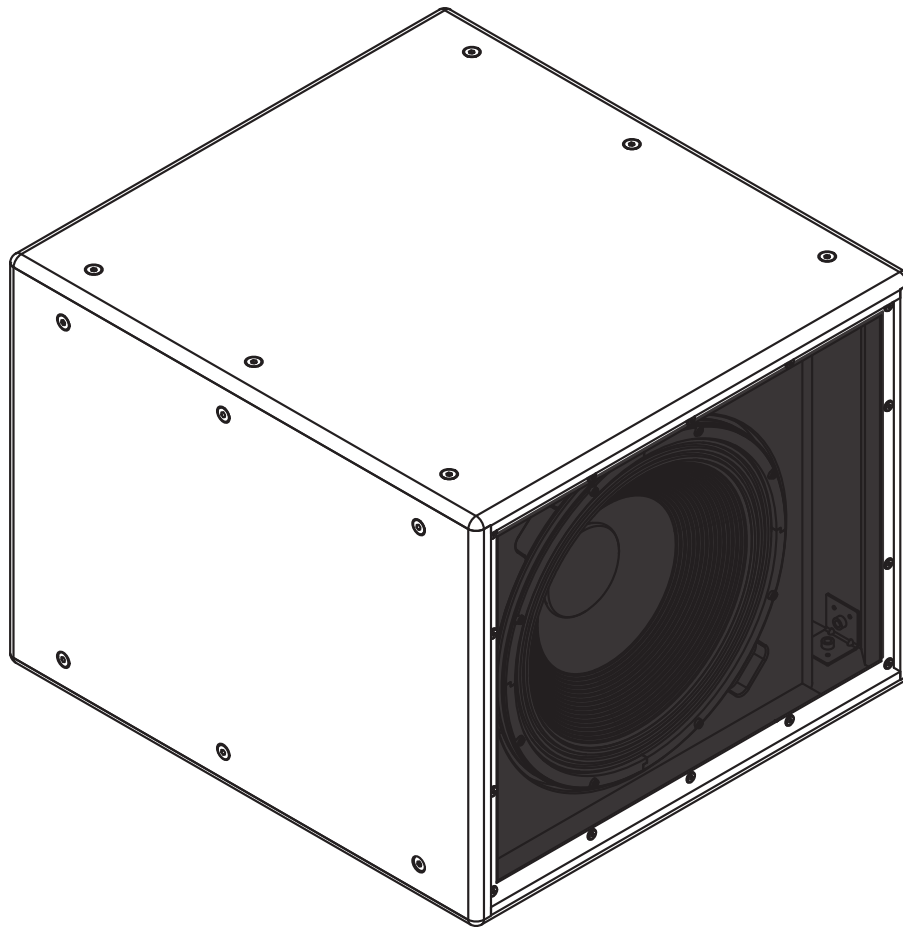


BLAZE

BY SONANCE



INSTALLATION MANUAL

BL118SS • BL218SS Subwoofers

1. Introduction and Overview

1.1 Introduction

Thank you for purchasing the Blaze Audio BL118SS or BL218SS subwoofer. BLx18SS series high power passive subwoofers are designed for use in medium to large-sized venues that require versatile and scalable low frequency solutions. BLx18SS series subwoofers can be installed free-standing or flown via accessory hardware.

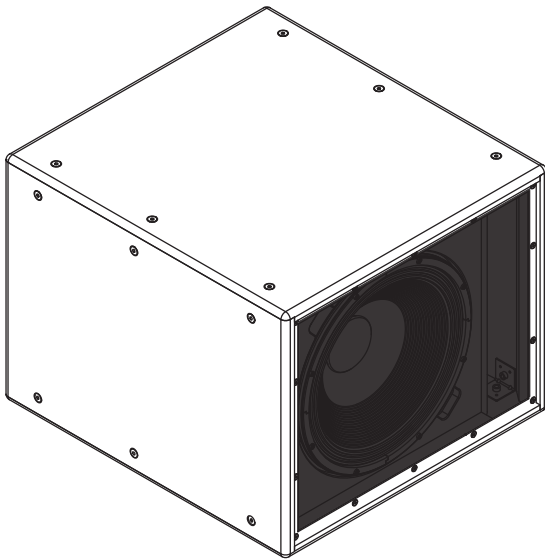
BLx18SS series subwoofers are intended to be driven only by Blaze Audio PowerZone™ Connect amplifiers (3004 or higher) with the appropriate speaker presets enabled. When installed in multiple arrays, the subwoofers can be configured via amplifier speaker presets to provide either omnidirectional or cardioid directivity characteristics.

BL118SS and BL218SS subwoofers respectively incorporate one or two 18 inch bass drivers in a reflex loaded enclosure. They provide low frequency bandwidth to 18 Hz at -10 dB and maximum sound pressure levels of 136 dB and 143 dB at 1 m respectively.

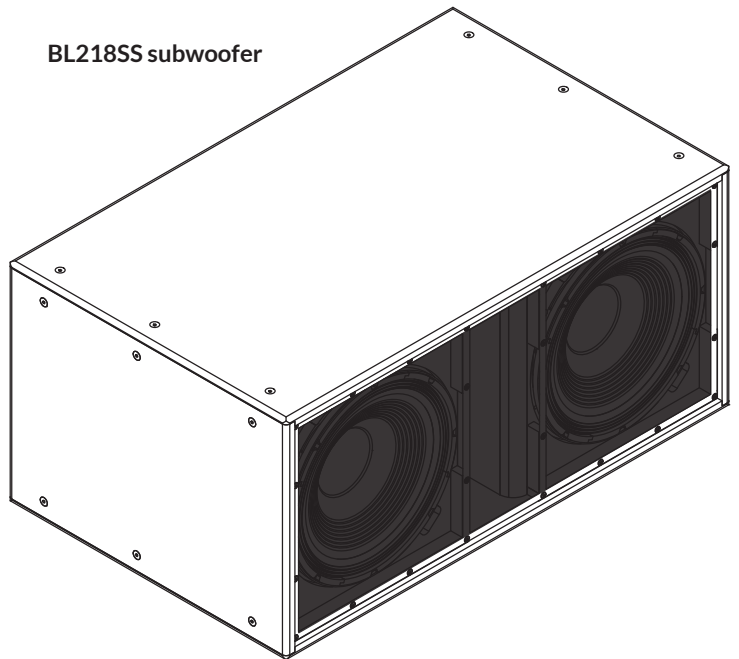
1.2 Subwoofer Pack Contents

Each package contains a single subwoofer and its document pack.

BL118SS subwoofer



BL218SS subwoofer



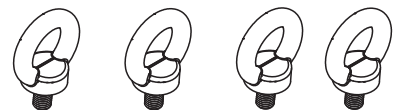
Document Pack



1.3 Subwoofer Flying accessories

BL118SS and BL218SS subwoofers can be flown via M10 Eye-bolt attachment points. Appropriate eye-bolts are available as accessories. A minimum of four and six attachment points must be employed for each BL118SS and BL218SS subwoofer respectively.

Accessory M10 Eye-bolts



2. Applications and Deployment



2.1 Important Safety Instructions

WARNING: Failure to observe the following safety precautions may result in severe injury or death. Installations such as described in this guide should only be attempted by a trained professional.

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Before installing or suspending any BL118SSi-B or BL218SSi-B subwoofer, inspect all hardware, the enclosure, and associated equipment for damage. Missing, corroded, or deformed components, or components without correct load ratings, could significantly reduce the strength of the installation or placement and should immediately be repaired or replaced.
- Always make sure that the structure the loudspeaker is to be suspended from has been approved by the building or structural engineer and will support the weight of all the components of the speaker system including speakers, speaker cable, wire rope, etc.
- Consult a licensed professional structural engineer regarding physical equipment installation.
- Do not suspend loudspeakers directly over people.
- Use only hardware that is rated for the load conditions of the installation and that allows for a possible short-term, unexpected overload. Never exceed the rating of the hardware or equipment.
- Blaze Audio strongly recommends that the system be inspected at least once a year and logged. If any sign of weakness or damage is detected, remedial action should be taken immediately.
- All installation crew members must be trained for loudspeaker rigging and mounting.
- Make sure that all relevant health and safety regulations are known, are followed by the installation crew, and follow applicable local laws. Local government offices can help with this information.
- Suspended installations must be completed or supervised by a certified rigger.
- The system should be designed so that it is a static suspension. There should be no dynamic or shock loading.
- Personal protective equipment (hard hats, steel-toed footwear, safety glasses, etc.) should be always worn by the installation crew.
- If called for in the design, make sure all installation personnel are trained to work at height and have certifications for scissor lifts, theatrical hoists, etc.
- Make sure all lifting equipment (slings, span-sets, deck chain, scaffolding, etc.) is in good working order. Thoroughly inspect all components prior to use.
- Inspect all the components associated with the project for damage before assembly. Any parts with damage or suspected damage should not be used. Contact the component manufacturer for replacement parts if necessary.
- Keep a tidy workplace. Do not leave tools, rigging items, etc., on top of loudspeakers during installation. Loose items can fall and cause injury.
- Never leave the system unattended during the installation process. Make sure that the workspace is isolated from public access. No one should be allowed to pass beneath the loudspeakers during installation.
- Do not suspend any other components or loudspeakers other than the supported configurations described in this manual.
- If secondary steel safeties are required, they should be installed once the entire system is at operating height and before public access is allowed.

2. Applications and Deployment

2.2 Installation Options

BLx18SS series subwoofers can be installed free-standing, or flown using accessory hardware. Additionally, pairs of BLx18SS series subwoofers can be arranged to provide cardioid directivity. The installation options are illustrated and described in the following sections.

2.2.1 Free-standing Installation

BLx18SS series subwoofers can be installed free-standing on floors or other structures able to support their weight.

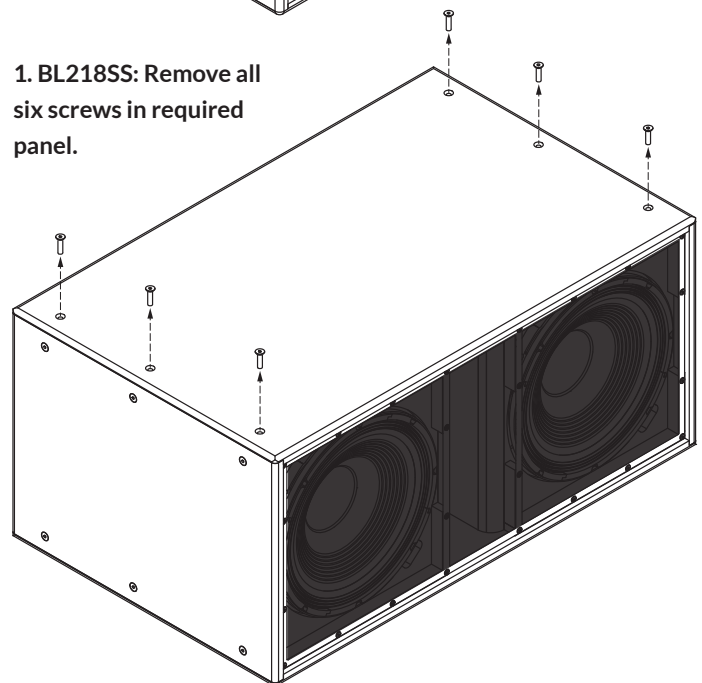
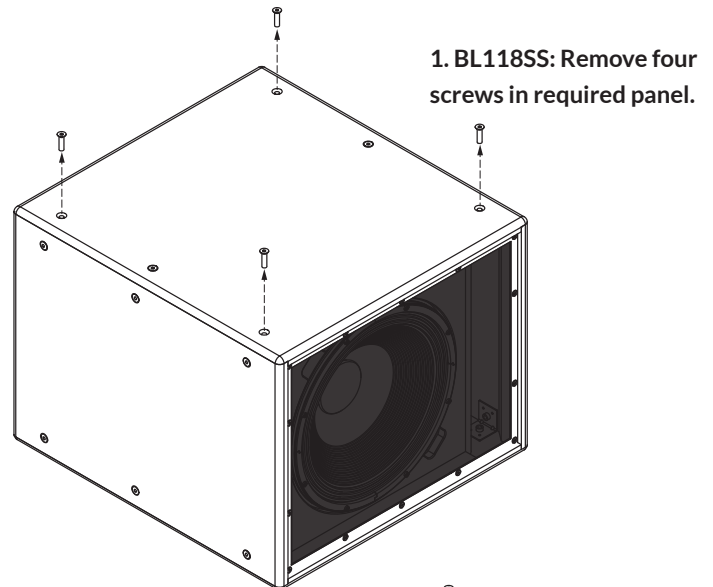
Note: *It is important to ensure that any structure on which a BLx18SS series subwoofer is supported is able to bear its weight with an appropriate factor of safety. If there is any doubt in this respect, a specialist structural engineer must be consulted.*

2.2.2 Flown Installation

BLx18SS series subwoofers can be flown through the installation of M10 eye-bolts at the attachment points provided. Six attachment points are provided on the top, bottom and side panels of each BLx18SS series subwoofer.

A minimum of four attachment points for the BL118SS subwoofer, and six attachment points for the BL218SS subwoofer, must be used. The installation of eye-bolts at the attachment points is illustrated and described in the following paragraphs and diagrams.

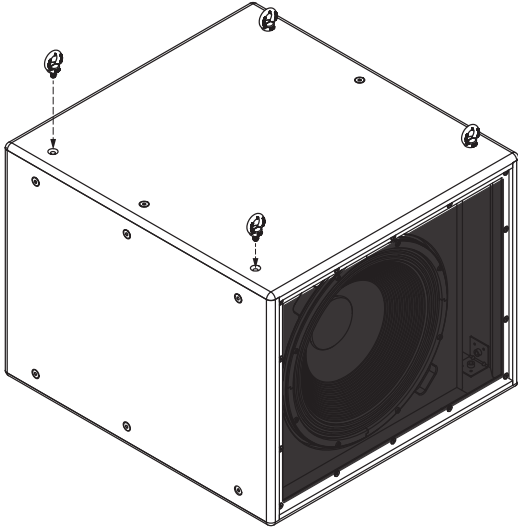
Step 1. Using an M10 Allen key remove four of the attachment point screws from the required panel on a BL118SS subwoofer and all six attachment point screws on a BL218SS subwoofer.



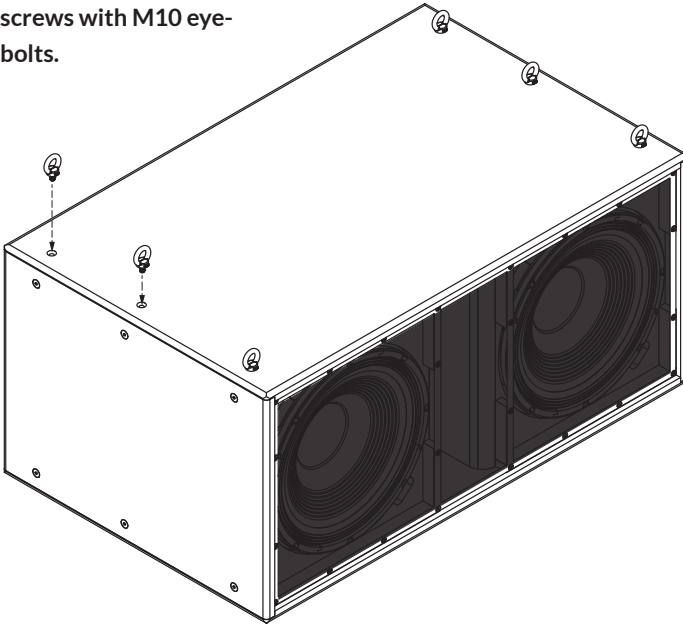
2. Applications and Deployment

2.2.2 Flown Installation

Step 2. Screw an M10 eye-bolt fully into each of the available attachment point screw holes. The eye-bolts are then available for attachment to flying hardware.



2. Replace removed screws with M10 eye-bolts.



WARNING: Consult a professional mechanical or structural engineer, licensed in the jurisdiction of the sound system installation, to review, verify, and approve all attachments to the building or structure. Employ the services of a certified, professional rigger for hoisting, positioning and rigging the equipment to the supporting structure. Improper suspension can lead to serious damage, injury, or death.

NEVER SUSPEND LOUDSPEAKERS DIRECTLY ABOVE THE AUDIENCE

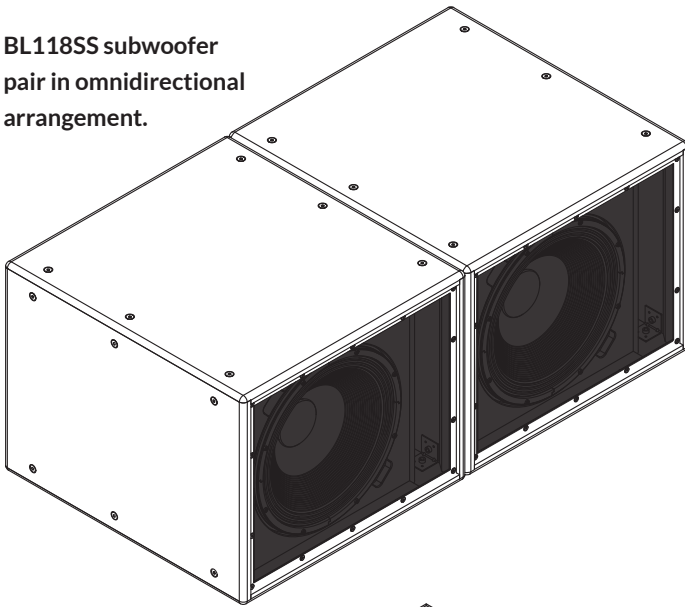
2. Applications and Deployment

2.2.3 Subwoofer Directivity Options

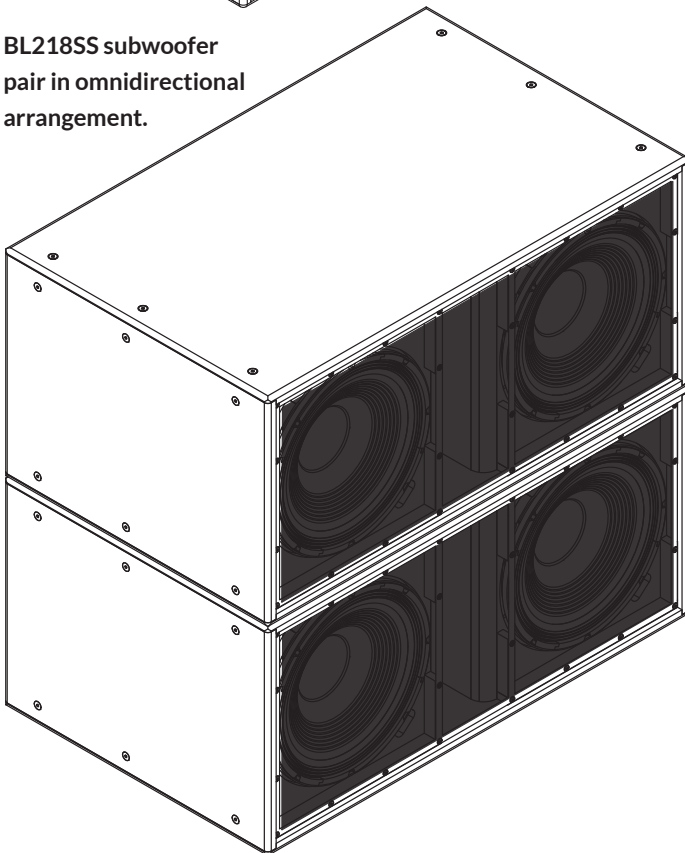
In combination with use of the appropriate Blaze PowerZone™ Connect amplifier Speaker Presets, pairs of BLx18SS series subwoofers can be configured to offer omnidirectional or cardioid directivity.

For omnidirectional directivity, the two subwoofers should be positioned either adjacent to each other or one above the other with both facing in the same direction as illustrated in the following diagrams. The amplifier outputs driving each subwoofer should have the same standard speaker preset enabled (BL118SS.zcp or BL218SS.zcp).

BL118SS subwoofer pair in omnidirectional arrangement.

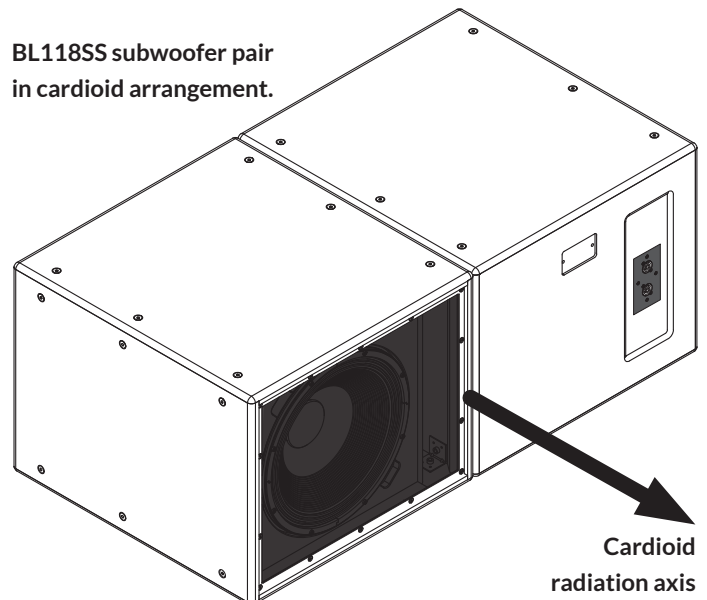


BL218SS subwoofer pair in omnidirectional arrangement.

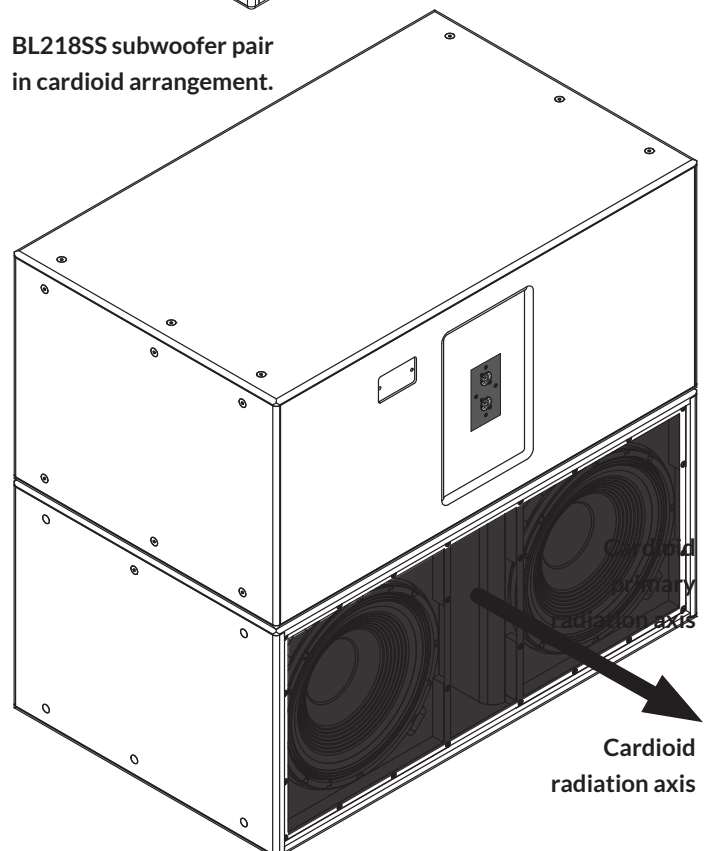


For cardioid directivity, the two subwoofers should be positioned either adjacent to each other, or one above the other, with one facing forwards and one facing backwards as illustrated in the following diagrams. The cardioid forward radiation lobe will coincide with the forward facing subwoofer. The amplifier output driving the forward facing subwoofer should have the standard speaker preset enabled (BL118SS.zcp or BL218SS.zcp) and the amplifier output driving the backwards facing subwoofer should have the cardioid speaker preset enabled (BL118SS-Cardioid.zcp or BL218SS-Cardioid.zcp).

BL118SS subwoofer pair in cardioid arrangement.



BL218SS subwoofer pair in cardioid arrangement.



3. Connection and Amplification

3.1 BLx18SS Connections

Each BLx18SS series subwoofer is fitted with two Neutrik® NL4 speakON® sockets on its rear panel. One socket is intended for connection to one or two bridged channels of a Blaze Audio PowerZone™ Connect amplifier (3004 or higher) and one socket provides an optional parallel output connection for a second subwoofer. The driving amplifier must be configured in Bridged Output (BTL) mode, as described in Section 3.2.2 of this manual, before it is connected to BLx18SS series subwoofers.

Subwoofer input and output connections are described and illustrated below. Amplifier connections to BLx18SS series subwoofers are described and illustrated on the following pages.

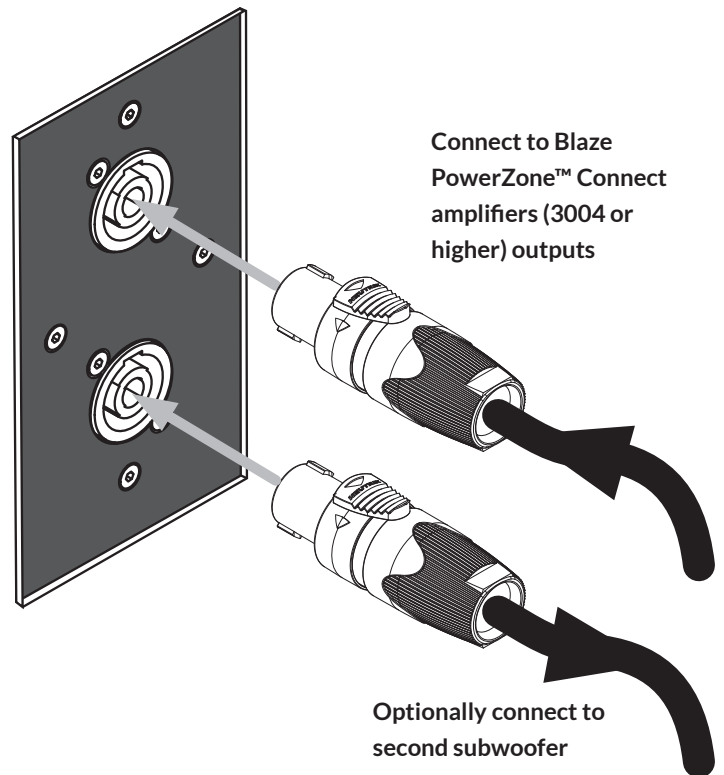
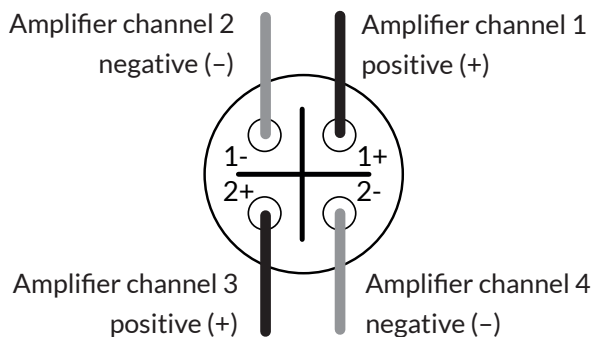
3.1.1 BLx18SS Connection Sockets

BLx18SS connection sockets are configured as indicated in the following table and diagrams. The two sockets are wired in parallel to enable the connection of a second subwoofer when increased output is required.

Note: A pair of parallel connected subwoofers must be the same model.

BLx18SS Socket Connections	
Signal Routing	Connection Pin
Amp Ch 1 (+)	1 (+)
Amp Ch 2 (-)	1 (-)
Amp Ch 3 (+)	2 (+)
Amp Ch 4 (-)	2 (-)

Neutrik® NL4 speakON® Pins



When used to drive BLx18SS series subwoofers, Blaze Audio PowerZone™ Connect amplifiers (3004 or higher) must be configured in Bridged Output mode. Do not connect an amplifier to a BLx18SS series subwoofer before it is configured appropriately.

3. Connection and Amplification

3.1.2 BL118SS Amplifier Connections

The BL118SS subwoofer is designed to work with the Blaze Audio PowerZone™ Connect amplifiers (3004 or higher) only. This amplifier incorporate the DSP equalisation facilities required to optimise the subwoofer acoustic performance, while also providing appropriate output power capabilities.

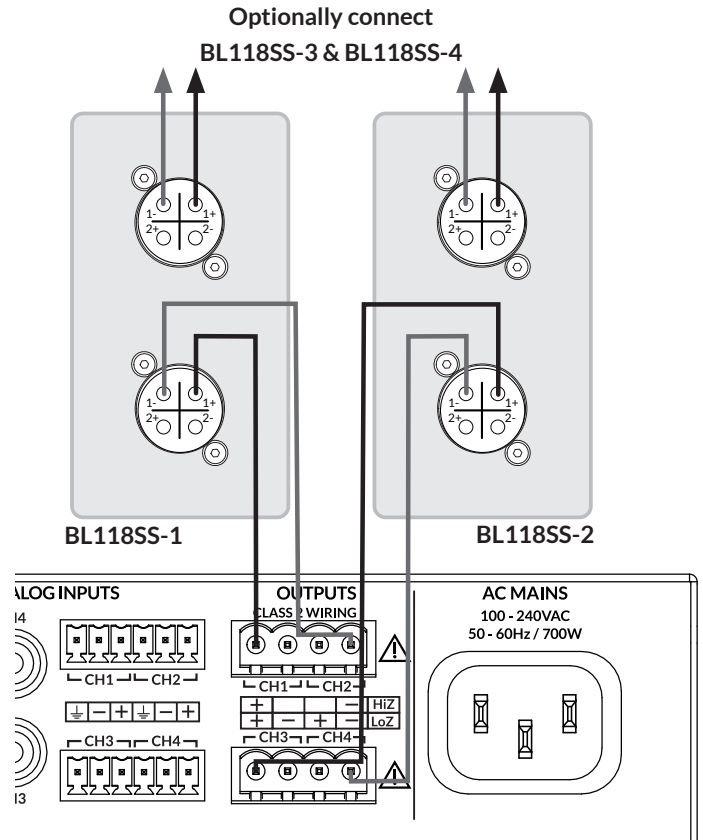
One PowerZone™ Connect amplifier (3004 or higher) is able to drive up to two BL118SS subwoofers per bridged output channel. The subwoofers can be configured in standard, omnidirectional directivity mode or as cardioid pairs.

BL118SS series subwoofer and PowerZone™ Connect amplifier connections are illustrated in the diagram alongside.

Note: *Blaze Audio PowerZone™ Connect amplifiers (3004 or higher) must be configured in Bridged (BTL) mode for optimal operation.*

Note: *No more than two BL118SS subwoofers per bridged output channel connected to a single amplifier.*

Note: *The Blaze PowerZone™ Connect Installation Manual, available for download from the Blaze website (blaze-audio.com), contains comprehensive amplifier installation and operational information.*



Two or four BL118SS subwoofers connected to each PowerZone™ Connect 3004 bridged (BTL) output channel, four units maximum on total amplifier power platform.

- For omnidirectional directivity, both amplifier outputs require speaker preset BL118SS.zcp enabled.
- For cardioid directivity, amplifier Output 1 (CH1 & CH2) requires speaker preset BL118SS.zcp enabled, and amplifier output 2 (CH3 & CH4) requires speaker preset BL118SS-Cardioid.zcp enabled. The BL118SS physical arrangement then requires cardioid pairs comprising BL118SS-1 (forward facing) with BL118SS-2 (backwards facing) and optionally BL118SS-3 (forward facing) with BL118SS-4 (backwards facing)



When used to drive BLx18SS series subwoofers, Blaze Audio PowerZone™ Connect amplifiers (3004 or higher) must be configured in Bridged Output mode. Do not connect an amplifier to a BLx18SS series subwoofer before it is configured appropriately.

3. Connection and Amplification

3.1.3 BL218SS Amplifier Connections

The BL218SS subwoofer is designed to work with the Blaze Audio PowerZone™ Connect amplifiers (3004 or higher) only. These amplifiers incorporate the DSP equalisation facilities required to optimise the subwoofer acoustic performance, while also providing appropriate output power capabilities.

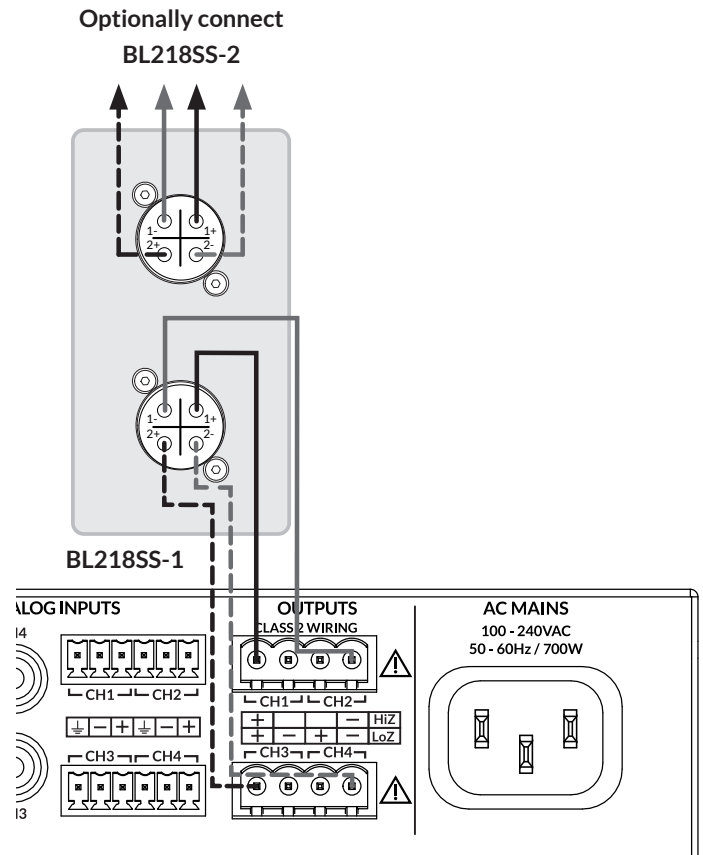
A single PowerZone™ Connect amplifier (3004 or higher) is able to drive a maximum of two BL218SS subwoofers per pair of bridged output channels (4 total output channels required). The subwoofers can be configured in standard, omnidirectional directivity mode, or to play the backward facing role in cardioid subwoofer pairs. Cardioid directivity with BL218SS subwoofers requires multiple power amplifiers.

BL218SS series subwoofer and PowerZone™ Connect amplifier connections are illustrated in the diagram alongside.

Note: Blaze Audio PowerZone™ Connect amplifiers (3004 or higher) must be configured in Bridged (BTL) mode for optimal operation.

Note: No more than two BL218SS subwoofers per pair of bridged output channels (4 channels total) connected to a single amplifier.

Note: The Blaze PowerZone™ Connect Installation Manual, available for download from the Blaze website (blaze-audio.com), contains comprehensive amplifier installation and operational information.



One or two BL218SS subwoofers connected to a pair of PowerZone™ Connect 3004 bridged (BTL) output channels, two units maximum on total amplifier power platform.

- For omnidirectional directivity, both amplifier outputs require speaker preset BL218SS.zcp enabled.
- For cardioid directivity, a second PowerZone™ Connect amplifier (3004 or higher) and BL218SS subwoofer system must be configured with speaker preset BL218SS-Cardioid.zcp enabled on both amplifier outputs. The one or two subwoofers of the second system should then play the backwards facing cardioid role paired with the primary system subwoofers (with BL218SS.zcp enabled).

3. Connection and Amplification

3.2 PowerZone™ Connect Amplifier Output Configuration and Speaker Presets

The Blaze PowerZone™ Connect amplifier incorporates mode configuration and loudspeaker management functions, accessed via a web page interface. Amplifier functional options can be configured, and preconfigured filter and equalization speaker presets can be enabled.

When used to drive BLx18SS series subwoofers, PowerZone™ Connect amplifiers (3004 or higher) must have the appropriate speaker presets enabled. Speaker presets for BLx18SS series subwoofers are available for download from the Blaze website and must be used for correct subwoofer performance. Standard and Cardioid speaker presets are available. The procedure for downloading and enabling PowerZone™ Connect amplifiers (3004 or higher) speaker presets is described in the following sections.

3.2.1 PowerZone™ Control Network Connection

In order to install the BLx18SS speaker preset files, the PowerZone™ Connect amplifier requires either a wired or wireless connection via a TCP/IP network, or to connect via its own wireless access point, to a computer or mobile device from which speaker preset files can be uploaded. Internet access for speaker preset file download is also required.

Note: *The PowerZone™ Connect amplifier Quick Start Guide and Installation Manual documents cover network connection and can be downloaded from: <https://blaze-audio.com/support/>*

3.2.2 Speaker Preset Download and Application

Follow the steps below to download and enable the BLx18SS speaker preset to the amplifier outputs.

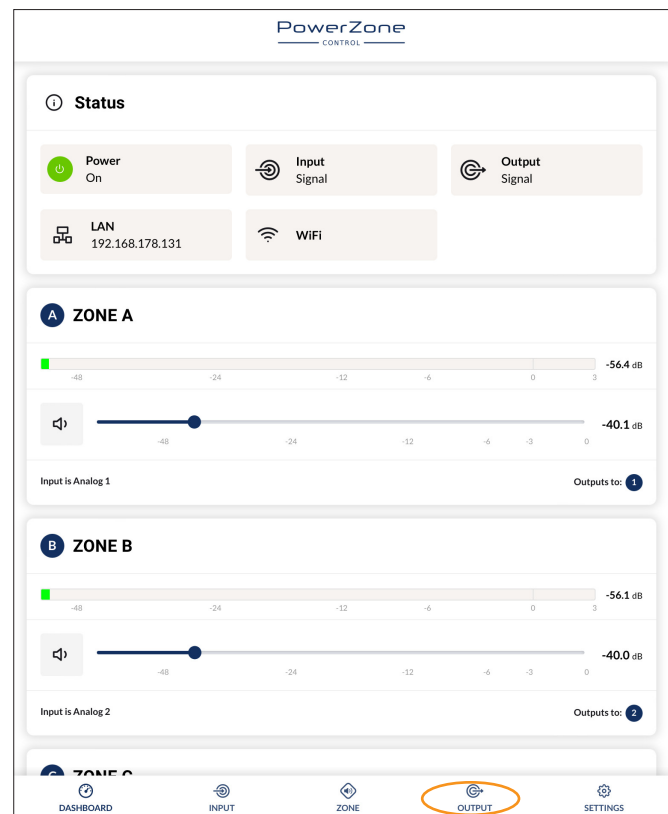
Step 1. Using a computer or mobile device, visit:
<https://blaze-audio.com/support/>
- and select the speaker preset files for download.

It is important that the correct speaker preset files are downloaded:

BL118SS Standard - File name: **BL118SS.zcp**
BL118SS Cardioid - File name: **BL118SS-Cardioid.zcp**
BL218SS Standard - File name: **BL218SS.zcp**
BL218SS Cardioid - File name: **BL218SS-Cardioid.zcp**

NOTE: *The speaker preset files will download in a compressed .zip archive format. Expand the .zip archive and store the files in an appropriate location on the download device.*

Step 2. On the computer or mobile device, navigate to the PowerZone™ Connect amplifier web interface and select the **Output** tab.



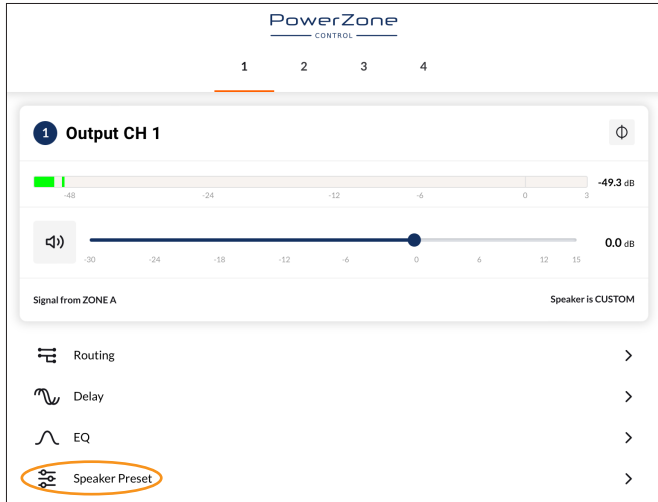
NOTE: *The exact appearance and layout of the amplifier web interface may vary slightly depending on the device and browser in use.*



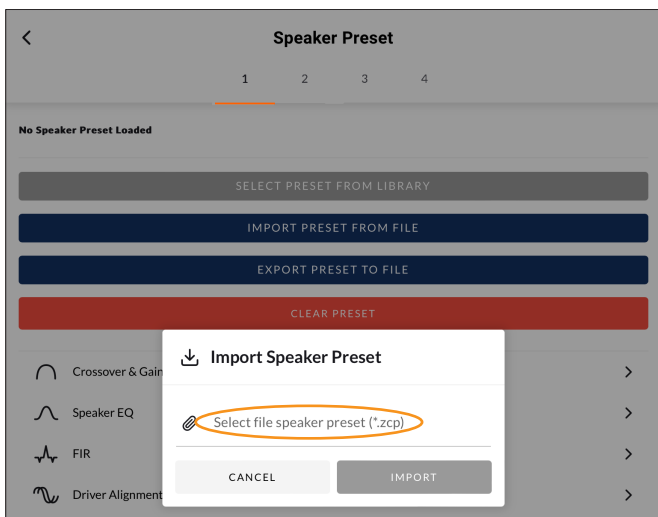
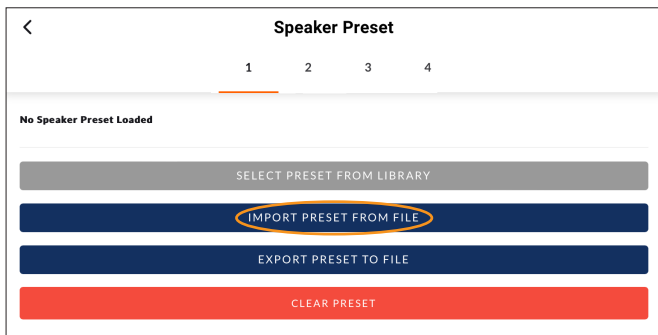
When used to drive BLx18SS series subwoofers, Blaze Audio PowerZone™ Connect amplifiers (3004 or higher) must be configured in Bridged (BTL) mode for optimal operation. Do not connect an amplifier to a BLx18SS series subwoofer before the speaker preset is enabled, and do not connect any alternative speaker to the amplifier before the BLx18SS series subwoofer speaker preset is disabled.

3. Connection and Amplification

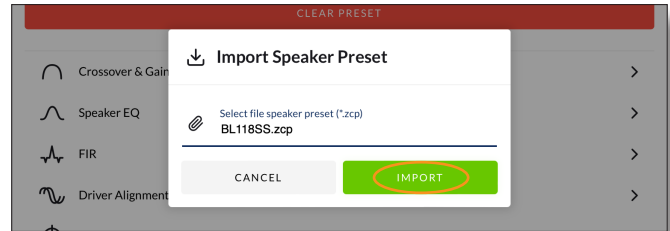
Step 3. From the **Output** page select the required **Output** tab at the top of the display and then select the **Speaker Preset** menu option.



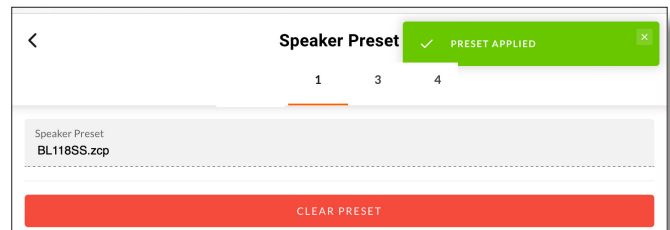
Step 4. Selecting **IMPORT PRESET FROM FILE** will open the **Speaker Preset Import** pop-up box that provides the option to choose a preset file.



Step 5. Browse the download device for the files downloaded in **Step 1** and select the appropriate file. It will be named : **BL118SS.zcp**, **BL118SS-Cardioid.zcp**, **BL218SS.zcp** or **BL218SS-Cardioid.zcp**
Select **IMPORT**.



Step 6. The speaker preset file will now be applied to amplifier **Output 1**.



Step 7. With the appropriate speaker preset file applied to amplifier Output 1, repeat **Step 2** to **Step 6** for Output 3 if required.

NOTE: *BLx18SS speaker presets configure PowerZone Connect 3004 amplifiers in bridged output mode, so enabling the presets will reduce the number of available output channels.*



IMPORTANT: It is vital for the correct operation of BLx18SS series subwoofers that the correct speaker preset file is enabled.

4. Technical Information

4. BLx18SS Specifications

4.1.1 Technical Specifications		
Subwoofer Model	BL118SS	BL218SS
Frequency Response (-3 dB)*	26 Hz - 150 Hz	25 Hz - 150 Hz
Frequency Range (-10 dB)	18 Hz - 150k Hz	18 Hz - 150 Hz
Recommended High-Pass Filter	20 Hz (Butterworth, minimum 24 dB/Octave (4th order)	
Nominal Directivity (-6 dB)	Omnidirectional or cardioid	
Recommended Crossover Frequency	90 Hz (acoustic, active, external DSP)	
RMS Power Handling Capacity**	LF: 2500 Watts	LF: 5000 Watts
Maximum SPL @ 1m***	136 dB (Blaze Audio preset)	143 dB (Blaze Audio preset)
Transducer Components	LF: 18 inch (457.2 mm) x 1	LF: 18 inch (457.2 mm) x 2
Transducer Nominal Impedance	LF = 4 Ohms	LF = 4 Ohms
Dimensions (HxWxD)	22.5" x 28" x 30" 571.5 mm x 711.2 mm x 762 mm	22.5" x 48.0" x 30.0" (571.5 mm x 1,219.2 mm x 762.0 mm)
Net Weight	135 lb. (61.23 kg)	285 lb. (129.27 kg)
Shipping Weight	150 lb. (68.03 kg) - approximate with carton	295 lb. (133.8 kg) - approximate with carton

*Frequency response and range measured on-axis with anechoic environment.

** Power handling tested using pink noise filtered to meet IEC 268-5, 6 dB crest factor, 100 hours, with recommended EQ.

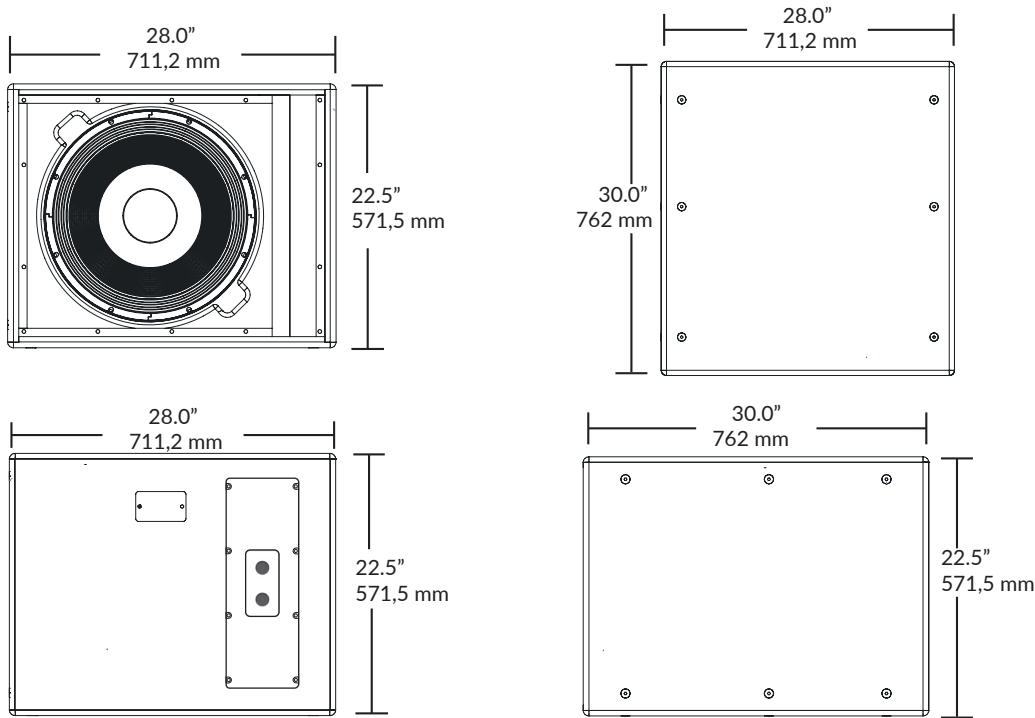
*** Peak level measured at 1m under free field conditions using 10 dB crest factor pink noise with specified ([Blaze Audio] preset) and corresponding EQ settings.

4.1.2 Physical Characteristics	
Enclosure Material	Baltic birch plywood, engineered plastics and aluminium frame.
Finish	Two-part spray catalyzed Polyurea coating on plywood.
Grille Material	14-gauge (1.0) perforated steel, powder-coated finish, black.
Environmental	Indoor use only.
Connectors/Bi-Amp	Two (2) parallel-wired Neutrik® NL4 speakON® connectors.
Suspension/Mounting	Internal bracket w/ threaded 0.375" flying points (x18)

4. Technical Information

4.2 BLx18SS Series Mechanical Drawings

4.2.1 BL118SS Dimensions



4.2.1 BL218SS Dimensions

