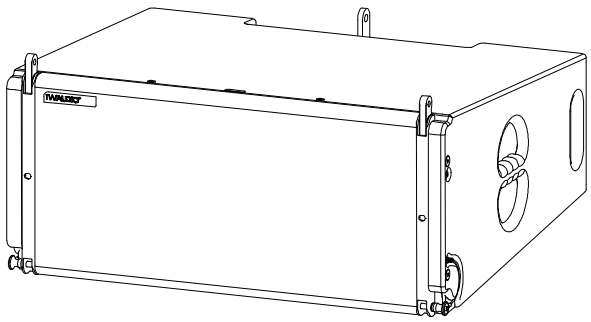
TWAUDIO®

VERA36 | Operation manual



Introduction

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

The intrinsic qualities of the VERA36 speak for themselves with no fewer than six drivers working within the compact confines of the enclosure. The central mid-range horn is driven by two 8“ cone speakers while the mid-high frequency unit comprises two 1.4“ compression drivers plus a purpose-developed waveguide, coaxially positioned in the center. The result is a vertical dispersion of 10 degrees with horizontal dispersion across either 80 or 120 degrees as required. Supplementing the low-mid range are two 10“ long excursion bass speakers. Below 400 Hz, all four cone speakers work in tandem to deliver vast reserves of low-mid punch. All of that leading to our user‘s experience that VERA36 can compete with much bigger double 12“ systems and more besides.

But for a contemporary loudspeaker system to achieve real success, impressive performance alone just isn‘t enough. Today, systems must be easy to operate, quick to rig and simple to transport, and in all of these areas VERA36 excels. Setup times are dramatically reduced cortesy of a newly developed, fully integrated, three-point rigging system incorporating an innovative mechanism with logarithmically stepped splay angles, enabling optimal array curving and precise directional targeting.

The combination of TW AUDiO‘s deep expertise and the precision of the VERA36 hardware equals coverage right to the back rows of even a large venue. No matter whether you fly the system straight from the dolly, rig from the floor or build as a ground-stack, every variation is swiftly and safely achievable. Having the same width as the VERA S33 and equipped with the same rigging, VERA S33 subwoofers can easily and unobtrusively be integrated into VERA36 arrays.

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 TW AUDiO 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 TW AUDiO 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 VERA36 loudspeaker.

General information

Operation manual: OM-VERA36
Version 2.0 en, 01/2022

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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Content

1. Safety | Intended use

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

The VERA36 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.

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 TW AUDiO loudspeakers, only use materials specified by TW AUDiO. 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.

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 TW AUDiO.

2. Overview

2.1 Components

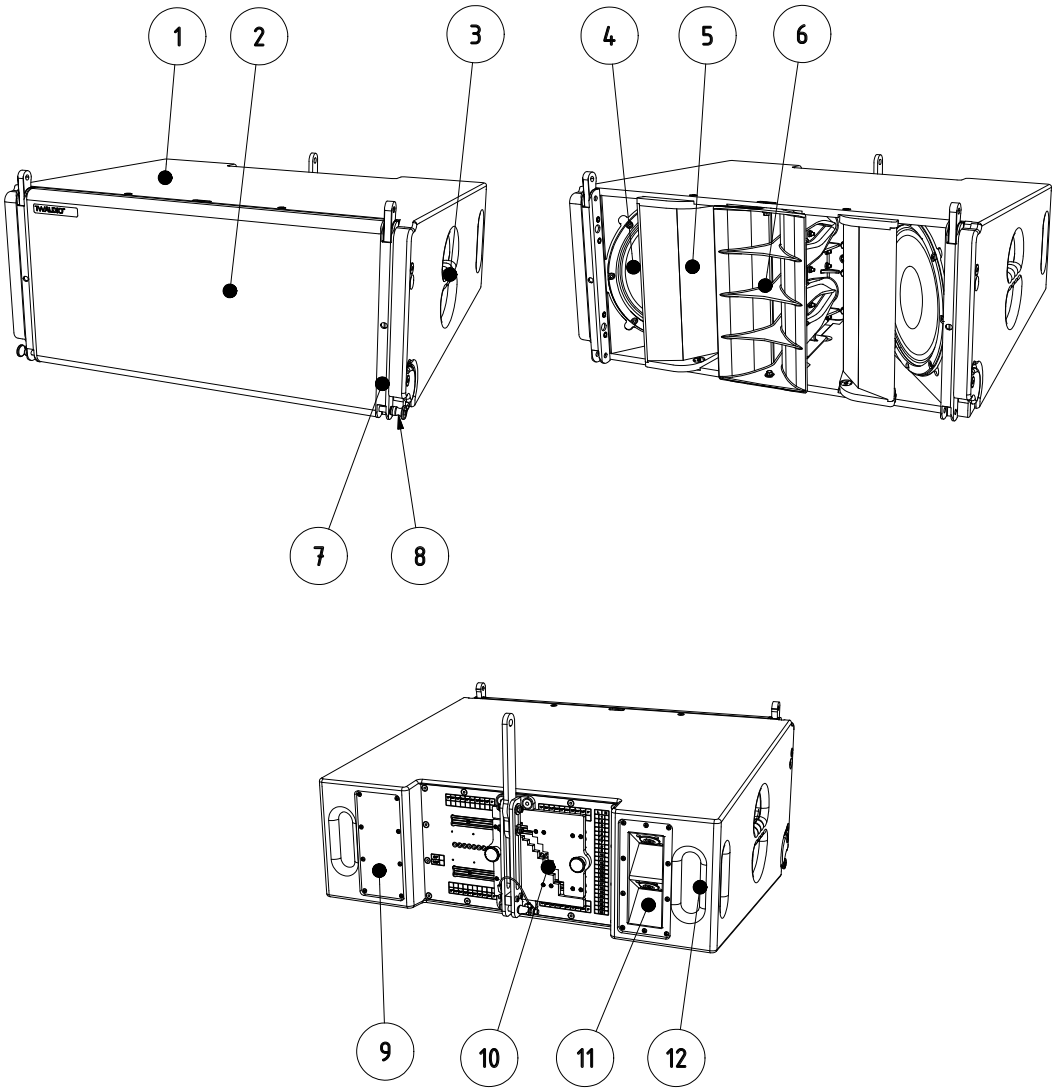

Figure 2.1 - Overview

1. 15 mm Multiplex enclosure - Polyurea surface finish
2. Front grill
3. Ergonomic handle (2 pieces)
4. 10“ cone driver (2 pieces)
5. Horn wall (2 pieces)
6. High frequency unit with waveformer, horn and 1,4“ compression driver
7. Rigging track (2 pieces)
8. Locking pin (2 pieces)
9. Type label
10. Rear rigging VERA36
11. Connection panel
12. Carrying handle (2 pieces)

2.2 Rear rigging VERA36

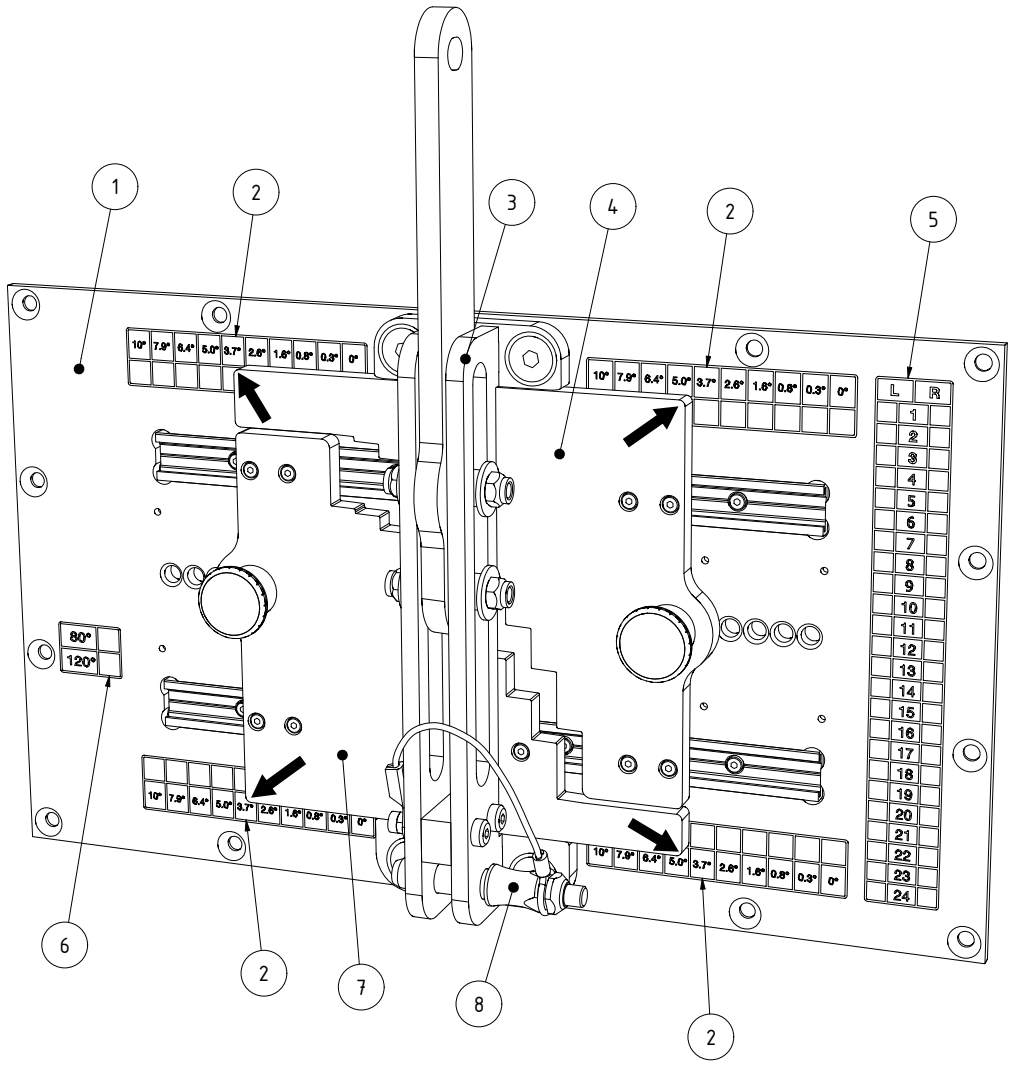

Figure 2.2 - rear rigging

1. Mounting plate with rails
2. Angle display with checkbox
3. Main carrier with bracket
4. Right slider with locking pin
5. Checkbox for position of the VERA36 loudspeaker in the array
6. Checkbox for the installed high frequency unit
7. Left slider with locking pin
8. Locking pin

2.3 Variants - high frequency unit horizontal coverage 80° / 120°

The VERA36 loudspeaker can be optionally equipped with a 80° × 10° high frequency unit or a 120° × 10° high frequency unit. The specified degrees refer to the horizontal and vertical coverage. Which variant of the VERA36 is involved can be checked on the rear rigging.

TIP

The factory installed high frequency unit is marked on the VERA36's rear rigging (see figure 2.2 - pos.5). Depending on the application, it may be advantageous to replace the high frequency unit by the respective other. In this case, the identification mark on the rear rigging should also be changed. The factory marking can be removed using acetone.

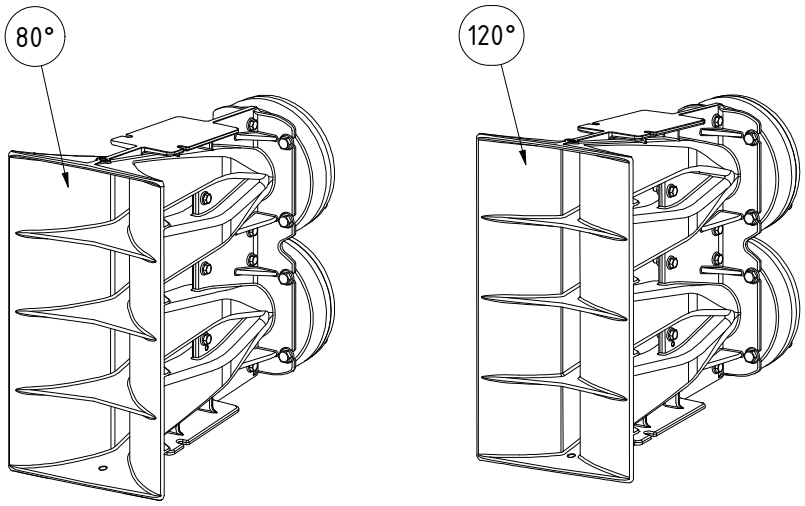

Figure 2.3 - variants of the VERA36 high frequency unit

3. Technical specifications

3.1 Data sheet

	Variant	
	VERA36-80	VERA36-120
Drivers	2x 10“ LF / 2x 8“ MF / 2x 1,4“ HF	
Frequency response	60 - 16000 Hz	
Power handling (program/Peak)	1000 / 2000 W LF 800 / 1600 W MF	
Impedance	8 Ω LF / 8 Ω MF	
Coverage (h x v)	80° x 10°	120° x 10°
Max. SPL / 1m	141 dB	
Dimensions (h x w x d)	310 x 700 x 580 mm [12,2 x 27,6 x 22,8 in]	
Weight	41,6 kg [92 lbs]	
Surface	Polyurea coating	

3.2 Connection diagram

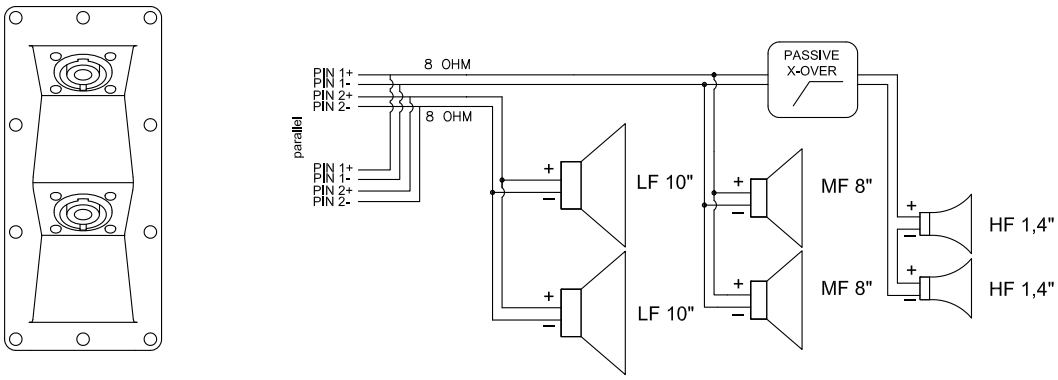

Figure 3.2 - Connection diagram

4. Commissioning

4.1 Setup

The VERA36 loudspeaker has been designed for horizontal operation in stacked and flown vertical arrays. TW AUDiO 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.

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

4.2 Rigging VERA36

VERA36 series line arrays can include VERA36 and/or VERA S33 loudspeakers.

Note that the VERA36 loudspeakers are mechanically connected. This is done via the quick and easy 3-point rigging.

Also note that the VERA S33 loudspeakers are mechanically connected via 4-point rigging.

Please refer to the VERA RF900 and SFV36 manuals for operating modes and set-up options.

EASE Focus simulation software can be used to plan VERA36 line arrays. EASE Focus is available as a free download from the TW AUDiO website at www.twaudio.com.

4.3 Changing the high frequency unit

Depending on the variant, the 80° or 120° high frequency unit (see capter 2.3 - page 9) is installed in the loudspeaker. For some applications, it may be advantageous to exchange the high frequency unit for the other variant in order to change the horizontal coverage. Proceed as follows:

1. Place the VERA36 loudspeaker on its back with the front grill facing up. Ensure that the working surface is clean with a non-slip finish. To secure the speaker against lifting and slipping, ask a second person for assistance.

2. Remove the four grill mounting screws on the left and right of the speaker enclosure. Use a TX25 hexalobular key.

3. Carefully unplug the connector from the high frequency unit.

4. Loosen the two screws of the high frequency unit (see figure 4.3 - S1 and S2). Use a tool with SW8.

5. Carefully pull the high frequency unit upward out of the loudspeaker enclosure.

6. Carefully guide the new high frequency unit into the guide groove until it hits the rear. Screw it onto the enclosure.

7. Reconnect the high frequency unit into the connection plate.

8. Screw on the front grill.

9. Change the marking for the installed high frequency unit on the rear rigging.

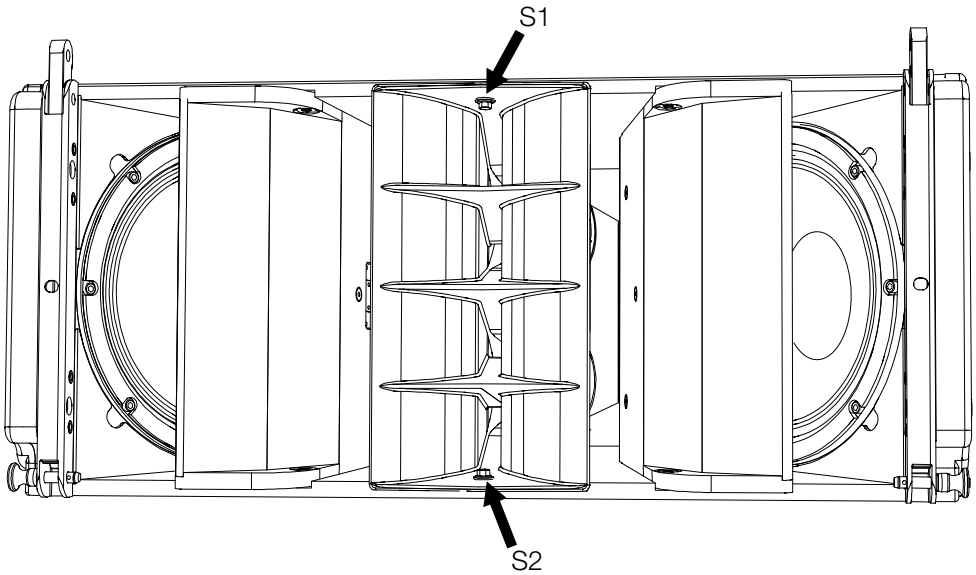

Figure 4.3 - changing the high frequency unit

4.4 Operation

Operation of the VERA36 loudspeaker requires a DSP-Controller. For this purpose, only presets developed by TWAUDiO are recommended. The TWAUDiO 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 TWAUDiO 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.

4.5 Connecting the cable

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

NOTE

Ensure that the cable cross sectional area is sufficient (at least 1.5 mm^2) to avoid power losses. TW AUDiO recommends using the loudspeaker cables available from TW AUDiO.

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 VERA36 loudspeaker can be found in section 3.2 ("Connection diagram") on page 10.

The internal wiring of the VERA36 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 VERA36 loudspeaker weighing over 20 kg [44 lbs.], two persons are required to handle and transport the unit.

NOTE

To enable a single person to transport up to six VERA36 loudspeakers, TW AUDiO recommends using the VERA DLV36.

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 TW AUDiO:

- VERA DLV36 (dolly)
- Cover4V36 (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:

CE

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

- VERA36-80
- VERA36-120

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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