



# Power Series Amplifiers

P80.2, P180.2, P80.4, BP150.1, BP300.1, BP600.1, BP1200.1 Owner's Manual

GENUINE JBL



**Thank you** for purchasing a JBL Power Series™ amplifier. In order that we may better serve you should you require warranty service for your new amplifier, please retain your original purchase receipt and return the enclosed warranty registration card.

**Warning:** Playing loud music in an automobile can permanently damage your hearing as well as hinder your ability to hear traffic. We recommend listening at low levels while driving your car. JBL accepts no liability for hearing loss, bodily injury or property damage resulting from use or misuse of this product.

**Important:** Installation of automotive stereo components can require extensive experience in performing a variety of mechanical and electrical procedures. Although these instructions explain, in a general sense, how to install Power Series amplifiers, they may not show the exact installation methods for your particular vehicle. If you feel you lack the necessary tools or experience, ask your authorized JBL car-audio dealer about professional installation options.

### Installation Warnings and Tips

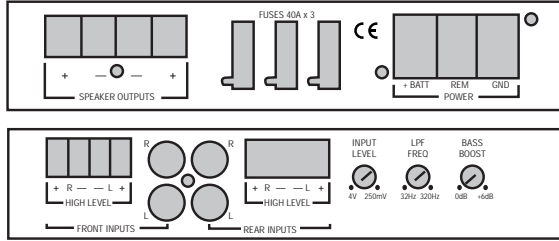
- Always wear protective eyewear when using tools.
- Turn off all audio systems and other electrical devices before you start. Disconnect the (-) negative lead from your vehicle's battery.
- Check clearances on both sides of a planned mounting surface before drilling any holes or installing any screws. Remember that the screws can extend behind the surface.
- At the installation sites, locate and make a note of all fuel lines, hydraulic brake lines, vacuum lines and electrical wiring. Use extreme caution when cutting or drilling in and around these areas.
- Before drilling or cutting holes, use a utility knife to remove unwanted fabric or vinyl to keep material from snagging in a drill bit.
- When routing cables, keep input-signal cables away from power cables and speaker wires.
- When making connections, make certain they are secure and properly insulated.
- If the amplifier's fuse must be replaced, use only the same type and rating as that of the original. Do not substitute another kind.

### Choosing a Location and Mounting the Amplifier

Amplifiers need air to stay cool. Suitable locations are under a seat (provided the amplifier doesn't interfere with the seat adjustment mechanism), in the trunk or in any other location which provides enough air for the amp to cool itself. Do not mount the amplifier with the heat sink facing downward, as this makes convection cooling of the amplifier impossible.

Mount the amplifier so that it is not damaged by the feet of back-seat passengers or shifting cargo in the trunk. Mount the amplifier so that it remains dry – never mount an amplifier outside the car or in the engine compartment. Using the amplifier as a template, mark the location of the mounting holes on the mounting surface, drill pilot holes, and attach the amplifier to the mounting surface with screws. Make sure the amplifier is mounted securely.

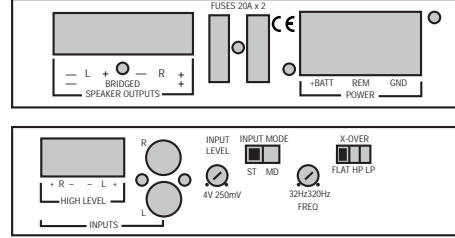
**BP150.1, BP300.1, BP600.1, BP1200.1**



**Note:** Drawing is provided only for connector, control and fuse location. Please see "Specifications" for fuse requirements.

Figure 1

**P80.2, P180.2**



**Note:** Drawing is provided only for connector, control and fuse location. Please see "Specifications" for fuse requirements.

Figure 2

**P80.4**

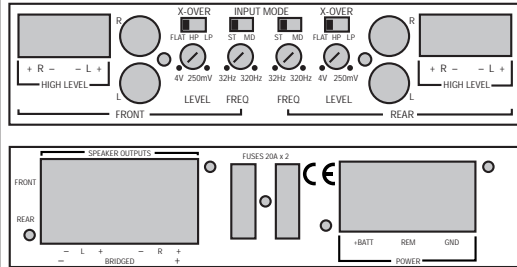


Figure 3

### Wiring the Power Connections

Refer to Figures 1–3 for connector locations. All the Power Series amplifiers will accept up to 4-gauge power and ground wire.

For power, remote and ground connections, strip off one end of each jacket to reveal bare wire for insertion into the connectors. Connect a wire from the GND connector on the amplifier to the nearest bare-metal chassis component; scrape away the paint to ensure good conductivity. Next, connect a wire between the BATT terminal on the amplifier and the POS(+) terminal of the vehicle's battery. Pass the wire through a factory-installed grommet in the firewall, or install a grommet if a factory grommet is not available. Connect a wire between the REM terminal of the amplifier and the "remote out" or power-antenna lead on the vehicle's radio.

### Wiring the Speaker-Output Connections

#### P80.2, P180.2, P80.4

All the Power Series amplifiers will accept up to 8-gauge speaker wire. Connect the speakers, observing proper polarity, to the speaker-output connector. The total impedance of the speaker system connected to the amplifier when the amplifier is driven in stereo must be at least two ohms.

If you are bridging the amplifier, connect the speaker wires to the terminals marked "bridged," observing proper polarity. The total impedance of the speaker system connected to the amplifier must be at least four ohms in bridged mode.

FREQUENCY Crossover	INDUCTOR 6dB/oct. LP (4-ohm)	CAPACITOR 6dB/oct. HP (4-ohm)
75Hz	8.0mH	530 $\mu$ F
100Hz	6.4mH	400 $\mu$ F
125Hz	5.0mH	318 $\mu$ F
150Hz	4.2mH	265 $\mu$ F
175Hz	3.6mH	227 $\mu$ F
200Hz	3.2mH	198 $\mu$ F

If you are running the amp in Tri-Mode (stereo and mono simultaneously), connect the satellite speakers to the speaker connector as you would a pair of stereo speakers. Connect the subwoofer to the terminals marked "bridged" Refer to the chart above to determine the capacitor and inductor values you'll need to route bass signals to the woofer, and the midrange and high frequencies to the satellite speakers. These passive crossover components will also ensure that the impedance of the speaker system doesn't drop below two ohms.

#### BP150.1, BP300.1, BP600.1, BP1200.1

Connect the woofers to the amplifier, observing proper polarity. Although these amplifiers have a single channel, duplicate positive and negative connectors are provided to facilitate the connection of multiple woofers.

The total impedance of the speaker system connected to a BP Series amplifier must be at least 1 ohm.

## Wiring the Input-Signal Connections

Connect a pair of signal cables with RCA-type ends between the connectors on the amplifier and the RCA-type signal connectors on the source unit. If your radio has only speaker-level outputs, you should connect them to the speaker-level input connectors, observing proper polarity. When using the speaker-level inputs, it is not necessary to connect a wire between the “remote” terminal of the amplifier and the “remote” lead from the source unit. The speaker-level inputs will sense voltage on the speaker outputs and turn the amplifier on automatically.

If you are installing a P80.4 amplifier and your source unit has only one pair of RCA-type output connectors and a pair of speaker-level outputs, you may connect the RCA outputs to a pair of amplifier input channels (front or rear), and the speaker-level outputs to the other pair of amplifier input channels.

The BP150.1, BP300.1, BP600.1 and BP1200.1 are designed to provide constant bass regardless of the position of the source unit's front-to-rear fader position. Use of this feature requires that all four inputs are connected to the source unit as labeled on the amplifier (front, rear, right and left). If your source unit has only one pair of RCA-type output connectors and a pair of speaker-level outputs, you may connect the RCA outputs to a pair of amplifier input channels (front or rear), and the speaker level outputs to the other pair of amplifier input channels. If nonfading bass is not important in your system, connect a pair of inputs, either speaker-level or RCA-type, to either the front or rear input connectors on the amplifier.

## System Setup and Adjustment

Refer to figures 1–6 for location of adjustment switches and controls. Electronic Crossover and Bass Boost **P80.1, P80.4, P180.2**

The electronic crossover can be selected as a 12dB/oct. high-pass filter (HPF) 12dB/oct. low-pass filter (LPF) or it can be defeated (FLAT). The crossover frequency can be set at any frequency between 32Hz and 320Hz.

**BP150.1, BP300.1, BP600.1, BP1200.1** These amplifiers are designed to drive subwoofers. Consequently, the electronic crossover is a 12dB/oct. low-pass filter which can be set at any frequency between 32Hz and 320Hz. The bass boost control will provide up to 6dB of boost at 50Hz.

## Setting Input Level

Initially, turn the input-sensitivity LEVEL control to its maximum (counter-clockwise) position. Turn on the source unit and increase the volume control until it is approximately three-quarters of maximum-output level. Slowly increase the input LEVEL control (clockwise) while listening to the quality of the reproduced sound. When you hear distortion on the music peaks, turn the LEVEL control back slightly. This is the maximum undistorted output level of your system. Turning the LEVEL control up farther **WILL NOT INCREASE THE OUTPUT POWER OF YOUR AMPLIFIER!** It will only decrease the amount of volume-control rotation before the amp is at full-output power. It will also increase the amount of extraneous noise present in your system.

## Troubleshooting

Symptom	Likely Cause	Solution
No Audio (Red LED flashes every four seconds)	Short circuit in speaker or speaker wire.	Disconnect speaker leads one at a time to determine which speaker or wire is shorted or defective. Repair the short circuit or replace bad speaker.
No Audio (Power indicator is off)	No voltage at BATT or REM terminals. Bad or no ground connection.	Check voltage at amplifier terminals with VOM.
No Audio (Green power LED is lit)	Amplifier overheated.	Make sure amplifier cooling isn't prevented by mounting location, make sure speaker-system impedance is within limit (see Specifications).
No Audio (Red LED stays lit)	Excessive voltage on B (+) connection.	Check vehicle charging system for defective voltage regulator.
Distorted Audio	Input sensitivity not set properly; amplifier or source unit defective.	Check LEVEL setting.
Music lacks "punch"	Speakers are not connected properly.	Check speaker connections for proper polarity.

## Specifications

### P80.2, P180.2, P80.4, BP150.1, BP300.1, BP600.1, BP1200.1

Specifications	P80.2	P180.2	P80.4	BP150.1	BP300.1	BP600.1	BP1200.1
Power Output, 4 ohms	40W x 2	90W x 2	40W x 4	75W	150W	300W	600W
Power Output, 2 ohms	80W x 2	180W x 2	80W x 4	150W	300W	600W	1200W
Power Output, 4 ohms Bridged	160W x 2	360W x 1	160W x 2	NA	NA	NA	NA
Minimum speaker impedance	2 ohms	2 ohms	2 ohms	1 ohm*	1 ohm*	1 ohm*	1 ohm*
Frequency Response	10Hz – 50kHz	10Hz – 50kHz	10Hz – 50kHz	10Hz – 320Hz	10Hz – 320Hz	10Hz – 320Hz	10Hz – 320Hz
Input Sensitivity (RCA type)	250mV – 4V	250mV – 4V	250mV – 4V	250mV – 4V	250mV – 4V	250mV – 4V	250mV – 4V
THD + Noise (4 ohms)	0.05%	0.05%	0.05%	0.10%	0.10%	0.10%	0.10%
Signal-to-Noise	>110dB	>110dB	>110dB	>100dB	>100dB	>100dB	>100dB
Maximum Current Draw	24 amps	45 amps	43 amps	14 amps	29 amps	57 amps	114 amps
Fuse Requirement	20A	20A x 2	20A x 2	20A	20A x 2	30A x 2	40A x 3
Dimensions (H x W x L)	8-3/4 x 8 x 2-11/16" 222 x 205 x 67.5mm	9-1/16 x 12-9/16 x 2-11/16" 229 x 319 x 67.5mm	9-1/16 x 12-9/16 x 2-11/16" 229 x 319 x 67.5mm	8-3/4 x 8 x 2-11/16" 222 x 205 x 67.5mm	8-5/16 x 10-3/4 x 2-11/16" 210 x 273 x 67.5mm	9-1/16 x 12-9/16 x 2-11/16" 229 x 319 x 67.5mm	10-13/16 x 14-13/16 x 2-11/16" 274 x 376 x 67.5mm

\* No increase in output power over 2Ω rating.

Declaration of Conformity



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