

# Technics

by Panasonic

TAPE DECK

## RS-630 US

### OPERATING INSTRUCTIONS



SIMULATED WOOD CABINET

Before operating this set, please read these instructions completely.

We want to thank you for selecting the Model RS-630US Technics by Panasonic Cassette Tape Deck for your recording and playback enjoyment. To obtain the maximum benefit of the many features of this deck, please read these operation instructions completely.

**WARNING: TO PREVENT FIRE OR SHOCK HAZARD,  
DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.**

## FEATURES

Dolby Noise-Reduction System

Large PEAK-LEVEL-CHECK Meters

TAPE Selector

INPUT Selector (Microphone/Line)

Dual INPUT and OUTPUT VOLUME Controls

Automatic-Stop System

Illuminated Cassette Compartment

Lockable PAUSE Control

Digital TAPE Counter

Sliding Cassette Compartment Door

## OPERATION NOTES

### 1. Use this unit horizontally

To assure finest performance from this unit, be sure it is always used in a horizontal position.

### 2. Location

Avoid extremely hot (above 100°F.) or extremely cold (below 40°F.) locations, or locations in direct sunshine or where subject to excessive vibration, because the performance of the unit may be adversely affected.

### 3. Use a power source frequency of either 50 Hz or 60 Hz

Because this unit has a DC servo-motor, a power frequency of either 50 Hz or 60 Hz may be used.

### 4. Power should be within ±5% of the rated voltage

Note that the unit's performance will be uneven, or the unit may be damaged, if the power exceeds ±10% of the rated voltage.

### 5. Cleaning the head assembly

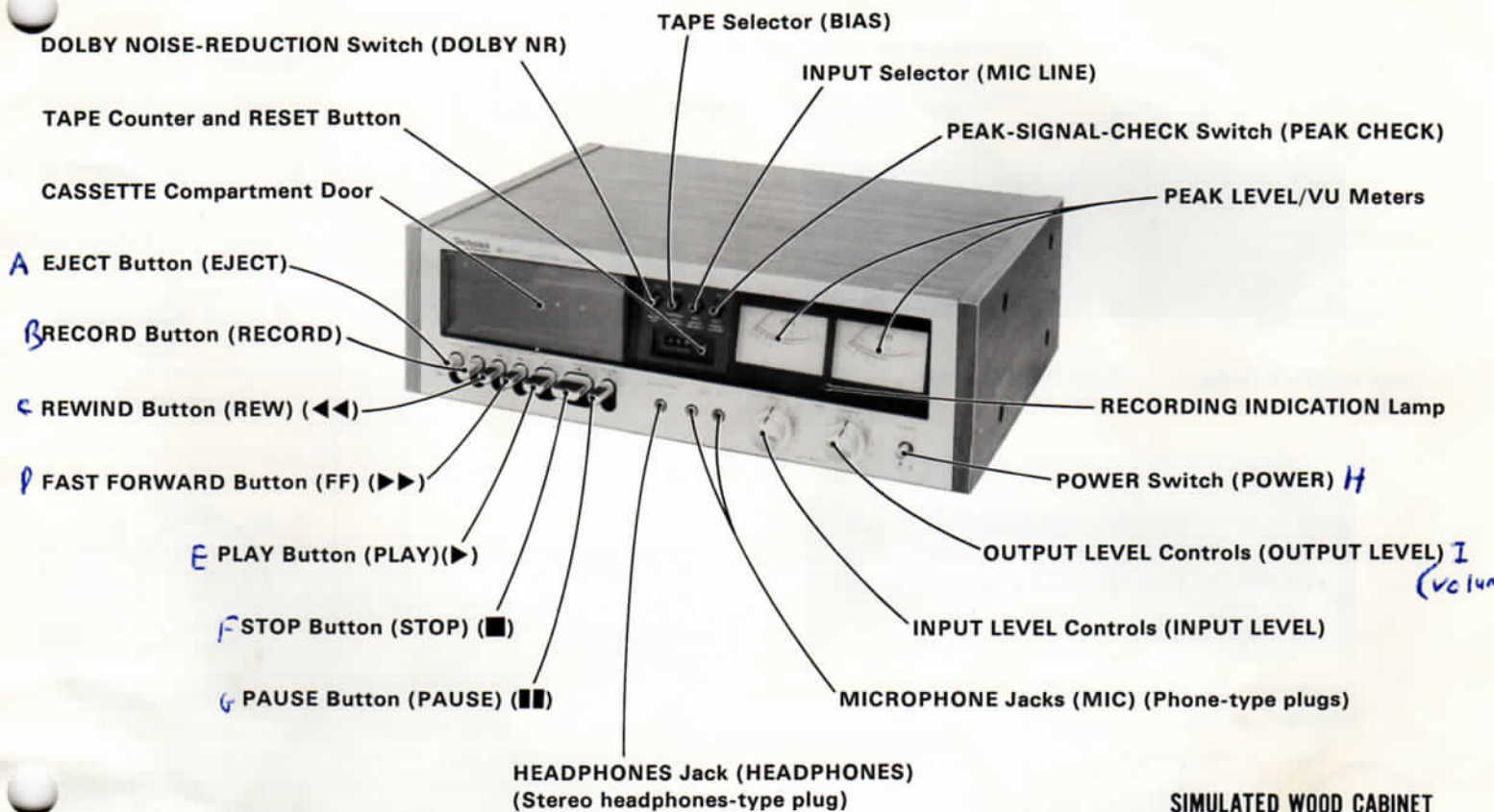
One of the most important factors in the determination of good tape recorder performance is regular cleaning of the head assembly. Refer to "MAINTENANCE" on page 6 and be sure to always keep the head surfaces clean.

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## CONTROLS



## ABOUT CASSETTE TAPE

The cassette tape used in this unit is the universal type used throughout the world.

### Notes:

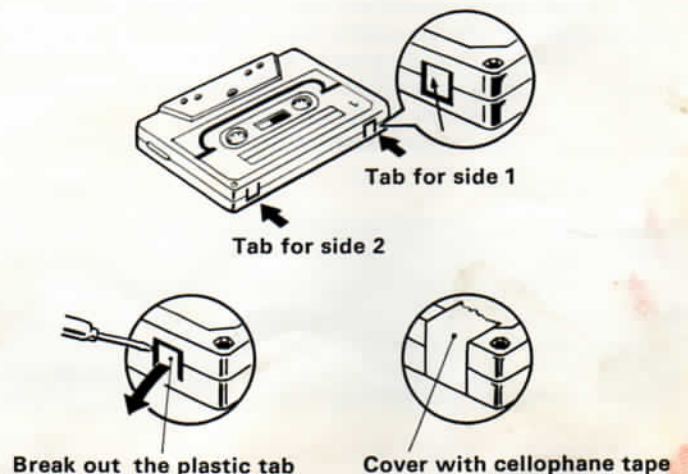
1. Never attempt to pull the tape out of the cassette openings.
2. Never try to turn the reels of the tape cassette by hand; to do so may loosen the tape. If the tape is loose in the cassette, the tape may become wound onto the pressure roller and result in breakage or damage. If the tape is loose, use a pencil as a drive shaft to rotate the reel in the proper direction.
3. Avoid storing this unit in places where the temperature and/or the humidity is high.
4. If the tape is very tightly wound or unevenly wound, wind and rewind it in the FF and Reverse modes, before use.

## SELECTION OF CASSETTE TAPE

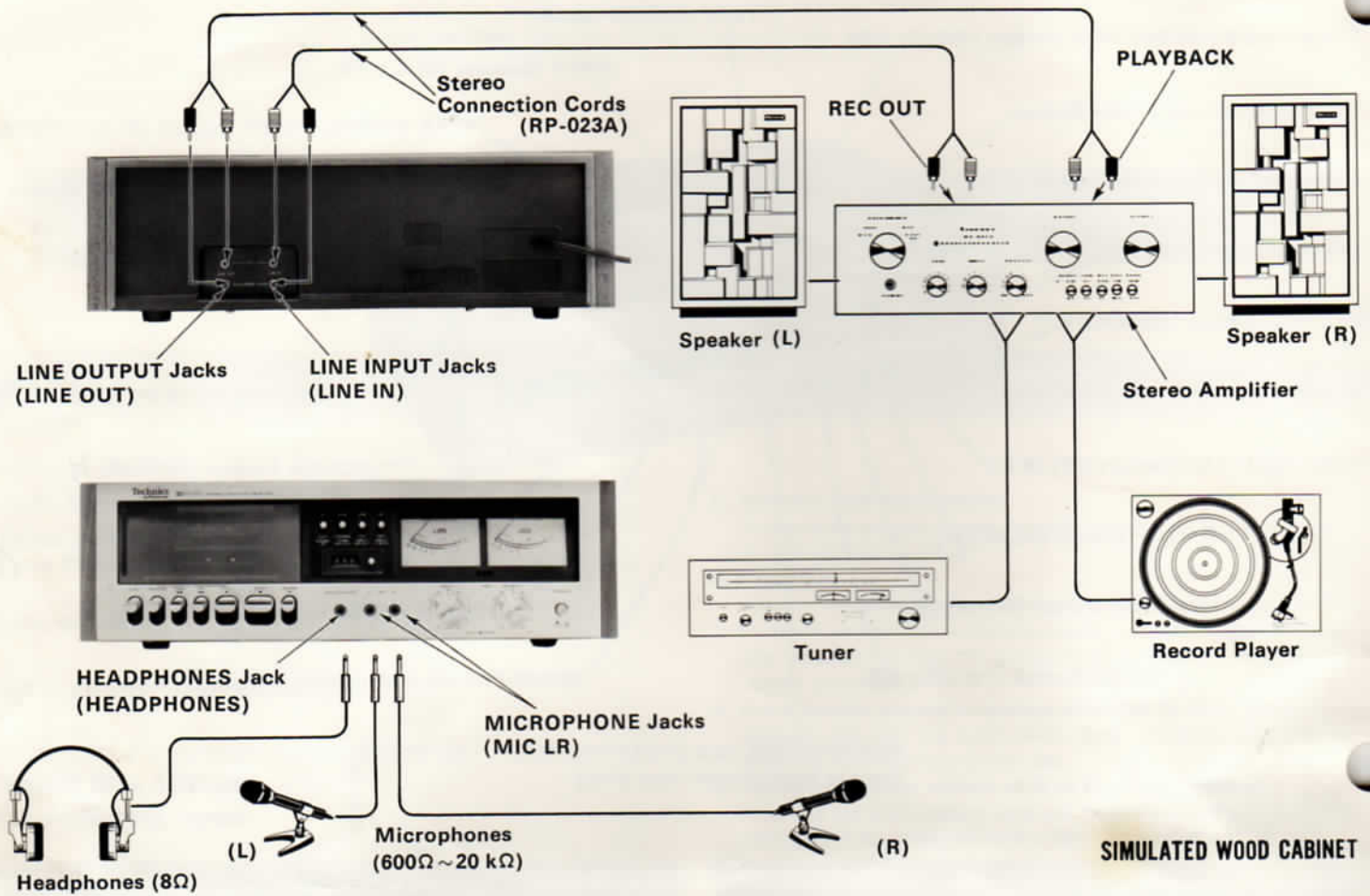
A wide selection of cassette tapes is available today. To make tapes longer than 60 minutes, it is necessary to use thinner tape, which is more fragile and must be handled with greater care. Because the likelihood of a cassette failure increases greatly with thinner tapes, we strongly recommend not using tapes longer than C-90, unless absolutely necessary. Do not use C-120 and C-180 tapes with this unit. If longer than 60 minutes' playing time is required, be sure to select high quality cassette tape capable of reliable performance. 60-minute tapes provide optimum performance with any unit. Since dirt on the head or pressure rollers can cause tape malfunctions, these parts must be kept clean, as instructed in the "MAINTENANCE" section on page 6.

## ACCIDENTAL-ERASE PREVENTION

Tape cassettes have special plastic tabs, one for side one and one for side two, which, if removed, prevent accidental erasure of recorded material. These tabs can be pushed out with a screwdriver or similar tool. If they are broken, (in this unit), the RECORD Button cannot be depressed. If, for any reason, it is later desired to make a recording on a cassette from which the tabs have been removed, it is possible to do so by simply covering the holes where the tabs were with cellophane tape, and then recording in the usual way.



## CONNECTIONS



## PREPARATIONS

- Slide the cassette compartment door open, place the cassette in the compartment with the part where tape is exposed facing you and with the fully-wound reel of tape on the left. Slide the cassette upward into holder and push the holder downward.
  - To remove the cassette, be sure to first push the the STOP Button to stop the tape movement, and then push the EJECT Button.
- Fast forward .....Tape is quickly moved forward onto the right reel by pushing the FF Button.
- Rewind .....By pushing the REW Button, the tape is rewound rapidly to the left reel.
- Stop .....To stop the rewind or fast forward, push the STOP Button.

### Caution:

- Do not push the EJECT Button during the fast forward or the re-wind operation. Before pushing the EJECT Button, be sure to first stop the tape by pushing the STOP Button.
- To change from fast forward or rewind to playback, first push the STOP Button. If the PLAY Button is pushed during fast forward or rewinding operation, it will not function.

## CONNECTION NOTES

Connections should be made in accordance with the connection diagram and the following instructions:

When 2 microphones are used in order to record in stereophonic sound, be sure both of them have the same performance and specification standards.

When only one microphone is used, connect it to either MICROPHONE Jack, and set the INPUT LEVEL Control for the channel not being used to the "0" position.

## PLAYBACK

- Set the DOLBY NOISE-REDUCTION Switch in the "OUT" position for playback of tape recorded in the usual (non-Dolby) way, or to the "IN" position for tape recorded by the Dolby system.
- Set the TAPE Selector for the type of tape to be played back.

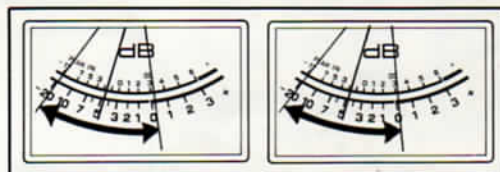
Type of Tape	TAPE Selector Position
· Chromium-dioxide tape recorded by 70 $\mu$ S system	CrO <sub>2</sub>
· Ordinary tape · Low-noise tape · Chromium-dioxide tape recorded by previous system (120 $\mu$ S)	NORMAL

3. Insert the cassette to be played back.
4. Turn the power on by pushing the POWER Switch in, until it locks in its inner position.
5. Depress the PLAY Button.
6. After playback begins, use the controls on the amplifier, to which this unit is connected, to adjust the level and tone.
7. This unit has an automatic-stop system. When the tape reaches its end during playback, the tape-drive mechanism is automatically released, and the system is placed in the stop condition.
  - To listen to playback sound with headphones, connect stereo headphones to the HEADPHONES Jack. Sound can then be heard directly from the unit, without connection to an amplifier. If an amplifier is connected, its controls have no effect upon the sound heard from the headphones.
  - Output is 0.42 V from the LINE OUTPUT Jacks when the OUTPUT LEVEL Controls on this unit are set in their maximum position and the indicator needles of the PEAK LEVEL/VU Meters indicate 0 dB.

6. There are two INPUT LEVEL Controls (one for the left channel and one for the right channel), one ganged with the other. They can be individually turned (by holding one, while turning the other) to balance the left and right channels. The outer (smaller) control is for the left-channel sound, and the inner (larger) control is for the right-channel sound.
7. After all of adjustments have been made, push the PLAY Button while depressing the RECORD Button. The tape will begin moving and recording the sound.
8. When the recording is finished and the tape reaches its end, the automatic-stop system will automatically stop the operation.

#### Notes:

1. No playback sound will be heard from this unit if, during playback, the OUTPUT LEVEL Controls are set to their minimum position, even though the volume control of the amplifier, to which this unit is connected, is set to its maximum position.
2. The OUTPUT LEVEL Controls of this unit can be conveniently used to balance the signal level from this unit with the signal level of a record player, tuner, etc. For this reason, the controls on this unit are designed to affect only the signal level from the LINE OUTPUT Jacks. There is no effect upon the fluctuations of the meters, nor upon the sound heard through headphones.



Recording level

## RECORDING

1. Set the DOLBY NOISE-REDUCTION Switch in the "OUT" position to record in the usual (non-Dolby) way, or to the "IN" position to record with the Dolby system.
2. Set the TAPE Selector to the correct position for the type of tape used to make the recording.

Type of Tape	TAPE Selector Position
• Chromium-dioxide tape	CrO <sub>2</sub>
• Ordinary tape • Low-noise high-output tape	NORMAL

3. Insert the cassette.
4. Push the RECORD Button. The RECORDING INDICATION Lamp will illuminate, but the tape will not move. Play a sample of the program to be recorded and adjust the recording level by observing the PEAK LEVEL/VU Meters.
5. If the recording is to be made by microphone(s), set the INPUT Selector in the "MIC" position. If the recording is to be made from equipment connected to the LINE INPUT Jacks, set the INPUT Selector in the "LINE" position.  
To adjust the recording level, turn the INPUT LEVEL Controls to allow the PEAK LEVEL/VU Meters to fluctuate as close as possible to the red zone, but WITHOUT MOVING INTO THE RED ZONE. (Refer to page 5 for information concerning the PEAK-SIGNAL-CHECK Switch.)

**SIMULATED WOOD CABINET**

## TAPE SELECTOR SETTINGS FOR VARIOUS TAPES

Tape Selector	Brand		Tape Type
NORMAL	Panasonic	ELN	C-60
	BASF	LH	C-60, C-90
	FUJI	FX	C-60, C-90
	MAXELL	UD	C-60, C-90
	MAXELL	UDXL	C-60, C-90
	SONY	HF	C-60, C-90
	TDK	SD	C-60, C-90
	CrO <sub>2</sub>	PHILIPS	CrO <sub>2</sub>
SONY		CrO <sub>2</sub>	C-60
TDK		KR	C-60
TDK		SA	C-60

#### Note:

Some audio material is copyrighted, and recordings of such material must be limited to personal use and enjoyment.

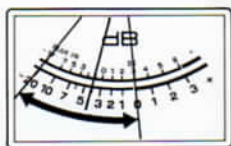
## PEAK-SIGNAL-CHECK SWITCH

### Recording Level Adjustment

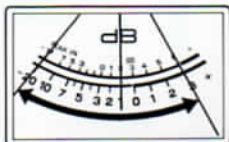
On ordinary tape decks, the level is adjusted so the level meters fluctuate at a point as near to (but below) the "0" point as possible. Because this unit has a PEAK-SIGNAL-CHECK Switch, better results can be obtained by adjusting the recording level as follows:

#### 1. Adjustment of the recording level by using the PEAK-SIGNAL-CHECK Switch

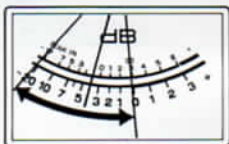
- 1 Set the PEAK-SIGNAL-CHECK Switch in the "OUT" position, and adjust the level up to but not beyond the "0 dB" point.



- 2 Next, set the PEAK-SIGNAL-CHECK Switch in the "IN" position. When the music reaches its peak, set the INPUT LEVEL Controls for meter readings up to, but not beyond "+6 dB". By so doing, the recording can be made without distortion, and at higher signal levels.



- 3 Occasionally, set the PEAK-SIGNAL-CHECK Switch in the "OUT" position to confirm that the meters do not read more than "0 dB."



#### 2. Significance of PEAK-SIGNAL-CHECK Switch "IN" and "OUT" positions

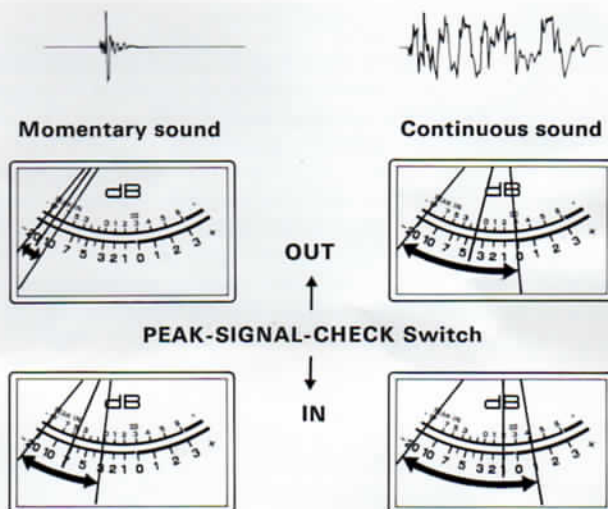
Because the response to sound signals by ordinary level meters is slow, the actual level of momentary signals is not accurately indicated. Under these circumstances there is a possibility that recordings can be distorted by large momentary signals. The level meters in this unit include a special PEAK-SIGNAL-CHECK Switch which, when set in the "IN" position, allows the meters to indicate the level of sounds, even momentary sounds, with extremely precise accuracy.

The PEAK LEVEL/VU Meters in this unit have dual scale indications which should be read in the following way:

With the PEAK-SIGNAL-CHECK Switch set in the "IN" position, the scale is read up to +6 dB.

With the PEAK-SIGNAL-CHECK Switch set in the "OUT" position, the scale is read up to +3 dB.

Meter fluctuations for momentary and continuous sounds are as shown below.



## CHROMIUM-DIOXIDE TAPE

### TAPE Selector

In order to assure the best performance when using chromium-dioxide tape:

1. Playback equalization.
2. Record equalization and
3. Record bias

can all be changed at the same time by using the TAPE Selector.

As a result, chromium-dioxide tape can be used to obtain clear tone quality, with very little noise, and a wide dynamic range. Although a time constant of 120  $\mu$ S has been used in tape recorders designed for use with chromium-dioxide tape, this unit uses a time constant of 70  $\mu$ S in order to obtain much better performance.

## DOLBY RECORDING HINTS

This unit includes the Dolby noise-reduction system, which reduces tape noise to a remarkable degree.

Briefly, the system works as follows: At low sound levels (where tape noise is most noticeable), the level of the high-frequency portion of the sound is recorded at a higher level. During playback, the level of only that portion of the signal which was increased at the time of the recording, is reduced by a like amount, and causes the signal to be heard at a normal level, and the tape noise to be reduced significantly.

- If Dolby recordings are made under conditions in which the recording sensitivity varies, or in which the frequency response is not flat, the Dolby system cannot function with sufficient efficiency. When, for example, recording sensitivity is high, the treble range will be overemphasized. And, if frequency response is poor, it will become even further deteriorated. It is important, therefore, that the selection of the setting of the TAPE Selector, and the choice of tape to be used, be made with deliberate care.
- If, when a tape is recorded by the Dolby system, a memorandum is written on the cassette, playback in the ordinary (non-Dolby) way can be avoided.

## MONITORING

To listen to the recording as it is being made, simply plug a set of stereo headphones (8Ω) into the HEADPHONES Jack. You may also listen to the program as it is being recorded if your receiver or amplifier is equipped with a Tape-Monitor Switch.

### HOW TO USE THE PAUSE BUTTON

1. The PAUSE Button can be used to temporarily stop tape movement during recording.
2. It can also be used to begin a recording without any delay. Push the RECORD Button, the PAUSE Button, and then the PLAY Button. The recording level can then be adjusted, if necessary. The recording can be started immediately at any time thereafter by simply pushing the PAUSE Button once again to release it from its locked in position.

### AUTOMATIC-STOP SYSTEM

When the tape comes to its end during playback, or recording, the tape movement stops automatically, and the PLAY Button and RECORD Button are released. After the automatic-stop system has been activated, the PLAY Button cannot be locked.

Although the tape stops when it reaches its end during fast forward, or rewind, the motor still operates. Be sure, therefore, to push the STOP Button in order to completely stop the motor operation. To subsequently turn off the power, push the POWER Switch.

### FOUR-TRACK, TWO-CHANNEL RECORDING SYSTEM

The recording is always made on the lower half of the tape. Two-way recordings can be made in the following way. Tracks 1 and 2 are recorded first. When the tape reaches its end, turn the cassette over and re-insert it. Record in the same manner as before. The other two tracks will then be recorded.

(Although this cassette stereo tape deck has a 4-track system, tracks 1 and 2, or tracks 3 and 4, cannot be separately recorded.)

### ERASING

When recording, any previously-recorded material on the tape is erased automatically. To erase an existing recording without making a new one, disconnect the microphones or other input connection cords, set the INPUT LEVEL Controls to minimum, and operate the unit in the same way as for recording. All previous recordings on one side will be completely erased as the cassette runs from beginning to end. To erase the other side, flip the tape and repeat.

### Product Service

Should your "Technics by Panasonic" product ever require service, refer to the Directory of Authorized Servicenters, or your Franchised Panasonic dealer, for guidance. Do not send the unit to the Panasonic head office for repair.

### Accessories

Stereo connection cord . . . . . 2

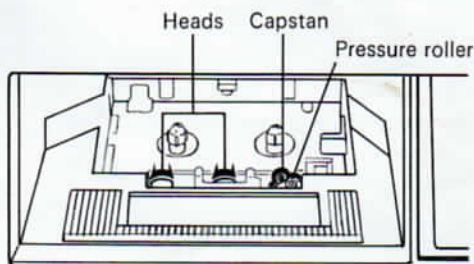
## MAINTENANCE

The head assembly, the capstan and the pressure roller are always in contact with the tape during operation. Therefore, they tend to get dirty very easily and have an adverse influence upon the sound quality and the level. Dirt can cause sound loss, noise and deterioration of the frequency characteristics. Therefore it is occasionally necessary to clean these parts as follows.

- Remove the cassette and wipe the capstan and the pressure roller with a cotton swab. The head assembly is easily accessible, and head surfaces should be cleaned well. Clean the head assembly with a cotton swab. If the dirt is excessive, wind a small piece of soft cloth around the cotton swab, and apply a slight amount of alcohol to it.

#### Notes:

1. Don't allow magnetic materials such as a screwdriver or a magnet, near the head assembly.
2. When cleaning, be careful not to bend the tape guides.
3. Don't attempt to clean the cabinet with alcohol, benzine or thinner, because it may damage the finish. If the cabinet is dirty, clean with a soft cloth dampened with a soap-and-water solution.



### TROUBLESHOOTING

If operation of this unit does not seem normal, check the following points before requesting service. If the trouble cannot in this way be determined and corrected, contact the dealer from whom it was purchased.

1. After the tape cassette is inserted, the tape does not move when the PLAY Button is pushed.
  - Is the power cord correctly connected?
  - Is the POWER Switch pushed in the "ON" position?
  - Is the PAUSE Button released?
2. Although the tape moves, no sound is heard.
  - Is the tape blank?
  - Are the connections of amplifier and speakers correct?
  - Are connection cords from this unit to the amplifier correctly connected?
  - Is the level control of the connected amplifier set in the correct position?
  - Is the monitor switch of the connected amplifier set in the correct position?
  - Are the OUTPUT LEVEL Controls set in the correct position?
3. Sound is distorted.
  - Is the recording level too high?
  - Is the playback output level too high?
  - Is the input impedance of the connected amplifier appropriate?
4. The RECORD Button cannot be pushed down.
  - Is the tape cassette inserted correctly?
  - Have the recording-prevention tabs of the cassette been removed?
5. Playback sound is hoarse or vibrates. Recorded sound is not clear.
  - Are the head surfaces dirty?
  - Is foreign material adhered to the pressure roller and/or the capstan?

Manufactured under license from Dolby Laboratories Inc.

## SPECIFICATIONS

Track System:	4-track, 2-channel stereo recording and playback	Outputs:	LINE: Output level 0.42 V, load impedance 50 k $\Omega$ over HEADPHONE: output level 60 mV, impedance 8 $\Omega$
Tape Speed:	1-7/8 ips	Motor:	1-Electronic Speed Control Motor
Wow and Flutter:	0.09% (WRMS)	Heads:	2-Head System 1-Super Alloy Head for rec/playback 1-Ferrite Head for erasure
Frequency Response:	CrO <sub>2</sub> tape: 30-16,000 Hz Normal tape: 30-14,000 Hz	Power Requirements:	AC: 120V, 50/60 Hz (not necessary for conversion)
Signal-to-Noise Ratio:	Dolby NR in: 63 dB (CrO <sub>2</sub> tape above 5 kHz) Dolby NR out: 50 dB (Normal tape) (signal level = 250nWb/m)	Power consumption:	10 W
Fast Forward and Rewind Time:	Approx. 90 seconds with C-60 cassette tape	Dimensions:	5-5/8"(H) x 17-1/8"(W) x 12-5/8"(D)
Inputs:	MIC: Sensitivity 0.25 mV, applicable microphone impedance 600 $\Omega$ -20 k $\Omega$ LINE: Sensitivity 60 mV, input impedance 47 k $\Omega$	Weight:	17-1/2 lbs (Specifications are subject to change without notice)

## RECOMENDED OPTIONAL ACCESSORIES

### Electret Condenser Microphones



RP-3850E

RP-3830E

RP-3550E

### RP-3850E/RP-3830E/RP-3550E

Unidirectional electret condenser microphones. RP-3550E with fixed wind screen and detachable 3-pin Switchcraft connector. RP-3830E with detachable wind screen, tone select switch and detachable 3-pin Switchcraft connector. RP-3850E with detachable wind screen, PAD switch, tone select switch and 3-pin Cannon connector. All models operate on 1.5 volt power source, (one "AA" size battery). Operating impedance of 200 and 600 ohms unbalanced. Mic cord length 17 feet with mic plug included.

	Frequency Response	Sensitivity (0dB = 1V/ $\mu$ bar)	Output Impedance (at 1kHz)	S/N Ratio (1,000Hz, 1 $\mu$ bar)	Wind Noise	Max. Input Sound Pressure	Microphone Cable
RP-3850E	20~16,000Hz	-72dB $\pm$ 3dB (at 1kHz)	200 $\Omega$ $\pm$ 20%, balanced	46dB or more	50dB, SPL or less	128dB, SPL	Cannon XLR-3-11C 5mm $\phi$ , 5m in length
RP-3830E	50~15,000Hz	-74dB $\pm$ 3dB (at 1kHz)	600 $\Omega$ $\pm$ 20%, balanced	46dB or more	50dB, SPL or less	128dB, SPL	Switchcraft A3F 5mm $\phi$ , 5m in length
RP-3550E	50~15,000Hz	-74dB $\pm$ 3dB (at 1kHz)	600 $\Omega$ $\pm$ 20%, balanced	46dB or more	50dB, SPL or less	128dB, SPL	Switchcraft A3F 5mm $\phi$ , 5m in length