PB-200

Please Note: The PB-200 is no longer in production (it was discontinued in 1987). The text below is provided for the convenience of SWR users who purchased this model on the used market.

GENERAL INFORMATION AND DESCRIPTION

The PB-200 was designed from the ground up specifically for amplifying all bass instruments. Its features, sound, packaging and performance specifications are the result of a four year accumulation of input from bass musicians, sound engineers, and studio engineers. Over this period of time three other designs were developed before the final design of the PB-200.
Housed in an all aluminum chassis for lightweight and lasting beauty is an extremely low noise tube preamp section and a solid state power amplifier utilizing all discreet components. The power amp delivers 200 watts into 4 ohms, and 110 watts into 8 ohms.
Standard features include two input jacks, gain and master volume controls, integral limiter, bass and treble controls, 4 band/3 octave variable graphic equalizer, two effects loops, balanced direct or-line out and adjustable electronic crossover for bi-amping.
Tlxe PB--200 is rack mountable taking up two rack spaces X3 1/2 inches) by 8 3/4 inches deep (measured from the front panel back). The PB-200 weighs only 13 pounds with a 16 pound shipping weight. It is easily carried by one of two handles secured to the front panel.
The tube employed in the preamplifier is a specially selected 7025 (or 12AX7) and should not need replacing for one to three years depending on usage and care of your unit.
We truly hope you enjoy your amplifier and find it all you have ever wanted in a bass amplifier and more. If you ever have any questions or suggestions, please don't hesitate to call or write us at the factory.

FRONT PANEL FEATURES

HIGH AND LOW GAIN INPUT JACKS

Both inputs accept a standard 1/4" phone plug and both inputs can be used at the same time. Since the two inputs are totally independent, no loss in volume or tone will occur if two instruments are used simultaneously. Keep in mind, however, that the Hi Gain input has five times more gain than the Low Gain input.

GAIN CONTROL AND PRE-AMP CLIP LED

The Gain Control adjusts the volume of the preamp section. After the tone controls, Variable Graphic Equalizer and Limiter is set to your liking, the Gain Control should be adjusted to where the Preamp Clip LED barely flashes upon striking your loudest note. Now adjust the Master Volume to the desired volume level. Utilizing these controls in this manner assures the user of maximum signal to noise ratio with no distortion caused by the preamp circuits "clipping."
The Pre-Amp Clip LED will light if any portion of the preamplifier reaches clipping or runs out of headroom. This can be caused-by the Gain Control being set to high or any tone or equalizer control set in'a high boost position. To correct this condition, turn down one of the previously mentioned controls.
NOTE: The Pre-Amp Clip LED indicates that at some point the preamplifier is clipping. No harm is being done to your amplifier and if desirable,, can be played under these conditions.

LIMITER

The Threshold Control sets the level at which limiting begins to take effect. At that point the LED will light.
Maximum'limiting will occur with the Threshold Control set in the Maximum position. The Limiter is completely out of the circuit with the Threshold Control set in the Minumum position. Loss in volume caused by extreme limiting can be overcome by increasing the Master Volume control.
NOTE: If the Threshold is set at maximum and still no limiting effect occurs, the Gain Control is set to low and should be increased to a desired level.

AURAL ENHANCER

The Aural Enhancer was developed to help bring out the fundamental notes of the bass guitar and give a resulting frequency response similar to that used for recording the bass in the studio. This effect becomes more radical as the control is turned to maximum. The result is a more "transparent" sound and is especially noticeable with a slap style technique of playing.

BASS CONTROL

The Bass Control is a shelving type tone control that cuts or boosts the lower of bass frequencies from mid-position. Starting at mid-position, turning the control counter clockwise cuts the bass response and turning the control clockwise boosts the bass response.

VARIABLE GRAPHIC EQUALIZER

Level Control

The Level Control cuts or boosts the frequency set by the Frequency Control directly beneath it. It is used in the same manner as you would a graphic equalizer. Starting at mid-position, moving the slider towards +15 boosts and moving the slider towards -15 cuts that particular frequency.

Frequency Control

The Frequency Control selects the center frequency that will be cut or boosted by the Level Control directly above it. If the-Level Control is at 'O' or mid-position, moving the Frequency Control will have no effect on the sound. The Frequency Control covers a three octave range.
To better understand how the Level and Frequency Controls work with each other, try the following example:
1. Set the Gain and Master Volume Controls for listening levels.
2. Set all tone and level controls at mid-position and turn all frequency controls full counter-clockwise.
3. Strike the open E string on the bass and move the Level Control on the first band of your equalizer to +15 (the Frequency Control should be set at 40 Hz which is the fundamental that the open E string produces). The change in sound and pressure levels is a result of the fundamental E note being increased by'approximately 15dB.
4. Keeping all controls in their present positions (Level Control at +15 and Frequency Control at 4OHz) strike your open E string again and move the Frequency Control from 4OHz to 16OHz.
As the Frequency Control is moved from 4OHz to 16OHz you should hear two increases in volume. The first will be at 8OHz or your first overtone (harmonic) and the second will be at 16OHz or the second harmonic of your open E string.
From the above example, a few things come to mind! One, there's a lot of information contained, in one note on your instrument, two, if one position of the Frequency Control gives a much louder sound or volume, you may have found the area of greatest efficiency of your speaker cabinet and three, the tonal-variations you can achieve with the Variable Graphic are.just about-infinite!
The advantages of the Variable Graphic Equalizer in tone shaping, correcting for 'dead spots' on the neck of your guitar and correcting for speaker deficiencies should be obvious and with a little bit of practice will become quite easy. An illustration showing the relationship between the notes on the bass guitar and their assigned -frequencies follows.

TREBLE CONTROL

The Treble Control is a shelving type tone control that cuts or boosts the high frequencies. Starting from mid-position, turning the Treble Control counter-clockwise cuts the highs and turning the control clockwise boosts the high frequencies.

FREQUENCY SHIFT

Starting from mid-position, and turned counter-clockwise, the Frequency Shift boosts the low frequency response while cutting the high frequency response. Turning the control clockwise boosts the highs while cutting the lows. This control is especially useful in making quick tonal variations and helps compensate for room acoustics without having to change your EQ or tone settings.

MASTER VOLUME AND POWER AMP CLIP LED

The Master Volume controls the volume of the internal power amplifier and the Balanced XLR jack when switched in the Line position. The Master Volume does not affect the levels at the Pre-amp out jack or the Crossover High and Low Output jacks located on the back panel. Those are controlled by the Gain Control only.
The Power Amp Clip LED will light when the power amplifier reaches maximum undistorted output. As with the Pre-Amp Clip LED, the power amplifier can be run beyond this point and will cause no adverse conditions.

POWER SWITCH

Moving the Power Switch to the On position will turn on your amplifier as indicated by the LED lighting.

REAR PANEL FEATURES

EFFECTS LOOP

The Effects Loop is provided for use with an external effect such as a Chorus. Using the Effects Loop lowers the noise heard at the speakers generated by the effects unit. The output and input impedances seen at the To and From Jacks were designed to give optimum performance from effects units both new and old.
To hook up your effect, run a shielded cable from the "To" jack to the input of the effect and another from the output of the effect to the "From" jack on the back panel. When this is accomplished, your effect is now ready for use.

BALANCED OUT

The Balanced Out is a true balanced.output and serves two functions. In the "Direct" position, the Balanced Out serves as a direct box and can be used for recording or patching into a house P.A. System. No controls on the front or back panel affect the signal appearing at the XLR connector. In the "Line" position, all controls on the front and back panels control the signal appearing at the XLR,connector and the level is set by the Master Volume.

The Line position can be used for recording directly into a tape machine as well as going directly to the studio board. An external power amplifier with a balanced input can be driven in the Line mode.
Pin out for the XLR connector are as follows: Pin 1= ground, Pin 2= Pin 3=

ACTIVE ELECTRONIC CROSSOVER

HIGH AND LOW OUT JACKS

The Crossover High and Low out jacks have been provided for bi-amping capabilities. Present at the Low jack are all frequencies below the point set by the Frequency Control. Present at the High jack are all frequencies above the point set by the crossover or Frequency Control. All patching from these jacks should be done with shielded cable.

FREQUENCY CONTROL

The Frequency Control sets the crossover point or dividing point of the High and Low jacks. For example, if the Frequency Control is set at about mid-position or 50OHz, all frequencies below 50OHz will appear at the L<)w output jack and all frequencies above 50OHz will appear at the High output jack. Crossover slope is 12dB per octave.

USING THE INTERNAL POWER AMP FOR BI-AMPING

The internal power amp in the PB-200 may be used for amplifying either the low or high frequencies in a bi-amp system. As a general rule., the bottom end or low frequencies should have at least twice the power that the high frequencies have. So.,if your slave power amp has a rating of 100 watts, use it for the highs and the PB-200 for the lows. Once you have selected the use for the PB-200,-run a patch cord from either the high or low out jack to the Power Amp In jack. This automatically stops any other signals from going to the internal power amplifier. The level or volume of,the internal power amp is still controlled by the Master Volume on the front panel. This allows the user to compensate for sensitivity differences in the two power amps being used.

EQ FOOTSWITCH

Insertion of a footswitch into this jack allows the user to turn on or off the Variable Graphic Equalizer. With no,footswitch plugged in, the Variable Graphic Equalizer is always on.

PRE AMP OUT/POIVER AMP IN JACKS

The Pre Amp Out jack is an unbalanced line out and can drive a slave power amplifier or-can be used for a patch to a mixer, etc. The Pre Amp Out jack is before the Master Volume and its level is controlled by the Gain Control on the front panel. The Power Amp In jack is provided for bi-amping capabilities (see Active Electronic Crossover section) and for using the internal power amplifier by itself. Insertion of a plug into this jack automatically disconnects the preamp signal that normally is present. The volume of the power amp is still controlled by the Master Volume control on the front panel.

USING THE PRE AMP OUT/POWER AMP IN JACKS AS AN EFFECTS LOOP

These jacks can be used as a line level effects loop. When used in this manner, the pre amp out jack becomes the "To" and the power amp in jack becomes the "From" effects jack. Refer to "Effects Loop" for further information.

SPEAKER JACKS

Two speaker jacks are provided for hooking up your speakers. Always use good quality cable for your speakers as it is the final link between the electronics and your speakers. It should be at least made of 18 gauge wire or heavier (the lower the gauge, the heavier the wire) and DO NOT use shielded cable such as that used for your instrument. Minimum load for the power amp is 4 ohms. This means that you can use one 4 ohm cabinet, two 8 ohm cabinets, or four 16 ohm enclosures.

SPEAKER FUSE

The Speaker Fuse is provided to protect your speakers in- the unlikely event of a power amp failure. Size and rating of the fuse is 3AG, 6AMP, FAST-BLOW. Do not defeat the purpose of this feature by using a higher rated fuse.
The speaker fuse can also open if there is a fault in the speaker cable or the-speakers themselves. Therefore, it is always wise to carry extra fuses at all times.

LINE OR MAINS FUSE

The size and rating of the Line fuse is 3AG, 4Amp, SLO-BLO. NEVER replace this fuse with one of a higher rating as it can only cause more damage to your unit and can void your warranty.

A/C CONVENIENCE OUTLET

The A/C Convenience Outlet is provided to provide AC power to another piece of equipment. Check the power rating to make sure that it is less than the rating written on the back panel of the PB-200.