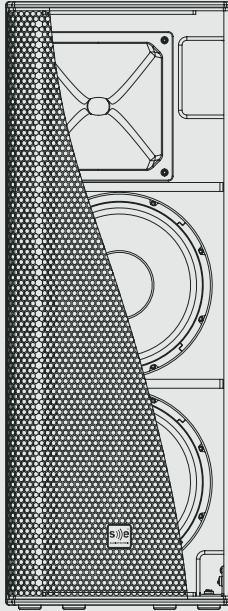
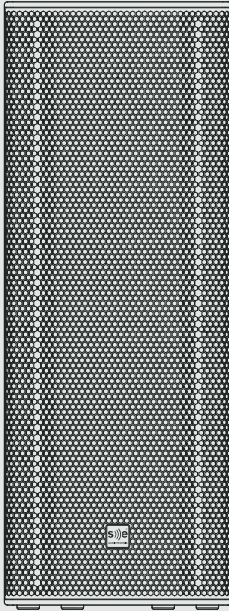




AUDIOTECHNIK

CV 212

2-WAY PASSIVE SPEAKER



MANUAL

THANK YOU FOR CHOOSING S)))e AUDIOTECHNIK®.

We are happy to be the solution for your sound reinforcement and professional sound needs. The system you purchased is the sum of 20 years of experience as a loudspeaker manufacturer, and more than 40 years as a speaker designer. It is the sum of German precision and Chinese effectivity, which ensures a high-quality product that will last you for the long-term.

Please, take the time to carefully read this manual and follow its instructions. It will allow you to get the most out of your product under safe operating conditions and suggest some care instructions leading to long-term endurance. Keep this manual in a safe place for further reference!

If you find any mistakes or have further questions or suggestions, please contact us at **info@se-audiotechnik.de**.

For more information about **SE AUDIOTECHNIK®** products, visit our website **www.se-audiotechnik.de**. There you will also find the latest updates to manuals, firmware and technical documents for additional support.

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The content of this document is subject to change without prior notice to improve reliability, function, design or otherwise.

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IMPORTANT SAFETY INSTRUCTIONS



The product included in this manual has been engineered and manufactured to ensure your personal safety. However, **IMPROPER USE CAN RESULT IN POTENTIAL ELECTRICAL SHOCK, FIRE HAZARD AND OTHER HEALTH RISKS**. Always follow the basic precautions listed here to avoid the possibility of serious injury or even death from electrical shock, short-circuiting, damages, fire or other hazards. These precautions include, but are not limited to, the following items in this manual.

1. Keep these instructions.
2. Read these instructions.
3. Follow thoroughly all instructions.
4. Heed all warnings.
5. Do not expose this device directly to rain, moisture or any kind of liquid. Keep it away from water and do not place objects filled with fluids on top of it.
6. Clean the device just with a dry cloth and only after disconnecting it from the power amplifier. Do not use paint thinners, solvents, cleaning fluids, or chemical-impregnated wiping cloths.
7. Keep away from objects which may be impaired by an external magnetic field. To avoid the damage of equipment such as computers, video monitors and magnetic data carriers, they should be located at least 1 meter away.
8. Only use safety pins, attachments, accessories and adapters specified and/or provided by the manufacturer.
9. Do not block any ventilation openings and keep away from any heat sources such as radiators, heat registers, or other equipment (including amplifiers) that produce heat.
10. Do not insert your fingers, hands or any other foreign objects into any gaps or openings of the device.
11. Do not attempt to open any part of the unit. There are no user-serviceable parts inside.
12. Refer all servicing to qualified service personnel. This is required when the product has been damaged in any way, such as power-supply plug is impaired, liquid has been spilled or objects have fallen into the device, the device has been exposed to rain or moisture, does not operate normally, or has been severely dropped.
13. When the product reaches its end of life, take it to the right collection point designated by local authorities. The appropriate collection and recycling at the time of discarding, will ensure it is properly disposed and will help to conserve natural resources, protect human health and preserve our environment.

GRAPHICAL SYMBOLS IN THE PRODUCT



The CE mark indicates the conformity with the relevant EU directives for safety, health and environmental protection. See the Manufacturer's Declaration section.



Symbol for conformity with Directive 2002/96/EC and Directive 2003/108/EC of the European Parliament, on waste electrical and electronic equipment (WEEE).

GRAPHICAL SYMBOLS IN THIS MANUAL



Symbol to alert the user about important operating or maintenance instructions.



Symbol for important concepts and information for a better understanding of the functioning of the product.



Symbol for practical tips and ideas useful to ensure the correct use of the product and improve its operation.

NOISE EXPOSURE PRECAUTIONS



THIS PRODUCT CAN RADIATE HIGH SOUND PRESSURE LEVELS (SPL), WHICH CAN LEAD TO IRREVERSIBLE HEARING DAMAGE. SE AUDIOTECHNIK® RECOMMENDS TO RESPECT THE TIMES OF EXPOSURE TO HIGH SOUND PRESSURE LEVELS.

Noise level (dBA)	85	94	97	112	127
Max. recommended exposure time per 24 hours	8 hrs.	1 hr.	30 min.	56 sec.	1 sec.

Noise exposure recommendations according to US National Institute for Occupational Safety and Health (NIOSH).

PACKAGE CONTENTS

The packaging of the **CV 212** includes:

- 1 **CV 212** speaker
- 1 **CV 212** User Manual
- 1 QC PASS card
- 1 Warranty card

Please inspect your product packaging before unboxing it. If it has been damaged during shipping, unbox the product and check for any visual damage before using it. Notify the shipping company immediately and contact your SE AUDIOTECHNIK® dealer or support center for help and assistance.

Finally, save the shipping carton as evidence for the possible claim, which can be requested only by you. We also recommend you to keep all the packing materials and contents for any further transportation.

INTRODUCTION

The **CV 212** is a compact yet powerful 2-way passive loudspeaker, designed to fulfil the most demanding requirements in a wide range of PA applications.

Two 12" woofers mounted in a fine-tuned vented-box, generate high SPL levels over the lower frequencies, while providing headroom for maximal performance. On top, a 1.4" horn-loaded compression driver covers the mid and high frequencies for a full-range reproduction.

To ensure maximum versatility, the **CV 212** is equipped with a rotatable horn, allowing to easily swap the vertical and horizontal coverages. Compared to single NL2 connectors, the two speakON® NL4 simplify wiring and signal distribution. In addition, the specific cabinet design offers different positions and orientations.

Manipulation and installation are as easy as safe thanks to the two side-handles, the 14 M10 fly points, the bottom pole receptacle and the special **CV 212** UB U-bracket.

From touring events to theatres and houses of worship, either as a floor, standing or hanged sound reinforcement system, multiple places and applications will benefit from this exceptional loudspeaker.

FEATURES

- 2 x 12" high efficiency woofers
- 1.4" compression driver
- 800 W continuous power handling
- Rotatable 90° x 60° horn
- 14 x M10 fly points
- 2 x handles for easy handling
- Rubber feet for excellent grip
- Rugged front grille with mesh backing
- Polyurea coating

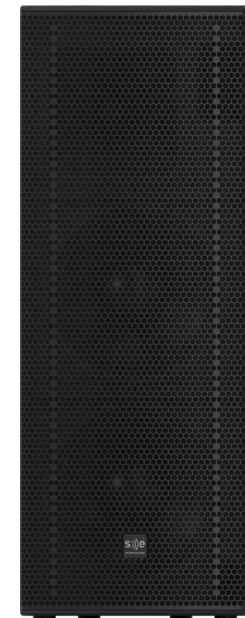


Figure 1. CV 212

INPUT PANEL

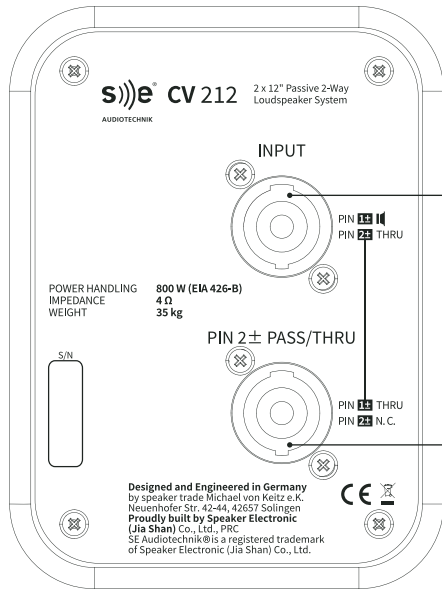


Figure 2. CV 212 input panel.

INPUT. Audio signal input through Neutrik® speakON® NL4 connector. Pins 1± are connected to the passive crossover and 2± pins to the pass thru connector.

PIN 2± PASS/THRU. Audio signal output through speakON® NL4 connector to pass the signal present in the 2± pins of the INPUT. This signal outputs through the 1± pins.



The NL4 topology of these two connections allows to handle two signals, which in some applications can contain the same information. The signal in pins 1± is applied to the loudspeaker and signal in pins 2± can be passed through to another loudspeaker or for example, a subwoofer.

WIRING AND POWERING

Audio signals are entered and/or passed through a Neutrik® speakON® NL4 connector. These wires should be connected as shown below:

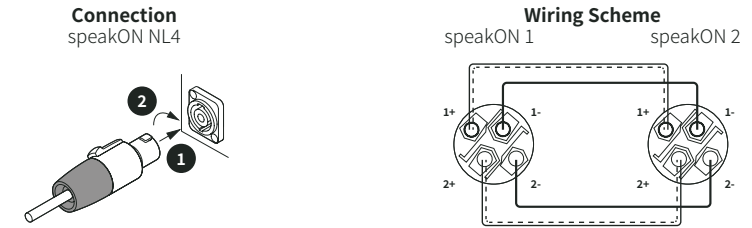


Figure 3. SpeakON® NL4 plug-in and link cable connection.

It is recommended to use cables with at least 18 AWG conductor size. For long cable lengths, the maximum conductor size is 14 AWG. Those wires must be assembled by a qualified technician.

To ensure the correct and safe behavior of the equipment, use a sufficiently powerful amplifier. As a general rule, its rated power should be at least twice the rated power of the loudspeaker. Keep in mind that daisy chain connections reduce the total impedance, which should respect the amplifier's capabilities.

In addition, when using passive loudspeakers as the **CV 212**, both mechanical and thermal protection techniques should be implemented with an external processor and/or if capable, the amplifier itself. SE AUDIOTECHNIK's® drivers are designed to reach lower stress in the suspension parts at greater excursion. However, these protections will assure the proper behavior of the equipment, its care and safety, and can maximize the performance of the whole system.



The mechanical protection of a loudspeaker controls the excursion of the cone, so its physical limits are not exceeded. This can be done by filtering the signal below the safe range of the loudspeaker.

Thermal protection controls the energy of the loudspeaker in the long term, keeping its temperature under safe levels. This is achieved by limiting the RMS voltage applied, where the maximum allowable value is its average power handling. This protection depends also on the time constants selected to trigger and release the limiter.



If equalization is needed, it is recommended to reduce levels in the undesired frequency ranges, instead of boosting the desired ones. This guarantees maximum dynamic range.

INSTALLATION

The **CV 212** cabinet's design offers great versatility for different needs and applications. As detailed in figures below, it can be placed:

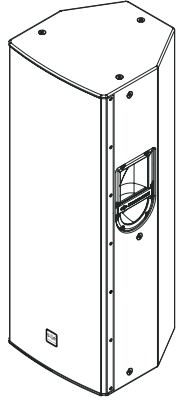


Figure 4. Vertical placement.
as a stand-alone loudspeaker for full-range reinforcement.

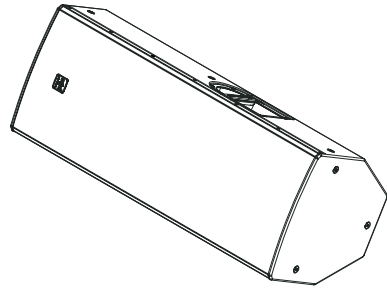


Figure 5. Horizontal placement.
for different radiation and coverage capabilities.

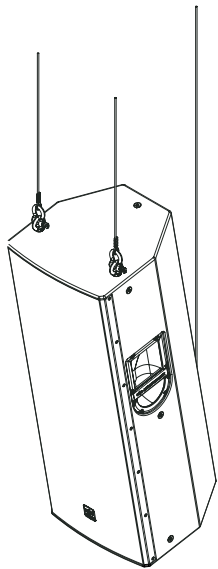


Figure 6. CV 212 hanging from the ceiling using the 14 M10 screw threads available. These are distributed strategically in the surfaces of the cabinet for an ease and safe installation.

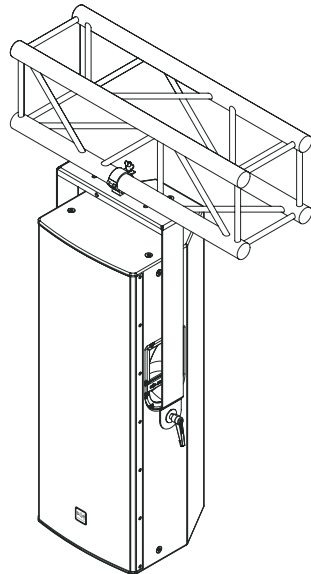


Figure 7. CV 212 hanging from a truss structure using the CV 212 UB U-bracket. See section U-bracket Mounting below.

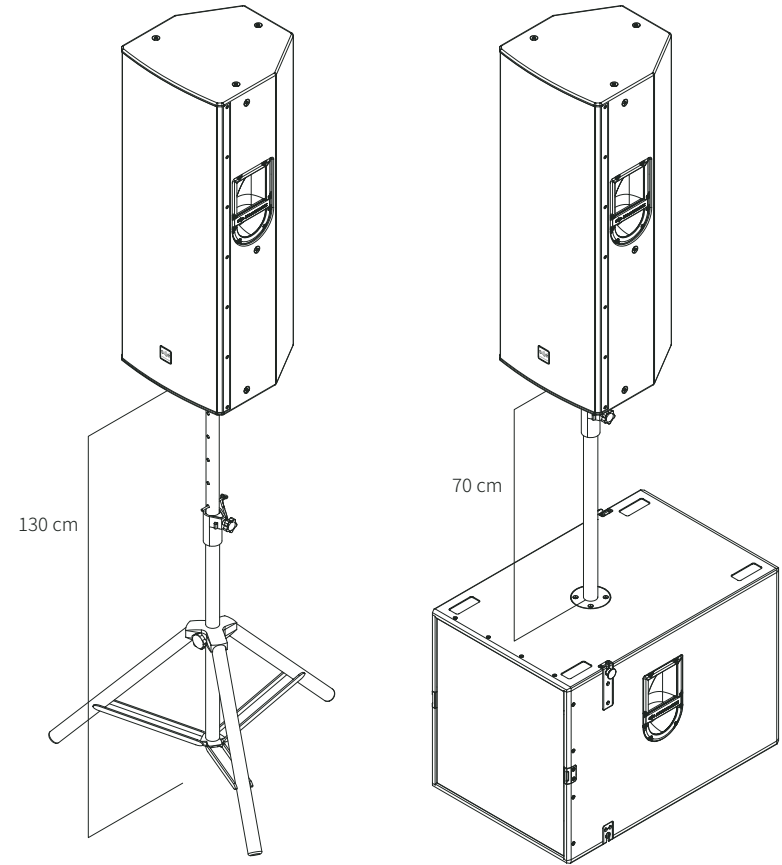


Figure 8. CV 212 installed over a tripod or, over a subwoofer and an SPS20 pole.
for a further throw and greater coverage than ground-based.



When using the SPS20 pole, it must be adjusted to its minimum length (75 cm). When using a tripod, open its feet as much as possible to improve the stability of the system. In this regard and in any case, the bottom of the **CV 212** must never be more than 1.3 meters from the ground.

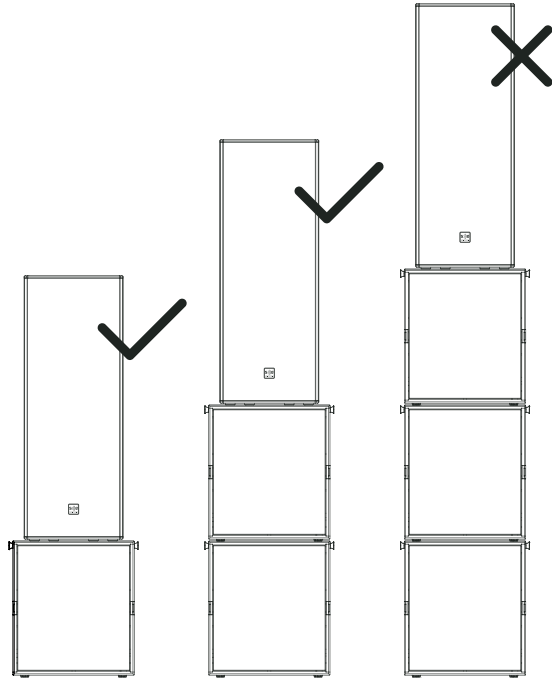


Figure 9. CV 212 mounted over one or even two subwoofers, as the top unit of systems with low-frequency extension.



Do not place the **CV 212** over a stack of more than two subwoofers. In order to increase the safety of the system, it is highly recommended to:

- Use ratchet straps to tie together the **CV 212** and the subwoofer/s.
- Fix the **CV 212** position in the topmost subwoofer using a 5 cm adapter bolt with M20 thread.

U-BRACKET ACCESSORY

Using the **CV 212 UB** U-bracket, the **CV 212** can be hung from the ceiling or a truss structure, for permanent installations. Sold separately from the **CV 212**, this item also includes:

- 2x M10 handle screws
- 2x Steel washers
- 2x Silicone washers

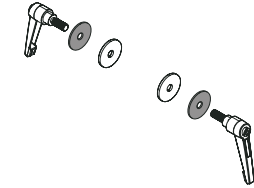


Figure 10. Additional elements for CV 212 UB attachment.

MOUNTING

To attach the U-bracket to the **CV 212** cabinet, it is recommended to have assistance to perform the following steps:

1. Identify the correct fly points, located below the plastic handle on each side. Remove their black countersink screws.
2. Onto the thread of each M10 handle screw, insert a steel washer.
3. With additional help, place the U-bracket on its position by aligning the holes at the extremes of its arms with the holes of the fly points in the cabinet.
4. On each side: insert the handle screw in the hole of the U-bracket, put a silicon washer on the screw and finally, tight partially the screw in the M10 thread.

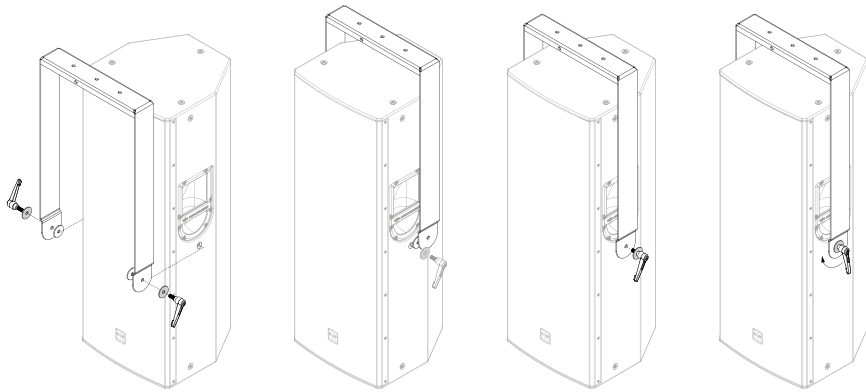
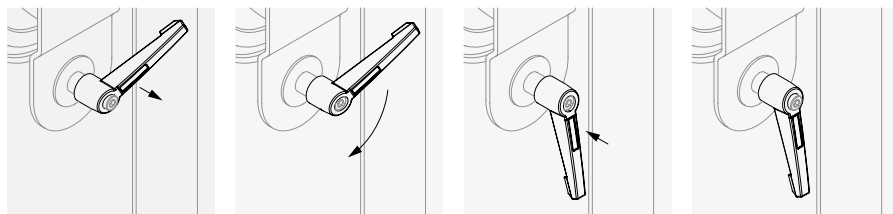


Figure 11. Bracket mounting steps.

5. Make sure the silicon washer is placed on the side of the cabinet, and that the metal washer is on the side of the handle screw.
6. Place the U-bracket vertically, matching the attaching holes in the center arm.
7. Fully and securely tighten the handle screws at the flying points to hold the U-bracket in place before making the final installation.

Please note that the handle of the handle screws can be rotated in order to find the most suitable position for tightening and loosening the screw. Furthermore, after the installation, both handles can be equally orientated to give the assembly a nicer appearance. To do this, simply:



1. Pull the handle of the handle screw.

2. Rotate it to the desired position.

3. Release the handle to fix it in place.

INSTALLATION



Before performing any installation procedure, always:

- Adhere to and respect any local regulation regarding manipulation and hoisting of heavy loads.
- Calculate the total suspended loads and guarantee that all components involved will be used within their respective mechanical limits.
- Validate and approve all installation calculations and designs with a professional licensed in Structural or Mechanical Engineering.
- Make sure the fixation points and elements in the ceiling and/or structure resist loads at least 10 times greater than the weight of the unit.
- Verify that all the elements and components are in optimal conditions before performing the attachment. In addition, make sure all of these are safe and correctly used.
- Ensure that only qualified and experienced personnel carry out the installation.
- Establish at least one independent safety attachment in addition to the main one, foreseeing the failure of the later.

The **CV 212 UB** can be hung at one or two points, using the M10 holes in the centre arm. The unit can be hung directly from a truss structure using the proper adapter/s, like half coupler clamp/s for example.

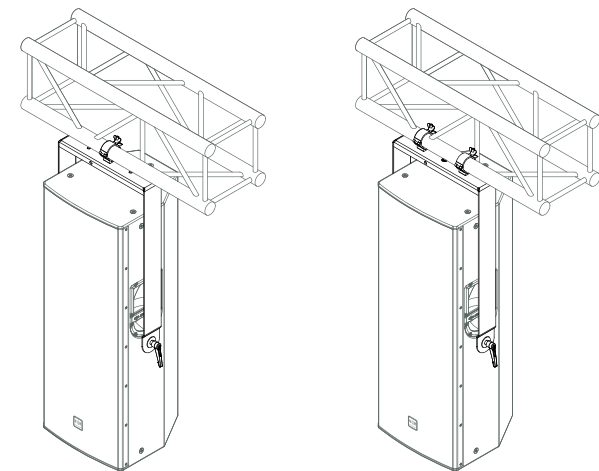
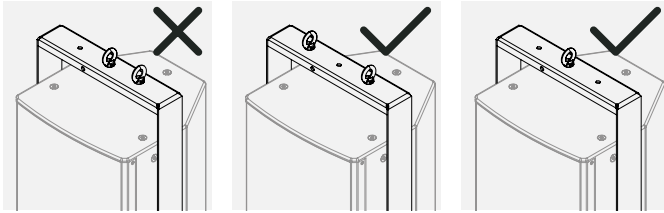


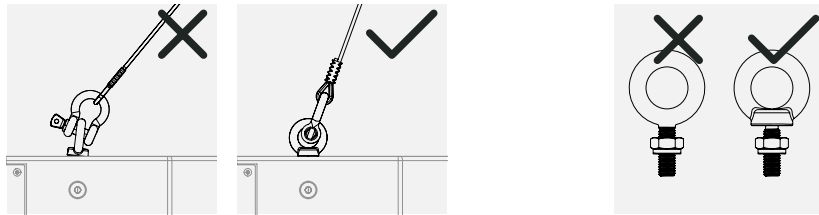
Figure 12. A CV 212 hung from a truss structure using half coupler/s both with one (left) and two (right) pick points of the CV 212 UB U-bracket.



For one pick point suspension, the middle hole must be used. For two, use only the outer holes.



Eye-bolts without shoulder are designed for vertical loading only. Conversely, eye-bolts with shoulder allow lifting from different angles and therefore should be preferred. In any case, the force must always be applied perpendicular to the axis of the centre of the eye.



Finally, use the hole on the centre flange to string a steel security cable and attach an additional fastener for increased safety.

COVERAGE ADJUSTMENT

By default, the horn of the CV 212 is placed to have a 90° coverage in the horizontal plane and 60° in the vertical. This can be easily changed to adapt to applications where a narrower horizontal and/or wider vertical coverage is needed. To rotate the horn:

- 1 **Remove the front grille.** Remove the seven screws located on each side and pull it out.
- 2 **Release the tweeter-horn assembly.** Remove the four screws around the horn and carefully, separate it from the cabinet. Take care not to harm the gasket around its inner edges, nor to disconnect the terminals of the compression driver.
- 3 **Rotate 90° the tweeter-horn assembly.**

- 4 **Place back the tweeter-horn assembly.** After turning it 90° around its front-rear axis, put the horn again in the cabinet. Make sure the gasket is flat and sealing correctly against the wooden slot.
- 5 **Fasten the tweeter-horn assembly.** Insert and tight partially the four screws of the horn in their corresponding threads. Fully tighten the four screws in the corners. This order will prevent possible harm of the plastic part of the horn.
- 6 **Install the grille.** Align the grille on its position and push from the side edges to attach it back. Insert and tighten the seven screws on each side to fasten it completely.

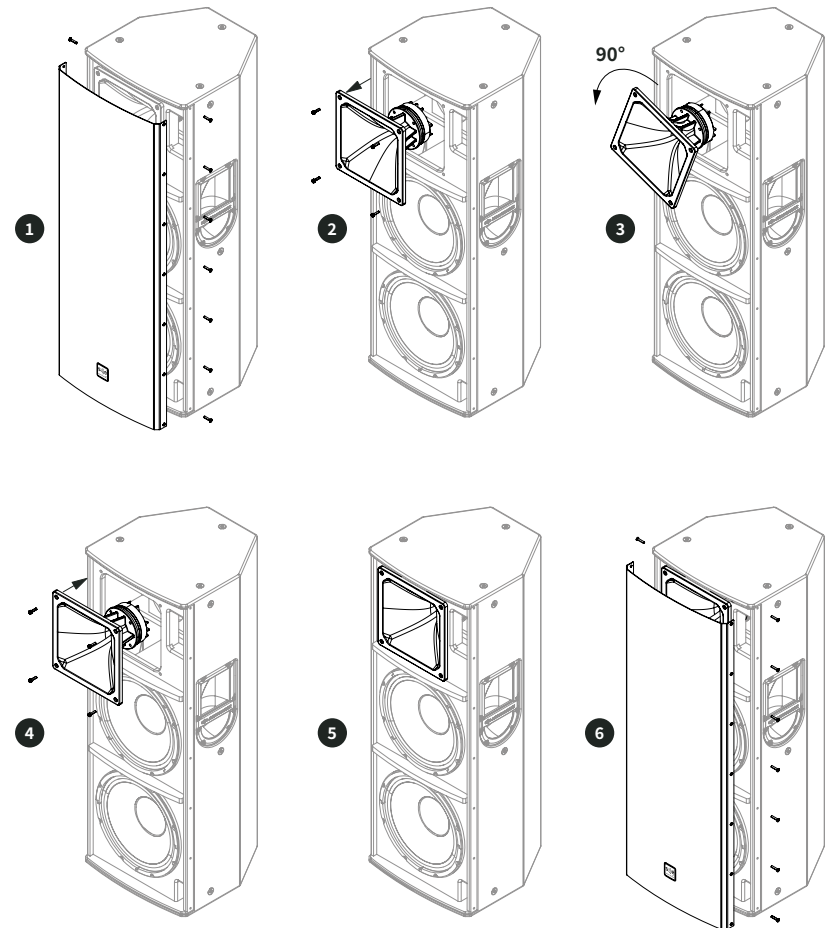


Figure 14. Rotating the horn to adjust the HF directivity.

SPECIFICATIONS

TECHNICAL SPECIFICATIONS

CV 212	
ACOUSTICAL	
Frequency range (-3 dB) ¹	100 Hz - 15 kHz
Frequency range (-10 dB) ¹	50 Hz - 16 kHz
Coverage angles (-6 dB) [H x V]	90° x 60°
Nominal impedance	4 Ω
Sensitivity ¹	100 dB
Peak power	3200 W
Continuous power ²	800 W
Maximum Peak SPL ³	140 dB
System type	2-way system
Crossover frequency	1.15 kHz
Transducers	Coaxial driver with: LF: 2 x 12" driver (3" voice coil) HF: 1.4" compression driver (3" voice coil)
Enclosure type	Vented box
Connectors	Input signal: Neutrik speakON® NL4 Link output: Neutrik speakON® NL4
Wiring	Pins 1+/1- : drivers Pins 2+/2- : link signal to pins 1+/1- of THRU output
MECHANICAL	
Product dimensions [H x W x D]	1017 x 380 x 388 mm
Weight	35 kg
Packaging dimensions [H x W x D]	1123 x 480 x 485 mm
Total weight	38 kg
Cabinet	15 mm plywood
Cabinet finishing	Black polyurea coating
Grille	Powder coated perforated steel
Hardware	- Two side plastic cup handles - Four bottom rubber feet - 14 x M10 threads for hanging: 3 on top, bottom and sides, and 2 on the rear.
ACCESSORIES	
Pole bar	SPS20
U-bracket for truss hanging	CV 212 UB

¹ Half space, 1W / 1m, on axis.

² According to EIA-426B Standard (based on RMS Voltage).

³ Max Peak SPL = Max. Cont. SPL (800W / 1m) + 12 dB Crest Factor.

MECHANICAL DRAWINGS

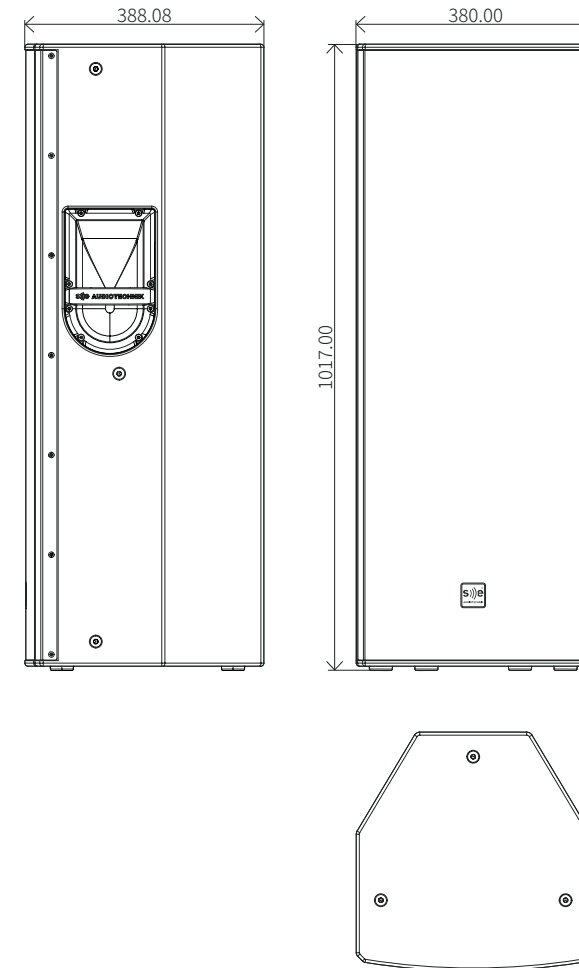


Figure 15. CV 212 views and dimensions. Annotations given in millimetres.

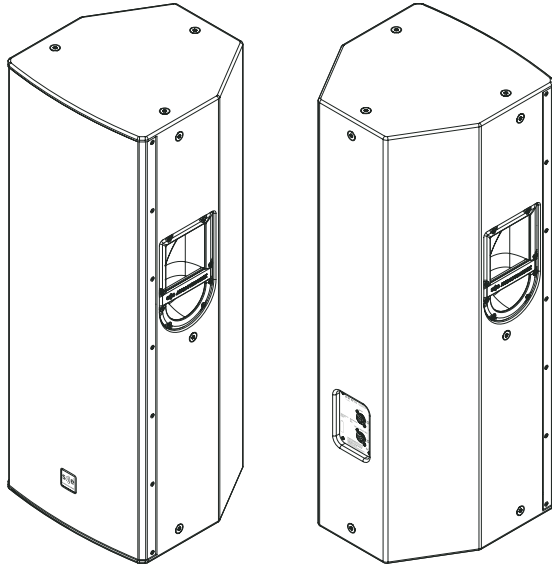


Figure 16. CV 212 isometric views.

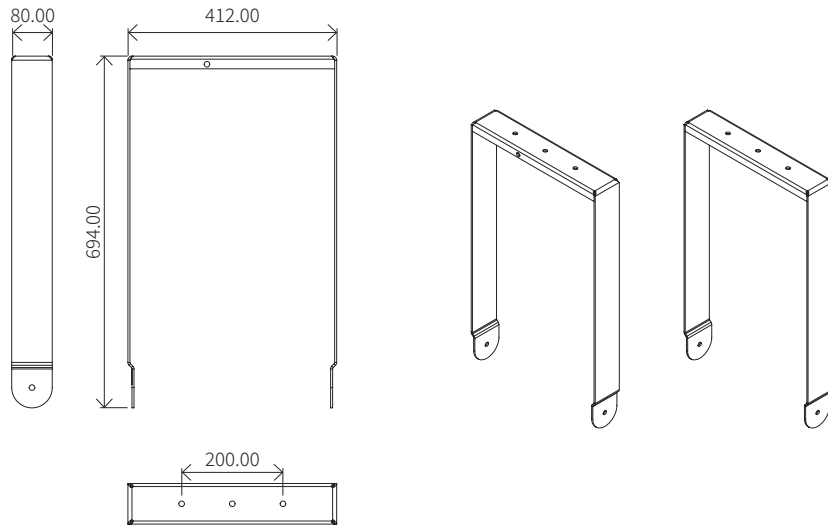


Figure 17. CV 212 UB views and dimensions.
Annotations given in millimetres.

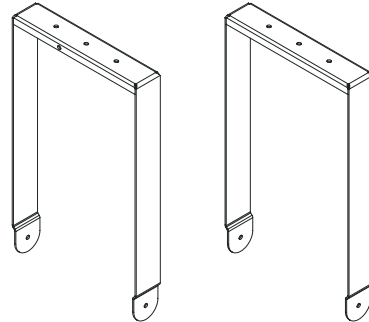


Figure 18. CV 212 UB views and dimensions.
Annotations given in millimetres.

MANUFACTURER'S DECLARATIONS

LIMITED WARRANTY

This limited warranty applies to SE AUDIOTECHNIK® branded products.

The statutory warranty rights towards the seller are not affected by this guarantee. In fact, it justifies additional independent warranty claims towards SE AUDIOTECHNIK®.

SE AUDIOTECHNIK® warrants that the SE AUDIOTECHNIK® product purchased from SE AUDIOTECHNIK® or from an SE AUDIOTECHNIK® authorized reseller, is free from defects in materials or workmanship under normal use, for a period of three years from the date of purchase.

The limited warranty period starts on the date of purchase. To receive warranty services, proof of the purchase must be provided. The dated sales or delivery receipt, stating the date of purchase, is the proof of purchase. Should products of the brands named above be in need of repair within the limited warranty period, you are entitled to warranty services according to the terms and conditions stated in this document.

This limited warranty extends only to the original purchaser of this SE AUDIOTECHNIK® branded product and is not transferable to anyone who obtains ownership of the SE AUDIOTECHNIK® product from the original purchaser. During the limited warranty period, SE AUDIOTECHNIK® will repair or replace the defective component parts or the product. All component parts or hardware products removed under this limited warranty become the property of SE AUDIOTECHNIK®.

In the unlikely event that the SE AUDIOTECHNIK® product has a recurring failure, SE AUDIOTECHNIK®, at its discretion, may elect to provide a replacement unit of SE AUDIOTECHNIK® choice that is at least equivalent to your SE AUDIOTECHNIK® branded product in hardware performance.

SE AUDIOTECHNIK® does not warrant that the operation of this product will be uninterrupted or error-free. SE AUDIOTECHNIK® is not responsible for damage that occurs as a result of your failure to follow the instructions included with the SE AUDIOTECHNIK® branded product.

This limited warranty does not apply:

- to wear parts
- to any product from which the serial number has been removed or that has been damaged or rendered defective as the result of an accident
- in case of misuse, abuse, or other external causes
- by operation outside the usage parameters stated in the user's documentation
- by use of spare parts not manufactured or sold by SE AUDIOTECHNIK®
- by modification or service by anyone other than SE AUDIOTECHNIK®

These terms and conditions constitute the complete and exclusive warranty agreement between the purchaser and SE AUDIOTECHNIK® regarding the SE AUDIOTECHNIK® branded product purchased.

LIMITATION OF LIABILITY

If the SE AUDIOTECHNIK® branded hardware product fails to work as warranted above, the sole and exclusive remedy shall be repair or replacement. SE AUDIOTECHNIK®'s maximum liability under this limited warranty is explicitly limited to the lesser of the price it has been paid for the product, or the cost of repair or replacement of any hardware components that malfunction in conditions of normal use.

SE AUDIOTECHNIK® is not liable for any damages caused by the product or the failure of the product, including any lost profits or savings or special, incidental or consequential damages. SE AUDIOTECHNIK® is not liable for any claim made by a third party or made by the purchaser for a third party.

This limitation of liability applies whether damages are sought, or claims are made, under this limited warranty or as a tort claim (including negligence and strict product liability), a contract claim, or any other claim. This limitation of liability cannot be waived or amended by any

person. This limitation of liability will be effective even if the purchaser has advised SE AUDIOTECHNIK®, or an authorized representative of SE AUDIOTECHNIK®, of the possibility of any such damages. This limitation of liability however, will not apply to claims for personal injury.

This limited warranty gives the purchaser specific legal rights. There may also be other rights that may vary from state to state or from country to country. The purchaser is advised to consult applicable state or country laws for a full determination of his rights.

REQUESTING WARRANTY SERVICE

To request warranty service for the product, the purchaser must contact SE AUDIOTECHNIK®, or the SE AUDIOTECHNIK® authorized reseller from which the product was purchased.

EC DECLARATION OF CONFORMITY

This device meets the essential requirements and further relevant specifications of the Directives of the European Union. The detailed declaration, and the list of these Directives and the Harmonized Standards, is available in our website www.se-audiotechnik.de.

CORRECT DISPOSAL OF THIS PRODUCT (ELECTRICAL WASTE)

(Applicable in the European Union and other European countries with separate collection systems)

This marking, shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of waste and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details on where and how they can recycle this item in an environmentally friendly manner.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other wastes for disposal.

WEEE-DECLARATION

This SE AUDIOTECHNIK® product was developed and manufactured with high quality materials and components which can be recycled and/or reused. This symbol indicates that electrical and electronic equipment must be disposed of separately from normal waste at the end of its operational lifetime.

Please dispose this product by bringing it to your local collection point or recycling centre for such equipment. This will help to protect the environment in which we all live.

S)))E' AUDIOTECHNIK

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Designed in Germany

Version 2021/07

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