 2

Dimensions
17⅞ (w) × 20 (h) × 11⅝ (d)"

Weight
46 lb 3 oz

Supplied accessories

Microphones	(2)
SONY tape (recorded at 7½ ips)	(1)
Reel R-7A	(1)
Connecting cord RK-74	(1)
Head cleaning tip	(1 pack)
Reel caps	(2)

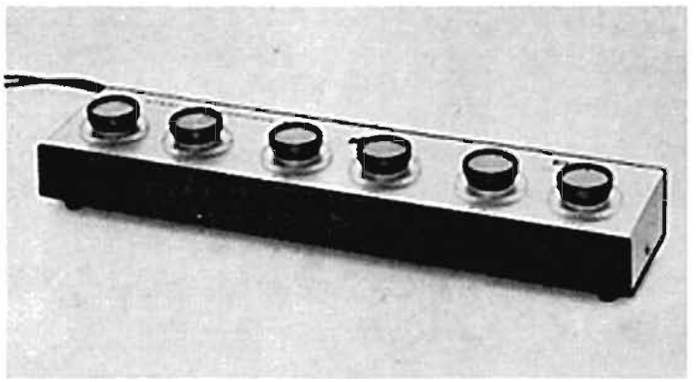
Hz (hertz): Cycles per second
Design and specifications subject to change without notice.

RECOMMENDED ACCESSORIES

Stereo Headphone DR-4A, -5A

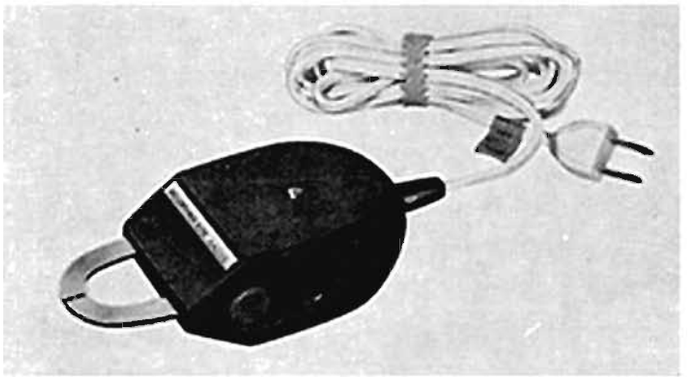
High quality dynamic 8 ohm headset with a standard phone plug for private stereo listening or monitoring while recording.

Stereo Microphone Mixer MX-6S



Provides professional mixing facilities for 3 microphones (600 ohm input impedance) or high level (approx. 100 k ohm input impedance) sources such as tape recorders. It may be connected stereophonically or monophonically.

Head Demagnetizer HE-2



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

SONY AUDIO COMPONENTS

Integrated Stereo Amplifier TA-1120

The highest quality all silicon transistor integrated amplifier having PREAMP OUT and AMPLIFIER IN terminals, thus allowing a wide variety of circuit variations.

Circuit system: Quasi-complementary symmetry circuit, 46 transistors, 25 diodes

Preamplifier section:
Inputs: MIC, TAPE HEAD, PHONO-1, PHONO-2, TUNER, AUX, TAPE, AMPLIFIER IN
Outputs: REC OUT, SPEAKER OUT, PRE-AMP OUT

REC/PB connector (integrated input and output connector)
Harmonic distortion: TUNER, AUX, TAPE—less than 0.1% at 1 kHz
MIC, TAPE HEAD, PHONO-1,-2—less than 0.05% at 1 kHz

IM distortion (60 Hz : 7 kHz=4 : 1): TUNER, AUX, TAPE, PHONO-1, -2, TAPE HEAD, MIC—less than 0.1% at rated output
Frequency response:

TUNER, AUX, TAPE	10 Hz–100 kHz	$^{+0}_{-2}$ dB
MIC	10 Hz– 30 kHz	$^{+0}_{-2}$ dB
TAPE HEAD	NAB	
PHONO-1, -2	RIAA	

S/N ratio:

TUNER, AUX	more than 90 dB
PHONO-1, -2, TAPE HEAD	more than 70 dB
MIC	more than 65 dB

Power amplifier section: same as the TA-3120 (See page 27)
Dimensions:
5¾(h) × 15¾(w) × 12¼(d)"

Stereo Amplifier TA-3120

All silicon transistor stereo power amplifier model TA-3120 has the same characteristics of power amplifier stage of the TA-1120 so that it can be combined with the TA-1120 for multi-channel amplification system.

Circuit system: Quasi-complementary symmetry circuit, 21 transistors, 21 diodes
Power outputs: 120 watts both channels (8 ohms)
50 watts per channel (rated output, 8 ohms)
Harmonic distortion: Less than 0.1% at rated output (at 1 kHz)
Less than 0.1% at rated output (at 20 Hz-15 kHz)

IM ditortion (60 Hz: 7 kHz=4:1): Less than 0.2% at rated output

Frequency response: 5 kHz-200 kHz $^{+0}_{-2}$ dB at rated output

Sensitivity: 1 volt at 50 watt output
Input impedance: Higher than 100 k ohms
S/N ratio: 110 dB (IHF, closed circuit)
Damping factor: Better than 180 (8 ohms)
Dimensions: 7⅛(w) × 5¾(h) × 17⅛(d)"

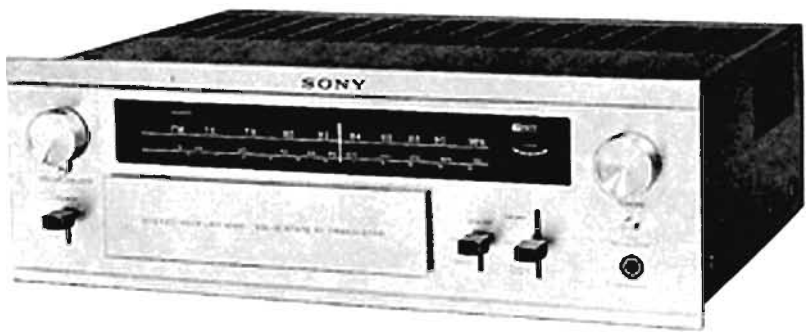
Stereo Tuner ST-5000 FW

The ST-5000 FW establishes a new era in FM stereo reproduction.
Circuit system: All silicon transistor FM stereo tuner, Superheterodyne, 43 transistors (including FET) 36 diodes

Monophonic section
Frequency range: 87-108 MHz
Usable sensitivity (IHF): 1.8 μV
Image rejection (IHF): Better than 90 dB
IF rejection (IHF): Better than 100 dB
Spurious rejection (IHF): Better than 100 dB
Capture ratio (IHF): 1 5 dB
AM suppression (IHF): Better than 65 dB
Hum and noise: 70 dB

Stereophonic section
Stereo separation: at mid frequency, 100% modulation, better than 40 dB
Frequency response: 20-15,000 Hz ±0.5 dB
Harmonic distortion (1,000 μV input): at 400 Hz, 100% modulation, less than 0.35%
19 kHz (pilot), 38 kHz (sub-carrier suppression): Better than 70 dB

Audio outputs (at 400 Hz, 100% modulation): Fixed 700 mV, mpedance 10 K ohms, each channel
Variable 0-2V, impedance 1 K ohms at maximum output, each channel
Dimensions: 5¾(h) × 15¾(w) × 12¼(d)"



Stereo Receiver STR-6060 FW

The performance of the receiver from all program sources; FM stereo, FM and AM broadcasts, records, and tapes, is superb. Its amplifier section has all the power needed to drive any speaker system with plenty in reserve for difficult passages. It reproduces the entire audio range without the slightest trace of distortion to intrude upon the performance. The FM section has the sensitivity to pick up the weakest signals and turn them into enjoyable listening. At the same time, it is insensitive to cross-modulation and other spurious interference that can mar listening pleasure. It is selective enough to zero in on all stations sharply, clearly.

FM tuner section
Usable sensitivity: 2.2 microvolts, IHF
Capture ratio: 2 dB
Selectivity: 80 dB, IHF
Image rejection: 80 dB
IF rejection: 90 dB
Spurious rejection: 90 dB
FM stereo separation: Better than 40 dB at 1 kHz

AM tuner section
Sensitivity: 44 dB/m, built-in antenna 10 microvolts, external antenna
Image rejection: 55 dB at 600 kHz
43 dB at 1,400 kHz
IF rejection: 38 dB at 1,000 kHz

Amplifier section
Dynamic power output: 110 watts, 8 ohms, both channels
Harmonic distortion: Less than 0.2% at rated output
Less then 0.08% at 0.5 watt output
Intermodulation distortion: Less than 0.2% at rated output
Less than 0.15 % at 0.5 watt output
Frequency response:
AUX, TAPE 20 Hz-60 kHz +0, −3 dB
PHONO RIAA standard ±1.5 dB
TAPE HEAD NAB standard ±1.5 dB
Dimensions: 17⅜(w) × 5¹⁵⁄₁₆(h) × 13¹⁵⁄₁₆(d)"

Servo Turntable TTS-3300

The exclusive servo motor system provides stable operation.
Speed: 33⅓, 45 rpm
Wow & flutter: Less than 0.05%
S/N ratio: More than 60 dB (NAB standard)
Dimensions: 14⅞₆(w) × 5⅛(h) × 15(d)″

Precision Tone Arm PUA-237, PUA-286

Perfect inside force compensator and complete lateral balancer are incorporated.

	PUA-237	PUA-286
Length:	237 mm (9⅓″)	286 mm (11-1/4″)
Tracking error:	1°44′	1°24′
Stylus pressure:	0-3 g	

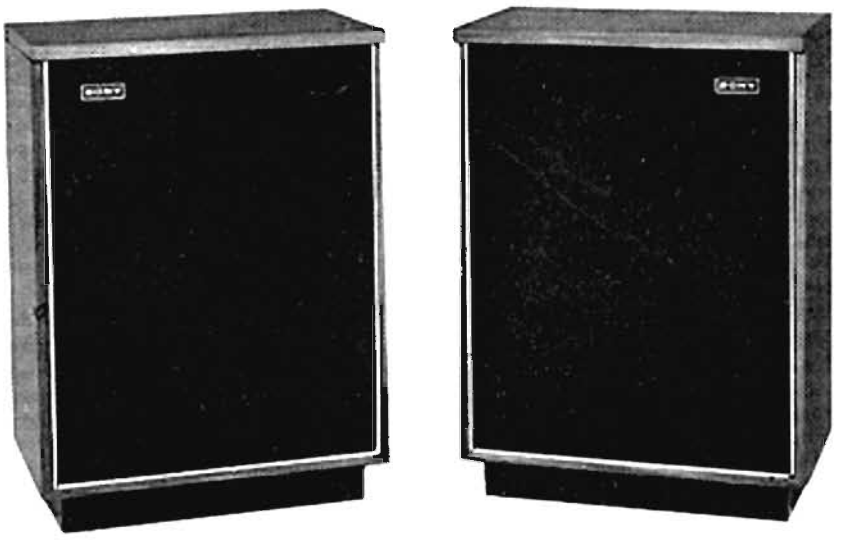
Stereo Cartridge VC-8E

High compliance moving coil cartridge with an elliptical diamond stylus.
Frequency response: 10-25,000 Hz
Output voltage: 4 mV±2 dB (1,000 Hz, 5 cm/sec.)
Load impedance: 40-100 K ohms
Compliance: 30×10^{-6} cm/dyne
Stylus tip radius: 0.2 × 0.8 mil elliptical, diamond
Stylus pressure: 1-3 g.

Stereo Turntable System PS-2000, PS-3000

The PS-2000 consists of the Servo Turntable TTS-3000, the precision Tone Arm PUA-237, the Stereo Cartridge VC-8E and the Wooden Base TAC-2.
The PS-3000 consists of the Servo Turn-

Speaker System SS-3300, SS-3100, SS-2800



These 3-way speaker systems are specially designed to emphasize the advantage of the high damping factor of transistor amplifiers. Three outstanding audio transducers are carefully matched to provide uniform and distortion-less sound throughout the range of human hearing. The output level of the high and mid range speaker can each be adjusted in three steps to suit acoustic conditions or personal taste.

Speaker system (3-way):			
	SS-3300	SS-3100	SS-2800
Low frequency (cone type)	12″	12″	10″
Mid range (cone type)	5″	6½″	6½″
High frequency (horn type)	2″	2″	2″
Cross over frequencies:	500 Hz & 3,000 Hz	400 Hz & 5,000 Hz	600 Hz & 6,000 Hz
Frequency range:	30-20,000 Hz	30-20,000 Hz	40-20,000 Hz
Power handling capacity:			
(rated)	30 W	30 W	20 W
(maximum)	60 W	50 W	50 W
Impedance:	16 Ω	8 Ω	8 Ω
Output sound pressure:	98 dB/W	98 dB/W	97 dB/W

Dimensions and weight:
SS-3300 22¾(w) × 31½(h) × 14½(d)″ 81 lb
SS-3100 15¾(w) × 26¾(h) × 11¹³⁄₁₆(d)″ 55 lb 2 oz
SS-2800 13¾(w) × 23¾(h) × 9⅛₆(d)″ 35 lb 4 oz