

**L2406
L2406W**

**WALL-MOUNTED
CONTROLLED DIRECTIVITY
COLUMN LOUDSPEAKER**

**COLONNA SONORA
A DIRETTIVITÀ CONTROLLATA
PER INSTALLAZIONE
A PARETE**



**User manual
Manuale d'uso**

the rules of sound

RCF

IMPORTANT NOTES

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.

WARNING: To prevent the risk of fire or electric shock, never expose this loudspeaker to rain or humidity and dust.



SAFETY AND OPERATING 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 (i.e. 100 V) to involve a risk of electrocution: never install or connect this loudspeaker when the line is alive.
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 have got into the unit.
 - 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 with a suitable section (twisted, if possible, to reduce inductive effects due to surrounding electro-magnetic fields) and a sufficient electrical insulation. Refer to local regulations since there may be additional requirements about cable characteristics.
- 15.** Install this loudspeaker far from any heat source.
- 16.** When connect to its low impedance input, do not overload the loudspeaker with too much power.
- 17.** 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

L 2406 (/L 2406W) is a compact 3 way column loudspeaker with vertical controlled directivity providing natural hi-fidelity sound of both speech (to improve the intelligibility) and music.

It is the optimum choice for sound system having fixed loudspeakers, where the critical acoustical environment or architectural constraints require vertical acoustic dispersion control.

L 2406 is equipped with six 5" woofers and four 1" dome tweeters.

Its design with central tweeters permits a coherent sound dispersion, minimizing lobes and keeping a compact size for a professional loudspeaker.

The crossover has a protection circuit for the 4 dome tweeters and is designed to avoid secondary lobe creation.

The 2 central woofers are controlled and placed differently from the other 4, in order to get a column true cardioid polar pattern.

The wide horizontal coverage angle and the controlled vertical dispersion allow the correct sound reproduction in a wide space, in order to limit feedbacks and improve the sound directivity (important in halls having a long reverberation time).

The column loudspeaker has a VOICE / MUSIC selector, useful to optimise the frequency response according to its main use.

Mounting accessories are included. These have been studied to keep the column as close as possible to the wall and simplify its installation; tilt adjustment is easy.

L 2406 can be connected to either a 100 V (/ 70 V) constant voltage line (through a 60 W internal transformer) or an amplifier low impedance output (max. power. 200 W RMS).

The power setting is made through the rear panel selector.

The loudspeaker power is:

- a.** 60-30-15-10 W (selectable), if connected to a 100 V constant voltage line (note: with a 70 V line, the power is halved: 30-15-7.5-5 W).
- b.** max. 200 W on 8 Ω load.

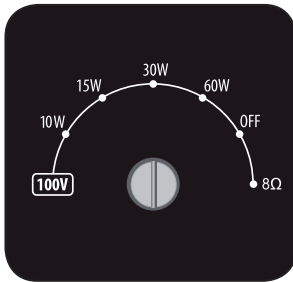
The column is available in 2 different colours:

- black **L 2406**
- white **L 2406W**

SETTING (REAR PANEL)

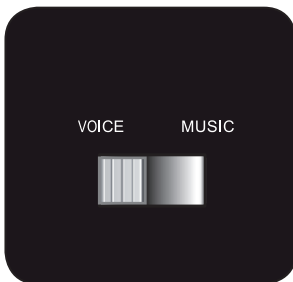
POWER SELECTOR

Note:



- Use a screwdriver to select.
 - OFF position: the loudspeaker is disabled (muted).
- a) 100 V (/ 70 V) constant voltage line**
 Select the desired power (referred to a 100 V line) among 10 – 15 – 30 – 60 W.
 When using a 70 V line (instead of 100 V), the power is halved: 5 – 7.5 – 15 – 30 W.
- b) Low impedance input**
 Select the 8 Ω position.

WARNING: Do NOT set the 8 Ω position when the loudspeaker is connected to a 100 / 70 V constant voltage line.



'VOICE / MUSIC' REAR PANEL SWITCH

The 'VOICE / MUSIC' switch allows to optimise the frequency response according to the main use.

Select 'voice' when announcements (with or without background music) and the speech intelligibility is more important than music.

Select 'music' when the loudspeaker is mainly (/ only) used for music.

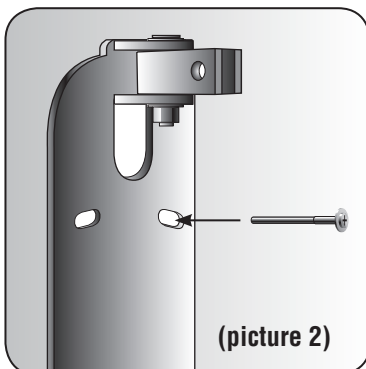
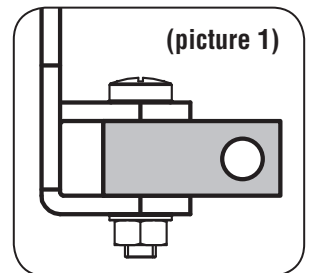
INSTALLATION

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

Loudspeakers are to be installed securely.

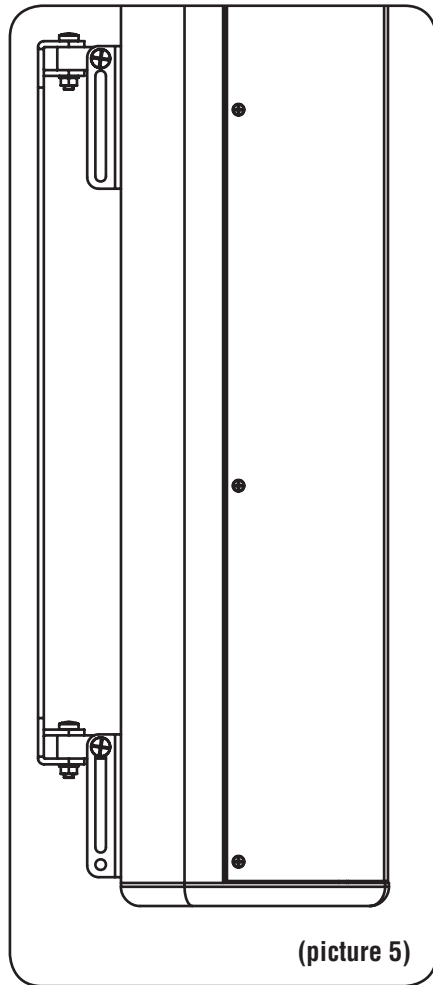
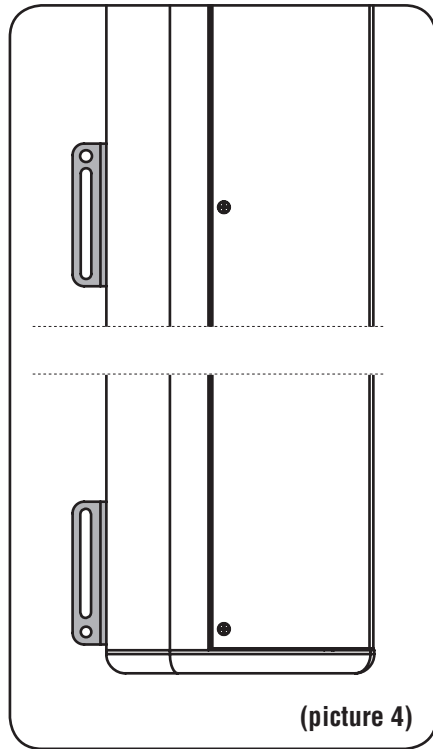
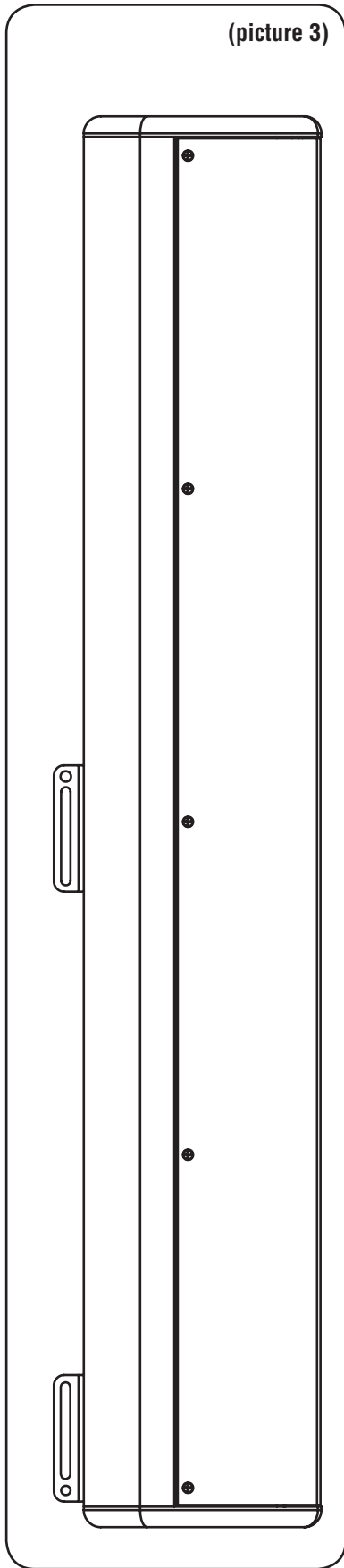
Make sure the supporting structure (i.e. plasterboards / wood panels) has the necessary mechanical characteristics for the loudspeaker weight, without the risk of a fall that could damage things or cause an injury.

- a.** Mount the 2 coupling shorter parts to the ends of the wall-mounted support (picture 1), but without tightening too much (as it may be later necessary to adjust the loudspeaker horizontal aiming angle).



- b.** Fix (vertically) the support to the wall with 4 (M5) dowels.
Picture 2: screw through a wall-mounted support hole.

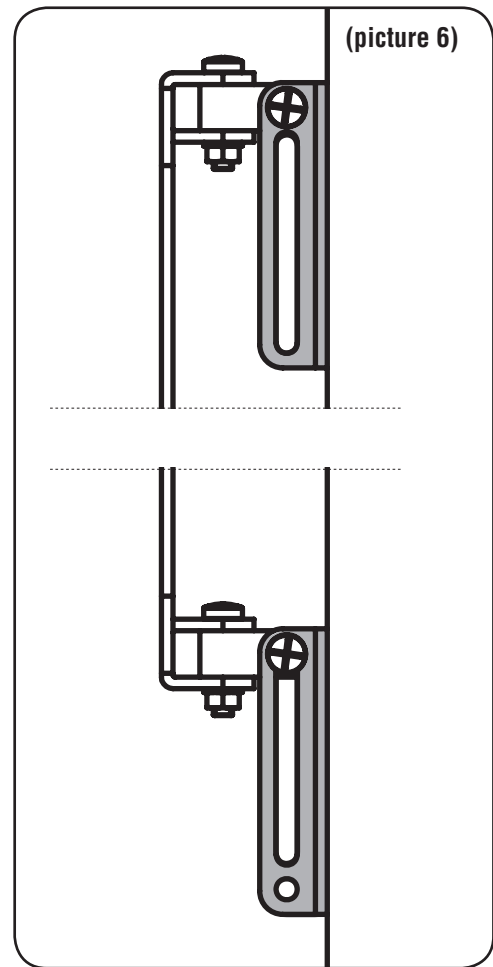
Note: the connecting cable (if inside a flush-mounted pipe) can pass through the wall-mounted support central hole.

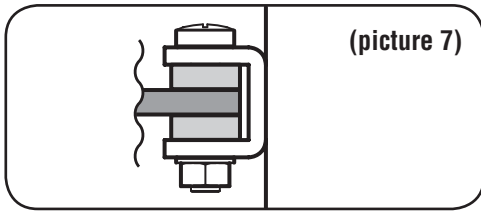


- C. Screw the 2 coupling longer parts to the rear side of the column; the upper one shall have its circular hole at the top, the lower one shall have its circular hole at the bottom (**see pictures 3 and 4**).

d1. INSTALLATION WITHOUT VERTICAL TILT

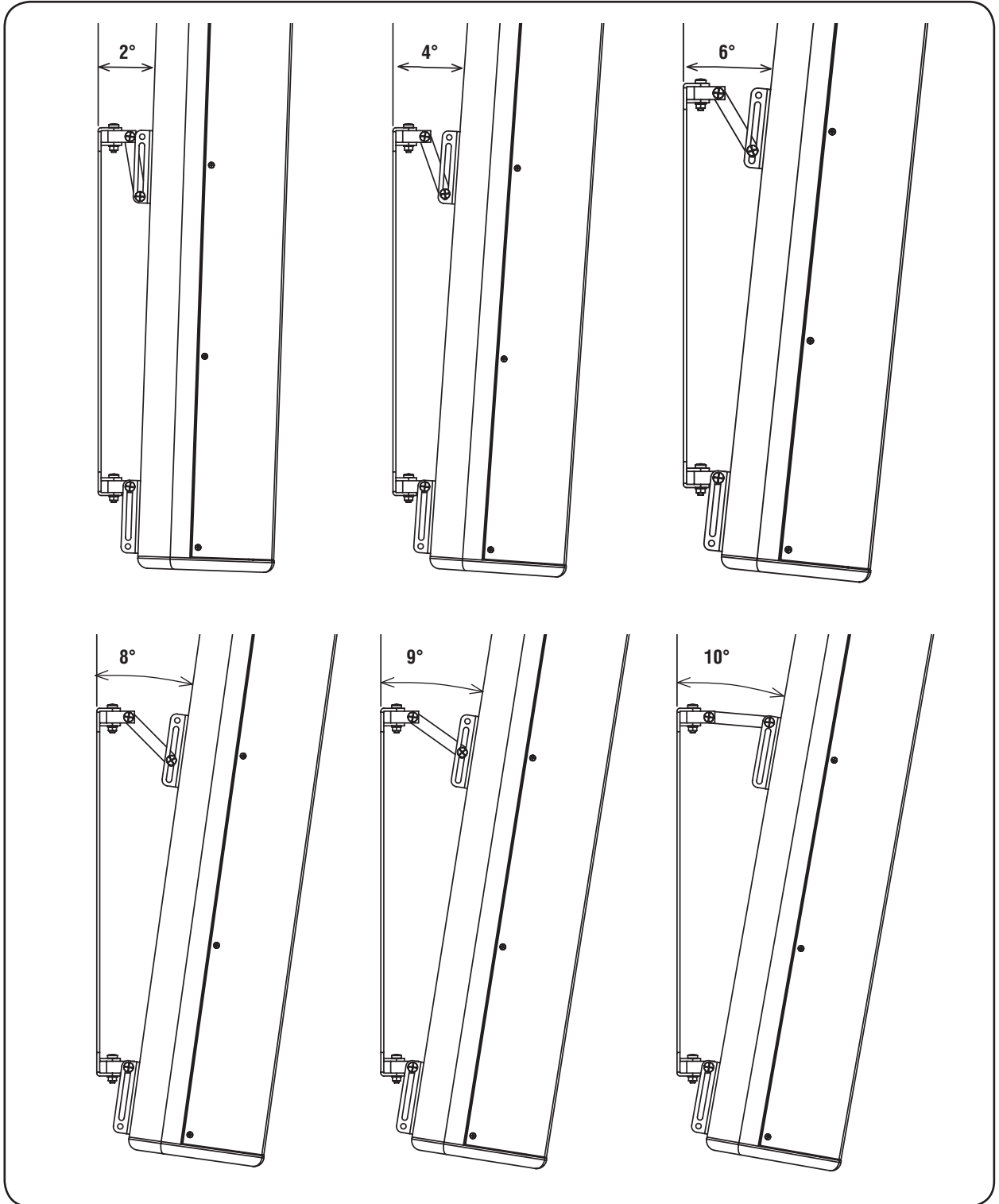
Mount the column directly on the wall-mounted support as shown in the **pictures 5 and 6**; first fix the upper coupling (then the lower one).





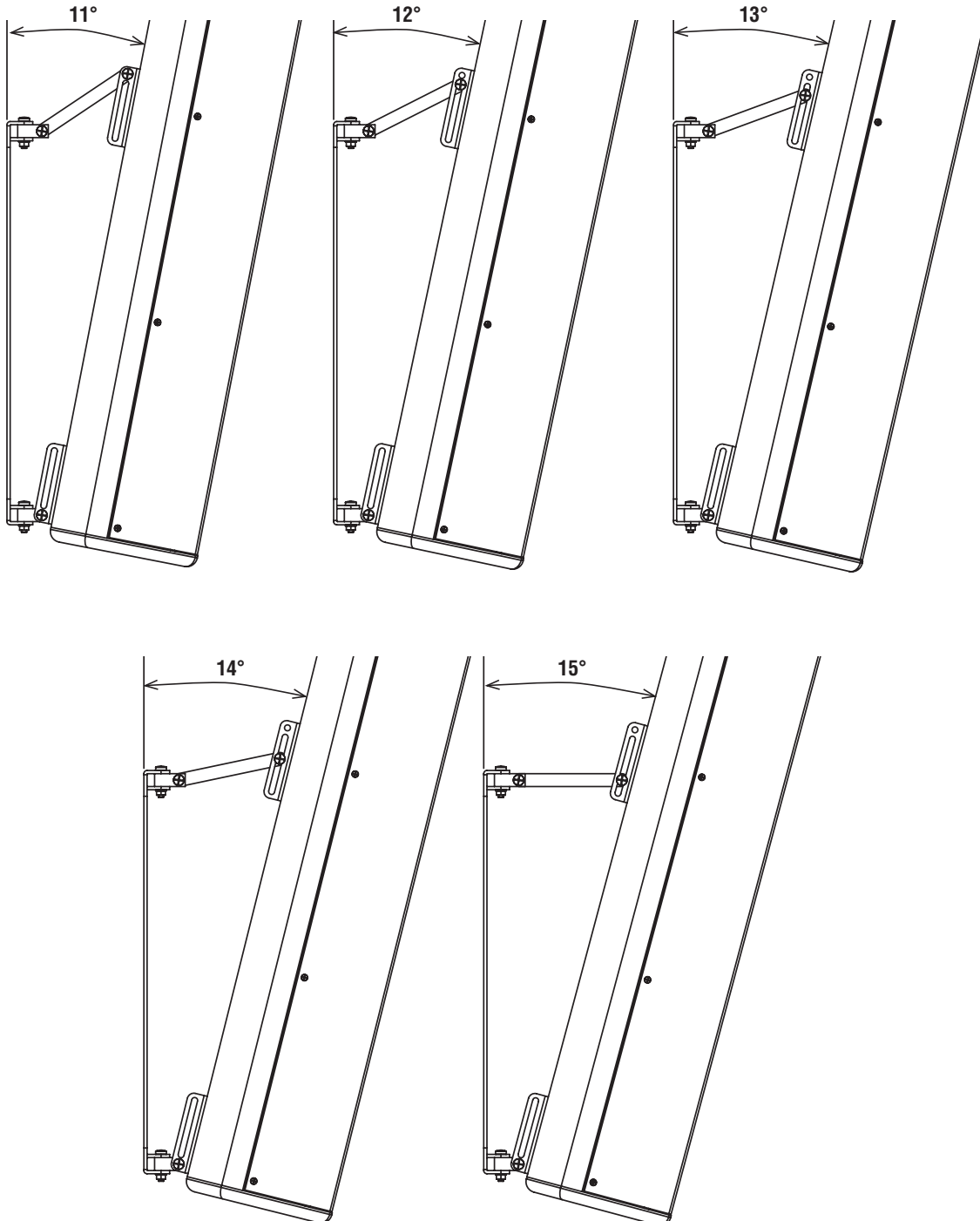
d2. INSTALLATION WITH 2° ÷ 10° VERTICAL TILT

Mount the column starting from the upper coupling, which needs its shorter arm and 2 spacers / washers (**see picture 7**).

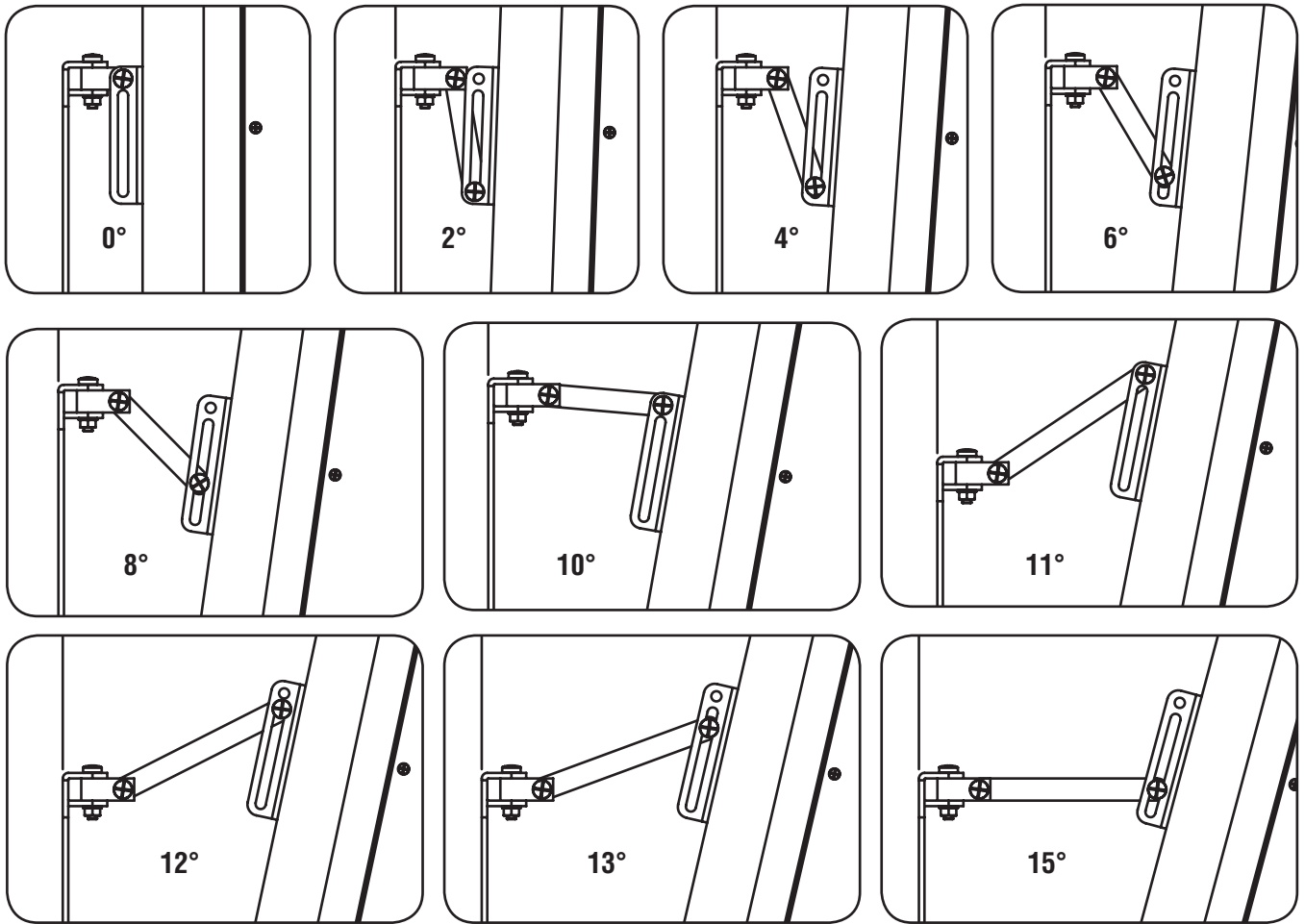


d3. INSTALLATION WITH 11° ÷ 15° VERTICAL TILT

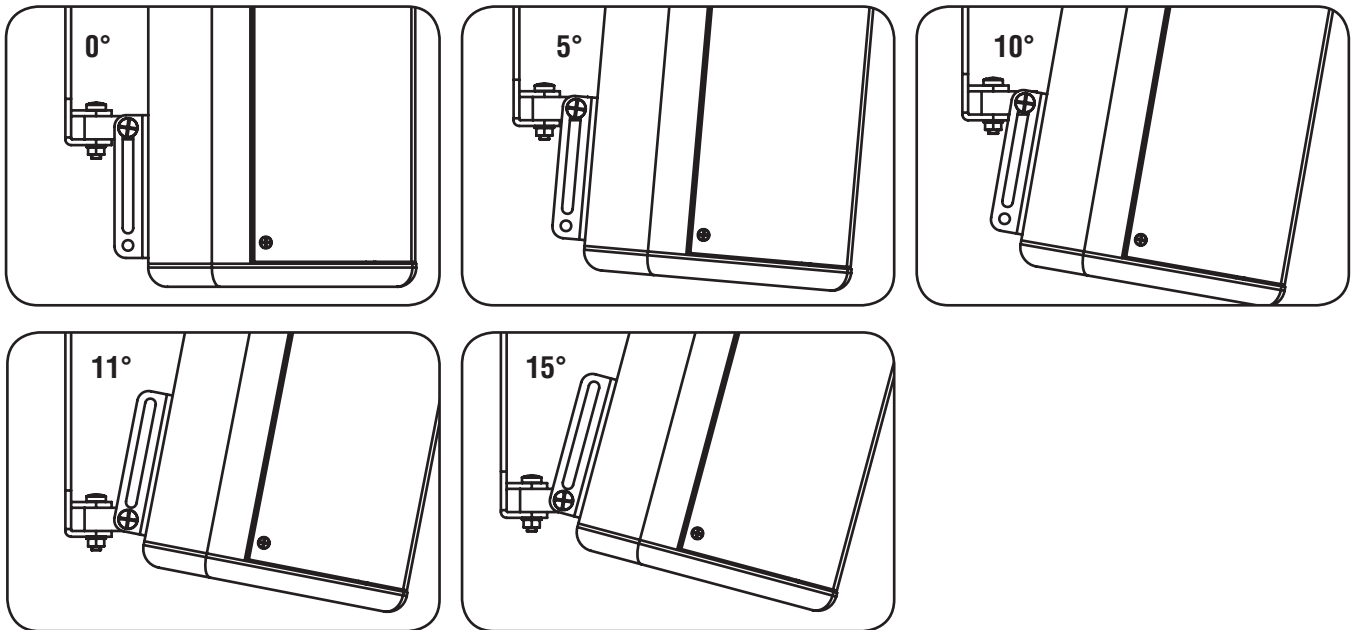
Mount the column starting from the upper coupling, which needs its longer arm and 2 spacers / washers (see picture 7, d2. 'Installation with 2° ÷ 10° vertical tilt').



UPPER COUPLING DETAILS

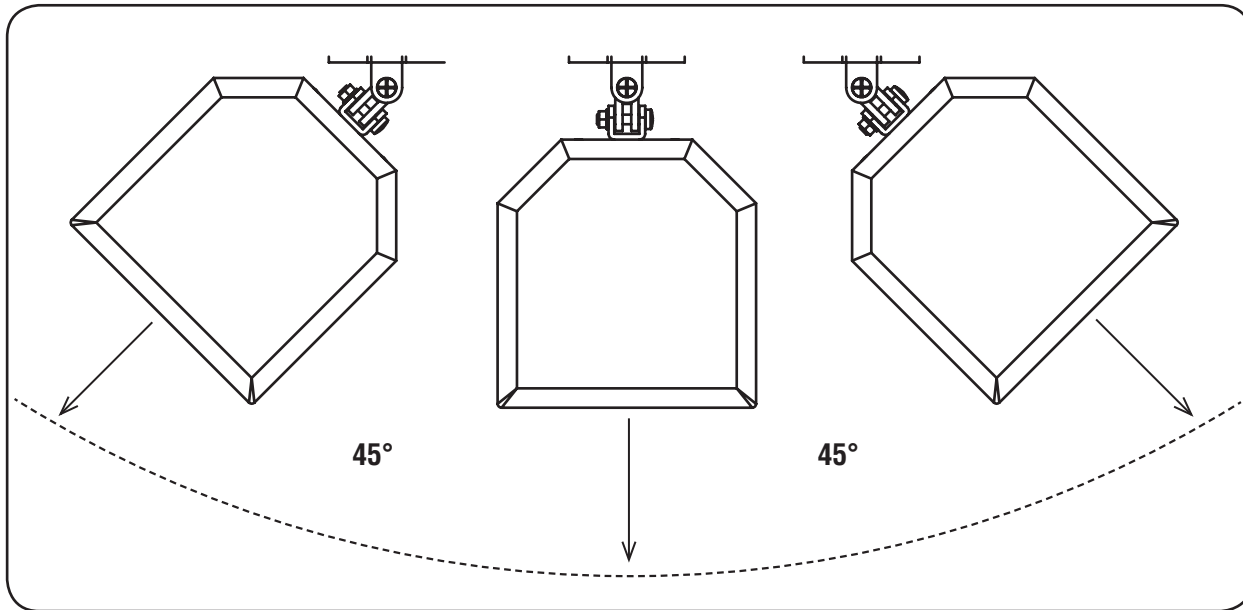


LOWER COUPLING DETAILS

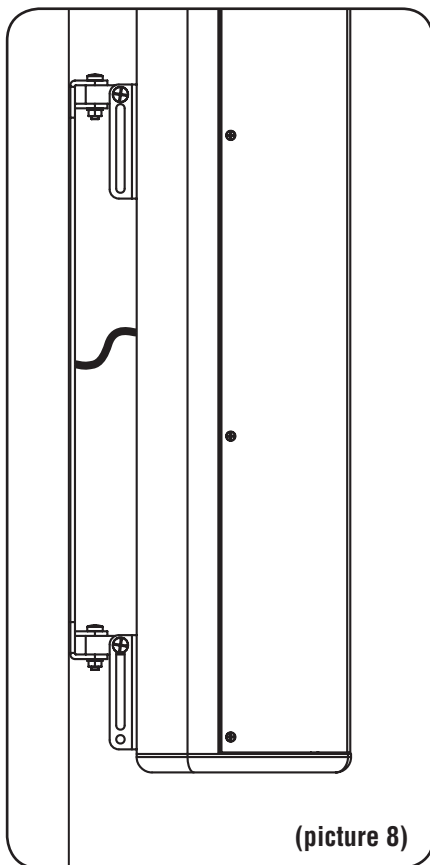


e. HORIZONTAL AIMING

Turn the column right / left (max. angle: 45° from the centre), then tighten the bolts to fix the loudspeaker position.



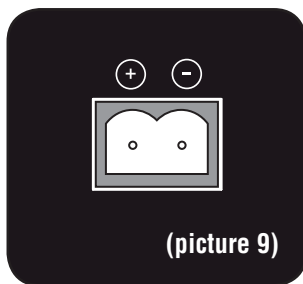
CONNECTION (REAR PANEL)



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.

NOTE: the connecting cable (if inside a flush-mounted pipe) can pass through the wall-mounted support central hole (see picture 8).

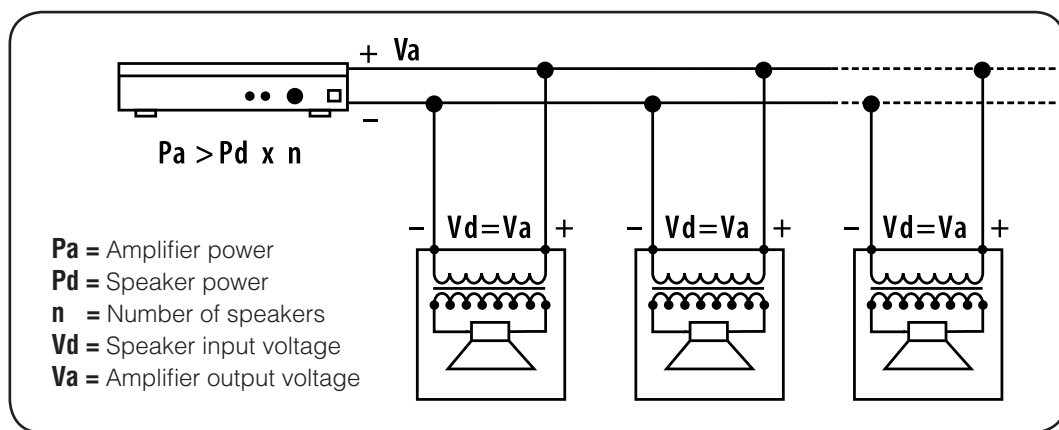


Connect the line positive wire (coming from the amplifier output usually marked '100 V', '+' or 'a') to the '+' loudspeaker terminal.

Connect the line negative wire (coming from the amplifier output usually marked '0', '-', 'COM' or 'b') to the '-' loudspeaker terminal.

NOTES ABOUT CONSTANT VOLTAGE SYSTEMS

- The loudspeaker input voltage (V_d) shall correspond to the amplifier output voltage (V_a).
- The sum of nominal power values ($P_d \times n$) of all loudspeakers connected to the line shall not exceed the amplifier power (P_a).
- Make sure all loudspeakers are connected in phase to ensure a correct sound reproduction.



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 a 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 (for long distances, it may be necessary to use cables with large cross-section wires).

NOTE ABOUT CABLES

- Always use cables having wires with an adequate cross-section, considering the cable length and the total loudspeaker power.
- Loudspeaker lines must be kept separated from mains cable, microphone cables or others, in order to avoid inductive phenomena may cause hum or noises.
- Use loudspeaker cables having twisted wires to reduce hum caused by inductive effects due to coupling with electromagnetic fields.

SPECIFICATIONS

SYSTEM

Frequency response (-10 dB)	100 Hz ÷ 20 kHz
Frequency response (- 3 dB)	150 Hz ÷ 15 kHz
Horizontal coverage angle (- 6 dB)	150°
Vertical coverage angle (- 6 dB)	30°
Directivity factor	9.25
Sensitivity (1 W, 1 m)	97 dB
Max. sound pressure level (SPL @ 1 m)	120 dB
Nominal impedance	8 Ω
Input power rating RMS (8 Ω)	200 W
Input power rating (100 V)	60 – 30 – 15 – 10 W
Protection	PTC on tweeters
Crossover frequency	2 kHz
Enclosure	9 mm birch plywood construction, trapezoidal, 45° side angles
Rigging inserts	4 x M5
Colour	black (L 2406) / white (L 2406W)
Grille material	steel
Input connector	'Euroblock'
Dimensions (w, h, d)	135 mm, 826 mm, 140 mm
Net weight	11.5 kg

TRANSDUCERS

LOW FREQUENCY 1

Woofers (x 2)	5" (130 mm) with 1" (25 mm) coil
Single woofer impedance	8 Ω
Single woofer power	30 W (AES), 60 W (peak)
Single woofer sensitivity (1 W, 1 m)	90 dB

LOW FREQUENCY 2

Woofers (x 4)	5" (130 mm) with 1" (25 mm) coil
Single woofer impedance	16 Ω
Single woofer power	30 W (AES), 60 W (peak)
Single woofer sensitivity (1 W, 1 m)	90 dB

HI FREQUENCY

Tweeters (x 4)	1" (25 mm) with 1" (25 mm) coil
Single tweeter impedance	8 Ω
Single tweeter power	10 W (AES), 20 W (peak)
Single tweeter sensitivity (1 W, 1 m)	90 dB

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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