



# High-Fidelity, Small-Footprint Speaker

## Model HFSF1

Installation and Use Manual

# Product Description

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Thank you for choosing Bogen's High-Fidelity, Small-Footprint Loudspeaker. Please familiarize yourself with the product by reading and reviewing the descriptions and diagrams in this manual.

Bogen's coaxial 2-way small footprint ceiling speaker delivers unsurpassed performance and value. The HFSF1's steel back can and front exit tuned venting allow for extended bass response, enhancing the quality and intelligibility of both speech and music. The very compact diameter and depth dimensions allow for a wide range of installation possibilities in nearly all ceiling spaces.

The HFSF1 can be installed either in suspended ceiling structures or hard surfaces (such as sheetrock). It comes ready to install with integral swinging arm clamps. The Bogen support bracket TBSF is recommended for additional support when the speaker will be installed in suspended ceilings with thin or non-rigid tiles. The optional bracket can also be used for providing a cutout guide behind a sheetrock ceiling and to stiffen the edges of the cutout.

A variety of speaker power levels are easily selected via a front panel rotary switch. Settings for both 70V high-impedance systems and 16-ohm low-impedance systems are provided.

The HFSF1 features a removable snap-lock input connector, providing easy wire connection for input as well as loop-through to the next speaker.

**Note:** The HFSF1 is not an outdoor speaker. Do not expose the speaker to rain or moisture. The HFSF1 should only be installed by qualified personnel.

## Important Safety Instructions

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this apparatus near water.
- 6) Clean only with dry cloth.
- 7) Do not block any ventilation openings. Install in accordance with manufacturer's instructions.
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9) Only use attachments/accessories specified by the manufacturer.
- 10) Recommended amplifier should be 16W @ 70V or 50W @ 16 ohms. Higher-power amplifiers should be used with additional current limiting, such as a fuse.
- 11) Refer all servicing to qualified personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

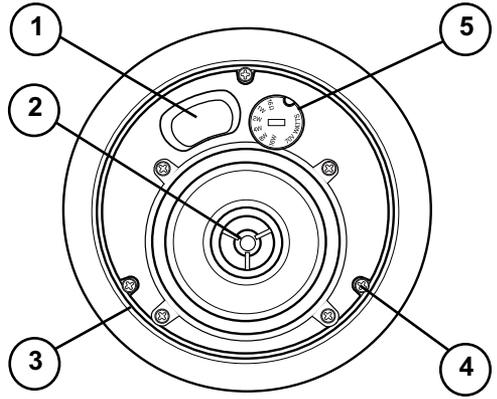


To prevent injury, this apparatus must be securely attached to the ceiling or wall in accordance with the installation instructions.

# Product Diagrams

## Front Drawing (grille removed)

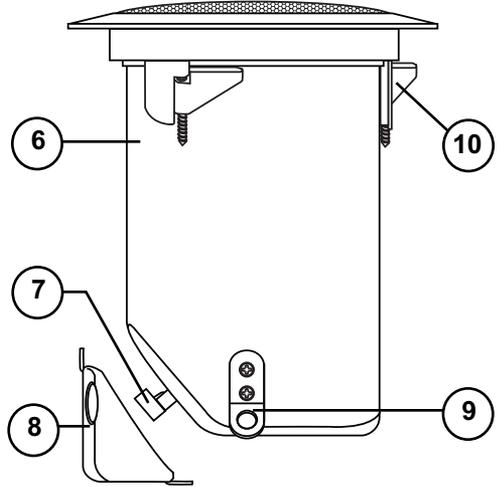
- 1. Bass Tuning Vent
- 2. Coaxial Driver Assembly
- 3. Grille Retention Groove
- 4. Mounting Clamp Screws (×3)
- 5. Power Tap Selection Switch



Front Drawing  
(grille removed)

## Side Drawing

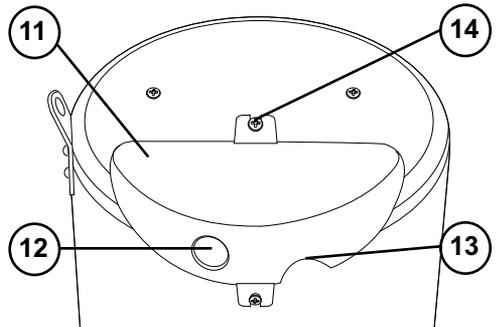
- 6. Metal Back Can
- 7. Snap-Lock Input Connector
- 8. Terminal Cover
- 9. Safety cable attachment point
- 10. Mounting Clamps (×3)



Side Drawing

## Rear Drawing (close up)

- 11. Terminal Cover (shown installed)
- 12. Conduit Knockout
- 13. Wire Exit Slot
- 14. Mounting Screws (×2)



Rear Drawing  
(close up, terminal cover installed)

# Installation

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## ***Important Notes***

The HFSF1 can be installed in a variety of ceiling environments. The use of the TBSF (Tile Bridge Support) accessory may be desired.

**For suspended ceilings, the use of both the TBSF Tile Bridge and CK10 Saftey Cable is strongly recommended to help support and distribute the weight of the speaker.**

The HFSF1 requires a minimum of 7-1/8" of vertical clearance between the **front** of the mounting surface and any other structure for the speaker to fit.

The edge of the hole must be a minimum of 1-1/4" away from any side obstructions to ensure that they will not interfere with the action of the clamps.

## ***Beginning Installation***

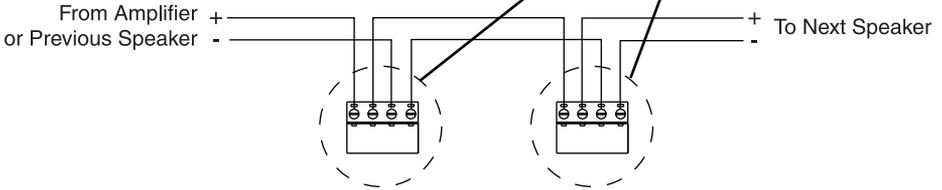
1. Begin by cutting a 6-1/4" circular hole where the speaker will be installed. A cardboard template is provided with the HFSF1 and should be used as a guide for making the cutout in the ceiling or sheetrock.
2. Tighten the mounting clamps by turning the clamping screws clockwise. Do not over-tighten the clamps – only tighten until the speaker is snug in the mounting hole. If using an electric driver, set the clutch on the driver to the lowest setting.

# Speaker Wiring

All wiring should be done prior to installation and then plugged into the rear of the speaker. Wiring is terminated at a snap-lock input connector. There are two positive and two negative terminals to accommodate daisy-chaining of speakers in a system.

## Daisy-Chaining

The snap-lock input connector allows for easy daisy-chaining of speakers by providing a second terminal of each polarity. See the figures to the right and below for correct wiring for daisy-chaining of terminals.



**Note:** When speakers are daisy-chained, disconnecting one speaker from the chain will disable all speakers further down the chain.

## Speaker Polarity

Keep the same polarity terminals wired together to ensure correct speaker polarity. In order to provide the best possible sound, all speakers in a system need to be pushing out and pulling in at the same time. Therefore all must be wired with the same polarity.

If the connections to one speaker in a system are reversed from the others, that speaker's movement will be out of polarity with the other speakers. This results in a loss of low frequency response and will effect the overall performance of the system.

## Terminal Cover

- The terminal cover is attached to the back of the speaker using 2 screws. It is important that both screws be used to mount the covers.
- A half-round hole in the cover allows the wire to exit the speaker while protecting the connections. A small hole is provided if a wire tie will be used for strain relief.
- If local codes require the use of a conduit for connections or strain relief of the connections, a knockout can be removed and a proper fitting installed for the particular situation.

## Selecting Power Levels

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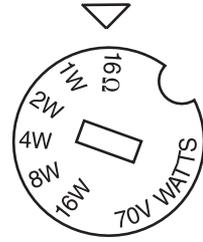
The front-mounted selector switch is used to set the appropriate power level or impedance for your system. Using your fingers or a small, flat-blade screwdriver, turn the knob until the pointer indicates the power level you require.

### 70V Systems

Power setting scales for 70V systems are labeled on the speaker.

### 16-ohm Systems

The fully counterclockwise position of the setting switch is the 16-ohm position. This setting is suitable for use with low-impedance amplifiers that typically support 4- or 8-ohm speakers. The speaker's higher, 16-ohm impedance makes it easier to combine multiple speakers into series-parallel networks while keeping the total system impedance at a level suitable for low-impedance amplifiers.

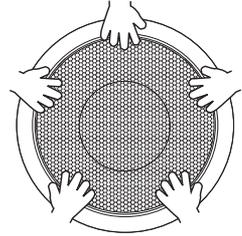


## Speaker Grille Installation & Removal

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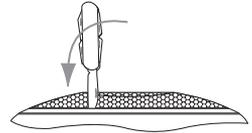
### Installation

The speaker grille fits tightly! Push the speaker grille into the slot until it is fully seated. The edge of the plastic bezel and the grille will be approximately flush when the grille is properly seated.



### Removal

Insert a small flat-blade screwdriver or a thin pocketknife blade between the grille and the bezel about 1/8" deep and gently pry the grille upwards. Do this in several places around the grille until it is free.



# Specifications

| <b>SPECIFICATIONS</b>               | <b>HFSF1</b>  |
|-------------------------------------|---|
| <b>Frequency Response (-10 dB)*</b> | 78 Hz to 20 kHz   |
| <b>LF Driver</b>                    | 4" Polypropylene Cone   |
| <b>HF Driver</b>                    | 3/4" Polycarbonate Dome   |
| <b>Sensitivity (1W/1M)*</b>         | 86 dBspl  |
| <b>Power Input (Max.)</b>           | 50W @ 16 ohms; 16W @ 70V  |
| <b>Power Settings (in watts)†</b>   | 70V: 16, 8, 4, 2, 1   |
| <b>Baffle Material</b>              | Fire-rated (94V0) ABS   |
| <b>Back Can Material</b>            | Heavy-Gauge Steel   |
| <b>Terminations</b>                 | 4-Terminal Snap-Lock Input Connector  |
| <b>Included Accessories</b>         | (1) Snap-Lock Input Connector, (1) Steel Terminal Cover with<br>(2) mounting screws |
| <b>Minimum Vertical Clearance</b>   | 7-1/8" (From front of mounting surface)   |
| <b>Ceiling Cutout</b>               | 6-1/4" dia.   |
| <b>Speaker Weight</b>               | 4-1/2 lb.   |
| <b>Speaker Dimensions</b>           | 7-3/16" dia. x 7-1/2" D   |

\* Half-Space Response, 16-ohm input

† Front panel, switch-selected.

## Accessories

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### **TBSF (Tile Bridge Support)**

The TBSF is a combination tile bridge and support bracket that assists in securing the HFSF1, and in distributing the weight of the speaker in various types of installations.

### **CK10 (Cable Kit, 10')**

The CK10 is a 10-foot cable with one looped end and an adjustable cable clamp. It is suitable for use as a safety cable.

## Limited Warranty

The Bogen High-Fidelity, Small-Footprint speaker, model HFSF1, is warranted to be free from defects in material or workmanship for three (3) years from the date of sale to the original purchaser. Any part of the product covered by this warranty that, with normal installation and use, becomes defective will be repaired or replaced by Bogen, at our option, provided the product is shipped insured and prepaid to: Bogen Factory Service Department, 50 Spring Street, Ramsey, NJ 07446, USA. The product will be returned to you freight prepaid. This warranty does not extend to any of our products that have been subjected to abuse, misuse, improper storage, neglect, accident, improper installation or have been modified or repaired or altered in any manner whatsoever, or where the serial number or date code has been removed or defaced.

THE FOREGOING LIMITED WARRANTY IS BOGEN'S SOLE AND EXCLUSIVE WARRANTY AND THE PURCHASER'S SOLE AND EXCLUSIVE REMEDY. BOGEN MAKES NO OTHER WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED AND EXCLUDED TO THE MAXIMUM EXTENT ALLOWABLE BY LAW. Bogen's liability arising out of the manufacture, sale or supplying of products or their use or disposition, whether based upon warranty, contract, tort or otherwise, shall be limited to the price of the product. In no event shall Bogen be liable for special, incidental or consequential damages (including, but not limited to, loss of profits, loss of data or loss of use damages) arising out of the manufacture, sale or supplying of products, even if Bogen has been advised of the possibility of such damages or losses. Some States do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from State to State.

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