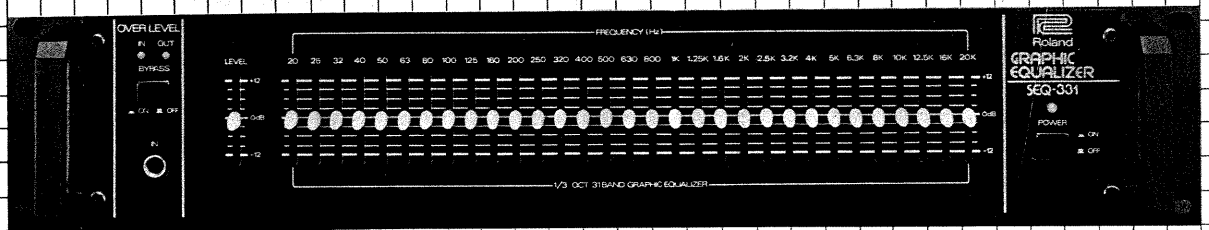


 Roland

GRAPHIC EQUALIZER SEQ-331

OWNER'S MANUAL



The Roland Rack

GRAPHIC EQUALIZER

The SEQ-331 is a one-third octave, rack-mounting graphic equalizer, designed for either professional sound reinforcement or recording studio use. Thirty one bands cover the frequency spectrum with a control range of ± 12 dB on each band.

Features

- Nominal 1/3 frequency centers are 20, 25, 32, 40, 50, 63, 80, 100, 125, 160, 200, 250, 320, 400, 500, 630, 800, 1k, 1.25k, 1.6k, 2k, 2.5k, 3.2k, 4k, 5k, 6.3k, 8k, 10k, 12.5k, 16k and 20k. The 31 vertical sliders across the front panel move through an indicated range of +12 to -12dB. Center click detents effectively remove any band from the circuit at the 0dB position.
- The total level can be adjusted without changing the already established equalizing curve. Equalization with a high signal to noise ratio can be achieved accurately and consistently.
- Two types of input jacks, Balanced (XLR) and Unbalanced (standard phone) are provided for systems requiring either type of connection.
- The input/output switches (for Unbalanced only), the level indicator and the bypass switch make operation simple and precise.
- The equalizer is designed to EIA standard width of 19" for convenience in rack-mounting.

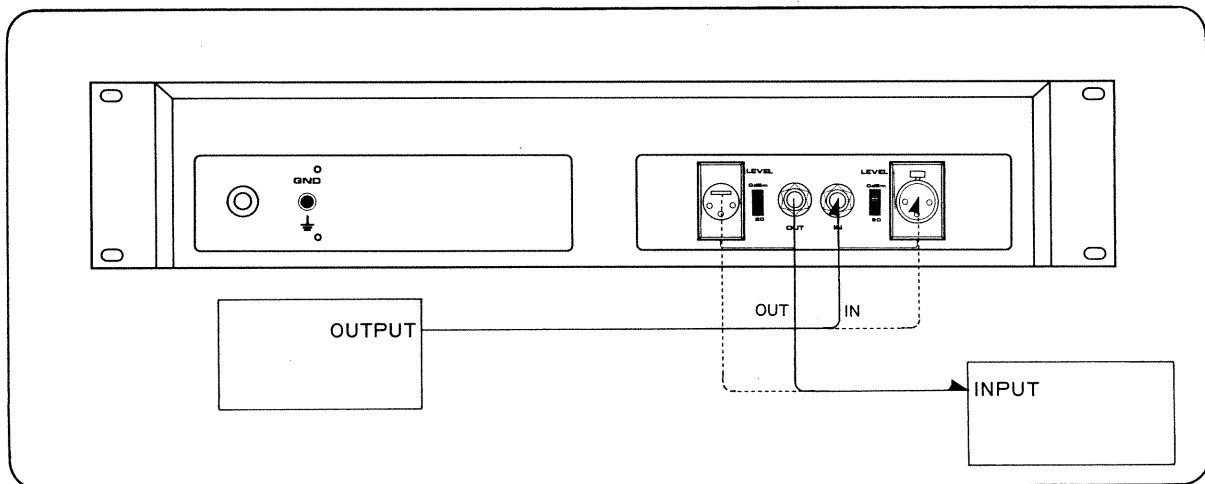
Before Starting

- Make sure the line voltage in your area meets the requirements specified on the unit.
- Before using the SEQ-331 in a foreign country, check with your local Roland agent for various power requirements you may have.
- Plug in the SEQ-331 before turning on the power switch.

Precautions

- Do not open this unit. Refer servicing to a qualified repair center.
- Unplug this unit when not in use for a long period of time. When unplugging the unit, always grasp the plug. Do not tug by the cord. Avoid placing heavy weights on the power cord.
- Avoid using this unit in areas of very high or low temperature. For circuit stability, keep unit away from heaters and coolers.
- Avoid using this unit in very dusty or humid places.
- Using this unit near neons and fluorescent lights will induce a high level of noise. Changing the angle of this unit in relation to the lights may help reduce this noise.
- To clean this unit, wipe with a cloth dampened with a neutral cleanser. Do not use harsh solvents.

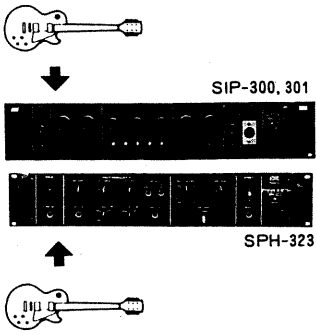
Connection



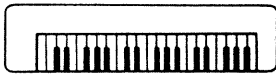
Direct (Level Selection Switch @ operate when the standard jack of UNBALANCE is used.)

INPUT

● Roland Rack System



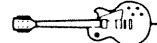
● High Level Instrument



● Audio-equipment (pre-amplifiers, tape decks)



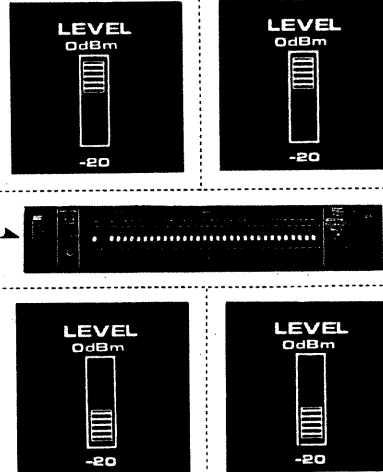
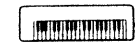
● Guitar



● Microphone

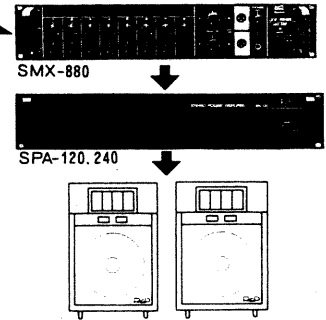


● Low Level Instrument

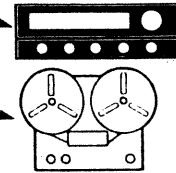


OUTPUT

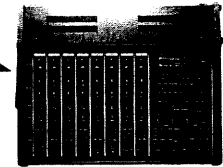
● Roland Rack System



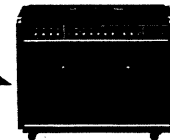
● Audio-equipment (audio-amplifiers, tape decks)



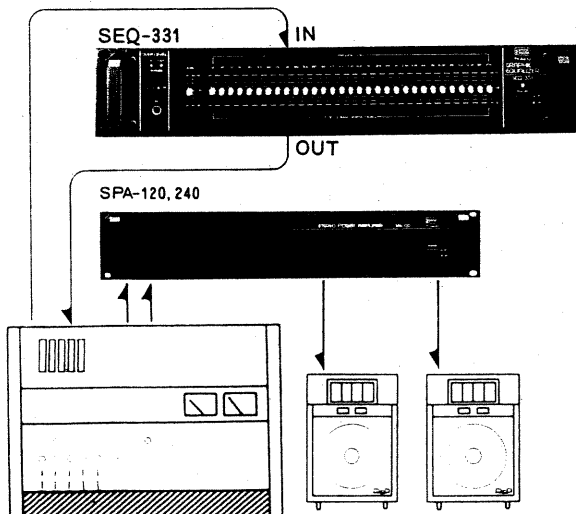
● PA, Mixer



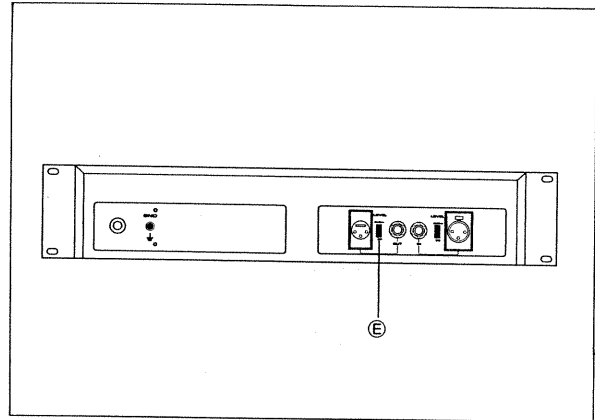
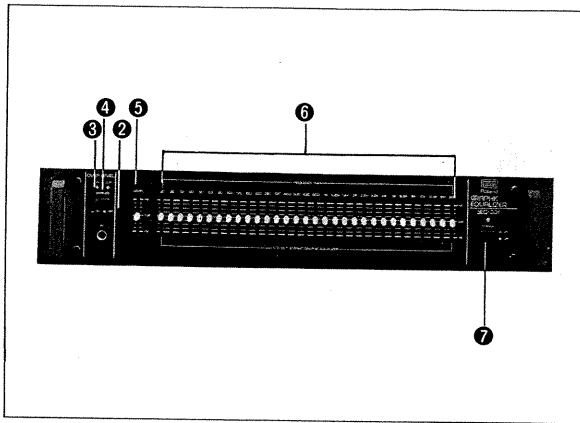
● Guitar Amplifier, Microphone Amplifier



PA, Mixer, Channel Effect Loop



Operation

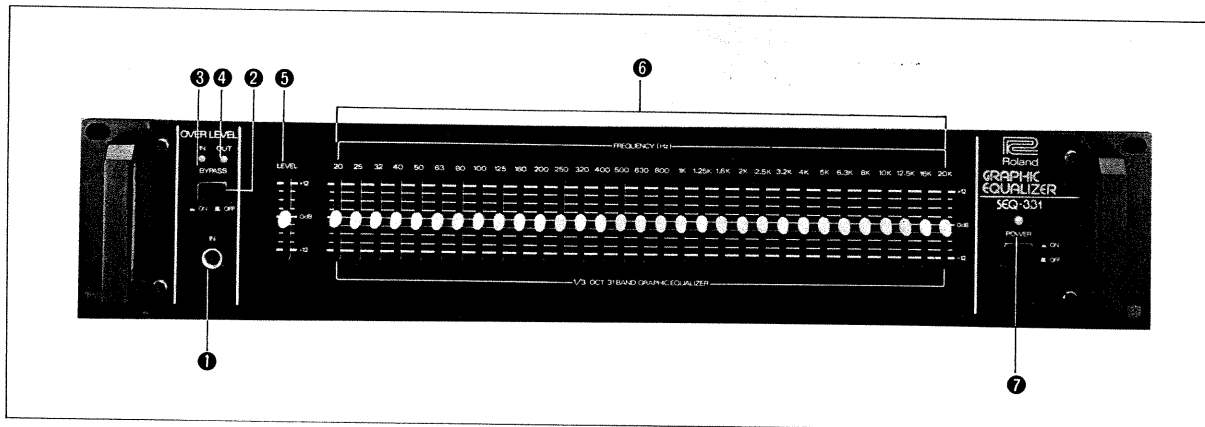


- 1 After making the necessary connections, turn on the power 7 and turn off the Bypass Switch 2.
- 2 Keeping an eye on the Input Level Indicator 3, set the input level with the Input Level Selection Switch 4 and the output volume of the connected equipment (instrument, pre-amplifier, etc.).
*If the indicator 3 lights up, the output signal may be distorted.
- 3 Level Control 5 and Frequency Control 6 should be set at the middle (0dB).

- 4 The Output Level Selection Switch 4 and the volume of the amplifier, PA, or recording equipments should be adjusted. Start producing sounds.
- 5 Listening to the sound, start the process of equalization with the Frequency Control 6.
*Level Control 5 can adjust the master level without changing the equalized curve established with the Frequency Control 6.

- 6 Within the limits of keeping the Output Level Indicator 4 unlit, raise the Level Control 5.
*If the indicator 4 lights up, the output signal may be distorted.
 - 7 If the volume is to be adjusted again, do so with the control on the connected unit.
- The operation method for using the Balanced input and output (XLR connector) is in the same order as mentioned above. However, the Input Level Selection Switch 4 and the Output Level Selection Switch 5 will not operate. Therefore, the input/output levels should be adjusted with each connected equipment.**

Names and Functions of the Controls



- 1 **Unbalanced Input Jack (standard jack)**
*When this jack is used, the input from the unbalanced input jack 8 on the rear panel is automatically cut off. (The input from the Balanced Input Jack 9, will not be cut off).

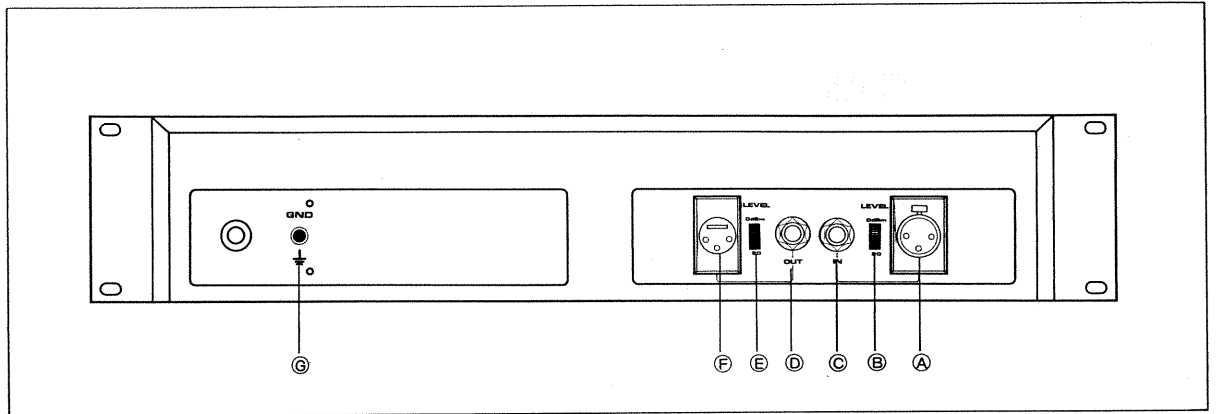
- 2 **Bypass Switch**
This switch makes the direct connection between instruments, pre-amplifiers, etc. with the stereo amplifiers, PA, and others.
*The on-off of the bypass switch will be done mechanically. Therefore there is no relation between the on-off of the power switch. However if the bypass switch is manipulated during performance, a click noise will be produced.

- 3 **Input Level Indicator**
- 4 **Output Level Indicator**
Both of these indicators will light up when there is an overload in the level.
- 5 **Level Control**
Without moving the equalized curve established by the Frequency Control 6 knob, the whole level can be moved through a range of ± 12 dB with this slider.

⑥ Frequency Control

This slider controls the level of ± 12 dB for each frequency.

⑦ Power Switch (with an indicator)



Rear Panel

① Balanced Input Jack (XLR connector)

② Input Level Selection Switch

The level can be chosen according to the output level of the connected equipment.

*This switch only operates with Unbalanced Input ③

*Aside from low level inputs, use at the position of 0dBm.

④ Unbalanced Input Jack (standard jack)

*If this jack is hooked up simultaneously with the input jack ① on the front panel, the front panel will be given the priority.

⑤ Unbalanced Output Jack (standard jack)

⑥ Output Level Selection Switch

The level can be chosen according to the input level of the connected instrument.

*This switch only operates with Unbalanced Output ⑤

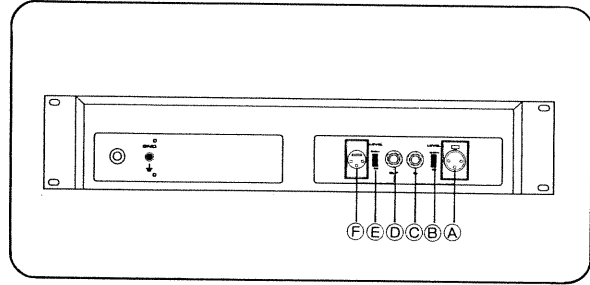
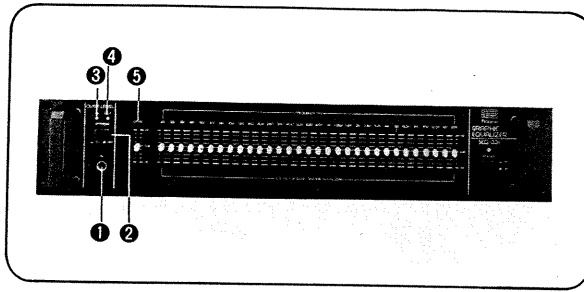
⑦ Balanced Output Jack (XLR connector)

*It can be used with the Unbalanced Output Jack ⑤ at the same time.

⑧ GND

*By connecting together ground jack (earth jack) of each piece of equipment used, ground noise or hum can be prevented.

Using the SEQ-331



Input/Output Jacks

The SEQ-331 is equipped with input/output jacks of the balanced type (XLR connector) ④ and the unbalanced type (standard jack) ① ② ③. They can be used simultaneously. Therefore a combination of BALANCED- UNBALANCED can be made, but the bypass switch ⑤ will not move.

Setting the Input/Output Level

The most important point in obtaining good results, without losing the S/N ratio is the setting of the correct input/output levels.

For this, it is necessary to have a high signal level without going over the level where distortion in sound occurs.

The level is set according to the flow of the signals. Therefore, if the level is to be set at several places, it should be done in order, starting from the input side. (See "Operation" for the instructions).

Once the appropriate level is set, the volume should be controlled and adjusted with the amplifiers, PA, etc.

Choosing the Input/Output Level Selection Switch

When using the unbalanced type jack (standard), the right level for the connected equipment can be selected with the Input/Output Level Selection Switch ③ ④. The Connection Method (p.2, 3) is one example for choosing the right level.

The Input/Output Level Indicator

The Input Level Indicator ③ lights up when there is an overload in the input. For Balanced Input, this occurs at over +21dBm and for Unbalanced Input, at +15dBm (If the Input Level Selection Switch ③ is at -20dBm, it is -5dBm). The Output Level Indicator ④ lights up when Balanced Output is over +21dBm and Unbalanced Output is over +15dBm (If the Output Level Selection Switch ④ is at -20dBm, it is -5dBm).

The Bypass Switch During Performance

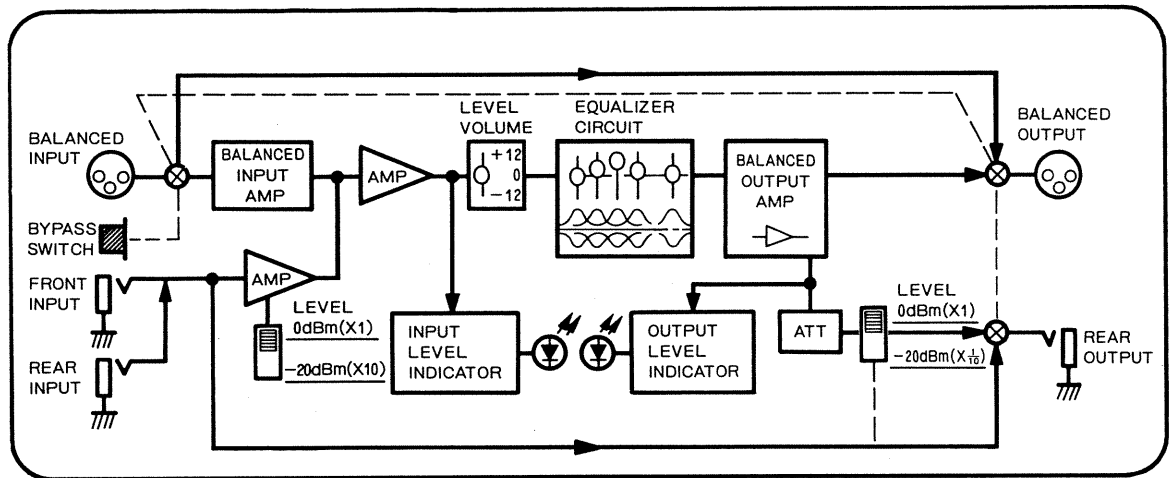
Take note of the following points before making the settings.

1 For the input/output jacks, use connectors of the type.

2 When using the unbalanced type (standard jack) as the input/output jack, set the Level Selection Switches ③ ④ to the same position.

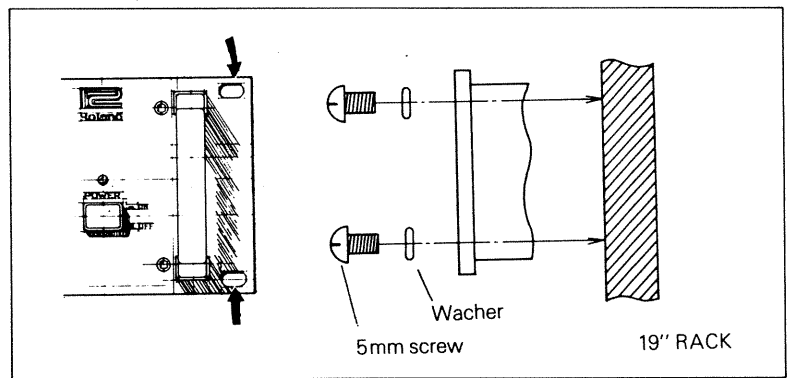
3 If necessary, equalize the difference in the overall signal level with the Level Control ⑤.

Blockdiagram



● Rack Mounting the SEQ-331

The SEQ-331 can be mounted in a standard 19" rack using 5mm screws as shown in the drawing.



Specifications

GRAPHIC EQUALIZER ■ SEQ-331

Input Level

Balanced (XLR) +24 dBm max.
Unbalanced (standard) +20 dBm max.
0 dBm max.
Level Selector (0dB / -20dB)

Input Impedance

Balanced 26k Ω
Unbalanced 100k Ω

Output Level

Balanced +24 dBm max.
Unbalanced +20 dBm max.
0 dBm max.
Level Selector (0dB / -20dB)

Load Impedance

Balanced over 600 Ω
Unbalanced over 10k Ω

Distortion* (T.H.D./20Hz ~ 20kHz)

0.03%

Frequency Response*

5Hz ~ 22kHz (+0, -1.5 dB)

S/N*

80dB

*At "0", for each control slider

Controls and Switches

Frequency Slider ⑥
Level Control ⑤
Bypass Switch ②
Input Level Selection Switch ③
Output Level Selection Switch ④
Power Switch (with an indicator) ⑦

Connection Jacks

Input
Balanced (XLR) ④
Unbalanced (standard) ① ②
Output
Balanced (XLR) ⑤
Unbalanced (standard) ③
GND ⑥

Indicator

Input Level ③
Output Level ④

Power Consumption 8W

Dimension 482(W) × 92(H) × 247(D) mm
19"(W) × 3.6"(H) × 9.7"(D)

Weight 4.2kg 9.3Lbs.

 Roland®

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