



---

**SP 3200 30 BAND EQUALIZER  
SP 3215 DUAL 15 BAND EQUALIZER  
SP 3202 DUAL 30 BAND EQUALIZER  
OWNER'S MANUAL**

---

P/N 033345

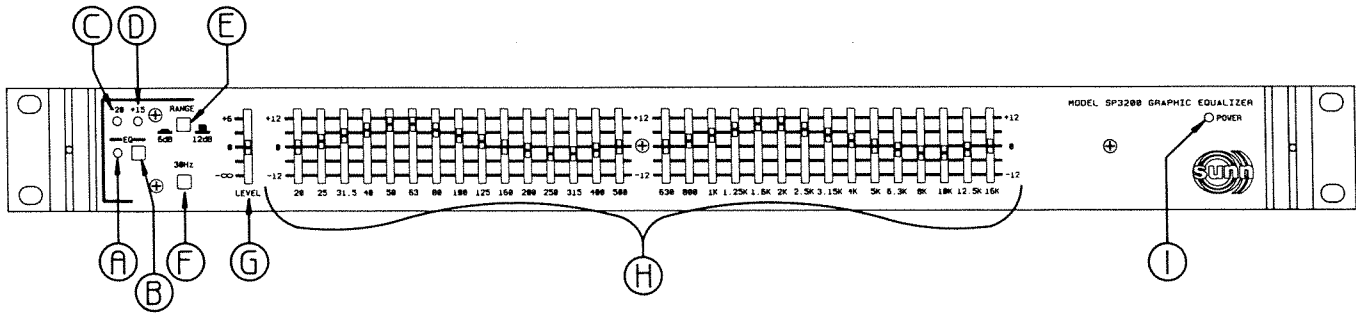
**SP 3200 30 BAND EQUALIZER  
SP 3215 DUAL 15 BAND EQUALIZER  
SP 3202 DUAL 30 BAND EQUALIZER**

**OWNER'S MANUAL**

The SUNN "SP" Series of graphic equalizers are outstanding signal processing devices, designed to meet the needs of demanding professionals and the discriminating audiophiles.

The three models use the same basic circuit and design philosophy providing excellent performance specifications and road-worthy reliability. "Surface Mount" component modules are used throughout the printed circuit boards of the SP Series of equalizers for closer control on manufacturing, quality and sonic performance.

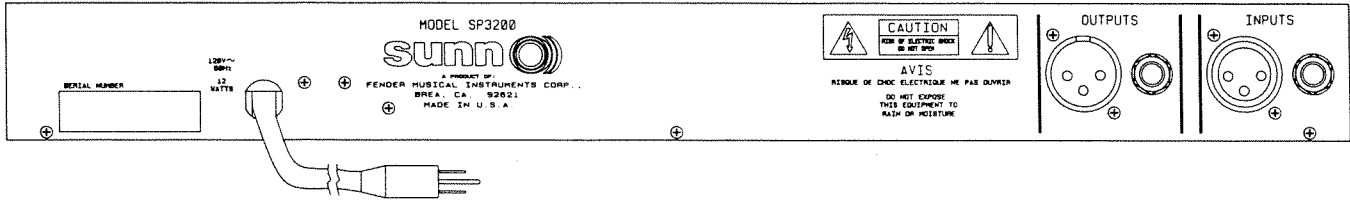
SUNN PRO SOUND...THE SOUND CHOICE



## FRONT PANEL

The front panel used for this manual is that of the SP 3200. The features and functions of all three SP Equalizers are identical. The only difference is the number of EQ Sliders per unit.

- A. EQ ON LED**—When on, this LED (Light Emitting Diode) indicates the equalizer is in the circuit and able to modify the sound. When off, the input signal passes directly to the output with no alteration of the sound.
- B. EQ ON/OFF SWITCH**—Switches the equalizer in and out of the circuit. The LED next to the switch provides status (ON/OFF) information.
- C. -20dB SIGNAL INDICATOR**—This LED should be ON during normal operation. If this LED is not on, increase the level of the signal coming into your SP equalizer.
- D. +15dB SIGNAL INDICATOR**—This LED should be OFF during normal operation. This LED measures the signal going to the sliders and the overall output. If this LED is constantly ON, reduce the level using the LEVEL SLIDER (G). This LED may come on if any of the individual frequency sliders are set at an extreme level. It is a good practice to avoid any unusual or radical eq settings where a particular frequency or group of frequency sliders are set very high or very low.
- E. 6dB/12dB RANGE SWITCH**—The frequency sliders can be configured to offer either a 6dB or 12dB boost or cut with this switch. Experiment to find the setting most useful for your application.
- F. 30Hz LOW FREQUENCY ROLL OFF SWITCH**—This switch activates a 3dB roll off at 30Hz. This is useful to eliminate unwanted low frequency energy from robbing power from the amplifiers. In most sound reinforcement applications, the program material will have very little musical information below 30Hz. It is also very difficult for most speaker systems to reproduce these very low frequencies. If this switch is used, the low frequency sliders will offer even more filtering of the lower frequencies.
- G. LEVEL SLIDER**—Controls the output level from the equalizer. Make sure the +15dB LED is not ON during normal operation.
- H. INDIVIDUAL FREQUENCY SLIDERS**—The particular frequency assigned to the sliders is marked directly below each slider. Be careful to avoid excessive boost or cut of any frequency or group of frequencies. We suggest if you need a radical boost or cut, there may be a better solution to your problem, like using a different microphone, checking the eq on input channel of the mixer, checking the placement of your speakers, etc.
- I. POWER ON INDICATOR**—Indicates the unit is receiving power. The SP Series equalizers do not have ON/OFF power switches. We suggest this unit be plugged to some type of AC power strip with a switch. This will allow you to turn all your signal processing equipment on and off with one switch.



## REAR PANEL

All SP Equalizers are capable of handling balanced or unbalanced input and output signals.

The Cannon or XLR input and output connectors are balanced. The 1/4" jacks are RTS (ring-tip-sleeve) type and can be used for either balanced or unbalanced signals. We do not recommend using both the 1/4" and Cannon (input or output) at the same time. Do not correct the balanced output from the SP Equalizer to an unbalanced input, loss of gain may result.

## EQUALIZATION

In sound reinforcement applications, graphic equalizers are normally used to correct for frequency response problems and to control feedback.

Improving the "sound" of your system with an equalizer will take some experimenting. Do not over-equalize, this can cause your system to sound artificial and very strange.

To control feedback within your system, either mains or monitors, you must first get your system completely set-up and operating properly. This must include all microphones that will be used during a performance. Open microphones, not being used at a certain time, greatly contribute to acoustic feedback. Once the system is operational, begin increasing the level until feedback barely begins, use your equalizer to select the frequency or frequencies causing the trouble and reduce their level until the feedback stops. If you are forced to make radical cuts in certain frequencies to get the feedback to stop, you should try moving speakers, re-setting microphones or TURN IT DOWN (a little).

Equalizers are very useful in recording to increase or decrease the presence of vocals and certain musical instruments. Experiment with your equalizer on different pre-recorded tracks.

## BALANCED AND UNBALANCED LINES

There are two basic methods of patching line level signals between PA components, (mixers, EQ's, power amplifiers, etc.), in sound systems, balanced and unbalanced lines. As the length of patch cables increases, so does the chance of introducing noise from external sources into your system (AC hum, dimmer buzz, CB etc.). The use of balanced lines helps to remove the noise from these outside sources through common mode rejection. For this reason SUNN recommends that all patching in your sound system be done with balanced lines using two conductor shielded cable. This does not apply to patching between a power amplifier and speakers where two conductor speaker wire should be used. Balanced lines should be used only when both the input and output jacks of the units being connected together are designed for balanced lines.

If your system is not capable of balanced line patching and unbalanced lines are required, keep all patching cables to a minimum length. Keep all patching cables away from all AC power cords, lighting cables and speaker wires. Use single conductor shielded cable for unbalanced line patching.

## OPERATING HINTS AND PRECAUTIONS

1. Avoid exposure to moisture (rain, drinks, etc.).
2. To reduce the chances of introducing unwanted noise into your system, keep all patch cables away from AC power cords, lighting cables, and speaker wires. Always use shielded cables for patching to and from this unit.
3. Make all signal connections before powering up this unit.
4. Do not overdrive this unit (indicated by the +15 LED staying on). This will cause unwanted distortion and may cause further clipping of other components patched into the system after the equalizer.
5. To avoid the loss of gain, do not use the balanced output to drive unbalanced line input.
6. This unit is equipped with three prong AC plug for use in USA and Canada. In application where a grounded AC output is not available, use a three prong to two prong adapter. **DO NOT REMOVE THE GROUND PIN OR ALTER THE AC CORD IN ANY WAY.**
7. Do not over equalize. Look for another solution to the problem if over-equalization seems necessary. Extreme frequency boost can cause clipping of the output and extreme frequency cut reduces the signal gain and can cause an increase in system noise.

# SP 3200 • SP 3215 • SP 3202

## SPECIFICATIONS

**FREQUENCY RESPONSE:** 20Hz to 20kHz +0, -0.5dB  
2Hz to 200kHz +0, -3dB

**DISTORTION:** THD—less than .01%  
Measurements achieved with all controls in center position  
20 Hz to 20k Hz at any output level

**SIGNAL TO NOISE RATIO:** 80dB 1 VRMS output  
100dB 10 VRMS output

**SLEW RATE:** 10 VOLTS per microsecond

**COMMON MODE REJECTION RATIO:** -50dB @ 20kHz (balanced input)  
-70dB @ 1kHz (balanced input)

**MAXIMUM INPUT LEVEL:** +24 dBm

**MAXIMUM OUTPUT LEVEL:** +24 dBm into 600 ohms

**GAIN:** Unity  $\pm$ 1 dB all controls centered

**LEVEL CONTROL RANGE:** Switchable 6dB or 12dB

**FILTER CENTER FREQUENCIES:** 25, 40, 63, 100, 160, 250, 400, 630, 1k  
1.6k, 2.5k, 4k, 6.3k, 10k, 16k

**FILTER ACCURACY:**  $\pm$ 3% from ISO centers

**CONTROL RANGE:**  $\pm$ 15dB accurate within  $\pm$ 1dB of front panel markings for one control

**POWER REQUIREMENTS:** 110-130 VAC 60Hz

**DIMENSIONS:** SP 3200 HT: 1.75" (4.45cm); WIDTH: 19" (48.3cm); DEPTH: 5" (12.7cm)  
SP 3215 HT: 1.75" (4.45cm); WIDTH: 19" (48.3cm); DEPTH: 5" (12.7cm)  
SP 3202 HT: 3.5" (8.9cm); WIDTH: 19" (48.3cm); DEPTH: 5" (12.7cm)

*Sunn is a product line of*  
**FENDER MUSICAL INSTRUMENTS**  
1130 Columbia Street, Brea, California 92621