

## Models covered by this Quick Start Guide

TCX-8, TCX-10, TCX-12, TCX-15, TCX-15B, TCX-18B

Thank you for choosing a TURBOSOUND loudspeaker product for your application. If you would like further information about this or any other TURBOSOUND product, please visit our website at [www.turbosound.com](http://www.turbosound.com). A detailed user guide on this product range is available from <ftp://ftp.turbosound.com>

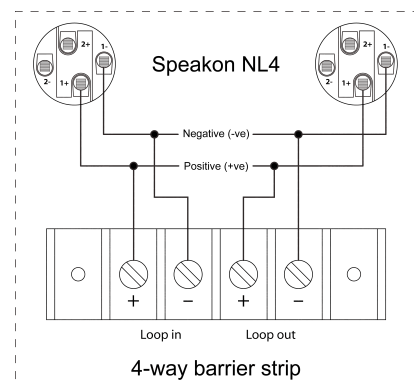
## Unpacking the loudspeaker

After unpacking the unit please check carefully for damage. If damage is found, please notify your supplier at once. You, the consignee, must instigate any claim. Please retain all packaging in case of future re-shipment.

## System requirements

TCX series two-way loudspeakers operate as passive systems and require only one amplifier channel for correct operation; the internal passive crossover network built into each enclosure splits the frequency range appropriately between the LF driver and the HF driver. TCX loudspeakers are equipped with two Speakon NL4 connectors wired in parallel with a 4-way barrier strip connector, providing input and loop-through connections to additional TCX series loudspeakers.

To avoid wasting amplifier power you should use heavy-duty speaker cable with a minimum wire size of 12 gauge (1.5mm<sup>2</sup>), and preferably 10 gauge (2.5mm<sup>2</sup>) for longer runs. For extreme cable lengths be aware of cable impedance and resistive losses. Always observe the correct polarity as shown.



## Amplifier considerations

**TCX series loudspeaker enclosures should be driven by high quality power amplifiers designed for true professional use. Power amplifiers should be capable of delivering long term broadband power equal to the loudspeaker's program power rating at its stated nominal impedance. The use of under-powered amplifiers must be avoided as heavily clipped signals can cause permanent loudspeaker damage.**

Model	TCX-8	TCX-10	TCX-12	TCX-15	TCX-15B	TCX-18B
Impedance	8Ω	8Ω	8Ω	8Ω	8Ω	8Ω
Amplifier power	400w	500w	600w	800w	2000w	2000w

## System Controllers

TCX systems can be used with Turbosound LMS-D24 or LMS-D26 controllers to provide improved performance as well as vital operating and system security features. If you do not have a controller, please contact your Turbosound dealer for further details. Turbosound LMS-D2X controllers provide preset slots into which you can load TCX loudspeaker model parameters, available as a free download. To use your TCX loudspeaker with a Turbosound controller:

1. Download and install the presets for TCX loudspeakers from [ftp://ftp.turbosound.com/tech\\_data](ftp://ftp.turbosound.com/tech_data)
2. Power up the controller(s) and associated power amplifiers.
3. Press **RECALL** to select the appropriate program from the preset menu using the '**A**' **ROTARY ENCODER**.
4. Press **RECALL** again to accept the preset. The controller will un-mute and is then ready for use.

## Networking capability with LMS series controllers

- LMS-D2X controllers are designed to offer control and monitoring of system parameters over a BvNet network in real time using a PC and TurboDrive™ software. The controllers are equipped with network cards to allow the building of comprehensive networked loudspeaker systems.
- **Download the TurboDrive™ software** from the supplied CD or from [ftp://ftp.turbosound.com/tech\\_data/software/](ftp://ftp.turbosound.com/tech_data/software/) and follow the installation instructions.
- **Install the drivers.** If connecting via RS232 there is no need to install drivers. If connecting via USB install the USB drivers which can be found on the CD that came with your Linea Research USB interface.
- **Networking multiple devices to a PC:** BvNet is the method of connecting multiple devices and this is done with the Linea Research USB & RS232 Interface (available from Turbosound). The interface enables devices to be connected to a PC either using RS232 or using USB. EIA485 is the network protocol among the networked devices and is carried over CAT5-type cables. Minimum system requirements are: PC with Pentium processor, Windows NT, 2000, XP, or Vista, CD ROM drive or internet access, RS232 or USB port.
- **RS232:** Connect your computer to the BvNet interface using a standard 9-pin serial cable. External power is required for RS232 operation and this should be provided by the Linea Research Accessory Power Supply.
- **USB:** Connect your computer to the BvNet interface using a USB Type A to USB Type B cable. External power is not required when using USB.
- Connect networked devices via RJ45 CAT5 cables.
- Launch the TurboDrive™ software.
- Application Authorisation: TurboDrive™ prompts for an **Authorisation Code** on the first launch which is PJLUWZ.
- Select the **COM port** from Network > Com Port.
- Click the **Online** toolbar button.
- Click on one of the devices that appear in the tree view to **Launch the panel.**
- When the progress bar indicates *ready*, **adjust** the controls as required.
- Please refer to the TurboDrive™ User Guide for further information on networking.

## Mounting and fixing

TCX series cabinets are designed with multiple internal rigging points to suit many possible mounting methods in permanent installations. The table below summarises the mounting accessories required for each model in permanent installations

Model	Wall mount	Ceiling mount	OmniMount™	Speaker stand	Eyebolts
TCX-8	WB-20	CB-55	120 series	PA-100	EB-8
TCX-10	WB-55	CB-55	120 series	PA-90	EB-10/18
TCX-12	WB-55	CB-55	120 series	PA-90	EB-10/18
TCX-15	WB-55	CB-55	120 series	PA-90	EB-10/18
TCX-15B	N/A	N/A	N/A	PA-90/100	EB-10/18
TCX-18B	N/A	N/A	N/A	PA-90/100	EB-10/18

## Use with speaker poles and speaker stands

Use speaker poles such as the PA-90 or PA-100 on top of a bass cabinet to raise the mid/high cabinets to above head height for better audience coverage.

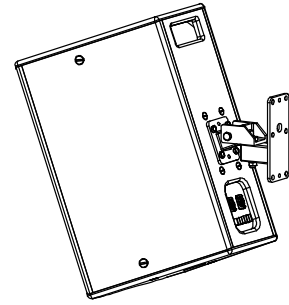
For portable use remove the plastic bung covering the pole mount socket. Fit the speaker pole into the pole mount socket on the TCX bass cabinet and mount the TCX two-way cabinet to the top of the pole. TCX cabinets are compatible with standard 35mm speaker stands to raise mid/high cabinets to above head height for better audience coverage. Mount the cabinet on to the top of the speaker stand and tighten all adjusting screws. Always use caution when lifting the loudspeaker.



## Wall brackets

Illustrated: TCX-12 on a WB-55 wall bracket

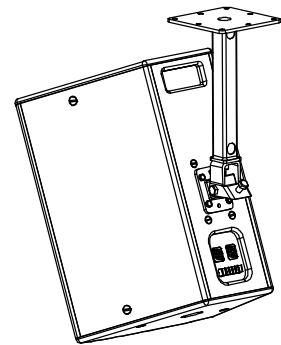
- Separate the component parts of the bracket into the wall plate and speaker plate assemblies by removing the nylock nut underneath the wall plate horizontal lug.
- Remove the countersunk bolts on the rear panel of the cabinet and attach the speaker plate to the cabinet with the bolts supplied.
- Fix the wall plate in the venue using appropriate fixings (not supplied), ensuring that the cable access hole is towards the top.
- Lift the loudspeaker on to the wall plate and locate the large captive bolt welded to the speaker plate through the wall plate lug. Re-assemble the bracket parts, adjust the aim of the loudspeaker and tighten all bolts.



## Ceiling brackets

Illustrated: TCX-12 on a CB-55 ceiling bracket

- Separate the component parts of the bracket into the ceiling plate and speaker plate assemblies by removing the nylock nut underneath the wall plate lug.
- Remove the countersunk bolts on the rear panel of the cabinet and attach the speaker plate to the cabinet with the bolts supplied.
- Fix the ceiling plate in the venue using appropriate fixings (not supplied). Lift the loudspeaker on to the ceiling plate and re-assemble the bracket fixings, adjust the aim of the loudspeaker and tighten all bolts.



## Pole brackets

TCX series mid-high cabinets equipped with a recessed pole mount socket can be wall mounted with the generic PB-55 pole bracket. Fix the bracket in the venue using appropriate wall fixings, mount the loudspeaker on to the spigot, and aim the loudspeaker as required. Tighten the pole bracket grub screw to lock the loudspeaker and prevent unauthorised removal.

## OmniMount™ brackets

The internal rigging points are also compatible with OmniMount™ series 120 wall and ceiling brackets. To mount TCX cabinets with OmniMount™ brackets follow the instructions provided with the brackets.

## Suspending with eyebolts

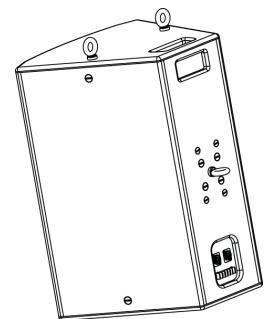
Illustrated: TCX-15 with M10 eyebolts

TCX cabinets can be suspended using optional eyebolts coupled to the internal rigging points provided on the top, bottom and sides and back. The simplest method is to use the two rigging points on the top and a single pull-back rigging point in the centre of the rear panel.

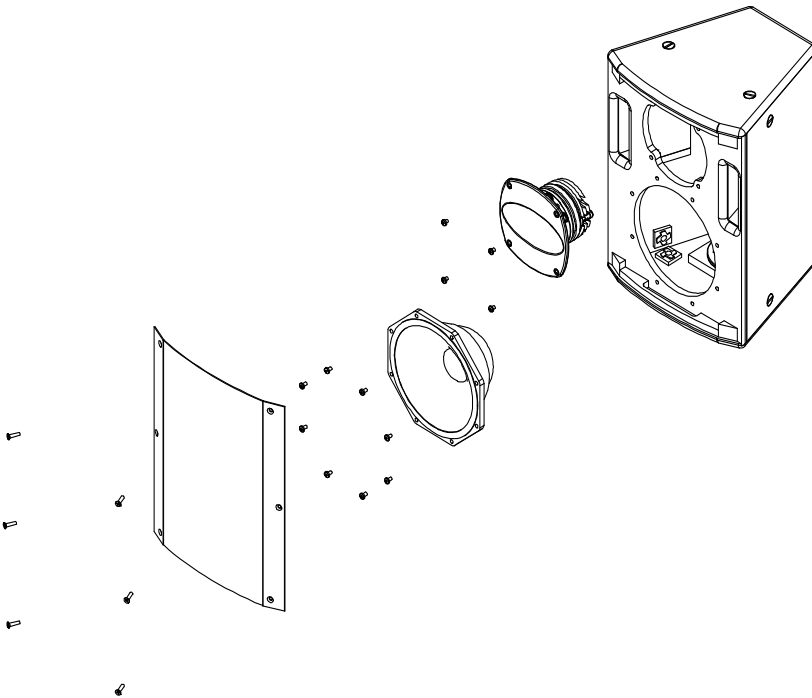
Remove the appropriate countersunk screws and replace them with shoulder eyebolts, which must have a thread length of at least 18mm. Use the rear rigging point to angle the cabinet for optimum room coverage. Cabinets may be hung upside down if required.

**IMPORTANT NOTE:** The mounting of a permanently installed sound system may be dangerous unless undertaken by qualified personnel with the required experience and certification to perform the necessary tasks. Walls, floors or ceilings must be capable of safely and securely supporting the actual load. The mounting accessory used must be safely and securely fixed both to the loudspeaker and to the wall, floor or ceiling.

When mounting rigging components on walls, floors or ceilings, ensure that all fixings and fasteners used are of an appropriate size and load rating. Wall and ceiling claddings, and the construction and composition of walls and ceilings, all need to be taken into account when determining whether a particular fixing arrangement can be safely employed for a particular load. Cavity plugs or other specialist fixings, if required, must be of an appropriate type, and must be fitted and used in accordance with the maker's instructions.



### Servicing and driver removal



1. Place the cabinet on its back on a suitable work surface. Remove the six Pozidrive countersunk screws that hold the grille in place and set the grille aside (fig 1).
2. Remove the M5 hex head bass driver fixings screws (fig 2).
3. Disconnect and remove the bass driver, making a note of the polarity for later reconnection (fig 3).



4. Remove the M5 hex head HF horn fixing screws (fig 4).
5. Lift out the horn and compression driver assembly. Disconnect the cables from the compression driver, making a note of the polarity for later reconnection (fig 5).

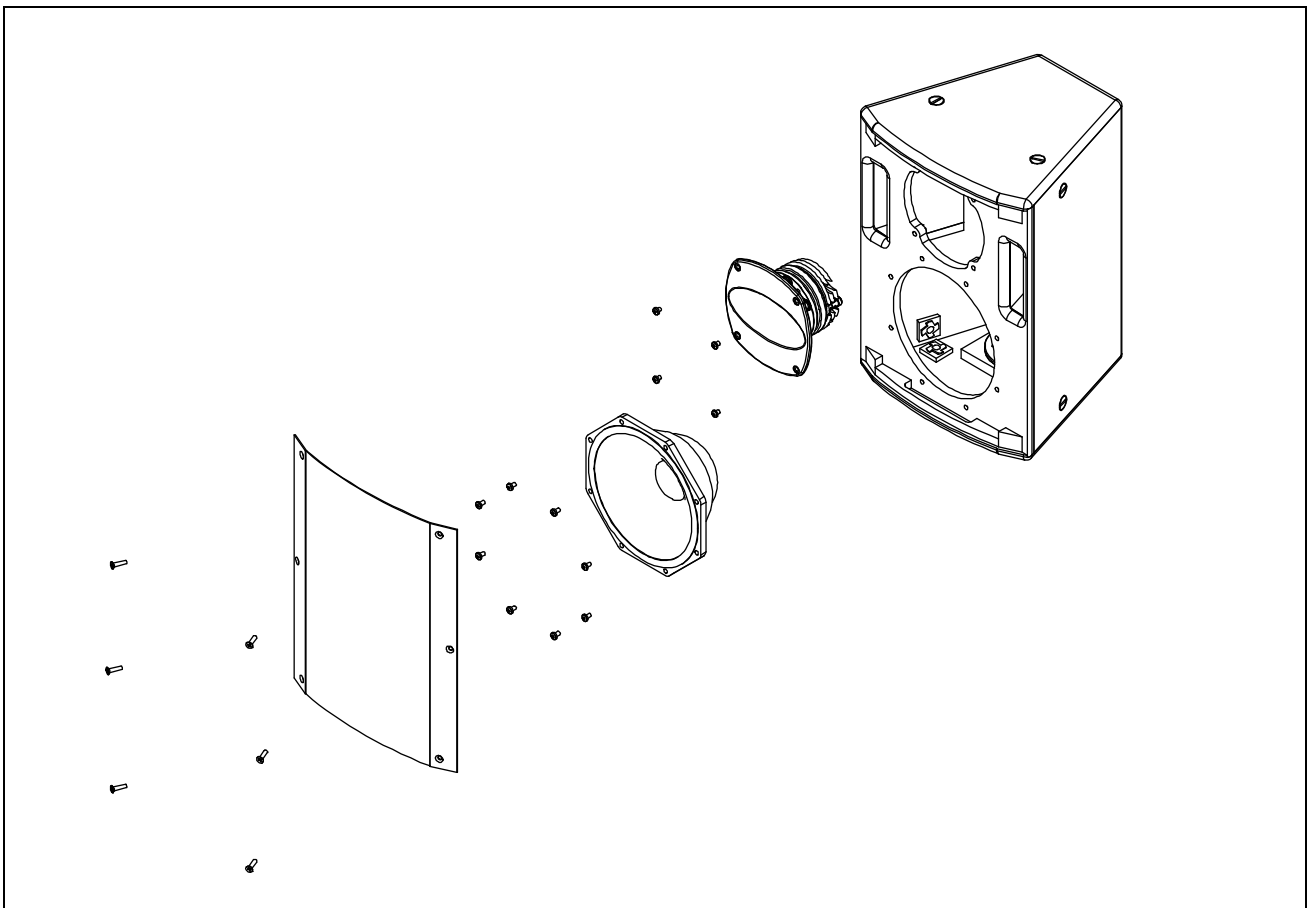


6. Reinstatement is a simple reversal of the above process. Reconnect the compression driver cables, observing the correct polarity (white cable to the +ve terminal, green/white cable to the -ve terminal).
7. Replace the horn and driver in the cabinet.
8. Replace the horn fixing screws and tighten.
9. Reconnect the bass driver cables, observing the correct polarity (brown cable to the red +ve terminal, blue cable to the black -ve terminal) and reinstate the driver in the cabinet. Replace and tighten the driver fixing screws.
10. Replace the grille (fig 6) and phase check the cabinet before use.

### Rotating the HF horn pattern

The high frequency horn in all TCX two-way models can be rotated through 90° in order to swap the horizontal and vertical dispersion patterns, particularly useful to retain the wide horizontal dispersion when the cabinet is installed horizontally in venues with limited ceiling height.

1. Remove the loudspeaker grille as above.
2. Remove the M5 hex head HF horn fixings screws
3. Lift the horn / driver assembly out, rotate the horn as necessary to achieve the desired coverage pattern and replace it in the cabinet.
4. Replace the horn fixing screws and tighten.
5. Replace the grille and phase check the cabinet before use.



### EASE Data

EASE data is available for TCX series loudspeakers to enable software simulation of audio coverage installation projects. Please visit <ftp://ftp.turbosound.com> for a free EASE data download.

## Technical Specifications

Model	TCX-8	TCX-10	TCX-12	TCX-15	TCX-15B	TCX-18B
Dimensions (mm)	408 x 312 x 280	488 x 370 x 332	552 x 410 x 368	652 x 470 x 422	600 x 500 x 600	838 x 469 x 440
(inches)	16.1 x 12.3 x 11	19.2 x 14.6 x 13.1	21.7 x 16.1 x 14.5	25.7 x 18.5 x 16.6	23.6 x 19.7 x 23.6	33 x 18.5 x 17.3
Net weight	9.5kg (21lbs)	13.5kg (29.7lbs)	19.5kg (43lbs)	24.5kg (54lbs)	35.5 kg (78lbs)	40 kg (88lbs)
Components	1 x 8" LF driver 1 x 1" HF driver	1 x 10" LF driver 1 x 1" HF driver	1 x 12" LF driver 1 x 1" HF driver	1 x 15" LF driver 1 x 1" HF driver	1 x 15" LF driver	1 x 18" LF driver
Response (±10dB)	70Hz – 20kHz	68Hz – 20kHz	68Hz – 20kHz	55Hz – 20kHz	30Hz – 150Hz	25Hz – 200Hz
Dispersion @-6dB	90°h x 60°v	90°h x 60°v	90°h x 60°v	90°h x 60°v	N/A	N/A
Sensitivity 1w @ 1m	94dB	95dB	97dB	99dB	95dB	94dB
Power handling	200 watts	250 watts	300 watts	400 watts	1000 watts	1000 watts
Calc max SPL	123dB	125dB	128dB	131dB	131dB	130dB
Impedance	8 ohms	8 ohms	8 ohms	8 ohms	8 ohms	8 ohms
Connectors	2 x Speakon NL4 4-way barrier strip	2 x Speakon NL4 4-way barrier strip	2 x Speakon NL4 4-way barrier strip	2 x Speakon NL4 4-way barrier strip	2 x Speakon NL4 4-way barrier strip	2 x Speakon NL4 4-way barrier strip

## Spares and Accessories

CD-119 / RD-119	Compression driver / diaphragm for TCX-12, TCX-15
CD-120 / RD-120	Compression driver / diaphragm for TCX-8, TCX-10
LS-1027 / RC-1027	10" low frequency loudspeaker / recone kit for TCX-10
LS-1224 / RC-1224	12" low frequency loudspeaker / recone kit for TCX-12
LS-1531 / RC-1531	15" low frequency loudspeaker / recone kit for TCX-15
LS-1532 / RC-1532	15" low frequency loudspeaker / recone kit for TCX-15B
LS-1816 / RC-1816	18" low frequency loudspeaker / recone kit for TCX-18B
LS-8094 / RC-8094	8" low frequency loudspeaker / recone kit for TCX-8

## Limited Warranty

This Turbosound loudspeaker product is warranted to the original end-user purchaser and all subsequent owners for a period of two (2) years, or one (1) year for electronics products, from the original date of purchase. Warranty coverage includes defects in materials and workmanship. It does not include:

- damage caused by accident, misuse, abuse, neglect or modification by any person other than an authorised Turbosound representative,
- damage caused by failure to operate the product in accordance with the instructions contained in the user manual,
- damage occurring during shipment in transit,
- claims based on any misrepresentation by the seller,
- products which do not have the original components as specified in the product engineering information,
- products on which the serial number has been removed or defaced.
- Should any fault develop with a component of your Turbosound system, please return the product, freight pre-paid, in its original packing carton, along with proof of purchase such as the original bill of sale or receipted invoice, and a description of the suspected fault to your local authorised Turbosound representative. The product serial number must be quoted in all correspondence relating to the claim. Insurance is recommended, as Turbosound or its representatives are not liable for loss or damage in transit. Turbosound will pay for return freight costs should repairs be covered under warranty.

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