BRAXIALS

THE CDT BRAXIAL COMPONENTS ADVANTAGE!

"**CDT Audio Braxial** refers to a bracket mounted assembly of mid/woofer Tweeter This apparently simple assembly has huge advantages over the more common coaxial speaker. These were summarized above. Let us examine these advantages and contrast the corresponding drawbacks of conventional technology.

First consider the typical speaker configuration. The coaxial mounting type and the simple full range speaker also provide simple mounting convenience. However the full range cannot really do the job as asking one speaker to do full range is just too much to ask without major sacrifices. Dispersion, power handling and distortion are just the first three compromised parameters.

The coaxial two-way speaker mounts the Tweeter on an axis ahead of the apex of the main cone. This Tweeter blocks the sound from the main cone as well as producing sound that is always ahead of the main cone. The supporting post utilized in this design must pass through the dust-cap and thus allows dirt to pass into the voice coil gap or requires an extra, restrictive noisy spider to exclude some potential dirt ingress.

The area created between the back of the blocking Tweeter and the apex of the cone forms a resonant cavity that can color the sound from both woofer and Tweeter. The volume of this cavity can vary during long mid/woofer excursions. Response ripple at the crossover frequency can result. The sound from the forward mounted Tweeter is always ³ahead² of the main cone and is never time aligned with this cone. Most coaxial speakers use a cheap single crossover part embedded somewhere in the assembly.

BRAXIAL STYLE ADVANTAGES

- Utilization of a single mounting position for full range response.
- Sealed dust-cap on the mid/woofer for full extension and protection from dirt.
- Acoustically non-resonant mount for smoothest response.
- Time aligned axis defines an optimum listening space for maximum clarity.
- Uniform polar response is available over a well defined but broad area.

The CDT Audio Braxial design solves these problems. The dust-cap is retained for a clean extended high end from the mid/woofer and positively excludes dirt that may enter from the automotive interior. The Tweeter is not mounted on top of the dust-cap or the apex of the cone. Instead it is placed in the cone area but to the side where it allows the Tweeter to couple strongly to the mid/woofer and to be rotationally placed to time align the woofer dome and the Tweeter. This means there is an area defined by points, which are equidistant to the apex of the cone and the Tweeter diaphragm. Additionally the Tweeter, which itself is angled, may be directed during mounting. Finally one ideal mounting and listening position exists to provide the best of both.

Relative to individual drivers the CDT Audio Braxial design provides a more predictable result in conjunction with the high-quality external matching crossover network. The Braxial assembly uses the same high quality soft dome Tweeter and rubber edged Kevlar mid/woofer as provided in the separate system kit. However the interaction of the sound fields between the Tweeter and mid/woofer in the Braxial allows each driver to accentuate the output of the other. This expresses itself as a broader polar response in the crossover region. Also the enhanced time alignment lends precision and clarity through an improved transient response.

When the drivers are separated and placed at various distances from the listener some of the design precision is taken out of the system. Now the installer may need to adjust the Tweeter level to give the best blend. It may be necessary if the mounting positions are restricted to use the rear speaker sound to correct the front or visa versa.

The polar response in the crossover region is optimized by the CDT Audio Braxial construction. The closer the drivers the wider this response will be.

With individually mounted drivers the individual responses contribute to the reverberant field in a less predictable manner. In the case that the Braxial must be mounted inconveniently low, the CDT-10LP kit can be used to inject a small amount of very high frequencies in an elevated location and in precisely variable amounts to restore extreme high frequency energy and to enhance and raise the image.

Installed design precision is the overall advantage of CDT Audio Braxial based systems.

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