TCX SERIES

Quickstart Guide

Turbosound

Table of Contents

EN Important Safety Instructions

CAUTION
RISK OF ELECTRIC SHOCK!
DO NOT OPEN!

ATTENTION
RISQUE D'ÉLECTROCUTION !
NE PAS OUVRIR !

Terminals marked with this symbol carry electrical current of sufficient magnitude to constitute risk of electric shock. Use only high-quality commercially-available speaker cables with 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.

LIMITED WARRANTY

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

Introduction

Congratulations, you have purchased a professional loudspeaker product from the TCX series of loudspeakers, designed to give you the best in audio quality and many years of reliable, trouble-free operation. It offers excellent pattern control, safe and practical rigging hardware, superior audio quality, proven reliability, ease of setup, consistent performance, and the backing of a world leader in acoustics technology including a comprehensive warranty against manufacturing defects. Please read through this manual carefully before you attempt to operate the loudspeaker system. It contains valuable information which will enable you to quickly and easily connect the loudspeakers to your outboard equipment; and important system and set-up checks.

Thanks

Thank you for choosing a TURBOSOUND loudspeaker product for your application.

By engaging in an on-going rigorous program of research and development all TURBOSOUND products are carefully engineered for world class performance and reliability.

If you would like further information about this or any other TURBOSOUND product, please contact us. Detailed product information is available on our website at: turbosound.com

We look forward to helping you in the near future.

Unpacking

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

Getting Started

## 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 product, please visit our website turbosound.com.

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 (1.5mm²), and preferably 10 gauge (2.5mm²) for longer runs. For extreme cable lengths be aware of cable impedance and resistive losses. Always observe the correct polarity as shown.
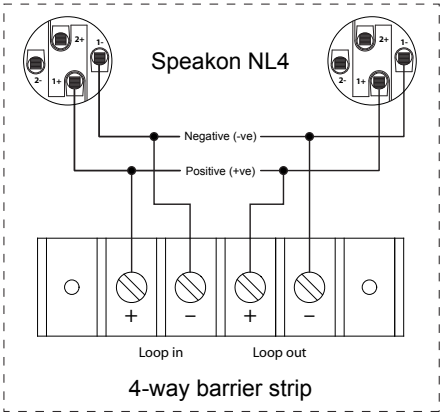
Amplifier Considerations

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	8 Ω	8 Ω	8 Ω	8 Ω	8 Ω	8 Ω
Amplifier power	400 W	500 W	600 W	800 W	2000 W	2000 W

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 TCX loudspeaker presets from the TURBOSOUND website turbosound.com.
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 the TURBOSOUND website turbosound.com 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. It works with the following: PC with Windows NT, Windows 2000, Windows XP, or Windows Vista operating systems, or with Pentium processor, or 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 and portable situations. The table below summarises the mounting accessories available for each model.

Model	Wall mount	Ceiling mount	OmniMount	Eyebolts	Speaker pole	Pole bracket
TCX-8	WB-20	CB-55	30 series	PA-100	PA-100	PB-55
TCX-10	WB-20	CB-55	30 series	PA-90	PA-90	PB-55
TCX-12	WB-20	CB-55	60 series	PA-90	PA-90	PB-55
TCX-15	WB-20	CB-55	60 series	PA-90	PA-90	PB-55
TCX-15B	N/A	N/A	N/A	PA-90 / PA-100	PA-90 / PA-100	N/A
TCX-18B	N/A	N/A	N/A	PA-90 / PA-100	PA-90 / PA-100	N/A

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. Always use caution when lifting the loudspeaker.
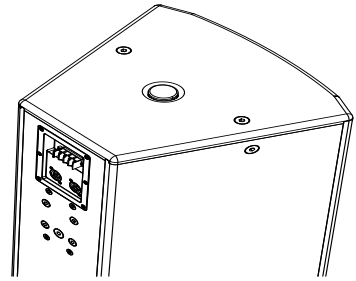
Wall Brackets

1. 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.
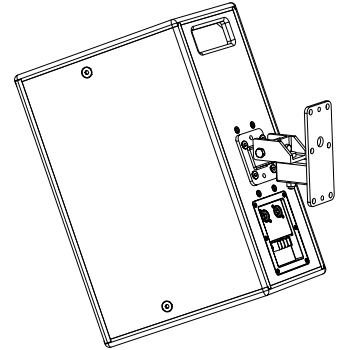2. Remove the countersunk bolts on the rear panel of the cabinet and attach the speaker plate to the cabinet with the bolts supplied.
3. Fix the wall plate in the venue using appropriate fixings (not supplied), ensuring that the cable access hole is towards the top.
4. Lift the loudspeaker on to the 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.

Illustrated: TCX-15 on a WB-55 wall bracket

Ceiling Brackets

1. 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.
2. Remove the countersunk bolts on the rear panel of the cabinet and attach the speaker plate to the cabinet with the bolts supplied.
3. 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.
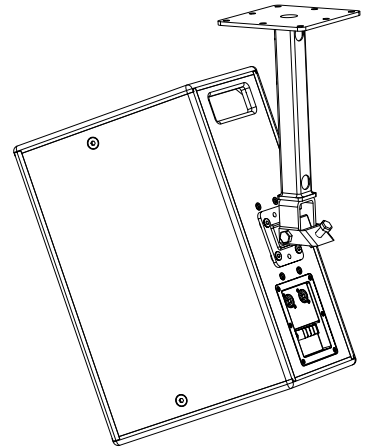
Illustrated: TCX-12 on a CB-55 wall bracket

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

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 18 mm. Use the rear rigging point to angle the cabinet for optimum room coverage. Cabinets may be hung upside down if required.
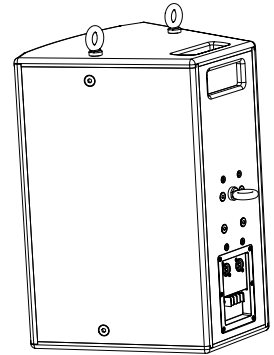
IMPORTANT NOTE: The mounting of a permanently installed sound system may be dangerous unless undertaken by qualified personnel with the required experience and certification to perform the necessary tasks. Walls, floors or ceilings must be capable of safely and securely supporting the actual load. The 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.

The operation of your speaker cabinet as part of a flown 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 or flying.

Make sure that speaker cabinets are set up and "flown" by qualified and certified personnel only, using dedicated equipment and original parts and components delivered with the unit. If any parts or components are missing please contact your Dealer before attempting to set up the system.

Be sure to observe the local, state and other safety regulations applicable in your country. MUSIC Group, including the MUSIC Group companies listed on the enclosed "Service Information Sheet", assume 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 speaker is flown, the area underneath the speaker is free of human traffic. Do not fly the speaker in areas which can be entered or used by members of the public.

Speakers create a magnetic field, even if not in operation. Therefore, please keep all materials which can be affected by such fields (discs, computers, monitors etc) at a safe distance. A safe distance is usually between 1 and 2 metres.

Servicing and Driver Removal

1. Place the cabinet on its back on a suitable work surface. Remove the eight 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).
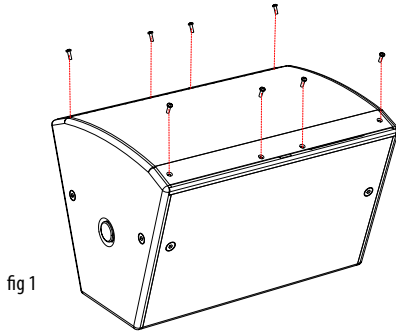
fig 1
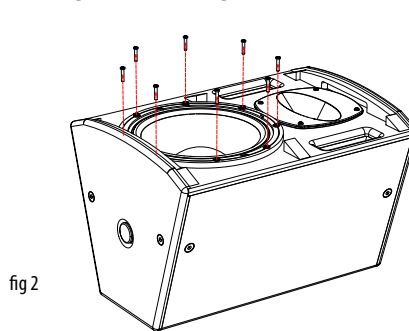
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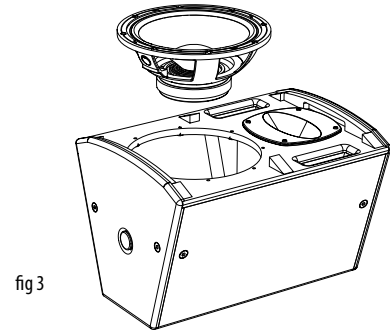
fig 3

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.
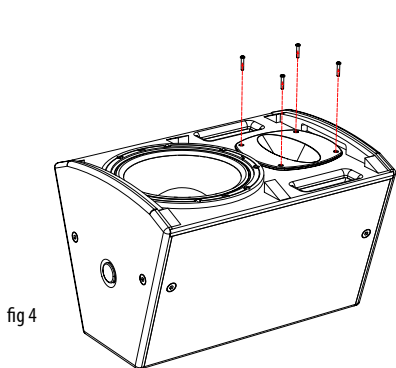
fig 4
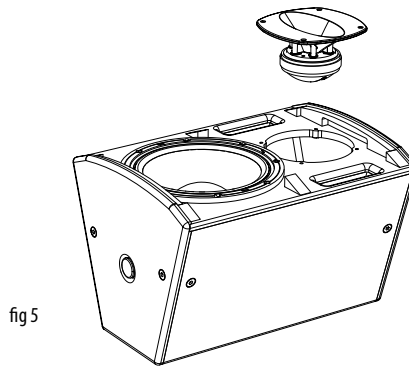
fig 5
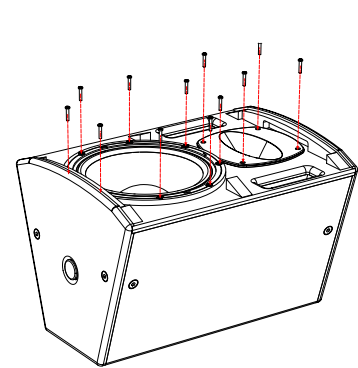
9. Reconnect the bass driver cables, observing the correct polarity (brown cable to the red +ve terminal, blue cable to the black –ve terminal) and reinstate the driver in the cabinet. Replace and tighten the driver fixing screws.

10. Replace the grille 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 before.
2. Remove the M5 hex head HF horn fixing 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 turbosound.com for a free EASE data download.

Technical Specifications

| Model	TCX-8	TCX-10	TCX-12	TCX-15	TCX-15B	TCX-18B
Dimensions (H x W x D)	16.1 x 12.3 x 11" 408 x 312 x 280 mm	19.4 x 14.6 x 13.1" 492 x 370 x 332 mm	21.7 x 16.1 x 14.5" 552 x 410 x 368 mm	25.7 x 18.5 x 16.6" 652 x 470 x 422 mm	23.6 x 19.7 x 23.6" 600 x 500 x 600 mm	26 x 22 x 26" 660 x 560 x 660 mm
Net weight	24.4 lbs / 11.1 kg	33.2 lbs / 15.1 kg	42.9 lbs / 19.5 kg	53.9 lbs / 24.5 kg	78 lbs / 35.5 kg	84.7 lbs / 38.5 kg
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 drive	1 x 15" LF driver 1 x 1" HF driver	1 x 15" LF driver	1 x 18" LF driver
Response (±10 dB)	70 Hz – 20 kHz	68 Hz – 20 kHz	68 Hz – 20 kHz	55 Hz – 20 kHz	28 Hz – 170 Hz	25 Hz – 170 Hz
Dispersion @ -6 dB	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 1 w @ 1 m	94 dB	95 dB	97 dB	99 dB	95 dB	97 dB
Power handling	200 W	250 W	300 W	400 W	1000 W	1000 W
Calc. max SP	123 dB	125 dB	128 dB	131 dB	131 dB	133 dB
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

Spare Parts

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

In keeping with our policy of continual improvement, TURBOSOUND reserves the right to alter specifications without prior notice.

Contact Information

TURBOSOUND

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Partridge Green

West Sussex RH13 8RY

England

Customer Service

If your product requires servicing please contact your local distributor or retailer. A complete list is available on our website at: turbosound.com

EN Important information

1.   Register online. Please register your new TURBOSOUND equipment right after you purchase it by visiting turbosound. com. Registering your purchase using our simple online form helps us to process your repair claims more quickly and efficiently. Also, read the terms and conditions of our warranty, if applicable.

2.   Malfunction. Should your MUSIC Group Authorized Reseller not be located in your vicinity, you may contact the MUSIC Group Authorized Fulfiller for your country at turbosound.com. If your country is not listed please contact the "United Kingdom (TURBOSOUND main office)" located under "Contact Us" on the turbosound.com website. The warranty eligibility will be verified from the original sales receipt.

3.   Power Connections. Before plugging the unit into a power socket, please make sure you are using the correct mains voltage for your particular model. Faulty fuses must be replaced with fuses of the same type and rating without exception.