



TLX LIVERPOOL SERIES

TLX215L

Compact Dual 15" Subwoofer for Portable and Fixed Installation Applications

TLX84

Dual 2 Way 8" Line Array Element for Portable and Fixed Installation Applications

TLX84-FLB

Fly Bar for TLX84 and TLX215L for Suspended or Ground Stacked Arrays

Rigging Manual



WARNING!

This rigging manual contains important safety information, and it must be kept in a safe place for future reference. It must be supplied with the equipment during the original sale, rental, or re-sale, and all operators and users of the equipment must be made aware that this manual is available. Please visit our website turbosound.com regularly and check for any updates to this manual.

Table of Contents

Important Safety Instructions	3
Legal Disclaimer	3
Limited warranty	3
Chapter 1: Safety Information.....	4
Chapter 2: Introduction	6
Chapter 3: Assembling a TLX84 Array on a TLX84-FLB Flybar	21
Chapter 4: Assembling TLX215L Subwoofers on a TLX84-FLB Flybar.....	25
Chapter 5: Assembling a TLX84 Array with a TLX215L Subwoofer	28
Chapter 6: Groundstack of two TLX215L Subwoofers	32
Chapter 7: Groundstack TLX215L Subwoofer and TLX84 Array.....	34
Chapter 8: Safety Inspection	37
Chapter 9: Enclosure quantities and combinations for TLX84-FLB flybar suspension at 10:1, 7:1, 5:1 design factors.....	38
Manufacturer’s Declaration	39

EN Important Safety Instructions



Terminals marked with this symbol carry electrical current of sufficient magnitude to constitute risk of electric shock.

Use only high-quality professional speaker cables with ¼" TS or twist-locking plugs pre-installed. All other installation or modification should be performed only by qualified personnel.



This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure - voltage that may be sufficient to constitute a risk of shock.



This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Please read the manual.



Caution

To reduce the risk of electric shock, do not remove the top cover (or the rear section). No user serviceable parts inside. Refer servicing to qualified personnel.



Caution

To reduce the risk of fire or electric shock, do not expose this appliance to rain and moisture. The apparatus shall not be exposed to dripping or splashing liquids and no objects filled with liquids, such as vases, shall be placed on the apparatus.



Caution

These service instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operation instructions. Repairs have to be performed by qualified service personnel.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11. Use only attachments/accessories specified by the manufacturer.



12. Use only with the 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.

13. Unplug this apparatus during lightning storms or when unused for long periods of time.

14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

15. The apparatus shall be connected to a MAINS socket outlet with a protective earthing connection.

16. Where the MAINS plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.



17. Correct disposal of this product: This symbol indicates that this product must not be disposed of with household waste, according to the WEEE Directive (2012/19/EU) and your national law. This product should be taken to a collection center licensed for the recycling of waste electrical and electronic equipment (EEE). The mishandling of this type of waste could have a possible negative impact on the environment and human health due to potentially hazardous substances that are generally associated with EEE. At the same time, your cooperation in the correct disposal of this product will contribute to the efficient use of natural resources. For more information about where you can take your waste equipment for recycling, please contact your local city office, or your household waste collection service.

18. Do not install in a confined space, such as a book case or similar unit.

19. Do not place naked flame sources, such as lighted candles, on the apparatus.

20. Please keep the environmental aspects of battery disposal in mind. Batteries must be disposed-of at a battery collection point.

21. Use this apparatus in tropical and/or moderate climates.

LEGAL DISCLAIMER

MUSIC Group accepts no liability for any loss which may be suffered by any person who relies either wholly or in part upon any description, photograph, or statement contained herein. Technical specifications, appearances and other information are subject to change without notice. All trademarks are the property of their respective owners. MIDAS, KLARK TEKNIK, LAB GRUPPEN, LAKE, TANNOY, TURBOSOUND, TC ELECTRONIC, TC HELICON, BEHRINGER, BUGERA and DDA are trademarks or registered trademarks of MUSIC Group IP Ltd. © MUSIC Group IP Ltd. 2017 All rights reserved.

LIMITED WARRANTY

For the applicable warranty terms and conditions and additional information regarding MUSIC Group's Limited Warranty, please see complete details online at music-group.com/warranty.

Chapter 1: Safety Information

1.1 Intended Use

The rigging components (TLX84-FLB flybar, rigging pins, drop links) shall only be used in conjunction with TURBOSOUND TLX84 loudspeakers and TLX215L subwoofers as described in this manual.

1.2 Intended Use of this Manual

The instructions in this manual describe how to assemble various configurations of TLX84 loudspeaker cabinets, TLX215L subwoofers, and the TLX84-FLB flybar, in readiness for suspending or ground stacking.

These instructions shall only be used with the TLX84, TLX215L, and TLX84-FLB components.

The instructions do not show details of external lifting equipment and do not contain details of safe lifting procedures or installation.

Possession of these instructions and procedures does not imply authorisation for their use.

1.3 General Safety

The operation of your product as part of a suspended system, if installed incorrectly and improperly, can potentially expose persons to serious health risks and even death. In addition, please ensure that electrical, mechanical and acoustic considerations are discussed with qualified and certified (by local, state or national authorities) personnel prior to any installation.

Installation and setup should only be carried out by qualified and authorised personnel observing the valid local, state and other safety regulations applicable in your country. If any parts or components are missing please contact your dealer before attempting to set up the system.

It is the responsibility of the person installing the assembly to ensure that the suspension/fixing points are suitable for the intended use.

We also recommend you schedule TURBOSOUND line array training with our sales partners and applications team.

Equipment used to connect to the TURBOSOUND rigging system must be properly rated and must conform to the local, state and other safety regulations. Do not use TURBOSOUND rigging with other types or brands of loudspeakers. This practice may compromise safety standards and MUSIC Group will not be responsible for damage or injury so caused. Do not modify the rigging accessories, or use them in a way other than that described in this rigging manual. Rigging components supplied as part of a complete assembly are non-interchangeable and must not be exchanged with the component parts of any other assembly.

Welding, or any other means of permanently fixing rigging components to each other or to cabinet fixing points is not allowed. Rigging components or assemblies must only be fixed to TURBOSOUND loudspeaker cabinets using the cabinet fixing points.

MUSIC Group assumes no liability for any damage or personal injury resulting from improper use, installation or operation of the product. Regular checks must be conducted by qualified personnel to ensure that the system remains in a secure and stable condition. Make sure that, where the product is suspended, the area underneath the product is free of human traffic. Do not suspend the product in areas which can be entered or used by members of the public.

1.4 Loudspeaker Cabling

Attach and support the speaker cables from your amplifiers to the loudspeaker cabinets, so that no significant additional weight or lateral force is applied to the array by the input wiring.

Input cables or link cables should never be used to angle the array or used as rigging in any way.

1.5 Load Capacity and System Safety

The TLX84-FLB flybar is designed to suspend a maximum of 8 TLX84 loudspeaker cabinets, or 3 TLX215L subwoofers, or a mixed array of 1 TLX215L subwoofer with 6 TLX84 loudspeaker cabinets. The speakers may be flown with any vertical splay angle configuration and from any of the pick points. This corresponds to a Working Load Limit (WLL) of 260 kg with a design factor of 10:1. TLX installation procedures and recommendations described in Chapters 3-5 are based on 10:1 design factor. TLX enclosure counts and combinations are also given for 5:1 and 7:1 design factors in Chapter 9. Check local regulations in order to comply with regional design factor requirements. Always refer to EASE FOCUS II modeling software error and warning indications prior to installation.

1.6 Safety Inspections

Carefully inspect rigging system components and cabinets for defects or signs of damage before proceeding to assemble the array to be flown. If any parts are damaged or suspect, or if there is any doubt as to the proper functioning and safety of the items DO NOT USE THEM and withdraw them from use immediately.

Refer to Chapter 8 for information about care maintenance and disposal.

1.7 Secondary Safeties

All loudspeakers flown in theatres, studios or other places of work and entertainment shall, in addition to the principle load bearing means of suspension, be provided with an independent, properly rated, and securely attached secondary safety. Only steel wire ropes or steel chains of an approved construction and load rating shall be used as secondary safeties. Plastic-covered steel wire ropes are not permitted for use as secondary safeties.

The secondary safety suspension must be independent of the primary suspension points and capable of carrying the total system weight. The additional safety device must be mounted in a way that the array is caught by the safety device without any drop and swing in the event that the primary suspension fails.

1.8 Wind Loads

The loudspeakers must not be suspended or ground stacked in winds greater than:

Beaufort Scale 6 bft (39-49 km/h, 25-31 mph, 22-27 knots)

If the forecast or actual winds reach:

Beaufort Scale 8 bft (62-74 km/h, 39-46 mph, 34-40 knots)

- 1) Clear the area of personnel
- 2) Lower and secure the array

1.9 Operational Safety

The procedures require the use of two or more authorised persons.

Produce a lift plan: before any lift takes place, you must formulate a lift plan that describes the exact steps and procedures that will be carried out. The plan must be shared with all assistants and stake-holders in the lift so that each person will understand their responsibilities.

Observe all instructions given on the respective instruction labels of the rigging components and loudspeakers.

When using chain hoists make sure nobody is directly underneath or in the vicinity of the array.

During assembly pay attention to the possible risk of crushing.

Wear suitable protective clothing.

Safety Logo	Description	Safety Logo	Description	Safety Logo	Description
	Protective Headwear shall be worn		Protective Eyewear shall be worn		Protective Gloves shall be worn
	Protective Footwear shall be worn		Practice Safe Lifting		

1.10 Safety Notices in this manual

 **WARNING**

This indicates advice that if not followed, may lead to permanent injury or death.

 **CAUTION**

This indicates advice that if not followed, may lead to damage to the equipment.

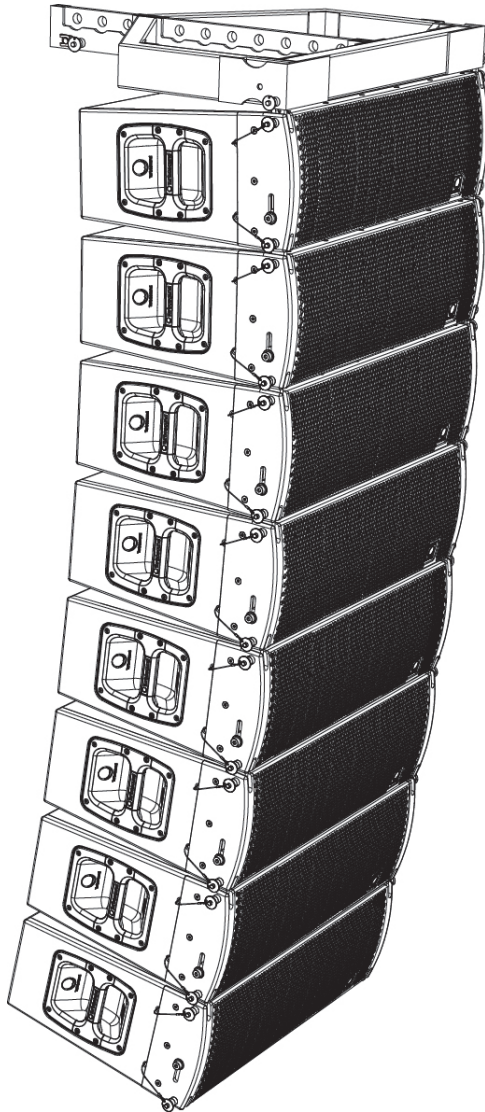
NOTE

This indicates extra advice that may be useful when performing the procedures.

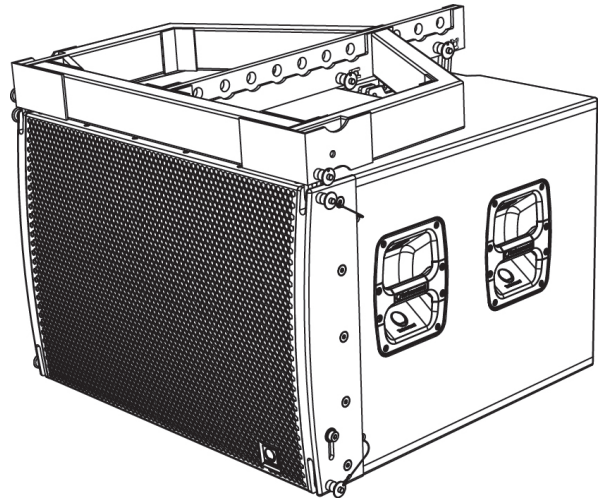
Chapter 2: Introduction

2.1 Typical Configurations

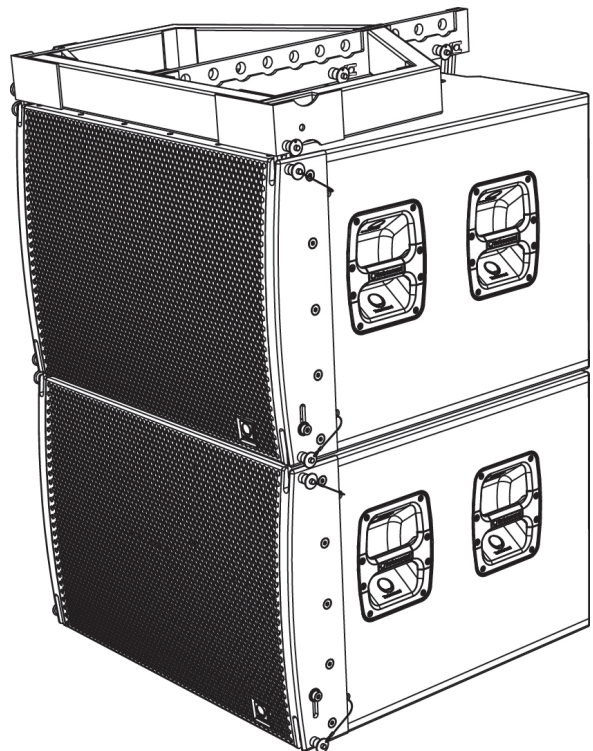
TLX84 Array (See Chapter 3)



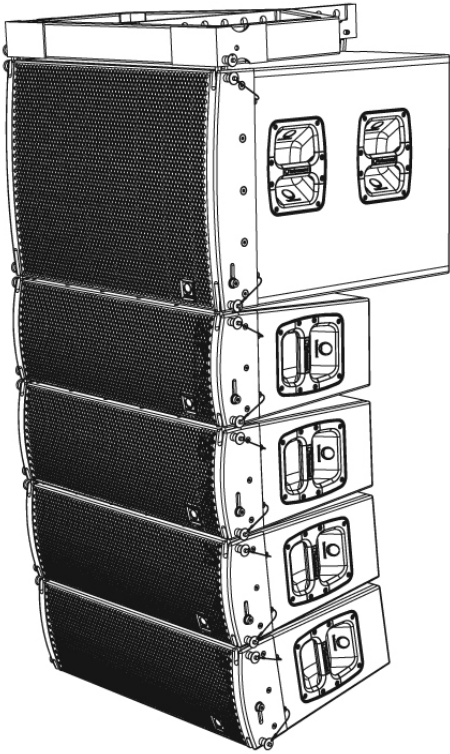
TLX215L (See Chapter 4)



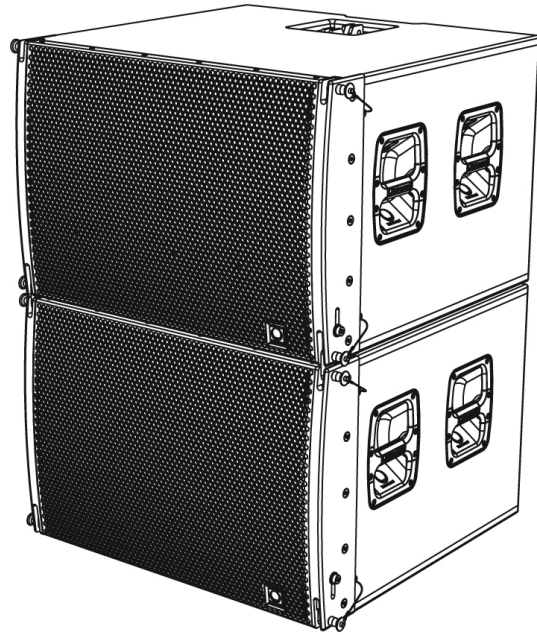
TLX215L Pair (See Chapter 4)



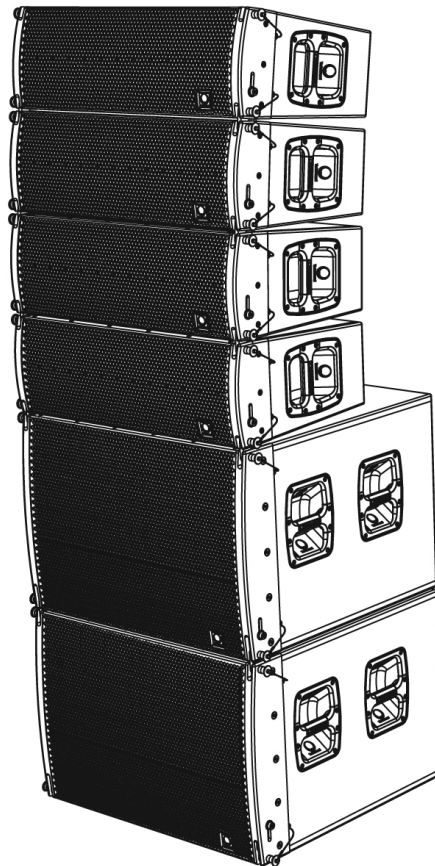
TLX215L and TLX84 Array (See Chapter 5)



Two TLX215L Subwoofer Groundstack (See Chapter 6)



TLX215L and TLX84 Array Groundstack (See Chapter 7)



2.2 Rigging and Acoustic Simulation Software

The EASE FOCUS II software allows you to configure the system for optimal performance and coverage in the venue.

The software can be downloaded from <http://www.afmg.eu/index.php/products.html>

The quantity of cabinets can be varied, the angles of each cabinet can be adjusted, and the SPL coverage calculated for any configuration.

Once an optimum system has been designed using the EASE FOCUS II software, the angles of each TLX84 cabinet should be noted, as well as the correct suspension hole on the TLX84-FLB flybar, where your bow shackle would be fitted for single-point suspension. For two-point suspension, pick point holes #1 and #10 can be utilized in conjunction with front and rear chain motors to obtain the desired array site angle.

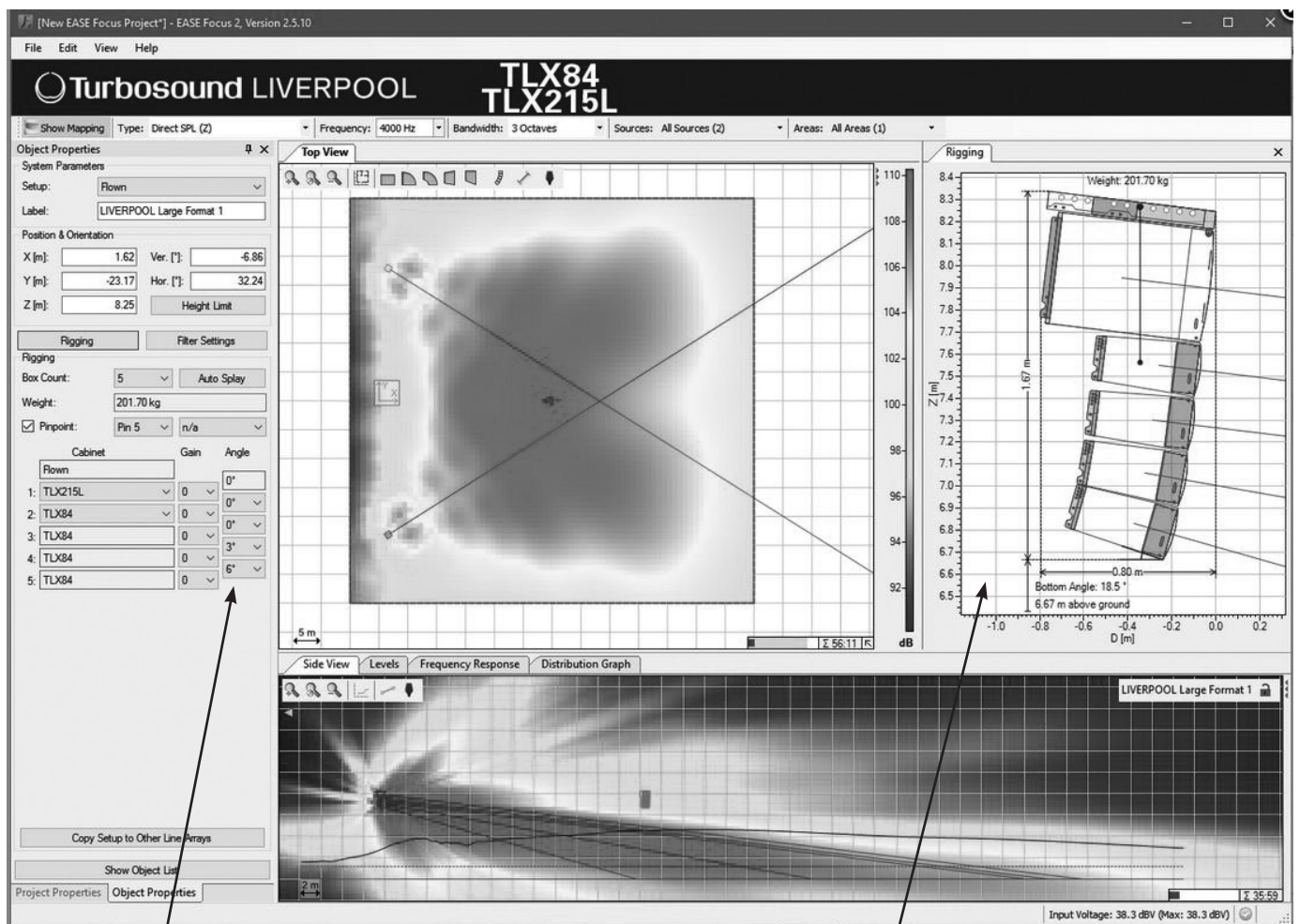
The EASE FOCUS II screenshot below is for a typical TLX84 configuration. Check the "RIGGING" Tab and note installation parameters such as: array weight, bottom element elevation above ground level, bottom enclosure angle.

Note the angle of each TLX84 cabinet in the "Object Properties" Tab.

WARNING

ERROR AND WARNING INDICATIONS ARE GIVEN IN THE OBJECT PROPERTIES WINDOW IF WORKING LOAD LIMITS ARE EXCEEDED AT 10:1, 7:1 OR 5:1 DESIGN FACTORS. HEED THESE WARNINGS AT ALL TIMES IN ACCORDANCE WITH LOCAL REGULATIONS.

EASE FOCUS II Typical Screenshot for a TLX84 Array

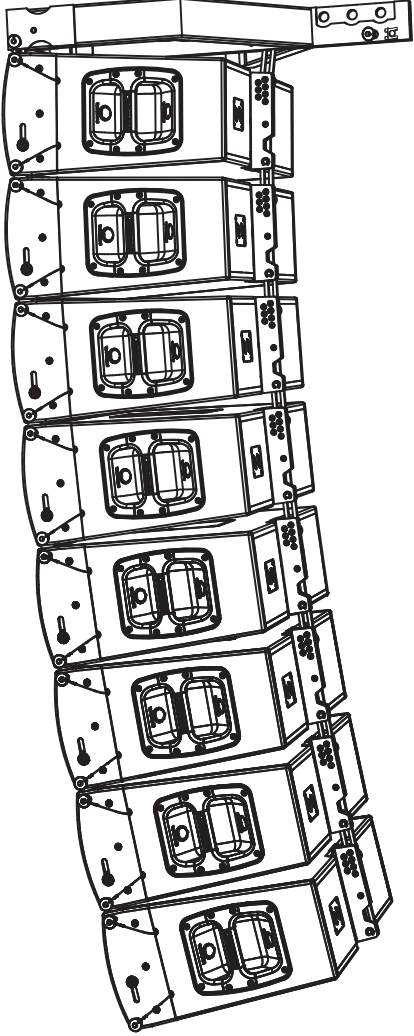
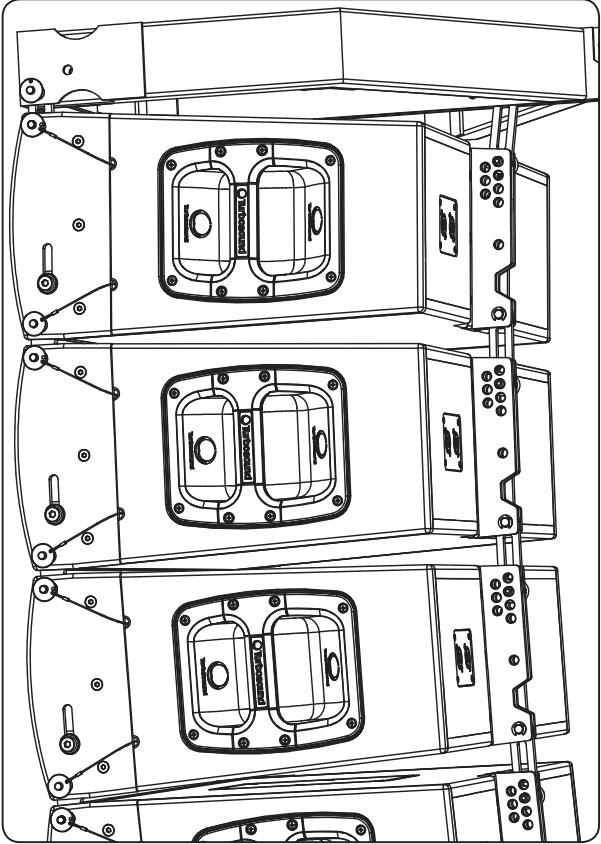
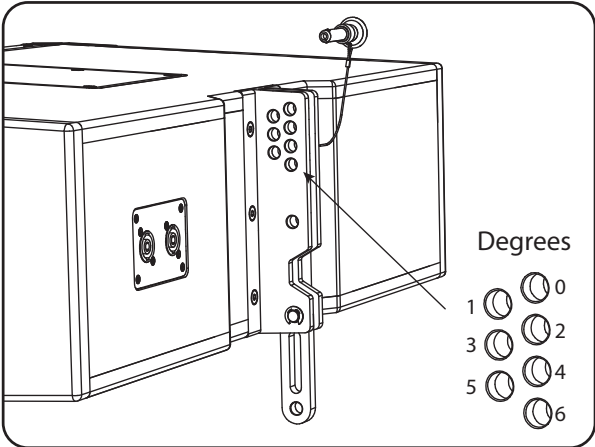


TLX84 Cabinet Angles

Rigging Tab Shows the layout graphically, and indicates the correct suspension pick point to choose on the flybar.

2.3 TLX84 Cabinet Angles

The angle of each TLX84 cabinet relative to the cabinet above it, is varied by selecting one of 7 mounting holes in the rear mounting bracket. These are labeled 0, 1, 2, 3, 4 5, and 6 degrees.



2.4 Weights

Item	Quantity	Weight (kg)	Weight (lbs)
TLX84	1	27.9	62
	2	55.8	123
	3	83.7	185
	4	112	246
	5	140	308
	6	167	369
	7	195	431
	8	223	492

Item	Quantity	Weight (kg)	Weight (lbs)
TLX215L	1	65	143
	2	130	287
	3	194	430

Item	Quantity	Weight (kg)	Weight (lbs)
TLX84-FLB	1	25.1	55.3

2.5 TLX84-FLB Flybar Working Load Limit (WLL)

Item	WLL (kg)	WLL (lbs)	DESIGN FACTOR
TLX84-FLB	260	573	10:1
	371	819	7:1
	520	1146	5:1

2.6 TLX84-FLB Flybar Safety Warning Label

⚠️ CHECK ARRAY SIZE AND LOADING CONDITIONS ACCORDING TO THE MANUAL AND MODELING SOFTWARE.

SUSPENDING THIS SYSTEM SHOULD ONLY BE DONE BY QUALIFIED PERSONS FOLLOWING SAFE RIGGING PRACTICES

MUSIC Group Manufacturing PH Ltd
17A Brunswick Street Hamilton HM 10 Bermuda

MADE IN CHINA



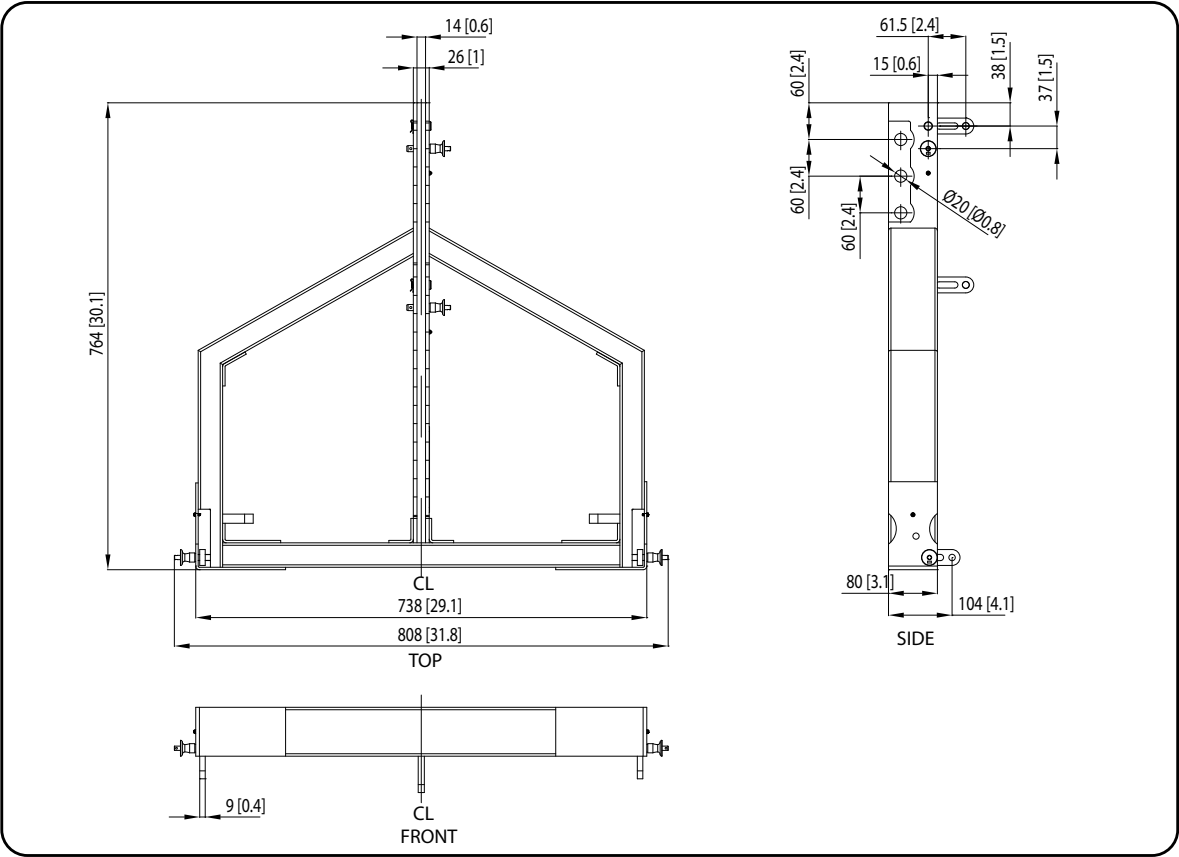


DESIGNED AND ENGINEERED IN THE U.K.

TLX84-FLB W.L.L.:260 kg/573 lbs. WEIGHT:25.1 kg/55.3 lbs.

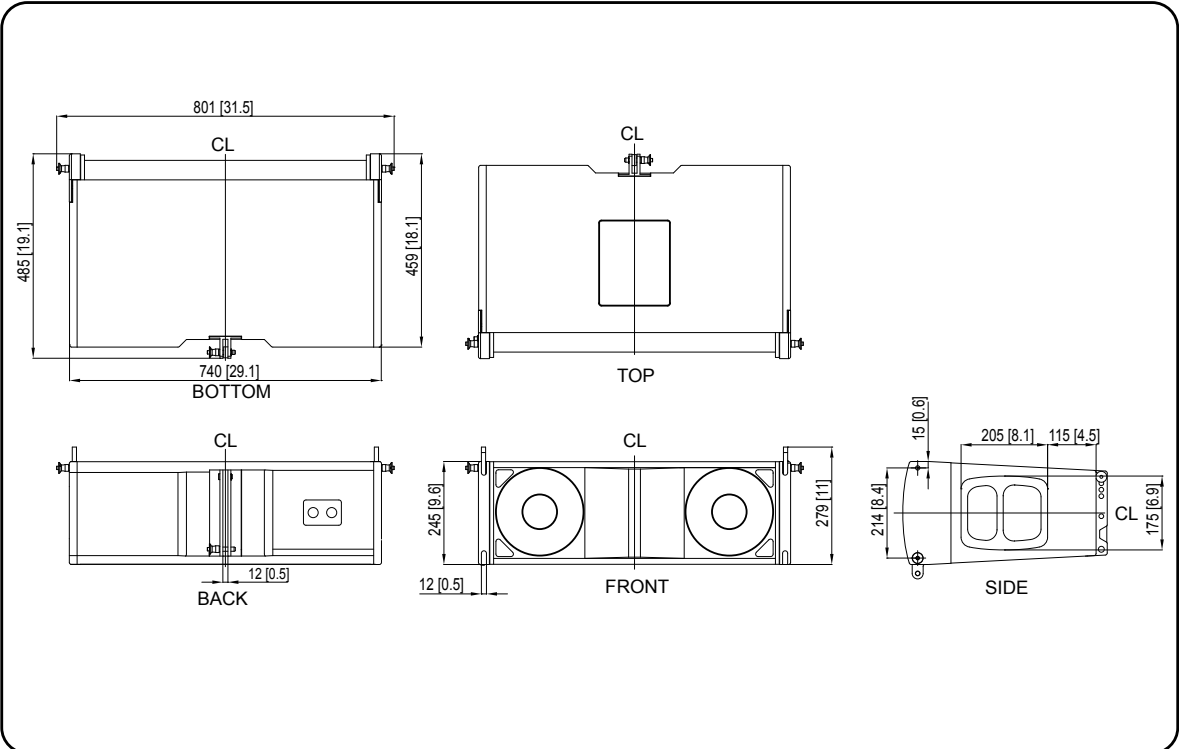
2.7 TLX84-FLB Flybar Dimensions

See Chapter 8 for information regarding inspection, care, and maintenance.



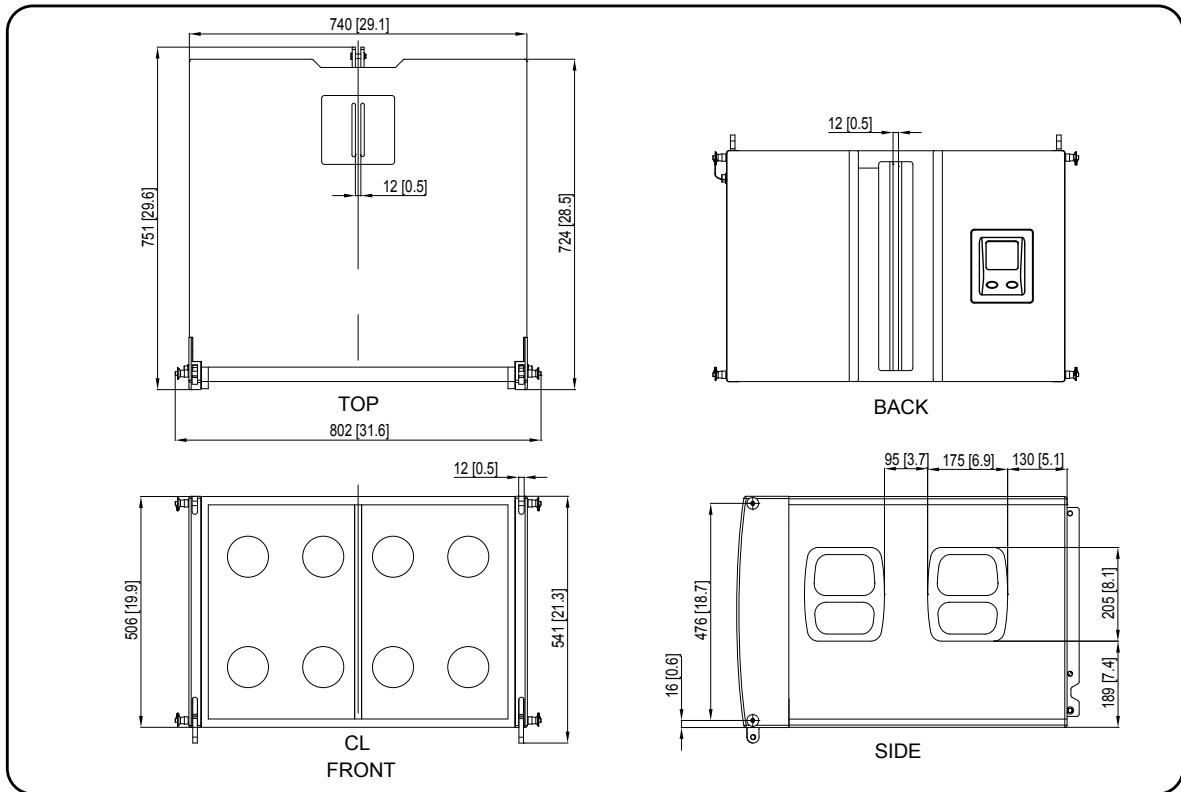
2.8 TLX84 Cabinet Dimensions

See Chapter 8 for information regarding inspection, care, and maintenance.



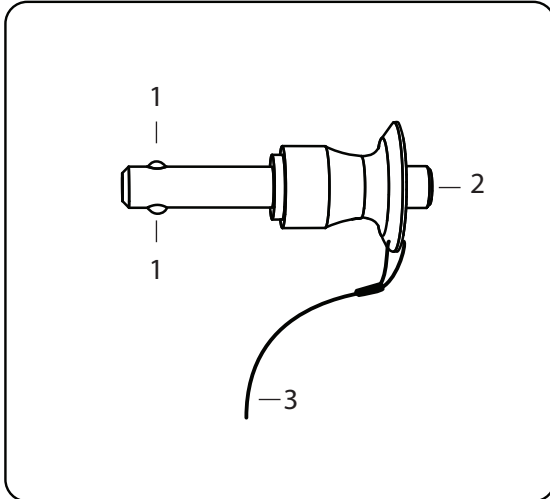
2.9 TLX215L Subwoofer Dimensions

See Chapter 8 for information regarding inspection, care, and maintenance.



2.10 Rigging Pins

See Chapter 8 for information regarding inspection, care, and maintenance.



These pins are the fundamental mechanical fastener for the assembly of the TLX84-FLB flybar, TLX84 cabinet, and the TLX215L subwoofer.

1. **Spring Balls** – These are locking devices that prevent the pin from pulling out once it has been inserted.
2. **Spring Release** – Press this button in and the spring balls (1) will unlock and allow the pin to be inserted into the mounting holes and lugs. Release this button and the spring balls will lock and prevent the pin from pulling back out.
3. **Lanyard** – These prevent the pins from being easily lost.

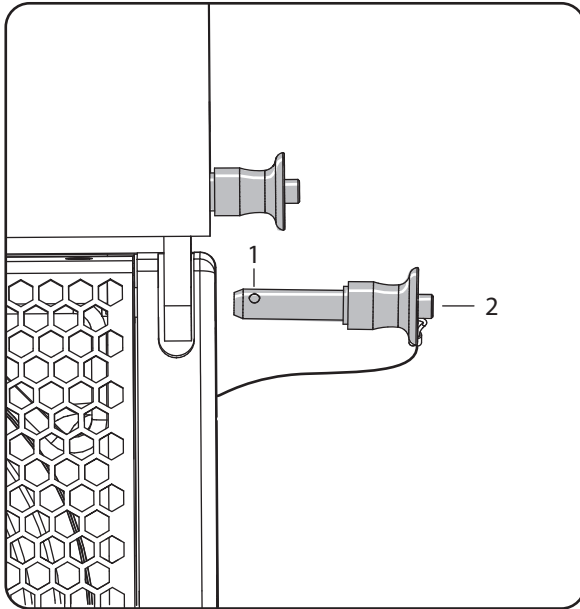
WARNING

BEFORE EVERY USE, INSPECT ALL PINS FOR DAMAGE, AND VERIFY THE CORRECT OPERATION OF THE SPRING LOCKING MECHANISM. DO NOT USE ANY PINS THAT SHOW SIGNS OF DAMAGE. FAILURE TO FOLLOW INSTRUCTIONS MAY CAUSE PERMANENT INJURY OR DEATH.

WARNING

BEFORE EVERY USE, MAKE SURE THAT ALL PINS ARE CLEAN AND FREE FROM DIRT AND DEBRIS THAT MAY INTERFERE WITH THE CORRECT OPERATION OF THE SPRING LOCKING MECHANISM. FAILURE TO FOLLOW INSTRUCTIONS MAY CAUSE PERMANENT INJURY OR DEATH.

2.10.1 Rigging Pin Installation



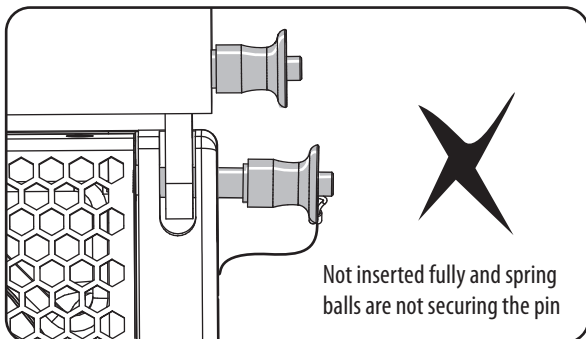
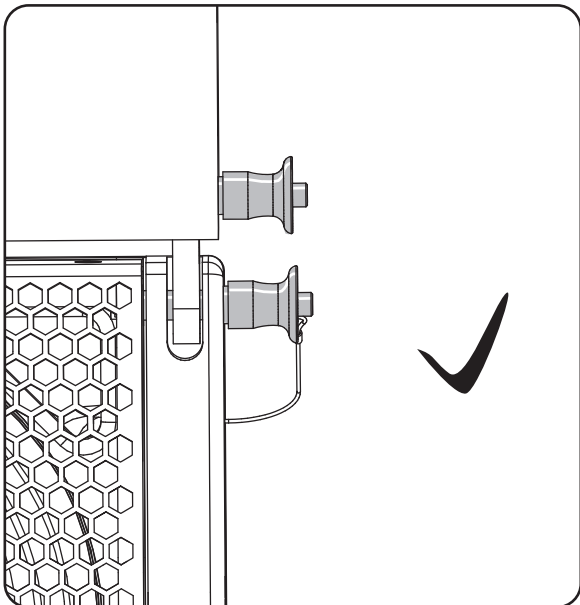
Pin Installation

The following example shows how to use a pin to join a TLX84 cabinet and a TLX84-FLB flybar. Exact details of the connections for various configurations are given in the various chapters of this manual.

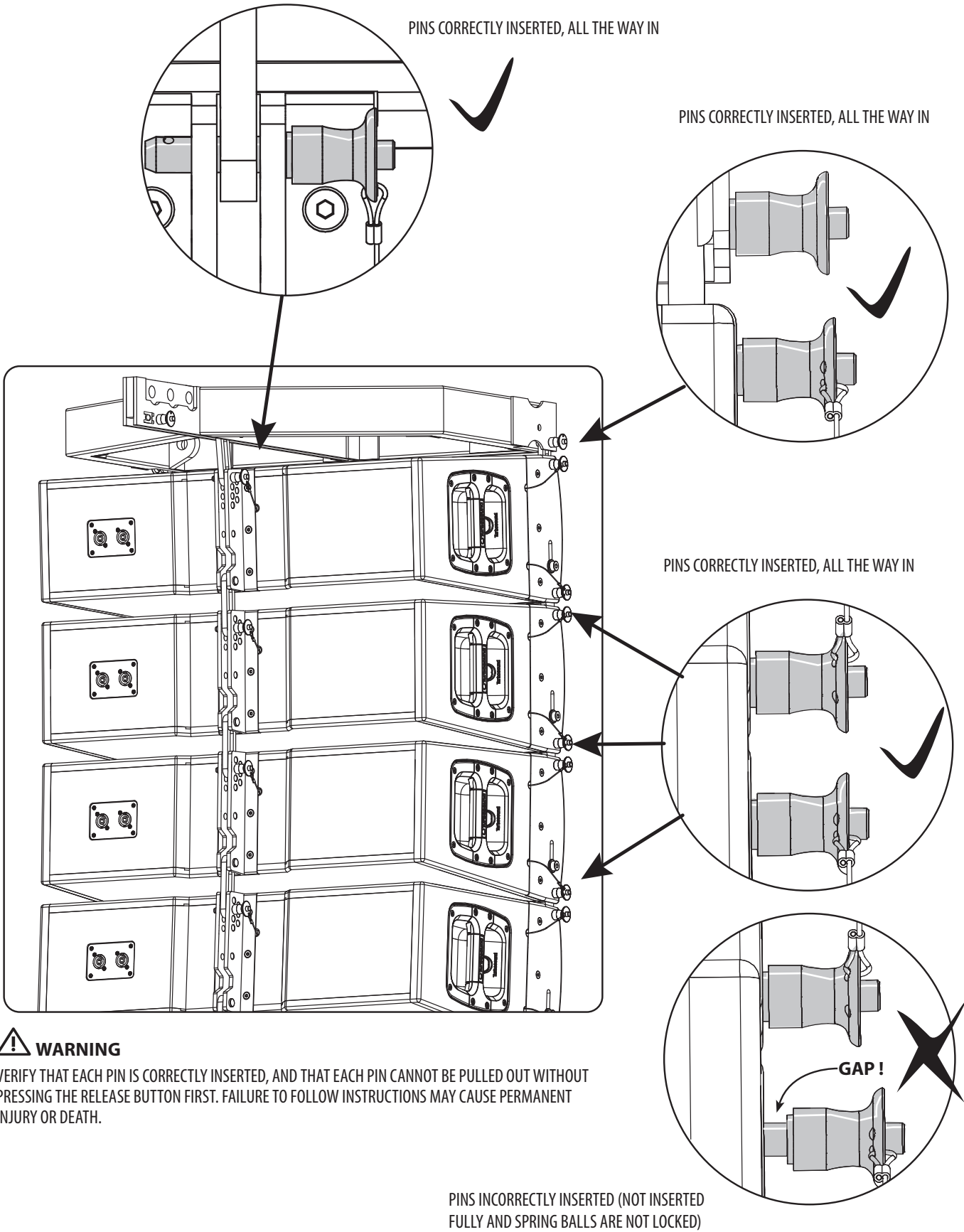
1. Support the weight of the components to be joined.
2. Align the top mounting slot of the TLX84 cabinet with the bottom retractable link of the TLX84-FLB flybar. Align the holes so the pin can pass through and join them together.
3. Press the button (2) at the end of the pin, and insert the pin in as far as it will go. The spring balls(1) will retract while the button is being held, allowing the pin to pass through the holes.
4. Release the button (2) when the pin is fully inserted.
5. Check the pin is correctly inserted as far as it will go, and check that the components being connected have been correctly captured together by the pin.
6. With the weight of the components still supported, and without pressing the button (2), try to pull on the pin sharply, to check it is secured in position by the spring ball locking mechanism.

Pin Removal

1. Support the weight of the components to be disconnected.
2. Press the button (2) and pull out the pins joining the components together.
3. Carefully separate the components.



2.10.2 Typical Locations where Rigging Pins are used

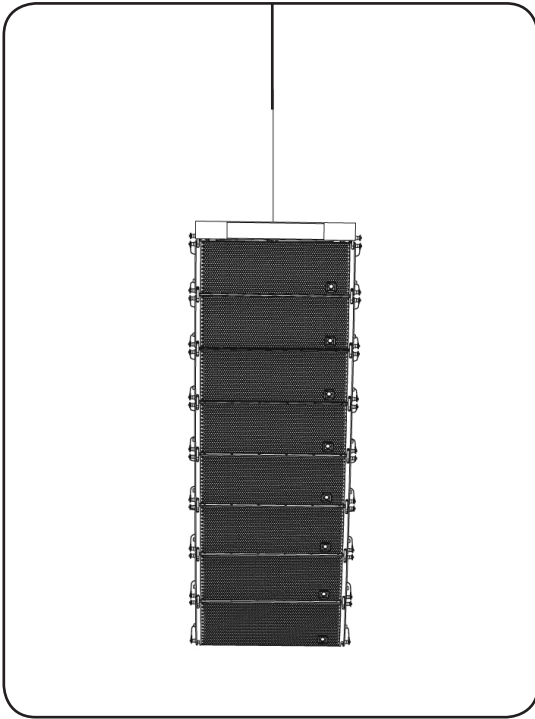


⚠ WARNING

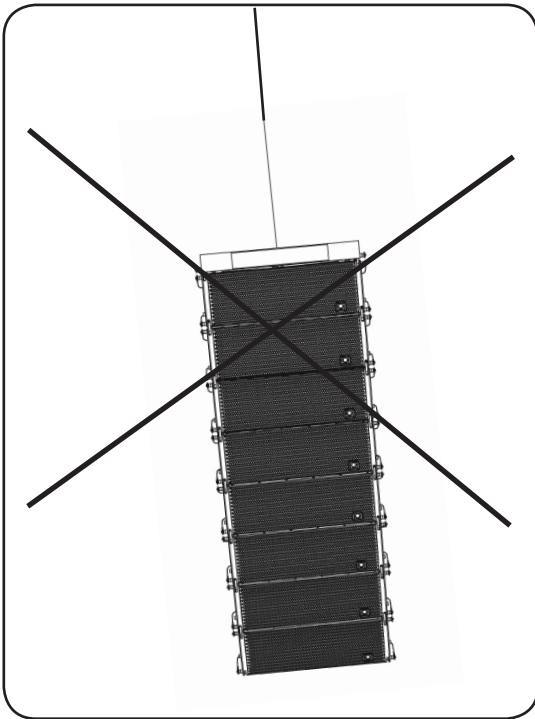
VERIFY THAT EACH PIN IS CORRECTLY INSERTED, AND THAT EACH PIN CANNOT BE PULLED OUT WITHOUT PRESSING THE RELEASE BUTTON FIRST. FAILURE TO FOLLOW INSTRUCTIONS MAY CAUSE PERMANENT INJURY OR DEATH.

2.11 Vertical Orientation

CORRECT INSTALLATION



INCORRECT INSTALLATION



Vertical Orientation Only!

The mechanical design of the TLX84 cabinet, TLX215L subwoofer, and the TLX84-FLB flybar uses links and pins to assemble the various components. The mechanical strength comes from the cabinet's metal side pieces and the pins, and not through the wooden cabinets. The cabinets are supported vertically below each other, and vertically below the flybar.

WARNING

THE ASSEMBLY MUST BE ORIENTED SO THAT THE SIDES OF THE CABINETS AND SUBWOOFER ARE ALWAYS KEPT IN THE VERTICAL PLANE. FAILURE TO DO THIS MAY CAUSE STRAIN AND FAILURE OF THE MECHANICAL STRUCTURE, LEADING TO POSSIBLE PERMANENT INJURY OR DEATH.

WARNING

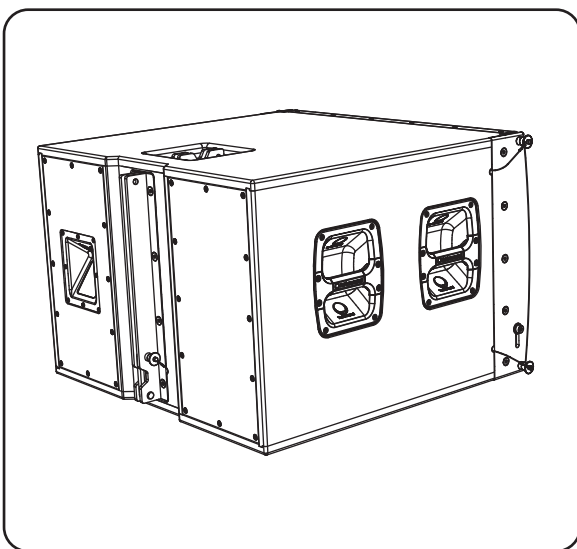
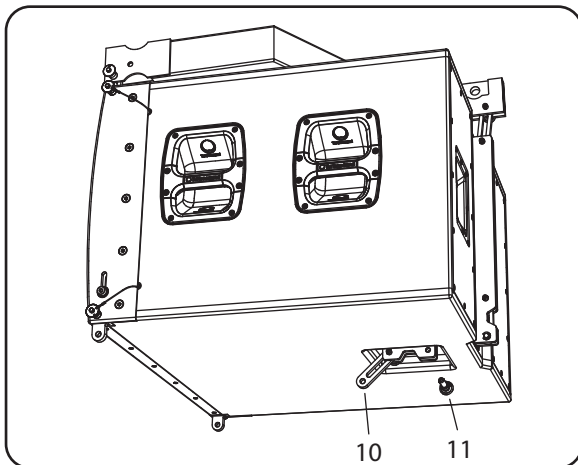
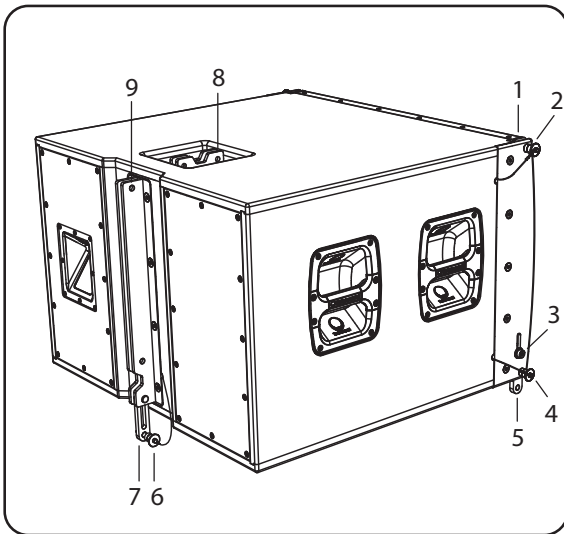
THIS ILLUSTRATION SHOWS AN INCORRECT INSTALLATION, WHERE THE SIDES OF THE CABINETS ARE NOT IN THE VERTICAL PLANE. THIS MAY CAUSE STRAIN AND FAILURE OF THE MECHANICAL STRUCTURE, LEADING TO POSSIBLE PERMANENT INJURY OR DEATH.

WARNING

THE TLX84 CABINETS, TLX215L SUBWOOFERS, AND TLX84-FLB FLYBAR SHALL NOT BE CLIMBED UPON. THIS MAY CAUSE STRAIN AND FAILURE OF THE MECHANICAL STRUCTURE, LEADING TO POSSIBLE PERMANENT INJURY OR DEATH.

2.12 TLX215L Subwoofer Mounting Components

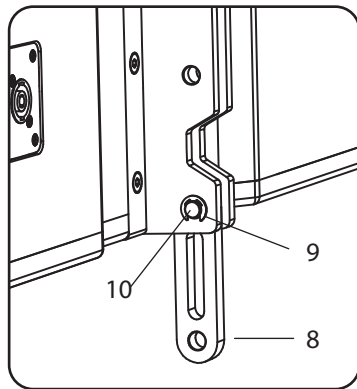
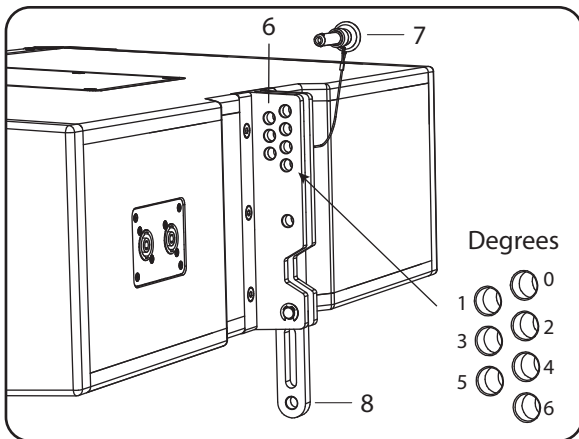
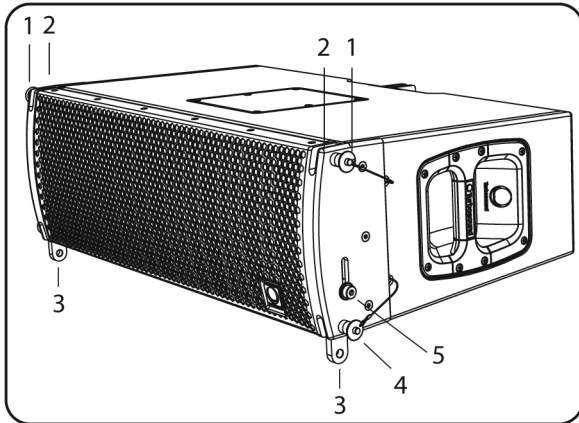
Mounting Links Out



The TLX215L subwoofer has 2 retractable mounting links at the bottom (5), mounting holes at the rear (9) and top (8), and a drop-down link (7) at the rear bottom and underneath (10). The TLX84-FLB flybar has 2 drop down links that fit in two locations (1) on top of the subwoofer.

1. **Location for Top Mounting Links** – TLX84-FLB flybar has two drop down links that fit in these two locations. The bottom links (5) of another TLX215L subwoofer or TLX84 cabinet (for ground stacking) can also fit here.
2. **Top Pins** – Secures the mounting links of the TLX84-FLB flybar or the drop down links of a second TLX215L subwoofer or TLX84 cabinet.
3. **Bottom Bolts** – These allow the bottom mounting links (5) to be positioned up or down, by sliding in the slot, then securing with the bottom pin (4).
4. **Bottom Pins** – Secures the bottom mounting links (5) in the up or down position.
5. **Bottom Mounting Links** – These retractable links connect to the top of a second TLX215L subwoofer or TLX84 cabinet below.
6. **Rear Pin** – This is used to connect the drop down link (7) to a subwoofer below, or to stow the drop-down link if it is not used.
7. **Rear Drop-Down Link** – This is used to connect to the rear mounting hole (9) of a second TLX215L subwoofer.
8. **Top Mounting Hole** – This is used to connect to the drop-down link (8) of a TLX84 cabinet mounted on top of the subwoofer.
9. **Rear Mounting Hole** – This is used to connect to the drop-down link (7) of a TLX215L subwoofer above it, or to the drop-down link of a TLX84-FLB flybar.
10. **Bottom Drop-Down Link** – This is used to connect to the rear mounting hole of a TLX84 cabinet hung below the subwoofer.
11. **Bottom Pin** – This rigging pin is used to stow the drop-down link (10) if it is not used.

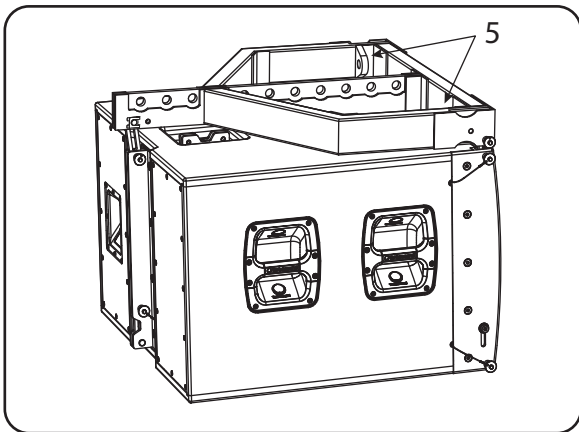
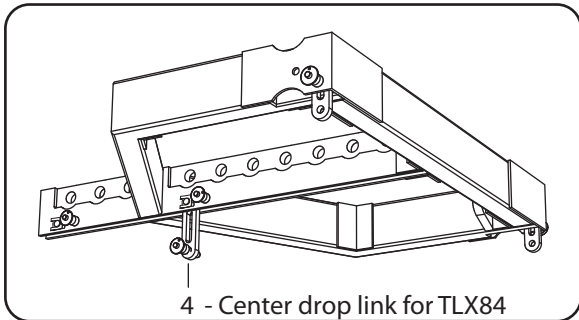
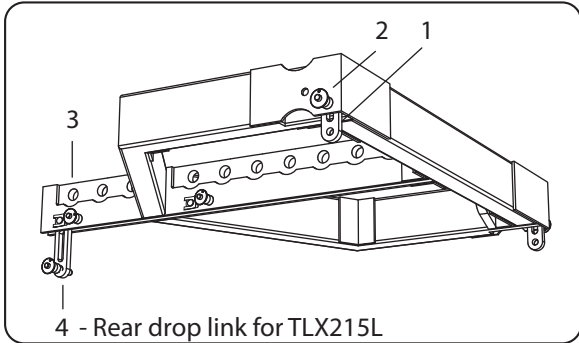
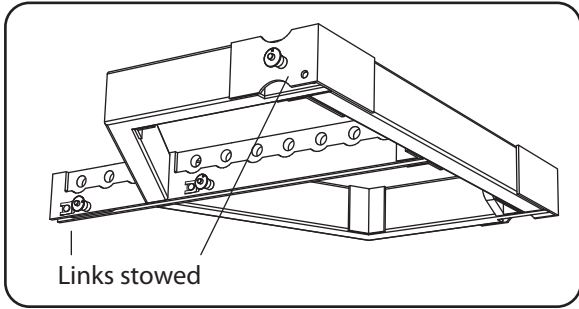
2.13 TLX84 Cabinet Mounting Components



The TLX84 cabinet has 2 mounting slots (2) at the top, 2 retractable mounting lugs (3) at the bottom, a choice of 7 mounting holes (6) at the rear top, and a drop-down link (8) at the rear bottom. These allow the TLX84 cabinets to be connected together, attached to the TLX84-FLB flybar, and TLX215L subwoofer.

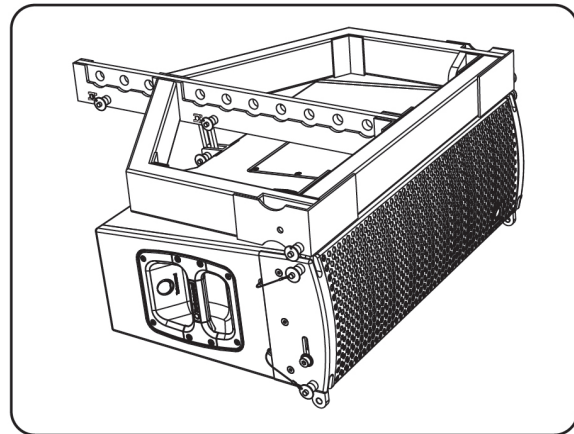
1. **Front Pins** – These are used to secure the bottom links (3) of the TLX84 cabinet or TLX215L subwoofer above, or to the bottom mounting links of the TLX84-FLB flybar. They are attached with lanyards to prevent loss.
2. **Top Mounting Slots** – These accept the bottom links (3) of the TLX84 cabinet or TLX215L subwoofer above, or the bottom mounting links of the TLX84-FLB flybar.
3. **Bottom Mounting Links** – These retractable links fit into and connect to the top mounting slots (2) of the TLX84 cabinet or TLX215L subwoofer below.
4. **Bottom Pins** – These pins are used to secure the bottom mounting links (3) in the up or down position. They have lanyards attached.
5. **Bottom Bolts** – These bolts are used to secure the bottom mounting links (3) in their slots so they move up or down.
6. **Rear Mounting Holes** – These are used to connect the rear drop-down link (8) of the TLX84 cabinet or TLX215L above, or the drop-down link of the TLX84-FLB flybar. The angle of the cabinet is defined by choosing one of these 7 holes.
7. **Rear Pin** – This is used to secure the rear drop-down link (8) of the TLX84 cabinet or TLX215L subwoofer above, or the drop-down link of the TLX84-FLB flybar, to the selected rear mounting hole (6). If the drop-down link (8) is not in use, then the pin is used to secure it.
8. **Drop-Down Link** – This connects to the rear mounting hole (6) of the TLX84 cabinet or TLX215L subwoofer (for ground stacking) below it.
9. **Circlip** – This holds the pivot pin (9) in place, and prevents the pivot pin and the drop down link (8) from falling out.
10. **Pivot Pin** – This pin holds the drop-down link (8) in place and allows it to rotate in the up or down position. A circlip (9) holds the pivot pin in place.

2.14 TLX84-FLB Flybar Mounting Components

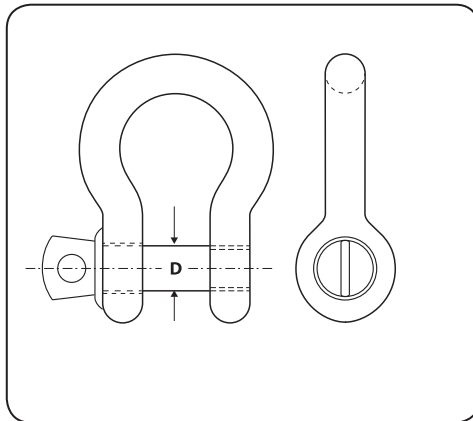


The TLX84-FLB flybar shall only be used with TLX84 cabinets and TLX215L subwoofers.

1. **Mounting Links** – These retractable links connect the flybar to the top mounting slots of the TLX84 cabinet or TLX215L subwoofer. The connections are secured using the front pins of the TLX84 cabinet or TLX215L subwoofer.
2. **Rigging Pins** – These are used to secure the mounting links (1) in the up or down positions.
3. **Suspension Points** – Ten 20 mm diameter holes are used to attach a bow shackle or similar lifting equipment for suspending the assembly. Use the EASE FOCUS II software to determine the correct pick point for each configuration.
4. **Drop-Down Links** – For attaching the flybar to the rear mounting point of TLX84 or TLX215L. The rear drop link is for attaching to TLX215L and the center drop link is for TLX84.
5. **Lugs** – These 2 lugs are used to secure secondary safeties to the flybar.



2.14.1 TLX84-FLB Flybar (continued)

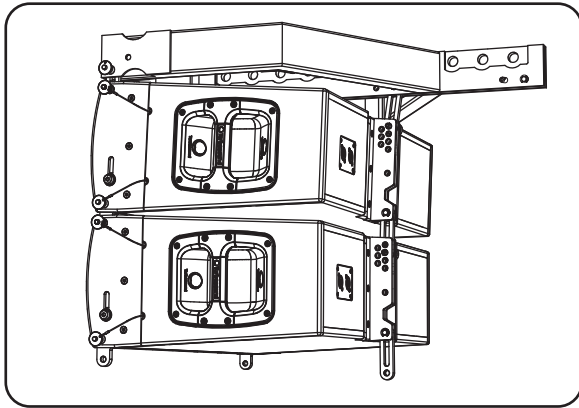


Typical Bow Shackle

Suspend the array by attaching one or more bow shackles or similar lifting devices with a pin diameter (D) to fit the 20 mm suspension pick point. Typically, manufacturers of bow shackles provide suitable devices with pin diameters between 11 mm and 19 mm, and with work loads between 1 tonnes and 3.25 tonnes.

Installation and setup should only be carried out by qualified and authorized personnel observing the valid national Rules for the Prevention of Accidents (RPA). Refer to Chapter 1 for more details.

Chapter 3: Assembling a TLX84 Array on a TLX84-FLB Flybar



The following procedure shows how to build an array of TLX84 cabinets by adding them one at a time.

Alternatively, cabinets can be pre-assembled into groups of four, and then connected to the flybar at a later time. This method is shown in procedure 3.2.

The system is suspended using a TLX84-FLB flybar that attaches to your lifting system.

The top TLX84 cabinet connects to two front links on the flybar, and one rear drop-down link.

There are 7 rear mounting holes on the back of the TLX84 that allow the cabinet angle to be selected from 0 to 6 degrees.

3.0.1 Required Components

Item	Quantity
TLX84-FLB Flybar	1
TLX84 Cabinet	8 (maximum)

3.0.2 Preparation

Use the EASE FOCUS II software application to design your system to suit the venue. This will calculate which flybar mounting hole to attach your bow shackle, and at which angle to set each TLX84 cabinet to achieve optimum coverage.

3.0.3 Location

Move the first TLX84 cabinet so it is sitting upright on a safe flat surface, directly below the suspension point.

3.0.4 Measured Weights

Item	Quantity	Total Weight including one TLX84-FLB Flybar	
TLX84	1	53.0 kg	117 lbs
	2	80.9 kg	178 lbs
	3	109 kg	240 lbs
	4	137 kg	301 lbs
	5	165 kg	363 lbs
	6	193 kg	424 lbs
	7	220 kg	486 lbs
	8	248 kg	547 lbs

WARNING

DO NOT EXCEED A TOTAL QUANTITY OF 8 TLX84 CABINETS FOR ONE TLX84-FLB FLYBAR. FAILURE TO FOLLOW INSTRUCTIONS MAY CAUSE PERMANENT INJURY OR DEATH.

3.0.5 Personnel

The following procedures shall be undertaken by experienced, certified, qualified, and authorised personnel only. The procedures require the use of three or more authorised persons.



Protective Headwear shall be worn



Protective Footwear shall be worn



Protective Gloves shall be worn



Protective Eyewear shall be worn

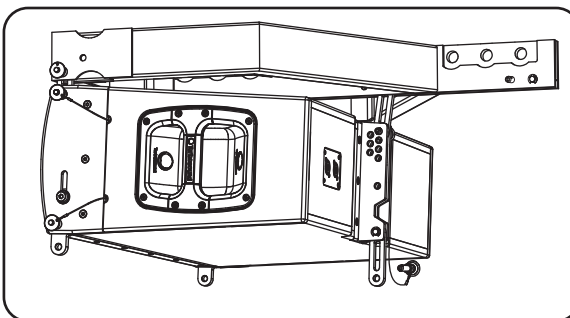
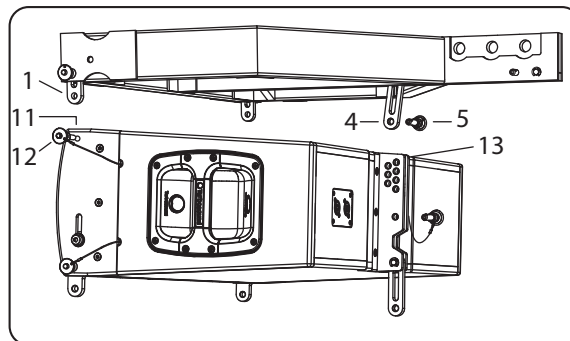
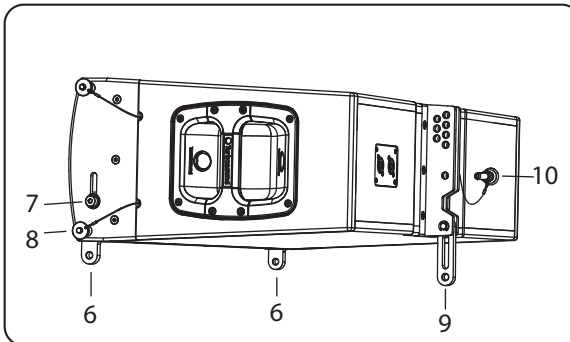
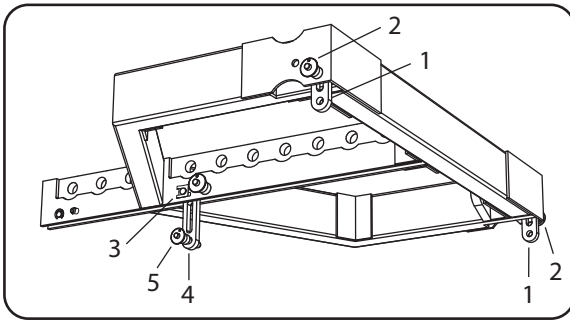


Practice Safe Lifting

TLX84-FLB Flybar Working Load Limit (WLL)

Item	Working Load Limit (WLL)	
TLX84-FLB	260 kg	573 lbs

Procedure 3.1 Connecting TLX84 Cabinets to the TLX84-FLB Flybar



1. Prepare the TLX84-FLB flybar by pulling out the rigging pins (2) to drop down the front links (1) and then securing them in the lower position with the rigging pins (2) again. Lower the center drop link from its storage position by removing the rigging pin.
2. Double check that all pins are correctly inserted, before proceeding further.
3. Prepare all the TLX84 cabinets, by pulling out the front rigging pins (8), and sliding the drop down links (6) downwards. Secure the links in the lower position with the pins (8). Remove the rear pin (10) and then the rear drop-down link (9) will drop down. Check that the drop down link (9) and its pivot pin and circlip and are all present, clean, and in good condition. Check that the circlip is correctly holding the pivot pin in place, and preventing it and the drop-down link from falling out. Pull out the front pins (12).
4. Carefully lift the TLX84-FLB flybar on top of the first TLX84 cabinet and align the flybar's front links (1) with the top mounting slots (11) of the cabinet. Insert the front pins (12) to secure the front links (1).

Note: normally the 0 degree hole is selected to attach the top TLX84 enclosure to the TLX84-FLB in order to set the site angle of the top element parallel to the flybar. This allows the TLX84-FLB to serve as a visual reference for checking array focus on the audience area, i.e., if you can see the top of the TLX84-FLB then you are outside the vertical coverage pattern of the array.

Take care not to trap your fingers between components.

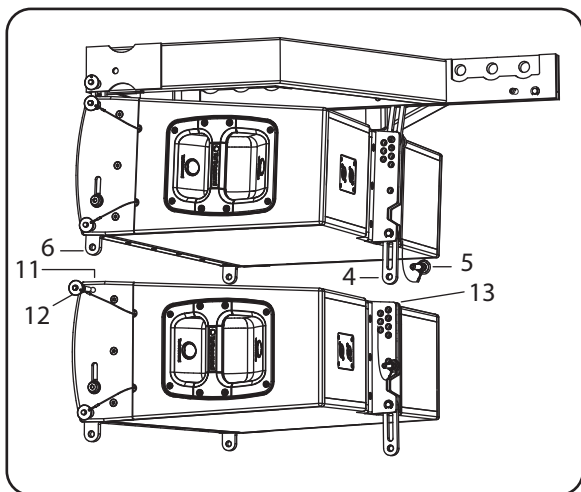


5. Support the rear of the flybar and align the flybar's drop-down link (4) with the desired hole (13) in the TLX84 rear bracket. The holes are marked with the angle from 0 to 6 degrees. Choose the correct hole that corresponds to the angle recommended by EASE FOCUS II software for the first TLX84 cabinet. Insert the rear pin (5) to secure the link to the cabinet.

Double check that all pins are correctly inserted, before proceeding further.



6. Attach the bow shackle or other lifting equipment securely to the flybar mounting hole recommended by the EASE FOCUS II software, then attach the hook and chain. Carefully raise the flybar/cabinet assembly to a reasonable working height to allow attaching the next cabinet.

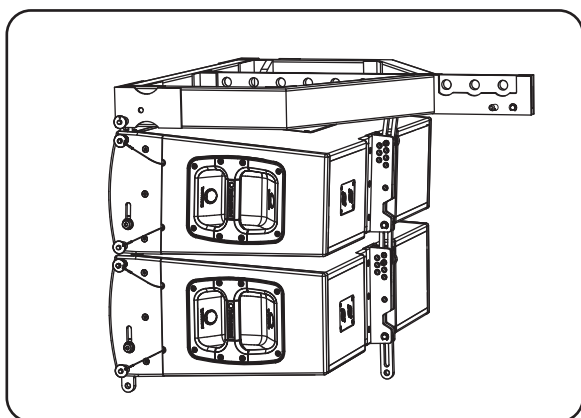


7. Prepare the next TLX84 cabinet, as described in step 3.
8. Carefully lower the upper enclosure and flybar assembly until the front lower mounting links (6) of the top cabinet fit into the top slots (11) in this lower cabinet. Insert the front two pins (12), to secure the links (6) in the slots (11).

Take care not to trap your fingers between components.



9. Support the rear of the lower cabinet and align the top cabinet's drop-down link (4) with the desired hole (13) in the lower cabinet's rear bracket. The holes are marked with the angle from 0 to 6 degrees. Choose the correct hole that corresponds to the angle recommended by EASE FOCUS II software for this TLX84 cabinet. Insert the rear pin (5).
10. Double check that all pins are correctly inserted, before proceeding further.
11. The addition of other TLX84 cabinets is performed by repeating steps 8 through 11 for each additional cabinet.

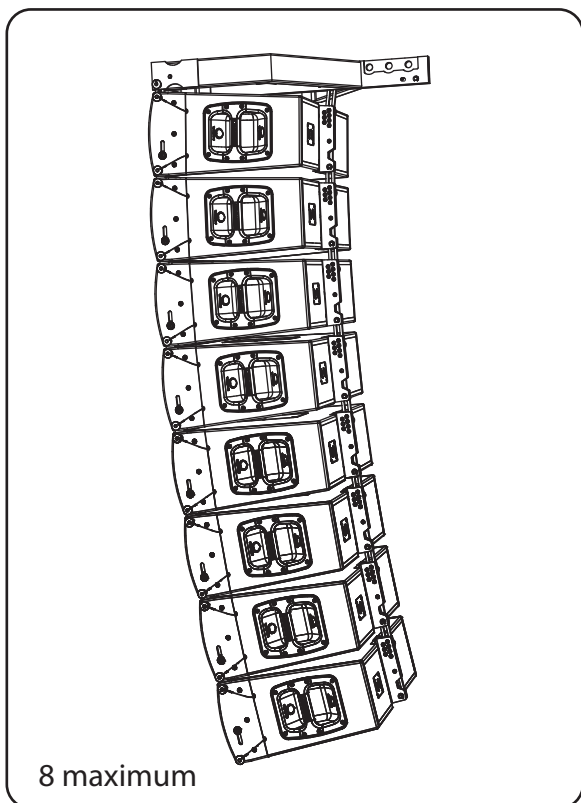


! WARNING

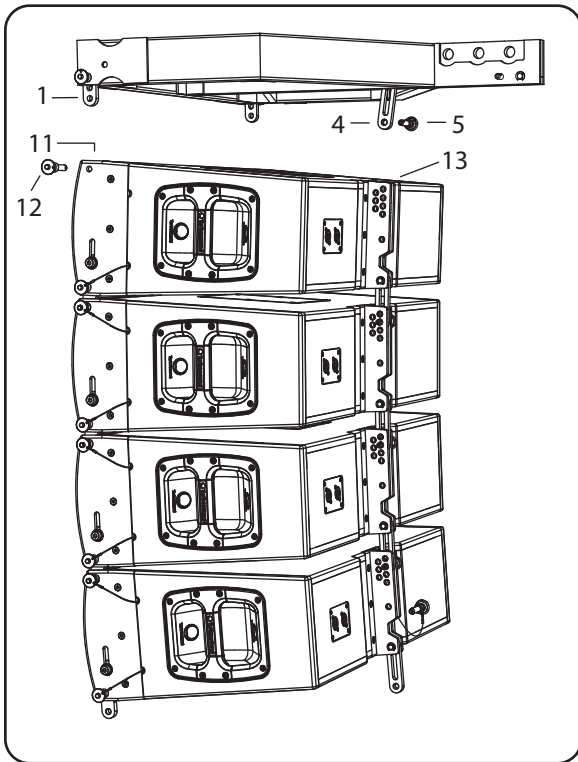
DO NOT EXCEED A TOTAL QUANTITY OF 8 TLX84 CABINETS FOR ONE TLX84-FLB FLYBAR. FAILURE TO FOLLOW INSTRUCTIONS MAY CAUSE PERMANENT INJURY OR DEATH.

NOTE

Disassembly is the reverse of assembly.



Procedure 3.2: Adding a group of four TLX84 Cabinets to the TLX84-FLB Flybar



Groups of four cabinets can be pre-assembled using Procedure 3.1, steps 8 to 11, and then connected to the TLX84-FLB flybar as an assembled group of four just prior to flying.

The TLX84 cabinets connect to each other using the front mounting links, and the rear drop-down link.

1. Remove the top pins (12). Carefully lift the TLX84-FLB flybar on top of the top TLX84 cabinet and align the flybar's front links (1) with the top mounting slots (11) of the cabinet. Insert the front pins (12) to secure the front links (1) of the flybar to the cabinet.

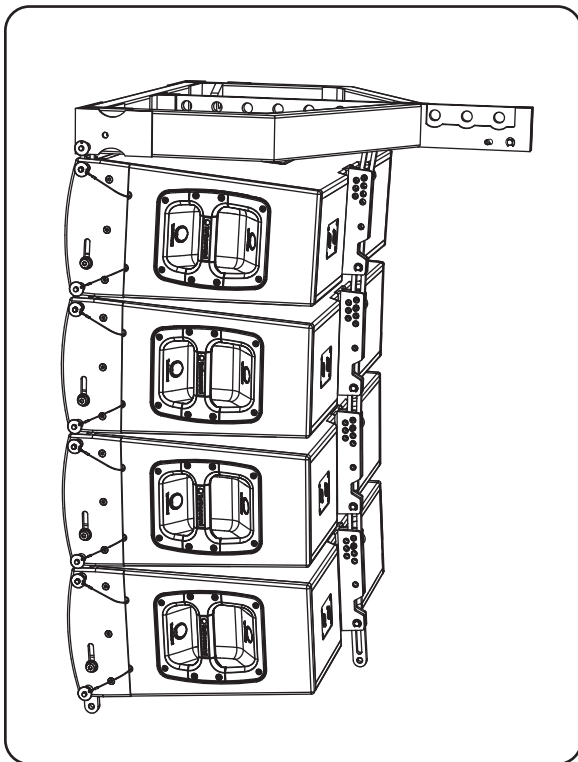
Take care not to trap your fingers between components.



2. Support the rear of the flybar and align the flybar's drop-down link (4) with the desired hole (13) in the TLX84 rear bracket. The holes are marked with the angle from 0 to 6 degrees. Choose the correct hole that corresponds to the angle recommended by EASE FOCUS II software for the first TLX84 cabinet. Insert the rear pin (5) to secure the link to the top cabinet.

Note: normally the 0 degree hole is selected to attach the top TLX84 enclosure to the TLX84-FLB in order to set the site angle of the top element parallel to the flybar. This allows the TLX84-FLB to serve as a visual reference for checking array focus on the audience area, i.e., if you can see the top of the TLX84-FLB then you are outside the vertical coverage pattern of the array. The angles of the other cabinets can be adjusted by supporting the cabinet weight and moving the drop-down links (4) of the various cabinets to the desired angle holes (13).

Double check that all pins are correctly inserted.



WARNING

DO NOT EXCEED A TOTAL QUANTITY OF 8 TLX84 CABINETS FOR ONE TLX84-FLB FLYBAR. FAILURE TO FOLLOW INSTRUCTIONS MAY CAUSE PERMANENT INJURY OR DEATH.

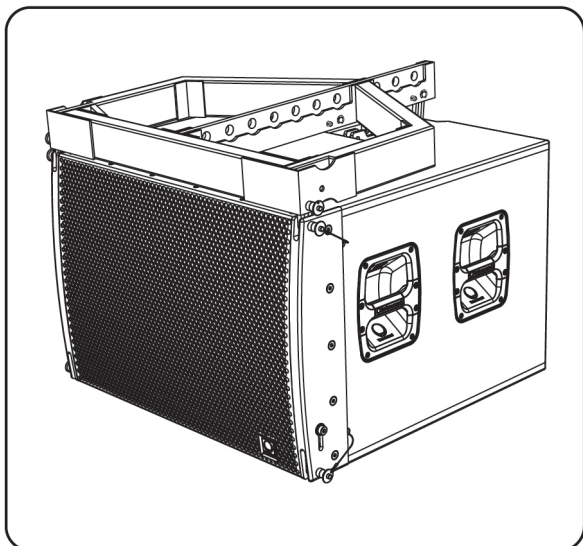
WARNING

DO NOT FLY THE PRE-ASSEMBLED GROUPS OF TLX84 CABINETS WITHOUT THE TLX84-FLB FLYBAR. FAILURE TO FOLLOW INSTRUCTIONS MAY CAUSE PERMANENT INJURY OR DEATH.

NOTE

Disassembly is the reverse of assembly.

Chapter 4: Assembling TLX215L Subwoofers on a TLX84-FLB Flybar



The following procedure describes how to assemble a TLX215L subwoofer to the TLX84-FLB flybar.

The TLX84-FLB flybar is attached to the top of the TLX215L subwoofer, using 2 front pins, 2 mounting links, and the rear drop-down link from the TLX84-FLB flybar.

WARNING

DO NOT EXCEED A TOTAL QUANTITY OF 3 TLX215L SUBWOOFERS FOR ONE TLX84-FLB FLYBAR. FAILURE TO FOLLOW INSTRUCTIONS MAY CAUSE PERMANENT INJURY OR DEATH.

4.0.4 Personnel

The following procedures shall be undertaken by experienced, certified, qualified, and authorised personnel only. The procedures require the use of three or more authorised persons.

4.0.1 Required Components

Item	Quantity
TLX84-FLB Flybar	1
TLX215L Subwoofer	3 (max)

4.0.2 Location

Move the TLX215L subwoofer so it is sitting upright on a safe flat surface, directly below the suspension point.

4.0.3 Measured Weights

Total Measured System Weight			
Item	Quantity	Total Weight Including one TLX84-FLB Flybar	
TLX215L	1	90 kg	199 lbs
	2	155 kg	342 lbs
	3	220 kg	485 lbs



Protective Headwear shall be worn



Protective Footwear shall be worn



Protective Gloves shall be worn



Protective Eyewear shall be worn

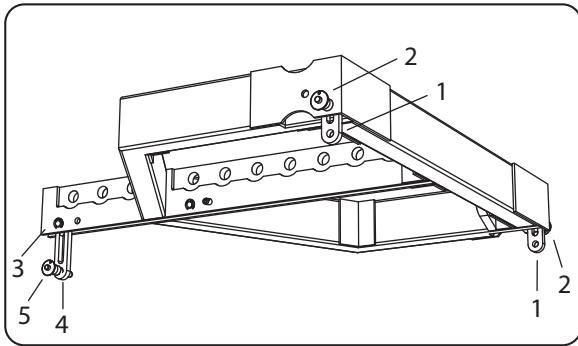


Practice Safe Lifting

TLX84-FLB Flybar Working Load Limit (WLL)

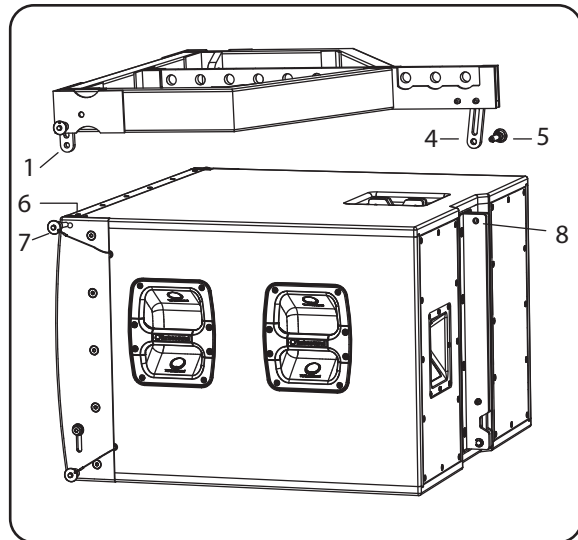
Item	Working Load Limit (WLL)		
TLX84-FLB	TLX84-FLB	260 kg	573 lbs

Procedure 4.1 Connecting TLX215L Subwoofers to the TLX84-FLB Flybar



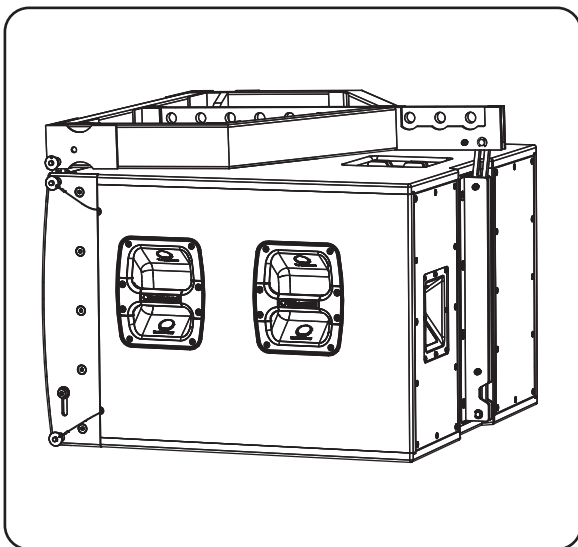
1. Prepare the TLX84-FLB flybar by pulling out the rigging pins (2) to drop down the front links (1) and then secure them in the down position with the rigging pins (2). Lower the rear drop link from its storage position by removing the rigging pin.

Double check that all pins are correctly inserted, before proceeding further.



2. Pull out the subwoofer's front pins (7). Carefully lift the TLX84-FLB flybar on top of the TLX215L subwoofer and align the flybar's front links (1) with the top mounting slots (6) of the subwoofer. Insert the front pins (7) to secure the front links (1) to the subwoofer.

Take care not to trap your fingers between components.

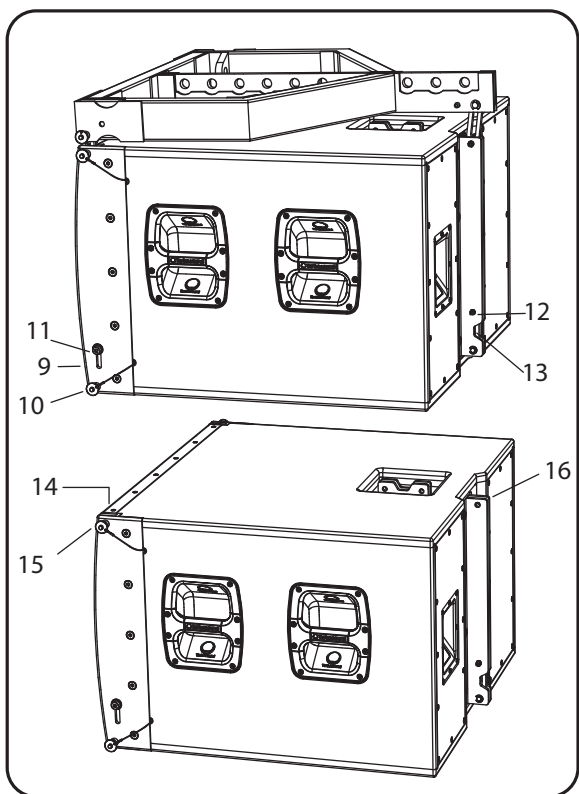


3. Align the flybar's drop-down link (4) with the hole (8) in the TLX215L rear bracket. Insert the rigging pin (5) to secure the link to the subwoofer.

Double check that all pins are correctly inserted, before proceeding further.



4. To attach a second subwoofer, first attach a bow shackle or other lifting equipment securely to the flybar mounting hole recommended by the EASE FOCUS II software, then attach the hook and chain. Carefully raise the flybar/subwoofer assembly to a reasonable working height to allow attachment of the next subwoofer.
5. Move the bottom TLX215L subwoofer to a position directly below the top subwoofer. Make sure it is resting on a flat steady surface.



6. Prior to attaching the lower subwoofer, ensure that bottom mount hardware on the upper subwoofer and upper mount hardware on the lower subwoofer are in their stored positions. Carefully lower the flybar/subwoofer assembly and physically align the top and bottom subwoofers so that front lower mounting links (11) and the rear drop link (13) of the top subwoofer will properly align with the mount link slots (14) and rear drop link channel (16) of the lower subwoofer.
7. Pull out the lower subwoofer's front pins (15) then remove the front lower rigging pins (10) of the top subwoofer. Allow front mounting links (11) to slide downwards from the top subwoofer into the bottom subwoofer's mount link slots (14). Secure the mounting links to the upper subwoofer with pins (10) and to the lower subwoofer with pins (15).

Take care not to trap your fingers between components.



8. Remove the rear pin (12) and the rear drop-down link (13) will drop down. Check that the drop down link (13) and its pivot pin and circlip and are all present, clean, and in good condition. Check that the circlip is correctly holding the pivot pin in place, and preventing it and the drop down link from falling out.
Align the top subwoofer's drop-down link (13) with the hole (16) in the lower subwoofer's rear drop link channel. Insert the rear pin (12) to secure the subwoofers together.

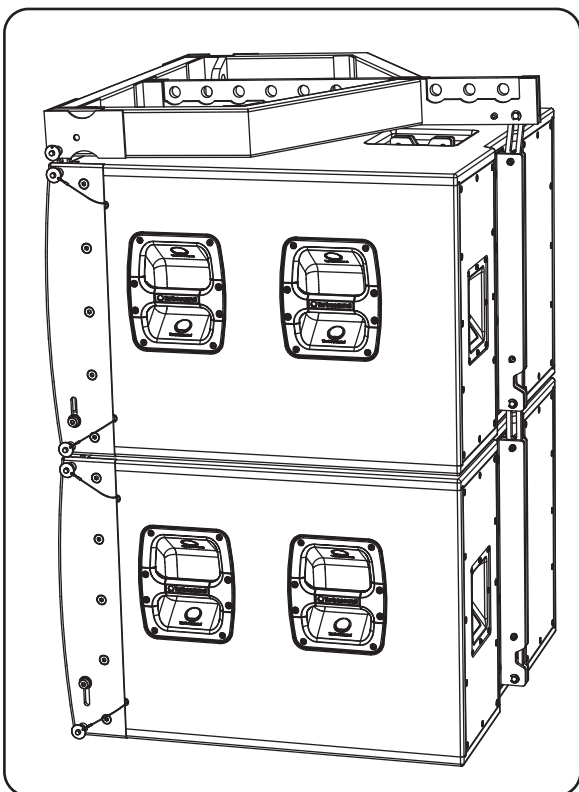
Double check all the connections to make sure that the TLX215L subwoofers and the TLX84-FLB flybar are securely connected together.



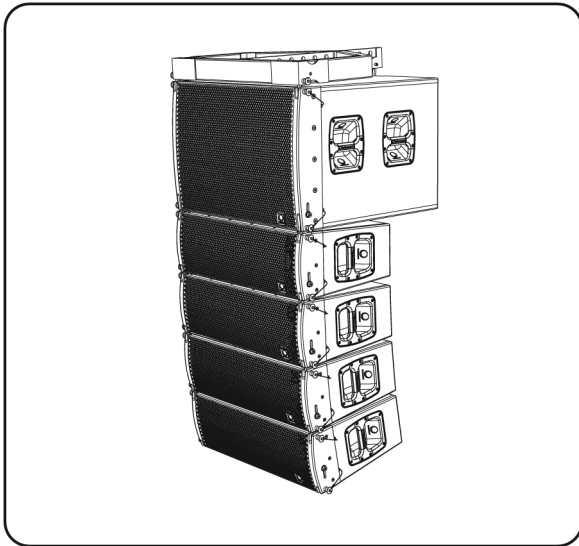
9. The addition of one more TLX215L subwoofer is performed by repeating steps 7 through 8.

WARNING
DO NOT EXCEED A TOTAL QUANTITY OF 3 TLX215L SUBWOOFERS FOR ONE TLX84-FLB FLYBAR. FAILURE TO FOLLOW INSTRUCTIONS MAY CAUSE PERMANENT INJURY OR DEATH.

NOTE
Disassembly is the reverse of assembly.



Chapter 5: Assembling a TLX84 Array with a TLX215L Subwoofer



The following procedure describes how to assemble a mixed array consisting of one TLX215L subwoofer and four TLX84 cabinets below it.

One TLX84-FLB flybar is attached to the top of the TLX215L subwoofer, using components supplied with the TLX84-FLB flybar.

⚠ WARNING

VARIOUS MIXTURES OF TLX84 CABINETS AND TLX215L SUBWOOFERS CAN BE CONFIGURED BUT DO NOT EXCEED A TOTAL WEIGHT OF 260 KG. A TYPICAL CONFIGURATION IS 1 SUBWOOFER AND 4 TLX84 (SHOWN)

⚠ WARNING

THIS ARRAY SHALL ONLY BE MADE WITH THE TLX215L SUBWOOFER ON TOP, AND THE TLX84 CABINETS BELOW. FAILURE TO FOLLOW INSTRUCTIONS MAY CAUSE PERMANENT INJURY OR DEATH.

5.0.1 Required Components

Item	Quantity
TLX84-FLB Fly bar	1
TLX214L Subwoofer	1
TLX84 Cabinet	4

5.0.2 Measured Weights

Total Measured System Weight			
Item	Quantity	Total Weight, including one TLX84-FLB Flybar and one TLX215L Subwoofer	
TLX84	1	118 kg	260 lbs
	2	146 kg	322 lbs
	3	174 kg	383 lbs
	4	202 kg	445 lbs

TLX84-FLB Flybar Working Load Limit (WLL)

Item	WLL (kg)	WLL (lbs)
TLX84-FLB	260	573

5.0.3 Personnel

The following procedures shall be undertaken by experienced, certified, qualified, and authorised personnel only. The procedures require the use of three or more authorised persons.



Protective Headwear shall be worn



Protective Footwear shall be worn



Protective Gloves shall be worn

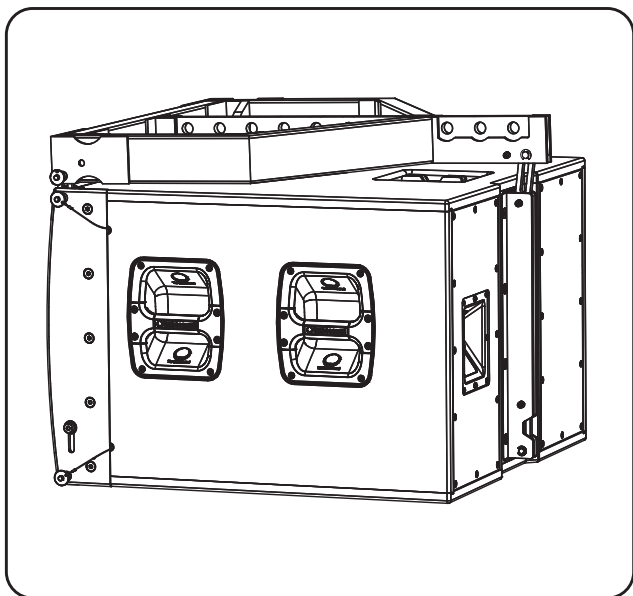


Protective Eyewear shall be worn



Practice Safe Lifting

Procedure 5.1 - Attaching the TLX84-FLB flybar to the TLX215L Subwoofer



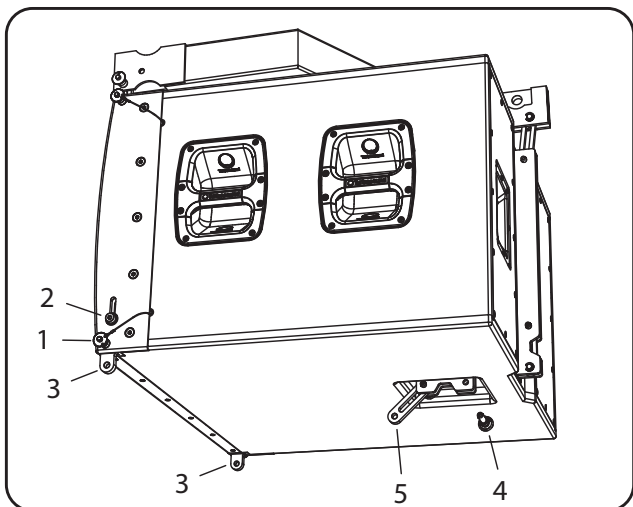
1. Perform the previous procedures in **Chapter 4**: Procedure 4.1 steps 1 to 5, to attach the TLX84-FLB flybar to the TLX215L subwoofer.

Procedure	Description of Work	Check
4.1 step 1 to step 5	Attaching the TLX215L Subwoofer to the TLX84-FLB Flybar	

Double check all pins are correctly inserted, and that the flybar is securely attached to the subwoofer.



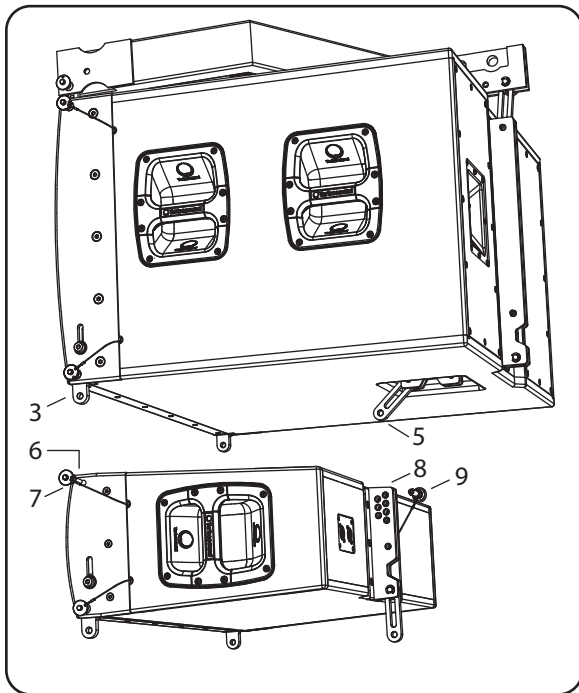
2. Attach a bow shackle or other lifting equipment securely to the flybar mounting hole recommended by the EASE FOCUS II software, then attach the hook and chain. Carefully raise the flybar/subwoofer assembly to a reasonable working height to allow attachment of the first TLX84 cabinet.
3. Prepare the subwoofer by pulling out the front rigging pins (1), to slide down the drop down links (3). Secure the links in the lower position with the pins (1). Remove the rear rigging pin (4) beneath the subwoofer, and then the rear drop-down link (5) will drop down.



CAUTION

Do not lower the TLX215L subwoofer onto the ground with the mounting links (3) and drop-down link (5) in the down position. This may cause damage to the links and the drop-down link, or cause damage to the stage. They should be retracted by reversing the order of the steps above.

Procedure 5.2 - Attaching the TLX84 Cabinets to the TLX215L Subwoofer



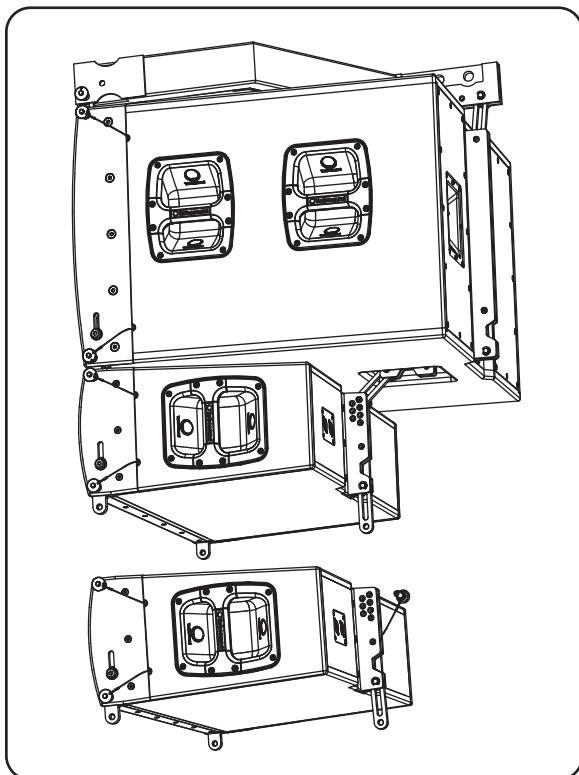
1. Pull out the front rigging pins (7) of the first TLX84 cabinet. Carefully lower the upper flybar and subwoofer assembly using your lifting apparatus and align the subwoofer's front links (3) with the top mounting slots (6) of the TLX84 cabinet. Insert the front pins (7) to secure the front links (3.)

Take care not to trap your fingers between components.

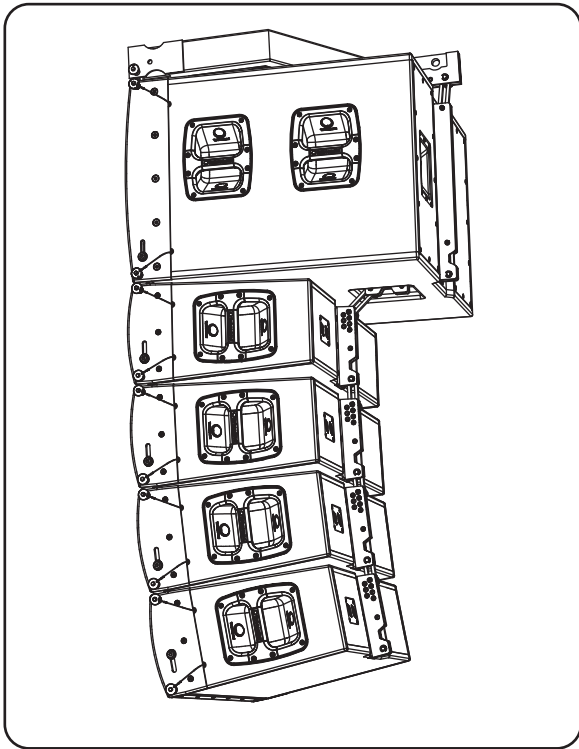


2. Support the rear of the TLX84 cabinet and align the subwoofer's drop-down link (5) with the desired hole (8) in the TLX84 rear drop link channel. The holes are marked with the angle from 0 to 6 degrees. Choose the correct hole that corresponds to the angle recommended by EASE FOCUS II software for the first TLX84 cabinet. Insert the rear pin (9) to secure the link to the cabinet.

Double check that all pins are correctly inserted, before proceeding further.



3. Add further TLX84 cabinets below the first TLX84 cabinet, in a similar way, up to a maximum of 4 cabinets.
4. Alternatively, a previously-assembled group of four TLX84 cabinets can be assembled to the bottom of the TLX215L subwoofer.



⚠ WARNING

VARIOUS MIXTURES OF TLX84 CABINETS AND TLX215L SUBWOOFERS CAN BE CONFIGURED BUT DO NOT EXCEED A TOTAL WEIGHT OF 260 KG. A TYPICAL CONFIGURATION IS 1 SUBWOOFER AND 4 TLX84 (SHOWN).

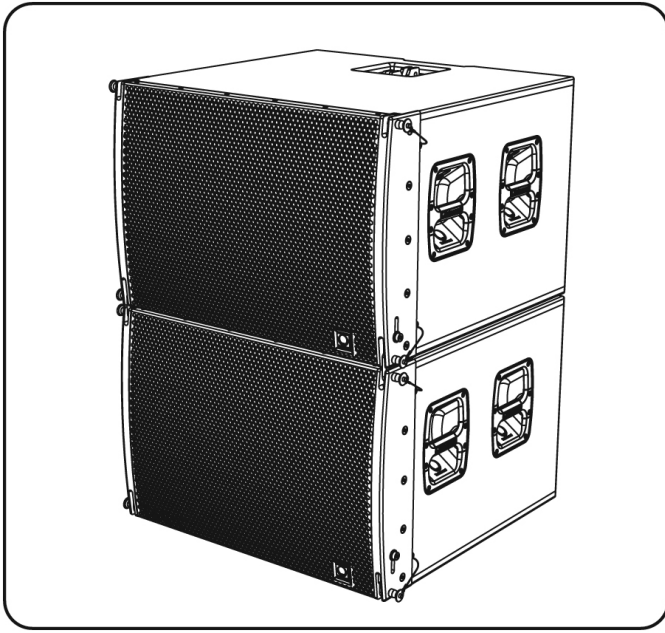
⚠ WARNING

THIS ARRAY SHALL ONLY BE MADE WITH THE TLX215L SUBWOOFER ON TOP, AND THE TLX84 CABINETS BELOW. FAILURE TO FOLLOW INSTRUCTIONS MAY CAUSE PERMANENT INJURY OR DEATH.

NOTE

Disassembly is the reverse of assembly.

Chapter 6: Groundstack of two TLX215L Subwoofers



The following procedure describes how to assemble a groundstack with two TLX215L subwoofers.

The TLX215L subwoofers are attached using the 2 bottom mounting links and the rear drop-down link of the top subwoofer.

⚠ WARNING

DO NOT EXCEED A TOTAL QUANTITY OF 3 TLX215L SUBWOOFERS FOR THIS GROUNDSTACK CONFIGURATION. FAILURE TO FOLLOW INSTRUCTIONS MAY CAUSE PERMANENT INJURY OR DEATH.

⚠ WARNING

WHERE POSSIBLE ALWAYS SECURE THE GROUND-STACKED SPEAKERS TO THE STACKING SURFACE WITH ADDITIONAL FIXINGS SUCH AS RATCHET STRAPS.

6.0.1 Required Components

Item	Quantity
TLX215L Subwoofer	3 (maximum)

6.0.2 Location

The TLX215L subwoofers should be located on a flat, horizontal, and dry surface, capable of supporting the weight of the complete assembly.

6.0.3 Measured Weights

Item	Quantity	Weight (kg)	Weight (lbs)
TLX215L	1	65.0	143
	2	130	287
	3	195	430

6.0.4 Personnel

The following procedures shall be undertaken by experienced, certified, qualified, and authorised personnel only. The procedures require the use of three or more authorised persons.



Protective Headwear shall be worn



Protective Footwear shall be worn



Protective Gloves shall be worn

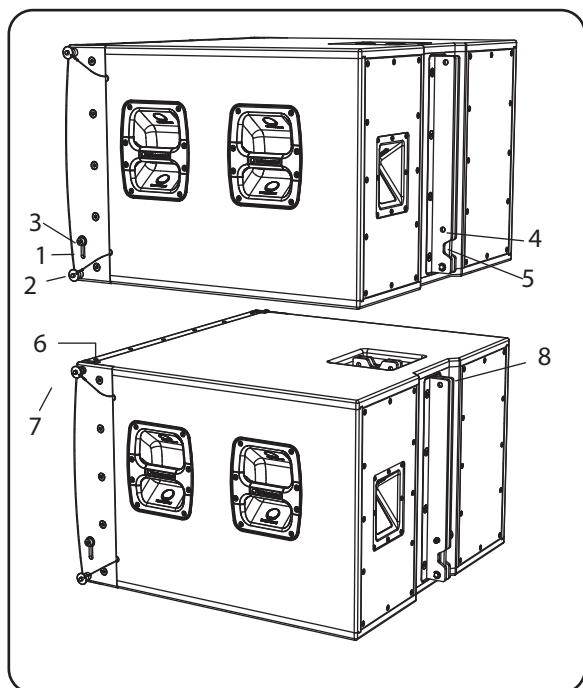


Protective Eyewear shall be worn



Practice Safe Lifting

Procedure 6.1 - Assembling the two TLX215L Subwoofers



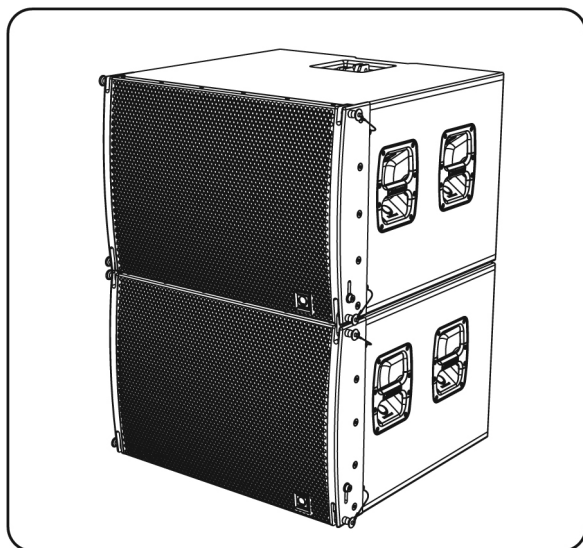
1. Prior to stacking, ensure that all mount hardware on upper and lower subwoofers are their stored positions. Carefully lower and physically align top and bottom subwoofers so that front lower mounting links (3) and the rear drop link (5) of the top subwoofer will properly align with the mount link slots (6) and the rear drop link channel of the lower subwoofer.
2. Pull out the lower subwoofer's upper front pins (7) then remove the lower front rigging pins (2) of the top subwoofer. Allow front mounting links (3) to slide downwards from the top subwoofer into the bottom subwoofer's mount link slots (6). Secure the mounting links to the upper subwoofer with pins (2) and to the lower subwoofer with pins (7).
3. Remove the rear pin (4) and the rear drop-down link (5) will drop down. Check that the drop down link (5) and its pivot pin and circlip and are all present, clean, and in good condition. Check that the circlip is correctly holding the pivot pin in place, and preventing it and the drop down link from falling out.

Take care not to trap your fingers between components.



4. Align the top subwoofer's drop-down link (5) with the hole (8) in the lower subwoofer's rear bracket. Insert the rear pin (4) to secure the subwoofers together.

Double check all the connections to make sure that the TLX215L subwoofers are securely connected together.



WARNING

DO NOT EXCEED A TOTAL QUANTITY OF 3 TLX215L SUBWOOFERS FOR THIS GROUNDSTACK CONFIGURATION. FAILURE TO FOLLOW INSTRUCTIONS MAY CAUSE PERMANENT INJURY OR DEATH.

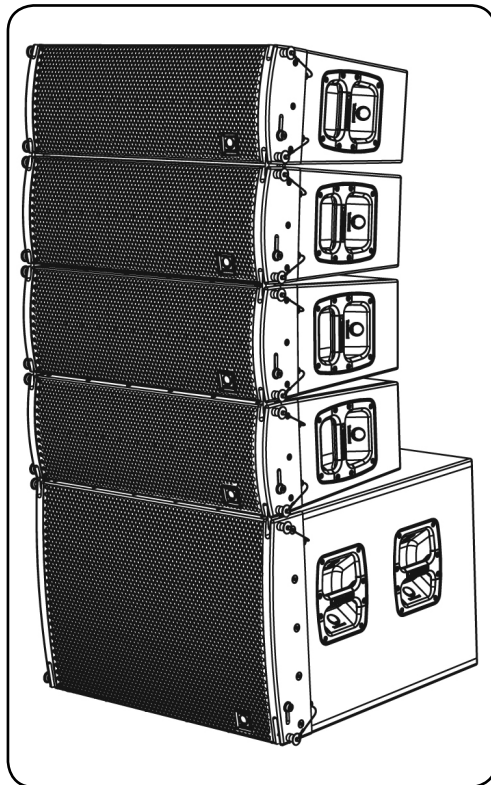
CAUTION

DO NOT LOWER THE TLX215L SUBWOOFER ONTO THE GROUND WITH THE MOUNTING LINKS (3) AND DROP-DOWN LINK (5) IN THE DOWN POSITION. THIS MAY CAUSE DAMAGE TO THE LINKS AND THE DROP-DOWN LINK, OR CAUSE DAMAGE TO THE STAGE. THEY SHOULD BE RETRACTED BY REVERSING THE ORDER OF THE STEPS ABOVE.

NOTE

Disassembly is the reverse of assembly.

Chapter 7: Groundstack TLX215L Subwoofer and TLX84 Array



The following procedure describes how to assemble a groundstack with a TLX215L subwoofer as a base, and an array of four TLX84 cabinets on top.

⚠ WARNING

DO NOT EXCEED A TOTAL QUANTITY OF 4 TLX84 CABINETS FOR THIS GROUNDSTACK CONFIGURATION. FAILURE TO FOLLOW INSTRUCTIONS MAY CAUSE PERMANENT INJURY OR DEATH.

⚠ WARNING

WHERE POSSIBLE ALWAYS SECURE THE GROUND-STACKED SPEAKERS TO THE STACKING SURFACE WITH ADDITIONAL FIXINGS SUCH AS RATCHET STRAPS.

7.0.1 Required Components

Item	Quantity
TLX215L Subwoofer	2 (maximum)
TLX84 Cabinet	4 (maximum)

7.0.2 Location

The TLX215L subwoofer should be located on a flat, horizontal, and dry surface, capable of supporting the weight of the complete assembly.

7.0.3 Measured Weights

Total Measured System Weight			
Item	Quantity	Total Weight, including one TLX215L Subwoofer	
TLX84	1	92.9 kg	205 lbs
	2	121 kg	266 lbs
	3	149 kg	328 lbs
	4	177 kg	389 lbs

7.0.4 Personnel

The following procedures shall be undertaken by experienced, certified, qualified, and authorised personnel only. The procedures require the use of three or more authorised persons.



Protective Headwear shall be worn



Protective Footwear shall be worn



Protective Gloves shall be worn

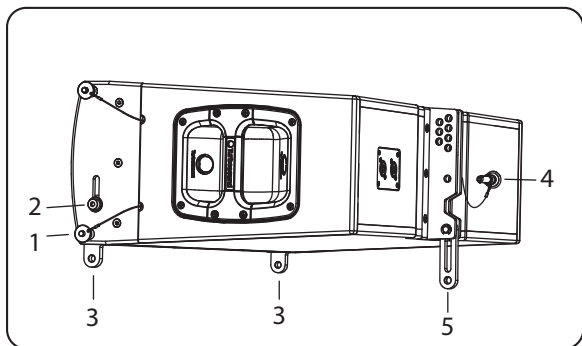


Protective Eyewear shall be worn

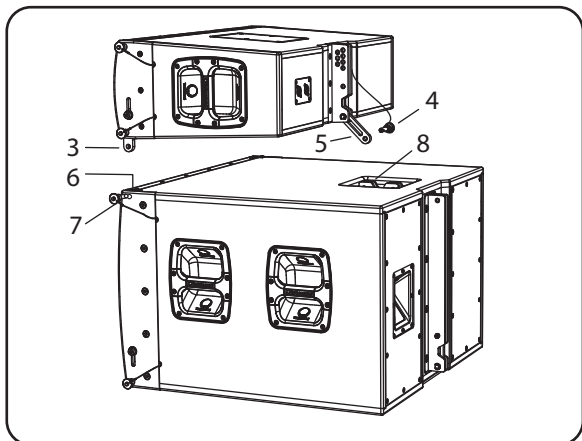


Practice Safe Lifting

Procedure 7.1 - Attaching the TLX84 cabinets to the TLX215L Subwoofer



1. Prepare all the TLX84 cabinets, by pulling out the front rigging pins (1), and sliding the front mount links (3) down. Secure the links in the lower position with the pins (1). Remove the rear pin (4) and then the rear drop-down link (5) will drop down. Check that the drop down link (5) and its pivot pin and circlip are all present, clean, and in good condition. Check that the circlip is correctly holding the pivot pin in place, and preventing it and the drop-down link from falling out.
2. Remove the front rigging pins (7) from the lower subwoofer. Carefully lift the TLX84 cabinet until its drop-down links (3) fit into the top slots (6) in the lower subwoofer. Insert the front pins (7) of the lower subwoofer to secure the links (3) in the subwoofer slots (6).

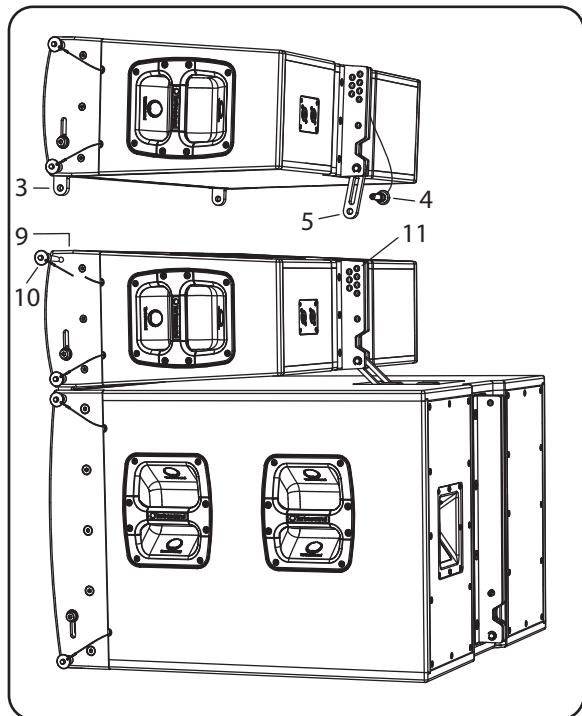


Take care not to trap your fingers between components.



3. Align the TLX84 cabinet's rear drop-down link (5) with the forward hole (8) in the lower subwoofer's rear top bracket. Insert the rear pin (4) to secure the TLX84 and TLX215L together.
4. Remove the front rigging pins (10) from the lower TLX84 cabinet. Carefully lift the next TLX84 cabinet until its drop-down links (3) fit into the top slots (9) in the lower cabinet. Insert the front pins (10) of the lower cabinet to secure the links (3) in the cabinet slots (9).

Take care not to trap your fingers between components.

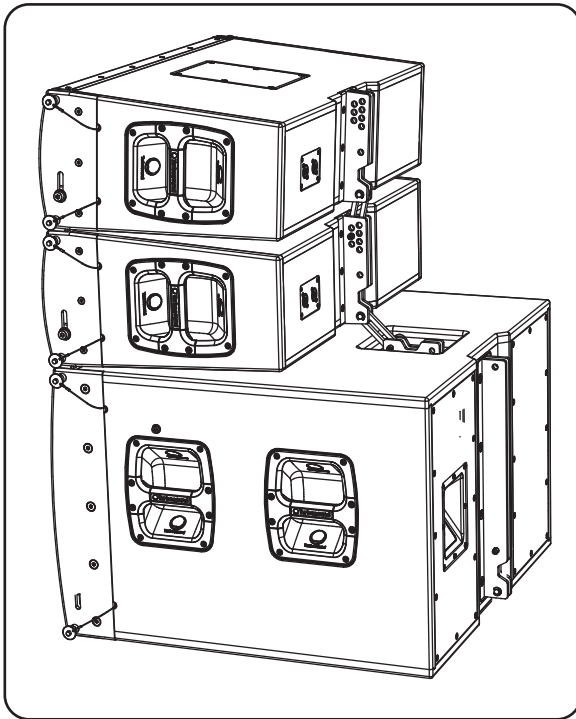


5. Align the top TLX84 cabinet's rear drop-down link (5) with the desired rear hole (11) in the lower cabinet's rear drop link channel. Insert the rear pin (4) to secure the TLX84 cabinets together.

Double check that all pins are correctly inserted, before proceeding further.



Procedure 7.1 continued



6. The addition of other TLX84 cabinets is performed by repeating procedure steps 4 through 6 for each additional cabinet.

Double check all the connections to make sure that the TLX215L subwoofer and TLX84 cabinets are all securely connected together.

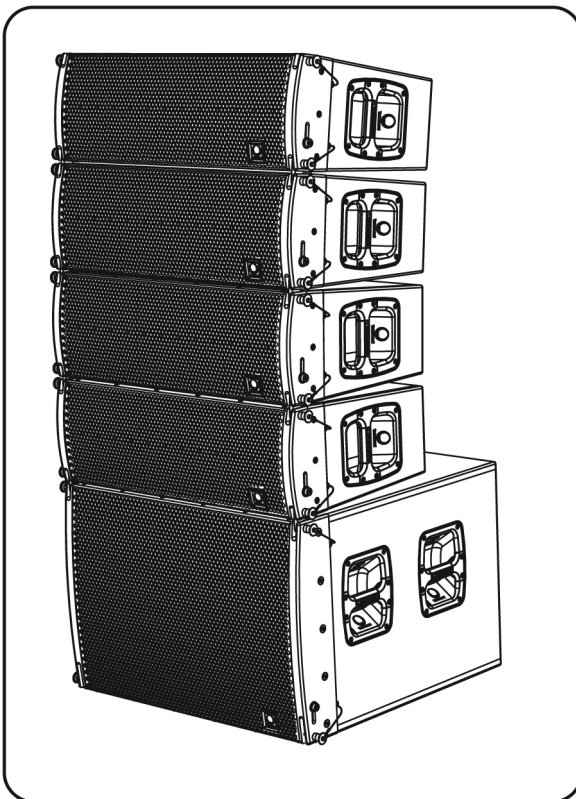


WARNING

DO NOT EXCEED A TOTAL QUANTITY OF 4 TLX84 CABINETS FOR THIS GROUNDSTACK CONFIGURATION. FAILURE TO FOLLOW INSTRUCTIONS MAY CAUSE PERMANENT INJURY OR DEATH.

NOTE

Disassembly is the reverse of assembly.



Chapter 8: Safety Inspection

 The following notes must be read and followed before suspending the systems or ground stacking:

Cabinets

Inspect all cabinets carefully and make sure that all surfaces are clean, in good condition, and free from cracks, corrosion, or any other defects that may weaken the assembly. Check for any missing screws, rigging pins, mounting links, or drop down links, pivot pins, or their circlips.

All cabinets must be clean and dry, and free from any debris that might cause incorrect or faulty operation.

Check that all mounting holes are clean and in good condition, and will accept the rigging pins correctly.

Flybar

Inspect the flybar carefully and make sure it is in good condition and free from cracks, corrosion, or any other defects that may weaken the assembly. Check for any missing rigging pins, or drop down links.

Check that all mounting holes are clean and in good condition, and will accept the rigging pins correctly.

Rigging Pins

Inspect all rigging pins carefully and make sure they are in good condition and free from cracks, corrosion, or any other defects that may weaken them.

Check that the retaining ball bearings are present and operate correctly.

Check that all rigging pins and connecting drop down links are correctly and fully inserted.

Drop Down Links

Inspect all drop down links and their pivot pins and circlips carefully and make sure they are in good condition and free from cracks, corrosion, or any other defects that may weaken them.

Check that the retaining pivot pins are present and operate correctly to retain the drop down links.

Check that all circlips are present, installed correctly, and retain the pivot pins correctly.

Care and Maintenance


In addition to regular inspections, make sure that all equipment is kept clean and dry by careful brushing and wiping down with a cloth. Light use of lubrication such as WD40 may be applied to the rigging pins and mounting holes.

All equipment must be stored in a clean and dry state to prevent corrosion.

Transportation

Use only recommended road cases to transport the loudspeakers and components.

Regularly Scheduled Inspections

 In addition to the visual inspection of all rigging components, regular, more rigorous test and inspection of rigging components must also be carried out. Safety legislation and test and inspection requirements will vary from country to country. In most cases, semi-annual or annual independent test and inspection by a suitably approved and qualified inspector will be required. Users must ensure compliance with all applicable safety requirements. TURBOSOUND recommends regular safety inspections, and further recommends that a logbook be kept detailing the test and inspection history of each TURBOSOUND rigging accessory. Always wear protective head-wear, footwear and eye protection in accordance with local regulations. Anyone involved in suspending ANY sound system should take note of the following advice:

The rigging of a suspended sound system may be dangerous unless undertaken by qualified personnel with the required experience and certification to perform the necessary tasks. Fixing of hanging points in a roof should always be carried out by a professional rigger and in accordance with the local rules of the venue. The house rigger and/or building manager must always be consulted.

Chapter 9: Enclosure quantities and combinations for TLX84-FLB flybar suspension at 10:1, 7:1, 5:1 design factors

Maximum allowed TLX84 and TLX215L enclosure quantities and combinations for suspension using TLX84-FLB Fly Bar at 10:1, 7:1 and 5:1 design factors.

Design Factor	Working Load Limit	Maximum Number Of Suspended Cabinets / Weight							
		TLX84 only		TLX215L only		TLX215L / TLX84 Mixed Array			
5:1	520 kg (1146 lbs)	TLX84	17	TLX215L	6	TLX215L	6	TLX215L	5
		TLX84-FLB	1	TLX84-FLB	1	TLX84	3	TLX84	6
		Weight	499 kg (1101 lbs)	Weight	415 kg (915 lbs)	TLX84-FLB	1	TLX84-FLB	1
7:1	371 kg (819 lbs)	TLX84	12	TLX215L	5				
		TLX84-FLB	1	TLX84-FLB	1				
		Weight	360 kg (793 lbs)	Weight	350 kg (772 lbs)				
10:1	260 kg (573 lbs)	TLX84	8	TLX215L	3				
		TLX84-FLB	1	TLX84-FLB	1				
		Weight	248 kg (547 lbs)	Weight	220 kg (485 lbs)				

Design Factor	Working Load Limit	Maximum Number Of Suspended Cabinets / Weight							
		TLX215L / TLX84 Mixed Array							
5:1	520 kg (1146 lbs)	TLX215L	4	TLX215L	3	TLX215L	2	TLX215L	1
		TLX84	8	TLX84	10	TLX84	13	TLX84	15
		TLX84-FLB	1	TLX84-FLB	1	TLX84-FLB	1	TLX84-FLB	1
		Weight	508 kg (1121 lbs)	Weight	499 kg (1100 lbs)	Weight	518 kg (1142 lbs)	Weight	509 kg (1121 lbs)
7:1	371 kg (819 lbs)	TLX215L	4	TLX215L	3	TLX215L	2	TLX215L	1
		TLX84	3	TLX84	5	TLX84	7	TLX84	10
		TLX84-FLB	1	TLX84-FLB	1	TLX84-FLB	1	TLX84-FLB	1
		Weight	369 kg (813 lbs)	Weight	360 kg (793 lbs)	Weight	350 kg (772 lbs)	Weight	369 kg (814 lbs)
10:1	260 kg (573)							TLX215L	1
								TLX84	6
								TLX84-FLB	1
								Weight	258 kg (568 lbs)

Local Regulatory Compliance: The design factor and Working Load Limit (WLL) ratings of the TLX suspension system are intended to be in compliance with all known regulatory statutes. Recommendations throughout this manual are based on a 10:1 design factor, however there are variations internationally in the regulations and practices applying to suspension of sound systems in public places and 7:1 or 5:1 design factors may be acceptable. IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO MAKE CERTAIN THAT ANY TURBOSOUND LOUDSPEAKER SYSTEM IS SUSPENDED IN ACCORDANCE WITH ALL APPLICABLE NATIONAL/FEDERAL, STATE/PROVINCIAL, AND LOCAL REGULATIONS.

Manufacturer's Declaration

We, MUSIC Group Manufacturing PH Ltd.

MUSIC Group Manufacturing PH Ltd.
17A Brunswick Street
Hamilton HM 10
Bermuda

Do hereby declare that the following components:

TLX84 Loudspeaker Cabinets
TLX215L Subwoofer Cabinets
TLX84-FLB Flybar

are in compliance with the relevant fundamental safety and health criteria of the applicable EC Directive(s).

This declaration is void if unauthorised modifications are made to the equipment.

National standards and technical specifications applied:

DIN EN ISO 12100

Safety of machinery - General principles for design - Risk assessment and risk reduction

BGV C1

Accident-prevention regulation, "Staging and Production Facilities for the Entertainment Industry"

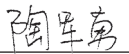
ANSI E1.8 - 2012

Entertainment Technology—Loudspeaker Enclosures Intended for Overhead Suspension—Classification, Manufacture and Structural Testing

2006/42/EC

Machinery Directive

The person responsible for making this declaration:



Jun Yong. Tao
(COMP team Senior Engineer)

Date: 2016-11-21

MUSIC Group Manufacturing PH Ltd.
17A Brunswick Street
Hamilton HM 10
Bermuda

