

## Gland Class – Speaker System **SB-G90**



Speaker System  
**SB-G90**



*Unwanted vibration produced by the speaker units and enclosure has been thoroughly eliminated.*

*The floor-standing speaker achieves clarity in sound imaging and fullness in spatial expression.*

**A vast sound field is reproduced in excellent clarity and precision with realism over a wide range, from low to super-high frequencies.**

- Balanced Driver Mounting Architecture with units secured at their centre of gravity
- High-rigidity enclosure with cross construction using reinforcing material with a separate sub-baffle for each speaker unit
- High response achieved by a wide-bandwidth mid/high coaxial unit, while inheriting the R1 concept of point sound source and the concept of linear phase

**Low-frequency reproduction with excellent response and low distortion**

- Two 16-cm high-response, low-distortion, long-stroke woofers using double magnets and overhung voice coils

# Emotive Acoustic Technology

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## Point Sound Source Speaker System

One ideal in reproducing sound with full spatial expression is to ensure that the wave-fronts emitted from the speaker units are aligned at any listening position, i.e., providing a point sound source.

While inheriting the linear phase concept, the SB-G90 has newly developed two-way coaxial cone units (including mid-range and tweeter) targeting high-speed reproduction with enhanced high sensitivity.

## Wide Range and Low Distortion Reproduction

In order to fully reproduce the vast frequency spectrum in high-resolution music sources, the SB-G90 uses both a newly developed 25-mm phase precision tweeter and two newly developed 16-cm low-distortion, long-stroke woofers, achieving reproduction in a wide frequency range of 27 Hz to 100 kHz.

In addition, the diaphragm material of all the speaker units has been unified to anodized aluminium in order to unify the tones over the entire frequency range. Also, all the speaker units have features such as copper rings and high-linearity-drive voice coils, thereby achieving low distortion over a wide frequency range.

These characteristics enable smooth and well-balanced music reproduction.



## BDMA (Balanced Driver Mounting Architecture)

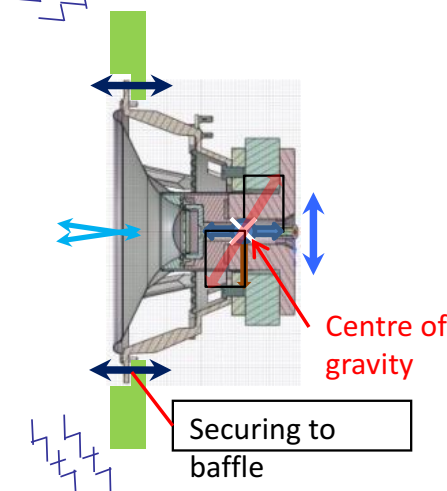
With the conventional method of mounting a speaker unit to a baffle, the centre of gravity of the speaker unit was located away from the support points, and so the force acting on the voice coil when driving the speaker produced vibration on the entire speaker unit. This produced distortion in the sound waves generated from the diaphragm, which deteriorated the sound quality.

In addition, mounting the speaker unit to the baffle is a configuration that easily transmits vibration of the speaker unit itself to the baffle, and so unnecessary vibration sound was produced from the baffle, again deteriorating the sound quality.

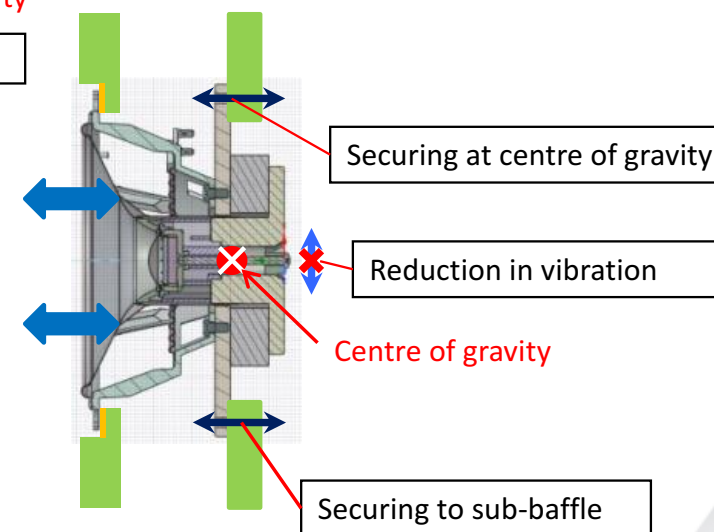
With Balanced Driver Mounting Architecture, the speaker unit is mounted to a sub-baffle installed inside the cabinet at the speaker unit's centre of gravity, which enables suppressing the vibration of the speaker unit itself. Also, because the speaker unit is not mounted to the baffle on the front, transmission of unwanted vibration from the speaker unit to the baffle can be suppressed.

This makes it possible to reduce distortion in the sound waves generated from the diaphragm and reduce unwanted vibration sound from the baffle, thereby providing reproduction of a sound field excellent in sound imaging with both realism and clarity allowing visualization of the fine details of each and every sound.

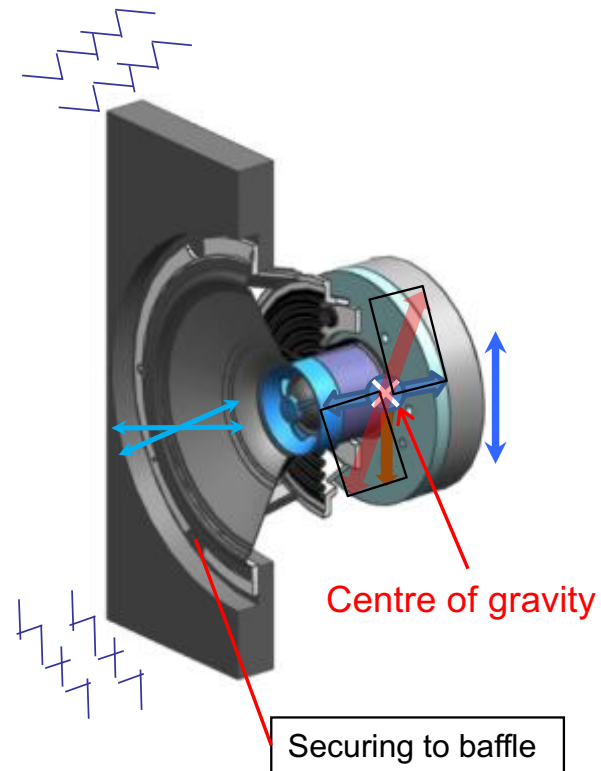
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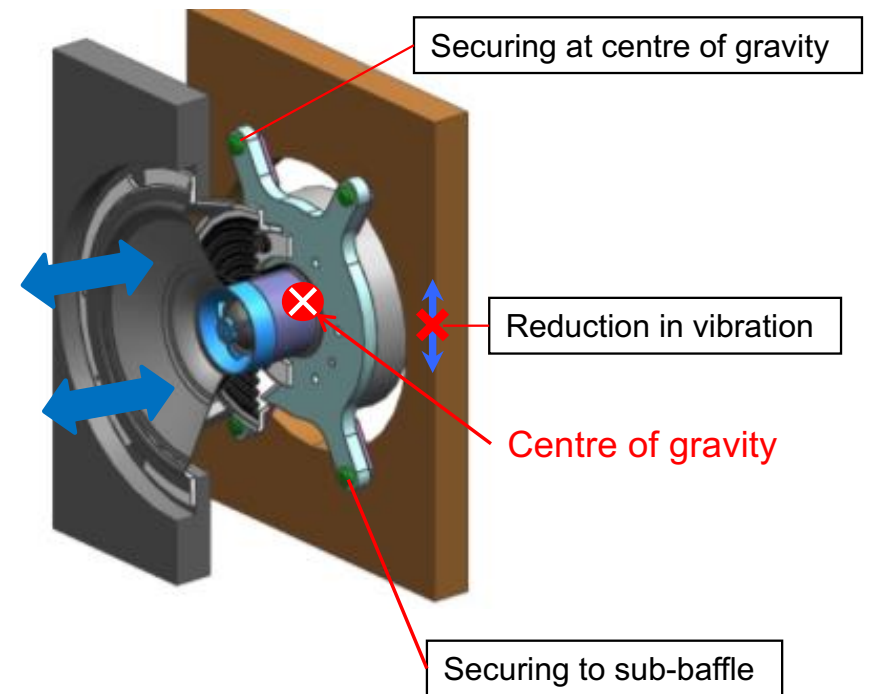
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## Phase Precision Driver (Coaxial 2-Way Speaker Unit)

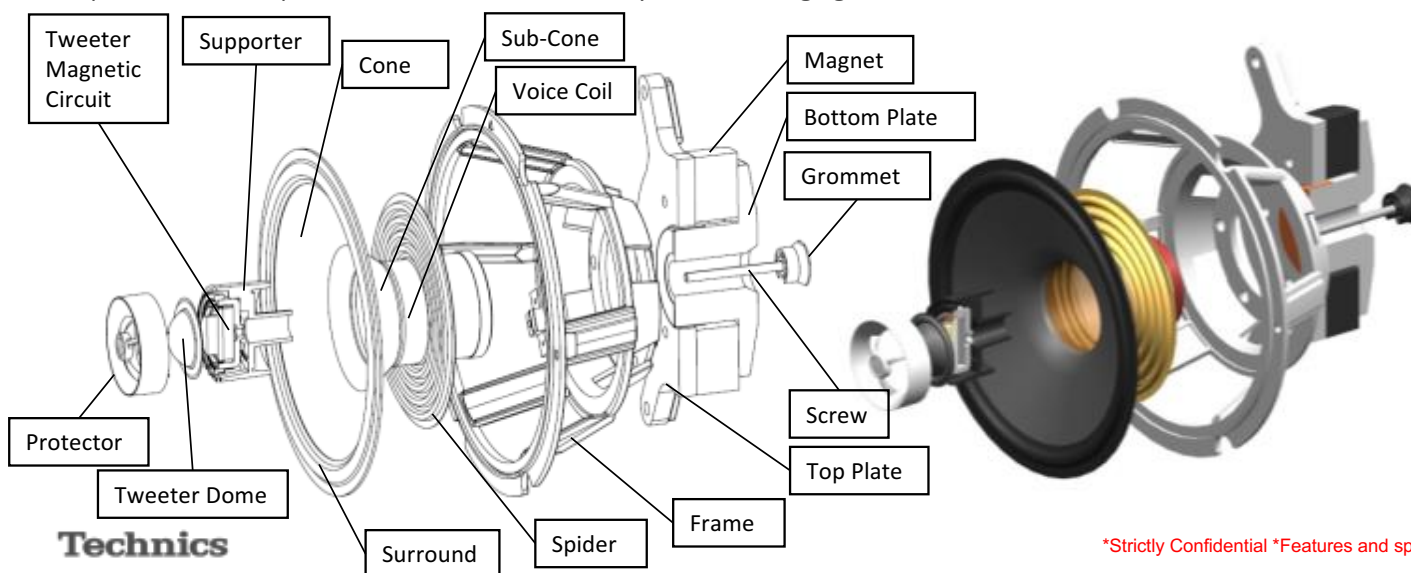
A lightweight, high-rigidity aluminium dome diaphragm on which anodizing has been performed is used for the diaphragm of the tweeter. The driver achieves reproduction of a wide frequency range up to 100 kHz by using a new dome shape optimized through simulation, as well as achieving greater uniformity in phase characteristics by using a phase plug. In addition, the SB-G90 uses high-linearity-drive underhung voice coils, the magnetic gaps of which have had magnetic fluid injected to suppress temperature rise, thereby ensuring superior power linearity.

These features provide reproduction of the high-frequency range with superb detail and beauty.

As with the tweeter, the mid-range also uses an anodized, lightweight, high-rigidity aluminium cone diaphragm. The magnetic circuit achieves low distortion and enhanced drive power by using large magnets, copper caps, and high-linearity-drive underhung voice coils.

Also, the frame uses a tough die-cast in a support structure with arms dispersing resonance, thereby thoroughly eliminating even the slightest unnecessary resonant sound. These features enable reproduction of mid-range with excellent precision and response.

In addition, the mid-range diaphragm uses a cone shape in which its sound generation centre in the axial direction is closer to the sound generation centre of the tweeter, and the position of the axial direction of the dome tweeter placed in the centre of the mid-range diaphragm is precisely adjusted, thus achieving linear phase reproduction by integrating the sound in each range without time lag. Also, the inside end of the mid-range diaphragm has a smooth shape with no **surround** deteriorating tweeter characteristics, with the diaphragm being constructed to deliver the sound emitted from the tweeter to the listening space. This reproduces mid-range and highs with superb precision and response, as well as excellent clarity in sound imaging.



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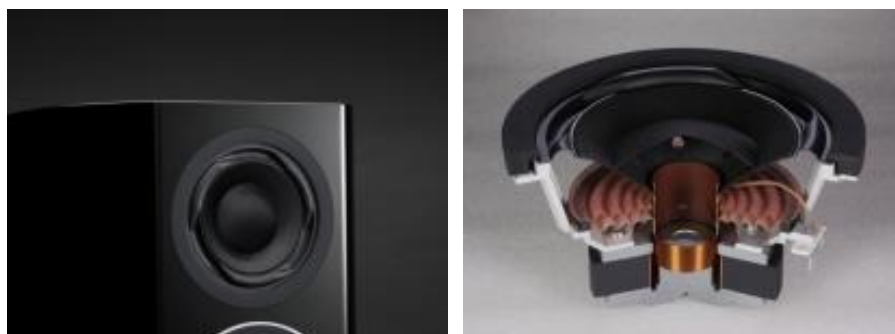


## 16cm Low-Distortion Long-Stroke Woofer

The woofers have features such as double magnets producing robust drive power, and the magnetic circuit with high-linearity-drive overhung voice coils, copper rings, aluminium short rings, and this newly developed long-stroke unit achieves low-frequency reproduction with wide dynamic range as well as excellent low distortion and response even for a large **excursion**.

Also, the frame uses a tough die-cast in a support structure that disperses resonance, thereby thoroughly eliminating even the slightest unnecessary resonant sound. And, a lightweight, high-rigidity aluminium cone diaphragm on which anodizing has been performed is used for the diaphragm to ensure uniformity in tone with the mid-range and high frequencies.

These features reproduce robust, powerful bass.



## High Quality Network Circuit

The high-precision network circuit was created through repeated processes of designing and listening, in order to maximize the performance of each speaker unit and achieve well-balanced sound. High-quality parts, such as a polypropylene film capacitor, an air core choke coil, and OFC wire used for connection were carefully selected by examining their properties.

In order to prevent sound vibration emitted into the cabinet by the speaker unit from affecting the network, the network is installed in its own compartment separated from the speaker units, thereby achieving reproduction of sound allowing an atmospheric sensation.

# Emotive Acoustic Technology

## High Rigidity Cabinet

Cabinet strength is ensured inside the cabinet by using a cross construction with sub-baffles to which the speaker units are mounted and horizontal reinforcing panels. A separate sub-baffle is used for each speaker unit, which minimises the effect of mutual vibration between speaker units.

In addition, differentiated use of two kinds of absorbent acoustic materials with optimal placement inside the cabinet suppresses internal standing waves and reduces incidental sound due to reflection in the cabinet.

Also, multiple coatings of polyurethane (PU) material on the cabinet surface dampen cabinet vibration, thereby thoroughly suppressing the production of unnecessary sound. These features reproduce a vast sound field with excellent sound imaging.

**Will be replaced  
to formal SB-G90**

