GT SERIES™

GT5-12

car audio subwoofer owner's manual

JBL®
THE OFFICIAL BRAND OF LIVE MUSIC.

THANK YOU
for purchasing a JBL® GT 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.

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.

GT Series subwoofers are optimized to perform best in small, sealed, vented and prefabricated band-pass enclosures. While infinite-baffle mounting of GT 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 GT 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 when mounted inside a vehicle, 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 at the lowest frequencies. If you are using a small amplifier, a vented box will provide more perceived 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.

Band-pass 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 band-pass enclosure. Band-pass-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 band-pass enclosure described in the enclosure design sheet included with this woofer. Fortunately, there are many prefabricated band-pass boxes available, and they are all optimized to extract the most output possible from any woofer. Band-pass enclosures can be quite large and may require a lot of space inside your vehicle.

CONNECTING YOUR SUBWOOFER TO YOUR AMPLIFIER

The GT5-12 subwoofer has a single 4-ohm voice coil. Be sure to consider your amplifier's optimum load when designing a subwoofer system. Many bridgeable 2-channel amplifiers are optimized to drive a single 4-ohm woofer in bridged mode. If you will use multiple woofers, be sure to configure them to extract all the power available from your amplifier. When designing a subwoofer system, consider the following rules:

1. Do not mix different subwoofers or enclosure types in the same system. Subwoofers being used in the same enclosure or powered by the same amplifier should be identical models. Mismatched woofers and enclosures can result in poor system performance.

2. Most amplifiers deliver exactly the same amount of power bridged into a 4-ohm load as they do driving a 2-ohm stereo load.

3. If you are designing a multiple-woofer system, be sure to configure the woofers so that they each receive the same amount of power from the amplifier. Never connect two identical woofers in series and then connect that pair to another woofer in parallel. If your system will include an odd number of woofers, be sure to connect *all* the woofers in *either* series or parallel according to the rules that follow, in order to maximize the power available from your amplifier:

   a. The total system impedance of voice coils (or woofers) in series can be calculated using the formula:

   $$\text{Impedance} = w_1 + w_2 + w_3 \ldots$$

   b. The total system impedance of woofers in parallel can be calculated using the formula:

   $$\text{Impedance} = \frac{1}{\frac{1}{w_1} + \frac{1}{w_2} + \frac{1}{w_3} \ldots}$$

   where w is the nominal impedance of the woofer.

The diagrams at right show series and parallel speaker connections.

Figure 1. Connecting two woofers in series to the amplifier (8 ohms)

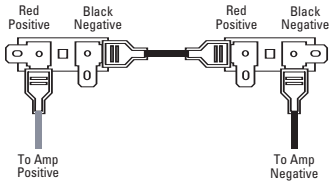
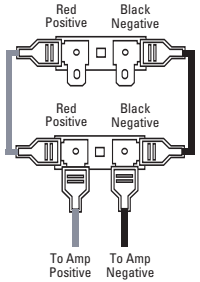


Figure 2. Connecting two woofers in parallel to the amplifier (2 ohms)



SPECIFICATIONS

	GT5-12
	12" (300mm) Single 4-Ohm Subwoofer
Power Handling, RMS	275W
Power Handling, Peak	1100W
Sensitivity (2.83V/1m)	93dB
Frequency Response	23Hz – 450Hz
Impedance	4 Ohms
Mounting Depth	6-7/16" (164mm)
Cutout Diameter	11-1/4" (286mm)
Overall Diameter	12-5/16" (313mm)

A valid serial number is required for warranty coverage.
Features, specifications and appearance are subject to change without notice.
These products are designed for mobile applications and are not intended for connection to the mains.

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Part No. GT5-12OM4/07

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Declaration of Conformity

CE

We, Harman Consumer Group International
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72500 Château du Loir
France

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

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

Klaus Lebherz
Harman Consumer Group International
Château du Loir, France 4/07

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