

Installation manual



XY Series

XY-3B

Dual 12" three-way
Bi-amp loudspeaker

XY-1

Dual 12" hybrid loaded
LF loudspeaker

XY-2

8" two-way passive
mid-high loudspeaker

XY-2E

8" two-way Passive/Bi-Amp
mid-high loudspeaker

pioneerproaudio.com

For support information such as a installation manual and recommended preset settings for these products, visit the website above.

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Pioneer

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1 Introduction

WARNING

- These loudspeakers must be installed by a qualified technician as it involves such tasks as selecting a location for installation, drilling holes in walls/ceiling and wiring. Have the installer carefully follow the installation instructions.
- Certain technical skills are required to install the loudspeaker. Please have the product installed by a professional.
- AlphaTheta Corporation is not responsible for any loss or damage that results from improper installation, insufficient strength of installation materials, misuse, modification or natural disasters.

1.1 Before you start

- Make sure to use amplifiers with rated load impedances that match the speaker impedance for the amplifiers connected to each loudspeaker.
- Furthermore, any devices or objects easily affected by magnetism (floppy disks, magnetic cards, magnetic tape etc.) should be kept well away from the speakers.
In order to prevent damage to the loudspeaker resulting from input overload, please observe the following precautions:
- If you supply amplification power to the loudspeaker excessively, the speaker could be damaged and overheating could cause a hazard.
- Only connect, turn ON or OFF the audio system or any one part (such as DJ player and Mixer) when the power to the amplifier is turned off. If any operations are performed while the amplifier is turned on, there is the possibility of damaging the treble frequency speaker unit.
- When using a graphic equaliser to emphasise loud sounds in the high-frequency range, do not use excessive amplifier volume.
- Do not try to force a low-powered amplifier to produce high sound levels as the amplifier's harmonic distortion will be increased, and you may damage the speaker.
- These loudspeakers require properly adjusted signal inputs optimized for each speaker units. Otherwise speaker units may deteriorate even if the power is below the power handling capacity.

CAUTION: installation

- Ensure that the floor or stage surface can withstand the weight of the system.
- The installation technician must follow professional installation techniques to protect the loudspeaker against falling.
- When installing the speakers, make sure that the wall/ceiling is strong enough to support the speakers.
- Improper installation of the speakers could cause them to fall and cause damage or injuries to persons nearby.
- Do not attempt to stack devices together for use other than specified systems. Such devices may become unstable and tip over or fall, leading to injury. Make sure to secure each device in place using the pole mount, ratchet straps or other hardware to prevent them from tipping over or falling when stacking devices together. AlphaTheta Corporation shall accept no liability for damage or injury caused by accidents resulting from these products tipping over or falling due to them being insufficiently secured.
- Switch off and unplug your power amplifier and consult the instructions when connecting up components. Make sure you use the correct connecting cables.
- Keep magnetic objects such as screwdrivers or steel parts away from the tweeter and woofer speakers. Since the speakers use strong magnets, the objects may be attracted, causing injury or damaging the diaphragm.
- Do not install the loudspeaker in areas exposed to direct sunlight or near heating appliances. Such conditions may result in shrinkage of the wood materials and finish, leading to deformation of the enclosure, discolouration, or damage to the speakers. Conditions considered unpleasant by humans are detrimental to speakers as well. Providing a comfortable environment for the speakers will assist them in demonstrating their best performance. Please maintain the usage environment as follows:

Temperature:	15 °C to 25 °C (59 °F to 77 °F)
Relative Humidity:	35 % to 65 % (winter)
	40 % to 70 % (summer)
- Do not store speakers at temperatures outside of the rated temperature range as doing so may cause the speaker to drop in performance or become damaged.

Storage temperature range:	-20 °C to +55 °C (-4 °F to +131 °F)
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- Do not use the product in locations subject to extreme fluctuations in temperature. Doing so could cause the product to malfunction.
- When using room air-conditioners or stoves to rapidly cool or heat room spaces, take precautions to avoid excessive dehumidification.

- Avoid placing the speaker near areas such as windows, as outside air can cause condensation to occur within the speaker.
- These loudspeaker is designed for indoor use only. To avoid electric shock hazard, do not place them outside, or in an overly humid area.

CAUTION: in use

- Do not attempt to use the product for other applications.
- Do not use the speaker to output distorted sound for long periods of times. This can result in a fire hazard.
- Please also remember that vibrations from subwoofer systems can shake other loudspeakers out of place, which may present a toppling hazard.
- Do not attempt to use the product with the XY Series grille detached as doing so could result in damage to the product. Consult a qualified professional for assistance with removing the grille for maintenance purposes.
- If you notice anything unusual with a speaker or ceiling suspension hardware, immediately stop using it and detach it without delay.
- If you notice cracking on the speaker enclosure, immediately stop using it and detach it without delay.
- Detach speakers that are not used or cannot be used without delay.

For XY-2 Only



For Europe



If you want to dispose of this product, do not mix it with general household waste. There is a separate collection system for used electronic products in accordance with legislation that requires proper treatment, recovery and recycling.

Private households in the member states of the EU, in Switzerland and Norway may return their used electronic products free of charge to designated collection facilities or to a retailer (if you purchase a similar new one).

For countries not mentioned above, please contact your local authorities for the correct method of disposal.

By doing so you will ensure that your disposed product undergoes the necessary treatment, recovery and recycling and thus prevent potential negative effects on the environment and human health.

The Safety of Your Ears is in Your Hands

- Get the most out of your equipment by playing it at a safe level – a level that lets the sound come through clearly without annoying blaring or distortion and, most importantly, without affecting your sensitive hearing. Sound can be deceiving. Over time, your hearing “comfort level” adapts to higher volumes of sound, so what sounds “normal” can actually be loud and harmful to your hearing. Guard against this by setting your equipment at a safe level BEFORE your hearing adapts.

ESTABLISH A SAFE LEVEL:

- Set your volume control at a low setting.
- Slowly increase the sound until you can hear it comfortably and clearly, without distortion.
- Once you have established a comfortable sound level, set the dial and leave it there.

BE SURE TO OBSERVE THE FOLLOWING GUIDELINES:

- Do not turn up the volume so high that you can't hear what's around you.
- Use caution or temporarily discontinue use in potentially hazardous situations.
- Do not use headphones while operating a motorised vehicle; the use of headphones may create a traffic hazard and is illegal in many areas.

About trademarks and registered trademarks

- Pioneer is a registered trademark of PIONEER CORPORATION*.
- SpeakON is a registered trademark of Neutrik.

*The names of companies and products mentioned herein are the trademarks of their respective owners.

1 Introduction

1.2 Installation guidelines

WARNING

- Ensure that the floor, wall, ceiling, or stage surface can withstand the weight of the system. Consult a qualified professional for advice if the strength of the surface is unknown.
- After installation, you must confirm that the speakers are safely installed.
- You must periodically check that the speakers are safely installed, without any loosen bolts, deterioration of parts, and so on. Also you must check right after earthquake.
- Wherever possible, avoid high stacks and use ratchet straps to secure loudspeakers together. Please also remember that vibrations from subwoofer systems can shake other loudspeakers out of place, which may present a toppling hazard. The use of ratchet straps and non-slip material is recommended to prevent this.
- When this product is placed in an elevated place such as on a shelf or stage, a speaker may be moved by vibrations and fall to the floor, causing an injury or accident. Take measures to prevent a speaker from sliding off a shelf or a stage, etc.
- At least two persons should together lift the speaker to install.
- Give sufficient consideration to safety when performing the work.

Mid-high loudspeaker

- The XY-2 yoke is equipped with hole for mounting on the ceiling or walls.
- This mounting hole and included special bolt can be used to mount the XY-2 to the bottom of the XY-3B/XY-1/XY-2E.
- Make sure to attach a wire for preventing falling parts and equipment of adequate strength using holes for mounting secondary safety wires.
- The sides of the XY-2 are equipped with the socket head bolts for adjusting the forward tilt of the speaker.

WARNING

- When attaching the speakers to the wall or ceiling, you should first confirm that the wall or ceiling being used is strong enough to support their weight. If you are unsure then consult a specialist. If the speakers should fall then it could lead to serious injury, and is potentially very dangerous.
- Check to make sure that any mounting hardware used is enough to support the system, whether using special hardware designed for the system or commercially available hardware. Make sure to read the Introduction section in this manual and the instruction manual for the mounting hardware thoroughly before proceeding. Take every precaution to prevent the product and associated parts from falling as they could cause serious injury if they fell onto a person.
- Use screws suitable for ceiling material and screw mounting parts in solid locations.
- Make sure to use mounting hardware of sufficient strength to secure the speaker in place when using non-designated hardware. The speaker could fall, causing accidents, if not properly secured.
- The fall prevention wire must be attached to a suitably strong location. The strength of the location to which the wire is attached being insufficient can lead to the speakers falling or cause accidents. The fall prevention wire and screw to attach the fall prevention wire to the ceiling or wall are not supplied with the speakers, so please purchase them separately.
- Check to make sure that any mounting hardware used is enough to support the system, when using commercially available hardware. Make sure to read the Introduction section in this manual and the instruction manual for the mounting hardware thoroughly before proceeding. Be careful not to place any devices or other equipment on top of the system as such devices could fall, causing severe injury.
- Make sure to install the system in a stable location if using a pole for mounting.
- Make sure to use mounting hardware of sufficient strength to secure the speaker in place. The speaker could fall, causing accidents, if not properly secured.

1.3 System set-up

WARNING

- Loudspeaker systems are potentially dangerous objects if used incorrectly. Please ensure that you read this section fully, and contact your local dealer should you be in any doubt over correct operation procedures.
- Professional loudspeaker systems are capable of producing damage-inducing sound pressure levels, and hence care should be taken when setting your system up, particularly when it comes to loudspeaker placement within a venue. Damage to the ear can result from levels above 90 dB under prolonged exposure.

2 Accessories

WARNING

- The overhead suspension of loudspeakers is a very serious issue with potentially lethal consequences should anything go wrong.
Rigging should only be carried out by experienced personnel following safe working practice.
Should you be in any doubt whatsoever, please contact the retailer or dealer from which you purchased this product.
- When utilising any suspension method, **a secondary safety feature must be used.** For any suspension method, fit an eyebolt to any of the rigging points.
A safety steel can then be attached to this and connected to your safety point.

Hardware standby

The following hardware is provided with the XY series products so that commercially-available poles, brackets and other items can be attached.

(see Table 2-1 "Hardware standby")

Caution

- Check to make sure that any commercially available mounting hardware used is enough to support the weight of the speaker system.
- If you use any commercially available eyebolt, ensure it is the same size as in the list below and have enough strength to withstand the weight of the loudspeaker.

Bolt size	Length [mm]	Pitch [mm]	Effective length [mm]	Safe working load limits [kN] ([kg])
M10	30	1.5	10~15	1.47 (150.0)

Accessories List

All the supplied accessories for XY series are listed in the following "Accessories List."

(see Table 2-1 "Accessories List")

Please ensure that you read "Section 1: Introduction" and "Section 3.1 - 3.2" fully, and have the product installed by a professional.

Have the installer carefully follow the installation instructions.

2 Accessories

Table 2-1. Full-range loudspeaker

	Hardware	XY-3B	XY-1	XY-2	XY-2E
Hardware standby	Mounting point	9 x M10 threaded points(*2)	13 x M10 threaded points (*2)	1 x M12 mounting point (*3)	13 x M10 threaded points (*2)
	Speaker Pole / Tripod Stand	-	-	35 mm polemount socket(*4)	-
Accessories List	Variable Angle Bracket (*1)	CP-XY3DF1 (*5)	CP-XY1DF1 (*1)	-	
	Dual Enclosure Flying Plate (*1)	CP-XY3DF1 (*5)	CP-XY1DF1 (*1)	-	
	Transportation	CP-XY3WB1	-	-	
Setting procedure		Refer to Section 3.2 Rigging and Caster setting			

*1 Eye bolts to be used as secondary safety feature are not included with the products.

*2 When you use any commercially available eyebolts, please use the eyebolts meeting the following size and specification.

Bolt size	Length [mm]	Pitch [mm]	Effective length [mm]	Safe working load limits [kN] ([kg])
M10	30	1.5	10~15	1.47 (150.0)

*3 Using the included special bolt, attachment to the bottom of XY-3B is also available.

*4 Available by using commercially polemount adapter for the speaker stand.

*5 CP-XY3DF1 also can be used as Variable Angle Bracket not only Dual Enclosure Flying Plate Set.

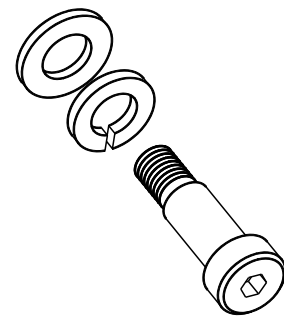
Special bolt included with the XY-2 for attachment to the bottom of the speaker

XY-2 includes a special bolt set for attachment to the bottom of the speaker.

Ensure to read "3.2.2 Horizontal Flying Cradle & XY-2" to attach the XY-2 to the speaker safety.

WARNING:

- When attaching the XY-2 to the speakers, do not attach it to anywhere other than the bottom of the enclosure.
- Do not use the bolt other than special bolt included with XY-2 for mounting to the speaker.



Part list

Item	Part Name	Qty	Service Part No.	Note
1	M10 Special bolt	1	-	M10 x 41mm (P=1.5), 6mm hex socket head shoulder bolt
2	Spring Washer	1	-	M12
3	Flat washer	1	-	M12

3 Rigging And Caster Setting

3.1 Before Setting

3.1.1 Guide for safe use

Improper installation of the speakers could cause them to fall and cause damage or injuries to persons nearby. Please check the following conditions of all the loudspeakers in this series always before they are rigged.

WARNING:

INTENDED USAGE

- Do not use any other method than the one prescribed in this manual.

SAFETY CAUTIONS

- Ensure and check all the speaker riggings are sufficiently secure to be used before using them. Damaged components must be withdrawn from use immediately.
- Ensure the supplied bolts are used to fix the rigging accessories instead of the pre-inserted screws.
- Any installation (permanent or temporary) must be securely attached to the structure of the building using chain, steel wire or web straps that are certified and load rated for the loudspeaker system. Consideration must be taken when determining the loading on the structure to include loudspeakers and rigging hardware, and the appropriate safety factor can then be decided upon. If you are in any doubt whatsoever, please contact the retailer or dealer from which you purchased this product. A reputable rigging organisation should also be able to advise on legislation regarding safety factors for suspended systems of this type.
- Be sure to use the supplied accessory screws.
- Small parts such as flat washer, spring washer and nut out of the reach of children and infants. If accidentally swallowed, contact a doctor immediately.

EYEBOLT STRENGTH

- When you use any commercially-available eyebolts, please use the eyebolts meeting the following size and specification:

Bolt size	Length [mm]	Pitch [mm]	Effective length [mm]	Safe working load limits [kN] ([kg])
M10	30	1.5	10~15	1.47 (150.0)

NOTE only for XY-3B:

The nuts of the threaded fixing points on XY-3B are structured so that bolts cannot pass through them. (max threaded length is 15mm.)

NOTE: XY-3B is shown in the illustration.

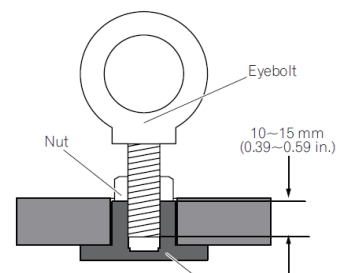


Fig. 3-1-1-A Threaded fixing point

Adjusting the direction of eyebolt

- Screw the eye bolts into the nuts so that they are engaged within the range of 10 to 15 mm (0.39 to 0.59 in.) and then tighten the nuts with a spanner while matching the direction of the eye bolts to fix them in place. (Fig. 3-1-1-A)

- The safe working load limits of an eyebolt are different depending on an inclined angle of the wire attached to the eyebolt. If the suspension angle of the wire attached to the eyebolt is inclined (not vertical) and correctly oriented in the plane of pull, be sure to read the catalogue of the eye bolt for details of the safe working load limits depending on the inclined angle. It is generally recommended that an angle of the wire attached to the eye bolt correctly oriented in the plane of pull be 45 degrees at maximum. Do not suspend the eye bolts as shown in the right figure. (Fig. 3-1-1-B)

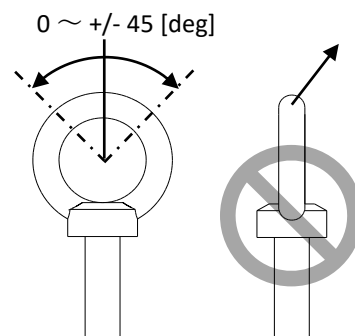


Fig. 3-1-1-B

THE SECONDARY SAFETY FEATURE

- **The secondary safety feature must be used** to prevent the speaker from falling. Eye bolts to be used as secondary safety feature are not included with the products. When you use any commercially-available eyebolts, the above-listed safe working load limits and other specifications should be met.
- With any suspension method, a second anchor point should be used as safety feature.
- Ensure a wire or a chain to be used as secondary safety feature is securely **suspended vertically from the ceiling or wall**.
 - If such a wire or a chain is suspended from the inclined ceiling or wall, or it is horizontally suspended, the wire or the chain would not be effective to prevent an accidental fall.
- Do not use the double safety hoisting accessory enclosure connection together with the main hoisting accessory connection.
- **An appropriate length of wire or chain should be used as second safety feature.** It is generally recommended that the fall prevention wire be 100 mm longer than the main suspension wire/chain/tool.
 - If the wire or the chain is too long, it would not be effective enough to prevent an accidental fall.

AFTER INSTALLATION

- After installation, you must confirm that the speakers are safely installed. You must also periodically check them to make sure that they are still safe.
- After installing the speaker, never loosen any of its screws, since the speaker could fall or other accidents could occur.
- You must confirm that the speakers are safely installed right after earthquake.

3 Rigging And Caster Setting

3.2 Procedures

3.2.1 XY-2

Using the included yoke, suspension of the XY-2 from the ceiling, wall, and bottom of XY-3B/XY-1/XY-2E is available.

The orientation of the enclosure can be changed at any angle.

Several holes on both sides of the outer yoke of the cradle are used to change the length of the outer yoke so that the distance between the enclosure and the cradle can be adjusted. The factory default sets the distance between the enclosure and the cradle at the nearest position. If you want to connect a speaker cable and incline the enclosure, please select a different hole on the outer yoke to enlarge the distance.

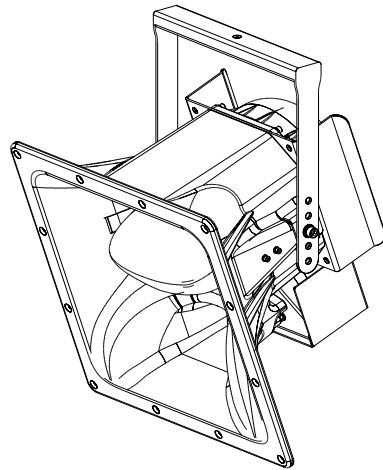
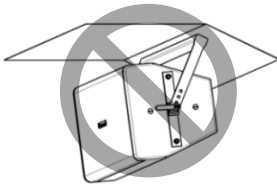


Table.3-2-2-A: Installation to the ceiling and wall

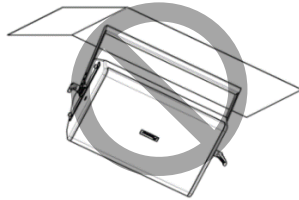
Part number	Installation to the ceiling	Installation to the wall	
		Vertical	Horizontal
XY-2	Available	Installation prohibited	Available

WARNING:

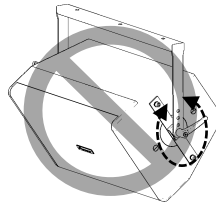
- Be careful not to insert your fingers between the steel arms when you adjust the angle of them.
 - XY-2 is not supposed to be used in the following situations, which may cause an injury or accident.
- For ALL the models, the following situations are quite dangerous.



Suspending from sloped (non-horizontal) ceiling



Excluding installation, loosening the side levers/handles/bolts.



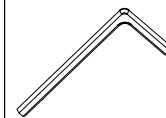
The outer yoke of the cradle is not horizontal to the wall

Part list (XY-2)

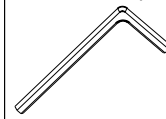
Item	Part Name	Qty	Service Part No.	Note
1	Main Yoke	1	-	
2	Yoke mount	2	-	
3	Flat Washer	2	06D014	M10
4	Spring Washer	2	06D015	M10
5	M10 socket head bolt	2	-	M10 x 40mm (P=1.5), 8mm hex socket head
6	M10 Special bolt	1	-	M10 x 41mm (P=1.5), 6mm hex socket head shoulder bolt
7	Spring Washer	1	-	M12
8	Flat washer	1	-	M12

Required tools

• 6mm hex key



• 8mm hex key



3 Rigging And Caster Setting

Procedure (XY-2 single use)

Note: The yoke length can be changed by unscrewing the socket head bolts and choosing mounting holes in the both side plate ends of the yoke.

- (1) The hole on the top of the yoke can be used to install the speaker to the ceiling or the wall in the horizontal position. (Fig.3-2-1-A)

WARNING:

- Do not use the special bolt included with XY-2 mounting to the ceilings or walls. Included bolt is dedicated for mounting to XY-3B/XY-1 / XY-2E.

- (2) Once the desired angle of the XY-2 is set, tighten the socket head bolt on the yoke to lock the position in place at 15N·m torque. (Fig.3-2-1-A)
- (3) Secondary safety feature must be provided using the holes on the back of the XY-2 for secondary safety wires. (Fig.3-2-1-B)

For preventing to occur the noise from secondary safety wires, wire length should be as short as possible. (Ex. Not using lower holes on back of XY-2, Surplus wire length:10cm)

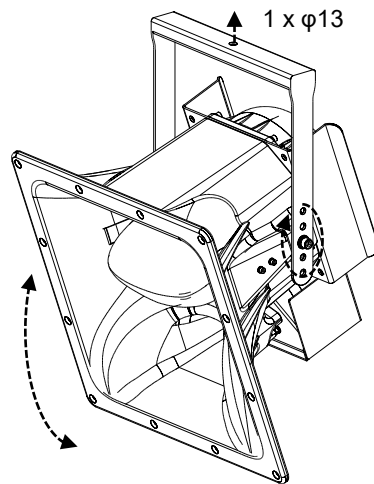


Fig.3-2-1-A

Hole for secondary safety feature.

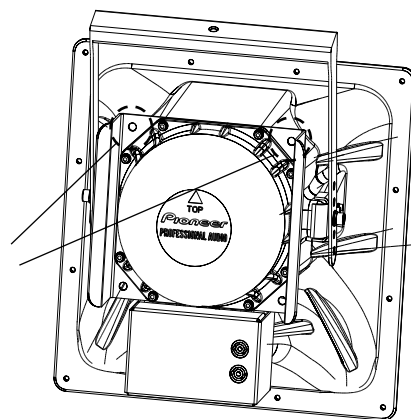


Fig.3-2-1-B

Procedure (Attachment to the bottom of XY-3B/XY-1/XY-2E)

WARNING:

- When attaching the XY-2 to the speaker, do not attach it to anywhere other than the bottom of the XY-3B/XY-1/XY-2E.
- Do not suspend anything other than an XY-2 to the bottom of the speaker. Also, do not suspend two or more XY-2s.

- (1) Using the included special bolts, align the mounting holes on the top of the XY-2 yoke with the mounting points on the bottom of the speaker.

WARNING:

- Do not use the bolt other than special bolt included with XY-2 for mounting to the speaker.

Ensure that both Spring washer and Flat washer are used - the Flat Washer should be in contact with the XY-2 yoke. Tighten the bolts at 15N·m torque. (Fig.3-2-1-C)

- (2) Once the desired angle of the XY-2 is set, tighten the socket head bolts on the side of yoke to lock the position in place at 15N·m torque. (Fig.3-2-1-C)

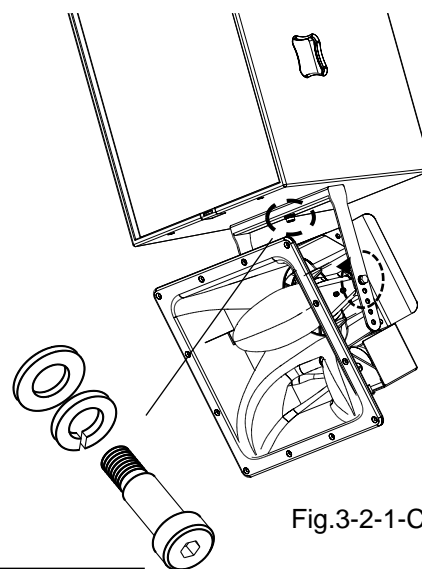


Fig.3-2-1-C

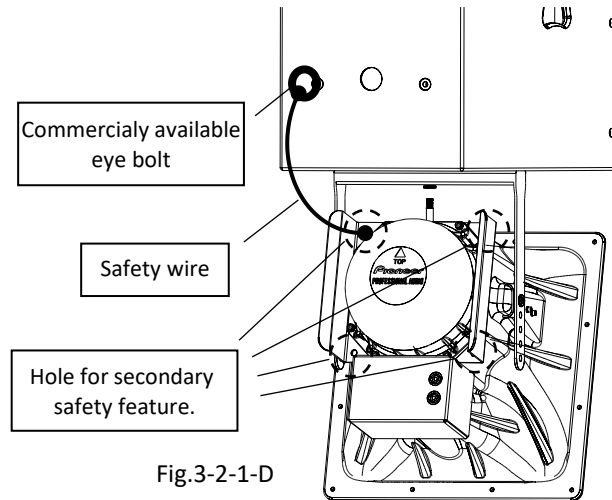
Special Bolt

3 Rigging And Caster Setting

WARNING:

- Excluding installation, do not loosen the XY-2 side hexagon socket head cap bolts.

- (3) For secondary safety, ensure a commercially available eyebolt to the mounting point on the bottom of the speaker rear, securely fix the eye-bolt on the speaker and the hole on the back of XY-2 using secondary safety wire. (Fig.3-2-1-D)



3 Rigging And Caster Setting

3.2.2 Vertical Flying Cradle

When using the Vertical Flying Cradle, suspension of the XY-1 and XY-2E enclosure vertically from the ceiling as shown in the right figure is available. Speaker models compatible with respective Vertical Flying Cradles are shown in the table below.

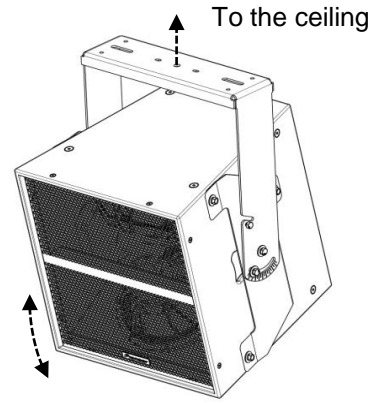


Table.3-2-2-A: Models compatible with respective Vertical Flying Cradles

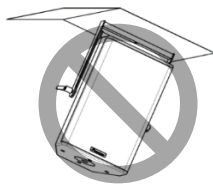
No.	Use model
CP-XY1VC1	XY-1
	XY-2E

NOTE: XY-1 is shown in the illustration.

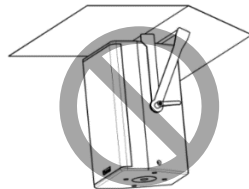
WARNING:

- Be careful not to insert your fingers between the steel arms when you adjust the angle of them.
- Securely fix the bolts for angle adjustment of the Vertical Flying Cradle except during the installation work.
- Vertical Flying Cradle is not supposed to be used in the following situations, which may cause an injury or accident.

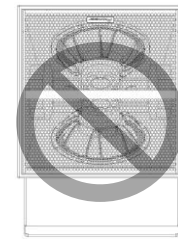
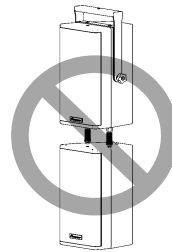
For all the models, the following situations are quite dangerous.



Suspending from sloped (non-horizontal) ceiling



Prohibition of connecting speakers using commercially available eyebolts or CP-XY1CON1 (Only XY-2 available)

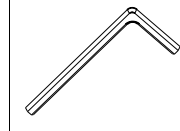


Prohibited to install upside down

Part list (CP-XY1VC1)

Item No	Part Name	Qty	Service Part No.	Note
	Side plate set	1	-	
1	Side plate (L)	1	-	
2	Side plate (R)	1	-	
3	M10 socket head bolt	7	-	M10 x 40 mm (P=1.5), 8mm hex socket head
4	Flat washer	7	-	M10
5	Spring washer	7	-	M10
	Yoke set	1	-	
6	Yoke	1	-	
7	M10 socket head bolt	7	-	M10 x 25 mm (P=1.5), 8mm hex socket head
8	Flat washer	4	-	M10
9	Spring washer	4	-	M10
10	Rubber washer	4	-	φ40mm x 2mm

Required tools
- 8mm hex key



3 Rigging And Caster Setting

Procedure (CP-XY1VC1)

- (1) Remove the eight pre-inserted mounting screws from the lateral of enclosure. (Fig.3-2-2-A)

NOTE: XY-1 is shown in the illustrations below.

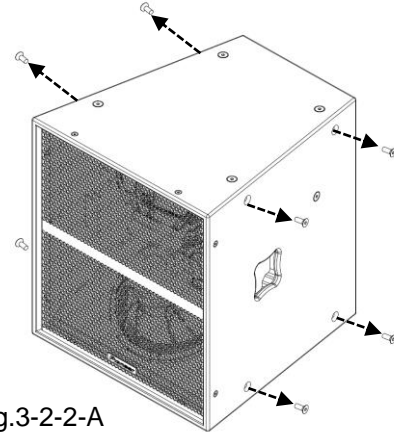


Fig.3-2-2-A

- (2) Using the supplied six M10 socket head bolts (C), align the mounting holes in the side plate (A)/(B) with the mounting points on the lateral of the enclosure. Ensure that both the Flat Washer (D) and the Spring Washer (E) are used - the Flat Washer (D) should be in contact with the cradle. Tighten the bolts over 15 N·m torque. (Fig.3-2-2-B)

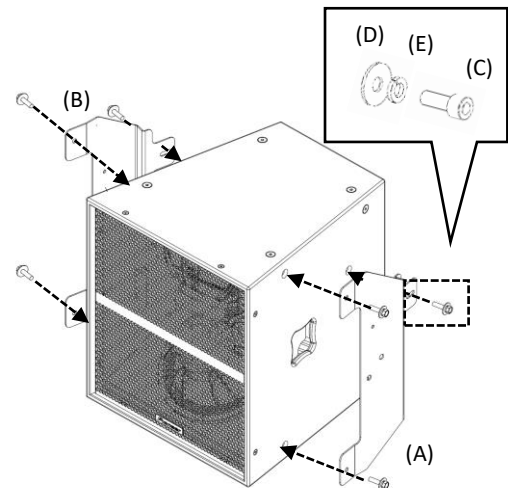


Fig.3-2-2-B

The CP-XY1VC1 can be attached to the ceiling in one of the following two ways.

(A) When the yoke is attached to the speaker and then the speaker is mounted to the ceiling.

> Continue with the installation process from section **(3a)**.

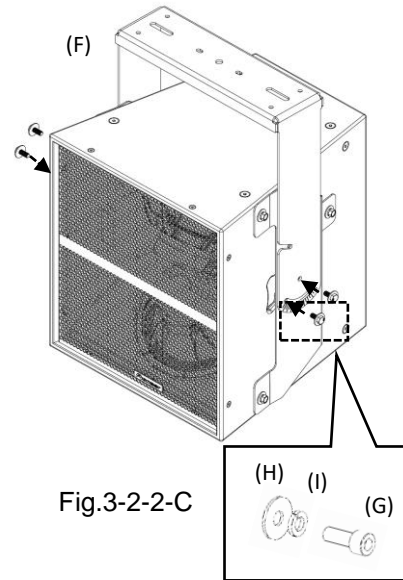
(B) When mounting the yoke to the ceiling and then mounting the speakers to the ceiling.

> Continue with the installation process from section **(3b)**.

3 Rigging And Caster Setting

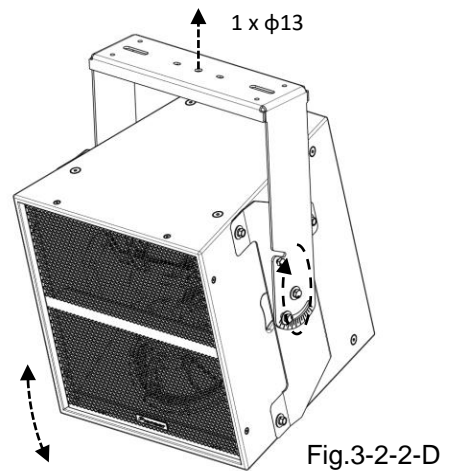
(A) When the yoke is attached to the speaker first

- (3a)** Using the supplied four M10 socket head bolts (G), align the main mounting holes and the hole for angle adjustment in the yoke (F) with the mounting points on the side plate. Ensure that both the Flat Washer (H) and the Spring Washer (I) are used - the Flat Washer (H) should be in contact with the cradle. Tighten the bolts over 15 N·m torque. (Fig.3-2-2-C)



NOTE: XY-1 is shown in the illustration.

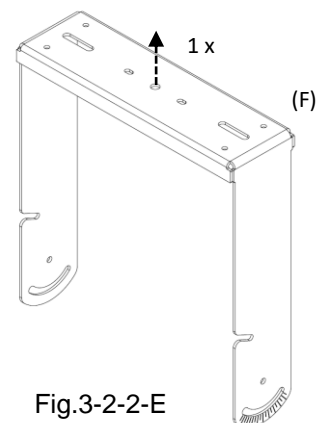
- (4a)** Install the speakers to the ceiling and loosen the angle adjustment screws to adjust the direction of the speakers. Once the speaker angle is set, retighten the screws. (Fig.3-2-2-D)



Please read section (8) as your next task.

(B) 2 When the yoke is attached to the ceiling first and then the speaker is attached to the yoke

- (3b)** Attach the yoke to the ceiling. (Fig.3-2-2-E)



3 Rigging And Caster Setting

- (4b) Attach the two socket head bolt (G) to the temporary fixing points on the side plate. Insert the bolts into the side plate by about 10 mm.
There is no need to install the Flat washer and Spring washer with the bolts. (Fig.3-2-2-F)

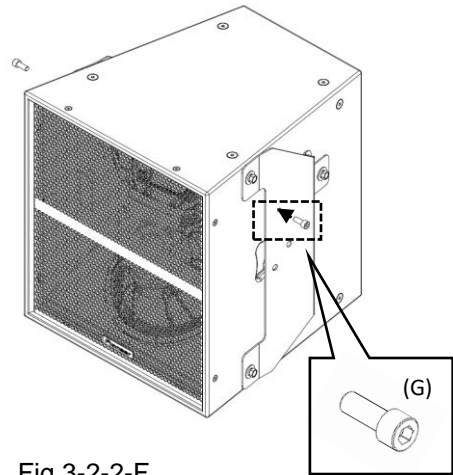


Fig.3-2-2-F

NOTE: XY-1 is shown in the illustration.

- (5b) Lift the speaker up to the ceiling and insert the temporary fixing bolts on the side of the speaker into the temporary fixing slits in the yoke. (Fig.3-2-2-G)

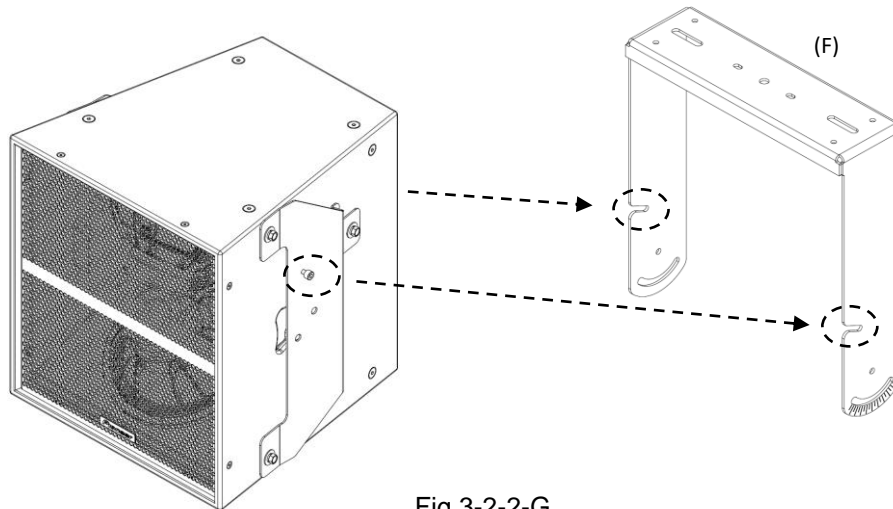


Fig.3-2-2-G

- (6b) Once the speaker is attached to the yoke, securely fasten the yoke fixing bolt and angle adjustment socket head bolt. (Fig.3-2-2-H)
After that, remove the temporary fixing bolts. (Fig.3-2-2-I)

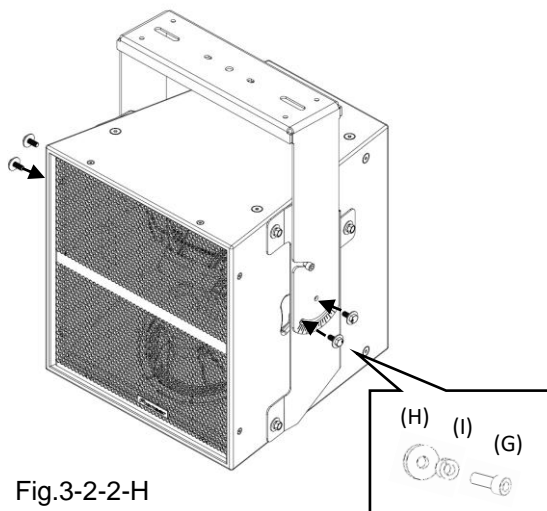


Fig.3-2-2-H

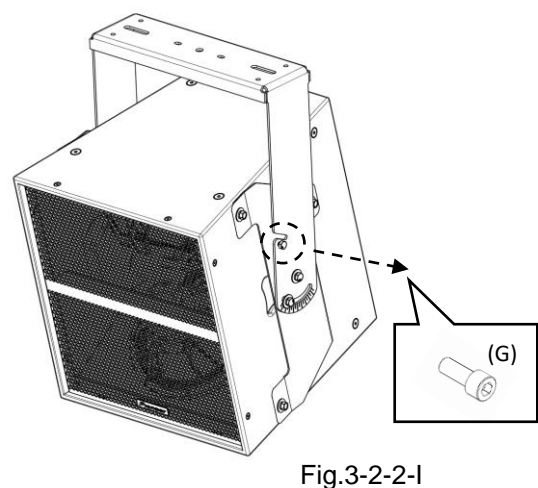


Fig.3-2-2-I

3 Rigging And Caster Setting

- (7b) Loosen the bolts for securing the bolts for adjusting the angle, and adjust the direction of the speaker. Once the direction of the speaker is determined, tighten the bolts firmly to secure the speaker to the yoke. (Fig.3-2-2-J)

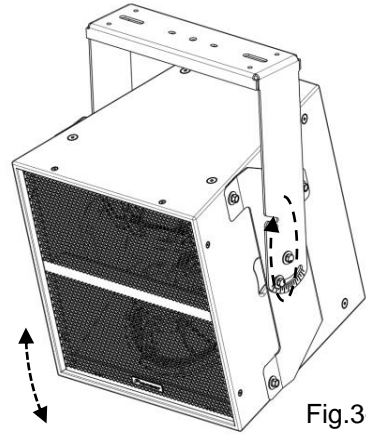


Fig.3-2-2-J

NOTE: XY-1 is shown in the illustration.

- (8) For use as a secondary safety feature, you must attach commercially available eye bolts to one of the four mounting holes on the top of the speaker and secure it to the ceiling with wires.

Commercially-available
eyebolt

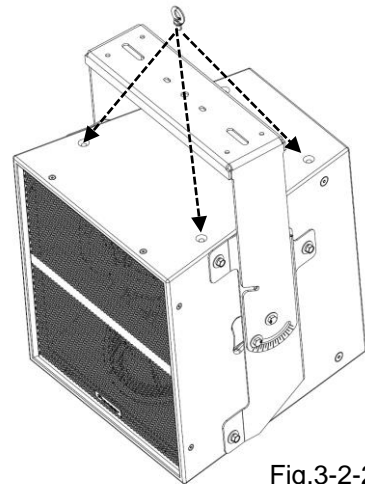


Fig.3-2-2-K

3 Rigging And Caster Setting

3.2.3 Variable Angle Bracket

When using the Variable Angle Bracket, suspension of the enclosure vertically from the ceiling as shown in the right figure is available. It is easier to change the inclined angle of Variable Angle Bracket than that of Vertical Flying Cradle. Speaker models compatible with respective Variable Angle Brackets is shown in the table below:

NOTE: XY-3B is shown in the illustration.

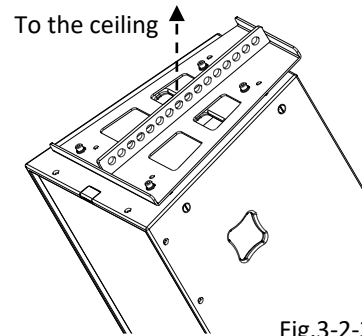
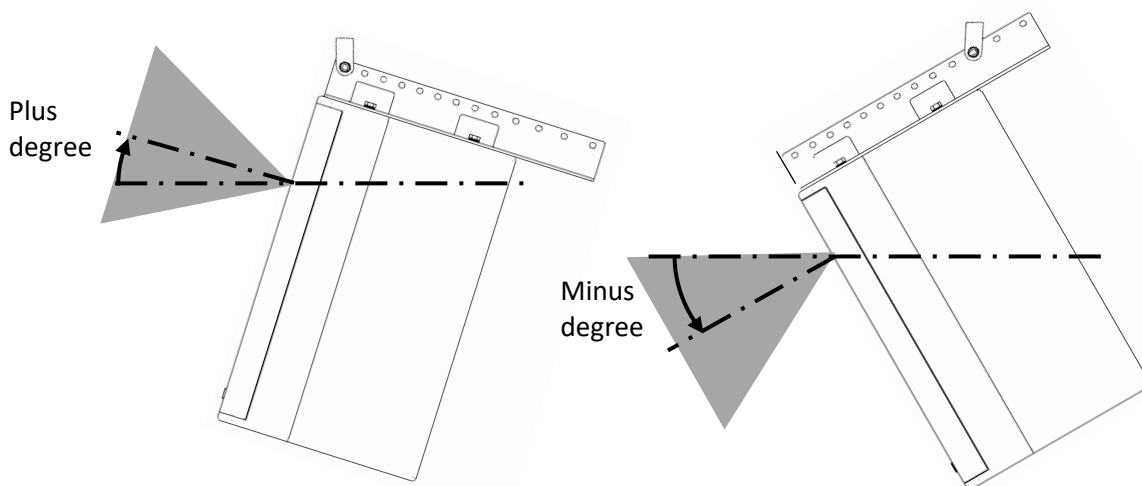


Fig.3-2-3-A

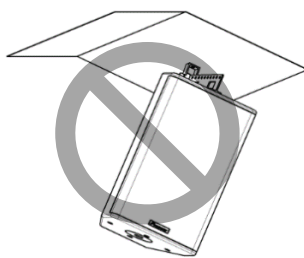
Table.3-2-3-A: Models compatible with each Variable Angle Bracket and the range of inclined angle

No.	Use model
CP-XY3DF1	XY-3B
CP-XY1DF1	XY-1/XY-2E

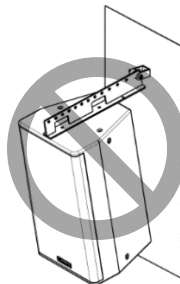


WARNING:

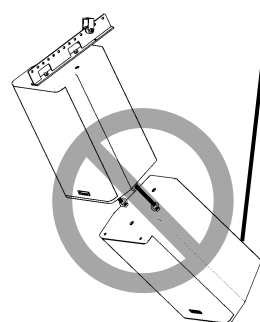
- Do not attempt to use this product with components other than the specified speaker.
- Be sure to use the supplied accessory screws.
- Flat washer and spring washer out of the reach of children and infants. If accidentally swallowed, contact a doctor immediately.
- After mounting the speaker with the cradle, never loosen any of its accessory installation screws, since the speaker could fall or other accidents could occur.
- Attach two or more wires to a rigging point different from those for installing the cradle to prevent swaying.
- Variable Angle Bracket is not supposed to be used in the following situations, which may cause an injury or accident.



Suspending from sloped (non-horizontal) ceiling



Suspending from the wall



Suspending Multiple enclosures

3 Rigging And Caster Setting

Part list (CP-XY3DF1)

Item	Part Name	Qty	Service Part No.	Note
1	Dual Enclosure Flying Plate	1	-	
2	Rear Plate Top	1	10B917L	Disuse
3	Rear Plate Bottom	1	10B917S	Disuse
4	M10 socket head bolt	9	06B522	M10 x 20mm (P=1.5), 8mm hex socket head Included spare: 5
5	Spring washer	9	06D015	M10, Included spare: 5
6	Flat washer	9	06D014	M10, Included spare: 5

Required tools

- 8mm hex key



Part list (CP-XY1DF1)

Item	Part Name	Qty	Service Part No.	Note
1	Dual Enclosure Flying Plate	1	-	
2	Rear Plate	1	-	Disuse
4	M10 socket head bolt	7	-	M10 x 40 mm (P=1.5), 8mm hex socket head Included spare: 3
5	Spring washer	7	-	M10, Included spare: 3
6	Flat washer	7	-	M10, Included spare: 3

Required tools

- 8mm hex key



Procedure (CP-XY3DF1 / CP-XY1DF1 as Variable angle bracket)

(0) Only For CP-XY1DF1

Remove the four blindfold screws on the top surface of XY-1/XY-2E.
(Fig.3-2-3-B)

NOTE: XY-1 is shown in the illustration.

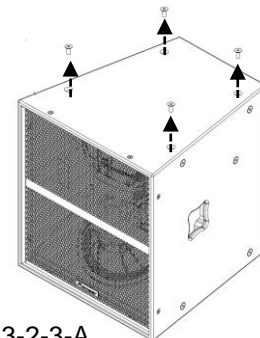


Fig.3-2-3-A

(1) Using the supplied M10 socket head bolts(B), align the mounting holes in the Dual Flying Plate(A) with the mounting points on the top of the enclosure.

Ensure that both the Spring washers(C) and Flat washers(D) are used - the Flat washer(D) should be in contact with the bracket.
Tighten the bolts at 15N·m torque. (Fig.3-2-3-B)

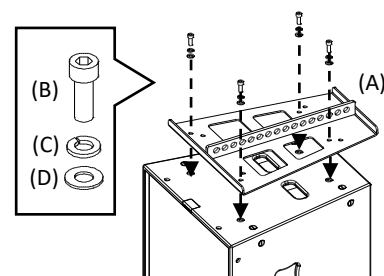


Fig.3-2-3-B

3 Rigging And Caster Setting

(2) The holes on the top plate can be used to install the speaker to the ceiling. (Fig.3-2-3-C)

Note:

- For larger down-tilt angles, position the pivot on the last hole and use the mounting point on the rear or underside as a pull-back.
- When hanging the speakers using the Variable angle bracket, the XY-2 can be attached to the bottom of the XY-3B/XY-1/XY-2E.

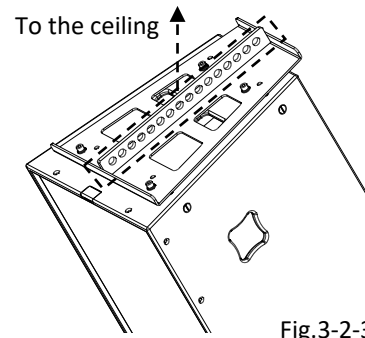


Fig.3-2-3-C

WARNING:

- Attach two or more wire to a rigging point different from those for installing the Variable angle bracket to prevent swaying. (Fig.3-2-2-D)
- When attaching the XY-2 to the speaker, do not attach it to anywhere other than the bottom of specified models. Make sure to use the included bolt, washer, and spring washer supplied with XY-2.
- Do not suspend anything other than an XY-2 to the bottom of the XY-3B/XY-1/XY-2E. Also, do not suspend two or more XY-2s.

Table:3-2-2-B : Mounting point of CP-XY3DF1 and inclined angle of the speaker

The mounting point		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Angle [°]	Only XY-1	17	14	10	7	4	0	-3	-7	-10	-13	-17	-20	-23	-26	-29
	XY-1 + XY-2	13	10	8	5	2	0	-3	-5	-8	-10	-13	-16	-18	-20	-23
	Only XY-2E	17	14	10	7	4	0	-3	-7	-10	-13	-17	-20	-23	-26	-29
	XY-2E + XY-2	13	10	8	5	2	0	-3	-5	-8	-10	-13	-16	-18	-20	-23

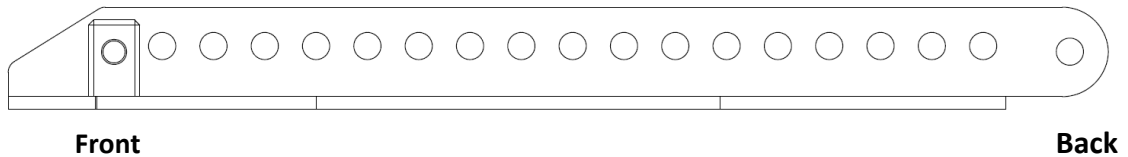


Table:3-2-2-C : Mounting point of CP-XY3DF1 and inclined angle of the speaker

The mounting point		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Angle [°]	Only XY-3B	17	14	10	7	4	0	-3	-7	-10	-13	-17	-20	-23	-26	-29	-31
	XY-3B + XY-2	13	10	8	5	2	0	-3	-5	-8	-10	-13	-16	-18	-20	-23	-25

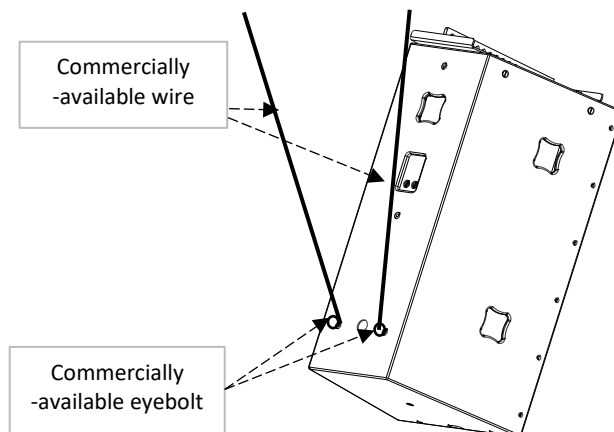
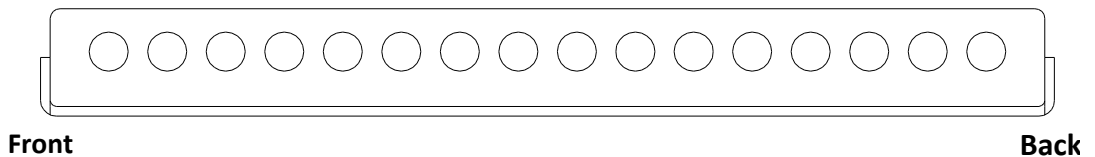


Fig.3-2-3-D

3 Rigging And Caster Setting

- (3) Ensure the commercially-available eyebolt are secured to mounting point on the rear top of the enclosure to suspend it with wire as a secondary safety feature. (Fig.3-2-3-E)

For preventing to occur the noise from secondary safety wires, wire length should be as short as possible.

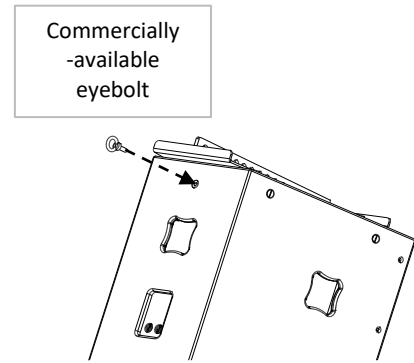


Fig.3-2-3-E

3 Rigging And Caster Setting

3.2.4 Dual Enclosure Flying Plate Set

When using the Dual Enclosure Flying Plate Set, multiple enclosures can be stably combined side by side and suspended from the ceiling as shown in the figure below.

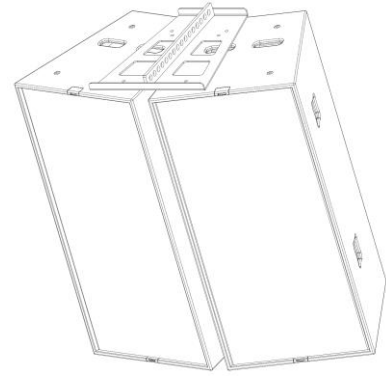


Table.3-2-4-A: Models compatible with Dual Enclosure Flying Plate Set and inclined angle between the 2 enclosures

No.	Use model	Fixing mode
CP-XY3DF1	XY-3B	Horizontal coverage extension
CP-XY1DF1	XY-1	A. Frontal alignment
	XY-2E	B. Horizontal coverage extension

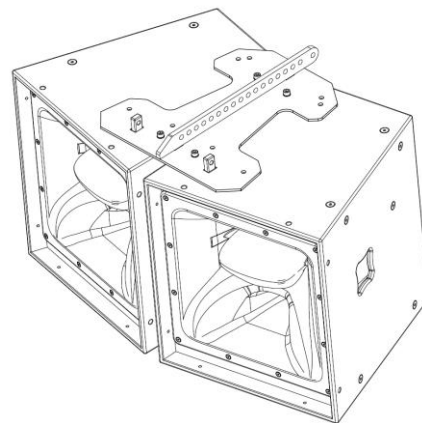
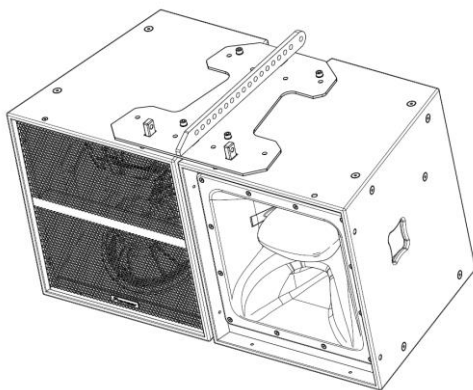
NOTE: XY-3Bs are shown in the illustration.

Only for CP-XY1DF1

When using the CP-XY1DF1 to combine XY-1/XY-2E, the direction of the speaker can be selected from the following two settings, depending on the purpose.

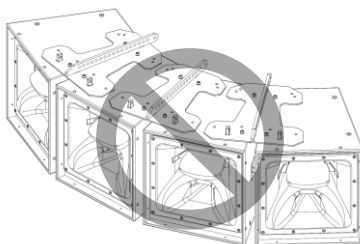
A. By aligning the front of the speakers, XY-1 and XY-2E can be handled like a single full range speaker.

B. XY-2E can be connected at an angle to reduce sound interference between the two loudspeakers.

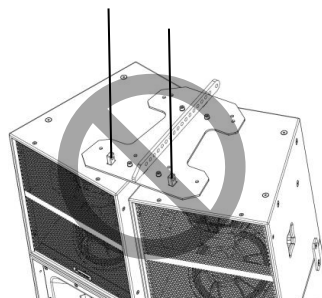


WARNING:

- Do not attempt to use this product with components other than the specified speaker.
- Be sure to use the supplied accessory screws.
- Flat washer and spring washer out of the reach of children and infants. If accidentally swallowed, contact a doctor immediately.
- After mounting the speaker with the cradle, never loosen any of its accessory installation screws, since the speaker could fall or other accidents could occur.
- Attach a wire to a rigging point different from those for installing the cradle to prevent swaying.
- Dual Enclosure Flying Plate Set is not supposed to be used in the following situations, which may cause an injury or accident.



Connecting 4 or more units horizontally



Prohibition of suspending only at balancing points

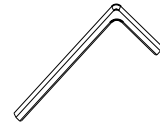
3 Rigging And Caster Setting

Part list (CP-XY3DF1)

Item	Part Name	Qty	Service Part No.	Note
1	Vertical connection plate	4	-	-
2	M10 countersunk bolt	9	-	M10 x 35 mm (P=1.5), 6 mm hex socket head, Included spare:1
3	Rubber pad	5	-	-

Required tools

- 8mm hex key

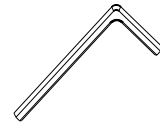


Part list (CP-XY1DF1)

Item	Part Name	Qty	Service Part No.	Note
1	Dual Enclosure Flying Plate	1	-	-
2	Rear Plate	1	-	-
3	M10 socket head bolt	7	-	M10 x 40 mm (P=1.5), 8mm hex socket head, Included spare:1
4	Spring washer	7	-	M10, Included spare:1
5	Flat washer	7	-	M10, Included spare:1

Required tools

- 8mm hex key



Procedure (CP-XY3DF1 / CP-XY1DF1)

(0) Only For CP-XY1DF1

Remove the two screws on the top surface of XY-1/XY-2E from the side where the speaker contacts. (Fig.3-2-4-A)

- (1)** Using the supplied M10 socket head bolts(B), align the mounting holes on the Dual enclosure flying plate(A) with the mounting points of the top of the enclosure. Ensure that both the Spring washer(C) and Flat washer(D) are used in between the Dual enclosure flying plate(A) and the M10 socket head bolt(B). Tighten the bolts at 15N·m torque. (Fig.3-2-4-B)

NOTE: XY-2E is shown in the illustration.

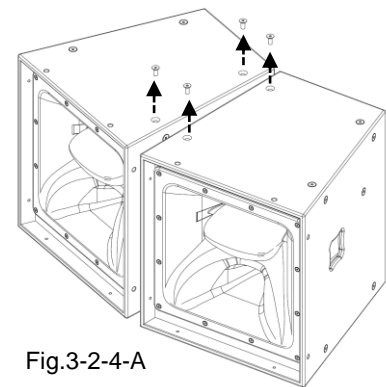
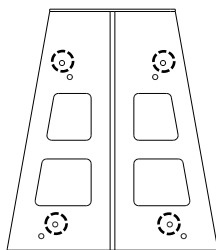


Fig.3-2-4-A

WARNING:

- The top of each enclosure must be fixed with the proper mounting holes on top plate(A) as following figure.

CP-XY3DF1



CP-XY1DF1

1. Horizontal Coverage Extension 2. Frontal Coverage

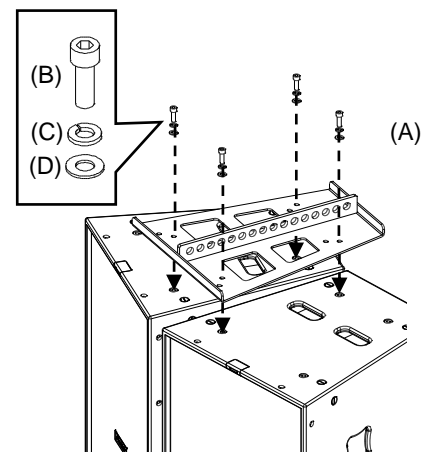
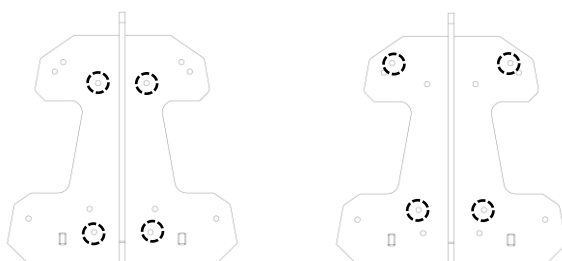


Fig.3-2-4-B

3 Rigging And Caster Setting

Refer to the instructions below to install a rear plate on the back of each speaker.

CP-XY1DF1

Using the supplied M10 socket head bolts(B), align the mounting holes on the Rear plate bottom(F) with the mounting points of the rear of the enclosures. Ensure that both the Spring washer(C) and Flat washer(D) are used in between the rear plate (F) and the M10 socket head bolt(B). Tighten the bolts at 15N·m torque. (Fig.3-2-4-C)

WARNING:

- When assembling cluster using the CP-XY1DF1, back of the enclosures must be fixed using a rear plates.

CP-XY3DF1

Using the supplied M10 socket head bolts(B), align the mounting holes on the Rear plate top(E) and Rear plate bottom(F) with the mounting points of the rear of the enclosures. Ensure that both the Spring washer(C) and Flat washer(D) are used in between the rear plates(E/F) and the M10 socket head bolt(B). Tighten the bolts at 15N·m torque. (Fig.3-2-4-C)

WARNING:

- When assembling cluster using the CP-XY3DF1, back of the enclosures must be fixed using a set of two rear plates.

- (3) Holes on the top plate can be used to install the speaker to the ceiling. (Fig.3-2-4-D)

Note: Only CP-XY1DF1

When using the CP-XY1DF1 to connect different left and right speakers, a wire can be attached to the balancing point and pulled to keep the weight balanced. However, do not take down the speaker at the balancing point

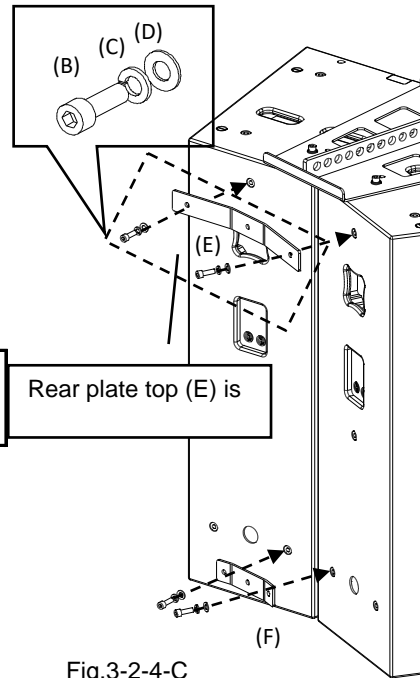


Fig.3-2-4-C

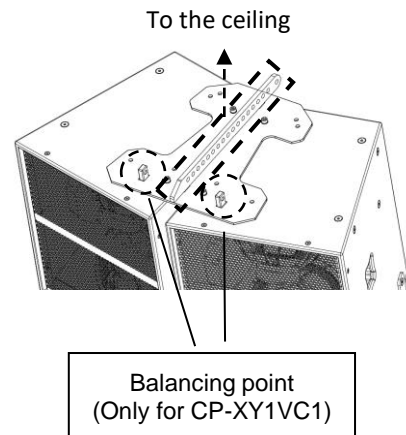
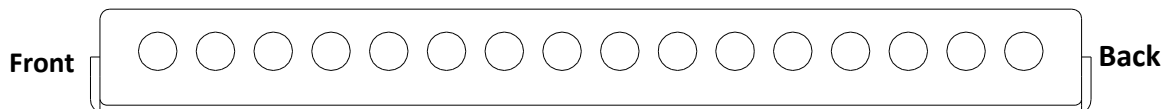


Fig.3-2-4-D

The range of inclined angle when a CP-XY3DF1 is used to suspend the speaker from the ceiling is shown in the table below:

The mounting point	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Angle Only XY-3B	20	18	14	11	8	5	2	-1	-5	-8	-11	-14	-17	-20	-23	-25
Angle XY-3B + XY-2	16	14	11	9	7	4	2	-1	-3	-6	-8	-11	-13	-15	-18	-20



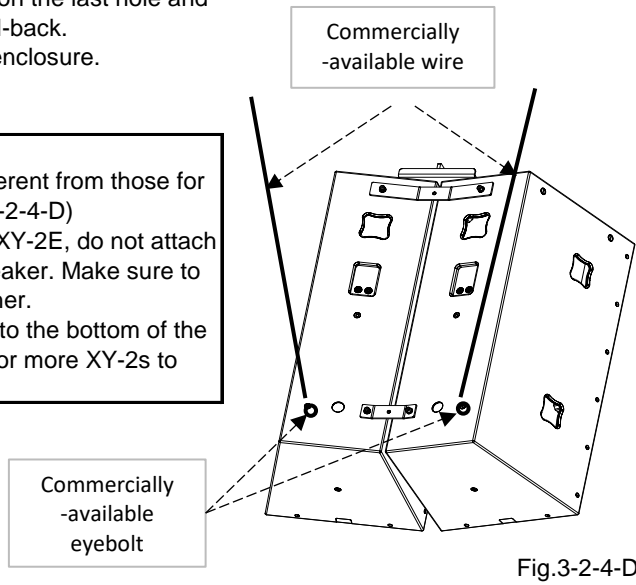
3 Rigging And Caster Setting

Note:

- For larger down-tilt angles, position the pivot on the last hole and use the point on the rear or underside as a pull-back.
- XY-2 can be attached to the bottom of each enclosure.

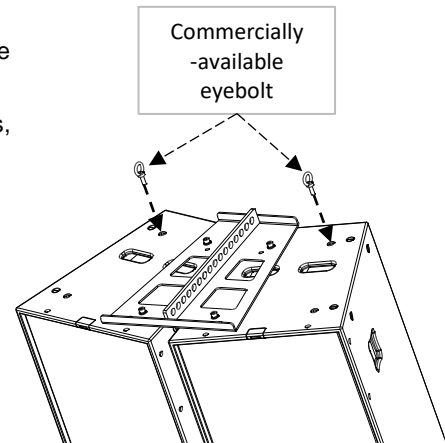
WARNING:

- Attach two or more wire to a rigging point different from those for installing the cluster to prevent swaying. (Fig.3-2-4-D)
- When attaching the XY-2 to the XY-3B/XY-1/XY-2E, do not attach it to anywhere other than the bottom of the speaker. Make sure to use the included bolt, washer, and spring washer.
- Do not suspend anything other than an XY-2 to the bottom of the XY-3B/XY-1/XY-2E. Also, do not suspend two or more XY-2s to each of the enclosure.



- (4) Ensure the two commercially-available eyebolt are secured to mounting point on the top of each enclosure to suspend it with wire as a secondary safety feature. (Fig.3-2-4-E)

For preventing to occur the noise from secondary safety wires, wire length should be as short as possible.



3 Rigging And Caster Setting

Assembling the cluster using Dual enclosure flying plate and Vertical connection plate

By using the dual enclosure flying plate and vertical connection plate, XY-1/XY-2E can be connected horizontally and vertically to assemble a cluster.

NOTE: All the parts for a combination of Dual Enclosure Flying Plate Set and Vertical connection plate set should be compatible with respective speakers, XY-1 and XY-2E.

Maximum number of connections

The maximum number of these connections is 3 horizontally and 3 vertically. An XY-2 can also be connected underneath it. (Fig.3-2-4-F)

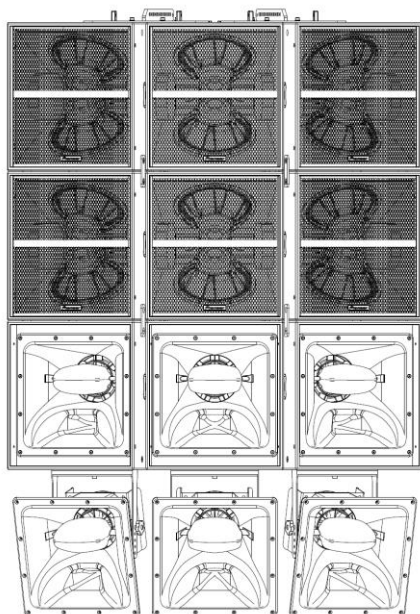
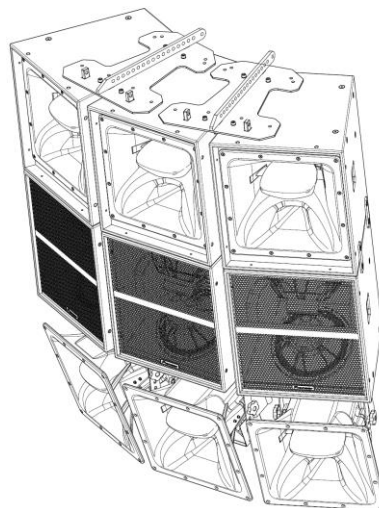
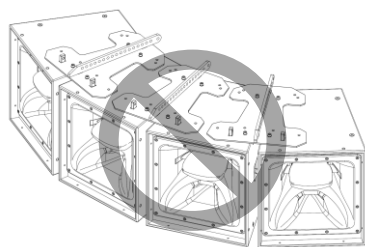


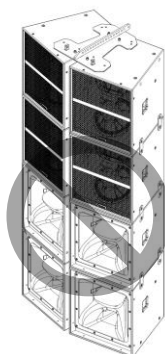
Fig.3-2-4-F

WARNING:

- Do not attempt to use this product with components other than the specified speaker.
- Be sure to use the supplied accessory screws.
- Flat washer and spring washer out of the reach of children and infants. If accidentally swallowed, contact a doctor immediately.
- After mounting the speaker with the cradle, never loosen any of its accessory installation screws, since the speaker could fall or other accidents could occur.
- Attach two or more wires to a rigging point different from those for installing the cradle to prevent swaying.
- The Variable Angle Bracket and the Dual Enclosure Flying Plate Set are not supposed to be used in the following situations, which may cause an injury or accident.



Connecting 4 or more units horizontally



Connecting 4 or more units vertically

3 Rigging And Caster Setting

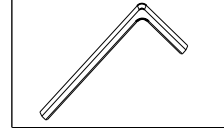
Part list

Dual Enclosure Flying Plate Set (CP-XY1DF1)

Item	Part Name	Qty	Service Part No.	Note
1	Dual Enclosure Flying Plate	1	-	-
2	Rear Plate	1	-	-
3	M10 socket head bolt	7	-	M10 x 20mm (P=1.5), 8mm hex socket head, Included spare:1
4	Spring washer	7	-	M10, Included spare:1
5	Flat washer	7	-	M10, Included spare:1

Required tools

- 8 mm hex key

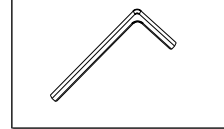


Vertical connection plate set (CP-XY1CON1)

Item	Part Name	Qty	Service Part No.	Note
1	Vertical connection plate	4	-	-
2	M10 countersunk bolt	9	-	M10 x 30mm (P=1.5), 6 mm hex socket head, Included spare:1
3	Rubber pad	5	-	-

Required tools

- 6 mm hex key



Procedure

- (1) Pile up XY-1/XY-2E and put a rubber pad between them.
(Fig.3-2-4-H)

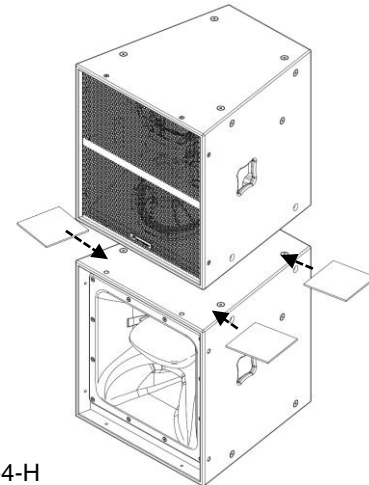


Fig.3-2-4-H

3 Rigging And Caster Setting

- (2) Remove the blindfold screws on the sides of XY-1/XY-2E, and use Countersunk bolts to secure the vertical connection plate to the speaker and connect the upper and lower speakers together. Tighten the bolts at 15N·m torque. (Fig.3-2-4-I)

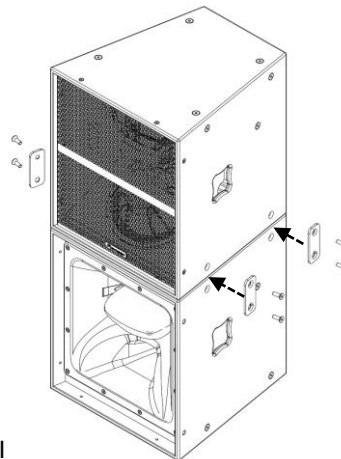


Fig.3-2-4-I

- (4) Secure each stack connected by CP-XY1CON1 with the top plate of CP-XY1DF1. Tighten the bolts at 15N·m torque. (Fig.3-2-4-I)

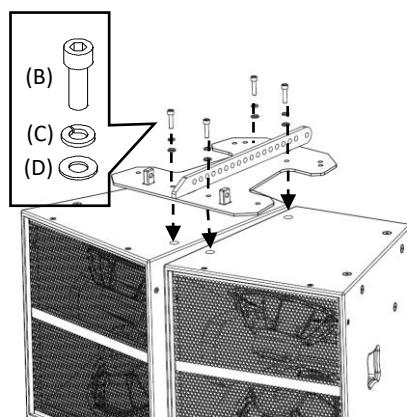


Fig.3-2-4-J

- (5) Using the supplied M10 socket head bolts(B), align the mounting holes on the Rear plate (F) with the mounting points of the rear of the enclosures. Ensure that both the Spring washer(C) and Flat washer(D) are used in between the rear plates(F) and the M10 socket head bolt(B). Tighten the bolts at 15N·m torque. (Fig.3-2-4-K)

WARNING:

- When assembling cluster using the CP-XY1DF1, back of the enclosures must be fixed using a rear plates.

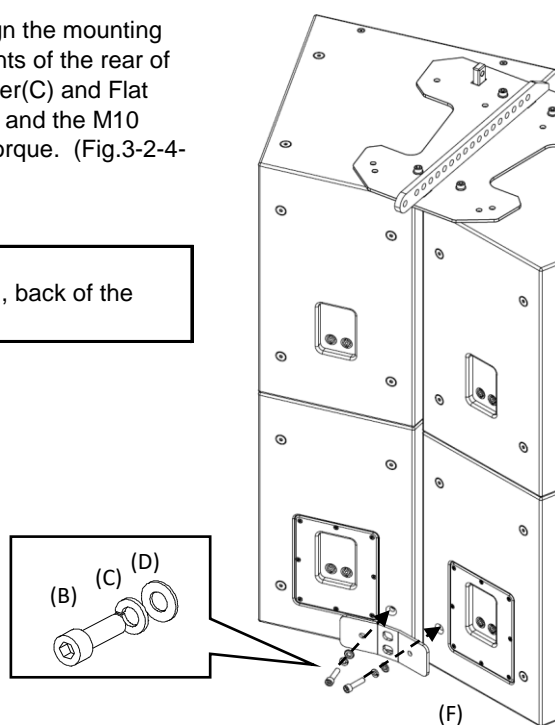


Fig.3-2-4-K

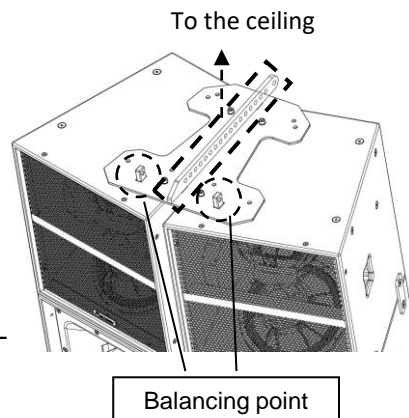
3 Rigging And Caster Setting

- (6) Holes on the top plate can be used to install the speaker to the ceiling. (Fig.3-2-4-L)

Note: Only CP-XY1VC1

When using the CP-XY1DF1 to connect different left and right speakers, a wire can be attached to the balancing point and pulled to keep the weight balanced. However, do not take down the speaker at the balancing point

Fig.3-2-4-L



Note:

- For larger down-tilt angles, position the pivot on the last hole and use the point on the rear or underside as a pull-back.
- XY-2 can be attached to the bottom of each enclosure.

WARNING:

- Attach two or more wire to a rigging point different from those for installing the cluster to prevent swaying. (Fig.3-2-3-M)
- When attaching the XY-2 to the XY-3B/XY-1/XY-2E, do not attach it to anywhere other than the bottom of the speaker. Make sure to use the included bolt, washer, and spring washer.
- Do not suspend anything other than an XY-2 to the bottom of the XY-3B/XY-1/XY-2E. Also, do not suspend two or more XY-2s to each of the enclosure.

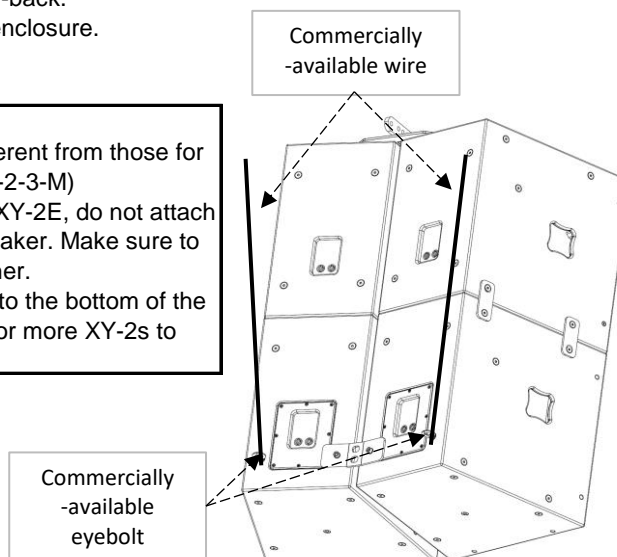


Fig.3-2-4-M

- (4) Ensure the two or more commercially-available eyebolt are secured to mounting point on the top of each enclosure to suspend it with wire as a secondary safety feature. (Fig.3-2-4-N)

For preventing to occur the noise from secondary safety wires, wire length should be as short as possible.

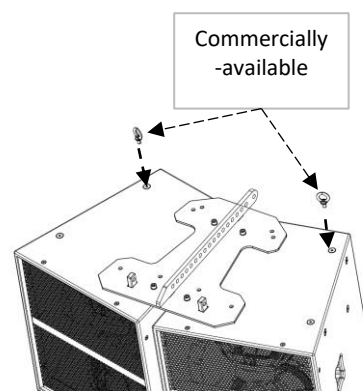


Fig.3-2-4-N

3 Rigging And Caster Setting

3.2.5 Suspension of the enclosure using the eyebolt

The speaker has the mounting points where commercially-available eyebolts can be mounted. Using the commercially-available eyebolts, a speaker or a combination of them can be vertically suspended.

WARNING:

Specification of eyebolt

- If you use any commercially available eyebolt, ensure it is the same size as in the list below and have enough strength to withstand the weight of the loudspeaker.

Table.3-2-5-A: Specification of eyebolt for each model

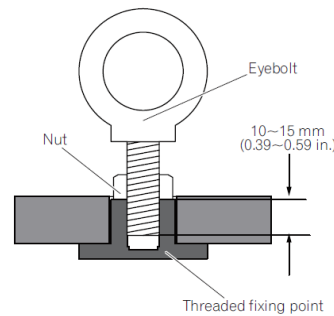
Bolt size	Length [mm]	Pitch [mm]	Effective length [mm]	Safe working load limits [kN] ([kg])
M10	30	1.5	10~15	1.47 (150.0)

NOTE only for XY-3B:

The nuts of the threaded fixing points on XY-3B are structured so that bolts cannot pass through them. (max threaded length is 15mm.)

Adjusting the direction of eyebolt

Screw the eye bolts into the nuts so that they are engaged within the range of 10 to 15 mm (0.39 to 0.59 in.) and then tighten the nuts with a spanner while matching the direction of the eye bolts to fix them in place.



NOTE: XY-3B is shown in the illustration.

Limits of combining multiple speakers

- Be sure to meet the conditions and requirements shown in the Table.3-2-5-B.

Table.3-2-5-B: Limits and requirements of combining multiple speakers using eyebolts

Model	Max. No. of Total Enclosures	Min. No. of Suspension Lines for One Enclosures	Max. working load limit/mounting point
XY-3B	*Combination with eyebolt is not allowed	Three, *Horizontal suspending is not allowed	60 kg
XY-1/XY-2E	Three	Two, *Horizontal suspending is not allowed	60 kg

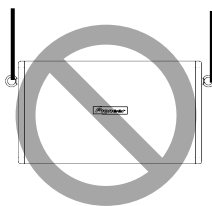
Eyebolt is not supposed to be used in the following situations, which may cause an injury or accident. For all the models, the following situations are quite dangerous.

For all models :

Only for the following model : XY-3B



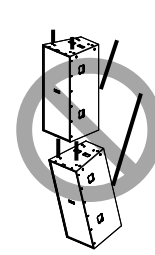
Suspending horizontally using eyebolts



Suspending using XY-2 mounting holes at bottom



Suspending multiple enclosures



3 Rigging And Caster Setting

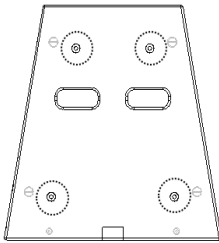
The enclosure can be inclined downward. The locations and number of mounting points of each model are listed in the Table.3-2-5-C.

Table.3-2-5-C: Locations and number of mounting points of each model

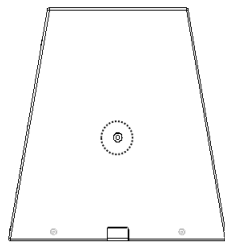
Model	Hole size	Location		
		Top / Bottom	Left / Right	Rear
XY-3B	M10	4 on top 1 on bottom	N/A	4
XY-1/XY-2E	M10	4 on top 5 on bottom	N/A	4

XY-3B

Top

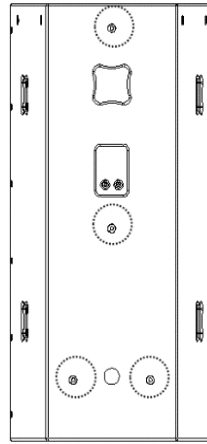


Bottom



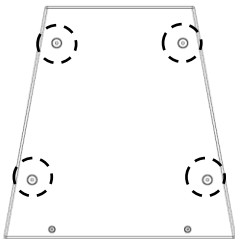
*Center hole is only for combining XY-2

Rear

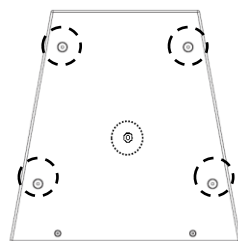


XY-1 / XY-2E

Top

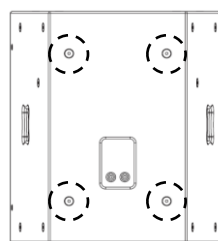


Bottom



*Center hole is only for combining XY-2

Rear



3 Rigging And Caster Setting

3.2.6 Wheel Board

A wheel board to help with transportation can be attached to the front of the XY-3B. Lock casters are provided to prevent unexpected movement with the wheel board. Also, you can use the wheel boards to stack two enclosures.

Part list (CP-XY3WB1)

Item	Part Name	Qty	Service Part No.	Note
1	Wheel Board	1	-	

Procedure

- (1) Attach the wheel board to the front of the enclosure using the butterfly latches on both sides of the wheel board. (Fig.3-2-6-A)
- (2) Lower down the cabinet so that its back is facing upward. (Fig.3-2-6-B)

WARNING :

- When attaching the wheel board to the enclosure, securely tighten the butterfly latches to the brackets on the sides of the enclosure.
- When attaching the wheel board to the enclosure, be sure to attach it so that the lock caster side is on the bottom side of the cabinet.
- The work to raise up and lower down the enclosure for transportation must be performed by two or more persons. Also, when raising up the enclosure after transportation, be sure to lock the lock casters.
- Be sure to lock the lock casters except during transportation. Additionally, do not place the enclosures in a sloping location.
- When stacking, do not use any other method than that specified in the user's manual. Additionally, do not stack more than three deep, stack in a sloping location, or stack any products other than the XY-3B.
- Stacking work should always be performed by two or more people.
- When stacking, apply the locking castor locks firmly. Additionally, after stacking, check that the guide on the underside of the wheel board on the upper enclosure is fit firmly into the enclosure on the underside.

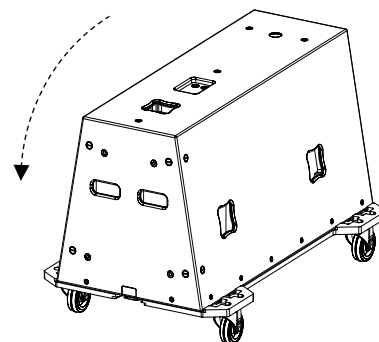
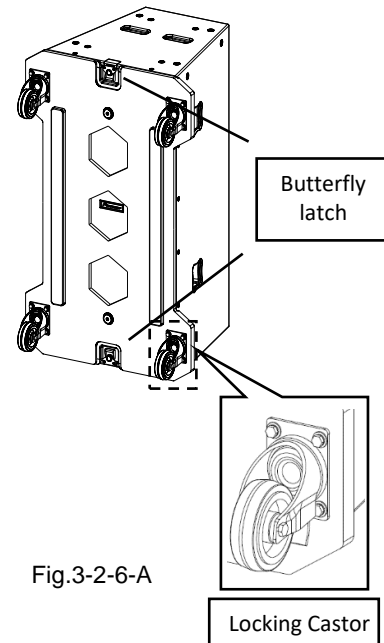
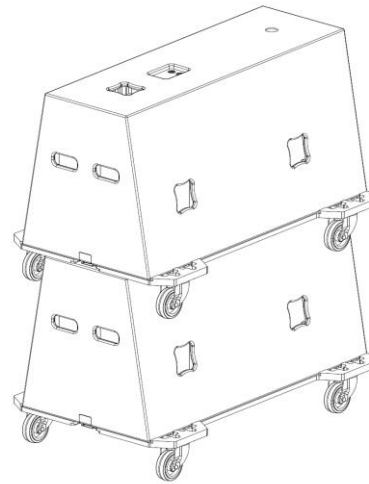


Fig.3-2-5-B

4 System Configuration

4.1 Connections

Power Amplifier Recommendations

In order to deliver best audio quality, amplifiers made by Powersoft is recommended to be used with the XY series loudspeakers.

Please refer to the table below for the combination of amplifiers with respective loudspeakers.

Table 4-1-1 Specification of Loudspeaker

Speaker model		XY-3B		XY-1	XY-2/2E
		LF	MHF		
Nominal Impedance		4Ω	8Ω	4Ω	8Ω
Power Handling	RMS	1400 W	270 W	1400 W	270 W
	Peak	2800 W	540 W	2800 W	540 W
Recommended Amplifier	X-Series	X8		X8	
		X4		X4	
	T-Series	T604 (Bridge)	T604	T604 (Bridge)	T604
	Quattrocanali	4804D	4804D 2404D	4804D	4804D 2404D

Table 4-1-2 Specification of Power Amplifier

Application	Series	Model	Channel Number	Output power				
				Per channel			Bridge mode	
				@ 2 Ω	@ 4 Ω	@ 8 Ω	@ 4 Ω	@ 8 Ω
Touring	X-Series	X8	8	5,200 W	3,000 W	1,600 W	10,400 W	6,000 W
		X4	4	5,200 W	3,000 W	1,600 W	10,400 W	6,000 W
	T-Series	T604	4	1,500 W	1,500 W	1,250 W	3,000 W	3,000 W
		T304	4	750 W	750 W	750 W	1,500 W	1,500 W
		T602	2	3,000 W	2,500 W	1,300 W	6,000 W	5,000 W
		T302	2	1,500 W	1,500 W	1,200 W	3,000 W	3,000 W
	K-Series	K20	2	9,000 W	5,200 W	2,700 W	18,000 W	10,400 W
		K10	2	6,000 W	4,000 W	2,000 W	12,000 W	8,000 W
		K6	2	3,600 W	2,500 W	1,300 W	7,200 W	5,000 W
		K3	2	2,800 W	2,600 W	1,400 W	5,600 W	5,200 W
		K2	2	2,400 W	1,950 W	1,000 W	4,800 W	3,900 W
	M-Series	M50Q	4		1,250 W	750 W		2,500 W
		M30D	2		1,500 W	900 W		3,000 W
		M28Q	4		700 W	360 W		1,400 W
		M20D	2		1,200 W	600 W		2,400 W
M14D		2		700 W	360 W		1,400 W	
Install	Ottocanali	12K4	8	1,000 W	1,500 W	850 W	2,000 W	3,000 W
		8K4	8	850 W	1,000 W	600 W	1,700 W	2,000 W
		4K4	8	450 W	500 W	250 W	900 W	1,000 W
	Quattrocanali	8804	4	1,800 W	2,400 W	1,600 W	3,600 W	4,800 W
		4804	4	1,500 W	1,200 W	1,200 W	3,000 W	2,400 W
		2404	4	800 W	600 W	600 W	1,600 W	1,200 W
		1204	4	400 W	300 W	300 W	800 W	600 W
	Duecanali	6404	2	4,600 W	3,200 W	1,800 W	9,200 W	6,400 W
		4804	2	3,000 W	2,400 W	1,250 W	6,000 W	4,800 W
		1604	2	1,000 W	800 W	800 W	2,000 W	1,600 W
804		2	500 W	400 W	400 W	1,000 W	800 W	

4 System Configuration

Loudspeaker connections

WARNING:

- Ensure that cables are compatible with both the specifications of the Power Amplifier and Speaker used.
- Using wrong pinouts may cause damage to the speakers or cause accidents.

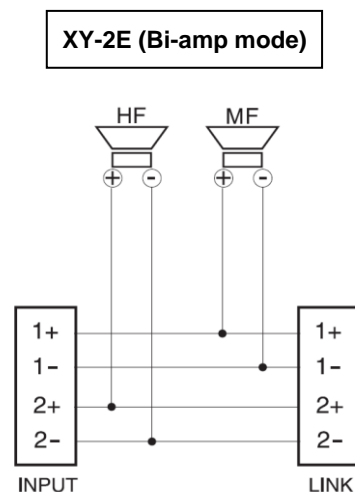
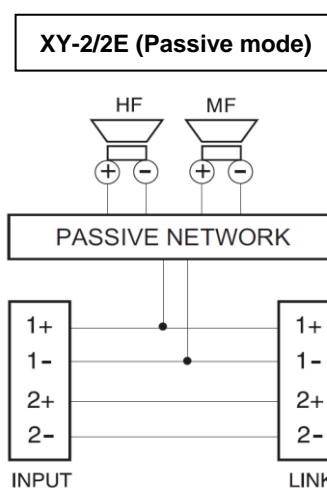
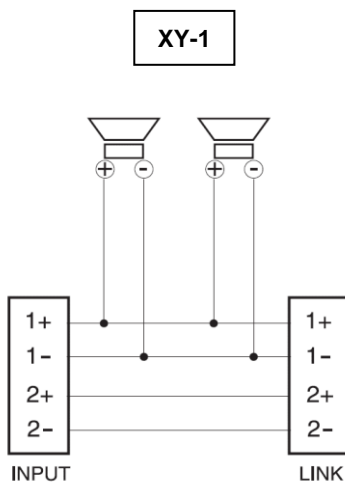
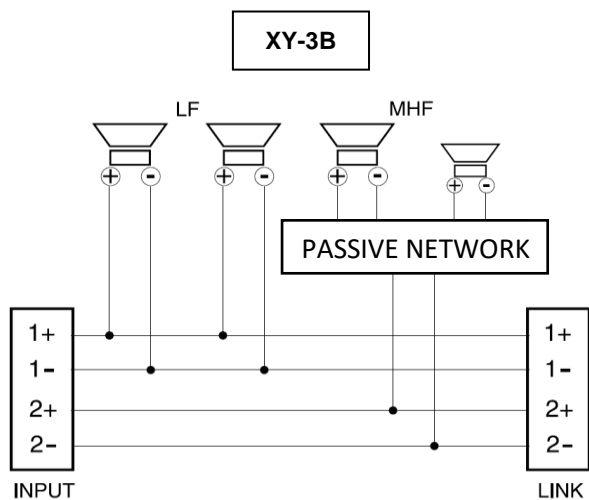
The XY Series are supplied as standard with Neutrik SpeakON™ NL4 connectors, wired pin 1+/1- and 2+/2-.

Pin 2+/2- is used for mid-high drivers in the XY-3B, and in the other models used for only link-through.

It is recommended that the resistance of your cable be less than one tenth of the nominal system impedance.

Given below are the recommended maximum cable lengths for different cross-sections and impedances.

Conductor Cross Sectional Area	Max recommended cable length		
	4 Ω	8 Ω	16 Ω
1.0 mm ²	11 m	22 m	44 m
1.5 mm ²	17 m	34 m	68 m
2.0 mm ²	22 m	44 m	88 m
2.5 mm ²	29 m	58 m	116 m
4.0 mm ²	44 m	88 m	176 m
6.0 mm ²	66 m	132 m	264 m

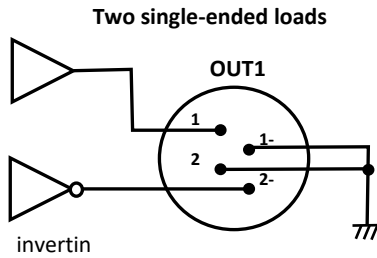


4 System Configuration

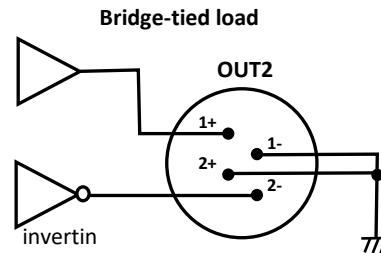
CAUTION :

Each amplifier has different pinouts for the Neutrik SpeakON™ connectors(NL4) . Following are only examples of connection. Please refer to the amplifier's manual for further information.

X-Series

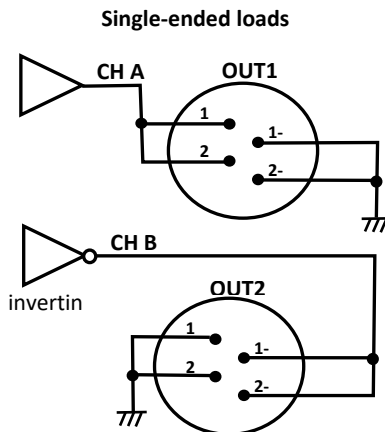


OUT1 1+ : Speaker 1+
 1- : Speaker 1-
 OUT2 1+ : Speaker 2+
 1- : Speaker 2-

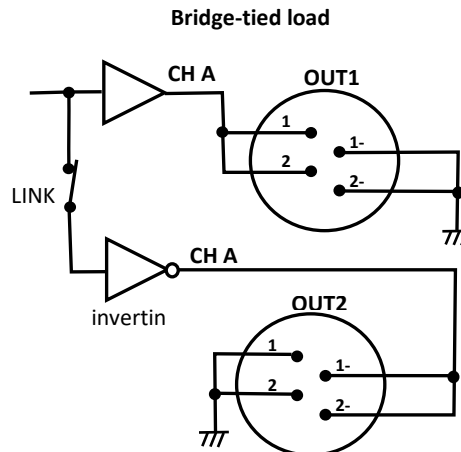


OUT1 1+ : Speaker 1+
 1- : NC
 OUT2 2+ : NC
 2- : Speaker 1-

K-Series



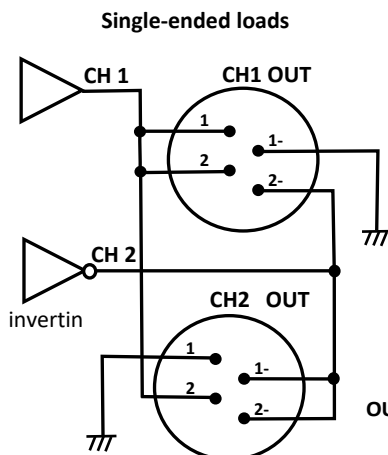
OUT1 1+ 2+ (Parallel) : Speaker 1+
 1- 2- (Parallel) : Speaker 1-
 OUT2 1+ 2+ (Parallel) : Speaker 2+
 1- 2- (Parallel) : Speaker 2-



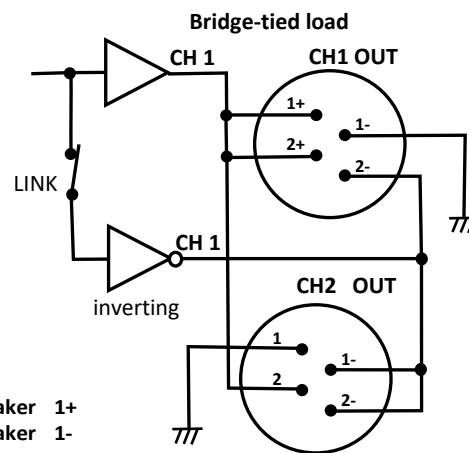
OUT1 1+ 2+ (Parallel) : Speaker 1+
 1- 2- : NC
 OUT2 1+ 2+ : NC
 1- 2- (Parallel) : Speaker 1-

It is written in Amplifier's USER GUIDE that 1+ and 2+, 1- and 2- pins of amplifier are used parallelly.

M-Series



OUT1 1+ : Speaker 1+
 1- : Speaker 1-
 OUT2 1+ : Speaker 2+
 1- : Speaker 2-



OUT1 2+ : Speaker 1+
 2- : Speaker 1-

4 System Configuration

4.2 Changing the XY-2E operation mode

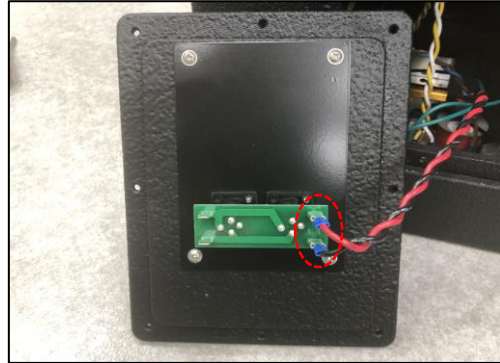
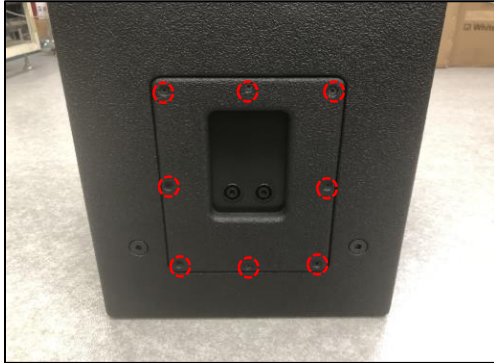
The operation mode of the XY-2E can be changed from the Passive mode (Initial state) to the Bi-amp mode. When changing the operation mode.

WARNING:

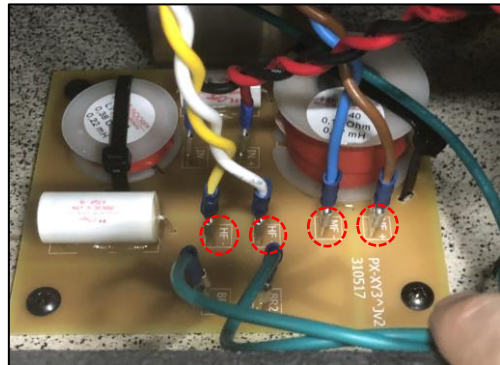
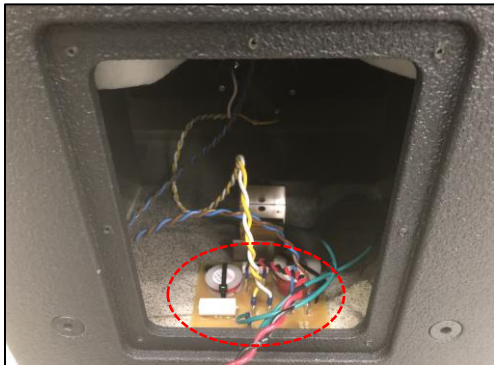
- If wiring is carried out incorrectly, it may result in damage to the amplifier and speaker unit.

Procedure

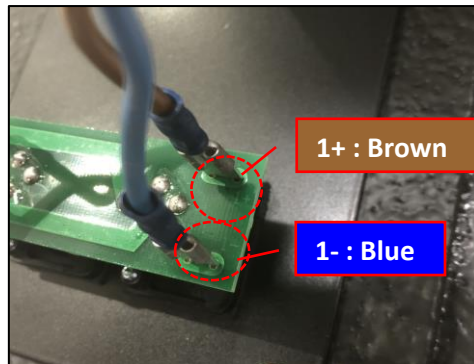
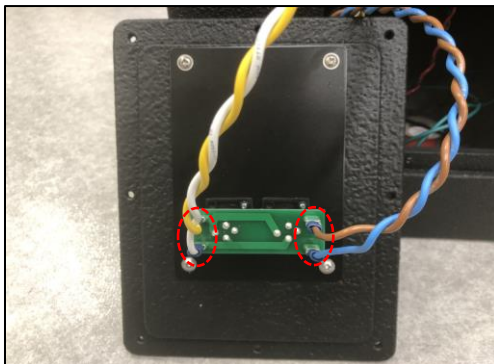
- (1) Remove the Phillips screw from the door at the back of the enclosure.
- (2) Disconnect the cable connected to the back of the door.



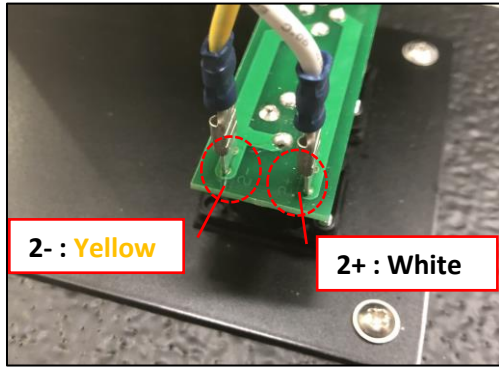
- (3) Remove the MF and HF cables connected to the passive crossover installed in the enclosure.



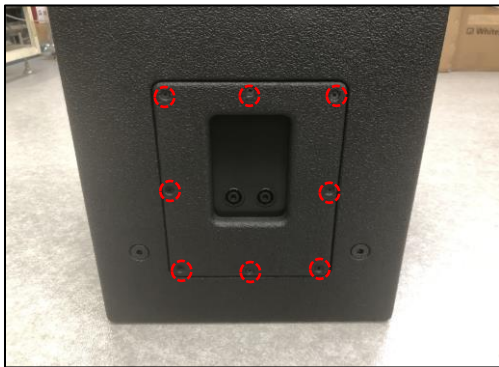
- (4) Attach the MF and HF cables removed from the passive crossover to the terminals on the back of the door.



4 System Configuration



- (5) Attach the door to the enclosure.



The speaker cable connection and the drive unit driven by the speaker cable correspond to the following.

1+/1- : MF unit
2+/2- : HF unit

5 Specifications

5.1 Spec sheet

Product Name	XY-3B/XY-3B-W		XY-1/XY-1-W	XY-2
Loudspeaker Type	Dual 12" three-way bi-amp loudspeaker		Dual 12" hybrid loaded LF loudspeaker	8" two-way Passive mid-high loudspeaker
Section	LF	MF	-	-
Frequency Response (+/-3dB)* 1.	55 Hz to 400 Hz (-10 dB @ 45 Hz)	235 Hz to 17 kHz (-10 dB @ 150 Hz)	55 Hz to 400 Hz (-10 dB @ 45 Hz)	235 Hz to 17 kHz (-10 dB @ 150 Hz)
Sensitivity (1W/1m) * 2.	102 dB	107 dB	102 dB	107 dB
Nominal Impedance	4 W	8 Ω	4 Ω	8 Ω
Power Handling AES* 5.	1400 W AES, 5600 W Peak	270 W AES, 1080 W Peak	1400 W AES, 5600 W Peak	270 W AES, 1080 W Peak
Dispersion* 3.	-	50°H x 35 °V	-	50°H x 35 °V
Max SPL * 4.	133 dB cont., 139 dB peak	130 dB(cont.), 136 dB(peak)	133 dB cont., 139 dB peak	130 dB(cont.), 136 dB(peak)
Driver Configuration	12" neodymium cone driver x 2	8" neodymium cone driver 1" exit neodymium compression driver	12" neodymium cone driver x 2	8" neodymium cone driver 1" exit neodymium compression driver
Crossover	-	Asymmetric internal passive	-	Asymmetric internal passive
Connectors	2 x Neutrik SpeakON™ NL 4		2 x Neutrik SpeakON™ NL 4	2 x Neutrik SpeakON™ NL4MD-V
Dimensions (WxHxD)	530 mm x 1080 mm x 540 mm (20.7" x 42.5" x 21.3")		530 mm x 578 mm x 540 mm (20.7" x 22.8" x 21.3")	480 mm x 480 mm x 376 mm (18.9" x 18.9" x 14.8") Not including Flying Yoke
Weight	58.0 kg (127.9 lb)		34.0 kg (74.9 lb)	13.5kg (29.8 lbs)
Rigging & Hardware	9 x M10 threaded mounting points (4 top / 1 bottom / 4 rear) 7 x flush handles (2 top / 2 left / 2 right / 1 rear) CP-XY3DF1 - Dual enclosure flying plate CP-XY3WB1 - Wheelboard		23 x M10 threaded mounting points (4 top / 5 bottom / 4 rear / 5 left / 5 right) 2 x Flush handles (1 left / 1 right) CP-XY1VC1 - Vertical flying cradle CP-XY1DF1 - Dual enclosure flying plate CP-XY1CON1 - Vertical connection plate	1 x ø13 mounting point on yoke, Attach to XY-3B
Grill	Hex punched steel		Hex punched steel	-
Enclosure	15 mm (0.6") birch plywood		15 mm (0.6") birch plywood	Polyurethane
Finish	Impact-resistant, Black/White semi-matt textured		Black: Impact and weather resistant textured polyurethane paint, White: Impact resistant textured paint	Polyurethane
Suggested Power Amplifier	Powersoft Quattrocanali 4804D(Bridge mode), T-Series T604(Bridge mode), X-Series X4, X8.	Powersoft Quattrocanali 2404D, 4804D, T- Series T604	Powersoft Quattrocanali 4804D(Bridge mode), T-Series T604(Bridge mode), X-Series X4, X8.	Powersoft Quattrocanali 2404D, 4804D, T- Series T604
Spare Parts	PT-XY3LF1- LF Driver	PT-XY3HF1- HF Comp Driver PT-XY3MF1- MF Driver	PT-XY3LF1- LF Driver	PT-XY3HF1- HF Comp Driver PT-XY3MF1- MF Driver

Notes: 1. Measured on-axis at 2m in an anechoic environment and referenced to 1m. / 2. Measured in half space at 2m with 4W sine wave input and referenced to 1m / 3. Nominal dispersion, measured in an anechoic environment and averaged over stated bandwidth. / 4. Calculated at 1m, and verified by subjective listening test of familiar program material. / 5. AES Standard ANSI S4.26-1984.

5 Specifications

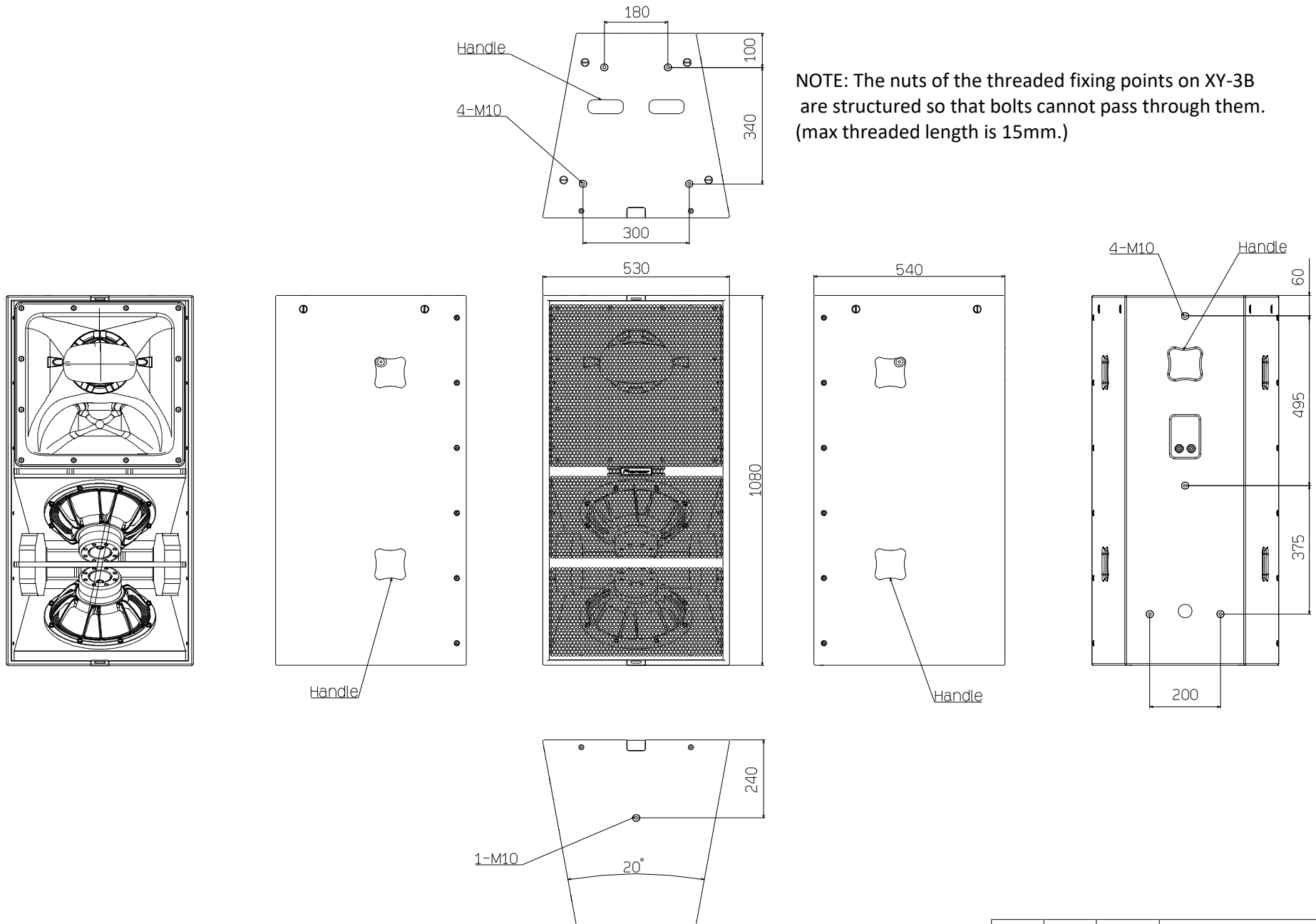
5.1 Spec sheet

Product Name	XY-2E/XY-2E-W (Passive mode)	XY-2E/XY-2E-W (Bi-amp mode)
Loudspeaker Type	8" two-way Passive/Bi-Amp mid-high loudspeaker	
Section	-	-
Frequency Response (+/-3dB)* 1.	235 Hz to 17 kHz (-10 dB @ 150 Hz)	MF: 235 Hz to 3.5 kHz (-10 dB @ 150 Hz) HF: 1.4 kHz to 17 kHz
Sensitivity (1W /1m) * 2.	107 dB	MF: 107 dB / HF: 110 dB
Nominal Impedance	8 Ω	MF: 8 Ω / HF: 8 Ω
Power Handling AES* 5.	270 W AES, 1080 W Peak	MF: 200 W AES, 800 W Peak HF: 70 W AES, 280 W Peak
Dispersion* 3.	50°H x 35 °V	
Max SPL * 4.	130 dB(cont.), 136 dB(peak)	
Driver Configuration	8" neodymium cone driver 1" exit neodymium compression driver	
Crossover	Asymmetric internal passive	-
Connectors	2 x Neutrik SpeakON™ NL4MD-V	
Dimensions (WxHxD)	530 mm x 578 mm x 540 mm (20.7" x 22.8" x 21.3")	
Weight	29.0 kg (63.9 lb)	
Rigging & Hardware	23 x M10 threaded mounting points (4 top / 5 bottom / 4 rear / 5 left / 5 right) 2 x Flush handles (1 left / 1 right) CP-XY1VC1 - Vertical flying cradle, CP-XY1DF1 - Dual enclosure flying plate CP-XY1CON1 - Vertical connection plate	
Grill	-	-
Enclosure	15 mm (0.6") birch plywood	
Finish	Black: Impact and weather resistant textured polyurethane paint, White: Impact resistant textured paint	
Suggested Power Amplifier	Powersoft Quattrocanali 2404D, 4804D, T- Series T604	
Spare Parts	PT-XY3HF1- HF Comp Driver PT-XY3MF1- MF Driver	

Notes: 1. Measured on-axis at 2m in an anechoic environment and referenced to 1m. / 2. Measured in half space at 2m with 4W sine wave input and referenced to 1m / 3. Nominal dispersion, measured in an anechoic environment and averaged over stated bandwidth. / 4. Calculated at 1m, and verified by subjective listening test of familiar program material. / 5. AES Standard ANSI S4.26-1984.

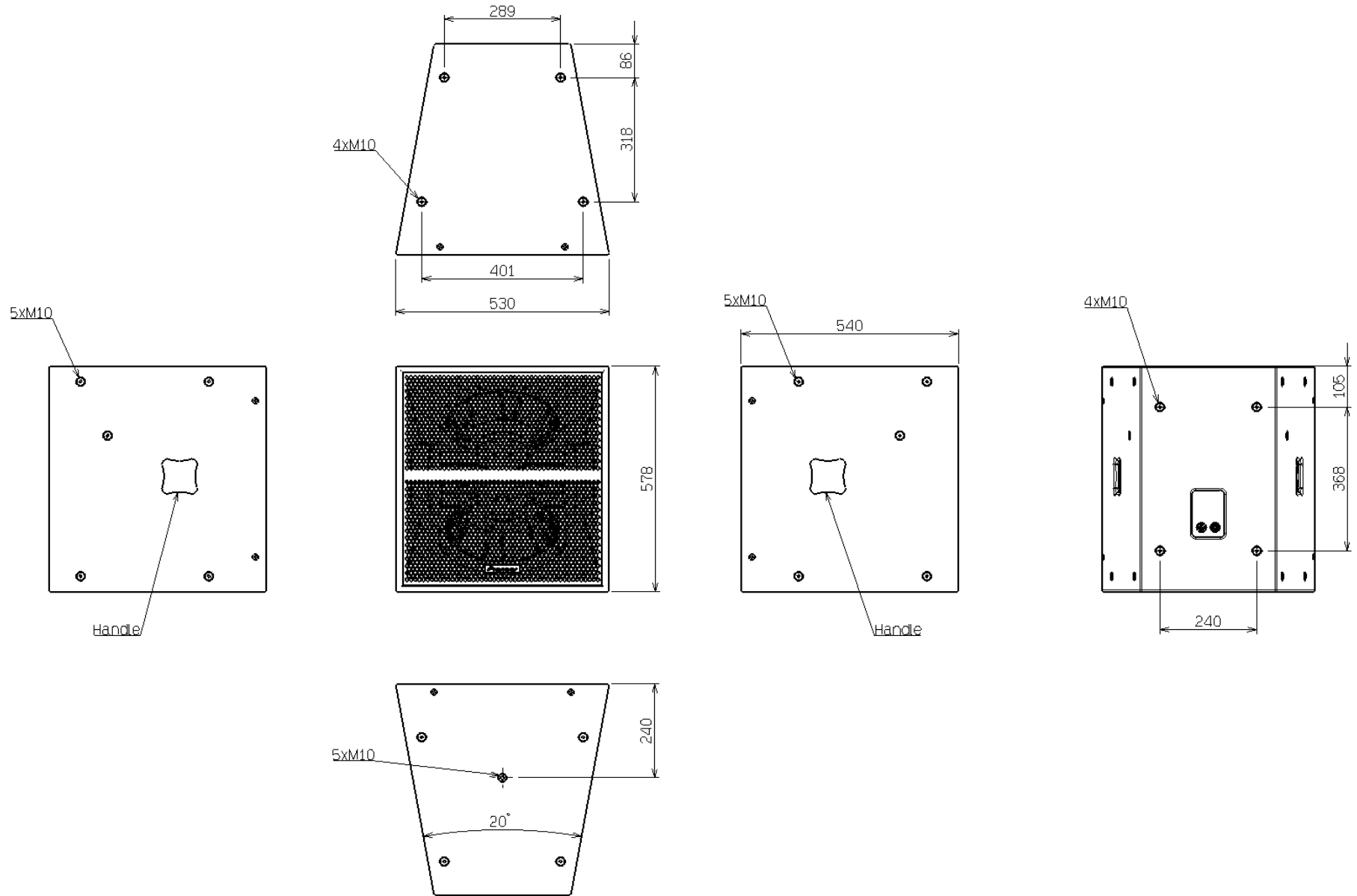
5 Specifications

5.2 Drawing




5 Specifications

5.2 Drawing



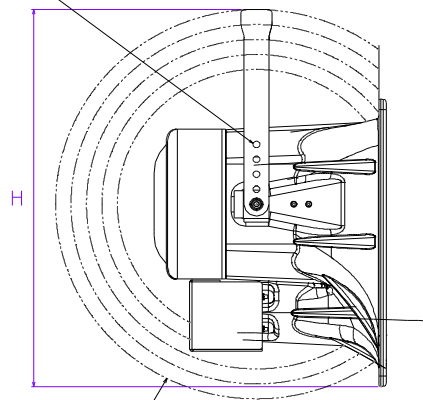
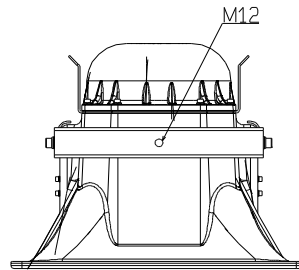
5 Specifications

5.2 Drawing

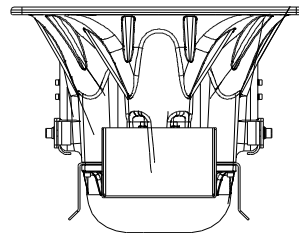
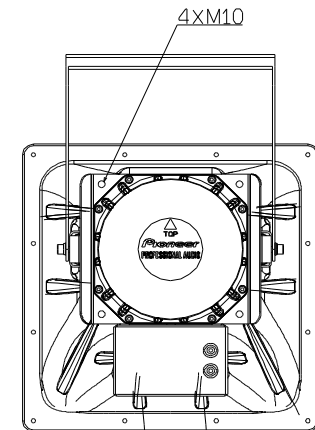
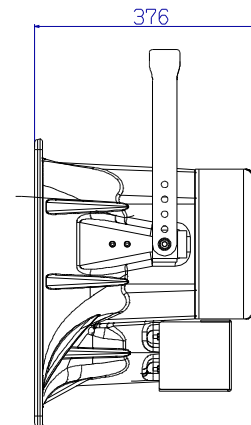
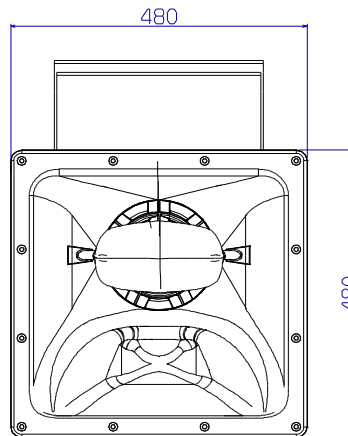


Point	H
1(min)	529,4
2	554,4
3(middle)	579,4
4	604,4
5(max)	629,4

5 height adjustable fixing points.
Overall heights of product at each point are above.



The range of motion for the yoke relative to each fixing point.
At fixing point 4 and 5, the yoke has a free range of motion.



5 Specifications

5.2 Drawing

