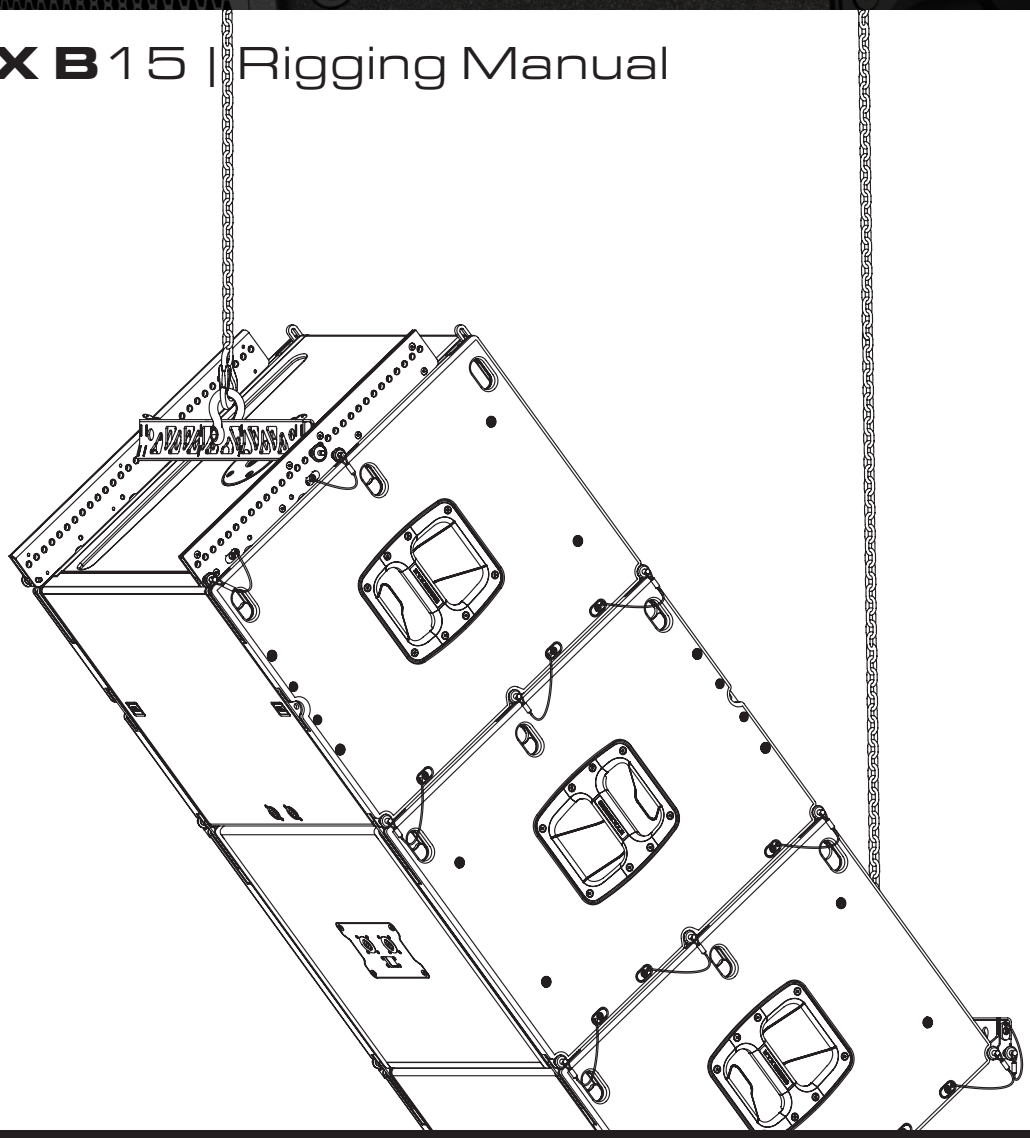
JBL

PROFESSIONAL

VTX SERIES

SYSTEM SOLUTIONS

VTX B15 | Rigging Manual



GENERAL INFORMATION

VTX B15 - Rigging Manual
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JBL PROFESSIONAL

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Thank you for purchasing JBL VTX Series products

In more than 75 years of JBL innovations, the VTX Series stands apart as a milestone in the practical application of creative engineering. VTX products herald the next generation in line array loudspeaker systems: a new era in performance, system integration, and user friendliness. VTX products draw on multiple JBL patents in driver, waveguide, and suspension technology, as well as custom amplification, DSP, control, and system management designs created in collaboration with HARMAN Professional sister companies.

VTX loudspeakers marry custom transducer design and in-house manufacture, breakthrough technologies, and a comprehensive system approach to deliver a premium experience for all who come into contact with them, from the FOH mixing engineer to the systems engineer, rigger, road crew, warehouse manager, and, of course, the audience. Designed for operators of portable and fixed systems alike, the VTX Series features JBL's legendary sound quality coupled with expert support and advanced tools that enable optimal specification, configuration, and operation of VTX systems in any venue, anywhere in the world. The VTX Series delivers a comprehensive solution: the finest sound quality available, plus efficient and intuitive setup, tuning, networking, and control.

TABLE OF CONTENTS

1 - SAFETY

1.1 SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not expose the product to direct rain or sea spray.
6. Clean only with a dry cloth.
7. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus that produce heat.
8. Only use attachments/accessories specified by the manufacturer.
9. Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
10. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as if liquid has been spilled or objects have fallen into the apparatus, or if the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
11. Contact JBL Professional for advanced servicing issues.
12. CAUTION - DO NOT PERFORM ANY SERVICING UNLESS YOU ARE QUALIFIED TO DO SO.
13. Prolonged exposure to excessive SPL can cause hearing damage. The loudspeaker is easily capable of generating sound pressure levels (SPL) sufficient to cause permanent hearing damage to performers, production crew, and audience members. Caution should be taken to avoid prolonged exposure to SPL in excess of 90 dB.
14. Read the **System Rigging Manual** before installation and use of the product.

1.2 GENERAL HARDWARE INFORMATION

Any hardware used in an overhead suspension application must be load rated for the intended use. Generally, this type of hardware is available from rigging supply houses, industrial supply catalogs, and specialized rigging distributors. Local hardware stores do not usually stock these products. Compliant hardware will be referenced with a working load limit (WLL) and a traceability code.

1.3 ATTACHMENT TO STRUCTURES

A licensed Professional Engineer must approve the placement and method of attachment to the structure prior to the installation of any overhead object. The following performance standards should be provided to the Professional Engineer for design purposes: Uniform Building Code as applicable, Municipal Building Code as applicable, and Seismic Code as applicable. The installation of the hardware and method of attachment must be carried out in the manner specified by the Professional Engineer. Improper installation may result in damage, injury, or death.

1.4 IMPORTANT SAFETY WARNING

The information in this section has been assembled from recognized engineering data and is intended for informational purposes only.

None of the information in this section should be used without first obtaining competent advice with respect to applicability to a given circumstance. None of the information presented herein is intended as a representation or warranty on the part of JBL. Anyone making use of this information assumes all liability arising from such use.

All information presented herein is based upon materials and practices common to North America and may not directly apply to other countries because of differing material dimensions, specifications, and/or local regulations. Users in other countries should consult with appropriate engineering and regulatory authorities for specific guidelines.

Correct use of all included hardware is required for secure system suspension. Careful calculations should always be performed to ensure that all components are used within their working load limits before the array is suspended. Never exceed the maximum recommended load ratings.

Before suspending any speaker system, always inspect all components (enclosure, rigging frames, pins, eyebolts, track fittings, etc.) for cracks, deformations, corrosion, or missing/loose/damaged parts that could reduce strength and safety of the array. Do not suspend the speaker until the proper corrective action has been taken. Use only load-rated hardware when suspending JBL suspendable loudspeaker models.

1.5 ARE YOU NEW TO RIGGING?

If you are new to rigging, you should:

- Know the rules for safe rigging.
- Attend a safe rigging seminar.
- Meet and establish a relationship with a licensed mechanical or structural engineer. Get in the habit of asking them questions instead of assuming their answers. Learn from what they tell you.
- Research and understand the codes, practices, and requirements of the venues where you intend to operate your sound system.

1.6 INSPECTION AND MAINTENANCE

Suspension systems are comprised of mechanical devices and, as such, require regular inspection and routine maintenance to ensure proper functionality. Before suspending or pole mounting any speaker system, always inspect all components (enclosure, suspension frames or brackets, pins, eyebolts, etc.) for cracks, deformations, corrosion, or missing/loose/damaged parts that could reduce strength and safety of the array. Do not suspend or pole mount a speaker until the proper corrective action has been taken.

Installed systems should be inspected at least once a year. The inspection must include a visual survey of all corners and load-bearing surfaces for signs of cracking, water damage, delamination, or any other condition that may decrease the strength of the loudspeaker enclosure.

Accessory suspension hardware provided with or for VTX systems must be inspected for fatigue at least once a year or as required by local ordinance. The inspection must include a visual survey of the material for signs of corrosion, bending, or any other condition that may decrease the strength of the fastener. Additionally, any eyebolts must be checked for possible spin-out of the enclosure.

Refer to the manufacturer's guidelines for inspection and maintenance of all other hardware and fittings.

JBL is not responsible for the application of its products for any purpose or the misuse of this information for any purpose. Furthermore, JBL is not responsible for the abuse of its products caused by avoiding compliance with inspection and maintenance procedures or any other abuse.

Prior to suspending the system, an expert, trained and experienced in suspending speaker systems, should inspect all parts and components.

1.7 SYMBOLS

The following symbols are used in this document:

CAUTION: This symbol gives notice of a potential risk of harm to the individual or the equipment. Instructions marked with this symbol must be strictly followed.

TIP: This symbol gives notice of helpful, relevant information about the topic.

INSTRUCTIONS: This symbol gives notice of instructions that must be followed for proper installation and use of the product.

TOOLS REQUIRED: This symbol gives notice of tools that must be used for proper installation and use of the product.

TIPPING HAZARD: This symbol gives notice of a potential tip hazard. Use caution when moving the cart/apparatus combination to avoid injury from tip-over.

1.8 RESOURCES AND DOCUMENTATION

Several resources are available to VTX Series owners to illustrate proper and safe use of the equipment. Below is an overview of what is available and a brief description of each resource:

USER MANUAL: This document focuses on the electromechanical aspects of the system, including amplification, wiring, speaker presets, tuning, and optimization. User manuals do not include information regarding rigging and suspension hardware.

RIGGING MANUAL: This document focuses on the mechanical aspects of the system, including step-by-step rigging instructions, accessory usage, mechanical limits, and safety instructions. All users must read this document.

SPECIFICATION SHEETS: These documents include detailed specifications for loudspeakers and accessories. Specifications include acoustical performance, material types, weight, and general mechanical information. Specification sheets are available for each product.

CUSTOMER DRAWINGS: This is a collection of files that includes detailed drawings for each SKU. The collection consists of detailed dimensional 2D PDF/DXF documents and simplified 3D DXF models. Depending on the product, additional types of 3D files might be available for download at www.jblpro.com.

VIDEO TUTORIALS: Software and hardware video tutorials are available for watching on the JBL Professional YouTube channel.

2 - MECHANICAL LIMITS

The VTX B15 suspension system and accessories comply with the 2006/42/EC Machinery Directive and have been designed following the guidelines of DGUV regulation 17 (BGV-C1) for a minimum safety factor of 4:1. Minimum safety factor requirements are often set by local regulations, and JBL Line Array Calculator 3 (LAC-3) software should always be used to check mechanical limits.

2.1 SUSPENDED ARRAY

ARRAY FRAME	NOTES	SAFE LIMIT	MAXIMUM LIMIT
VTX A6 MF	Non-mixed arrays using the VTX A6 Mini Frame	(9)	(12)
VTX A6 SB	(1) Suspension Bar used as an Array Frame (top center)	(10)	(15)
VTX A6 SB (x2)	(2) Suspension Bars used at the top front/rear rigging bars)	(10)	(15)
VTX A6 SB (x2)	(2) Suspension Bars used at the top and bottom (pull-back)	(8)	(15)

TERMINOLOGIES:

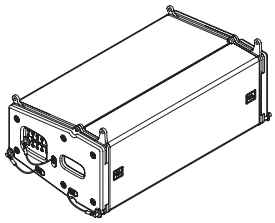
Safe Limit: The safe limit provides the number of cabinets that can be used in an array and always produce a safety factor of 4:1 or higher. The safety factor of an array is determined by the number of boxes, the array shape, and the overall array angle. A B15 array that is within the safe limit will always yield a safety factor greater than 4:1 regardless of the array parameters and conditions. Designs much greater than the safe limit, and up to the maximum limit can be achieved, but Line Array Calculator 3 software should be used to check mechanical safety for the given configuration.

Maximum Limit: Arrays larger than the maximum limit are not allowed under any conditions.

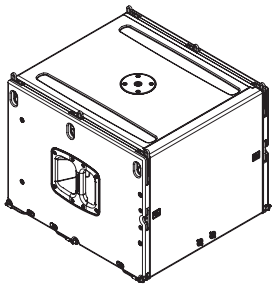
NOTES:

- LAC-3 allows for array designs with a minimum design factor of 4:1. Anything lower than that is not allowed.
- For exact mechanical limits of combination arrays (A6s suspended under B15s), always check the design with LAC-3.
- For mechanical limits when using dual Suspension Bars always check the design with LAC-3.
- ANSI Standard E1.8-2005 (Entertainment Technology Loudspeaker Enclosures Intended for Overhead Suspension), Section 5.3.4, specifies a minimum safety factor of 5:1. If compliance with the ANSI standard is needed, make sure that the array design in LAC-3 produces a minimum safety factor of 5:1

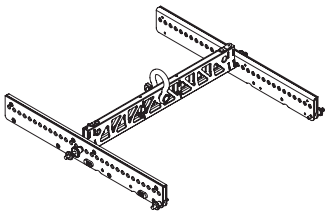
3 - SYSTEM COMPONENTS



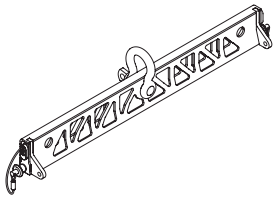
VTX A6



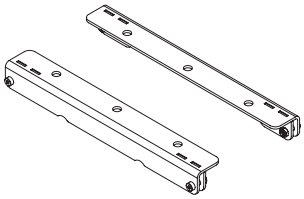
VTX B15 | VTX B15G



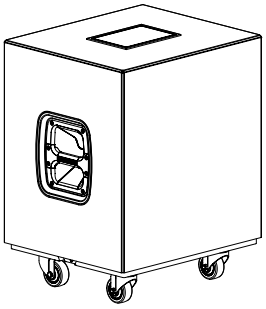
VTX A6 MF | Mini Frame



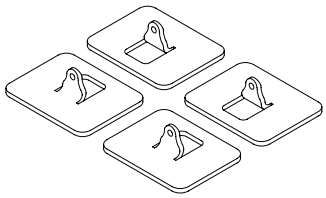
VTX A6 SB | Suspension Bar



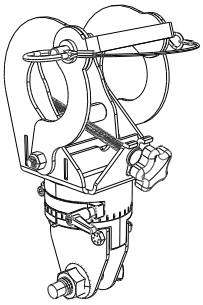
VTX A6 CM | Ceiling Mount



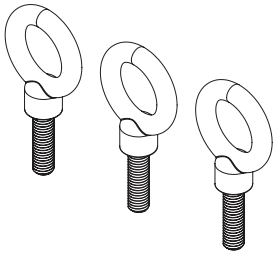
VTX B15 ACC | Caster Board & Cover



VTX B1 GND



VTX RC500 | Rotating Clamp



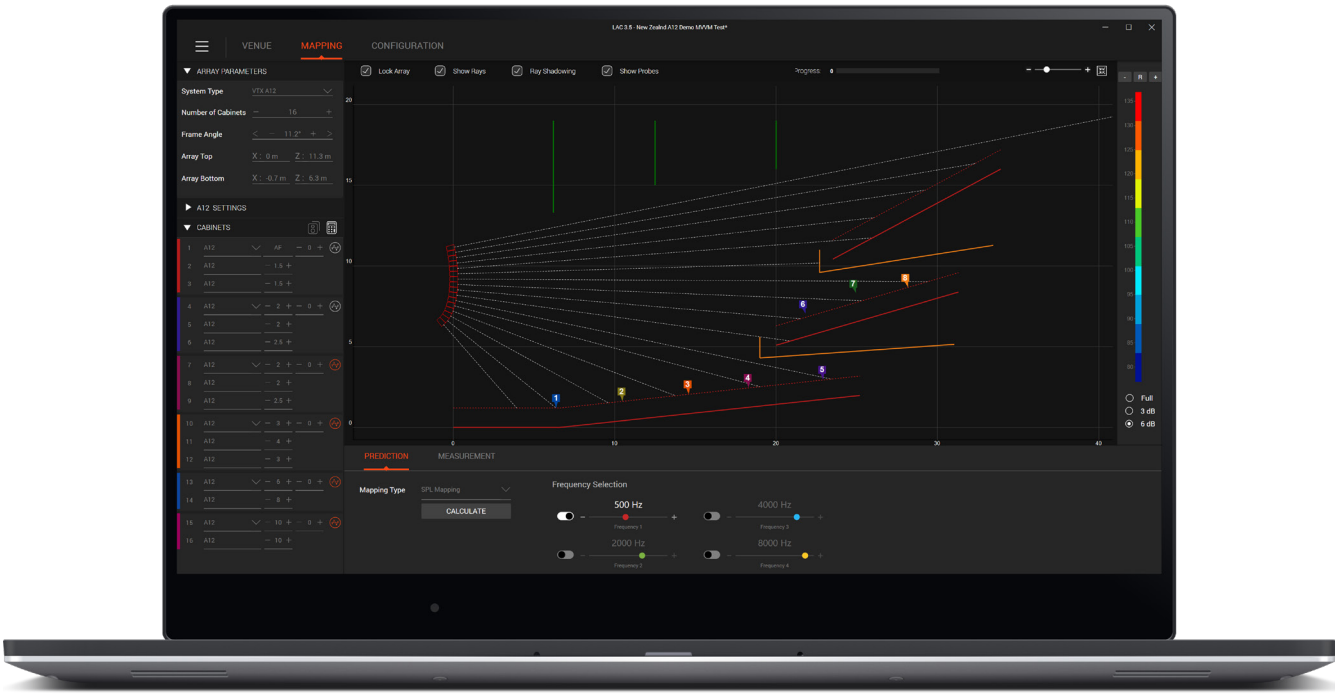
229-00009-01 | M10 Eyebolt Set

CAUTION: Always use components and accessories specified and approved by JBL Professional. When a cart is used, use caution when moving the cart to avoid injury from tip-over.

4 - SOFTWARE

4.1 LINE ARRAY CALCULATOR 3™

Line Array Calculator 3 acoustical prediction software is used for the design and mechanical validation of VTX Series line array systems. Using LAC-3 is a three-step process. First, venue dimensions are defined using either X/Y/Z coordinates or the fast distance/angle method. Second, array configurations are built from VTX Series loudspeaker models. Third, virtual measurement microphones and a suite of built-in DSP functions are applied to make predictions of the system's coverage and the linearity that will be delivered by the defined array configuration in the specified space. Loudspeaker quantities and models, splay angles, and array aiming can be modified until prediction shows that the desired coverage is attained throughout the venue. The built-in coverage-and-delay calculator determines subwoofer delay values for electronic delay steering (EDS) that achieves optimal low frequency coverage.

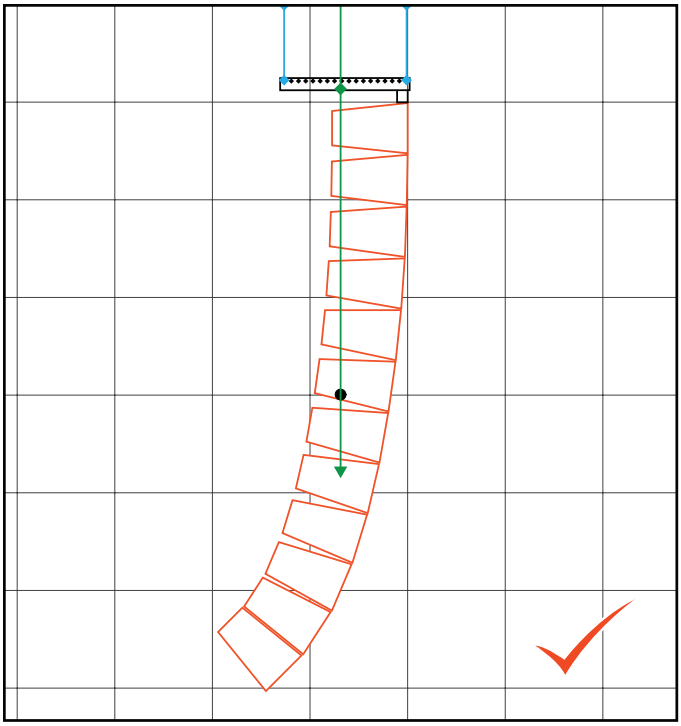


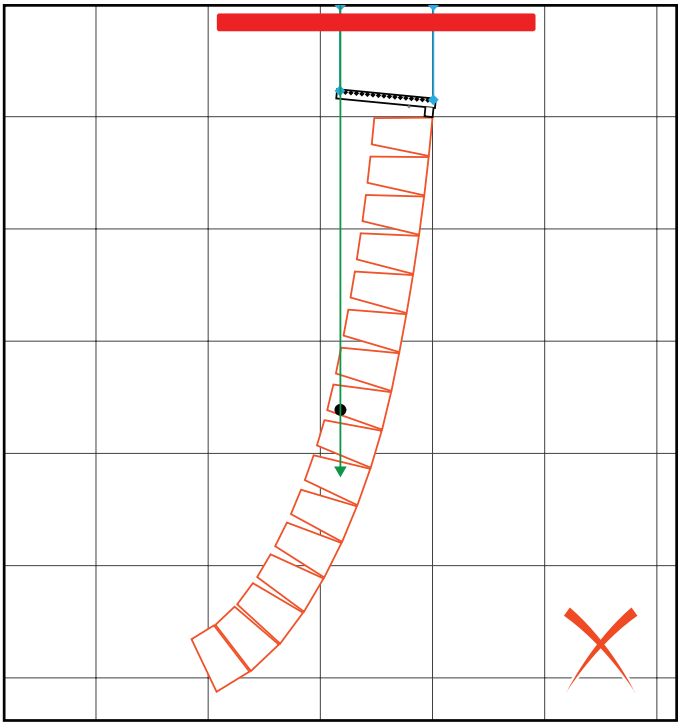
Beyond acoustical predictions, LAC-3 validates the mechanical properties of arrays and selected JBL accessories. Configuration limits are calculated in real time, for either suspended or ground-stacked arrays, based on array parameters such as the number of cabinets, cabinet-to-cabinet splay angles, overall array aiming, and selected accessories. In the case of suspended arrays, a safety factor is calculated to aid in designing systems that conform to local regulations. Warnings and error messages notify the user when an array or a specific accessory is outside safe working limits. For ground-stacked arrays, a tipping factor calculated from a complex set of variables suggests whether an array design is likely to be stable, potentially unstable, or unsafe. Array statistics like array size, depth, and weight are also calculated, and a PDF report facilitates system deployment. Mechanical data can be transferred to JBL's Array Link™ app running on an iOS® or Android™ mobile phone using a QR code, with no need for internet connectivity. All relevant rigging information and options are presented in an easy-to-understand layout.

CAUTION: All VTX systems should be designed and validated using the LAC-3 software application. This is the only way to ensure that safe mechanical conditions are met for any given configuration.

4.2 SUSPENDED ARRAYS

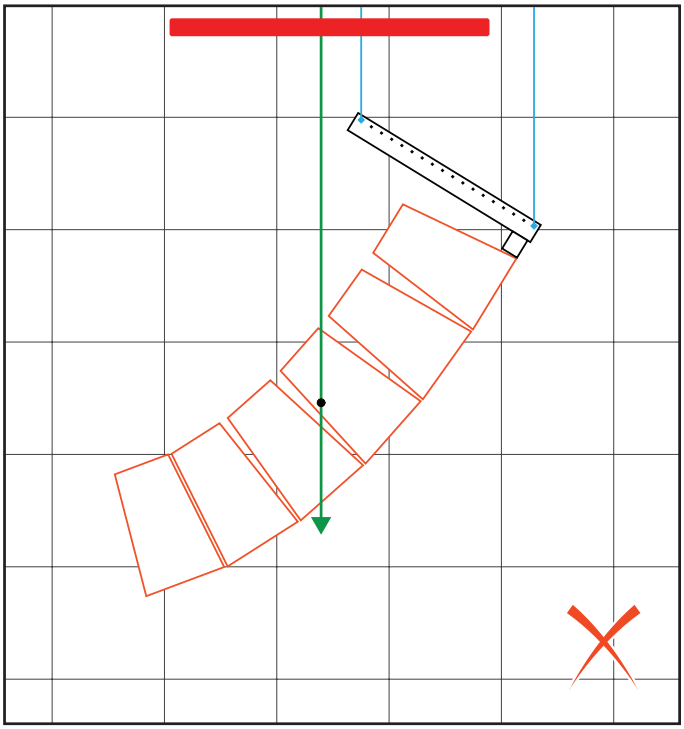
Line Array Calculator checks the mechanical safety of suspended arrays and takes into consideration all variables that can affect the mechanical safety and safety factors. The software validates the mechanical stresses on the enclosures, speaker rigging components, and all accessories used as part of an array. Parameters like array down angle and curvature are considered and a safety factor is generated for the given configuration. The generated safety factor value represents the minimum of any components used, and values are always rounded down.





A red banner appears at the top of the array views when the software detects a mechanical error. The banner explains the issue, and some configurations might include more than one error. In that case, the software will present the additional messages as the errors are cleared. Configurations generating a mechanical error should never be used as their safety factor falls under the minimum of 4:1. The safety factor generated by the application can be used to design arrays with safety factors other than 4:1 and based on local regulations.

In addition to mechanical and safety errors, the software notifies of configurations that cannot be realized in real life. An example of such a condition is when the center of gravity of an array falls outside of the footprint of the array frame. In this case, the error can be cleared by changing the down angle or using a pull-back at the bottom of the array.



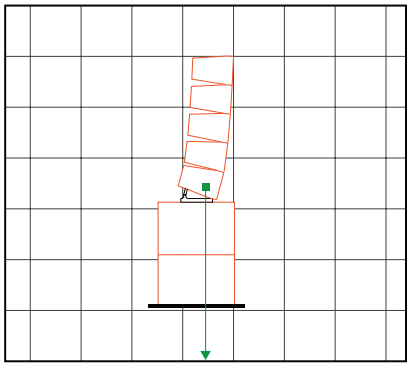
● Center of Gravity ● Suspension Points

4.3 GROUND-STACKED ARRAYS

Line Array Calculator checks for the mechanical safety for ground-stacked arrays. The software takes into consideration several variables that can affect the stability of an array, including outside factors such as someone pushing on an array. Based on this data, LAC-3 generates a safety assessment factor and notifies the user of potential mechanical or stability problems. Errors and warnings generated fall into one of the following categories:

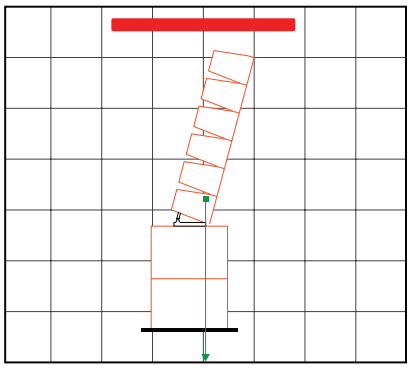
No errors or messages

In this case, the array is stable under normal conditions and can be used as is. The array also complies with the mechanical limits set by JBL for the speakers and selected accessories.



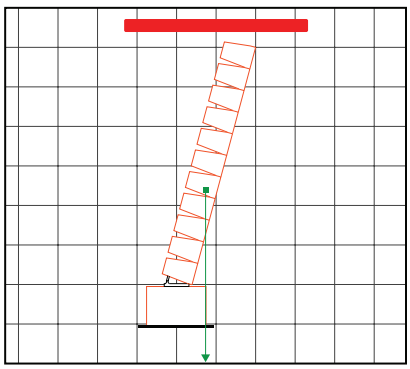
WARNING: Stability Hazard! - Stack Could Become Unstable - Secure to Ground

This message is an alert that the array is potentially unstable and a tipping hazard condition has been detected. The user is responsible for securing the array to the ground, stage, or other structure that can provide additional support and is rated for the weight of the array. This message may also be warning of external factors that can influence stability, such as someone accidentally pushing the array.



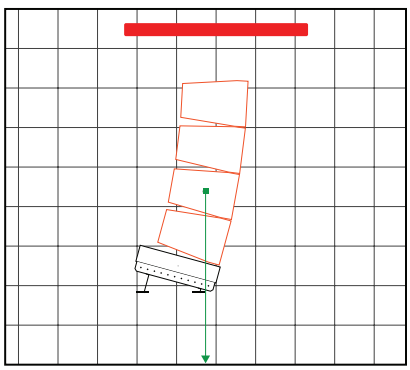
Configuration exceeds the maximum number of boxes allowed

This message is presented when the specified array design exceeds the mechanical limits set by the JBL team for the speakers or selected accessories. Array designs that trigger this message should not be used under any conditions, as they can lead to hardware damage and/or injury.



Invalid CG Location

This message is presented when the center of gravity of an array design exceeds the footprint of the selected accessory. Array designs that trigger this message should not be used under any conditions, as they can lead to hardware damage and/or injury.

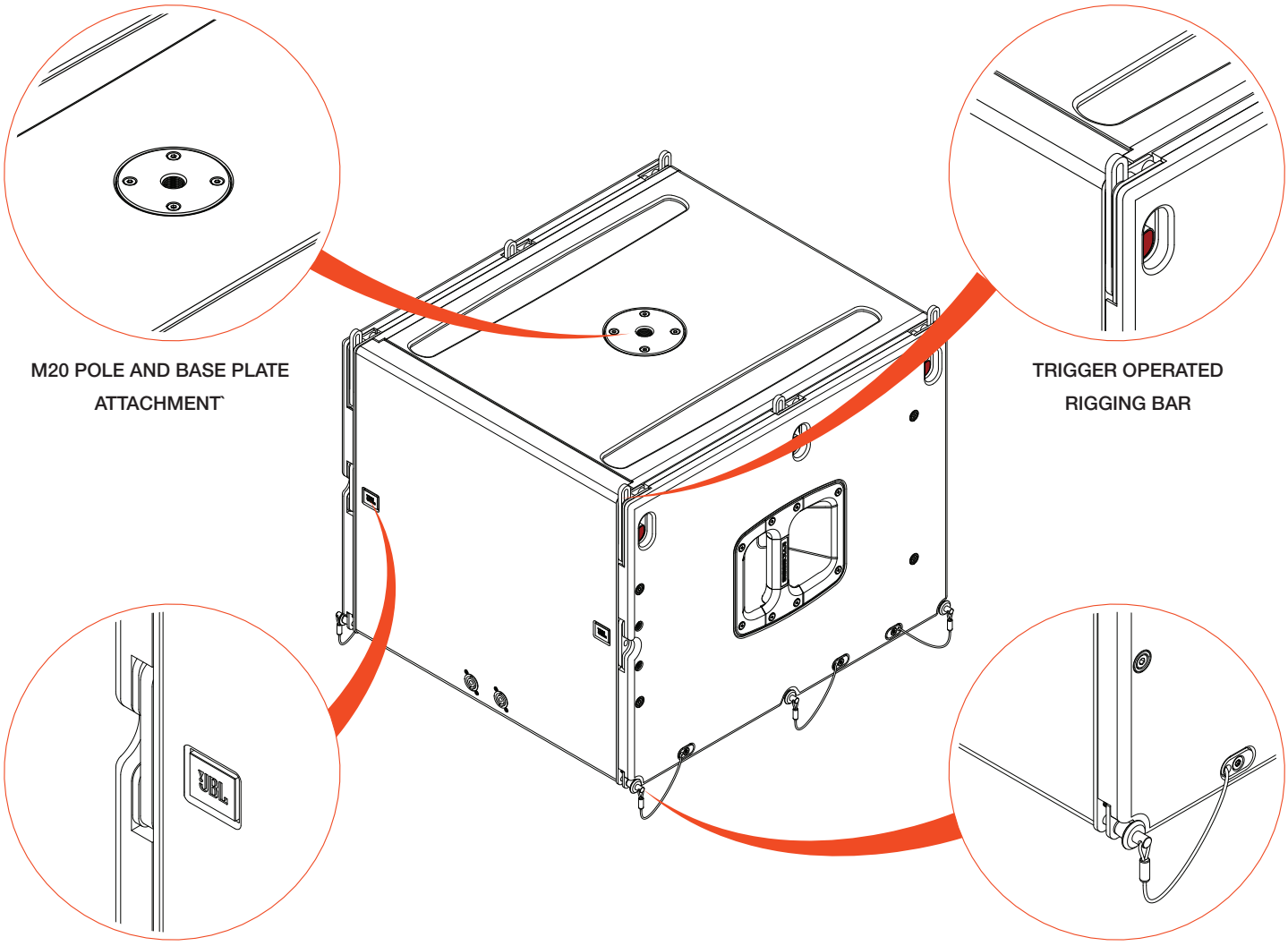


● Center of Gravity

5 - RIGGING SYSTEM

VTX B15 cabinets include a six-point, trigger operated, rigging mechanism that can be deployed to suspend up to 15 cabinets, depending on the configuration. The B15 rigging system enables forming either standalone arrays or mixed arrays using A6 full-range cabinets suspended under the B15s. All A6 suspension accessories, such as the Mini Frame, Suspension Bar, and Ceiling Mount are compatible with the B15. When used in ground-stacked configurations, the spring-loaded rigging mechanism maintains tension on all parts, preventing any audible artifacts from vibrations. The B15 is front-to-back symmetric, enabling cardioid arrays to be easily created for suspension or ground stacking.

5.1 RIGGING CLOSEUP

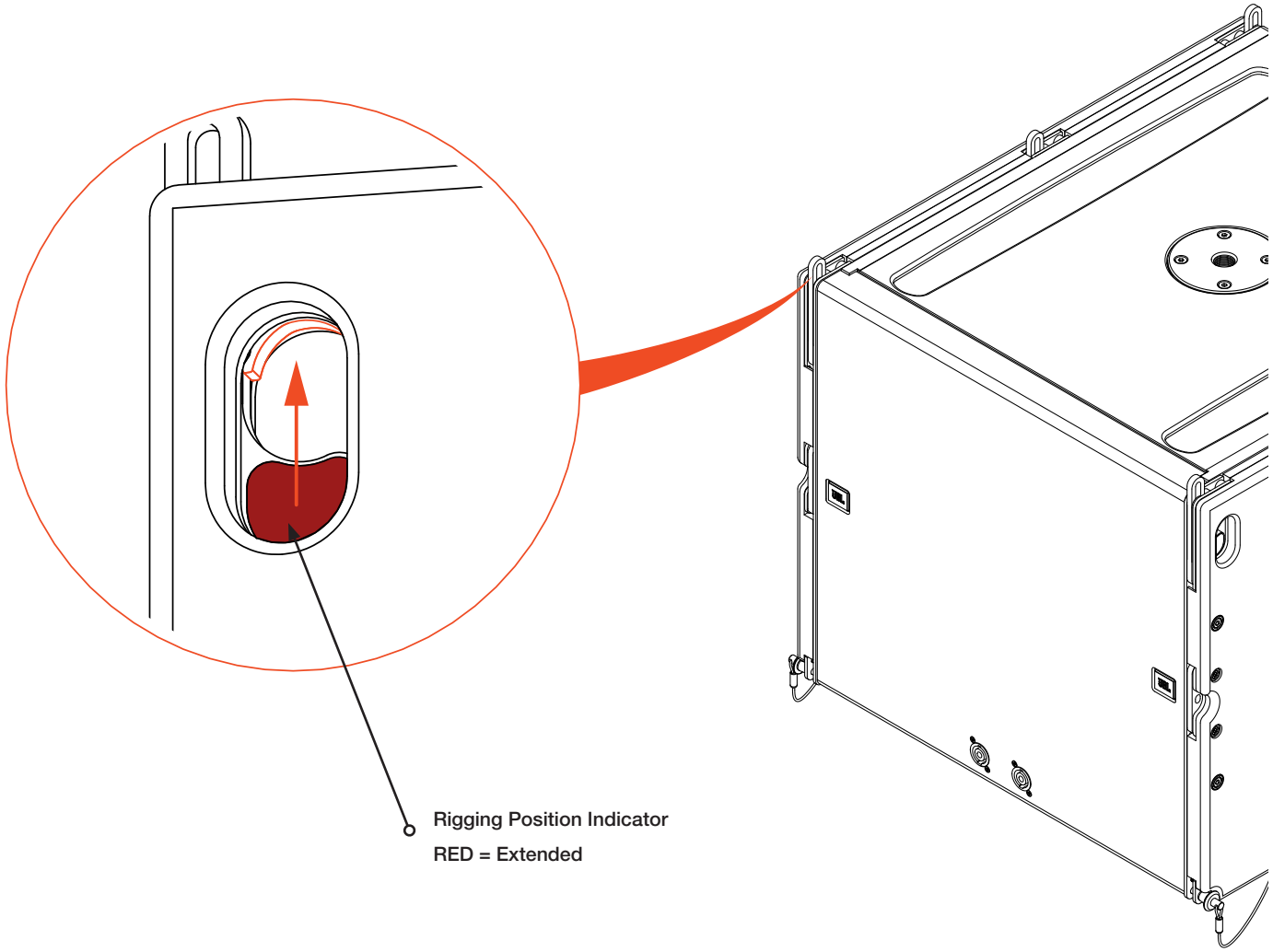


5.2 RIGGING MECHANISM

Each of the six B15 rigging bars incorporates a trigger operated, spring-loaded mechanism. Rigging bars automatically extend upwards once the user pulls the captive trigger located within the recess just below the rigging bar. Once extended, a **RED** label is visible to indicate that the link bar is in the extended position. This is especially useful when multiple B15s are arrayed together and the link bars are not fully visible.

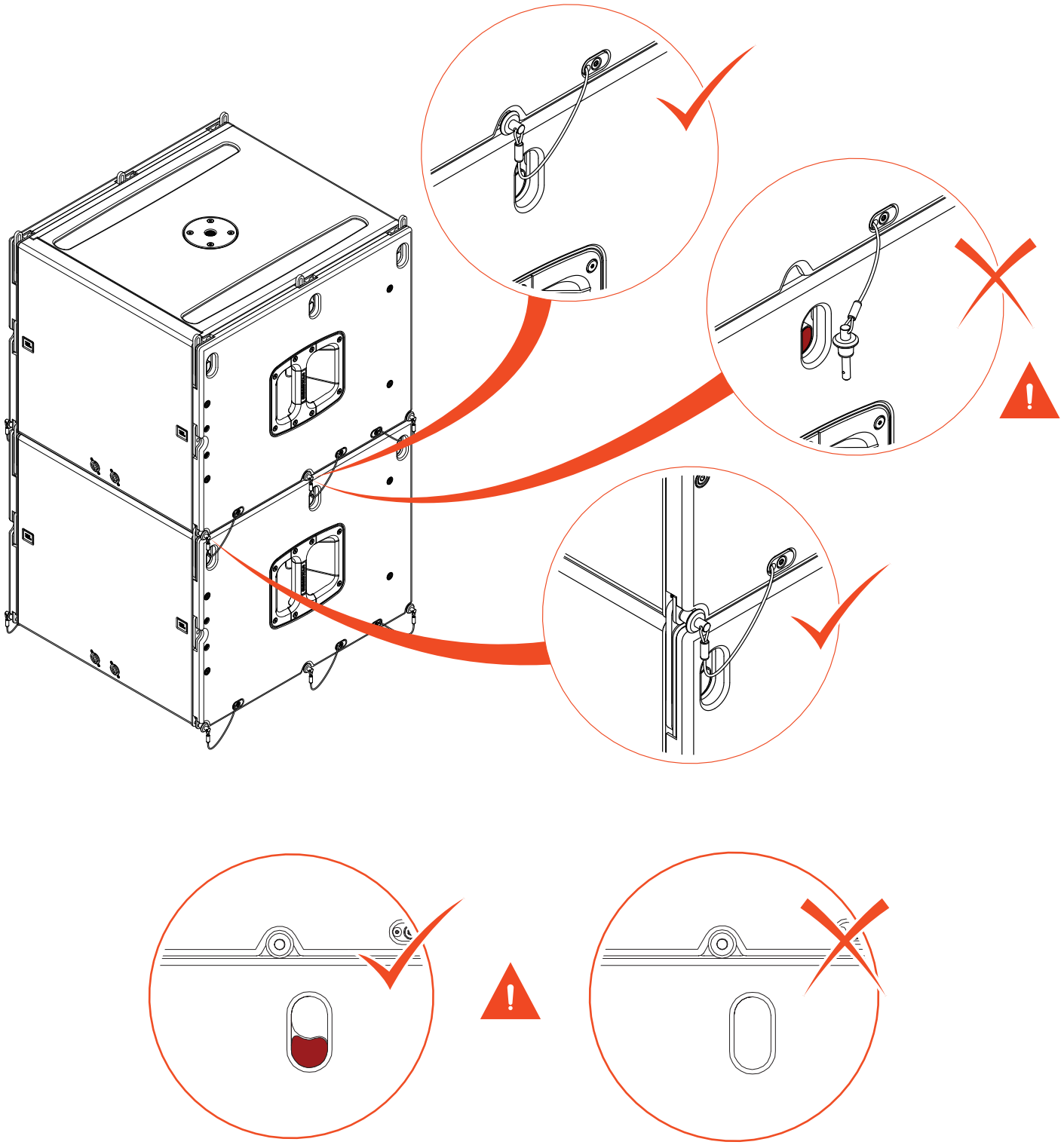
STEPS:

1. Release the captive trigger located just underneath each rigging bar by pressing up.
2. The rigging bar automatically extends upwards.



CAUTION: No rigging bars should be left unused when deploying B15 cabinets in suspended configurations. Look for the RED color to verify rigging bars are in the extended positions.

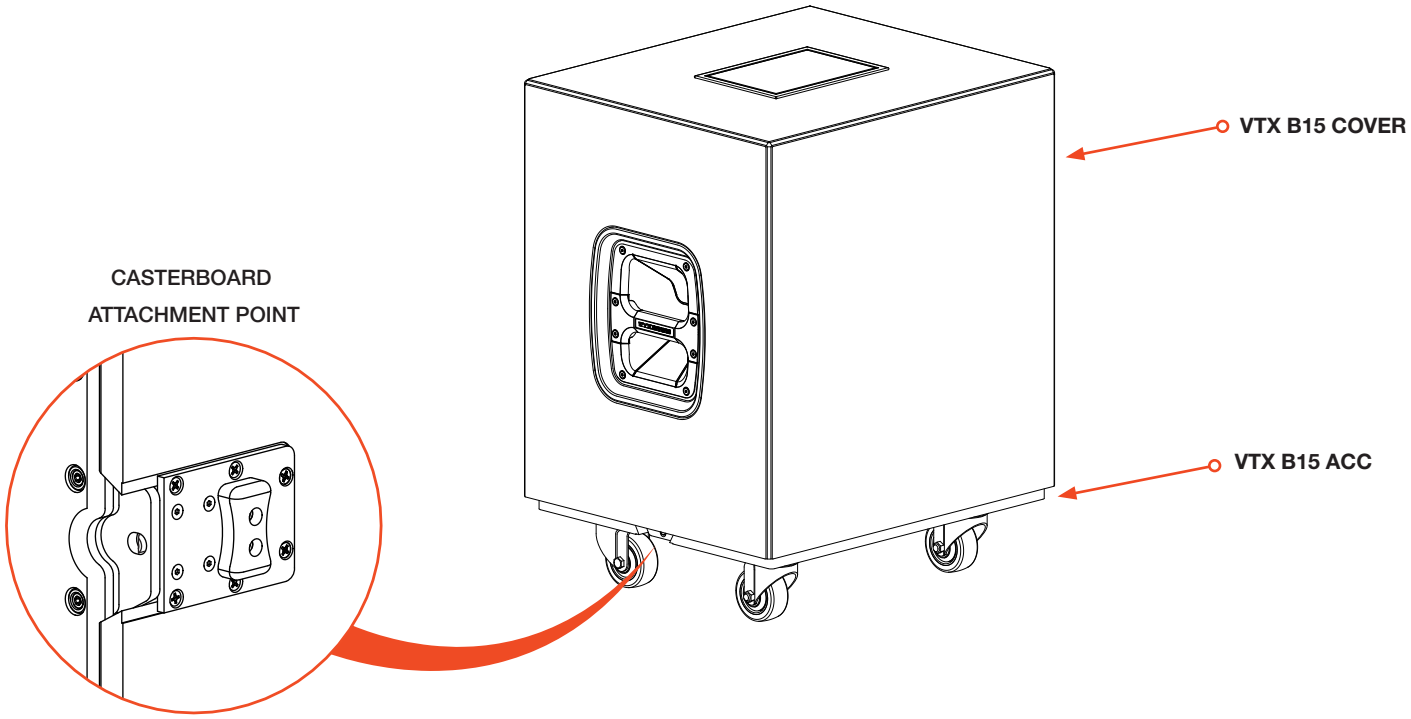
When suspending multiple B15 cabinets together, all six rigging points (three per side) should be used for each B15 with the exception of the top cabinet, which connects to the array frame or suspension bar. Each attachment point will use one quick release pin, as illustrated below. No quick release pins should be left unused.

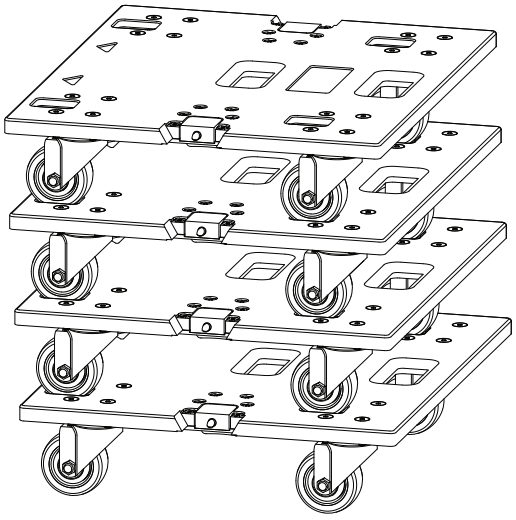


CAUTION: No quick release pins should be left unused when deploying B15 cabinets in suspended configurations. All used rigging bars should have the RED rigging indicators showing.

6 - TRANSPORTATION

The VTX B15 ACC accessory kit includes a front face caster board for a single B15 and a protective cover. The ACC is an efficient solution for easy transportation and maximizing truck packs. Because of their small footprint, B15 subwoofers can be stacked on top of other equipment packed in a truck. When not in use, the caster boards can be stacked on top of each other for storage.



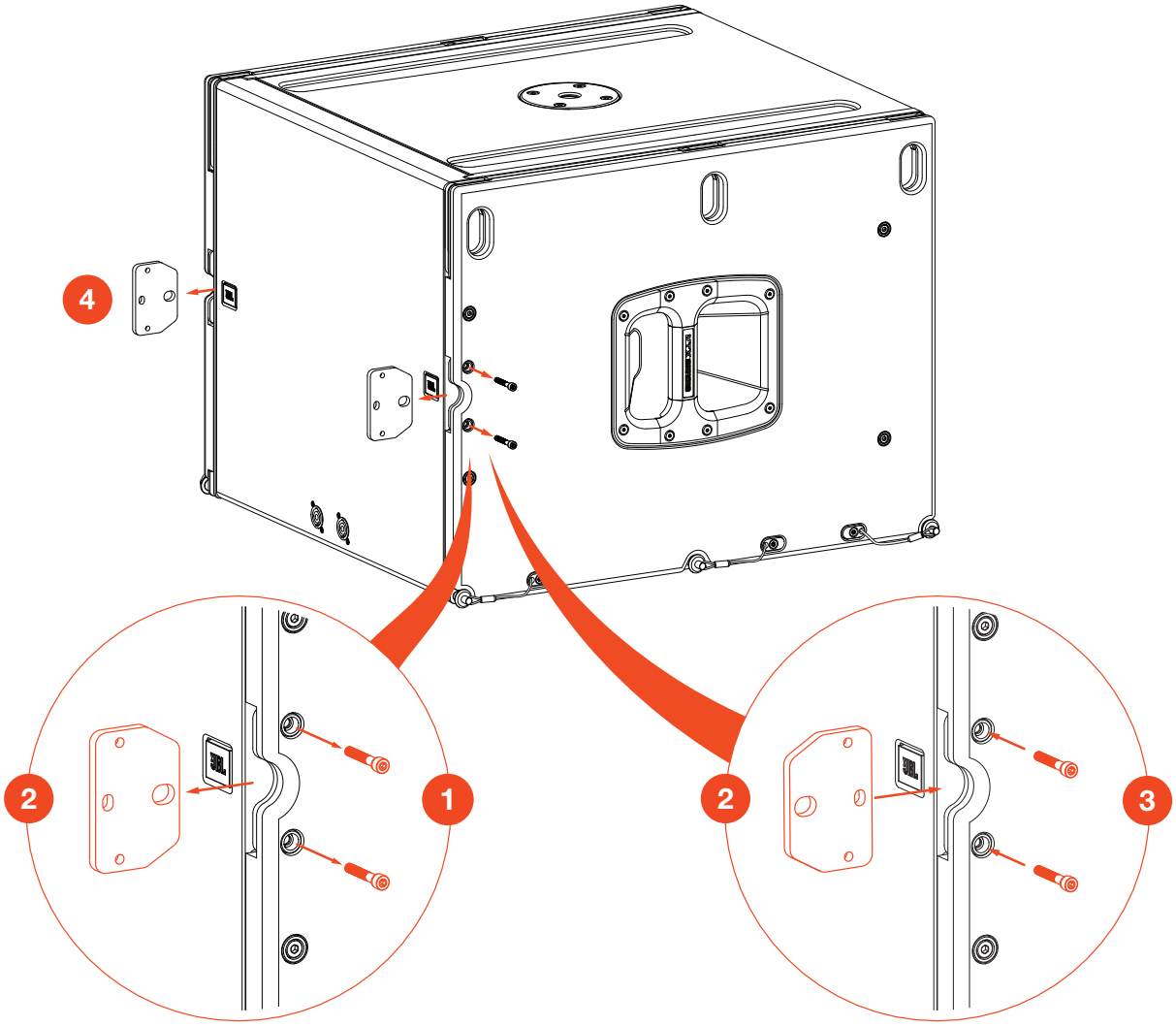


6.1 CASTER BOARD INSTALLATION

Two caster board tabs at the front of the B15 are used to secure the front face ACC caster board to the B15. The tabs are retractable and ship from the factory in the retracted position inside the B15. This orientation is ideal when B15s are used in an installation, where the tabs are not needed, but the tabs must be rotated to attach the caster board to the B15.

STEPS:

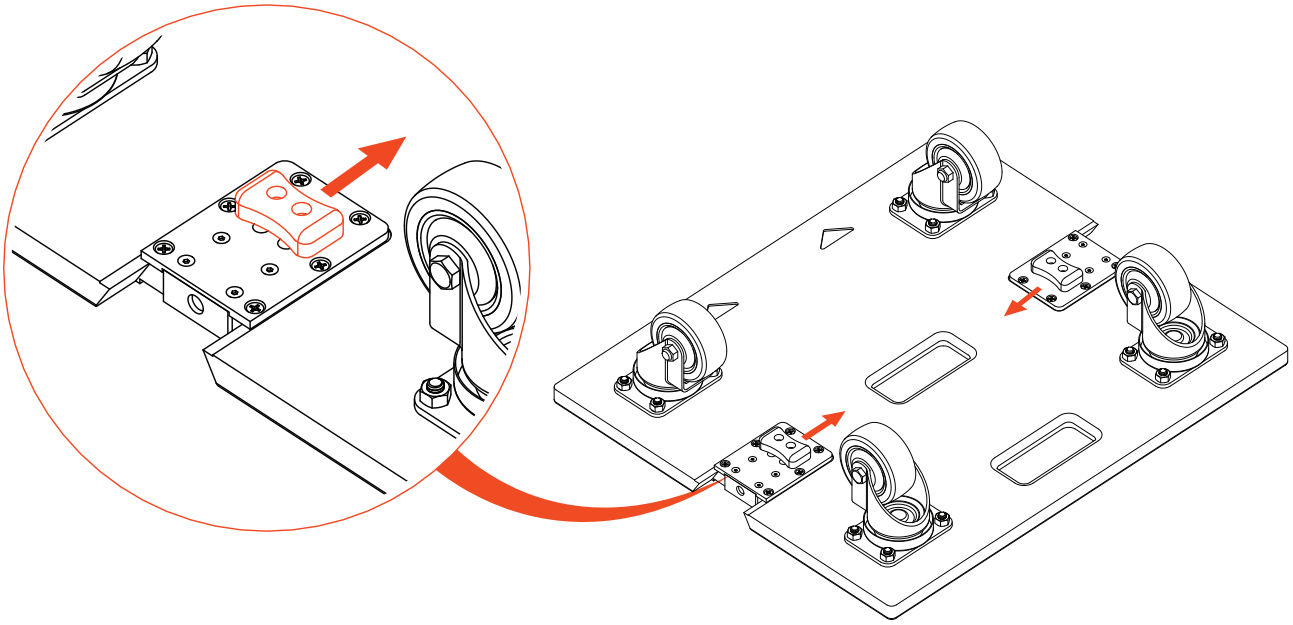
1. Remove the four M6 hex bolts holding the bracket onto the B15.
2. Rotate the bracket to the extended position.
3. Install the bolts.
4. Repeat for the other side.

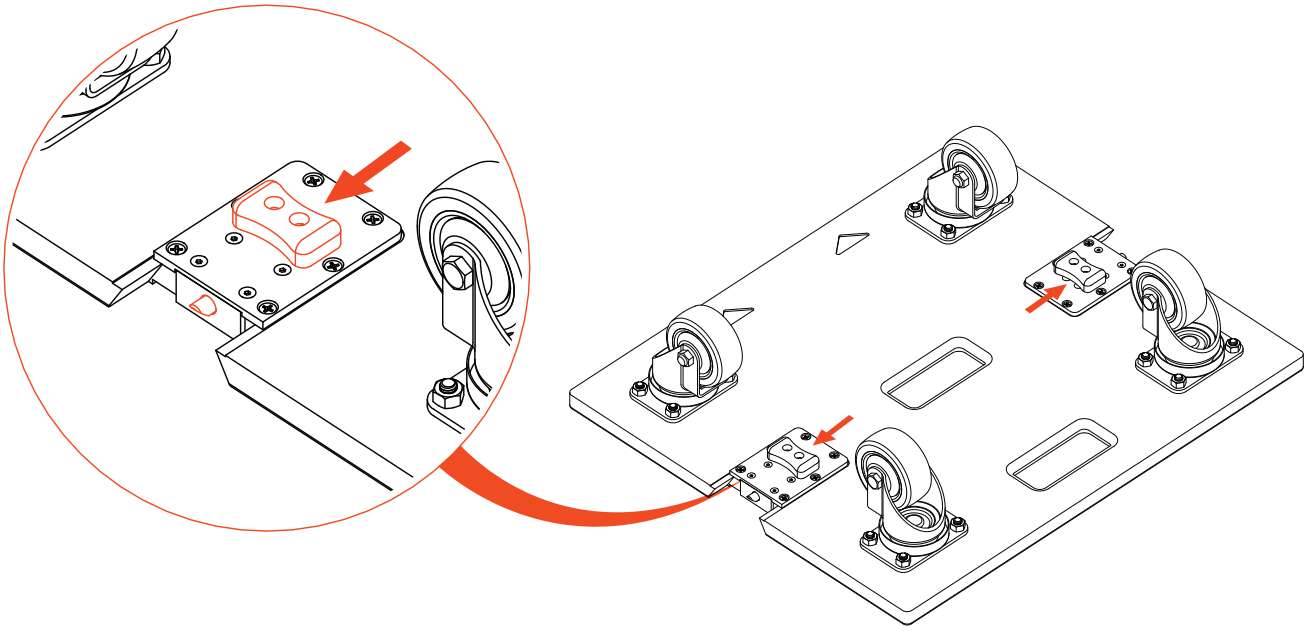


TOOLS REQUIRED: A Torx T25 wrench is required to remove the four bolts holding the ACC brackets. All bolts should be torqued to 2.82 N.m (25 in.lbs).

6.2 CASTER BOARD OVERVIEW

The VTX B15 ACC caster board features two spring-loaded sliding pin locks (one on each side), which are used to attach the caster board to a B15 cabinet. The caster board seats on the B15 mounting tabs and is secured by the spring-loaded pin.



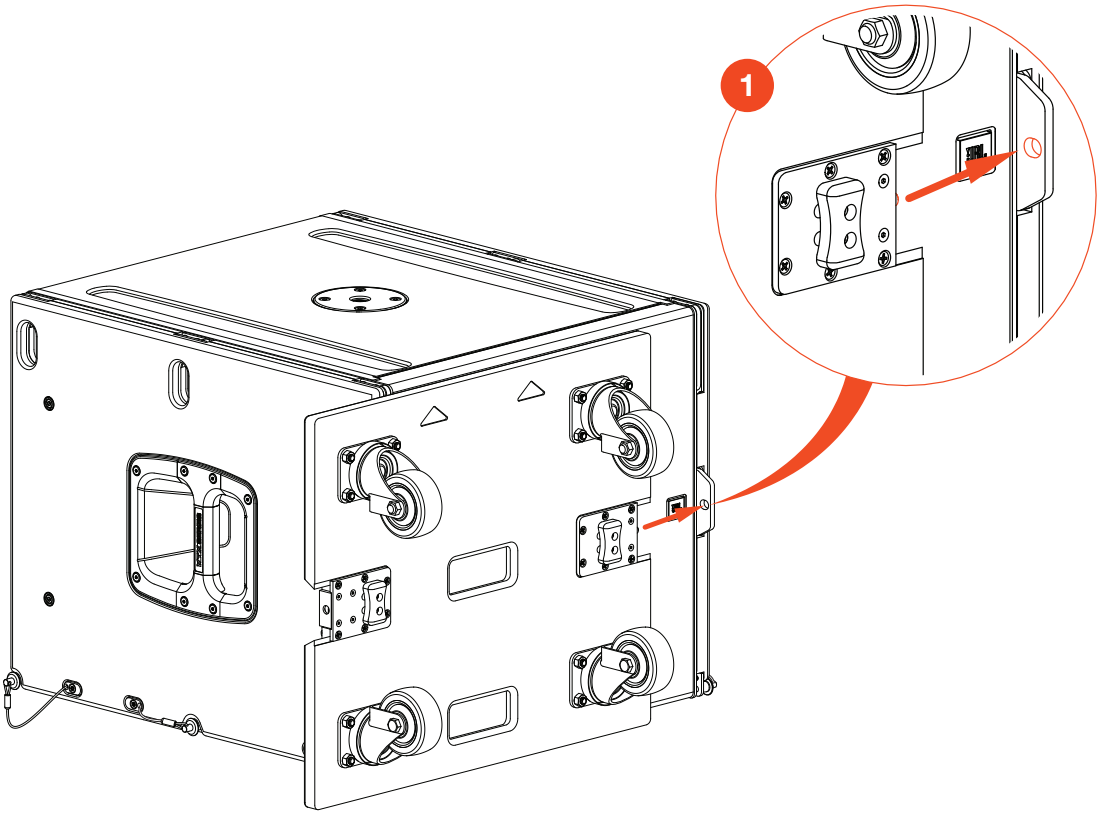


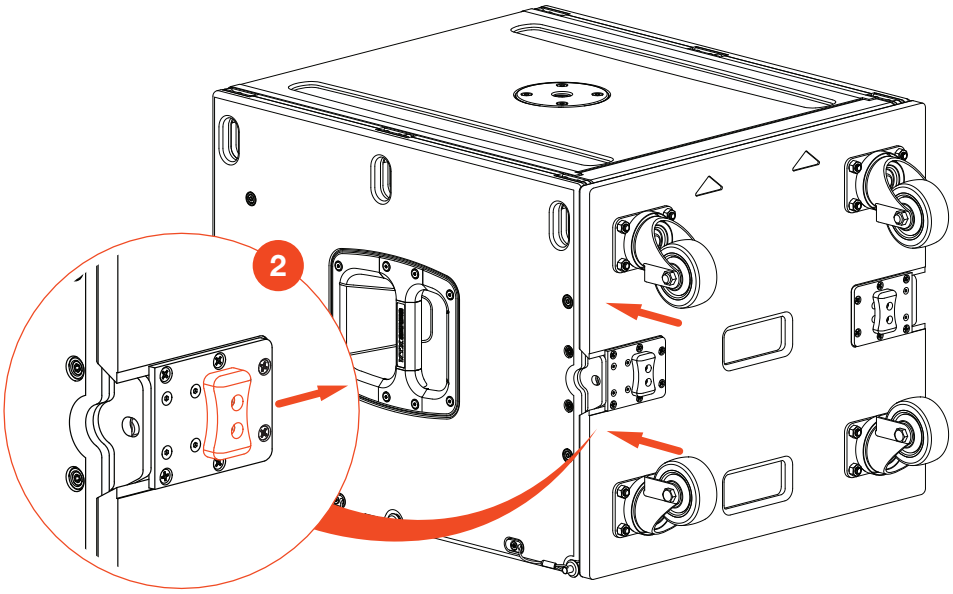
TIP: The beveled edge on the pin allows you to attach the caster board with a forceful push, rather than needing to pull back the handle on the spring-loaded pin.

6.3 CASTER BOARD INSTALLATION

STEPS:

1. Slide either of teh ACC caster board mounting pins into one of the mounting tabs on the face of the B15 subwoofer.
2. Pull back the handle on the other pin mechanism, push the caster board onto the tab and release the handle.



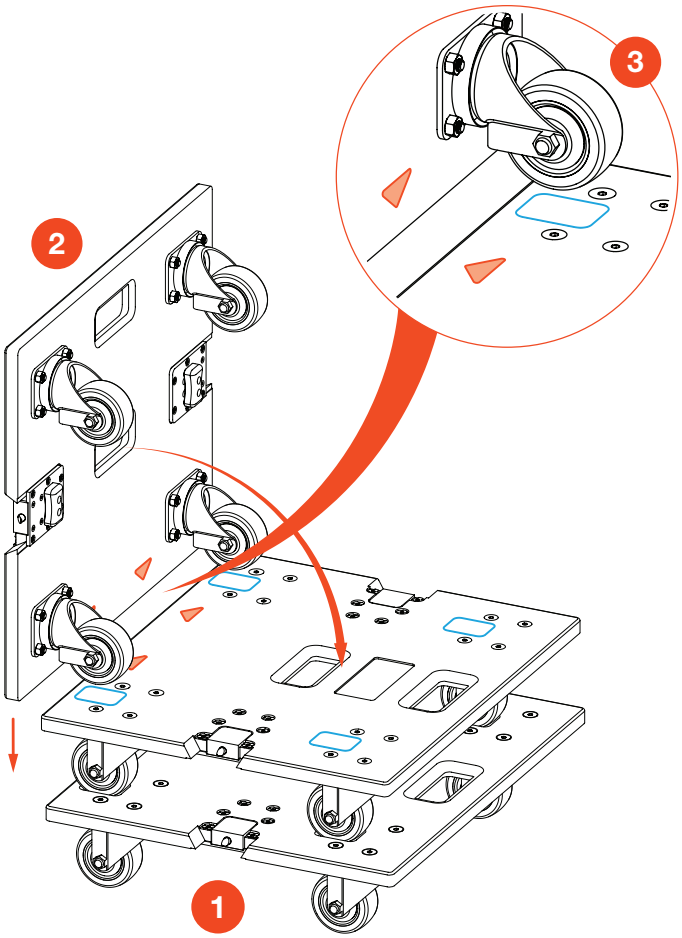


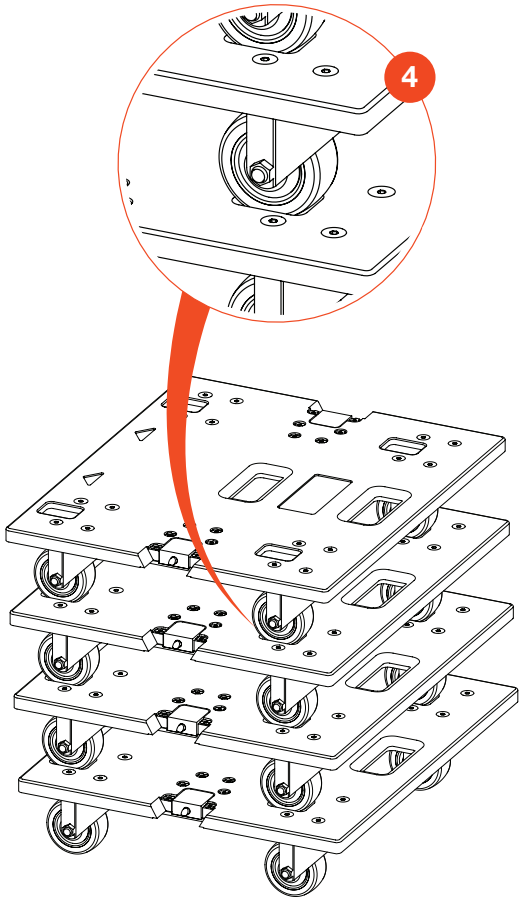
6.4 STACKING CASTER BOARDS

VTX B15 ACC Caster Boards can be stacked together for storage. The caster board's handles and wheels were designed to allow stacking without having to touch or manually turn the wheels. When the ACC is held by the handle near its edge, gravity orients the wheels downward. Alignment arrows are located near one edge on both the top and bottom of the ACC to identify the correct orientation. To stack two ACCs, line up the arrows on the bottom of the ACC being added to the stack with the arrows on the top ACC on the stack, then lower the ACC onto the stack.

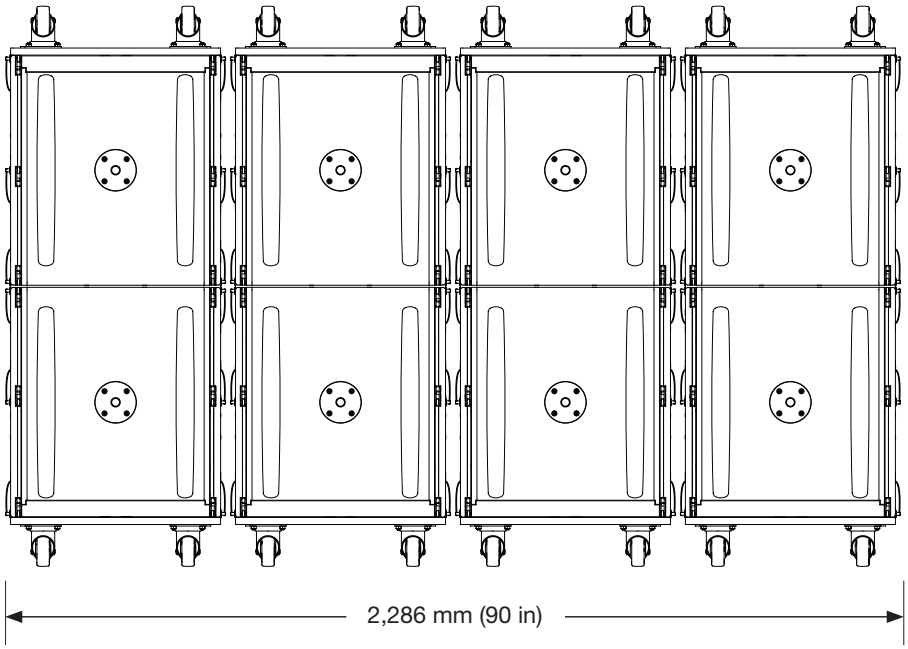
STEPS:

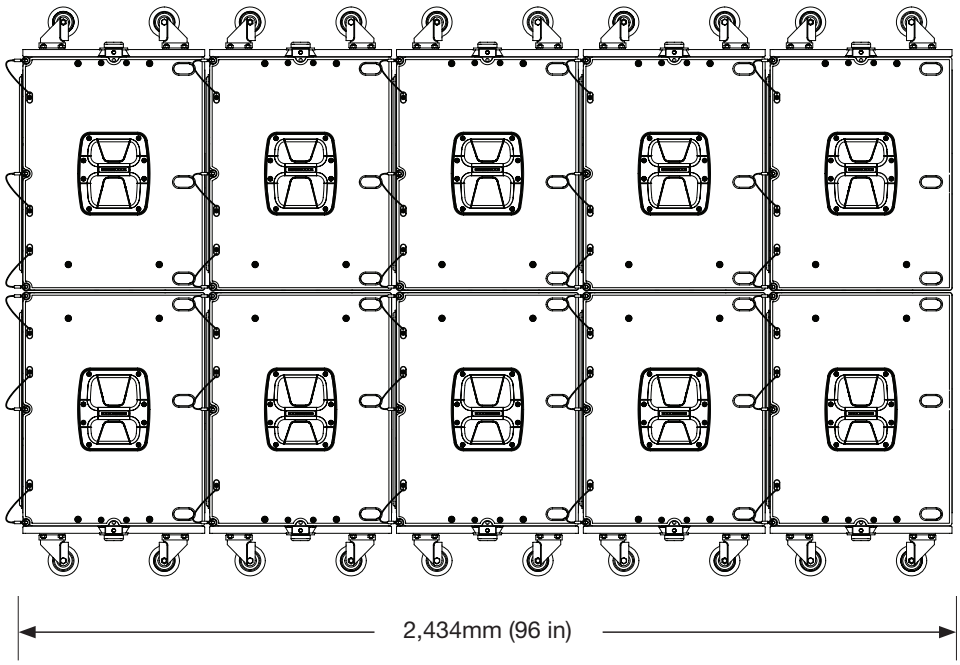
1. Place the first ACC dolly on the ground.
2. Hold the next dolly by the handle located close to the edge so that it is vertical. All four wheels will be oriented downwards.
3. Using the arrows for orientation, fit the lower wheels into the nearest wheel wells of the ACC on the ground.
4. Once the lower wheels are aligned, lay the dolly flat, seating the upper wheels into the remaining wheel wells.





6.5 TRUCK PACKING



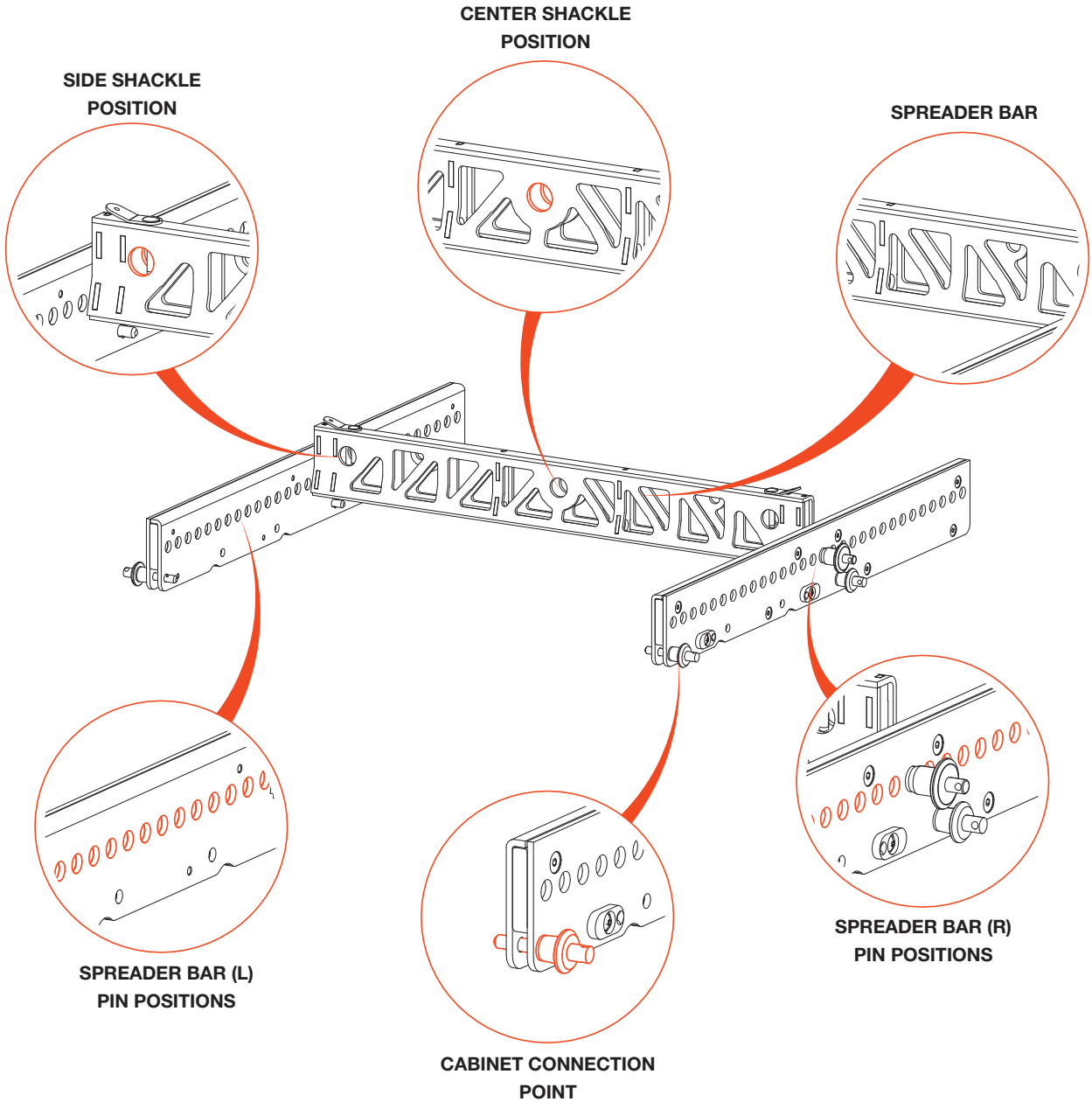


7 - MINI FRAME

The VTX A6 MF Mini Frame is a lightweight, compact, and inexpensive array frame intended for suspending VTX A6 and VTX B15 arrays. The three-piece design is comprised of two side arms and one Spreader Bar. The side arms connect to the cabinets, and the Spreader Bar can be pinned to one of the 26 pick-point positions, providing excellent tilt resolution. The Mini Frame was designed to work primarily in single-point applications, although dual-point suspension is supported using the two Spreader Bar side shackle positions. The Mini Frame can be used in conjunction with the VTX RC500 Rotating Clamp, allowing smaller A6/B15 arrays to be suspended from standard size trusses or pipes. The three pieces of the frame can be collapsed and pinned together for storage.

CAUTION: This manual describes the VTX A6 MF only in the context of the B15. For detailed information on the A6 Mini Frame and a full description of use cases refer to the VTX A6 Rigging Manual before using.

7.1 OVERVIEW

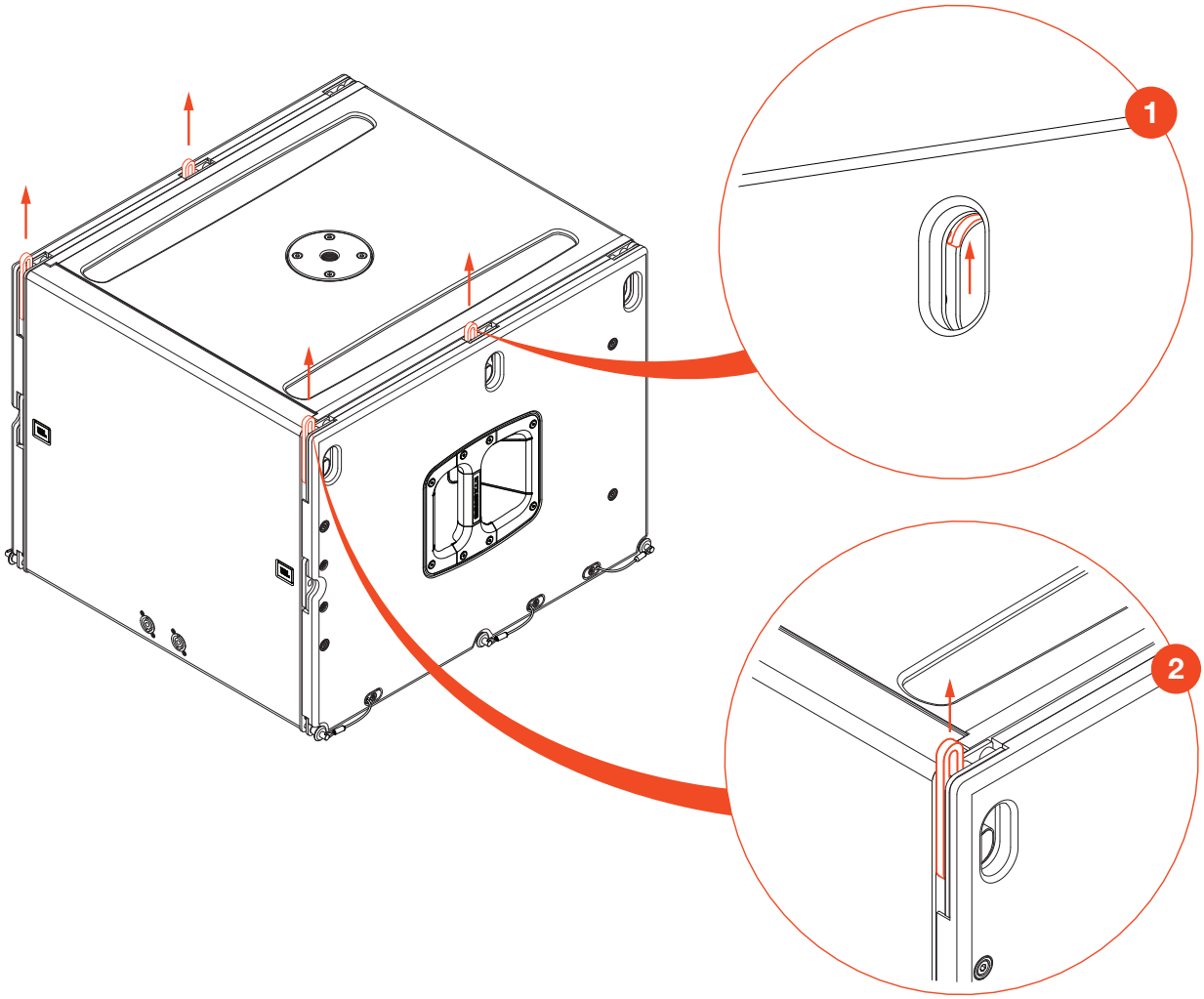


7.2 ATTACHING THE MINI FRAME

The Mini Frame is always attached to the front four rigging bars of the top B15 subwoofer in an array.

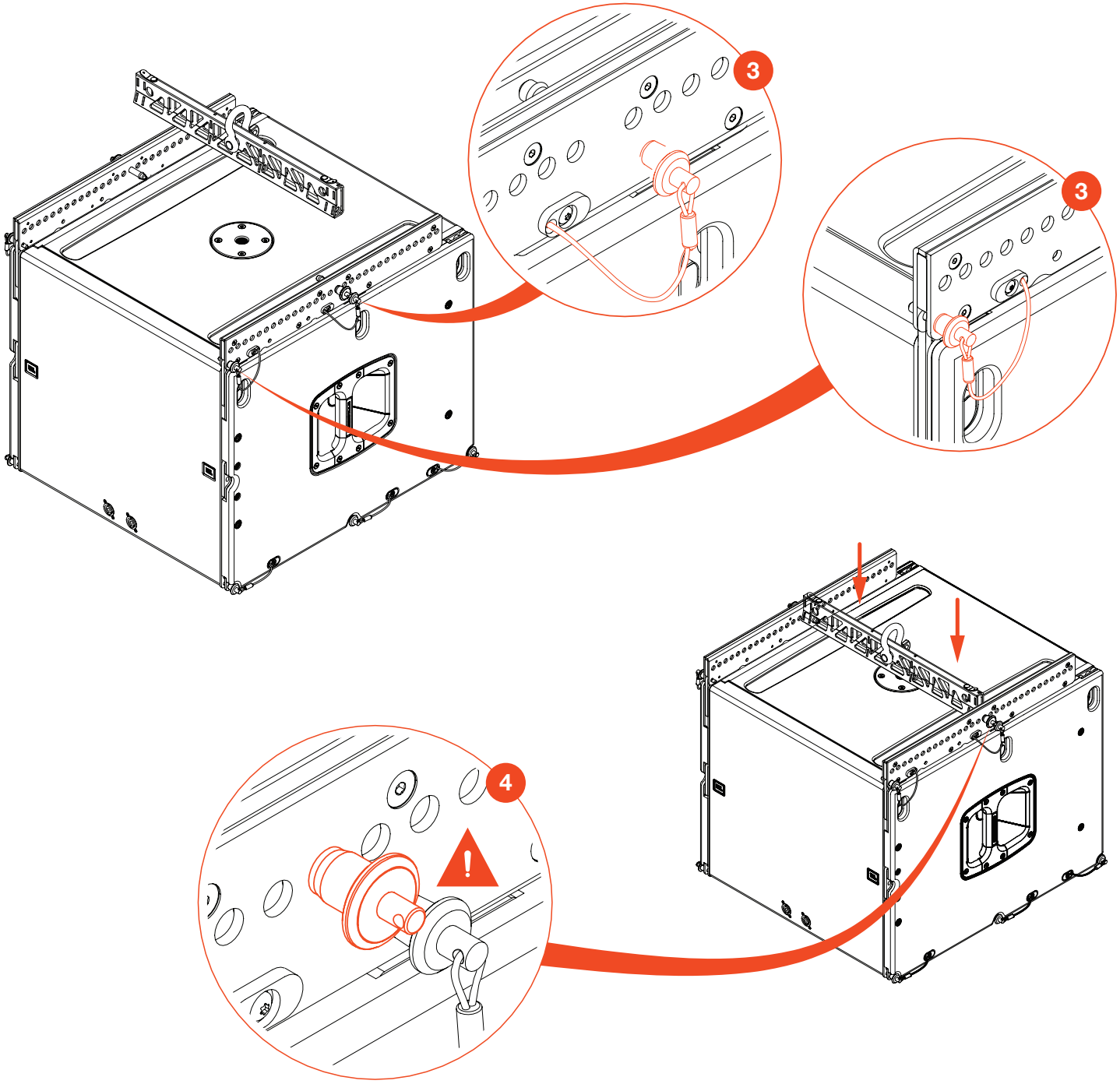
STEPS:

1. Extend the four front B15 rigging bars by releasing the recessed triggers located just below the rigging bars.
2. The rigging bars will automatically extend upwards.



STEPS:

3. Attach the two side arms to the B15 using the quick release pins attached to the side arms.
4. Pin the Spreader Bar to the desired pick-point position using the two pins attached to the Spreader Bar. Consult LAC-3 to determine proper hole position.

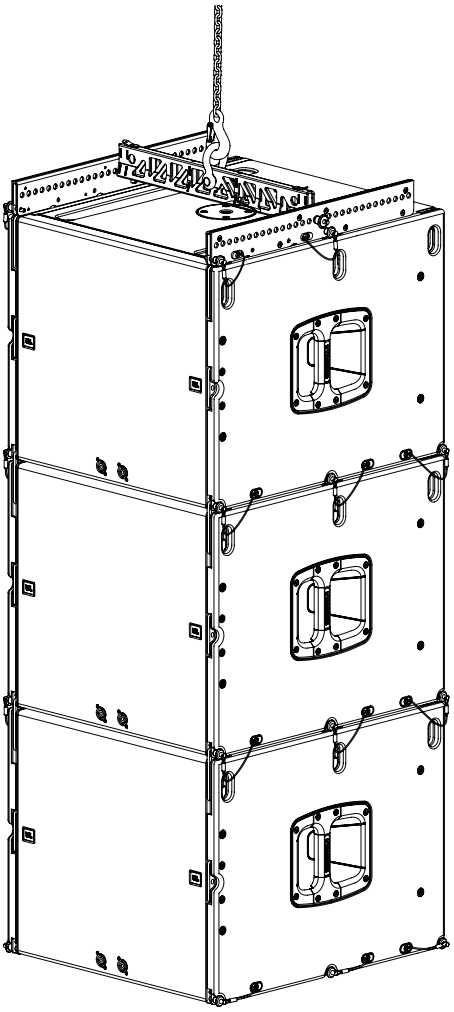


CAUTION: Ensure that the two Spreader Bar pins are fully seated and engaged before suspending an array. Check for correct installation by pulling on them. The QRPs should be fully seated with minimal movement.

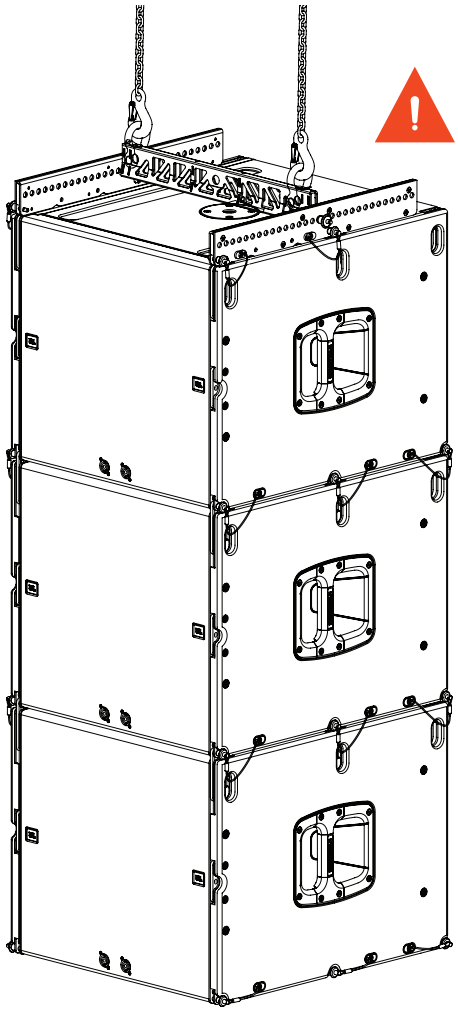
CAUTION: Always make sure that the same hole position is used on both side arms. Failing to use the same position on both sides can result in damaging the Mini Frame.

7.3 SUSPENSION OPTIONS

The VTX A8 Mini Frame can be used in single-point configurations using the center shackle position of the Spreader Bar. Alternatively, the two side shackle positions can be used to facilitate dual-point configurations. When a single point is used, the side shackle positions can be used for safety attachment and vice-versa.



SINGLE-POINT

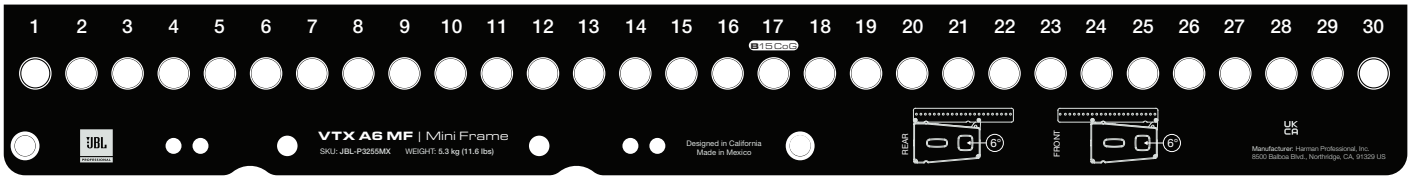


DUAL-POINT
SIDE-BY-SIDE

CAUTION: Always make sure that the same hole position is used on both side arms. Failing to use the same position on both sides can result in damaging the Mini Frame.

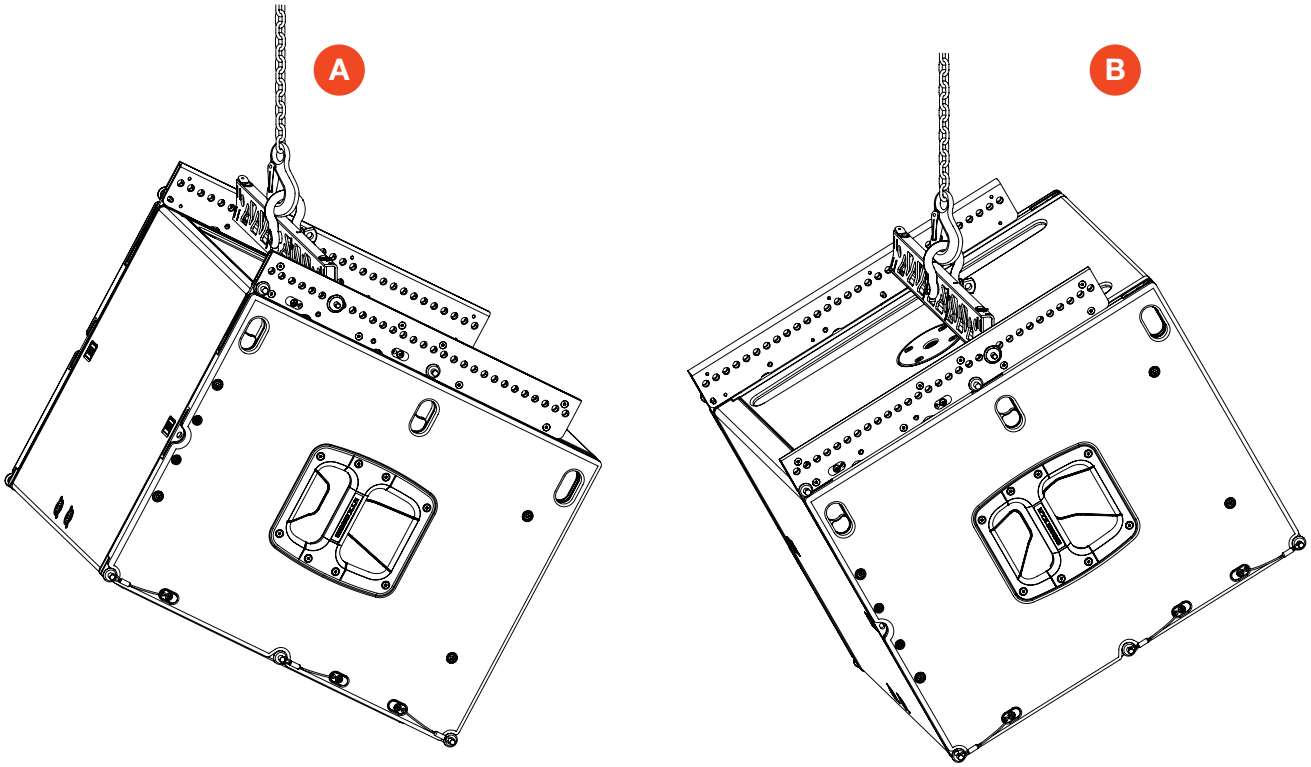
7.4 SPREADER BAR POSITIONS

Each one of the two Mini Frame side arms includes 30 hole positions used for attaching the Spreader Bar. The position of the Spreader Bar controls the overall site angle of the array. The further back the Spreader Bar is attached, the more down angle is generated and vice-versa. The exact position of the Spreader Bar for a given angle is determined using Line Array Calculator 3 software. Position 17 corresponds to the center of gravity position of the B15 and is marked as such on the Mini Frame side arms. This position can be used to suspend B15s flat (straight).



EXAMPLES:

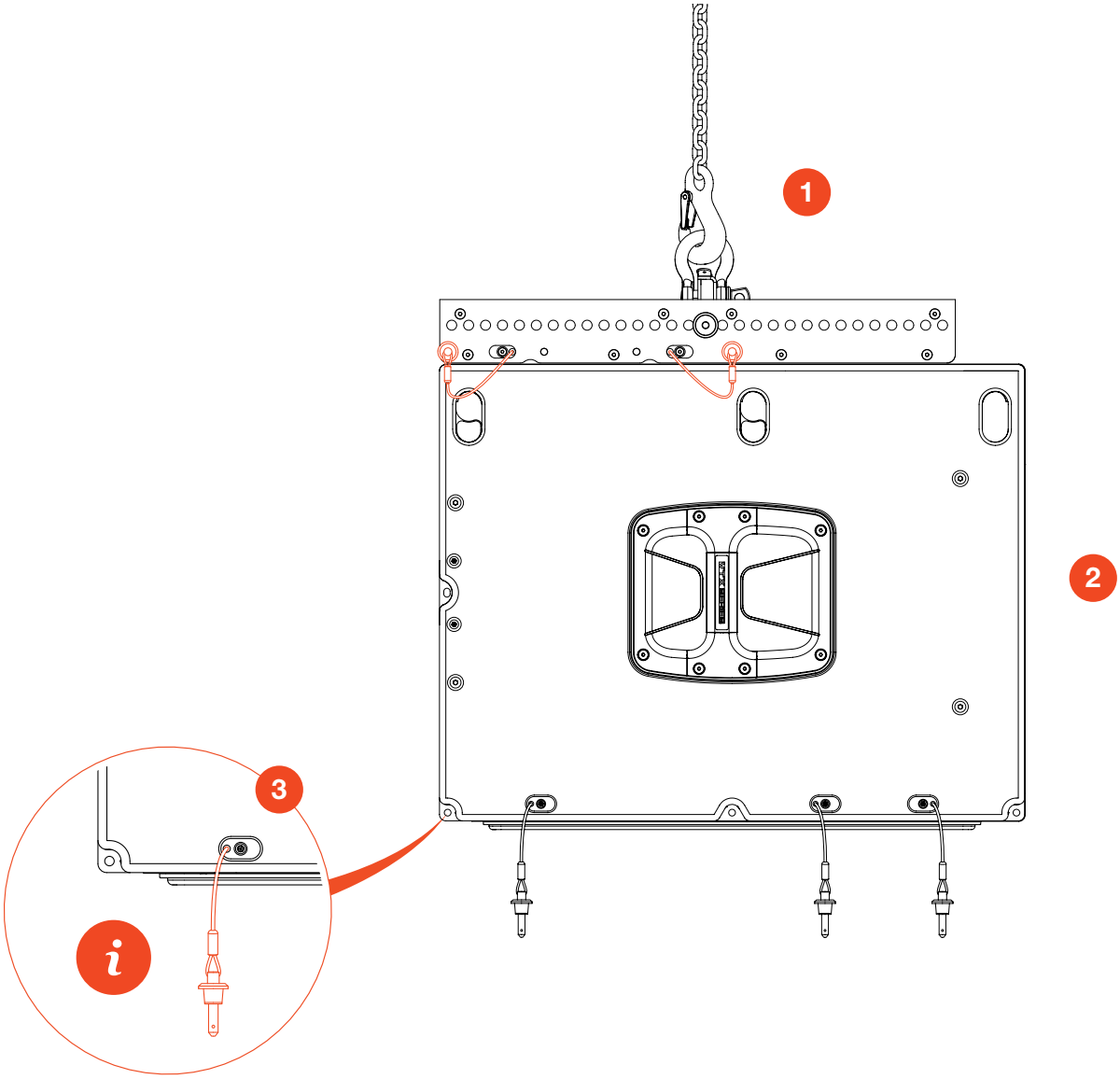
- **A** Spreader Bar set to position 7, creating uptilt.
- **B** Spreader Bar set to position 20, creating downtilt.



7.5 SUSPENDING B15 CABINETS

STEPS:

1. Install the A6 Mini Frame as outlined in Section 7.2 Attaching the Mini Frame.
2. Use the hoist to lift the B15 cabinet.
3. Remove the six pins from the bottom of the cabinet.

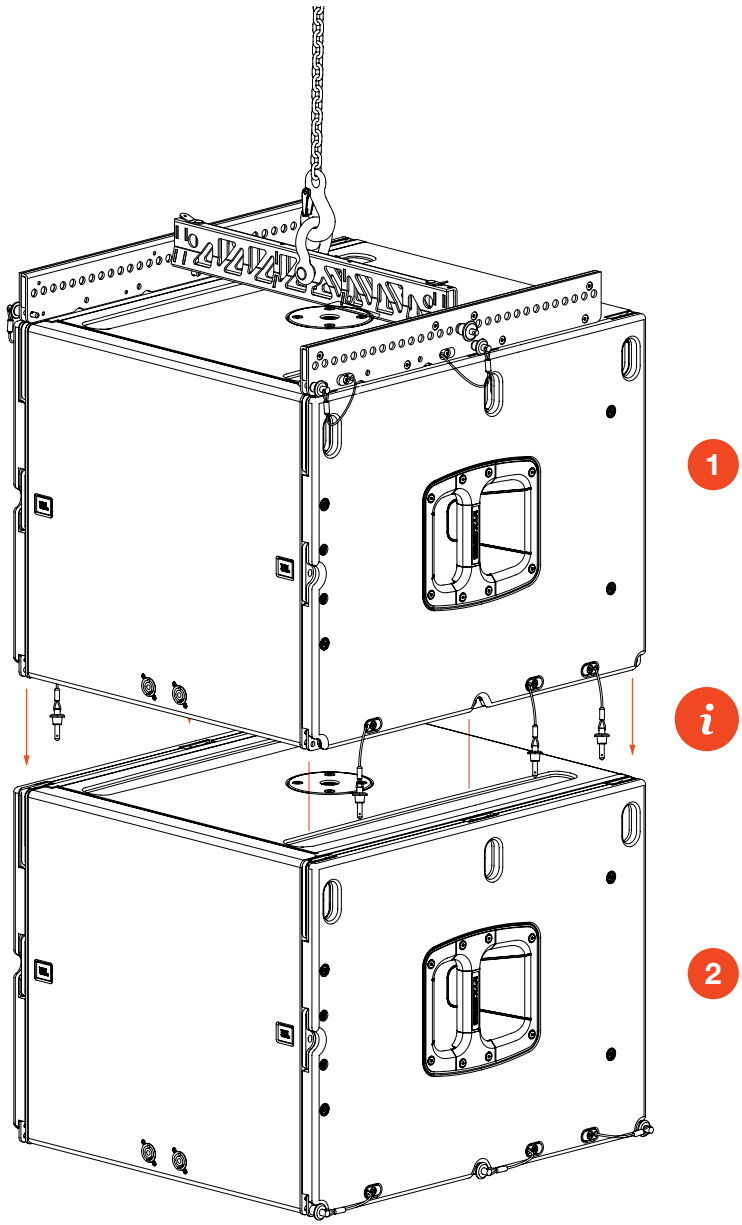


TIP: Removing the pins at this point is not a requirement. This can happen before or after the B15 cabinets are stacked together. The same goes for the rigging bars, which can be extended after the B15s are stacked.

7.6 CONNECTING B15 CABINETS

STEPS:

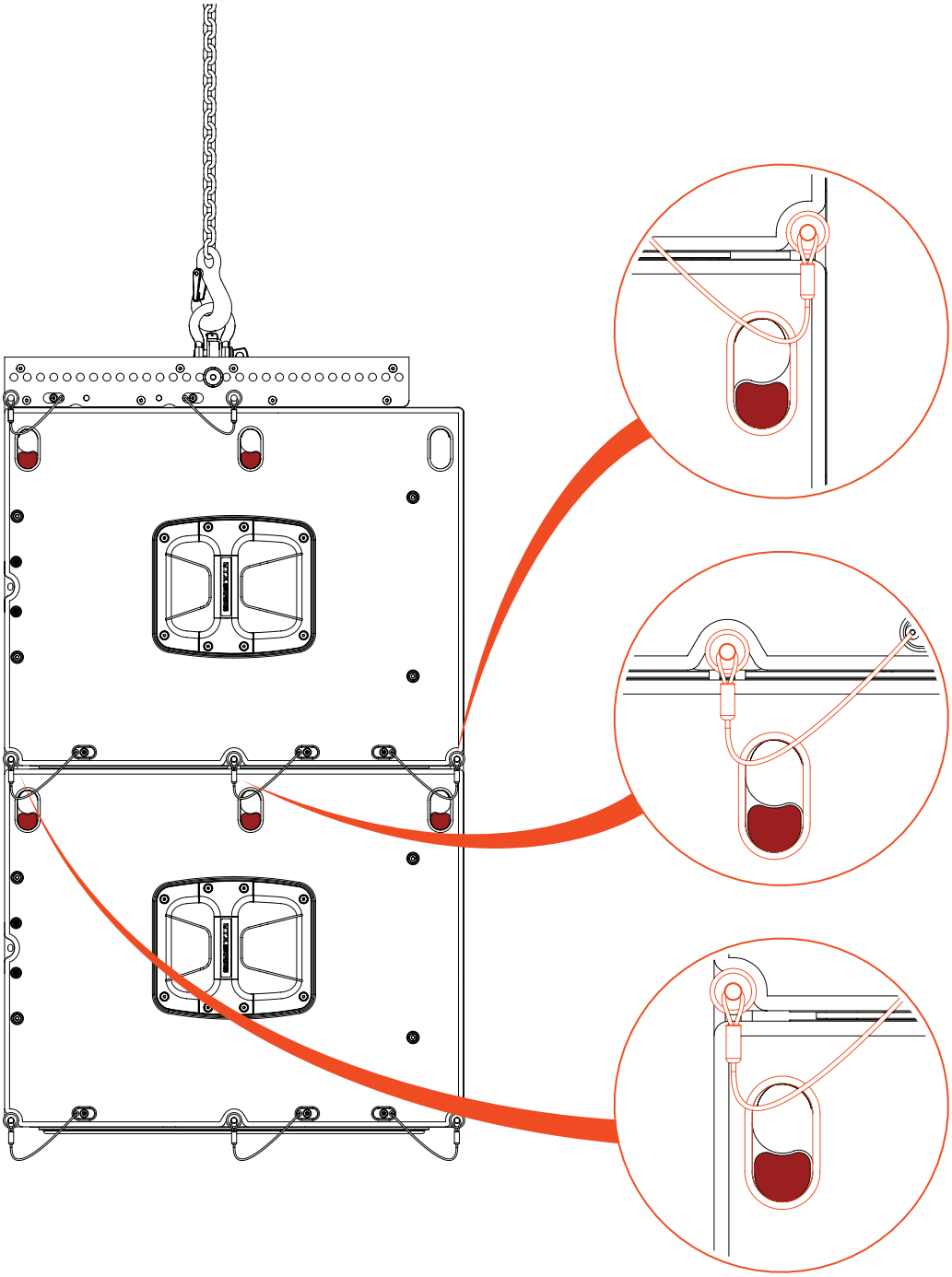
1. Lower the flown stack until it rests on the B15 on the ground.
2. Once stacked, extend all six rigging bars of the B15 cabinet on the ground.



TIP: Removing the pins at this point is not a requirement. This can happen before or after the B15 cabinets are stacked together. The same goes for the rigging bars, which can be extended after the B15s are stacked.

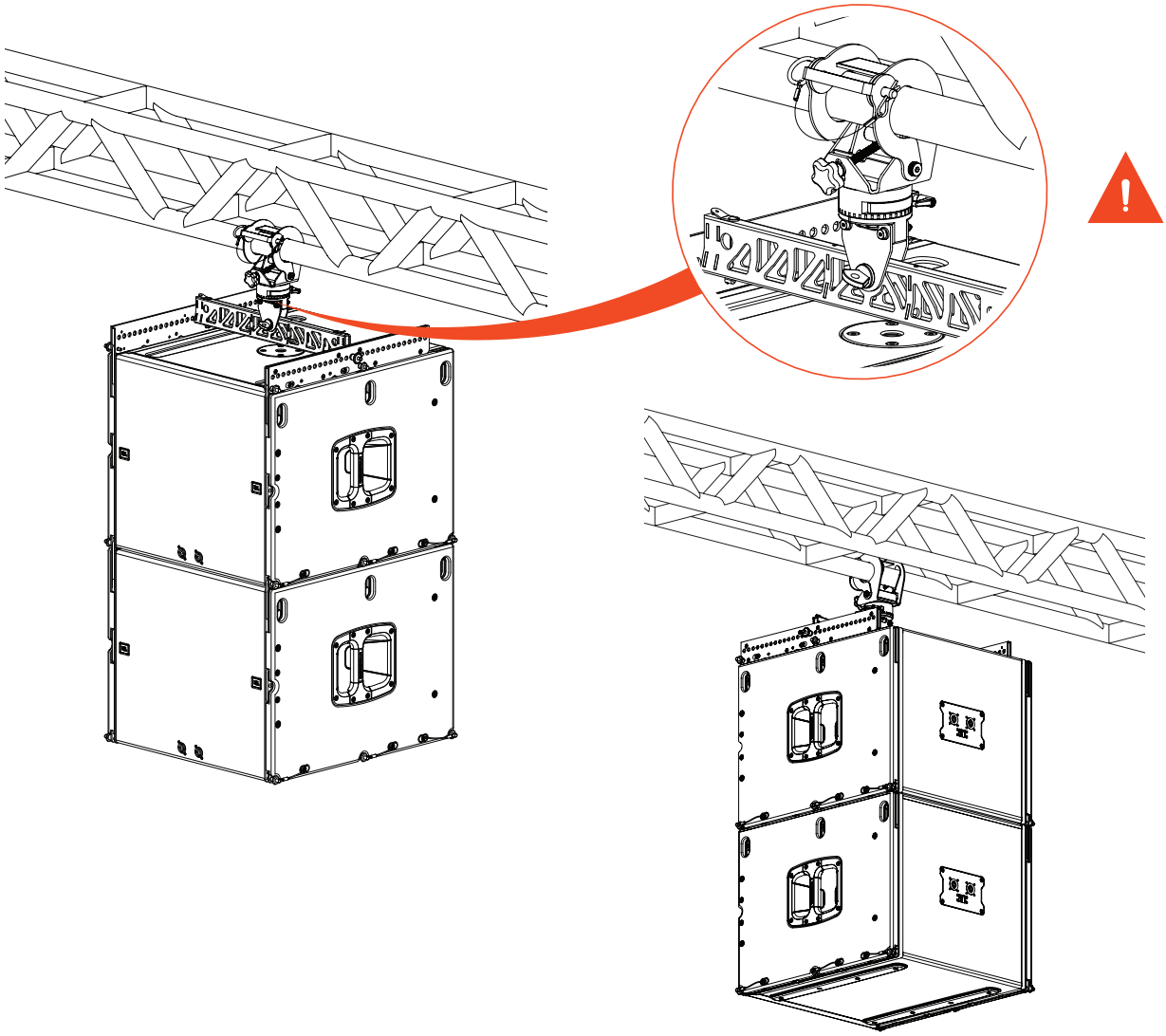
STEPS:

3. Use the six pins to secure the cabinets.
4. Lift and repeat steps 1-4 for additional B15s in the array.



7.7 RC500

The Mini Frame can be used in combination with the VTX RC500 Rotating Clamp. The VTX RC500 is a universal truss/pipe adapter designed for vertically suspending speaker arrays from standard truss structures or pipes. The RC500 supports arrays of up to 500 kg (1,100 lbs) and is compatible with array frames that support 1/2 inch shackles, such as the VTX A6 MF. The RC500 is attached to the center shackle position of the Mini Frame and allows for 360 degree rotation. For more information on the RC500, refer to the **RC500 User Manual**.



CAUTION: Array weight must always be within the 500 kg capacity of the RC500. For more information on mechanical limits and use cases refer to the RC500 User Manual.

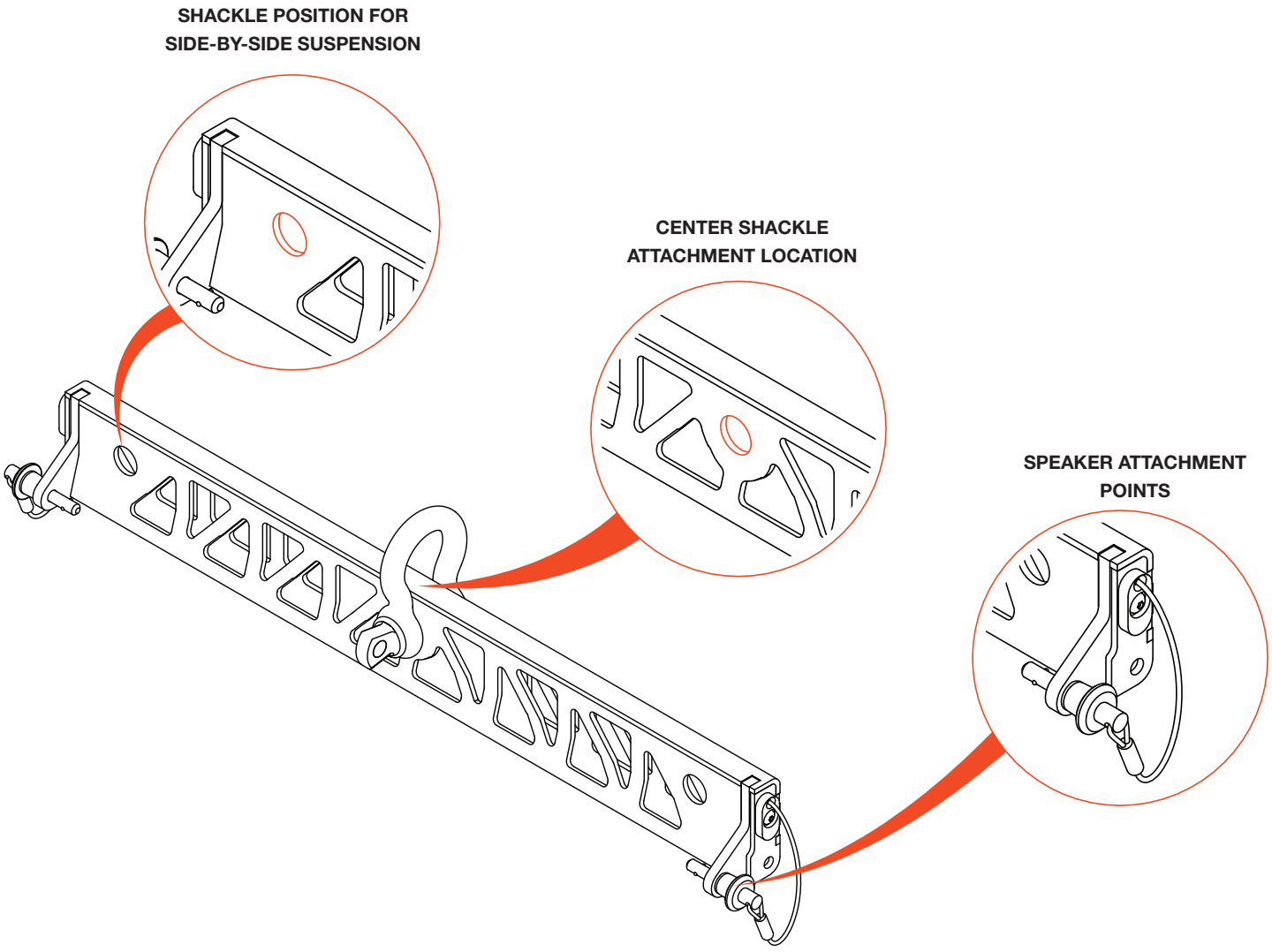
CAUTION: It is the responsibility of the installer/user to ensure the truss/pipe hardware and all other equipment are rated for the exact use case and requirements.

TIP: Use the open shackle position to facilitate secondary safety attachments for installations or regions requiring such safety measures. It is the responsibility of the installer/user to make sure the array hardware and all other safety hardware are rated for the exact use case and requirements.

8 - SUSPENSION BAR

The VTX A6 SB Suspension Bar is a lightweight suspension bar for suspending A6 and B15 arrays when the additional functionality of the Mini Frame is not needed. A single Suspension Bar or dual bars can be used, depending on the array configuration and requirements. For Suspension Bar mechanical limits refer to **Chapter 2 – Mechanical Limits.**

8.1 OVERVIEW

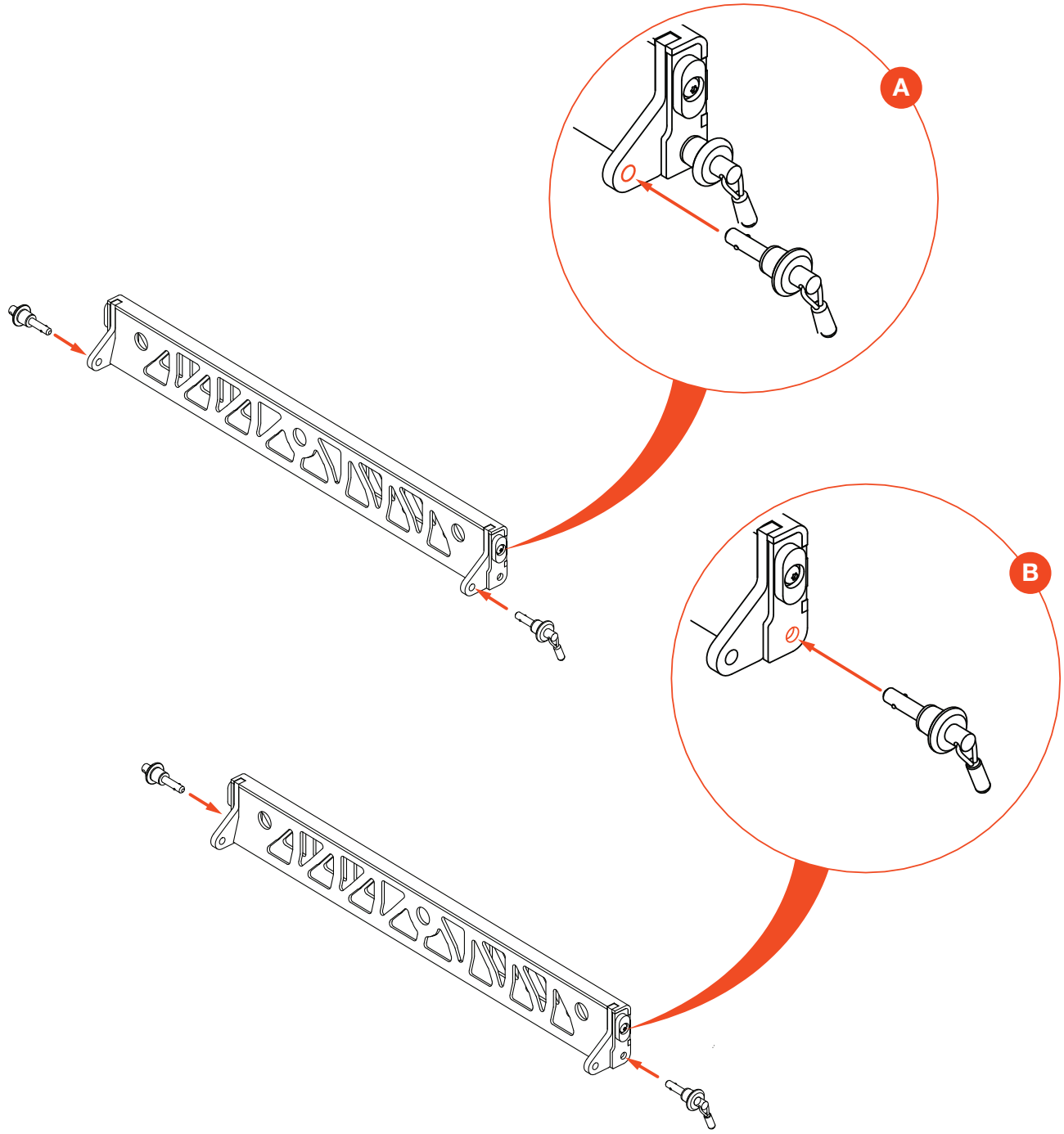


8.2 ATTACHMENT OPTIONS

The Suspension Bar can be connected to either the bottom or the top of a suspended mixed array of VTX A6s and B15s. To attach a Suspension Bar at the bottom of an array, the array attachment tabs will be used in conjunction with the pins from the cabinet. When connecting an SB at the top of an array, the pin from the Suspension Bar will be used.

EXAMPLES:

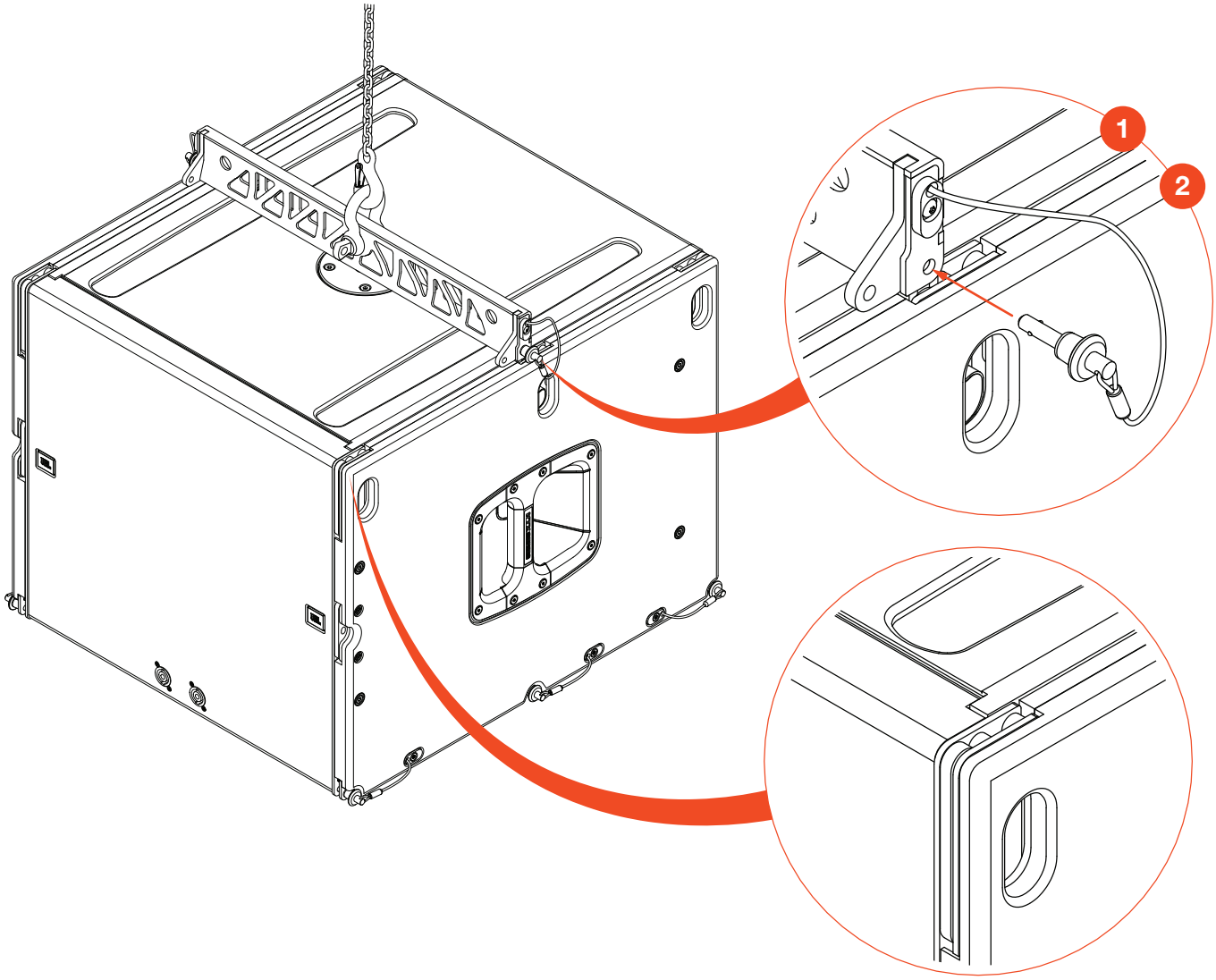
- A Suspension Bar pin hole for attaching to the bottom of an array for pull-back.
- B Suspension Bar pin hole for attaching to the top of an array.



8.3 ATTACHING THE SUSPENSION BAR

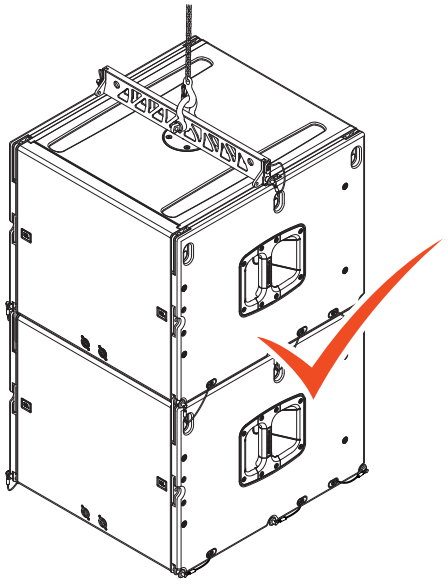
STEPS:

1. Extend the two center B15 link bars that will be connected to the Suspension Bar.
2. Pin the Suspension Bar to the link bars.

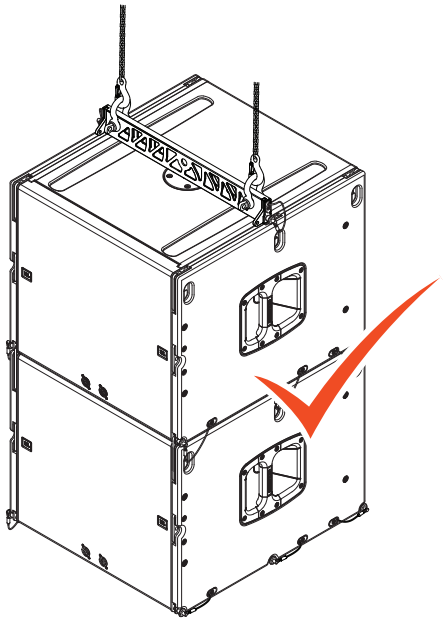


8.4 SUSPENSION BAR USE CASES

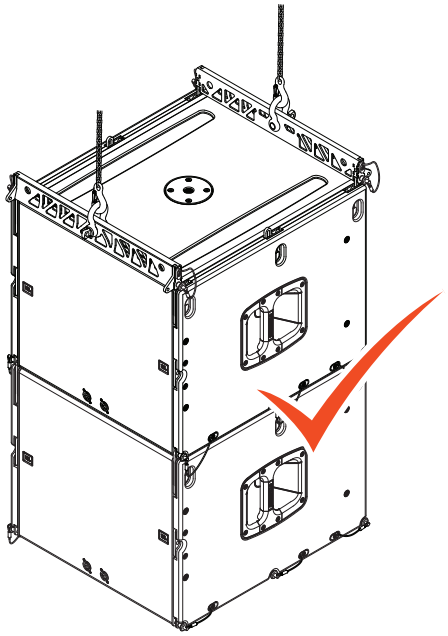
The VTX A6 SB Suspension Bar can be deployed in a number of configurations when used with B15 subwoofers. Below are some safe guidelines on use cases.



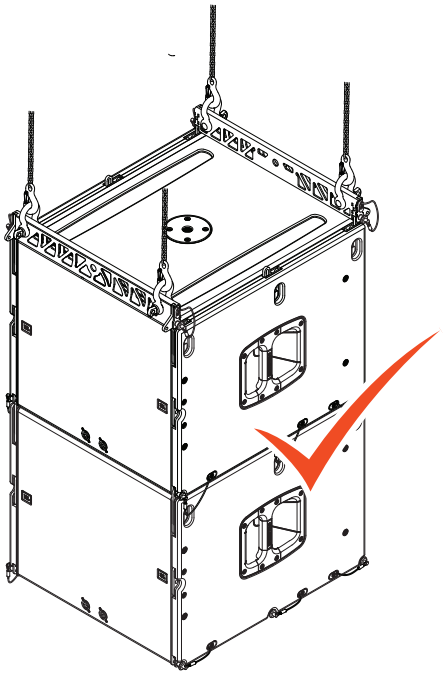
SINGLE SUSPENSION BAR
SINGLE-POINT



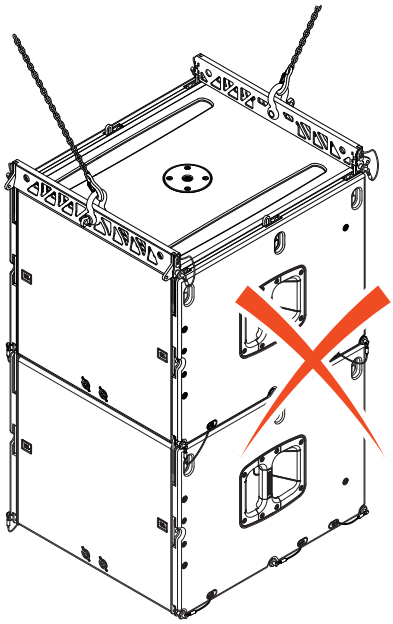
SINGLE SUSPENSION BAR
DUAL-POINT | SIDE-BY-SIDE



DUAL SUSPENSION BAR
DUAL-POINT | FRONT-TO-BACK



DUAL SUSPENSION BAR
QUAD-POINT | CORNERS



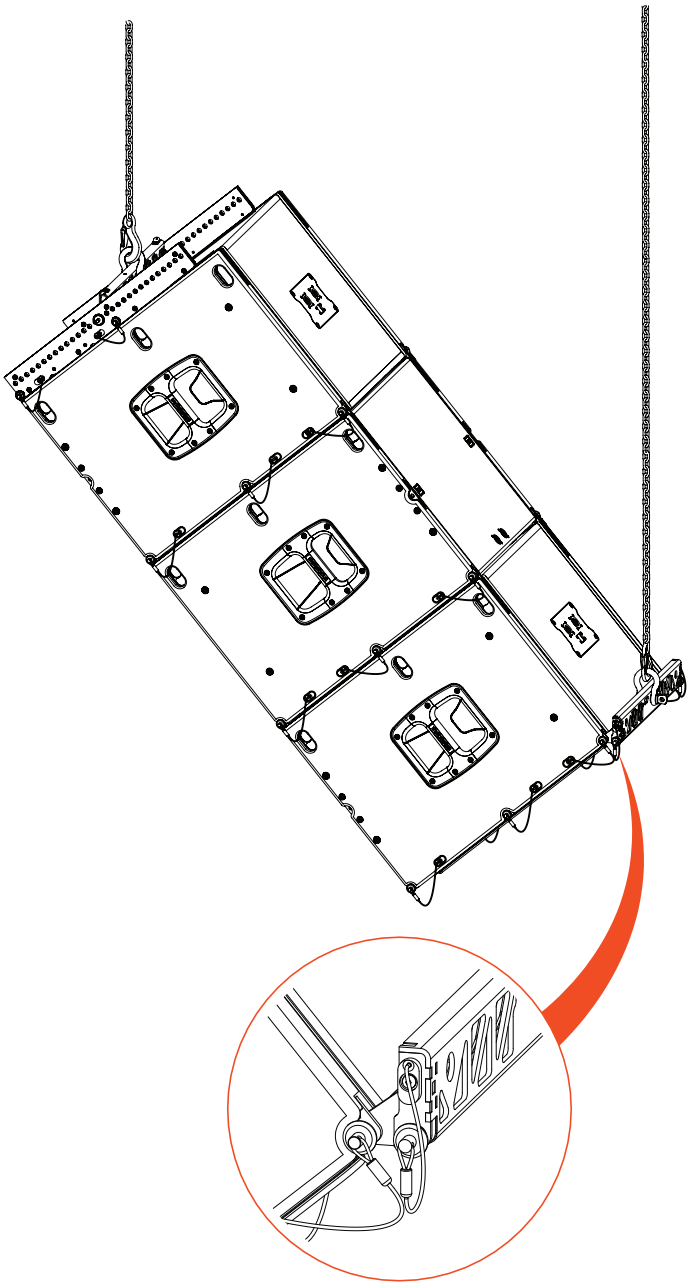
DUAL SUSPENSION BAR
DUAL-POINT | FRONT-TO-BACK

8.5 PULL-BACK

The VTX A6 SB Suspension Bar can be used for pull-back at the bottom of a B15 array in array configurations requiring a significant amount of downtilt. Either the VTX A6 MF or an additional Suspension Bar can be used at the top of the array as the primary attachment point. A Suspension Bar at the top must be connected to the two center rigging points of the B15. This allows for easier and safer assembly, since the array remains straight during setup. When the MF Mini Frame is at the top, the Spreader Bar hole 17 can be used, which also allows for a straight array during setup.

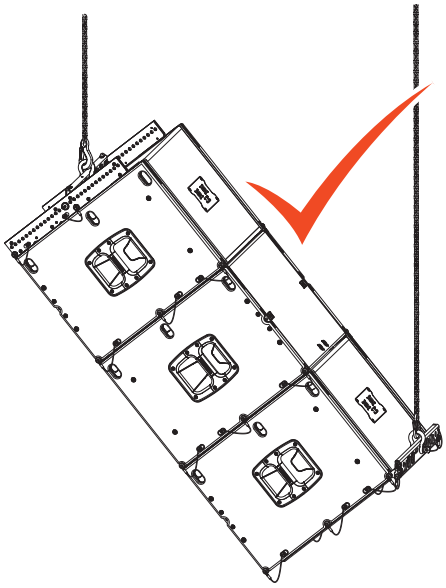
STEPS:

1. Assemble the B15 array based on the instructions in Chapter 7.
2. Attach the Suspension Bar to the bottom B15 using the two rear rigging points.

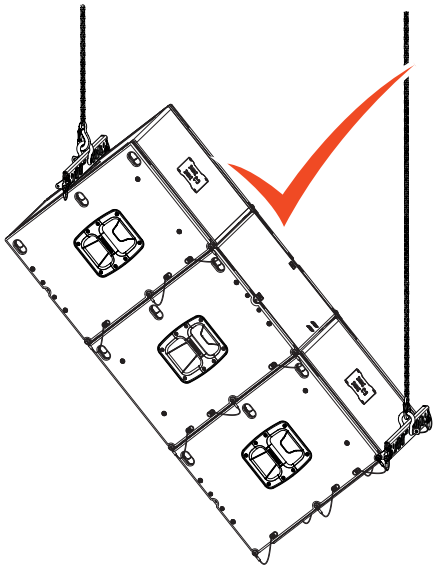


8.6 PULL-BACK USE CASES

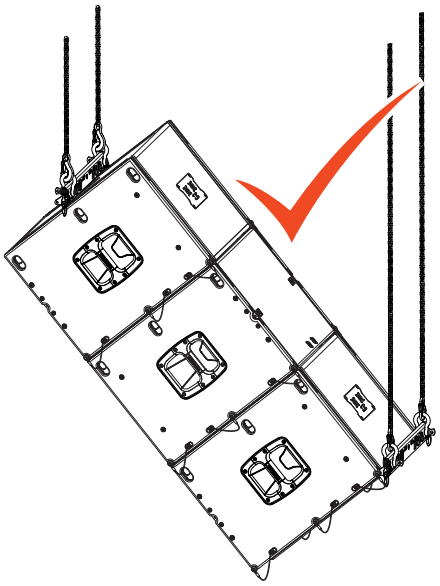
Follow the examples below to safely implement pull-back for B15 arrays using the Mini Frame and Suspension Bar.



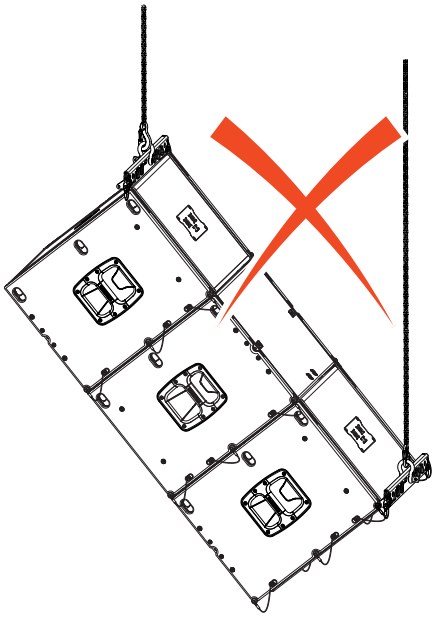
VTX A6 MF + VTX A6 SB
DUAL-POINT



(2) VTX A6 SB
DUAL-POINT



(2) VTX A6 SB
QUAD-POINT



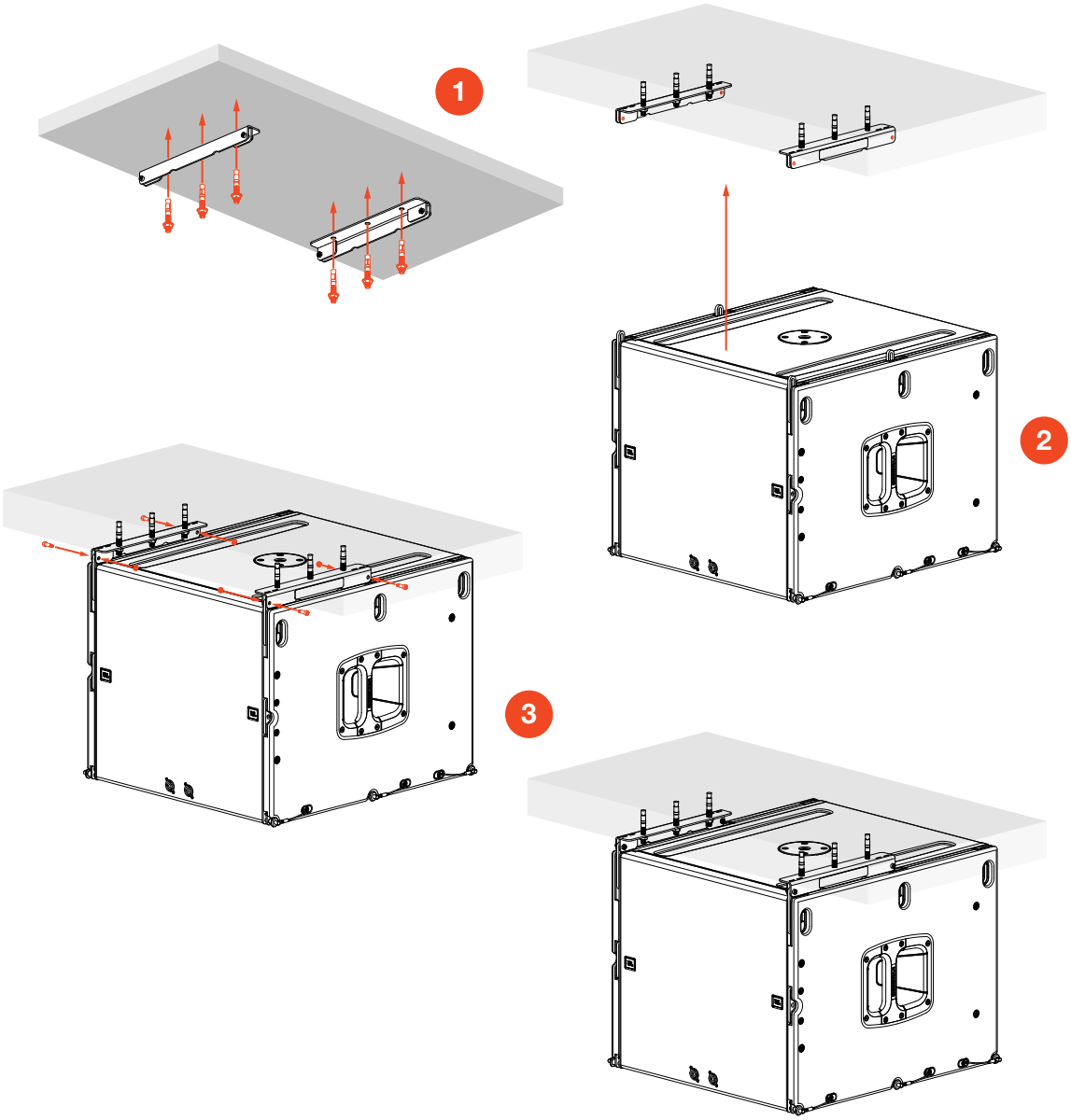
(2) VTX A6 SB
DUAL-POINT

9 - CEILING MOUNT

The VTX A6 CM Ceiling Mount accessory allows for a cost-effective way to suspend a VTX B15 Subwoofer from a capable structure in a fixed installation scenario.

STEPS:

1. Using the provided mounting holes, secure the A6 CM to a structure. Refer to the **A6 CM Spec Sheet** for bracket spacing.
2. Extend the front four rigging tabs on the B15
3. Using the provided hardware, bolt the four connection tabs of the B15 to the CM.



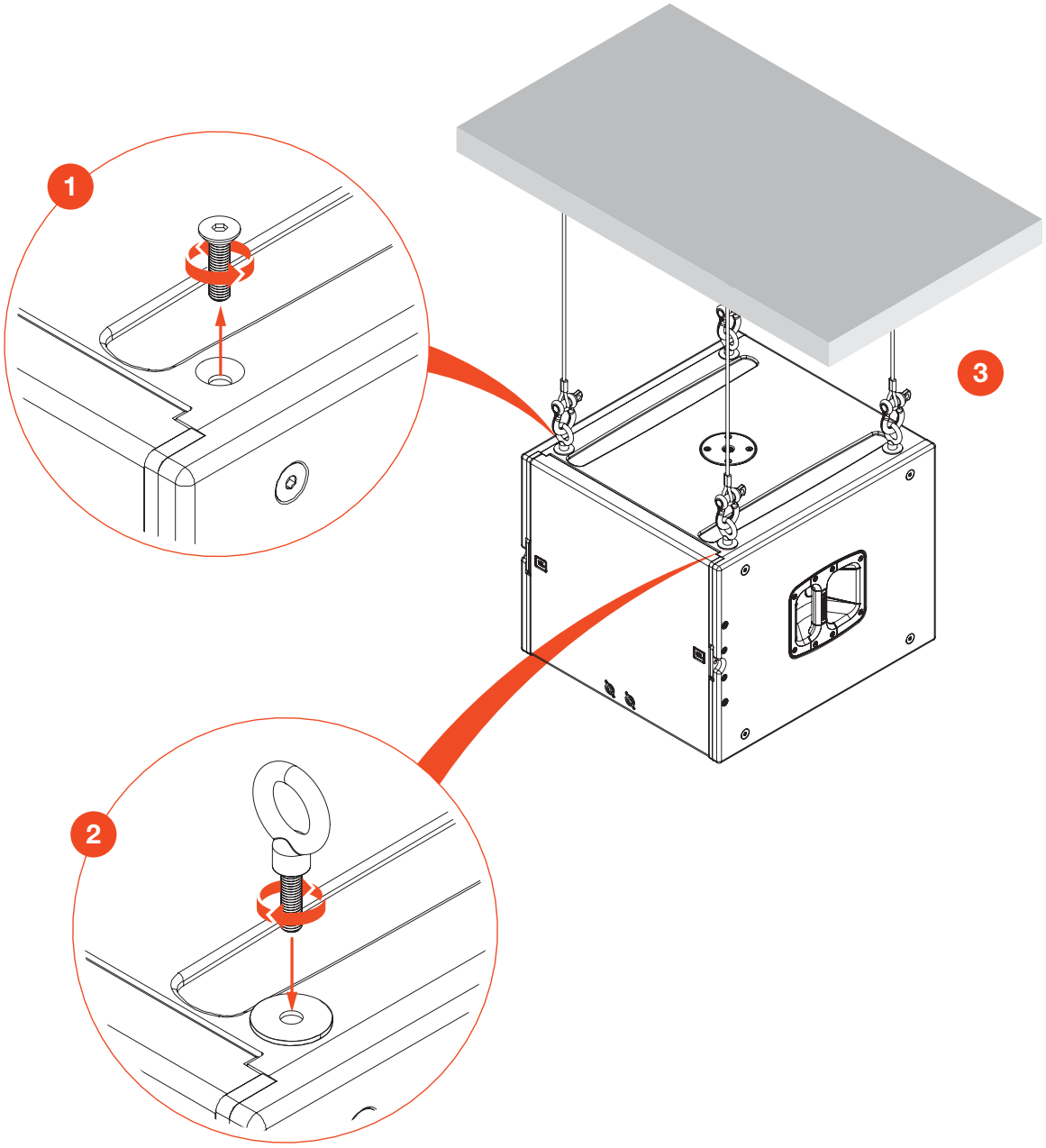
CAUTION: It is the responsibility of the installer/user to ensure that the structure and hardware are sufficient and rated for the exact use case and requirements. Any mechanical limits provided in this manual are strictly for the brackets and nothing else.

10 - EYEBOLT INSTALLATION

The B15G is acoustically the same as the B15 but designed without the integrated rigging system. This reduces weight and unnecessary components for applications where portable rigging hardware is unnecessary. Instead, the B15G offers integrated M10 suspension points, making it ideal for fixed installations.

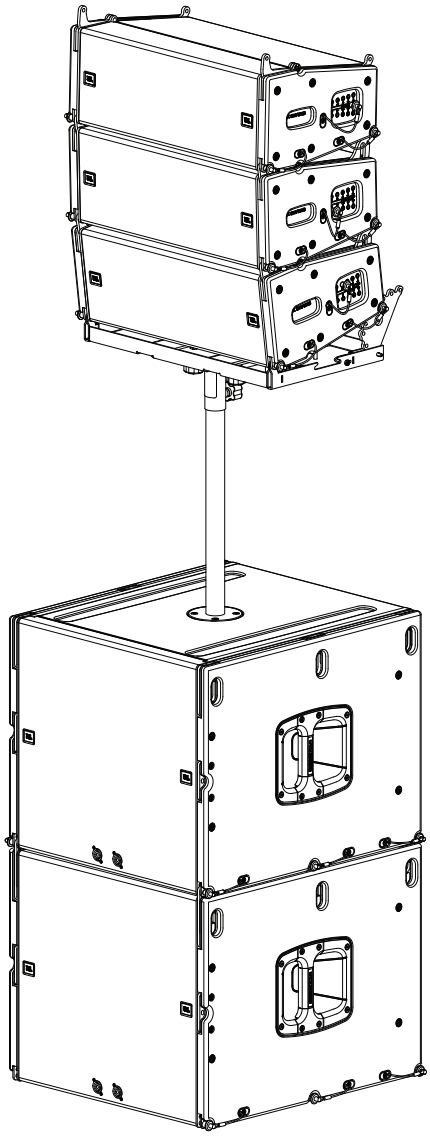
STEPS:

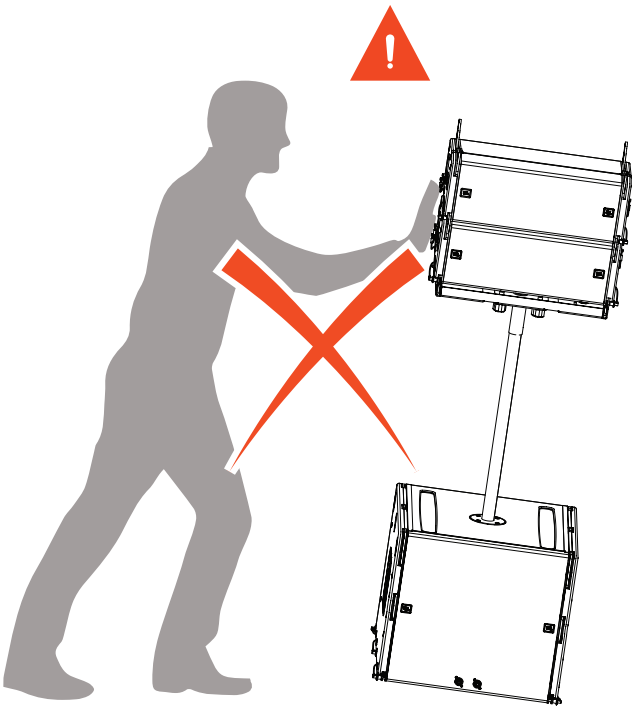
1. Remove the four M10 suspension point covers from the top of the B15G.
2. Install a washer and eyebolt into each of the four M10 suspension points.
3. Suspend the subwoofer from an appropriate structure.



11 - POLE MOUNT ATTACHMENT

The B15 includes a standard M20 pole mount plate for attaching standard extension rods or other JBL supported acaccessories, like Base Plates. In this configuration, a load of up to 45 kg (100 lbs) can be placed on the extension rod as a static vertical load. For more information on the A6 Base Plate configuration limits, refer to the **VTX A6 Rigging Manual**.



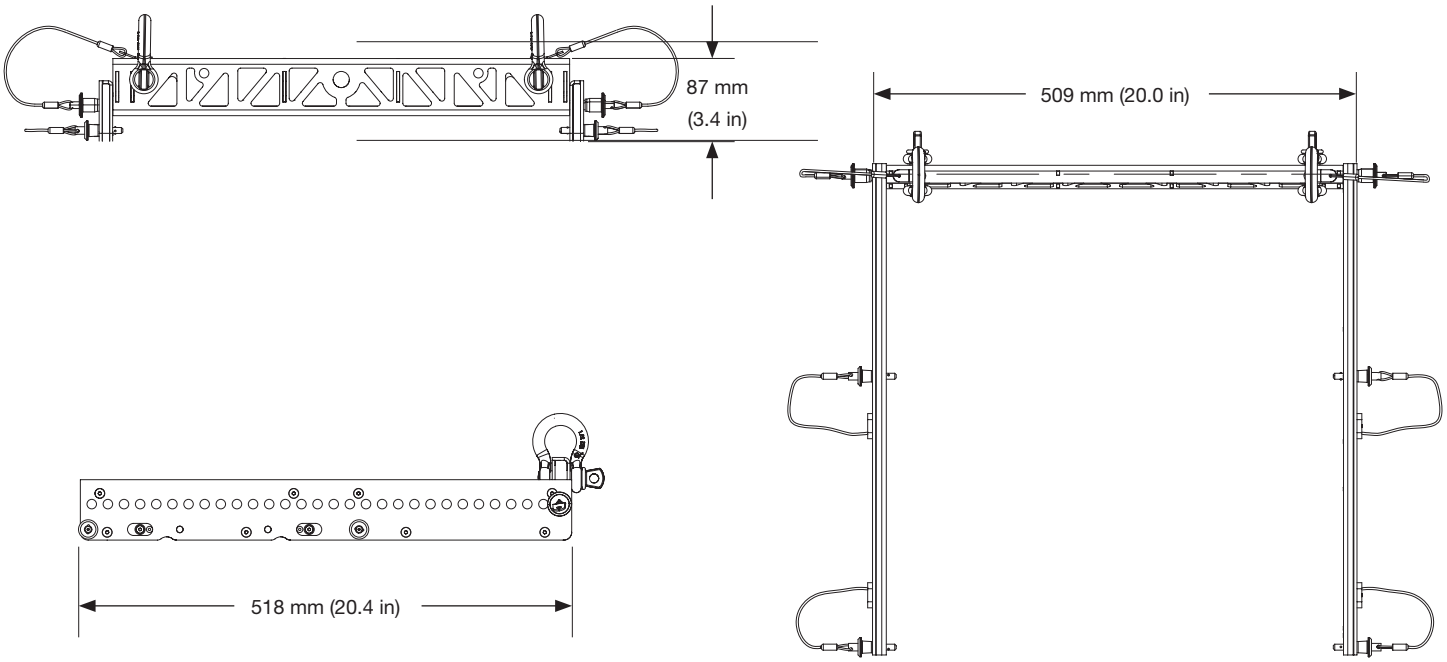


CAUTION: Do not deploy ground-stacked arrays on non-flat surfaces to avoid tipping hazards. Safe limits for ground-stacked arrays always assume that the stacking surface (floor and stage) is flat.

CAUTION: Lifting or pushing the extension rod, or sliding the subwoofer with a loaded extension rod, is unsafe. This can result in permanent damage or reduce the capacity of the M20 plate, potentially leading to a falling loud-speaker and personal injury.

12 - SPECIFICATIONS

12.1 - VTX A6 MF



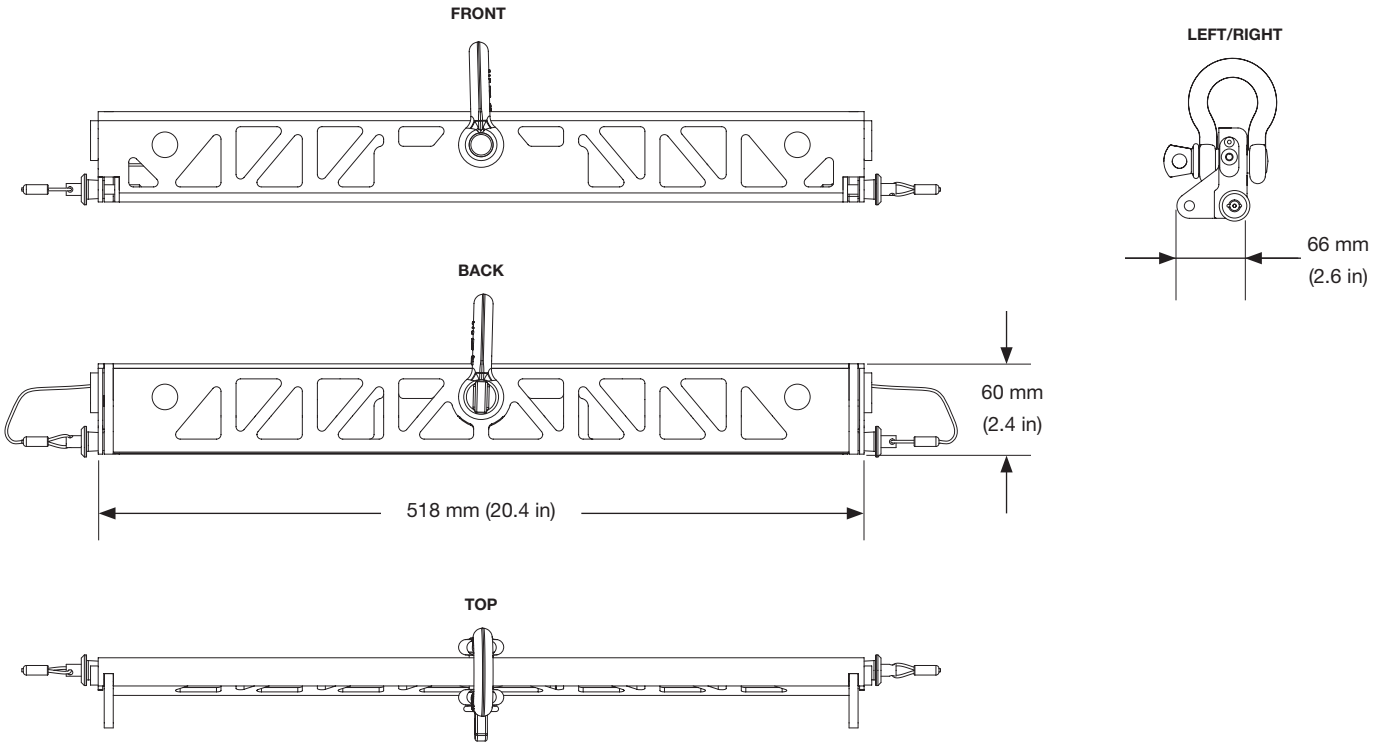
TECHNICAL SPECIFICATIONS

PHYSICAL	
Construction :	High-grade steel with anti-corrosion coating
Finish :	Black powder coat
Compatible Shackle Size :	1/2-inch
Mechanical Limits[1]	
Safe Limit :	(15) VTX A6 | (11) VTX B15
Maximum :	(24) VTX A6 | (12) VTX B15
Dimensions (H x W x D)[2] :	87 mm x 509 mm x 518 mm (3.4 in x 20.0 in x 20.4 in)
Net Weight[3] :	5.3 kg (11.6 lbs)
Shipping Weight :	5.8 kg (12.9 lbs)

ORDERING INFORMATION	
SKU :	JBL-P3253MX | VTX A6 MF
Included :	(2) Side arms | (1) Spreader bar | (1) 1/2-inch Shackle #5118578

Footnotes:
1: Always check mechanical safety with JBL Line Array Calculator 3 software before use. For more information on Safe and Maximum Limits, refer to the **VTX A6 and VTX B15 Rigging Manuals**.
2: Refer to the 2D and 3D Customer Drawings for more detailed dimensions.
3: Weight includes spreader bar, extension bar, and laser bracket. Shackles and other rigging parts not included.

12.2 - VTX A6 SB



TECHNICAL SPECIFICATIONS

PHYSICAL

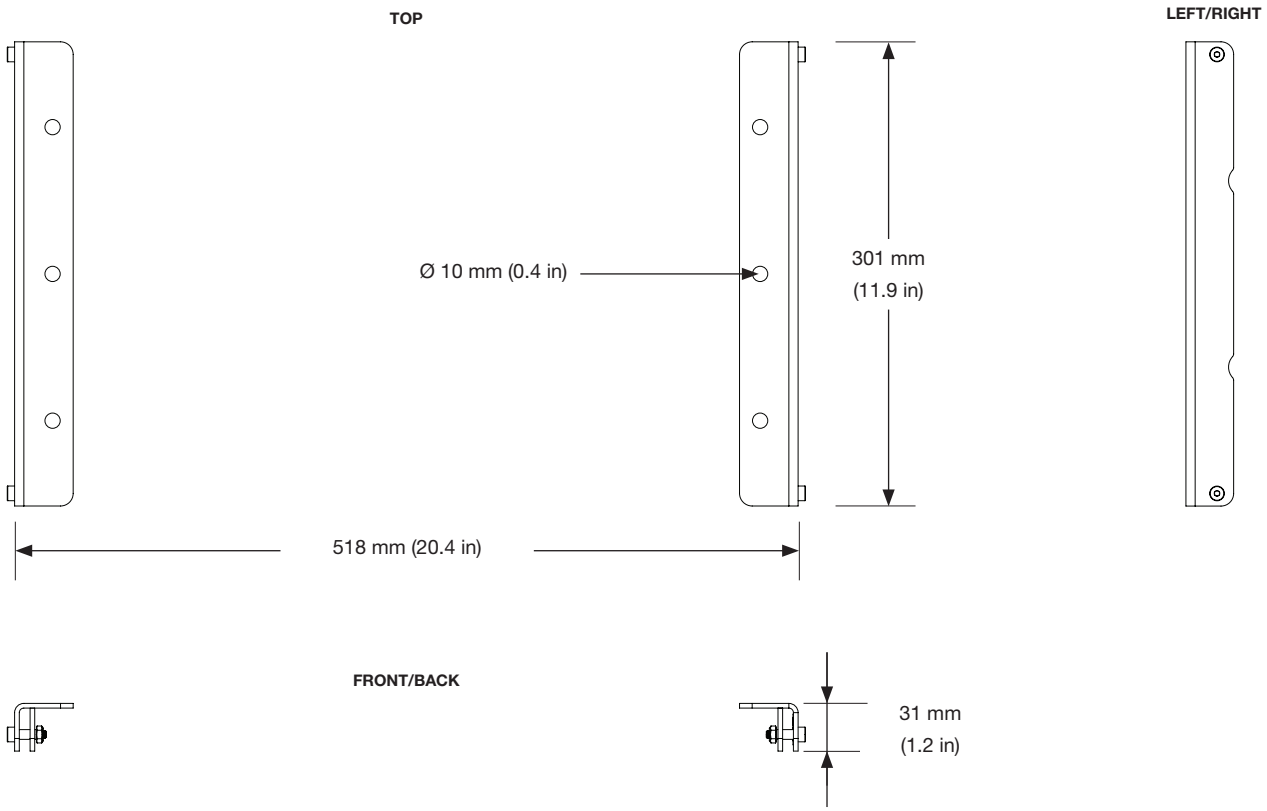
Construction :	High-grade steel with anti-corrosion coating
Finish :	Black powder coat
Compatible Shackle Size :	1/2-inch
Mechanical Limits[1]	
Safe Limit :	(16) VTX A6 | (10) VTX B15
Maximum :	(24) VTX A6 | (15) VTX B15
Dimensions (H x W x D)[2] :	60 mm x 518 mm x 66 mm (2.4 in x 20.4 in x 2.6 in)
Net Weight[3] :	1.7 kg (3.9 lbs)
Shipping Weight :	2.2 kg (4.8 lbs)

ORDERING INFORMATION

SKU :	JBL-P3254MX | VTX A6 SB
Included :	(1) Suspension bar | (1) 1/2-inch Shackle #5118578

Footnotes:
1: Always check mechanical safety with JBL Line Array Calculator 3 software before use. For more information on Safe and Maximum Limits, refer to the **VTX A6 and VTX B15 Rigging Manuals**.
2: Refer to the 2D and 3D Customer Drawings for more detailed dimensions.
3: Weight includes the suspension bar only. Shackles and other rigging parts not included.

12.3 - VTX A6 CM



TECHNICAL SPECIFICATIONS

PHYSICAL

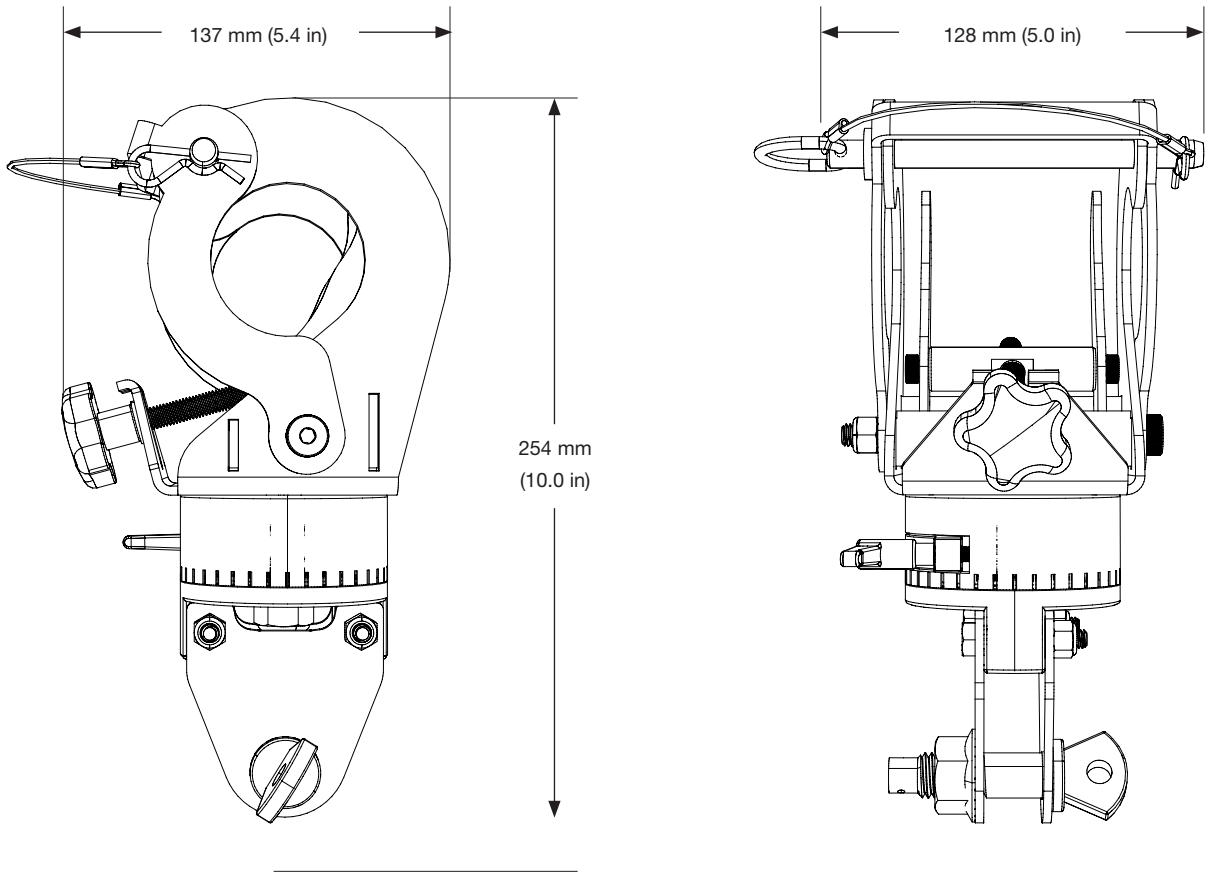
Construction :	High-grade steel with anti-corrosion coating
Finish :	Black powder coat
Mechanical Limits[1]	
Maximum :	(8) VTX A6 | (4) VTX B15
Safe Limit :	(8) VTX A6 | (4) VTX B15
Dimensions (H x W x D)[2] :	31 mm x 518 mm x 301 mm (1.2 in x 20.4 in x 11.9 in)
Net Weight :	1.0 kg (2.3 lbs)
Shipping Weight :	1.4 kg (3.1 lbs)

ORDERING INFORMATION

SKU :	JBL-P3287MX | VTX A6 CM
Included :	(2) Mounting Plates | (1) Drilling Template

Footnotes:
1: Always check mechanical safety with JBL Line Array Calculator 3 software before use. For more information on Safe and Maximum Limits, refer to the **VTX A6 Rigging Manual**.
2: Refer to the 2D and 3D Customer Drawings for more detailed dimensions.

12.4 - VTX RC500



TECHNICAL SPECIFICATIONS

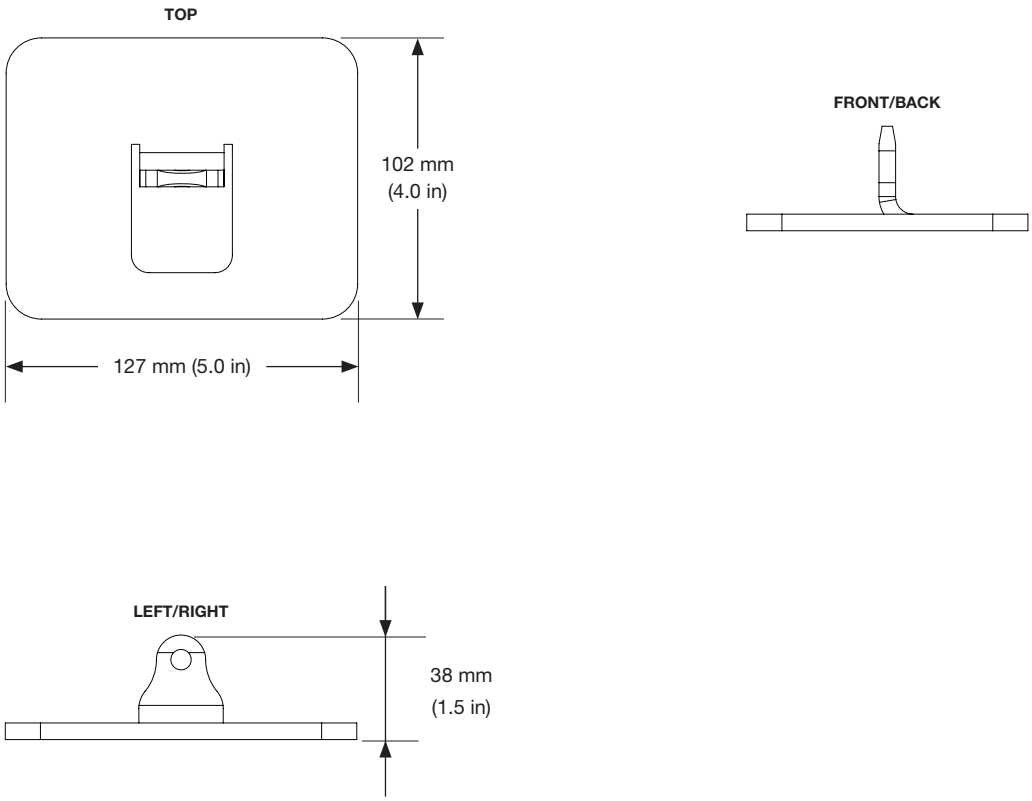
PHYSICAL	
Construction :	High-grade steel with anti-corrosion coating
Finish :	Black powder coat
Working Load Limit[2] :	500 kg (1,100 lbs)
Dimensions (H x W x D)[1] :	254 mm x 128 mm x 137 mm (10.0 in x 5.0 in x 5.4 in)
Net Weight[3] :	3.3 kg (7.3 lbs)

ORDERING INFORMATION	
SKU :	VTX-RC500
Included :	(1) RC500

Footnotes:

1: WLL refers to the RC500 only. Always make sure the structure the RC500 is attached to can support the weight of the array
2: Refer to the 2D and 3D Customer Drawings for more detailed dimensions
3: Weight includes VTX RC500 only

12.5 VTX B1 GND



TECHNICAL SPECIFICATIONS

PHYSICAL

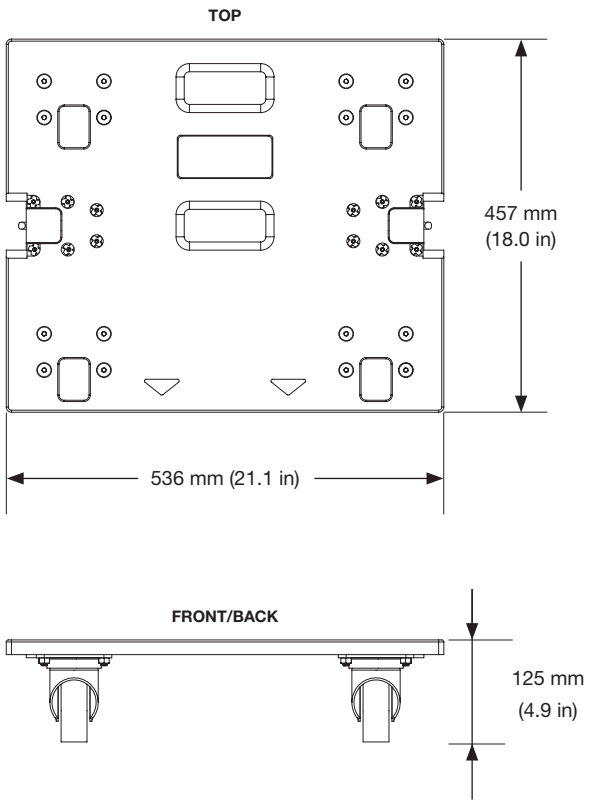
Construction :	High-grade steel with anti-corrosion coating
Finish :	Black powder coat
Dimensions (H x W x D)[1] :	38 mm x 102 mm x 127 mm (1.5 in x 4.0 in x 5.0 in)
Net Weight :	0.5 kg (1.2 lbs) each | 2.0 kg (4.8 lbs) total
Shipping Weight :	2.9 kg (6.5 lbs)

ORDERING INFORMATION

SKU :	JBL-P3258MX | VTX B1 GND
Included :	(4) Ground stack plates

Footnotes:
1: Refer to the 2D and 3D Customer Drawings for more detailed dimensions.

12.6 VTX B15 ACC



TECHNICAL SPECIFICATIONS

PHYSICAL

Construction	
Board :	Exterior grade 18 mm birch plywood
Hardware :	Stainless steel/zinc-plated steel
Cover :	1000 D Nylon, Tricot lining bonded to 1/2-inch foam passing (black)
Finish	
Board :	Black DuraFlex™ finish
Dimensions (H x W x D)[1] :	125 mm x 536 mm x 457 mm (4.9 in x 21.1 in x 18.0 in)
Net Weight[2] :	7.0 kg (15.4 lbs)
Shipping Weight :	12.4 kg (27.4 lbs)

ORDERING INFORMATION

SKU :	JBL-P3257MX | VTX B15 ACC
Included :	(1) Caster board | (1) VTX B15 CVR

Footnotes:
1: Refer to the 2D and 3D Customer Drawings for more detailed dimensions that include the B15 attached to the caster board.
2: Weight includes caster board and soft cover

13 - CONTACT INFORMATION

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