

K&F SCENA 15



User's Manual

Translation of the original instructions

Version 1.7

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**Important Information,
Please Read Before Use!**

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1. Introduction

Thank you for purchasing a KLING & FREITAG product. To guarantee a trouble-free operating of the equipment and to allow your KLING & FREITAG SCENA 15 system to achieve its full potential read the user's manual carefully before use. As the owner of a SCENA 15 loudspeaker, you now have a versatile and highly professional tool which, when operated properly, is a true pleasure to use.

1.1 Icons Used



Warning



Caution



Tip

This icon indicates a risk of injury or death. Not following these instructions may result in serious health problems including potentially fatal injuries.

This icon indicates a possibly dangerous situation. Not following these instructions may cause minor injuries or damage.

This icon marks instructions for proper use of the described products. Not following these instructions may cause malfunctions or damage.

This icon marks information provided for simplified use of the described products.

1.2 About this Manual

© KLING & FREITAG GmbH. All rights reserved.

All specifications regarding the features of the described products and applicable safety guidelines provided in this manual are based on information available at the time of publishing.

We assume no responsibility for technical specifications, dimensions, weights, and properties.

All information in this manual is subject to change without notice.

All persons who use the speaker system must have this guide and all further information for safe operations available to them during assembly, disassembly, and use. The speaker system may neither be set up nor used until these user's manual has been read, understood and kept readily available in site.

All KLING & FREITAG manuals are originally authored in German.

KLING & FREITAG spare manuals are separately available for order or can be downloaded from our website: www.kling-freitag.de.

Contact Us:

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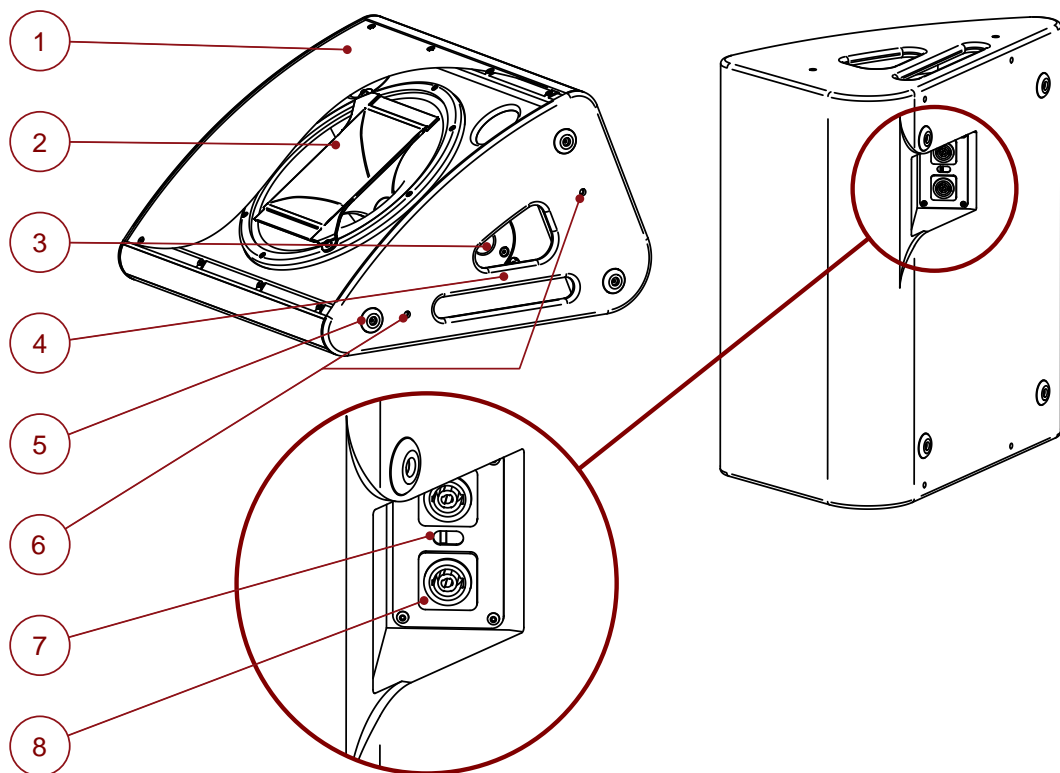
2. Product Description

The SCENA 15 is a high performance stage monitor with a hidden pole mount flange and 4 flying points. These features make it possible to use it not only as a highly professional stage tool but also as a PA speaker. The SCENA 15 is equipped with a rotatable high frequency horn with a coverage angle of 50°x70°. It has a hidden connector panel with an adjacent cable outlet for inconspicuous cable routing. The SCENA 15 can be used in the operating modes '1 Channel Controlled' and '2 Channel Controlled' (1 channel active / 2 channel active), thus providing flexible application possibilities. Its elegant design suitable for TV and galas provides for a positive appearance on all stages and sets the SCENA 15 apart from other stage monitors in its performance class.

2.1 Items Included

- Floor monitor incl. hidden pole mount flange for mounting on a stand.
- (1x) User manual

2.2 Components



1. **Front grille** with a hexagonal hole pattern and acoustic foam behind it.
2. **High frequency horn**, rotatable
3. **Pole mount flange**, covered. For using the monitor on a speaker stand.
4. **Handle rail**
5. **Plastic sliders**, 4 x on the bottom, 3 x on the side
6. **M8 thread inserts**, 4 x, for K&F eyebolt M8, for suspension of the speakers
7. **Operating mode switch**, for selecting the operating modes 1 channel or 2 channel.
8. **SpeakOn connector**, 2 x 4-pin NLT4MP (parallel)

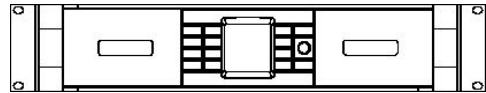
2.3 System Requirements

Lab.gruppen IPD 2400



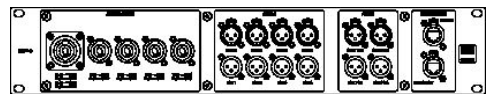
or

K&F PLM+ 20k44 (SystemAmp, ProRental)
K&F PLM+ 12k44 (SystemAmp, ProRental)



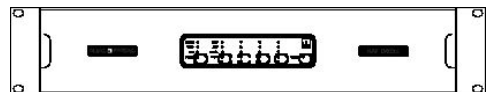
with

K&F Connector Panel CP+
Terminalpanel (optional)



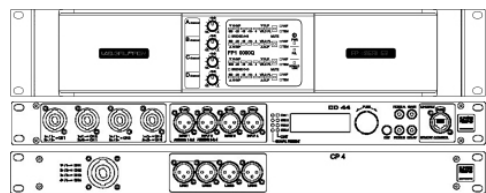
or

K&F D200:4 (SystemAmp, InstallSound)
K&F D120:4 (SystemAmp, InstallSound)
K&F D80:4 (SystemAmp, InstallSound)



or

K&F SystemRack



3. Safety Instructions

3.1 Mounting the Speakers / Wall and Ceiling Installation



Warning

Suspended loads pose a safety risk.

Only qualified technicians are permitted to perform the installation steps. Be sure to use personal protective equipment at all times.

The technicians installing the speaker on site are responsible for and guarantee safe setup and use.

Never use signal cables or power cords for suspending, aligning, or securing the systems.

Before installing, check the stability, strength, and materials of walls, ceilings, and boarding. For example, use suitable rawlplugs for wall panels and make sure the strength is sufficient.

Note that the suspension points on the hall ceiling (i.e. shackles, attachment points, or chain hoists) must comply with the DGUV regulations 17 and 18 or similar locally applicable accident-control standards. The maximum load must have been certified by an authorized expert.

Be sure to tighten all bolts and screws to the specified torque.

Unless otherwise stated, use only KLING & FREITAG original parts for mounting the speakers. Never use other parts (in particular, parts not made by KLING & FREITAG).

Make sure all fittings used are suitable for the task at hand and meet all relevant safety requirements.

Ensure that all connections are secured against coming loose and that only authorized, statically tested and correctly sized supports, mounting equipment, wire ropes and chains are used.

Be sure to always visually inspect all safety-related speaker and accessory components before use. If there are signs of wear, cracks, or deformation, etc., replace the affected parts immediately. Visual inspection also includes checking all screwed connections of supporting components.

The information described here does not relieve the user of the duty to follow the given safety requirements and legal regulations.

3.2 Notes for Mounting the Speakers



Warning

Mount the speakers securely. To avoid injury or damage, always be sure to mount the speakers securely so that they do not fall.

Note that speakers can move as a result of vibrations. To prevent them from falling from their mounted position, they must be secured properly.

Run the cables in a way that nobody can trip over them.

3.3 Preventing Hearing Damage



Caution

Keep your distance from operating speakers. This equipment is capable of delivering sound pressure levels in excess of 90 dB SPL, which may cause permanent hearing damage.

3.4 Protecting the Speakers / Operating Safety

Notice

SCENA 15 speakers may only be used in combination with a K&F SystemAmp/SystemRack.

In general, audio signals must not be overdriven. This may be caused by mixing consoles, equalizers, effect equipment, etc. and should be indicated on this equipment. When a power amplifier is overloaded at the output (clipping), then the amplifier activates a clipping warning signal. In any case, the signal must be reduced as soon as it sounds unnaturally distorted.

For damage caused by

- overloading the speakers or
- using the speakers without K&F SystemAmp/SystemRack

we do not assume warranty and excludes liability for possible consequential damage.

The following signals may damage the speakers:

- permanent high-level signals with high frequency and continuous noise from feedback,
- permanently distorted high-level signals,
- noises, which occur when the amplifier is on while equipment is being connected, disconnected or switched on.

Do not install devices in any of the following places:

- where the devices are permanently exposed to direct sunlight.
- where the devices are exposed to high moisture or rain.
- where the devices are exposed to strong vibrations and dust.

Damage caused by the speakers' magnetic fields

Speakers are permanently surrounded by a magnetic field, even when they are not connected. Therefore, during transport and placement of the speakers, it is important to ensure that there is always approx. 1 m between the speakers and magnetic data media and computer/video monitors.

4. Suspending the Speakers

With the help of the M8 x 20 eyebolts available as accessories from KLING & FREITAG, the SCENA 15 can be suspended

Screw in at least two of these eyebolts into the existing M8 threads on the sides.

Suspend the speaker with the help of shackles and steel ropes.

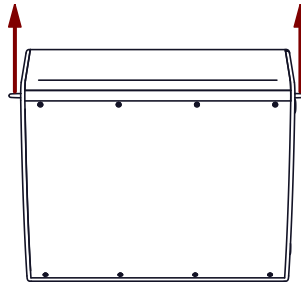


Ensure that all connections are secured against coming loose and that only authorized, statically tested and correctly sized supports, mounting equipment, wire ropes and chains are used.

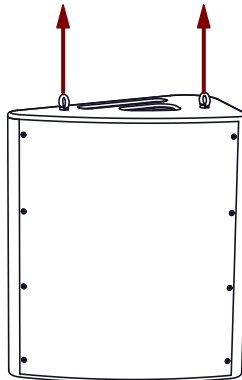
Note that the suspension points on the hall ceiling (i.e. shackles, attachment points, or chain hoists) must comply with the DGUV regulations 17 and 18 or similar locally applicable accident-control standards. The maximum load must have been certified by an authorized expert.

It is not permissible to suspend anything else from the bottom of the SCENA 15.

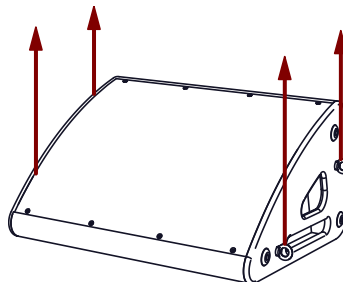
Horizontal



Vertical



Under floor



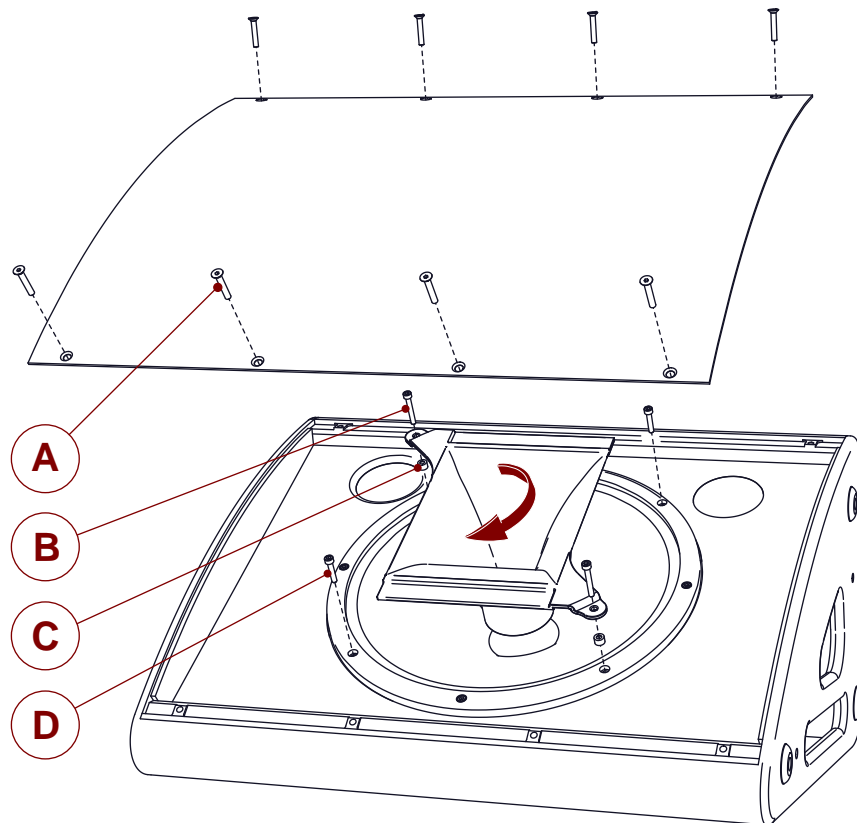
5. Rotating the high frequency horn

By default, the SCENA 15 has a coverage angle of 50°x70° (hor. x vert.). When you use it as a stage monitor, you have a good coverage into the depth of the stage and an optimal lateral sound field boundary on the stage. When used on a speaker stand, the practice-orientated directional characteristic of 70°x50° (hor. x vert.) results automatically. For special uses, the horn can also be rotated.

Required tools:

- 3 mm Allen key for loosening the front grille
- 4 mm Allen key for loosening the horn tweeter

If you wish to rotate the horn, proceed as follows:



1. Remove the grille screws **(A)** with a 3 mm Allen key and remove the front grille.
2. Remove the horn screws **(B)** and the chassis screws **(D)** opposite them with a 4 mm Allen key.
3. Remove the horn.
4. Remove the spacer tubes **(C)** that are located under the mounting tabs.
5. Place the spacer tubes **(C)** under the mounting tabs of the new position.
6. Turn the horn by 90° and put it in place while making sure that the socket of the horn is in the middle of the woofer and securely latches into the groove.
7. Screw on the horn tightly again using the longer horn screws **(B)**.
8. Screw in the shorter chassis screws **(D)** again.
9. Mount the front grille with the 8 grille screws.

6. Wiring Instructions

Notice

- Before connecting your SCENA 15 loudspeaker switch off all equipment and turn down all level controls.
- Only use high-quality speaker cables with a sufficient wire gauge. The wire gauge depends on the length of the speaker cable.
- For connections to the power amplifier inputs, use 2-pin shielded microphone cable (balanced) with high-quality connectors.
- Avoid creating ground loops.
- Be sure to note the pinouts shown in these user's manual.
- Make sure that the +/- polarity of the speakers at the amplifier is correct. When simultaneously using power amplifiers from different manufacturers, be sure to use the correct specific pin configuration. It may be necessary to modify the pin configuration on the power amplifiers or on the connectors leading to them.
- Upon completing wiring, ensure that the connected speaker channels are working in phase, for example, using a voltage tester. When the connected channels are used simultaneously, you can identify out-of-phase statuses by bass cancellation or mid-frequency signals (e.g. voices) that cannot be located properly.
- If several loudspeakers are connected, the signal can be linked through parallel from one loudspeaker to the next. Make sure that the total impedance of the loudspeakers $R(\text{Ohm})$ is not lower than the minimal impedance indicated on the power amplifier. $1/R_1 + 1/R_2 + 1/R_3 + \dots = 1/R_{\text{total}}$

7. First-time Use

Notice

- Switch off all equipment and turn down all level controls of the mixing console and the power amplifiers.
- Wire your SCENA 15 systems according to the instructions in these user's manual.
- Switch on the mixing console **first**, then the controller and the power amplifier. Always use the before mentioned switching order. Otherwise switching noises may damage the sound system.
- If there is interference, turn off all appliances in the reverse order and check all cable connections.
- Successively turn up the individual power amplifier channels and send a signal with low volume to the system. Check whether the audio is properly routed to the appropriate speakers. Make sure no noise is heard through those speakers.
With controller: The SIGNAL LEDs of the CD 44 Controller will light up if the output level is higher than -45 dB. Your system should now be ready for operation.
- Turning down the input level controls may not always prevent distortions in the input section of the power amplifier, especially if this section has a relatively low headroom. A clipping signal may not be displayed by the clipping indicator then! To prevent signal interruptions or damages to the speakers, turn the level controls of the power amplifier to the maximum position, if possible. Set the output level of the mixing console or the controller to a level that doesn't overload the power amplifiers or decrease the limiter threshold of the controller.
- When turning off the system, the input controls for the power amplifiers should be turned down first followed by the power switches of the amplifiers. After that, the other appliances can be turned off.

8. Configuration and Connecting Diagram

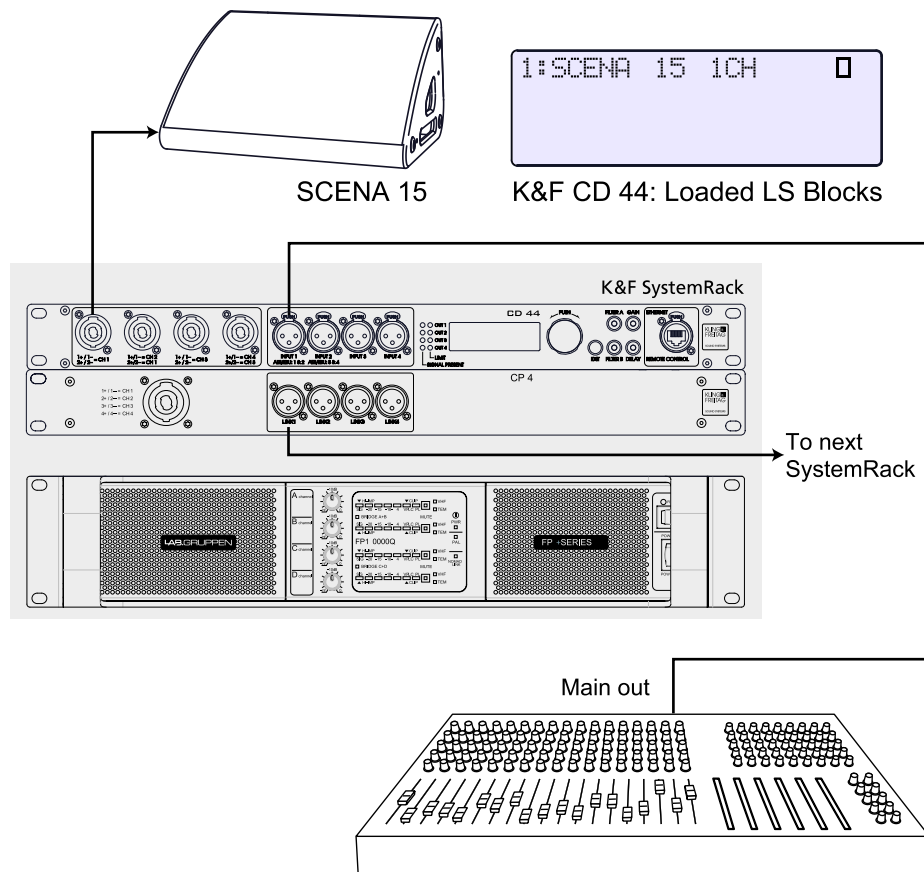
8.1 1 Channel Mode

To avoid unnecessarily assigning controller channels, this operating mode is recommended for most usages.

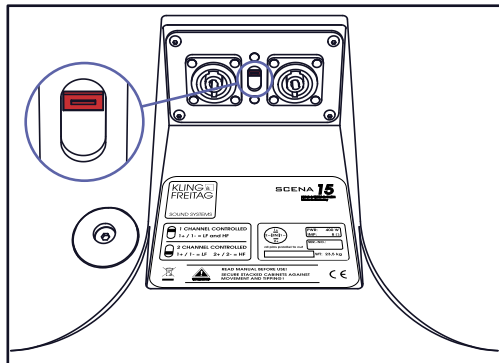
In 1 channel mode, the high frequency driver and the low/mid-range chassis are controlled by one controller channel. The internal crossover takes over the frequency separation for tweeter and low/mid-range.

In 1 channel mode, a maximum sound pressure of 134 dB SPL is reached.

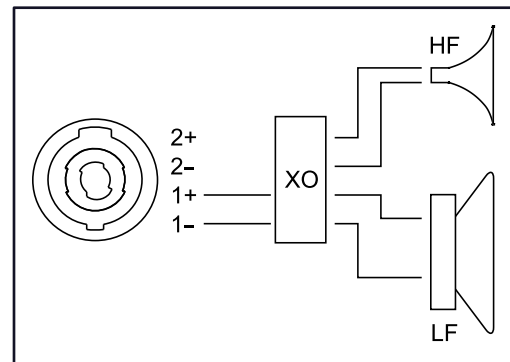
In general, this sound pressure level is fully sufficient for use as a stage monitor.



Switch to
'1 CHANNEL CONTROLLED'



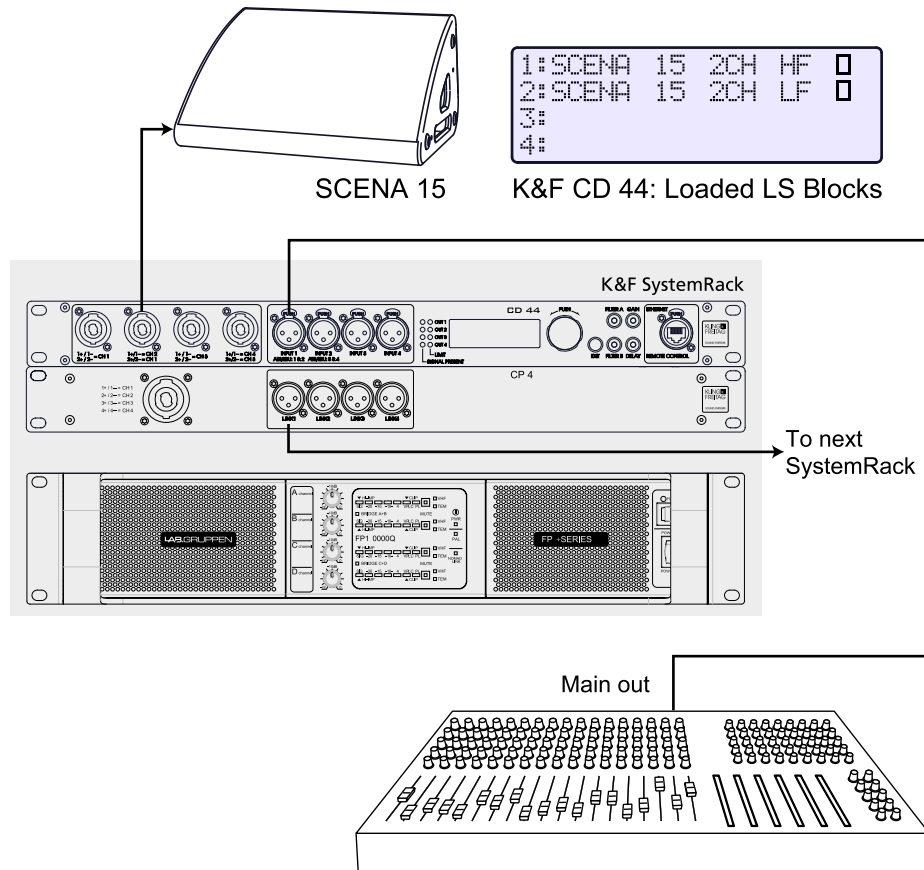
Wiring:



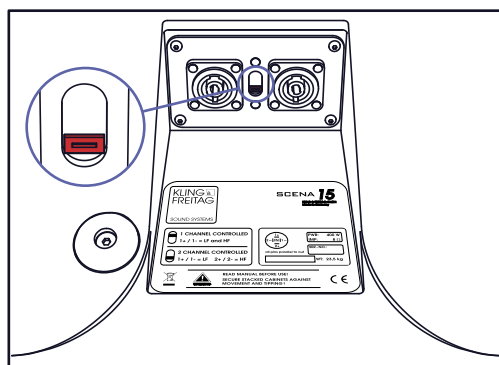
8.2 2 Channel Mode

You can use the 2 channel operating mode when you have to slightly increase the maximum sound pressure level.

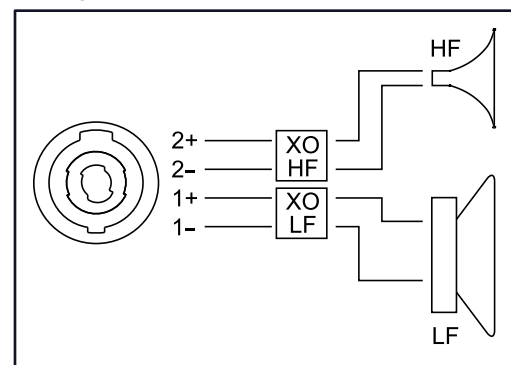
In 2 channel mode, a maximum sound pressure of 136 dB SPL is reached.



Switch to
'2 CHANNEL CONTROLLED'



Wiring

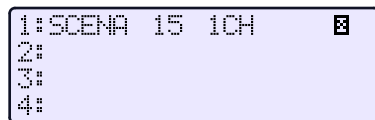


8.3 Operations with an additional Subwoofer

If you want to operate the SCENA 15 with an additional K&F subwoofer, you must activate the filter button B (100 Hz mode) on the CD 44 for the SCENA 15. In doing so, you will get an optimal coupling to the K&F subwoofer systems.

1 Channel Mode

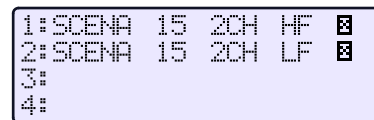
Activate 'Filter B' for the LSBlock SCENA 15 1CH.



FILTER B

2 Channel Mode

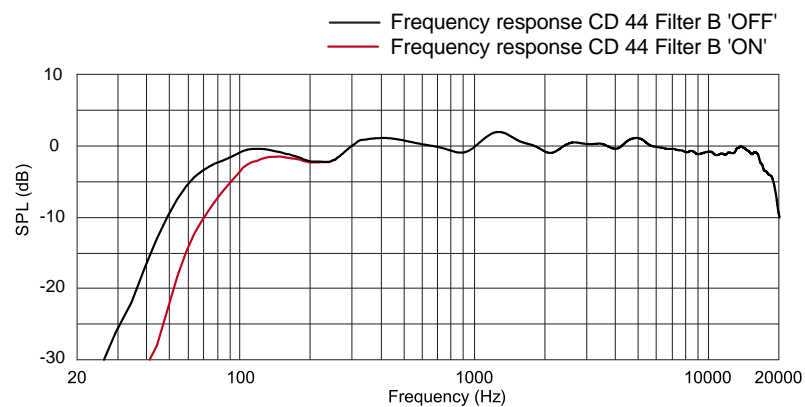
Activate 'Filter B' for the LSBlock SCENA 15 2CH LF and SCENA 15 2CH HF..



FILTER B

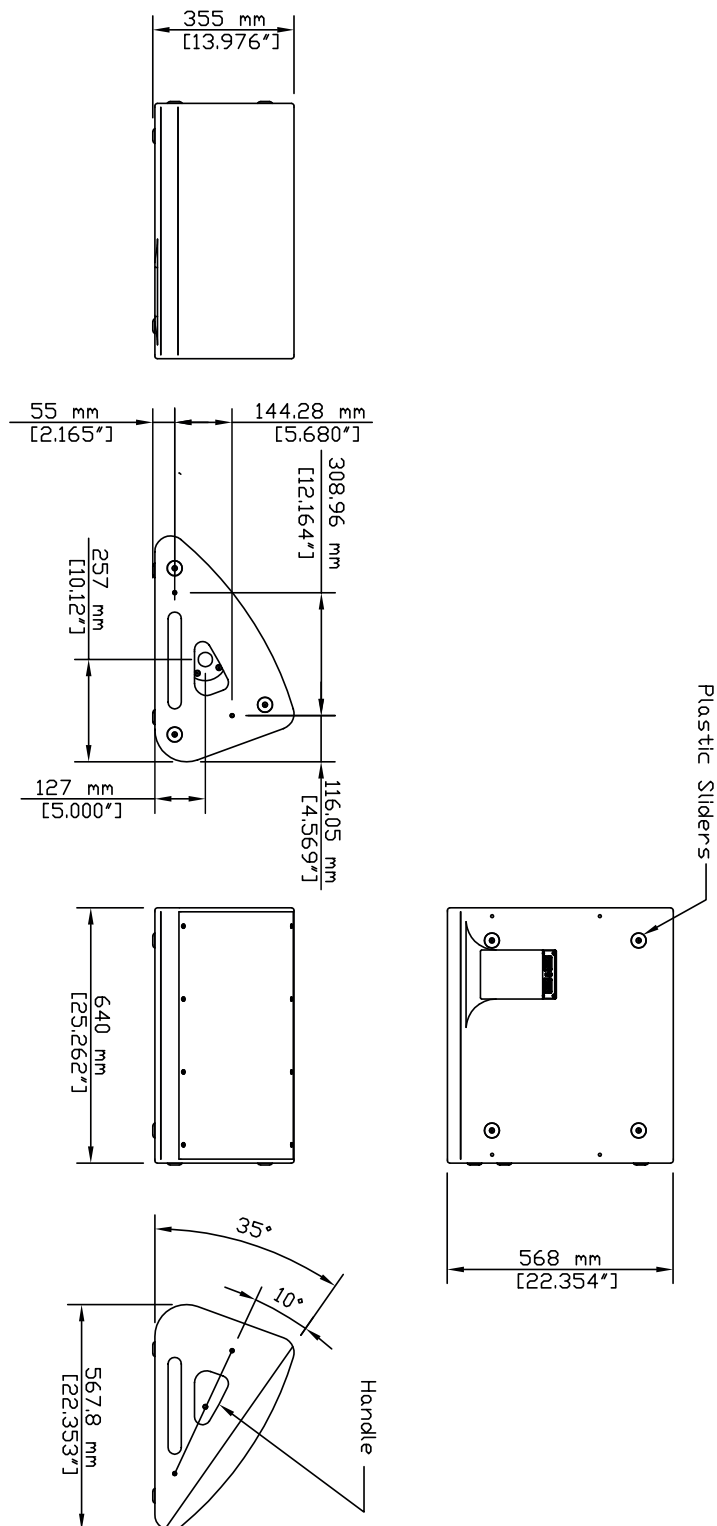
If necessary, adjust the correct level balance with the output gain of the subwoofer on the K&F systemamp or systemrack.

9. Measuring Diagrams



10. Dimensions

Weight: 23.5 kg



11. Technical Specifications

SCENA 15	
Concept	Passive 2-Way-bass reflex system
Operated with	K&F PLM+ Serie, K&F D-Serie, Lab.Gruppen IPD 2400, K&F SystemRack, K&F TOPAS
Frequency range @-10 dB	49 Hz – 20 kHz
Frequency range @±3 dB	65 Hz – 18 kHz
Coverage angle (nominal)	50° x 70° (hor. x vert., horizontal use)
Nominal power handling	400 watts
program	800 watts
peak	1.600 watts
Max. SPL (1 m)	134 dB in 1-channel mode (SPL Peak/1 m) 136 dB in 2-channel mode (SPL Peak/1 m)
Impedance nominal	8 Ohm
loudspeaker/channel	see matrix
Components	1.4" horn tweeter 15" coaxial chasis
Connection	2 x speakON® 4-pol NLT4MP (+1/-1), IN parallel zu OUT
Enclosure Design	
	Frame-reinforced 15mm Multiplex enclosure with 35° monitor angle and highly resistable Polyurea synthetic coating in black, integrated pole mount flange, ergonomic handles on the sides for horizontal and vertical transport, hidden connecting panel, 4 flying points M8 on the sides, 7 non-abrasive plastic sliding feet, ball proof steel grille with black acoustic foam behind the grille.
Dimensions (H x W x D)	640 x 355 x 568 mm
Weight	23.5 kg
Color	RAL 9005 (black)

1) Pink noise 40 – 5,000 Hz, 2 h; 2) as 1) but with 50% duty cycle

The K&F SystemRack is required for operation of the K&F SCENA 15.

12. EC Declaration of Conformity

applicable to all products designated hereafter and distributed by KLING & FREITAG GmbH including model variants unless these products have been altered afterwards.

Loudspeaker systems:

ACCESS B5	E 90 MK II	SEQUENZA 10 N/W
ACCESS B10	LINE 212 -6/-9	SEQUENZA 10 B
ACCESS T5/T9	NOMOS LS CIN	SEQUENZA 5 W
CA 106	NOMOS LS II	SEQUENZA 5 B
CA 205 *) **)	NOMOS LT	SONA 5 **)
CA 1001	NOMOS XLC	SONA 6
CA 1201 *)	NOMOS XLS	SONA 8
CA 1215 -6/-9	NOMOS XLT	SONA SUB **)
CA 1515 -6/-9	PASSIO **)	SONS SUB II
GRAVIS 8 W	PASSIO SUB 12	SW 112
GRAVIS 12 N/W*	PASSIO SUB 15	SW 115D *)
GRAVIS 12+ N/W/XW	SCENA 15	SW 115E
GRAVIS 12+ N/W/XW AS		SW 118E
GRAVIS 15 N/W/XW		SW 212E

*) These products are discontinued.

**) These systems are not covered by the Low Voltage Directive because of the rated voltage used.

We declare that the designated product(s) are in conformity with the protection requirements imposed by the following EU directives:

Electromagnetic Compatibility (EMC) Directive	(2004/108/EC)
Low Voltage Directive	(2006/95/EC)
Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances	(VDE 0042-12:2013-02)

The operating conditions specified in these user's manual must be met accordingly.

This declaration is issued under sole responsibility of the manufacturer:

KLING & FREITAG GmbH
Junkersstr. 14, D-30179 Hannover, Germany



Hannover, 30th March 2015

Jürgen Freitag
(Managing Director / CEO)

13. Accessories

- K&F eyebolts M8 x 20

14. Care and Maintenance



Warning

1. For the owner and user, it is mandatory to be aware of the safety relevance of speakers that can be flown.

Note that the mains cable is supplied with either a connector appropriate for the place of delivery (see item number) or with open terminals (on the mains side).

The SCENA 15 system can exhibit signs of wear over the years, for example, from mechanical strain, transport damage, corrosion, or improper handling. Remember that flying speakers always impose a high safety risk.

Generally, perform a visual inspection of your speaker every time you suspend it or take it down. SCENA 15In fixed installations, check the speaker for signs of wear at regular intervals.

When performing those checks, particularly look for deformations, cracks, dents, damage to threads, and corrosion. Also check slings and lifts (e.g. shackles, chains, and steel ropes) carefully for wear and deformation.

If as a result of these checks any uncertainty should arise with regard to safety or defects are found, don't use the speaker any longer. SCENA 15If defects are ascertained, then you must send in the product to KLING & FREITAG GmbH for inspection and repairs, if necessary.

Inspection regulations may vary depending on application and country of use. Observe all applicable regulations; when in doubt, contact the local authorities.

Many countries require regular inspection of mounting components and accessories. An additional annual inspection is typically required to be performed by a technical expert. Moreover, a legally certified or official authority must perform a detailed inspection every four years.

Therefore, be sure to maintain an inspection log. Enter the values determined for each speaker and accessory during the periodic checks into this log. This way, relevant data are always at hand in case of inspection. The log should also document maintenance measures and inspection intervals and contain parts lists.

2. Twice a year, turn on the switch in the speaker's connector area so that it stays functional.
3. The Polyurea synthetic coating used by KLING & FREITAG is impact proof and highly resistant. We recommend using protective coverings or transport cases to help avoid damaging the paint in case of continuous mobile use, etc.
4. To replace the filter foam, send the front grille incl. foam to KLING & FREITAG GMBH. Upon payment for expenses, the grille with the new covering will be returned.

15. Transportation and Storage

The SCENA 15 is protected against short-term moisture. despite, be sure to store, transport, and use the accessories in dry environments only. The SCENA 15 System is not designed for long-term use in a corrosive environment.

Make sure that the system is adequately ventilated during longer storage periods so any residual moisture can escape from the equipment.

Furthermore, you should ensure that the SCENA 15 System is protected from mechanical strain to prevent possible damage.

We recommend using suitable transport and storage cases and the optional soft cover that protects from the above-mentioned influences.

16. Disposal

Recycle the packaging material of the device.

16.1 Germany

Don't dispose of waste electrical equipment through household waste.

Don't deliver it to official recycling points either.

All KLING & FREITAG products are plain business-to-business (B2B) products. Therefore, KLING & FREITAG GmbH is exclusively responsible for disposing of all KLING & FREITAG waste equipment marked with a garbage-can icon. Call the below phone number when you have a KLING & FREITAG product (marked with the garbage-can icon) for disposal. We will offer you a straightforward and professional disposal at no cost.



KLING & FREITAG equipment with no such icon was sold before 24 March 2006; in that case, the owner is legally responsible for disposal. We will, however, gladly assist you by naming appropriate ways of disposal.

For further disposal information of KLING & FREITAG waste products, call +49 (0)511-96 99 7-0

Background information: The Electrical and Electronic Equipment and Appliances Act (ElektroG) is the German implementation of the European (EU) Waste Electrical and Electronic Equipment Directive (WEEE, 2002/96/EC).

Therefore, starting on 24 March 2006, KLING & FREITAG GmbH has marked all products subject to the WEEE that are distributed in Germany with an icon showing a crossed-out garbage can with a white bar below it. The icon indicates that the equipment was distributed on or after 24 March 2006 and must not be disposed of through household waste.

KLING & FREITAG GmbH is legally registered as a manufacturer with the German waste-equipment registration authority (EAR). The WEEE registration number is: DE64110372.

We substantiated towards the EAR that our products are for B2B trade only.

16.2 EU, Norway, Iceland, and Liechtenstein

Don't dispose of waste electrical equipment through household waste.

Starting on 13 August 2005, KLING & FREITAG GMBH has marked all products subject to the WEEE directive that are distributed in any member state of the European Union (except Germany), Norway, Iceland, or Liechtenstein with an icon showing a crossed-out garbage can with a white bar below it.



The icon indicates that the equipment was distributed on or after 13 August 2005 and must not be disposed of through household waste.

Unfortunately, the European WEEE directive was implemented in different national legislation in the EU member states, making it impossible to offer a consistent disposal solution throughout Europe.

The local distributor (sales partner) in the respective country is responsible for complying with the applicable legislation.

Contact your retailer or the local authorities for information on the regulations applicable in any EU member state (except Germany).

16.3 All Other Countries

Contact your retailer or the local authorities for information on the regulations applicable in any country not listed above.

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