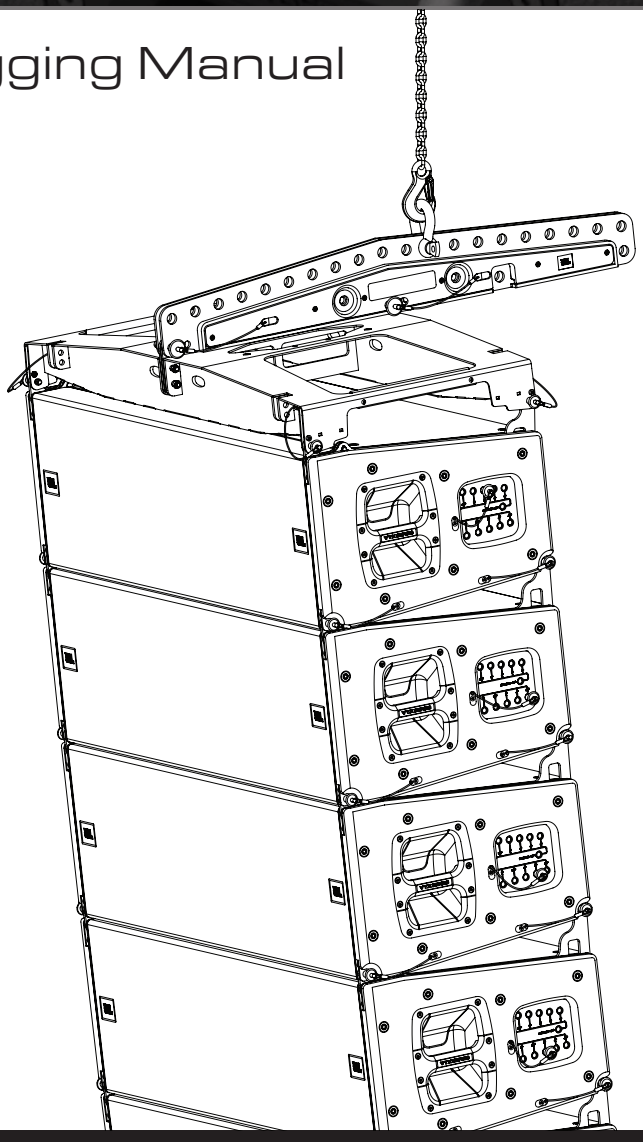


JBL PROFESSIONAL

VTX SERIES
SYSTEM SOLUTIONS

VTX A12 | Rigging Manual



GENERAL INFORMATION

VTX A12 - Rigging Manual

Part Number: 5126004-00

Version: E - EN

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JBL PROFESSIONAL

8500 Balboa Blvd

Northridge, CA 91325

USA

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 it, 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 - DOCUMENT REVISION HISTORY 7

2 - SAFETY 8

2.1 Safety Instructions 8

2.2 General Hardware Information 8

2.3 Attachment to Structures 8

2.4 Important Safety Warning 8

2.5 Are You New to Rigging? 9

2.6 Inspection and Maintenance 9

2.7 Symbols 10

2.8 Personal Protective Equipment (PPE) 10

2.9 Resources and Documentation 11

3 - MECHANICAL LIMITS 12

3.1 Suspended Array Limits 12

3.2 Ground Stack Array Limits 12

4 - SYSTEM COMPONENTS 13

5 - SOFTWARE 15

5.1 Venue Synthesis Overview 15

5.2 Suspended Arrays 16

5.3 Ground-Stacked Arrays 17

6 - VTX A12 RIGGING SYSTEM OVERVIEW 18

6.1 A12 Rigging Closeup 18

6.2 Angle Lock Mechanism 19

6.3 Angle Selection 20

7 - TRANSPORTATION 21

7.1 Installing VTX A12 Cabinets on a VTX A12 VT 21

7.2 Installing the VT-Top on the VTX A12 VT 23

7.3 Storing the VTX A12 VT 24

7.4 Stacking the VTX A12 VT with the VT-TOP 25

7.5 Stacking the VTX A12 VT 26

7.6 Truck Packing Dimensions 27

8 - ARRAY FRAMES AND EXTENSION BAR 28

8.1 Array Frame Overview 28

8.2 Array Frame Differences 29

8.3 Extension Bar Overview 30

8.4 Precision Shackle System . . . 31
8.5 Attaching the Extension Bar . . . 32
8.6 Extension Bar Orientation . . . 33
8.7 Extension Bar Use Cases . . . 35
8.8 Storing the Extension Bar . . . 36
8.9 Using Dual Extension Bars . . . 37
8.10 Installing the Laser Bracket . . . 38
8.11 Attaching the Array Frame . . . 39

9 - DEPLOYING A12 SYSTEMS . . . 40
9.1 Preselect the Angles . . . 40
9.2 Suspend the First Stack . . . 41
9.3 Attaching Straight (Upper) Sections of an Array . . . 42
9.4 Attaching Curved (Lower) Sections of an Array . . . 43

10 - DISASSEMBLING AN A12 ARRAY . . . 44
10.1 Release the Angle Locks and Attach the VT . . . 44
10.2 Close the Angle Locks and Move Pins to Storage . . . 45
10.3 Repeat Steps to Disconnect the Next Four Cabinets . . . 47

11 - MIXED ARRAYS WITH A12 AND B35 . . . 49
11.1 Attaching the Array Frame to the B35 . . . 49
11.2 Lift the Subwoofers . . . 50
11.3 Attaching A12 to B35 . . . 51
11.4 De-Rigging the Mixed Array . . . 54
11.5 Mixed Array Safety Note . . . 54

12 - THE VTX A12 SB SUSPENSION BAR . . . 55
12.1 Suspension Bar Overview . . . 55
12.2 Suspension Bar Attachment Tabs . . . 56
12.3 Using an A12 SB as a Pull-Back . . . 57
12.4 Using Two A12 Suspension Bars . . . 58
12.5 Suspension-Bar Configuration Examples . . . 59
12.6 When to Use a Pull-Back . . . 60
12.7 Suspension Bar and Mixed Arrays . . . 61

13 - THE VTX DELTA PLATE . . . 62
13.1 Using the VTX Delta Plate . . . 62

14 - THE VTX A12 VT GND . . . 63
14.1 VTX A12 VT GND Overview . . . 63
14.2 Angle Selection Mechanism . . . 64

14.3 Building a Ground Stack 65
14.4 Disassembling the Ground Stack 67

15 - THE VTX A12 BASE PLATE 69
15.1 Base Plate Overview 69
15.2 Storage Configuration 70
15.3 Angle Selection Plates 70
15.4 Assembling Ground-Stacked Arrays 71
15.5 A12 Base Plate Examples 74
15.6 Attaching the Base Plate onto a Structure 75

16 - PRODUCT CARE AND MAINTENANCE 76
16.1 Inspection Frequency 76
16.2 Components to Inspect 76
16.3 Corrective Action 76
16.4 Cleaning and Storage 76

17 - CONTACT INFORMATION 77

1 - DOCUMENT REVISION HISTORY

VERSION	RELEASE DATE	CHANGES
Version A	May 30. 2017	• Initial VTX A12 Rigging Manual
Version B	July 21, 2017	• Updated Mechanical Limits chapter text • Added guidance for installing the Laser Bracket • Added guidance for using the VTX A12 SB • Added guidance for using the VTX Delta Plate
Version C	Jan 25, 2018	• Added an overview section for the VTX A12W variant • Added guidance on proper use of a pull-back for suspended arrays • Added guidance on using the Suspension Bar as an array frame • Added guidance for using the VTX A12 VT GND • Updated JBL contact information
Version D	Nov 25, 2020	• Updated document fonts and formatting • Updated language in Section 2 - Safety • Updated terminology in Section 3 - Mechanical Limits • Added guidance on designing ground stacked arrays in LAC-III to Section 5 - Software • Added guidance for using the VTX A12 BP • Improved the language of some rigging steps • Updated JBL contact information
Version E	October 15, 2026	• Added Document Revision History • Updated Safety Information • Updated Mechanical Limits • Updated language in Section 3 - Mechanical Limits • Replaced all LAC-III guidance with JBL Venue Synthesis • Added VTX A12 AF MKII guidance • Added VTX B35 and B35G guidance • Updated array assembly instructions to clarify and improve language • Updated ground stacked array steps to clarify and improve language • Added cleaning and maintenance guidance • Updated JBL contact information • Removed product specifications from end of document, specifications can now be found on individual product pages at www.jblpro.com

2 - SAFETY

2.1 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. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus that produce heat.
7. Only use attachments/accessories specified by the manufacturer.
8. 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.
9. 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.
10. Contact JBL Professional for advanced servicing issues.
11. **CAUTION - Do not perform any servicing unless you are qualified to do so.**
12. 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.
13. Read the **VTX A12 User Manual** before installation and use of the products.

2.2 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.

2.3 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.

2.4 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, eye bolts, 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.

2.5 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.

2.6 INSPECTION AND MAINTENANCE

Suspension systems are comprised of mechanical devices and require regular inspection and routine maintenance to ensure proper functionality. Before suspending or pole mounting any speaker system, inspect all components, including enclosures, suspension frames or brackets, pins, and eyebolts, for cracks, deformation, corrosion, or missing, loose, or damaged parts that could reduce system strength or safety. Do not suspend or pole mount a speaker until any issues have been corrected.

Inspect all load-bearing surfaces for signs of cracking, water damage, delamination, or other conditions that may reduce the strength of the loudspeaker enclosure. Inspect suspension hardware for signs of fatigue, corrosion, bending, or other damage that may reduce its strength. Check eyebolts for possible spin-out of the enclosure.

Follow the inspection intervals and maintenance requirements in Section 16 - Product Care and Maintenance, or as required by local regulations. For all other hardware and fittings, follow the hardware manufacturer's inspection and maintenance guidelines.

Prior to suspending the system, all parts and components should be inspected by a trained and experienced person qualified in suspending loudspeaker systems.

JBL is not responsible for the application or misuse of its products or this information, including failure to comply with inspection and maintenance procedures.

2.7 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 potential tip hazard. Use caution when moving the cart/apparatus combination to avoid injury from tip-over.

2.8 PERSONAL PROTECTIVE EQUIPMENT (PPE)

Appropriate personal protective equipment (PPE) must be worn whenever installing, adjusting, or removing rigging hardware or loudspeakers. This includes, but is not limited to, safety helmets, protective footwear, gloves, and eye protection. PPE helps reduce the risk of injury from falling objects, sharp edges, pinch points, and other hazards commonly present during rigging operations. Always follow applicable local regulations, workplace safety requirements, and site-specific safety procedures when performing rigging tasks.



HEADWEAR: Protective headwear shall be worn.



FOOTWEAR: Protective footwear shall be worn.



GLOVES: Protective gloves shall be worn.



EYEWEAR: Protective eyewear shall be worn.



LIFTING: Practice safe lifting.

2.9 RESOURCES AND DOCUMENTATION

Several resources are available to VTX Series users to support the proper and safe use of the equipment. The following is an overview of each resource:

USER MANUAL: Covers the electromechanical aspects of the system, including amplification, wiring, speaker presets, tuning, and optimization. User Manuals do not include information about rigging or suspension hardware.

RIGGING MANUAL: Covers the mechanical aspects of the system, including step-by-step rigging instructions, accessory usage, mechanical limits, and safety requirements. **This document should be read by all users.**

SPECIFICATION SHEETS: Provide detailed specifications for loudspeakers and accessories, including acoustical performance, materials, weight, and general mechanical information. A Specification Sheet is available for each SKU.

CUSTOMER DRAWINGS: Include detailed drawings for each SKU, including dimensional 2D PDF and DXF files and simplified 3D DXF models. Depending on the product, additional 3D file formats may be available for download at www.jblpro.com.

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

3 - MECHANICAL LIMITS

The VTX Series rigging systems comply with the applicable requirements of Regulation (EU) 2023/1230 (Machinery Regulation) and have been designed following the design principles of DGUV Regulation 17, with a minimum design safety factor of 4:1. Minimum design safety factor requirements for suspended arrays may be specified by local regulations or applicable standards. Some jurisdictions or venues may require higher safety factors. Always check local regulations and applicable standards, and use JBL Venue Synthesis to verify mechanical limits.

3.1 SUSPENDED ARRAY LIMITS

ACCESSORY	NOTES	SAFE LIMIT	MAXIMUM LIMIT
VTX A12 AF	Using the original VTX A12 AF with one or two Extension Bars	(12) A12	(24) A12
VTX A12 AF MKII	Using the VTX A12 AF MKII with one or two Extension Bars	(12) A12	(24) A12
VTX A12 SB	Suspension Bar used as an Array Frame	(12) A12	(18) A12

3.2 GROUND STACK ARRAY LIMITS

ACCESSORY	NOTES	SAFE LIMIT	MAXIMUM LIMIT
VTX A12 VT + GND	Using VTX A12 VT with VTX A12 VT GND outriggers	(4) A12	(6) A12
VTX A12 BP	Base plate for ground stacking A12 systems	(2) A12	(6) A12

TERMINOLOGY:

Safe Limit: The safe limit defines the maximum number of cabinets that can be used in an array while maintaining a minimum design safety factor of 4:1. The safety factor of an array is determined by the number of cabinets, array shape, and overall array angle. An array constructed within the safe limit will maintain a safety factor of at least 4:1 for all allowable array configurations. Ground-stacked arrays within the safe limit are stable under normal operating conditions. Arrays exceeding the safe limit, but not exceeding the maximum limit, are permitted only when JBL Venue Synthesis software is used to verify the mechanical safety of the specific configuration.

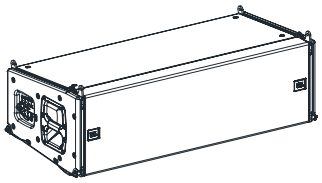
Maximum Limit: The maximum limit defines the largest allowable array size. Arrays exceeding this limit are not permitted under any conditions.

NOTES:

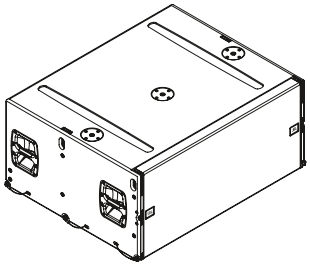
- Venue Synthesis allows array designs with a minimum design safety factor of 4:1. Designs below 4:1 are not permitted.
- Safe and maximum limits apply only to the specified accessory (e.g., base plate or array frame). When multiple accessories are combined—for example, a ground-stacked array using a base plate with subwoofers underneath—the complete configuration must be evaluated using Venue Synthesis.
- Safe and maximum limits for base plate accessories are specified for standalone use. Limits may differ when a base plate is attached to subwoofers or other structures.

TIP: Declarations of Conformity (DoCs) for applicable products and accessories are available from www.jblpro.com. Refer to the relevant DoC for product-specific information on regulatory compliance and applicable standards.

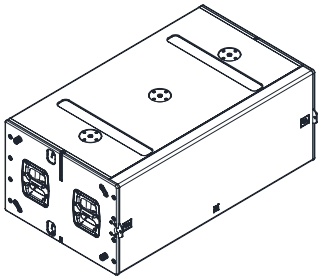
4 - SYSTEM COMPONENTS



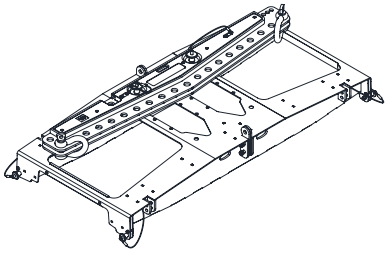
VTX A12 / VTX A12W



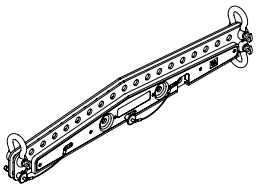
VTX B35 / VTX B35G



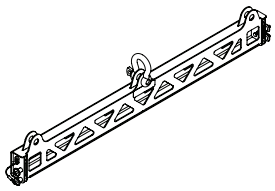
VTX B28



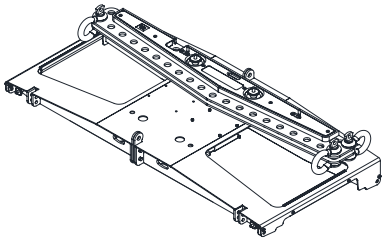
VTX A12 AF MKII | Array Frame



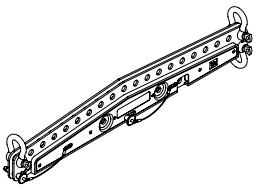
VTX A12 AF EB MKII | Extension Bar



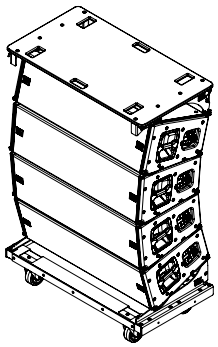
VTX A12 SB | Suspension Bar



VTX A12 AF | Array Frame

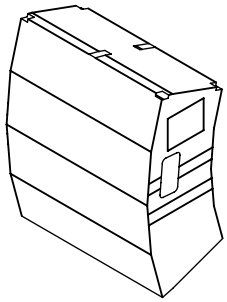


VTX A12 AF EB | Extension Bar

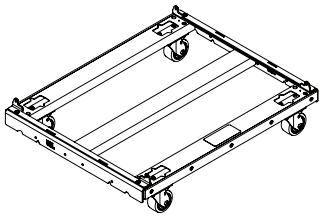


VTX A12 VT | Vertical Transporter

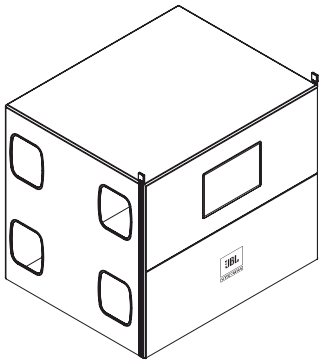
CAUTION: Always use components and accessories specified and approved by JBL Professional. When a cart is used, use caution when moving the cart to avoid injury from tip-over.



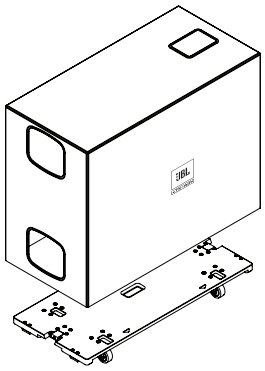
VTX A12 VT CVR | Cover



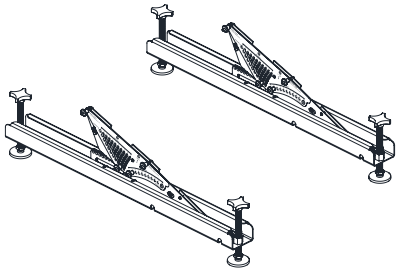
VTX B35 VT | Vertical Transporter



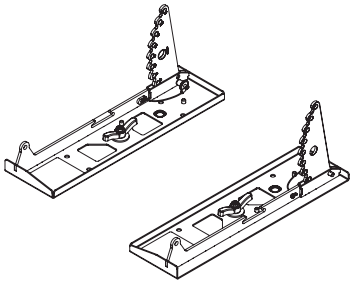
VTX B35 VT CVR | Soft Cover



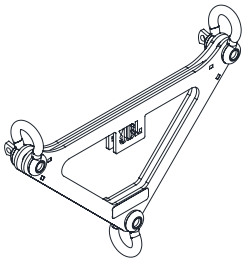
VTX B35 ACC | Caster Board & Cover



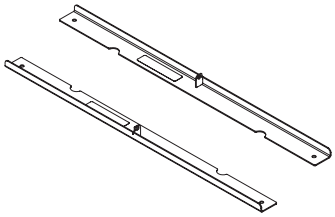
VTX A12 VT GND



VTX A12 BP | Base Plate



VTX Delta | Delta Plate



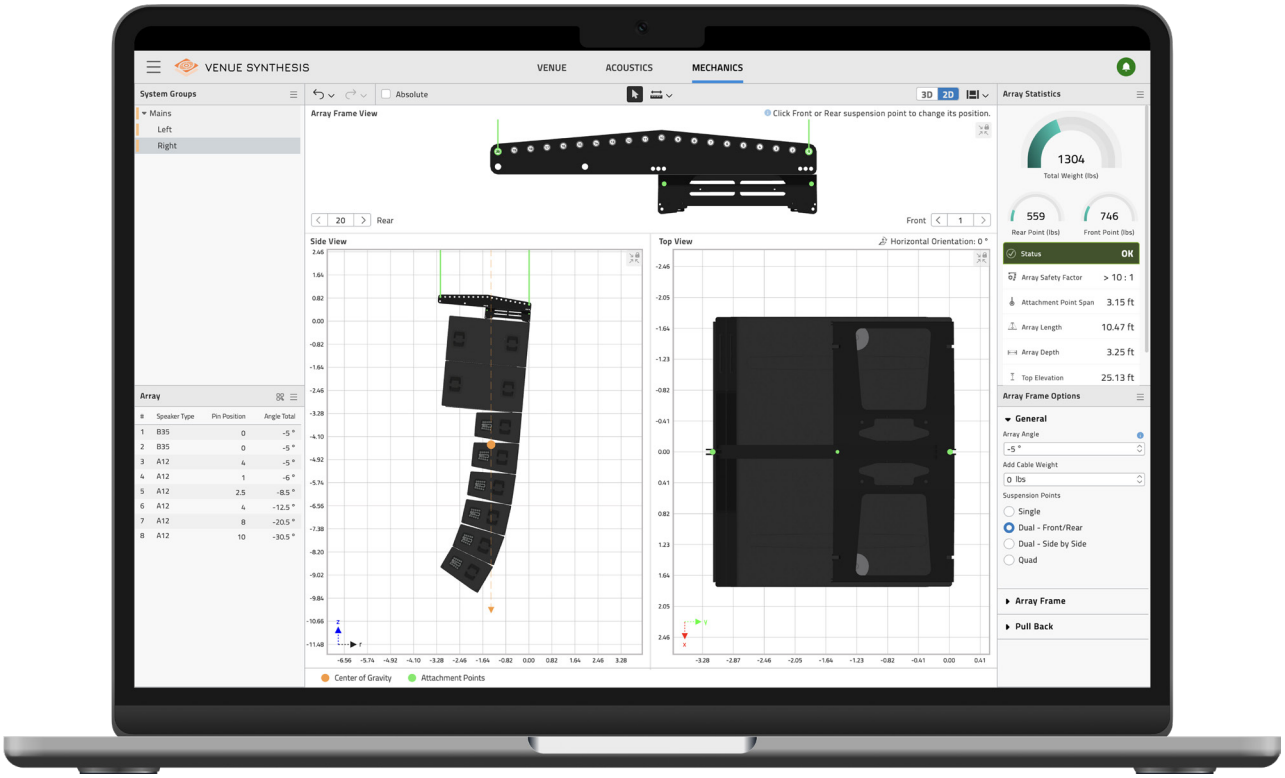
VTX B28 GND

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.

5 - SOFTWARE

5.1 VENUE SYNTHESIS OVERVIEW

Venue Synthesis is a 3D acoustic simulation software, designed to allow system designers and engineers to accurately predict the acoustical and mechanical performance of JBL sound systems. The software provides the ability to run three-dimensional acoustic predictions, simulate acoustic performance for complete systems, and validate mechanical configurations. The application has been designed from the ground up to take advantage of an improved acoustical and mechanical engine and offers ultra-realistic 2D and 3D graphics, featuring accurate renderings of physical rigging components.

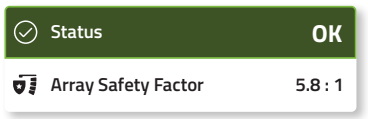


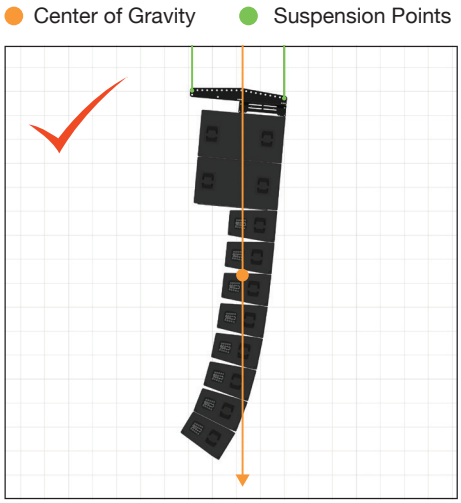
Venue Synthesis validates the mechanical properties of arrays and selected JBL accessories. Configuration limits are calculated in real time, for either suspended or ground-stacked arrays, based on array parameters such as the number of cabinets, cabinet-to-cabinet splay angles, overall array aiming, 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 the ArrayLink™ 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 that exceed the Safe Limit defined in Section 3.1 must be validated using Venue Synthesis software, this is the only way to ensure that safe mechanical conditions are met for any given configuration.

5.2 SUSPENDED ARRAYS

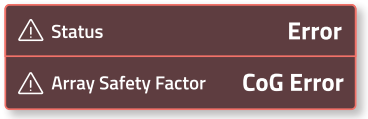
Venue Synthesis checks the mechanical safety of suspended arrays by analyzing the variables that affect loading and safety factors. The software evaluates the mechanical stresses on the enclosures, rigging components, and suspension accessories used in the array. Parameters such as array down angle and curvature are considered when determining the safety status and safety factor of the configuration. The reported array safety factor represents the lowest safety factor calculated for any component in the system.

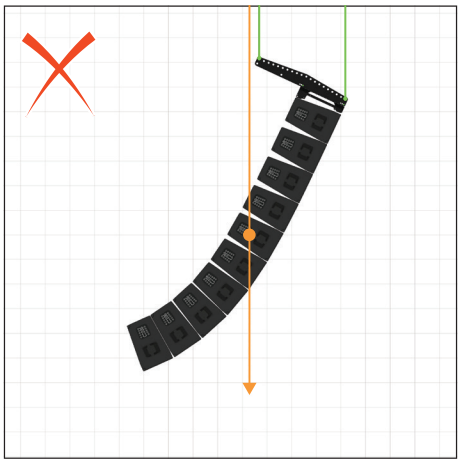




Status OK | Array Safety Factor OK

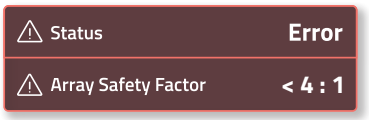
In this case, the array is stable under normal operating conditions and can be used as configured. The array also complies with the mechanical limits for the speakers and selected accessories. The status and notification icons are displayed in green.

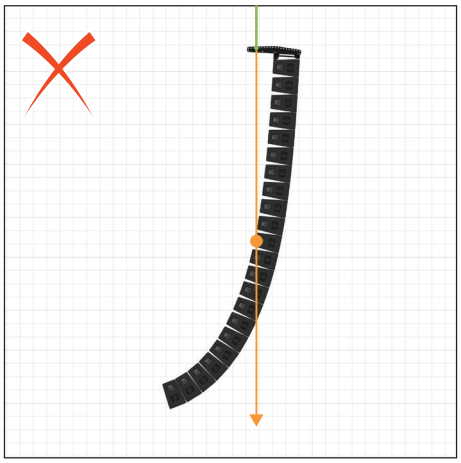




Status Error | Array Safety Factor CoG Error

In this case, the center of gravity of the array falls outside the usable range of the selected suspension accessory. The array cannot be used as configured. This condition can sometimes be resolved by changing the suspension accessories or configuration. In this example, a pull-back can be used to provide a second suspension point.





Status OK | Array Safety Factor < 4 : 1

In this case, the center of gravity is within the allowable range of the selected suspension accessory, but the resulting safety factor is below 4:1. Arrays with a safety factor below 4:1 must never be used. Correct this condition by reducing the number of cabinets, changing the suspension accessories, adjusting enclosure angles, or changing the overall array angle to reduce stress on the suspension hardware.

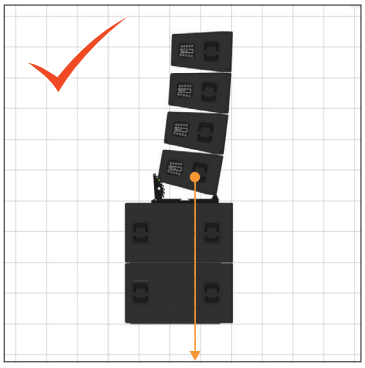
5.3 GROUND-STACKED ARRAYS

Venue Synthesis evaluates the mechanical safety of ground-stacked arrays by analyzing the factors that affect array stability, including external forces such as someone pushing on the array. Based on this analysis, the software determines the stability status and reports any mechanical or stability issues. Messages fall into the following categories:

Status OK

No errors or messages

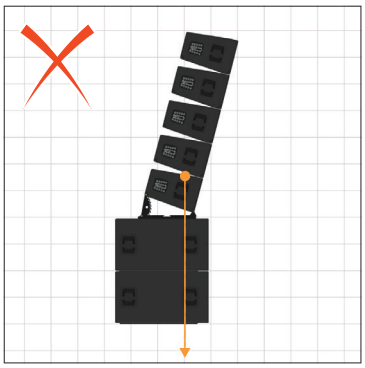
In this case, the array is stable under normal operating conditions and can be used as configured. The array also complies with the mechanical limits for the speakers and selected accessories. The status and notification icons are displayed in green.



Status Error

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

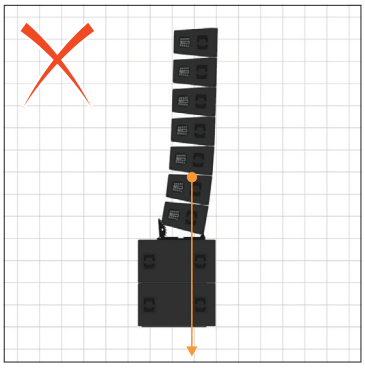
This warning indicates that the array may be unstable and at risk of tipping. Secure the array to the ground, stage, or another structure rated for its weight. Stability may also be affected by external forces, such as someone pushing on the array.



Status Error

Configuration exceeds the maximum number of boxes allowed

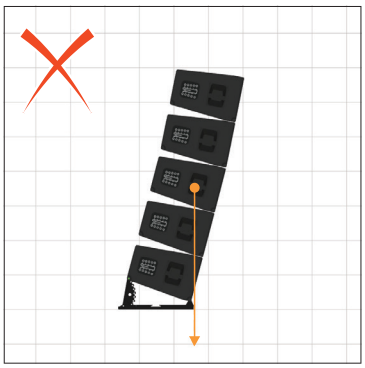
This message is displayed when the specified array design exceeds the mechanical limits of the speakers or selected accessories. Array designs that trigger this message must not be used under any conditions, as they may result in hardware damage and/or personal injury.



Status Error

Invalid CG Location

This message is displayed when the center of gravity of an array design exceeds the footprint of the selected accessory. Array designs that trigger this message must not be used under any conditions, as they may result in hardware damage and/or personal injury.

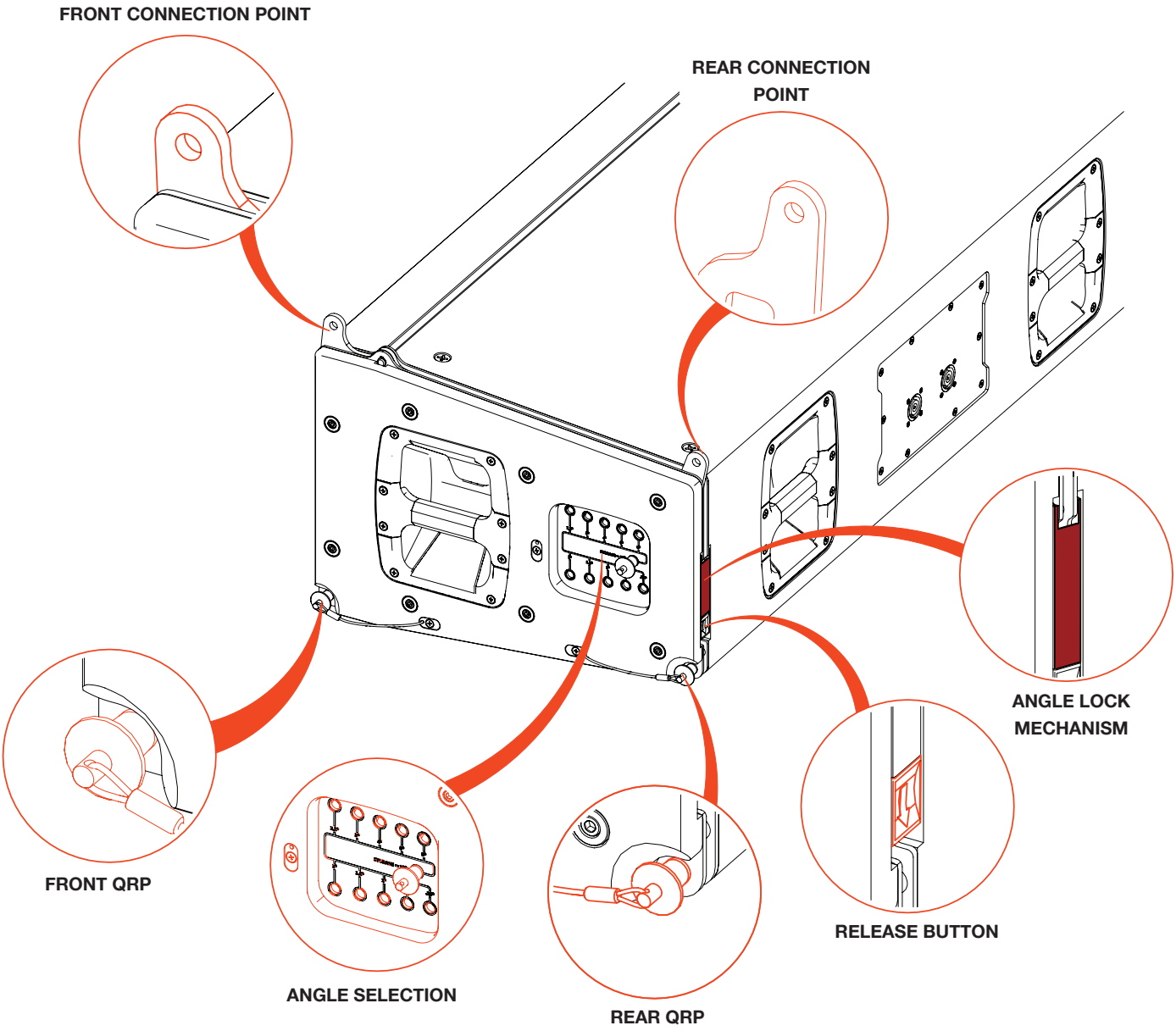


Center of Gravity

6 - VTX A12 RIGGING SYSTEM OVERVIEW

VTX A12 cabinets feature an easy-to-use and highly accurate rigging system. Cabinets are transported vertically in stacks of four on the VTX A12 VT Vertical Transporter, with the cabinets collapsed and set to the 10° position. Cabinet-to-cabinet splay angles are selected while the cabinets are on the ground by moving the angle selection quick release pins (QRPs) to the desired positions. As the cabinets are lifted from the VT, the Angle Lock Mechanism automatically engages and locks each cabinet at its selected angle. The cabinets remain locked until the Angle Lock Mechanism is released, allowing them to collapse for storage and transportation.

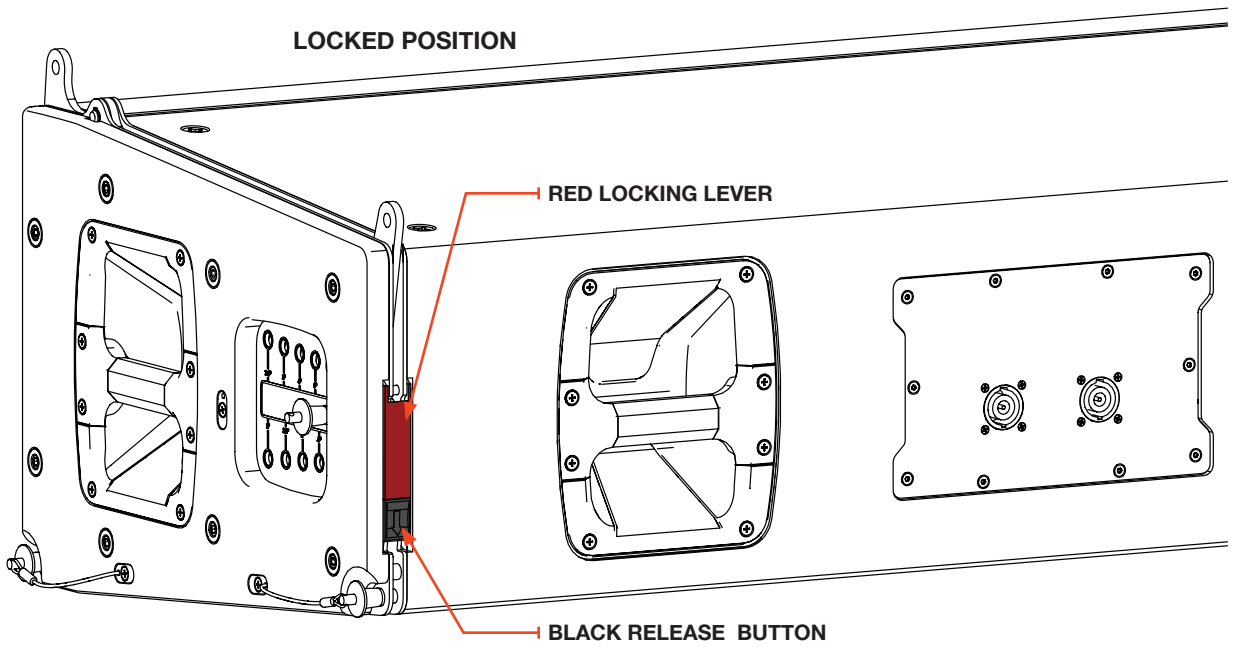
6.1 A12 RIGGING CLOSEUP

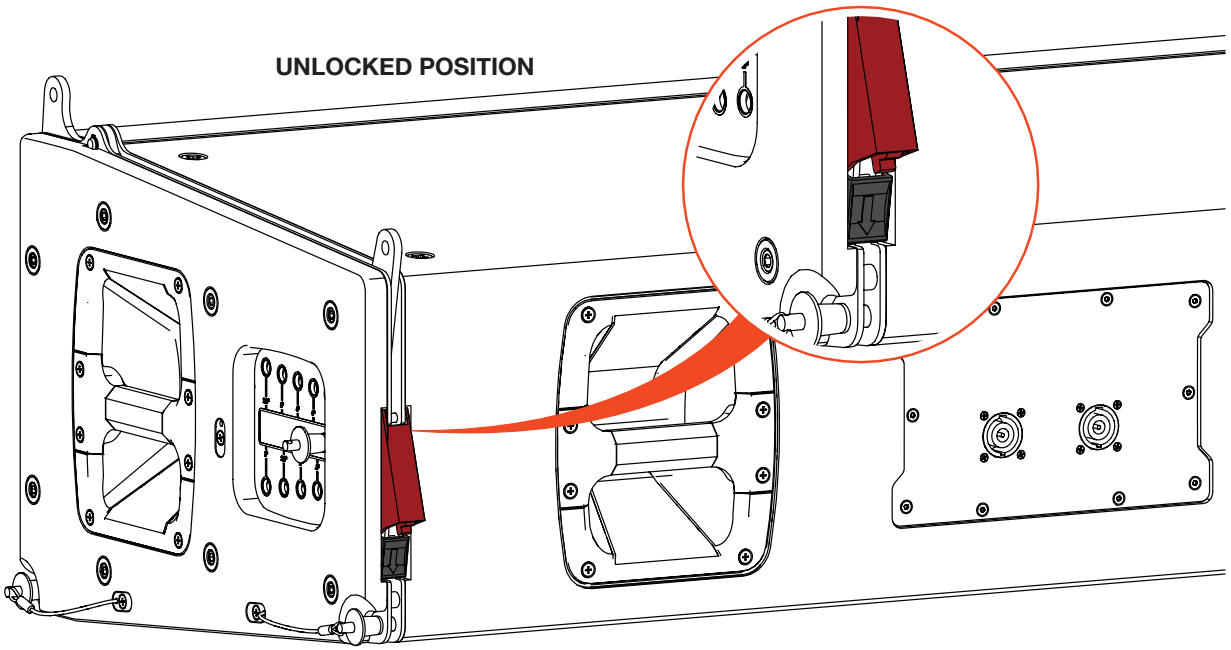


TIP: The names “VTX A12” and “VTX A12W” are used interchangeably throughout this document. The VTX A12 and VTX A12W share the same weight, physical size and suspension hardware.

6.2 ANGLE LOCK MECHANISM

VTX A-Series cabinets feature an Angle Lock mechanism that automatically locks each cabinet at its selected angle when the system is suspended. Angles are preselected while the cabinets are on the ground. The mechanism consists of a red **LOCKING LEVER** and a black **RELEASE BUTTON**. The system is locked when the **LOCKING LEVER** is recessed into the cabinet. During de-rigging, press the **RELEASE BUTTON** to disengage the Angle Lock, allowing the cabinets to collapse to the 10° position for transportation.





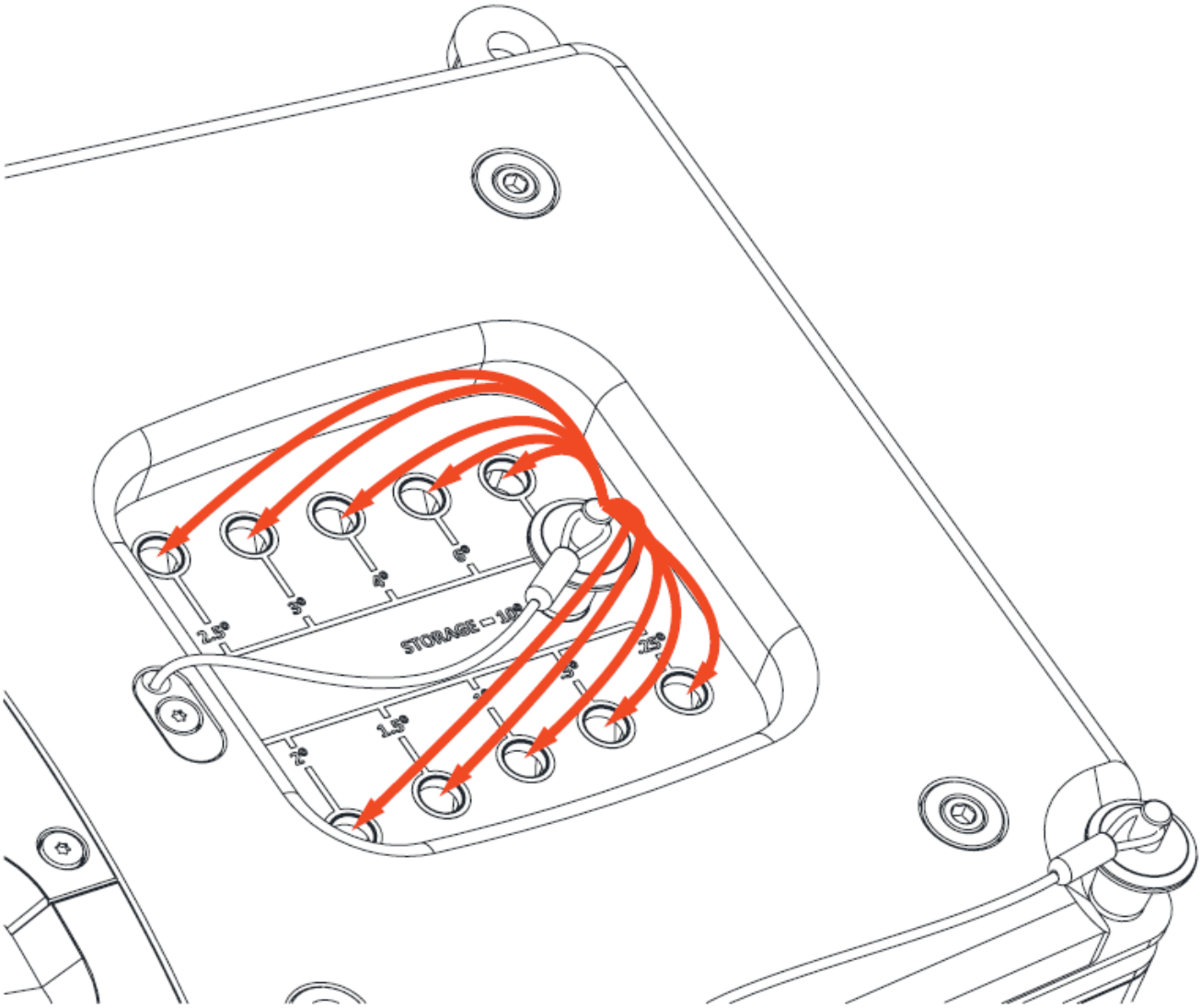
6.3 ANGLE SELECTION

Every VTX A12 has an Angle Selection panel on either side of the cabinet. These panels are used to select the cabinet-to-cabinet splay angle. The panels offer eleven unique positions, labeled in degrees. The positions range from 0.25 to 10 degrees.

VTX A12 ANGLE OPTIONS: 0.25°, 0.5°, 1°, 1.5°, 2°, 2.5°, 3°, 4°, 6°, 8°, 10°

A dedicated quick release pin (QRP) is used to select the cabinet angle. Angles are set while the VTX A12 cabinets are on the Vertical Transporter (VT) and the rigging is unloaded, allowing the QRP to move freely between angle positions. Remove the QRP from the 10° storage position and insert it into the desired angle position. When the array is lifted, the rigging expands to the selected angles and places the QRPs under load.

During transportation, always return the cabinets to the 10° storage position to secure the rigging.



CAUTION: All quick release pins must be fully inserted before suspending a VTX A12 array. Never suspend an array with any quick release pins hanging free.

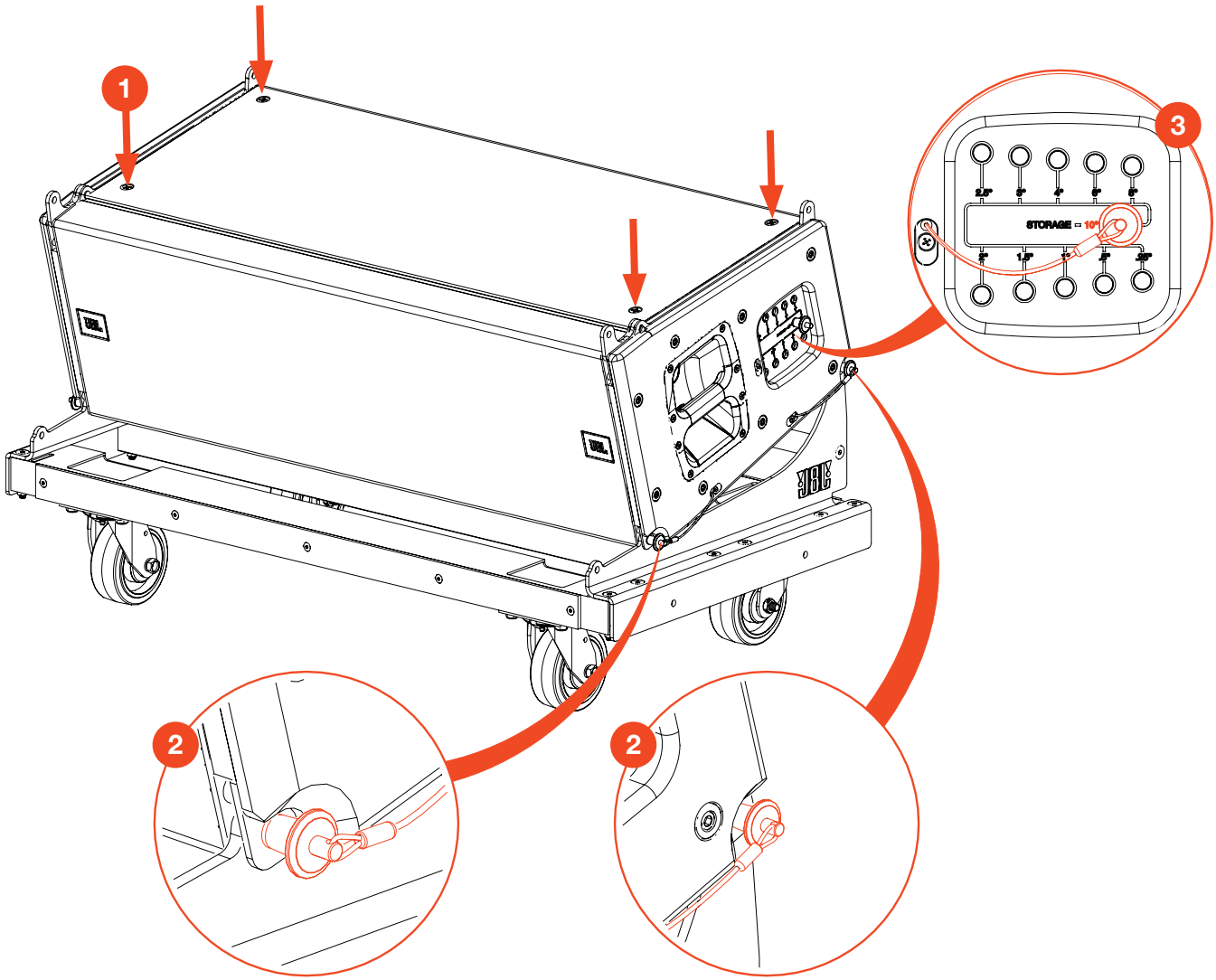
7 - TRANSPORTATION

The VTX A12 VT Vertical Transporter carries up to four VTX A12 cabinets. For transportation, all cabinets are set to the 10° (STORAGE) position to secure the rigging. The optional VTX A12 VT CVR provides additional protection.

7.1 INSTALLING VTX A12 CABINETS ON A VTX A12 VT

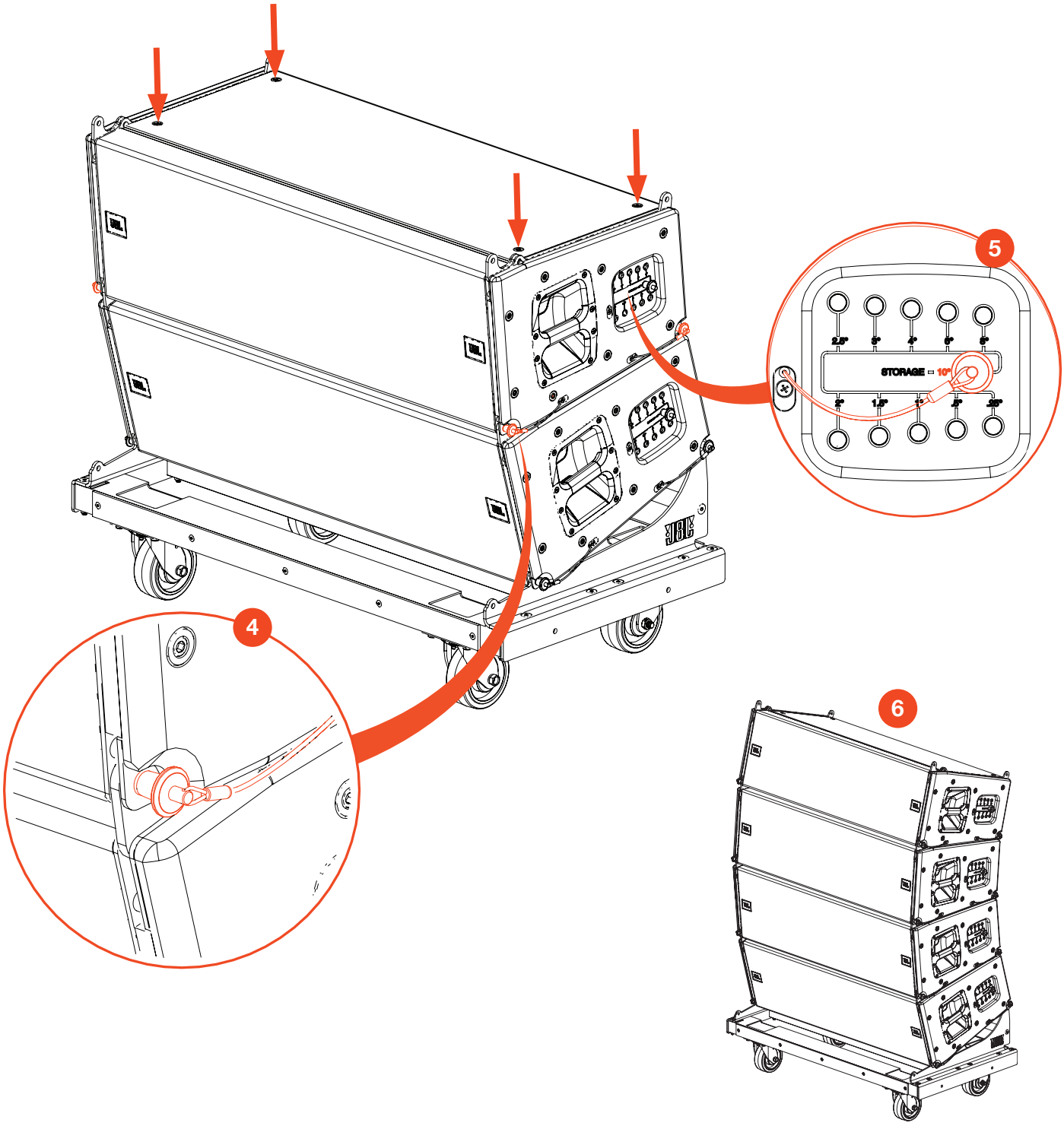
STEPS:

1. Place the first VTX A12 cabinet onto the VTX A12 VT.
2. Insert the four quick release pins through the VT mounting tabs to secure the cabinet to the VT.
3. Set the cabinet angle to the 10° (STORAGE) position and place the red Locking Lever in the locked position.



STEPS (CONTINUED):

4. Lower the next A12 cabinet onto the stack, and insert the four quick release pins to secure the cabinets together.
5. Set the cabinet to the 10° (STORAGE) position and place the red Locking Lever in the locked position.
6. Repeat until all four cabinets are secured on the VTX A12 VT.

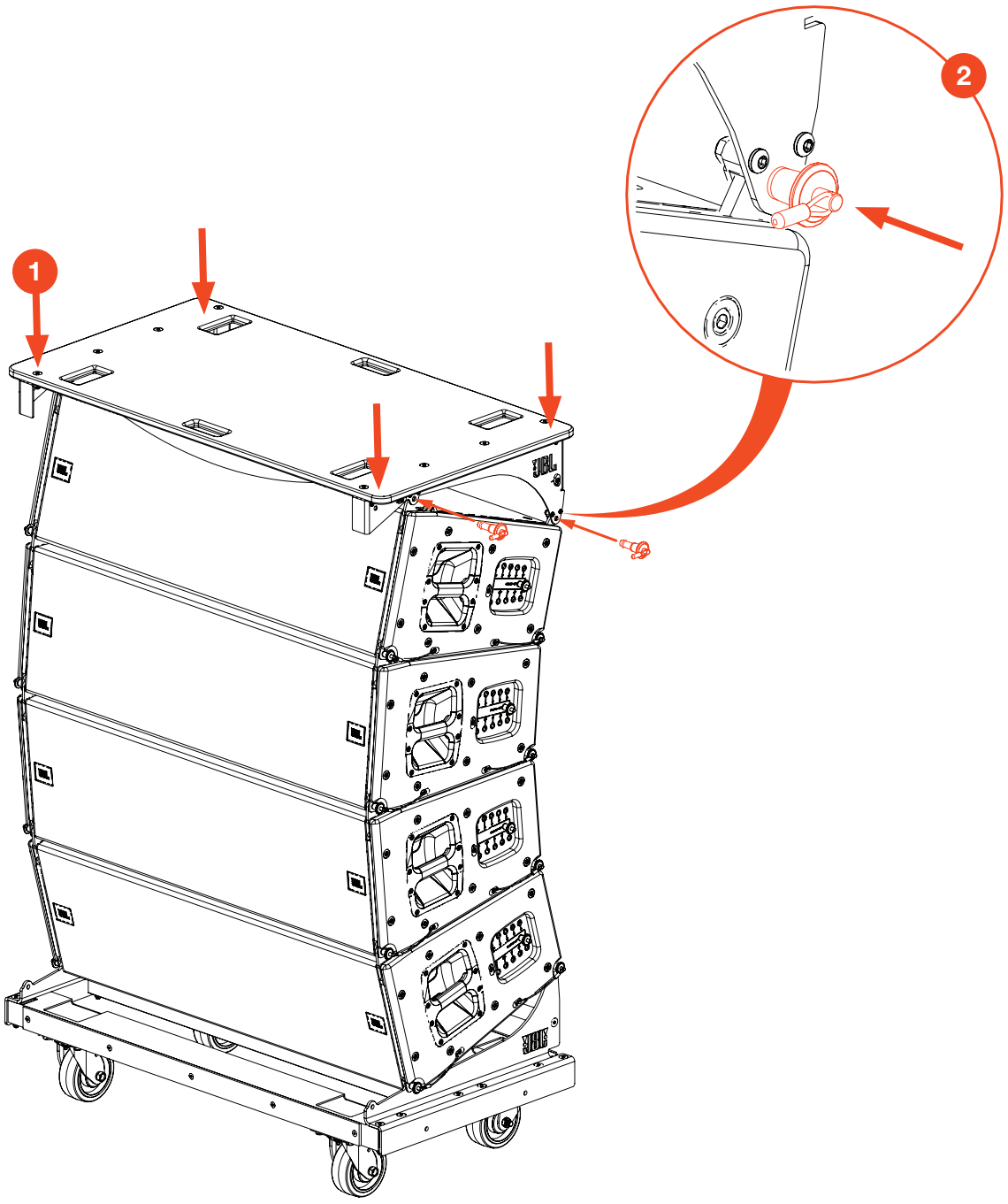


7.2 INSTALLING THE VT-TOP ON THE VTX A12 VT

The VT-TOP connects to the top cabinet of an A12 stack to create a robust and defined footprint that stabilizes the carts during transportation. Because of its flat profile, other gear can be placed above VTX A12 carts for a more efficient truck pack.

STEPS:

1. Lower the VT-TOP onto the top VTX A12 making sure the VT-TOP engages with the rigging on all four corners.
2. Secure the VT-TOP by installing the four quick release pins on to the top VTX A12 cabinet.

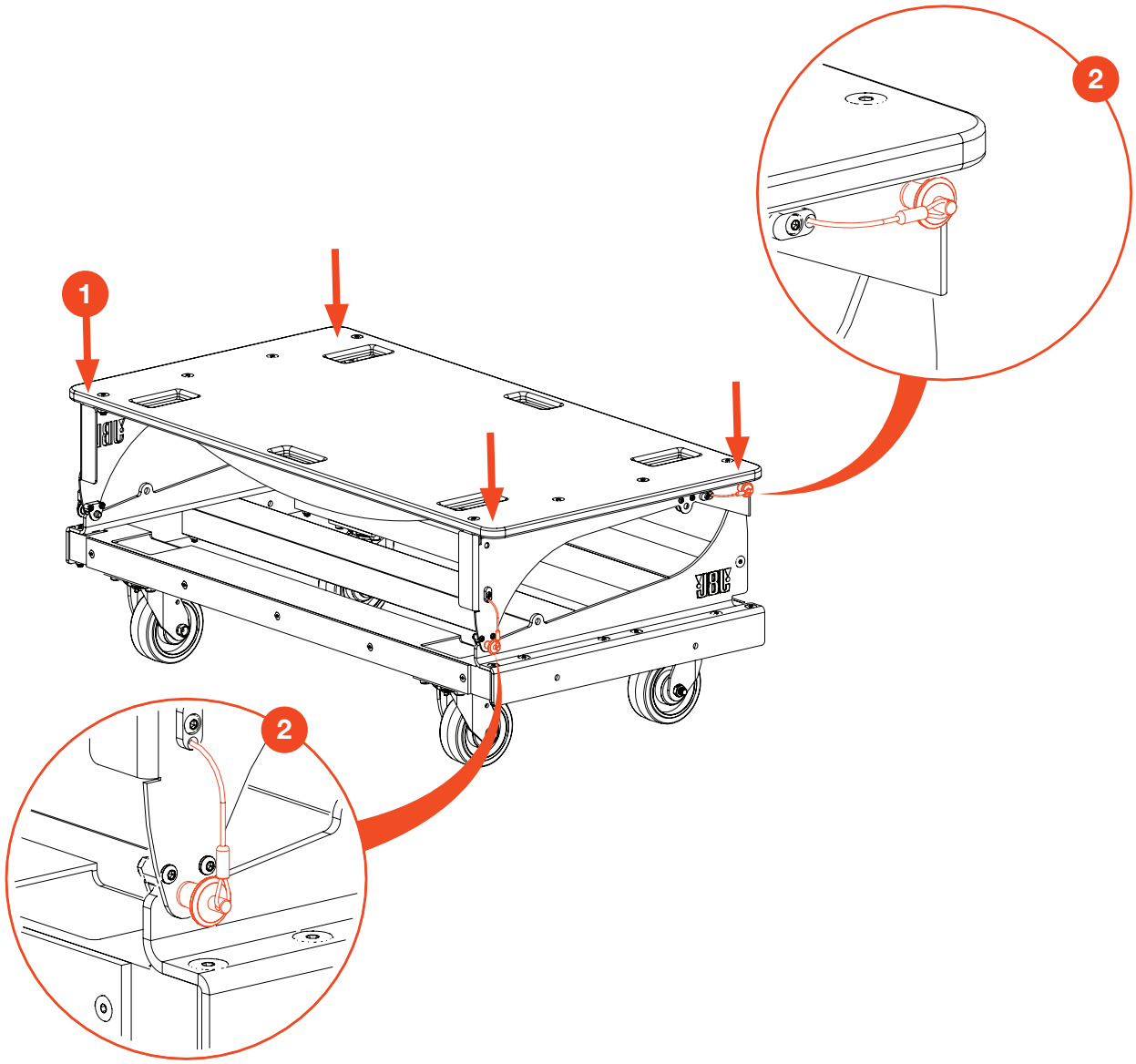


7.3 STORING THE VTX A12 VT

Once the system has been deployed, the VT-TOP can connect to the VTX A12 VT for storage. After the two are connected, several assemblies can be stacked together for storage.

STEPS:

1. Line up the corners of the VTX A12 VT and the VT-TOP. Lower the VT-TOP onto the VTX A12 VT until all four corner connection points engage.
2. Use the four quick release pins found on the VT-TOP to secure it to the VT.



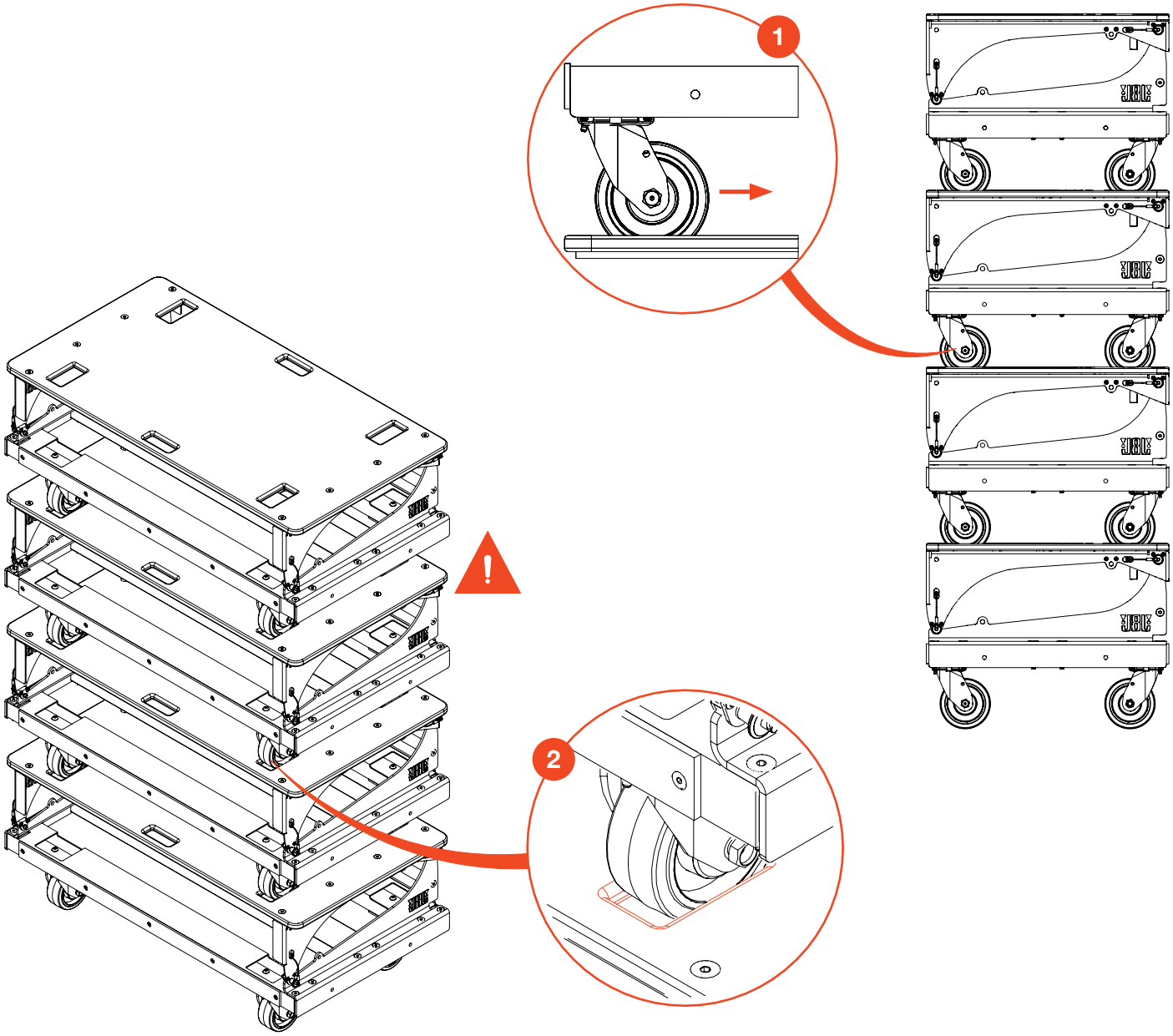
TIP: The VTX A12 VT CVR Cover can be stored in the empty space between the VT and VT-TOP. Fold the cover and place it in the VT before pinning the VT-TOP.

7.4 STACKING THE VTX A12 VT WITH THE VT-TOP

When the VTX A12 VT and VT-TOP are connected, several assemblies can be stacked together for storage.

STEPS:

1. Rotate the VT wheels so that the wheels are pointed to the inside of the VT.
2. Line up the wheels with the VT-TOP stacking cups and stack the two parts together.



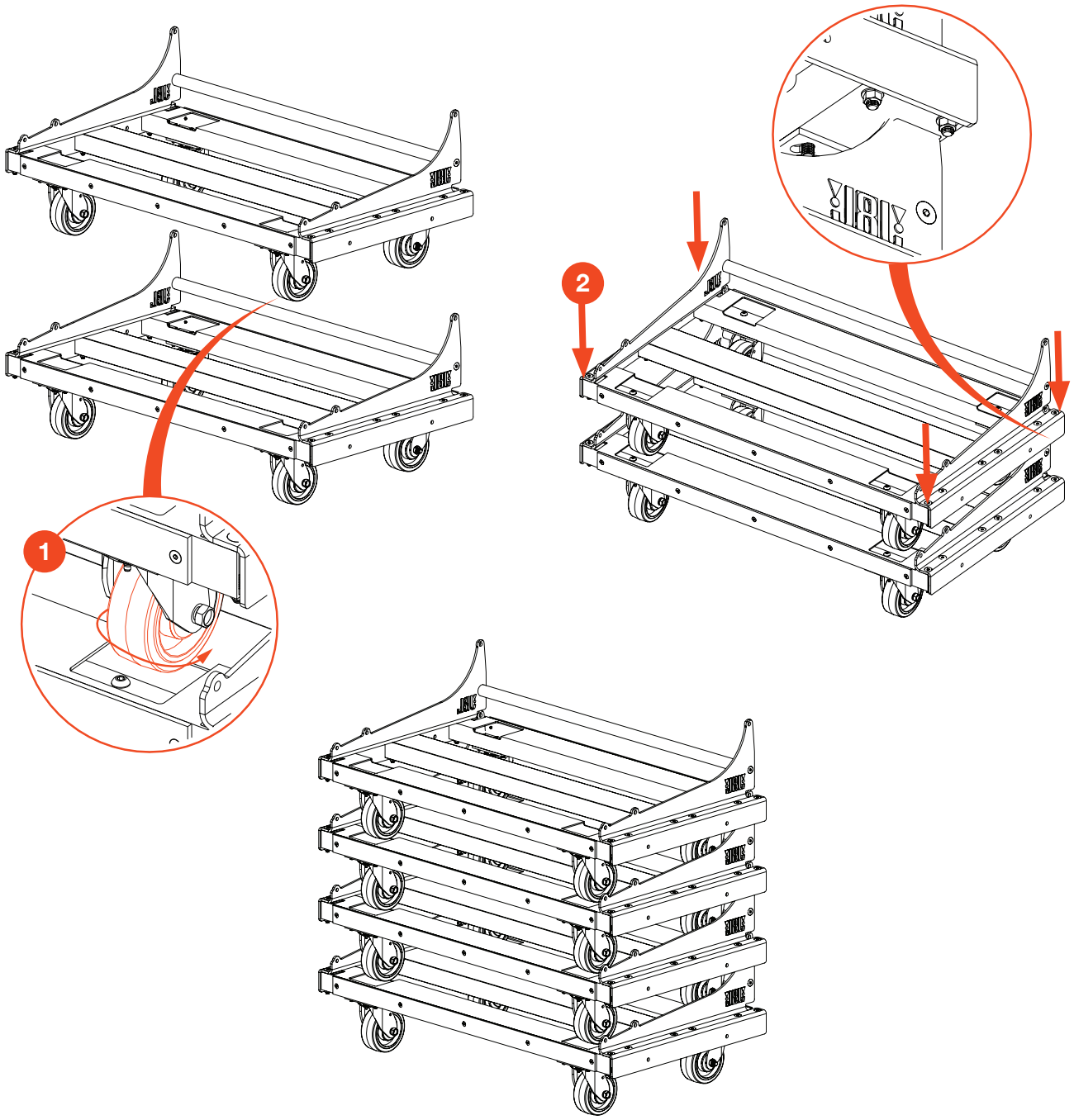
CAUTION: Make sure the VT and VT-TOP are pinned together securely before stacking. **No more than four VTs should be stacked together.**

7.5 STACKING THE VTX A12 VT

If necessary, the VTX A12 VT can be stacked for storage without the VT-TOP.

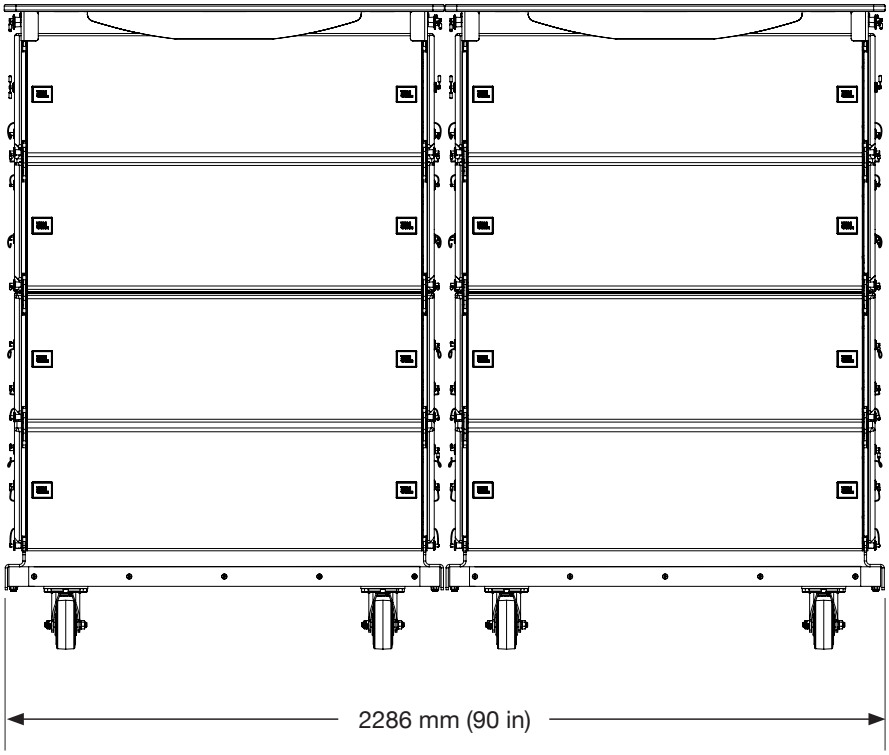
STEPS:

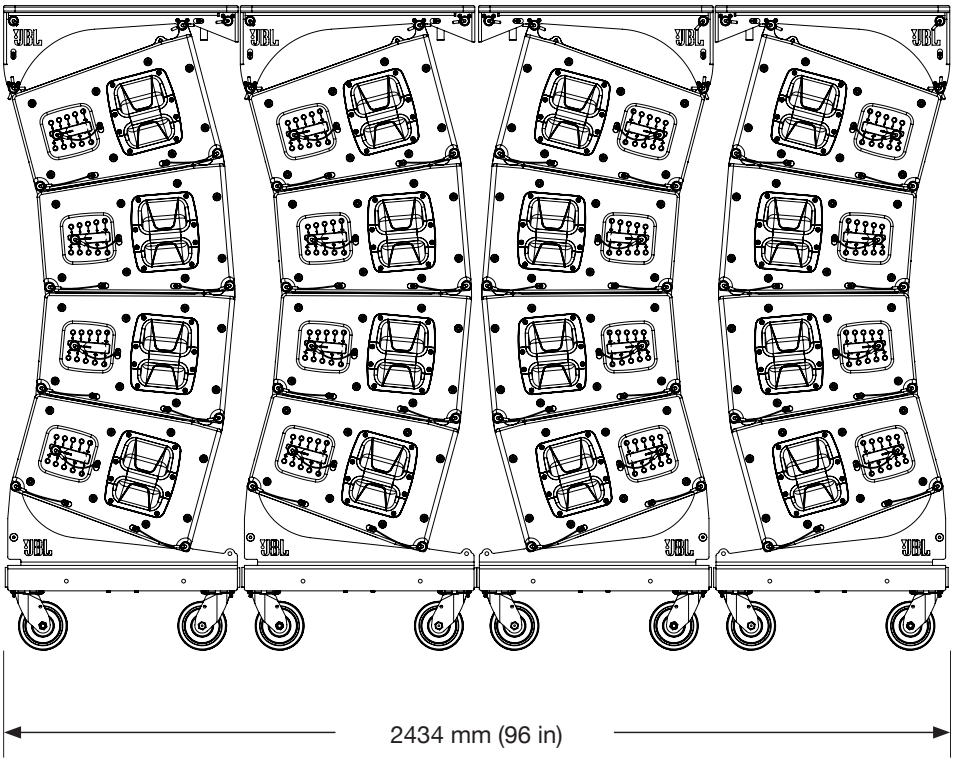
1. Rotate the VT wheels so they point to the inside of the VT.
2. Line up the wheels and stack the two carts together, making sure the VT rear attachment point fits into the slot in the cart above.



CAUTION: To maintain stability, place no more than eight VTX A12 VTs in a stack.

7.6 TRUCK PACKING DIMENSIONS



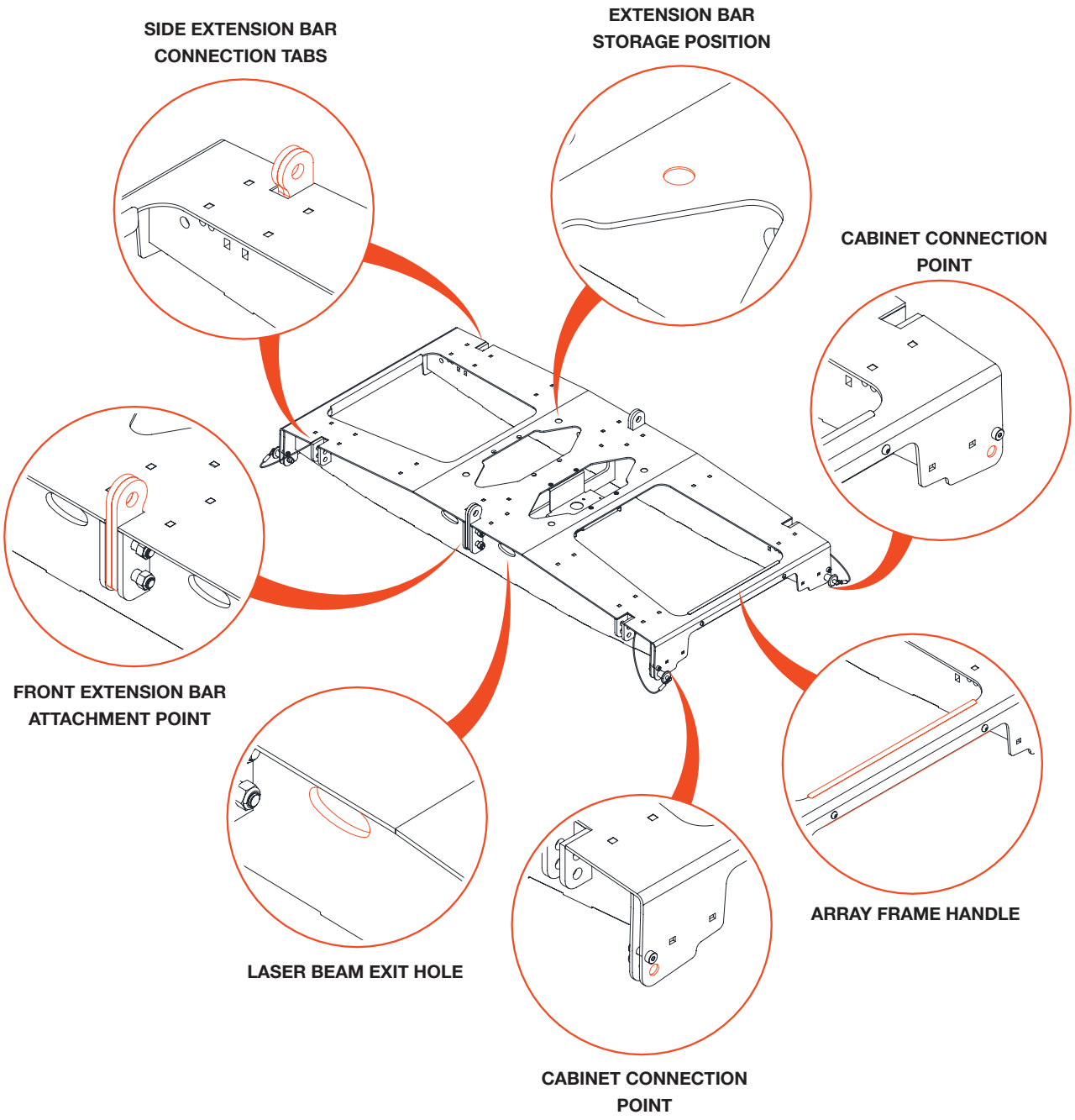


8 - ARRAY FRAMES AND EXTENSION BAR

The VTX A12 AF and VTX A12 AF MKII Array Frames are lightweight suspension accessories for VTX A12 arrays. The VTX A12 AF MKII also supports VTX B35 subwoofers in standalone and mixed A12/B35 arrays. The frames were designed to operate in single-point, front-to-back, or side-by-side suspension modes using the Extension Bar. One Extension Bar is included with each frame and a second Extension Bar can be added to facilitate side-by-side suspension.

TIP: One Extension Bar is always required when using the VTX A12 AF or the VTX A12 AF MKII.

8.1 ARRAY FRAME OVERVIEW

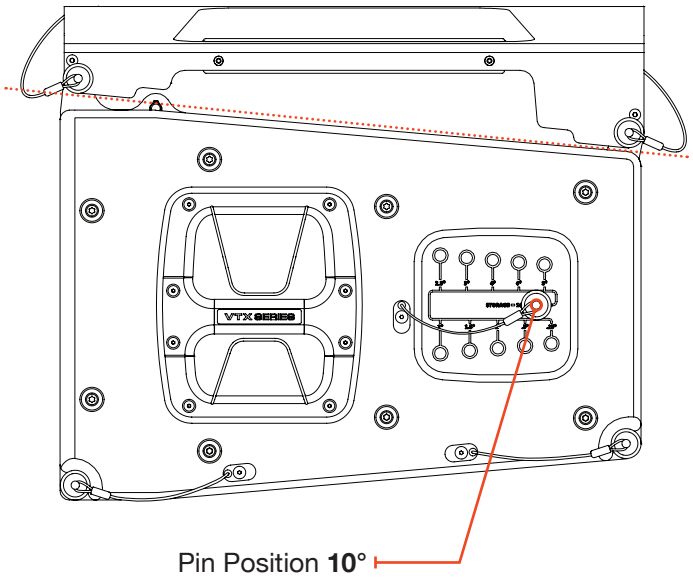


8.2 ARRAY FRAME DIFFERENCES

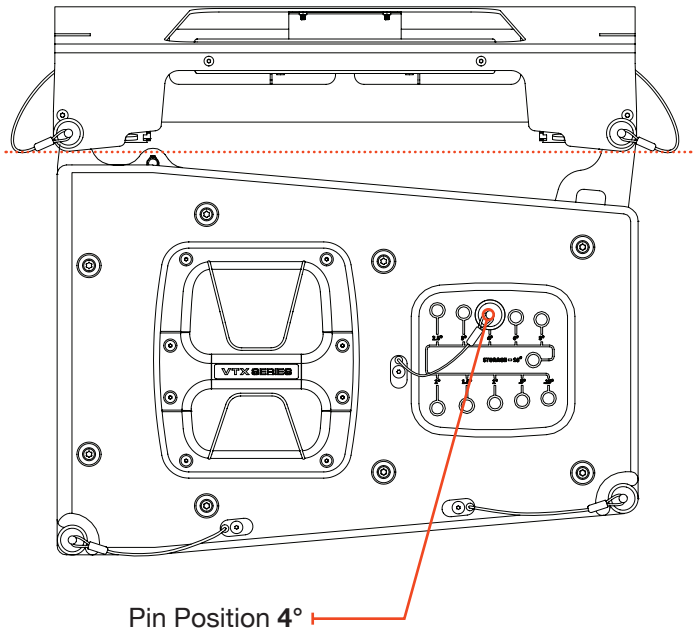
The original VTX A12 AF uses an asymmetrical design that sits level on an A12 cabinet when set to 10°. With the introduction of the VTX B35, the symmetrical VTX A12 AF MKII was developed to support A12 and B35 cabinets in standalone or mixed arrays. The B35 rigging points are at equal heights and are not compatible with the original asymmetrical frame.

When using the VTX A12 AF MKII with A12 cabinets, set the top cabinet to **4°** to keep the top of the frame perpendicular to the grille. The two frames can also be identified when placed on the ground: the original VTX A12 AF sits at an angle, while the VTX A12 AF MKII sits level.

VTX A12 AF



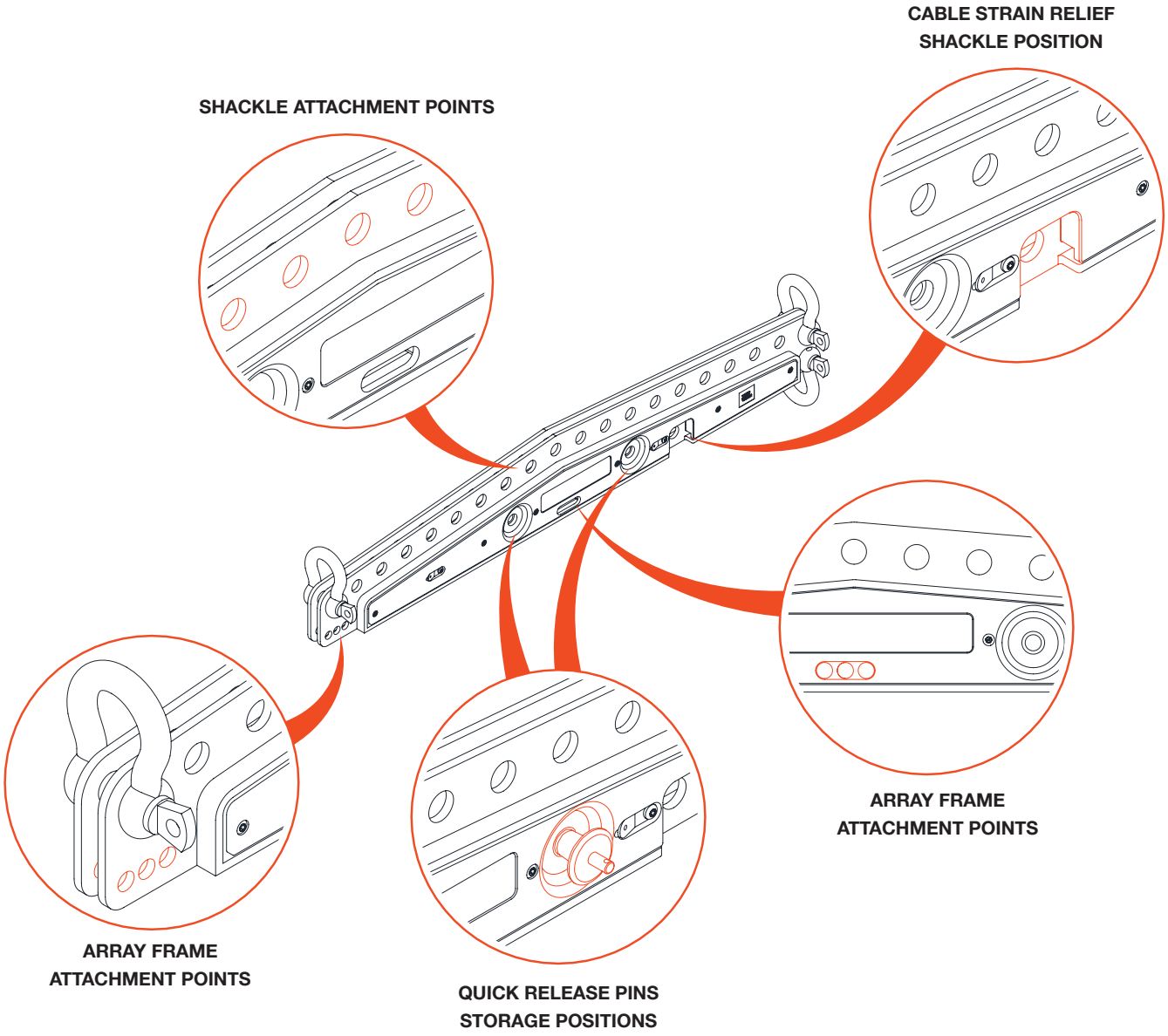
VTX A12 AF MKII



8.3 EXTENSION BAR OVERVIEW

The VTX A12 AF and VTX A12 AF MKII Array Frames each include an Extension Bar. The original VTX A12 AF EB and the newer VTX A12 AF EB MKII are functionally identical and can be used interchangeably with either Array Frame. One Extension Bar is included with the VTX A12 AF and VTX A12 AF MKII, and additional Extension Bars can be used as needed. The Extension Bar includes three 5/8-inch shackles, two for suspension and one for cable strain relief, and two quick release pins for attachment to the Array Frame.

TIP: The VTX A12 AF Extension Bar and the VTX A12 AF MKII Extension Bar are functionally identical and can be used interchangeably.

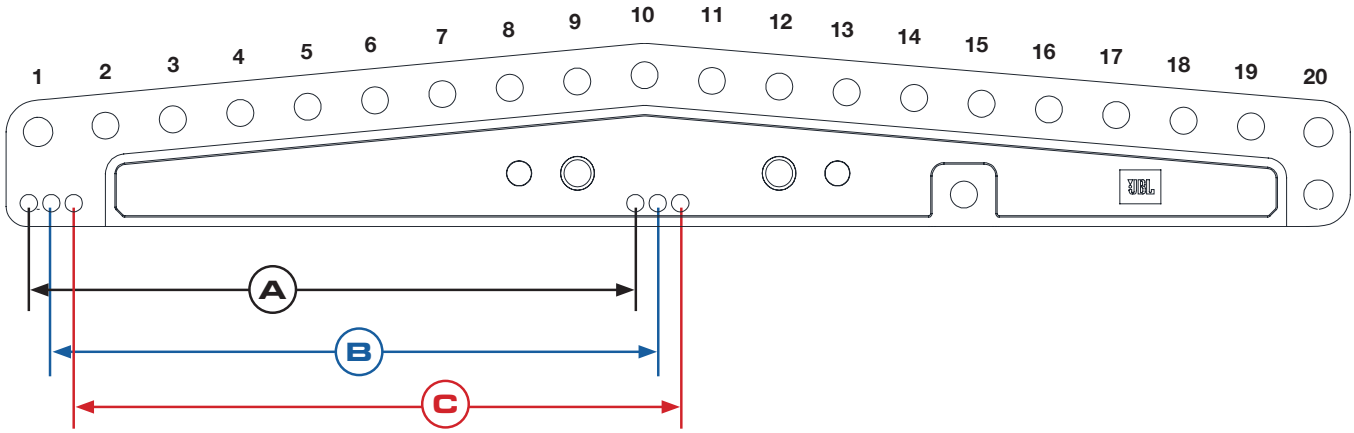


TIP: The VTX A12 AF Extension Bars are only compatible with 5/8-inch shackles. Three 5/8-inch shackles are included with each Extension Bar and Array Frame.

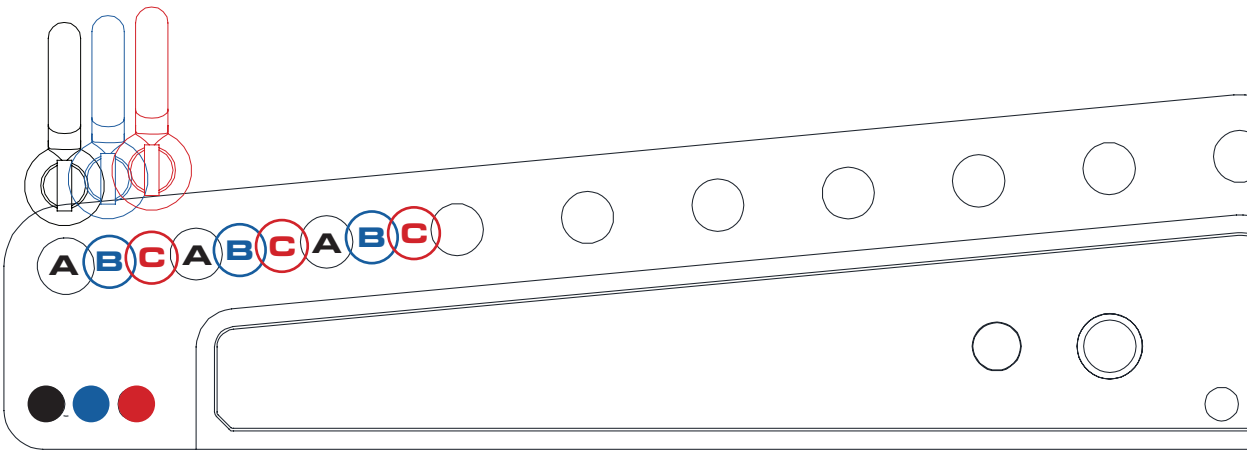
CAUTION: Always use high-quality 5/8-inch rigging shackles made by reputable manufacturers. Always inspect all rigging components for potential defects before use.

8.4 PRECISION SHACKLE SYSTEM

The VTX A12 AF EB and AF EB MKII Extension Bars include three Array Frame attachment positions (A, B, and C) for increased aiming resolution in single-point applications. In a single-point hang, the shackle position on the Extension Bar determines the overall array angle. Each Extension Bar has 20 shackle positions spaced 51 mm (2 in) apart. The three attachment positions offset the Extension Bar relative to the Array Frame, creating two intermediate positions between each shackle hole and providing 60 effective shackle positions.



The example below shows how the real and “virtual” positions are spaced across the extension bar.



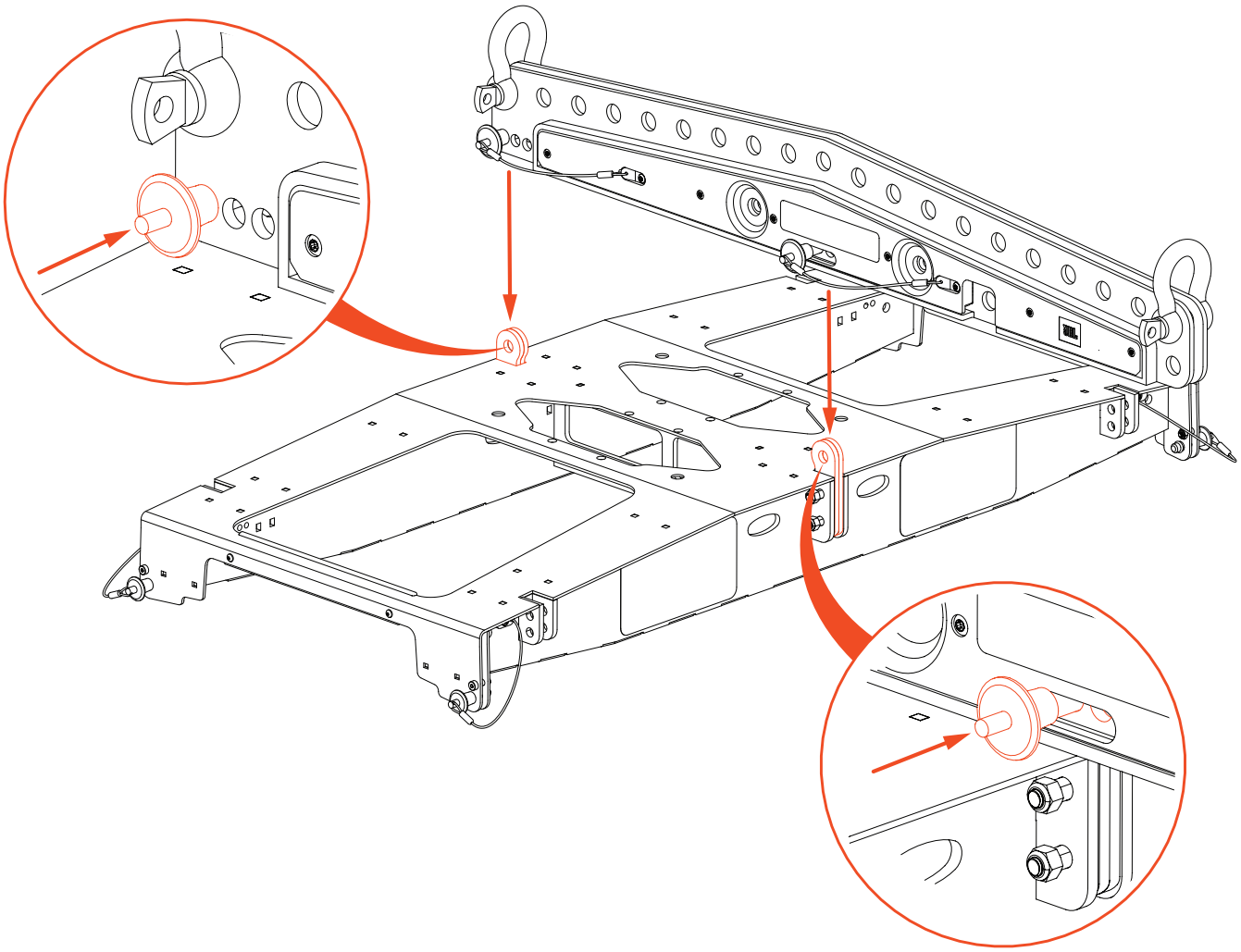
TIP: Refer to Venue Synthesis to determine the best shackle position and attachment combination to achieve the required array angle.

8.5 ATTACHING THE EXTENSION BAR

The Extension Bar includes two quick release pins for connecting to the Array Frame. Both the VTX A12 AF and the VTX A12 AF MKII follow the same steps.

STEPS:

1. Align the Extension Bar with the Array Frame connection tabs and lower it into place.
2. Secure the Extension Bar to the Array Frame using the two included quick release pins. Consult Venue Synthesis for the correct A, B, or C hole position.



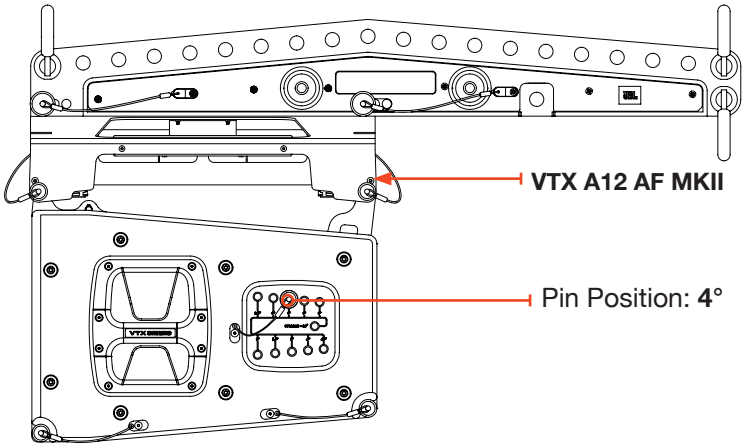
TIP: The VTX A12 AF Extension Bar and the VTX A12 AF MKII Extension Bar are functionally identical and can be used interchangeably.

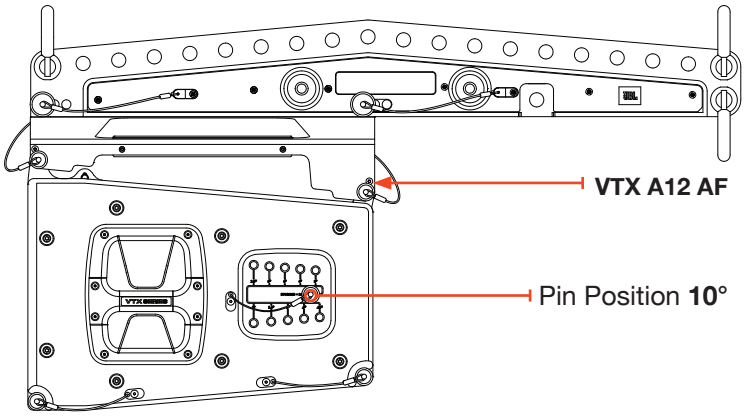
CAUTION: Always use both included quick release pins to attach the Extension Bar to the Array Frame. Inspect both connection points before suspending an array.

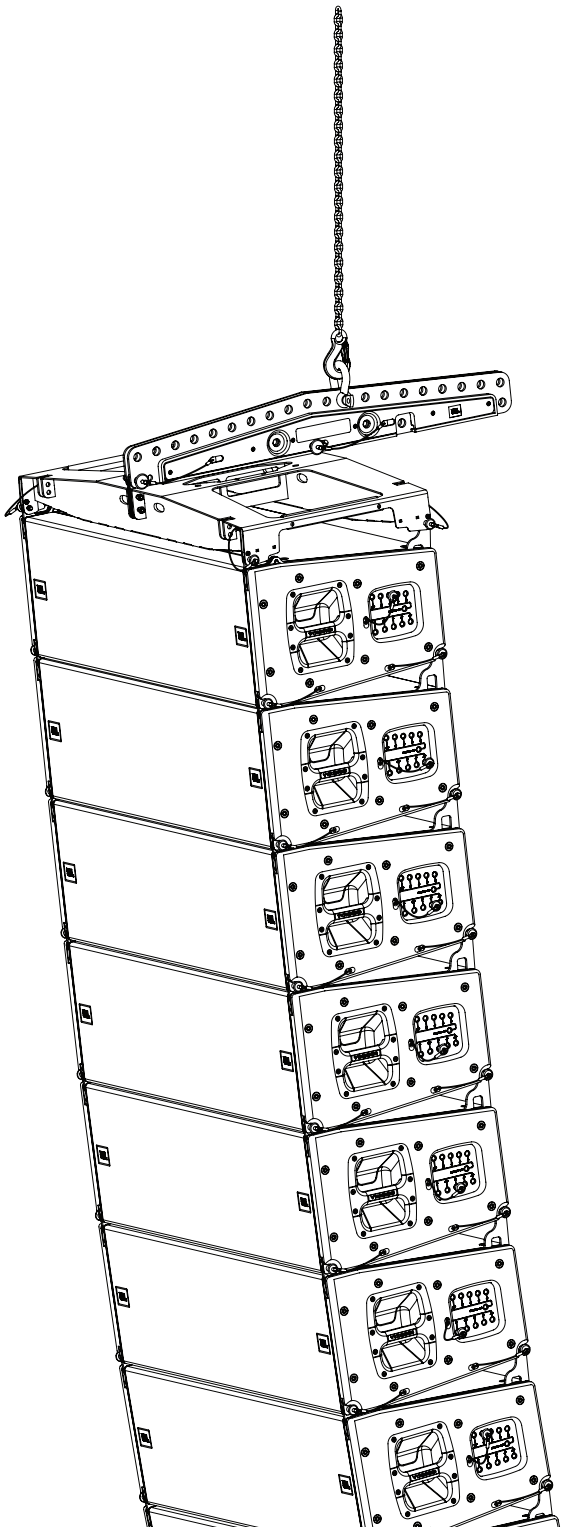
8.6 EXTENSION BAR ORIENTATION

When the Extension Bar is attached to the Array Frame in its normal orientation, it extends towards the rear of the array, permitting the maximum possible downtilt for the array. **The VTX A12 cabinet connected to the array frame needs to be pinned at the angle that matches the Array Frame Version being used.**

NORMAL (REAR)

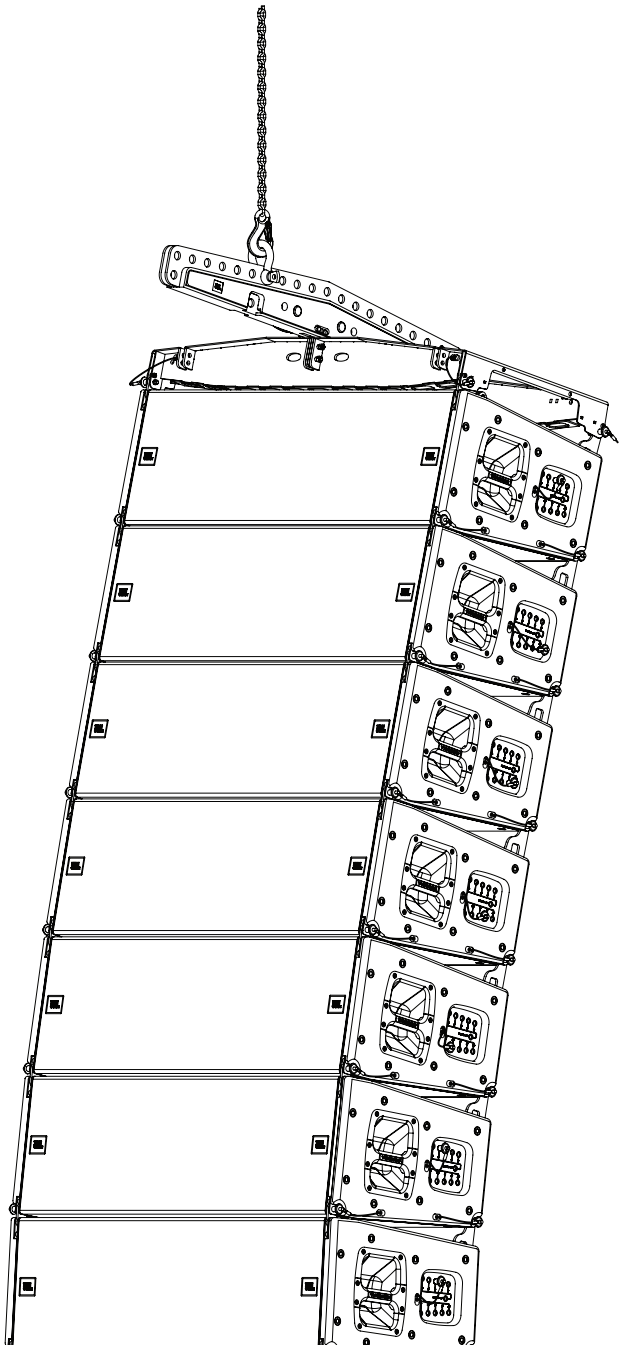




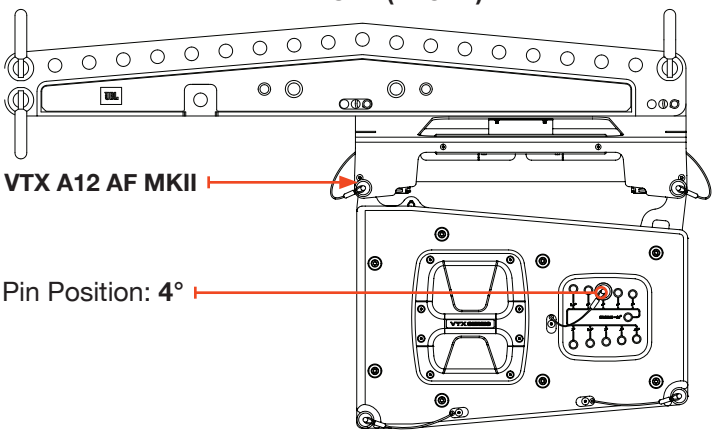


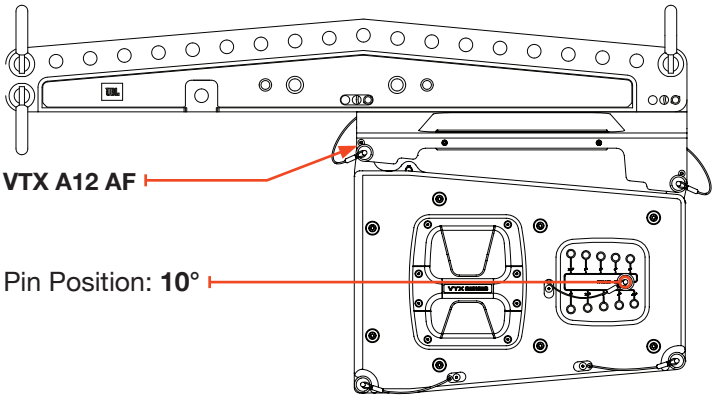
CAUTION: Always refer to Venue Synthesis to determine safe Array Frame and Extension Bar orientations.

The Extension Bar also can be attached in a reversed position, which provides the maximum possible uptilt. This orientation is typically used when the array is trimmed lower than the highest seat of the venue and required to point upwards. **The VTX A12 cabinet connected to the array frame needs to be pinned at the angle that matches the Array Frame Version being used**.

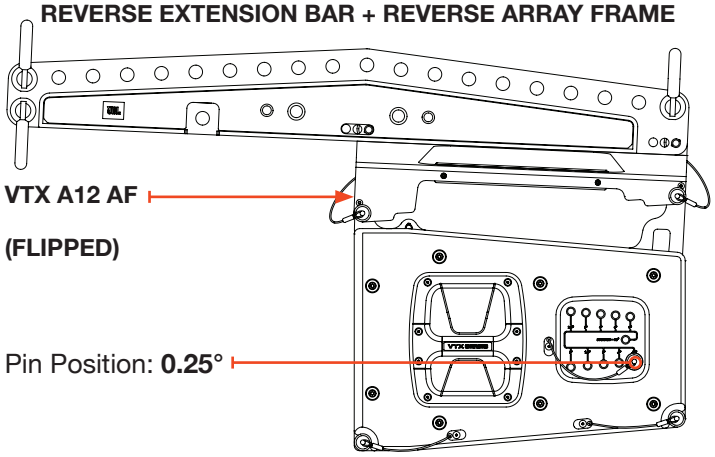


REVERSED (FRONT)





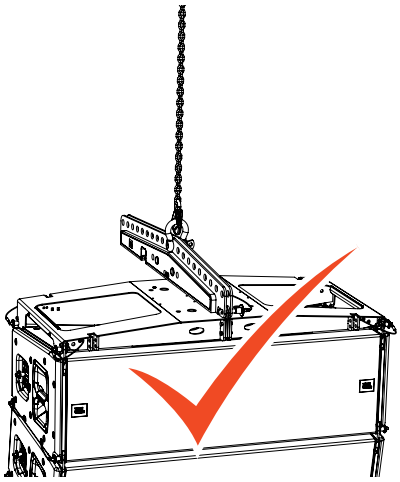
REVERSE EXTENSION BAR + REVERSE ARRAY FRAME



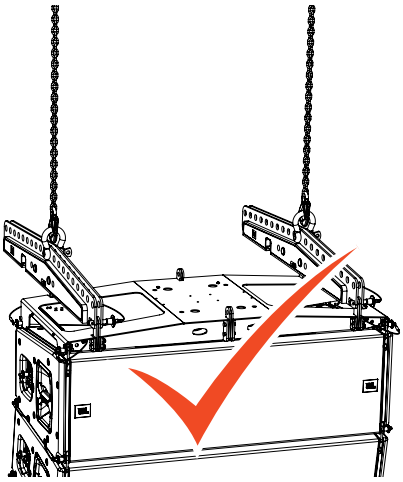
TIP: When both maximum uptilt and front motor weight support are required, reversing both the Extension Bar and the Array Frame is possible. This configuration is typically used for large, heavy arrays that need to be aimed steeply upward. **This setup applies only to the original VTX A12 AF**.

8.7 EXTENSION BAR USE CASES

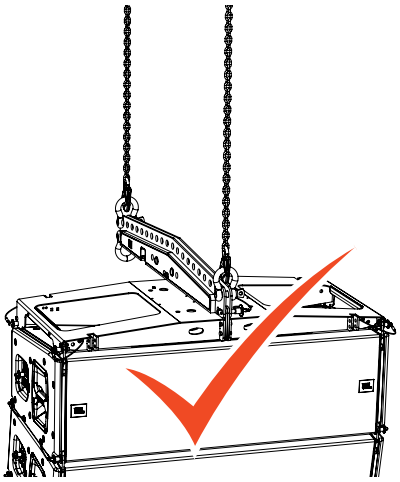
The VTX A12 Array Frame can be deployed in a number of configurations with one or two VTX A12 Extension Bars. It is important to note that only certain configurations are correct and safe for suspension of VTX A12 arrays. The images below illustrate proper configurations for attaching VTX A12 Extension Bars, and where suspension points should be attached to the Extension Bars. Suspension points should never be connected horizontally across two extension bars.



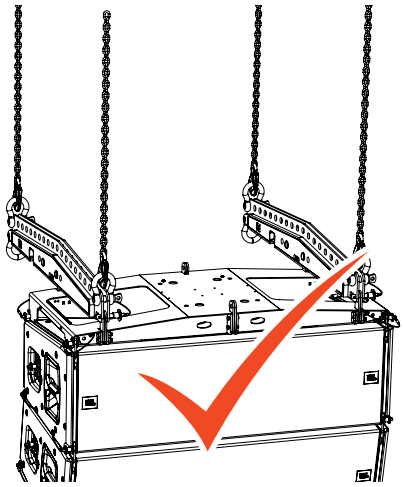
SINGLE-POINT



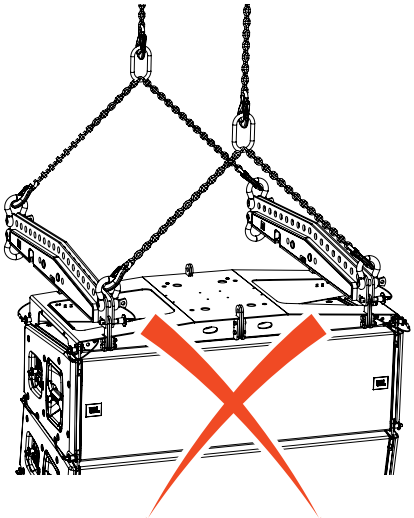
DUAL-POINTS
SIDE-BY-SIDE



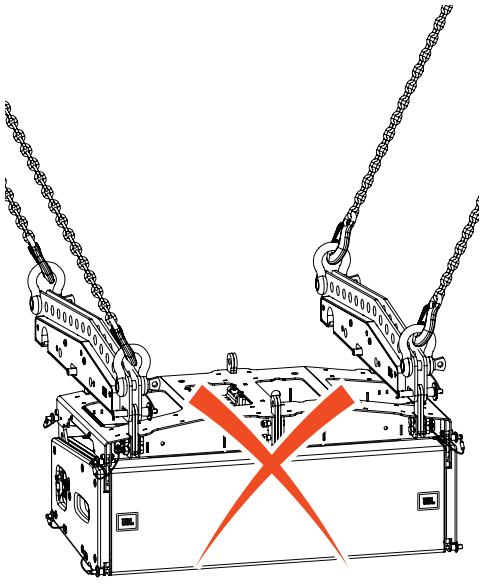
DUAL-POINTS
FRONT-TO-BACK



QUAD-POINTS



DUAL-POINTS USING BRIDALS
FRONT-TO-BACK



DUAL-POINT / QUAD
SIDE-BY-SIDE

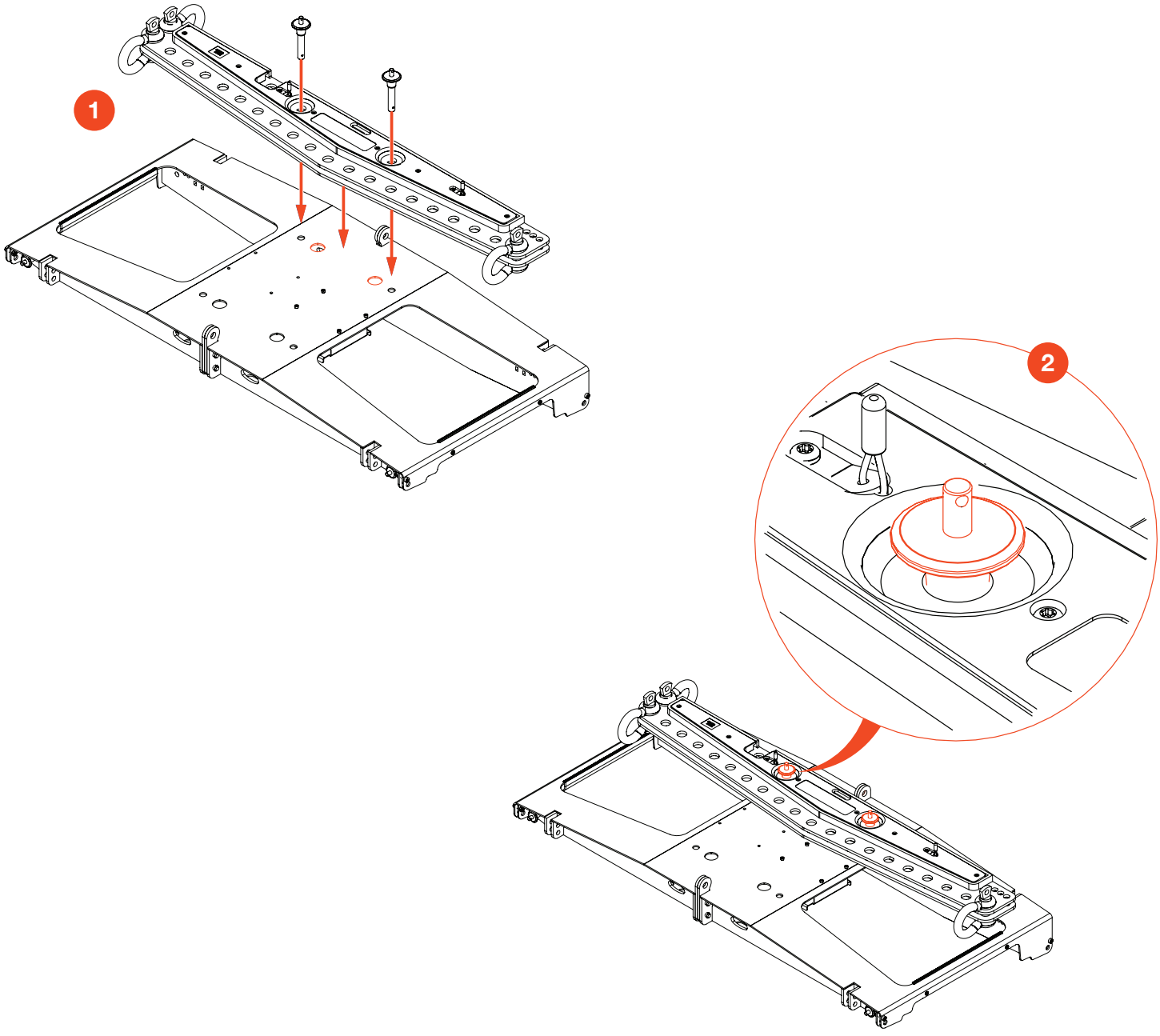
CAUTION: When using multiple suspension points, use Venue Synthesis to determine the suspension-point locations and verify load distribution. For side-by-side suspension, ensure left and right points are equally loaded.

8.8 STORING THE EXTENSION BAR

Each A12 Array Frame accommodates two Extension Bars for transport and storage. The top of the frame includes alignment guides to simplify positioning. Once placed, the Extension Bars are secured using their integrated quick release pins.

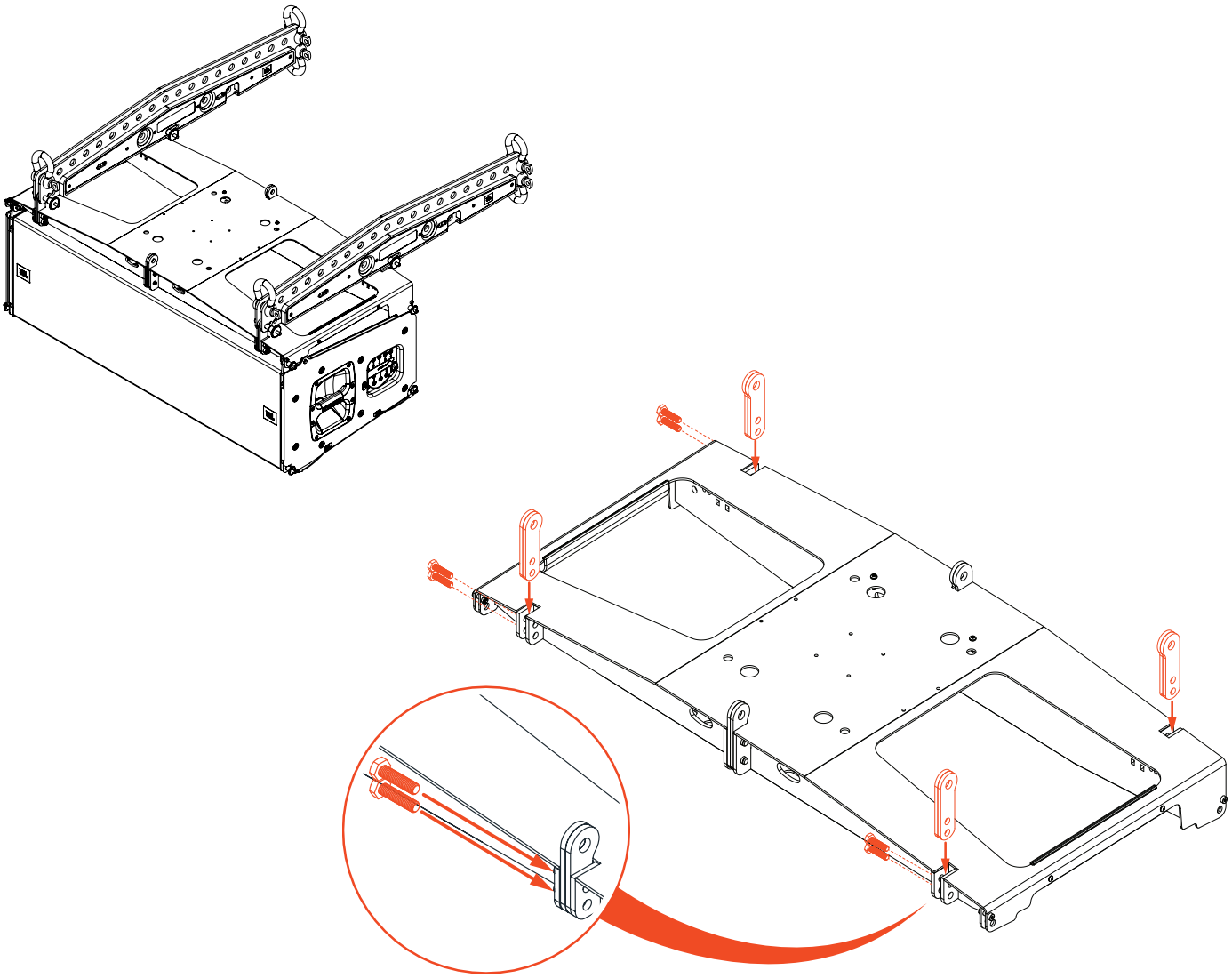
STEPS:

1. Place the Extension Bar across the top of the Array Frame with the label facing up, then slide it into place so the two alignment locators fit into the storage position cutouts.
2. Secure the Extension Bar to the Array Frame using the quick release pins.



8.9 USING DUAL EXTENSION BARS

VTX A12 AF Array Frames can be used with one or two Extension Bars. Each Array Frame includes one Extension Bar; a second VTX A12 AF EB can be purchased for side-by-side suspension applications. The VTX A12 AF EB kit includes an Extension Bar, two quick release pins, and the attachment tabs and hardware required for installation. Install the additional attachment tabs at the outer Extension Bar positions using the supplied bolts and locking nuts.



TOOLS REQUIRED: Attachment of the extension bar connection tabs is a one-time operation. To properly install the tabs, a 1/2-inch wrench should be used for the nut and a 7/16-inch wrench for the bolts. All necessary hardware is included with the VTX A12 AF EB.

TIPS:

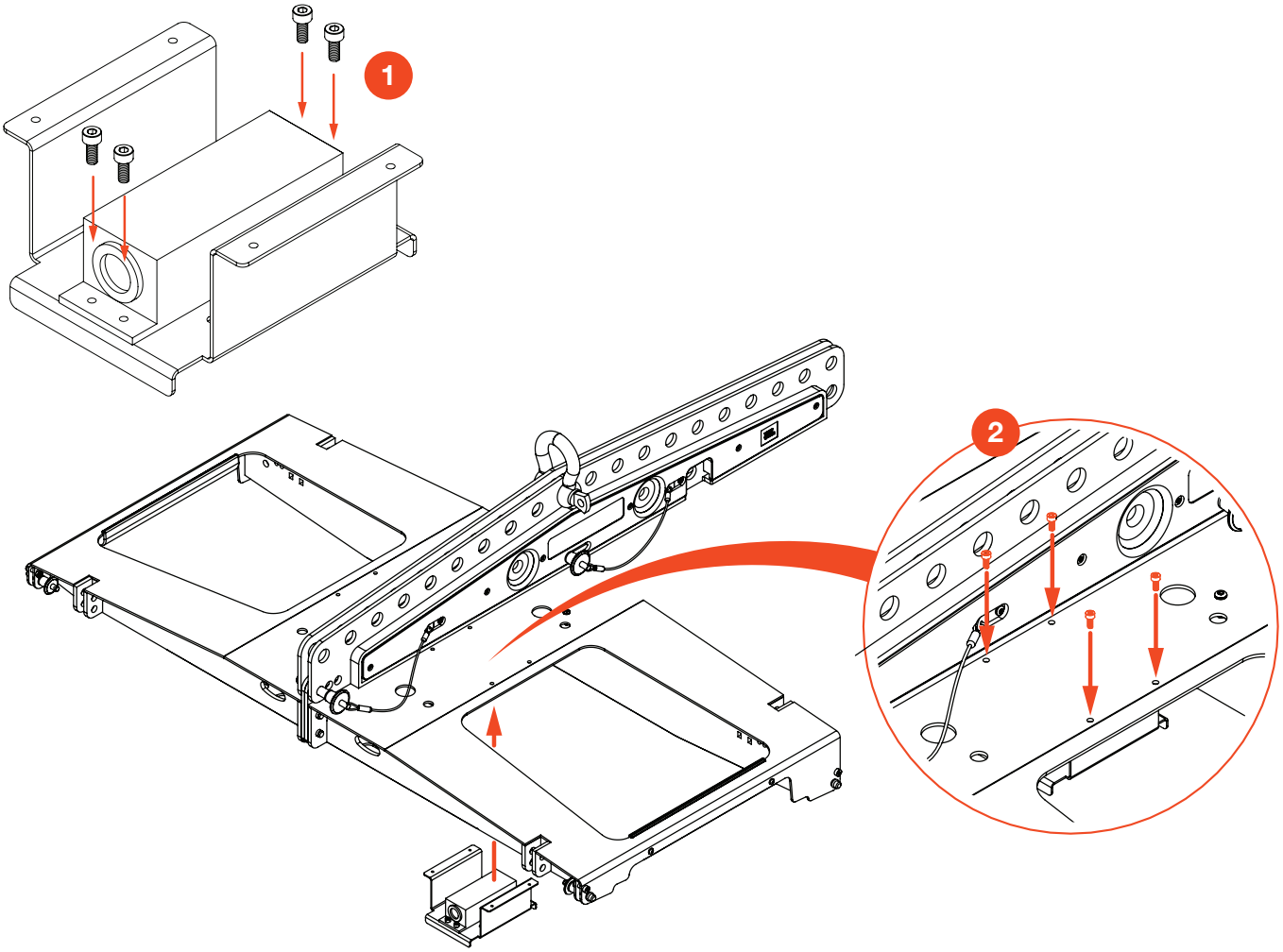
- If the additional Extension Bar is not needed, the side tabs and hardware can be purchased without the Extension Bar. The below part numbers can be used to order the parts.
- (8) Side Tabs #5085088 | (8) Pins #5034413 | (8) 5/16 in. Nylock Nut #835-36010-00

8.10 INSTALLING THE LASER BRACKET

A laser inclinometer can be installed onto the VTX A12 Array Frames using the included mounting bracket. The bracket is designed to work with the JBL VTX LZ laser unit, TEQSAS LAP-TEQ laser inclinometer, or RECLINE laser inclinometer. The Array Frames have front and back exit holes to allow the laser light to shine through.

STEPS:

1. Use the included screws to secure the laser unit onto the mounting bracket. Be sure to center the laser unit in the bracket.
2. Use the included fasteners to secure the laser bracket onto the Array Frame. The Array Frame's orientation determines whether the bracket should be installed facing forward or to the rear.



TOOLS REQUIRED: A **Phillips #2** screwdriver is needed to attach the laser bracket. All necessary hardware is included with the VTX A12 AF and A12 AF MKII.

TIPS:

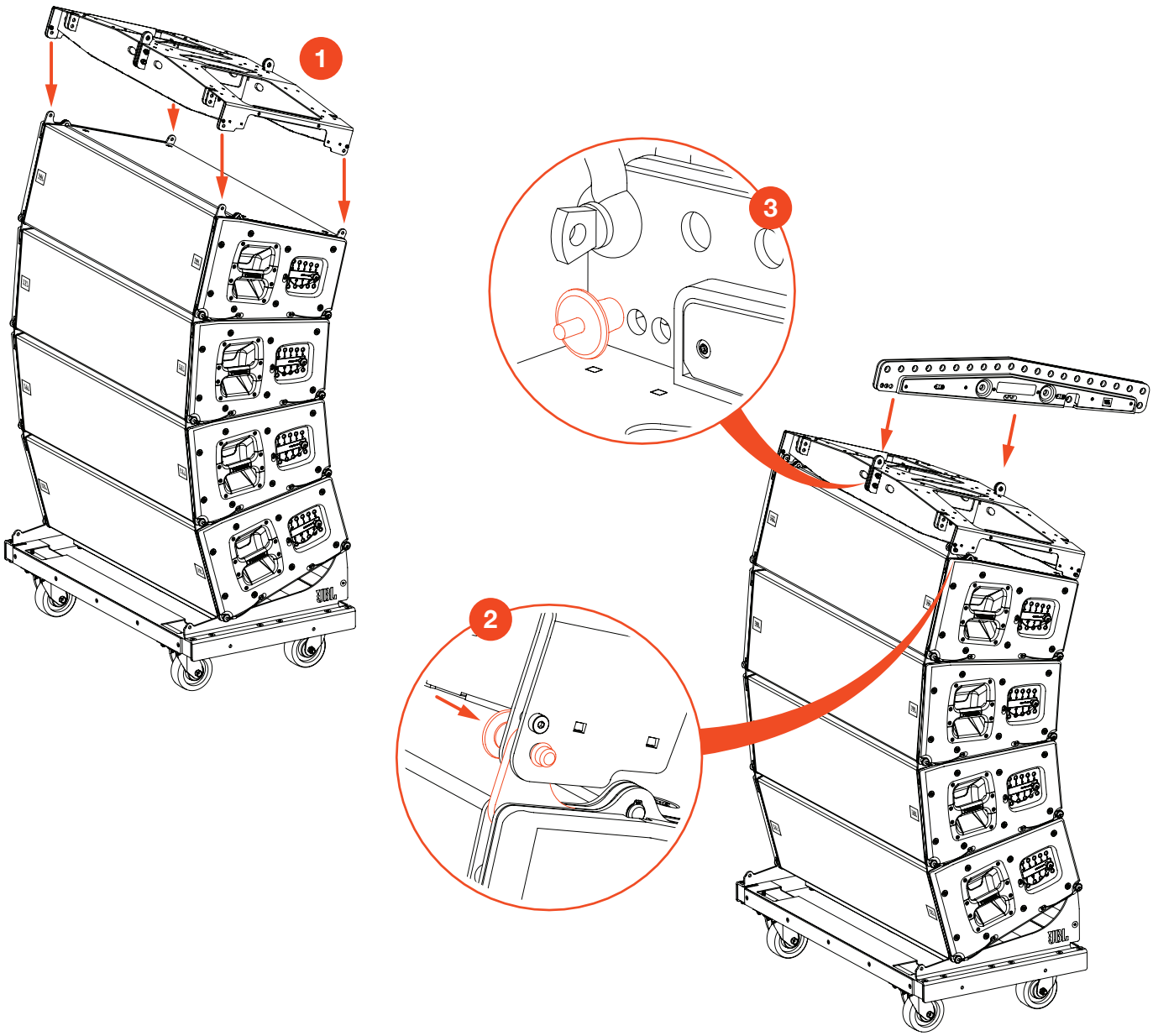
- Additional laser brackets can be purchased separately.
- Make sure to select the appropriate forward/backward orientation for the laser bracket.

8.11 ATTACHING THE ARRAY FRAME

Follow the steps below to attach a VTX A12 AF Array Frame to a VTX A12 cabinet. Before attaching the Array Frame, remove the Extension Bar to make the frame easier to lift onto the top A12 cabinet.

STEPS:

1. Set the top A12 cabinet to the correct angle for the Array Frame being used. Orient the Array Frame correctly, lift it onto the top cabinet, and rest it on the four QRP attachment points.
2. Remove the four quick release pins from their storage positions and insert them from inside the Array Frame to secure it to the cabinet.
3. Attach the Extension Bar in the orientation and A, B, or C position specified by Venue Synthesis. Secure it to the Array Frame using both large-gauge quick release pins.



9 - DEPLOYING A12 SYSTEMS

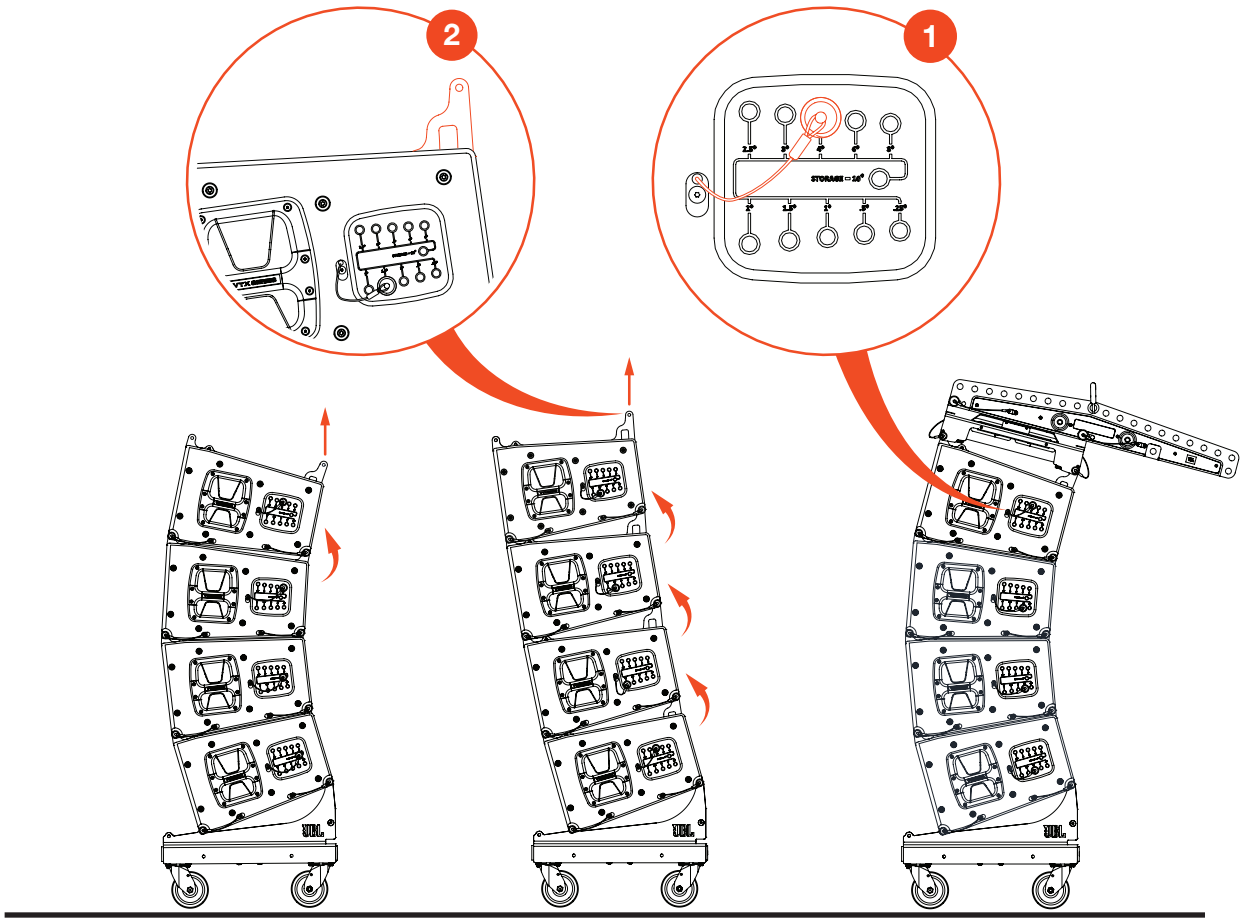
Suspending a flown VTX A12 array is a straightforward process for trained technicians. Follow all steps in this section carefully. Failure to follow these instructions may result in equipment damage or a hazardous condition.

9.1 PRESELECT THE ANGLES

Completing angle selection for all cabinets at one time allows operators to focus on the task and reduces the risk of incorrect angles during deployment. This section assumes an Array Frame has already been mounted on the first stack of cabinets as defined in **Section 8.11 - Attaching the Array Frame.**

STEPS:

1. Using the quick release pins (QRPs) on the Angle Selection Panels, set the desired cabinet-to-cabinet splay angle for each cabinet. For a 10° angle, leave the QRP in the STORAGE position.
2. Preload the rigging to make connecting stacks easier by lifting the top A12 enclosure by the rear handle and extending the top rigging arms until fully engaged. The stack attached to the Array Frame does not need to be preloaded.

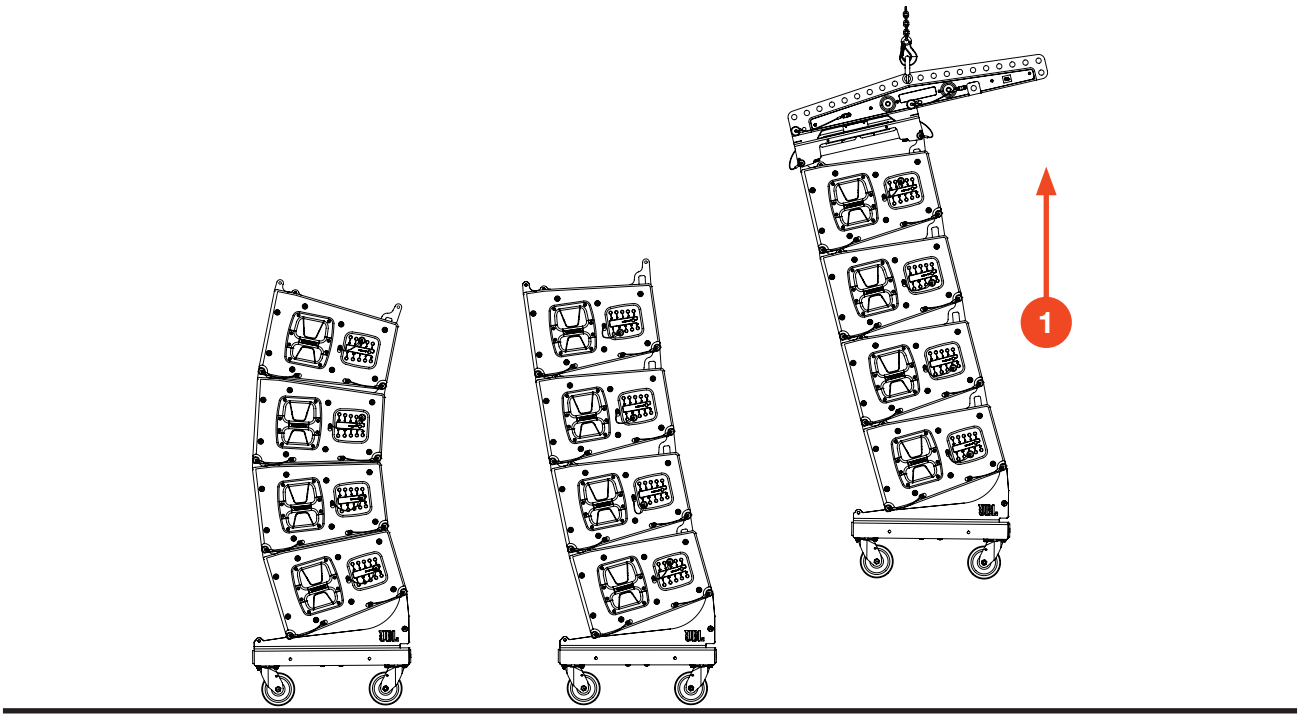


CAUTION: If all A12 enclosures in a stack are set to narrow angles (0.25°–3°), do not fully preload the rigging, as this may create a tipping hazard. Preload the enclosures only enough to make connecting to the flown array easier.

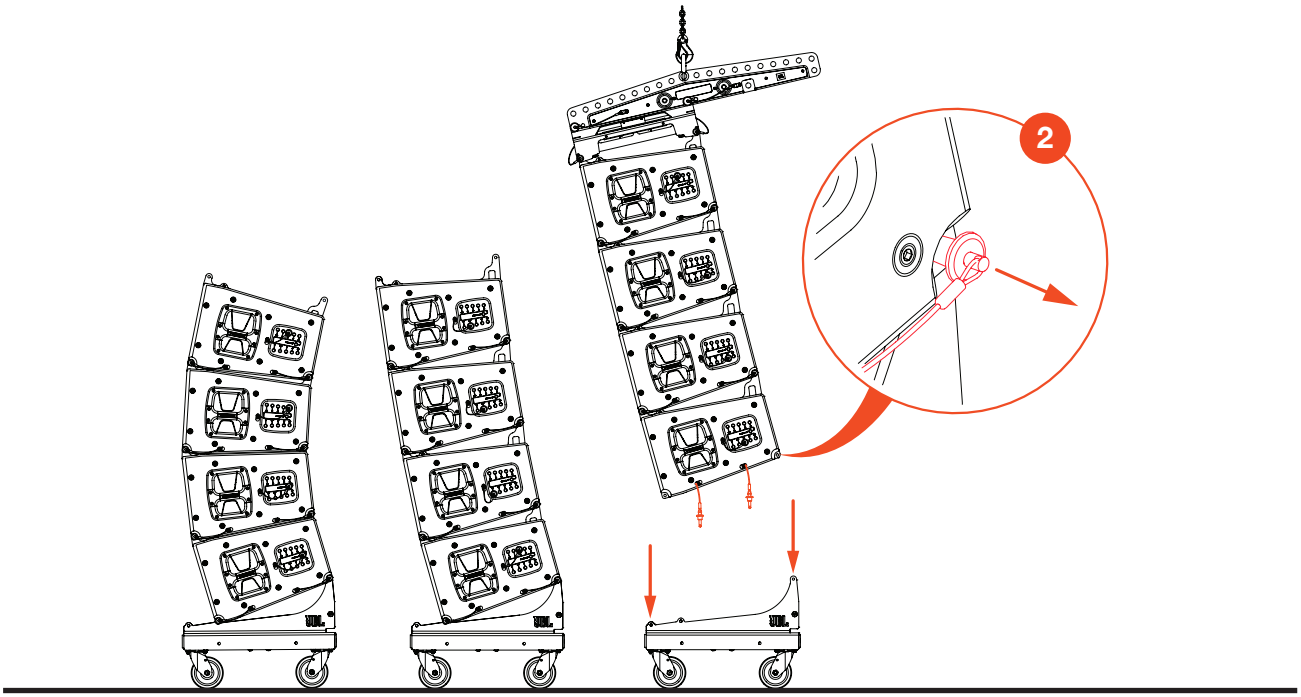
9.2 SUSPEND THE FIRST STACK

STEPS:

1. Confirm all red Locking Levers are closed, then use the hoist to lift the array. As the array is raised, each cabinet expands and locks at its selected splay angle.



2. With the array just above the ground, remove the Vertical Transporter (VT) by removing the front QRPs, followed by the rear QRPs.

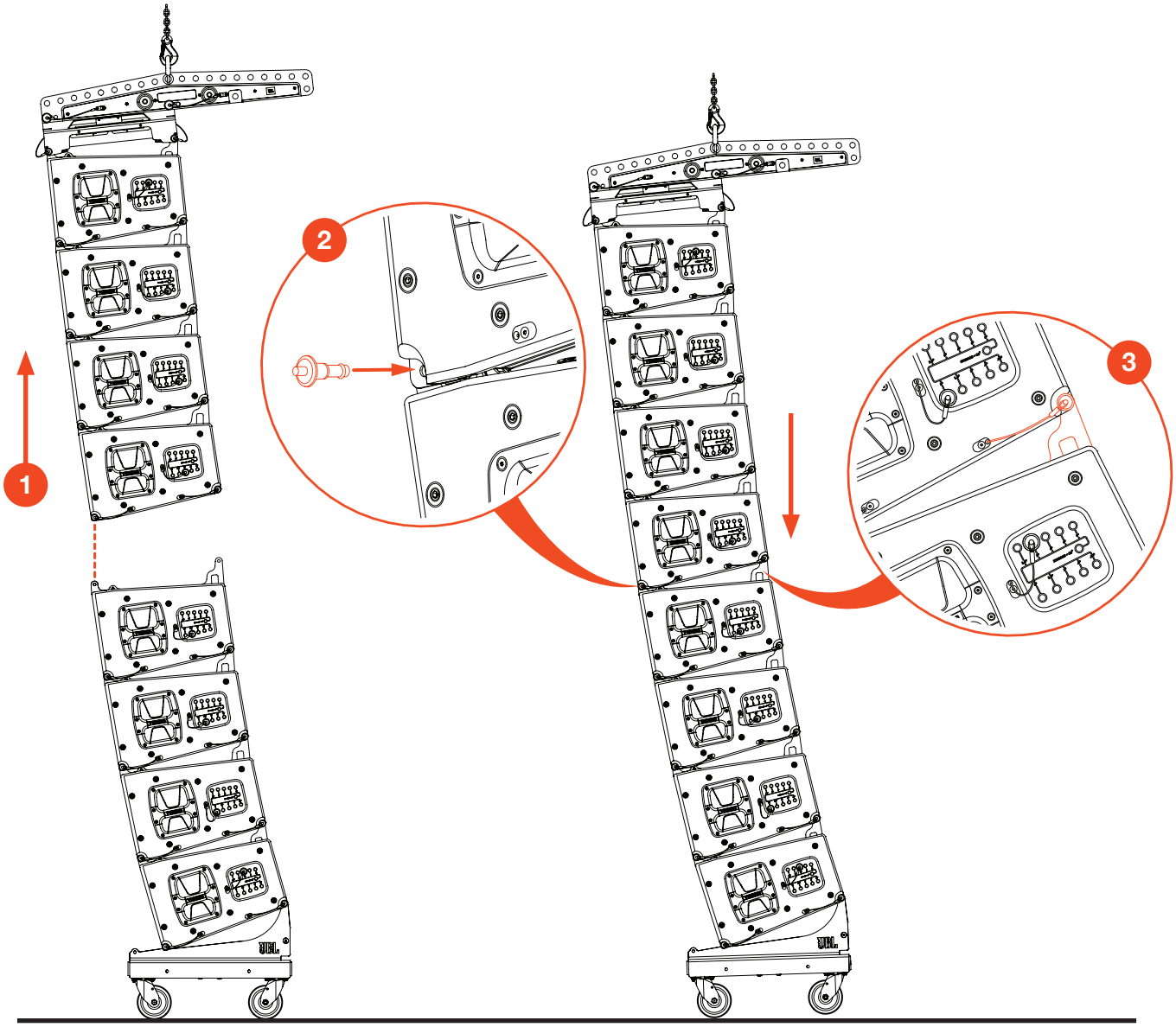


9.3 ATTACHING STRAIGHT (UPPER) SECTIONS OF AN ARRAY

The upper portion of a line array is typically straighter, while the lower portion has greater curvature. Follow the instructions below when connecting an additional stack where the rear points are no greater than 4 inches (10 cm) apart.

STEPS:

1. Raise the suspended VTX A12 cluster and align the next stack below it.
2. Carefully lower the suspended cluster until the front attachment points engage, then insert the two front quick release pins.
3. Continue lowering the array until the rear attachment points align, then insert the two rear quick release pins.



CAUTION:

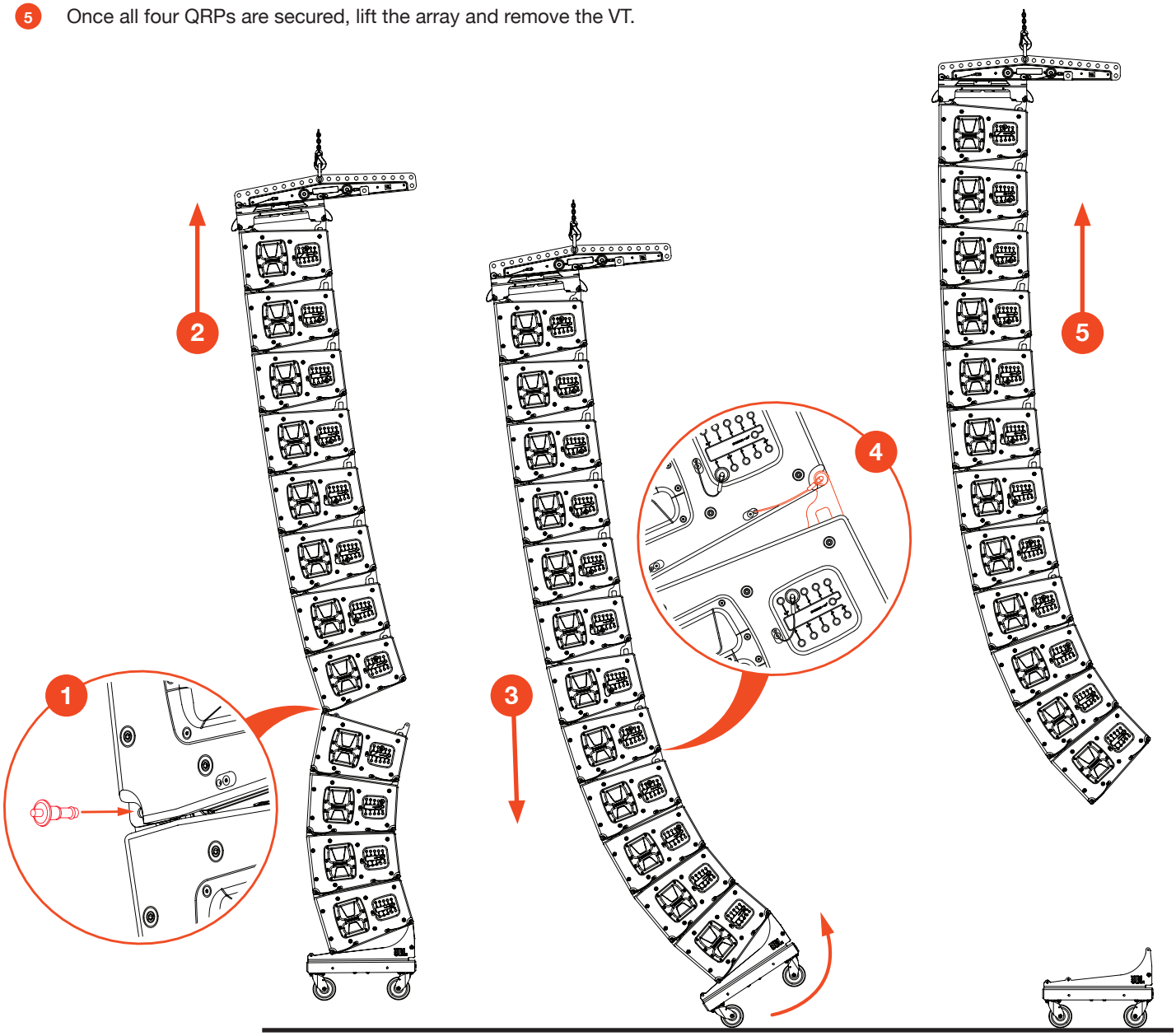
- **Always check that each cabinet is pinned to the same angle on each side of the enclosure.**
- **The top cabinet of the complete array must be set to the angle required for the Array Frame being used.**

9.4 ATTACHING CURVED (LOWER) SECTIONS OF AN ARRAY

The lower portion of a line array is generally more curved than the upper portion. To safely connect a curved section of an array to a straighter section, a slightly modified procedure is used. Follow the procedure below when the distance between the rear points of the two stacks being connected is greater than 4 inches (10 cm).

STEPS:

1. Connect the front QRPs as described for a straight array.
2. Lift the array until the lower cluster is suspended by the front connection points. Be aware that the lower cluster may swing forward as it lifts.
3. Using the handlebar at the rear of the VT, pull the lower cluster toward the rear of the array while lowering the array until the front wheels of the VT touch the ground.
4. Continue lowering the array until the rear attachment points engage, then insert the two rear QRPs.
5. Once all four QRPs are secured, lift the array and remove the VT.

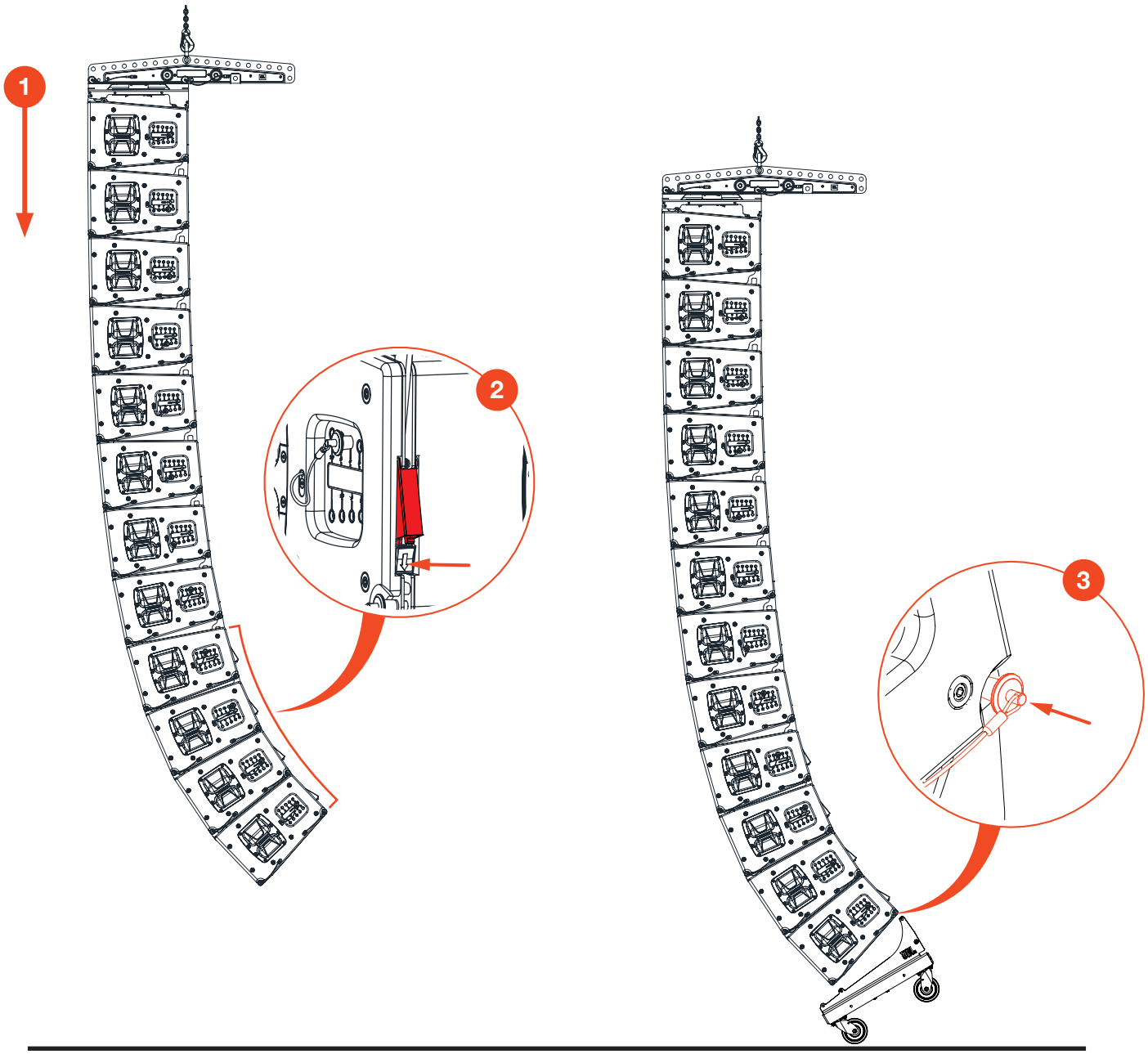


10 - DISASSEMBLING AN A12 ARRAY

10.1 RELEASE THE ANGLE LOCKS AND ATTACH THE VT

STEPS:

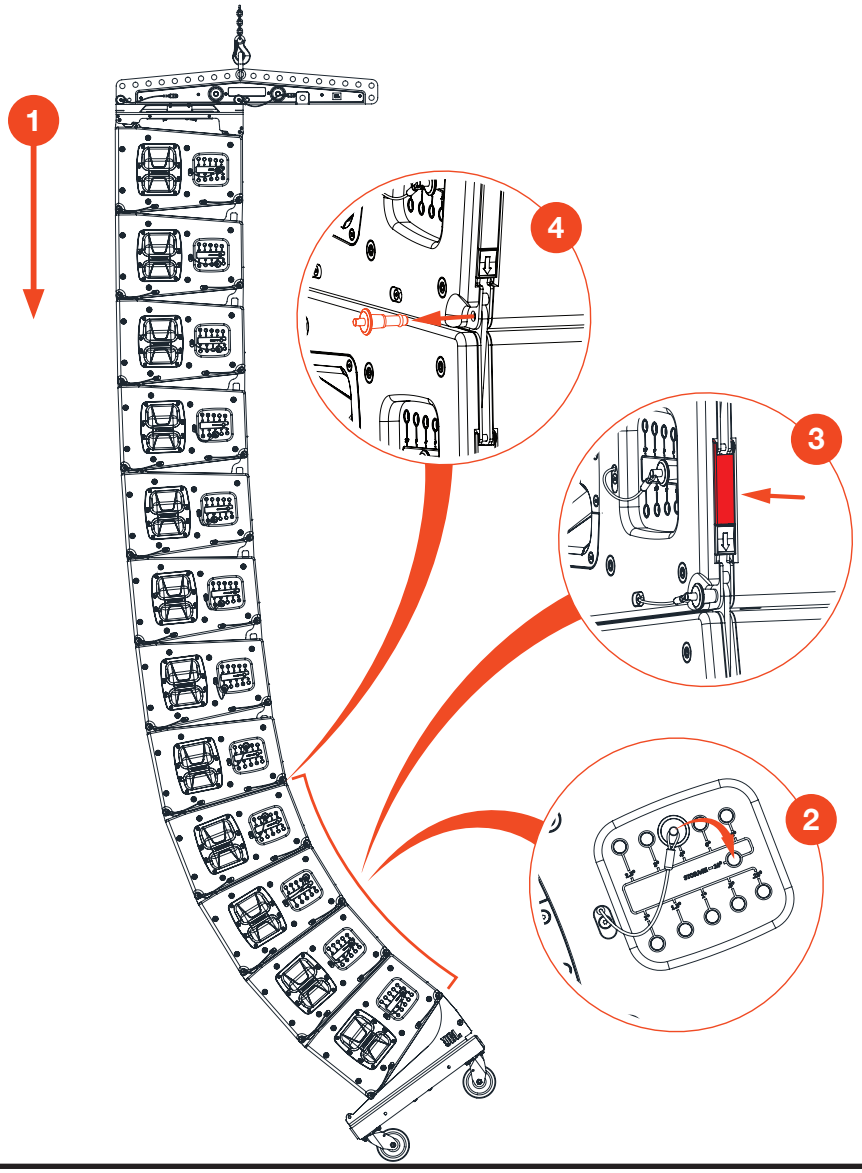
1. Safely lower the entire array to a working height.
2. Press the Release Buttons to open the Angle Locks on the lower **four** cabinets. This allows the cabinets to collapse back to the 10° position when lowered.
3. Lift the VT by the rear handle and secure the two rear attachment points with QRPs. Then lift the front of the VT and secure the two front attachment points with QRPs.



10.2 CLOSE THE ANGLE LOCKS AND MOVE PINS TO STORAGE

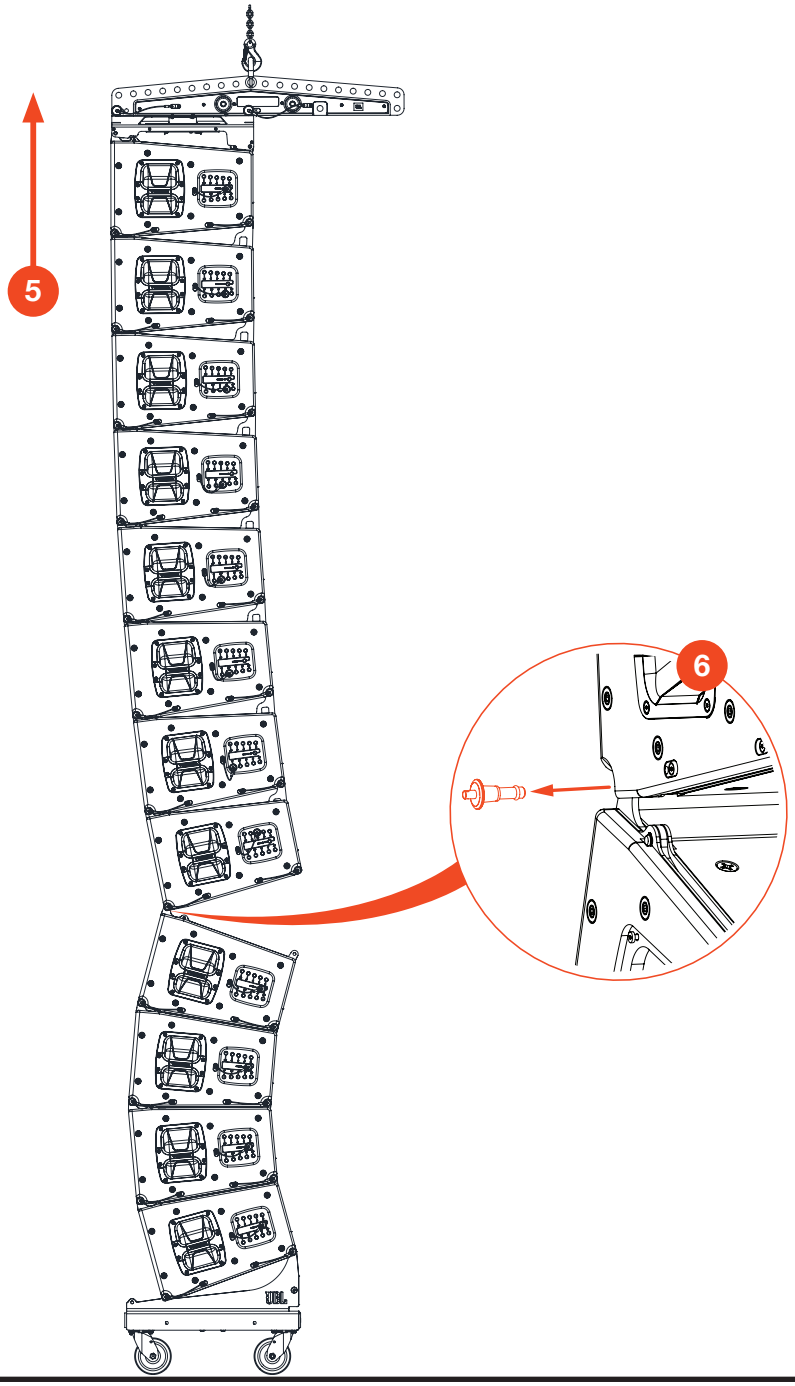
STEPS:

1. Lower the array until the front wheels of the VT touch the ground. Continue lowering the array until the gap between the **fourth** and **fifth** cabinets from the bottom is closed. Be aware that the VT will roll backward as the array is lowered
2. Set the Angle Selection QRPs on the bottom **four** A12 cabinets to the 10° STORAGE position.
3. Close all Locking Levers by pressing each lever until it clicks into place and sits flush with the rear of the cabinet.
4. Remove the two rear QRPs between the **fourth** and **fifth** cabinets from the bottom. The QRPs should move freely with the weight of the array supported by the front wheels of the VT.



STEPS (CONTINUED):

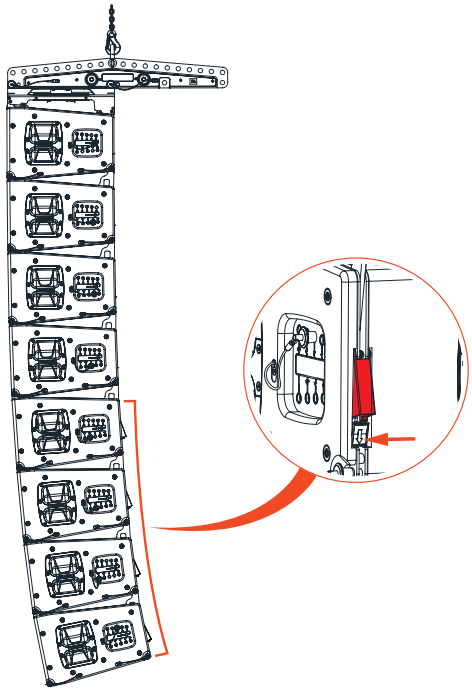
5. Raise the array, allowing the four A12 cabinets on the VT to roll forward until the VT rests on all four wheels.
6. Remove the two front QRPs, and separate the suspended array from the stack on the VT.

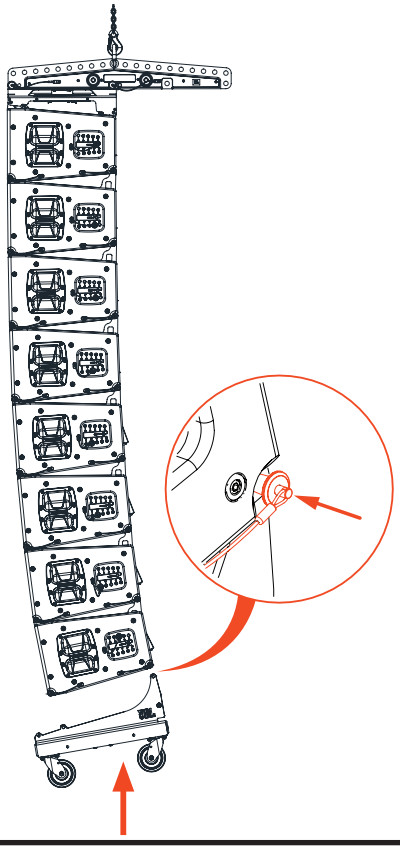


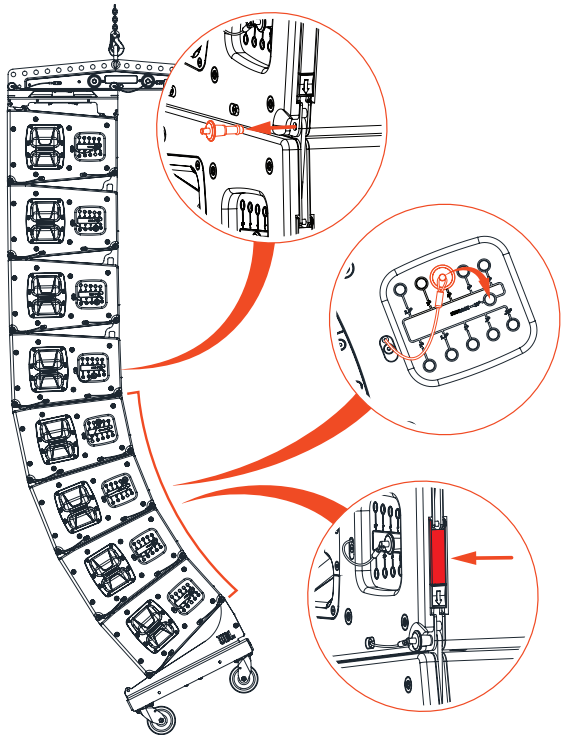
TIP: If there is any resistance when removing the front QRPs, lower the array another increment to release any remaining tension. The VT is designed to support the weight of the array above, making the pins easier to remove.

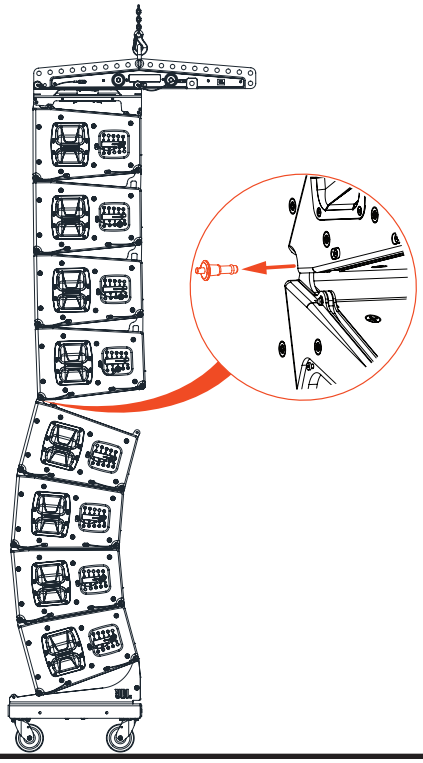
10.3 REPEAT STEPS TO DISCONNECT THE NEXT FOUR CABINETS

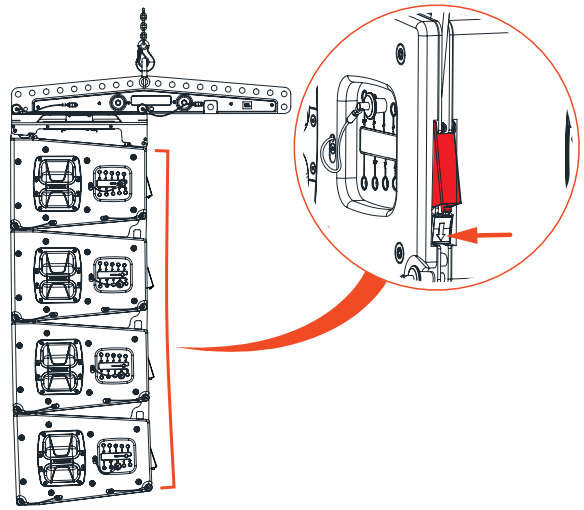
Repeat the previous steps to disconnect and store the next four cabinets of the array.

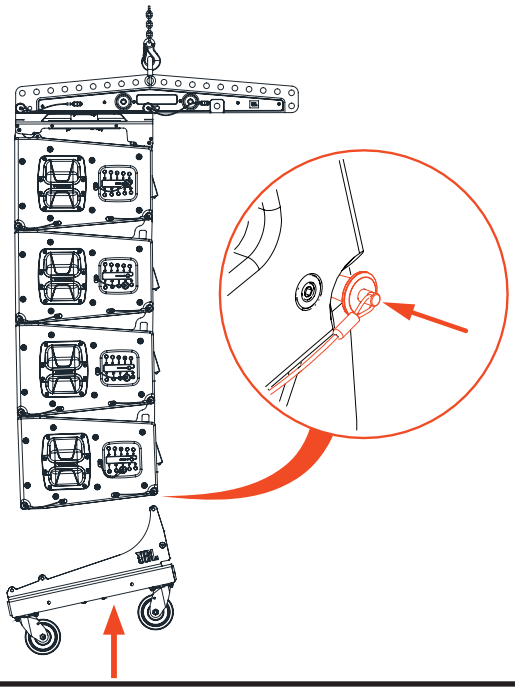


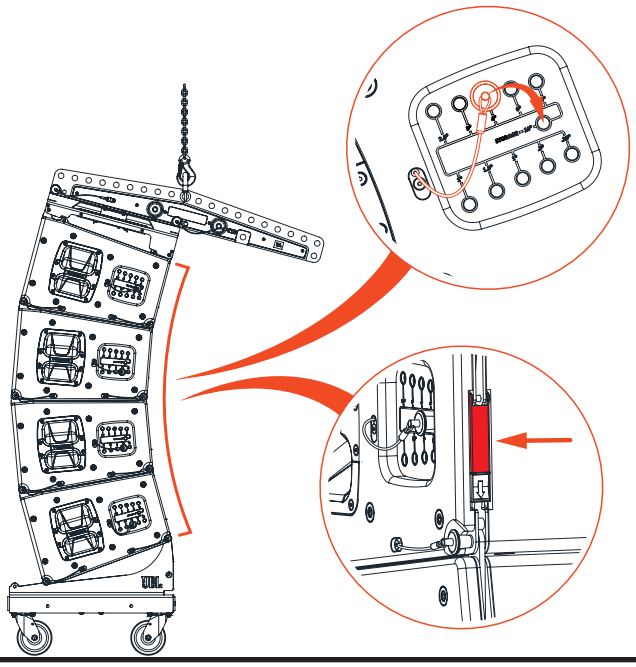


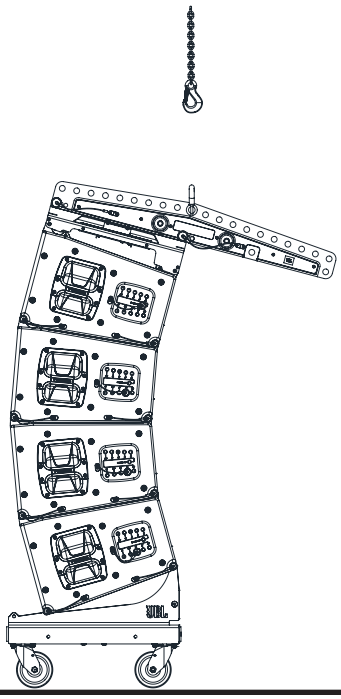












11 - MIXED ARRAYS WITH A12 AND B35

VTX A12 cabinets are mechanically and acoustically compatible with VTX B35 subwoofers, allowing A12 cabinets to be suspended below B35 subwoofers in mixed arrays using compatible A12 suspension accessories.

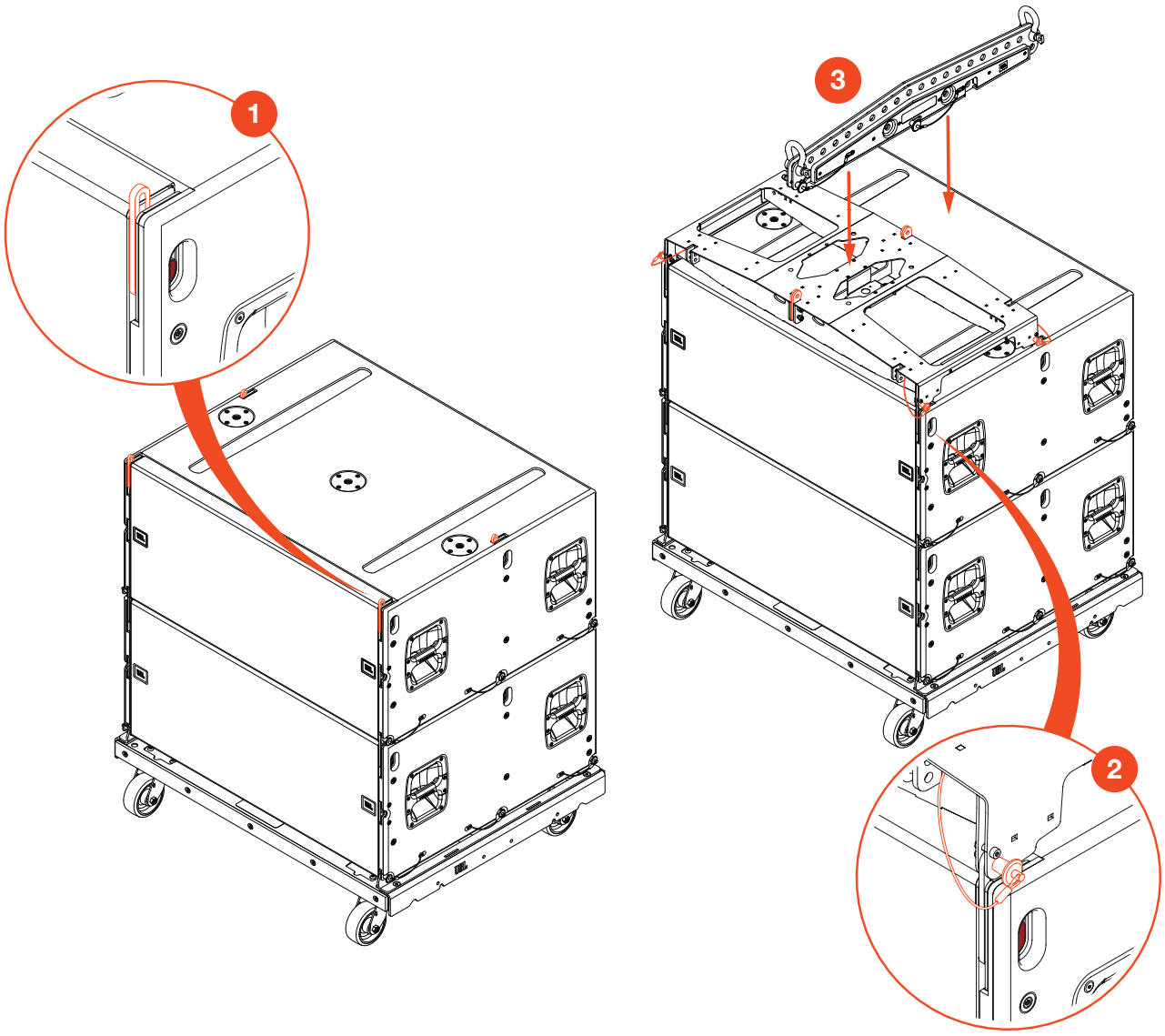
This section of the manual covers creating mixed VTX A12/B35 arrays. For more detailed information on the B35 rigging system and how to create standalone B35 suspended arrays, refer to the **VTX B35 Rigging Manual**.

11.1 ATTACHING THE ARRAY FRAME TO THE B35

The first step in this process is attaching the VTX A12 AF MKII Array Frame to the top VTX B35 cabinet. **Only the VTX A12 AF MKII can be used to suspend mixed arrays with B35 cabinets.** The original VTX A12 AF cannot be used given its asymmetrical geometry.

STEPS:

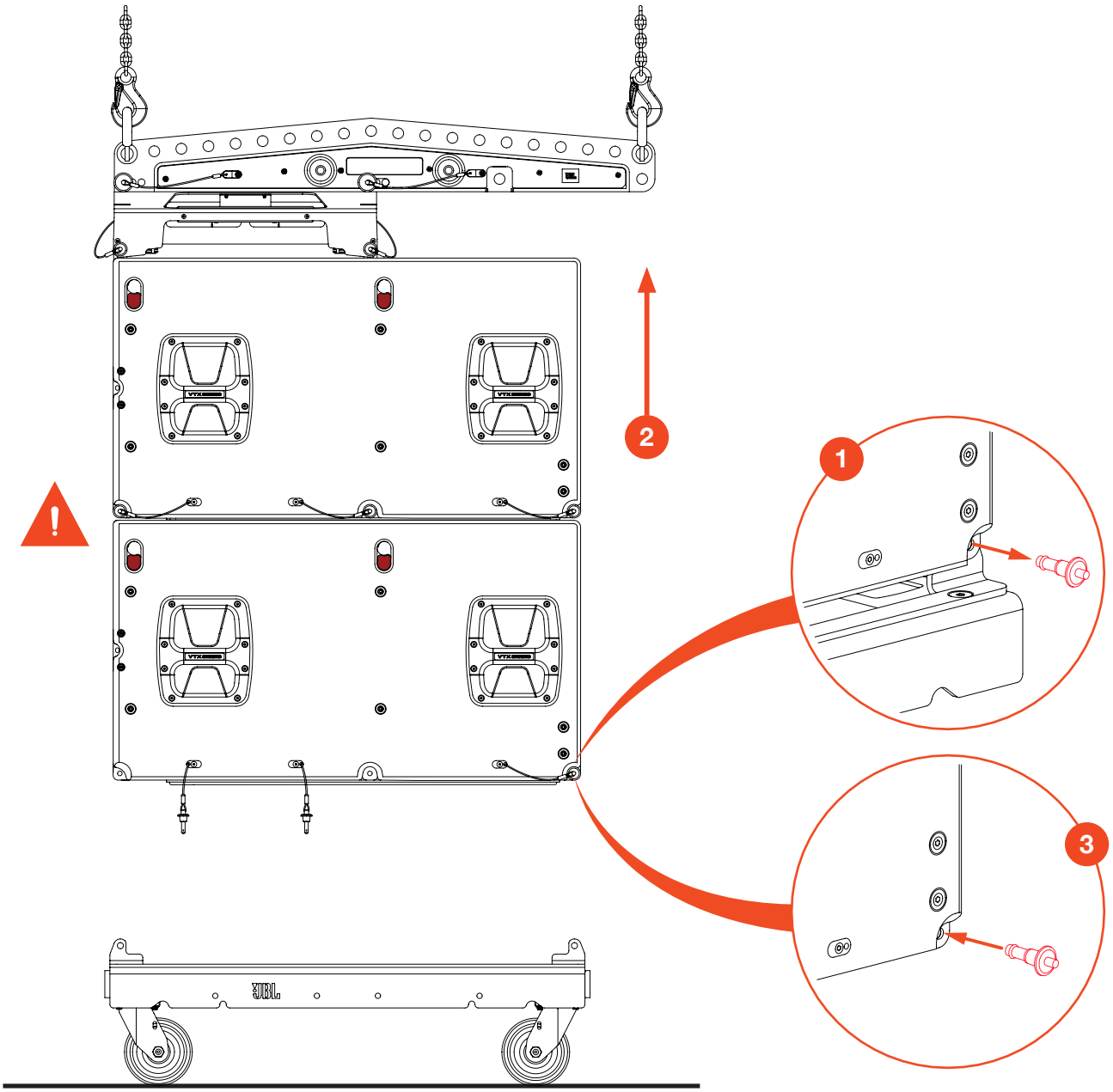
1. Extend the four B35 rigging bars by releasing the recessed triggers located just below the rigging bars.
2. Lower the Array Frame onto the B35 and use the four QRPs to secure it.
3. Once the Array Frame is secured to the top of the cabinet, the Extension Bar can be attached.



11.2 LIFT THE SUBWOOFERS

STEPS CONTINUED:

1. Remove the four corner QRPs securing the B35 stack to the Vertical Transporter.
2. Use the hoist(s) to lift the B35 stack off the VT.
3. Reinsert the two rear QRPs. Leave the front and center QRPs free for attaching the first A12 cabinet.



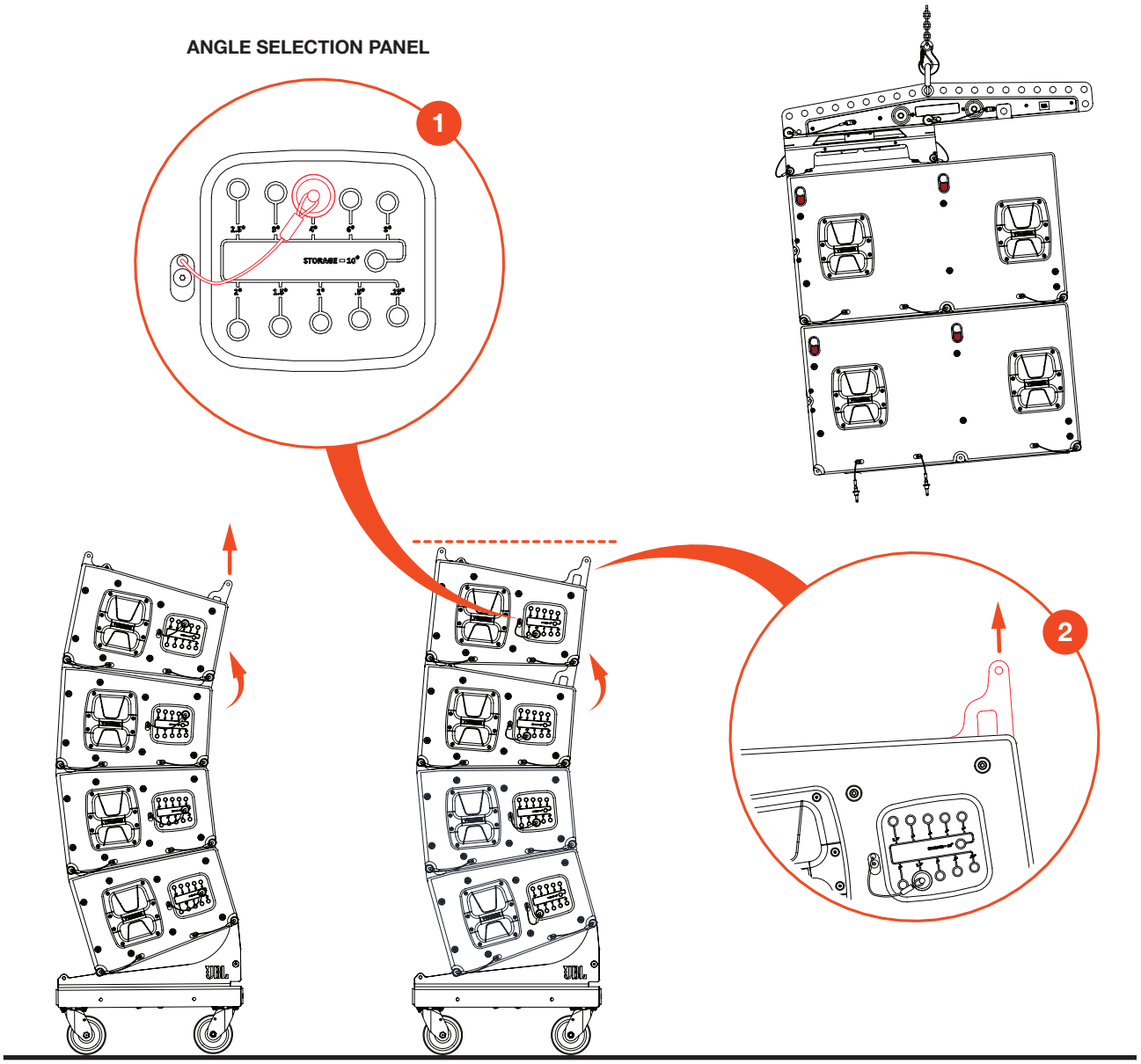
CAUTION: When connecting B35 cabinets together, the front and center Rigging Bars and corresponding Quick Release Pins must be used. A12 cabinets must be attached only to the B35 rigging points corresponding to the Array Frame attachment points.

11.3 ATTACHING A12 TO B35

Once the VT has been disconnected from the flown B35 array, the first stack of A12 cabinets can be attached. The first A12 connected below a B35 must always be set to the 4° position. This keeps the grille of the top A12 perpendicular to the Array Frame. Preloading the A12 rigging makes it safer and easier to connect the rear attachment points to the B35.

STEPS:

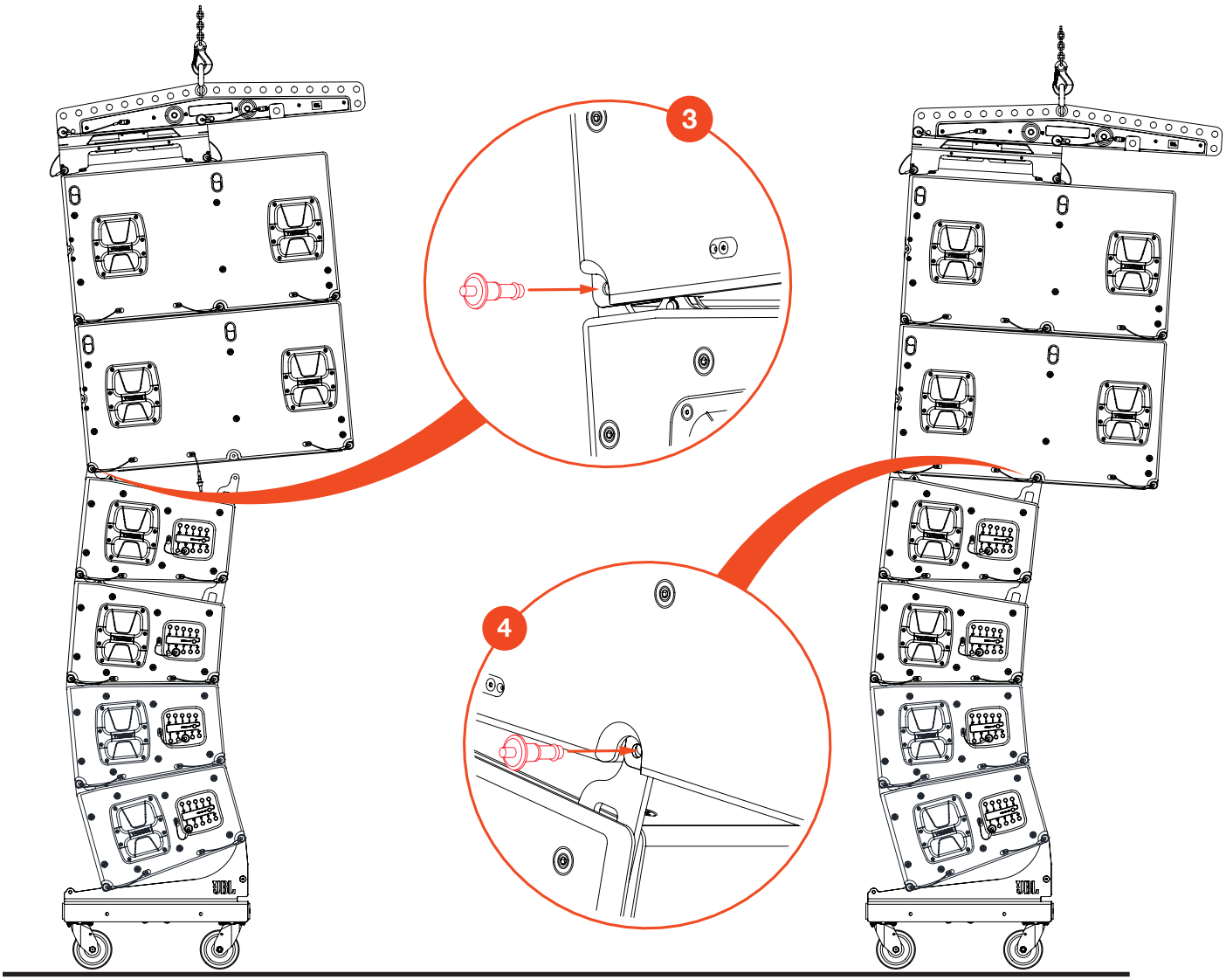
1. Preset the angles of the A12 cabinets. The top A12 in the mixed array should be set to 4°.
2. Pull the top rigging arms up until they fully engage. Then preload the upper A12 cabinets by lifting the rear handle of the top cabinet until the rear attachment points are approximately level with the front attachment points.



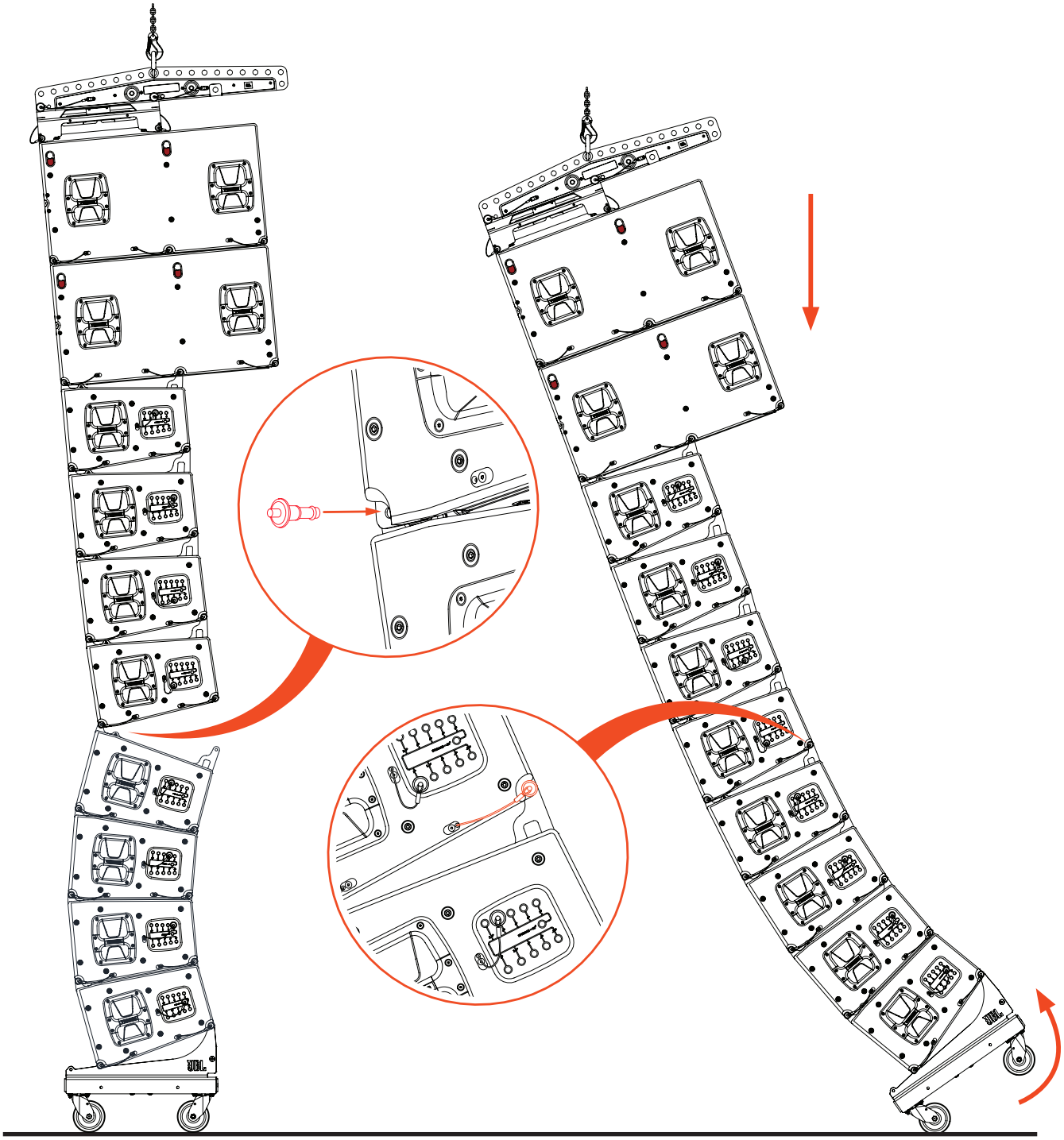
CAUTION: Depending on the angles of the first A12 stack, it may be possible to preload the rigging too far, causing the rear attachment points to contact the B35 before the front points. Preload only enough to bring the rear attachment points closer to the height of the front points, but not above them.

STEPS CONTINUED:

3. Lower the suspended B35 array until the front attachment points contact the A12 front rigging arms. Insert the two front quick release pins to secure the cabinets together.
4. Continue lowering the array until the rear A12 attachment points engage the B35 rigging. Insert the two rear quick release pins to complete the connection.



The remaining A12 cabinets can be added to the array following the steps outlined in **Chapter 9.**

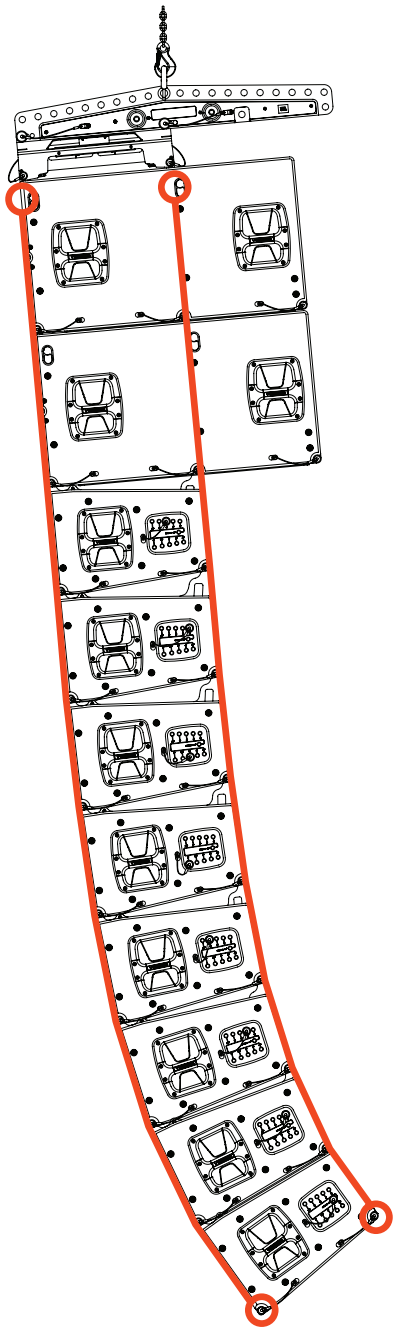


11.4 DE-RIGGING THE MIXED ARRAY

The steps to de-rig a mixed array are the same as for a standalone A12 array. Follow the steps in **Chapter 10 – Disassembling an A12 Array** to safely de-rig the A12 cabinets. Additional information on de-rigging B35 cabinets can be found in the **B35 Rigging Manual.**

11.5 MIXED ARRAY SAFETY NOTE

When building mixed A12/B35 arrays, maintain the same four corresponding attachment points from the Array Frame through each B35 connection and into the A12 array. For additional B35 configurations and safety recommendations, refer to the **B35 Rigging Manual**.

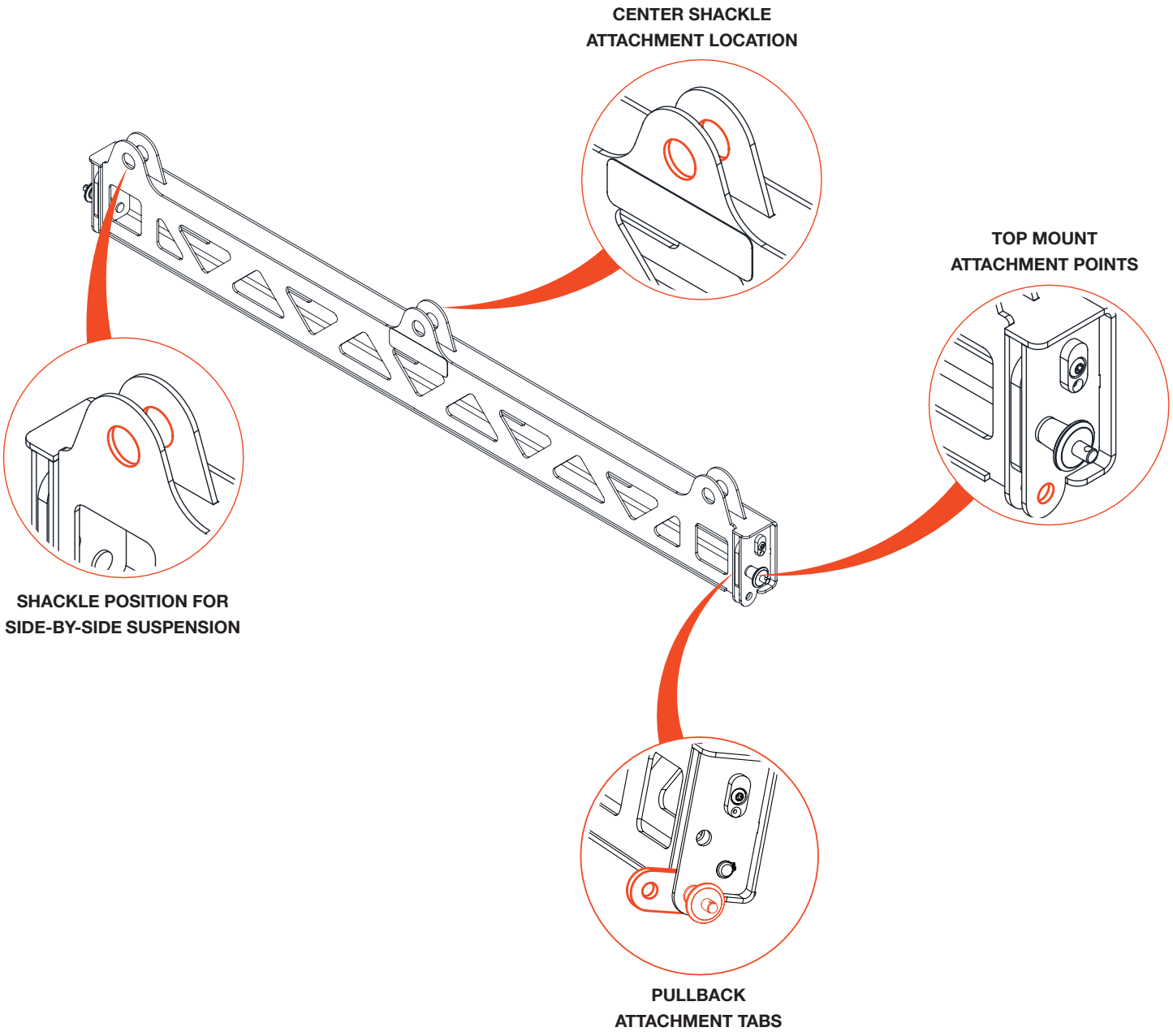


12 - THE VTX A12 SB SUSPENSION BAR

The VTX A12 SB is a lightweight Suspension Bar that can be used as an array frame or pull-back for VTX A12 arrays. When used as a pull-back, the Suspension Bar attaches to the bottom cabinet and connects to a rear suspension point, allowing greater downtilt than is possible with the VTX A12 AF or A12 AF MKII alone. Two Suspension Bars can be used together, one at the top and one at the bottom, for dual-point suspension and additional aiming flexibility.

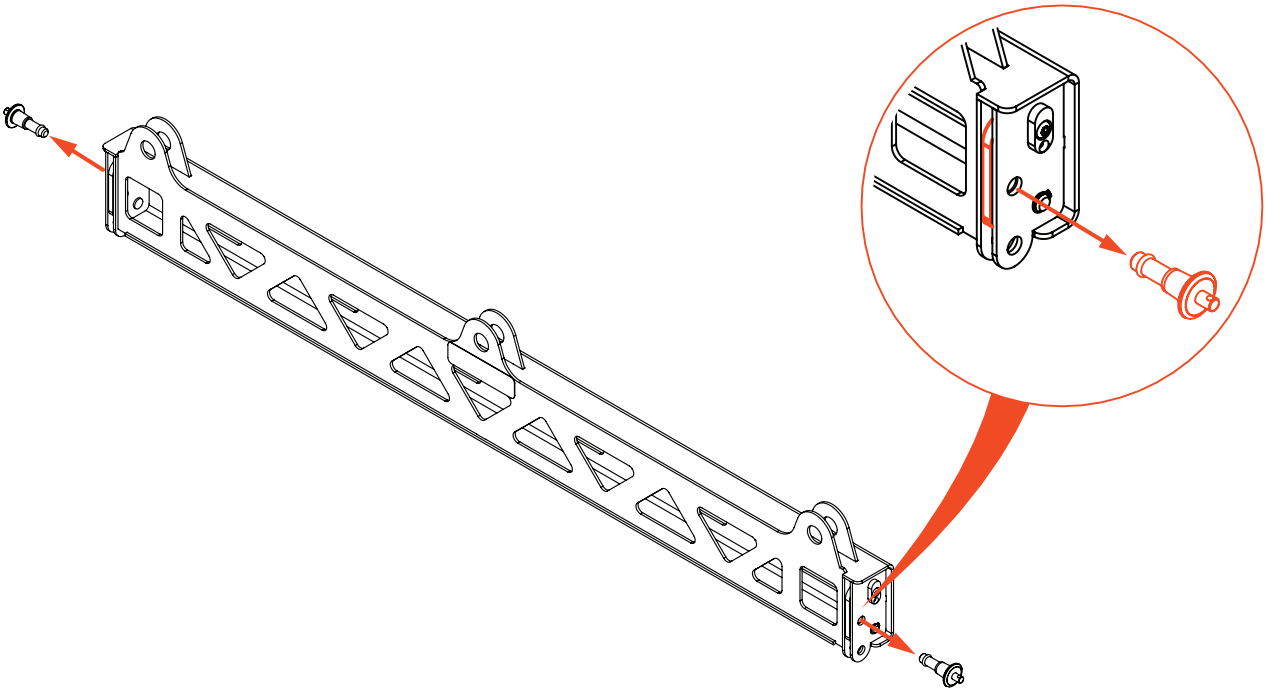
The VTX A12 SB can also be used to suspend VTX B35 arrays. For more information on this use case, refer to the VTX B35 Rigging Manual.

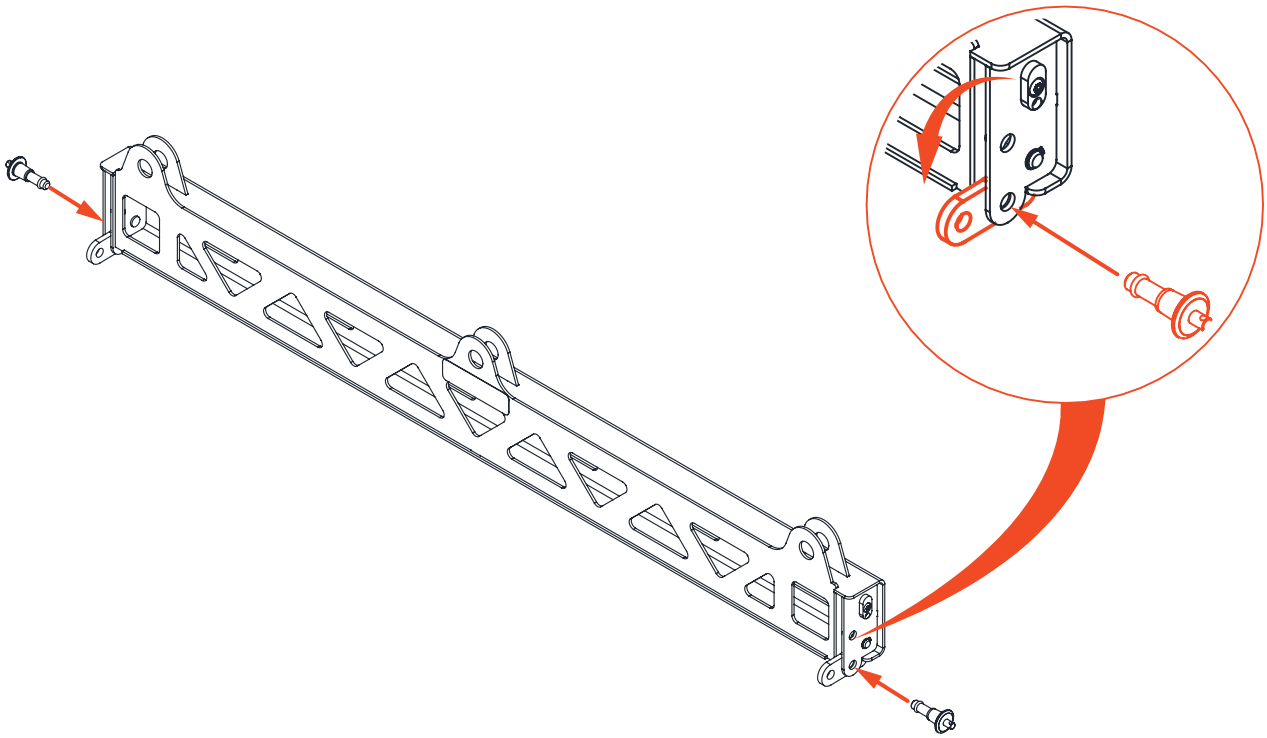
12.1 SUSPENSION BAR OVERVIEW



12.2 SUSPENSION BAR ATTACHMENT TABS

The VTX A12 SB Suspension Bar can connect to the top or bottom of a suspended VTX A12 or B35 array. When connecting the Suspension Bar to the bottom cabinet, remove the QRPs on both sides of the SB to release the attachment tabs from their storage positions. Allow the tabs to swing open, then reinsert the QRPs into the lower hole to lock them in the operating position. Attach the Suspension Bar to the cabinet using the cabinet's quick release pins.



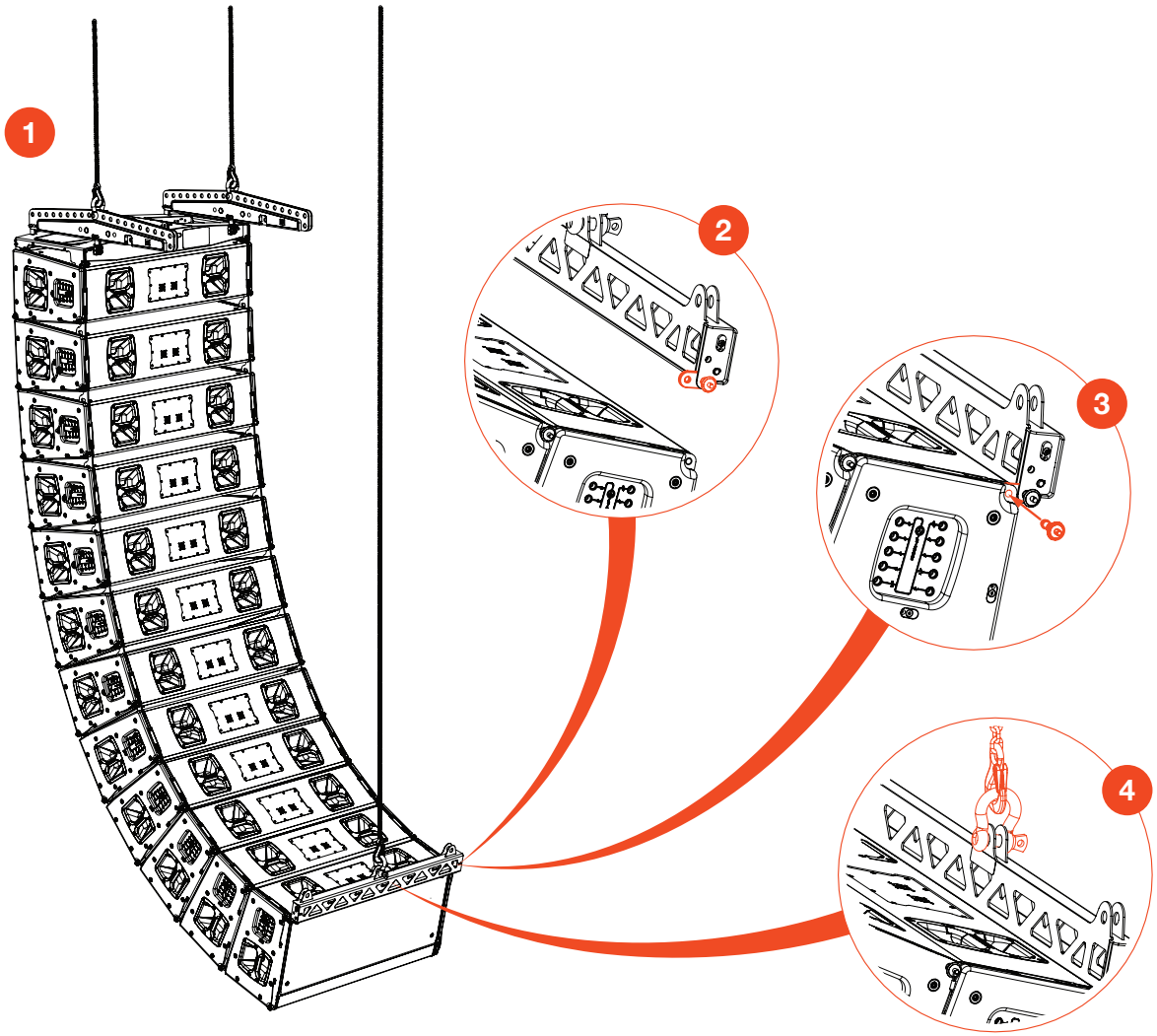


12.3 USING AN A12 SB AS A PULL-BACK

The Suspension Bar can be used as a pull-back attachment at the bottom of an array, to facilitate array configurations requiring a significant amount of downtilt. In this situation, the VTX A12 AF or VTX A12 AF MKII is used at the top of the array for the primary suspension point, with the VTX A12 SB attached to the bottom of the array and lifted by a second, rear hoist. The two hoists are used to achieve the desired array downtilt.

STEPS:

1. Follow the steps in **Chapter 9 - Deploying A12 Systems** to suspend the VTX A12 array from the Array Frame.
2. Extend and lock the Suspension Bar attachment tabs in the operating position.
3. Attach the Suspension Bar to the lowest VTX A12 cabinet using the cabinet's quick release pins.
4. Attach the hoist to the shackle position(s) of the Suspension Bar and lift to the required downtilt.



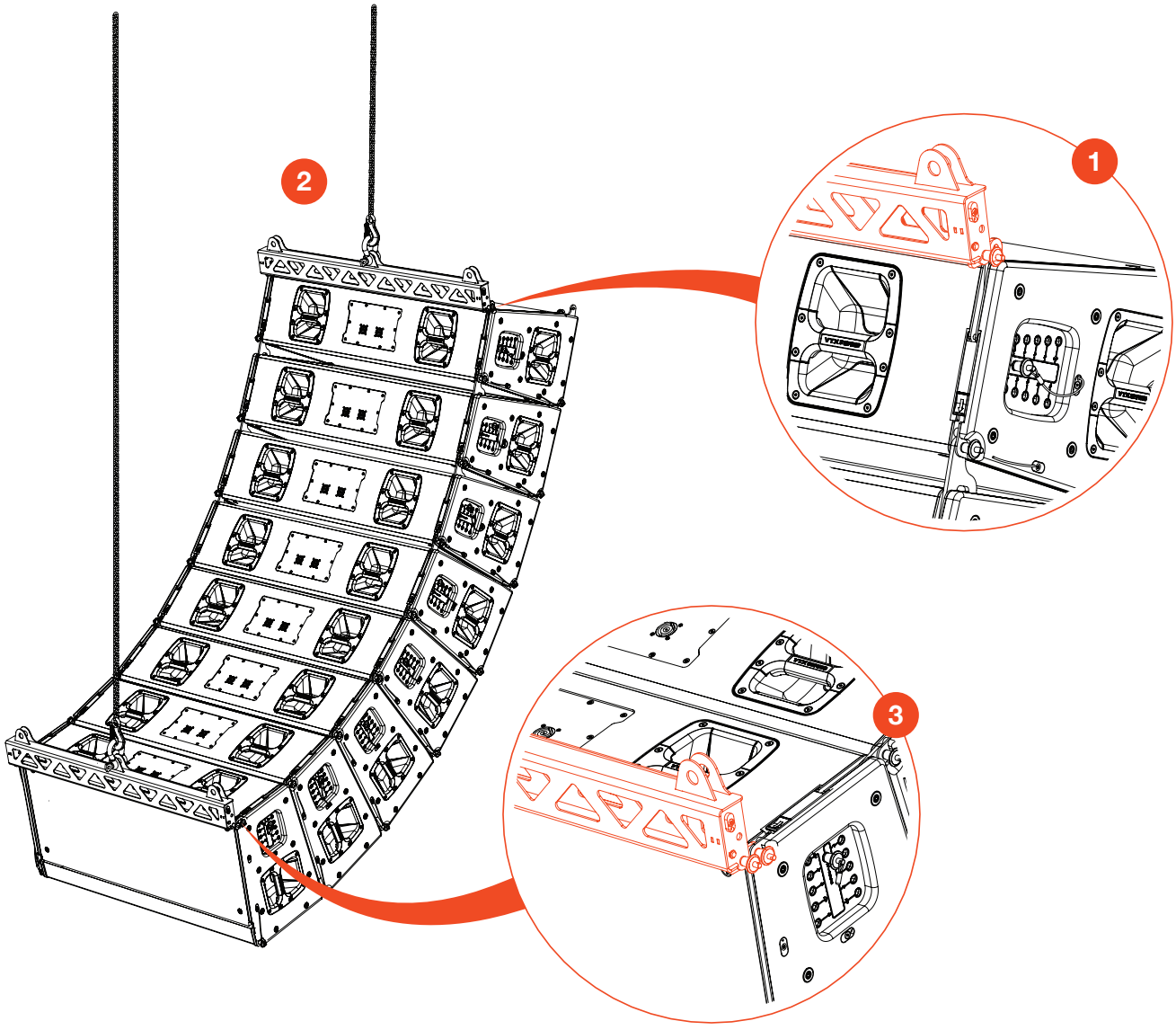
TIP: Venue Synthesis can be used to determine the spacing between the front and rear shackle positions.

12.4 USING TWO A12 SUSPENSION BARS

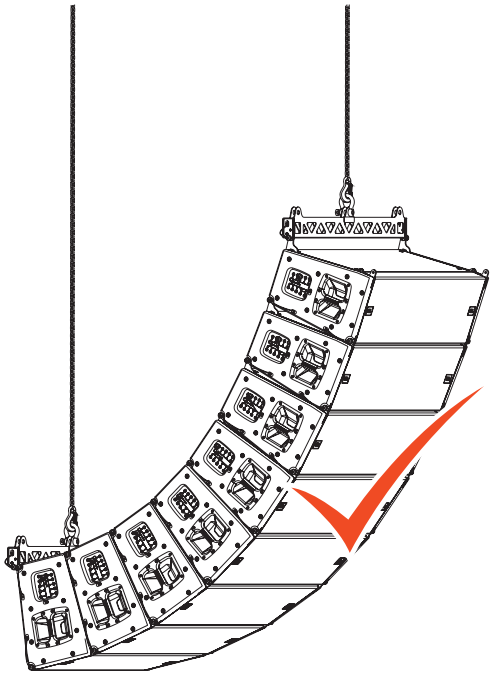
Two VTX A12 Suspension Bars can be used together, one at the top and one at the bottom of an array. This configuration reduces overall weight and cost when the aiming flexibility of an Array Frame is not required. However, deployment can be more difficult because the array angle cannot be controlled until the lower Suspension Bar is connected.

STEPS:

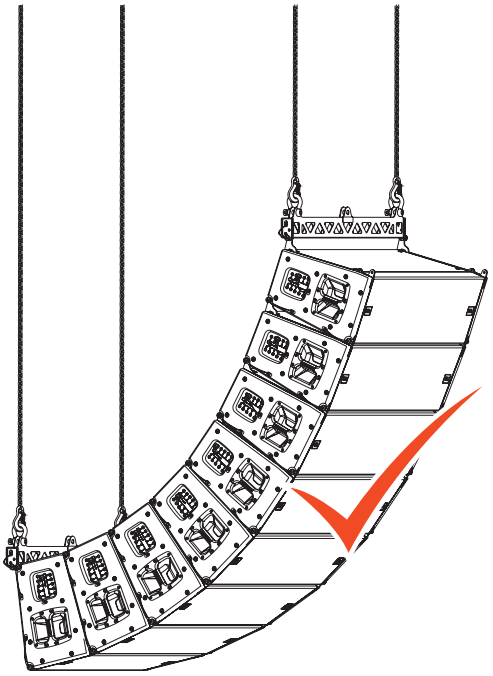
1. Attach the first Suspension Bar to the rear suspension points of the top A12 cabinet using the Suspension Bar QRPs.
2. Attach the hoist to the Suspension Bar and follow the steps in **Chapter 9 - Deploying A12 Systems** to assemble and suspend the array.
3. Once the array is assembled, deploy and lock the attachment tabs on the second Suspension Bar, then attach it to the lowest A12 cabinet using the cabinet's QRPs.



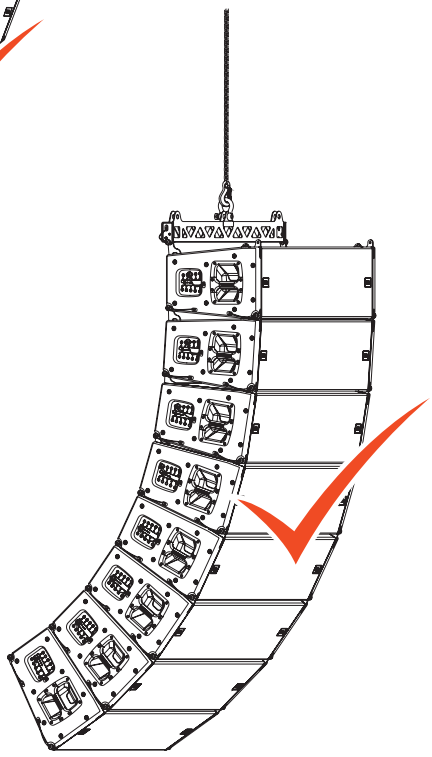
12.5 SUSPENSION-BAR CONFIGURATION EXAMPLES



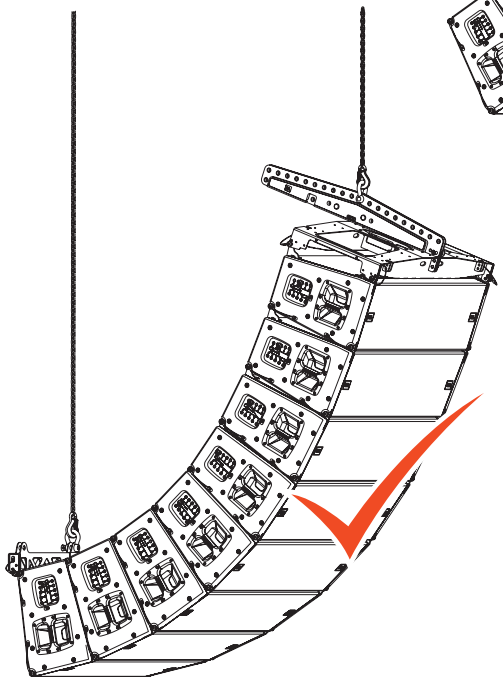
(2) SB - DUAL POINTS



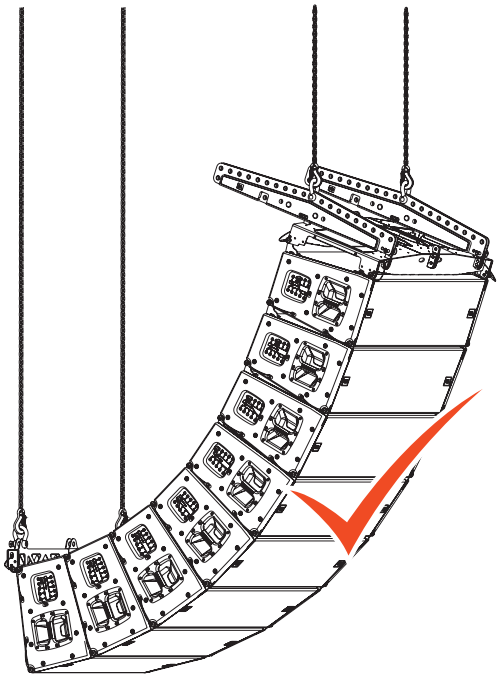
(2) SB - QUAD POINTS



(1) SB - SINGLE POINT



(1) AF + (1) SB - DUAL POINTS

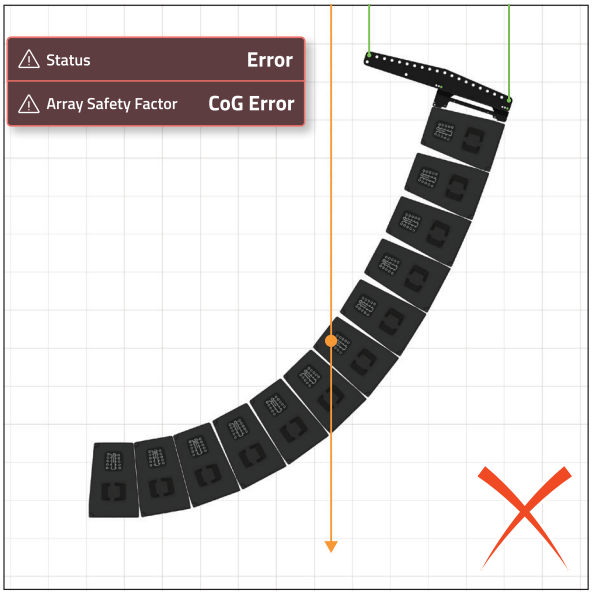


(1) AF + (1) SB - QUAD POINTS

12.6 WHEN TO USE A PULL-BACK

The use of a pull-back is common when the center of gravity (CoG) of an array falls outside the footprint of the Array Frame. Typically, long curved arrays with a large downtilt qualify for this condition. When this occurs, Venue Synthesis displays an error to indicate that the array frame alone cannot achieve the down angle needed for the design (Example 1). Using a VTX A12 SB Suspension Bar as a bottom frame will move the array CoG between the two suspension points, allowing a significantly greater range of array downtilt (Example 2).

Venue Synthesis - Example 1



Center of Gravity Suspension Points

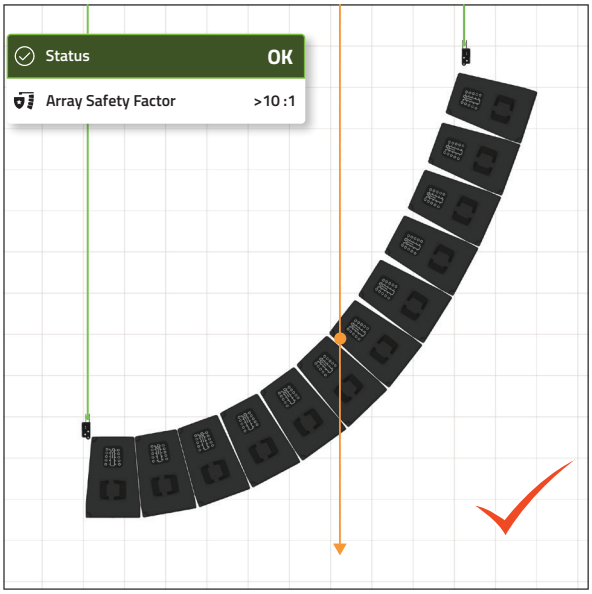
Venue Synthesis - Example 2



Center of Gravity Suspension Points

However, when using the motors for the two suspension points to adjust the array angle, the pick-point flexibility of the Array Frame is not needed. Using a Suspension Bar at the top and another at the bottom yields the same outcome, while saving some weight and cost (Example 3).

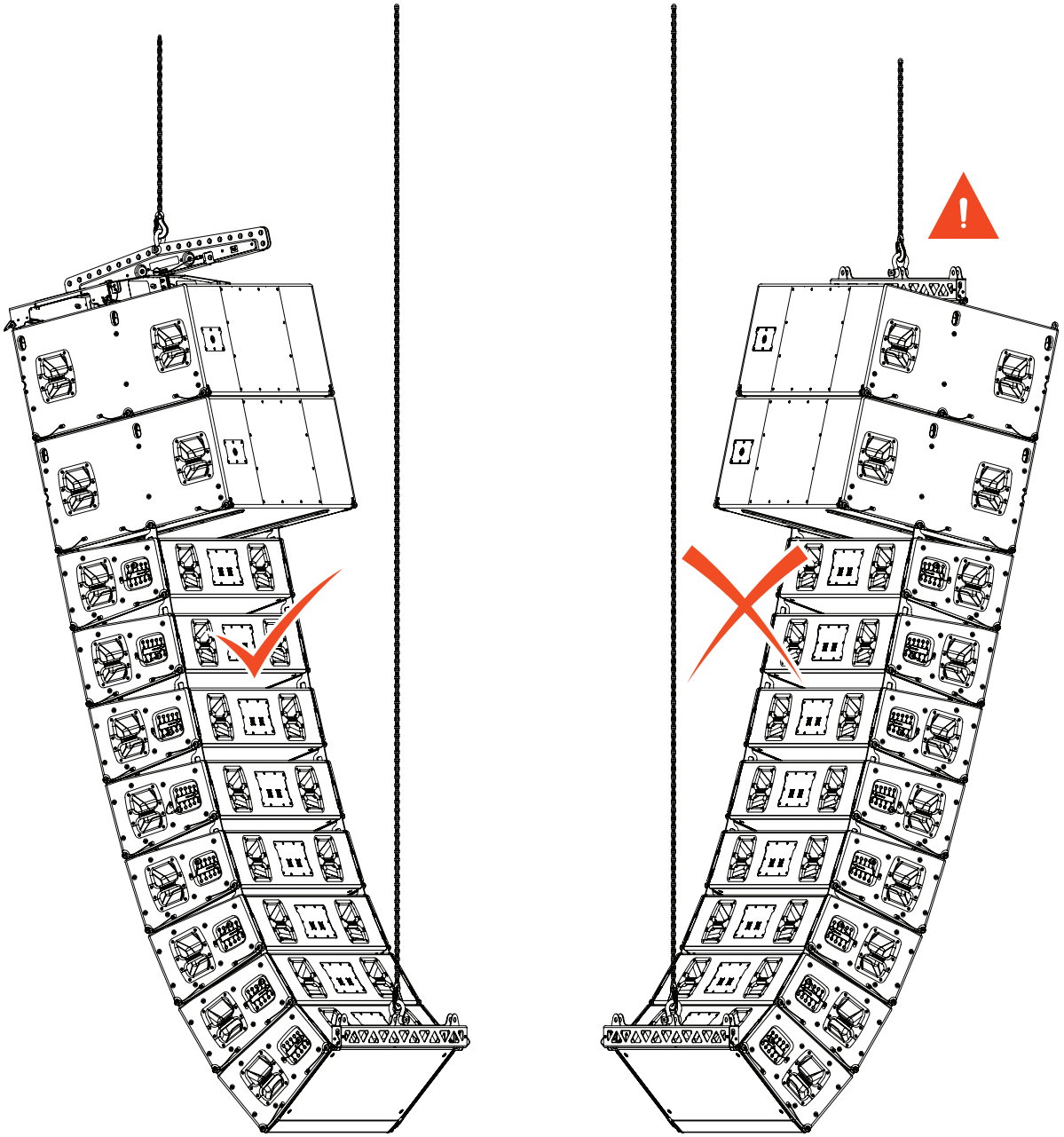
Venue Synthesis - Example 3



Center of Gravity Suspension Points

12.7 SUSPENSION BAR AND MIXED ARRAYS

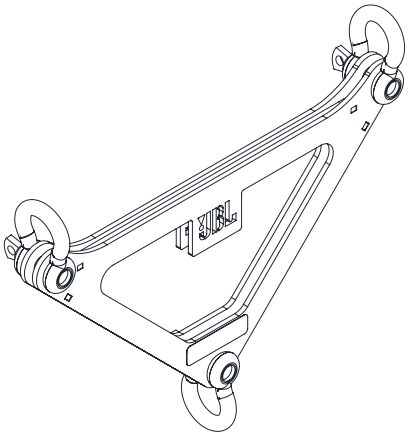
The Suspension Bar can be used as a pull-back in mixed arrays, but not as the main frame at the top. In these situations, an Array Frame is required to provide the structural rigidity needed for mechanical safety. However, the Suspension Bar can be used at the top of a B35-only array. Details on the Suspension Bar and B35 usage are available in the **B35 Rigging Manual**. All mixed array configurations should be checked in Venue Synthesis for mechanical safety.

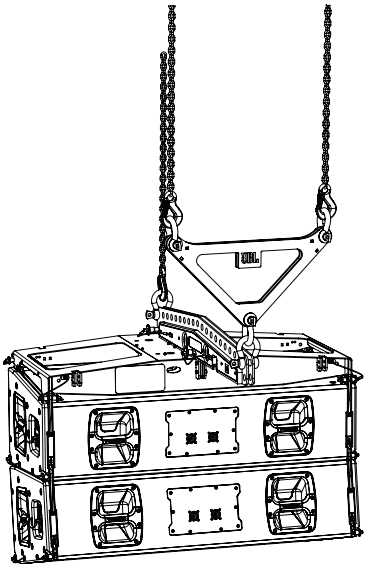


CAUTION: The VTX A12 SB Suspension Bar should never be used at the top of an array when VTX A12 and VTX B35 products are combined in the same array. Always check in Venue Synthesis for mechanical safety.

13 - THE VTX DELTA PLATE

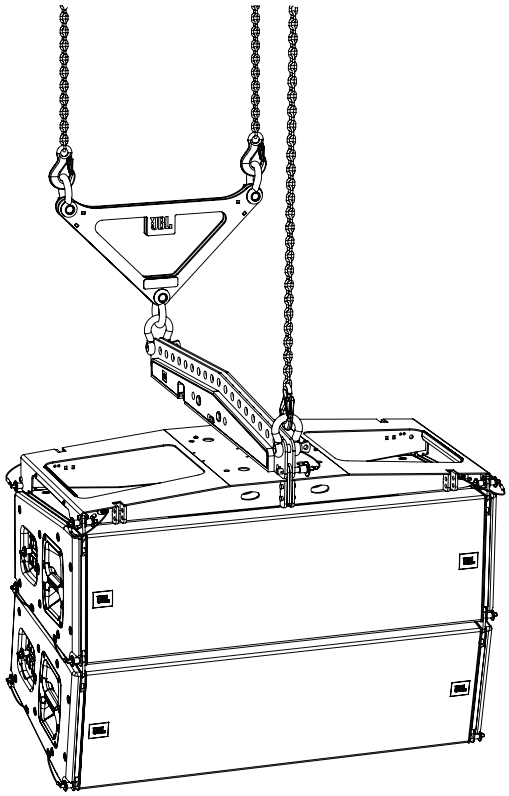
The VTX Delta Plate is a rigging accessory used for controlling the horizontal aiming of an array. Two chain motors are attached to the Delta Plate, allowing for adjustments of up to +/- 10° . The VTX Delta Plate can also be used to distribute the weight of an array to two points.

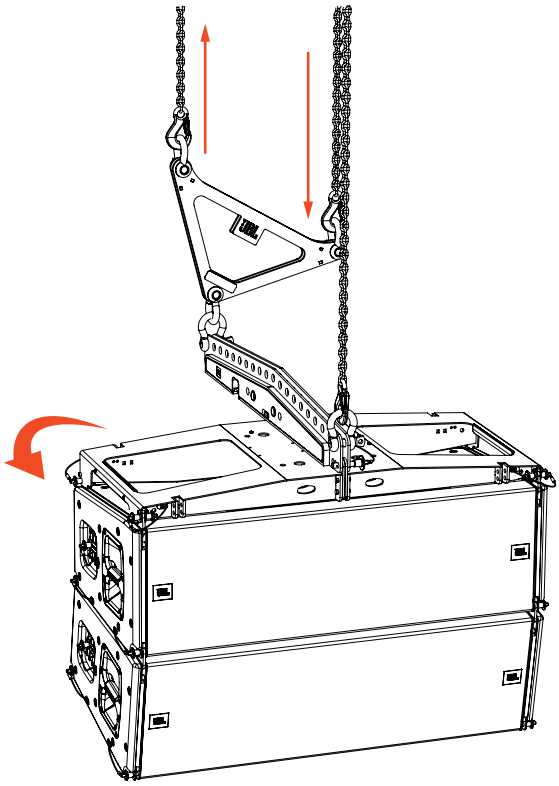




13.1 USING THE VTX DELTA PLATE

The VTX Delta Plate is typically positioned at the rear of an array and connected to the very last attachment hole of the Extension Bar. The included 5/8-inch shackles are used to connect the VTX Delta Plate to the Extension Bar. Two rear motors are connected to the VTX Delta Plate, and horizontal aiming of the array is achieved by adjusting the position of the rear motor points.

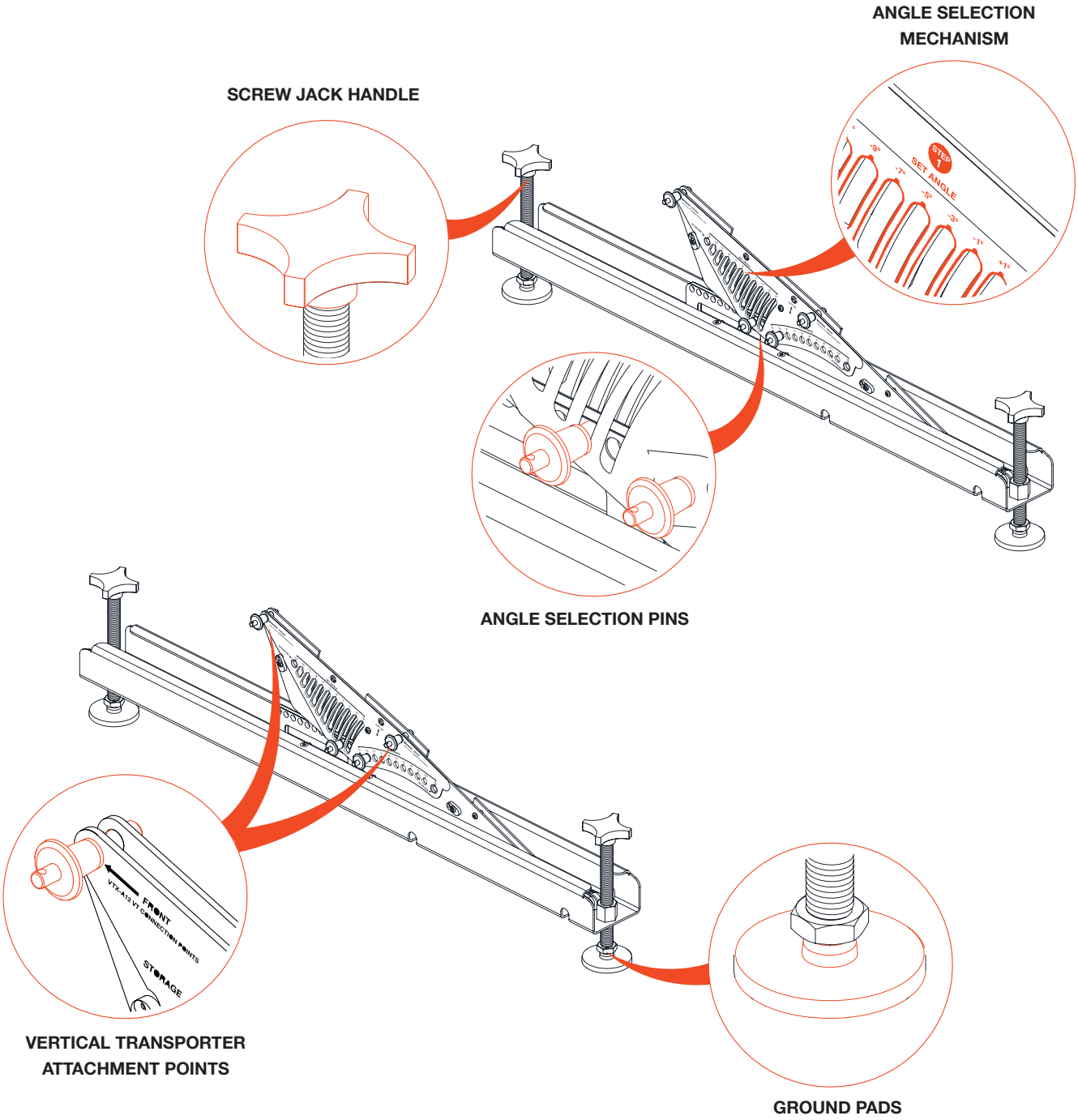




14 - THE VTX A12 VT GND

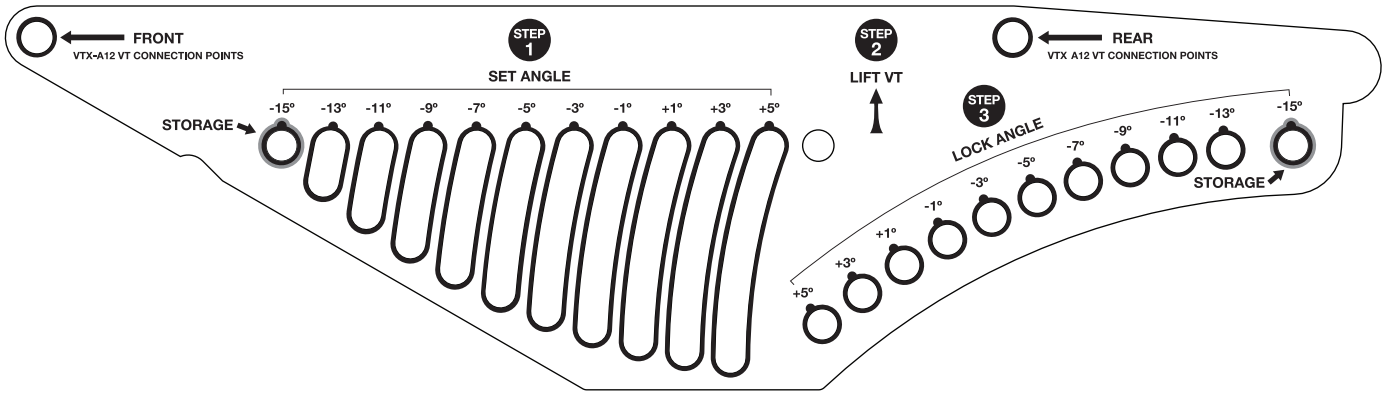
The VTX A12 VT GND allows A12 cabinets to be deployed in a ground-stacked configuration directly on the Vertical Transporter. Front and rear outriggers increase the footprint for improved stability, while screw jacks lift the stack off the ground. Gas-spring-assisted hinges allow the overall array angle to be adjusted from -15° to +5° without manually lifting the cabinets. The system supports up to six A12 cabinets. Use Venue Synthesis to determine configuration parameters and validate configurations exceeding the four-cabinet Safe Limit.

14.1 VTX A12 VT GND OVERVIEW

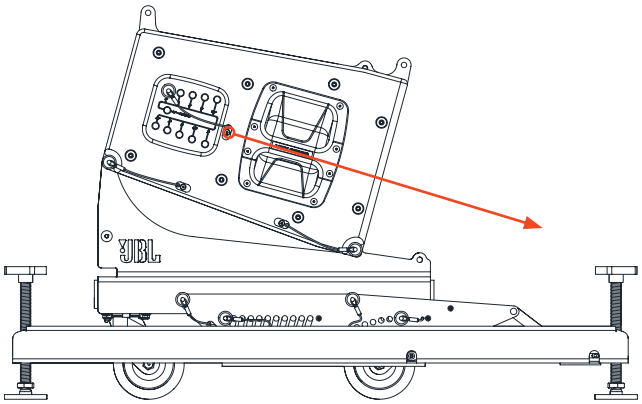


14.2 ANGLE SELECTION MECHANISM

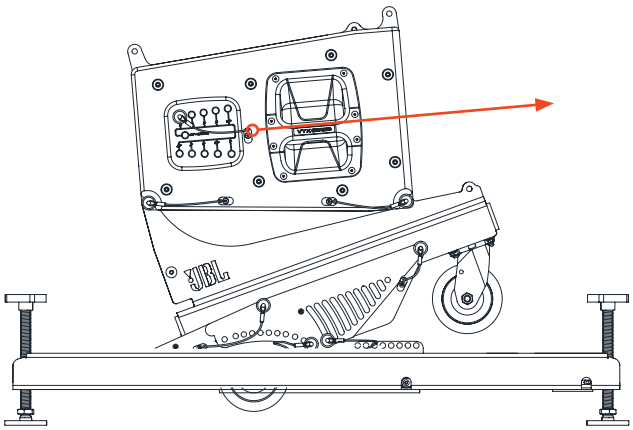
The Angle Selection mechanism sets the overall ground stack angle using two quick release pins. The SET ANGLE pin selects the desired angle, while the LOCK ANGLE pin secures the array once positioned. To adjust the angle, set the desired position, use the gas-spring-assisted hinges to tilt the array, then insert the LOCK ANGLE pins. The gas springs counteract the weight of the array, making angle adjustments easier. Both sides of the VTX A12 VT GND must be adjusted and locked together.



The Angle Selection settings correspond to the site angle of the bottom A12 cabinet. For example, -15° aims the bottom cabinet 15° down, while +5° aims it 5° up. These settings do not represent the overall array angle. Use Venue Synthesis to determine the required GND angle for the ground stack.



GROUND STACK SET TO -15°



GROUND STACK SET TO +5°

CAUTION:

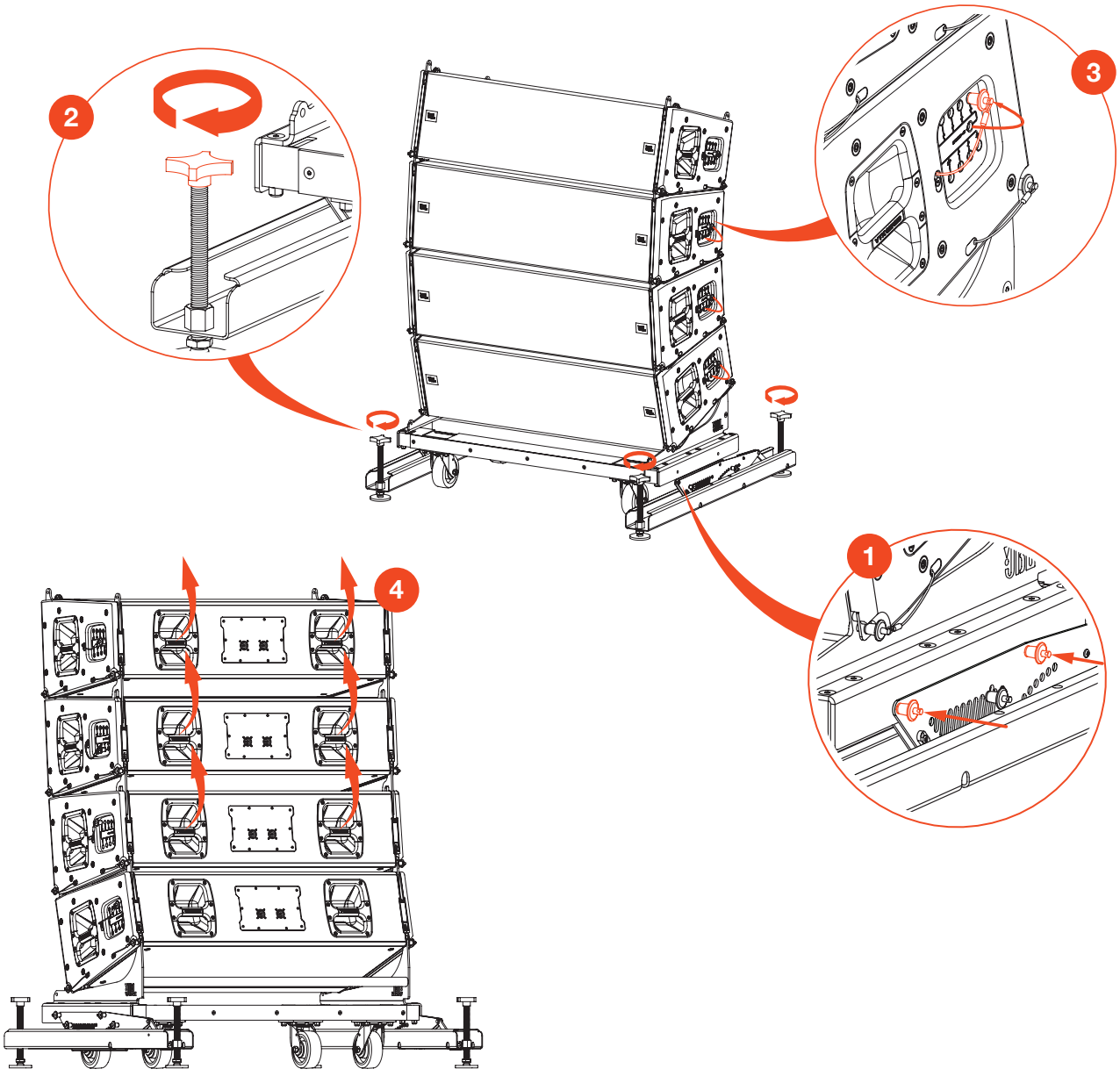
- **Keep the SET ANGLE and LOCK ANGLE QRPs in their storage positions until the GND is attached to the A12 array and the screw jacks have lifted the stack off the ground. This transfers the array weight to the gas springs and releases the QRPs for adjustment.**
- **Always set both ANGLE and LOCK QRPs to the same angle position.**

14.3 BUILDING A GROUND STACK

Follow the steps below to safely assemble a VTX A12 ground-stacked array using the VTX A12 VT GND accessory.

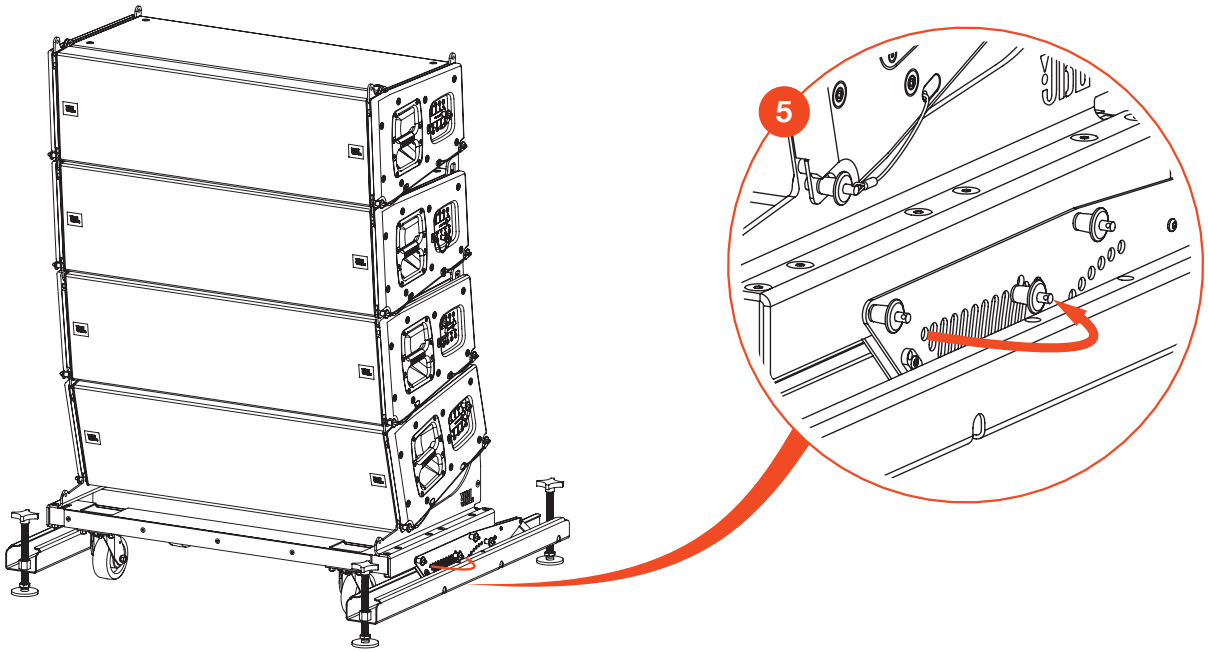
STEPS:

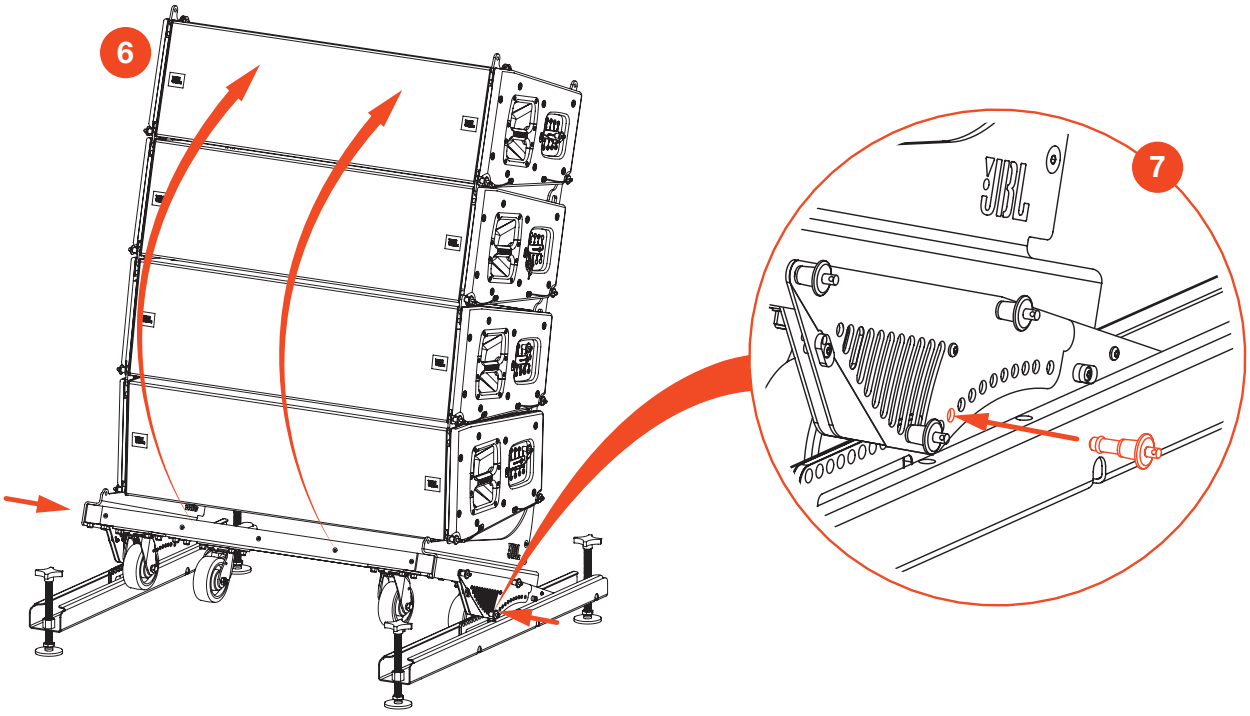
1. Connect the VTX A12 VT GND to the VTX A12 VT. Fully retract the screw jacks, remove the FRONT and REAR QRPs, and slide the outriggers under the VT. Align the connection points and reinsert the two QRPs to secure the GND.
2. Rotate the four screw jacks clockwise to lift the VT until all four wheels are approximately 38 mm (1.5 in) off the ground.
3. Set the A12 cabinets to the desired inter-enclosure angles. The top cabinet can remain in the 10° STORAGE position if no other cabinets will be stacked on top.
4. Starting with the top cabinet, lift each A12 by its rear handle until the Angle Lock mechanism engages at the selected angle. Continue down the stack until all cabinets are locked at their selected angles.



STEPS (CONTINUED):

5. Remove the SET ANGLE and LOCK ANGLE QRPs from their storage positions. Set the SET ANGLE QRP to the desired array angle on both sides of the GND. Both sides must use the same position.
6. Push the A12 stack upward until it reaches the selected angle.
7. Insert both LOCK ANGLE QRPs into the positions matching the selected angle to secure the stack.
8. If the array includes more than four A12 cabinets, add the remaining cabinets to the stack.



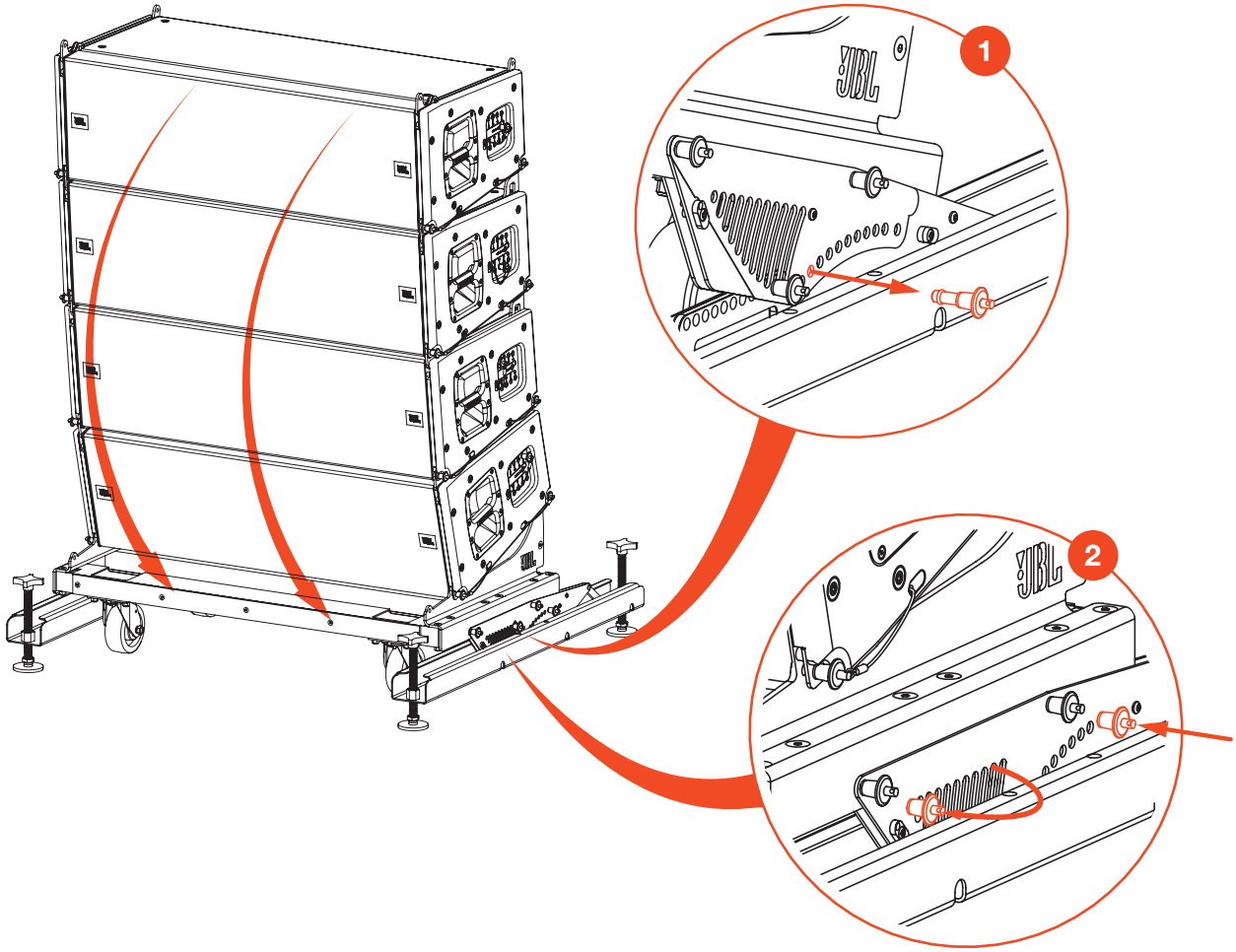


14.4 DISASSEMBLING THE GROUND STACK

Disassembling a ground-stacked A12 system is similar to assembling a stack, only in reverse. Follow the instructions below to safely disassemble the array. **If more than four A12 cabinets are used, disconnect and remove the additional A12 cabinets from the stack until only four A12 cabinets remain on the VT.**

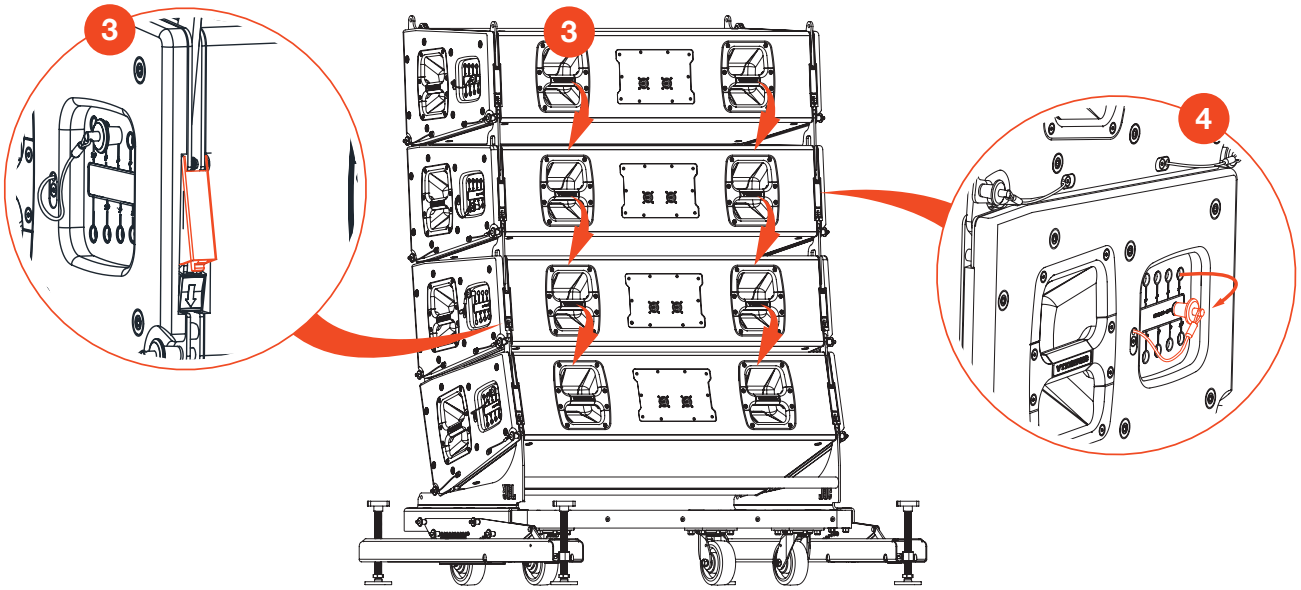
STEPS:

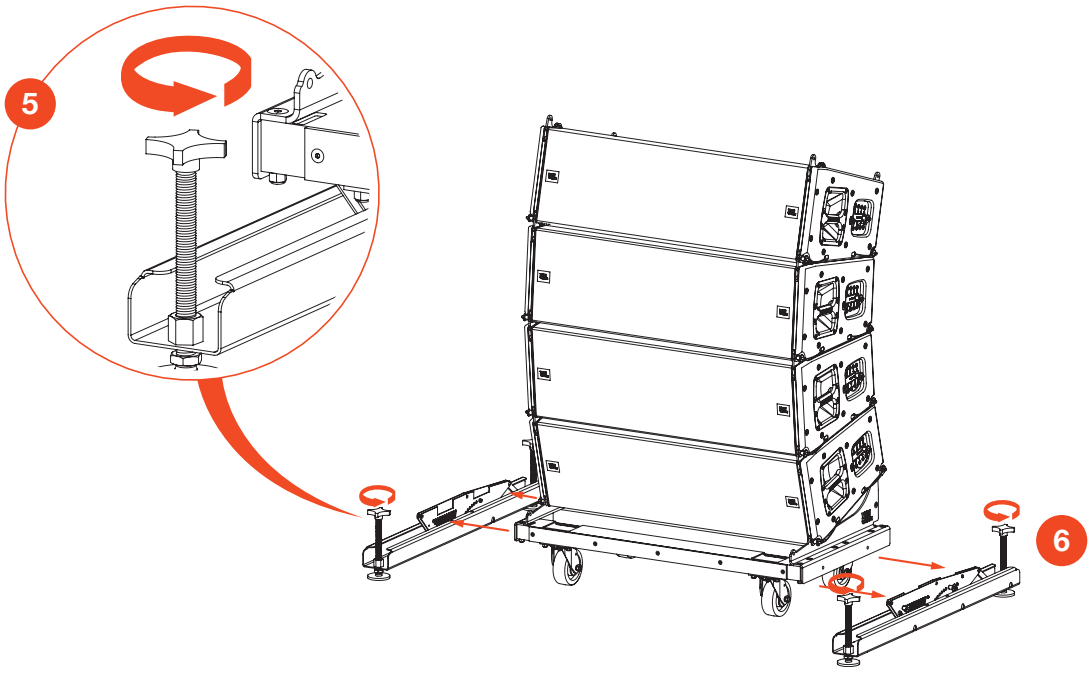
1. Remove the LOCK ANGLE quick release pins on the A12 VT GND and carefully lower the A12 stack to the level, -15° position.
2. Move both the SET ANGLE and LOCK ANGLE quick release pins to the STORAGE positions.



STEPS (CONTINUED):

3. Work from the top cabinet in the array to the bottom. Lift each cabinet by its rear handle, then press the RELEASE BUTTON on both sides to disengage the Angle Lock Mechanism and allow the cabinet to return to the 10° STORAGE position.
4. Reset the Angle Selection QRPs to the 10° STORAGE position.
5. Lower the stack to the ground by turning the four screw jacks counterclockwise until they reach their retracted position.
6. Remove the QRPs securing the VTX A12 VT GND to the VT, then slide the outriggers out from under the VT. Reinsert the two QRPs into their connection positions.

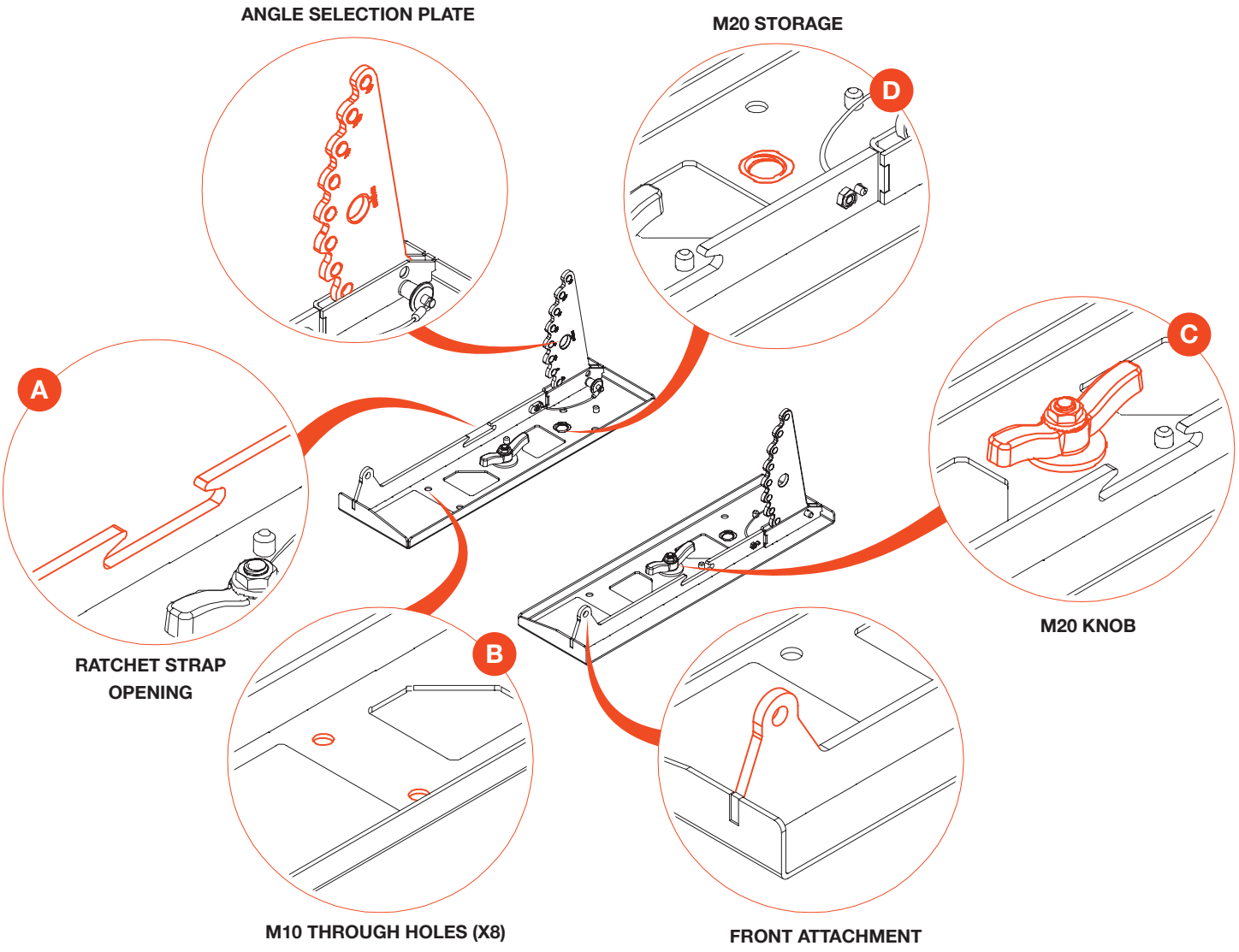




15 - THE VTX A12 BASE PLATE

The VTX A12 BP Base Plate accessory is a universal adapter frame that enables VTX A12 arrays to be ground stacked on top of compatible subwoofers or support structures such as stages, scaffolding, or carts. The VTX A12 BP attaches directly to the bottom of an A12 array, and then to M20 plates on the top of a VTX B28 or B35 subwoofer. The rear angle selection bar can be set for angles between -15 and +5 degrees. When not used with subwoofers, the A12 BP's M10 through-holes can be used to permanently attach an A12 array to other support structures. Configurations and load conditions for using the VTX A12 BP can be obtained using Venue Synthesis.

15.1 BASE PLATE OVERVIEW

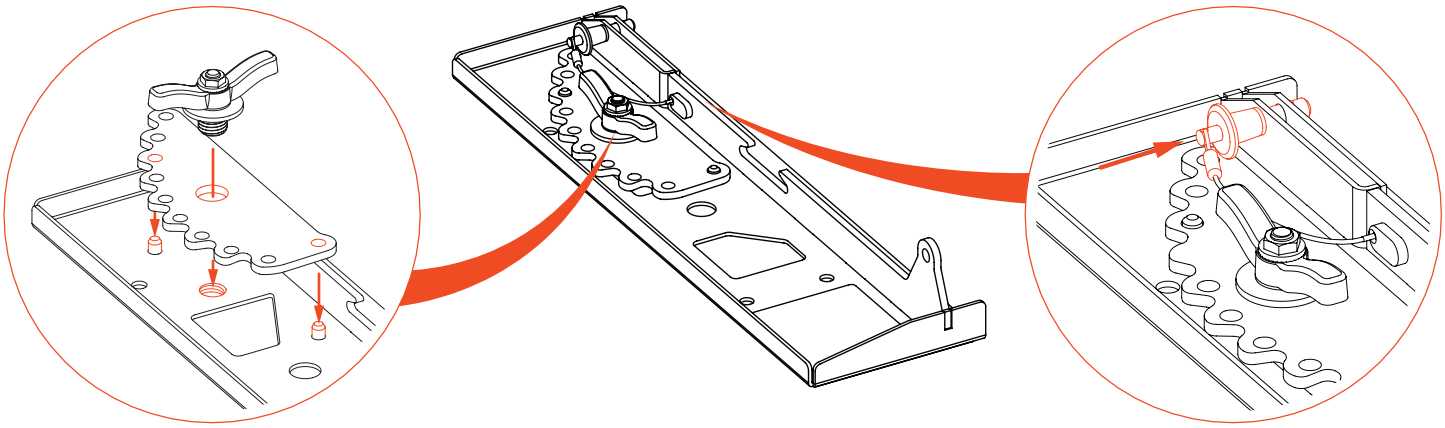


NOTES:

- **A** The ratchet strap opening can be used to secure the ground-stacked array to a structure to prevent tipping.
- **B** Four M10-sized screws (per plate) can be used to secure the base plate onto a fixed structure (like a stage or a cart) for permanent installation.
- **C** A threaded M20 knob attaches the base plate onto supported subwoofers like the VTX B35 or B28.
- **D** Storage position for the M20 knob.

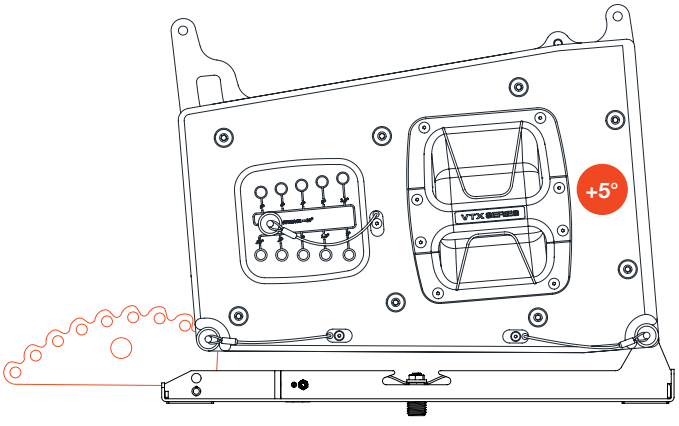
15.2 STORAGE CONFIGURATION

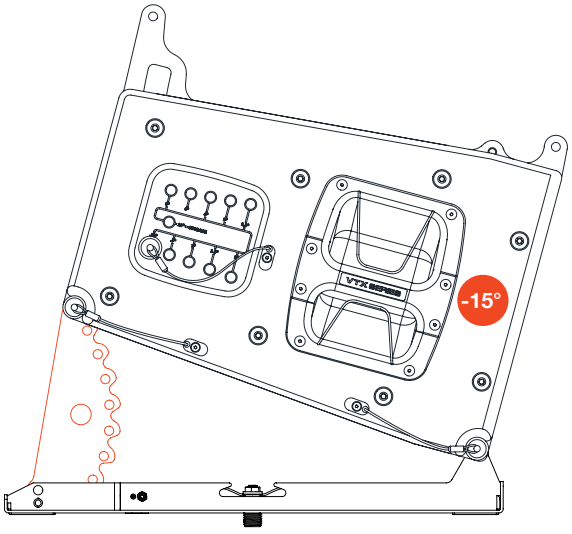
The two angle selection plates can be removed from their regular positions and secured horizontally for storage using the M20 knobs. Use the (S) marks on the angle plate labels for proper alignment.

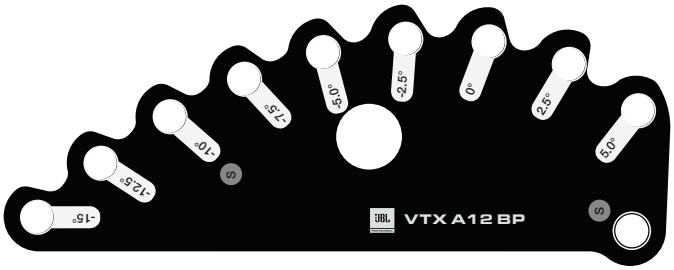


15.3 ANGLE SELECTION PLATES

The Base Plate angle selection plates include nine pin positions, allowing for a range of angles from -15 degrees to +5 degrees in 2.5-degree steps. Venue Synthesis determines the most appropriate position to select to obtain the required down angle, and checks array safety.





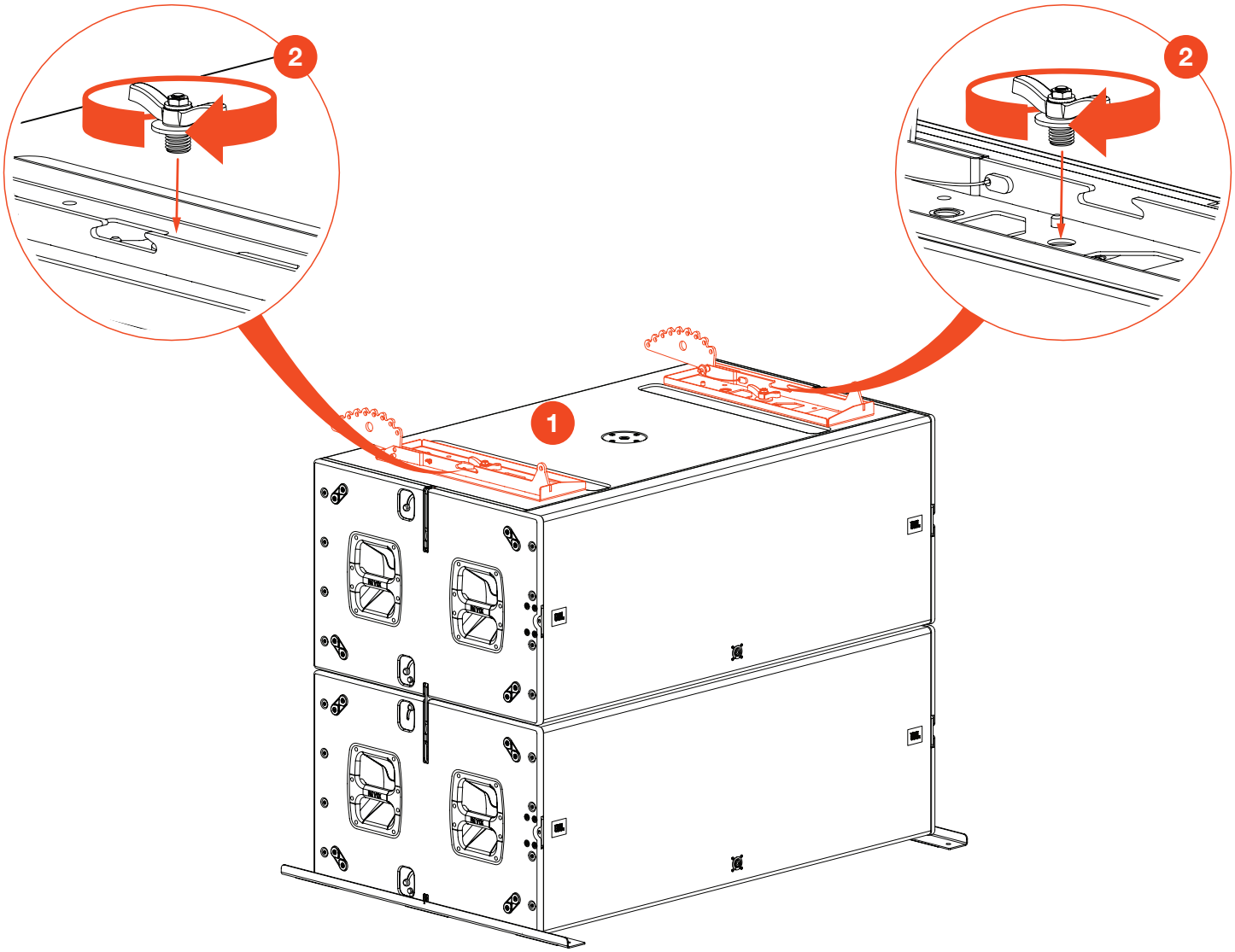


15.4 ASSEMBLING GROUND-STACKED ARRAYS

The Base Plate attaches to supported VTX subwoofers using their M20 pole mount adapter/plates. Before attaching the Base Plate, assemble and position the subwoofers at the desired location. For instructions on assembling and attaching other subwoofer-specific accessories, refer to the subwoofer rigging manuals. Follow the instructions below to assemble an A12 array.

STEPS:

1. Place the base plates onto the top subwoofer.
2. Attach the plates to the outer two M20 attachment points, using the included M20 knobs to secure them onto the subwoofer.

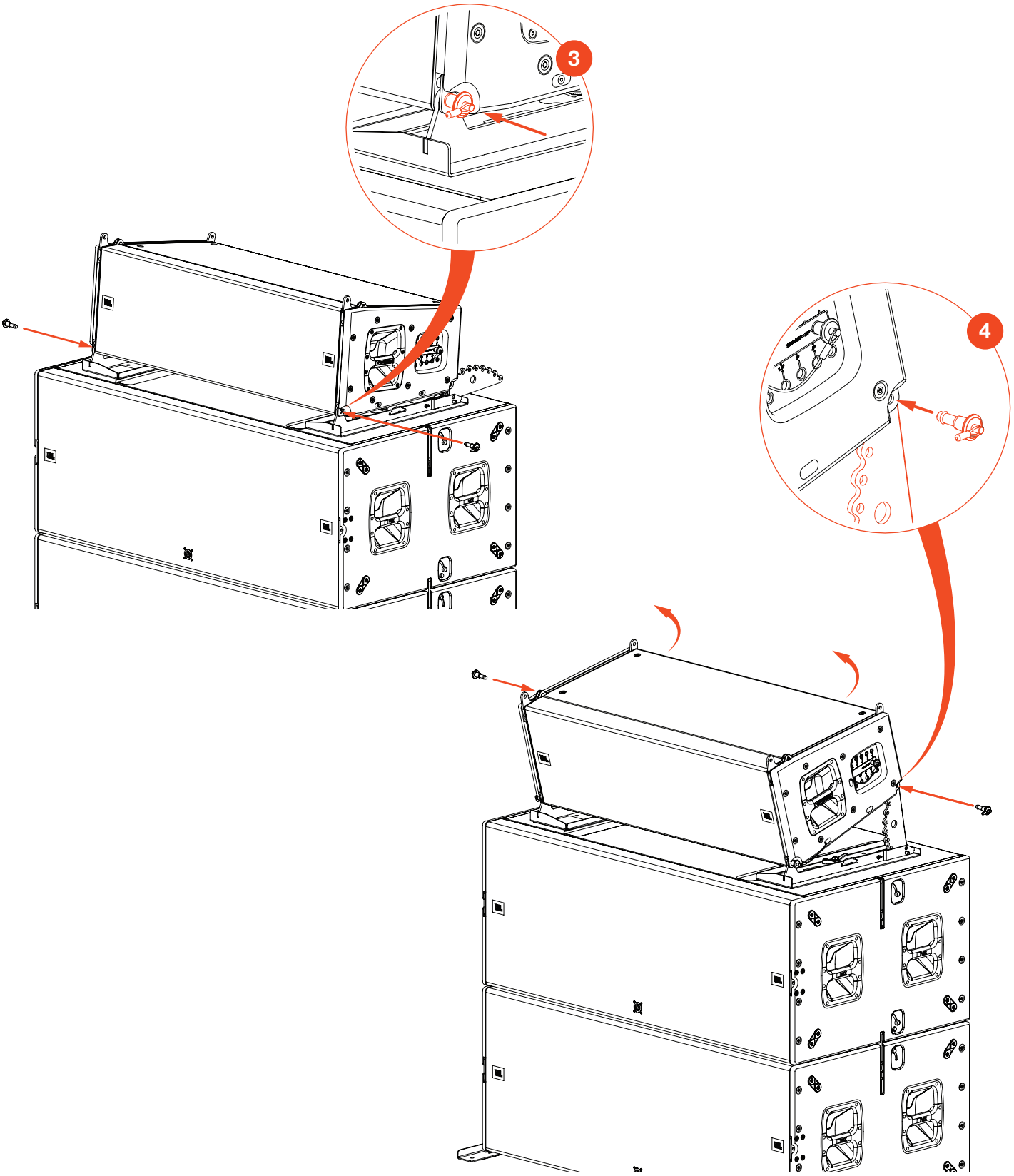


CAUTION: Safe limits for ground-stacked arrays always assume that the stacking surface (floor or stage) is flat. To avoid tipping hazards, do not deploy ground-stacked arrays on non-flat surfaces.

CAUTION: Ground-stacked arrays should always be checked in Venue Synthesis for mechanical safety. Always secure a stacked system to the stacking platform or stacking surface to ensure stability and prevent tipping.

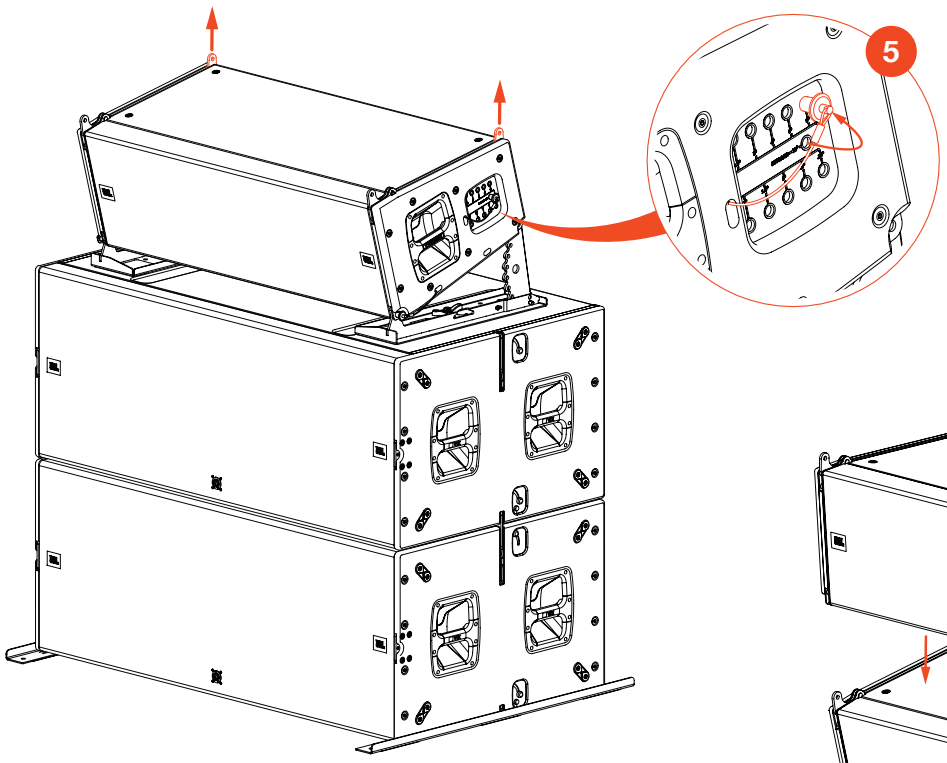
STEPS (CONTINUED):

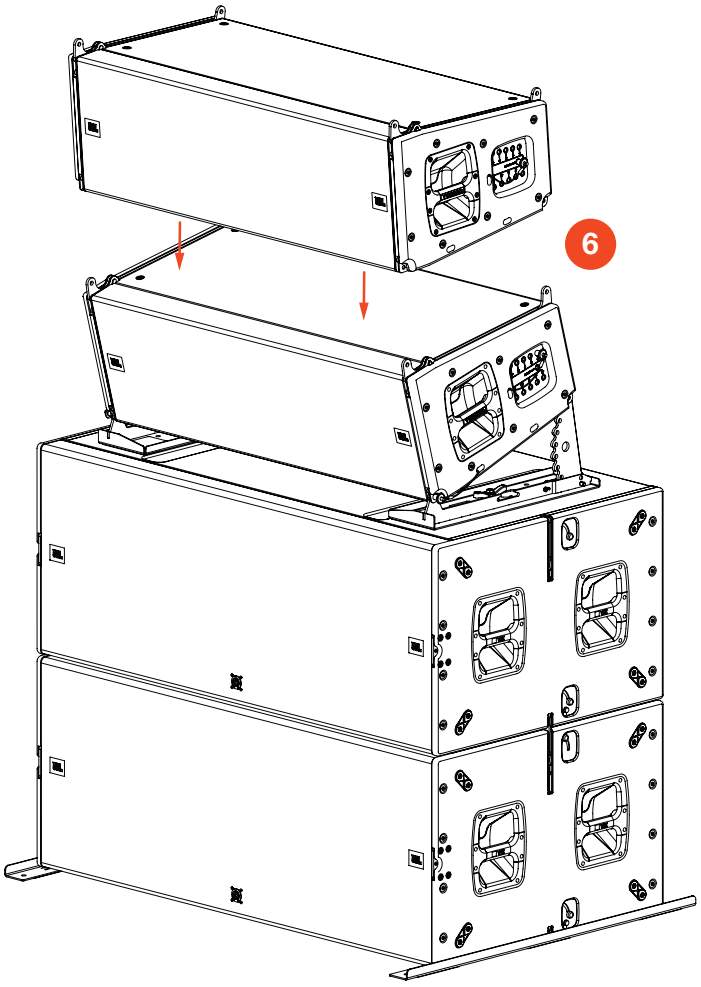
3. Place the first A12 onto the Base Plate and pin the front two corners.
4. Lift the rear of the A12 and position the angle selection plate at the desired location. Pin the rear two corners.



STEPS (CONTINUED):

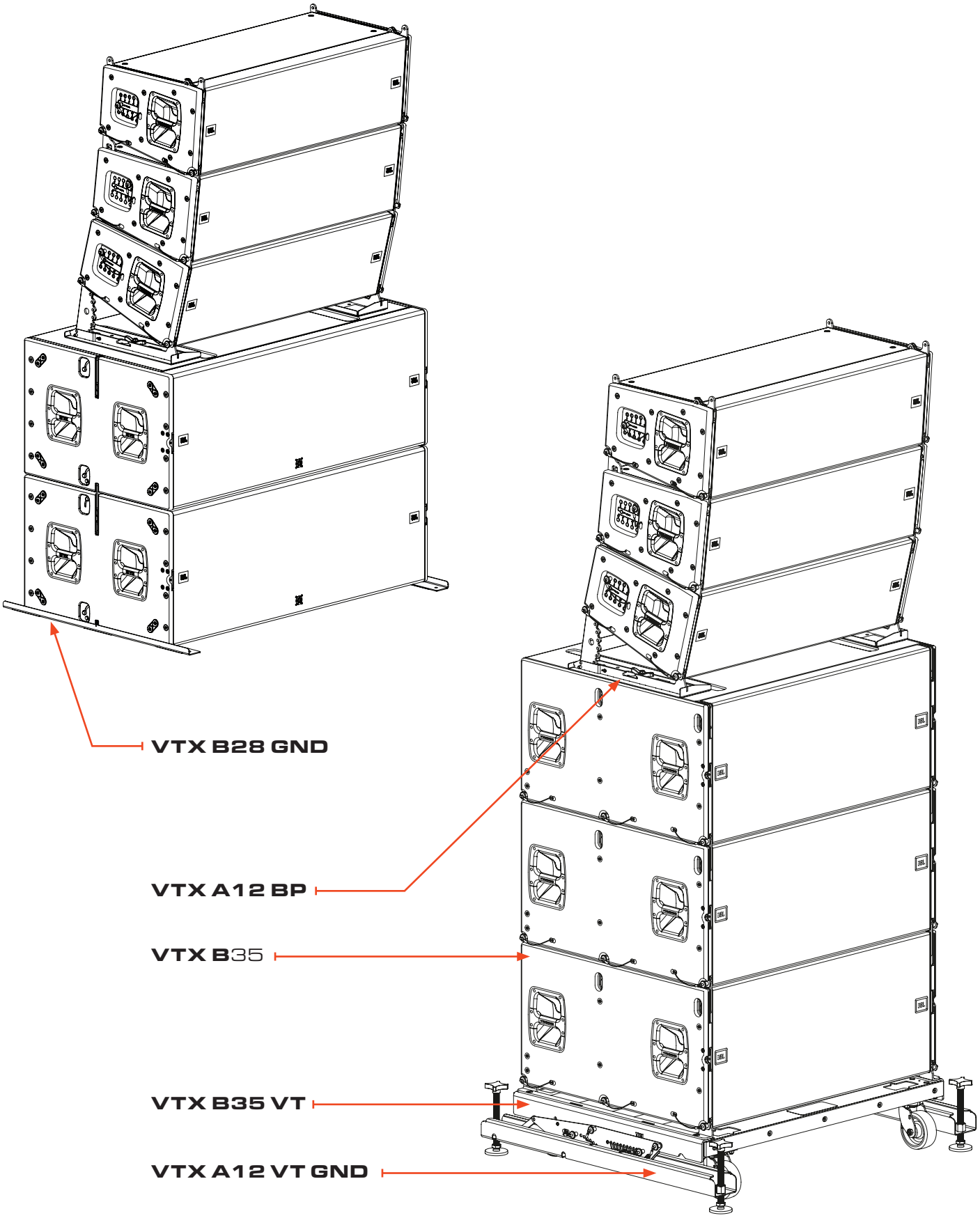
5. Select the inter-enclosure angle for the first A12 and extend the rigging arms to set the angle.
6. Stack the next A12, pin the cabinets together, and set the angle for the cabinet. Repeat steps 3 and 4 to add the remaining cabinets to the array.





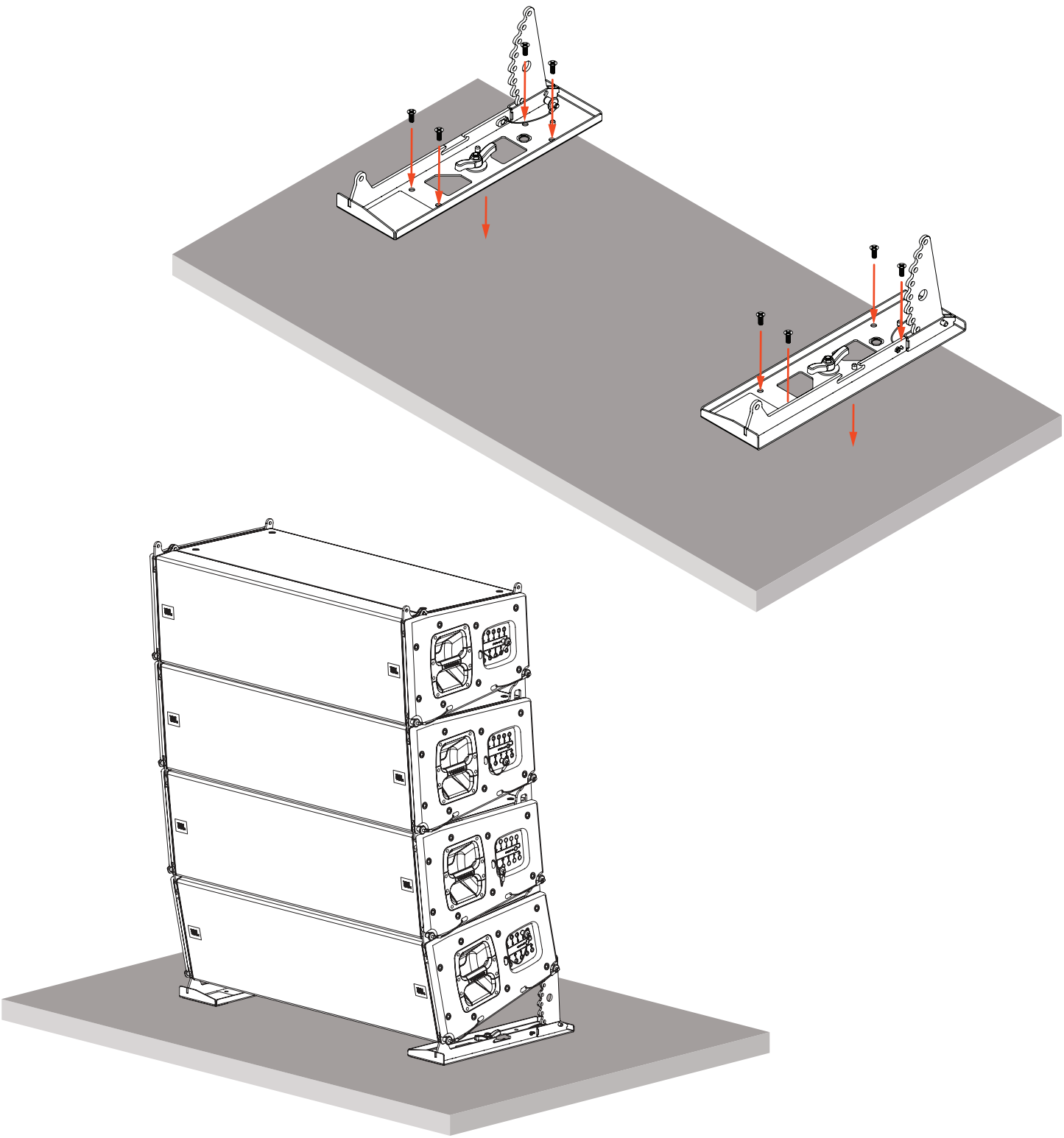
TIP: The very top cabinet does not require an angle when used in ground-stacked configurations. Set the top cabinet to the 10° STORAGE position when no angle is required.

15.5 A12 BASE PLATE EXAMPLES



15.6 ATTACHING THE BASE PLATE ONTO A STRUCTURE

The base plate can be permanently attached to a structure like a stage or platform using its eight through-holes. This is especially useful for permanent installations or other fixed applications where a ground-stacked A12 system is needed, but not often moved. In such situations, the base plate is permanently attached to the structure and subwoofers are not used beneath the array. For detailed drawings of the A12 BP Base Plate, including the position and size of its holes, refer to the VTX A12 BP Customer Drawings.



16 - PRODUCT CARE AND MAINTENANCE

To ensure long-term safety and performance, VTX Series rigging systems must be maintained in accordance with the applicable requirements of Regulation (EU) 2023/1230 (Machinery Regulation). All rigging components must undergo regular inspection and maintenance by trained and qualified personnel. This section outlines general care practices, inspection intervals, and maintenance procedures for safe use.

16.1 INSPECTION FREQUENCY

INSPECTION TIMING	REQUIRED ACTIONS
Before each use	Visual inspection of all rigging hardware and loudspeaker enclosures.
Monthly (minimum)	Full inspection of suspension components and load-bearing hardware.
After an incident	Inspect any system exposed to impact, overload, or extreme environmental stress.

16.2 COMPONENTS TO INSPECT

Inspect the following for visible damage, wear, or deformation:

- Loudspeaker enclosures and structural rigging points
- Quick Release Pins, rigging arms, and Angle Lock mechanisms
- Suspension accessories such as array frames, extension bars, spreader bars, suspension brackets, base plates, pole mounts, pull-back accessories and clamps
- Lifting eyebolts and threaded fasteners

Look for:

- Cracks, rust, or corrosion
- Bending, warping, or deformation
- Loose or missing hardware and spun-out bolts
- Water damage or plywood delamination

16.3 CORRECTIVE ACTION

- Remove any compromised components from service.
- Replace only with JBL Professional-supplied parts and hardware
- For uncertain or severe issues, consult a JBL-certified repair technician or authorized service partner.

16.4 CLEANING AND STORAGE

- Clean with a damp cloth. Avoid using solvents as they may degrade the product's finish.
- Store in a dry, covered, and secure location.
- Use JBL-provided covers, cases, and vertical transport accessories for protection during transport and storage.



CAUTION: Do not deploy the loudspeakers until any issues identified during inspection have been resolved by a qualified professional.

17 - CONTACT INFORMATION

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