Speakers

CS 26T and CS 120P
CS 1226T SpeedMount Ceiling Speaker System

Extron Electronics
INTERFACING, SWITCHING AND CONTROL

68-2161-01 Rev. A
08 13

Safety Instructions

Safety Instructions • English

WARNING: This symbol, ⚠, when used on the product, is intended to alert the user of the presence of uninsulated dangerous voltage within the product's enclosure that may present a risk of electric shock.

ATTENTION: This symbol, ⚠, when used on the product, is intended to alert the user of important operating and maintenance (servicing) instructions in the literature provided with the equipment.

For information on safety guidelines, regulatory compliances, EMI/EMF compatibility, accessibility, and related topics, see the Extron Safety and Regulatory Compliance Guide, part number 68-290-01, on the Extron website, **www.extron.com.**

Instructions de sécurité • Français

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ATTENTION: Ce pictogramme, ⚠, lorsqu'il est utilisé sur le produit, signale à l'utilisateur des instructions d'utilisation ou de maintenance importantes qui se trouvent dans la documentation fournie avec le matériel.

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Chinese Simplified（简体中文）

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注意：⚠ 产品上的这个标志意在提示用户设备随附的用户手册中有重要的操作和维护(维修) 说明。

关于我们产品的安全指南、遵循的规范、EMI/EMF 的兼容性、无障碍使用的特性等相关内容，敬请访问 Extron 网站 **www.extron.cn**，参见 Extron 安全规范指南，产品编号 68-290-01。

Chinese Traditional（繁體中文）

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Japanese

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注意: この記号 ⚠ が製品上に表示されている場合は、本機の取扱説明書に記載されている重要な操作と保守(整備)の指示についてユーザーの**注意**を喚起するものです。

安全上のご注意、法規厳守、EMI/EMF適合性、その他の関連項目については、エクストロンのウェブサイト**www.extron.jp** より『Extron Safety and Regulatory Compliance Guide』(P/N 68-290-01) をご覧ください。

Korean

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안전 가이드라인, 규제 준수, EMI/EMF 호환성, 접근성, 그리고 관련 항목에 대한 자세한 내용은 Extron 웹 사이트(**www.extron.co.kr**)의 Extron 안전 및 규제 준수 안내서, 68-290-01 조항을 참조하십시오.

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This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. The Class A limits provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause interference; the user must correct the interference at his own expense.

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Conventions Used in this Guide

Notifications

The following notifications are used in this guide:

WARNING: A warning indicates a situation that has the **potential** to result in death or severe injury.

ATTENTION: Attention indicates a situation that may damage or destroy the product or associated equipment.

NOTE: A note draws attention to important information.

Specifications Availability

Product specifications are available on the Extron website, **www.extron.com**.

Contents

Introduction

This section gives an overview of the Extron CS 1226T SpeedMount Ceiling Speaker System, consisting of the CS 26T speakers and CS 120P enclosure. It also provides a list of system features and an application diagram. Topics include:

- **About this Guide**
- **Overview**
- **Features**
- **Application Example**

About this Guide

This guide describes the Extron CS 1226T Speaker System, the CS 26T speaker pair and the CS 120P enclosure and provides instructions for installing all components of the system in different types of ceilings.

Overview

The CS 1226T system features a low profile design that houses a 6.5-inch woofer and a 0.75-inch tweeter (CS 26T) contained in a UL 2043 rated enclosure (CS 120P) designed for use in plenum rated ceiling spaces.

This unique speaker system splits installation into two phases, rough-in and finish, allowing the installer to "reserve" space for the speaker system by installing the CS 120P back can and then later installing the CS 26T speaker. This two-step process (division of labor) is especially useful when multiple installers are involved. The CS 120P can be installed by the low voltage contractor while the CS 26T can be installed by the AV systems contractor.

Features

- **US and metric ceiling grids** — The CS 120P enclosure can be installed in both U.S. and metric ceiling grid systems (for metric systems, the CS 120P end tabs are cut off).
- **UL 2043 listed** — The CS 1226T is UL 2043 listed (only when the CS 26T is used with the CS 120P).

  > **NOTE:** The use of any other back can other than the CS 120P or those provided by Extron voids the UL 2043 rating.

- **Optional open back configuration** — The CS 26T can be used without the CS 120P by reconfiguring the attached bass port plate (allowing the CS 26T to function as an open back speaker).

  > **NOTE:** When the CS 26T is used without the CS 120P, it is not suitable for air handling spaces and is not UL 2043 rated.

- **New dog-leg design** — The new dog-leg design eliminates jamming during installation.
- **Low profile enclosure** — The low profile enclosure is compatible with plenum environments where overhead space may be limited.

- **Selectable taps** — The rotary tap selector switch, located behind the grille, sets the speaker to operate in either 8-ohm direct or 70 volt /100 volt operation with 16, 8, 4, 2, and 1 watt taps.
- **Magnetic grille** — Magnets spaced around the grille edge enable it to be easily attached and to remain firmly in place.

Application Example

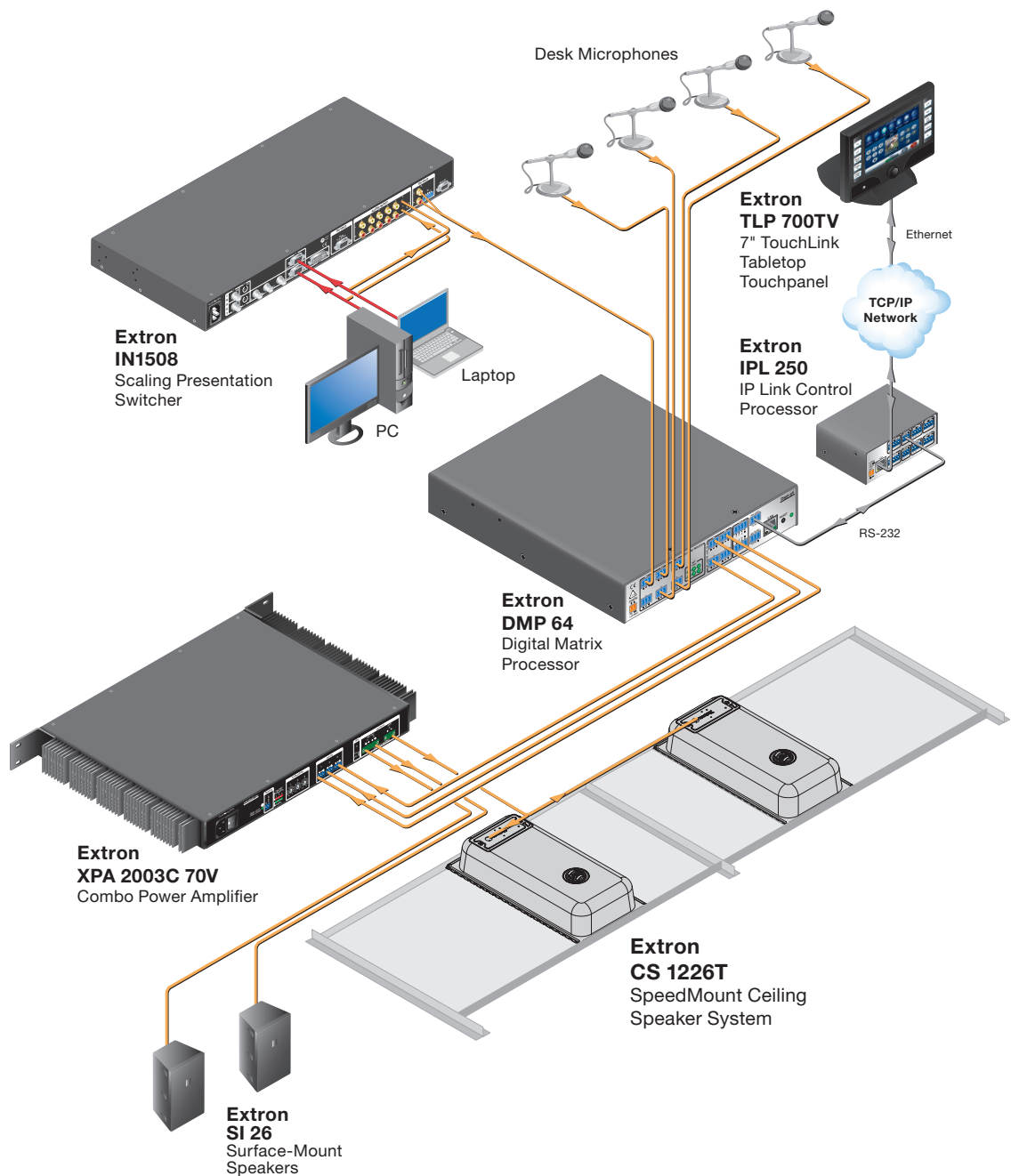The illustration below is one example of configuring a system using the CS 1226T.

Desk Microphones

**Extron
TLP 700TV**
7" TouchLink
Tabletop
Touchpanel

Ethernet

**TCP/IP
Network**

**Extron
IN1508**
Scaling Presentation
Switcher

Laptop

PC

**Extron
IPL 250**
IP Link Control
Processor

RS-232

**Extron
DMP 64**
Digital Matrix
Processor

**Extron
XPA 2003C 70V**
Combo Power Amplifier

**Extron
CS 1226T**
SpeedMount Ceiling
Speaker System

**Extron
SI 26**
Surface-Mount
Speakers

Figure 1.   Application Diagram of a CS 1226T Installation

Installation

This section provides instructions for installing the CS 26T speakers and the CS 120P enclosure. Topics include:

- **Installation Considerations**
- **Installation Configurations**
- **Installing the CS 1226T — Single Installer**
- **Installing the CS 120P in a Suspended Ceiling — Division of Labor**
- **Installing the CS 26T in a Suspended Ceiling — Division of Labor**
- **Installing CS 120P in a Hard Ceiling**

Installation Considerations

> **WARNING:** **Risk of severe bodily injury from falling or sharp equipment.**
> Installation and service must be performed by authorized personnel only.

- All wiring and electrical connections must conform to all applicable building codes and local ordinances.
- Installation in a plenum-rated environment requires plenum rated cable or conduit.
- If using secondary support cables, the installer provides the cables.

Installation Configurations

The CS 26T can be configured in the following ways:

- **Open-back:** For configurations in which the CS 120P is not used, use the C-ring accessory, available at **www.extron.com**. The C-ring spreads out the clamping force of the dog-legs when used in drop ceilings and gypsum ceilings.
- **Using the CS 120P:** When used with the CS 120P, the CS 26T can be placed in plenum environments. This is the only configuration that is UL 2043 rated.

> **NOTE:** The CS 120P can be ordered separately or as part of the CS 1226T kit.

For hard ceiling installations, see **Installing the CS 120P in a Hard Ceiling** on page 26.

Installing the CS 1226T System — Single Installer

If a single installer is installing the CS 1226T system, follow this procedure for the entire system:

> **NOTE:** The ceiling grid must be installed **before** the installation of the CS 1226T begins.
>
> - Verify if fiberglass ceiling tiles are being used (see step 2 below and **step 11** on page 7 for details).
> - The grid face must be at least 15/16 inch (24 mm) for proper installation of the CS 120P (see **step 20** on page 13 for details on suspending the enclosure on a smaller grid face).
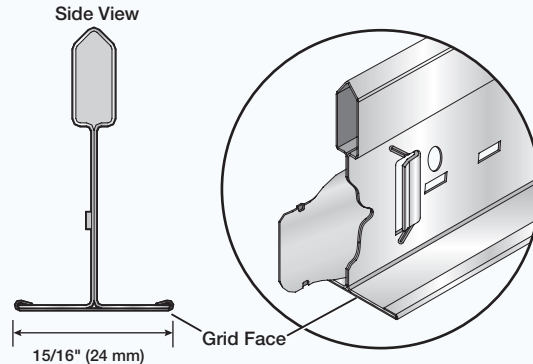>
> Side View
>
> 15/16" (24 mm)
>
> Grid Face
>
> **Figure 2.** **Grid Face Example**

1. **Disconnect power** — Power down all attached devices before proceeding.

2. **Verify the space where the system will be installed** — Ensure that there is sufficient clearance above the ceiling tile for the unit to be installed.

3. **Cut a hole for the CS 26T speaker** — Use the provided cutout template to outline the hole to be cut in the ceiling tile as described below.

    a. Remove the ceiling tile.

    b. To find the center of the tile, use a tape measure to measure the space between two opposite corners, and mark the half-way point.

    c. Position the center hole of the cutout template directly over the center of the tile that you marked in step 3b.

    d. Using the provided cutout template, trace a circle on the ceiling tile as follows:

    For installations in ceiling tiles that are NOT fiberglass or when installing the speakers in an open back configuration: Trace a circle around the CS 26T cutout template.

    > **NOTE:** The fiberglass tile adapters are not needed and can be discarded.

    For installations in 1-inch (0.25 cm) thick fiberglass ceiling tiles with the CS 120P:

    > **NOTE:** A set of fiberglass tile adapters is provided with both the CS 26T and the CS 120P. Only one set is needed to install the CS 26T with the CS 120P kit in a 1-inch (0.25 cm) thick fiberglass tile. The adapter works **only** with 1-inch (0.25 cm) thick fiberglass tile.

    i. Place the fiberglass tile adapter around the outer diameter of the template that was positioned in step 3c.

    ii. Trace a circle around the outer diameter of the adapter.

e. Cut out the circle traced in the ceiling tile.

   f. Replace the tile in the ceiling.

4. **Remove the adjacent ceiling tile** — To facilitate the installation process, remove the tile adjacent to the ceiling tile where the CS 26T will be installed. If the CS 120P is being installed, skip to step 6. Otherwise, proceed to step 5.
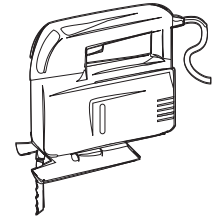
5. **If NOT using the CS 120P, install the Ceiling Mount kit** — Place two V-rails and one C-ring across the tile above the hole that you cut in step 3, where the speaker will be installed.

C-ring

V-rail
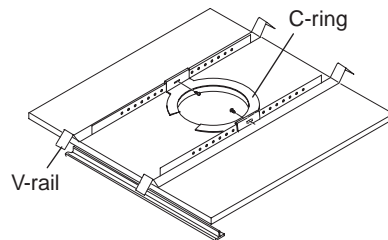
Figure 3.   Install the Ceiling Mount Kit

Skip to step 12 on page 8.

6. **Configure the CS 120P for a U.S. or metric ceiling grid** — For U.S. ceilings (2 feet by 2 feet or 2 feet by 4 feet) leave intact the four tabs that are on one of the short ends of the enclosure.

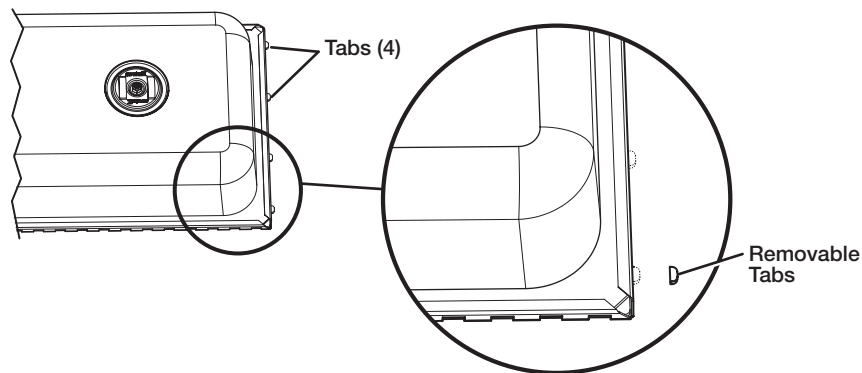   For metric ceilings (600 mm by 600 mm or 600 mm by 1200 mm) cut off the tabs.

Tabs (4)

Removable Tabs

Figure 4.   Tabs on the CS 120P

7. **Remove the cover plate** — Loosen (do not remove) the two screws on the cover plate and remove it, as shown in figure 5.
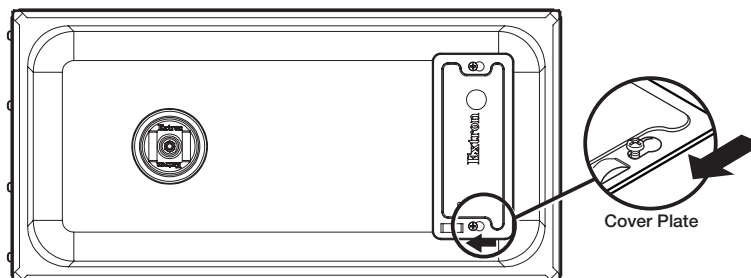

Cover Plate

Figure 5.   Removing the Cover Plate

8. **Route the cables through the cover plate** —

> **NOTES:**
> - The CS 120P is fully UL 2043 compliant only when it is used with a metal conduit or with plenum rated cables.
> - Installation of all conduits, conduit adapters, wiring, and electrical connections must conform to all applicable building codes and local ordinances.

Using a flexible conduit:

a. Route wires through the conduit.

b. Insert the conduit into the cover plate opening using an appropriate conduit adapter, and secure the conduit to the plate as shown in figure 6.

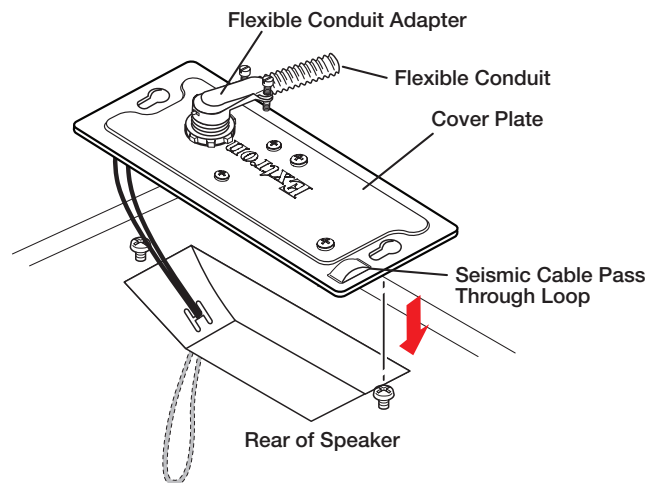**c.** Pull the wires out of the conduit and through the cover plate.

Figure 6. Routing the Cables through the Cover Plate Using a Flexible Conduit

Using speaker wires without a conduit:

a. Secure the cable clamp adapter (included) to the cover plate.

b. Insert the wires through the clamp and cover plate, as shown in figure 7.
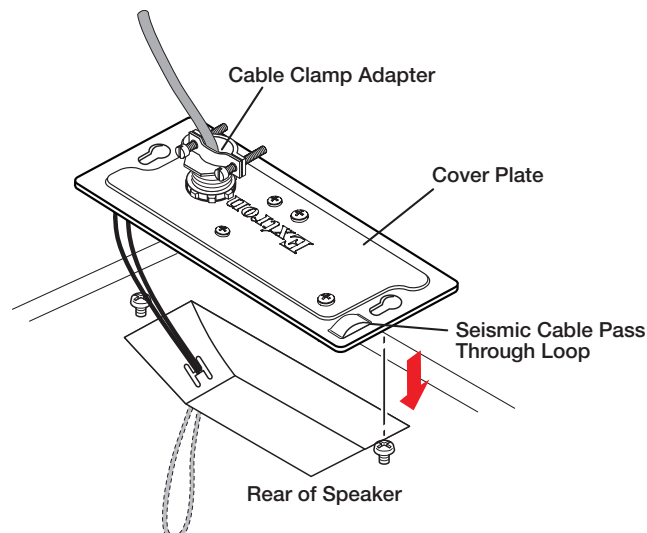
c. Tighten the clamp screws.

Figure 7. Routing the Cables Without a Conduit

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9. **Wire the CS 120P** — Route the wires through the H-shaped opening in the CS 120P. Be sure to leave sufficient slack.
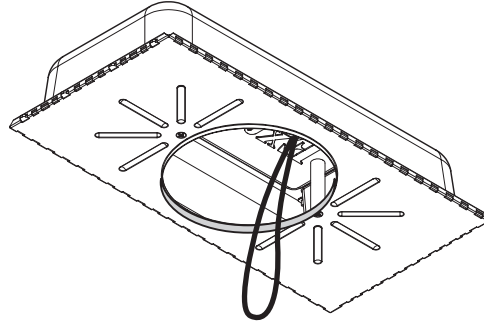

Figure 8.   Route the Wires Through the H-shaped Opening

10. **Replace the terminal cover plate** — Reinstall the terminal cover plate onto the CS 120P and tighten the two screws that were previously loosened.

11. **If the CS 120P is NOT being installed in a 1-inch (0.25 cm) thick fiberglass ceiling tile,** discard the fiberglass tile adapter and proceed to **step 12** on the next page.

    If the CS 120P is being installed in a 1-inch (0.25 cm) thick fiberglass ceiling tile, install the fiberglass ceiling tile adapter. Attach the fiberglass tile adapter to the outer side of the lip of the port hole on the CS 120P as follows:

    a.   Cut four strips of adhesive tape (such as duct tape) approximately 4 inches (102 mm) long.

    b.   Attach each tape strip starting from the outer side of the CS 120P metal baffle, up and over the port ring adapter, then down to the inner surface of the CS 120P metal baffle, as shown in figure 9.
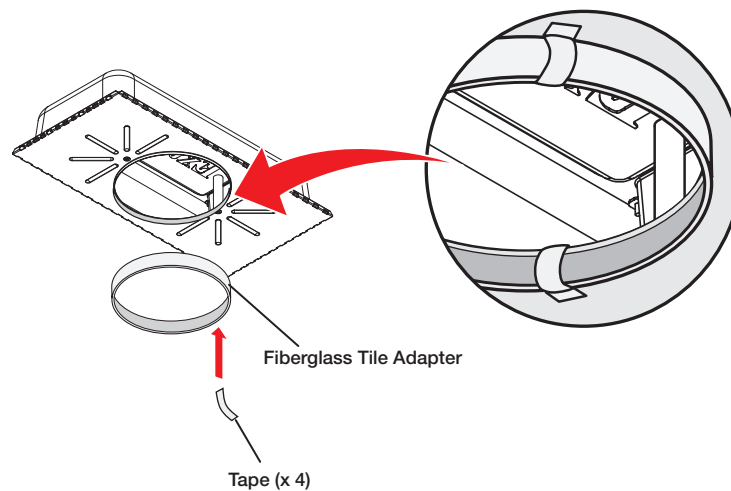

Fiberglass Tile Adapter

Tape (x 4)

Figure 9.   Attach Four Tape Strips to the Baffle and Port Ring Adapter

> **NOTE:**   The tape strips must lie flat against all surfaces, with no ridges or raised edges.

12. Place the CS 120P into the ceiling grid — Place the CS 120P over the tile grid so that the CS 120P is safely supported on the two short edges. Ensure that the hole in the tile is aligned with the hole in the CS 120P (see figure 10).
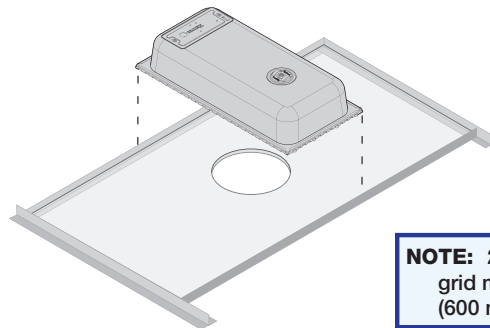
> **NOTE:** 2' x 2' (600 mm x 600 mm) grid mounting is the same as 2' x 4' (600 mm x 1200 mm) grid mounting.

Figure 10. Mounting the CS 120P in a 2″ x 2″ (600 mm x 600 mm) Ceiling Grid

13. Route the speaker wires — Route the speaker wires through the ceiling tile hole.

14. Remove the speaker grille — Carefully remove the grille from the front of the CS 26T.

> **NOTE:** Grille hooks are provided for grille removal, if needed.

15. Configure the bass reflex port plate. By default, the CS 26T is set up for use with the CS 120P. If not using the CS 120P, set the plate for an open-back installation.

- **With the CS 120P (default configuration):** Leave the plate in its default location. The port must be left **uncovered** (see **A** in figure 11).

- **Open back:** The bass reflex port is uncovered by default. In the open back configuration (without the CS 120P), this port must be closed (covered). If the port is **not** covered:

  a. Use a Phillips screwdriver to remove the two screws securing the bass reflex port plate in its storage location.

  b. Attach the plate to the bass reflex port using the two screws that you removed in step a (see **B** in figure 11).
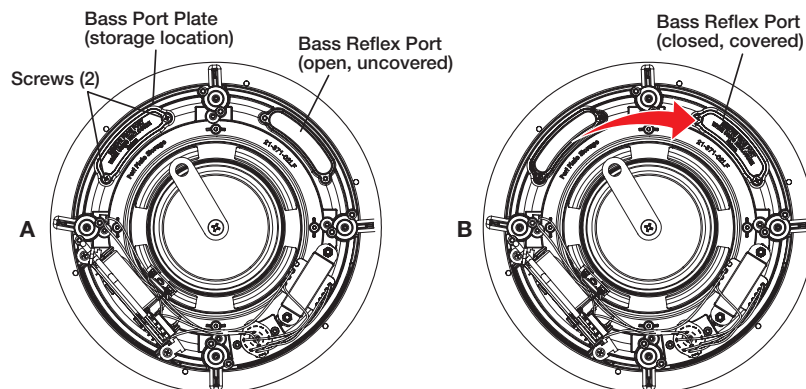

Figure 11. Configuring the Bass Reflex Port Plate

16. **Attach the speaker wires to the captive screw connector** —

> **ATTENTION:** Do not tin the wires. Tinned wires do not remain tight in the captive screws and can break easily after several bends.

Number of Wires per Connection Point	Maximum Wire Gauge
1	12 AWG
2	16 AWG
4	18 AWG

Attach the speaker wires to the included four-pole captive screw connector using one of the following methods:

- **Wiring a Single Speaker:** Connect the wires to the captive screw connectors of the speakers as shown in figure 12. Be sure to tighten the screws.
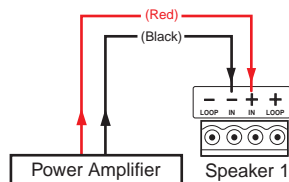
Figure 12. Wiring a Single Speaker

- **Wiring Multiple Speakers in Parallel:** Connect the wires to the captive screw connectors of the speakers, as shown in figure 13. Be sure to tighten the screws.
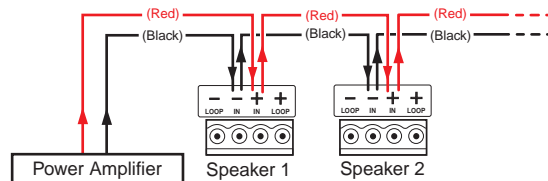
Figure 13. Wiring Multiple Speakers in Parallel

In the parallel configuration, all of the speakers downstream of the one being tested continue to function even when it is disconnected. This is especially useful in installations where the system can never be completely down, such as in a hospital setting.

The source signal can be tested by connecting to the inner **+** (IN) and **–** (IN) terminals of the captive screw connector.
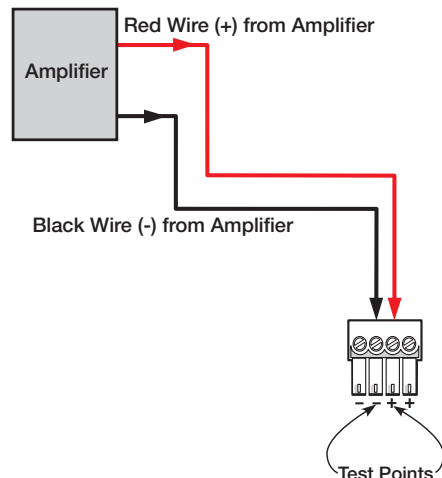
Figure 14. Signal Test Points — Parallel Configuration

- **Wiring Multiple Speakers Using Loop-through:**

  A loop-through electrical connection is made on the crossover board of the CS 26T. Connect the wires to the captive screw connectors of the speakers, as shown in figure 15. Be sure to tighten the screws.
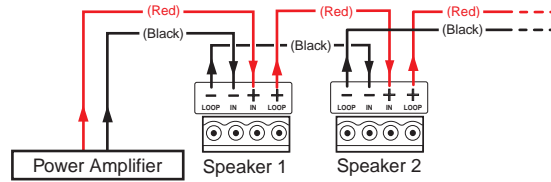

Figure 15. **Wiring Multiple Speakers Using Loop-through**

In this configuration, all of the speakers downstream of the one being tested are disconnected from the signal when it is disconnected. This is useful for troubleshooting in three ways:

- The system is sectioned for easier troubleshooting.
- The source signal can be tested by connecting to the inner + (IN) and – (IN) terminals of the captive screw connector, as shown in figure 16.
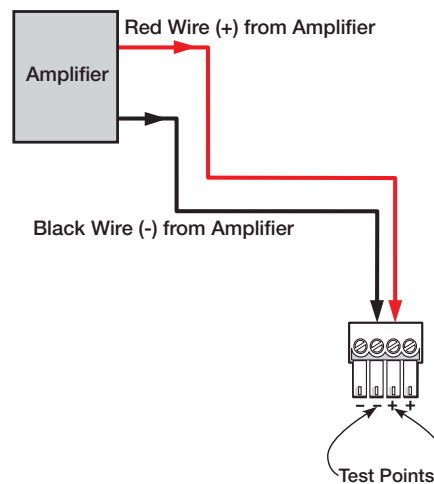

Figure 16. **Signal Test Points — Loop-through Configuration**

- The impedance of the speakers downstream of the one being tested can be measured while the system is on by connecting to the outer (LOOP) terminals of the captive screw connector, as shown in figure 17.
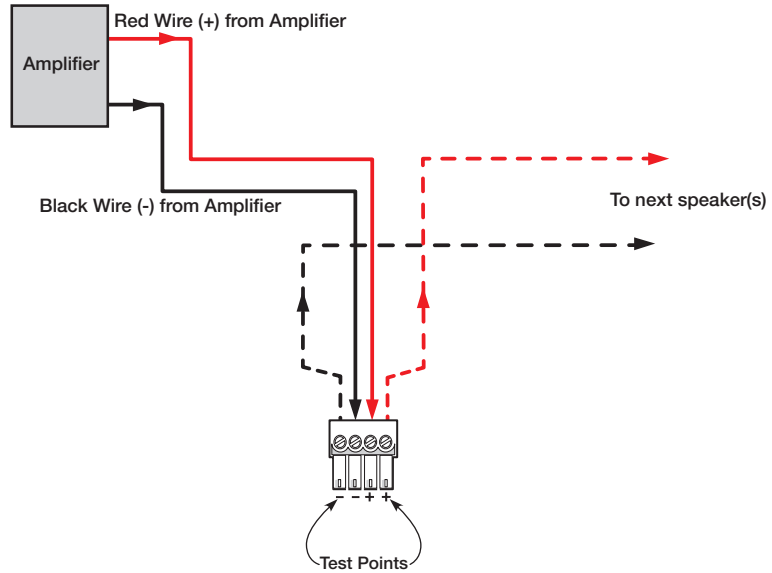
Amplifier

Red Wire (+) from Amplifier

Black Wire (-) from Amplifier

To next speaker(s)

Test Points

Figure 17.   Impedance Test Points — Loop-through Configuration

17. **Insert the captive screw connector** into the four-pole receptacle on the speaker crossover board.
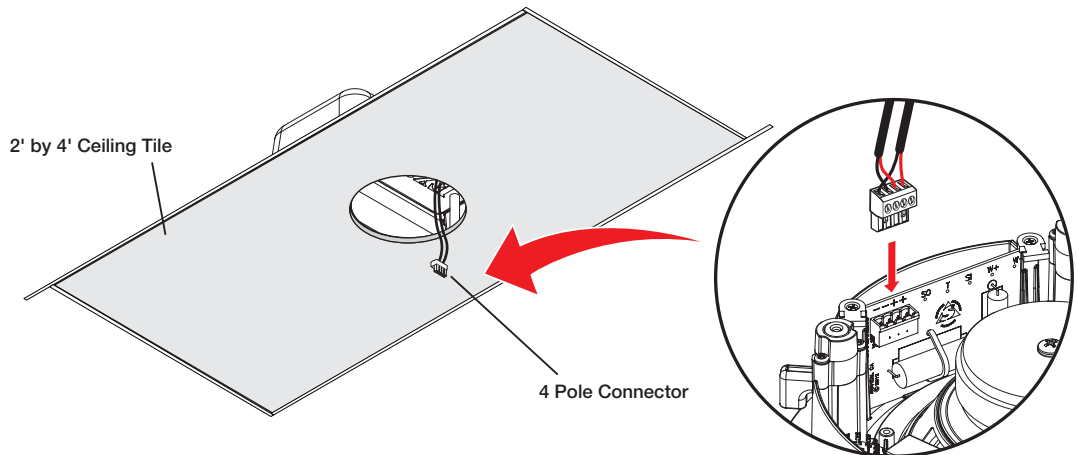
2' by 4' Ceiling Tile

4 Pole Connector

Figure 18.   Connecting the Wire from the CS 120P to the Speaker

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18. **Attach the speaker wire to the strain relief tie down point** using the provided zip tie.

Strain Relief Tab
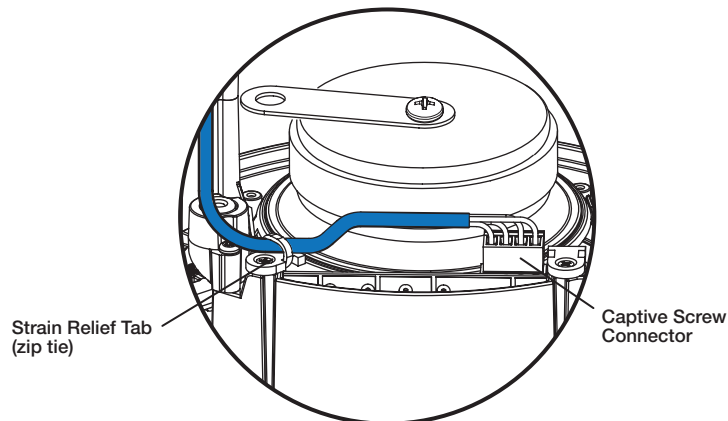(zip tie)

Captive Screw
Connector

Figure 19.   Attaching the Speaker Wire to the Strain Relief Point

19. **Mount the CS 26T** (see figure 20).

   a. **Insert the CS 26T** through the bottom of the hole in the ceiling tile that was cut in step 3.

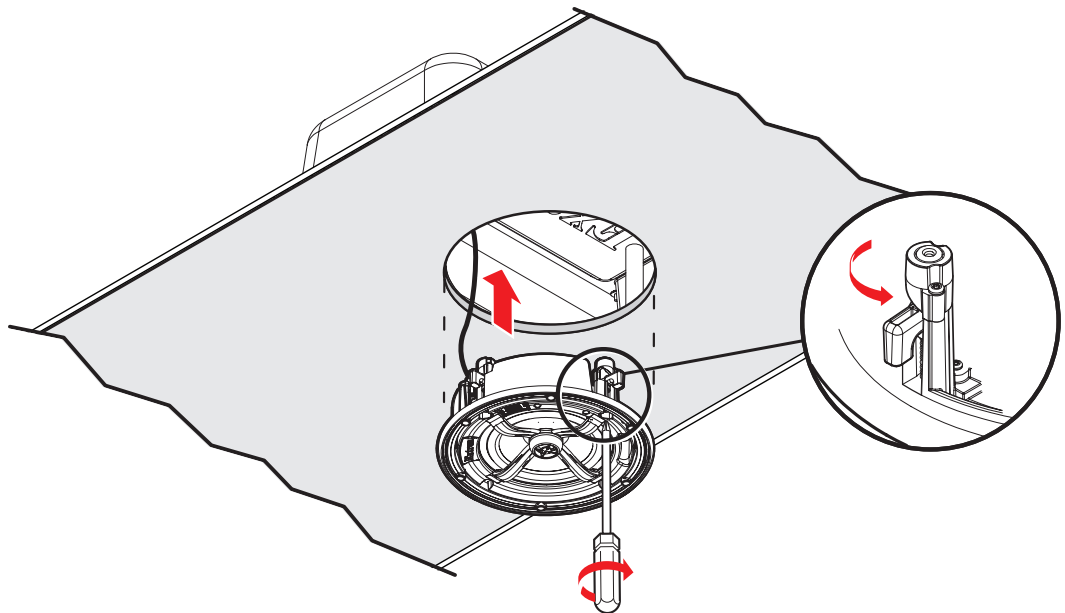   b. **Tighten the four screws** (clockwise) until the speaker is securely clamped to the ceiling.

Figure 20.   Mounting the Speaker to the CS 120P

> **ATTENTION:**   Do not overtighten the screws.

20. Attach secondary support lines — If required, attach all of the secondary support lines as shown in figure 21.

> **ATTENTION:** **Do not** allow any slack in the support cables.

> **NOTE:** If the CS 26T will be installed in the CS 120P, do not attach secondary support cables to the speakers.
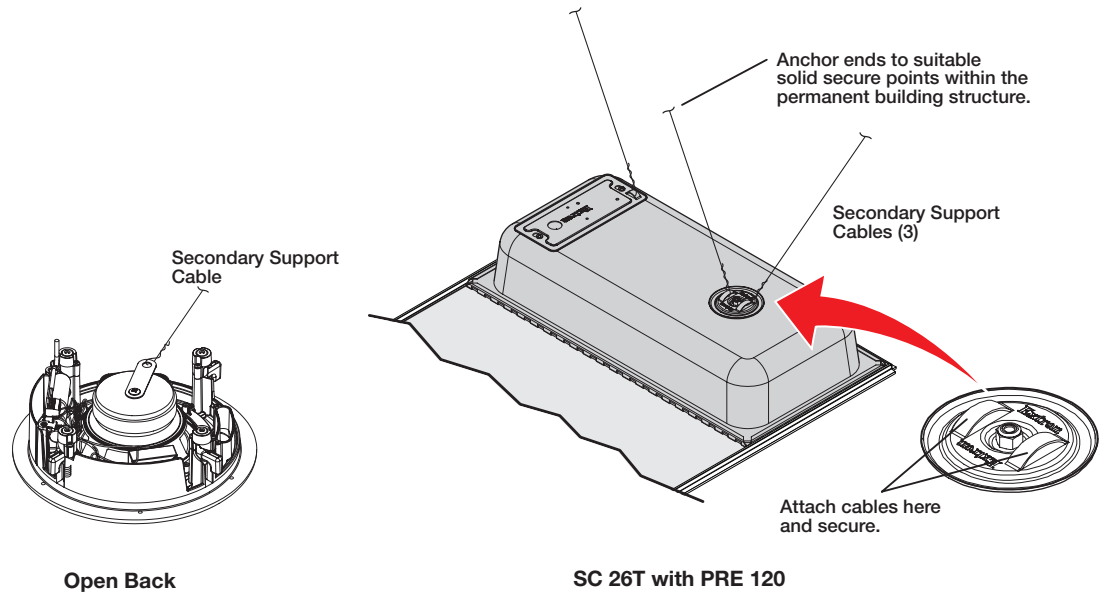

Anchor ends to suitable solid secure points within the permanent building structure.

Secondary Support Cables (3)

Secondary Support Cable

Attach cables here and secure.

Open Back

SC 26T with PRE 120

Figure 21.   Attaching Secondary Support Lines

> **NOTES:**
> - When placing the CS 120P on a tile grid with a grid face less than 15/16 inch (24 mm) and no ceiling tile is installed, use the secondary attachment points as hanger suspension points.
> - Observe all applicable building codes and local ordinances when installing the speaker.

21. Replace the adjacent tile — Reinstall the adjacent tile that was removed in step 4.

22. **Set the rotary tap selector switch** — Use a small screwdriver to set the tap selector switch to the appropriate setting.

> **ATTENTION:** When setting the taps for a distributed (high impedance) system, **do not** tap the system above the rated power of the amplifier. When connecting multiple speakers in 8-ohm mode, be sure that the combined rated impedance does **not** equal a value less than the minimum rated impedance of the amplifier.
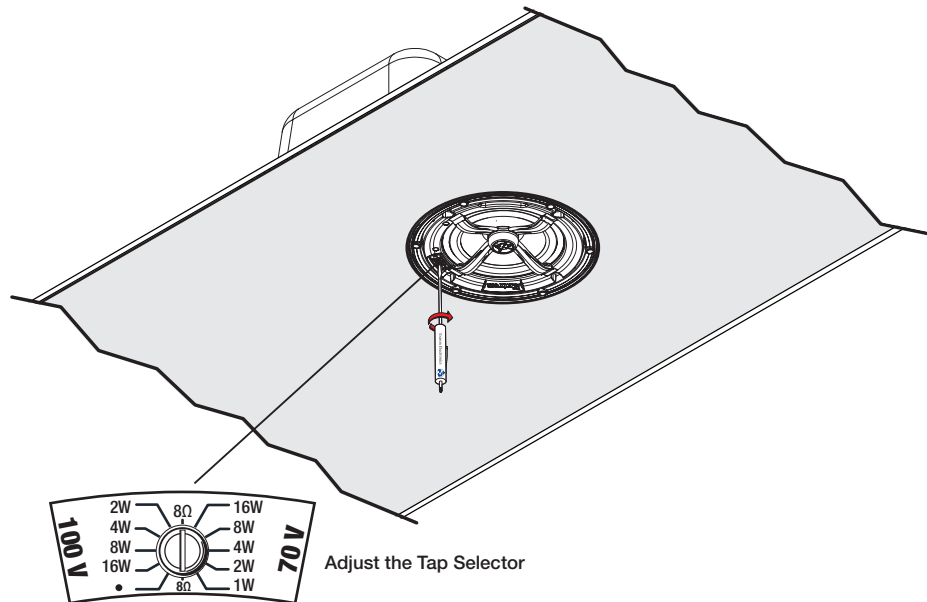

Adjust the Tap Selector

Figure 22. **Adjusting the Rotary Tap Selector**

23. **Install the grille.** Position the outer perimeter of the grille into the groove of the speaker baffle. Six magnets pull the grille securely into place.
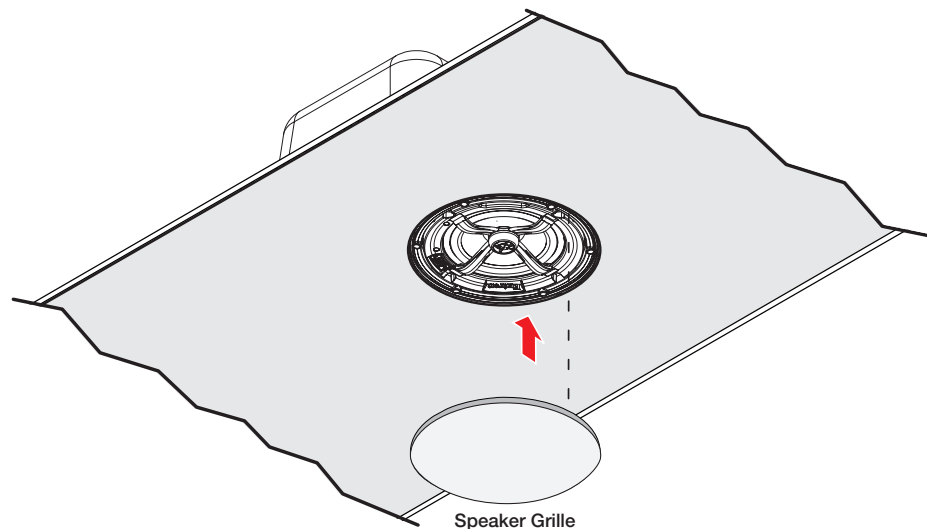

Speaker Grille

Figure 23. **Installing the Speaker Grille**

> **NOTE:** Grille hooks are provided for removal of the grille after installation.

Installing the CS 120P in a Suspended Ceiling — Division of Labor

In a division of labor installation, low-voltage contractors install the CS 120P enclosure (construction rough-in phase).

NOTE: The ceiling grid must be installed **before** the installation of the CS 1226T can begin.

- Verify if fiberglass ceiling tiles are being used (see **step 4d** on the next page and **step 10** on page 18 for details).
- The grid face must be at least 15/16 inch (24 mm) for proper installation of the CS 120P (see **step 12** on page 19 for details on suspending the enclosure on a smaller grid face).
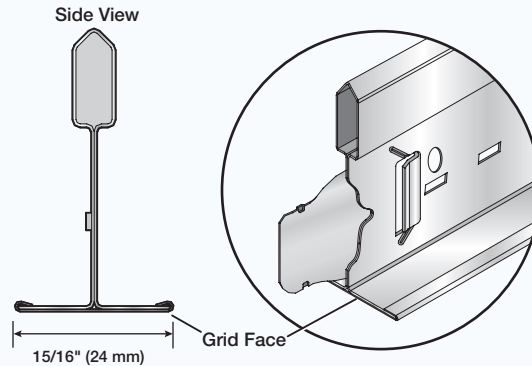
Side View

15/16" (24 mm)

Grid Face

Figure 24.   Grid Face Example

Use the following procedure:

1. **Disconnect power** — Power down all attached devices before proceeding.

2. **Verify the space where the system will be installed** — Ensure that there is sufficient clearance above the ceiling tile for the unit to be installed.

3. **Configure the CS 120P for a U.S. or metric ceiling grid** — For U.S. ceilings (2 feet by 2 feet or 2 feet by 4 feet), leave intact the four tabs that are on one of the short ends of the enclosure.

    For metric ceilings (600 mm by 600 mm or 600 mm by 1200 mm) cut off the tabs.
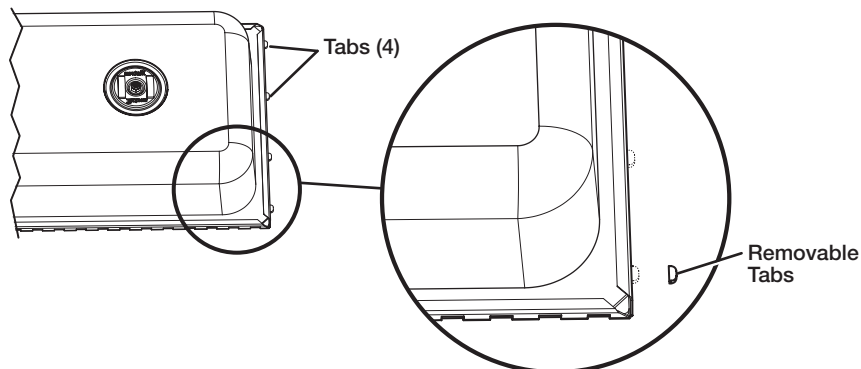

Tabs (4)

Removable Tabs

Figure 25.   Tabs on the CS 120P

4. **Cut a hole for the CS 26T speaker.** Use the provided cutout template to outline the hole to be cut in the ceiling tile as described below. (If the ceiling tile will **not** be installed during this phase of the installation, skip to **step 6**.)

   a. Remove the ceiling tile.

   b. To find the center of the tile, use a tape measure to measure the space between two opposite corners, and mark the half-way point.

   c. Position the center hole of the cutout template directly over the center of the tile that you marked in step 4b.

   d. Using the provided cutout template, trace a circle on the ceiling tile as follows:

   For installations in ceiling tiles that are NOT fiberglass: Trace a circle around the CS 26T cutout template.

   > **NOTE:** The fiberglass tile adapters are not needed and can be discarded.

   For installations in 1-inch (0.25 cm) thick fiberglass ceiling tiles with the CS 120P:

   > **NOTE:** A set of fiberglass tile adapters is provided with both the CS 26T and the CS 120P. Only one set is needed to install the CS 26T with the CS 120P kit in a 1-inch (0.25 cm) thick fiberglass tile. The adapter works **only** with 1-inch (0.25 cm) thick fiberglass tile.

       i. Place the fiberglass tile adapter around the outer diameter of the template that was positioned in step 4c.

       ii. Trace a circle around the outer diameter of the adapter.

   e. Cut out the circle traced in the ceiling tile.

   f. Replace the tile in the ceiling.

5. **Remove the adjacent ceiling tile** — To facilitate the installation process, remove the tile adjacent to the ceiling tile where the CS 26T will be installed.

6. **Remove the cover plate** — Loosen (do not remove) the two screws on the cover plate and remove it, as shown in figure 26.
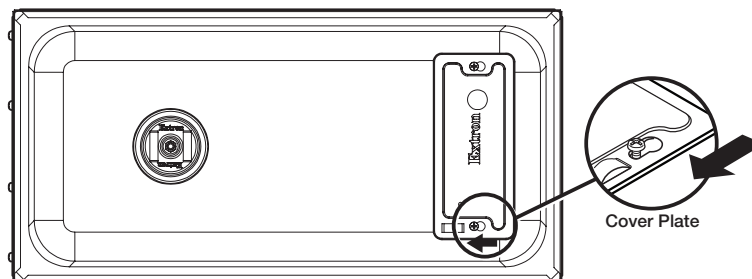

Cover Plate

Figure 26. **Removing the Cover Plate**

7. **Route the cables through the cover plate** —

> **NOTES:**
> - The CS 120P is fully UL 2043 compliant only when it is used with a metal conduit or with plenum rated cables.
> - Installation of all conduits, conduit adapters, wiring, and electrical connections must conform to all applicable building codes and local ordinances.

Using a flexible conduit:

a. Route wires through the conduit.

b. Insert the conduit into the cover plate opening using an appropriate conduit adapter, and secure the conduit to the plate as shown in figure 27.

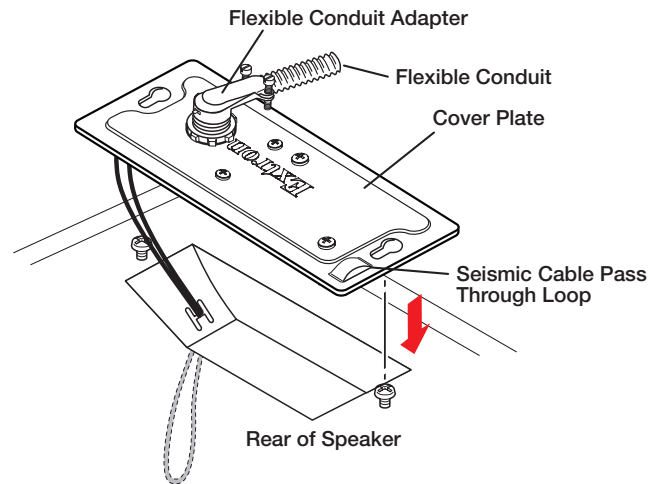**c.** Pull the wires out of the conduit and through the cover plate.

Flexible Conduit Adapter
Flexible Conduit
Cover Plate
Seismic Cable Pass Through Loop
Rear of Speaker

Figure 27. **Routing the Cables through the Cover Plate Using a Flexible Conduit**

Using speaker wires without a conduit:

a. Secure the cable clamp adapter (included) to the cover plate.

b. Insert the wires through the clamp and cover plate, as shown in figure 28.

c. Tighten the clamp screws.

Cable Clamp Adapter
Cover Plate
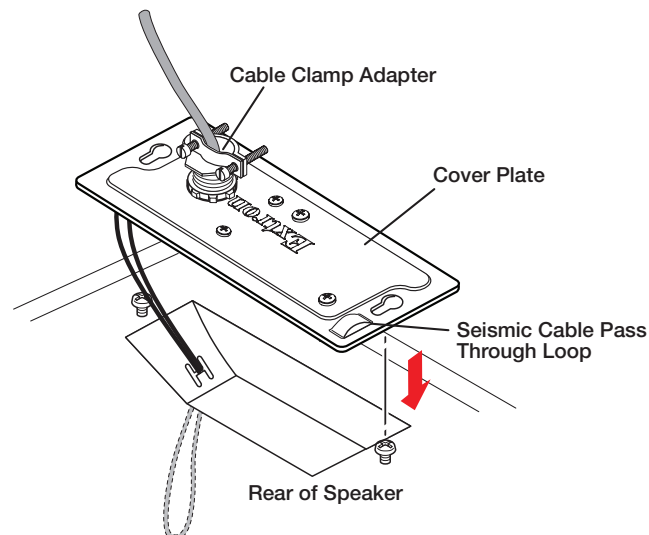Seismic Cable Pass Through Loop
Rear of Speaker

Figure 28. **Routing the Cables Without a Conduit**

8. **Wire the CS 120P** — Route the wires through the H-shaped opening in the CS 120P. Be sure to leave sufficient slack.
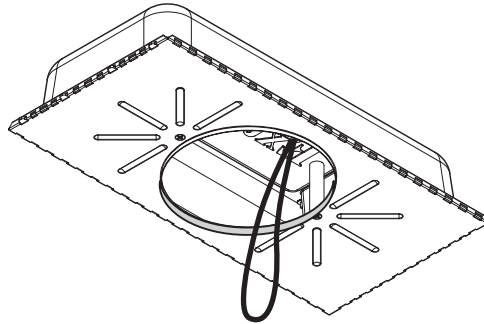

Figure 29. **Route the Wires Through the H-shaped Opening**

9. **Replace the terminal cover plate** — Reinstall the terminal cover plate onto the CS 120P and tighten the two screws that were previously loosened.

10. **If the CS 120P is NOT being installed in a 1-inch (0.25 cm) thick fiberglass ceiling tile,** discard the fiberglass tile adapter and proceed to **step 11** on the next page.

   If the CS 120P is being installed in a 1-inch (0.25 cm) thick fiberglass ceiling tile, install the fiberglass ceiling tile adapter. Attach the fiberglass tile adapter to the outer side of the lip of the port hole on the CS 120P as follows:

   a. Cut four strips of adhesive tape (such as duct tape) approximately 4 inches (102 mm) long.

   b. Attach each tape strip starting from the outer side of the CS 120P metal baffle, up and over the port ring adapter, then down to the inner surface of the CS 120P metal baffle, as shown below.
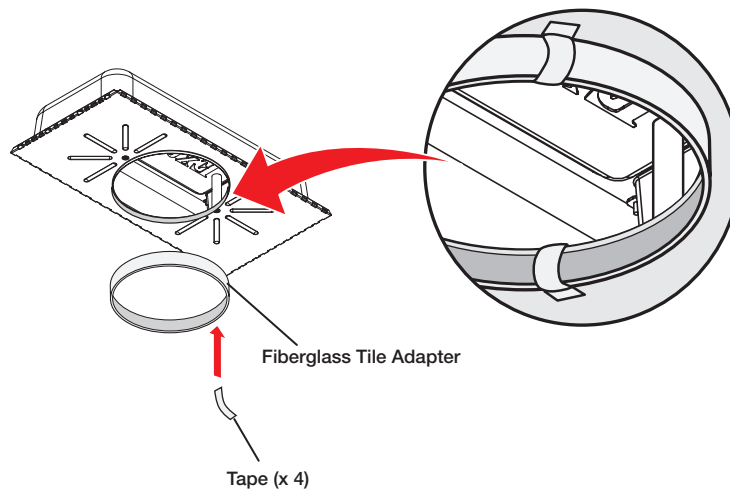

Fiberglass Tile Adapter

Tape (x 4)

Figure 30. **Attach Four Tape Strips to the Baffle and Port Ring Adapter**

> **NOTE:** The tape strips must lie flat against all surfaces, with no ridges or raised edges.

11. **Place the CS 120P into the ceiling grid** — Place the CS 120P over the tile grid so that the CS 120P is safely supported on the two short edges. If the ceiling tile was installed, ensure that the hole in the tile is aligned with the hole in the CS 120P (see figure 31).
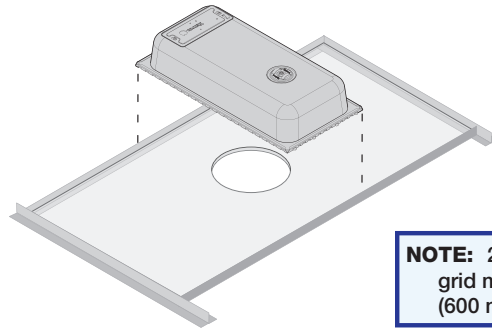
> **NOTE:** 2' x 2' (600 mm x 600 mm) grid mounting is the same as 2' x 4' (600 mm x 1200 mm) grid mounting.

Figure 31. Mounting the CS 120P in a 2' x 2' (600 mm x 600 mm) Ceiling Grid

12. **Attach secondary support lines** — If required, attach all of the secondary support lines as shown in figure 32.

> **ATTENTION:** **Do not** allow any slack in the support cables.

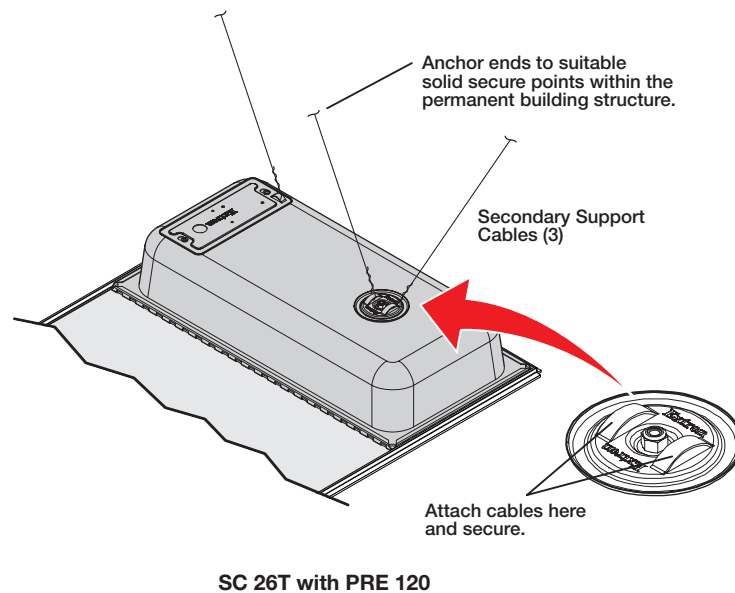> **NOTE:** If the CS 26T will be installed in the CS 120P, do not attach secondary support cables to the speakers.

Anchor ends to suitable solid secure points within the permanent building structure.

Secondary Support Cables (3)

Attach cables here and secure.

SC 26T with PRE 120

Figure 32. Attaching Secondary Support Lines

> **NOTE:**
> - When placing the CS 120P on a tile grid with a grid face of less than 15/16 inch (24 mm) and no ceiling tile is installed, use the secondary attachment points as hanger suspension points.
> - Observe all applicable building codes and local ordinances when installing the speaker.

13. **Replace the adjacent tile** — Reinstall the adjacent tile if one was removed in step 5.

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Installing the CS 26T in a Suspended Ceiling — Division of Labor

In a division of labor installation, an AV system contractor installs the CS 26T (final installation phase). Use the following procedure:

> **NOTE:** Observe all applicable building codes and local ordinances when installing the speaker.

1. **Disconnect power** — Power down all attached devices before proceeding.

2. (If the ceiling tile is already cut and in place, skip this step.)
   Cut a hole for the CS 26T speaker — Use the provided cutout template to outline the hole to be cut in the ceiling tile as described below.

   a. Remove the ceiling tile.

   b. To find the center of the tile, use a tape measure to measure the space between two opposite corners, and mark the half-way point.

   c. Position the center hole of the cutout template directly over the center of the tile that you marked in step 2b.

   d. Using the provided cutout template, trace a circle on the ceiling tile as follows:

   For installations in ceiling tiles that are NOT fiberglass: Trace a circle around the CS 26T cutout template.

   > **NOTE:** The fiberglass tile adapters are not needed and can be discarded.

   For installations in 1-inch (0.25 cm) thick fiberglass ceiling tiles with the CS 120P:

   > **NOTE:** A set of fiberglass tile adapters is provided with both the CS 26T and the CS 120P. Only one set is needed to install the CS 26T with the CS 120P kit in a 1-inch (0.25 cm) thick fiberglass tile. The adapter works **only** with 1-inch (0.25 cm) thick fiberglass tile.

   i. Place the fiberglass tile adapter around the outer diameter of the template that was positioned in step 2c.

   ii. Trace a circle around the outer diameter of the adapter.

   e. Cut out the circle traced in the ceiling tile.

   f. Replace the tile in the ceiling, ensuring that the hole in the tile is aligned with the hole in the CS 120P.

3. **Route the speaker wires** — Route the speaker wires through the ceiling tile hole.

4. **Remove the speaker grille** — Carefully remove the grille from the front of the CS 26T.
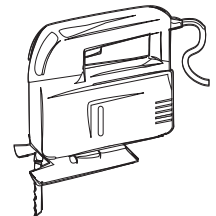
   > **NOTE:** Grille hooks are provided for grille removal, if needed.

5. **Attach the speaker wires to the captive screw connector** —

> **ATTENTION:** Do not tin the wires. Tinned wires do not remain tight in the captive screws and can break easily after several bends.

Number of Wires per Connection Point	Maximum Wire Gauge
1	12 AWG
2	16 AWG
4	18 AWG

Attach the speaker wires to the included four-pole captive screw connector using one of the following methods:

- **Wiring a Single Speaker:** Connect the wires to the captive screw connectors of the speaker as shown in figure 33. Be sure to tighten the screws.
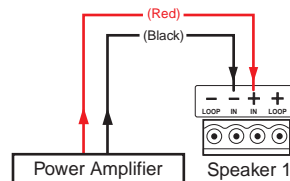

Figure 33. **Wiring a Single Speaker**

- **Wiring Multiple Speakers in Parallel:** Connect the wires to the captive screw connectors of the speakers, as shown in figure 34. Be sure to tighten the screws.
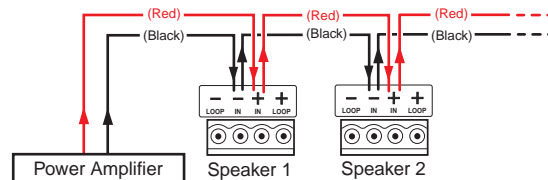

Figure 34. **Wiring Multiple Speakers in Parallel**

In the parallel configuration, all of the speakers downstream of the one being tested continue to function even when it is disconnected. This is especially useful in installations where the system can never be completely down, such as in a hospital setting. You can test the source signal can be tested by connecting to the inner **+** (IN) and **–** (IN) terminals of the captive screw connector.
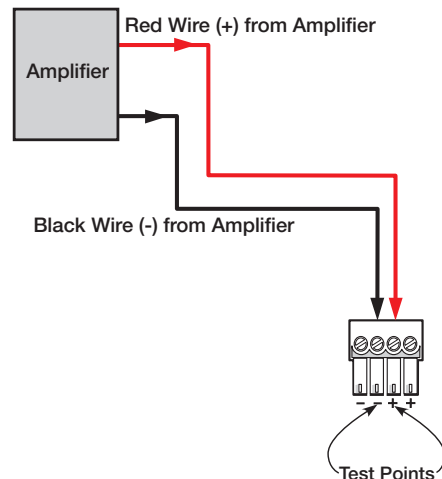

Figure 35. **Signal Test Points — Parallel Configuration**

- **Wiring Multiple Speakers Using Loop-through:**

    A loop-through electrical connection is made on the crossover board of the CS 26T. Connect the wires to the captive screw connectors of the speakers, as shown in figure 36. Be sure to tighten the screws.
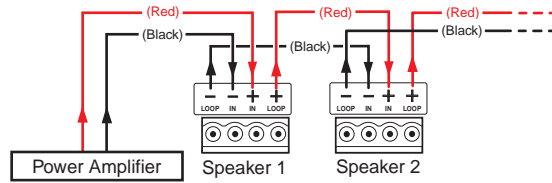

Figure 36.   Wiring Multiple Speakers Using Loop-through

In this configuration, all of the speakers downstream of the one being tested are disconnected from the signal when it is disconnected. This is useful for troubleshooting in three ways:

- The system is sectioned for easier troubleshooting.
- The source signal can be tested by connecting to the inner + (IN) and – (IN) terminals of the captive screw connector, as shown in figure 37.
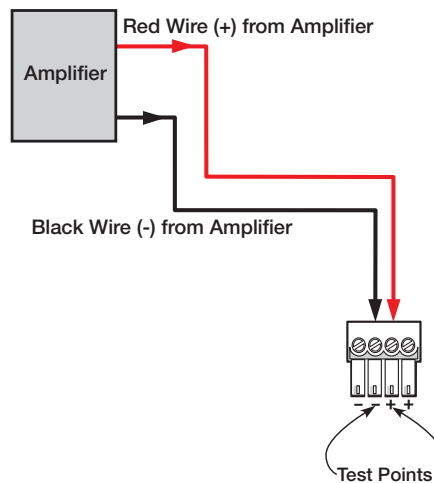

Figure 37.   Signal Test Points — Loop-through Configuration

- The impedance of the speakers downstream of the one being tested can be measured while the system is on by connecting to the outer (LOOP) terminals of the captive screw connector, as shown in figure 38.
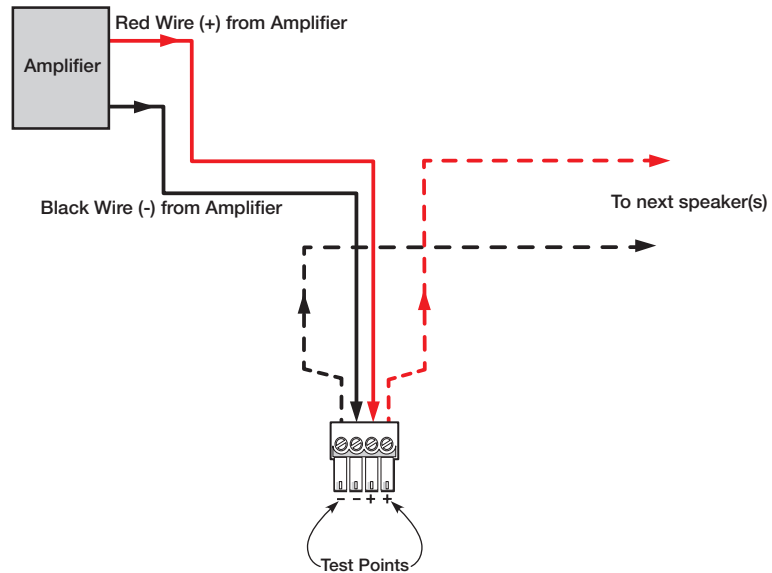

Figure 38.   Impedance Test Points — Loop-through Configuration

6. **Insert the captive screw connector** into the four-pole receptacle on the speaker crossover board.
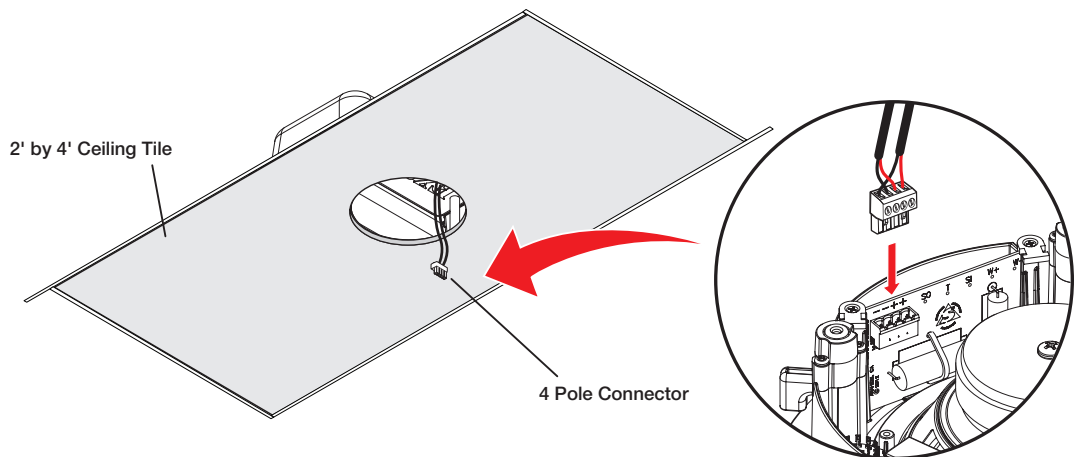

Figure 39.   Connecting the Wire from the CS 120P to the Speaker

7. **Attach the speaker wire to the strain relief tie down point** using the provided zip tie.

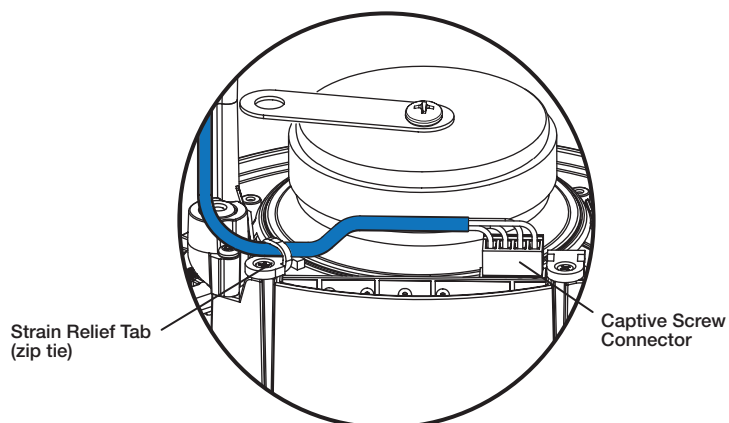Strain Relief Tab (zip tie)

Captive Screw Connector

Figure 40. Attaching the Speaker Wire to the Strain Relief Point

8. **Mount the CS 26T** (see figure 41).

   a. **Insert the CS 26T** through the bottom of the hole in the ceiling tile that was cut in step 2.

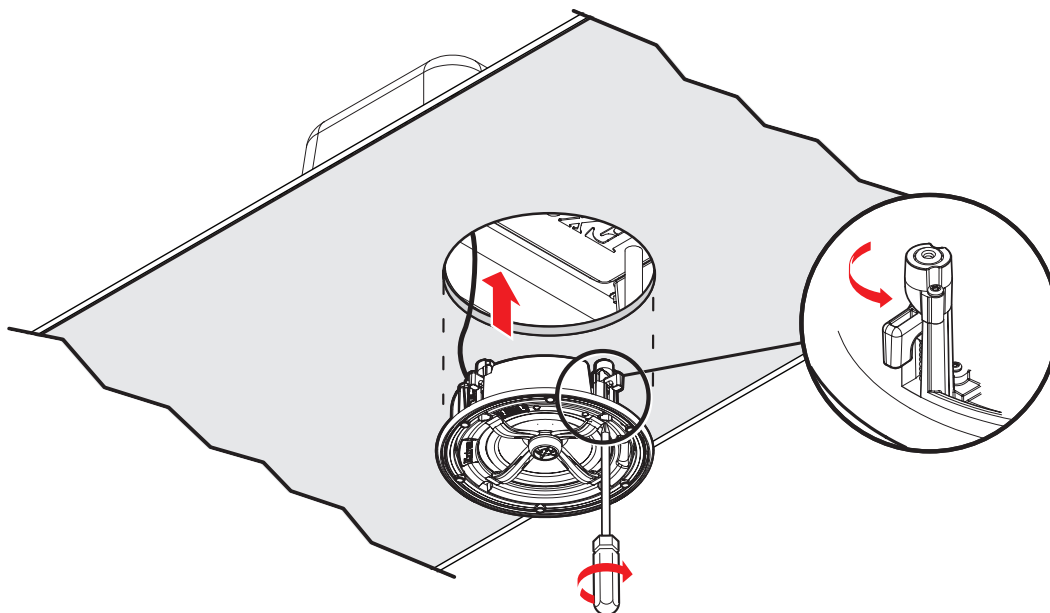   b. **Tighten the four screws** (clockwise) until the speaker is securely clamped to the ceiling.

Figure 41. Mounting the Speaker to the CS 120P

> **ATTENTION:** Do not overtighten the screws.

9. **Set the rotary tap selector switch** — Use a small screwdriver to set the tap selector switch to the appropriate setting.

> **ATTENTION:** When setting the taps for a distributed (high impedance) system, **do not** tap the system above the rated power of the amplifier. When connecting multiple speakers in 8-ohm mode, be sure that the combined rated impedance does **not** equal a value less than the minimum rated impedance of the amplifier.
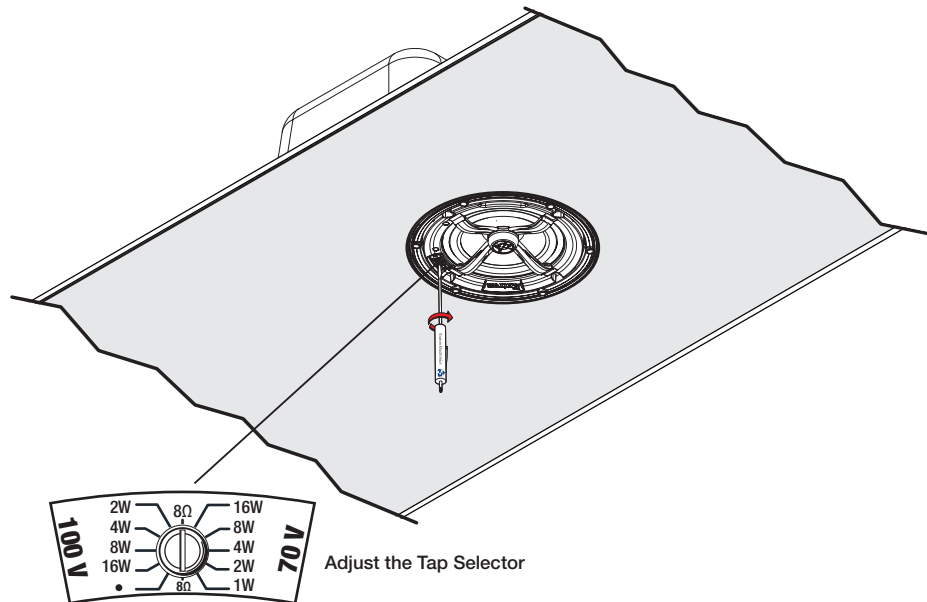

100 V
2W 8Ω 16W
4W   8W
8W   4W
16W   2W
•   8Ω 1W
70 V

Adjust the Tap Selector

Figure 42. Adjusting the Rotary Tap Selector

10. **Install the grille** — Position the outer perimeter of the grille into the groove of the speaker baffle. Six magnets pull the grille securely into place.
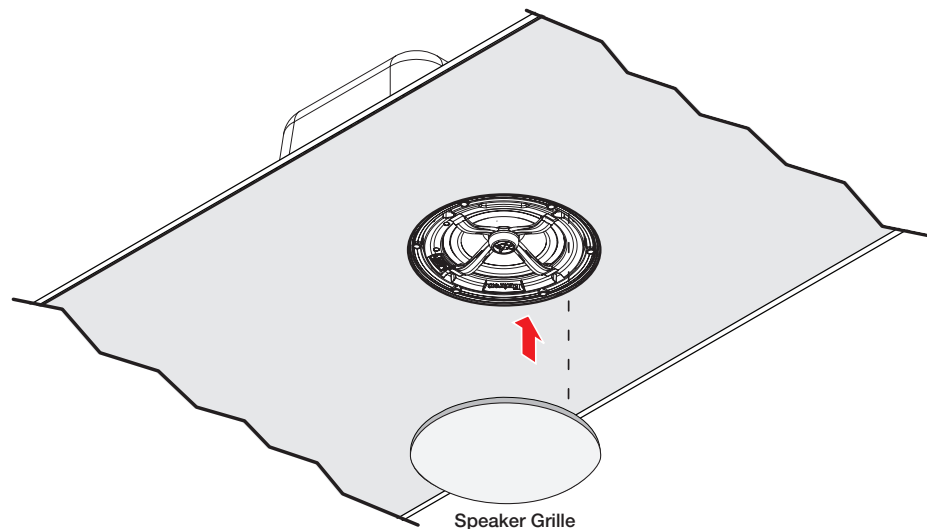

Speaker Grille

Figure 43. Installing the Speaker Grille

> **NOTE:** Grille hooks are provided for removal of the grille after installation.

Installing the CS 120P in a Hard Ceiling

If you are installing the CS 1226T in a hard ceiling (having no ceiling tiles), with the ceiling structure in place, install the CS 120P:

- It is the responsibility of the installer to identify a suitable mounting location and provide the mounting hardware.

- The CS 120P must be mounted as close as possible to the upper surface of the ceiling material.

- The lip of the CS 120P should protrude into the hole cut for the speaker.

- Do not leave a gap between the CS 120P and the ceiling material.

NOTE: Installation in this type of ceiling must be done while access to the ceiling is still possible.

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Extron Electronics warrants this product against defects in materials and workmanship for a period of three years from the date of purchase. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron Electronics will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

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