

TWIN X SERIES MULTI-PURPOSE LOUDSPEAKER SYSTEMS

TWIN 8X, 10X, 12X & 15X CO-AXIAL FULL RANGE MULTI-PURPOSE LOUDSPEAKER
SYSTEMS

TWIN 15X SUB & TWIN 18X SUB - SUB BASS CABINETS

TWIN 15X ACTIVE SUB & TWIN 18X ACTIVE SUB CABINETS

USER MANUAL



TWIN-X SERIES MULTI-PURPOSE LOUDSPEAKER SYSTEMS



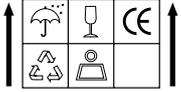
TWIN-8X, -10X, -12X & -15X CO-AXIAL FULL RANGE MULTI-PURPOSE LOUDSPEAKER SYSTEMS

Wharfedale
Pro

TWIN-15X SUB & TWIN-18X SUB - SUB BASS CABINETS USER MANUAL

TWIN-15X SUB ACTIVE & TWIN-18X SUB ACTIVE BASS CABINETS USER MANUAL

⚠ WARNING & SAFETY INSTRUCTIONS



Unpacking

All Wharfedale Pro products are fully checked before leaving the factory. After unpacking please inspect cabinets for any physical damage. Please retain the shipping carton if possible and internal packing material in case the unit needs to be returned. Please check as soon as possible the unit is functioning. In the event of any damage please contact your dealer immediately so that a written claim for damages can be made.

Wharfedale Pro Limited Warranty*

Wharfedale Twin-X Series loudspeaker systems are warranted to be clear of manufacturing or materials defects for a period of one year from the original date of purchase. In the event of malfunction, contact your authorised Wharfedale Professional dealer or distributor for information.

*Be aware that warranty details may differ from country to country. Contact your dealer or distributor for information. These terms do not infringe your statutory rights.

TWIN-8X, -10X, -12X, -15X FULL RANGE AND -15X SUB /-18X SUB BASS CABINETS

- 1. READ INSTRUCTIONS** carefully before operating this product.
- 2. RETAIN** these instructions.
- 3. COMPLY WITH WARNINGS** - All warnings and instructions for this product should be adhered to.
- 4. USE WITH AMPLIFIERS** - In order to avoid damage, it is advisable to establish and follow a pattern for turning on and off any sound system. With all system parts connected, turn on source equipment, tape decks, instruments, mixers, signal processors etc., BEFORE turning on your power amplifier. Many products output turn on and turn off transients that can damage speakers. By turning on your power amplifier LAST and making sure the amplifier's input controls are at minimum any transients "upstream" of the amplifier are not amplified and passed to the speaker. Wait until all system parts have stabilised, then bring up amplifier controls to operating level. This should take no more than a few seconds. Similarly when shutting systems down, always turn down amplifier input controls and then turn off your amplifier BEFORE shutting down other components. Professional amplifiers often feature delayed turn on/off circuits to perform these functions for you automatically.
- 5. CABLES** - Never use shielded or microphone cable for any speaker connection as this will not be heavy enough to handle the amplifier load and could cause damage to the complete system.
- 6. ⚠ RIGGING • SUSPENDING • MOUNTING**
The rigging, suspension or mounting of this speaker system can expose members of the public to serious health risks and even death. UNDER NO CIRCUMSTANCES ATTEMPT TO RIG, SUSPEND OR OTHERWISE MOUNT THIS SYSTEM UNLESS YOU ARE FULLY QUALIFIED AND CERTIFIED TO DO SO BY RELEVANT LOCAL, STATE AND NATIONAL AUTHORITIES. ALL RELEVANT SAFETY REGULATIONS MUST BE FOLLOWED. IF YOU ARE NOT PROPERLY QUALIFIED OR DO NOT KNOW OF PERTINENT REGULATIONS, CONSULT QUALIFIED PERSONNEL FOR ADVICE AND ASSISTANCE.
- 7. ⚠ CAUTION:** These professional loudspeaker systems are capable of generating very high sound pressure levels. Use care with placement and operation to avoid exposure to excessive levels that can cause permanent hearing damage.
- 8. SERVICING** - The user should not attempt to service this product except that mentioned in this manual.

TWIN-15X SUB ACTIVE AND TWIN-18X SUB ACTIVE SUB BASS CABINETS

- 9. ⚠ WATER & MOISTURE** - This Wharfedale Pro unit should not be used near liquids. It should not have liquids placed on or in close proximity as there are **⚠ DANGEROUS VOLTAGES** present.
- 10. ⚠ VENTILATION/AIR FLOW:** This Wharfedale Pro unit should not have its heatsink obstructed from air flow. It should not be situated in a built-in installation that may hamper air flow to the heat sinks. It should not be placed near heat sources.
- 11. ⚠ POWER SUPPLY:** This Wharfedale Pro unit should be only connected to a power supply as stated on the unit. Power supply cables should be routed where they will not be walked on or pinched by objects placed adjacent or upon them.
- 12. ⚠ ELECTRIC SHOCK:** Care should be taken that the grounding of this unit is NOT defeated. Do not use this units power cable with an extension cable unless the pins can be fully inserted.

TWIN-8X, -10X, -12X, -15X FULL RANGE UNITS

- Proprietary designed, high efficiency, high power Wharfedale Professional coaxial two-way full-range drive units (full range units).
- Sophisticated crossover design enables smooth power and frequency response control through crossover region.
- Speakon™ connectors
- Protective full steel grille with acoustic foam backing
- High power output, low distortion sound quality
- Trapezoidal array design
- Built in rigging points
- Low profile ceiling mounting - low profile stage monitor
- Pole mount socket for portable sound system use
- Integral High Frequency Driver Overload protection "PRO-TECH"™
- Strong construction of acoustically inert birch plywood.
- Impact resistant multiple layered paint finish

TWIN-15X SUB , TWIN-18X SUB WOOFERS

- Proprietary designed, high efficiency, high power Wharfedale Professional Folded Bass Horn Subwoofer with 15 inch (15X SUB) or 18 inch (18X SUB) heavy duty woofers.
- Sophisticated crossover design enables smooth power and frequency response control through crossover region.
- Speakon™ connectors
- Protective steel grille (part covering) with acoustic foam backing
- High power output, low distortion sound quality
- Rectangular shape
- Pole mount socket for portable sound system use
- Strong construction of acoustically inert 18 mm birch plywood.
- Built in M10 rigging points (except Active version)
- Impact resistant multiple layered paint finish

INTRODUCTION:

The TWIN-X is capable of delivering high SPL's in even the most demanding applications and exhibits true constant directivity, providing an even frequency response over the entire area of coverage.

The TWIN-X full range cabinet comprises one sophisticated low frequency (LF) driver and high frequency (HF) sources are exactly aligned to a point source, resulting in a smooth uniform frequency response over a wide area of coverage either as a portable stand alone system or in a multi-cabinet array. As the system is a point source, clusters and arrays have minimal lobing. These features are inherent and achieved without the use of any electronic signal processing.

The asymmetric cabinet profile allows flexible and discreet installation. As a foreground system, installation is made simple with any type of mounting hardware or the system can be flown using the integral M10 inserts.

For portable stage use the birch ply cabinet has a recessed carrying handle on the rear of the cabinet. As a versatile low profile stage monitor, the conical coverage pattern gives the performer greater freedom of movement.

Equalisation:

The TWIN-X loudspeaker is designed to need no equalisation or correction to overcome system limitations. As a result, it will only need equalisation to compensate for difficult acoustic environments.

Over equalisation can reduce system headroom, and introduce phase distortion resulting in greater problems than cures. If equalisation is required then it should be applied gently and smoothly. The TWIN-X loudspeaker is a point source, phase coherent design and violent equalisation will be detrimental to the overall sound quality.

When a loudspeaker is used in close proximity to another, comb filtering effects can create coverage problems, comb filtering creates an uneven frequency response across the coverage area due to constructive and destructive interference effects between the sources. The amount of comb filtering is affected by the spacing of the relative sound sources. Minimising this effect cannot be cured by equalisation.

APPLICATION: Twin X series of foreground/back-ground music speakers designed for demanding professional applications such as the reproduction and reinforcement of music and sound in venues as diverse as discotheques, airports, places of worship, retail premises, restaurants and public houses.

DESCRIPTION: Twin-8X, 1 x 8" coaxial two-way full-range drive unit plus 2" HF driver, trapezoid, ported acoustically-efficient enclosure. Twin-10X, 1 x 10" coaxial two-way full-range drive unit plus 2" HF driver, trapezoid, ported acoustically-efficient enclosure. Twin-12X, 1 x 12" coaxial two-way full-range drive unit plus 2" HF drive unit, trapezoid, ported acoustically-efficient enclosure. Twin-15X, 1 x 15" coaxial two-way full-range drive unit plus 2" HF drive unit, trapezoid, ported acoustically-efficient enclosure.

SUB BASS UNITS: Twin-15XSB, 1 x 15" bass unit, rectangular, ported acoustically-efficient enclosure. Twin-18XSB, 1 x 18" bass unit, rectangular, ported acoustically-efficient enclosure.

CONSTRUCTION: All units are constructed from birch plywood. All full range units are fitted with a full steel grille. Subwoofers are fitted with a partial steel grille.

FINISH: All Twin X models are available in a black or white impact resistant multiple layered paint finish with rugged metal grille with acoustic foam backing as standard.

DEPLOYMENT: The Twin-X can be mounted in a vertical or horizontal position using the mounting bracket hardware. All models have been designed for installation with the use of suitable ancillary commercial mounting equipment. They can be installed on the wall or ceiling flush mounted, or combined in groups of two and four in a column or on floor stands.

IMPORTANT NOTE See Warning Section on **RIGGING • SUSPENDING • MOUNTING** before attempting to install Wharfedale Pro Twin-X series of speakers.

Ensure you use the M10 eyebolts for any mounting hardware used with the Twin-X.

HF PROTECTION: The Twin X series speakers are equipped with The "PRO-TECH"™ System, a dynamic tweeter protection circuit, composed of an accurate and sensitive protection lamp. When high signal levels are present that may pose a dangerous overload for the tweeter coil, the protection circuit will activate immediately to limit the power sent to the transducer.

OPERATION/USE:

1. The Twin-X Series will accept cables with Speakon™ connectors. The units feature two Speakon™ type connectors situated at the rear of each cabinet. This type of connection is easy to use as it requires no additional solder. The rear of the unit will feature two parallel sockets labelled 'Input' and 'Output'. The pins of these sockets are paralleled with the unit itself. Pin +1 is positive and Pin -1 is negative in accordance with standard wiring regulations (see diagram below). The SUB models feature an additional Speakon Hi Pass output. These are connected in parallel. Take care to avoid adding too many Twin-X Series speakers in series. Each speaker connected in series increases the load on the amplifier and can add up to a total load that may exceed the amplifier's capabilities, leading to possible damage. Two 8 Ω loudspeakers in series make a 4Ω total load. Four 8Ω series connected loudspeakers make a total load of 2Ω, which is too low for many amplifiers.
2. Attach the speaker cable securely to your Twin-X unit and power amplifier (the amplifier should be **off, power down mode**). Where possible use Speakon™ connectors as they are professional high current connections specifically designed for this application. Try to use the correct type of speaker cable according to the handling ability of your Twin X cabinet. Use 2 core equal stranded insulated cable for speaker runs. It is always advisable to use heavier conductor cables on longer runs.
3. If using Speakon™, insert the speakon and rotate 1/8 of a turn until locked in.
4. Power up amplifier with levels on zero. Confirm units are operating.
5. Take care to try and avoid running the amplifier into clip (overdriving) for any length of time as this will result in damage to the voice coil of the loudspeakers.
6. If you are using amplifiers from different manufacturers then make sure the gain variation between the models is less than +/-5dB.



Speakon™ Plug Connection

Pin 1+ = + on amp terminal

Pin 1- = - on amp terminal

TWIN-X SUB ACTIVE PANEL FEATURES:

1. **LINE INPUT:** Balanced line in socket
2. **LINE OUTPUT:** Balanced line out socket
3. **VOLUME:** The input level control controls the level of the input signal into the sub allowing low frequencies to integrate into the system
4. **CROSSOVER FREQUENCY:** Switchable to 80, 100, 150 and 200Hz.
5. **PHASE SWITCH:** For smooth integration of the subwoofer into the system, the phase of the subwoofer can be moved to any of four points between one half and a full phase rotation at selected low pass frequencies. These four points are at 0, one quarter, one half and full phase rotation which can be calculated for example using 80Hz to an approximate delay in position of 0 (ie in phase), 1 metre, 2 metres or 4 metres. These delay settings can also be specified in relation to time offsets as "0", 4, 8 and 16 milliseconds. These sophisticated controls allow the user to accurately integrate the TWIN-X sub into a system for optimum sonic integrity and performance. This facilitates the placement of the sub in a variety of positions with no time alignment problems.
6. **AC SOCKET**
7. **POWER ON/OFF SWITCH**
8. **POWER ON LED INDICATOR**
9. **LIMITER LED:** Output power overload/clipping circuit active indicator.

TWIN-15X ACTIVE SUBWOOFER AND TWIN-18X ACTIVE SUBWOOFER OPERATION:

1. Attach your signal cable to one of the input of of the Twin-15X or -18X Active subwoofer system. The Active Subwoofer has two parallel balanced XLR and 1/4" jack input sockets and one unbalanced stereo input/output socket.
2. Select the crossover frequency that you wish the subwoofer to deliver.
3. Select the phase setting that is correct for your subwoofer.
4. Adjust the subwoofer level control to suit the level of the satellite speakers in the system.

TWIN X SERIES MULTI-PURPOSE LOUDSPEAKER SYSTEMS

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