# RCF HDM 45-A Active Two Way Speaker Owner's Manual



https://muzcentre.ru

**OWNER MANUAL**
**HDM 45-A**
**ACTIVE**
**TWO WAY**
**SPEAKER**

Contents



## SAFETY PRECAUTIONS

1. All the precautions, in particular the safety ones, must be read with special attention, as they provide important information.
2. Power supply from mains

   a. The mains voltage is sufficiently high to involve a risk of electrocution; install and connect this product before plugging it in.

   b. Before powering up, make sure that all the connections have been made correctly and the voltage of your mains corresponds to the voltage shown on the rating plate on the unit, if not, please contact your RCF dealer.

   c. The metallic parts of the unit are earthed through the power cable. An apparatus with CLASS I construction shall be connected to a mains socket outlet with a protective earthing connection.

   d. Protect the power cable from damage; make sure it is positioned in a way that it cannot be stepped on or crushed by objects.

   e. To prevent the risk of electric shock, never open this product: there are no parts inside that the user needs to access.
3. Make sure that no objects or liquids can get into this product, as this may cause a short circuit.

   This apparatus shall not be exposed to dripping or splashing. No objects filled with liquid, such as vases, shall be placed on this apparatus. No naked sources (such as lighted candles) should be placed on this apparatus.
4. Never attempt to carry out any operations, modifications or repairs that are not expressly described in this manual. Contact your authorized service centre or qualified personnel should any of the following occur:

   – the product does not function (or functions in an anomalous way).

   – The power cable has been damaged.

   – Objects or liquids have got in the unit.

   – The product has been subject to a heavy impact.
5. If this product is not used for a long period, disconnect the power cable.
6. If this product begins emitting any strange odours or smoke, switch it off immediately and disconnect the power cable.
7. Do not connect this product to any equipment or accessories not foreseen.

   For suspended installation, only use the dedicated anchoring points and do not try to hang this product by using elements that are unsuitable or not specific for this purpose. Also check the suitability of the support surface to which the product is anchored (wall, ceiling, structure, etc.), and the components used for attachment (screw anchors, screws, brackets not supplied by RCF etc.), which must guarantee the security of the system / installation over time, also considering, for example, the mechanical vibrations normally generated by transducers.

   To prevent the risk of falling equipment, do not stack multiple units of this product unless this possibility is specified in the user manual.
8. RCF S.p.A. strongly recommends this product is only installed by professional qualified installers (or specialised firms) who can ensure correct installation and certify it according to the regulations in force.

   The entire audio system must comply with the current standards and regulations regarding electrical systems.
9. Supports and trolleys.

   The equipment should be only used on trolleys or supports, where necessary, that are recommended by the manufacturer. The equipment / support / trolley assembly must be moved with extreme caution. Sudden stops, excessive pushing force and uneven floors may cause the assembly to overturn.

**IMPORTANT**

10. There are numerous mechanical and electrical factors to be considered when installing a professional audio

system (in addition to those which are strictly acoustic, such as sound pressure, angles of coverage, frequency response, etc.).

11. Hearing loss.

Exposure to high sound levels can cause permanent hearing loss. The acoustic pressure level that leads to hearing loss is different from person to person and depends on the duration of exposure. To prevent potentially dangerous exposure to high levels of acoustic pressure, anyone who is exposed to these levels should use adequate protection devices. When a transducer capable of producing high sound levels is being used, it is therefore necessary to wear ear plugs or protective earphones. See the manual technical specifications to know the maximum sound pressure level.

**IMPORTANT NOTES**

To prevent the occurrence of noise on line signal cables, use screened cables only and avoid putting them close to:

– Equipment that produces high-intensity electromagnetic fields.

– Power cables.

– Loudspeaker lines.

## OPERATING PRECAUTIONS

OPERATING PRECAUTIONS

– Place this product far from any heat sources and always ensure an adequate air circulation around it.
– Do not overload this product for a long time.
– Never force the control elements (keys, knobs, etc.).
– Do not use solvents, alcohol, benzene or other volatile substances for cleaning the external parts of this product.

**IMPORTANT NOTES**

Before connecting and using this product, please read this instruction manual carefully and keep it on hand for future reference. The manual is to be considered an integral part of this product and must accompany it when it changes ownership as a reference for correct installation and use as well as for the safety precautions. RCF S.p.A. will not assume any responsibility for the incorrect installation and / or use of this product.

⚠ **WARNING:** to prevent the risk of fire or electric shock, never expose this product to rain or humidity.

⚠ **CAUTION:** to prevent electric shock hazard, do not connect to mains power supply while grille is removed

## PRODUCT INFORMATIONS

**Tour sound**

The concept of this unique speakers derives from the touring industry, bringing in a compact cabinet all the experience of RCF professional sound.

The RCF Team always has the performer's needs at the forefront of the design in order to create new lines of speakers with renewed features, improved sound clarity and definition and even lighter weight systems.

D-LINE represents the latest evolution in the active loudspeaker technology with a revolutionary design and sound. Every detail has been carefully studied in order to offer usicians and professionals the perfect tool to amplify their performance, night after night.

High quality materials, precise manufacturing, careful assembly and extensive quality control procedures complete the groundbreaking design work of the RCF R&D team.

The vocals are natural, the sound is clear at longer distances, the spl power is stable at very high levels.

**LEGENDARY TRANSDUCERS**

The high power transducers equipping D-LINE have been representing for decades the ultimate performance, the highest power handling and the most advanced technology in the professional and touring industry.

All Compression drivers and Transducers are precision built taking advantage of RCF's superior moulding, assembly technologies and a wealth of professional knowledge and experience dedicated to achieving extremely high standards.
The high power woofer delivers extremely accurate punchy bass, the custom made compression driver offers a transparent midrange and extreme fidelity.

**DIGITAL PROCESSING FOR DIGITAL POWER**

RCF Class-D power amplifiers technology packs huge performance operating with high efficiency into a lightweight solution. D-LINE amplifiers deliver ultra fast attack, realistic transient response and impressive audio performance.
The integrated DSP manages crossover, equalisation, soft limiter, compressor and dynamic bass boost.
Each input board presents both XLR/jack balanced inputs, XLR output link, mic/line switch, volume and a switchable EQ Mode (Flat/Boost).
The amplifier features a solid mechanical aluminium structure which not only stabilize the amplifier during transportation but also assist in the heat dissipation.
All the D-LINE amplifiers presents SMPS power supply section in order to produce maximum output and minimum transportation weight.

**RENTAL PROOF**

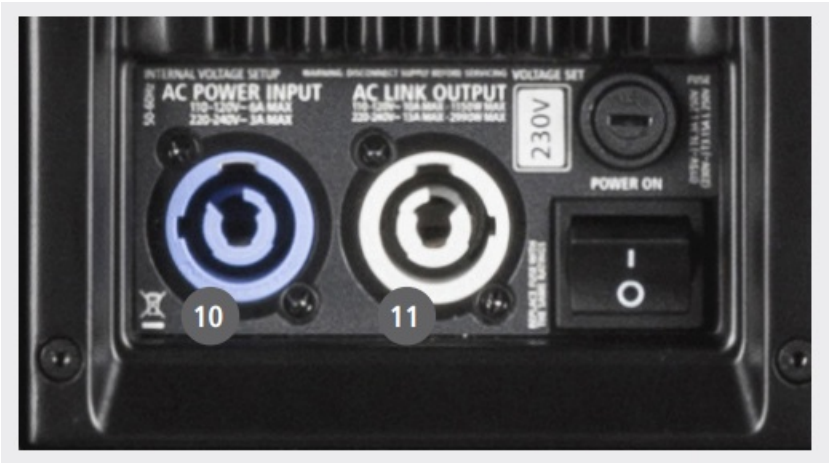
D-LINE cabinets are moulded on a special polypropylene composite material designed to dampen down vibrations even at maximum volume settings.
From moulding to the final texture, D-LINE offers the maximum reliability and strength for the intensive use on the road.
The reflex porting has been resized to offer a better efficiency.
HDM 45-A is equipped with a top handle and two side handles with rubber handgrip for greater portability. At the bottom a rugged steel pole mount has been installed in both models.
The cabinet shape will allow to use the speaker in the standard configuration as well as in stage monitor model.
Four M10 threaded inserts are provided for optional mounting hardware in Installed Sound Applications.

## REAR PANEL


1. FEMALE XLR INPUTS (BAL/UNBAL). The system accept XLR input connectors.
2. MALE XLR SIGNAL OUTPUT. The output XLR connector provides a loop through for speakers daisy chaining.

The balanced connector is connected in parallel and can be used to send the audio signal to other amplified speakers, recorders or supplementary amplifiers.

3. SYSTEM SET UP ENCODER. Push the encoder to select a function (gain reduction, delay, preset). Rotate the encoder to select a value or a preset.
4. GAIN REDUCTION LED. Pushing the encoder once the gain reduction indicator lights green.
   Then rotate the encoder to reduce the gain to the right level.
   POWER LED. This green led is ON when the speaker is connected to the main power supply.
5. DELAY LED. Pushing the encoder twice the delay indicator lights green. Then rotate the encoder to delay the speaker. The delay is expressed in meters.
   SIGNAL LED. The signal indicator lights green if there is audio signal present on the main
6. PRESET LED. Pushing the encoder three times the preset indicator lights green. Then rotate the encoder to load the right preset to the speaker.
   LIMITER LED. The amplifier has a built in limiter circuit to prevent clipping of the amplifiers or overdriving the transducers. When the soft clipping circuit is active the LED blinks RED. It is okay if the limit LED blinks occasionally. If the LED lights continuously, turn down the signal level.
7. SYSTEM SET UP DISPLAY. Display the system setting values. In case of RDNet active connection a rotating segment will light up.
8. RDNET LOCAL SETUP/BYPASS. When released the local setup is loaded and RDNet can only monitor the speaker. When switched the RDNet setup is loaded and bypass any speaker local preset.
9. RDNET IN/OUT PLUG SECTION. The RDNET IN/OUT PLUG SECTION features etherCON connectors for the RCF RDNet protocol. This allows the user to completely control the speaker using the RDNet software.




10. AC INPUT. Powercon locking 3-pole AC mains.
11. AC OUTPUT. Powercon locking 3-pole AC mains output.
12. POWER MAIN SWITCH. The power switch turns the AC power ON and OFF.

⚠ **WARNING:** the Powercon connector is used to disconnect the system from the power supply network. It shall be easily accessible after the instillation and during the use of the system.

## THE REAR ENCODER CONTROL AND SPEAKER SETTING

Pushing the rear encoder it is possible to select the following three functions:
– input gain reduction
– speaker delay setting
– selection of a speaker preset

### INPUT GAIN REDUCTION

Pushing once the rear encoder the gain reduction LED will light up. Now rotating the encoder counter clockwise it will be possible to reduce the input gain. The gain reduction will be in steps of 0,1 dB for the first 10 dB and than in 1 dB steps.
The maximum reduction is 99 dB.

**SPEAKER DELAY SETTING**

Pushing a second time the rear encoder the delay LED will light up. Now rotating the encoder clockwise it will be possible to delay the signal output of the speaker.
The delay is expressed in meter. The delay will be in steps of 0,1 m for the first 10 m and than in 1 m steps. The maximum delay will be 20 meter.

**SELECTION OF A SPEAKER PRESET**

Pushing a third time the rear encoder the preset LED will light up. Now rotating the encoder clockwise it will be possible to select a preset.
There are eight presets in three groups:
– CLOSE (C). When the listening distance is less than 4 meter
– LINEAR (L). When the listening distance is from 4 to 11 meter
– FAR (F). When the listening distance is more than 11 meter.

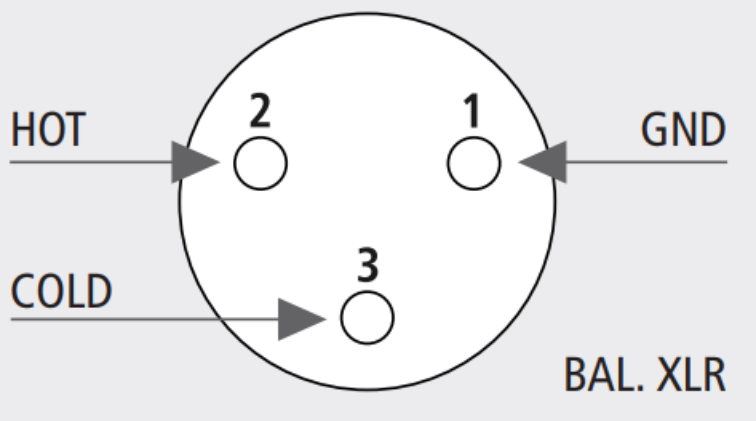
| PRESET | | LOW FREQ. | HIGH FREQ. |
|---|---|---|---|
| L1 | Linear | LINEAR | LINEAR |
| L2 | Linear | HIGH PASS | LINEAR |
| L3 | Linear | 3 dB BOOST | LINEAR |
| L4 | Linear | -3 dB SHELF | LINEAR |
| C1 | Close listening | LINEAR | -3 dB SHELF |
| C2 | Close listening | HIGH PASS | -3 dB SHELF |
| F1 | Far listening | LINEAR | 3 dB SHELF |
| F2 | Far listening | HIGH PASS | 3 dB SHELF |

**L1.** LINEAR. Is the totally linear preset. The speaker curve response is perfectly linear. It is ideal when listening outdoor or in low reverberation rooms, at medium distance and at a medium or high sound pressure level.
**L2.** LINEAR HIGH PASS. This preset is the same as L1 with a 24 dB/oct. high pass filter at 100 Hz. To be used when the speaker is a part of a bigger system, when is a satellite of a subwoofer system or when the application is speech reproduction.
**L3.** LINEAR LOW LEVEL – PLAYBACK. This preset is linear with a gentle +3 dB boost at low frequency. To be used when playing at low level or for playback music.
**L4.** LINEAR INDOOR. This preset is linear with a gentle -3 dB shelf at low frequency. It is ideal for a better sound balance in reverberant rooms and for indoor speech reproduction. C1. CLOSE. Close listening preset. To be used when the average listener is closer than 3 meter. The preset shows a gentle -3 dB shelf in high frequencies. The sound balance is natural and never aggressive.
**C2.** CLOSE HIGH PASS. This preset is the same as C1 with a 24 dB/oct. high pass filter at 100 Hz.
**F1.** FAR. Far listening preset. To be used when the average listener distance is more than 10 meter. The preset shows a +3 dB shelf in high frequencies to compensate the air absorption.
The clarity and intelligibility in distance are improved.
**F2.** FAR HIGH PASS. This is the same as F1 with a 24 dB/oct. high pass filter at 100 Hz.
After the parameter settings the 2 digits display will flash one time. This represent saving all the preset values in the speaker memory.
Once saved, all the speaker settings are permanent. It is possible to turn off and turn on, the speaker will remember the last settings.

To reset the speaker to the original settings :
– turn off the speaker
– keep the encoder pressed
– turn on the speaker
– the status yellow led will be blinking slowly, keep the encoder pressed
– the status yellow led will be blinking fast, now release the encoder

– the reset procedure is finished

**SAVING A SPEAKER PRESET**
Using the RDNet IN/OUT connection it is possible to load in the speaker memory a dedicated user equalisation. The speaker reset procedure will cancel even this equalisation.
**SPEAKER RESET**
The XLR connectors use the following AES standard:
PIN 1 = GROUND (SHIELD)
PIN 2 = HOT (+)
PIN 3 = COLD (-)
**CONNECTIONS**




**BEFORE TURNING ON THE SPEAKER**
At this point you can connect the power supply cable and the signal cable, but before turning on the speaker make sure that the volume control is at the minimum level (even on the mixer output). It is important that the mixer is already ON before turning on the speaker. This will avoid damage to the speakers and noisy “bumps” due to turning on parts on the audio chain. It is a good practice to always turn on speakers at last and turn them off immediately after the show.
Now you can turn ON the speaker and adjust the volume control to a proper level.

## INSTALLATION

⚠ **WARNING:** daisy chaining speakers always make sure that the maximum current requirement does not exceed the maximum admitted POWERCON current. In case of doubt call the closest RCF SERVICE CENTRE.
**WARNING:** The powercon connector is used to disconnect the system from the power supply network. It shall be easily accessible after the installation and during the use of the system.

## SERVICE NOTE

The fuse settings/replacement shall be as follow:
**FUSE VALUE T 6.30 A H 250 V**
**VOLTAGE SETUP**
(RESERVED TO THE RCF SERVICE CENTRE)

## SPECIFICATIONS

| | |
|---|---|
| | HDM 45-A |
| ACOUSTICAL | |
| Frequency response | 45 – 20 kHz |
| Max SPL | 133 dB |
| Horizontal Coverage | 90° |
| Vertical Coverage | 60° |
| Crossover point | 650 Hz |
| TRANSDUCERS | |
| Low frequency | 15” neo, 3.5” v.c. |
| High frequency | 1.5” neo, 4” v.c. |
| AMPLIFIER | |
| Total power | 2200 Watt PEAK |
| Low section | 1600 Watt |
| High section | 600 Watt |
| Inrush Current | 10,1 A (According to EN 55103-1:2009) |
| CONNECTIONS | |
| Signal input/output | XLR, RDNet Ethercon |
| Power input | Powercon IN/OUT |
| Controls | 8 selectable presets |
| PHISICAL SPECIFICATIONS | |
| Dimensions (w, h, d) | 442, 714, 397 mm |
| Weight | 22 Kg |
| Cabinet Material | PP Composite |
| Colour | Black |


www.rcf.it

RCF S.p.A.
Via Raffaello Sanzio, 13
42124 Reggio Emilia – Italy
Tel +39 0522 274 411
Fax +39 0522 232 428
e-mail: info@rcf.it

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**Documents / Resources**

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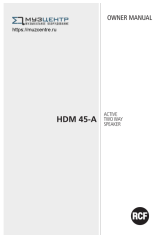
|  | RCF HDM 45-A Active Two Way Speaker [pdf] Owner's Manual<br>HDM 45-A, HDM 45-A Active Two Way Speaker, Active Two Way Speaker, Two Way Speaker, Speaker |

## References

- Audio Experience
- Профессиональная акустика — Активные акустические системы.
- User Manual