

**BOGEN®**



# **CSUB**

## **Ceiling Subwoofer**

Installation and Use Manual

© 2008 Bogen Communications, Inc.

All rights reserved.

Specifications subject to change without notice.

54-2171-01D 1206

# Product Description

---

Thank you for choosing Bogen's CSUB Ceiling Subwoofer. Please familiarize yourself with the product by reading and reviewing the descriptions and diagrams in this manual.

Bogen's CSUB delivers unsurpassed performance and value. This subwoofer can be installed either in suspended ceiling structures or hard surfaces (such as drywall). It is ready to install with swinging arm clamps that take the place of a tile bridge for installation in suspended ceilings.

A variety of speaker power levels are easily selected via a front panel rotary switch. Settings for both 70V and 8-ohm systems are provided.

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

## NOTE

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

**Recommended amplifier for 64W @ 70V use should be 65W @ 70V. Higher-power amplifiers should be used with additional current limiting, such as a fuse.**

Always follow these basic safety precautions when installing and using the unit:

## 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 unit with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the 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. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade, or the third prong, are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer. An operation manual is provided with the product.
12. Unplug this apparatus during lightning storms or when not used for long periods of time.
13. Refer all servicing to qualified service 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.

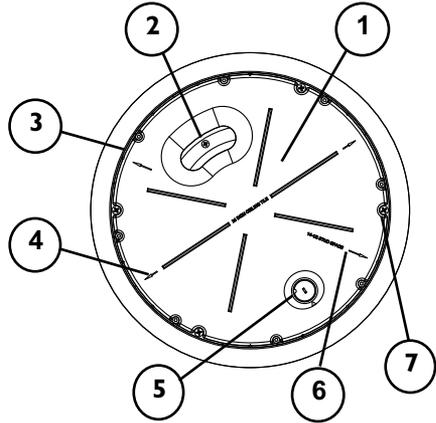


**To prevent injury, this apparatus must be securely attached to the ceiling or wall in accordance with the installation instructions.**

# Product Diagrams

## Front Drawing (grille removed)

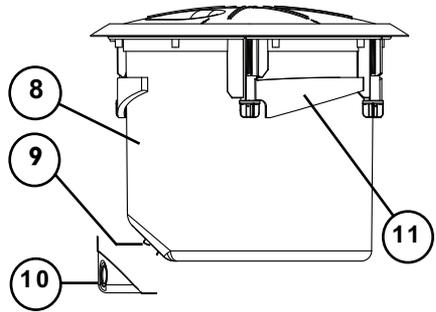
1. Driver Assembly (internal)
2. Bass Tuning Vent
3. Grille Retention Groove
4. 24" Ceiling Tile Guide Arrows (×2)
5. Power Tap Selection Switch
6. 14-1/2" Joist Space Guide Arrows (×2)
7. Mounting Clamp Screws (×4)



Front Drawing  
(grille removed)

## Side Drawing

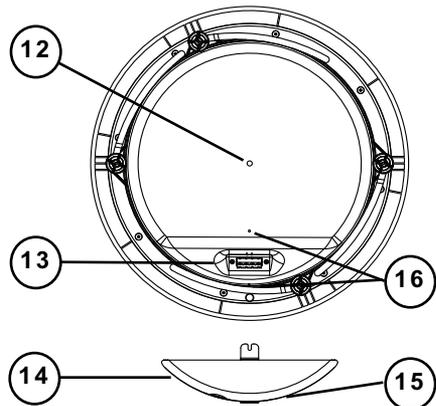
8. Metal Back Can
9. Snap-Lock Input Connector
10. Terminal Cover (side view)
11. Mounting Clamps (×4)



Side Drawing

## Rear Drawing

12. Safety Tether Point
13. Snap-Lock Input Connector
14. Terminal Cover (top-down view)
15. Wire Exit Slot
16. Terminal Cover Anchor Screw (×2; one on back, one below connector)



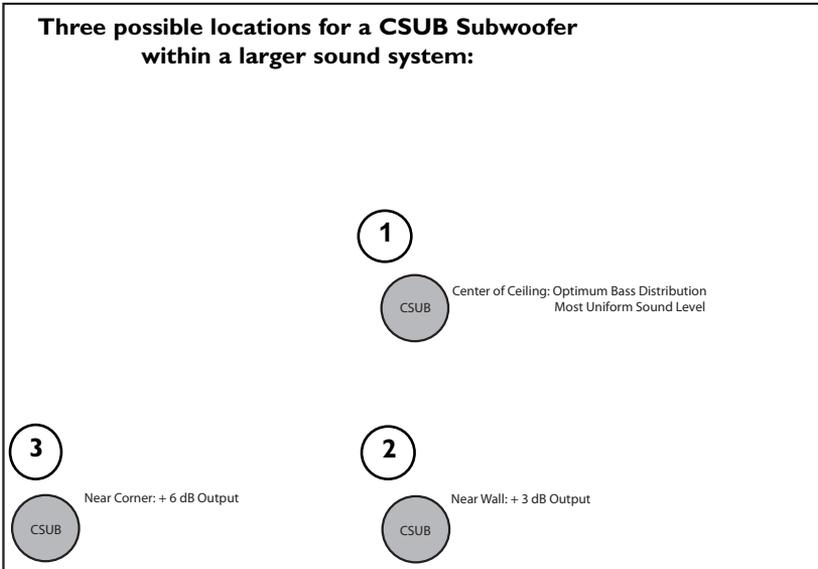
Rear Drawing

# Speaker Placement

---

The low frequency capability of the CSUB allows great flexibility in its placement. While full-range speakers will typically be installed throughout the ceiling in an evenly spread pattern, the CSUB can be placed wherever it is most convenient. This usually means where the subwoofers best meet the needs of the overall sound system, or may sometimes mean where they best fit into the ceiling. This flexibility is useful in irregularly-shaped rooms or when the depth of the area behind the ceiling surface varies.

An important performance parameter to keep in mind is that the location of the subwoofer will affect its output sound pressure level (SPL) within a room. Locating the CSUB close to a wall will increase its output by approximately 3 dB rather than locating it toward the center of the ceiling area. The 3 dB increase will effectively double the amount of output power coming from the subwoofer. Locating the CSUB in the corner of a room, adjacent to 2 perpendicular wall surfaces, will increase its output by 6 dB. This 6 dB increase effectively quadruples the output of the subwoofer compared to locating it closer toward the center of the room. The tradeoff for this extra output is a less uniform overall sound level, especially in large rooms.



**Note:** The CSUB may be placed as close as 5" from a wall, provided care is taken to ensure that mounting clamps are properly extended (see *Installation* section). If mounting clamps cannot be properly extended, another location must be found.

# Installation

---

The unique clamp-mounting system of the Bogen CSUB not only allows mounting in most types of ceiling surface thicknesses, it takes the ease of installation two significant steps further:

1. **NO TILE BRIDGE IS REQUIRED.** Because the mounting clamps are extra-long and very durable, they can suspend and support the CSUB across the 24" span of a suspended ceiling. This eliminates the need for the separate tile bridge required for nearly all ceiling speakers.
2. A uniquely designed clamp screw assembly can be tightened from either the front or rear, allowing the CSUB to be mounted either by dropping the ceiling tile onto the rear of the CSUB or by dropping the CSUB into the front of the ceiling tile. This design can significantly accelerate the installation process.

## **IMPORTANT**

There must be a minimum of 11" of vertical clearance (12-1/4" if using the CK10 Safety Cable Kit) between the **front** of the mounting surface and any other structure in the ceiling for the speaker to fit. Before cutting the full hole, investigate for depth and clearance by cutting a small hole, or removing the ceiling tile, whichever is applicable.

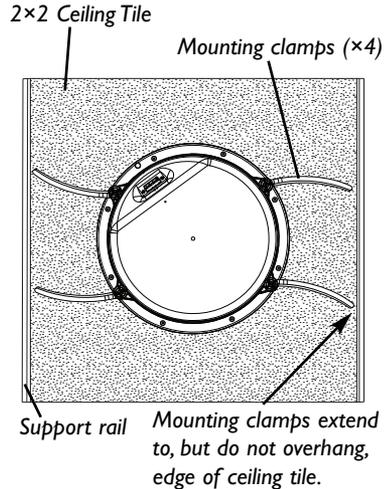
**SUSPENDED CEILINGS:** The clamps must be able to span the full 24" (approx.) between the ceiling rails to provide the proper support for the CSUB. If there is interference with any objects in the ceiling to prevent this, then another ceiling tile location should be chosen.

**DRYWALL or OTHER Hard Ceiling Surfaces:** The edge of the hole must have clearance of at least 5" on opposite edges of the hole to ensure that the clamps will be able to support the CSUB.

## Installation (cont.)

### SUSPENDED CEILINGS:

1. Remove the ceiling tile from the ceiling grid. Cut a 14-1/4" circular hole in the ceiling tile. Use the included template as a guide.
2. Put the CSUB face down on a workbench or on the floor **without grille installed**.
3. Place the ceiling tile over the CSUB, making sure the ceiling tile is facing out. It is important to note the direction of the clamps: they must be installed so that they span the distance from one side of the ceiling tile to the other (approx. 24", see illustration at right). **The front of the CSUB is engraved with guide arrows for "24-Inch Ceiling Tile" (see Product Diagrams section). Use these guides for this installation.**
4. Using an electric powered screwdriver with the clutch at a low setting, tighten each screw until the clamps are just snug against the tile surface. The CSUB's clamps can be tightened from either the front or rear of the speaker. Use a No. 3 Phillips screwdriver when working from the front. Use a 1/4" flat-blade screwdriver when working from the rear. If working from the rear of the speaker, the screws tighten **COUNTERCLOCKWISE**. Do not over-tighten clamps. Once all four clamps are properly positioned and snug on the ceiling tile, the assembly (CSUB and ceiling tile) is ready to be mounted in the ceiling grid.
5. Before installing the grille, make sure you have selected the proper power setting on the front panel rotary switch. Refer to the *Selecting Power Levels* section for instructions on selecting the power level. Install the grille as indicated in the *Speaker Grille Installation & Removal* section.
6. Before mounting the CSUB/tile assembly, make sure the snap-lock input connector has been connected to the input wires (see *Speaker Wiring* section). The CSUB/tile assembly may now be placed in the ceiling grid. By accessing the ceiling space through an adjacent ceiling tile, plug in the snap-lock connector. Attach the Terminal Cover using the screws provided. If using conduit, refer to the *Terminal Cover* section of this manual.
7. Attach the CK10 Safety Cable, if it is being used, by screwing the eyebolt into the safety tether point in the rear of the CSUB's metal enclosure (see *Product Diagrams*). This may be a local code requirement. It is certainly a very good safety measure, particularly in suspended ceiling installations. For more information see the instruction sheet included with the CK10.



## Installation (cont.)

---

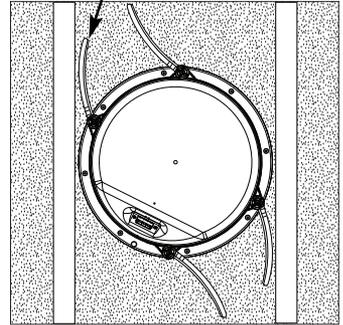
### DRYWALL OR OTHER HARD SURFACES:

1. Be sure you know the location of the ceiling joists before cutting the speaker opening. Cut a 14-1/4" circular hole where the CSUB will be installed. Use the included template as a guide.
2. Make electrical connections to the snap-lock input connector and then plug it into the CSUB (see *Speaker Wiring* section).
3. Install terminal cover using the supplied screws. If using conduit, refer to the *Terminal Cover* section of this manual.
4. Place the CSUB in the ceiling cut-out. **To help properly place the CSUB in the ceiling, the front of the CSUB is engraved with guide arrows for "14-1/2" Joist Space"** (see *Product Diagrams, #6*). Use these guides for this installation.

Important:

Be certain to position the subwoofer so that the engraving "14-1/2" Joist Space" aligns perpendicularly between the studs. Failure to do so may result in the clamps being unable to swing out far enough to seat the speaker properly.

Mounting clamps extend to joists.



14-1/2 Inches between ceiling joists.

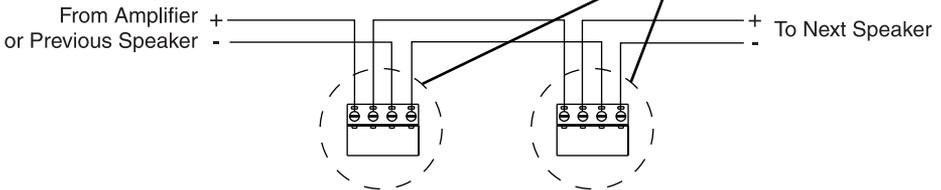
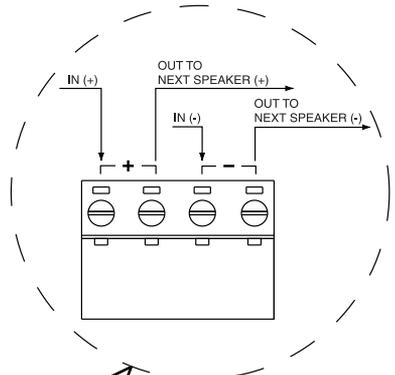
5. Using an electric screwdriver with the clutch at a low setting, tighten each clamp screw until the clamps are just snug against the ceiling surface. Once all four clamps are snug on the ceiling, the four clamp screws should be tightened with the next clutch setting or with a hand screwdriver. Do not over-tighten clamps.
6. Before installing the grille, make sure you have selected the proper power setting on the front panel rotary switch. Refer to the *Selecting Power Levels* section for instructions on selecting the power level. Install the grille as indicated in the *Speaker Grille Installation & Removal* section.

# 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 – both subwoofers and full-range 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 housing using 2 screws. It is important that both screws be used to mount the cover.

A slot in the terminal cover allows the wires to exit the speaker while protecting the connections.

If local codes require the use of a conduit for connections or strain relief of the connections, a circular knockout can be removed and a proper fitting installed to meet these requirements.

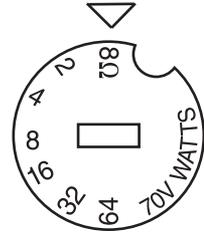
## Selecting Power Levels

---

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

### 70V Systems

A power setting scale for 70V systems is labeled on the switch. Six settings are available, from 2 to 64 watts.



### 8-ohm Systems

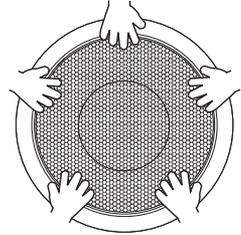
The fully counterclockwise position of the setting switch is the 8-ohm position. This setting is suitable for use with low-impedance amplifiers that typically support 4- or 8-ohm speakers.

## Speaker Grille Installation & Removal

---

### Installation

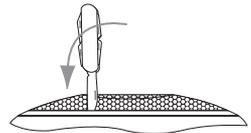
The speaker grille fits tightly! Push the speaker grille in until it can go no further. Then, slap around the edge of the grille to seat the grille. The grille is properly seated when it is flush with the edge of the bezel.



**Note:** Black butyl rubber tape is included for extra security in holding the grille in place. Cut four small pieces and space them equidistant around the groove in the baffle where the grille fits. The butyl rubber tape is quite sticky and it is not necessary to use an excessive amount.

### Removal

Insert a pocketknife blade between the grille and the bezel about 1/4" deep and then gently pry the grille upwards. Do this in multiple places around the circumference of the grille to free the grille.



# Specification

---

SPECIFICATIONS	CSUB
Frequency Response (-6 dB)*	40 Hz to 125 Hz
Sensitivity (1W/1m)*	91 dBspl
Dispersion	Omni-directional
Power Input (Max.)	150W @ 8 ohms; 64W @ 70V
Power Settings (in watts)†	70V: 64, 32, 16, 8, 4, 2
Baffle Material	Fire-rated (94V0) ABS
Back Can Material	Heavy-gauge Steel
Terminations	4-Terminal Snap-Lock Input Connector
Included Accessories	(1) Snap-Lock Input Connector, (1) Steel Terminal Cover with (2) mounting screws, and (1) Package, Butyl Tape
Optional Accessories	10-Ft. Safety Cable Kit (CK10)
Minimum Vertical Clearance (From front of mounting surface)	11" Without Safety Cable Attachment Point 12-1/4" With Safety Cable Attachment Point
Ceiling Cutout	14-1/4" dia.
Speaker Weight	20 lb.
Speaker Dimensions	15-1/2" dia. x 12-1/2-" D
Listings	Listed to UL Standard 60065 for US and Canada

\* Half-space response (ceiling-mounted), 8-ohm input

† Front panel, switch-selected

## Accessories

---

### **CK10 (10-Ft. Safety Cable Kit)**

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. On the CSUB Ceiling Subwoofer, the CK10 attaches to the safety tether point on the rear of the housing (see *Product Diagrams*).

## Limited Warranty; Exclusion of Certain Damages

---

The **Bogen CSUB Ceiling Subwoofer** is warranted to be free from defects in material and 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 (as confirmed by Bogen upon inspection) during the applicable warranty period, will be repaired or replaced by Bogen, at Bogen's option, provided the product is shipped insured and prepaid to: Bogen Factory Service Department, 50 Spring Street, Ramsey, NJ 07446, USA. Repaired or replacement 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.

Products that are out of warranty will also be repaired by the Bogen Factory Service Department – same address as above or call 201-934-8500. The parts and labor involved in these repairs are warranted for 90 days when repaired by the Bogen Factory Service Department. All shipping charges in addition to parts and labor charges will be at the owner's expense. All returns require a Return Authorization number. For most efficient warranty or repair service, please include a description of the failure.

12/2008

**BOGEN<sup>®</sup>**  
**COMMUNICATIONS, INC.**  
50 Spring Street, Ramsey, NJ 07446, U.S.A.  
Tel. 201-934-8500 • Fax: 201-934-9832  
[www.bogen.com](http://www.bogen.com)