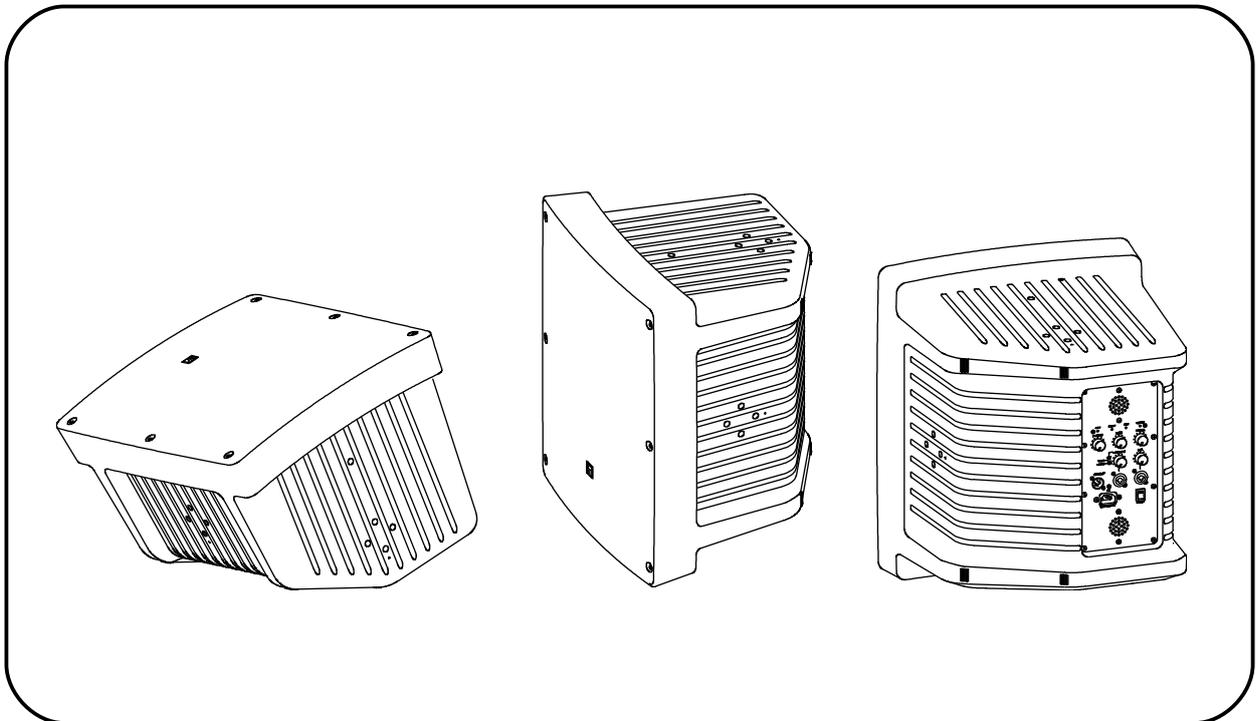![TOA logo]

OPERATING INSTRUCTIONS

POWERED SPEAKER

HS-P1500B AS
HS-P1500W AS

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

TOA Corporation

TABLE OF CONTENTS

1. SAFETY PRECAUTIONS

- Before installation or use, be sure to carefully read all the instruction in this section for correct and safe operation.
- Be sure to follow all the precautionary instruction 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 symbol and messages describe 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.

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.
- Install the unit only in 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.
- Since the unit is designed for indoor use, do not install it outdoors. If installed outdoors, the aging of parts causes the unit to fall off, resulting in personal injury. Also, when it gets wet with rain, there is a danger of electric shock.
- 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.
- Do not use other methods than specified to mount the bracket. If extreme force is applied to the unit, the unit could fall off, resulting in personal injuries.
- Use screws that are appropriate for the ceiling's or wall's structure and composition. Failure to do so may cause the unit to fall, resulting in personal injury.
- Ensure that all screws are securely tightened. If they are not tightened or firmly secured after installation, the unit could fall down, possibly resulting in personal injury.
- Use the specified mounting bracket in combination. Doing otherwise may cause the unit or component to fall off, resulting in personal injury.
- Do not mount the unit in locations exposed to constant vibration. The mounting bracket can be damaged by excessive vibration, potentially causing the unit to fall, which could result in personal injury.
- Do not expose the unit to rain or an environment where it may be splashed by water or other liquids,as doing so may result in fire or electric shock.
- Use the unit only with the voltage unit. Using a voltage higher than that which is specified may result in fire or electric shock.
- Do not cut, kink, otherwise damage nor modify the power supply cord. In addition, avoid using the power cord in close proximity to heaters, and never place heavy objects -- including the unit itself – on the power cord, as doing so may result in fire or electric shock.
- The apparatus shall be connected to a main socket outlet with a protective earthing connection.
- Should the following irregularity be found during use, immediately turn off this unit's power switch, disconnect the power supply plug from the AC outlet and contact your nearest TOA dealer. Make no further attempt to operate the unit in this condition as this may cause fire or electric shock.
  - If you detect smoke or a strange smell coming from the unit.
  - If water or any metallic object gets into the unit
  - If the power supply cord is damaged (exposure of the core, disconnection, etc.)
  - If it is malfunctioning (no tone sounds.)

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

When Installing the Unit

- When unpacking or installing the unit, be sure to handle it with two or more persons. Falling or dropping the unit may cause personal injury.

- Avoid touching the unit's sharp metal edge to prevent injury.

- To avoid electric shock, be sure to switch off the amplifier's power when connecting to other speakers.

- Never plug in nor remove the power supply plug with wet hands, as doing so may cause electric shock.

- When unplugging the power supply cord, be sure to grasp the power supply plug never pull on the cord itself. Operating the unit with a damaged power supply cord may cause a fire or electric shock.

When the Unit is in Use

- Do not place heavy objects on the unit as this may cause it to fall or break which may result in personal injury and/or property damage. In addition, the object itself may fall off and cause injury and/or damage.

- Make sure that the volume control is set to minimum position before power is switched on. Loud noise produced at high volume when power is switched on can impair hearing.

- Do not operate the unit for an extended period of time with the sound distorted. This is an indication of a malfunction, which in turn can cause heat to generate and result in a fire.
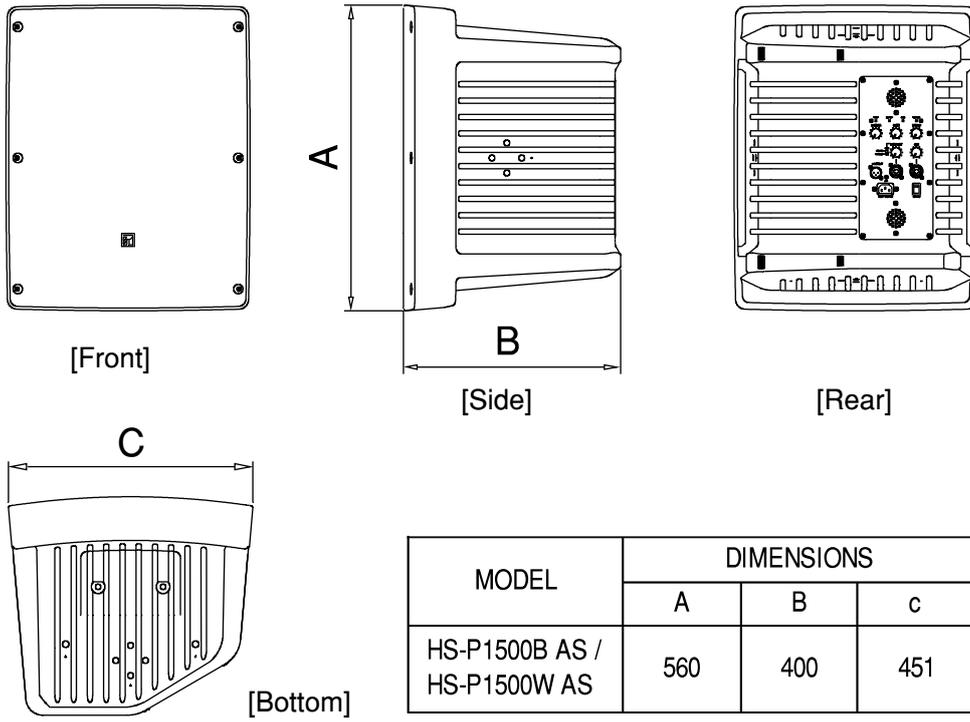
2. GENERAL DESCRIPTION

TOA's HS-P1500 series are Powered Speakers with high power handling capabilities and excellent durability for background music in the hall, restaurant, religious place and etc. This 2-way self-powered speaker features a built-in digital amplifier of 170W rated output and 15-inch woofer. The speaker's enclosure is made of resin. It can be installed and used in many different applications with combined use of the supplied accessories and/or the optional mounting brackets.

3. FEATURES

- Tweeter array realizes a 90° horizontal x 40° vertical directivity control at high frequencies.

- Compact and lightweight with its high frequency tweeter array arranged in front of the frequency woofer.

- Built-in overload protection circuitry for the tweeters, disconnects the power amplifier's output when unusual temperature rise occurs.

- Both permanent and temporary installations available.

- Either vertical or horizontal speaker installation available for the permanent installation.

- Easy to carry with a handy handle.

- Rated output of 170W. Two Audio input, with one input that has a combined LINE and MIC option (selectable with the switch selector).

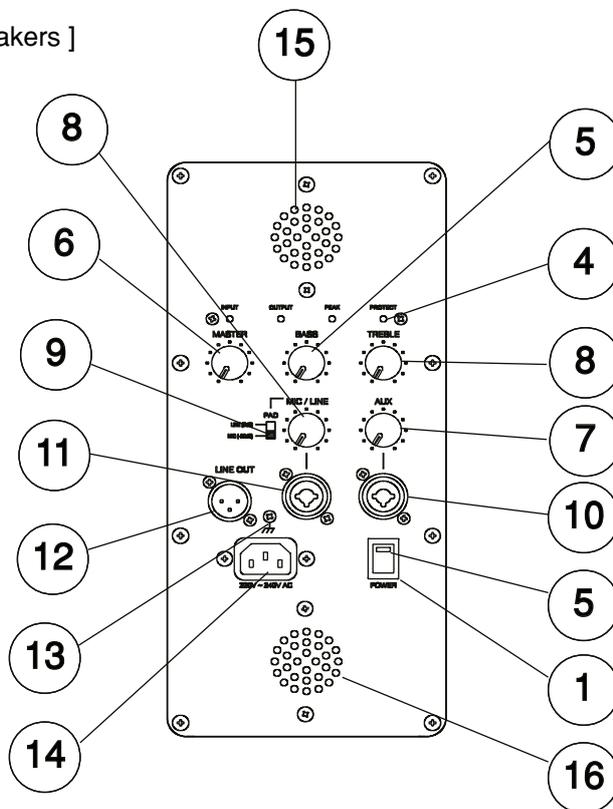- Equipped with the LED indicators that show the input/output status, etc.

4. DIMENSIONAL DIAGRAM

[Front]

A

B

[Side]

[Rear]

C

[Bottom]

MODEL	DIMENSIONS		
	A	B	c
HS-P1500B AS / HS-P1500W AS	560	400	451

Unit : mm

5. NOMENCLATURE AND FUNCTIONS

[Input Panel of Powered Speakers]

HS-P1500 Series [Rear]

1. Power Switch [|, ON / |'OFF]

Turning this switch on causes the amplifier to function, and turning it off causes the amplifier to cease function.
Note : All input volume to be in the minimum position.

2. Power Indicator [POWER]

Lights green when the power switch is turned on.

3. Indicators [INPUT, OUTPUT, PEAK, PROTECT]

The Indicators are as follows from left to right :

- **Input Indicator [INPUT]**
Lights green regardless of the input level control setting when an input signal level exceeds about −20 dB.

- **Output Indicator [OUTPUT]**
Lights yellow when an output level exceeds about 1 W at an 8Ω load

- **Peak Indicator [PEAK]**
Lights red when an output signal clips (distortion occurs).
Note : When the Peak indicator is lit, turn the input level control counterclockwise until its light extinguishes or decrease the input signal level of the connected external device. Operating the unit while the Peak indicator remains lit may cause the protection circuitry to be activated.

- **Protection Indicator [PROTECT]**
Lights red when the protection circuitry is activated. (See p. 7; Protection Operation List.) When the power is switched on, this indicator lights for about 2 seconds and then extinguishes.

4. Master Volume Control

Adjusts the overall signal level.

5. Bass Control

Adjusts bass response. Rotate clockwise to increase bass output, and counterclockwise to reduce it. The center position provides flat characteristics.

6. Treble Control

Adjusts treble response. Rotate clockwise to increase bass output, and counterclockwise to reduce it. The center position provides flat characteristics.

7. AUX Volume Control

Adjusts the AUX level.

8. MIC / LINE Volume Control

Adjusts the Microphone or Line level.

9. Switch Selector

Select to input LINE (0dB) or MICROPHONE (-60dB).

10. AUX Input Terminal

Input type is unbalanced, using XLR connector type / phone plug (combination type), Pin connector XLR : Pin 1, 3 : Earth, Pin 2: Hot

11. MIC / LINE Input

Input type is balanced, using XLR connector type / phone plug (combination type)
Pin connector XLR : Pin 1: Earth, Pin 2: Hot, Pin 3 : Cold

12. Line Out

Input type is unbalanced, using XLR connector type for parallel output can connect to another of the same unit or other equipments. Pin connector XLR : Pin 1, 3 : Earth, Pin 2: Hot
Note : When connecting to other equipment, they must be of same impedance.

13. Functional ground terminal [SIGNAL GND]

Hum noise may be generated when external equipment is connected to the unit. Connecting this terminal to the functional ground terminal of the external equipment may reduce the hum noise.
Note : This terminal is not for protective earth.

14. AC Inlet

Connect the supplied power cord to this inlet. The socket-outlet shall be installed near the equipment and the plug (disconnecting device) shall be easily accessible.

15. Ventilation Fan

To circulate the hot air out of the amplifier.
Caution: Do not close/block this hole, in order to protect the amplifier from over-heating.

16. Ventilation panel (Air Vent)

To circulate airflow into the unit.
Caution: Do not close/block this hole, in order to protect the amplifier from over-heating.
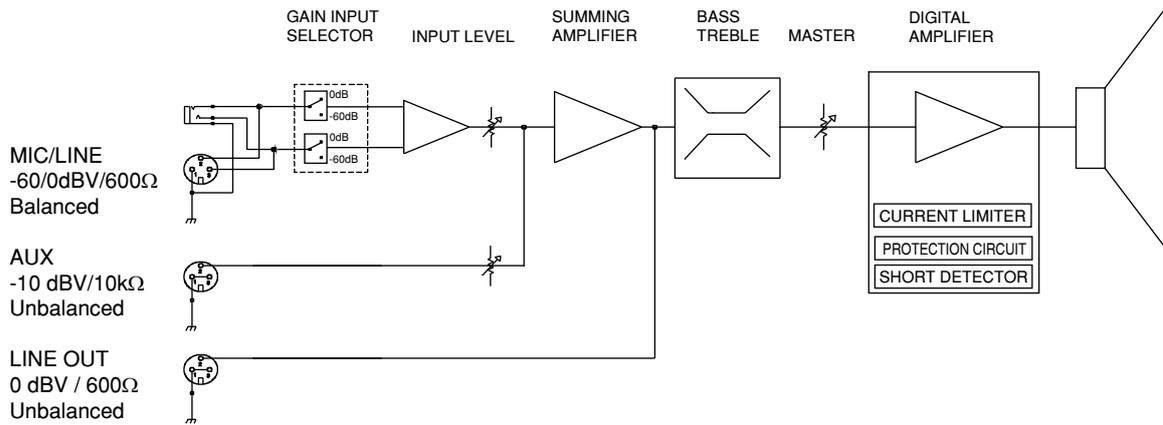
6. VOLUME CONTROL SETTINGS

Output levels are adjustable with individual volume controls. For music play or announcement, adjust the corresponding volume control so that the red peak indicator lights intermittently.
Note that the sound quality is downgraded when the peak indicator remains lit.
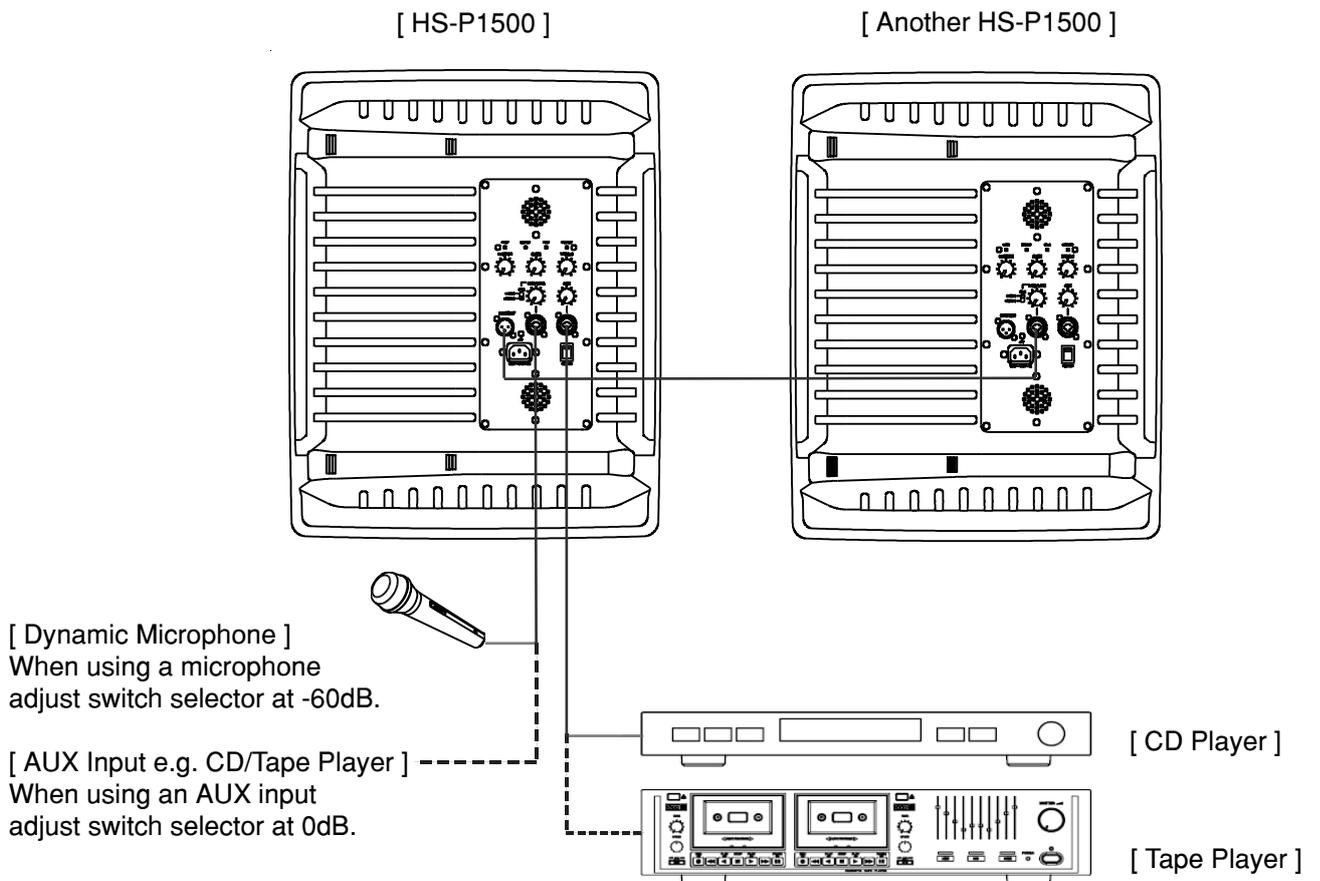
7. PROTECTION OPERATION LIST

Failure	Protection	Operation Indicator	Remedy	Recovery
Over current due to overload	Current limiter is activated. When impedance drops below the specified value.	Peak indicator lights.	Remove overload.	Connecting a correct load automatically restores normal operation.
Short circuit	Current limiter is activated. Load is disconnected.	Protection indicator lights.	Check speakers and lines for short circuit.	Turn off this unit's power switch. Correct the load, then turn on the power.
Temperature rise at power amp. heat sink (over 100°C)	Load disconnected.	Protection indicator lights.	Check the unit for correct ventilation and overload.	Operation automatically returns to normal when the temperature decreases.
Temperature rise inside the unit (over 80°C)	Built-in amplifier unit that caused the failure halted.	Four indicators of the corresponding channel extinguish.	Contact the TOA dealer where the unit was purchased.	

8. BLOCK DIAGRAMS

GAIN INPUT
SELECTOR   INPUT LEVEL   SUMMING   BASS   DIGITAL
                         AMPLIFIER   TREBLE   MASTER   AMPLIFIER

0dB
-60dB

0dB
-60dB

MIC/LINE
-60/0dBV/600Ω
Balanced

AUX
-10 dBV/10kΩ
Unbalanced

LINE OUT
0 dBV / 600Ω
Unbalanced

CURRENT LIMITER
PROTECTION CIRCUIT
SHORT DETECTOR

9. CONNECTIONS

[HS-P1500]   [Another HS-P1500]

[Dynamic Microphone]
When using a microphone
adjust switch selector at -60dB.

[AUX Input e.g. CD/Tape Player]
When using an AUX input
adjust switch selector at 0dB.

[CD Player]

[Tape Player]

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10. INSTALLATION

10.1. Installing to Ceiling or Wall
  • Install the speaker system to a ceiling or wall using the optional mounting brackets shown below.
Note : Refer to the instruction manual enclosed with the HY-1500 series Mounting Bracket for its
        mounting details.

10.1.1. HY-1500VB, HY-1500VW Mounting Brackets
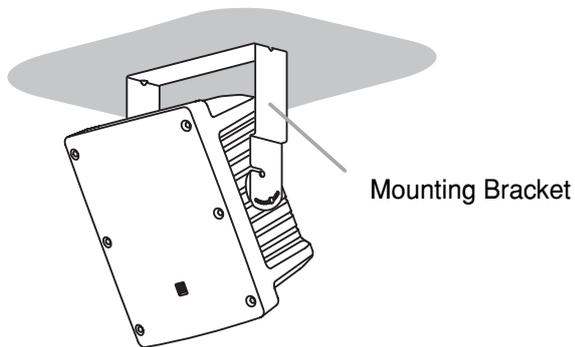   [For vertical speaker mounting]
  • These brackets are designed to mount HS series speakers to ceilings or walls vertically.
  • They allow speaker's vertical angle to be adjusted.
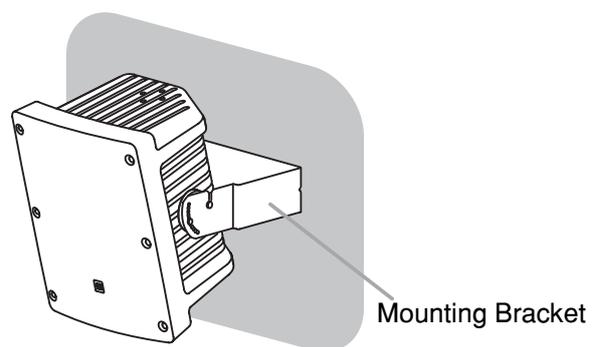   Ceiling : From 15° upward to 90° downward
    Wall : From 15° upward to 60° downward
Note : They also permit speaker's horizontal angle to be adjusted in conjunction with the optional HY-C0801
        or HY-C0801W Ceiling Mount Bracket, or HY-W0801 or HY-W0801W Wall Mount Bracket.

[Ceiling installation]   [Wall installation]

Mounting Bracket

Mounting Bracket

10.1.2. HY-1500HB, HY-1500HW Mounting Brackets
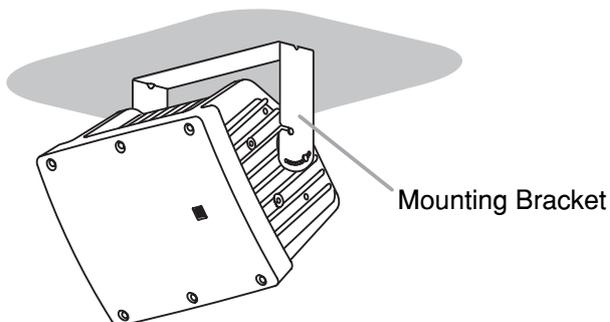   [For horizontal speaker mounting]
  • These brackets are designed to mount HS series speakers to ceilings or walls horizontally.
  • They allow speaker's vertical angle to be adjusted.
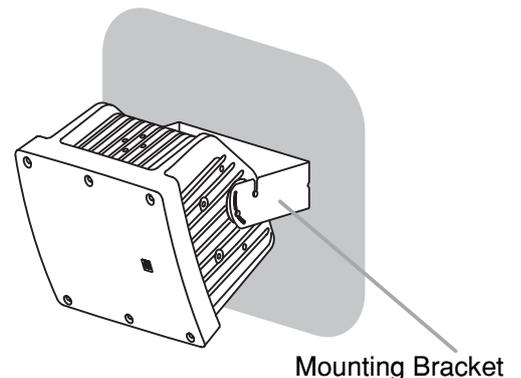   Ceiling : From 0° upward to 90° downward
    Wall : From 15° upward to 60° downward
Note : They also permit speaker's horizontal angle to be adjusted in conjunction with the optional
        HY-C0801 or HY-C0801W Ceiling Mount Bracket, or HY-W0801 or HY-W0801W Wall Mount Bracket.

[Ceiling installation]   [Wall installation]
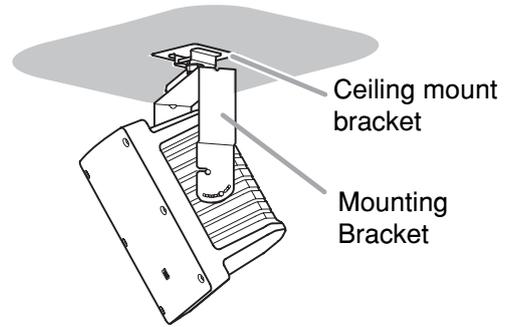
Mounting Bracket

Mounting Bracket

10.1.3. HY-C0801 and HY-C0801W Ceiling Mount Brackets
[For ceiling installation, horizontal angle adjustable]

Installing the HS series speaker to a ceiling in conjunction with the HY-1500 series Mounting Bracket permits the speaker's horizontal angle to be adjusted.

The figure at right shows an example of vertical speaker installation.

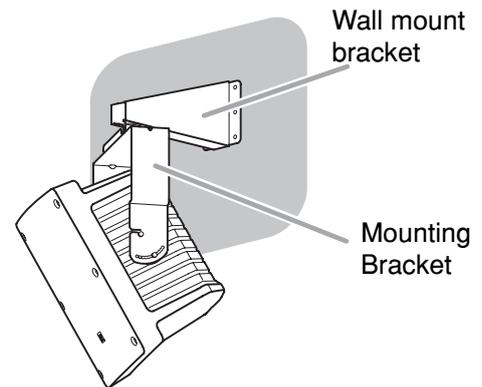Ceiling mount bracket

Mounting Bracket

10.1.4. HY-W0801 and HY-W0801W Wall Mount Brackets
[For ceiling installation, horizontal angle adjustable]

Installing the HS series speaker to a ceiling in conjunction with the HY-1500 series Mounting Bracket permits the speaker's horizontal angle to be adjusted.

The figure at right shows an example of horizontal speaker installation.

Wall mount bracket

Mounting Bracket

10.1.5. Safety wire installation [For speaker fall prevention]
When mounting the speaker system to the ceiling or wall, install a safety wire as needed.
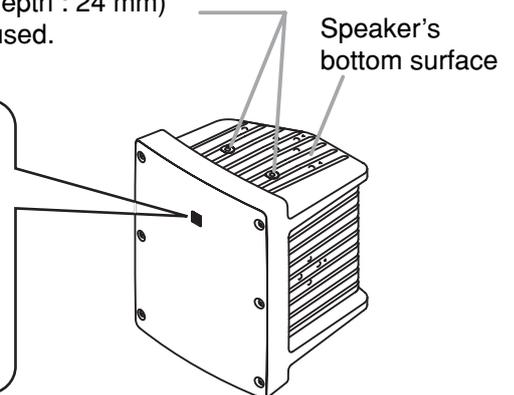
⚠ **WARNING** When installing the safety wire, be sure to follow the instruction below. Failure to do so may cause the speaker to fall, resulting in personal injury.

- Use a wire rope of 2mm(0.08") or more in diameter. (The safety wire is not supplied.)
- Tighten the safety wire to take up the slack. Otherwise, impact shock at speaker fall may cause the Wire connected parts or wire itself to break.
- Install the safety wire to a place that can structurally support the full weight of load.
- Screw a speaker suspension bolt (M8) into one of the screw holes on the speaker's bottom surface. Then, connect the safety wire to the bolt.

Installation position of an M8 bolt
M8 (Screw pitch : 1.25 mm, effective depth : 24 mm)
Note : Unified inch screws cannot be used.

Speaker's bottom surface

Changing the orientation of the front panel logo

Turn the logo mark while holding its edges to change its orientation.

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10.2. Mounting on the ST-34B Speaker Stand [optional]

Note :
Refer to the instruction manual enclosed with the
Speaker Stand for its mounting details.

Step 1. Fix the bracket supplied with the speaker stand
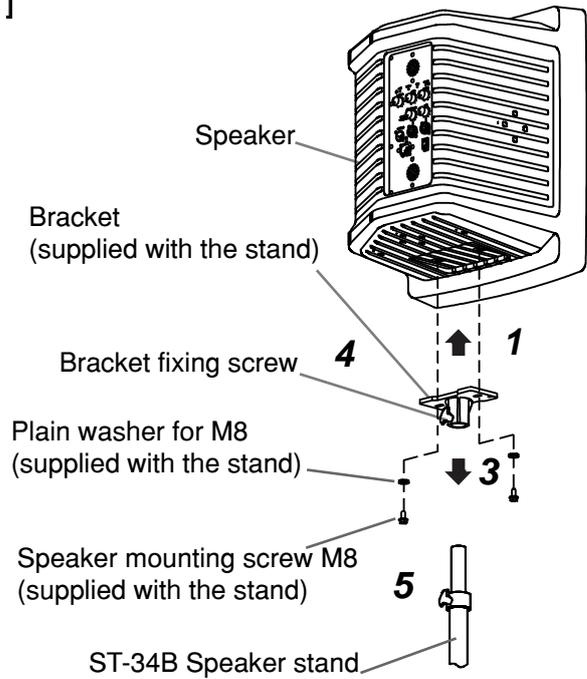to the speaker.

Step 2. Spread the tripod legs of the stand to their full
extension.
Note : Spread the tripod legs until the stays
extend horizontally.

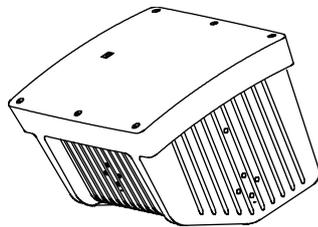Step 3. Mount the speaker with the bracket fixed onto
the stand.

Step 4. Determine the speaker direction, and tighten
the bracket fixing screw.

Step 5. Adjust the stand height.

Speaker

Bracket
(supplied with the stand)

Bracket fixing screw   *4*   *1*

Plain washer for M8
(supplied with the stand)   *3*

Speaker mounting screw M8
(supplied with the stand)   *5*

ST-34B Speaker stand

10.3. Using as a Floor Monitor

Note : When installing the speaker system on slippery floor, put a non slip mat under the speaker.
Do not kick or stand on the speaker system, as this will damage the speaker.
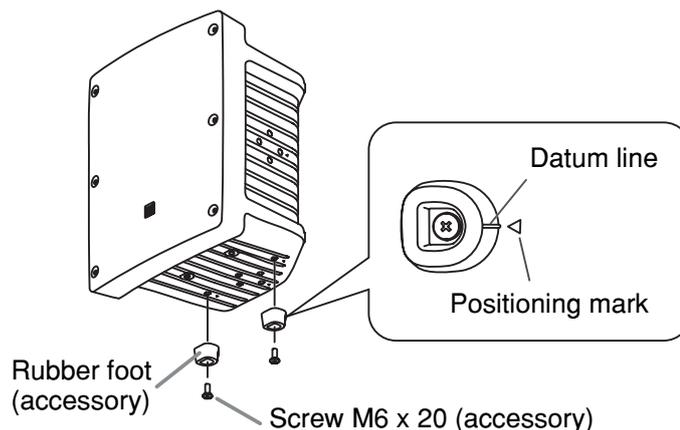
10.4. Attaching the Supplied Rubber Feet

Attach the rubber feet in the case of speaker storage or on-floor speaker installation.
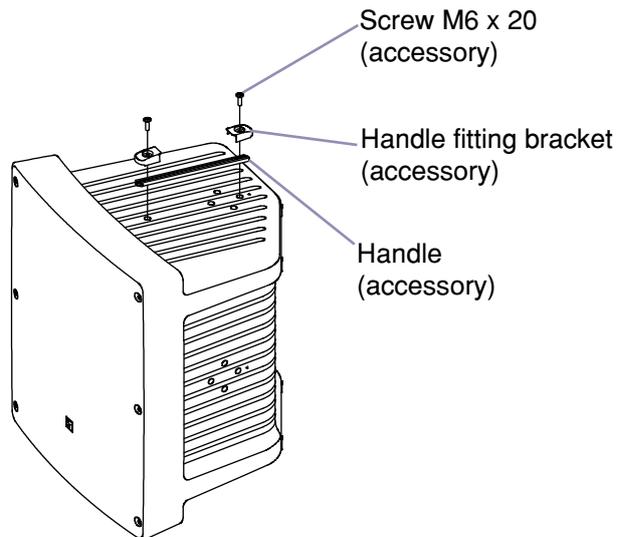Note : The rubber foot has a direction (back and forth).
Align the datum line on the rubber foot with the positioning mark ($\triangle$) on the speaker unit as shown
below.

Datum line

Positioning mark

Rubber foot
(accessory)

Screw M6 x 20 (accessory)

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10.5. Attaching a Handle

The speaker system comes with a handy carrying handle.
Attach the handle on the speaker's top surface.

Screw M6 x 20
(accessory)

Handle fitting bracket
(accessory)

Handle
(accessory)

11. SPECIFICATIONS

No. Model	HS-P1500B AS	HS-P1500W AS
Enclosure	Sealed type	
Power Source	220 – 240V AC (50/60Hz)	
Rated Output	170W	
Power Consumption	100W	
Sensitivity	98 dB (1W,1m)	
Frequency Response	60Hz – 20kHz	
Crossover Frequency	3 kHz	
Directivity Angle	Horizontal : 90°, Vertical : 40°	
Input	MIC/LINE : XLR-3-31 type combination connector (balanced/unbalanced, -60dB/0dB selective) AUX : XLR-3-31 type combination connector, -10dB unbalanced	
Output	LINE Out : XLR-3-31 type connector, 0dB unbalanced	
Tone Control	Bass : ±10dB at 100Hz, Treble : ±10dB at 10kHz	
Operating Temperature	-10°C to 40°C	
Finish	Enclosure : Polypropylene, black Punched Net : Surface-treated steel plate black, Input panel : Surface-treated steel plate, black	
Dimension	451(W) x 560(H) x 400(D)mm (17.76" X 22.04" X 17.75")	
Weight	16kg (35.2 lb) unit only	
Accessory	Power cord (2m) ...1, Handle...1, Handle fitting bracket...2, Rubber foot...2, Screw M6 x 20...4	
Option	Mounting Bracket: HY-1500VB/VW, HY-1500HB/HW ; Ceiling mount bracket : HY-C0801; Wall mount bracket:HY-W0801; Speaker stand: ST-34B	

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