

BI-DIRECTIONAL SPEAKER

PJ-430W-AS

Thank you for purchasing TOA's Bi-Directional Speaker. Please carefully follow the instructions in this manual to ensure long, trouble-free use of your equipment.

1. SAFETY PRECAUTIONS

- Before installation or use, be sure to carefully read all the instructions in this section for correct and safe operation.
- Be sure to follow all the precautionary instructions in this section, which contain important warnings and/or cautions regarding safety.
- After reading, keep this manual handy for future reference.

! WARNING

Indicates a potentially hazardous situation which, if mishandled, could result in death or serious personal injury.

When Installing the Unit

- Refer all installation work to the dealer from whom the speaker was purchased. Installation work requires extensive technical knowledge and experience. The speaker may fall off if incorrectly installed, resulting in possible personal injury.
- Install the speaker only in a location that can structurally support the full weight of the unit and mounting bracket. Doing otherwise may result in the speaker falling down and causing personal injury and/or property damage.
- When installing the speaker in an outdoor or snow area, take appropriate measures to prevent snow from lying on the speaker. If the snow lies on it, the speaker may fall, causing personal injuries.
- Do not use other methods than specified to install the speaker. Extreme force is applied to the speaker and the speaker could fall off, possibly resulting in personal injuries.
- Use screws that are appropriate for the ceiling's material and structure. Failure to do so may cause the speaker to fall, resulting in material damage and possible personal injury.
- Ensure that all screws are securely tightened. If they are loose after installation, the speaker could fall down, possibly resulting in personal injury.
- Do not mount the speaker in locations exposed to constant vibration. The speaker or its mounts can be damaged by excessive vibration, potentially causing the speaker to fall, which could result in personal injury.
- Do not use anti-rust lubricant. If it contacts resin or rubber parts, they could deteriorate and cause the speaker to fall, possibly resulting in personal injury.

- Do not install the speaker in indoor swimming pools or such locations where liquid chemicals are used. The parts deteriorate if corroded, causing the speaker to fall, which could result in personal injury.

When the Unit is in Use

- If any of the following irregularities occurs, immediately switch off the amplifier's power, and inform the shop from where the speaker was purchased. Further using the speaker may result in fire or electric shock.
 - If you detect smoke or a strange smell coming from the speaker
 - If water or any metallic object gets into the speaker
 - If the speaker falls, or the speaker case breaks

! CAUTION

Indicates a potentially hazardous situation which, if mishandled, could result in moderate or minor personal injury, and/or property damage.

- To prevent a fire or electric shock, never open nor remove the speaker case. Refer all servicing to your nearest TOA dealer.

When Installing the Unit

- Avoid touching the speaker's sharp metal edge to prevent injury.
- To avoid electric shocks, be sure to switch off the amplifier's power when connecting speakers.

When the Unit is in Use

- Do not operate the speaker for an extended period of time with the sound distorting. Doing so may cause the speaker to heat, resulting in a fire.
- Do not stand or sit on, nor hang down from the speaker as this may cause it to fall down or drop, resulting in personal injury and/or property damage.
- Have the speaker checked periodically by the shop from where it was purchased. Failure to do so may result in corrosion or damage to the speaker or the mounts that could cause it to fall, possibly causing personal injury.

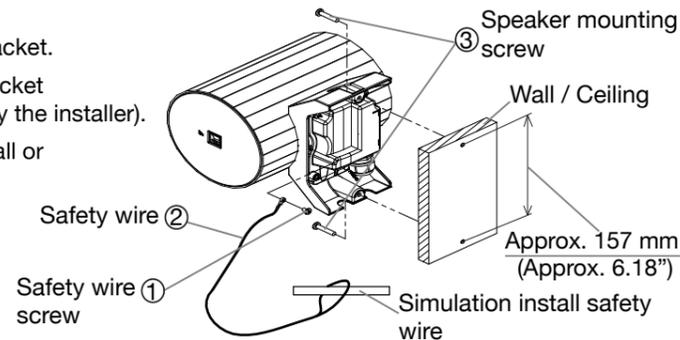
Step 7. Securely tighten the cable glands.

Note

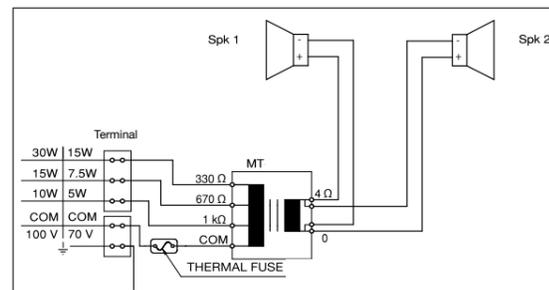
If loosely tightened, water or moisture may get inside the terminal cover.

4. INSTALLATION

- Step 1. Unscrew the screw from mounting bracket.
- Step 2. Fitting the safety wire to mounting bracket (the safety wire prepared separately by the installer).
- Step 3. Screw the Mounting bracket to the wall or the ceiling.



5. SCHEMATIC DIAGRAMS



6. SPECIFICATIONS

Rated input	30 W (100 V line), 15 W (70 V line)
Rated impedance	100 V line : 330 Ω (30 W), 670 Ω (15 W), 1 kΩ (10 W) 70 V line : 330 Ω (15 W), 670 Ω (7.5 W), 1 kΩ (5 W)
Sensitivity (SPL) Max. SPL	89 dB (1 W, 1 m) (500 Hz – 5 kHz, pink noise, 2 speakers) 103 dB (30 W, 1 m) (500 Hz – 5 kHz, pink noise, 2 speakers)
Frequency response	97 Hz – 20 kHz (Peak -20dB)
Environmental type	IP 44
Installation environmental	Indoor and outdoor installation
Speaker component	2x 10 cm (4 ") double cone-type
Operating temperature	-25 °C to +70 °C (13 °F to 158 °F)
Applicable cable size	Cable type : 0.65 – 0.125 mm (0.26 " – 0.49 ") Conductor : Solid wire or Stranded wire (7-core wire). No bridge connection : 0.8 – 6 mm ² (AWG18 – AWG10) for solid wire 0.8 – 4 mm ² (AWG18 – AWG12) for stranded wire Bridge connection : 0.8 – 2.1 mm ² (AWG18 – AWG14) for solid wire 0.8 – 1.8 mm ² (AWG18 – AWG15) for stranded wire
Cable connection	2-pins + 3-pins Screw terminal (ceramic), can be bridge connection
Finish	Cabinet, Mount bracket : Aluminum, white (RAL 9016 equivalent), paint Grille: Steel perforate, white (RAL 9016 equivalent), paint Terminal cover: ABS resin, white (RAL 9016 equivalent), paint
Dimensions	189 (H) x 178 (W) x 191 (D) mm (7.44 " x 7.01 " x 7.52 ")
Weight	3.5 kg (7.72lb)
Accessories	Terminal cover with Cable gland PGB 13.5-12 grey1 Speaker Mounting screw2

Notes

- The design and specifications are subject to change without notice for improvement.
- Reference axis: Axis is on the center of grill surface and perpendicular to the grill surface.
- Reference plane: Plane is on the grill surface and perpendicular to the reference axis.
- Horizontal plane: Plane is containing the reference axis and perpendicular to the reference plane.

2. GENERAL DESCRIPTION AND FEATURES

- The PJ-430W-AS is a bi-directional speaker designed for wall or ceiling installation in indoor and outdoor applications. The ceramic terminal block makes cable connections easy and allows bridge wiring.

This model features:

- 2 x 4" double cone speaker
- Ceramic Screw Terminal
- Rugged bracket included
- Aluminum alloy cabinet, Steel grille and ABS material terminal cover.
- Water proof according IP 44
- An extreme wide temperature range: -25°C to +70°C

Note

Do not dismantle the PJ-430W-AS for painting. Since the PJ-430W-AS is certified in the form of complete assembly by the above-mentioned standards, it does not meet these standards if dismantled. The rated power (impedance) is 30W (330Ω) for 100V line or 15W for 70V line.

3. WIRING AND CONNECTION

The terminal cover is not mounted to the speaker unit when shipped from the factory.

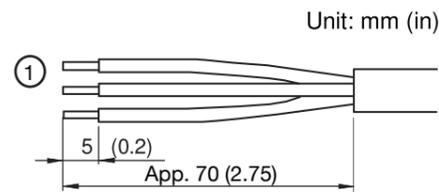
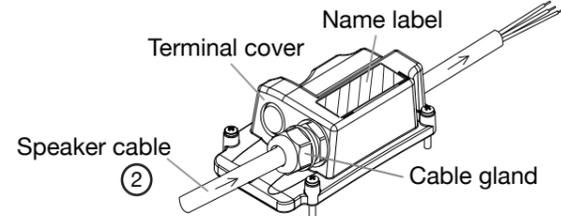
Note

To complete speaker installation, be sure to attach the terminal cover after finishing cable connections. If the unit is left without the terminal cover attached, water or moisture may get inside the speaker, causing the unit malfunction

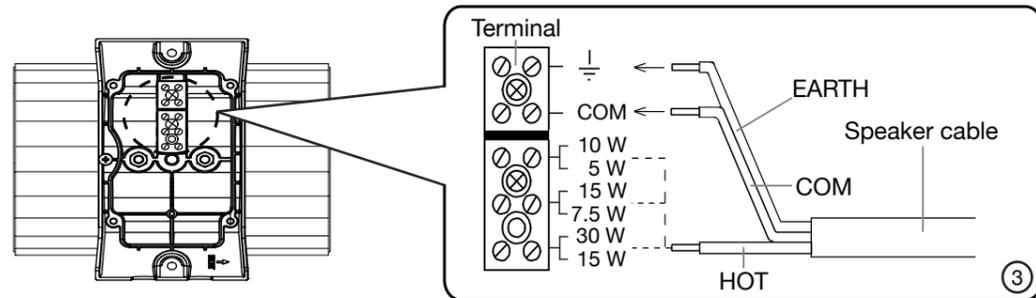
3.1. When No Bridge Connection is Required

Step 1. Strip the speaker cable jacket as shown at right.

Step 2. Run the speaker cable through the cable gland.



Step 3. Connect the speaker cable according to the polarity indication at the screw terminal.



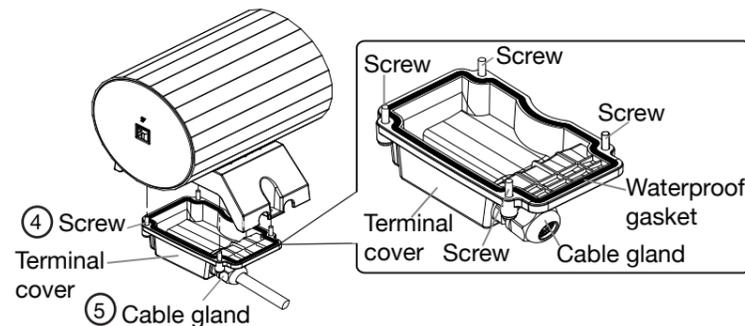
Step 4. Attach the terminal cover.

Secure the terminal cover using the 4 supplied screws.

In this case, take care not to pinch the wiring, and check that the water proof gasket is secured into place.

Note

If wiring or the waterproof gasket is pinched between the terminal cover and the unit case, this causes water or moisture to get inside the terminal cover.



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Step 5. Securely tighten the cable gland.

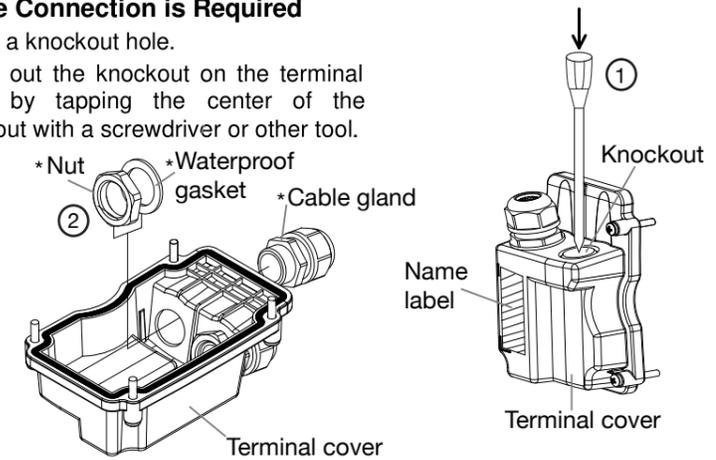
Note

If loosely tightened, water or moisture may get inside the terminal cover.

3.2. When Bridge Connection is Required

Step 1. Punch a knockout hole.

Punch out the knockout on the terminal cover by tapping the center of the knockout with a screwdriver or other tool.



* Additional a cable gland set (nut, waterproof gasket, cable gland) prepared separately by the installer.

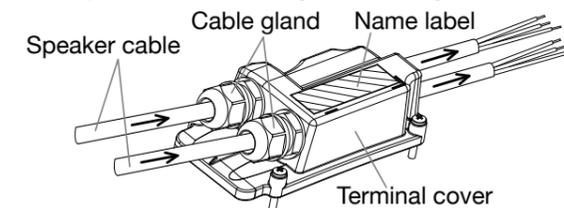
Step 2. Mount the cable gland to be added.

Notes

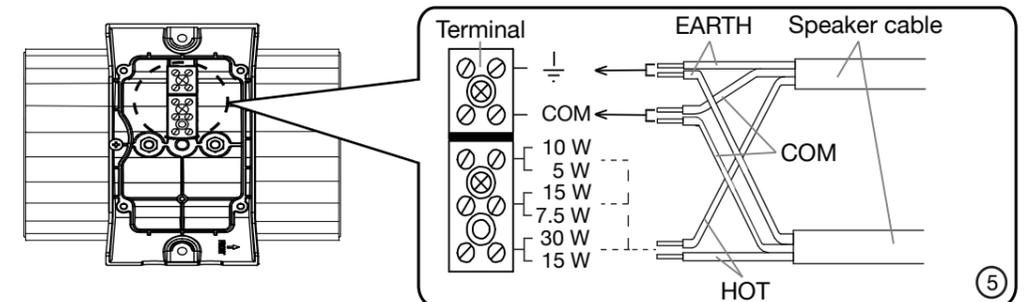
- Prepare the cable gland of PG13.5 size separately.
- Ensure that the cable gland is securely tightened. If loosely tightened, water may get inside the terminal cover.

Step 3. Strip the speaker cable jacket. (Refer to page 2, Step 1).

Step 4. Run one each of speaker cables through the cable gland.



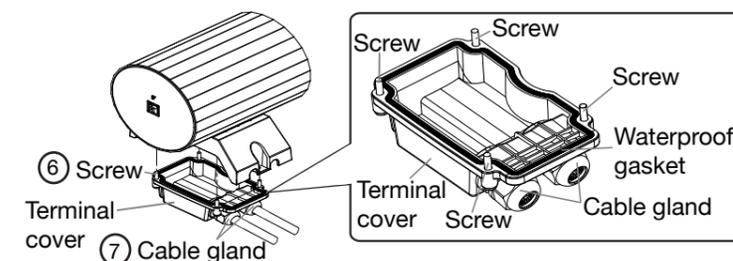
Step 5. Connect the speaker cables with the same polarity to each terminal according to the polarity indication at the screw terminal.



Step 6. Attach the terminal cover. Secure the terminal cover using the 4 supplied screws. In this case, take care not to pinch the wiring, and check that the water proof gasket is secured into place.

Note

If wiring or the waterproof gasket is pinched between the terminal cover and the unit case, this causes water or moisture to get inside the terminal cover.



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