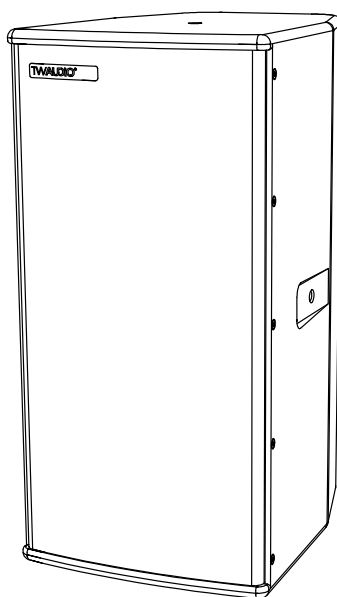


T20i | **Operation manual**



Introduction

Thank you for choosing a high-quality product “MADE IN GERMANY” from the brand TWAUDIÖ.

The T20i is a consequential transformation of our users requirements. A compact, 30 cm slim 2× 10“ / 1.4“ top in a symmetric construction, perfectly suitable for use in upright and crosswise applications.

Thanks to the sophisticated driver arrangement and passive crossover the T20i has a constant directivity, horizontally as well as vertically. Particularly installations where low ceilings are an issue and conventional two-way loudspeakers are a mere compromise, the T20i shows its true potential.

The T20i comes standard with a rotatable 90° × 50° horn. With the optional 60° × 40° horn thus there are four different dispersion angles possible.

If you lend your product to another party, inform that party of the safety-related operating procedures and hand over this assembly guide. If you require additional copies of this manual, you can obtain them free of charge from TWAUDIÖ or download them from www.twaudio.de

Instructions in this user manual

Strictly adhere to the instructions contained in this operating manual that are marked as follows:



This symbol in combination with the signal word “Warning” identifies a potentially hazardous situation. Failure to comply with this safety instruction can lead to serious injury or even death.



This symbol in combination with the signal word “Warning” identifies a potentially hazardous situation for persons with a pacemaker. Failure to comply with this safety instruction can lead to serious injury or even death.



This symbol in combination with the signal word “Caution” identifies a potentially hazardous situation. Failure to comply with this safety instruction can lead to light or moderate injury.



This symbol in combination with the signal word “Note” identifies a potentially hazardous situation. Failure to comply with this safety instruction can lead to product damage.



This symbol in combination with the signal word “Tip” identifies additional information or notes that will simplify working with TWAUDIÖ products on the basis of practical experience.

Notes on the products

Read manual before use!

Before using the device, carefully read the operating manual and keep it with the T20i loudspeaker.

General information

Operation manual: OM-T20i
Version 2.0 en, 01/2022
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All information contained in this operating manual was correct to the best of our knowledge at the time of printing.

Quality warranties or assurance of suitability for a certain type of use based on the technical specifications, dimensions and weights are not granted by TWAMBO.

TWAMBO also shall not assume liability for any secondary damage (property damage and/or personal injury) nor for the failure to comply with this operating manual!

TWAMBO reserves the right to update this document based on recent developments.

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1. Safety | Intended use

Please adhere to the following safety instructions to avoid risks when operating loudspeakers.

The T20i loudspeaker was developed for use in professional sound systems. The loudspeaker may only be used by trained and qualified personnel.

Note the operating modes described in this operating manual. Other uses are not permissible.

Damage caused by improper use is not covered by TWAMBO.



Loudspeakers generate an electromagnetic field. Persons with pacemakers are not permitted to remain in the immediate vicinity of loudspeakers as the electromagnetic fields can cause pacemakers to malfunction.



When working with heavy loads exceeding 20 kg (44 lbs.), use suitable aids (dollies, hoisting slings, etc.). Multiple persons may be required depending on the situation.

Ensure that the units are in a stable position and are firmly attached. A falling loudspeaker can result in serious personal injury and property damage.

When using and assembling TWAUDIÖ loudspeakers, only use materials specified by TWAUDIÖ. These tasks must be performed by qualified personnel. Adhere to the applicable safety regulations.



When setting up loudspeakers, ensure that they are not exposed to the following ambient conditions:

- Direct sunlight
- Humidity
- Jolting
- Dust



Keep away from the immediate vicinity of loudspeakers that are operated at high sound pressure levels. These loudspeaker systems are capable of endangering your health. Sound levels beginning as low as approximately 90 dB SPL can lead to long-term hearing impairment.



Avoid:

- Feedback
- Distorted signals (clipping) and
- Peaks resulting from switching on devices, plugging in devices or unplugging devices during operation.

Such signals can lead to loudspeaker overload and ultimately to loudspeaker failure.



Ensure that the loudspeaker is not exposed to permanent thermal overloads. Thermal overloads may cause a fire and result in serious personal injury and property damage.

Note that TWAMBO does not provide a warranty for damage that can be attributed to this type of overload and therefore cannot be held liable for any secondary damage.



A permanent magnetic field is present in the immediate vicinity of loudspeakers. Ensure that objects which react sensitively to magnetic fields are not located in the immediate vicinity of the loudspeaker. In particular, this applies to magnetic storage media, magnetic stripe cards such as debit cards and CRT displays. A distance of approximately one meter is sufficient to avoid damage.



Check loudspeakers and accessory parts regularly for visible wear. This is essential to ensure continuing fault-free operation. Worn parts should be replaced immediately. Spare parts are available from TWAUDIO.

2. Overview

2.1 Components

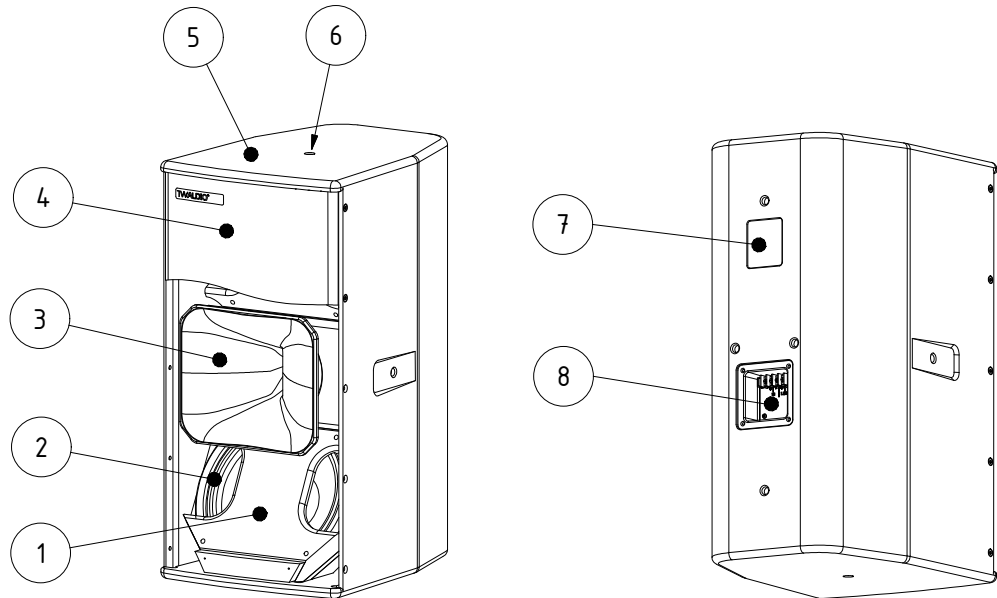


Figure 2.1 - Overview

1. Phaseplug
2. 10" cone driver
3. Rotatable horn with 1,4" compression driver
4. Front grill
5. 15 mm Multiplex enclosure - Warnex textured paint surface
6. M10 threaded insert for attaching accessories (8 pieces)
7. Type label
8. Standard i-series screw terminal

2.2 Variants

The T20i loudspeaker is available as standard in a $90^\circ \times 50^\circ$ horn version and optionally in a $60^\circ \times 40^\circ$ horn version. The specified angles of radiation refer to the horizontal and vertical radiation behavior of the HF horns. For this purpose interchangeable horn funnels are installed. Which horn version is concerned can be checked on the side of the horn cone (see figure 2.2.1).

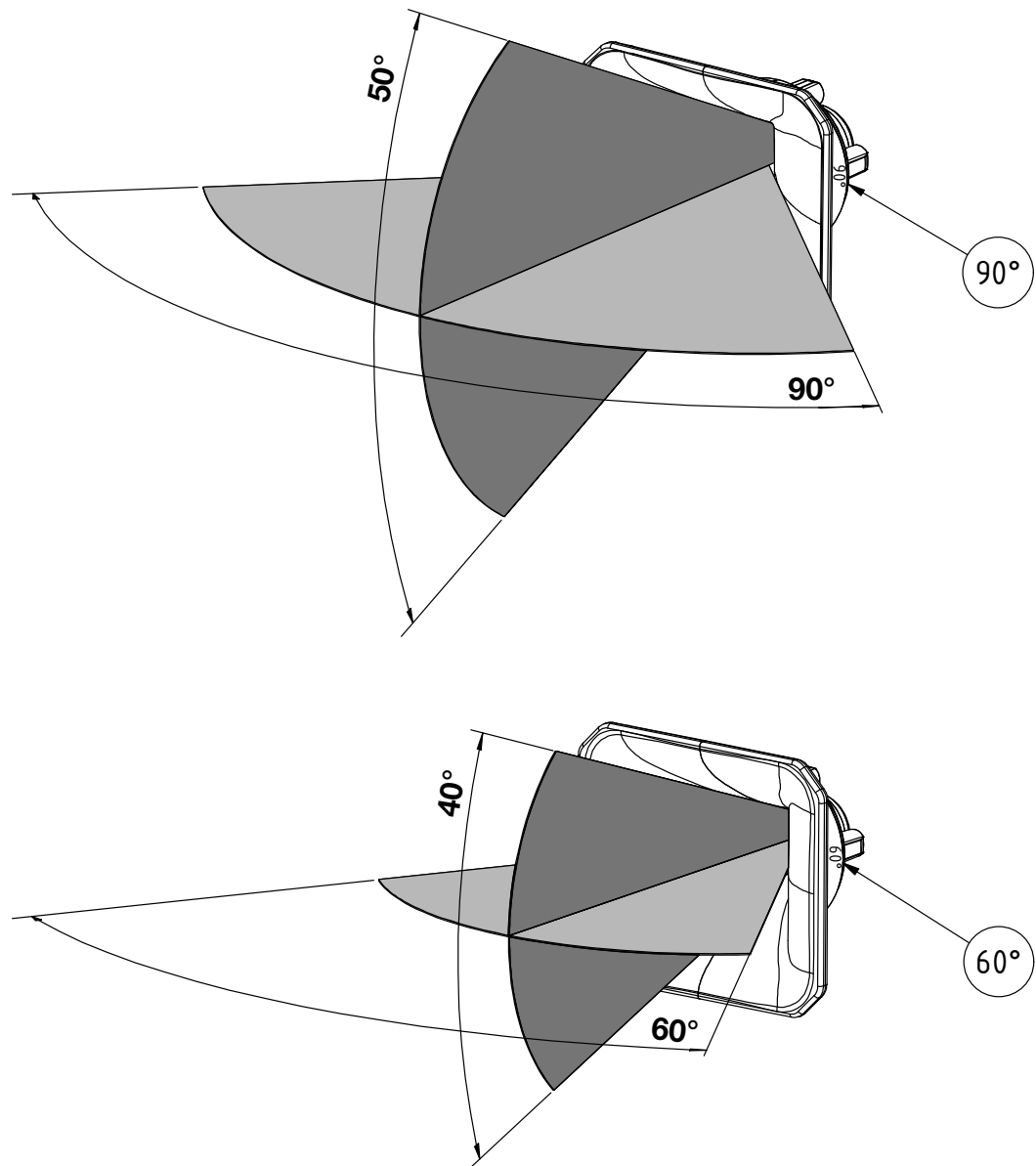


Figure 2.2.1 - Variants of the T20i HF horns



The modular design of the tweeter unit allows a quick change between the different emission characteristics. The complete tweeter unit consists of horn funnel (1), horn foot (2), driver plate and compression driver.

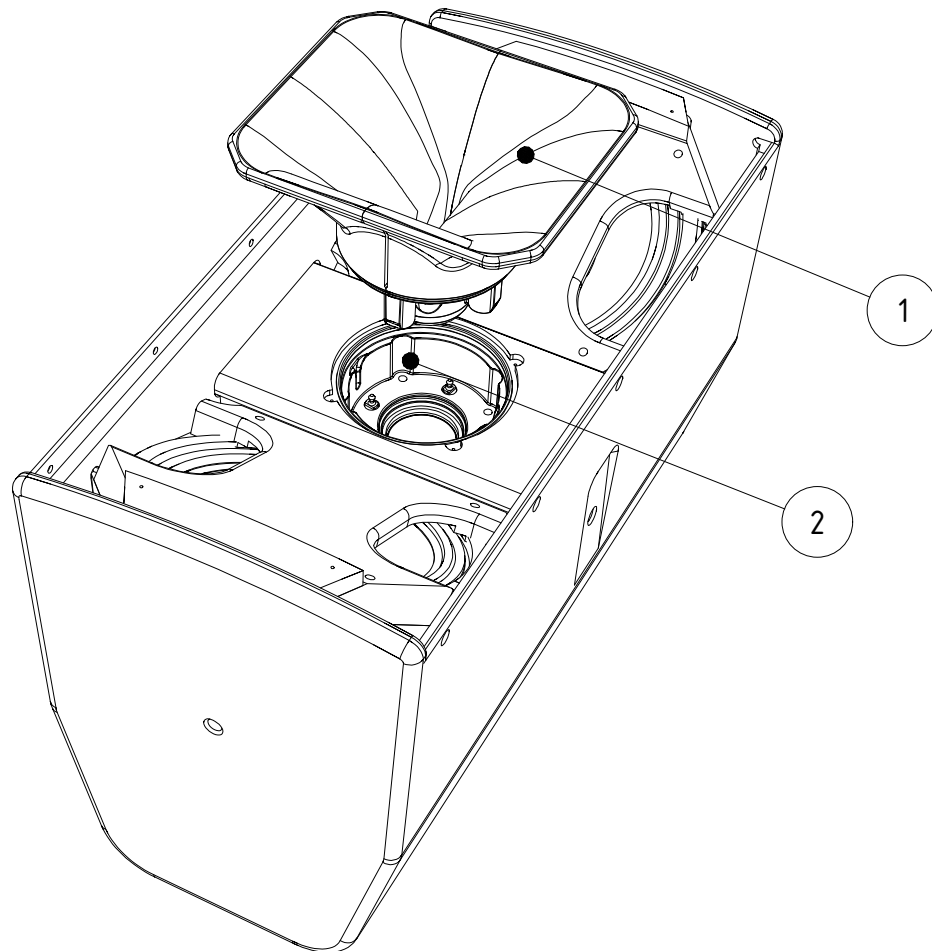


Figure 2.2.2 - setup of the T20i HF unit

3. Technical specifications

3.1 Data sheet

Drivers	2x 10" LF / 1x 1,4" HF
Frequency response	60 - 18000Hz
Power handling (program/Peak)	1000 / 2000W
Impedance	8Ω
Coverage (h x v)	90° x 50° or 60° x 40°
Max. SPL / 1m	138dB
Dimensions (h x w x d)	600 x 300 x 400mm [23.6 x 11.8 x 15.7 in]
Weight	24,3kg [53lbs]
Surface	Warnex textured paint

3.2 Connection diagram

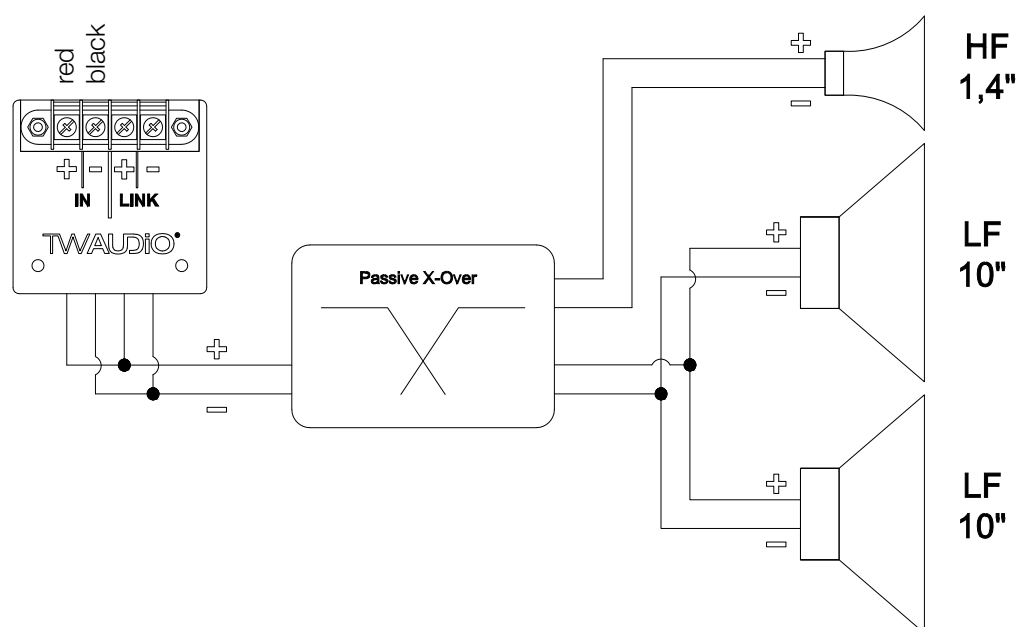


Figure 3.2 - Connection diagram

4. Commissioning

4.1 Setup

The T20i loudspeaker is designed for hanging, vertical and horizontal operation. TWAUDIÖ provides a wide range of accessories to securely attach the loudspeaker.



Make sure that all system structures are located on a firm, level surface and that the surface can bear the total weight!



Make sure the speakers are securely fastened to prevent personal injury and property damage.



TWAUDIÖ recommends using only the accessories specified by TWAUDIÖ for securing and mounting loudspeakers.



Please note that when operating the T20i loudspeaker without front grill, the HF horn must additionally be secured against falling out! (Sticking)

4.2 M10 threaded inserts

Before fitting the accessories follow the subsequent steps:

1. To remove the countersunk screws remove the texture paint by using a cutter knife. Avoid damaging the surrounding paint to prevent chipping.
2. Remove for your application required countersunk screws. Use a hexalobular key with the size of TX50.



3. Please note that once the countersunk screws are removed, water and moisture may enter into the enclosure.



4. For the T20i loudspeaker M10 threaded inserts, various TWAUDIÖ accessories can be mounted. For each product refer to the instructions. (If you have further questions, please contact TWAUDIÖ Support.)

5. Note that the load capacity is limited to a single speaker.

4.3 Rotating and changing the HF horn

By default, the HF horn of the T20i loudspeaker is oriented so that the horizontal beam angle is 90° and the vertical beam angle is 50°. In some situations it may be advantageous to change the emission characteristics in the HF range. You can replace the standard high frequency horn of the T20i loudspeaker with an optional 60° x 40° version. Proceed as follows:

4.3.1 Rotating the HF horn

1. Place the T20i loudspeaker on its back, with the speaker grill facing up. Make sure to place the speaker on a clean, non-slippery surface.
2. To remove the front grill, a hexalobular key with the size of TX25 is required. Remove all front grill mounting screws from the side of the loudspeaker (10 pieces). Lift the front grill of the loudspeaker away. Secure the speaker against lifting and slipping if necessary with a second person.
3. Pull the horn with the compression driver up and out of the speaker cabinet.
4. Turn the horn funnel 90°.
5. Insert the twisted horn funnel into the horn foot. To do this, press the horn funnel until it snaps back into the horn foot with the click mechanism. Then check the tightness of the horn funnel in the horn foot.
6. Attach the grill using the screws provided.



Please note that when operating the T20i loudspeaker without front grill, the HF horn must additionally be secured against falling out! (Sticking)

4.3.2 Changing the HF horn

1. Place the T20i loudspeaker on its back, with the speaker grill facing up. Make sure to place the speaker on a clean, non-slippery surface.
2. To remove the front grill, a hexalobular key with the size of TX25 is required. Remove all front grill mounting screws from the side of the loudspeaker (10 pieces). Lift the front grill of the loudspeaker away. Secure the speaker against lifting and slipping if necessary with a second person.
3. Pull the horn with the compression driver up and out of the speaker cabinet.
4. Insert the horn funnel to be changed into the horn foot. To do this, press the horn funnel until it snaps back into the horn foot with the click mechanism. Then check the tightness of the horn funnel in the horn foot.
5. Attach the grill using the screws provided.



Please note that when operating the T20i loudspeaker without front grill, the HF horn must additionally be secured against falling out! (Sticking)

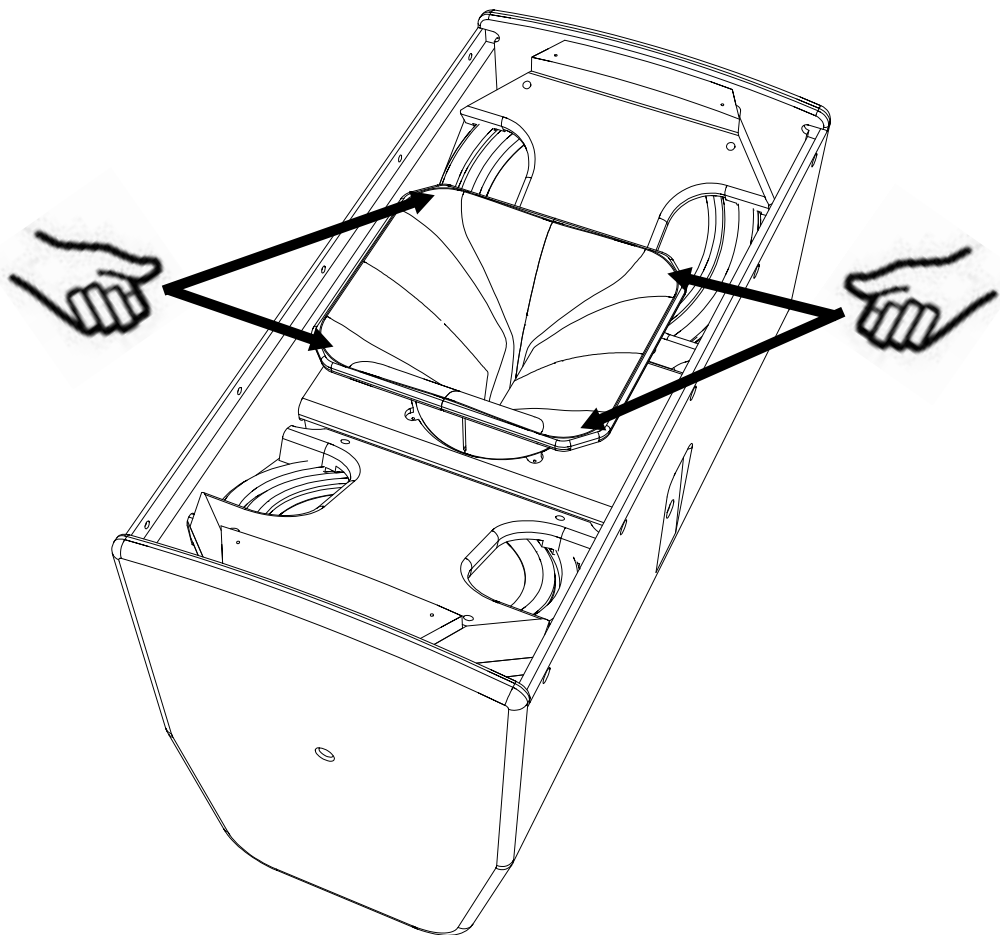


Figure 4.3.2 - changing the HF horn

4.4 Connection options

The T20i loudspeaker is equipped as standard with the i-series screw terminal.



NOTE

As options there can be mounted a panel with cable gland (CG-option) or a panel with two built-in speakON® jacks (SO-option).

Furthermore, a blind cover option is available.

All connection options are only available in black colour.



NOTE

More information about the different connection options can be found in the respective operating instructions in the download area on the homepage of TWAMBO.

4.5 Operation

Operation of the T20i speaker requires a DSP-Controller. For this purpose, only presets developed by TWAUDI® are recommended. The TWAUDI® system racks are ideally suited for this purpose.



NOTE

Before connecting the loudspeaker to the amplifier, ensure that the right preset has been loaded.

Using a wrong, out dated or a preset not provided by TWAUDI® can lead to destruction of the speaker.



NOTE

Make sure that the amplifier's specifications meet the requirements. Using an amplifier that doesn't meet the specifications can destroy the loudspeaker.

Please note the technical data in section 3.1 on page 10.

4.6 Connecting the cable

To create a cable connection with an amplifier rack from TWAUDIO, proceed as follows.



NOTE

Ensure that the cable cross sectional area is sufficient (at least 1.5 mm²) to avoid power losses. TWAUDIO recommends using the loudspeaker cables available from TWAUDIO.

When connecting the cables to the loudspeaker, ensure that polarity (+/-) and pin assignment (1/2) are correct. Incorrect connection can lead to a significant change in the loudspeaker's sound characteristics and may damage the driver.

The pin connections of the T20i loudspeaker can be found in section 3.2 ("Connection diagram") on page 10.

The internal wiring of the T20i loudspeaker allows for parallel connection of multiple loudspeaker units.

Please note that parallel connections will decrease the total impedance of your loudspeaker configuration.

The total impedance and the resulting power of the speaker configuration must match the output power of the amplifier.

5. Transport and Storage

Due to the T20i loudspeaker weighing over 20 kg [44 lbs.], two persons are required to handle and transport the unit.



Ensure that the front grill of the loudspeaker is not damaged during transport and storage. Moisture can penetrate exposed wood surfaces and cause the wood to swell. A bent or broken front grill will no longer adequately protect the sensitive driver membranes.

In addition, larger dust deposits can significantly affect the functionality of a speaker membrane. This is why the product should be transported and stored in a safe, careful, dry and largely dust-free manner.

6. CE Conformity Declaration

Copy and translation of the original CE Conformity Declaration:



We hereby declare that the below-referenced components by virtue of their design and construction, and in the configuration placed on the market by us, satisfy the safety and health requirements of the applicable EC directives. This declaration becomes invalid in case of modifications that have not been approved by us.

This declaration applies to the following components

- T20i - 90° x 50°
- T20i - 60° x 40°

as well as all model variants based on these, provided that they correspond to the original factory models and have not been technically modified in any way.

Applicable directives:

- 2001/95/EG
- 2011/65/EU

Applicable national standards and technical specifications:

- DIN EN 18800
- DIN EN ISO 12100
- DGUV Vorschrift 17 und 18
- EN 50581: 2013-02

Berlin, Germany, January 1st, 2021



Bernhard Wüstner

7. Disposal

It is prohibited to dispose of used electrical equipment with household refuse.



All TWAMBO GmbH products are so-called B2B-products. This means that they are sold by a commercial business to a commercial business. TWAMBO products that bear the trash can symbol shown here may only be disposed of by TWAMBO.

The loudspeaker owner is legally responsible for proper disposal of used devices that do not bear this symbol. This pertains to all products delivered prior to March 29, 2010. Nevertheless, TWAMBO will also be happy to assist you in this case.

If you have any question regarding the disposal of used devices, please contact us under the following telephone number:

+49 (0) 71 41 - 48 89 89 0

Thus, TWAMBO is in strict compliance with the Waste Electrical and Electronic Equipment Directive (2012/19/EU) for the protection of our environment.

TWAMBO is registered under the following WEEE-reg.-no. with the German National Register EAR as a B2B-manufacturer and distributor of electrical devices:

DE93295191

In countries outside of the European Union, comply with local regulations.

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