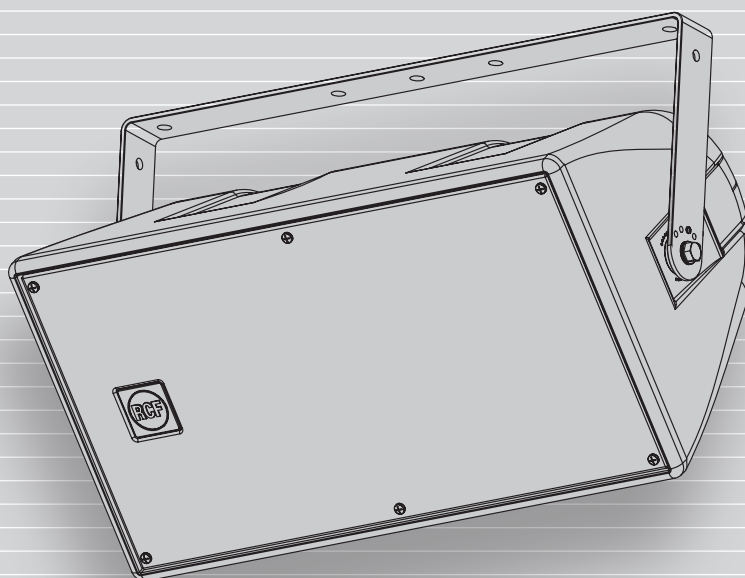


# P5228

## P SERIES LOUDSPEAKER DIFFUSORE ACUSTICO SERIE P



User manual  
Manuale d'uso

the rules of sound

**RCF**

Before connecting and using this product, please read this instruction manual carefully and keep it on hand for future reference. This 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.

## IMPORTANT NOTES



**WARNING:** To prevent the risk of fire or electric shock, never expose this loudspeaker to rain or humidity and dust, but the case a special gasket is added to both high frequency drivers in order to get the IP 55 protection grade.

## SAFETY PRECAUTIONS

1. All the precautions, in particular the safety ones, must be read with special attention, as they provide important information.
2. Loudspeaker lines (amplifier outputs) can have a sufficiently high voltage to involve a risk of electrocution: never install or connect this loudspeaker when amplifiers are switched on.
3. Make sure all connections have been made correctly and the loudspeaker input voltage (in a constant voltage system) or its impedance is suitable for the amplifier output.
4. Protect loudspeaker lines from damage; make sure they are positioned in a way that they cannot be stepped on or crushed by objects.
5. Make sure that no objects or liquids can get into this product, as this may cause a short circuit.
6. 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 loudspeaker does not function (or works in an anomalous way).
  - The cable has been damaged.
  - Objects or liquids are inside the loudspeaker.
  - The loudspeaker has been damaged due to heavy impacts or fire.
7. Should the loudspeaker emit any strange odours or smoke, remove it from the line after having immediately switched the amplifier off.
8. 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 loudspeaker 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.
9. **RCF S.p.A.** strongly recommends this product is only installed by professional qualified installers (or specialised firms) who can ensure a 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.

- 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 necessary to wear ear plugs or protective earphones.  
See the technical specifications in the instruction manual for the maximum sound pressure the loudspeaker is capable of producing.
- 12.** To ensure a correct sound reproduction, loudspeaker phase is to be respected (loudspeakers are connected respecting the amplifier polarity). This is important when loudspeakers are installed adjacent one another, for instance, in the same room.
- 13.** To prevent inductive effects from causing hum, noise and a bad system working, loudspeaker lines should not be laid together with other electric cables (mains), microphone or line level signal cables connected to amplifier inputs.
- 14.** The loudspeaker cable shall have wires (twisted, if possible, to reduce inductive effects due to surrounding electro-magnetic fields) with a suitable section and a sufficient electrical insulation. Refer to local regulations since there may be additional requirements about cable characteristics.
- 15.** Do NOT connect the loudspeaker low impedance (8  $\Omega$ ) input to 100 V constant voltage lines.
- 16.** Install this loudspeaker far from any heat source.
- 17.** Do not overload the loudspeaker with too much power.
- 18.** Do not use solvents, alcohol, benzene or other volatile substances for cleaning the external parts of this product.

**RCF S.p.A. thanks you for purchasing this product, which has been designed to guarantee reliability and high performance.**

## DESCRIPTION

P series loudspeakers belong to the 'RCF ACUSTICA' line for fixed installation. The model P 5228 can be installed outdoor, with IP 55 protection, if adapted by adding a special gasket to both high frequency drivers (as described in the next manual section 'Gasket insertion'). This is a two-way loudspeaker providing wide dispersion, high power input rate and efficiency. Its cabinet is made of UV stabilized plastic resin and its shape allows both single installation and especially arrays / clusters (with optional accessories). The front grille is in custom perforated aluminium with open-cell fibre water repellent woven fabric backing. Each cabinet is equipped with four M 8 brass inserts and a stainless steel U-Bracket. Connections to an amplifier are made through a watertight connector.

The high frequency section has two constant directivity horns, each with a 1" RCF Precision Neodymium compression driver (1.75" diaphragm). The low frequency section includes two 8" woofers (2.5" voice coil).

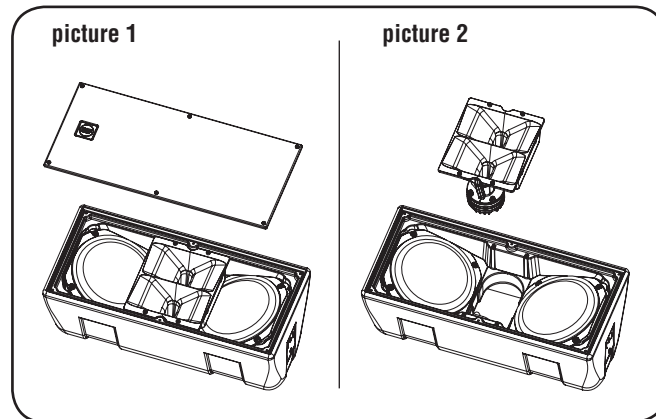
## GASKET INSERTION

Note: this modification shall be made professional installers or RCF service only.

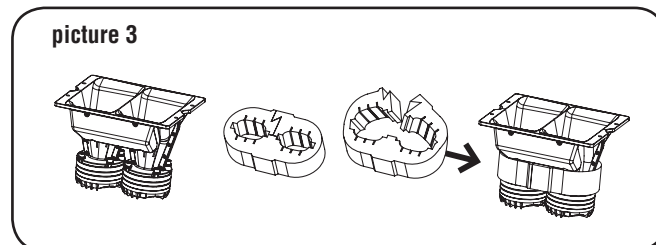
If P 4228 is installed outdoor with no direct protection against water, a IP 55 protection grade can be obtained by adding a gasket to both high frequency drivers.

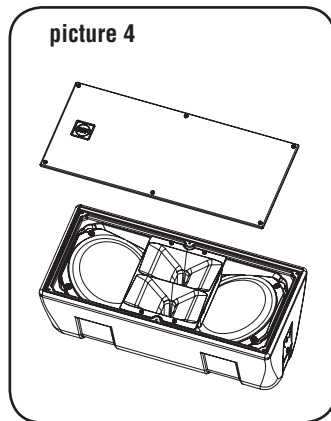
First, remove the protection front grille (picture 1) by loosening the 6 screws.

Remove the horn loaded drivers (picture 2) and disconnect the wires (paying attention to their polarity).



Add the gasket (included) to the drivers as shown in the picture 3.





Reconnect the wires, remount the horn loaded drivers and the protection grille (picture 4).

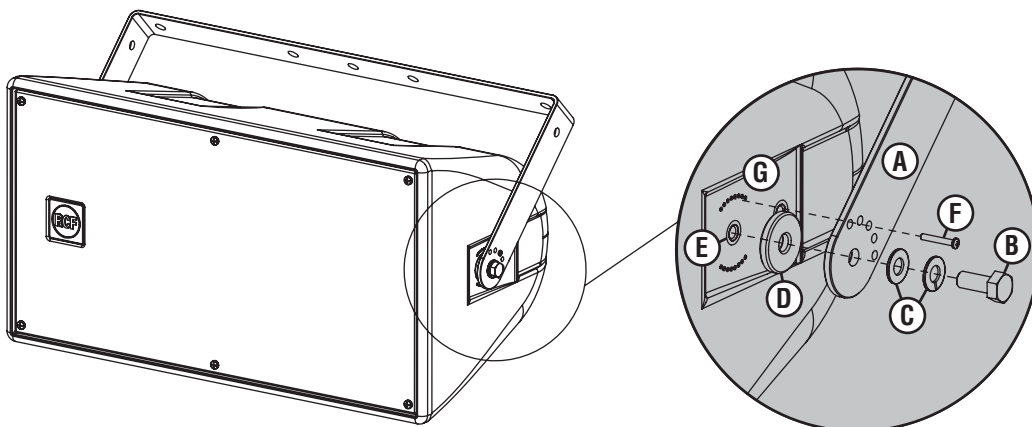
### SINGLE LOUDSPEAKER INSTALLATION



Loudspeakers are to be installed by qualified personnel, respecting all safety standards. Loudspeakers are to be installed securely.

Make sure the support structure (walls / ceilings) has the necessary mechanical characteristics for the loudspeaker weight, without the risk of a fall that could damage things or cause an injury.

Use attachments elements suitable for walls / ceilings (e.g. screw anchors for bricks, screw anchors for concrete, etc.).



Put together the loudspeaker and the U bracket (A) by fastening (on both sides) a M8 bolt (B) into the loudspeaker hole (E) through the 2 washers (C) and the spacer (D).

Before tightening the 2 bolts (B), adjust the loudspeaker aiming and then (when you are sure of the proper angle) fix that position with 2 thread-forming screws (F) into 2 little holes (G) of the loudspeaker (passing through the U bracket); then, tighten the 2 bolts (B) firmly.

Note: do NOT tilt the loudspeaker upwards!

## ARRAY / CLUSTER INSTALLATION

Please refer to the optional accessory user's manual.

### CONNECTION

**WARNING:** Loudspeaker connections should be only made by qualified and experienced personnel having the technical know-how or sufficient specific instructions (to ensure that connections are made correctly) in order to prevent any electrical danger. To prevent any risk of electric shock, do not connect loudspeakers when the amplifier is switched on.



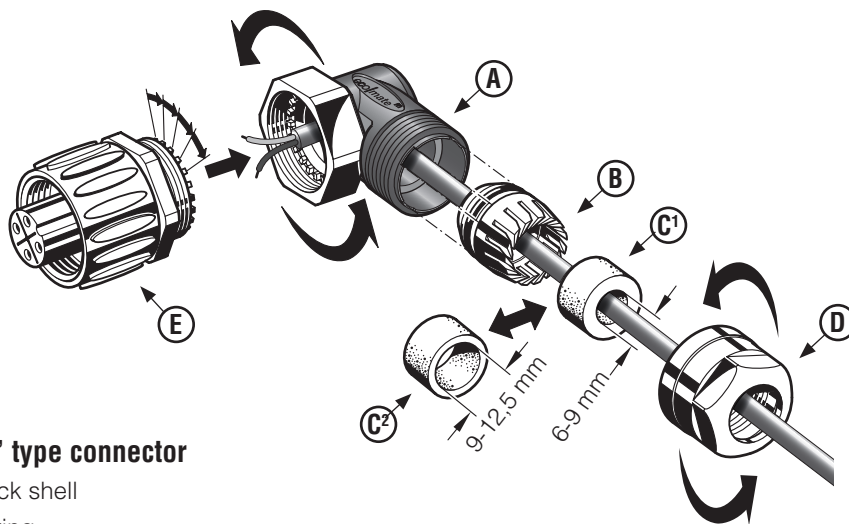
Before turning the system on, check all connections and make sure there are no accidental short circuits.

The entire sound system shall be designed and installed in compliance with the current local laws and regulations regarding electrical systems.

To ensure a correct sound reproduction, loudspeaker phase is to be respected (loudspeakers are connected respecting the amplifier polarity).

To prevent inductive effects from causing hum, noise and a bad system working, loudspeaker lines should not be laid together with other electric cables (mains), microphone or line level signal cables connected to amplifier inputs.

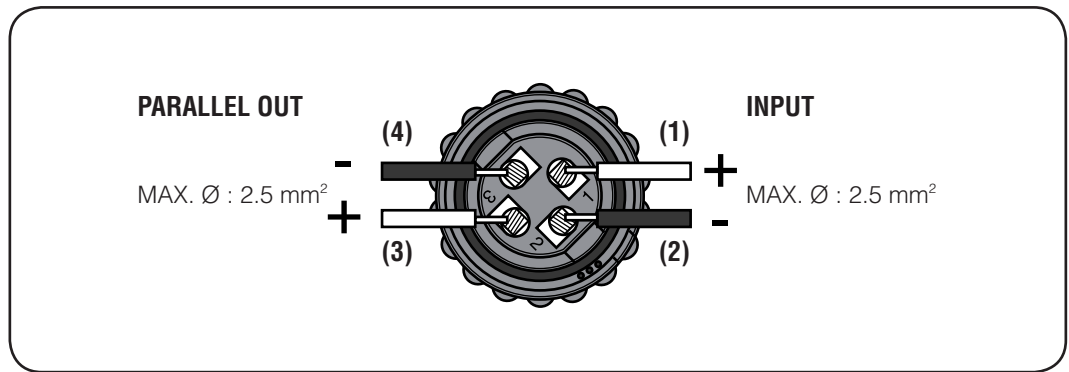
The loudspeaker cable shall have wires (twisted, if possible, to reduce inductive effects due to surrounding electro-magnetic fields) with a suitable section (min. 1.5 – max. 2.5 mm<sup>2</sup>) and a sufficient electrical insulation.



#### 'Amphenol ®' type connector

- (A): angled back shell
- (B): clamping ring
- (C<sup>1</sup>): mounted gasket  
(for the clamping ring)
- (C<sup>2</sup>): alternative gasket
- (D): nut
- (E): female contact insert with locking ring

1. The (C<sup>1</sup>) gasket is already inserted into the clamping ring (B): if necessary, replace it by the alternative one (C<sup>2</sup>) having a wider hole.
2. Insert the cable (coming from the amplifier) through the connector parts (in order) (D), (C<sup>1</sup>) – (B) (or (C<sup>2</sup>) – (B)), (A).
3. Put the clamping ring (B) into the angled back shell (A) as shown above.
4. Tighten the nut (D) to fix the clamping ring to the angled back shell (A).



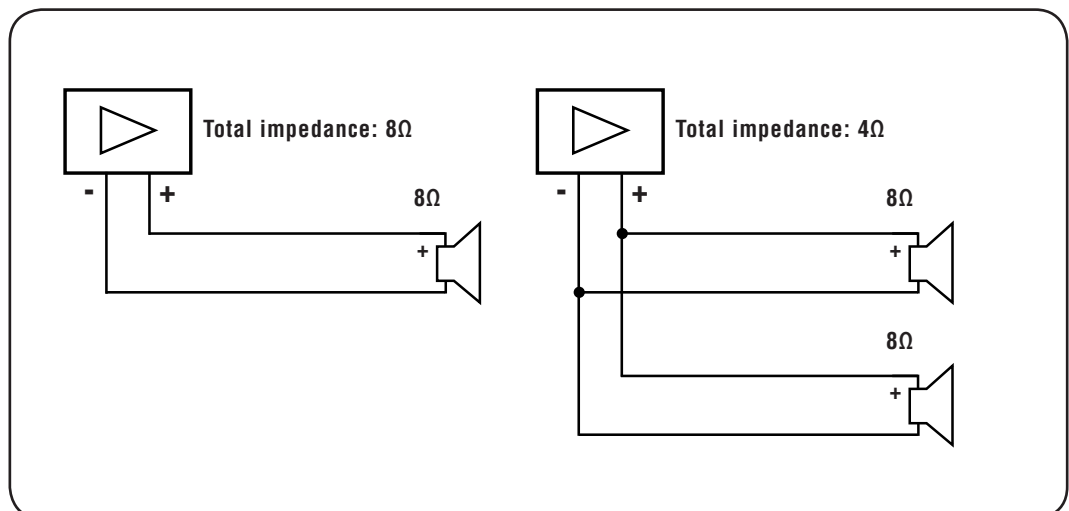
Locking at the rear side of the female contact insert (E), connect the wire coming from the amplifier output + to the contact 1 and the other wire (amplifier output - ) to the contact 2, then fix the contact insert (E) to the back shell (A).

The contacts 3 and 4 can be used as a parallel output (to link another loudspeaker) having the signal present at contacts 1 and 2 respectively.

**Note: The use of 2 connecting cables (input / output) in a single connector is advisable for loudspeaker indoor use only (or with protection against water).**

### NOTES ABOUT LOW IMPEDANCE CONNECTIONS

- The total loudspeaker impedance must not be lower than the amplifier output impedance.  
**Note:** a loudspeaker total impedance equal to the amplifier output one permits to get the maximum deliverable power (but an higher loudspeaker impedance entails less power).
- The total loudspeaker power shall be adequate for the maximum deliverable power of the amplifier.
- The loudspeaker line shall be as short as possible.



## SPECIFICATIONS

### SYSTEM

### P 5228

<b>Impedance</b> _____	8 $\Omega$
<b>Max. input power (RMS)</b> _____	500 W
<b>Max. input power (peak)</b> _____	2000 W
<b>Recommended amplifier power</b> _____	1000 W
<b>Sensitivity (1 W, 1 m)</b> _____	98 dB
<b>Max. sound pressure level (1 m)</b> _____	131 dB (P: 1600 W)
<b>Frequency response (- 10 dB)</b> _____	80 Hz ÷ 20 kHz
<b>Frequency response (- 3 dB)</b> _____	100 Hz ÷ 20 kHz
<b>Coverage angles (- 6 dB)</b> _____	90° (h), 20° (v)
<b>Directivity factor (Q)</b> _____	11
<b>HF protection</b> _____	dynamic
<b>Crossover frequency</b> _____	1.3 kHz
<b>Dimensions (w, h, d)</b> _____	268 x 566 x 250 mm
<b>Weight</b> _____	14 kg

### TRANSDUCERS

#### LF DRIVER

<b>Type</b> _____	2 x 8" woofer (2.5" coil)
<b>Impedance</b> _____	16 $\Omega$
<b>Power (AES / peak)</b> _____	300 W / 1200 W
<b>Sensitivity (1 W, 1 m)</b> _____	95 dB

#### HF DRIVER

<b>Type</b> _____	2 x 1" horn loaded (1.75" diaphragm)
<b>Impedance</b> _____	16 $\Omega$
<b>Power (AES / peak)</b> _____	50 W / 200 W
<b>Sensitivity (1 W, 1 m)</b> _____	109 dB

**ENCLOSURE:** \_\_\_\_\_ trapezoidal (angles: 2° hor., 15°V vert.), 8 mm Polyethylene rotomoulded, colour: grey

**RIGGING INSERTS:** \_\_\_\_\_ 4 x M8

**ACCESSORIES INCLUDED:** \_\_\_\_\_ a U-bracket, 2 M8 bolts, 2 spacers, 4 washers, 2 thread-forming screws, 1 gasket for the driver

**GRILLE:** \_\_\_\_\_ custom perforated aluminium with open-cell fibre water repellent woven fabric backing.

**INPUT CONNECTOR:** \_\_\_\_\_ 4-pole 'Amphenol ®'



Salvo eventuali errori ed omissioni.  
RCF S.p.A. si riserva il diritto di apportare modifiche senza preavviso.

Except possible errors and omissions.  
RCF S.p.A. reserves the right to make modifications without prior notice.

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**the rules of sound**

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