



EdgeMax EM90 & EM180

In-ceiling Loudspeakers

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Please read and keep all safety and use instructions.

This product is intended for installation by professional installers only! This document is intended to provide professional installers with basic installation and safety guidelines for this product in typical fixed-installation systems. Please read this document and all safety warnings before attempting installation.

Do not attempt to service this product yourself. Refer all servicing to authorized service centers, installers, technicians, dealers or distributors. To contact Bose Professional or to find a dealer or distributor near you, visit **PRO.BOSE.COM**.

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 a 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 produces heat.
9. Only use attachments/accessories specified by the manufacturer.

WARNINGS/CAUTIONS

This product contains magnetic material. Consult your physician on whether this might affect your implantable medical device.

- All Bose products must be installed in accordance with local, state, federal and industry regulations. It is the installer's responsibility to ensure installation of the loudspeakers and mounting system is performed in accordance with all applicable codes, including local building codes and regulations. Consult the local authority having jurisdiction before installing this product.
- Unsafe mounting or overhead suspension of any heavy load can result in serious injury or death, and property damage. It is the installer's responsibility to evaluate the reliability of any mounting method used for their application. Only professional installers with the knowledge of proper hardware and safe mounting techniques should attempt to install any loudspeaker overhead.
- Do not mount the product in locations where condensation may occur.
- This product is not intended for installation or use in indoor water facility areas (including, without limitation, indoor pools, indoor water parks, hot tub rooms, saunas, steam rooms and indoor skating rinks).
- Do not mount on surfaces that are not sturdy, or that have hazards concealed behind them, such as electrical wiring or plumbing. If you are not sure about installing the bracket, contact a qualified professional installer. Ensure the bracket is installed according to local building codes.
- Use only the hardware and accessories included or specified by Bose for use with EdgeMax EM90 & EM180 loudspeakers. For information on compatible accessories, see the product's technical data sheet at **PRO.BOSE.COM**.
- Do not make unauthorized alterations to this product.
- Do not use hydrocarbon based solvents, lubricants or cleaning agents of any type on or around this loudspeaker and associated mounting hardware during installation. Exposure to such substances can lead to degradation of the plastic material, resulting in cracking and creating a falling hazard.
- Clean speakers using only a dry cloth. Do not expose loudspeaker to soap, detergent, mineral oil, alcohol or other cleaning agents or chemicals.
- The grille is equipped with a safety lanyard pin designed for a single use.

Product Ratings:

Input Voltage: 70V/100V

Impedance: 8 Ω, 125 W

Current or Power: (70V): 2.5W, 5W, 10W, 20W, 40W, 80W; (100V): 5W, 10W, 20W, 40W, 80W

Regulatory Information

This product conforms to all applicable EU directive requirements. The complete declaration of conformity can be found at: **www.Bose.com/compliance**.



This symbol means the product must not be discarded as household waste, and should be delivered to an appropriate collection facility for recycling. Proper disposal and recycling helps protect natural resources, human health and the environment. For more information on disposal and recycling of this product, contact your local municipality, disposal service, or the shop where you bought this product.

China Restriction of Hazardous Substances Table

Names and Contents of Toxic or Hazardous Substances or Elements						
Part Name	Toxic or Hazardous Substances and Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr(VI))	Polybrominated Biphenyl (PBB)	Polybrominated diphenylether (PBDE)
PCBs	X	0	0	0	0	0
Metal Parts	X	0	0	0	0	0
Plastic Parts	0	0	0	0	0	0
Speakers	X	0	0	0	0	0
Cables	X	0	0	0	0	0

This table is prepared in accordance with the provisions of SJ/T 11364.
 0: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement of GB/T 26572.
 X: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB/T 26572.

Taiwan Restriction of Hazardous Substances Table

Equipment name: EdgeMax EM90 & EM180, Type designation: 778844, 777189						
Unit	Restricted substances and its chemical symbols					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent chromium (Cr+6)	Polybrominated biphenyls (PBB)	Polybrominated diphenyl ethers (PBDE)
PCBs	-	0	0	0	0	0
Metal Parts	-	0	0	0	0	0
Plastic Parts	0	0	0	0	0	0
Speakers	-	0	0	0	0	0
Cables	-	0	0	0	0	0

Note 1: "0" indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.
Note 2: The "-" indicates that the restricted substance corresponds to the exemption.

Date of Manufacture: The eighth digit in the serial number indicates the year of manufacture; "7" is 2007 or 2017.

China Importer: Bose Electronics (Shanghai) Company Limited, Part C, Plant 9, No. 353 North Ruyi Road, China (Shanghai) Pilot Free Trade Zone

EU Importer: Bose Products B.V., Gorslaan 60, 1441 RG Purmerend, The Netherlands

Mexico Importer: Bose de México, S. de R.L. de C.V., Paseo de las Palmas 405-204, Lomas de Chapultepec, 11000 México, D.F. For importer & service information: +5255 (5202) 3545

Taiwan Importer: Bose Taiwan Branch, 9F-A1, No. 10, Section 3, Minsheng East Road, Taipei City 104, Taiwan. Phone Number: +886-2-2514 7676

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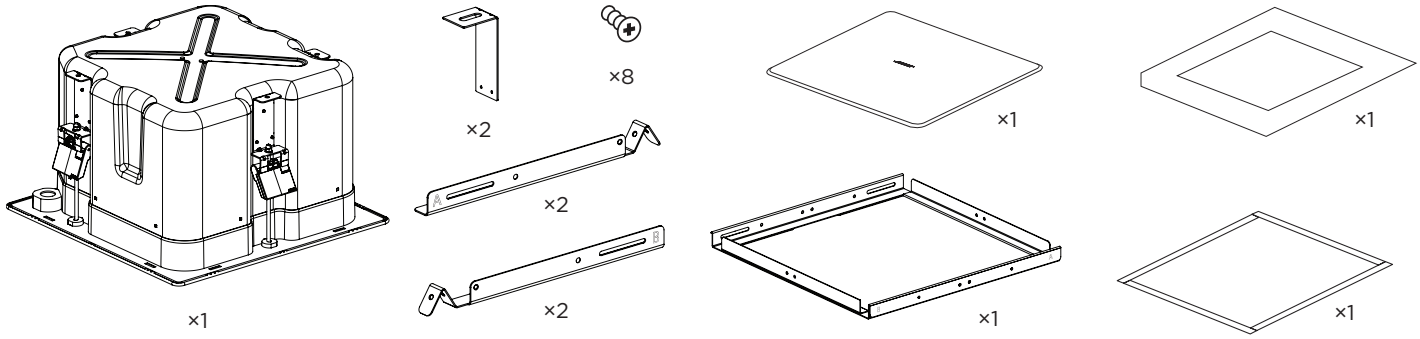
Bose Corporation Headquarters: 1-877-230-5639

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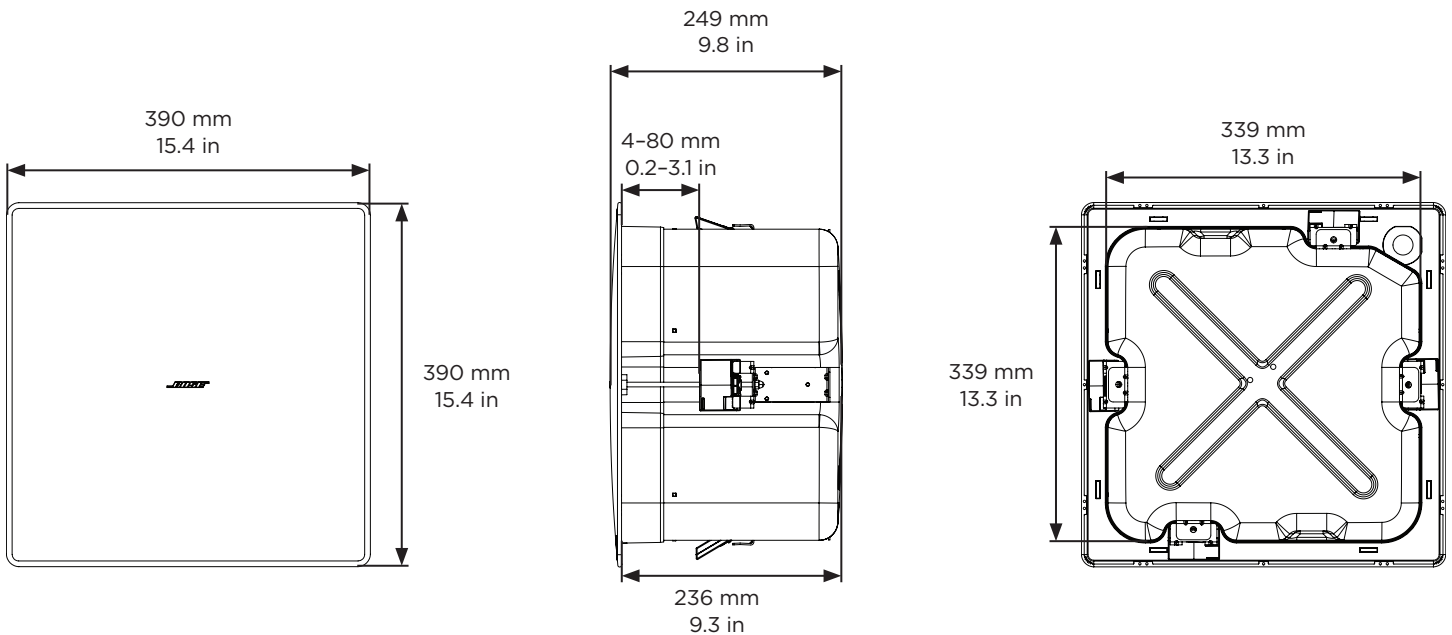
Warranty Information

This product is covered by a limited warranty. For warranty details, visit **PRO.BOSE.COM**.

Package Contents



Product Dimensions




Technical Specifications


For additional specifications, see the EdgeMax EM90 & EM180 technical data sheet at PRO.BOSE.COM.

Physical	
Product Dimensions	Grille: 390 mm × 390 mm (15.4 in × 15.4 in)
	Enclosure: 339 mm × 339 mm (13.3 in × 13.3 in)
	Backcan depth: 236 mm (9.3 in)
Hole cutout	345 mm × 345 mm (13.6 in × 13.6 in)
Maximum Ceiling Thickness	80 mm (3.1 in)
Net Weight, Loudspeaker with grille	10.1 kg (22.2 lb)
Net Weight, Tile Bridge	1.4 kg (3.1 lb)
Shipping Weight	12.5 kg (27.6 lb)


Important Installation Information

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It is the installer's responsibility to ensure installation of the loudspeakers and mounting system is performed in accordance with all applicable codes, including local building codes and regulations. Consult the local authority having jurisdiction before installing this product.
- It is the responsibility of the installer to ensure the safety of the loudspeaker installation. Failure to properly install the loudspeaker could result in damage, injury, or death.

Do not mount the product in locations where condensation may occur.
- 

This product is not intended for installation or use in indoor water facility areas (including, without limitation, indoor pools, indoor water parks, hot tub rooms, saunas, steam rooms and indoor skating rinks).

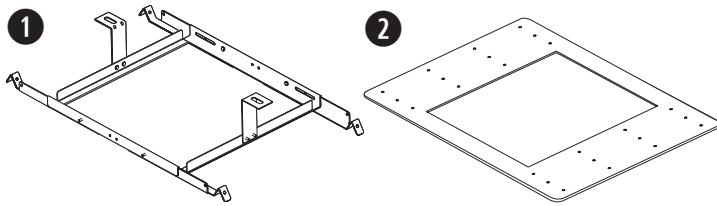
Do not mount on surfaces that are not sturdy, or that have hazards concealed behind them, such as electrical wiring or plumbing. If you are not sure about installing the bracket, contact a qualified professional installer. Ensure the bracket is installed according to local building codes.
- 

Do not use hydrocarbon based solvents, lubricants or cleaning agents of any type on or around this loudspeaker and associated mounting hardware during installation. Exposure to such substances can lead to degradation of the plastic material, resulting in cracking and creating a falling hazard.

Installation Options

Installation Options and Accessories

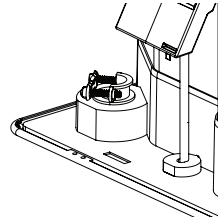
- ❶ Adjustable Tile Bridge (included)
- ❷ Rough-in Pan (optional)



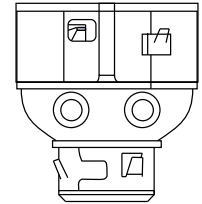
Conduit Fitting

If using a flexible metal conduit, use with a 3/8-inch conduit fitting or a 3/8-inch dual (duplex) connector.

Note: Conduit fittings are not provided.



3/8-inch single in



3/8-inch duplex in/loop

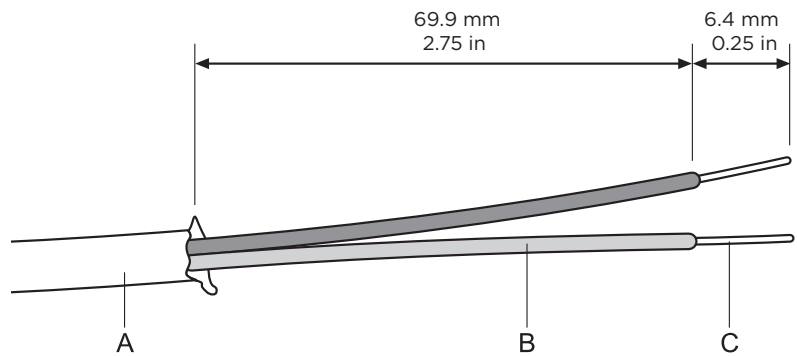
Wiring the Loudspeaker

With Use of Direct Input Terminals

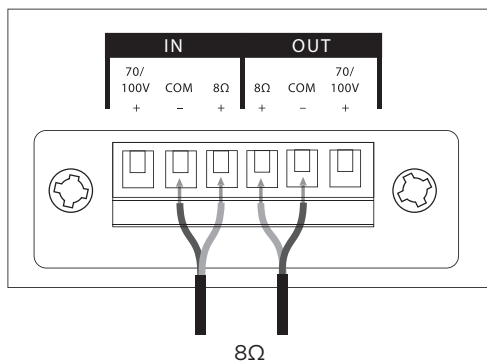
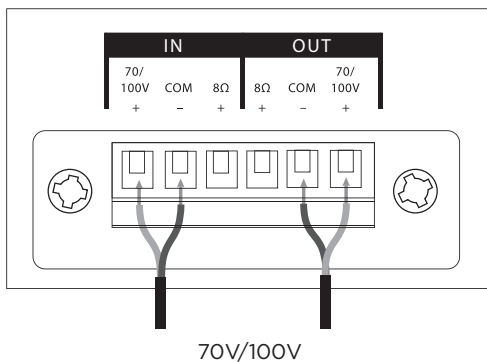
Wire gauge requirements from loudspeaker line wiring to loudspeaker terminals: Use 18 AWG (0.8 mm²) to 14 AWG (2.5 mm²) size wire only.

Preparing the Wire

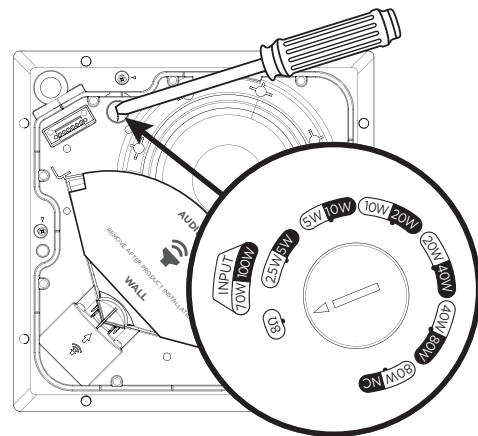
Trim back the outer jacket (A) and some of the wire insulation (B) to expose enough bare wire (C) to attach to the terminals.



Connection Diagrams



Loudspeaker Settings



70V						8Ω
2.5W*	5W	10W	20W	40W	80W	
5W*	10W	20W	40W	80W	NC**	
100V						

* Factory default

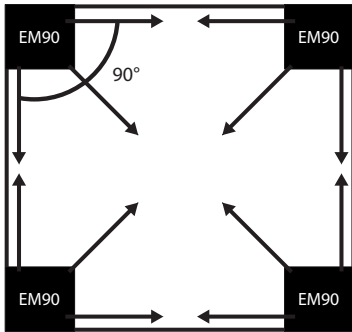
** NC: No Connection (do not use)

Transformer Tap Setting

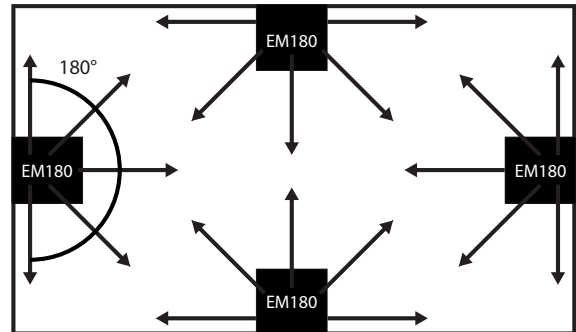
Set tap by turning. Use a flat head screwdriver.

Preparing the Installation

Install the EM90 in a corner. See below for the room placement top view.



Install the EM180 along a wall. See below for the room placement top view.



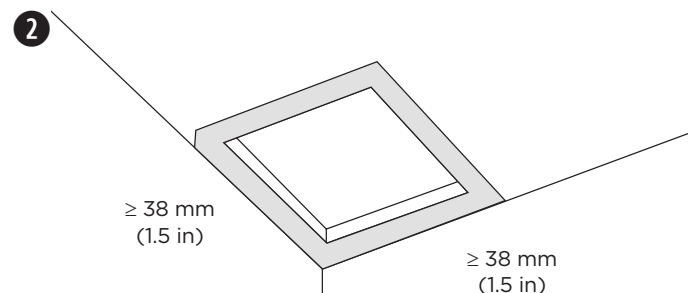
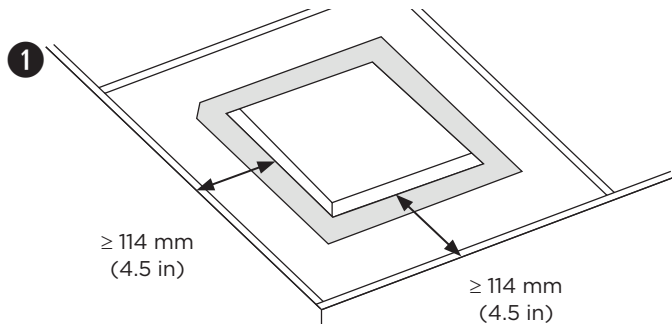
Note: Keep the phase guide protector in place until installation is complete.

Loudspeaker Placement

When installing the loudspeaker near a wall-ceiling interface, allow sufficient space for the grille overhang. The grille must be flush with the ceiling surface so the magnets can fully engage.

Use the enclosed template to ensure appropriate dimensions for the loudspeaker cutout and placement.

- For EM90 or EM180 in ceiling tile: Place the loudspeaker opening at least 114 millimeters (4.5 inches) from each wall to allow space for the tile bridge.
- For EM90 or EM180 in hard ceiling: Place the cardboard template flush with the corner (EM90) or wall (EM180). This leaves at least 38 millimeters (1.5 inches) from each wall to accommodate the grille.



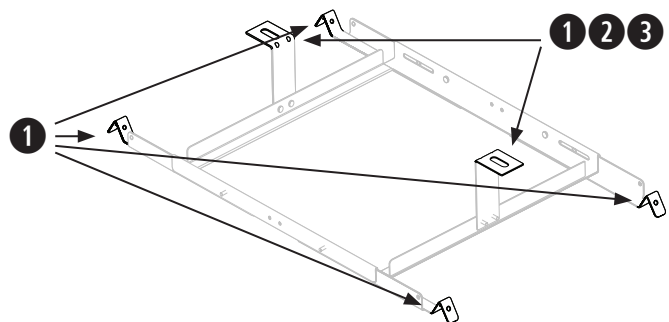
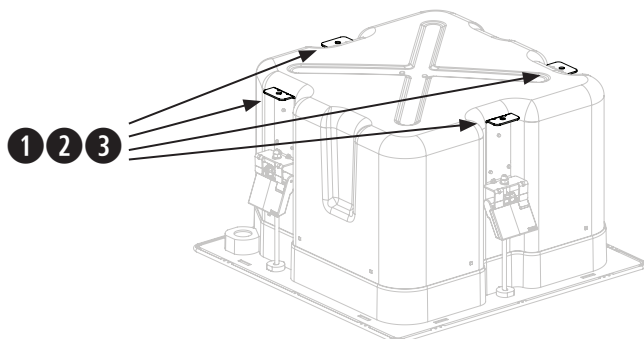
Note: Installation in close proximity to cooking surfaces where the loudspeaker may be directly exposed to cooking oils, steam, vapor, or high heat such as in commercial cooking environments may decrease the performance or reliability of the loudspeaker.

Using a Safety Cable

Some regional construction codes require the use of a secondary method of securing loudspeakers to support structures to provide additional safety. Choose a mounting position, method, and hardware consistent with local building codes and regulations.

Bose recommends using (1) a safety wire, (2) a safety cable, or (3) a threaded rod as a secondary securing mechanism. See the diagrams below for safety attachment points.

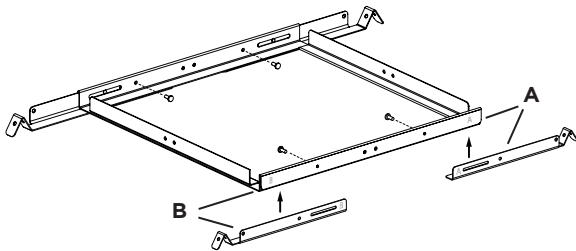
Follow the manufacturer's instructions for any secondary securing mechanism implemented.



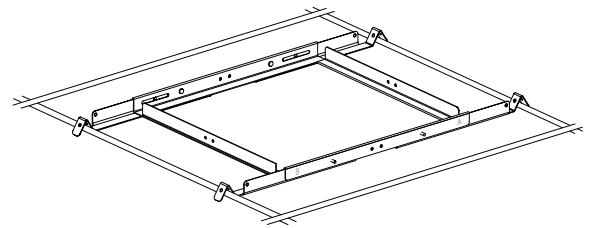
Assemble the Tile Bridge

1. Attach the four rails to the center frame using four of the included screws. Insert the screws from the inside of the tile bridge. The rails and center frame are labeled A and B to identify the correct attachment points.
2. Adjust the length of the tile bridge rails so the rails rest securely on the ceiling grid or furring.
Note: The tile bridge supports 56 to 66 centimeters (22 to 26 inches) spacing.
3. Tighten the four screws securing the tile bridge rails to the center frame.
4. Optional: Attach the L-brackets to the tile bridge to create an additional connection point for a safety wire, safety cable, or threaded rod. For more information, see **Using a Safety Cable** on page 5.
Note: Place the L-brackets in a position that does not prevent the anchors on the loudspeaker from fully engaging on the tile bridge.

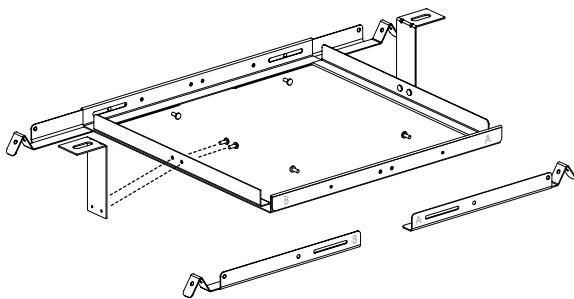
1



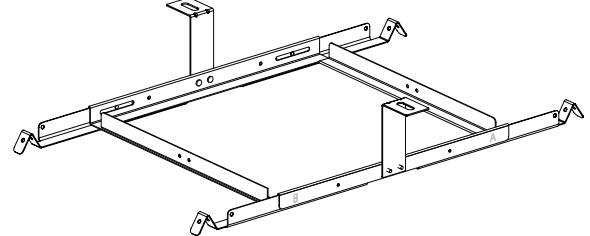
2



4



4

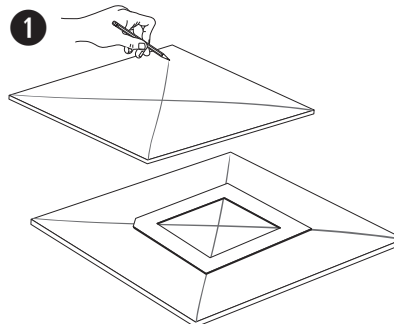


Preparing Acoustic Ceiling Tile

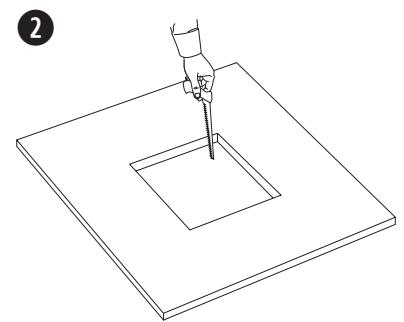
Cutting the Ceiling Tile

1. Remove the tile and use the template to trace a loudspeaker hole onto the tile. To center the template on the tile, draw an X by connecting the corners diagonally and center the template using the crossing point.
2. Cut a hole into the tile.

1



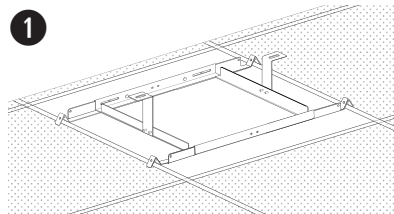
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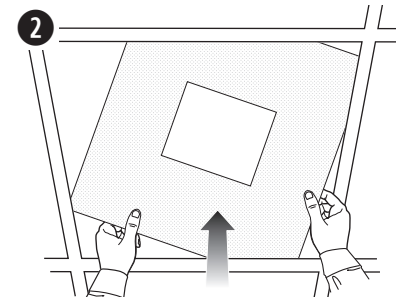
Installing the Tile Bridge

1. Place the assembled tile bridge across the ceiling grid. If necessary, adjust the tile bridge so the rails rest on the ceiling grid.
2. Replace the tile in the ceiling.

1



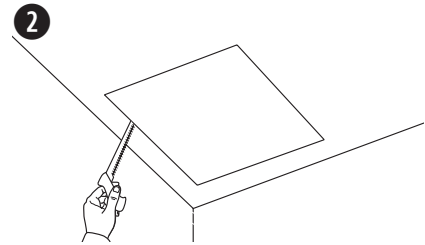
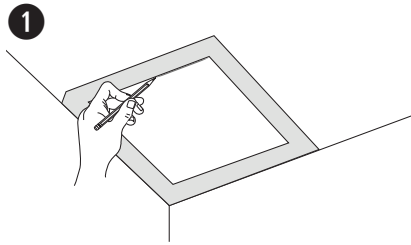
2



Preparing Hard Ceiling (Existing Construction)

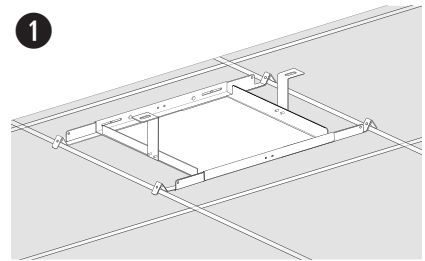
Cutting the Ceiling

1. Use the template to trace a hole onto the ceiling.
2. Cut a hole into the ceiling.




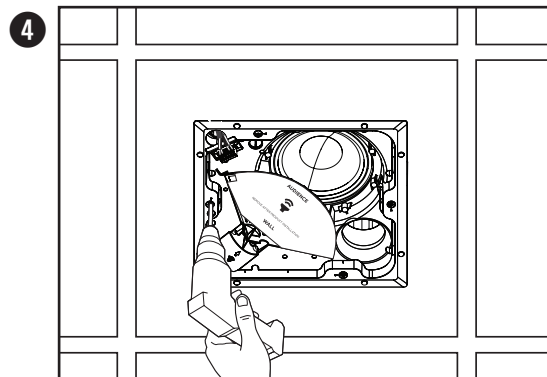
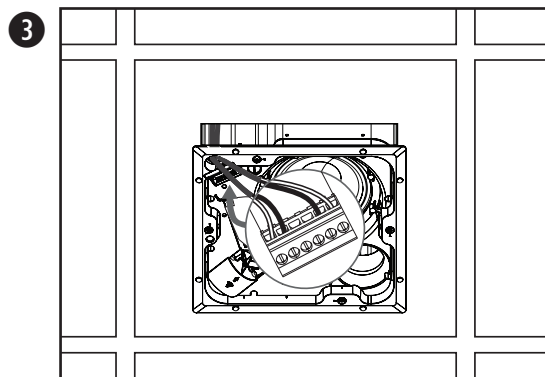
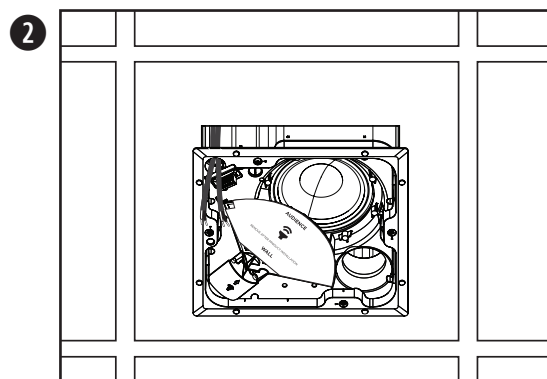
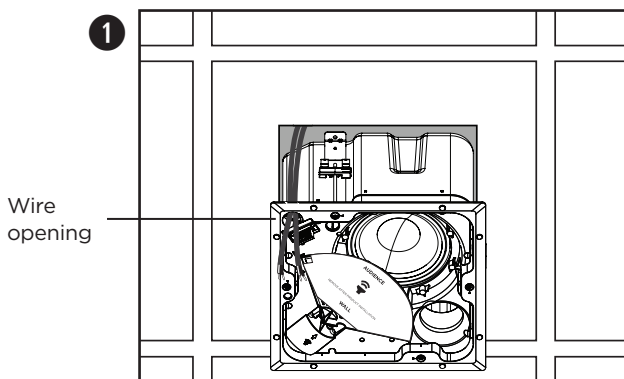
Installing the Tile Bridge

1. Insert the assembled tile bridge through the hole and place the tile bridge across the ceiling grid or ceiling furring. If necessary, adjust the tile bridge so the rails rest on the ceiling grid or ceiling furring.



Mounting the Loudspeaker

1. Pass the audio wire through the wire opening (next to wiring terminal).
2. Insert the loudspeaker through the hole and into the tile bridge. Make sure the anchors engage on the tile bridge before loosening your grip on the loudspeaker.
3. Remove the connector, wire the connector, and reinsert the connector into the loudspeaker. For wiring information, see **Wiring the Loudspeaker** on page 4.
4. Tighten the anchor arm screws to secure the loudspeaker. If using a power drill, set to a low torque setting.
 **WARNING:** Over-tightening the screws may result in damage to the anchor attachment point or the ceiling, which could lead to a falling hazard.
5. Discard the phase guide protector.

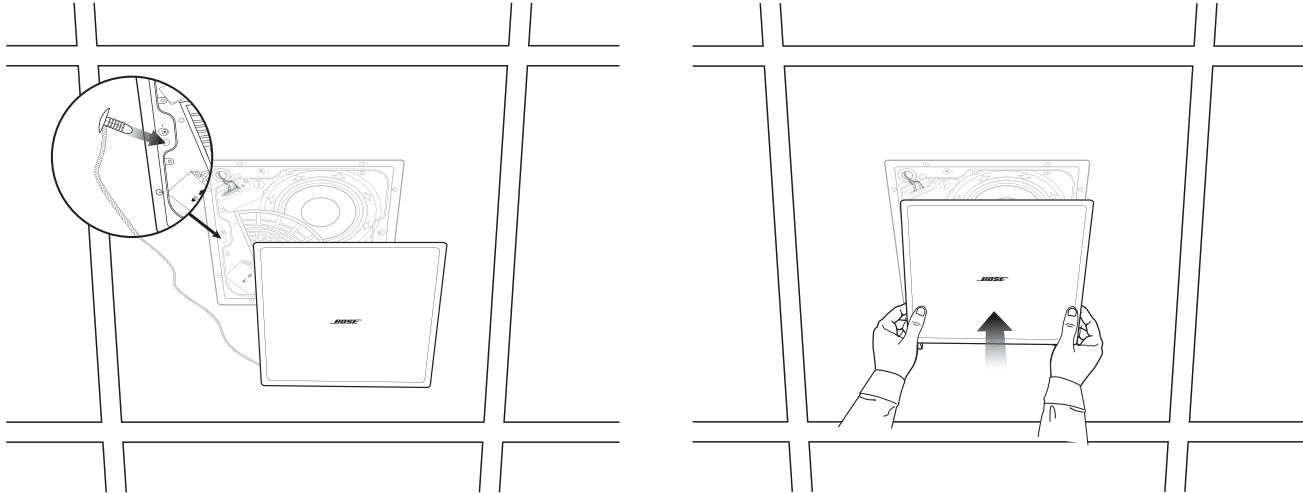


Installing in Hard Ceiling Using a Rough-in Pan (New Construction)

For information on installing a rough-in pan, see the EdgeMax Rough-in Pan installation guide at PRO.BOSE.COM. Once the rough-in pan is installed, see **Mounting the Loudspeaker** on page 7.

Attaching the Grille

Insert the safety lanyard pin into the hole in the loudspeaker. Using both hands, position the grille against the loudspeaker. The grille secures to the loudspeaker magnetically.



Safety and Regulatory Compliance

The Bose EdgeMax EM90 and EM180 loudspeakers have passed testing and comply with the following specifications and uses:

Listed to ANSI/UL 1480A-2016, Speakers for Commercial & Safety Professional Use

General-Purpose Use - UL Category UEAY, File Number S 5591 Control Number 3N89

Suitable for use indoors in damp locations under UL 1480A, but see warnings and cautions on page 2 of this installation guide for important installation restrictions.

UL-2043, 2013, Fire Test and Visible Smoke Release for Discrete Products and their Accessories Installed in Air Handling Spaces. Suitable for use in air handling (plenum) spaces.

Suitable for installation using Class 1, Class 2, or Class 3 wiring methods in accordance with NFPA 70, *National Electric Code*, 2017, Article 640

NFPA 70, National Electric Code, 2017, Article 300-22(c).

NFPA 90-A, 2015, Installation of Air Conditioning and Ventilation Systems, Paragraph 4.3.11.2.6.5

The EdgeMax EM90 and EM180 loudspeakers have been designed to the requirements defined in the following European regulatory specification for combination systems:

Tested to IEC 60268-5, 2007

Wire Gauge

The EdgeMax EM90 and EM180 loudspeakers are designed to work with 18 AWG (0.8 mm²) to 14 AWG (2.5 mm²) size wire only.



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