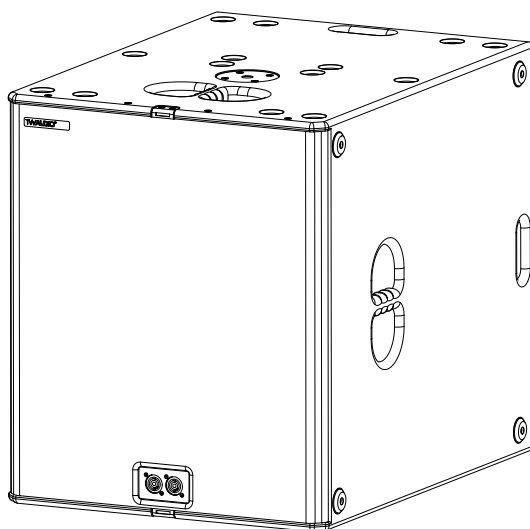
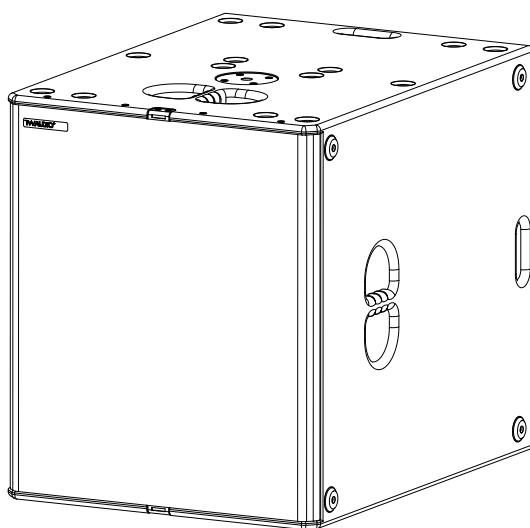


B21 / B21F | **Operation manual**



Introduction

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

The TWAUDIÖ B21 subwoofer will elevate your audio experience by adding a detailed reproduction of the lowest frequencies! It is a perfect solution for the high demands of today's listening habits in live and electronic music. Its superior design, flexible integration and precise low-end performance guarantee an impressive bass reproduction that captivates every audience, from small venues to larger stages meeting various applications.

The custom developed 21" driver in a compact enclosure with advanced port design, tuned to 30 Hz, delivers lowest frequencies with maximum precision and minimal distortion. Whether you're enhancing the depth of electronic music or to live performances, the B21 ensures powerful and controlled low-end performance every time. For inconspicuous cabling of directional subarrays with partially rotated subs, B21F contains two additional speakON® sockets in the front grill.

The B21 seamlessly integrates into setups with our renowned B30 and T24N, as an addition to the legendary PA-SYS-ONE, giving the users flexibility in vertical or horizontal configurations. It complements small to medium PA setups, bringing forth the thunderous low-end electronic music demands. In mixed subarrays, the B21 adds significant extended lows while still being punchy. Directional B21 clusters provide a wide-band cancellation at the back with more than 17 dB SPL reduction. As a stand-alone subwoofer, combined with tops like the T24N or M15, it forms a compact system with high output and low-end performance.

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 TWAUDIO 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 B21 and/or B21F loudspeaker.

General information

Operation manual: OM-B21 / B21F
Version 1.0 en, 01/2025
© by TWAMBO 2025; all rights reserved.

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.

TWAMBO GmbH
Karl-Hofer-Str. 42
14163 Berlin
Germany

Phone : + 49 (0) 71 41-48 89 89 0
Fax: + 49 (0) 71 41-48 89 89 99
E-Mail: info@twaudio.de
WWW: www.twaudio.de

Content

1. Safety Intended use.....	5
2. Overview	7
2.1 Components B21	7
2.2 Components B21F	8
3. Technical specifications	9
3.1 Data sheet	9
3.2 Connection diagram B21	9
3.3 Connection diagram B21F	10
4. Commissioning	11
4.1 Setup	11
4.2 M20 pole mount flange	11
4.3 Operation	14
4.4 Connecting the cable	14
4.5 Possible vertical system setups.....	15
4.5.1 B21(F) loudspeaker on B21(F) loudspeaker	15
4.5.2 B30 loudspeaker on B21(F) loudspeaker.....	16
4.5.3 B18 loudspeaker on B21(F) loudspeaker.....	16
4.5.4 VERA S32 loudspeaker on B21(F) loudspeaker	17
4.5.5 Variant 1: T24(N) loudspeaker on B21(F) loudspeaker	17
4.5.6 Variant 2: T24(N) loudspeaker on B21(F) loudspeaker	18
4.5.7 Variant 3: T24(N) loudspeaker on B21(F) loudspeaker	18
4.6 Possible horizontal system setups.....	19
4.6.1 B21(F) loudspeaker on B21(F) loudspeaker	19
4.6.2 B30 loudspeaker vertical on B21(F) loudspeaker	20
4.6.3 B30 loudspeaker horizontal on B21(F) loudspeaker	20
4.6.4 VERA S33 loudspeaker on B21(F) loudspeaker	21
4.6.5 B21(F) loudspeaker on BSX loudspeaker	21
4.6.6 Variant 1: T24(N) loudspeaker on B21(F) loudspeaker	22
4.6.7 Variant 2: T24(N) loudspeaker on B21(F) loudspeaker	22
4.6.8 Variant 3: T24(N) loudspeaker on B21(F) loudspeaker	23
4.6.9 Variant 4: two T24(N) loudspeakers on two or four B21(F) loudspeaker	24
5. Transport and Storage.....	25
6. CE Conformity Declaration.....	26
7. Disposal	27

1. Safety | Intended use

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

The B21 and B21F loudspeaker are 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.



WARNING

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.



WARNING

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.



NOTE

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

- Direct sunlight
- Humidity
- Jolting
- Dust



WARNING

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.



NOTE

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.



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 B21

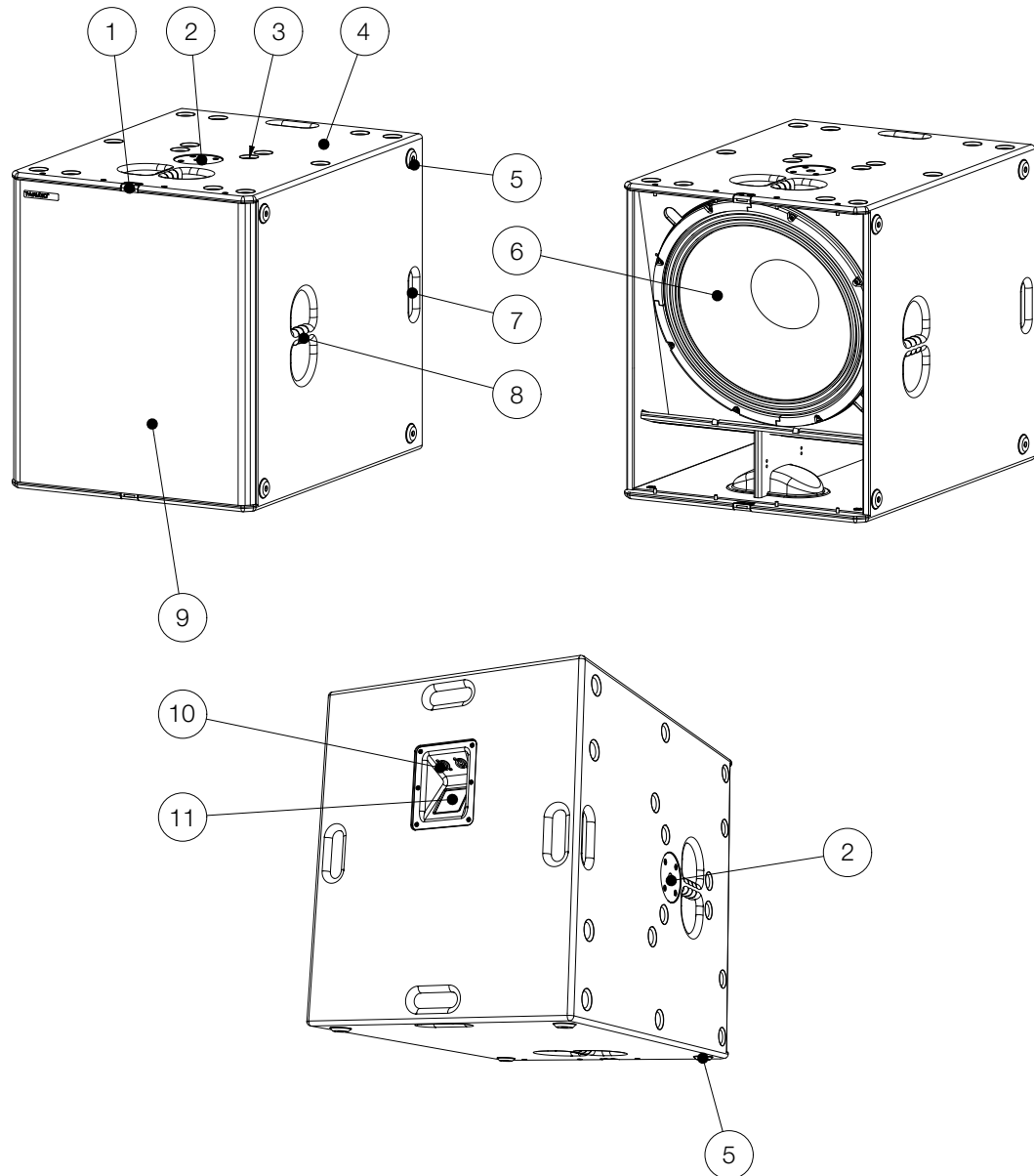


Figure 2.1 - Overview B21

1. Dolly latch base to attach the TWAUDIO B21 front dolly
2. M20 pole mount flange for attaching a distance rod
3. Milling for rubberfeet for safely stacking loudspeakers
4. 18mm multiplex housing – Warnex texture paint surface finish
5. Rubber feet (8 pieces)
6. 21" cone drivers
7. Carrying handle (rear, top and bottom, left and right)
8. Ergonomic carrying handle (top and bottom, left and right)
9. Front grill
10. Standard connection panel
11. Type label

2.2 Components B21F

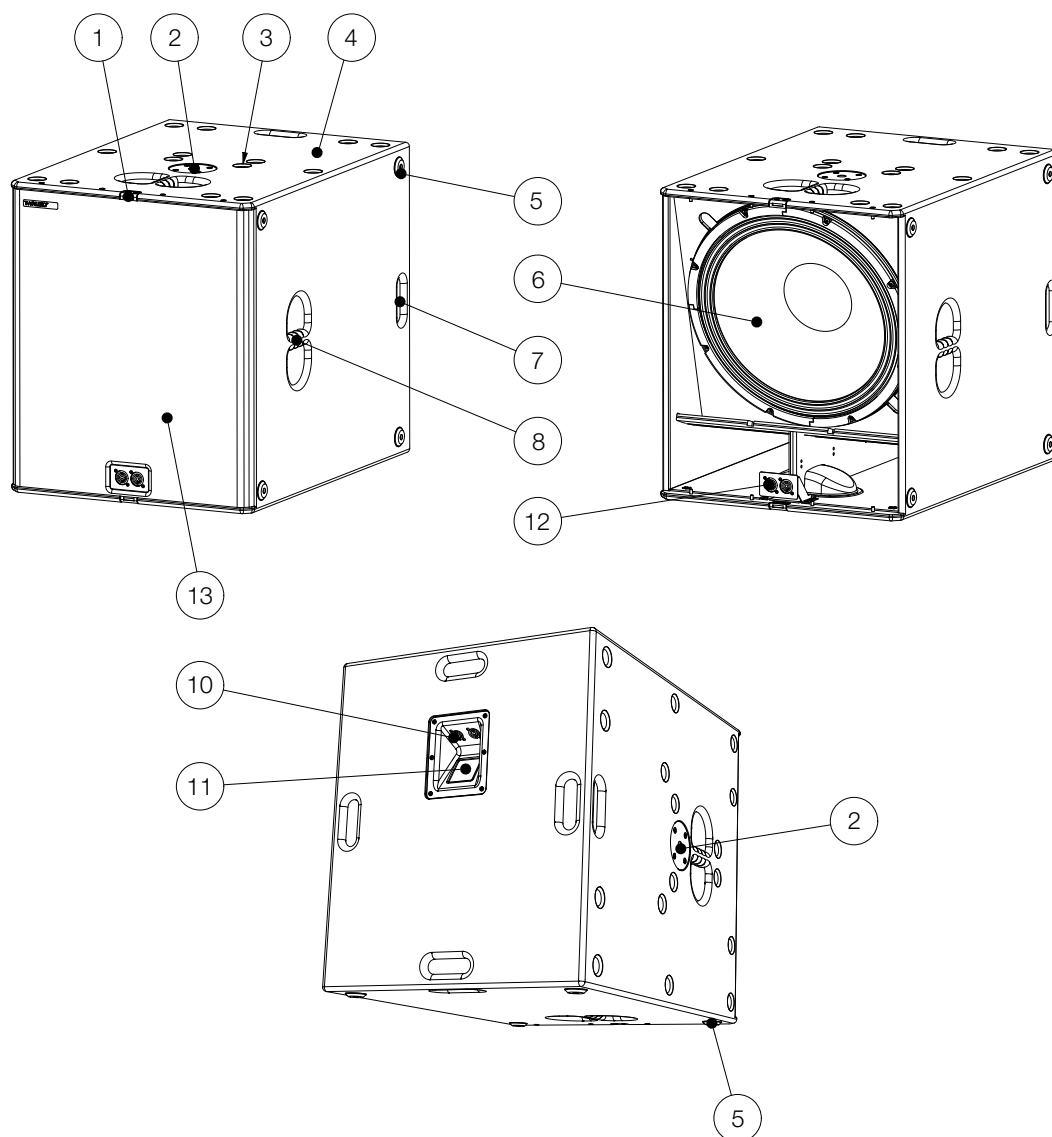


Figure 2.2 - Overview B21F

1. Dolly latch base to attach the TWAUDIÖ B21 front dolly
2. M20 pole mount flange for attaching a distance rod
3. Milling for rubberfeet for safely stacking loudspeakers
4. 18mm multiplex housing – Warnex texture paint surface finish
5. Rubber feet (8 pieces)
6. 21" cone drivers
7. Carrying handle (rear, top and bottom, left and right)
8. Ergonomic carrying handle (top and bottom, left and right)
10. Standard connection panel
11. Type label
12. SpeakON® front connection sockets
13. Front grill with SpeakON® front connection sockets

3. Technical specifications

3.1 Data sheet

Drivers	1x 21" LF
Frequency response	27 - 125Hz
Power handling (program/Peak)	3600 / 7200W
Impedance	8 Ω
Max. SPL / 1 m	137 dB
Dimensions (h x w x d)	706 x 606 x 800 mm [27.8 x 23.86 x 31.5 in]
Weight	54,5 kg [120.2 lbs]
Surface	Polyurea-coated

3.2 Connection diagram B21

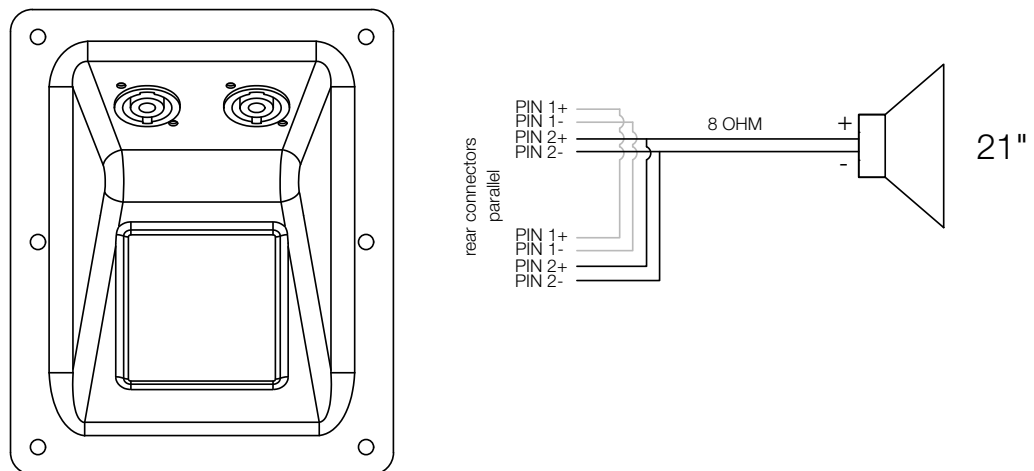


Figure 3.2 - Connection diagram B21

3.3 Connection diagram B21F

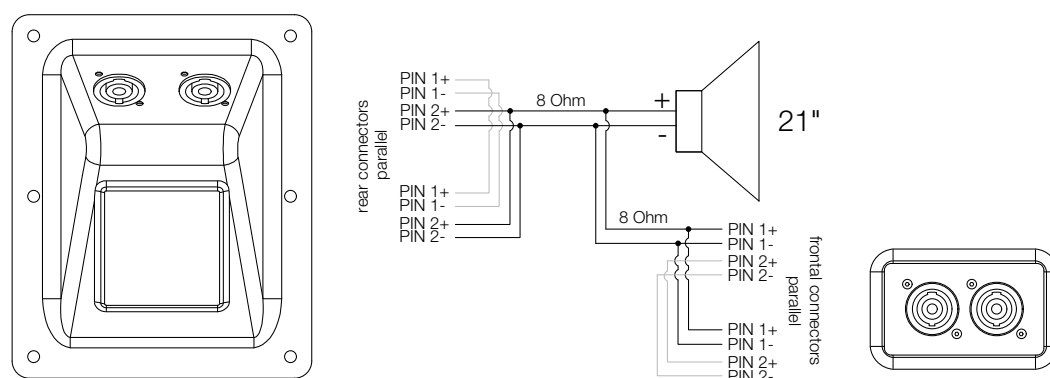


Figure 3.3 - Connection diagram B21F

4. Commissioning

4.1 Setup

The B21 and B21F loudspeaker are designed for standing, vertical and horizontal operation.



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. Secure stacked loudspeakers properly so that they can be tipped by 10° in any direction without toppling.



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

4.2 M20 pole mount flange

For all system components mounted on top of the M20 pole mount flange, observe the respective operating instructions!

Also be sure to observe all of the following warnings:



Make sure that the maximum load of 50kg / 110lbs for the M20 pole mount flange is not exceeded! Figure 2.1 – Item 2.



Make sure that no unauthorized persons can access the system structures!

Cordon off the area professionally!



The M20 pole mount flange (figure 2.1- item 2) is not designed for side forces once mounted – do not apply any pressure from the sides.

Make sure that no external forces are applied to the system structures. No objects or persons should lean against the structures, no objects should be thrown against them. If pressure is applied on the flange the loudspeaker may be damaged or falling over.



Before setting up the system outdoors, consider unexpected wind conditions at the operation site!

Disassemble your system immediately when wind speeds exceed 8 bft (34 to 40 kn / 62 to 74 kph / 38.5 to 46 mph) and secure the system components!

Make sure that there are no persons in the immediate vicinity of the system structure!



Make sure that the system structures are not operated over the audience at wind speeds in excess of 6 bft (22 to 27 kn / 39 to 49 kph / 24.2 to 30.45 mph) and that there are no persons in the immediate vicinity of the system structure!



Please note that only centered loads are allowed to be placed on the M20 pole mount flange – Figure 2.1 – Item 2.

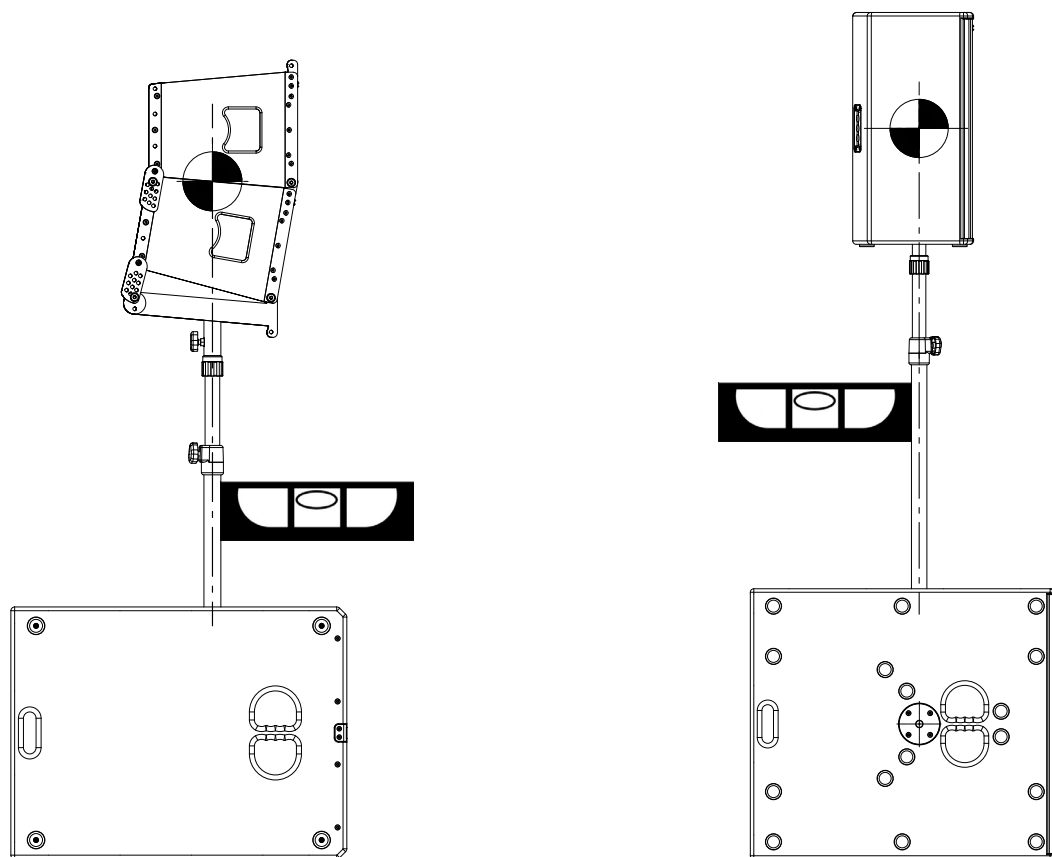


Figure 4.2.1 - system setup B21(F)

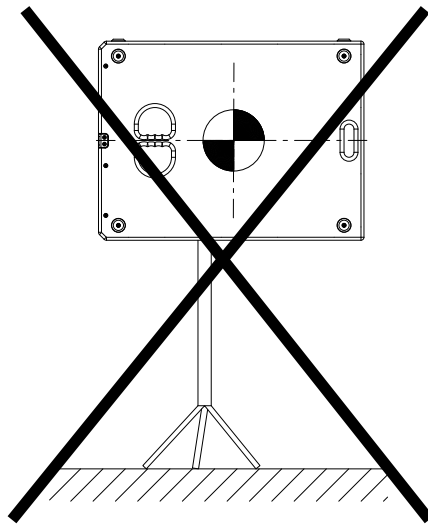


Figure 4.2.2 - B21(F) – improper installation

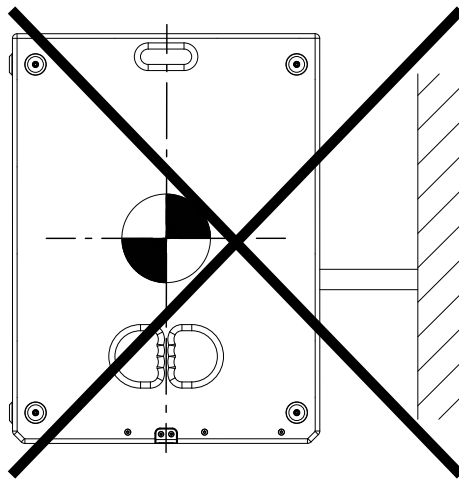


Figure 4.2.3 - B21(F) – improper wall mounting

4.3 Operation

Operation of the B21 and B21F loudspeaker requires a DSP-Controller. For this purpose, only presets developed by TWAUDIÖ are recommended. The TWAUDIÖ system racks are ideally suited for this purpose.



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 TWAUDIÖ can lead to destruction of the speaker.



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 9.

In Cardioid mode, the focus is on maximum sound pressure reduction behind the loudspeaker setup, with partial forward-facing level addition.

The rear speaker produces an inverted signal to cancel out sound components on the back. This results in a sound pressure level reduction of about 20 dB over a wide frequency range. Depending on the distance between the loudspeakers and their transit time difference, there will be a frequency-dependent sound pressure level addition of up to 3 dB in front of the loudspeaker arrangement. By adjusting the transit time difference between the two individual drivers, a different dispersion pattern – e.g. hypercardioid – can be achieved.

4.4 Connecting the cable

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



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

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 B21 loudspeaker can be found in section 3.2 ("Connection diagram") on page 9. The pin connections of the B21F loudspeaker can be found in section 3.3 ("Connection diagram") on page 10.

The internal wiring of the B21 or B21F 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.



In Cardio Setup mode, the sound radiated toward the rear is reduced. Ensure that you have selected the correct preset for this setup. Incorrect connection results in a significant change in the loudspeaker sound characteristics and may cause damage.

4.5 Possible vertical system setups

Additional loudspeakers can be placed on top of the B21 and/or B21F loudspeaker in standing, vertical operation.



Make sure that the existing millings for rubberfeets (Pos.2 - figure 2.1) are used for a safe stacking of the loudspeakers.



Secure the stacked loudspeakers professionally so that a danger of tipping over can always be excluded under the given installation conditions and environmental parameters!

4.5.1 B21(F) loudspeaker on B21(F) loudspeaker

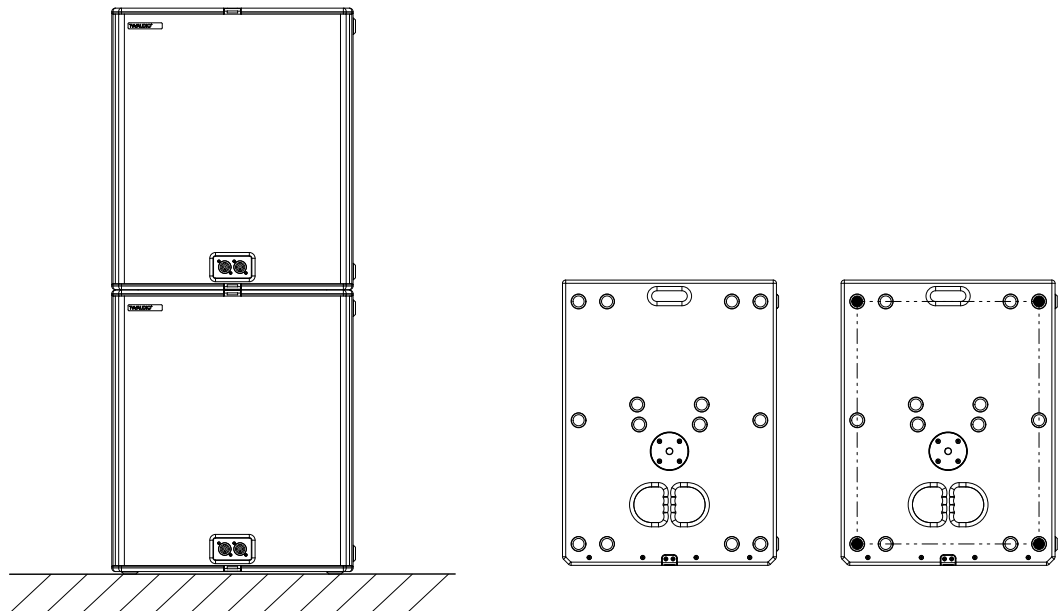


Figure 4.5.1 - B21(F) on B21(F) loudspeaker

4.5.2 B30 loudspeaker on B21(F) loudspeaker

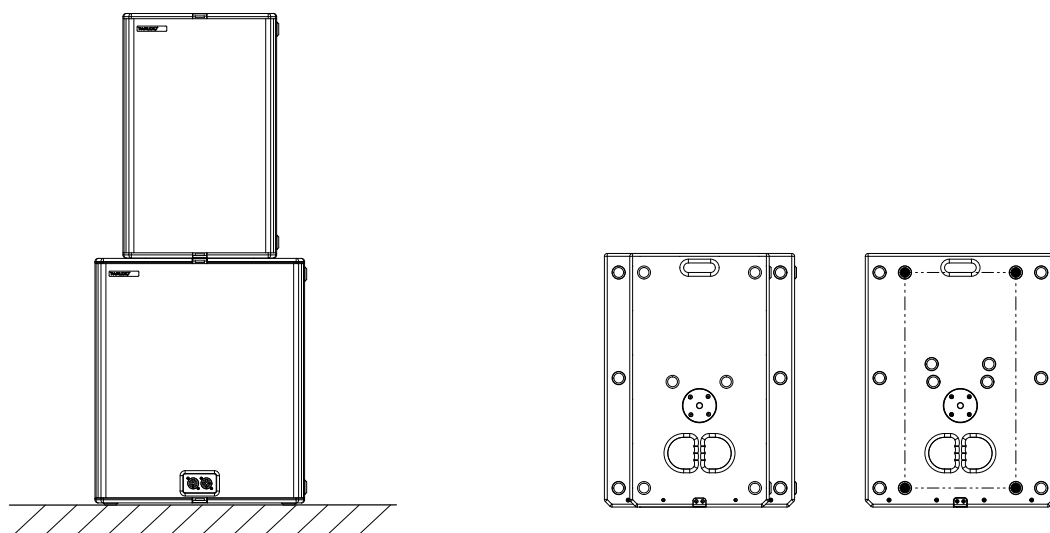


Figure 4.5.2 - B30 on B21(F) loudspeaker

4.5.3 B18 loudspeaker on B21(F) loudspeaker

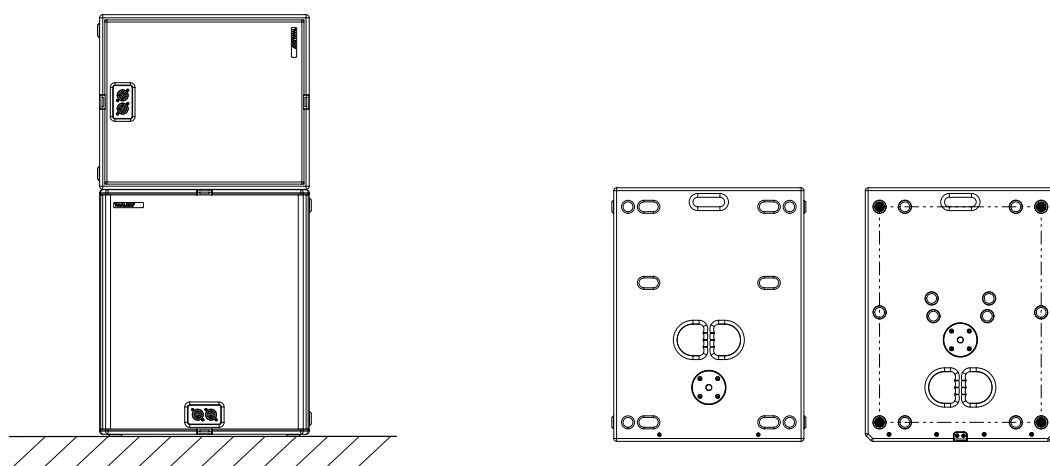


Figure 4.5.3 - B18 on B21(F) loudspeaker

4.5.4 VERA S32 loudspeaker on B21(F) loudspeaker

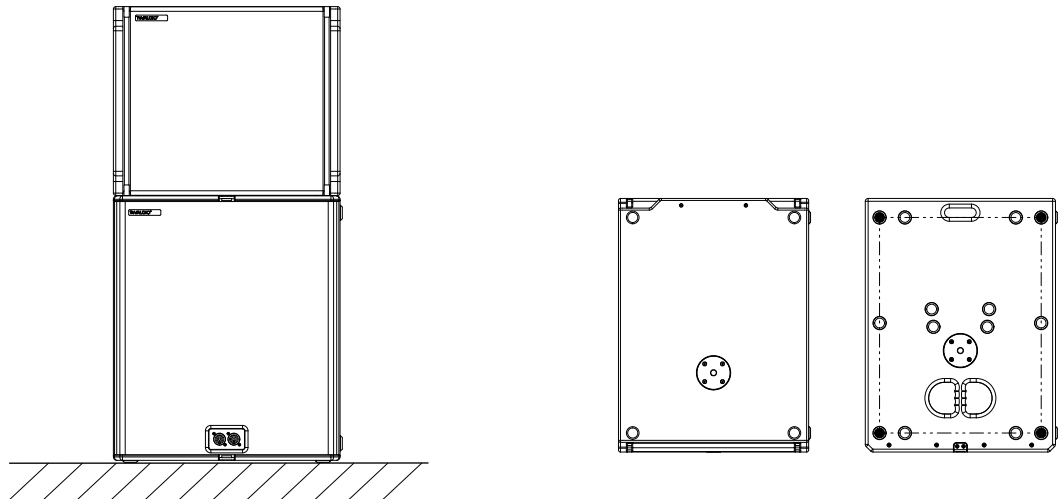


Figure 4.5.4 - VERA S32 on B21(F) loudspeaker

4.5.5 Variant 1: T24(N) loudspeaker on B21(F) loudspeaker

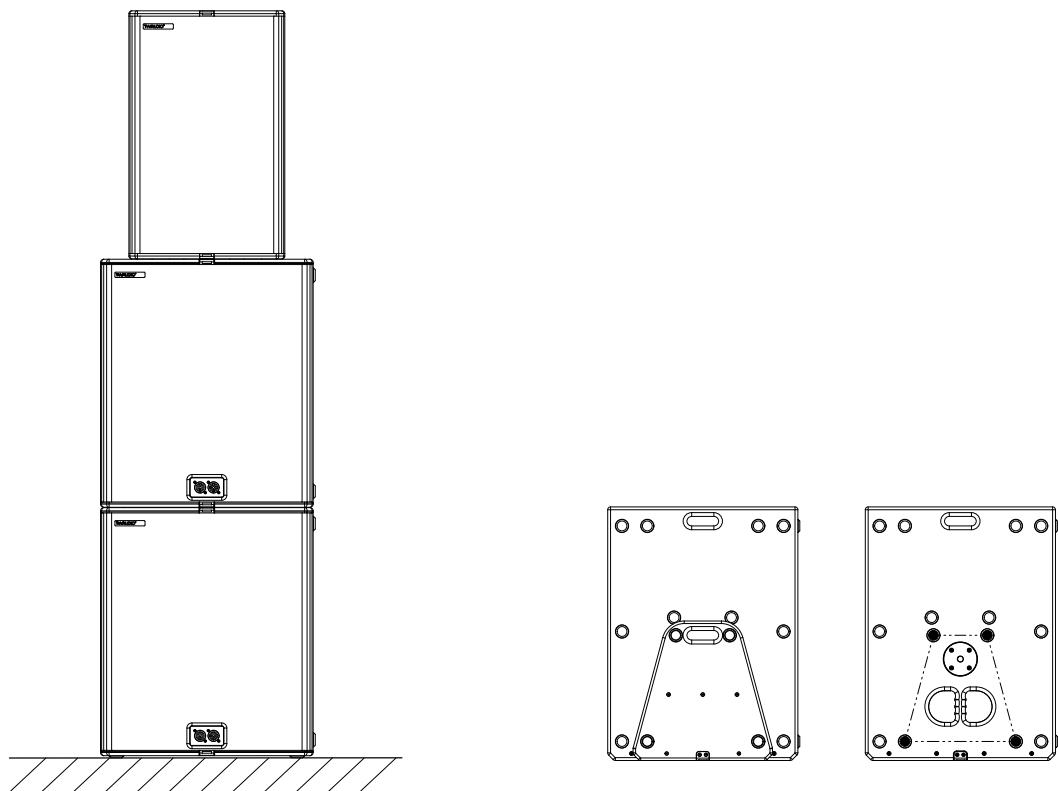


Figure 4.5.5 - T24(N) on B21(F) loudspeaker

4.5.6 Variant 2: T24(N) loudspeaker on B21(F) loudspeaker

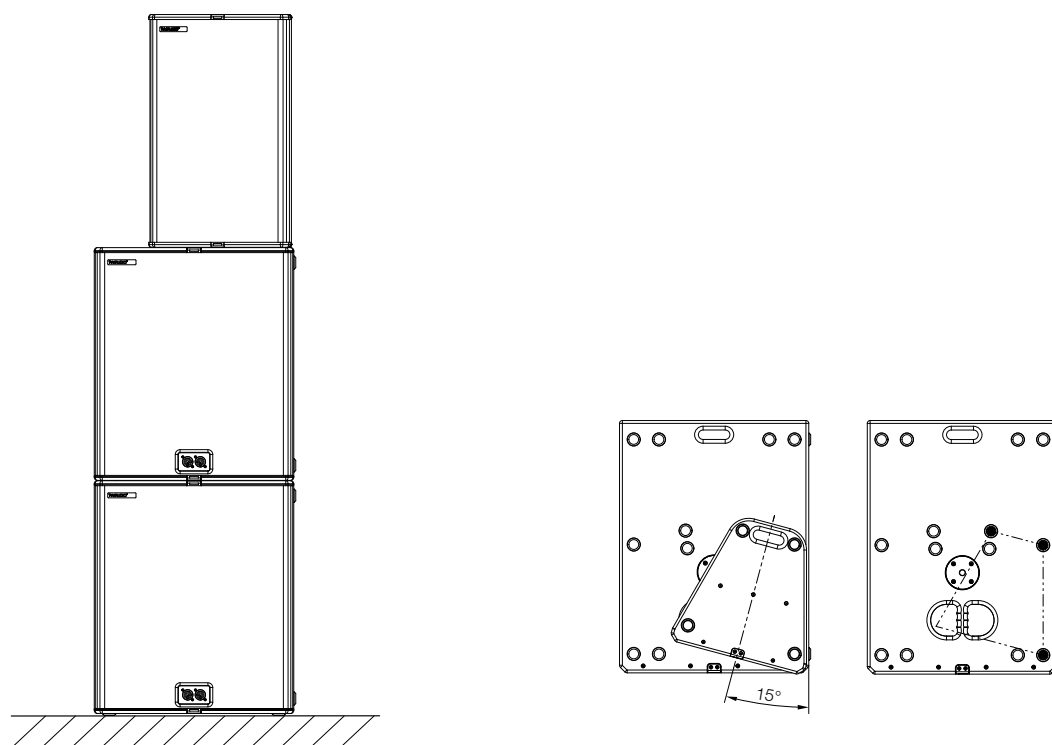


Figure 4.5.6 - T24(N) on B21(F) loudspeaker

4.5.7 Variant 3: T24(N) loudspeaker on B21(F) loudspeaker

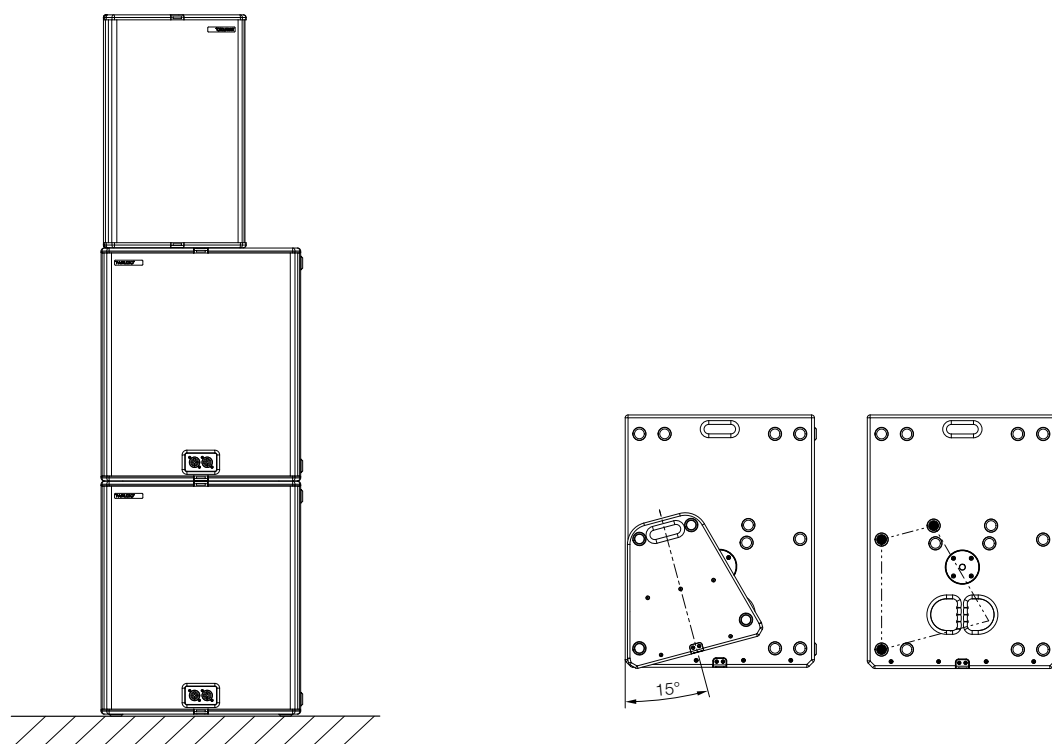


Figure 4.5.7 - T24(N) on B21(F) loudspeaker

4.6 Possible horizontal system setups

Additional loudspeakers can be placed on top of the B21 and/or B21F loudspeaker in standing, horizontal operation.



Make sure that the existing millings for rubberfeets (Pos.2 - figure 2.1) are used for a safe stacking of the loudspeakers.



Secure the stacked loudspeakers professionally so that a danger of tipping over can always be excluded under the given installation conditions and environmental parameters!

4.6.1 B21(F) loudspeaker on B21(F) loudspeaker

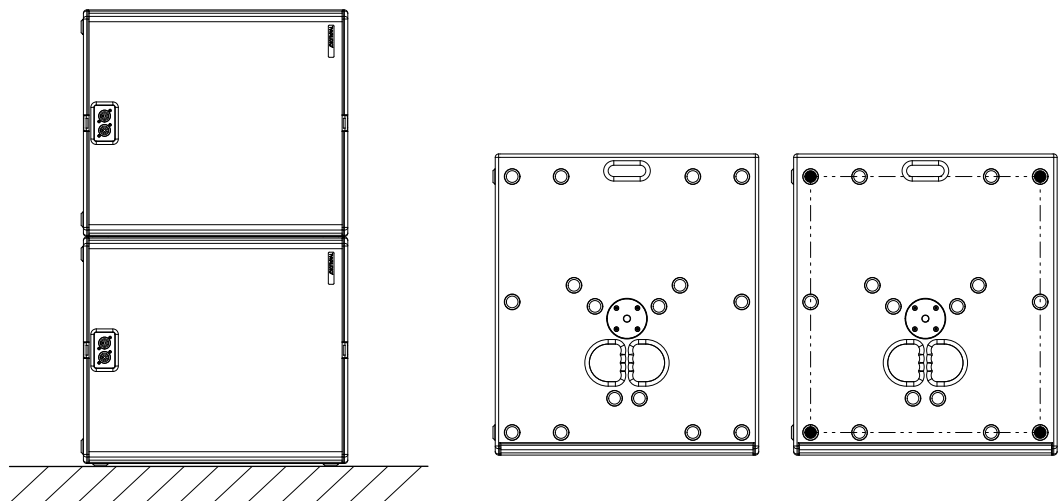


Figure 4.6.1 - B21(F) on B21(F) loudspeaker

4.6.2 B30 loudspeaker vertical on B21(F) loudspeaker

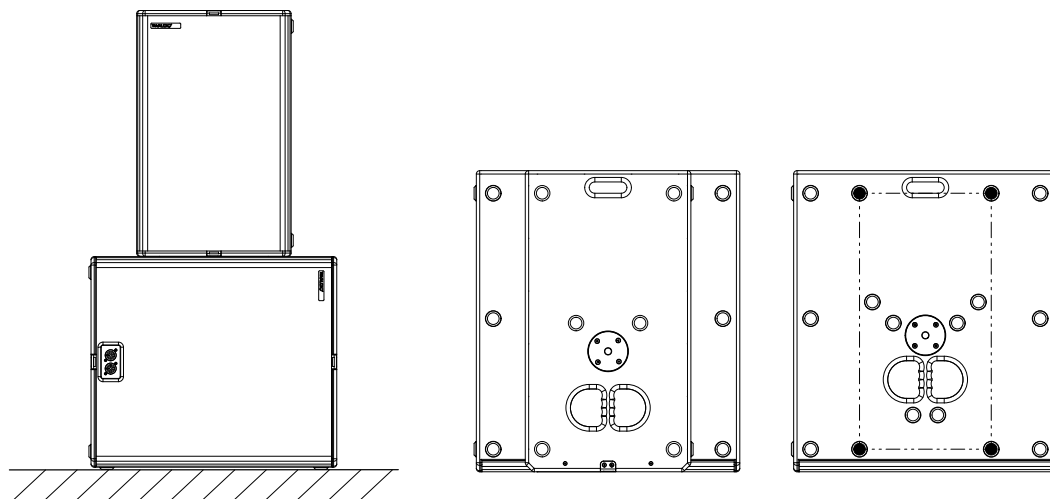


Figure 4.6.2 - B30 vertical on B21(F) loudspeaker

4.6.3 B30 loudspeaker horizontal on B21(F) loudspeaker

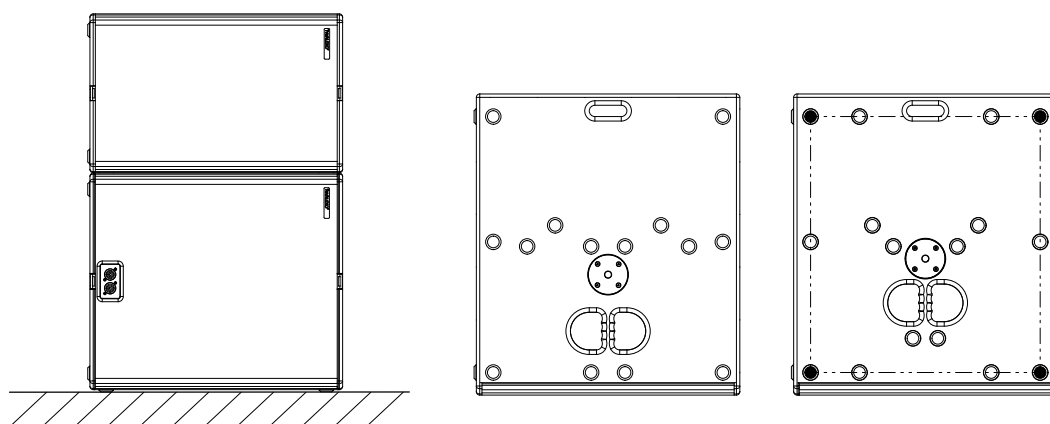


Figure 4.6.3 - B30 horizontal on B21(F) loudspeaker

4.6.4 VERA S33 loudspeaker on B21(F) loudspeaker

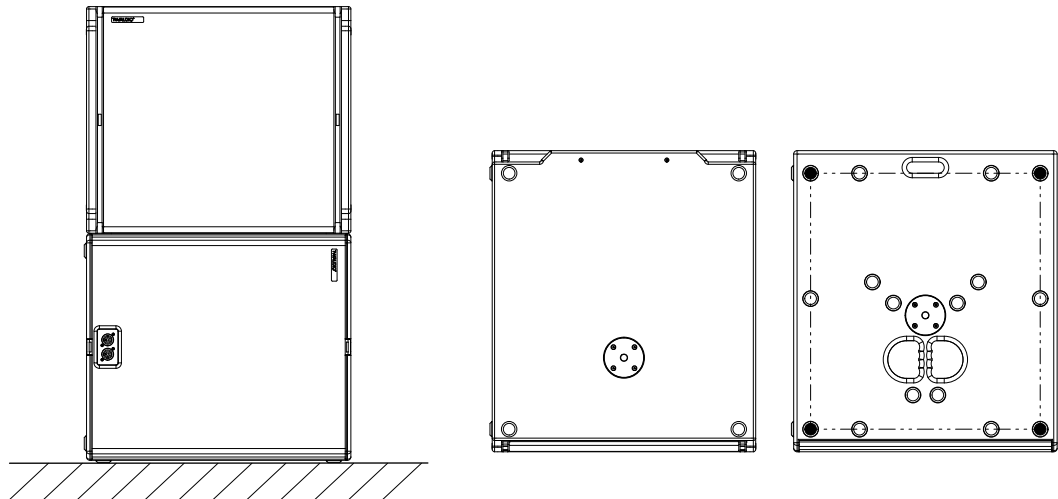


Figure 4.6.4 - VERA S33 on B21(F) loudspeaker

4.6.5 B21(F) loudspeaker on BSX loudspeaker

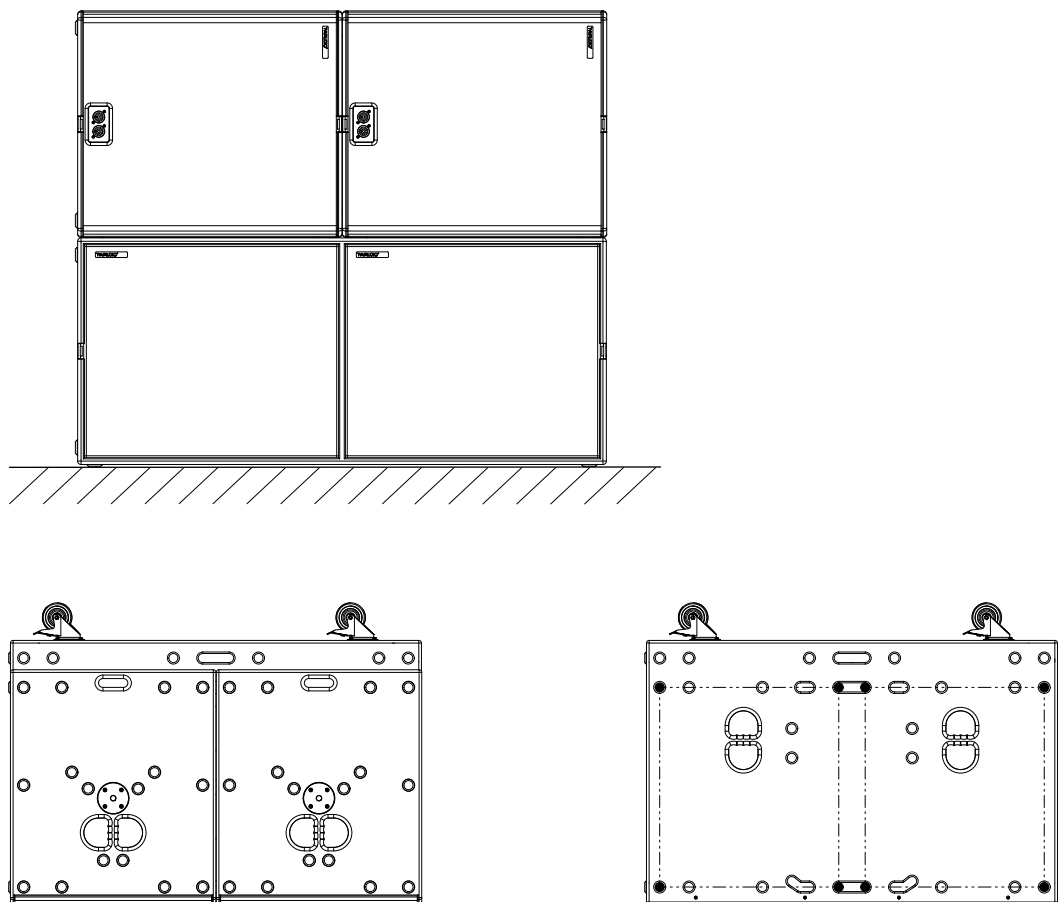


Figure 4.6.5 - B21(F) on BSX loudspeaker

4.6.6 Variant 1: T24(N) loudspeaker on B21(F) loudspeaker

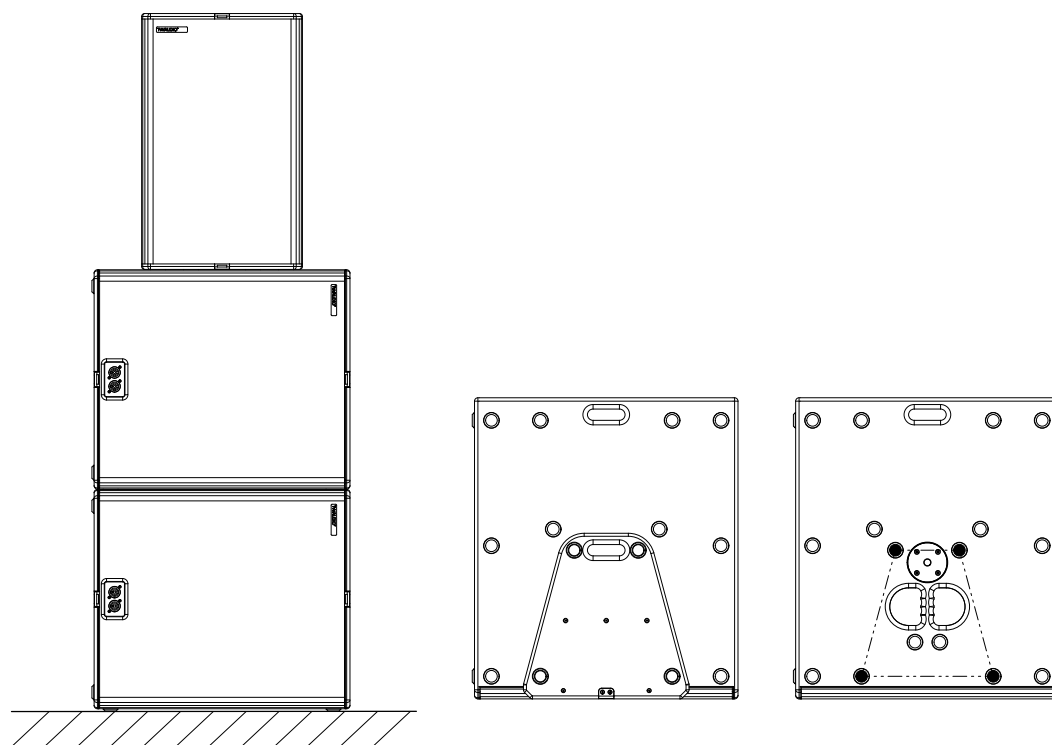


Figure 4.6.6 - T24(N) on B21(F) loudspeaker

4.6.7 Variant 2: T24(N) loudspeaker on B21(F) loudspeaker

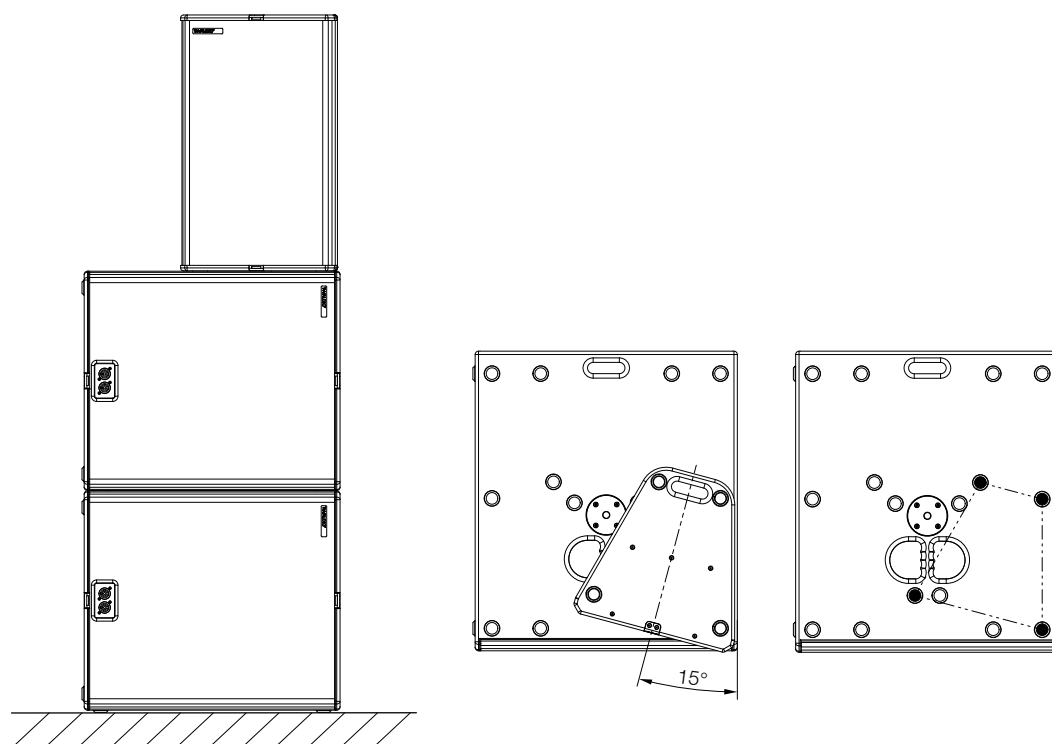
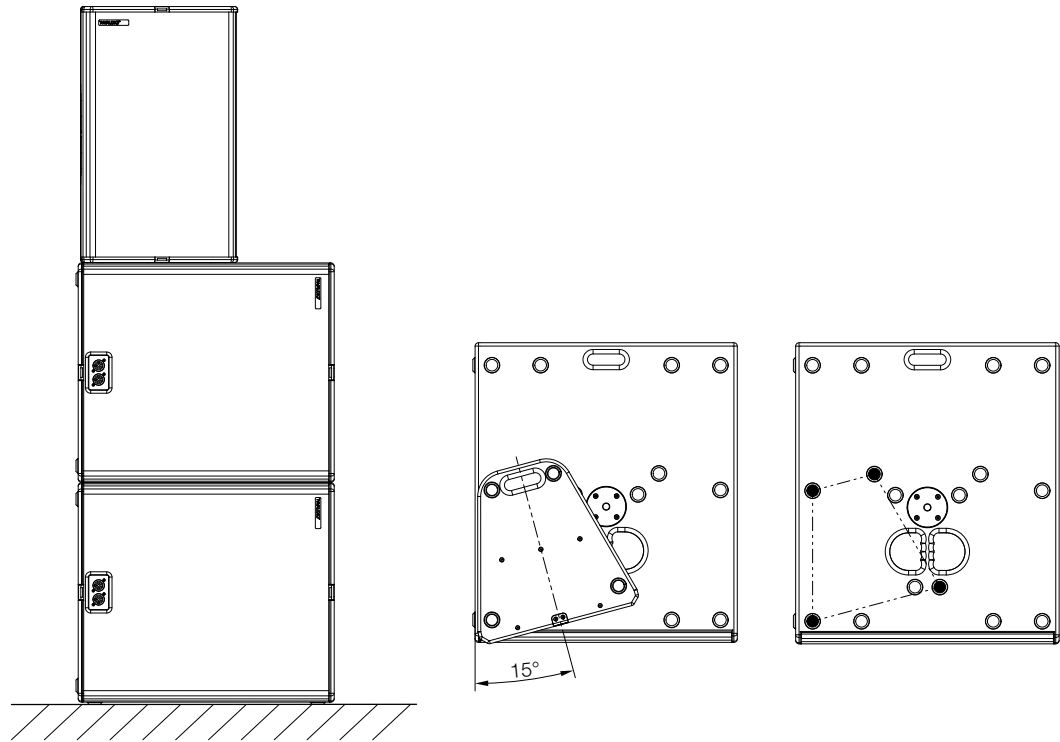


Figure 4.6.7 - T24(N) on B21(F) loudspeaker

4.6.8 Variant 3: T24(N) loudspeaker on B21(F) loudspeaker**Figure 4.6.8 - T24(N) on B21(F) loudspeaker**

4.6.9 Variant 4: two T24(N) loudspeakers on two or four B21(F) loudspeaker

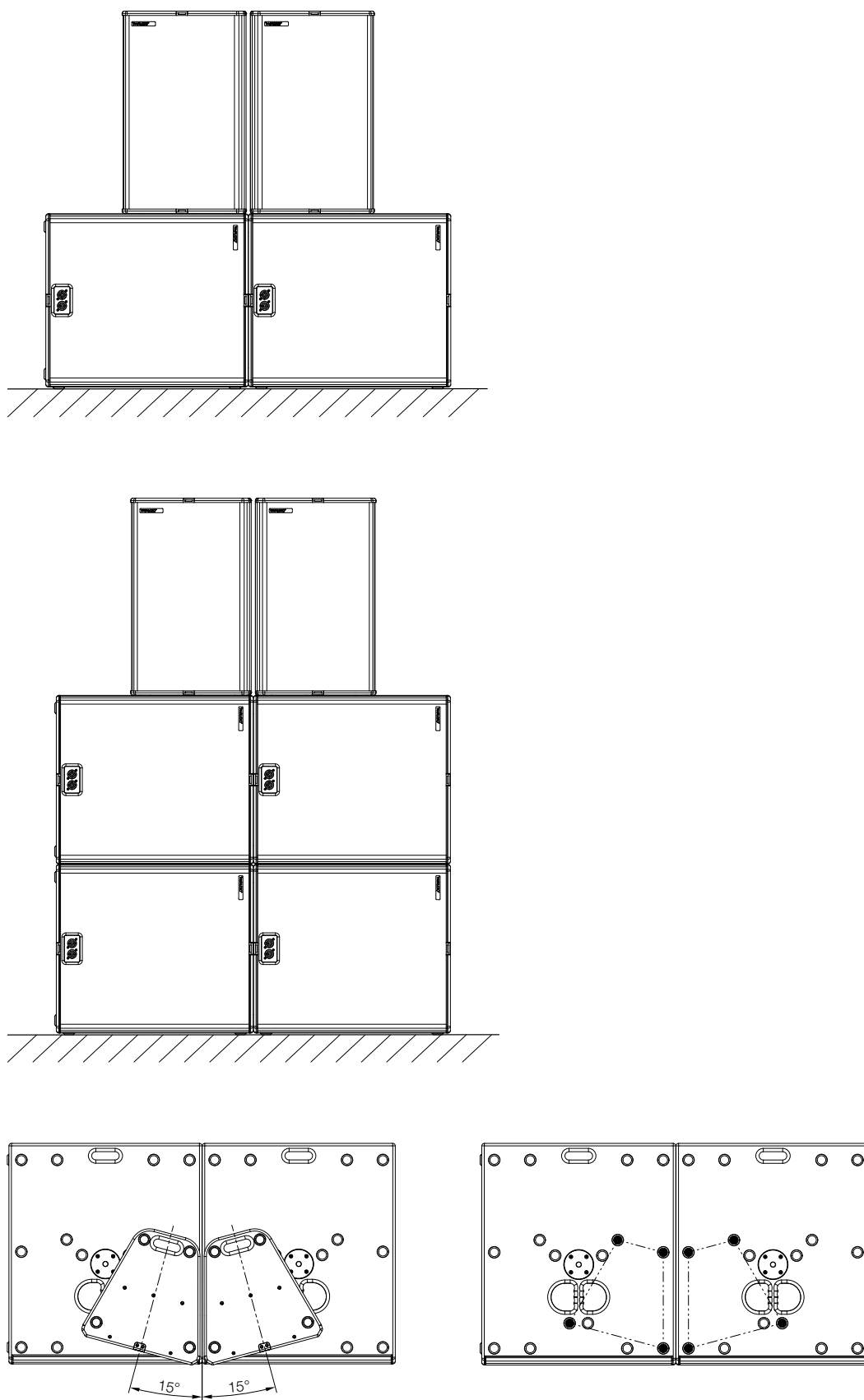


Figure 4.6.9 - T24(N) on B21(F) loudspeaker

5. Transport and Storage

Due to the B21 or B21F loudspeaker weighing over 20 kg [44 lbs.], two persons are required to handle and transport the unit.



To transport the unit with a single person, TWAUDIÖ recommends using the FDB21 front dolly. Alternatively, up to two B21 and/or B21F loudspeakers can also be transported in a QDB30 quad dolly.

When transporting and storing the unit, it is important to ensure that the surface and front grill of the loudspeaker are not damaged. Moisture can penetrate through exposed wood surfaces and cause the wood to swell. A bent or broken front grill will no longer adequately protect the sensitive speaker membranes.

In addition, appreciable dust deposits may considerably impair the functionality of a loudspeaker membrane. For this reason, the loudspeakers should be transported and stored in a safe, careful, dry and largely dust-free manner.

The following accessory parts for transport and storage are available from TWAUDIÖ:

- FDB30 (front dolly)
- QDB30 (quad dolly)
- CoverB30 (protective cover)
- Cover2B30 (protective cover)

The original packaging is unsuitable as permanent storage and transport packaging.

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

- B21
- B21F

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

A handwritten signature in black ink, appearing to read 'Wüstner'.

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.

TWAMBO GmbH
Karl-Hofer-Str. 42
14163 Berlin
Germany

Phone: + 49 (0) 71 41-48 89 89 0
Fax: + 49 (0) 71 41-48 89 89 99
E-Mail: info@twaudio.de
WWW: www.twaudio.de