



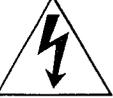


# FISHER

# EQ-273

## SPECIFICATIONS

	<b>CAUTION</b> RISK OF ELECTRIC SHOCK. DO NOT OPEN!	
<p><b>CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER.</b></p> <p><b>NO USER-SERVICEABLE PARTS INSIDE.</b></p> <p><b>REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</b></p>		

	This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.
	This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

Input Impedance	50 k $\Omega$
Output Impedance	3 k $\Omega$
T.H.D. (flat position)	
at 1 V Output	0.03 %
at 5 V Output	0.02 %
Gain (flat position)	+0 dB, -0.5 dB
Max. Output Voltage at 1 % T.H.D.	6 V
Frequency Response	
20 Hz - 20 kHz	+0.1 dB, -0.5 dB
Tone Control Response	
Center of Frequency	$\pm 10$ %
63 Hz	$\pm 12$ dB
125 Hz	$\pm 12$ dB
250 Hz	$\pm 12$ dB
500 Hz	$\pm 12$ dB
1 kHz	$\pm 12$ dB
2 kHz	$\pm 12$ dB
4 kHz	$\pm 12$ dB
8 kHz	$\pm 12$ dB
16 kHz	$\pm 12$ dB
S/N (IHF A, Reference 1 V, flat position)	95 dB
Crosstalk	
100 Hz	70 dB
1 kHz	70 dB
15 kHz	50 dB

### GENERAL

Power Requirements (50/60 Hz)	120 V AC $\pm 10$ % 7 Watts
AC Outlet	1
Dimensions (WxHxD)	17-1/3" x 3-1/4" x 10-1/2"
Weight (approx.)	6.2 lbs.

Because its products are subject to continuous improvement, Fisher Corporation reserves the right to modify product designs and specifications without notice and without incurring any obligation.

**WARNING:** TO AVOID THE HAZARDS OF FIRE OR ELECTRICAL SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR OTHER MOISTURE.

**IMPORTANT . . .** This Graphic Equalizer was developed by FISHER to give you many years of enjoyment. Please read the following instructions carefully. They have been prepared to assist you during the initial set-up procedure and to ensure that you obtain optimum performance at all times.

*THE WARRANTY ON THIS UNIT DOES NOT COVER DAMAGE CAUSED BY MISHANDLING OR MISUSE.*

## CONNECTING THE GRAPHIC EQUALIZER

**CAUTION:**

- Do not plug in the power cord until you have completed all the connections.
- Connect the left and right connecting cables exactly as shown in Fig. 1.

**1** **LINE IN/OUT Cables** (for connection to amplifier) . . .  
Connect these to the TAPE jacks of the amplifier. If your amplifier has two sets of jacks, it does not matter which set is used.

- **LINE IN (Input) Cables**  
The LINE IN cables of the graphic equalizer should be connected to the TAPE REC OUT jacks on the amplifier. Insert the WHITE plug in the LEFT jack and the RED plug in the RIGHT jack.
- **LINE OUT (Output) Cables**  
The LINE OUT cables of the graphic equalizer should be connected to the TAPE PB jacks on the amplifier. Insert the WHITE plug in the LEFT jack and the RED plug in the RIGHT jack.

**2** **TAPE Jacks** (for connection to cassette deck) . . .  
Connect the playback output jacks and the recording input jacks of the cassette deck.

- **REC OUT (Tape Recording Output) Jacks**  
Connect these to the recording input (LINE IN, INPUT) jacks of the cassette deck.
- **PB (Tape Playback Input) Jacks**  
Connect these to the playback output (LINE OUT, OUTPUT) jacks of the cassette deck.

**3** **UNSWITCHED AC Outlet** . . .  
This AC outlet for a system component remains "live" irrespective of the ON/OFF setting of the POWER switch. Use this as a power source for the turntable or cassette deck.

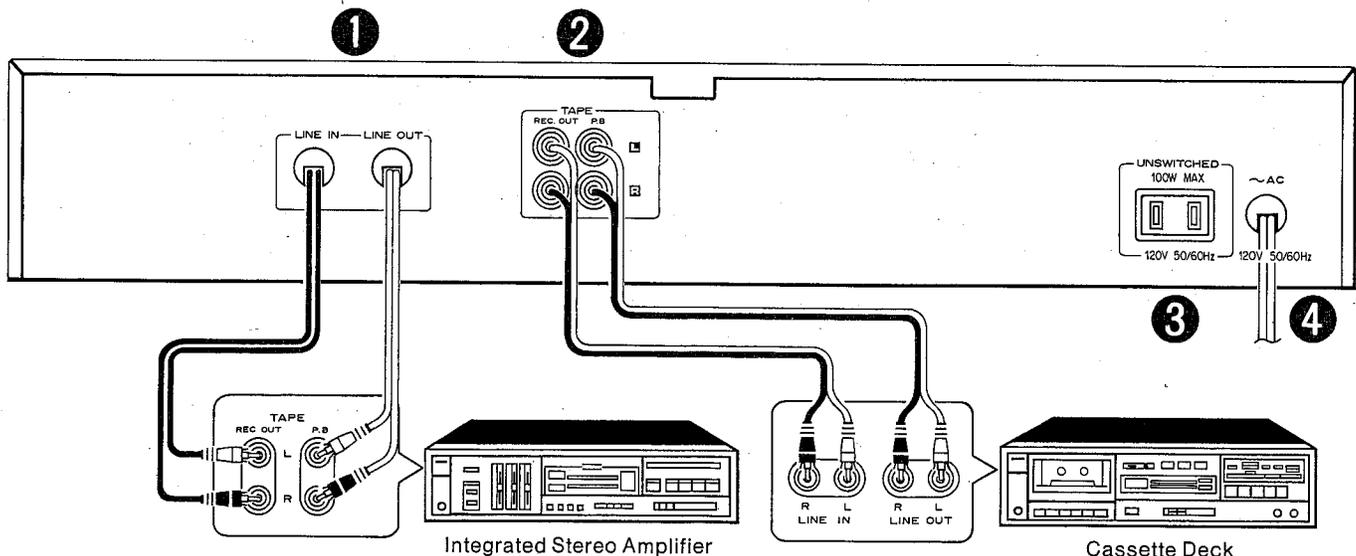
**CAUTION:**

The UNSWITCHED AC outlet has a power rating of 100W maximum. It should be used for supplying power to audio equipment only. NEVER use it as AC outlet for other electrical appliances.

**4** **AC (Power Cord)** . . .  
Once you have completed all the connections make sure that the front panel POWER switch is released. Then plug the power cord into an AC wall outlet.

**NOTE:**

Grasp the power cord by the plug when disconnecting it from the power source. Do not pull on the cord itself.



**Fig. 1**

# CONTROLS AND OPERATION

This section describes the graphic equalizer's controls in the order in which you would normally use them. Follow the instructions in a step-by-step sequence and in a very short time you will master complete operation of the unit.

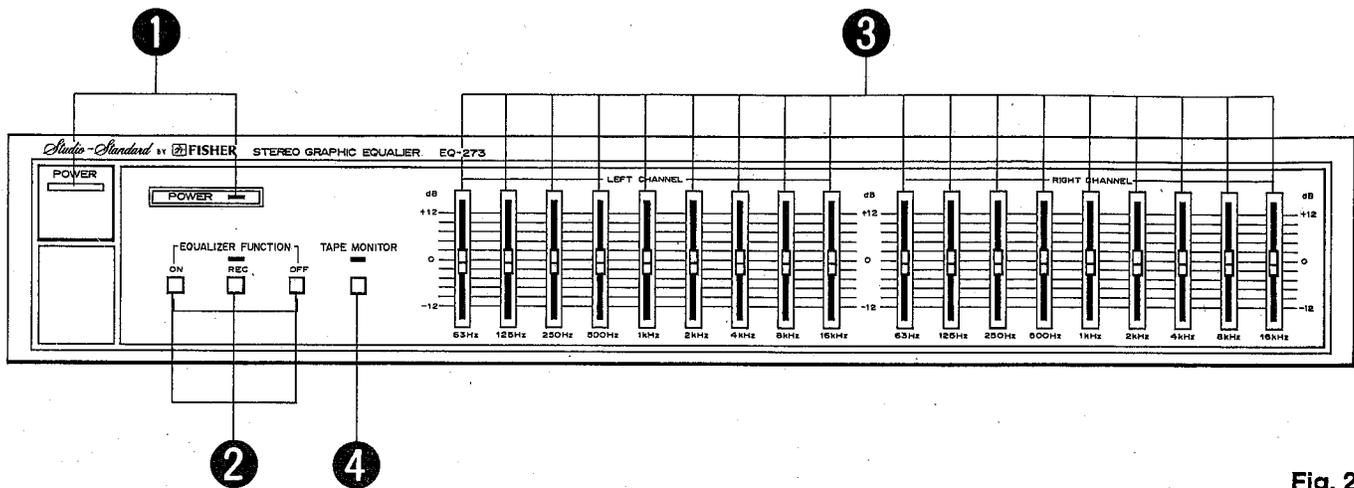


Fig. 2

**1** **POWER Switch and Indicator . . .**  
Depressing to the ON position (button in) switches on the power to the graphic equalizer and lights indicator. Depressing the switch a second time releases the switch to the OFF position (button out) and switches power off.

**2** **EQUALIZER FUNCTION Switches and REC Indicator . . .**  
**ON** switch – For listening with the graphic equalizer to a record, radio program, tape or other sound source selected by the function buttons of the amplifier. If a cassette deck is connected to the graphic equalizer, the sound will be recorded without equalization.  
**REC** switch – For recording on a cassette deck through the equalizer. The indicator located above this switch will light up when this switch is depressed.  
**OFF** switch – The graphic equalizer controls will not affect the signal passing through the graphic equalizer.

**3** **Graphic Equalizer Controls . . .**  
The advantage of the FISHER GRAPHIC EQUALIZER over conventional tone controls is that with 9 controls each for the left and right channel it is possible to control 18 different narrow, distinct sections of the audio band by up to  $\pm 12$  dB. This corresponds to a power increase of approximately 16 times or a power decrease to 1/16. With tone controls a setting for a bass or treble boost or cut will also affect the lower or upper mid frequencies.

The frequency bands controlled by the 18 slide controls have been chosen to yield the maximum possible control action within the audio spectrum.

## CAUTION:

When the graphic equalizer is used, set the tone controls of the amplifier to the flat position to avoid clipping the amplifier or damaging the speakers.

When the slide controls are moved up, the signals of the respective frequency bands are increased (boosted) and when the slide controls are moved down, the signals are attenuated (cut). The controls should be moved gradually until the desired boost or cut is obtained.

- **63 Hz Boost:** To enhance low bass notes, as in organ music, and to compensate for a deficiency in bass caused by poor listening room acoustics or poor bass response of your speakers, cartridge or record.

**Cut:** To remove excessive "heaviness" and to control severe problems with rumble, record warp, acoustic feedback, etc.

- **125 Hz and 250 Hz Boost:** Will add "warmth" to music, "punch" to drums and low percussion. "Fattens" thin vocals and poor recordings.

**Cut:** Eliminates "boom" while preserving true bass. Restores natural sound to poorly recorded guitar, piano, etc. Reduces "muddiness."

- **500 Hz Boost:** Will enhance the sound of wind and brass instruments.

**Cut:** Removes harshness.

- **1 kHz Boost:** Vocalists are emphasized or brought out front.

**Cut:** Reduces "presence." Moves sound farther away from listener. Corrects "nasal" vocals and instruments.

- **2 kHz and 4 kHz Boost:** Adds "bite" to horns, lead guitars, etc. Increases clarity and intelligibility. Adds impact to percussion and "edge" to strings.  
**Cut:** Reduces "screechiness." Corrects shrill vocals. Allows louder listening levels without discomfort.
- **8 kHz Boost:** Brings out overtones of grand piano, organ and violin.  
**Cut:** Reduces excessive brightness of instrumental sounds.
- **16 kHz Boost:** Adds "sizzle" to cymbals, etc. Increases realism by bringing out extremely high instrumental overtones. Corrects falling high-end response of many speakers.  
**Cut:** Helps salvage noisy recordings. Corrects over-bright instrumental sounds and "peaked" high end of some phono cartridges. De-emphasizes vocal sibilance.

- 4 **TAPE MONITOR Switch and Indicator . . .**  
Depressing this switch allows you to listen to playback from a cassette deck connected to the graphic equalizer. If your cassette deck has a 3-head system or monitor mechanism, you may then monitor the program material as it is being recorded.  
When the TAPE MONITOR switch is depressed, the indicator located above this switch will light up.

**NOTE:**

With the TAPE MONITOR switch depressed for listening to playback from a cassette deck connected to the graphic equalizer, if the EQUALIZER REC switch is depressed, the sound without equalization is heard.

## GRAPHIC EQUALIZER OPERATION

### PREPARATION BEFORE SWITCHING ON THE POWER

1. Connect the graphic equalizer between the TAPE REC OUT and TAPE PB jacks of the amplifier. Set the tape switch (tape monitor switch) on the amplifier to PLAY or TAPE.  
The other switches and controls are operated in the normal manner.
2. Set the volume control on the amplifier to the minimum position.
3. Release the TAPE MONITOR switch of the graphic equalizer.
4. Depress the EQUALIZER ON switch of the graphic equalizer.
5. Now switch on the power to the amplifier and graphic equalizer.

**NOTE:**

Refer to the OPERATING INSTRUCTIONS manual of your amplifier and cassette deck for details on their operation.

**When the amplifier has two sets of tape jacks.**

Use only one of the sets of tape jacks. For instance, when the graphic equalizer is connected to the TAPE-1 jacks, it will work only if the tape switch of the amplifier is set to PLAY-1 or TAPE-1.

**NOTE:**

You may connect a tape deck directly to the TAPE-2 jacks of the amplifier and proceed with recording and playback. In this case the graphic equalizer will not affect the recording.

### OPERATION

#### ADJUSTING THE GRAPHIC EQUALIZER CONTROLS WHILE LISTENING TO A RECORD, RADIO PROGRAM OR OTHER SOUND SOURCE.

1. Depress the EQUALIZER ON switch.
2. Play a record, radio program or other sound source selected by the function buttons of the amplifier.
3. Operate the volume control of the amplifier. You will hear the sound of the source as the volume is increased.
4. Set the graphic equalizer controls to produce the desired sound effect.

#### ADJUSTING THE GRAPHIC EQUALIZER CONTROLS WITH TAPE PLAY.

1. Depress the EQUALIZER ON switch.
2. Depress the TAPE MONITOR switch of the graphic equalizer.
3. Play back a pre-recorded tape on the cassette deck connected to the graphic equalizer.
4. Operate the volume control of the amplifier. You will hear the sound of the source as the volume is increased.
5. Set the graphic equalizer controls to produce the desired sound effect.

#### COMPARING THE SOUND OF A RECORD, RADIO PROGRAM, TAPE OR OTHER SOUND SOURCE WITH THE SOUND PROCESSED BY THE GRAPHIC EQUALIZER.

1. Depress the EQUALIZER OFF switch.
2. The sound of the original source is heard.
3. Depress the EQUALIZER ON switch.
4. The sound processed by the graphic equalizer is heard.

## **LISTENING TO A RECORD, RADIO PROGRAM, TAPE OR OTHER SOUND SOURCE WITHOUT ADJUSTING THE GRAPHIC EQUALIZER.**

1. Release the POWER switch of the graphic equalizer to switch off the power.
2. If you want to listen to a record, radio program or other sound source selected by the function buttons of the amplifier, release the TAPE MONITOR switch of the graphic equalizer.
3. If you want to listen to a pre-recorded tape in a cassette deck connected to the TAPE jacks of the graphic equalizer, depress the TAPE MONITOR switch of the graphic equalizer.
4. Operate the volume and tone controls on the amplifier as desired.

### **NOTE:**

Even when you do not want to adjust the graphic equalizer, there is no need to change the connections between the graphic equalizer and the amplifier and cassette deck. Switching off the power will cause the signal to pass through the graphic equalizer unchanged.

## **RECORDING**

### **RECORDING A RECORD OR RADIO PROGRAM**

1. Depress the EQUALIZER REC or ON switch.
  - EQUALIZER ON switch – For recording sound without equalization.
  - EQUALIZER REC switch – For recording sound with equalization.
2. Refer to OPERATION and then play a record or radio program.
3. When the cassette deck connected to the graphic equalizer is set to the recording mode, the sound from a record or radio program is recorded.

### **MONITORING THE RECORDING**

If you are using a cassette deck with a 3-head system or a monitoring function, you can compare the sound which has been recorded with the sound before it is recorded by selecting the position of the TAPE MONITOR switch of the graphic equalizer. In this way, you can monitor the quality of the recording.

- When the TAPE MONITOR switch is depressed, the recorded sound is heard through the speakers.
- When the TAPE MONITOR switch is released, the sound which is about to be recorded is heard through the speakers.

### **ADJUSTING THE RECORDING LEVEL**

The graphic equalizer is designed so that the level of the recording signals which are available at the TAPE REC jacks is kept constant. Therefore, the recording level is adjusted with the recording level controls of the cassette deck. The volume and tone controls of the amplifier will have no effect on the recorded signals.

## **RECORDING TAPE PLAY**

(This requires two cassette decks: one for play and the other for recording.)

1. Set up the cassette deck which is connected to the graphic equalizer for recording.
2. Connect the LINE OUT jacks of the playback cassette deck to the AUX jacks of the amplifier and play back the tape.
3. Depress the EQUALIZER REC or ON switch of the graphic equalizer.
4. Set the cassette deck which is connected to the graphic equalizer to the recording mode.

## **TAPE DUBBING**

If your amplifier is provided with two sets of tape jacks and a dubbing switch, you can dub tapes with the graphic equalizer connected.

### **NOTE:**

- Connect the LINE jacks of the graphic equalizer to the TAPE-1 jacks of the amplifier, tape deck 1 to the TAPE jacks of the graphic equalizer and tape deck 2 to the TAPE-2 jacks of the amplifier.
- Release the POWER switch of the graphic equalizer to switch off the power.

### **Dubbing from tape deck 1 to tape deck 2**

1. Set the dubbing switch of the amplifier to 1 ► 2.
2. Play back the tape in tape deck 1; set tape deck 2 to the recording mode and commence dubbing.

### **Dubbing from tape deck 2 to tape deck 1**

1. Set the dubbing switch of the amplifier to 2 ► 1.
2. Play back the tape in tape deck 2; set tape deck 1 to the recording mode and commence dubbing.

### **NOTE:**

If the graphic equalizer is connected to the TAPE-2 jacks of the amplifier, the operation will be reversed (substitute 2 for 1 in the above explanation and vice versa).

# TIPS FOR SAFE OPERATION...

1. **Location:**  
For safe operation and satisfactory performance of the graphic equalizer, keep the following in mind when selecting a place for its installation.
  - Shelter it from direct sunlight and keep it away from sources of intense heat.
  - Avoid dusty or humid locations.
  - Avoid places with insufficient ventilation for heat dissipation.
2. **When handling the power cord:**
  - Do not handle the power cord with wet hands.
  - Do not pull on the power cord when disconnecting it from an AC wall outlet. Grasp the plug.
3. **Built-in AC outlet:**  
The UNSWITCHED (rating: 100W maximum) AC outlet on the rear panel is designed for connection to other system units only. It should not be used as a power source for household electrical appliances such as irons and percolators.
4. **Avoiding the hazards of electrical shock or fire:**  
If, by accident, water is spilled on the graphic equalizer, unplug the power cord immediately and have the unit serviced by FISHER-authorized personnel. See Item 7.
5. **When changing connections:**  
Be sure to switch off power at the source when changing connections to the input terminals. This precaution is necessary to protect speakers, which may be damaged by a sudden increase in input.
6. **Cleaning:**  
Wipe the front panel and other exterior surfaces of the graphic equalizer with a soft, dry cloth. Stains should be removed by wiping the surfaces with a soft cloth immersed in lukewarm water and wrung dry. Never use a solvent or alcohol. Do not spray insecticide liquid near the graphic equalizer. Such chemicals may cause surface discoloration and cracking.
7. **Servicing:**  
Should this graphic equalizer require service, refer to the Fisher service station list supplied with the unit.  
  
If you do not have a convenient Fisher service station nearby, write to the Fisher dealer where you purchased the unit. Be sure to give the model number and explain the problem. The dealer will advise you how to obtain service.



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