

OWNER MANUAL

SUB 8003-AS II
SUB 905-AS II

ACTIVE
SUBWOOFERS





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

IMPORTANT



moved with extreme caution. Sudden stops, excessive pushing force and uneven floors may cause the assembly to overturn.

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.**

IMPORTANT NOTES



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

IMPORTANT NOTES



WARNING



CAUTION

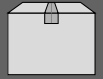


FCC NOTES



Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Modifications: Any modifications made to this device that are not approved by RCF may void the authority granted to the user by the FCC to operate this equipment.



**RCF: Evolution in technology,
revolution in sound**

RCF 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.

Every detail of the Sub Series has been carefully studied in order to offer musicians 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.

All 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.

All the transducers in Sub Series speakers feature high power magnets in order to guarantee the best performance and power handling.

Sub Series Subwoofers are equipped with a new generation of Digital Amplifiers. The result of this is very high output, extremely low distortion and an incredible natural sound.

The amplifier features a solid mechanical aluminium structure which not only stabilize the amplifier during transportation but also assist in the heat dissipation.

The new loudspeaker design looks aggressive whilst retaining perfect ergonomics and is the result of extensive combined functional and acoustic research.

The Sub Series Subwoofer cabinets are built in birch plywood and are designed to dampen down vibrations even at maximum volume settings. The reflex porting has been resized to offer a better efficiency. The cabinets are equipped with ergonomically designed forged aluminium handles with rubber handgrip. Rugged steel pole mount has been installed in all models.

The SUB 8003-AS II and SUB 905-AS II are high power, high output active subwoofer systems that set a new standard in professional sound reinforcement.

Each transducer has been specifically designed for the application. The woofer provides large excursion and very lightweight.

The woofers features:

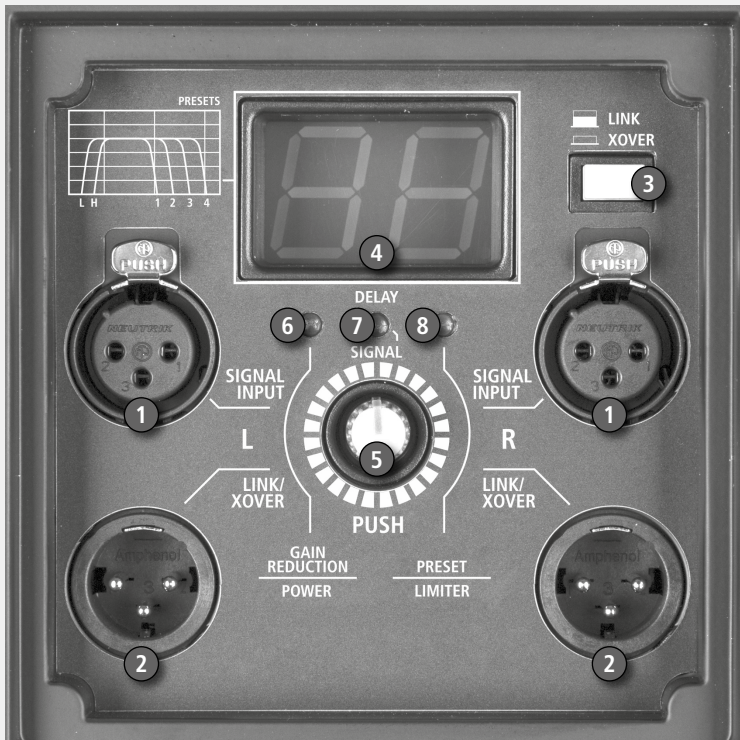
- Lightweight, high force, magnet assembly
- 100 mm diameter, inside-outside copper voice coil (75 mm the 15")
- Reinforced Polycotton spiders
- Water resistant treated cone.

The input section provides:

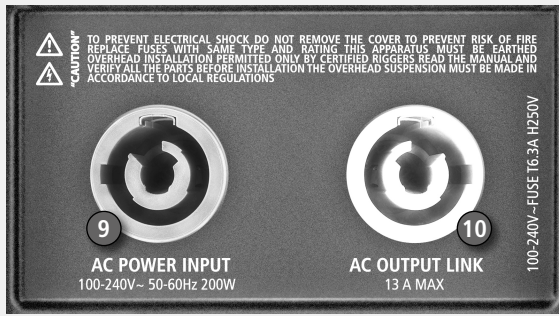
- Stereo In/Out XLR connectors;
- Selectable Crossover Output XLR connector;
- System sensitivity control (rotary encoder)
- Crossover set-up (High Pass, Low Pass)
- Delay set-up
- Cardioid set-up
- 3 multifunction status LEDs.

The amplifier section features:

- 2200 Watt digital amplifier module
- Powercon AC input connector
- Powercon AC output connector.



- 1 STEREO SIGNAL XLR INPUT (BAL/UNBAL). The system accept female XLR input connectors and line-level signals from a mixing console or other signal source.
- 2 - STEREO SIGNAL LINK XLR OUTPUT. The output XLR male connector provides a loop trough for speakers daisy chaining.
 - XOVER SIGNAL OUTPUT. The output XLR male connector provides a crossover high passed signal (24 dB/octave) for satellites speakers when the XOVER switch is pressed.
- 3 LINK/XOVER BUTTON. Pressing this button, the two XLR out become XOVER out.
- 4 SYSTEM SET UP DISPLAY. Display the system setting values.
- 5 - ENCODER -INPUT SENSITIVITY. Controls the overall signal level at the input to the power amplifier. The control ranges from + 99 Db gain reduction (maximum attenuation) to the 0 dB gain reduction (maximum input gain).
 - ENCODER - XOVER PRESETS. Provides 24 dB/octave low-pass and high pass filters. There are two possible high pass choices (30 Hz or 40 Hz) and four low pass choices (60 Hz, 80 Hz, 100 Hz, 125 Hz) for eight preset combinations. Cardioid presets are available for all 30 Hz high pass presets.
 - ENCODER - TIME DELAY. The encoder provides a time delay setting expressed in meters.
- 6 - INPUT SENSITIVITY LED. Turns on when the encoder sets the input sensitivity.
 - POWER INDICATOR. Power on indicator. When the power cord is connected and the power switch is turned on this indicator lights green.
- 7 - DELAY LED. Turns on when the encoder sets the system delay.
 - SIGNAL INDICATOR. The signal indicator lights green if there is signal present on one of the XLR inputs.
- 8 - PRESET LED. Turns on when the encoder sets a system preset.
 - LIMITER INDICATOR. The amplifier has a built in compressor/limiter circuit to prevent clipping 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.



- 9 AC POWERCON RECEPTACLE. RCF SUB series uses a POWERCON locking 3-pole AC mains. Always use the specific power cord provided in the package.
- 10 AC OUTPUT. Powercon locking 3-pole AC mains output.

THE REAR ENCODER AND SUBWOOFER SET-UP

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

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 then in 1 dB steps. The maximum reduction is 99 dB.

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 then in 1 m steps. The maximum delay will be 20 meter.

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:

EXTENDED LOW PRESETS (more extended and linear frequency response):

- L1 30 Hz – 60 Hz
- L2 30 Hz – 80 Hz
- L3 30 Hz – 100 Hz
- L4 30 Hz – 125 Hz

HARD PRESETS (less extended frequency response, more pressure at 50-60 Hz):

- H1 40 Hz – 60 Hz
- H2 40 Hz – 80 Hz
- H3 40 Hz – 100 Hz
- H4 40 Hz – 125 Hz

CARDIOID PRESETS (in combination with L presets)

- C1 30 Hz – 60 Hz
- C2 30 Hz – 80 Hz
- C3 30 Hz – 100 Hz
- C4 30 Hz – 125 Hz

After the parameter settings the two 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.

SAVING A SPEAKER PRESET

PRESET		HIGH PASS	LOW PASS
L1	Extended Low	30 Hz	60 Hz
L2	Extended Low	30 Hz	80 Hz
L3	Extended Low	30 Hz	100 Hz
L4	Extended Low	30 Hz	125 Hz
H1	Hard	40 Hz	60 Hz
H2	Hard	40 Hz	80 Hz
H3	Hard	40 Hz	100 Hz
H4	Hard	40 Hz	125 Hz
C1 - C2 - C3 - C4	Cardioid for L presets		

SERIAL NUMBER

MADE IN ITALY

RCF s.p.a. Via Raffaello Sanzio, 13
42124 Reggio Emilia - Italy

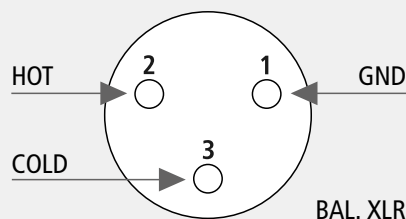
Using the RDNet IN/OUT connection it is possible to load in the speaker memory a dedicated user equalisation. The speaker reset procedure will cancel even this equalisation.

The XLR connectors use the following AES standard:

PIN 1 = GROUND (SHIELD)

PIN 2 = HOT (+)

PIN 3 = COLD (-)



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.

It is possible to create subwoofer cardioid systems using groups of two or three modules.

A group of two modules shall be made as follow:

- Only use one of the L presets (30 Hz High Pass filter)
- 1 modules pointing in forward direction
- 1 module pointing in backward direction, correspondent cardioid preset
- The modules shall have the same settings (system delay, sensitivity, preset)

A group of three modules shall be made as follow:

- Only use one of the L presets (30 Hz High Pass filter)
- 2 modules pointing in forward direction
- 1 module pointing in backward direction, correspondent cardioid preset
- The modules shall have the same settings (system delay, preset)
- The 2 front modules shall have -1.5 dB gain less than the rear module.

CONNECTIONS

BEFORE TURNING ON THE SPEAKER

CARDIOID SET-UP

INSTALLATION



Never suspend SUB Series subwoofers by there handles. Handles are intended for transportation, not for rigging.

WARNING: 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

WARNING



WARNING



SERVICE NOTE



The fuse settings/replacement shall be as follow: **FUSE VALUE T 6.30 A H 250 V**

INTERNAL FUSE SETTINGS



1. Tutte le avvertenze, in particolare quelle relative alla sicurezza, **devono essere lette con particolare attenzione**, in quanto contengono importanti informazioni.

2. Alimentazione diretta da rete

- a. La tensione di alimentazione dell'apparecchio ha un valore sufficientemente alto da costituire un rischio di folgorazione per le persone: non procedere mai all'installazione o connessione dell'apparecchio con l'alimentazione inserita.
- b. Prima di alimentare questo prodotto, assicurarsi che tutte le connessioni siano corrette e che la tensione della vostra rete di alimentazione corrisponda quella di targa dell'apparecchio, in caso contrario rivolgetevi ad un rivenditore RCF.
- c. Le parti metalliche dell'apparecchio sono collegate a terra tramite il cavo di alimentazione. Un apparecchio avente costruzione di CLASSE I deve essere connesso alla presa di rete con un collegamento alla terra di protezione.
- d. Accertarsi che il cavo di alimentazione dell'apparecchio non possa essere calpestato o schiacciato da oggetti, al fine di salvaguardarne la perfetta integrità.
- e. Per evitare il rischio di shock elettrici, non aprire mai l'apparecchio: all'interno non vi sono parti che possono essere utilizzate dall'utente.

3. Impedire che oggetti o liquidi entrino all'interno del prodotto, perché potrebbero causare un corto circuito. L'apparecchio non deve essere esposto a stillicidio o a spruzzi d'acqua; nessun oggetto pieno di liquido, quali vasi, deve essere posto sull'apparecchio. Nessuna sorgente di fiamma nuda (es. candele accese) deve essere posta sull'apparecchio.

4. Non eseguire sul prodotto interventi / modifiche / riparazioni se non quelle espressamente descritte sul manuale istruzioni.

Contattare centri di assistenza autorizzati o personale altamente qualificato quando:

- **l'apparecchio non funziona (o funziona in modo anomalo).**
- **Il cavo di alimentazione è danneggiato.**
- **Oggetti o liquidi sono entrati nell'apparecchio.**
- **L'apparecchio ha subito forti urti.**

5. Qualora questo prodotto non sia utilizzato per lunghi periodi, scollegare il cavo d'alimentazione.

6. Nel caso che dal prodotto provengano odori anomali o fumo, spegnerlo immediatamente e scollegare il cavo d'alimentazione.

7. Non collegare a questo prodotto altri apparecchi e accessori non previsti.

Quando è prevista l'installazione sospesa, utilizzare solamente gli appositi punti di ancoraggio e non cercare di appendere questo prodotto tramite elementi non idonei o previsti allo scopo.

Verificare inoltre l'idoneità del supporto (parete, soffitto, struttura ecc., al quale è ancorato il prodotto) e dei componenti utilizzati per il fissaggio (tasselli, viti, staffe non fornite da RCF ecc.) che devono garantire la sicurezza dell'impianto / installazione nel tempo, anche considerando, ad esempio, vibrazioni meccaniche normalmente generate da un trasduttore. Per evitare il pericolo di cadute, non sovrapporre fra loro più unità di questo prodotto, quando questa possibilità non è espressamente contemplata dal manuale istruzioni.

8. La RCF S.p.A. raccomanda vivamente che l'installazione di questo prodotto sia eseguita solamente da installatori professionali qualificati (oppure da ditte specializzate) in grado di farla correttamente e certificarla in accordo con le normative vigenti. Tutto il sistema audio dovrà essere in conformità con le norme e le leggi vigenti in materia di impianti elettrici.

IMPORTANTE





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