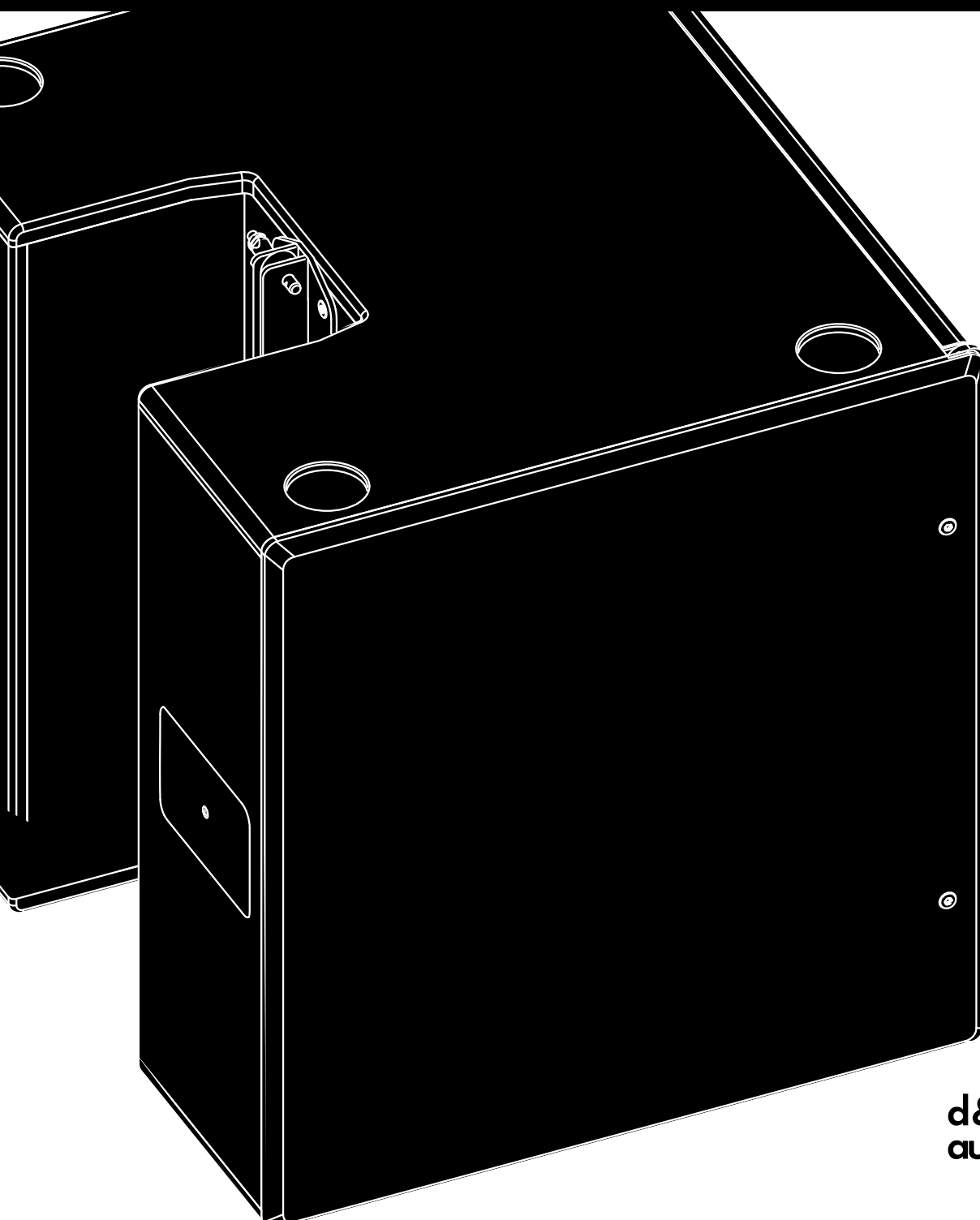


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Ti-SUB **Manual 1.2 en**



General information

Ti-SUB Manual

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1.1 Information regarding the use of loudspeakers

Potential risk of personal injury

Never stand in the immediate vicinity of loudspeakers driven at a high level. Professional loudspeaker systems are capable of causing a sound pressure level detrimental to human health. Seemingly non-critical sound levels (from approx. 95 dB SPL) can cause hearing damage if people are exposed to it over a long period.

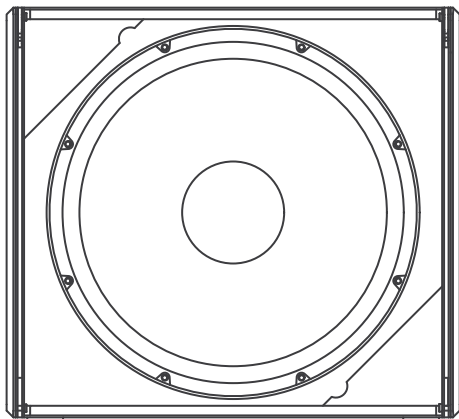
In order to prevent accidents when deploying loudspeakers on the ground or when flown, please take note of the following:

- When setting up the loudspeakers or loudspeaker stands, make sure they are standing on a firm surface. If you place several systems on top of one another, use straps to secure them against movement.
- Only use accessories which have been tested and approved by d&b for assembly and mobile deployment. Pay attention to the correct application and maximum load capacity of the accessories as detailed in our specific "Mounting instructions" or in our "Flying system and Rigging manuals".
- Ensure that all additional hardware, fixings and fasteners used for installation or mobile deployment are of an appropriate size and load safety factor. Pay attention to the manufacturers' instructions and to the relevant safety guidelines.
- Regularly check the loudspeaker housings and accessories for visible signs of wear and tear, and replace them when necessary.
- Regularly check all load bearing bolts in the mounting devices.

Potential risk of material damage

Loudspeakers produce a static magnetic field even if they are not connected or are not in use. Therefore make sure when erecting and transporting loudspeakers that they are nowhere near equipment and objects which may be impaired or damaged by an external magnetic field. Generally speaking, a distance of 0.5 m (1.5 ft) from magnetic data carriers (floppy disks, audio and video tapes, bank cards, etc.) is sufficient; a distance of more than 1 m (3 ft) may be necessary with computer and video monitors.

2 Ti-SUB loudspeaker



2.1 Product description

The Ti-SUB is the subwoofer for the T-Series. It can be used to supplement Ti10L or Ti10P cabinets in various combinations, either flown or ground stacked. The Ti-SUB cabinet is an actively driven bass-reflex design housing a long excursion 15" driver, its frequency response extending from 47 Hz to 140 Hz.

The cabinet is constructed from marine plywood and has an impact and weather protected PCP (Polyurea Cabinet Protection) finish. The front of the cabinet is protected by a rigid metal grill backed by an acoustically transparent foam.

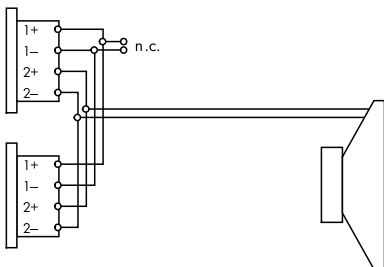
Ti-Series rigging components and arrays

Cabinets are mechanically connected using the rigging strands on both sides of the cabinet front and a central strand at the rear of the cabinet. All necessary rigging components are mounted to the cabinet and are folded or slide out when needed. Please also refer to ⇒ Chapter 3 "Ti-SUB Rigging procedure" on page 9.

A detailed description of the T-Series rigging components is given in the T-Series Rigging manual which is provided with the Z5370 T Flying frame.

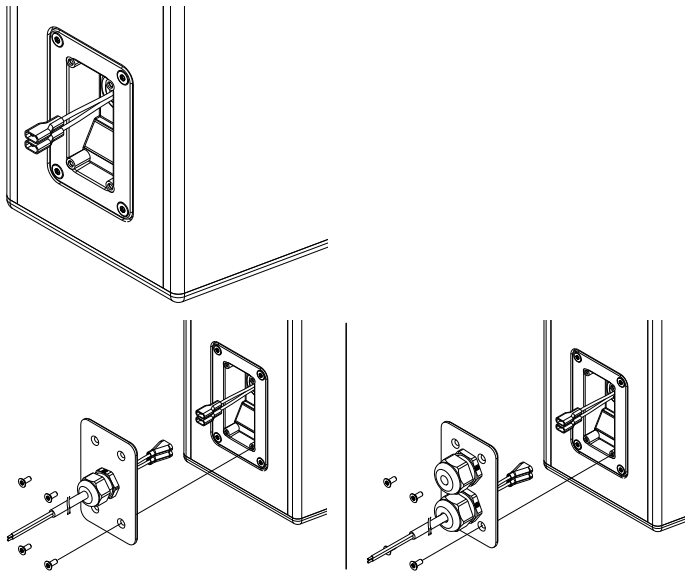
A detailed description of planning and designing T arrays is given in the technical information "TI 385 d&b Line array design, d&b ArrayCalc" which is also provided with the T Flying frame.

The d&b ArrayCalc simulation software can be downloaded from the d&b website at www.dbaudio.com.



2.2 Connections

The cabinet is fitted with a pair of NL4 M connector. All four pins of both connectors are wired in parallel. The cabinet uses the pin assignment 2+/2-. Pins 1+/1- are designated to full range cabinets.



Faston type connector, male single PG (standard), dual PG (optional)

WR option (Weather Resistance)

A number of d&b loudspeakers are available in special options suitable for different types of installed applications and environmental conditions. The following options are available for the Ti-SUB loudspeaker:

- Weather resistant (WR): This option is suitable for outdoor use. The cabinets have an impact and weather protected black PCP (Polyurea Cabinet Protection) finish.

WR cabinets are equipped with a recessed connector panel including a Faston type connector (2 x 6.3 mm, female). A cover plate which accepts single or dual PG cable glands (Type PG13.5 for cable diameters from 6 - 12 mm) is enclosed, as shown in the graphic opposite.

NOTICE!

The WR option enables operation of loudspeakers in changing ambient conditions, however it is not intended to enable permanent, unprotected operation of loudspeakers outdoors.

- Provide an additional cover over the loudspeakers.
 - Aim the cabinets either horizontally or with a downward tilt.
-

To install the fixed connection cable, please proceed as follows:

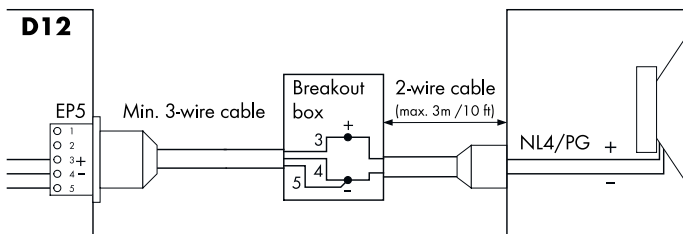
Tools required: Screw driver (#T20).

Note: Observe the correct polarity of the cable
Brown (+) / Blue (-).

1. Insert the connection cable through the PG screwing and connect the male connector to the female connector.
2. Push the cover plate towards the connector panel until it fits into place.
3. Fix the cover plate to the connector panel using the four countersunk screws.

d&b LoadMatch

With the d&b four channel amplifier platform, the LoadMatch function enables the amplifier to electrically compensate for the properties of the loudspeaker cable used without the need for an additional sense wire. For applicable loudspeakers, LoadMatch is therefore independent of the connector type used.



d&b SenseDrive

The SenseDrive feature within D12 amplifiers enables electrical compensation for the properties of the loudspeaker cable used. SenseDrive requires an additional sense wire. SenseDrive is therefore only available with EP5 connectors and 5-wire cabling for applicable loudspeakers.

Note: When the D12 is operated in "Mix TOP/SUB mode", the SenseDrive function is only available at the output B connector.

In permanent installations, SenseDrive can also be applied to cabinets with NL4 connectors or the fixed cable option (PG). The connection of the negative signal wire (EP5 pin 4 of the respective D12 output) to the SenseDrive wire (EP5 pin 5 of respective D12 output) is made in a breakout box close to the loudspeaker cabinet. For an uncompromising SenseDrive performance the connection should be done not more than 3 m (10 ft) away from the loudspeaker.

2.3 Operation

NOTICE!

Only operate d&b loudspeakers with a correctly configured d&b amplifier, otherwise there is a risk of damaging the loudspeaker components.

Applicable d&b amplifiers:

30D/10D/D80/D20/D12/D6.

Application	Setup	Cabinets per channel
Ti-SUB	T-SUB	2

Within applicable d&b amplifiers, the controller setup is available in Dual Channel or Mix TOP/SUB mode.

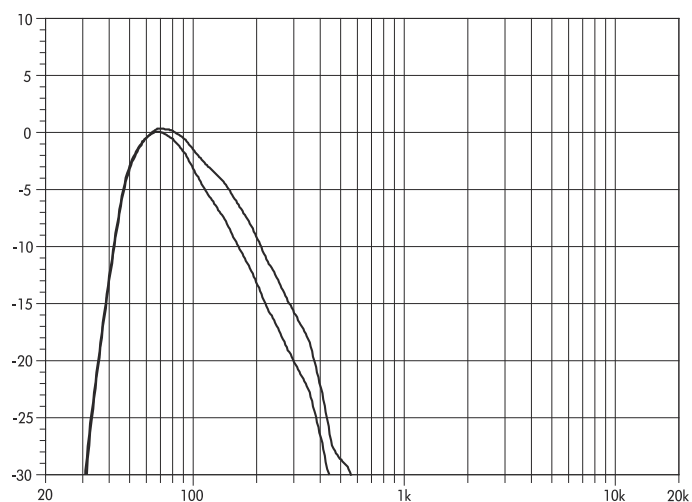
2.3.1 Controller settings

For acoustic adjustment the 100 Hz mode can be selected.

100 Hz mode

With the 100 Hz mode selected, the upper operating frequency of the system is reduced from 140 Hz to 100 Hz.

It can be used when actively driven Ti-SUB subwoofers are used to supplement TOP cabinets operated in full range mode, for example in a distributed sound system. The 100 Hz mode can also be used to compensate for the effect of close coupling between the Ti-SUB and TOP cabinets operated in CUT mode.



Ti-SUB frequency response, standard and 100 Hz modes

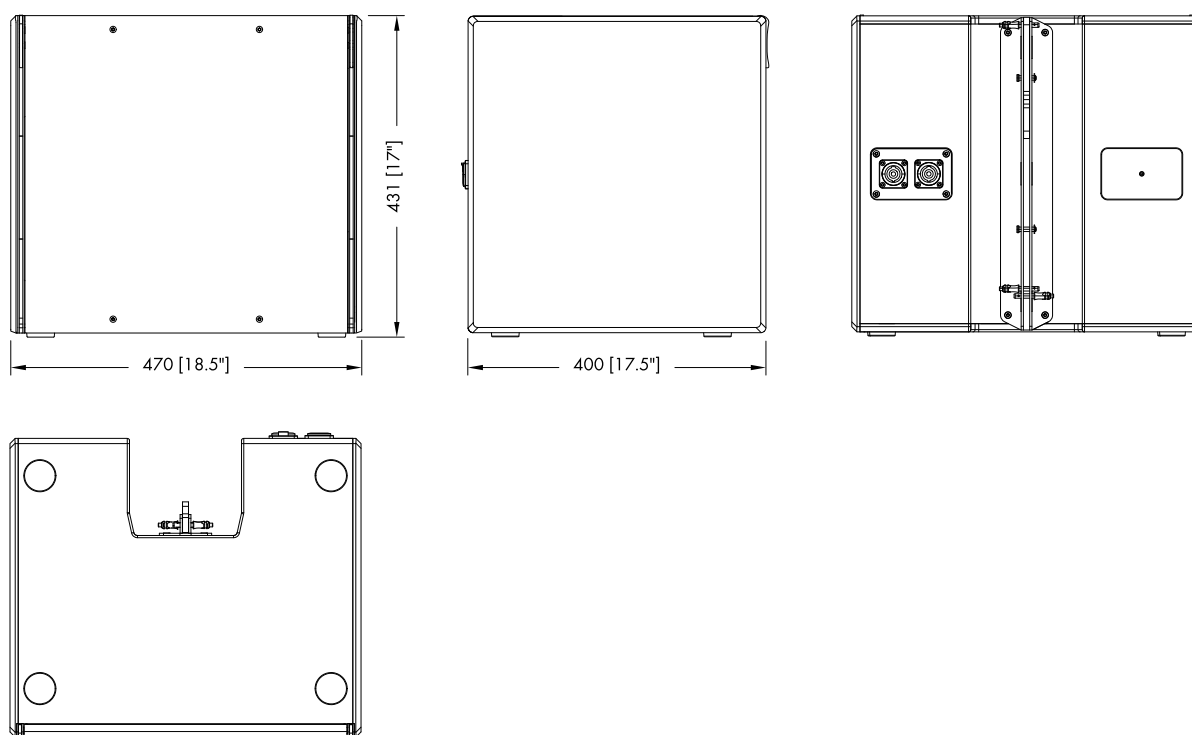
2.4 Technical specifications

Ti-SUB system data

Frequency response (-5 dB standard)	47 Hz - 140 Hz
Frequency response (-5 dB 100 Hz mode)	47 Hz - 100 Hz
Max. sound pressure (1 m, free field)	
10D/D6	127 dB
30D/D80/D20/D12	130 dB
	(SPLmax peak, pink noise test signal with crest factor of 4)

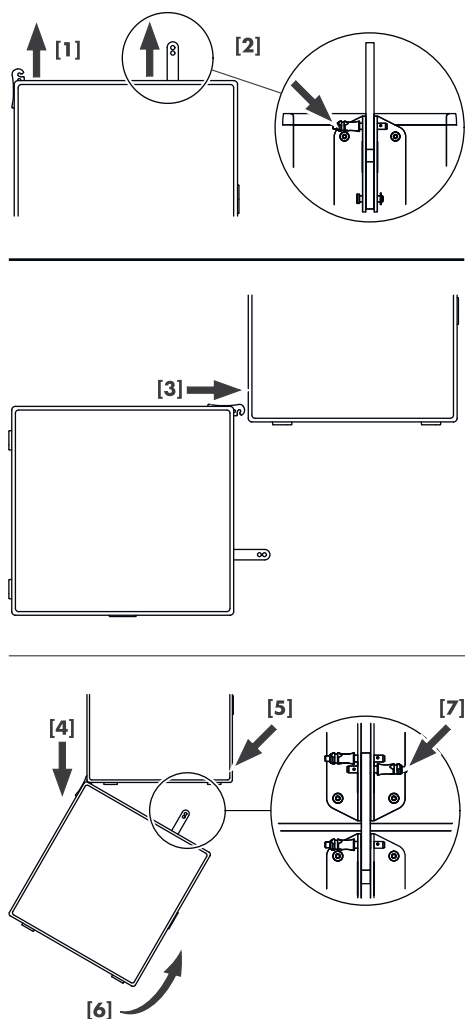
Ti-SUB loudspeaker

Nominal impedance	8 ohms
Power handling capacity (RMS/peak 10 ms)	300/1600 W
Components	15" driver with neodymium magnet
Connections	2 x NLT4 F/M, optional: EP5
	WR option: Faston type connector (2 x 6,3mm)
Pin assignment	NLT4 F/M: 2+ / 2-
	EP5: 3:+ / 4:-
Weight	17 kg (37 lb)



Ti-SUB cabinet dimensions in mm [inch]

3 Ti-SUB Rigging procedure



Ti-Series arrays with Ti-SUB cabinets at the top of the array are set up using the Z5370 T Flying frame. The rigging procedure follows the description given in the T-Series Rigging manual which is provided with the T Flying frame. However, Ti-SUB cabinets have different front rigging mechanisms. The Ti-SUB front rigging is equipped with hooks and fixed bolts instead of locking pins and is hidden behind a cover in cabinet color.

To attach a Ti-SUB cabinet to the T Flying frame and at the top of a Ti-Series array, proceed as follows:

1. Slide out the Front links of the cabinet.
2. Release the Locking pin of the Rear link and slide out the Rear link up to its stop position.
↳ Reinsert the Locking pin.
3. Keep the cabinet at an angle of 90° to the upper cabinet/ frame and insert the Front links into the front rigging of the upper cabinet.
4. Slowly lower the cabinet and make sure the hooks are engaged in the bolts.
5. Release the Locking pins at the rear rigging strand of the upper cabinet.
6. Lift the back of the cabinet and insert the Rear link into the rear rigging strand of the upper cabinet.
7. Insert the two Locking pins for the Rear link on the upper cabinet.

A detailed description of planning and designing T-Series arrays is given in the technical information "TI 385 d&b Line array design, d&b ArrayCalc" which is also provided with the T Flying frame.

The d&b ArrayCalc simulation software can be downloaded from the d&b website at www.dbaudio.com.



4.1 EU conformity of loudspeakers (CE symbol)

This declaration applies to:

d&b Ti-SUB loudspeaker, Z0561

manufactured by d&b audiotechnik GmbH.

All production versions of these types are included, provided they correspond to the original technical version and have not been subject to any later design or electromechanical modifications.

We herewith declare that said products are in conformity with the provisions of the respective EC directives including all applicable amendments.

A detailed declaration is available on request and can be ordered from d&b or downloaded from the d&b website at www.dbaudio.com.

4.1.1 WEEE Declaration (Disposal)

Electrical and electronic equipment must be disposed of separately from normal waste at the end of its operational lifetime.

Please dispose of this product according to the respective national regulations or contractual agreements. If there are any further questions concerning the disposal of this product, please contact d&b audiotechnik.

