GRAND TOURING® SERIES

AUTOMOTIVE SUBWOOFERS

GT800, GT800D, GT1000, GT1000D, GT1200, GT1200D, GT1500, GT1500D OWNER'S MANUAL

GENUINE JBL

Thank you for choosing a JBL GT Series subwoofer. GT Series subwoofers are designed to suit a broad range of mobile audio applications and can be used in a wide variety of enclosure types to produce extended, powerful bass in a limited amount of vehicle space. To ensure maximum subwoofer performance, we strongly recommend that installation be left to a qualified professional. Although these instructions explain how to install a GT Series subwoofer in a general sense, they do not show box construction details and exact installation methods for your particular vehicle. If you do not feel you have experience, do not attempt the installation yourself, but instead ask your authorized JBL dealer about professional installation options.

Remember to keep your sales receipt with this manual in a safe place so both are available for future reference.

Your Car and Bass Reproduction

Depending on the size of the vehicle's interior listening space, reproduced bass frequencies below 80Hz are actually boosted by nearly 12dB per octave as frequency decreases. NOTE: This effect, known as the vehicle's transfer function, plays an important part in shaping the overall in-car response and is displayed graphically along with freespace response on the enclosed data sheet for your GT Subwoofer.

Enclosure Calculations and Building Boxes

Use the recommended box designs on the enclosed data sheet or look for them on our Web site at www.jbl.com. Choose cabinet dimensions to fit your vehicle, but do not change the enclosure's volume. Doing so will change the tuning frequency of the enclosure and may adversely affect final performance. If you cannot perform the necessary calculations yourself, please contact your authorized JBL dealer for help and information about JBL Speakershop™, a dedicated enclosure-design software program for experienced car-audio enthusiasts.

Specifications
GT Speakers

Specifications:	GT800	GT800d	GT1000	GT1000d
Configuration	8" woofer	8" woofer, dual voice coil	10" woofer	10" woofer, dual voice coil
Recommended power amplifier range	18W – 200W	18W – 200W	18W – 260W	18W – 260W
Sensitivity (@ 2.83 volt/1 meter)	93dB	93dB	94dB	94dB
Frequency response	35Hz – 5kHz	35Hz – 5kHz	30Hz – 3.5kHz	30Hz – 3.5kHz
Mounting Depth				
Top mount	3-13/16" (97mm)	3-13/16" (97mm)	5-1/8" (131mm)	5-1/8" (131mm)
Bottom mount	4-5/16" (110mm)	4-5/16" (110mm)	5-5/8" (143mm)	5-5/8" (143mm)
Dimensions				
Cut-out diameter	7-1/8" (181mm)	7-1/8" (181mm)	9-1/4" (235mm)	9-1/4" (235mm)

Specifications:	GT1200	GT1200d	GT1500	GT1500d
Configuration	12" woofer	12" woofer, dual voice coil	15" woofer	15" woofer, dual voice coil
Recommended power amplifier range	18W – 280W	18W – 280W	18W – 300W	18W – 300W
Sensitivity (@ 2.83 volt/1 meter)	95dB	95dB	97dB	97dB
Frequency response	25Hz – 3kHz	25Hz – 3kHz	20Hz – 2kHz	20Hz – 2kHz
Mounting Depth				
Top mount 3-3/8" (86mm)	5-3/4" (147mm)	5-3/4" (147mm)	6-11/16" (170mm)	6-11/16" (170mm)
Bottom mount	6-1/4" (159mm)	6-1/4" (159mm)	7-3/16" (183mm)	7-3/16" (183mm)
Dimensions				
Cut-out diameter	11-1/8" (283mm)	11-1/8" (283mm)	13-15/16" (355mm)	13-15/16" (355mm)

Sealed enclosures exert the most control over the motion of a subwoofer because the air acts like a spring against the motion of the woofer cone. Larger boxes allow for more excursion (cone movement), thus more low-frequency output for the amount of power used. When placed in a sealed box larger than the compliance (Vas) of the subwoofer, it will perform as if it were in an infinite baffle installation.

Vented and bandpass enclosures have the lowest amount of excursion for the amount of sound output. This is a result of port tuning reinforcing the sound output. Vented boxes will not provide adequate woofer control when driven below the port tuning range, so proper design is important. A fourth-order bandpass box will have the lowest overall cone excursion at the expense of limited bandwidth.

In addition, there are a number of points you'll want to keep in mind as you construct an enclosure:

1. Use 3/4" (19mm) MDF (medium-density fiberboard) or marine birch plywood to build an enclosure. Enclosures for 12" and larger subwoofers, or small subwoofers driven by high-power amplifiers, should be constructed using 1" (25mm) material.

2. Seal all joints with glue and screws; do not use nails. We recommend "deck" or "zip" screws since they have coarse threads for better grip and don't require pre-drilling holes. Once the box has been tested, seal all interior joints with silicone caulk.

3. Depending on the application, fill the enclosure according to the design you have chosen from the enclosed data sheet in one of three ways: zero-percent fill (i.e., no fill), or 50-percent fill (i.e., 1"-thick polyfill sheets on all inside walls except where subwoofer is mounted), or 100-percent fill (i.e., entire box is stuffed with loosely-packed polyester fiberfill).

4. Use PVC or ABS pipe for ports. Keep in mind that the openings at either end of the port must be at least one port diameter away from any obstructions, including filling material inside or outside the box. Rectangular vents can be used as long as the cross-section area matches the recommended port-area values in the enclosed data sheet.

Power-Handling Limitations

The power-handling capability of any woofer is related to both its ability to dissipate heat and the maximum excursion limits of its cone. Once the speaker's voice coil moves outside the magnetic gap, power can no longer be converted into motion, and all the amplifier's power is converted into heat in the voice coil. This voice-coil heating is the largest detriment to speaker longevity, so overexcursion (driving the speaker past Xmax) should be avoided. Since speaker-cone excursion is different for each type of enclosure, power handling is different for each enclosure.

• Voice-coil overheating and burning due to over-excursion is often caused by overdriving an amplifier into "clipping." A severely clipped signal, or squarewave, contains nearly twice the power of a clean sine wave at the same level. Bass that sounds broken up and distorted at higher volumes usually indicates that the amplifier is being asked to deliver power beyond its ability.

• Infinite baffle or "free air" mounting applications allow for greater cone excursion than subwoofers mounted in an enclosure. In order to compensate, recognize that the power-rating value of the subwoofer will likely be half its rated power in this application.

• Study the excursion curves on the enclosed GT Series data sheet and note the differences for different enclosure applications. The type and size of box used will produce different excursion demands on the enclosed subwoofer and, consequently, different levels of power handling. As long as recommended parameters are used, the subwoofer will perform properly in its enclosed environment.

However, any design deviation may result in less than optimum performance, and may also subject the subwoofer to over-excursion that can eventually damage the speaker. For additional help with this issue, please contact your authorized JBL dealer.

Declaration of Conformity

CE

We, JBL Europe A/S
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declare in own responsibility, that the products described in this owner's manual are in compliance with technical standards:

EN 50 081-1/1992

EN 50 082-1/3.1995

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