User Guide

Speakers

SF 26CT LP

SoundField® XD Low-Profile 6.5" Two-Way Ceiling Speaker with 4.2" Composite Back Can

SoundField XD

Extron

68-3443-01 Rev. A
06 20

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Safety Instructions • English

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NOTE: For more information on safety guidelines, regulatory compliances, EMI/EMF compatibility, accessibility, and related topics, go to http://www.extron.com/68-290-01 on the Extron website.

Conventions Used in this Guide

Notifications

The following notifications are used in this guide:

WARNING: Potential risk of severe injury or death.
AVERTISSEMENT : Risque potentiel de blessure grave ou de mort.

ATTENTION:
- Risk of property damage.
- Risque de dommages matériels.

NOTE: A note draws attention to important information.

Specifications Availability

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

Extron Glossary of Terms

A glossary of terms is available at http://www.extron.com/technology/glossary.aspx.

Contents

Introduction 1

- Overview 1
- Features 1
- Application Example 2

Installation in a Suspended Ceiling (Single Installer) 3

- Installation Considerations 3
- Preparing the Installation Location 3
- Configuring the Speaker 5
- Mounting the Speaker 9

Installation in a Suspended Ceiling (Division of Labor) 13

- Getting Started 13
- Preparing the Installation Location 14
- Configuring the Speaker 14
- Mounting the Speaker Enclosure 15

Installation in a Hard Ceiling 20

- Preparing the Installation Location 20
- Configuring the Speaker 20
- Mounting the Speaker 21

Reference Information 24

- Painting the Speaker Grille 24
- Troubleshooting: Signal Test Points 25
  - Testing Source Signal (All Configurations) 25
  - Testing the Impedance (Loop-Through Configuration Only) 25

Introduction

This section gives an overview of the Extron SF 26CT LP SoundField® Low Profile XD 2-way speaker. Topics include:

- **Overview**
- **Features**
- **Application Example**

Overview

The Extron SoundField® XD model **SF 26CT LP** is a low profile 6.5" (165 mm) two-way ceiling speaker featuring a 4.2" (107 mm) deep composite back can for use in restricted height plenum rated ceiling environments. The driver complement includes a 6.5" (165 mm) woofer coupled to a 3/4" (19 mm) ferrofluid-cooled dome tweeter. The SF 26CT LP offers both direct 8 ohm and 70/100 volt operation with a behind-the-grille, six position power selector switch. With high impedance taps at 8, 16, 32, and 64 watts, the SF 26CT LP is ideal for applications that require a high power distributed speaker system in smaller plenum spaces.

Features

- **6.5" (165 mm) long throw woofer**
- **3/4" (19 mm) ferrofluid-cooled dome tweeter**
- **4.2" (107 mm) deep composite back can for plenum environments**
- **Frequency range: 85 Hz to 22 kHz, -10 dB, half space**
- **111° conical dispersion**
- **65 watts continuous pink noise, 130 watts continuous program**
- **8 ohm direct or 70/100 volt operation on a 6 position, behind-the-grille selector**
  - 8 ohm direct
  - 70 volt: 64, 32, 16, and 8 watt selectable
  - 100 volt: 64, 32, and 16 watt selectable
- **Magnetically attached grille with a thin bezel for a refined appearance**
- **Grille and bezel are white and can be painted to match any environment**
- **Separable back can and baffle supports both single-trade and division-of-labor applications**
- **Modular V-rail and folding C-ring kit included**
- **Opti-Torque indicator rings prevent overtightening of locking arm screws**
- **Four locking arms for quick ceiling installation**
- **UL 2043 plenum rated enclosure**
- **UL 1480 listed for safety**
- **5-year parts and labor warranty**

Application Example

The application diagram below shows one way to configure a system using the SF 26CT LP.

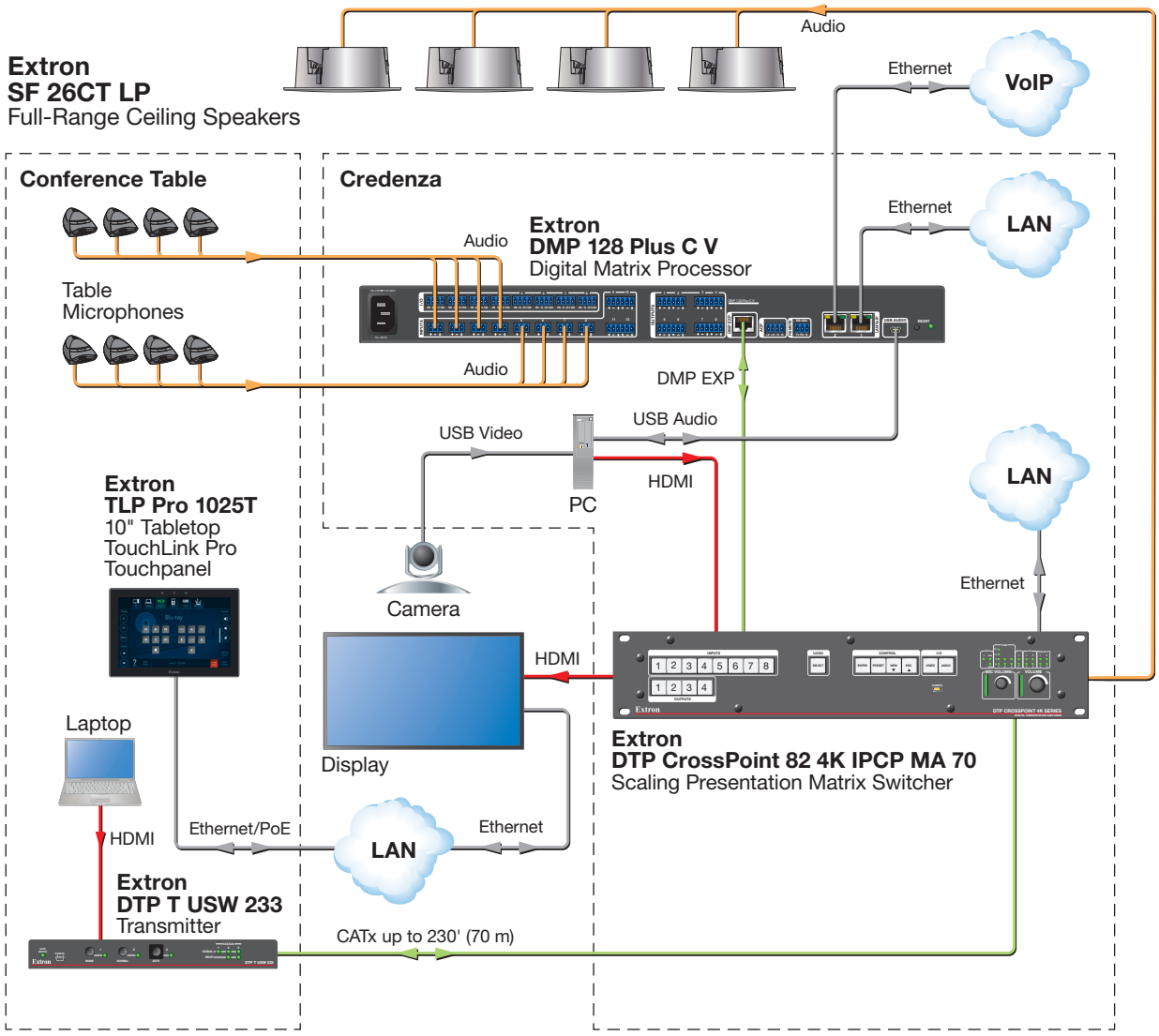


Figure 1. SF 26CT LP Application Diagram

Installation in a Suspended Ceiling (Single Installer)

If a single installer is installing the SF 26CT LP speaker system, follow the steps in this section. Topics in this section include:

- **Installation Considerations**
- **Preparing the Installation Location**
- **Configuring the Speaker**
- **Mounting the Speaker**

Installation Considerations

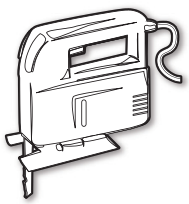
⚠ WARNING: Potential risk of severe injury. Installation and service must be performed by authorized personnel only.

AVERTISSEMENT : Risque potentiel de blessure grave ou de mort. L'installation et l'entretien doivent être effectués par le personnel autorisé uniquement.

- 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.

Preparing the Installation Location

1. Power down all attached devices before proceeding.
2. Ensure that there is sufficient clearance above the ceiling tile for the unit to be installed.
3. Cut a hole for the 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 around the cutout template.
   e. Cut out the circle traced on the ceiling tile.
   f. Replace the tile in the ceiling.



4. Attach two V-rails and one C-ring across the tile above the hole cut in step 3, as shown below:

   a. Assemble two V-rail half sections as follows: fit the tab of one end into the slot of the other end, then open the V-rail until it locks together (see figure 2). Repeat this procedure for the other V-rail.

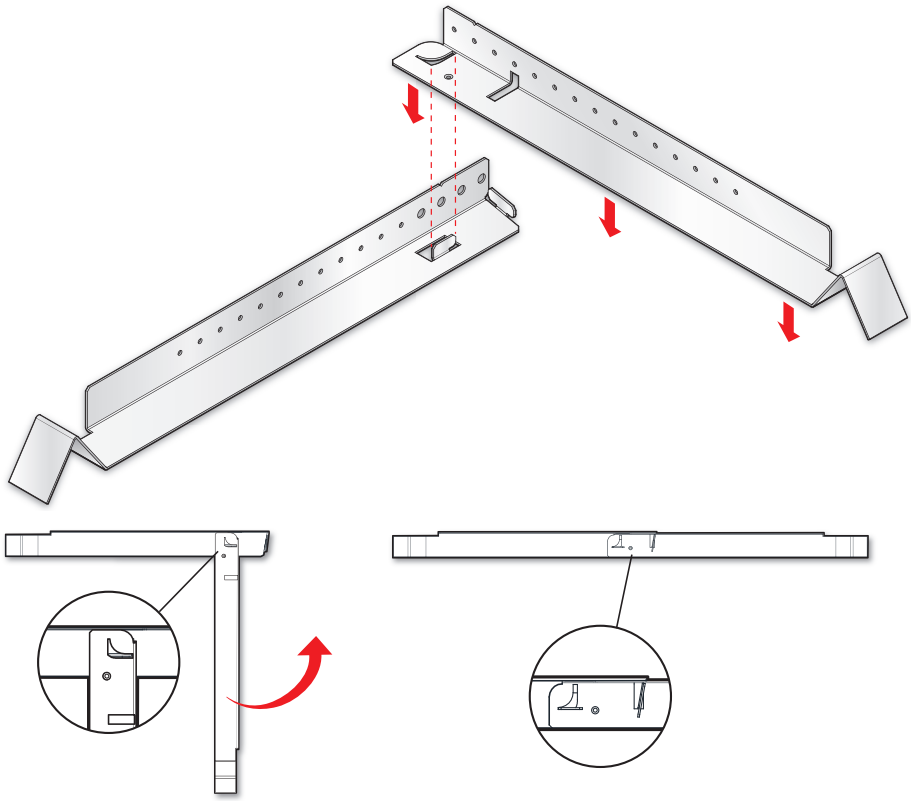


Figure 2. Assembling the V-rails

   b. Remove a ceiling tile adjacent to the tile with the hole.

   c. Place both assembled V-rails on the cut ceiling tile and position them equally on either side of the hole. The ends of the V-rails go over the ceiling grid.

   d. Position the C-ring assembly on the two V-rails so that the C-ring is centered over the hole, as shown below.

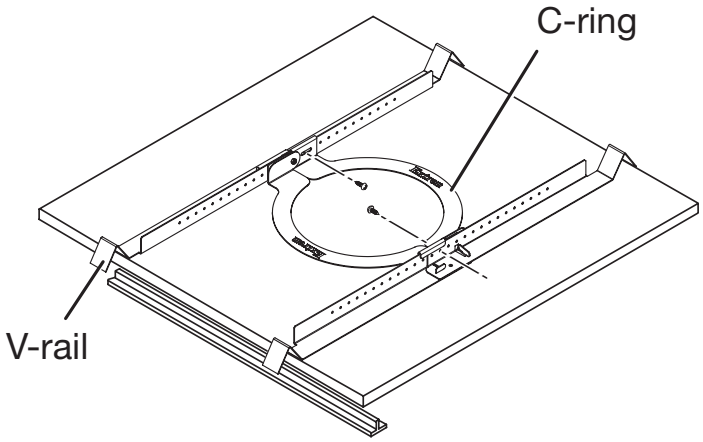


Figure 3. Positioning the C-ring Assembly on the V-rails

   e. Secure the C-ring to the V-rails using two screws.

5. **Route the speaker wires** through the ceiling tile hole.

Configuring the Speaker

1. **Configure the locking arms for thicker ceilings (optional)**.
   Four speaker locking arms are used to secure the speaker to ceiling tiles up to 2.25 inches (5.72 cm) thick. The locking arms are equipped with removable inserts to accommodate ceiling tiles up to 1.5 inches (3.81 cm) thick. For ceiling tiles thicker than 1.5 inches, the locking arm inserts must be removed.

   To remove the inserts:

   a. Using a screwdriver, rotate the locking arm so that the insert can be accessed.

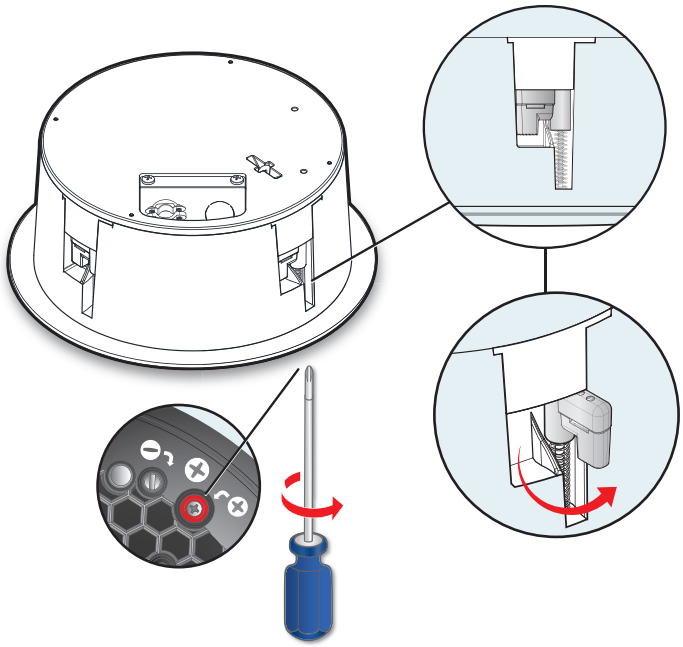


Figure 4. Accessing the Locking Arm Insert

   b. Use a small screwdriver to pry and separate the insert from the locking arm, as shown below.

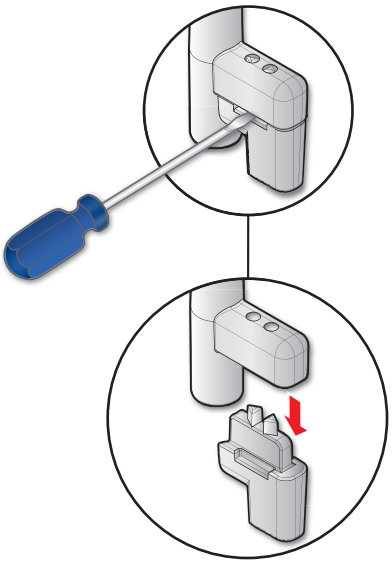


Figure 5. Prying Off the Locking Arm Insert

c. Repeat steps a. and b. for the remaining three locking arms.

d. Rotate all four locking arms back into the speaker.

2. **Configure the cable/conduit access plate and captive screw connector**: Loosen the three access plate screws and remove the plate before wiring the speaker.

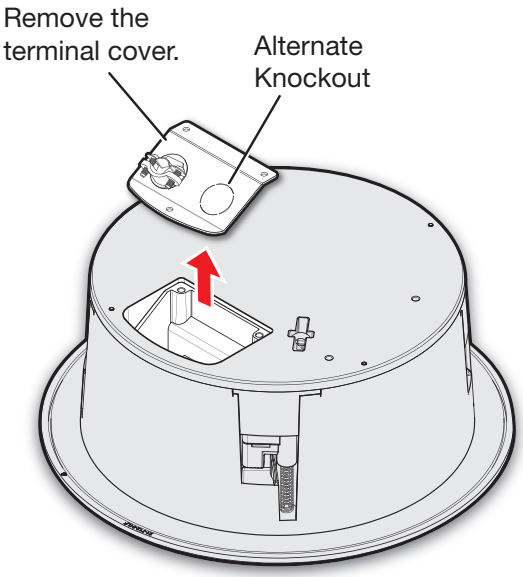


Figure 6. Removing the Cable/Conduit Access Plate

3. **Configure the access plate**:
   - **If not using conduit:** Route the speaker wires through the cable clamp.
   - **If using conduit:** Remove the cable clamp and install the conduit into the plate opening. Secure the conduit to the plate with the locking nut and pull the speaker wires from the conduit.

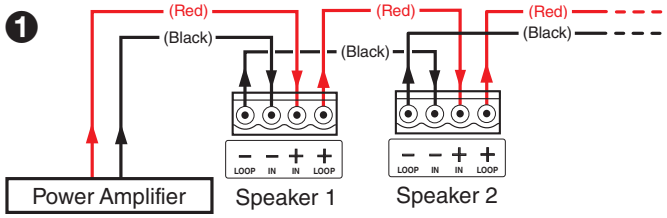
     NOTE: The cover plate has an alternate hole available by removing the knockout.

4. Strip 0.2 inch (5 mm) from the wire ends.

5. Attach the speaker wires to the captive screw connector depending on the configuration, using one of the three methods illustrated in figure 7.

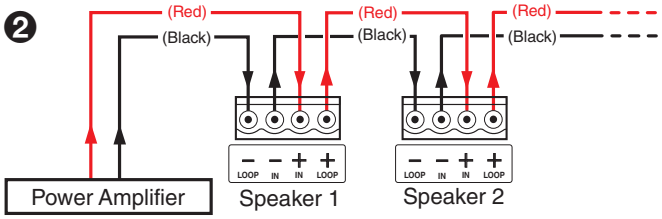
Wiring Multiple Speakers Using Loop-through
When a chain of speakers is wired this way, disconnecting one speaker removes power from all downstream speakers.

❶



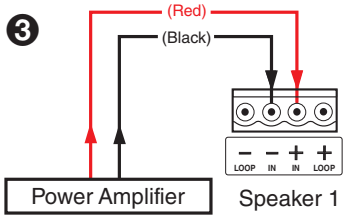
Wiring Multiple Speakers in Parallel
When a chain of speakers is wired this way, disconnecting one speaker does not remove power from the remaining speakers in the chain.

❷



Wiring a Single Speaker

❸



Wire Gauge Table

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

Figure 7. Wiring Options with Wire Gauge Table

ATTENTION:

- Do not tin the wire leads before installing into the connector. Tinned wires are not as secure in the connector and could be pulled out.
- Ne pas étamer les conducteurs avant de les insérer dans le connecteur. Les câbles étamés ne sont pas aussi bien fixés dans le connecteur et pourraient être retirés.

- 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.
- Lors de la connexion de plusieurs enceintes en mode 8 ohm, assurez vous que le niveau d'impédance combinée ne soit pas équivalent à une valeur inférieure à l'impédance minimum de l'amplificateur.

6. Insert the captive screw plug into the four-pole receptacle of the speaker.
   - **Using a cable clamp on the access plate:**

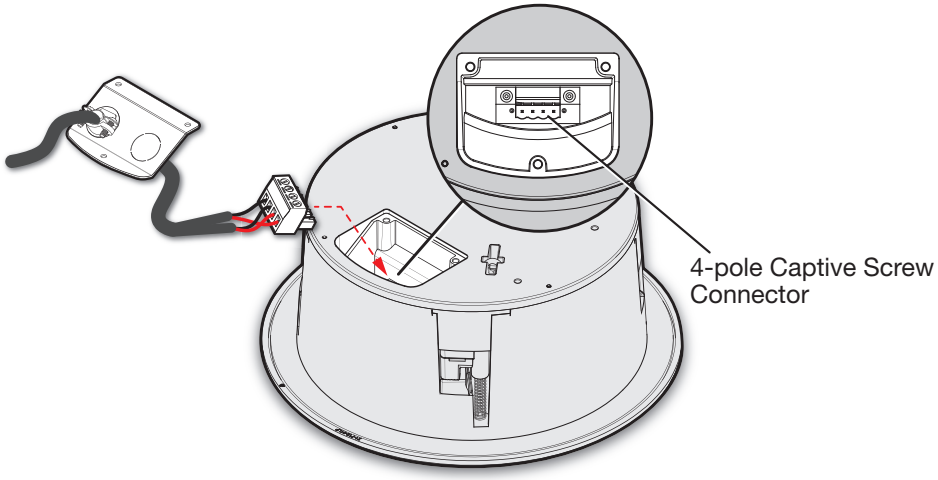


Figure 8. Using a Cable Clamp

   - **Using a conduit adapter on the access plate:**

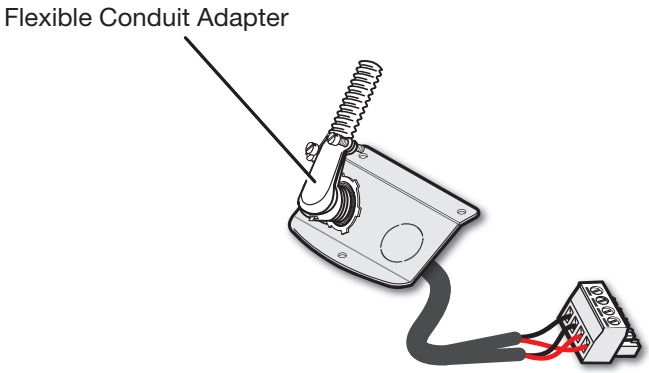


Figure 9. Using a Conduit Adapter

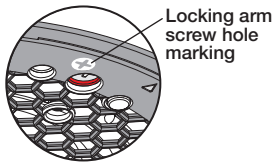
7. Replace the access plate and tighten the three retaining screws.
8. Tighten the cable clamp if it was used.

Mounting the Speaker

The speaker can be Installed into rigid material (mineral tile, gypsum board, sheetrock, etc.) or soft material, such as fiberglass.

1. Insert the speaker through the bottom of the hole in the ceiling tile that was cut in **step 3** on page 3 (`Preparing the Installation Location`) with the wires out of the way.
2. Clamp the speaker to the C-ring by using a Phillips screwdriver to tighten the four locking arms to the C-ring (see figure 10 and the Note below).

NOTE: The screw hole locations are marked on the front baffle with a Phillips-head screw symbol. Use these holes to tighten the locking arms.



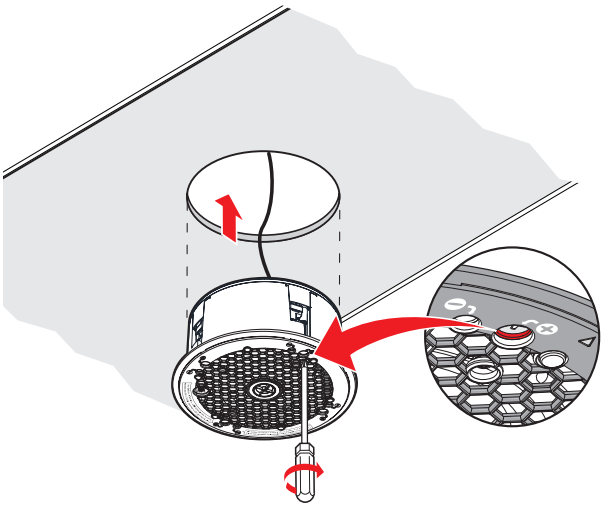


Figure 10. Clamping the Speaker to the C-ring

Tightening the Locking Arms into Rigid Material:

For rigid material use the Opti-Torque™ indicator ring as a tightening guide.

ATTENTION:

- To avoid damaging the speaker locking arms, do not overtighten the four screws.
- Ne pas trop serrer les quatre vis pour éviter d'endommager les bras de verrouillage de l'enceinte.

NOTE: Each of the four locking arm screws uses an Opti-Torque™ indicator ring. The indicator releases a red plastic ring onto the screwdriver once the screw is tightened to the correct torque. Stop tightening when this occurs to avoid overtightening the locking arms to the C-ring.

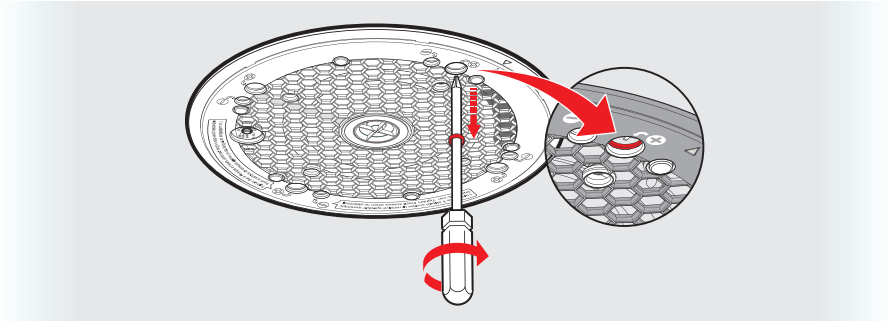


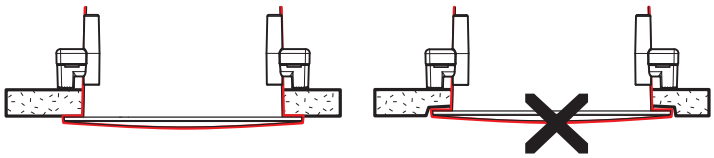
Figure 11. Stop Tightening When the Red Fing Falls

Tightening the locking arms into soft material:

Because fiberglass ceilings and other soft materials are not as rigid as mineral tiles and other hard materials, the Opti-Torque indicator ring must not to be used as a tightening guide due to the risk of overtightening.

ATTENTION:

- To avoid damaging or deforming soft ceiling material, tighten the locking arms to secure the speaker, but stop tightening short of causing the speaker to deform the flat mounting surface of the ceiling, as seen from below.
- Afin de ne pas endommager ni d'altérer un plafond souple, serrez les bras de verrouillage pour sécuriser l'enceinte, en veillant cependant à ce que l'unité ne cause l'altération de la surface de montage plane du plafond, comme illustré ci-dessous.



3. If required, attach a secondary support line.
   a. Connect a secondary support line to the support loop on the back of the speaker enclosure, as shown here.

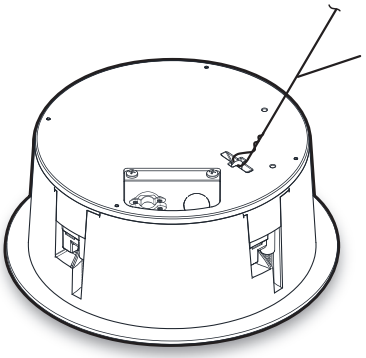


Figure 12. Connecting a Secondary Support Line

ATTENTION:

- Do not allow any slack in the secondary support line.
- Ne laissez pas de mou au niveau du filin de sécurité secondaire.

b. Replace the adjacent ceiling tile that was removed in **step 4b** on page 4.

4. Set the rotary tap selector switch to the appropriate setting using a small screwdriver.

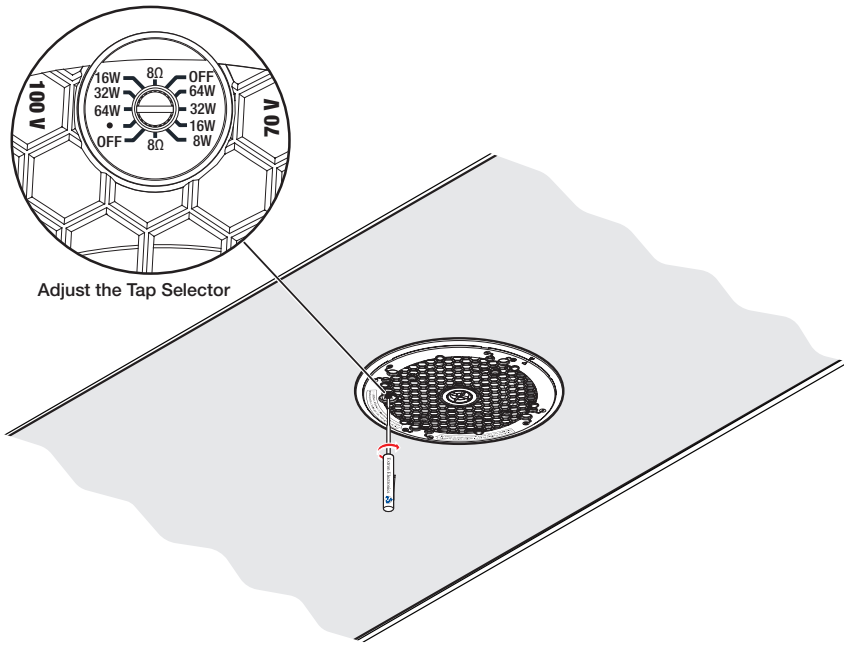


Figure 13. Setting the Rotary Tap Selector Switch

ATTENTION:

- When setting the taps for a distributed (high impedance) system, **do not** tap the system above the rated power of the amplifier.
- Lors de la mise en place des capteurs pour un système distribué (haute impédance), n'exploitez pas le système au delà du niveau d'alimentation de l'amplificateur.

- 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.
- Lors de la connexion de plusieurs enceintes en mode 8 ohm, assurez vous que le niveau d'impédance combinée ne soit pas équivalent à une valeur inférieure à l'impédance minimum de l'amplificateur.

5. Install the grille. Position the grille so that it covers the baffle of the speaker. Six small magnets secure the grille in place.

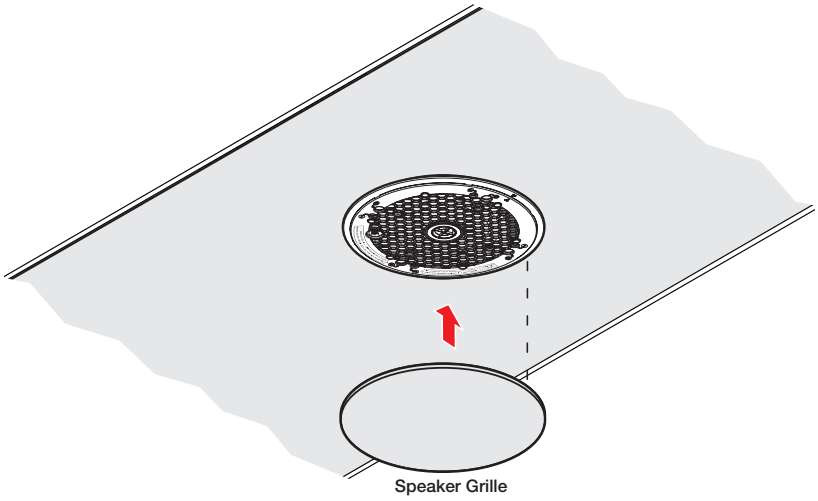


Figure 14. Installing the Grille

NOTE: Specific test points can be used to troubleshoot speaker system problems. Should problems be encountered, please see **Troubleshooting: Signal Test Points** on page 25.

Installation in a Suspended Ceiling (Division of Labor)

For a division of labor installation, follow the steps in this section. In a division of labor installation, low-voltage contractors first install the speaker back can enclosure (construction rough-in phase). After the back can has been installed, the second phase of the installation can begin by installing the speaker assembly to the back can.

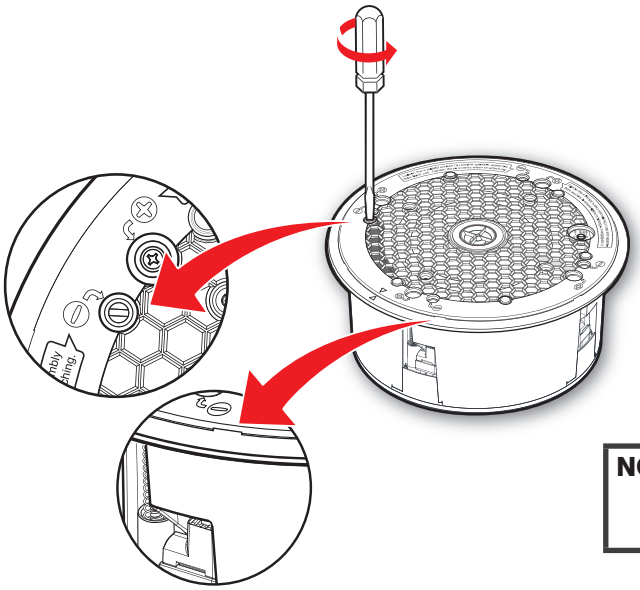
Topics in this section include:

- **Getting Started**
- **Preparing the Installation Location**
- **Configuring the Speaker**
- **Mounting the Speaker**

Getting Started

1. Using a flat head screwdriver, completely loosen the four screws holding the speaker assembly to the back can enclosure from the speaker, as shown in figure 15 below.

NOTE: The screws are not removable. They unscrew completely, but do not pull out.



NOTE: Notches are provided to help pry the speaker assembly from the back can.

Figure 15. Unscrewing the Speaker Assembly From the Back Can

2. Carefully separate the speaker assembly from the back can, as shown in figure 16.

NOTE: Disconnect the speaker wires from the speaker assembly before completely separating the speaker assembly from the back can.

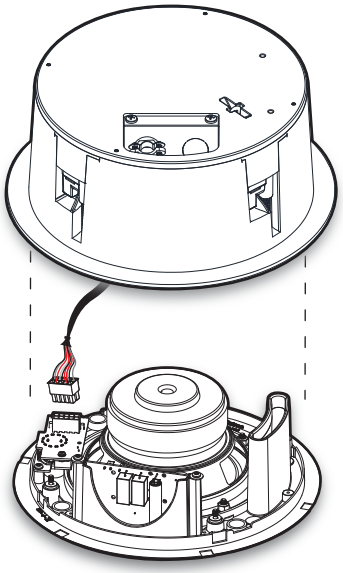


Figure 16. **Separating the Speaker Assembly from the Back Can**

3. **Repeat steps 1 and 2 for each speaker in the system** and distribute the components to the appropriate installers.

Preparing the Installation Location

Follow the steps in **Preparing the Installation Location** on page 3.

Configuring the Speaker

Follow the steps in **Configuring the Speaker** on page 5.

Mounting the Speaker Enclosure

1. Mount the speaker back can enclosure.
   a. Insert the back can through the bottom of the hole in the ceiling tile that was cut with the wires out of the way.

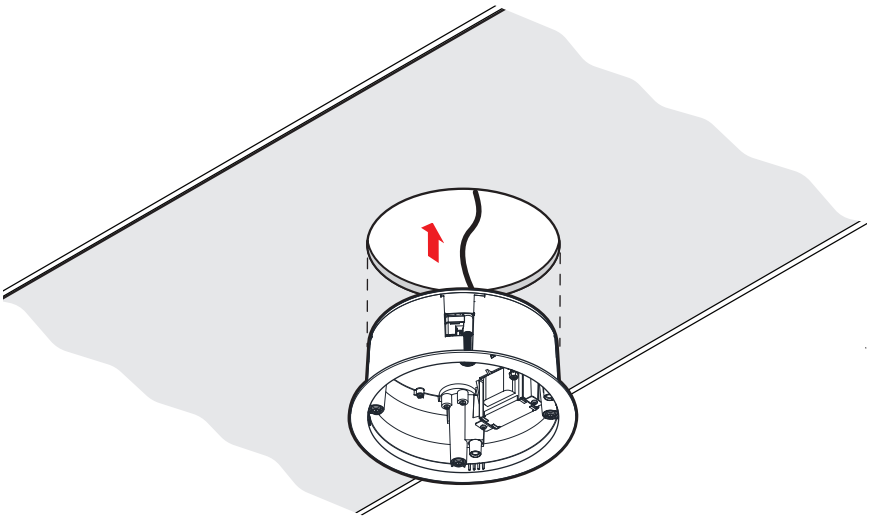


Figure 17. Inserting the Speaker Back Can

   b. Clamp the back can to the C-ring by using a Phillips screwdriver to tighten the four locking arms to the C-ring.

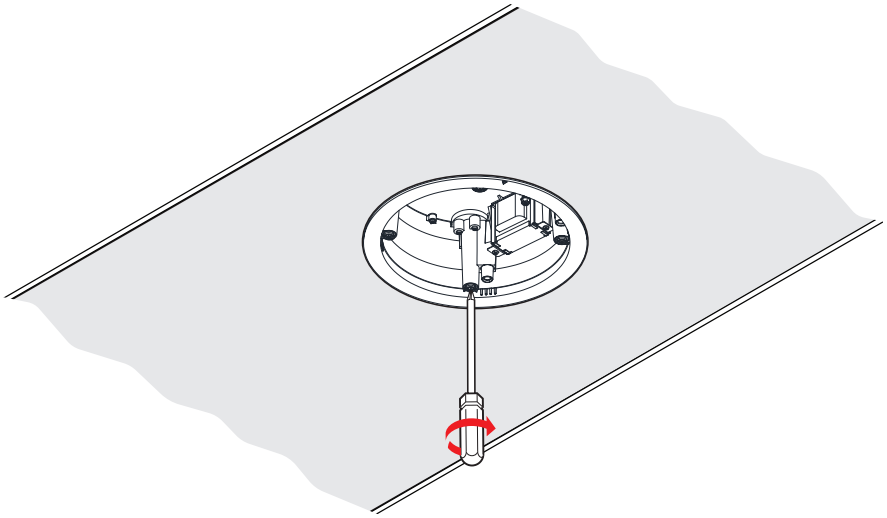


Figure 18. Tightening the Locking Arms

Tightening the locking arms into rigid material:

For rigid material use the Opti-Torque™ indicator ring as a tightening guide.

ATTENTION:

- To avoid damaging the locking arms, do not overtighten the four screws.
- Ne pas trop serrer les quatre vis pour éviter d'endommager les bras de verrouillage.

NOTE: Each of the four locking arm screws uses an Opti-Torque™ indicator ring. The indicator releases a red plastic ring onto the screwdriver once the screw is tightened to the correct torque. Stop tightening when this occurs to avoid overtightening the locking arms to the C-ring.

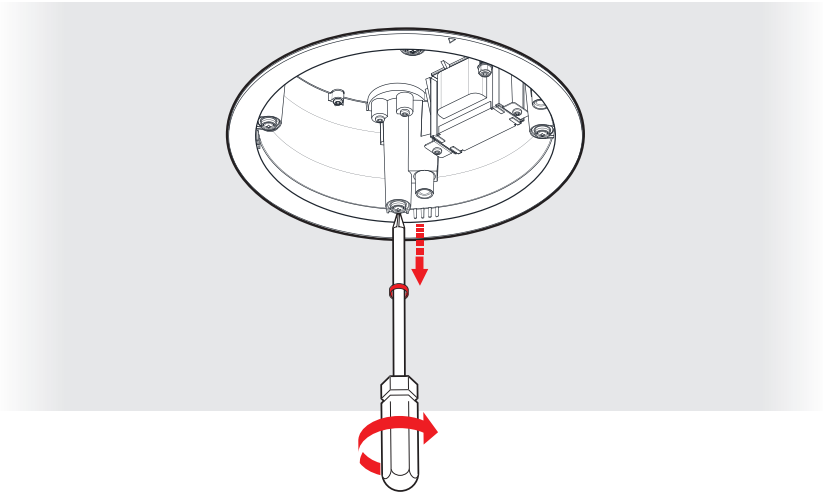


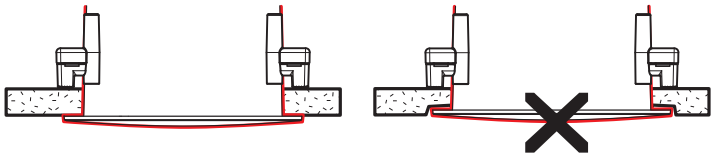
Figure 19. Stop Tightening When the Red Ring Falls

Tightening the locking arms into soft material:

Because fiberglass ceilings and other soft materials are not as rigid as mineral tiles and other hard materials, the Opti-Torque indicator ring must not be used as a tightening guide due to the risk of overtightening.

ATTENTION:

- To avoid damaging or deforming soft ceiling material, tighten the locking arms to secure the speaker, but short of causing the speaker to deform the flat mounting surface of the ceiling, as seen from below.
- Afin de ne pas endommager ni d'altérer un plafond souple, serrez les bras de verrouillage pour sécuriser l'enceinte, en veillant cependant à ce que l'unité ne cause l'altération de la surface de montage plane du plafond, comme illustré ci-dessous.



2. If required, attach a secondary support line.

   a. Connect a secondary support line to the support loop on the the back of the back can, as shown here.

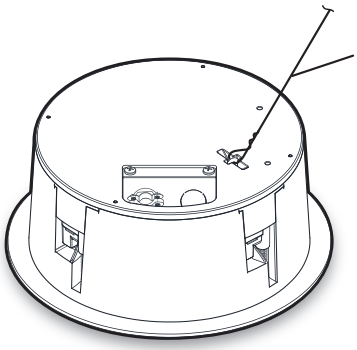


Figure 20. Connecting a Secondary Support Line

ATTENTION:

- Do not allow any slack in the secondary support line.
- Ne laissez pas de mou au niveau du filin de sécurité secondaire.

   b. Replace the adjacent ceiling tile that was removed in **step 4b** on page 4.

3. Repeat steps 1 and 2 for each speaker being installed.

4. Attach the speaker assembly to the back can enclosure.

   a. Connect the speaker wires from the back can enclosure to the speaker assembly.

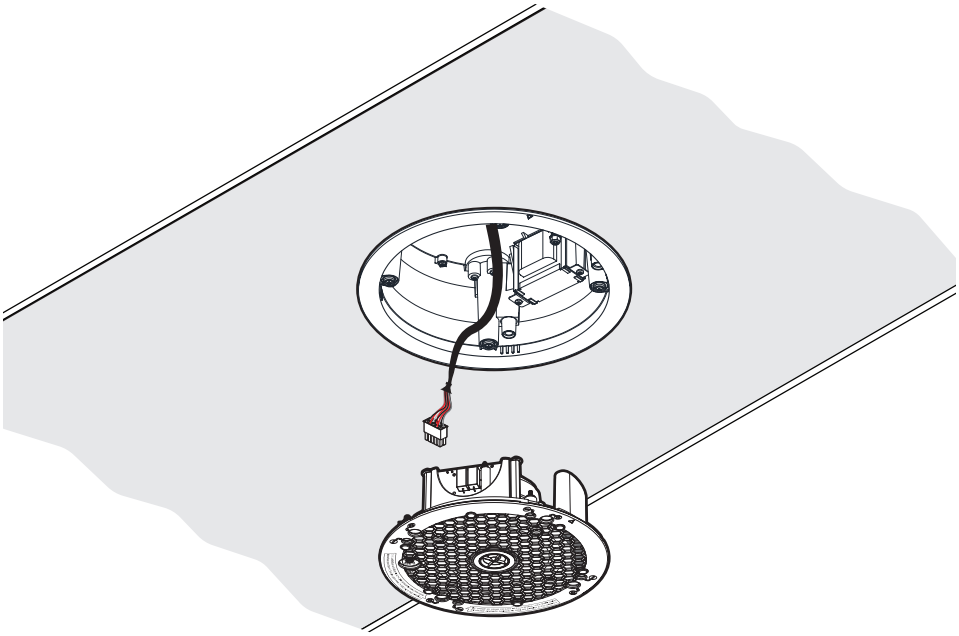


Figure 21. Connecting Speaker Wires to the Speaker Assembly

   b. Rotate the speaker assembly so that the white arrows on the back can enclosure and the speaker assembly are aligned with each other, and insert the speaker assembly into the back can. Make sure that the speaker wires do not get in the way or become pinched.

c. Using a flat head screwdriver, tighten the four screws that attach the speaker assembly to the back can.

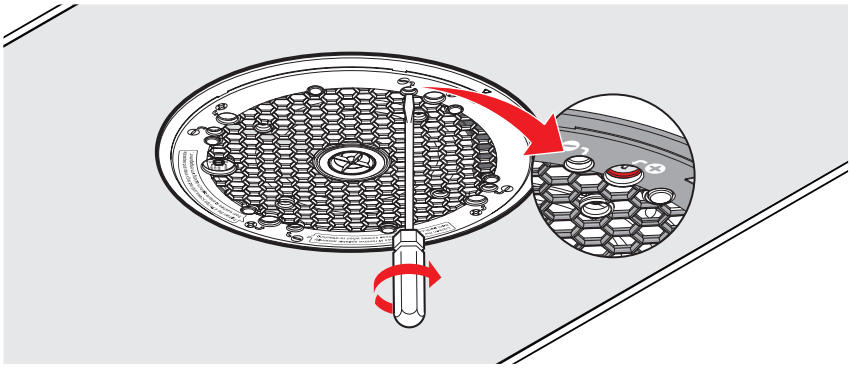


Figure 22. Attaching the Speaker to the Back Can

5. Set the rotary tap selector switch to the appropriate setting using a small screwdriver (see figure 22).

ATTENTION:

- When setting the taps for a distributed (high impedance) system, **do not** tap the system above the rated power of the amplifier.
- Lors de la mise en place des capteurs pour un système distribué (haute impédance), n'exploitez pas le système au delà du niveau d'alimentation de l'amplificateur.

- 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.
- Lors de la connexion de plusieurs enceintes en mode 8 ohm, assurez vous que le niveau d'impédance combinée ne soit pas équivalent à une valeur inférieure à l'impédance minimum de l'amplificateur.

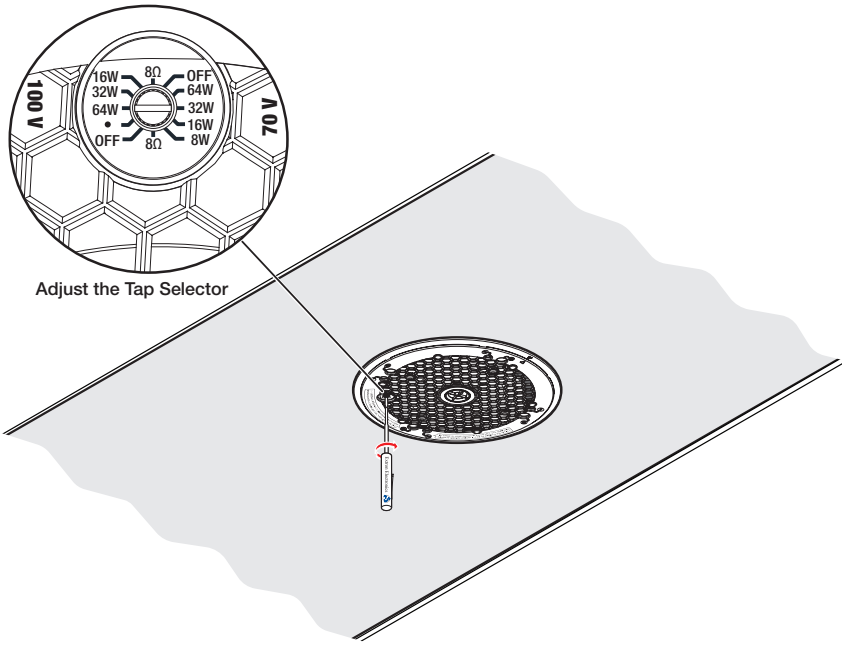


Figure 23. Setting the Rotary Tap Selector Switch

6. Install the grille. Position the grille so that it covers the baffle of the speaker. Six small magnets secure the grille in place.

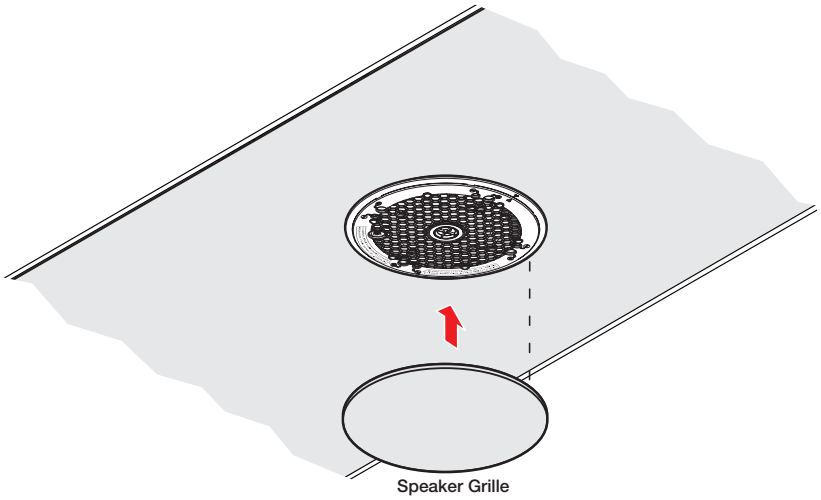


Figure 24. Installing the Grille

NOTE: Specific test points can be used to troubleshoot speaker system problems. Should problems be encountered, please see **Troubleshooting: Signal Test Points** on page 25.

Installation in a Hard Ceiling

To install the SF 26CT LP in a hard ceiling (having no ceiling tiles), with the ceiling structure in place, follow the steps in this section.

Topics in this section include:

- **Preparing the Installation Location**
- **Configuring the Speaker**
- **Mounting the Speaker**

Preparing the Installation Location

1. Power down all attached devices before proceeding.
2. Cut a hole for the speaker. Use the provided cutout template to outline the hole to be cut in the ceiling as described below.
   a. Mark the location on the ceiling where the center of the speaker will be placed.
   b. Position the center hole of the cutout template directly over the center mark.
   c. Trace a circle around the cutout template.
   d. Cut out the traced circle.
3. Fold one C-ring assembly in half and insert it through the hole in the ceiling.
4. Unfold the C-ring and center it over the hole with the flat side down.

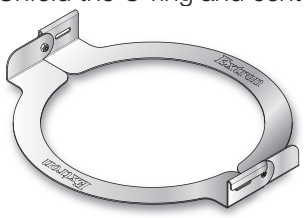


Figure 25. Installing the C-ring

5. Route the speaker wires through the ceiling hole.

Configuring the Speaker

Follow the steps in **Configuring the Speaker** on page 5.

Mounting the Speaker

1. If required, attach a secondary support line. Connect a secondary support line to the support loop on the back of the speaker enclosure, as shown in figure 26.

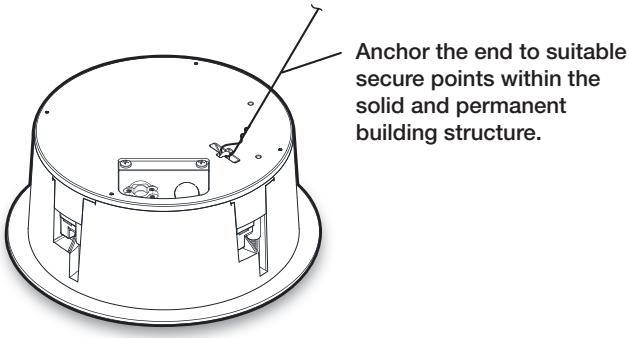


Figure 26. Connecting a Secondary Support Line

2. With the wires out of the way, insert the speaker through the bottom of the hole in the ceiling that was cut in **step 2** on the previous page.
3. Clamp the speaker to the C-ring by using a Phillips screwdriver to tighten the four locking arms to the C-ring.

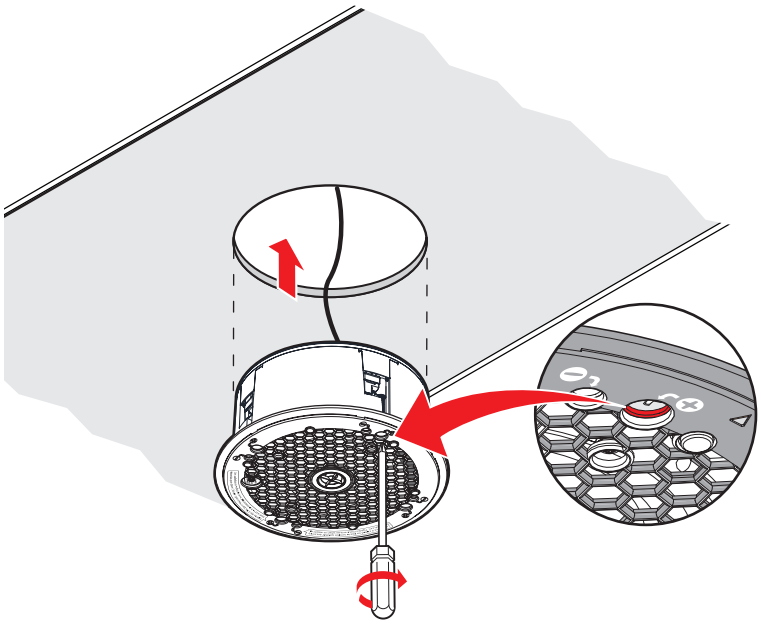


Figure 27. Clamping the Speaker to the C-ring

ATTENTION:

- To avoid damaging the locking arms, do not overtighten the four screws.
- Ne pas trop serrer les quatre vis pour éviter d'endommager les bras de verrouillage.

NOTE: Each of the four locking arm screws uses an Opti-Torque™ indicator ring. The indicator releases a red plastic ring onto the screwdriver once the screw is tightened to the correct torque. Stop tightening when this occurs to avoid overtightening the locking arms to the C-ring.

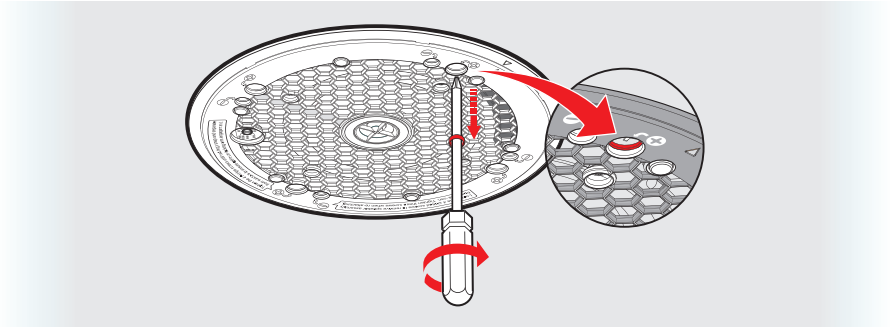


Figure 28. Stop Tightening When the Red Ring Falls

4. Set the rotary tap selector switch to the appropriate setting using a small screwdriver (see **figure 29** on the next page).

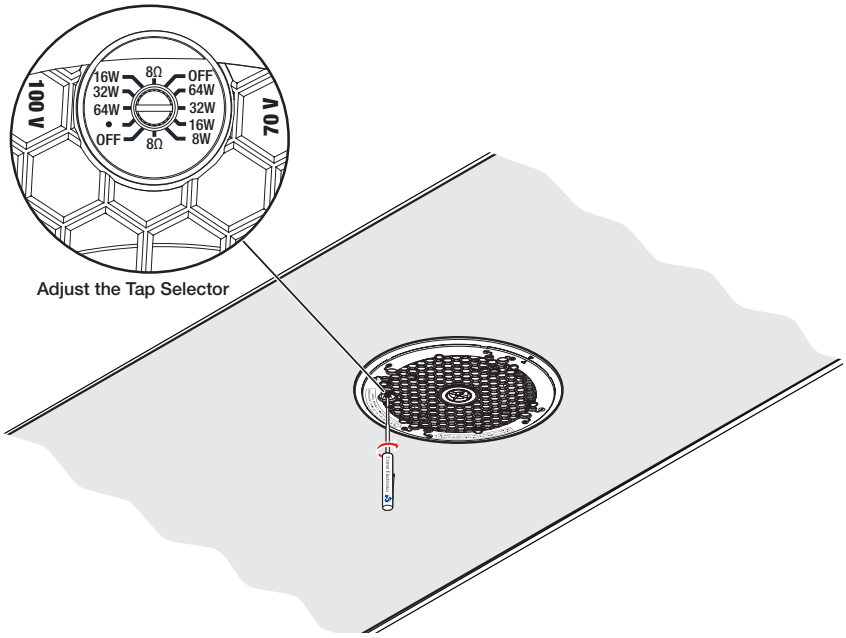


Figure 29. Setting the Rotary Tap Selector Switch

ATTENTION:

- When setting the taps for a distributed (high impedance) system, **do not** tap the system above the rated power of the amplifier.
- Lors de la mise en place des capteurs pour un système distribué (haute impédance), n'exploitez pas le système au delà du niveau d'alimentation de l'amplificateur.

- 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.
- Lors de la connexion de plusieurs enceintes en mode 8 ohm, assurez vous que le niveau d'impédance combinée ne soit pas équivalent à une valeur inférieure à l'impédance minimum de l'amplificateur.

5. Install the grille. Position the grille so that it covers the baffle of the speaker. Six small magnets secure the grille in place.

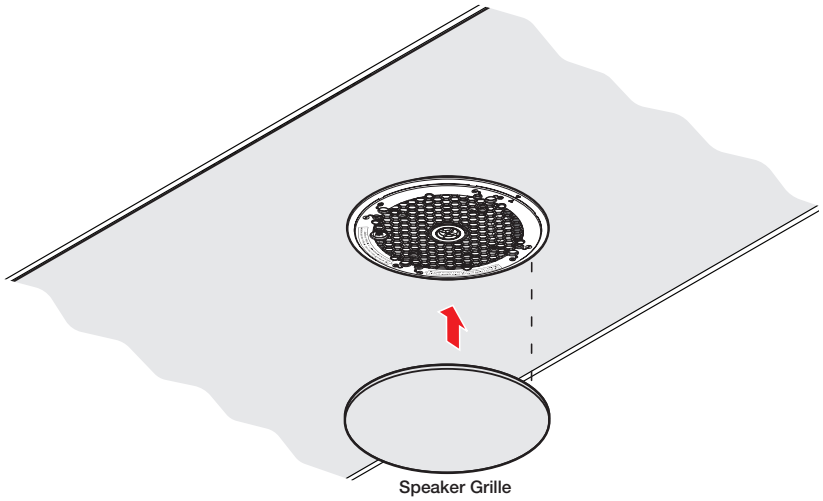


Figure 30. Installing the Speaker Grille

NOTE: Specific test points can be used to troubleshoot speaker system problems. Should problems be encountered, please see **Troubleshooting: Signal Test Points** on page 25.

Reference Information

This section covers the following topics:

- **Painting the Speaker Grille**
- **Troubleshooting: Signal Test Point**

Painting the Speaker Grille

The speaker grille can be painted using spray paint. Ensure that the spray paint is plastic friendly and adheres to both metal and plastic.

NOTE: Extron is not responsible for any alterations to the original paint.

To paint the grille:

1. Remove the grille from the speaker.

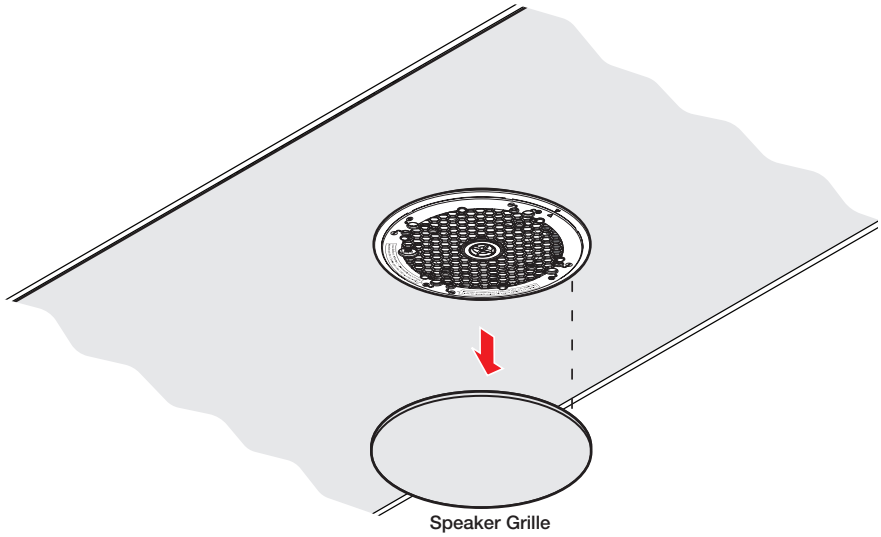


Figure 31. Removing the Speaker Grille

2. Remove and set aside the scrim from the back side of the grille.
3. Spray paint the front side of the grille.

NOTES:

- Do not paint the back side of the grille.
- Apply an even coat across the entire front surface.
- Be sure not to clog the grille holes.

4. Wait for the paint to dry.
5. Reattach the scrim to the back of the grille.
6. Reattach the grille to the speaker.

Troubleshooting: Signal Test Points

The following signal test points can be used to troubleshoot speaker system problems.

Testing Source Signal (All Configurations)

The source signal can be tested by connecting to the inner **+** (IN) and **–** (IN) terminals of the captive screw connector.

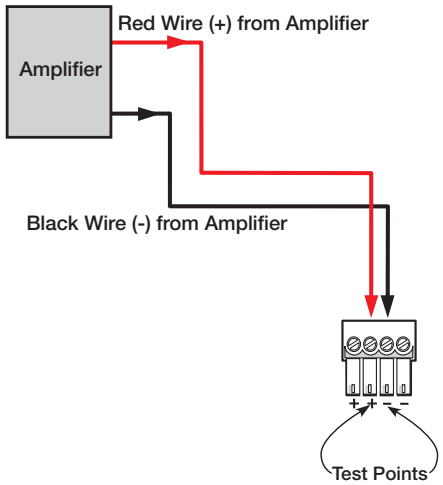


Figure 32. Signal Test Points — Parallel Configuration

Testing the Impedance (Loop-Through Configuration Only)

The impedance of the speakers downstream of the one being tested can be measured while the system is on. To do this, connect to the outer (LOOP) terminals of the captive screw connector, as shown in figure 33 below.

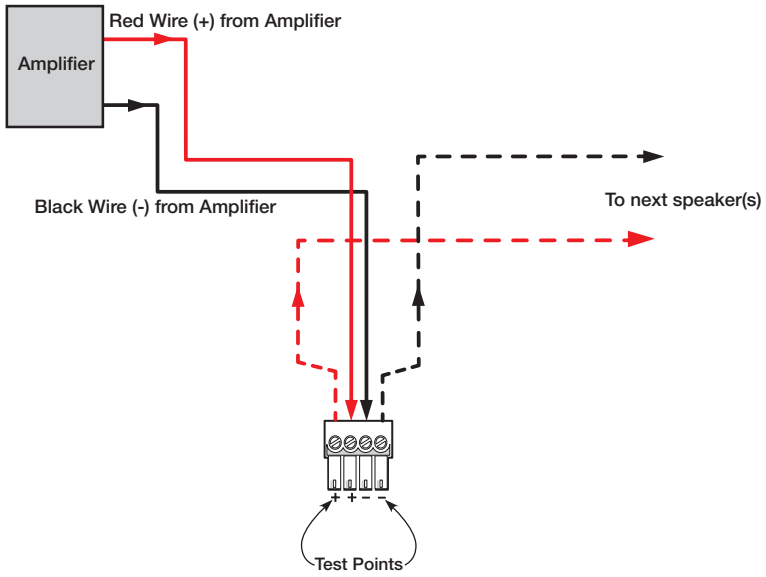


Figure 33. Impedance Test Points — Loop-through Configuration

Extron Warranty

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:

USA, Canada, South America, and Central America:
Extron Electronics
1230 South Lewis Street
Anaheim, CA 92805
U.S.A.

Asia:
Extron Asia Pte Ltd
135 Joo Seng Road, #04-01
PM Industrial Bldg.
Singapore 368363
Singapore

Japan:
Extron Electronics, Japan
Kyodo Building, 16 Ichibancho
Chiyoda-ku, Tokyo 102-0082
Japan

Europe:
Extron Europe
Hanzeboulevard 10
3825 PH Amersfoort
The Netherlands

China:
Extron China
686 Ronghua Road
Songjiang District
Shanghai 201611
China

Middle East:
Extron Middle East
Dubai Airport Free Zone
F13, PO Box 293666
United Arab Emirates, Dubai

Africa:
Extron South Africa
South Tower
160 Jan Smuts Avenue
Rosebank 2196, South Africa

This Limited Warranty does not apply if the fault has been caused by misuse, improper handling care, electrical or mechanical abuse, abnormal operating conditions, or if modifications were made to the product that were not authorized by Extron.

NOTE: If a product is defective, please call Extron and ask for an Application Engineer to receive an RA (Return Authorization) number. This will begin the repair process.

USA:	714.491.1500 or 800.633.9876	**Asia**:	65.6383.4400
Europe:	31.33.453.4040 or 800.3987.6673	**Japan**:	81.3.3511.7655
Africa:	27.11.447.6162	**Middle East**:	971.4.299.1800

Units must be returned insured, with shipping charges prepaid. If not insured, you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the name of the person to contact in case there are any questions.

Extron Electronics makes no further warranties either expressed or implied with respect to the product and its quality, performance, merchantability, or fitness for any particular use. In no event will Extron Electronics be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron Electronics has been advised of such damage.

Please note that laws vary from state to state and country to country, and that some provisions of this warranty may not apply to you.