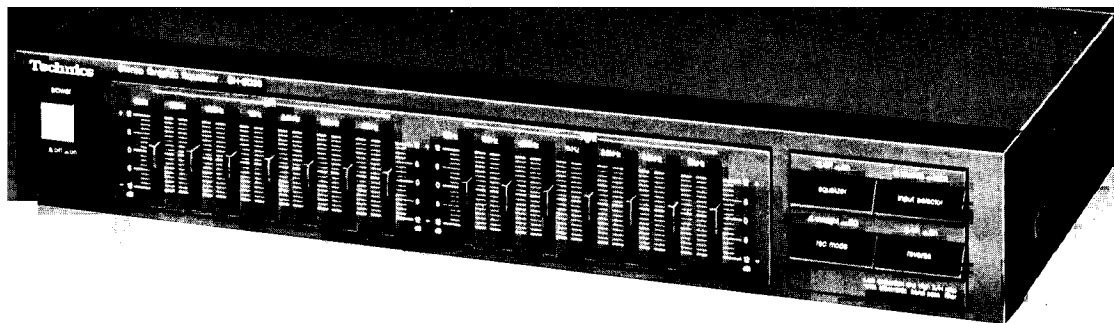


# Technics

Stereo Graphic Equalizer

## SH-8038

### OPERATING INSTRUCTIONS



Before operating this unit, please read these instructions completely.

## To Our Valued Customer,

Technics, The Science of Sound, welcomes the challenge of new audio technologies and brings you a multitude of world-renowned, high quality audio components, all backed by our time-honored commitment to innovation, value, and quality.

Technics captures the power of new ideas and turns them into high performance components like digital compact disc players that feature High Speed Linear Motor Transports, high speed editing cassette decks, professional and consumer turntables, Computer Drive New Class A amplifiers, and A/V receivers that integrate both audio and video equipment.

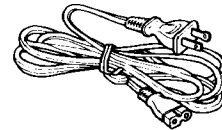
The Technics list of advanced audio components continues. From Class AA amplifiers, honeycomb disc speakers, and multi-disc CD changers to the world's first touch-sensitive graphic equalizer, Technics is a shining example of audio technology at its best.

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# Accessories

•Stereo connection cables .....	2	•AC power supply cord .....	1
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The model number and serial number of this product can be found on either the back or the bottom of the unit. Please note them in the space provided below and retain this booklet as a permanent record of your purchase to aid identification in the event of theft.

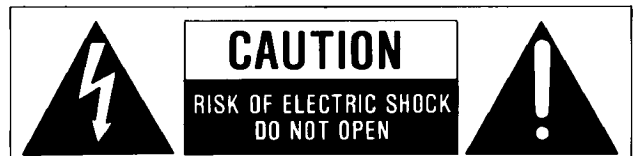
MODEL NUMBER

SERIAL NUMBER

\_\_\_\_\_

### WARNING:

**TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.**



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE SCREWS. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



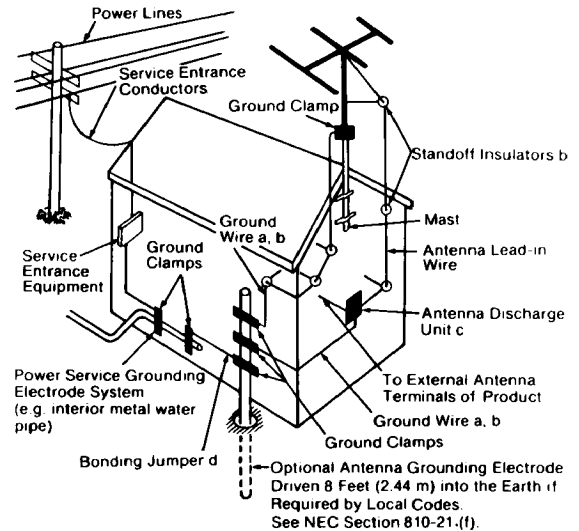
The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

# Suggestions for Safety

Before using this unit, be sure to read applicable items of the operating instructions and these safety suggestions carefully. Afterwards keep them handy for future reference. Take special care to follow the warnings indicated on the unit itself as well as in the operating instructions.

- 1. Water and Moisture** -- The unit should not be used near water -- for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, and the like.
- 2. Object and Liquid Entry** -- Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
- 3. Ventilation** -- The unit should be situated so that its location or position does not interfere with its proper ventilation. For example, the unit should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
- 4. Heat** -- The unit should be situated away from heat sources such as radiators, heat registers, stoves, or other units that produce heat.
- 5. Power Sources** -- The unit should be connected to a power supply only of the type described in the operating instructions or as marked on the unit.
- 6. Power Cord Protection** -- AC power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the unit. Never take hold of the plug or cord if your hand is wet, and always grasp the plug body when connecting or disconnecting it.
- 7. Polarization** -- If the unit is equipped with a polarized AC power plug (a plug having one blade wider than the other), that plug will fit into the AC outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
- 8. Carts and Stands** -- The unit should be used only with a cart or stand that is recommended by the manufacturer.
- 9. Wall or Ceiling Mounting** -- The unit should be mounted to a wall or ceiling only as recommended by the manufacturer.
- 10. Cleaning** -- The unit should be cleaned only as recommended by the manufacturer.

- 11. Outdoor Antenna Grounding** -- If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70 - 1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See figure below.



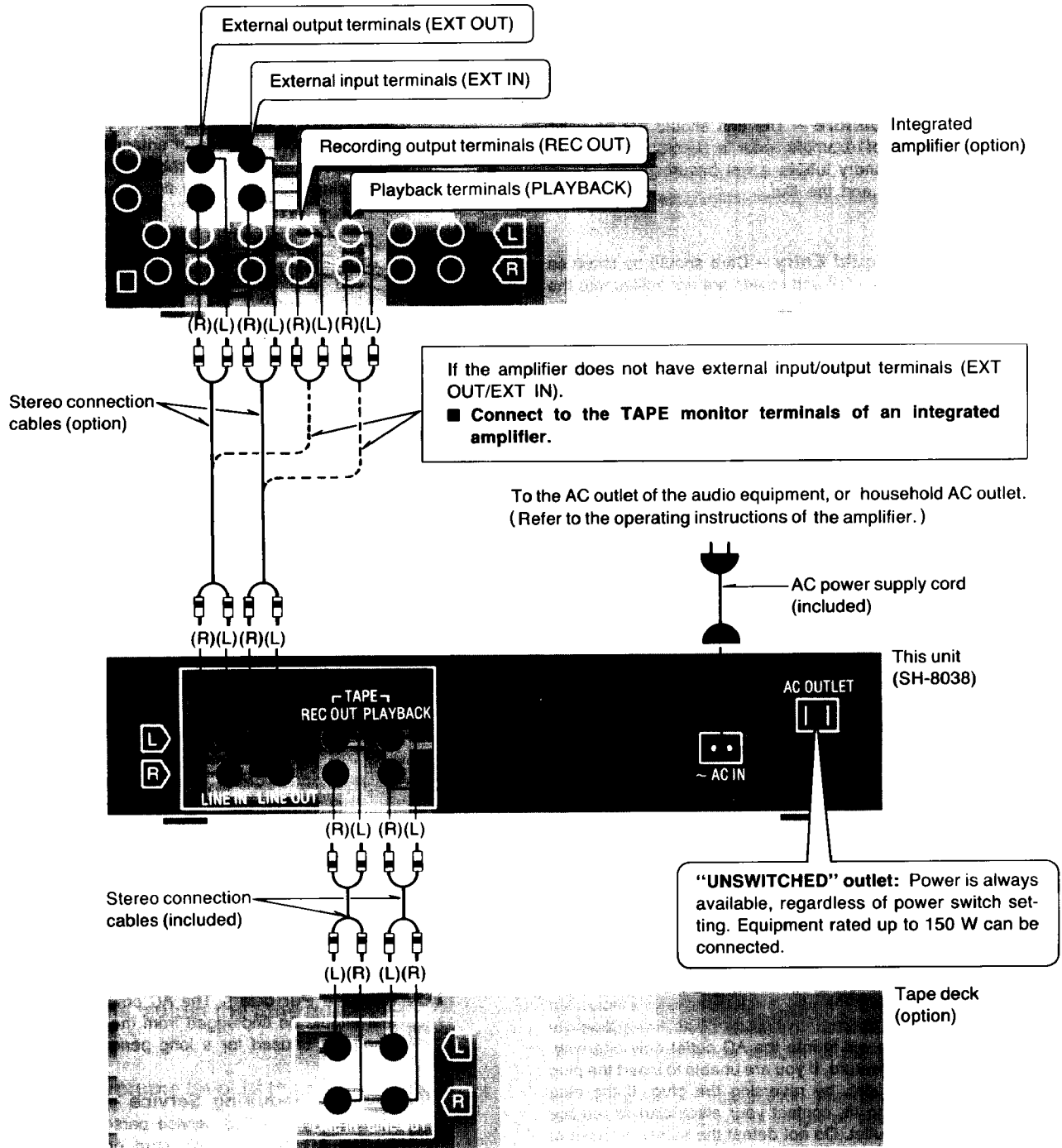
- Use No. 10 AWG (5.3 mm<sup>2</sup>) copper, No. 8 AWG (8.4 mm<sup>2</sup>) aluminum, No. 17 AWG (1.0 mm<sup>2</sup>) copper-clad steel or bronze wire, or larger, as a ground wire.
- Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 4 feet (1.22 m) to 6 feet (1.83 m) apart.
- Mount antenna discharge unit as close as possible to where lead-in enters house.
- Use jumper wire not smaller than No. 6 AWG (13.3 mm<sup>2</sup>) copper, or the equivalent, when a separate antenna-grounding electrode is used. See NEC Section 810-21 (j).

- 12. Power Lines** -- An outdoor antenna should be located away from power lines.
- 13. Nonuse Periods** -- The AC power supply cord of the unit should be unplugged from the household AC outlet when left unused for a long period of time.
- 14. Damage Requiring Service** -- The unit should be serviced by qualified service personnel when:
  - The AC power supply cord or the plug has been damaged; or
  - Objects have fallen or liquid has been spilled into the unit; or
  - The unit has been exposed to rain; or
  - The unit does not appear to operate normally or exhibits a marked change in performance; or
  - The unit has been dropped, or the enclosure damaged.
- 15. Servicing** -- The user should not attempt to service the unit beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

# Connections

(Refer to the operating instructions of the amplifier for further details.)

- Connect to the input/output (EXT OUT/EXT IN) terminals of an integrated amplifier. Using the connection diagram below, corrected signals from any source can be heard or recorded onto the tape deck.



**Note:** A receiver or preamplifier can be connected in the same manner as described above. An integrated amplifier is used here for example.

**CAUTION:**  
 TO PREVENT ELECTRIC SHOCK MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

Note that the way the input and output cords are routed (for example, if they are tangled with the power cord) could cause a hum to be emitted.

# Front Panel Controls and Functions

## ● Power switch (power)

This switch turns on and off the secondary circuit power only.

The unit is in the "standby" condition when this switch is set to the "off" (⏻) position.

Regardless of the switch setting, the primary circuit is always "live" as long as the power cord is connected to an electrical outlet.

## ● Left channel Band-level controls (left)

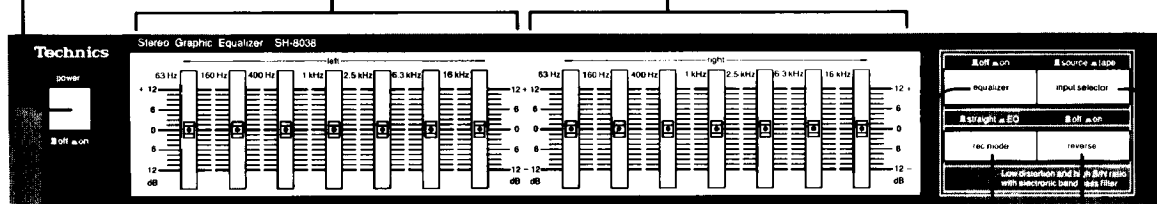
These levers are used to adjust the 7 frequency levels.

When these levers are moved in the "+ dB" direction, peak frequency characteristics are obtained. When they are moved in the "- dB" direction, dip frequency characteristics are obtained. These characteristics can be adjusted a maximum of  $\pm 12$  dB.

When the power switch is set to the "on" position, the tip of these levers will illuminate.

## ● Right channel Band-level controls (right)

These levers function the same as the left channel band-level controls.



## ● Equalization switch (equalizer)

This switch is used to turn the equalization circuitry on and off.

**on** (⏻):

Set to this position for equalizer correction.

**off** (⏻):

Set to this position to turn off equalizer correction. By turning this switch on and off, the equalizer effect can also be checked. When this switch is in the "off" (⏻) position, signals will still pass through the unit and be emitted, regardless of whether the power switch is in the "on" or "off" position.

## ● Recording mode selector (rec mode)

**straight** (⏻):

Set to this position to record without equalizer correction.

**EQ** (⏻):

Set to this position to make a tape recording of a radio broadcast or a disc while controlling the frequency response.

**Note:**

The equalization switch must be set to the "on" (⏻) position and then the input selector must be set to the "source" (⏻) position, otherwise the frequency response cannot be controlled.

This only works for tape decks connected to this unit.

## ● Reverse mode selector (reverse)

**off** (⏻):

This is the normal position for use, when set to this position, the sound level of desired frequencies can be raised or lowered 12 dB by moving the lever in the (+dB) direction or (-dB) direction.

**on** (⏻):

When set to this position, characteristics are obtained which are completely inverted with respect to those obtained in the "off" position.

This is convenient for purposes such as reducing tape hiss, etc.

## ● Input selector (input selector)

**source** (⏻):

Set to this position to listen to the radio or a compact disc, etc.

**tape** (⏻):

Set to this position to listen to a tape deck connected to the back of this unit.

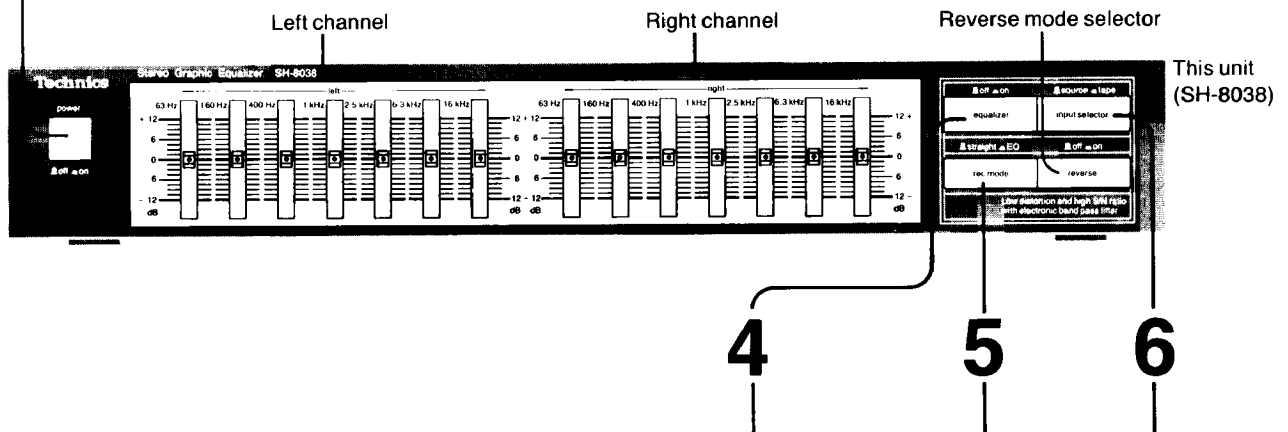
# Operation

**Note:** Turn the amplifier on, and set it for listening to the sound.  
(Refer to the operating instructions of the amplifier.)

- 1 Reduce the volume level of the amplifier.**  
(Set the amplifier's tone controls to the center position, and set the super bass or loudness switch to "OFF".)

- 2 Set the power switch to "on".**

- 3 Set the tape-monitor selector of the amplifier to "Tape" position.** (Refer to note)  
(Refer to the operating instructions of the amplifier for further details.)



	equalizer	rec mode	input selector
To listen to corrected sound of compact disc or radio.	"on" (■ — ■)	Set to any position.	"source" (■ — ■)
To record the corrected sound of compact disc or from the radio.		"EQ" (■ — ■)	
To record the uncorrected sound of compact disc or from the radio.		"straight" (■ — ■)	
To listen to corrected sound from a tape deck.		Set to any position.	
Press the equalization switch (equalizer) to the "off" (■ — ■) position to listen to uncorrected sound, or when recording.			

- 7 Using the left and/or right channel band-level controls, adjust the tone quality as desired.**

## To produce a reversed equalization level

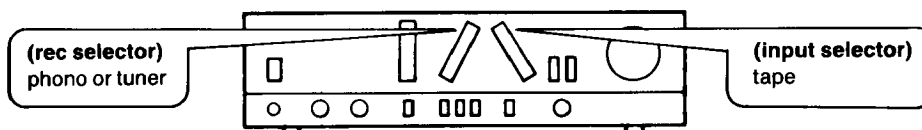
Set the reverse mode selector to the "on" position (■ — ■).

(By doing so, the equalization characteristic will be reversed, thus changing the sound range of sounds emitted from the speakers.)

- 8 Adjust the volume level of the amplifier.**

### Notes

- If the amplifier has a recording mode selector and an input selector: (Make setting as shown in the figure.)



- If your amplifier has terminals (GRAPHIC EQ./EXTERNAL) for connection of other equipment, use of the recording selector is unnecessary.

# Examples of Applications

By using the seven frequency divisions in the 63 Hz~16 kHz frequency range of the equalization function, various corrections of the sound field and tone quality are possible.

## For creation of a sound field in the listening room.

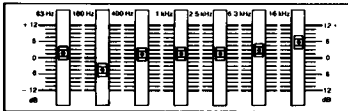
### ■ Correcting room acoustics

Each room has its own particular effects on frequency characteristics. These effects are determined by a number of conditions, such as room size, furnishings, etc.

The 7 separate divisions of the band level control on the this unit make it possible to selectively correct only the frequency ranges necessary to suit the conditions of each listening room.

### An example of room acoustics correction

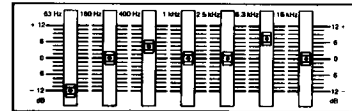
In order to correct the peaks and dips in bass sounds caused by reflection reduce, the 160 Hz level 4~6 dB and then, raise the level of sounds below the 63 Hz and above the 6.3 kHz vicinity slightly.



## For editing "live" recordings made on tape, etc.

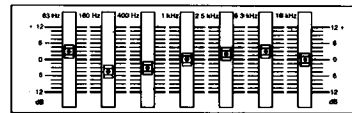
### ■ Cutting the noise from live recording tapes

Live tapes recorded outdoors generally contain popping noises caused by wind and various other noises from the surrounding area. In order to effectively eliminate wind noise, cut bass sounds below 63 Hz and raise the level of sounds in the 400 Hz range. Then control sounds made by birds, etc., with a 6.3 kHz adjustment.



### ■ Making tapes for car stereos

Tapes can be made exclusively for the listening conditions inside a vehicle. Merely raise the 63 Hz level 3~4 dB. For medium and low frequencies, centering on the 400 Hz vicinity, lower the modulating effect by raising the 2.5 kHz~6.3 kHz vicinity by 2~4 dB.



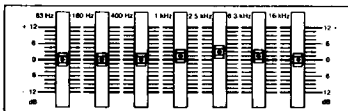
## For creation of unique, individually personalized sounds.

### ■ Producing clear vocals

For female vocals, raise the level of the 1 kHz~2.5 kHz range by 2~4 dB. To rectify omission, raise the level of the 6.3 kHz vicinity slightly.

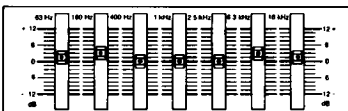
Male vocals can be improved by raising the level of the 400 Hz~2.5 kHz range.

Below is an example of a female vocal correction.



### ■ Adding some power to disco music

Increase the power of bass guitars and bass drums by raising the level of the 63 Hz~160 Hz range, and raise the level of sounds from 6.3 kHz to 16 kHz. The result will be greatly emphasized low frequency sounds and strong, clear high frequency sounds.



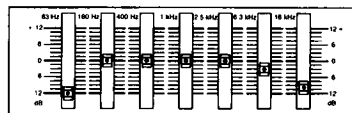
## For noise reduction and "howling" prevention.

### ■ Cutting noise from discs

Noises from warped discs are low frequency noise components. Lowering the sound level of the 63 Hz vicinity can eliminate these.

As for cutting the noise from old discs, all band level control levers should first be set to their exact mid-position (flattening the equalizer effect) and then lowered one by one to the "-12 dB" position, listening to the effect of each adjustment.

The noise components can thus be found and cut without deteriorating the sound quality.



### ■ Reducing tape hiss

Tape hiss can be effectively reduced by slightly raising the level of high frequency (above 2.5 kHz) sounds during tape deck recording, and then lowering them during playback.

#### Note:

If sounds above 6.3 kHz are raised too much, distortion may result in the tape deck. Prevent this by watching the level meters of the tape deck and setting the recording levels appropriately.

# Troubleshooting Guide

Before requesting service for this unit, check the chart below for a possible cause of the problem you are experiencing. Some simple checks or a minor adjustment on your part may eliminate the problem and restore proper operation.

If you are in doubt about some of the check points, or if the remedies indicated in the chart do not solve the problem, refer to the directory of Authorized service centers (enclosed with this unit) to locate a convenient service center, or consult your Technics dealer for instructions. (In U.S.A. consult MSC Authorized Servicenters for detailed instructions.)

Problem	Probable cause(s)	Suggested remedy
No sound	• Incorrect connection.	• Refer to page 4.
	• The power switch is "off".	• Turn the power switch "on".
Equalization is not possible during recording	• The equalization switch of the equalizer is set to the "off" position.	• Set it to the "on" position.
	• The recording mode selector of the equalizer is set to the "straight" position.	• Set it to the "EQ" position.
	• The input selector of the equalizer is set to the "tape" position.	• Set it to the "source" position.

## Technical Specifications

(IHF'78)

<b>Frequency response</b> (center position) 5 Hz~100 kHz, -3 dB	<b>Input sensitivity</b> 1 V	<b>Center frequency</b> 63 Hz, 160 Hz, 400 Hz, 1 kHz, 2.5 kHz, 6.3 kHz, 16 kHz
<b>Maximum output voltage</b> 7 V (1 kHz, THD 0.01%)	<b>Signal-to-noise ratio</b> (110 dB, IHF'A)	
<b>Rated output voltage</b> 1 V	<b>Maximum input voltage</b> 7 V (1 kHz)	
<b>Rated total harmonic distortion</b> 0.005% (20 Hz~20 kHz) 0.003% (1 kHz)	<b>Input impedance</b> 33 kΩ	<b>GENERAL</b>
	<b>Gain</b> 0±1 dB	<b>Power supply</b> AC 120 V 60 Hz
	<b>Band level controls</b> +12 dB~-12 dB (7 continuously variable elements per channel)	<b>Power consumption</b> 7 W
		<b>Dimensions</b> (430×75×192.5 mm) (W×H×D) (16 <sup>15</sup> / <sub>16</sub> "×2 <sup>31</sup> / <sub>32</sub> "×7 <sup>19</sup> / <sub>32</sub> "
		<b>Weight</b> 1.85 kg (4.1 lb)

## Maintenance

To clean, use a soft dry cloth.  
If the surfaces are extremely dirty, use a soft cloth, dipped into a soap and water or a weak detergent solution.  
Wring the cloth well before wiping the unit.  
Wipe once again with a soft dry cloth.  
Never use alcohol, paint thinner, or benzine, nor a chemically treated cloth to clean this unit.  
Such chemicals may mar the finish of your unit.

## Product Service

### ■ Warning concerning removal of covers

The unit should be serviced by qualified technicians only. No service information is provided for customers. Your product is designed and manufactured to ensure a minimum of maintenance. However, should your unit ever require service, a nationwide system of factory servicenters and AUTHORIZED INDEPENDENT SERVICENTERS is maintained to support your product's warranty.

(In the U.S.A., call 1-800-447-4700 to locate the MSC Authorized Servicenter nearest you.)

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