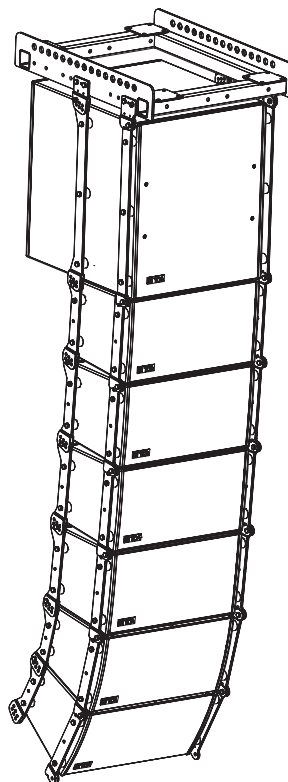


**LINE ARRAY SPEAKERS
(SPLASH-PROOF TYPE)****SR-C8LWP
SR-C8SWP
SR-C15BWP****RIGGING FRAME
(SPLASH-PROOF TYPE)****SR-RF8WP**

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

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1. SAFETY PRECAUTIONS

- Be sure to read this safety instructions in this section carefully in prior to use.
- 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.

Safety Symbol and Message Conventions

Safety symbols and messages described below are used in this manual to prevent bodily injury and property damage which could result from mishandling. Before operating your product, read this manual first and understand the safety symbols and messages so you are thoroughly aware of the potential safety hazards.



WARNING

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



CAUTION

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



WARNING

When Installing the Unit

- Avoid installing or mounting the unit in unstable locations, such as on a rickety table or a slanted surface. Doing so may result in the unit falling down and causing personal injury and/or property damage.
- Refer all installation work to the dealer from whom the speaker was purchased. Installation for flying requires extensive technical knowledge and experience. The speaker may fall off if incorrectly installed, resulting in possible personal injury.
- Flying precautions.
Be sure to follow the instructions below. Otherwise, the suspension wires or belts may be off or snap and the speaker may fall off, causing personal injury.
 - Check to confirm that the suspension wires and belts are strong enough to withstand the speaker load.
 - The connectors of the suspension wires and belts must be securely linked with those of the speaker.
 - All parts and components (such as enclosures, metal pieces, and screws) must be free from any deformation, crack, and corrosion.
 - Be sure to use screws supplied with the optional flying hardware when installing the speaker using such hardware.
- Install the unit only in a location that can structurally support the weight of the unit and the mounting bracket. Doing otherwise may result in the unit falling down and causing personal injury and/or property damage.
- Owing to the unit's size and weight, be sure that at least two persons are available to install the unit. Failure to do so could result in personal injury.

 **CAUTION****When Installing the Unit**

- When unpacking or moving the unit, be sure to handle it with two or more persons. Falling or dropping the unit may cause personal injury and/or property damage.
- Avoid touching the unit's sharp metal edge to prevent injury.

When the Unit is in Use

- Do not operate the unit for an extended period of time with the sound distorting. Doing so may cause the connected speakers to heat, resulting in a fire.
- Have the unit 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 unit that could cause it to fall, possibly causing personal injury.

2. GENERAL DESCRIPTION

TOA's lineup of line array speakers employs TOA's unique wave front control technology to create a sound field that offers clear reproduction and uniform sound dispersion. This lineup includes versions offering either 5 degrees or 15 degrees of angled vertical directivity, as well as sub-woofer configured types. The use of optional support brackets allows the line array speakers to be used in many applications as permanent sound system installations.

3. FEATURES

- TOA's unique wave front control technology creates a uniform sound distribution field with interference-free high frequency output, realizing high-clarity acoustic characteristics and long sound transmission capabilities.
- The SR-C8LWP is a two-way speaker mounting a high-power 20 cm woofer and two compression drivers, and featuring a 5 degree angle of vertical directivity and 110 degrees of horizontal. It is ideal for long distance applications and can be powered by either one or two amplifiers.
- The SR-C8SWP is a two-way speaker mounting a high-power 20 cm woofer and two compression drivers, and featuring a 15 degree angle of vertical directivity and 110 degrees of horizontal. It is ideal for shorter distance applications and can be powered by either one or two amplifiers.
- By combining the long-distance SR-8LWP and short-distance SR-8SWP, a line array speaker system can be built to support a variety of applications.
- The SR-C15BWP sub-woofer employs a large-diameter 38 cm woofer with high power handling capabilities, and is designed to be used in conjunction with the SR-C8LWP or SR-C8SWP line array speakers.
- The line array speakers are designed to allow easy rear access for maintenance work.
- Overlap angles between individual speakers can be set in 1 degree units between 0 and 5 degrees when constructing the line array speaker, making it possible to flexibly control speaker directivity.
- The line array speaker can be suspended with the additional use of the SR-RF8WP Rigging Frame.

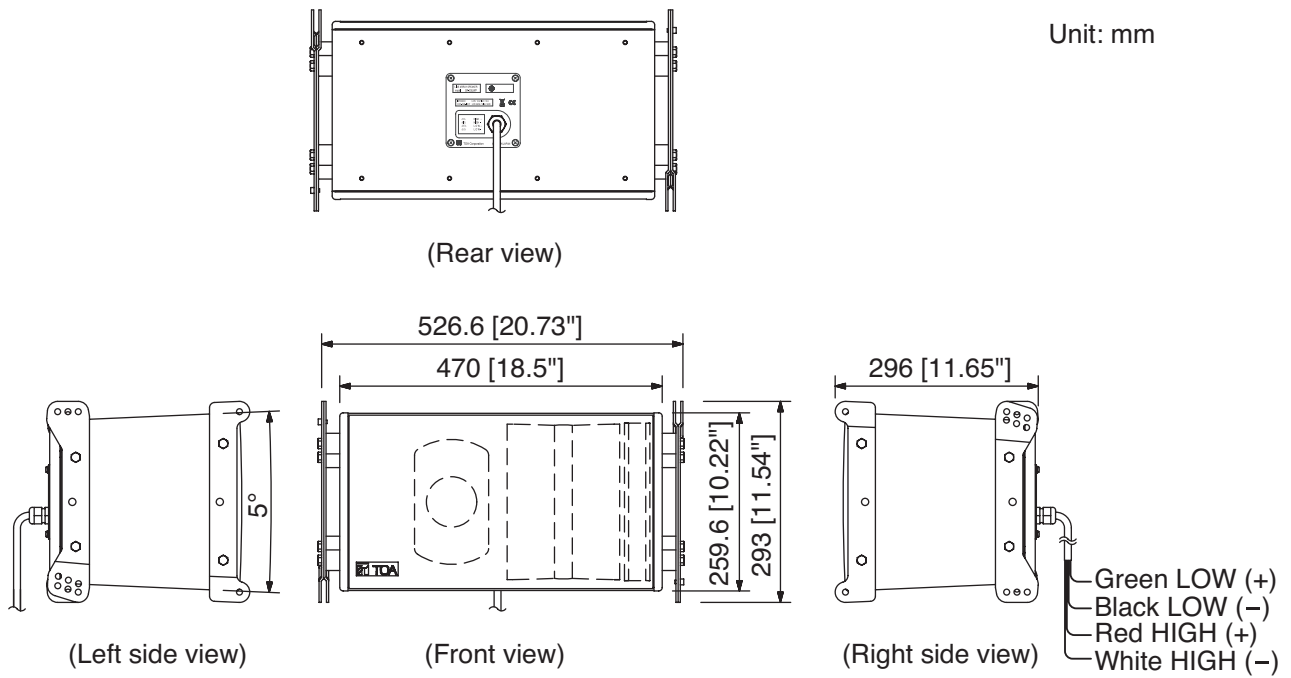
4. INSTALLATION PRECAUTIONS

The WP series is a splash-proof speaker, however please be sure to install it under a roof or eaves or in other locations where the speaker is not directly exposed to rain or snow. Also, avoid installing the speaker in such high-temperature and high-humidity locations as swimming pool facilities. Failure to follow these instructions could lead to equipment malfunctions.

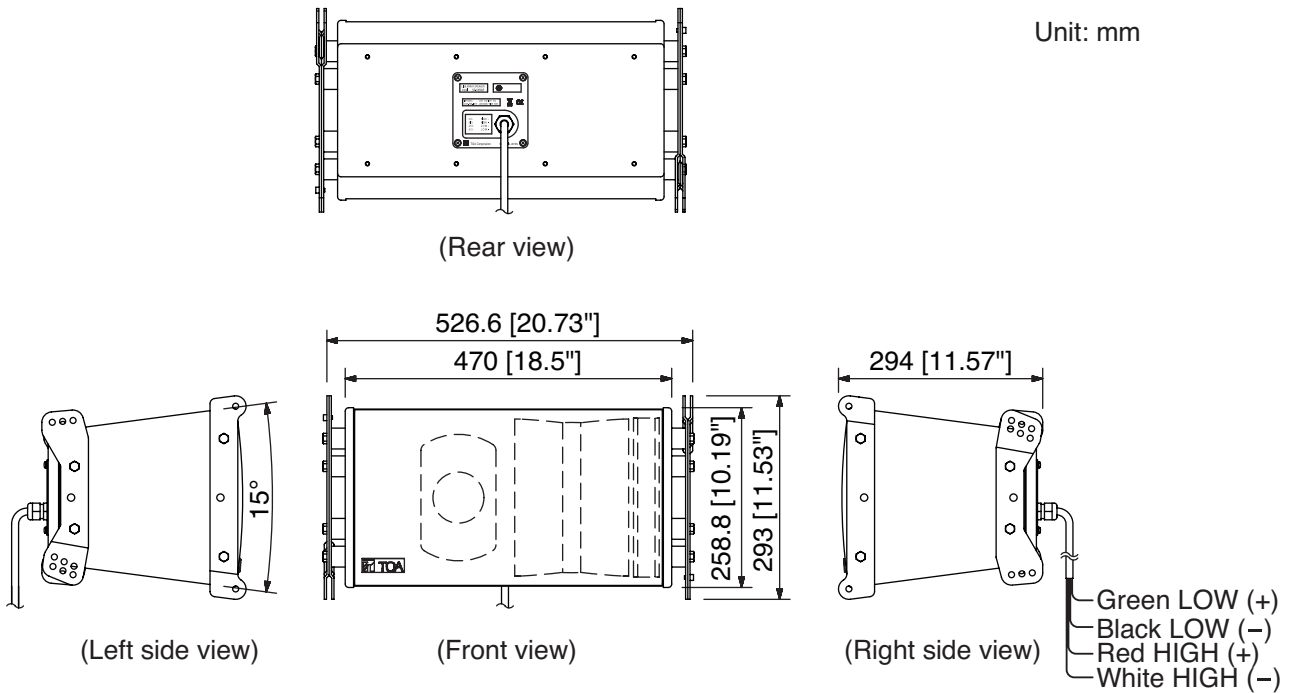
5. DIMENSIONAL DIAGRAMS

5.1. Speaker Systems

5.1.1. SR-C8LWP Line array speaker

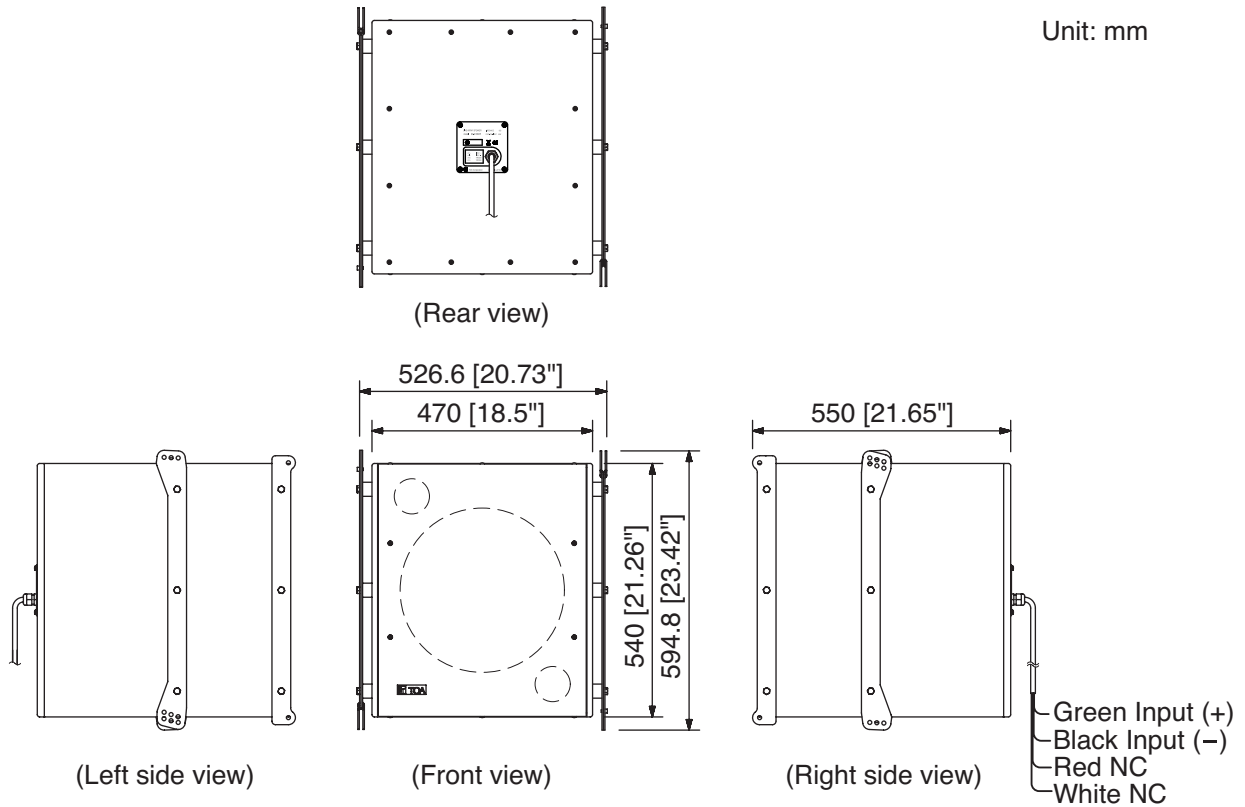


5.1.2. SR-C8SWP Line array speaker



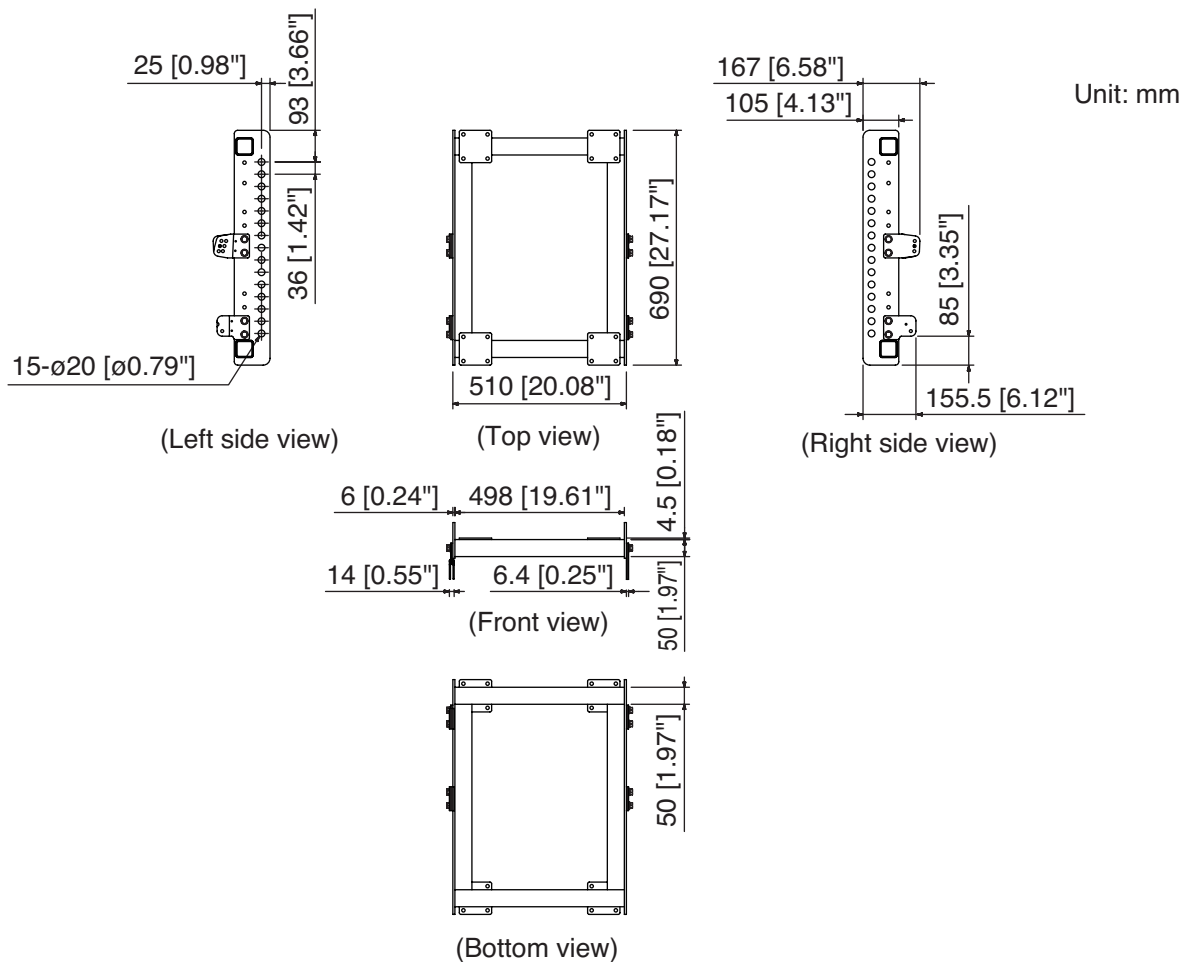
5.2. Sub-Woofer Speaker System

5.2.1. SR-C15BWP Line array speaker



5.3. Frame

5.3.1. SR-RF8WP Rigging frame

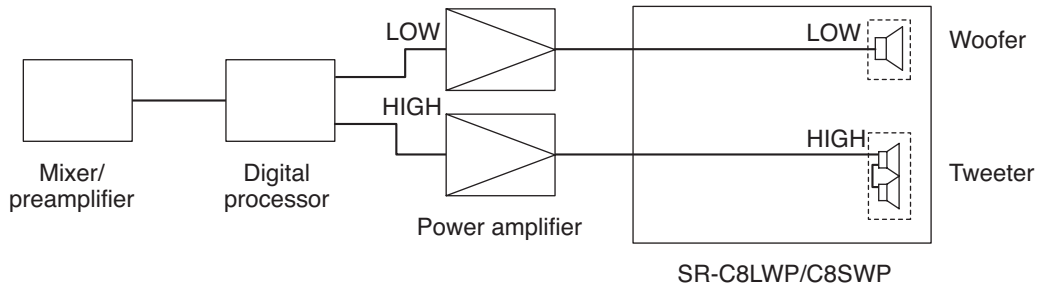


6. BI-AMPLIFIER AND SINGLE-AMPLIFIER OPERATIONS

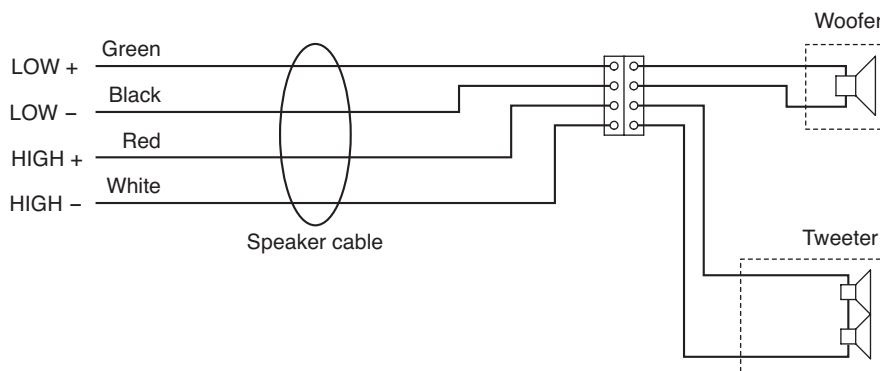
The SR-C8 series speakers are supplied from the factory set up for bi-amplifier operation. However, this default specification can be switched to single-amplifier operation mode by simply changing the position of an internal connector. (Refer to page 9. "Switching to Single-Amplifier Operation Mode.")

6.1. Bi-Amplifier Operation

6.1.1. System diagram

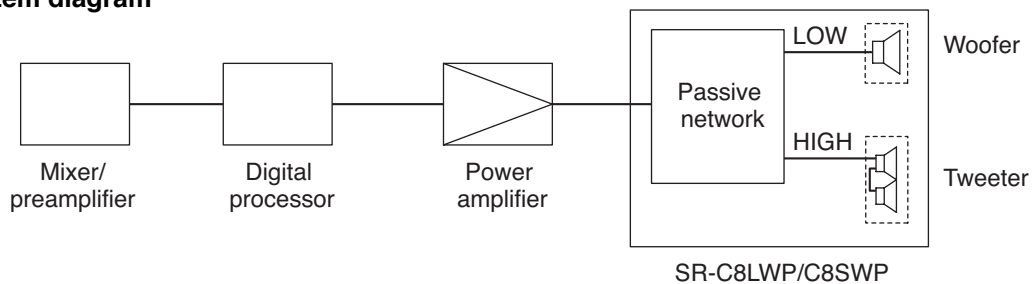


6.1.2. Internal wiring diagram

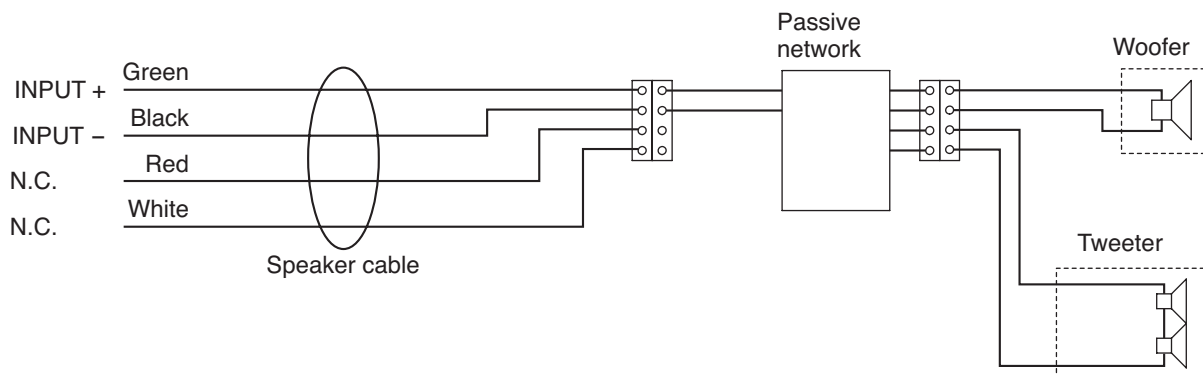


6.2. Single-Amplifier Operation

6.2.1. System diagram



6.2.2. Internal wiring diagram



7. SWITCHING TO SINGLE-AMPLIFIER OPERATION MODE

To switch the speaker's bi-amplifier operation mode to single-amplifier operation, remove the speaker's rear input panel and change the speaker's internal wiring.

Switching Power Modes

Step 1. Remove the four screws securing the input terminal panel and pull out the panel.

Step 2. Pull out a short length of the wiring connected to the back side of the input panel.

Step 3. Disconnect and switch the two pairs of connected connectors so that the two marked and unmarked connector halves match up.

Step 4. Reinstall the input terminal panel using the four removed screws.

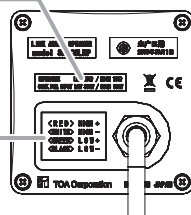
Step 5. Attach the supplied seals to the input terminal panel to change the indication.

5

Changing input terminal panel indication

Input indication seal for single-amplifier operation (accessory)

Rating seal for single-amplifier operation (accessory)



Panel mounting screws

1, 4

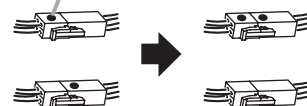
Input terminal panel

2

3

Switching connectors

Mark



8. DIGITAL PROCESSOR SETTINGS

Set the digital processor's parameters as follows:

8.1. SR-C8LWP and SR-C8SWP Systems

8.1.1. Bi-amplifier operation

Channel	Gain (dB)	Polarity	Filter				Delay (msec)
			TYPE	Freq. (Hz)	Gain (dB)	Q	
Pre-stage Filter	--	---	PEQ	1.6k	-4.0	1.414	---
SR-C8 LOW	0	Normal (Positive)	LPF (12 dB)	2.0k	---	0.707	0.667
			HPF (12 dB)	60	---	1.000	
			PEQ	800	-5.0	3.450	
SR-C8 HIGH	-9.0	Normal (Positive)	HPF (12 dB)	2.0k	---	0.707	0
			PEQ	1.45k	-6.0	4.318	
			PEQ	2.9k	-10.0	2.997	
			High Shelving	10k	+7.0	---	
			All Pass	4.5k	---	2.016	
			All Pass	7.6k	---	2.016	
			All Pass	11.5k	---	2.215	
			All Pass	12.0k	---	2.016	
			All Pass	14.0k	---	1.512	
All Pass	17.0k	---	4.938				

The "Gain" indications are merely provided as guidelines and may need be adjusted depending on the system configuration.

8.1.2. Single-amplifier operation

Channel	Gain (dB)	Polarity	Filter				Delay (msec)
			TYPE	Freq. (Hz)	Gain (dB)	Q	
SR-C8	0	Normal (Positive)	HPF (12 dB)	60	---	1.000	---
			PEQ	280	-3.5	4.318	
			PEQ	800	-2.0	3.450	
			PEQ	2.5k	-11.5	1.044	
			PEQ	2.65k	-5.0	2.145	
			PEQ	5.3k	-2.5	1.204	
			PEQ	9.0k	-6.0	1.707	

8.2. Combined SR-C8LWP or SR-C8SWP and R-C15BWP Systems

8.2.1. Bi-amplifier operation

Channel	Gain (dB)	Polarity	Filter				Delay (msec)
			TYPE	Freq. (Hz)	Gain (dB)	Q	
Pre-stage Filter	--	---	PEQ	1.6k	-4.0	1.414	---
SR-C15B	+6.0	Normal (Positive)	HPF (12 dB)	35	---	2.053	1.896
			LPF (6 dB)	50	---	---	
			LPF (12 dB)	100	---	1.432	
			PEQ	60	+3.0	2.648	
SR-C8 LOW	0	Normal (Positive)	LPF (12 dB)	2.0k	---	0.707	0.667
			HPF (12 dB)	100	---	1.000	
			PEQ	800	-5.0	3.450	
SR-C8 HIGH	-9.0	Normal (Positive)	HPF (12 dB)	2.0k	---	0.707	0
			PEQ	1.45k	-6.0	4.318	
			PEQ	2.9k	-10.0	2.997	
			High Shelving	10k	+7.0	---	
			All Pass	4.5k	---	2.016	
			All Pass	7.6k	---	2.016	
			All Pass	11.5k	---	2.215	
			All Pass	12.0k	---	2.016	
			All Pass	14.0k	---	1.512	
All Pass	17.0k	---	4.938				

"Gains" are merely given as a guideline and may need be adjusted depending on the system configuration.

8.2.2. Single-amplifier operation

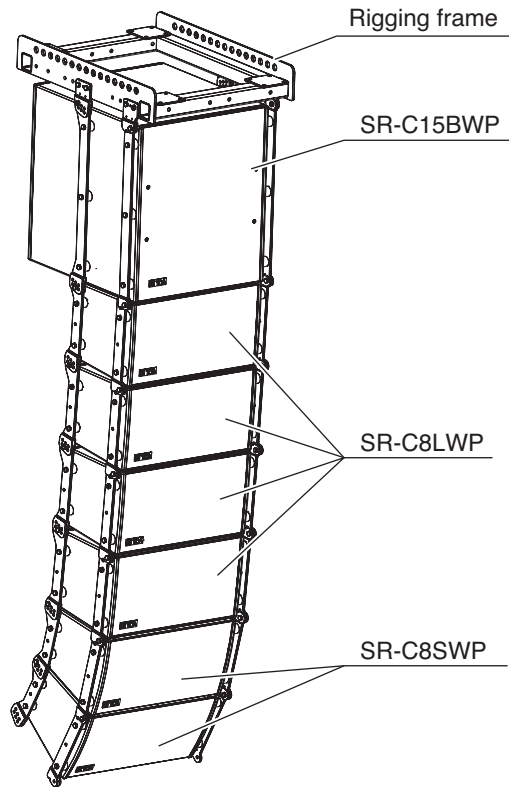
Channel	Gain (dB)	Polarity	Filter				Delay (msec)
			TYPE	Freq. (Hz)	Gain (dB)	Q	
SR-C15B	+6.0	Normal (Positive)	HPF (12 dB)	35	---	2.053	1.229
			LPF (6 dB)	50	---	---	
			LPF (12 dB)	100	---	1.432	
			PEQ	60	+3.0	2.648	
SR-C8	0	Normal (Positive)	HPF (12 dB)	100	---	1.000	0
			PEQ	280	-3.5	4.318	
			PEQ	800	-2.0	3.450	
			PEQ	2.5k	-11.5	1.044	
			PEQ	2.65k	-5.0	2.145	
			PEQ	5.3k	-2.5	1.204	
			PEQ	9.0k	-6.0	1.707	

The "Gain" indications are merely provided as guidelines and may need be adjusted depending on the system configuration.

9. FLYING SYSTEMS USING THE SR-RF8WP RIGGING FRAME

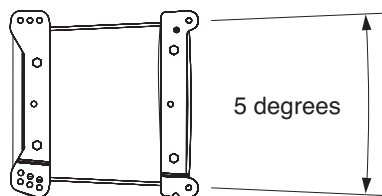
9.1. Flying System Outline

Use the SR-RF8WP Rigging Frame for flying applications. Up to twelve line array speakers can be simultaneously connected per frame, however the SR-C15BWP is calculated as two units. Adjust the vertical directivity angle according to the installation environment. For applications that specify long-distance sound transmission, link the long-distance SR-C8LWP speakers together. Shown below is a basic flying system.

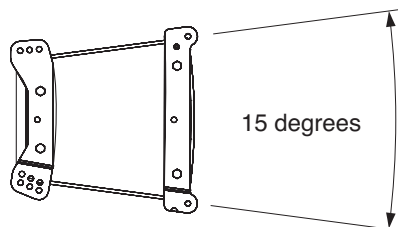


The line array speaker's vertical directivity angle is 5 degrees for the SR-C8LWP and 15 degrees for the SR-C8SWP.

[SR-C8LWP]

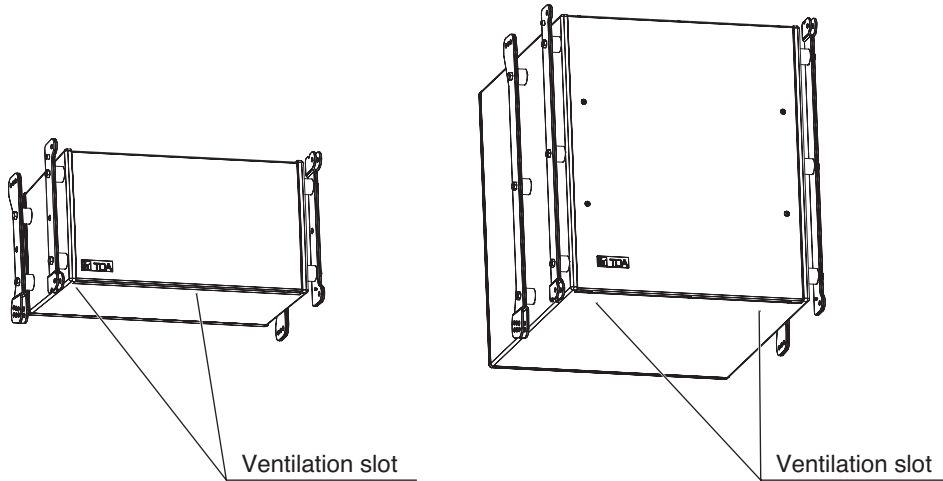


[SR-C8SWP]

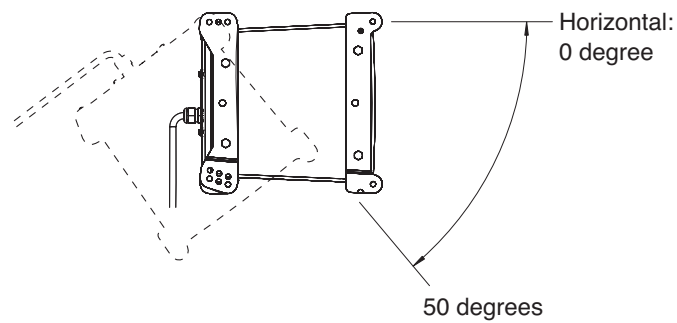


Notes

- The speaker's splash-proof capabilities meet IPX4 requirements. However, always make sure that the speaker is installed in locations (such as under a roof or eaves, etc.) not directly exposed to rain or snow.
- Be sure to install the speaker so that its air hole is positioned downward. In this case, the brand mark should be situated on the lower left corner of the speaker.

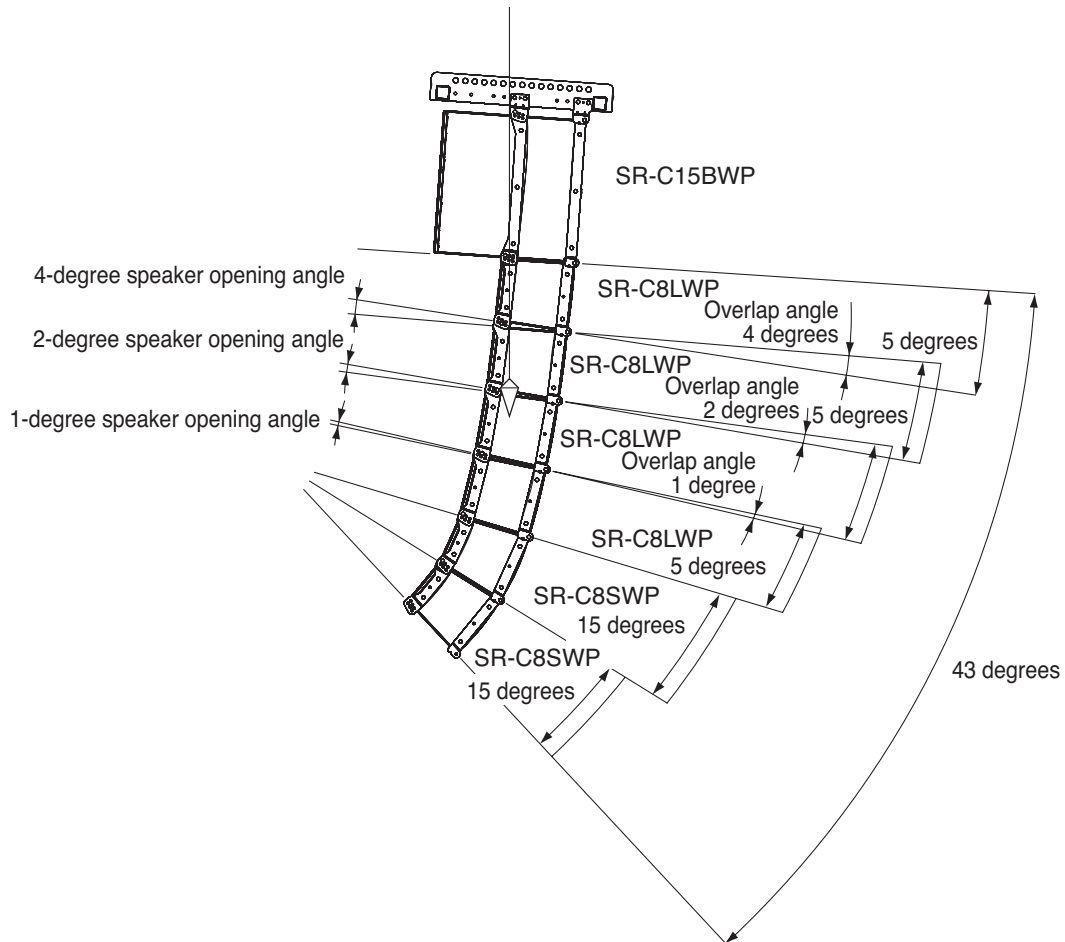


- Install each speaker so that the downward angle formed by its top panel is between 0 and 50 degrees.



This flying system consists of four SR-C8LWP units, two SR-C8SWP units and one SR-C15BWP unit. To enhance long-distance sound transmission capabilities, the four SR-C8LWPs are linked together at overlap angles of four, two and one degree. As a result of this, the system's overall vertical directivity angle is 43 degrees.

Overlap angles can be set depending on how the speakers are linked together. The horizontal directivity angle is 110 degrees.



As can be seen from the above figure, the overlap angle is equal to the rear opening angle between speakers.

Example: To adjust the sound radiation overlap angle to five degrees, set the rear opening angle between the speakers to five degrees.

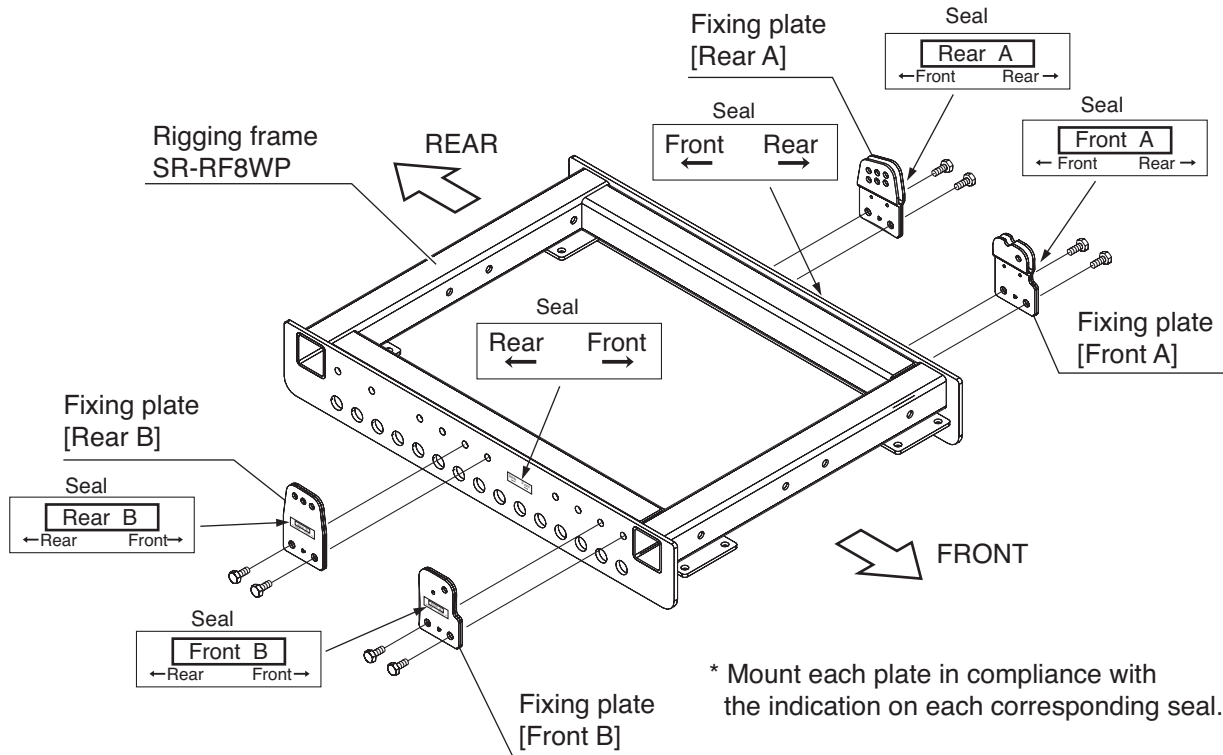
If the speakers are linked flat without no space between them, there will be no sound radiation overlap. For overlap angle settings, refer to "Linkage Between Speakers" on page 17.

9.2. Assembling the SR-RF8WP Rigging Frame

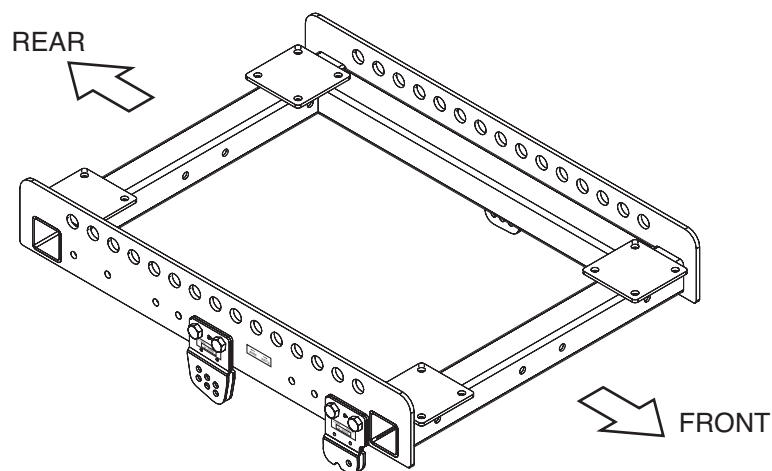
Assemble the rigging frame referring to the figure below.

Ensure that fixing plates are correctly secured using two bolts (including plain and spring washers) supplied with the rigging frame for each plate.

Since each fixing plate has its own installation position and orientation, refer to the figure for correct assembly. Be sure that the forward mounting holes are always used in flying applications.



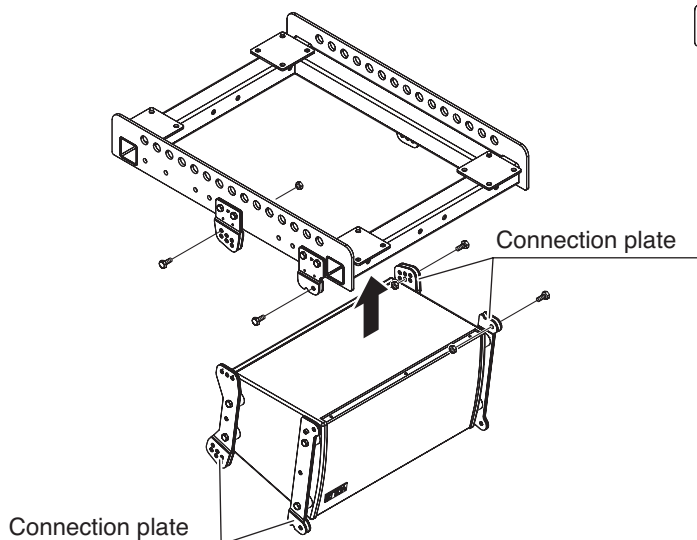
[Assembled frame]



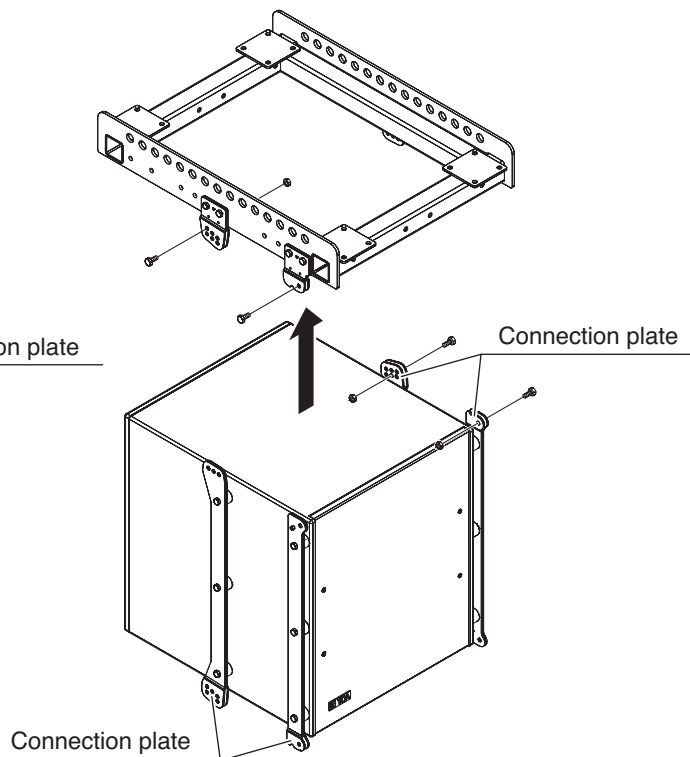
9.3. Connecting the Rigging Frame to the Speaker

Connect the rigging frame to the speaker referring to the figures below. Confirm the positioning of the horn (SR-C8LWP and SR-C8SWP only), then correctly mount the rigging frame to the speaker by tightening the supplied nuts and bolts from both left and right sides. When suspending the SR-C15BWP sub-woofer, be sure to mount it in the uppermost position (i.e. immediately below the rigging frame).

[Speaker system assembly]



[Sub-woofer system assembly]

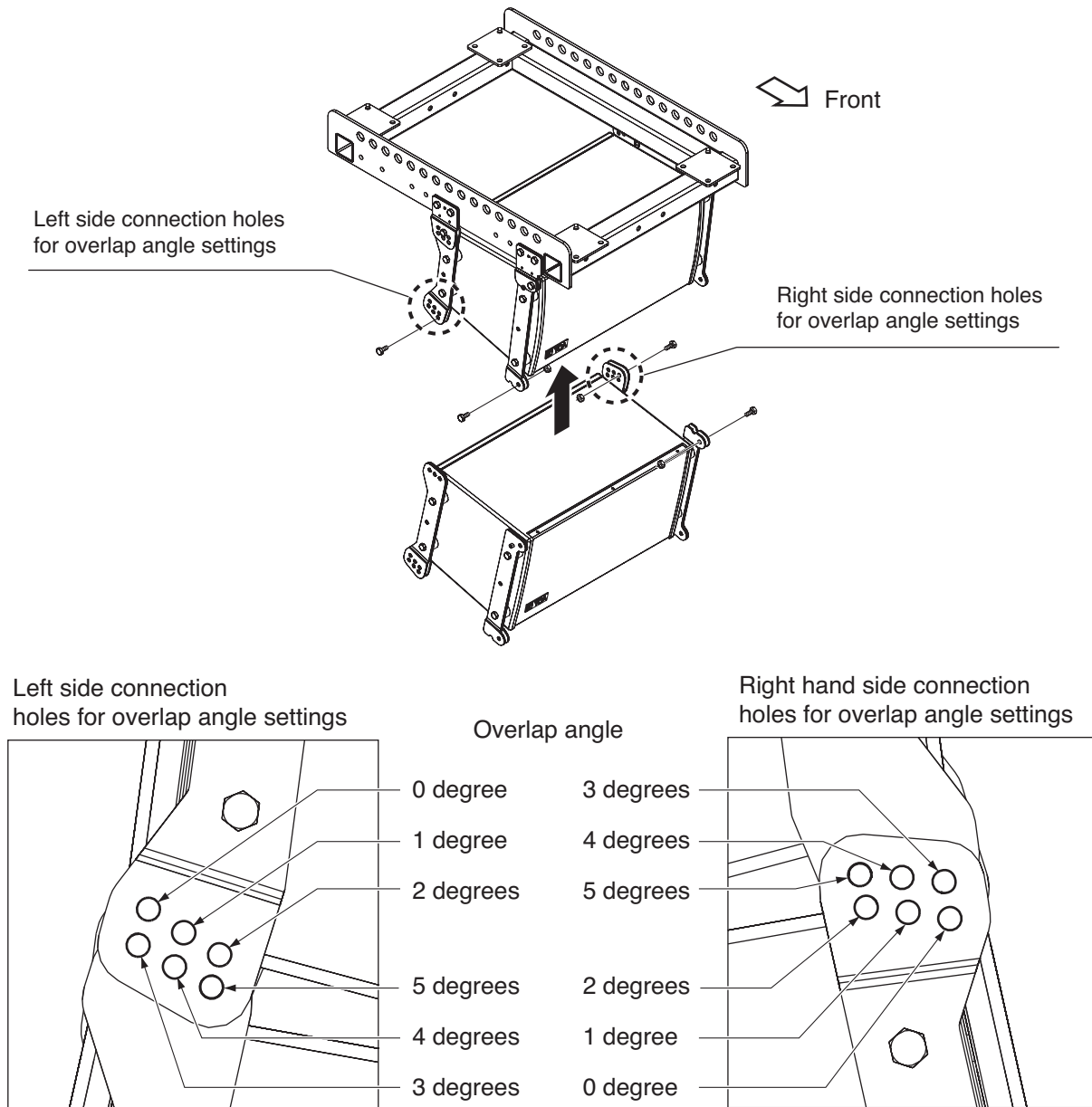


9.4. Connection Between Speakers

Inter-connect speaker sections referring to the figures below.

Ensure that both speakers are securely connected by tightening the supplied nuts and bolts from both left and right sides.

Since connection holes for setting the overlap angle are provided at the back of the speaker, assemble using the connection holes matching the required overlap angle. The overlap angle can be set within the range of 0 to 5 degrees in 1 degree units.

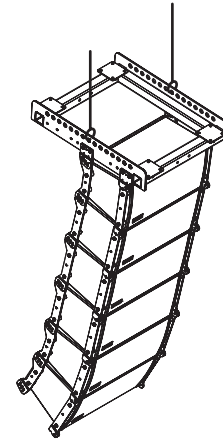


9.5. About the Flying Installations

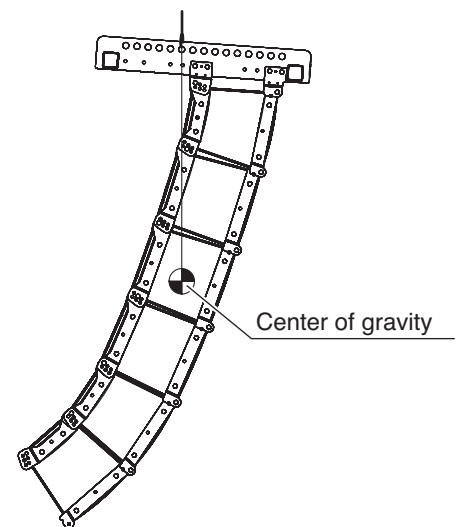
Cautions

- Suspension wires and shackles are not supplied with the speaker. Separately prepare and use those which are strong enough to suspend the speaker system. Further, ensure that the ceiling structure from which the speaker system is suspended is also robust and capable of supporting the system's total weight.
- A total of up to 12 line array speakers can be connected per rigging frame. However, the SR-C15BWP is calculated as two units. No more than a total of 12 units can be connected.

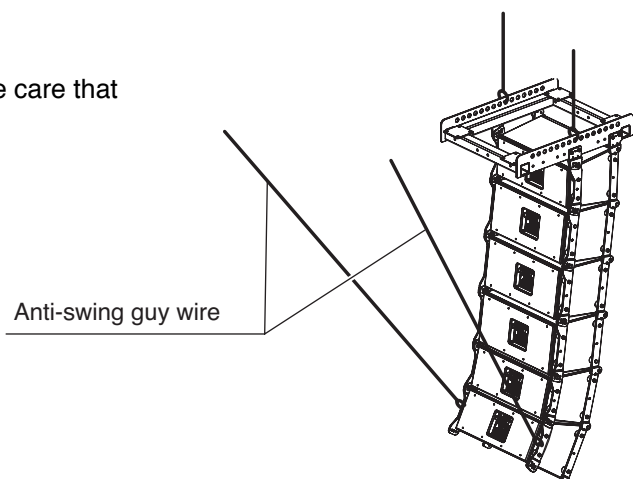
- Use at least two points on both the left and right sides to suspend the system vertically.



- Use the suspension points that allow the system to be set for a desired downward angle. The downward angle increases as the suspension points are moved rearward.



- Add an anti-swing guy wire as required. However, take care that the speaker system's weight is not applied to the wire.



10. SPECIFICATIONS

10.1. SR-C8LWP and SR-C8SWP

Model No.	SR-C8LWP	SR-C8SWP
Enclosure	Bass-reflex type	
Allowable Input	Continuous program: 360 W (single-amplifier operation) Low frequency: 360 W, high frequency: 180 W (bi-amplifier operation)	
Rated Impedance	16 Ω (single-amplifier operation) Low frequency: 16 Ω , high frequency: 16 Ω (bi-amplifier operation)	
Output Sound Pressure Level	98 dB (1 W , 1 m) (single-amplifier operation) Low frequency: 95 dB (1 W, 1 m), high frequency: 110 dB (1 W, 1 m) (bi-amplifier operation)	
Frequency Response	65 – 20,000 Hz (when an optional DP-0206 is used)	
Crossover Frequency	1,600 Hz (when the optional DP-0206 is used)	
Directivity Angle	Horizontal: 110°, Vertical: 5°	Horizontal: 110°, Vertical: 15°
Internal Speaker	Low frequency: 20 cm cone type High frequency: Wave-front control horn 110°(horizontal) x 5°(vertical) + Compression drivers x 2	Low frequency: 20 cm cone type High frequency: Wave-front control horn 110°(horizontal) x 15°(vertical) + Compression drivers x 2
Speaker Cable	Direct cable withdrawal from internal speaker: \varnothing 8.6 mm, conductor cross section: 1.25 mm ² , 4-core cable, 3 m	
Splash-proof Capabilities	IPX4	
Finish	Enclosure: Plywood, black, urethane paint Mesh grille: Stainless steel, black, paint	
Dimensions	526.6 (w) x 293 (h) x 296 (d) mm	526.6 (w) x 293 (h) x 294 (d) mm
Weight	17 kg	16 kg
Accessories	M8 connection bolts 4	
Optional Components	Rigging frame: SR-RF8WP Digital processor: DP-0206	

Note: The design and specifications are subject to change without notice for improvement.

10.2. SR-C15BWP

Enclosure	Bass-reflex type
Allowable Input	Continuous program: 450 W
Rated Impedance	8 Ω
Output Sound Pressure Level	93 dB (1 W , 1 m)
Frequency Response	40 – 400 Hz (when an optional DP-0206 is used)
Crossover Frequency	80 Hz (when the optional DP-0206 is used)
Internal Speaker	38 cm cone type
Connected Cable	Direct cable withdrawal from internal speaker: \varnothing 8.6 mm, conductor cross section: 1.25 mm ² , 4-core cable, 3 m
Ambient Temperature Range	-10°C to +50°C
Splash-proof Capabilities	IPX4
Finish	Enclosure: Plywood, black, urethane paint Mesh grille: Stainless steel, black, paint
Dimensions	526.6 (w) x 594.8 (h) x 550 (d) mm
Weight	41 kg
Accessories	M8 connection bolts 4
Optional Components	Rigging frame: SR-RF8WP Digital processor: DP-0206

Note: The design and specifications are subject to change without notice for improvement.

10.3. SR-RF8WP

Applicable Speaker	SR-C8LWP, SR-C8SWP, SR-C15BWP
No. of Mountable Speakers	Flying: Max. 12 speakers (optional SR-C15BWP is counted as 2 units)
Finish	Stainless steel plate, black, paint
Dimensions	510 (w) x 167 (h) x 690 (d) mm (bolted parts excluded)
Weight	17 kg (accessories included)
Accessories	M10 plate mounting bolts 8

Note: The design and specifications are subject to change without notice for improvement.

Traceability Information for Europe

Manufacturer:
TOA Corporation
7-2-1, Minatojima-Nakamachi, Chuo-ku, Kobe, Hyogo,
Japan

Authorized representative:
TOA Electronics Europe GmbH
Suederstrasse 282, 20537 Hamburg,
Germany



TOA Corporation

URL: <http://www.toa.jp/>

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