

## **POWER SERIES®**

**P1024**  
**P1022**  
**P1224**  
**P1222**

car audio subwoofer  
owner's manual

### **THANK YOU**

for purchasing a JBL® Power Series® subwoofer. Subwoofer installation requires woodworking skills and some experience in disassembling and reassembling automotive interiors. If you lack the tools or necessary skills, have your subwoofer installed by an authorized JBL dealer.



**JBL**

THE OFFICIAL BRAND  
OF LIVE MUSIC.®

## CHOOSING AN ENCLOSURE

**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. JBL accepts no liability for hearing loss, bodily injury or property damage resulting from use or misuse of this product.

Power Series subwoofers are optimized to perform best in small, sealed, vented and prefabricated bandpass enclosures. While infinite-baffle mounting of Power Series subs is possible, power handling will be greatly compromised because there's no enclosed volume of air to prevent the speaker's cone from moving past its limit. For this reason, we do not recommend infinite-baffle mounting for Power Series subwoofers.

You should choose the enclosure you will use based on the type of music you listen to, how much amplifier power you will use for the subwoofer and how much space inside the vehicle you can devote to a subwoofer enclosure.

Because a sealed enclosure provides the most control over the woofer's movement, a woofer mounted in a sealed enclosure will handle more power than a woofer mounted in another enclosure type. Sealed enclosures provide more accurate sonic reproduction than other enclosure types, so they are well suited to all types of music. Sealed-enclosure construction

is straightforward and there are many prefabricated sealed enclosures available. An optimum sealed enclosure is always smaller than other types of enclosures optimized for a particular speaker, so they require the smallest amount of space inside the vehicle.

Vented enclosures provide better efficiency in the 40Hz–50Hz range but this efficiency comes at the expense of sound in the lowest octave (below 40Hz) and at the expense of some control and power handling. If you are using a small amplifier, a vented box will provide more bass output from less power. Vented enclosures are also well suited to a variety of music types. Because vented enclosures require the volume of the enclosure and the size of the port to have a specific relationship with the characteristics of the woofer, the enclosure must be built *exactly* to the specifications provided. While there are some prefabricated vented boxes available, matching a prefabricated box to a particular woofer is difficult. If you wish to use a vented enclosure, we strongly recommend having your authorized JBL dealer build it, or verify that your design is correct

if you wish to build it yourself. An optimum vented enclosure is always larger than the optimum sealed box for the same woofer and will require more space inside the vehicle.

Bandpass enclosures often provide the most output available from any amplifier and subwoofer combination at the expense of sonic accuracy. If sheer SPL (sound-pressure level) is what you desire most, choose a bandpass enclosure. Bandpass-enclosure design is very tricky and the aid of a computer and enclosure design software is necessary. If you are an experienced installer or have some woodworking experience, you may wish to build the enclosure described in the enclosure design sheet included with this woofer. Fortunately, there are many prefabricated bandpass boxes available and they are all optimized to extract the most output possible from any woofer. Bandpass enclosures can be quite large and may require a lot of space inside your vehicle.

## CONNECTING YOUR SUBWOOFER TO YOUR AMPLIFIER

JBL Power Series subwoofers are available in two different configurations: as dual 4-ohm voice coils or as dual 2-ohm voice coils. Depending on the amplifiers you are using, you may use Power Series subwoofers in singles or multiples to maximize the power available from your amplifiers. To achieve the maximum amplifier output possible, you should design a speaker system that provides the lowest impedance that your amplifier is rated to drive safely. When designing a subwoofer system, consider the following rules:

1. Don't mix different subwoofer or enclosure types in the same system (use all dual 4-ohm woofers or all dual 2-ohm woofers).

2. You may connect the coils of a dual-voice coil woofer in series, but we recommend that you avoid connecting separate woofers in series.
3. You must use both coils of a dual-voice coil woofer connected either in series or in parallel.
4. Most amplifiers deliver exactly the same amount of power bridged into a 4-ohm load as they do running a 2-ohm stereo load.

To design a subwoofer system that maximizes available amplifier power, keep the following rules in mind:

1. The total system impedance of woofers in parallel =

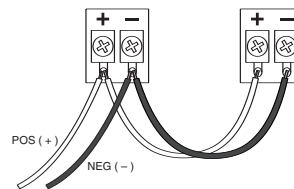
$$\frac{1}{\frac{1}{w_1} + \frac{1}{w_2} + \frac{1}{w_3} \dots}$$

where  $w$  is the nominal impedance of the woofer.

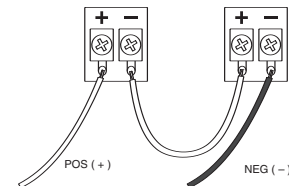
2. The total system impedance of voice coils (or woofers) in series =  $w_1 + w_2 + w_3 \dots$

The diagrams to the right show parallel and series speaker connections.

**Figure 1. Parallel connection**



**Figure 2. Series connection**



## SPECIFICATIONS

	<b>P1024</b>	<b>P1022</b>	<b>P1224</b>	<b>P1222</b>
	10" Dual 4-Ohm Voice-Coil Subwoofer	10" Dual 2-0hm Voice-Coil Subwoofer	12" Dual 4-0hm Voice-Coil Subwoofer	12" Dual 2-0hm Voice-Coil Subwoofer
Power Handling, RMS	400W	400W	400W	400W
Power Handling, Peak	1200W	1200W	1200W	1200W
Sensitivity (2.83V/1m)	92dB	96dB	94dB	97dB
Frequency Response	25Hz – 500Hz	25Hz – 500Hz	25Hz – 450Hz	23Hz – 450Hz
Impedance	8 Ohms/2 ohms	4 Ohms/1 ohm	8 Ohms/2 ohms	4 Ohms/1 ohm
Mounting Depth	6-1/4" (159mm)	6-1/4" (159mm)	6-1/4" (159mm)	6-1/4" (159mm)
Cutout Diameter	9-1/16" (231mm)	9-1/16" (231mm)	11-1/16" (281mm)	11-1/16" (281mm)
Overall Diameter	12-7/16" (316mm)	12-7/16" (316mm)	14-5/8" (372mm)	14-5/8" (372mm)

Features, specifications and appearance are subject to change without notice.

JBL Consumer Products  
250 Crossways Park Drive, Woodbury, NY 11797 USA  
516.255.4JBL (4525) (USA only) [www.jbl.com](http://www.jbl.com)

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### Declaration of Conformity



We, Harman Consumer Group International  
2, route de Tours  
72500 Chateau du Loir  
France

declare in own responsibility that the products described in this owner's manual are in compliance with technical standards:

EN 61000-6-3:2001  
EN 61000-6-1:2001

Klaus Lebherz  
Harman Consumer Group International  
Chateau du Loir, France 8/05

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