

SOUNDZ SPEAKER OWNERS MANUAL

Thank you for purchasing a Soundz premium speaker kit for your motorcycle. We are glad you chose Soundz!

Motorcycle Audio is our passion! When installed and set-up properly, the Soundz Speakers you have purchased will make a remarkable improvement in the sound quality of the motorcycle sound system and give years of superior performance.

With the publication of this manual, it is our goal to assist the “do it yourself” enthusiast and professional installer alike in getting the highest level of performance out of Soundz Speakers using straightforward installation advice. We have specific year/model installation guides that can be found on the support page of our website.

Frame-Carbon Series

The basket is a high-quality cast aluminum design, and contains a large flange providing for the mounting of the driver via four screw holes. The Carbon 65-S frame (also shared with the Iron 65) features large openings behind the cone to eliminate chuffing and other aerodynamic-based noises, as well as provides adequate communication to the back of the cone for acoustic suspension and proper operation.

Frame-Iron Series

Cast ABS plastic. The basket is a high-quality cast ABS design, which plays a critical role in aligning the voice coil in the magnetic circuit. Additionally, the cast ABS frame allows for better clamping strength versus typical stamped steel frames and ensures that the voice coil remains centered in the former. (Except Iron 65)

Frame-Street Series

Stamped and powder-coated steel. The basket is a high-quality stamped steel design, which plays a critical role in aligning the voice coil in the magnetic circuit. The frames are proprietarily tooled by Hybrid Audio & Soundz to allow for the inverted mounting of the surround, discussed in detail below. The stamped steel frame provides adequate clamping force in relation to its mass and ensures that the voice coil remains centered in the former.

Cone

Pressed paper with waterproof treatment. It is widely acknowledged that pressed paper cones are the best marriage of lightness, stiffness, and ability of the cone to damp unwanted cone and edge modes and resonances (read: distortion).

The paper cone, known for its excellent sonic attributes, is waterproof, thanks to a polymer developed exclusive and proprietarily by Hybrid Audio Technologies. As a manufacturing and brand partner of Soundz, we share many concepts in final product design. The treatment does not change the look and parameters of the driver like old-fashioned “glossy” polymers which added an appreciable amount of moving mass and significantly colored the sound. No, the Iron & Street cones look like any “normal” paper cone, but in

reality, are likely the only high-performance waterproof paper cone motorcycle audio speaker systems on the market. The treatment protects the cone from water exposure due to rain, and no/low pressure water exposure when cleaning the motorcycle.

Surround

Inverted high-loss rubber surround. The inverted high-loss rubber surround (in concert with the spider, detailed below), helps to provide the compliance and “restorative force” needed for the Imagine drivers to play effectively into the lower midbass, and even upper sub bass frequencies (depending on in-car cabin gain and other factors). You’ll also know a Soundz & Hybrid Audio midrange and midbass design by its inverted surround; this design feature allows for the use of a smaller height grille, better clearance with OEM panels, and more flexibility in mounting options.

Spider

Phenolic fabric and tinned tinsel leads. The spider is the brownish/yellow corrugated (rippled) fabric that attaches the cone and voice coil. The spider for the Carbon, Iron, and Street designs was the subject of a considerable amount of our research and development. The spider is a phenolic symmetrically-rolled fabric which provides excellent restorative force during excursion. The spider is vented courteous of the speaker frame; a design element not typically found in this price range of speaker system. The spider venting increases the thermal power handling of the Iron midbass driver. The tinsel leads are connected to real epoxy PCB, not flimsy cardboard.

Voice Coil and Motor System

The voice coil used in Soundz midbass is a 2-layer aluminized copper wire coils on a round former. An “overhung” voice coil was selected to improve sensitivity while still keeping distortion to a minimum.

Tweeter Attributes

Dome – Carbon & Iron

Small diameter aluminum inverted dome with high-loss rubber suspension. The SC-1 is designed for a linear, smooth sound, with a high-loss rubber suspension to damp edge modes and resonances. The dome is of extremely low mass and is much less susceptible to mechanical deformation than other designs, and yet yields a smooth response over the extent of its range. For the extended volume necessary in the demanding motorcycle environment, we developed this tweeter, along with a proprietary wave guide (optional accessory) that acts like a horn loaded tweeter. This accessory can be added to any of the SC-1 tweeters used in our lineup, however, grille modification may be necessary in certain applications.

Voice Coil and Motor System – Carbon & Iron

25mm complimentary design. The motor assembly is “conventional dynamic”, with a compact neodymium magnet structure to ensure a small footprint size and shallow depth. A perforated grille protects the dome. The voice coil is ferrofluid cooled and damped, and the tweeter housing consists of extruded plastic.

Dome – Street

Small diameter impregnated silk textile dome with high-loss rubber suspension. The Street has an impregnated fine cloth silk dome diaphragm for a linear, smooth sound, with a high-loss rubber suspension to damp edge modes and resonances. The dome is of extremely low mass and is much less susceptible to mechanical deformation than other designs, and yet yields a smooth response over the extent of its range.

Voice Coil and Motor System – Street

20mm complimentary design. The motor assembly is “conventional dynamic”, with a compact neodymium magnet structure to ensure a small footprint size and shallow depth. A perforated grille protects the dome. The voice coil is ferrofluid cooled and damped.

Tweeter Passive Crossover

Low-Tolerance Mylar Capacitor. The tweeter's protection circuit and crossover filter is a very high-quality, low-tolerance Mylar capacitor that has been affixed to the midbass frame.

Thiele/Small Parameter Discussion for Soundz Speakers

The mechanical and electrical parameters of the Soundz speakers are amenable to the speaker locations within a motorcycle. The Qms (Q factor of mechanical system) and Qts (Q factor of total system), coupled with the driver's Fs (resonance frequency) allow it to be used in this environment with exceptional performance.

SOUNDZ SPEAKER SPECIFICATIONS

MODEL	<u>CARBON 65S</u>	<u>IRON 69</u>	<u>IRON 57</u>	<u>IRON 65</u>	<u>IRON 61</u>	<u>STREET 65</u>	<u>STREET 69</u>
Overall Diameter - inch (mm)	6.5 (169.5)	6X9 (167 X 239)	5X7 (140 X 198)	6.5 (169.5)	6.5 (165)	6.5 (165)	6X9 (164.5 X 237)
DESCRIPTION	2-WAY	2-WAY	2-WAY	2-WAY	2-WAY	2-WAY	2-WAY
Nominal Impedance (ohms)	4Ω	2Ω	4Ω	4Ω	4Ω	4Ω	4Ω
Frequency Response (Hz)	60-22kHz	40-22kHz	90-22kHz	40-22kHz	50-22kHz	60-22kHz	45-22kHz
Voice Coil Diameter - inch (mm)	1 (25.5)	1.4 (35.5)	1 (25.5)	1 (25.5)	1 (25.5)	1 (25.5)	1 (25.5)
Power Handling - Watts(RMS/MAX)	80/160	110/220	110/220	110/220	110/220	80/160	110/220
Fs - Free Air Resonance (Hz)	86	49	115	63	75	93	75
Qts	0.922	0.48	0.82	1.108	0.59	1.231	1.088
Vas - cu. ft.	6.254 Ltr	9.397 Ltr	2.62 Ltr	15.08 Ltr	8.1 Ltr	5.356 Ltr	13.055 Ltr
Sensitivity (2.83V/1 Meter)	91 dB	88 dB	90 dB	89 dB	89 dB	91 dB	90 dB
Xmax - inch (mm)	0.26(6.6)	0.433 (11)	0.346(8.8)	0.348(8.85)	0.348(8.85)	0.29(7.4)	0.338(8.6)
Cutout Diameter	5.65 (143.5)	8.82 x 5.91 (224x150)	7.21 x 4.92 (183x125)	5.65 (143.5)	5.65 (143.5)	5.6 (143)	8.66 x 5.85 (220x148.5)
Mounting Depth	2 (51)	3.35 (85)	3 (76)	3 (76)	2.8 (71)	2.5 (63)	3.47 (88)