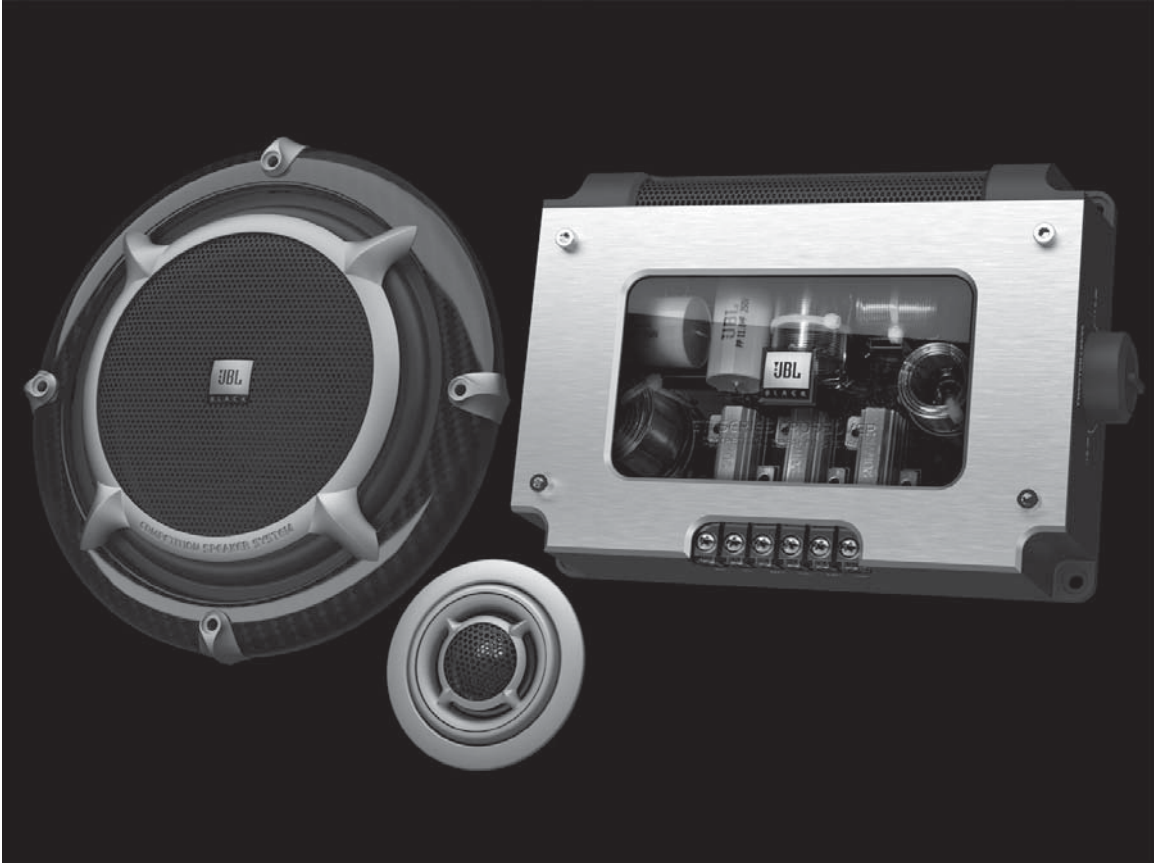


670GTi

COMPETITION SPEAKER SYSTEMS



OWNER'S GUIDE



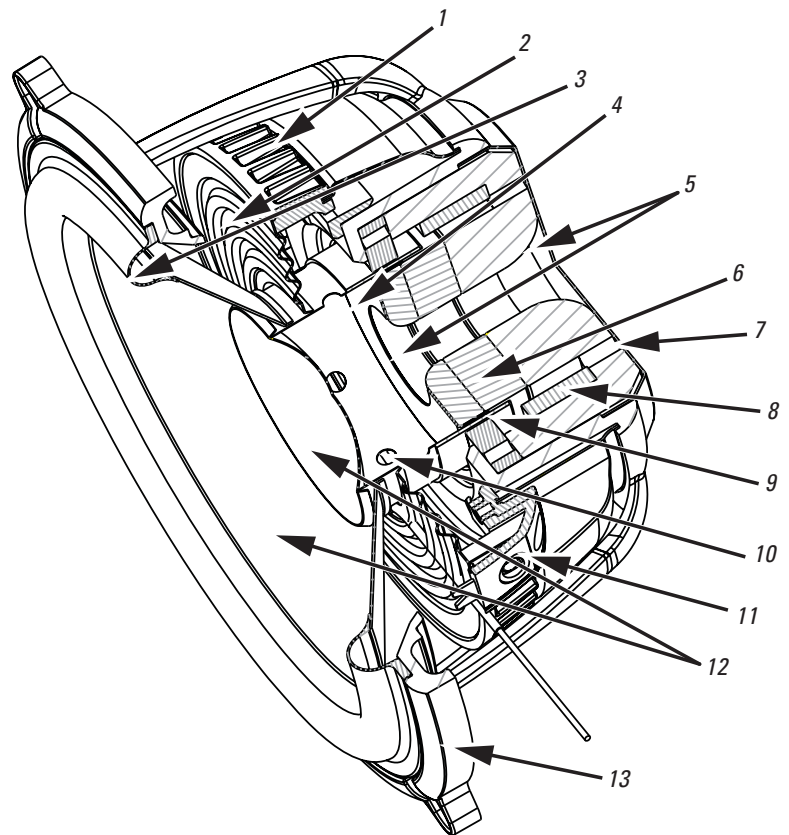
GTi COMPETITION SPEAKER SYSTEM TECHNOLOGY

LOW-DISTORTION WOOFER

Distortion – sound produced erroneously – is the enemy of great speaker performance. At its worst, distortion makes speakers sound broken. At more moderate levels, distortion clouds the midrange, making vocals sound muddy and obscuring the music’s detail. At JBL, we’ve had more practice than any other speaker company at eliminating distortion, and it shows. GTi competition speaker systems include the lowest-distortion woofers we’ve ever built.

In a loudspeaker, distortion can be produced by the cone, the motor, the suspension and even the movement of air through the speaker’s assembly. In designing the 670GTi woofer, JBL engineers have left no stone unturned. The basket, polepiece and voice coil former all include vents to eliminate any potential distortion caused by the movement of air trapped within these parts. The ultrarigid Kevlar® cone eliminates unwanted cone flexing (also called modal distortion), which can cause big peaks and dips in the midrange response. The spider and surround are designed to ensure linear forward and rearward motion, minimizing distortion caused by the speaker’s suspension. The motor includes a copper polepiece cap and a flux stabilization ring that work together to produce a linear voice coil inductance that minimizes intermodulation distortion. Finally, an extralong voice coil ensures that the coil remains in the magnetic gap to minimize distortion at low frequencies and their harmonics, and during high-output transients. The result is crystal-clear midrange, snappy mid-bass without any audible ringing or hang-over, and a smooth frequency response that needs no compensation circuitry in the crossover (see illustration, below).

1. *Spider-Landing Vents*: Minimize distortion from mechanical noise.
2. *Nomex® Spider*: Provides linear force in both movement directions.
3. *Nitrile-Butylene Surround*: Ensures superior longevity.
4. *Copper Polepiece Cap*: Provides linear inductance over the full range of forward voice-coil travel for reduced intermodulation distortion. Provides crystal-clear vocals and midrange, even during heavy bass signals.
5. *Polished and Flared Polepiece Vent*: Provides a low-velocity inlet and outlet for the movement of air in and out of the motor structure. Minimizes distortion from mechanical noise.
6. *Neodymium Magnet*: Provides high flux density. Also allows more room for larger steel motor components to provide critical heatsink mass for the voice coil.
7. *Vented Gap Cooling™ Ports*: Provide movement of air over the voice coil for superior power handling.
8. *Flux Stabilization Ring*: Provides global stabilization of the static magnetic field and works with the copper cap to minimize coil inductance during inward movement of the voice coil.
9. *Voice Coil*: Long, over-hung 2" diameter, aluminum edge-wound voice coil provides high excursion for improved low-frequency capability. Reduces distortion at low frequencies and high input power.
10. *Vented Voice Coil Former*: Minimizes distortion from mechanical noise.
11. *Screw-Down Terminals*: Ensures reliable high-quality connections.
12. *Kevlar® Dustcap and Cone Body*: Ultrarigid Kevlar dustcap and cone body minimize unwanted cone flexing for smooth frequency response.
13. *Cast-Aluminum Basket*: Provides a rigid support for motor and moving assembly.



EXTENDED-RANGE DOME TWEETER

The 670GTi employs a full one-inch edge-driven textile dome tweeter. This advanced tweeter features an oversized voice coil, which increases power handling and lowers distortion at high output levels, and produces a flatter overall frequency response. Another of this tweeter's significant benefits is that it allows a lower crossover point, providing a more seamless transition between the system's woofer and the tweeter. This gives you far superior stereo imaging and flatter overall system response, especially in the critical vocal range. At the other end of the spectrum, the 670GTi's tweeter plays all the way out to 30kHz, so you hear every bit of detail and nuance that your music has to offer.

PRECISION CROSSOVER NETWORK

The 670GTi crossover network features technology and construction that are more likely to be found in an expensive audiophile home loudspeaker than a typical car audio component speaker system. High-precision polypropylene capacitors and air-core inductors that approach the ideal theoretical characteristics of a capacitor and a coil are employed, precisely integrating the woofer and tweeter without adding a resistive component or other non-linearities to the signal. Aluminum-encased, wire-wound resistors and heavy-trace printed circuit boards greatly increase heat dissipation and power handling, maximizing the amount of amplifier power that reaches the woofer and tweeter.

SPECIFICATIONS

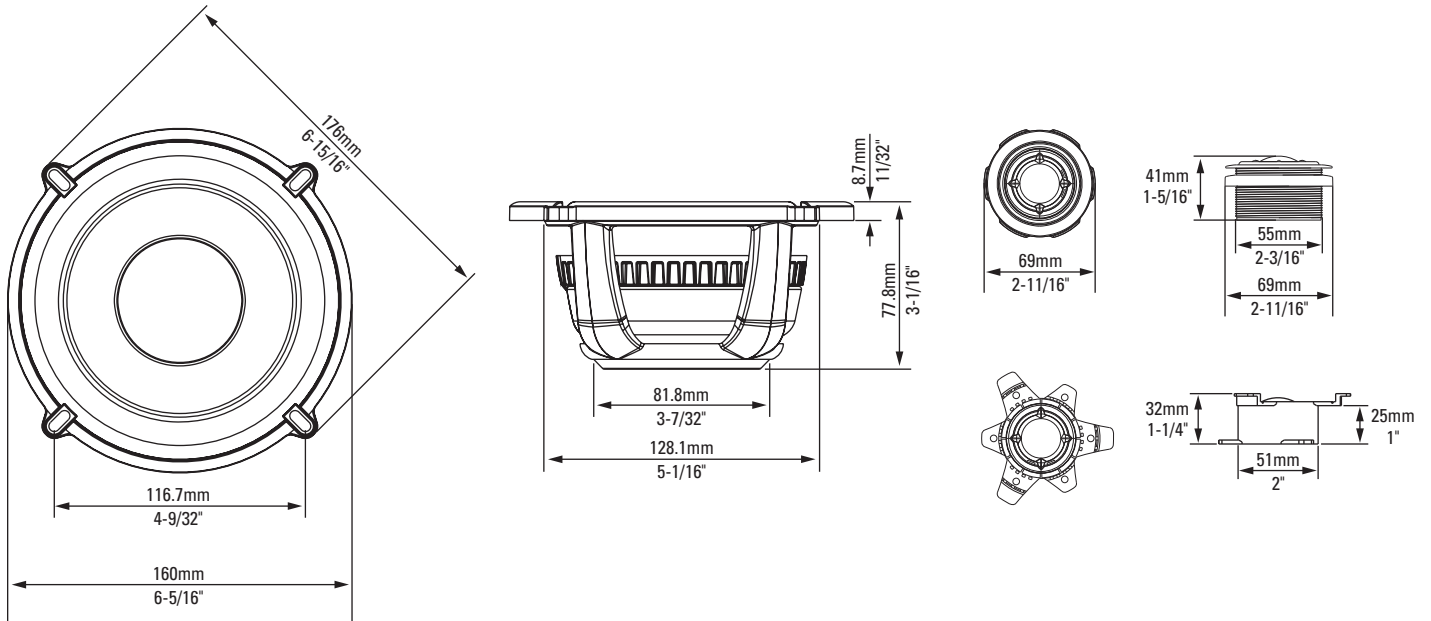


Model	670GTi
Description	6" 2-Way professional-grade automotive component speaker system
Power Handling (W peak)	600
Power Handling (W RMS)	150
Sensitivity (dB @ 2.83V)	92
Frequency Response (Hz)	50 – 30k
Crossover Frequency (Hz)	2500
Voice Coil Diameter	2 in. (50mm)
Impedance	4 ohms

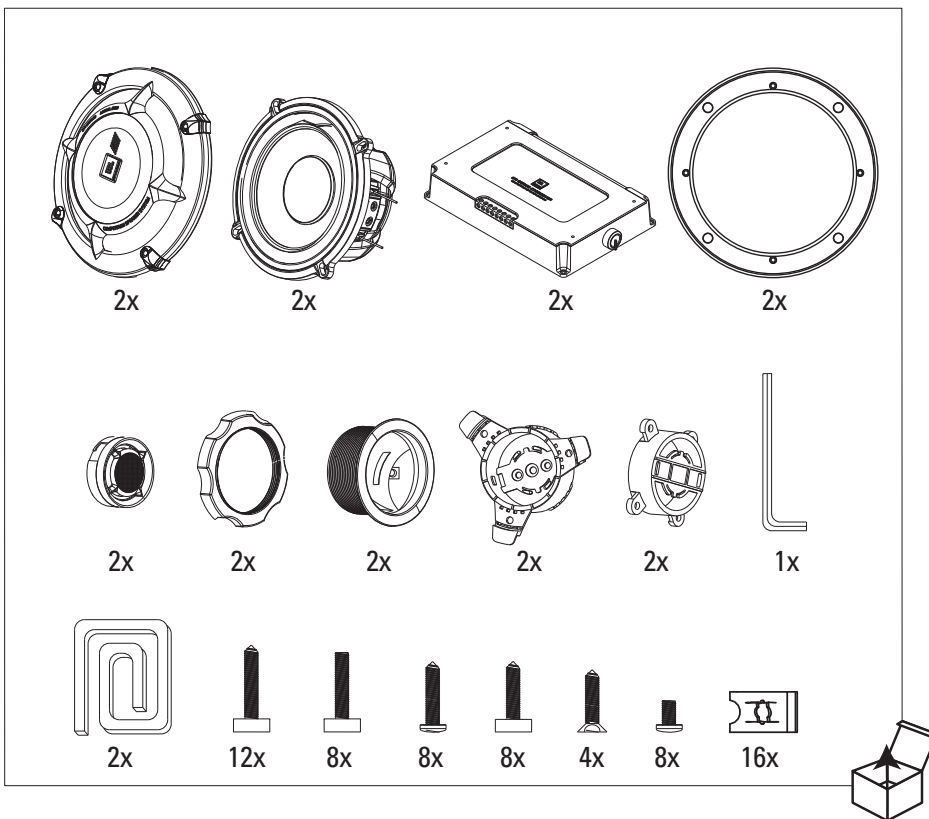
THIELE/SMALL PARAMETERS

	670GTi
BL (Tm)	7.56
DCR (ohms)	3.48
MMS (g)	17.94
S _D (cm ²)	132.7
C _{MS} (µm/N)	382
V _{AS} (l)	9.45
F _s (Hz)	60.8
Q _{ES}	0.42
Q _{MS}	10.17
Q _T	0.4
1wSPL (dB0)	89
SPL (2.83V)	92.6
H _{VC} (mm)	17.27
H _{AG} (mm)	6
X _{MAX} (mm)	5.36
V _B	288,890 mm ³
LEV _C (mHz)	0.13

670GTi DIMENSIONS



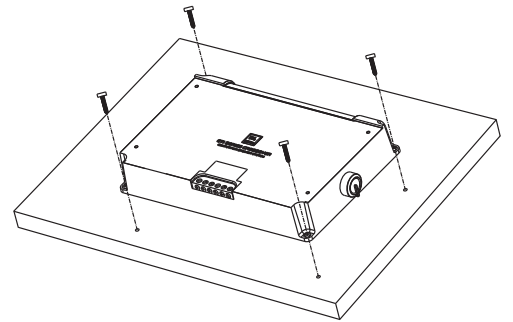
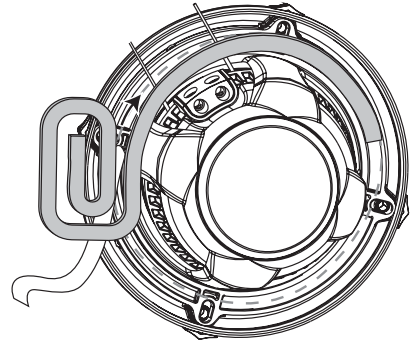
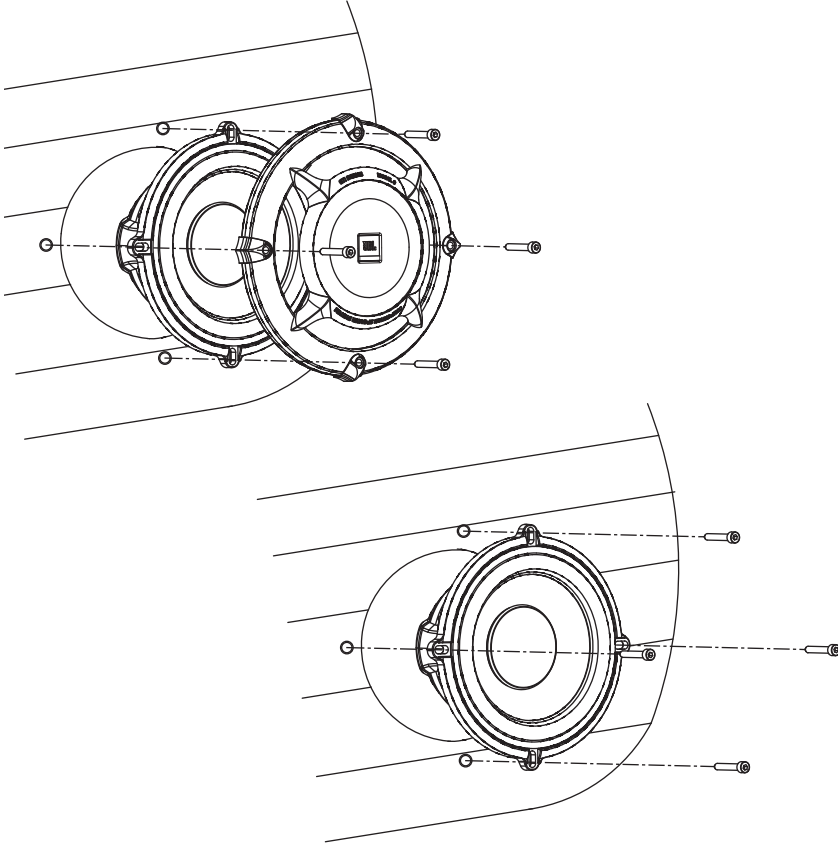
670GTi INCLUDED ITEMS



670GTi INSTALLATION

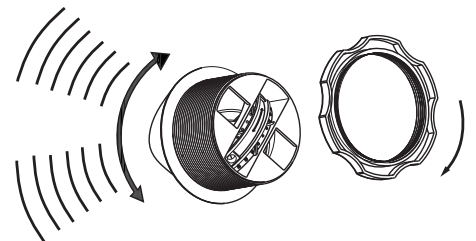
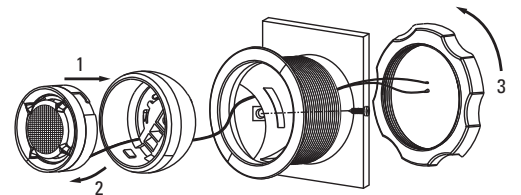
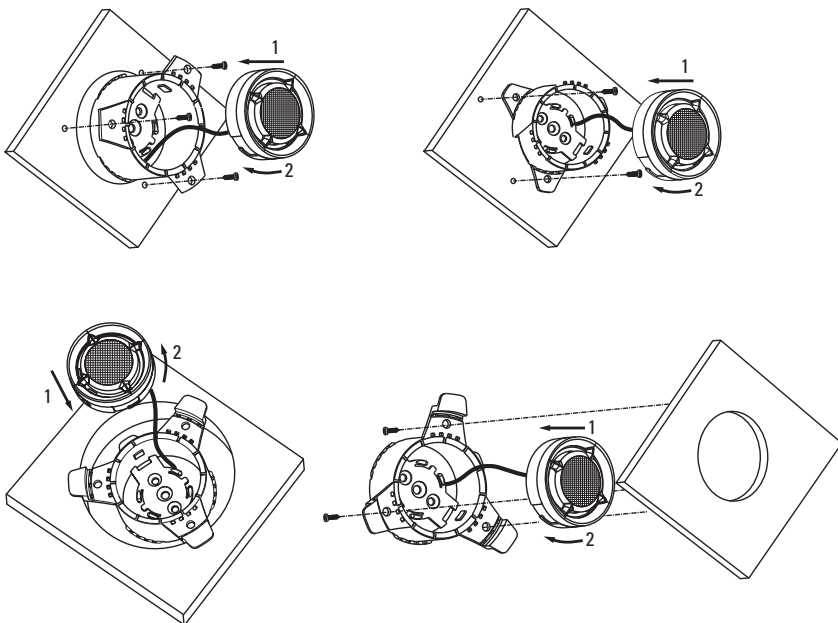
WOOFER MOUNTING CONSIDERATIONS

- All woofers require a rigid baffle and isolation between the front and back of the speaker for best low-frequency extension.
- The 670GTi woofer may be used in an infinite baffle or in a small sealed enclosure with a volume equal to or greater than 1/8 ft³.

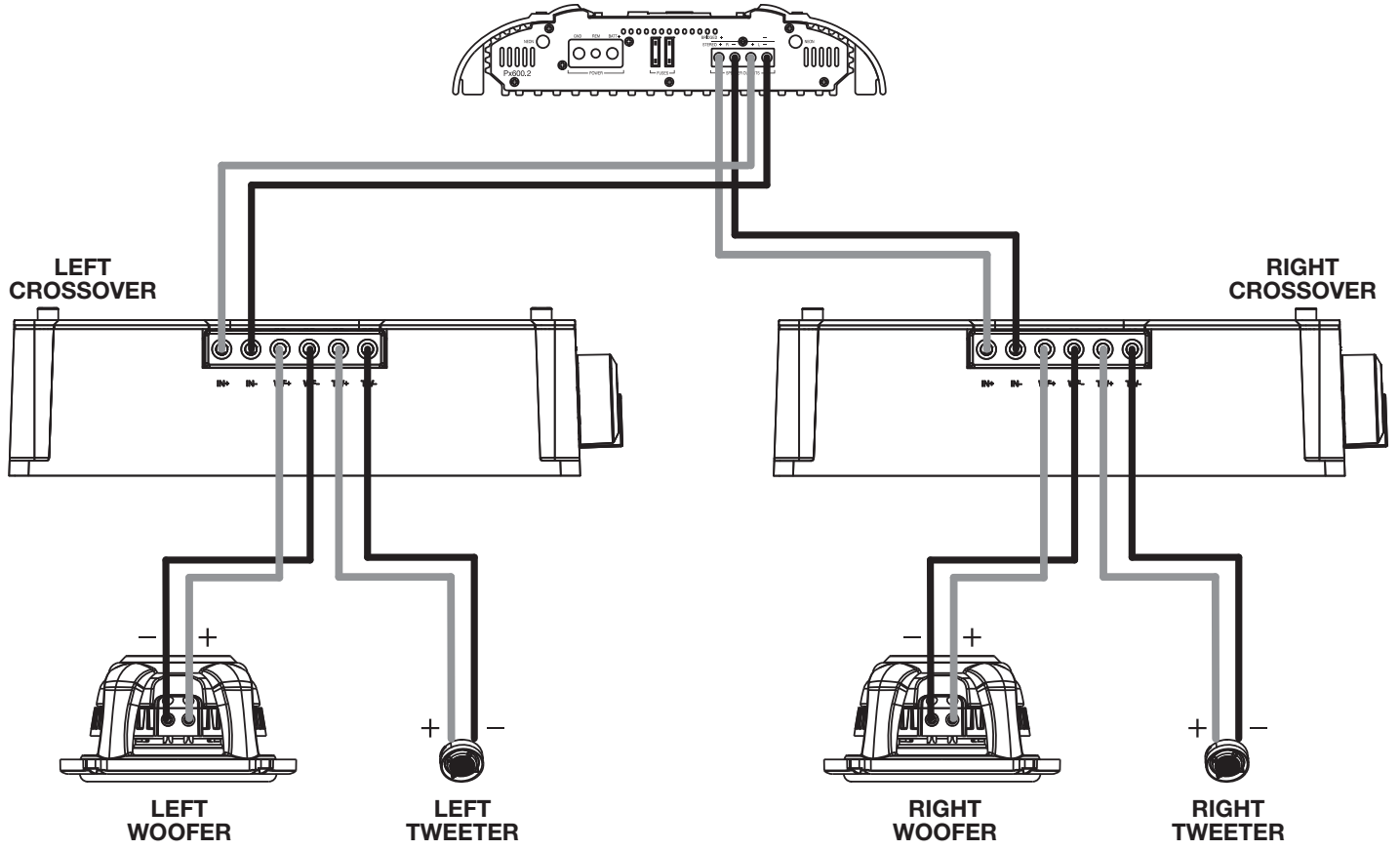


TWEETER MOUNTING CONSIDERATIONS

- If the tweeters will be mounted in the A-pillars or kick panels, aim them at a point midway between the two front-seat positions.

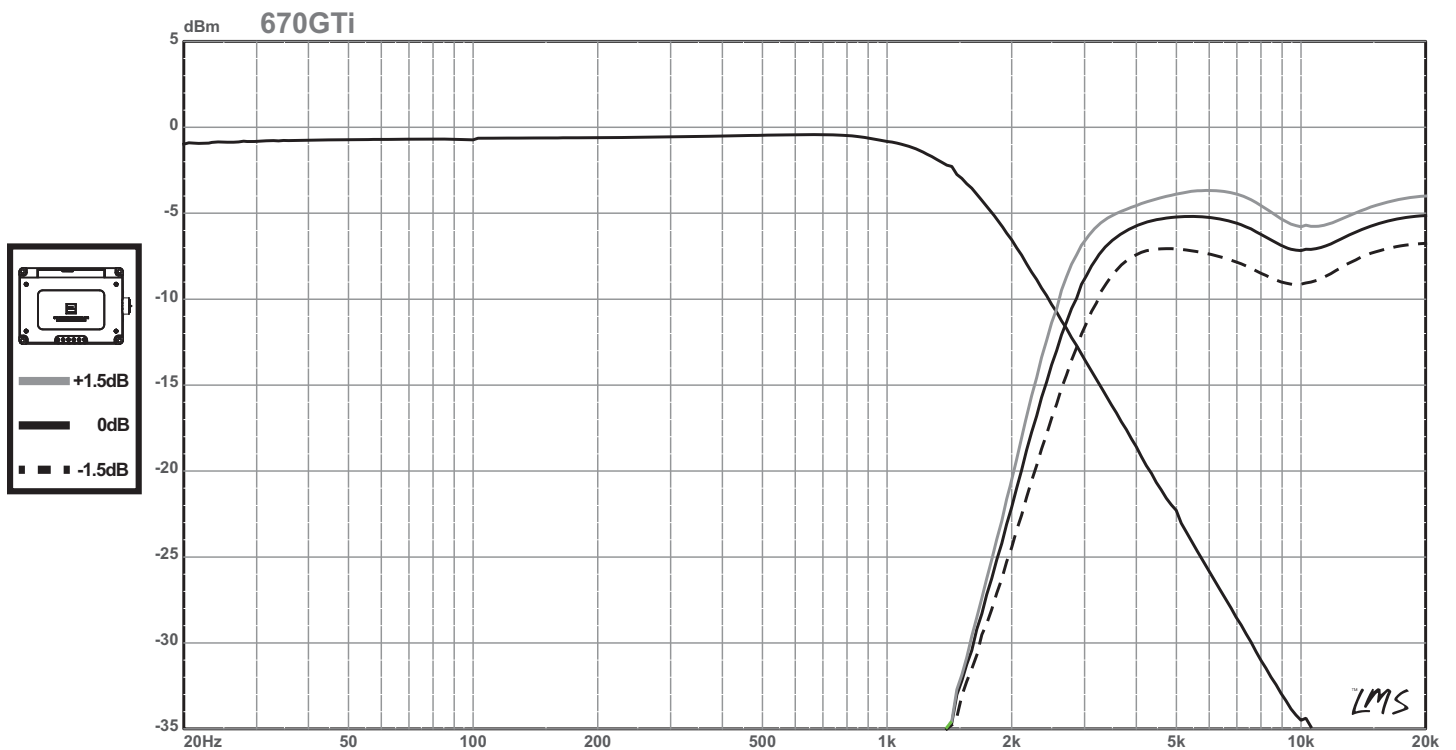
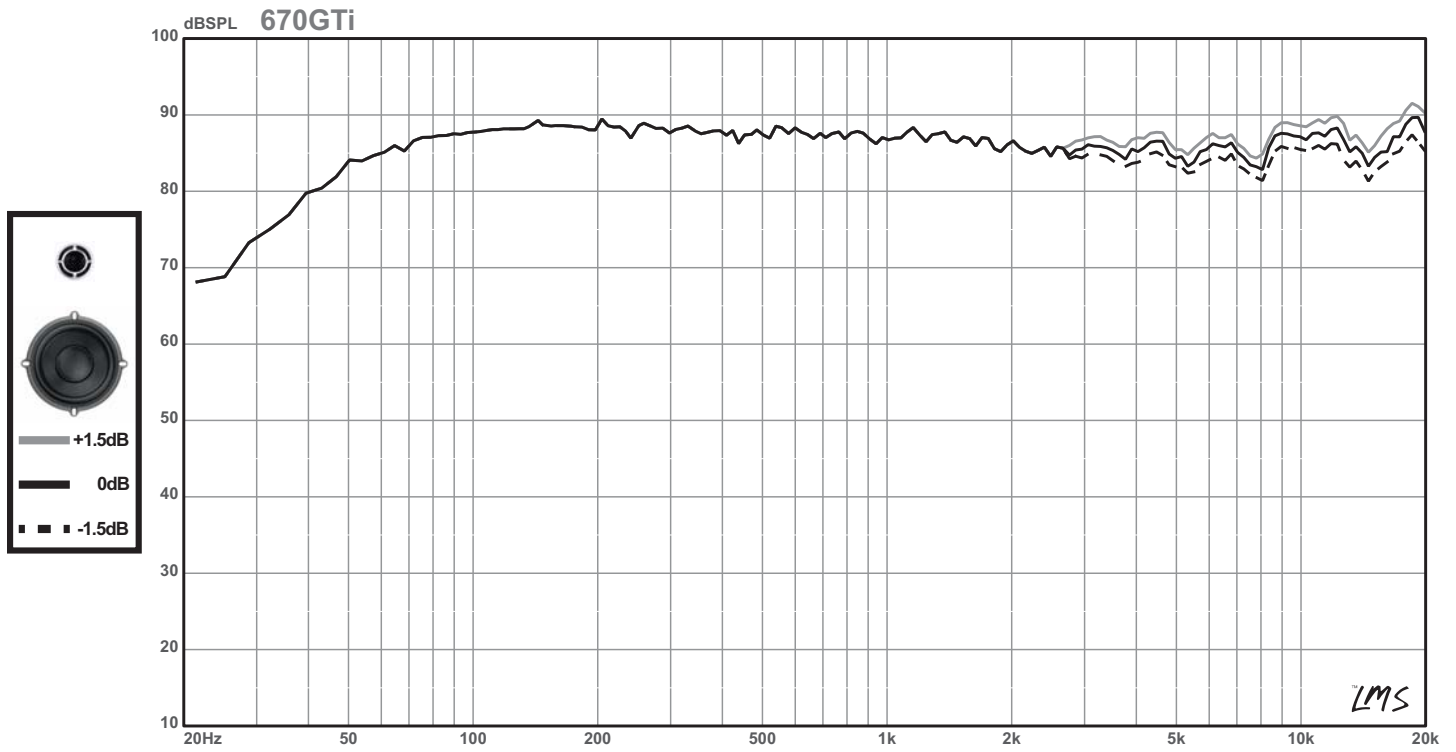


670GTi CONNECTIONS



670GTi CROSSOVER ADJUSTMENTS

After installing the system, set the Tweeter Level adjustment according to your preference. The graphs below illustrate the effect of the Tweeter Level adjustment





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