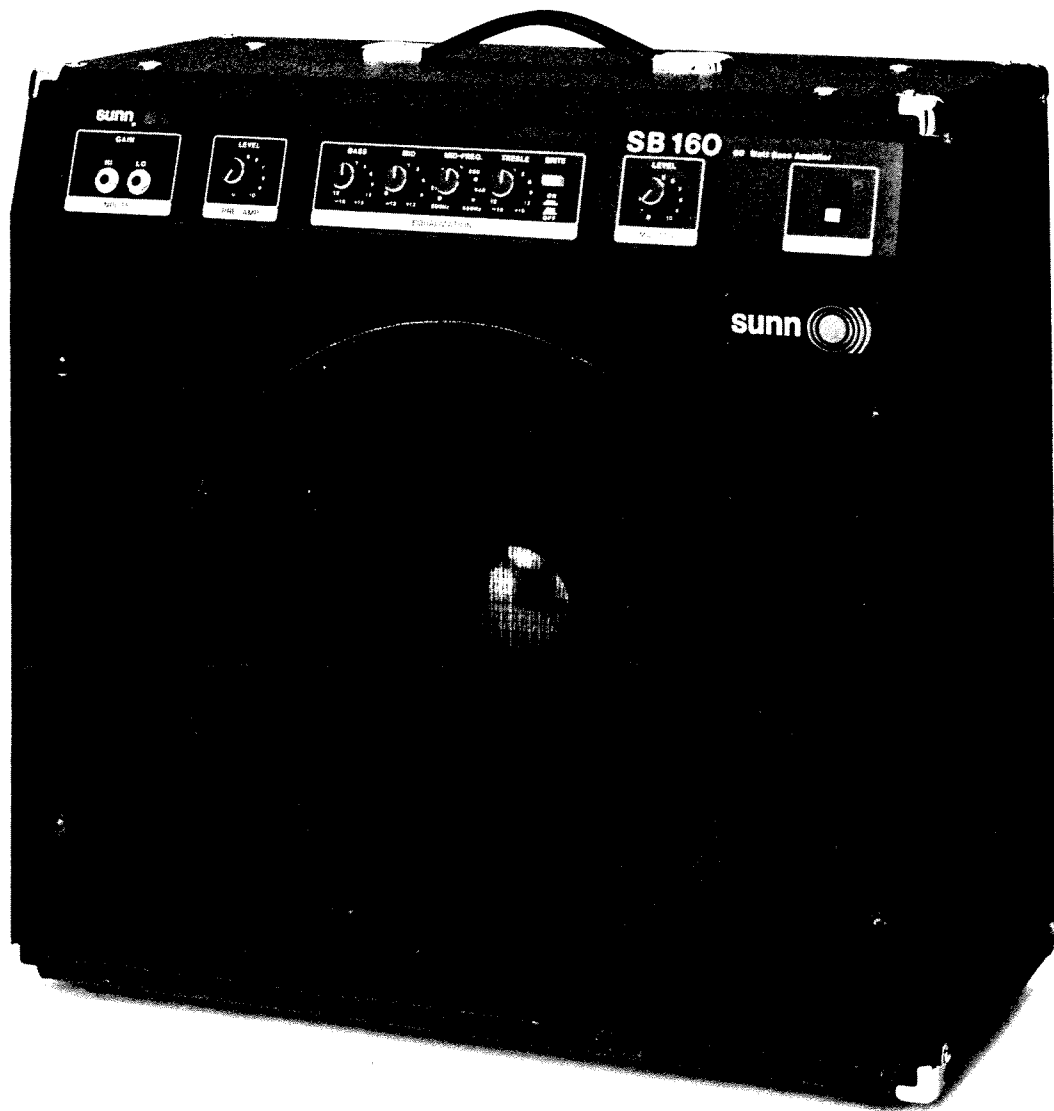


# SB 160



# operators manual



Sunn Musical Equipment Co. 19350 S.W. 89th. Tualatin Oregon, 97062  
a Hartzell Corporation Company

## INTRODUCTION

### THE SB 160 CONCEPT

The main concept behind the SB 160 bass amplifier was to design a medium power portable bass guitar amplifier with the features and flexibility required by today's musicians.

### C-MOS OVERLOAD CONTROL

The SB 160 uses C-MOS technology introduced in the Sunn Beta series. Two C-MOS stages have been placed in critical locations in the signal path, one in the preamp and one in the power amp. The C-MOS stage in the preamp has been designed so that any overload condition in the preamp will take place in the C-MOS where it is controlled and harmonically enriched. A C-MOS limiter placed in the power amp senses when a signal is potentially high enough to clip the power amplifier. As the signal approaches clipping, the C-MOS limiter begins to round off the signal, or soft limit, and harsh power amp clipping is prevented. The effect is essentially inaudible until extreme overdrive conditions occur, then the distortion is warm and controlled.

### EQUALIZATION

The SB 160 tone controls are optimized for the frequency range of the bass guitar and are designed to be effective and easy to use. The Bass, Mid and Treble controls are all active cut and boost type. The controls were designed such that in the center click position they will yield a smooth, pleasing sound you can adjust to your taste. The Mid Frequency control in conjunction with the Mid control give the SB amp a variable Q, sweeping notch or boost filter, which expands the sounds this amp can create. A Brite switch has been included giving extra high frequency boost if desired.

### AND THERE'S MORE

The back panel has a full complement of features including a headphone jack, an accessory patch loop and an extension speaker jack. The internal speaker, designed for the SB 160, has a 30 oz. magnet with 160 watt program rating.

You will find that your SB 160 amplifier is a versatile piece of audio equipment capable of complementing your playing style.

## SB 160 SPECIFICATIONS

POWER: 60 watts RMS at 1KHZ, less than 10% THD  
90 watts maximum continuous square wave.

LOAD: 8 ohms

EQUALIZATION: BASS,  $\pm 15$ dB, 40HZ to 160HZ, MID,  $\pm 12$ dB  
MID-FREQ, variable 200HZ to 850HZ  
TREBLE,  $\pm 15$ dB, corner frequency 750HZ  
BRITE SWITCH, +10dB, corner frequency 1KHZ

SPEAKER MODEL 558

INPUT SENSITIVITY: 2.5mV at 250HZ, HI GAIN input all controls at max  
7mV at 250HZ, LO GAIN input all controls at max

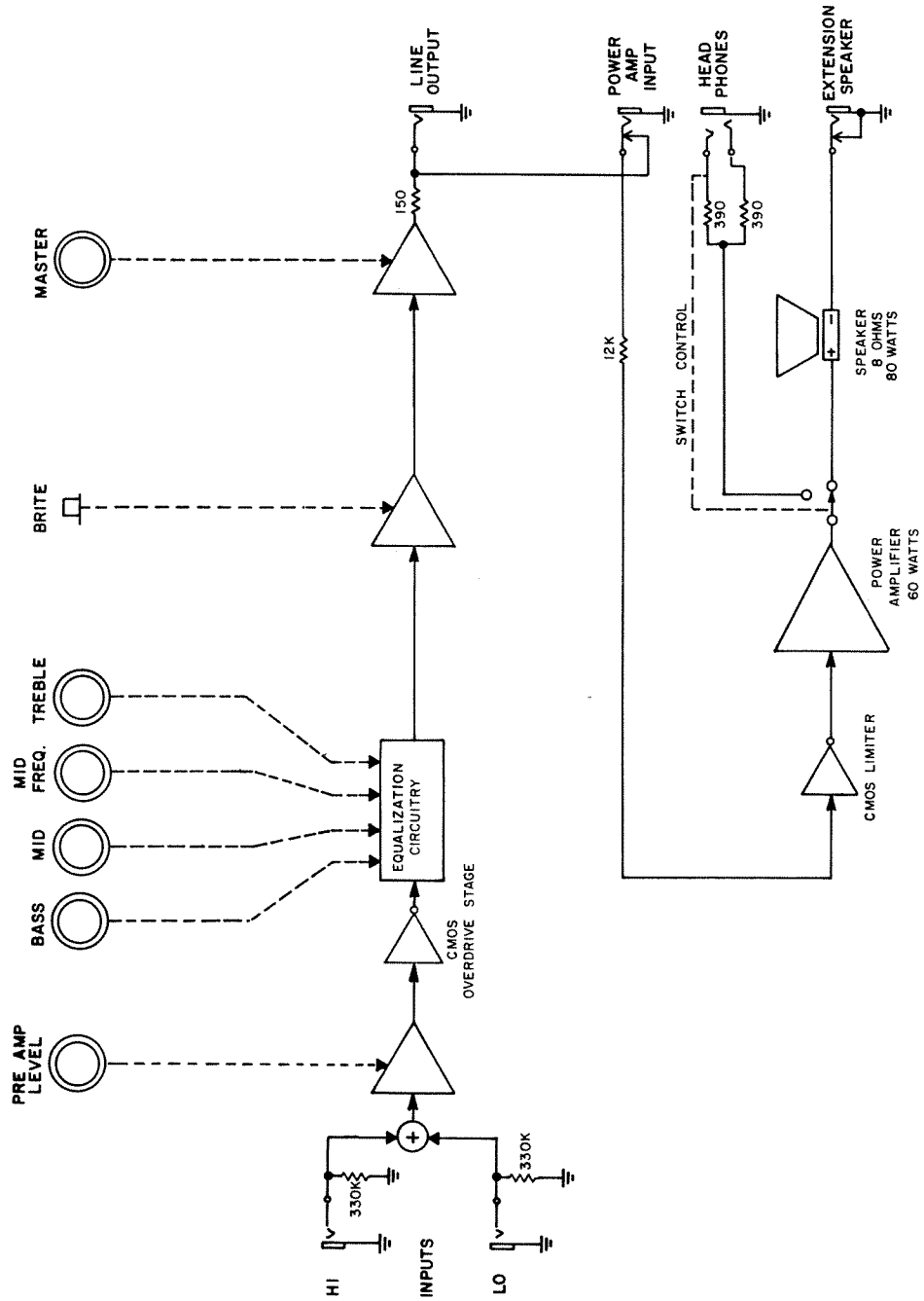
INPUT IMPEDANCE: HIGH GAIN 330K ohms  
LOW GAIN 330K ohms  
POWER AMP IN 12K ohms

OUTPUT IMPEDANCE: LINE OUT 150 ohms  
HEADPHONES 390 ohms

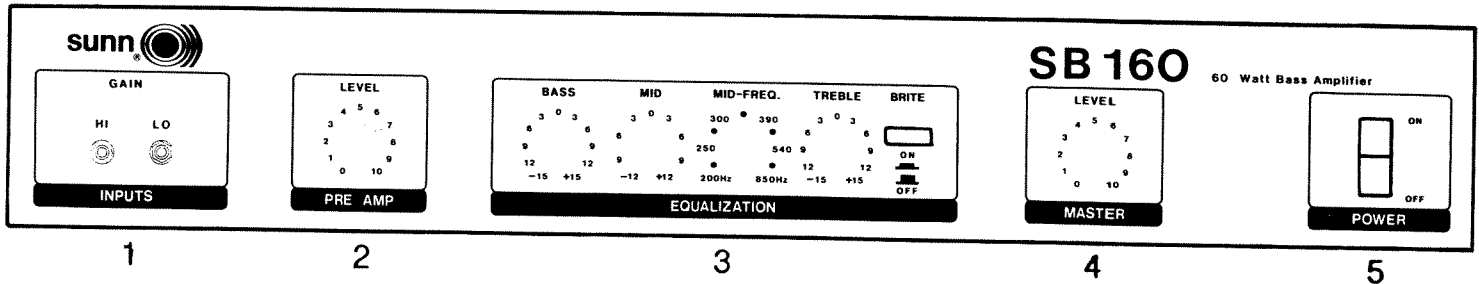
WEIGHT: 55.6 LBS. 25.22KG

DIMENSIONS:  
[HTxDEPTHxWIDTH] 22.8" x 11.25" x 23.1"  
57.91cm x 28.57cm x 58.67cm

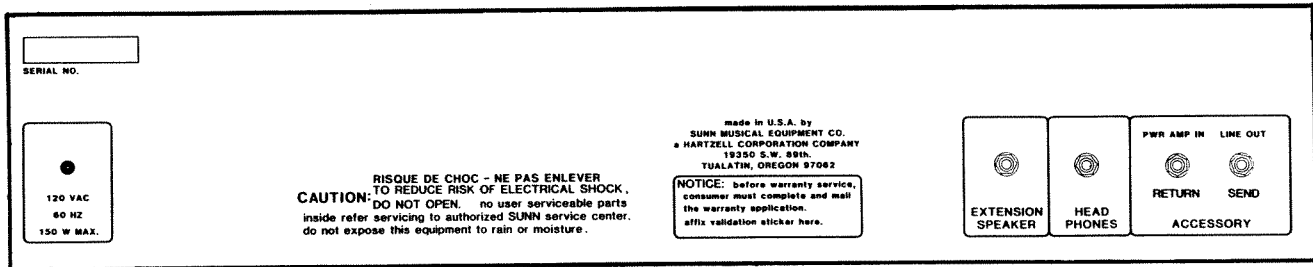
# SB 160 BLOCK DIAGRAM



## SB 160 FEATURES AND OPERATION



1. INPUTS - HI & LO GAIN. These jacks allow the SB amp to produce similar operating conditions with a wide range of guitar pickups. The jack used most often should be the one which allows you to use the rest of the front panel controls over their full range and set your sound with the fewest amount of adjustments. The HIGH GAIN jack will add 9dB more gain than the LO GAIN jack. There are no other differences in the two inputs.
2. PREAMP LEVEL. This control is used to adjust the signal level in the preamp section of the SB amp. To obtain a clean sound, turn the MASTER LEVEL up relatively high and then adjust the PREAMP LEVEL control to achieve your desired operating level. An overdrive sound can be obtained by turning up the PREAMP LEVEL control to a high position overdriving the preamp C-MOS stage or by driving the power amp over 60 watts where the C-MOS limiter adds an overdrive sound.
3. EQUALIZATION. The EQ section consists of the BASS, MID, MID-FREQ., and TREBLE controls as well as the BRITE switch. The BASS control will cut and boost the low frequencies, 40HZ to 160HZ, by up to 15dB. The MID control will cut or boost the midrange frequencies by up to 12dB. The MID-FREQ control varies the effective band of frequencies that the MID control affects. It can change the midrange control center frequency from 200HZ to 850HZ as indicated on the front panel. The TREBLE control will cut or boost the high frequencies starting at 750HZ, by up to 15dB. The BRITE switch will add 10dB of boost to the high frequencies above 1KHZ.
4. MASTER LEVEL. This controls the overall operating level of the SB amp.
5. POWER SWITCH. Turns on and off the AC power. The power switch will light in the ON position to indicate that the amplifier is receiving power.



6 7 8

6. EXTENSION SPEAKER JACK. If desired, an external speaker cabinet can be used with the SB amp by patching a speaker cable from this jack to the speaker cabinet. You may use any number of speakers of any impedance without risking damage to the power amplifier caused by improper speaker loads. The relative loudness of the speakers will depend upon their impedance and sensitivity.
7. HEADPHONE JACK. Any set of mono or stereo headphones may be used with the SB amp by plugging them into this jack. When used, the speaker will be disconnected from the power amp. This is especially useful for practicing or for tuning instruments quietly.
8. ACCESSORY SEND [LINE OUT]. This jack can be used to patch a line level signal from the preamp section to external units such as an effect unit [phaser, flanger, echo, etc] mixing board, tape recorder, or to another power amplifier for additional power.

ACCESSORY RETURN [POWER AMP IN]. This jack allows a signal from an external source to be sent to the power amp and speaker in the SB amp. When this jack is used the signal path from the preamp to the power amp will be disconnected. The preamp signal will still be present at the ACCESSORY SEND [LINE OUT] jack.

ACCESSORY PATCH LOOP. The ACCESSORY SEND and RETURN jacks can be used to patch some accessory effect units into the signal path between the preamp and power amp sections in the SB amp. The ACCESSORY SEND jack should be patched to the input of the effect unit. The output signal from the effect unit should be patched to the ACCESSORY RETURN jack. Effect units patched into this accessory patch loop should be able to handle line level signals of .3 volts to 3 volts. If the effect sounds distorted when patched into this loop, use it between your guitar and the HI or LO input jacks. Use single conductor shielded cable when patching to and from the ACCESSORY SEND and RETURN jacks.