

Suggestions for Safety

■ Use a standard way of holding when air is blown from the blower. Please read these operating instructions carefully. There is the possibility that a fire might be caused by careless use of this unit.

■ A DC power source cannot be used.

Be sure to check the power source carefully, especially in a shop or other place where the unit is used.

■ Grasp the plug when disconnecting the power supply cord.

1. Wet hands are dangerous.

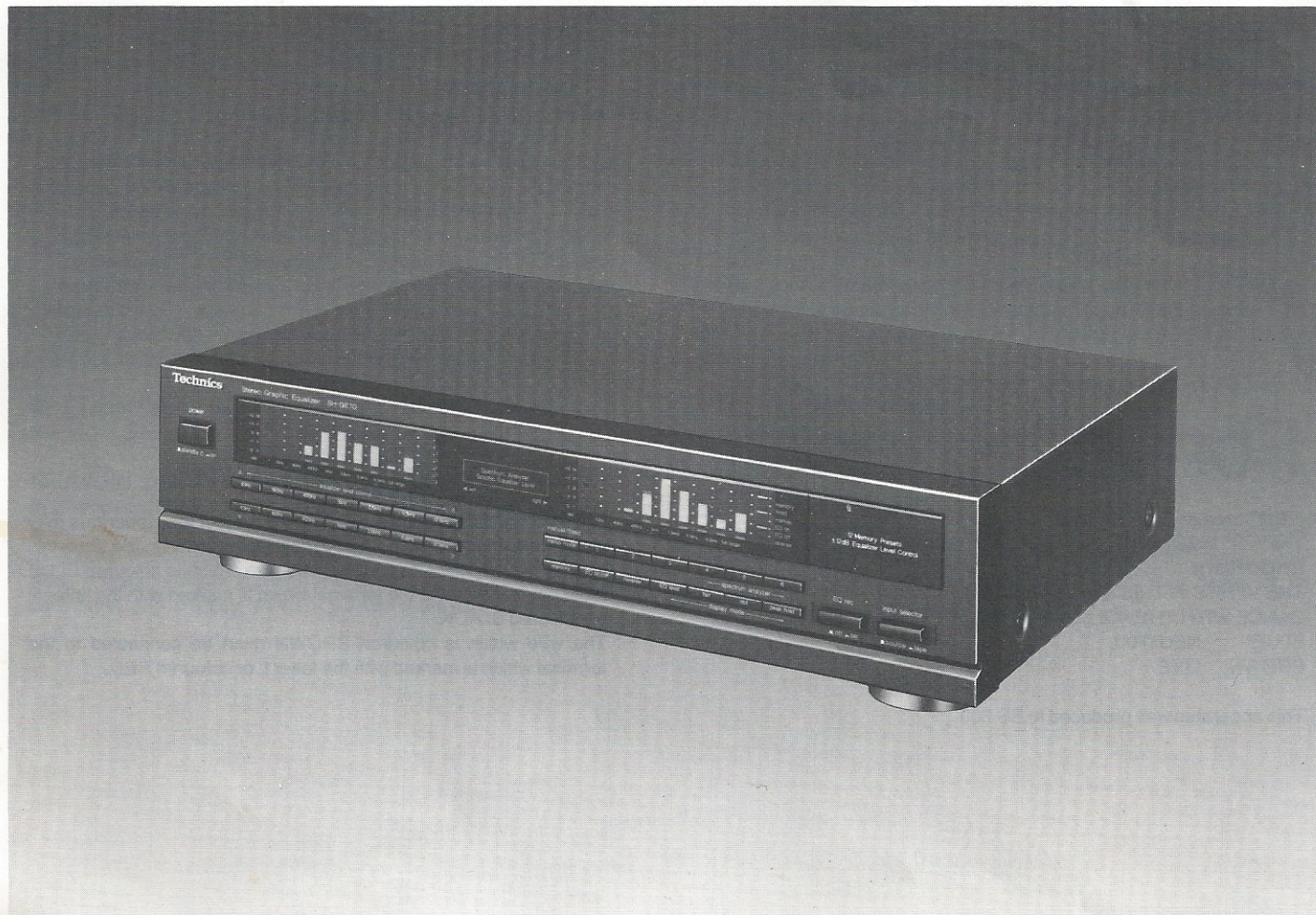
A dangerous electric shock may result if the plug is touched by

Technics

Stereo Graphic Equalizer

SH-GE70

OPERATING INSTRUCTIONS



Notes:

- Specifications differ according to the area code.
- The "EB" area code, for example, indicates United Kingdom specifications.
- The "EB" indication is shown on the packing case and serial number tag.

EB GN

Before operating this unit, please read these instructions completely.

Dear Stereo Fan

We want to thank you for selecting this product and to welcome you to the growing family of satisfied Technics product owners around the world. We feel certain you will get maximum enjoyment from

this new addition to your home. Please read these operating instructions carefully, and be sure to keep them handy for convenient reference.

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For United Kingdom

("EB" area code model only)

The "EB" indication is shown on the serial number tag.

Important

THE WIRES IN THIS MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE.

BLUE: NEUTRAL

BROWN: LIVE

This apparatus was produced to BS 800.

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows. The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

■ Be sure to place the unit on a flat, level surface

- If the surface is inclined, a malfunction may result.

- **Never attempt to repair or reconstruct this unit**

A serious electric shock might occur if this unit is repaired, disassembled or reconstructed by unauthorized persons, or if the internal parts are accidentally touched.

■ Take particular care if children are present

- Never permit children to put anything, especially metal, inside this unit. A serious electric shock or malfunction could occur if articles such as coins, needles, screwdrivers, etc. are inserted through the ventilation holes, etc. of this unit.

- If water is spilled on the unit

Be extremely careful if water is spilled on the unit, because a fire or

- serious electric shock might occur. Immediately disconnect the power cord plug, and consult with your dealer.

- **Avoid spray-type insecticides**

- Insecticides might cause cracks or "cloudiness" in the cabinet and plastic parts of this unit. The gas used in such sprays might, moreover, be ignited suddenly.

- Never use alcohol or paint thinner

These and similar chemicals should never be used, because they might cause flaking or cloudiness of the cabinet finish.

■ Disconnect the power supply cord if the unit will not be used for a long time

If the unit is left for a long time with the power ON, this will not only shorten its useful operation life, but may also cause other troubles.

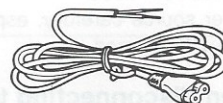
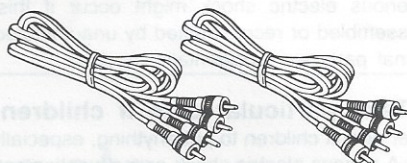
■ **If trouble occurs**

If, during operation, the sound is interrupted or indicators no longer

Accessories

• Stereo connection cables 2

• AC power supply cord 1



Note: The configuration of the AC power supply cord differs according to area.

Connections

Make connections in the numbered sequence by using the included cables.

1 Connect the stereo connection cables.

The illustration below shows an example of connections made when this unit is combined with a Technics electronic component system, and shows only the connections to be made to and from this unit in that combination.

2 Connect the AC power supply cord.

To the AC outlet of the audio equipment, or household AC outlet.

Note:

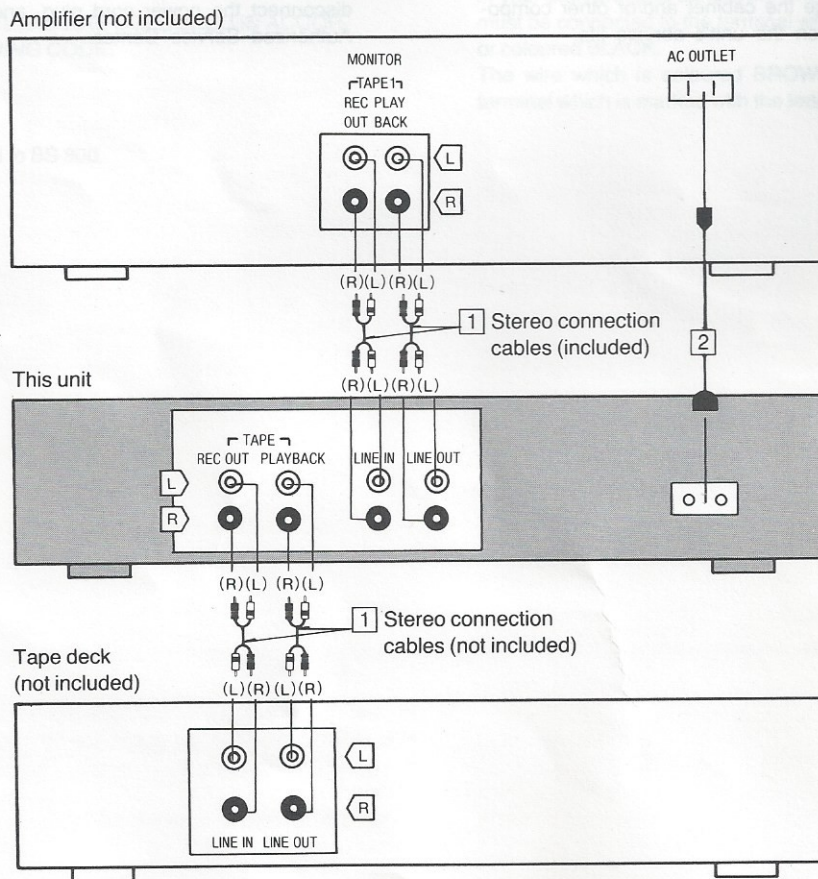
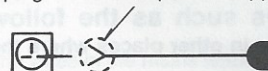
The configuration of AC power supply cord differs according to area.

① Connect this cord only after all other cables and cords have been connected.

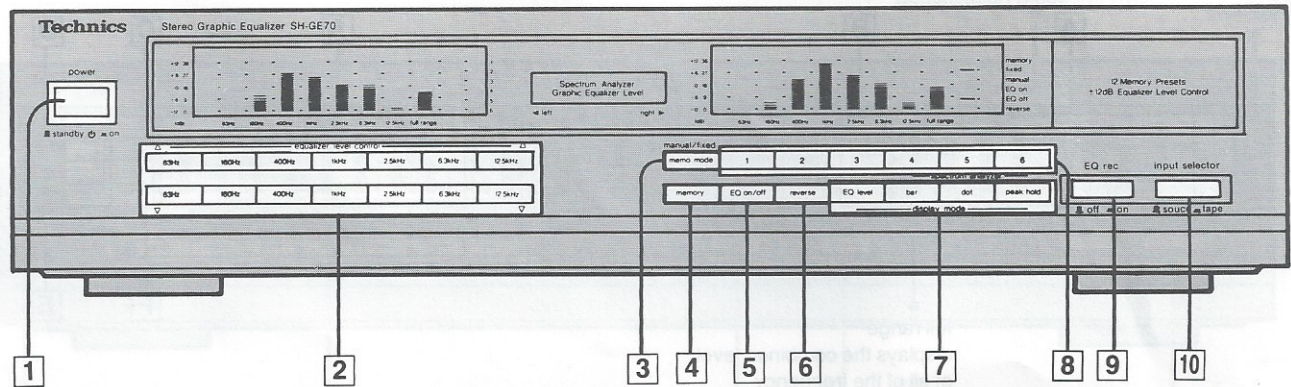
If the cord is to be connected to the household AC outlet, cut off and dispose of the plug and replace with a suitable plug. (Refer to "For United Kingdom".)

② Fit a suitable plug to an AC power supply cord.

Household AC outlet



Front Panel Controls and Functions



Control section

1 Power "standby /on" switch (power standby on)

This switch switches ON and OFF the secondary circuit power only. The unit is in the "standby" condition when this switch is set to the standby  position. Regardless of the switch setting, the primary circuit is always "live" as long as the power cord is connected to an electrical outlet.

"Power-through" function

Discs, radio broadcasts, etc. can be heard even if the power of this unit is switched to standby.
Note, however, that the power plug should be left connected to the AC outlet.

2 Equalizer level-control buttons (equalizer level control)

These buttons are used for adjustment of the equalization level of the left channel and right channel simultaneously.

Upper row: These buttons are used to increase the level of each sound range (frequency range).

Lower row: These buttons are used to reduce the level of each sound range (frequency range).

3 Memory mode-select button (memo mode)

This button is used to select the equalization memory mode to be used.

manual: Select this mode to program a desired curve to the unit's memory or to retrieve a curve that you have programmed.

fixed: Select this mode to retrieve a curve that was originally pre-programmed to the unit's memory.

4 Memory button (memory)

This button is used to program the equalization curve into the memory.

5 Equalization mode-select button (EQ on/off)

This button is used to switch the equalization correction function "EQ on" and "off". Each time a button is pressed, the mode changes alternately to one or the other of the following modes.

EQ on: Select this mode to make an equalization correction.

EQ off: Select this mode if no equalization correction is desired.

Note that the "EQ on" mode is automatically selected if a preset-memory button or an equalizer level-control button is pressed while this button is set to the "EQ off" mode.

6 Reverse button (reverse)

This button is used to reverse the equalization curve shown in the display.

7 Display mode-select buttons (display mode)

These buttons are used to select the equalization-level display mode and any of the three types of spectrum display mode described below.

■ Equalization-level display mode

EQ level: Select this mode when you want to display the equalization level.

■ Spectrum display modes (spectrum analyzer)

bar: Select this mode when you want a bar-type display.

dot: Select this mode when you want a dot-type display.

peak hold: Select this mode when you want the peak to be held in the display.

8 Preset-memory buttons (1-6)

These buttons are used to program an equalization curve into the memory, or to retrieve a curve originally programmed into the unit's memory.

9 Recording mode selector (EQ rec off on)

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

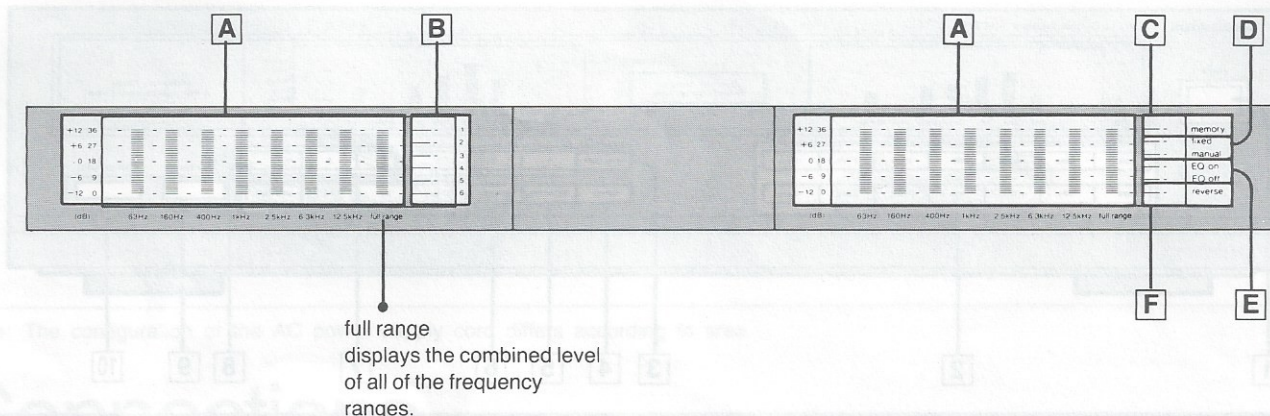
off: Set to this position to record without equalizer correction.

10 Input selector (source tape)

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.

Front Panel Controls and Functions (continued)



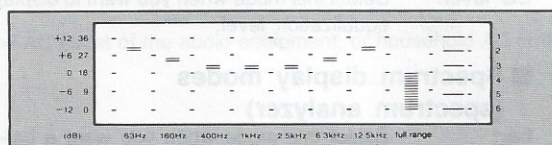
Display section

A Equalization/Spectrum display

The following equalization-level display and three types of spectrum display are possible.

■ Equalization-level display

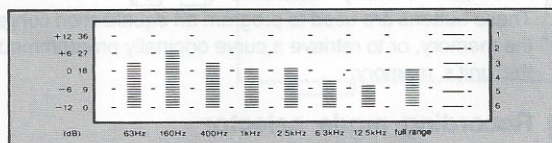
The amount of correction is displayed by a series of lines (=) for each sound range (frequency range).



■ Spectrum displays

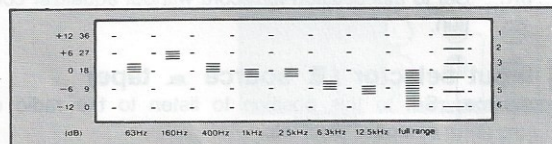
Bar-type display

This display can be used to show the output strength for each sound range (frequency range), and to show the output strength of sound for all ranges (full range) by a bar-type display.



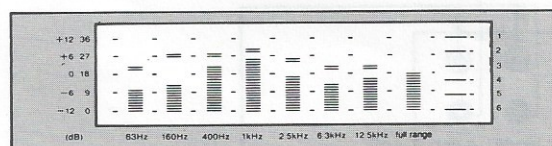
Dot display

Only the upper two parts of the bar display are shown, thus making the strength of the sound for each sound range even easier to see.



Peak-hold display

The peak sound value of each sound range is held on the display for about two seconds after it occurs.



Note:

If an equalization level-control or the memory-mode selector or a preset-memory button is pressed during any display other than the equalization-level display, the equalization-level display will be shown for about five seconds, after which the former display will return.

B Equalization-preset indicators (1-6)

The indicator corresponding to the pressed preset-memory button will illuminate.

manual: Indicates an equalization curve that you programmed into the memory.

fixed: Indicates one of the six equalization curves that were originally programmed into the memory.

C Equalization-memory indicator (memory)

This indicator illuminates when the memory button is pressed, thus indicating that an equalization curve can be programmed into the memory.

D Memory-mode indicators

fixed: Indicates that one of the equalization curves that were originally programmed into the memory can be retrieved.

manual: Indicates that an equalization curve that you programmed into the memory can be retrieved.

E Equalization-mode indicators

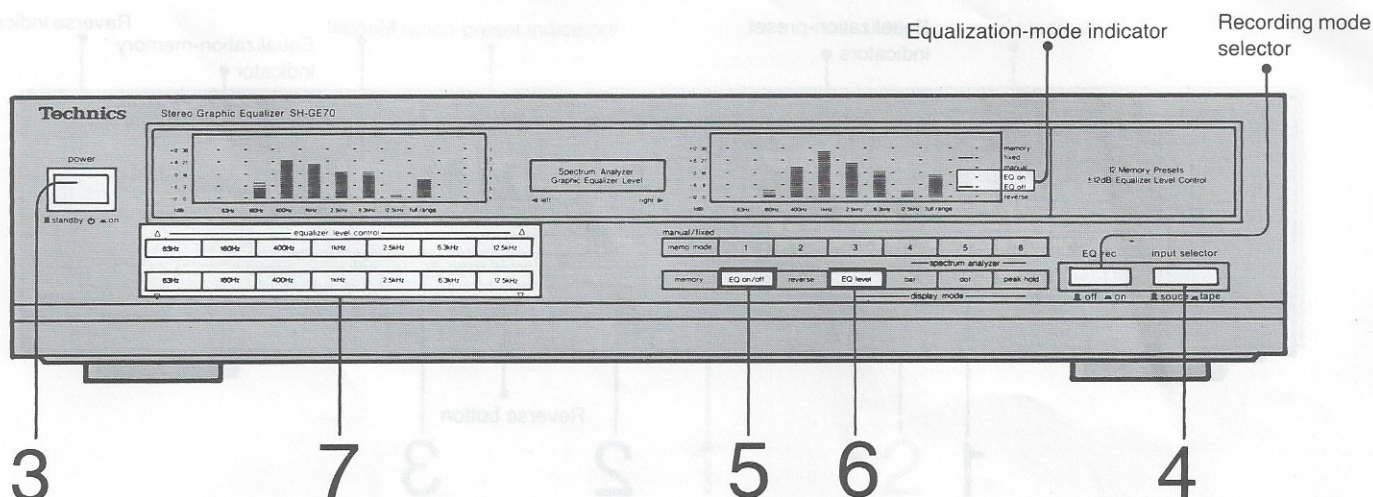
EQ on: Indicates that the equalization effect has been switched ON.

EQ off: Indicates that the equalization effect has been switched OFF.

F Reverse indicator (reverse)

This indicator illuminates when the reverse button is pressed, thus indicating that an equalization curve is reversed. Note, however, that there will be no illumination if the equalization curve is flat.

Operation



To adjust to the desired tone quality

1 Switch the amplifier ON and Reduce the volume level of the amplifier.

Set the amplifier's tone controls to the centre position, and set the super bass switch (if equipped) to the off position.

2 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.)

3 Switch ON the power switch.

4 Press the Input selector button.

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.

5 Switch ON the equalization mode-select button.

(The "EQ on" equalization-mode indicator will illuminate.)

6 Press the "EQ level" buttons.

(The equalization-level display will appear.)

7 Adjust to the desired sound.

When the equalizer level-control button corresponding to the frequency to be adjusted is pressed, the equalization level changes in 2 dB steps.

8 Adjust the volume level of the amplifier.

After completing the adjustment select the desired display by pressing the display mode-select button: "bar", "dot" or "peak hold".

Notes:

- To listen or record without the equalization effect, either press the equalization mode-select button (to the "EQ off" setting) or switch OFF the power of the graphic equalizer.
- Do not attempt to adjust the equalization level during recording.

■ Recording mode selector

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

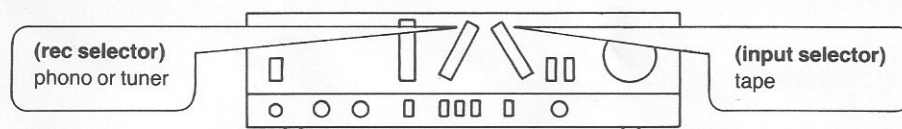
off: Set to this position to record without equalizer correction.

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.

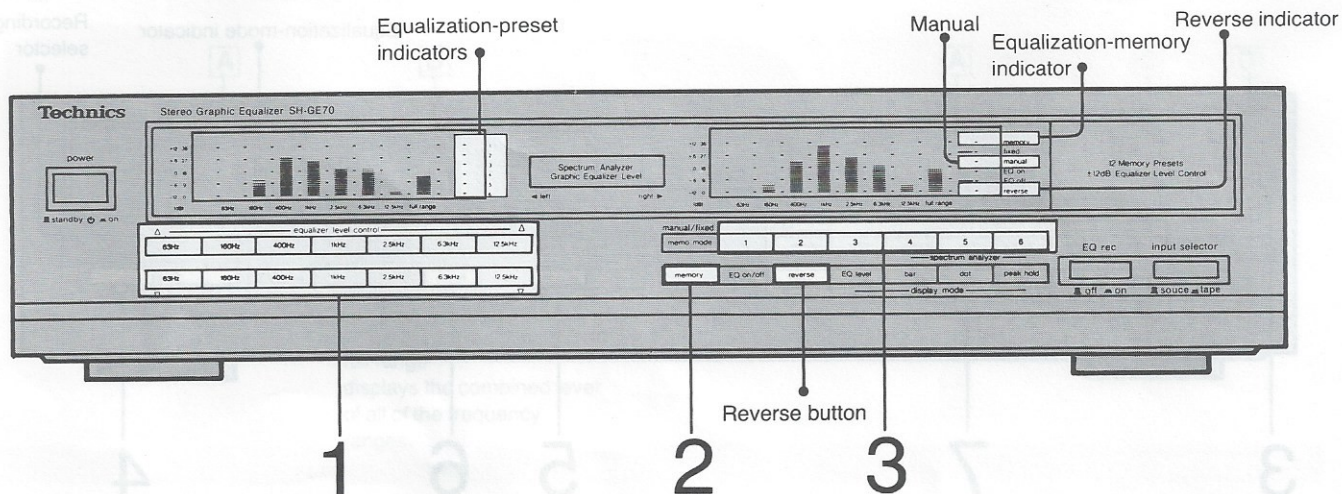
Notes:

- If the amplifier has a recording mode selector and an input selector: (Adjust 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.

Operation (continued)



To program an equalization curve into the memory

As many as six curves can be programmed into and retained by the memory of this unit. It is convenient to program those curves that are frequently used.

1 Adjust to the desired equalization curve.
(Adjust by following the steps in "To adjust to the desired tone quality" on page 7.)

2 Press the "memory" button.
(The equalization-memory indicator will illuminate.)
•To cancel memory programming, press the memory button once again.

3 Press one of the preset-memory buttons (1-6), whichever is to be used to make the programming to the memory.
(The corresponding equalization-preset indicator will illuminate, and the programming will be made.)

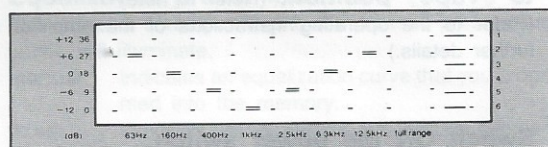
Note:

If a new curve is programmed for a number for which a curve is already programmed in the memory, the previously programmed curve will be erased.

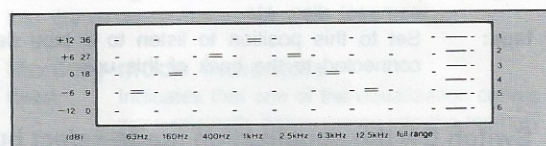
■ To produce a reversed equalization curve

This feature can be used, for example, to listen to the original sound characteristics of a tape that has been recorded with special equalization effects by using the graphic equalizer.

First, display the curve used when the recording was made.



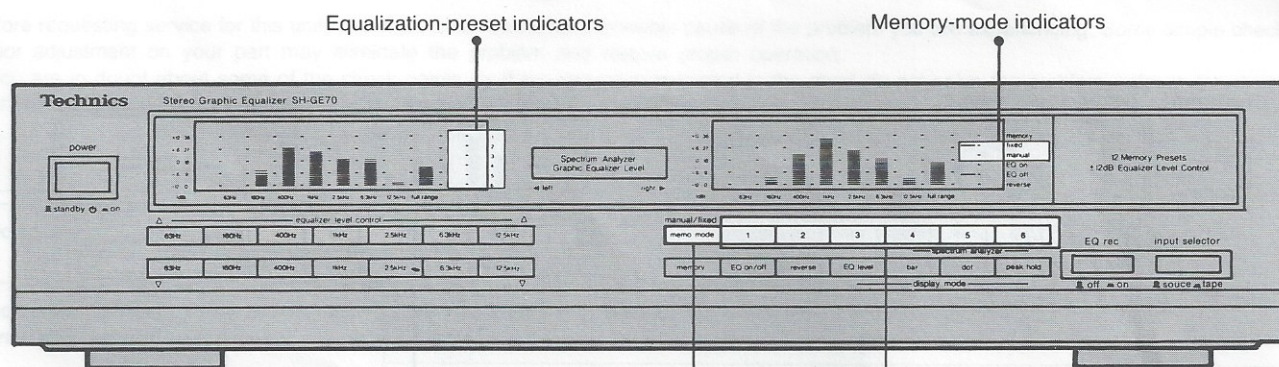
Then press the "reverse" button.
The reverse indicator will illuminate.



In this way, you can instantly produce a curve that is the opposite of the curve being displayed.

The playback sound will then be corrected by this curve, and will become a flat characteristic.

•When this button is pressed again, the curve returns to previous condition.



To retrieve equalization curves from the memory

This unit has been pre-programmed with six types of typical equalization curves which are applicable to certain styles of music.

1 Press the "memo mode" button.

manual: Select this mode when you want to retrieve a equalization curve that you have programmed into memory.

fixed: Select this mode when you want to retrieve a equalization curve that was originally programmed into memory as a permanent ("fixed") curve.

(The memory-mode indicator will indicate the selection made.)

2 Press one of the preset-memory buttons, whichever corresponds to the curve to be retrieved.

(The corresponding equalization-preset indicator will illuminate.)

- While in the "fixed" mode, if one of the equalizer level-control buttons is pressed, the unit will automatically switch to the "manual" mode.

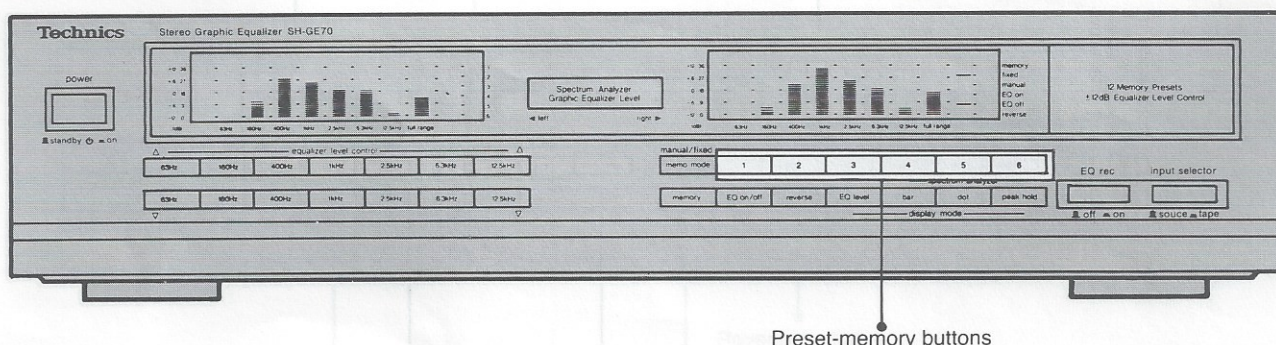
Note:

Curves programmed into the memory will be retained for about two weeks if the AC power supply cord is unplugged. If curves are erased, they must be programmed again. Note, however, that curves originally programmed beforehand into the unit's memory as permanent curves (the "fixed" curves) will not be erased.

■ "MOST RECENT" (recall) memory

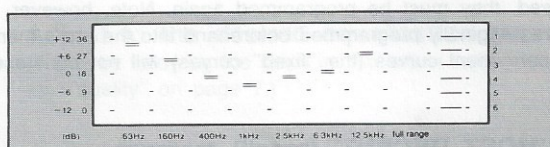
The last position of the EQ level controls (whether in memory or adjusted manually) will be automatically entered into the memory when the power is switched OFF. When the power is switched ON, these positions will be recalled.

Operation (continued)

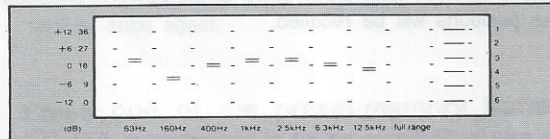


Equalization curves pre-programmed to this unit

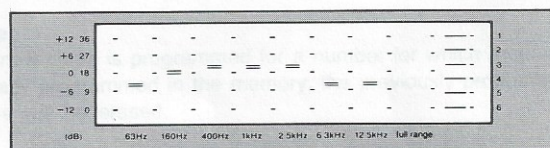
- 1** This curve can be used to add "punch" to rock and other music.



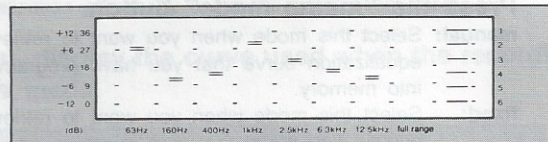
- 2** This curve can be used to clarify the treble range of jazz, etc.



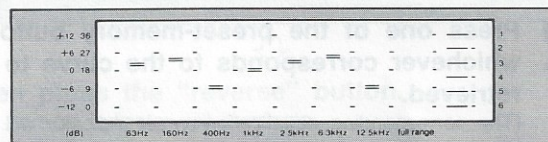
- 3** This curve can be used to listen to background music, etc. at a low volume level.



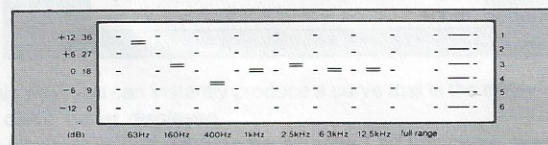
- 4** This curve can be used to clarify vocal music.



- 5** This curve can be used when making tapes to listen to through headphones-stereo units.



- 6** This curve can be used when making tapes to listen to through a car stereo.



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.

Problem	Probable cause(s)	Suggested remedy
No sound.	Incorrect connection.	Refer to page 4 and to the Operation Instructions of the amplifier.
Correction is not possible at playback (including recording.)	The equalization mode-select button is set to "EQ off".	Set to "EQ on".
	The recording mode selector of the equalizer is set to the "off" position.	Set it to the "on" position.
	The input selector of the equalizer is set to the "tape" position.	Set it to the "source" position.

Maintenance

To clean this unit, use a soft, dry cloth.

If the surfaces are extremely dirty, use a soft cloth, dipped into a soap-and-water solution 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 damage the finish of your unit.

Technical Specifications

Frequency response

(center position): 5 Hz~100 kHz (−3 dB)

Maximum output voltage: 8 V (1 kHz, THD 0.03%)

Rated output voltage: 1 V

Maximum input voltage: 8 V (1 kHz)

Input sensitivity: 1 V

Rated total harmonic distortion:

0.005% (20 Hz~20 kHz),
at 1 V output

0.003% (1 kHz) at 1 V output

Signal-to-noise ratio: 98 dB/1 V, DIN 45 500

Input impedance: 47 kΩ

Gain: 0±1 dB

Equalization-level

controls:

+12 dB~−12 dB

(7 frequency ranges, in 2 dB steps)

Center frequencies:

63 Hz, 160 Hz, 400 Hz, 1 kHz,
2.5 kHz, 6.3 kHz, 12.5 kHz

GENERAL

Power supply:

AC 50/60 Hz, 240 V

Power consumption:

11 W

(with power switch
"standby"; 6.5 W)

Dimensions (W×H×D):

430×102×280 mm

Weight:

2.9 kg

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 trouble persists in the chart, do not solve the problem, refer to the directory of Authorized Service Centers, located at the back of this manual, for further assistance. To locate a service center, contact your nearest Matsushita Electric Industrial Co., Ltd. office.

Problem	Possible Cause(s)	Suggested remedy
No sound	Power switch off	Turn on power switch
Correction is not possible in bypass (bypassing recording)	The equalization selector switch is set to the "off" position.	Set it to the "on" position.
	The recording mode selector of the equalizer is set to the "off" position.	Set it to the "on" position.
	The input selector of the equalizer is set to the "tape" position.	Set it to the "source" position.

Maintenance

To clean this unit, use a soft, dry cloth. If the surfaces are extremely dirty, use a soft cloth dipped into a soap and water solution or a weak detergent solution. Wipe the cloth well before wiping the unit.

Technical Specifications

Frequency response (center position):	5 Hz - 100 kHz (-3 dB)
Maximum output voltage:	8 V (THD 0.03%)
Rated output voltage:	1 V
Maximum input voltage:	1 V
Input sensitivity:	1 V
Rated total harmonic distortion:	0.005% (20 Hz - 20 kHz)
Signal-to-noise ratio:	88 dB (1 V DIN 45 500)
Input impedance:	47 kΩ
Gain:	0.7 dB

Equalization level control:	+12 dB - -12 dB
Center frequency:	63 Hz - 120 Hz - 400 Hz - 1 kHz - 2 kHz - 5 kHz - 12 kHz
GENERAL	
Power supply:	AC 200V 50/60 Hz 200 W
Power consumption:	11 W
Dimensions (W x H x D):	430 x 105 x 280 mm
Weight:	2.9 kg

Matsushita Electric Industrial Co., Ltd.
Central P.O. Box 288, Osaka 530-91, Japan