

SUBWOOFER SERIES

User Manual



Models:

Sub 12	Sub 12A	Sub 12 IP	SUB-H18
Sub 15	Sub 15A	Sub 15 IP	
Sub 18	Sub 18A	Sub 18 IP	
Sub 28	Sub 28A	Sub 28 IP	



Contents

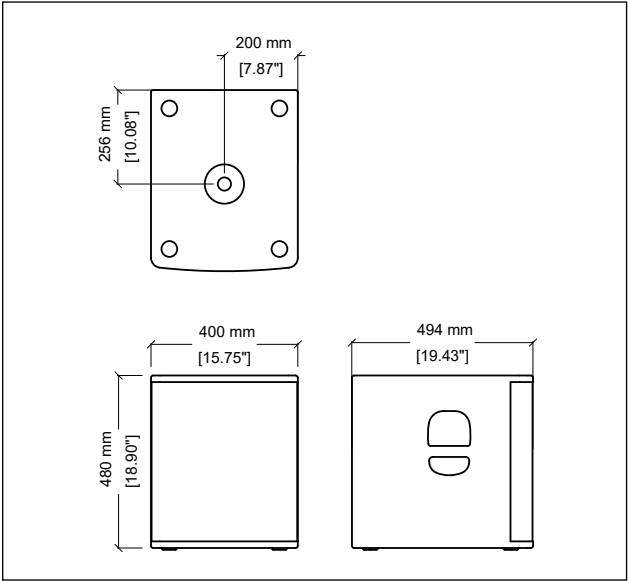
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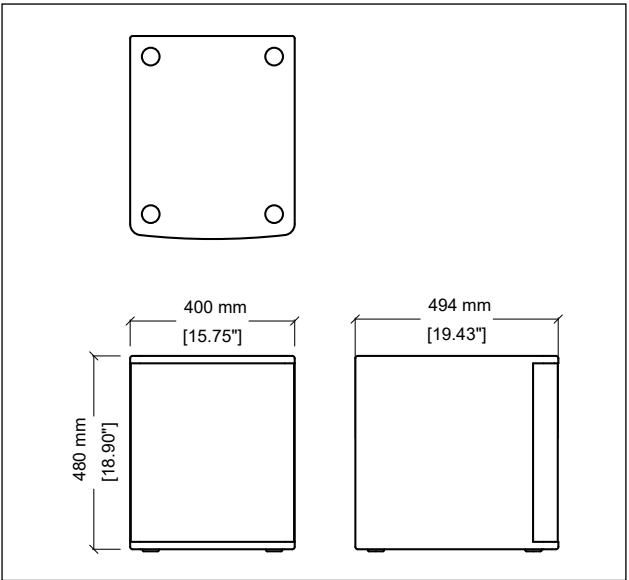


SUBWOOFER MODELS & Dimensions

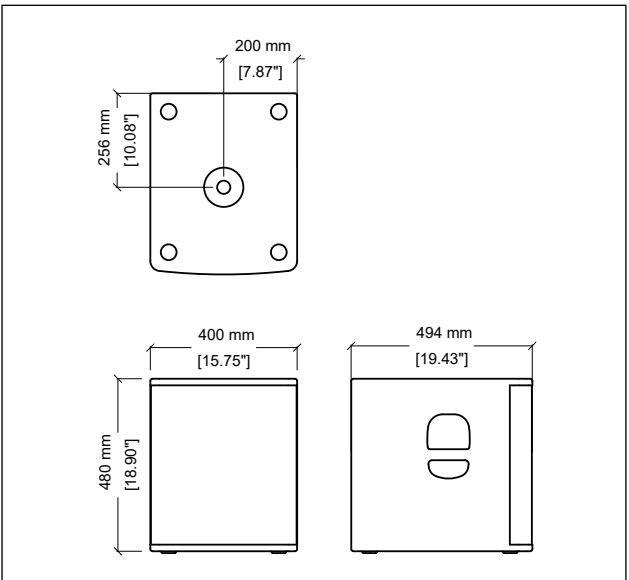
SUB 12



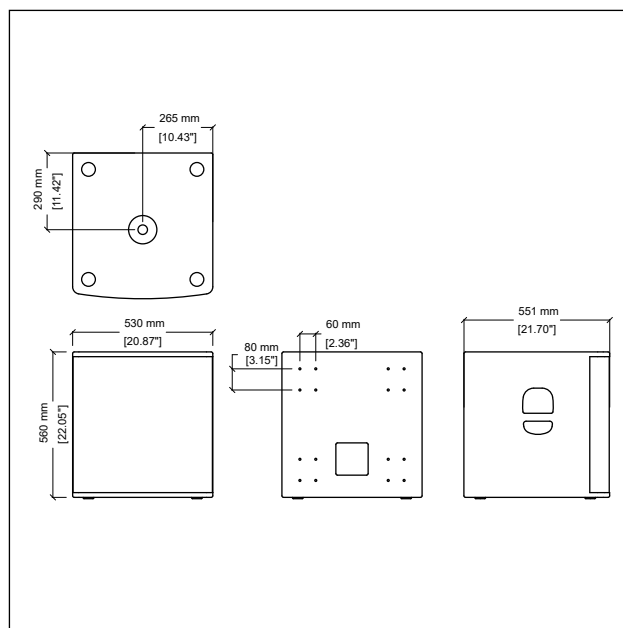
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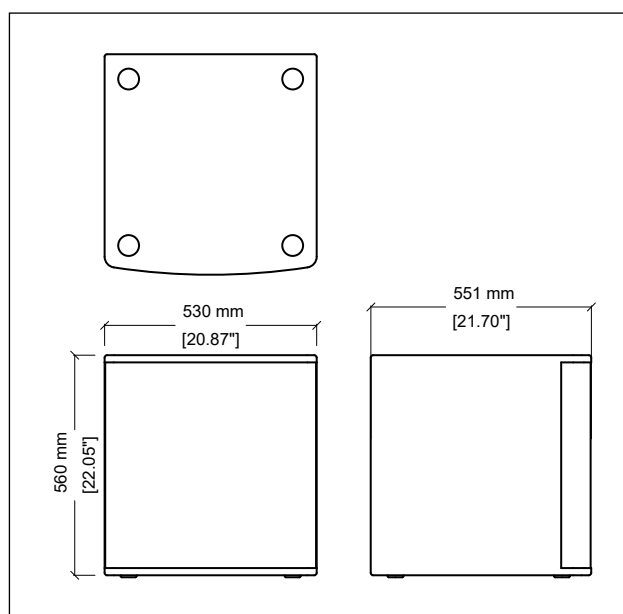
SUB 12A



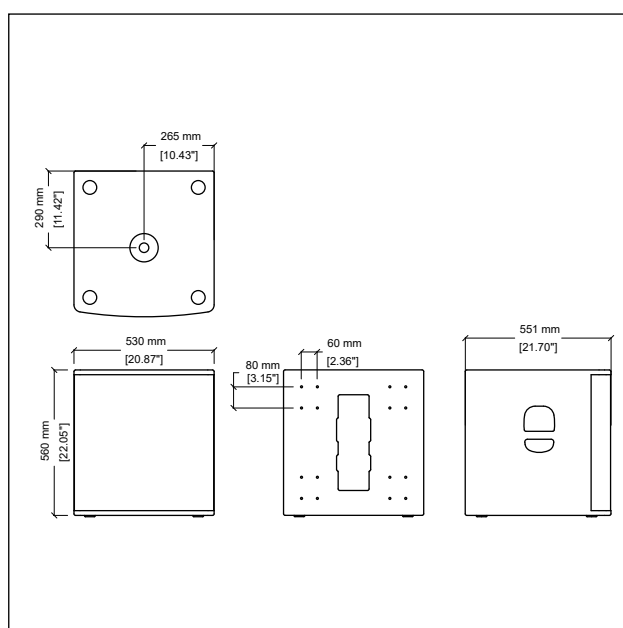
SUB 15



SUB 15 IP

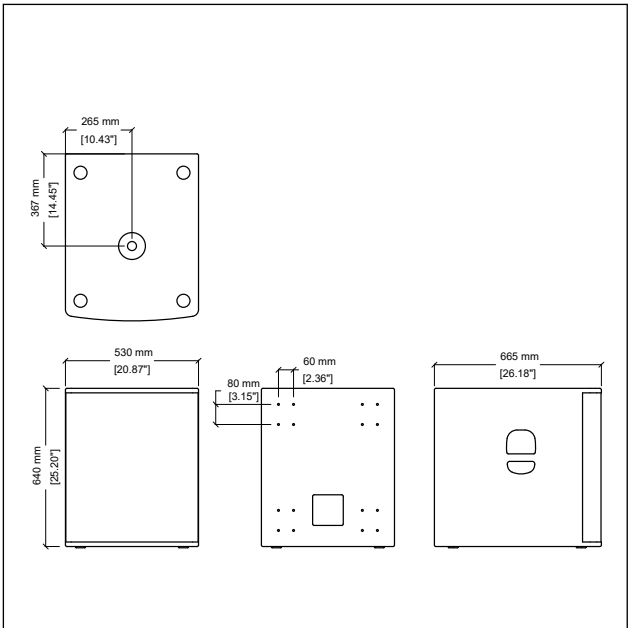


SUB 15A

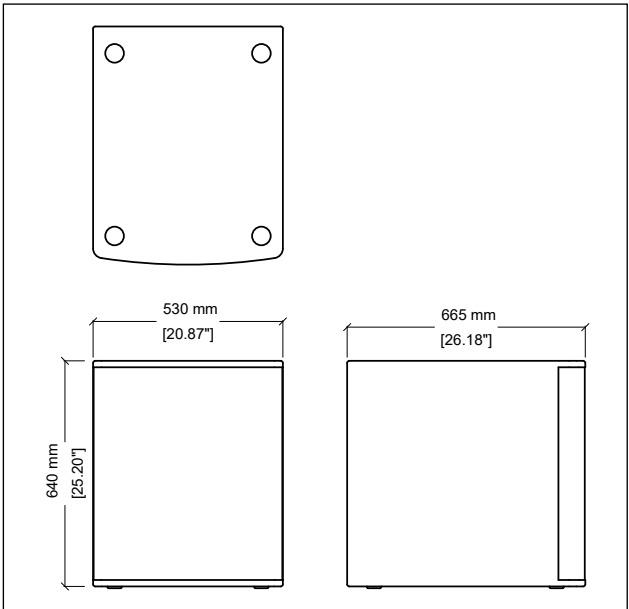




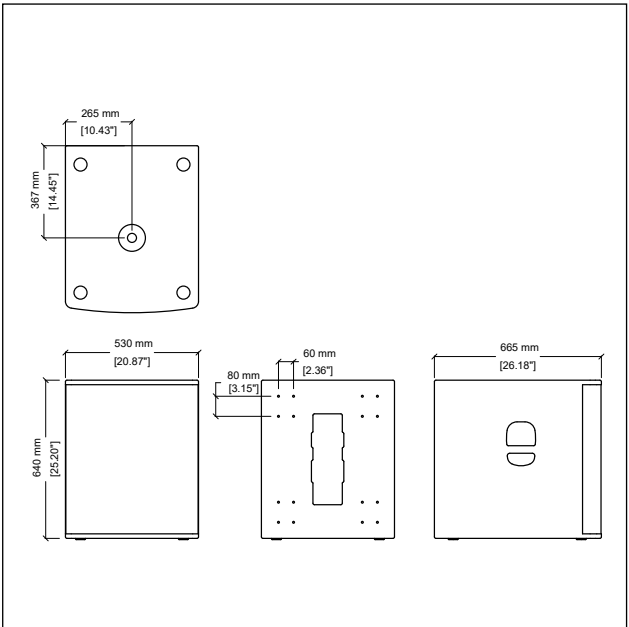
SUB 18



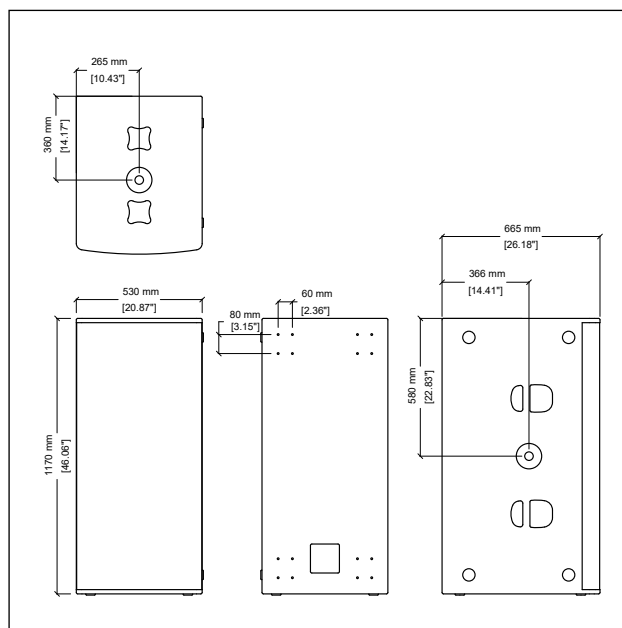
SUB 18 IP



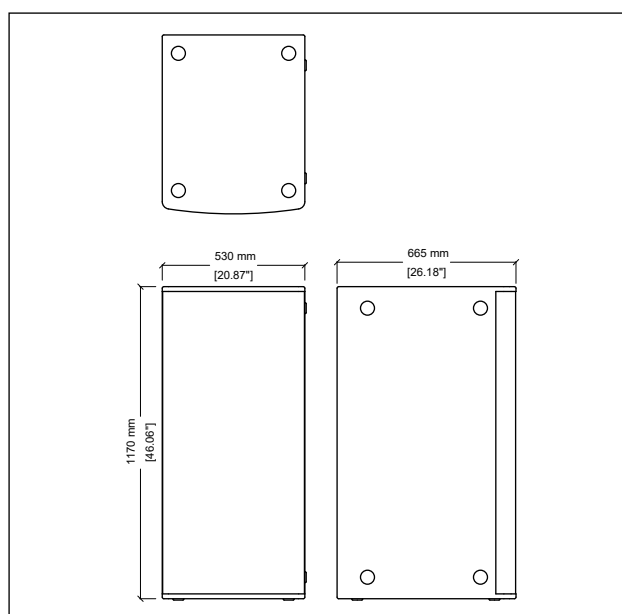
SUB 18A



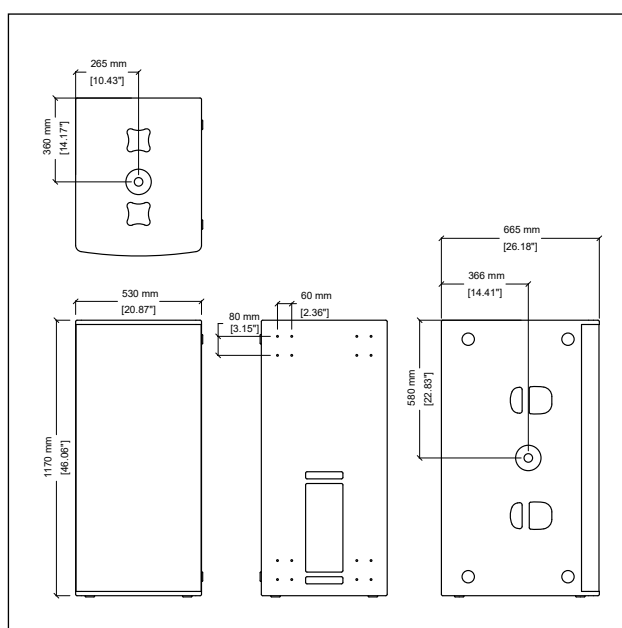
SUB 28



SUB 28 IP

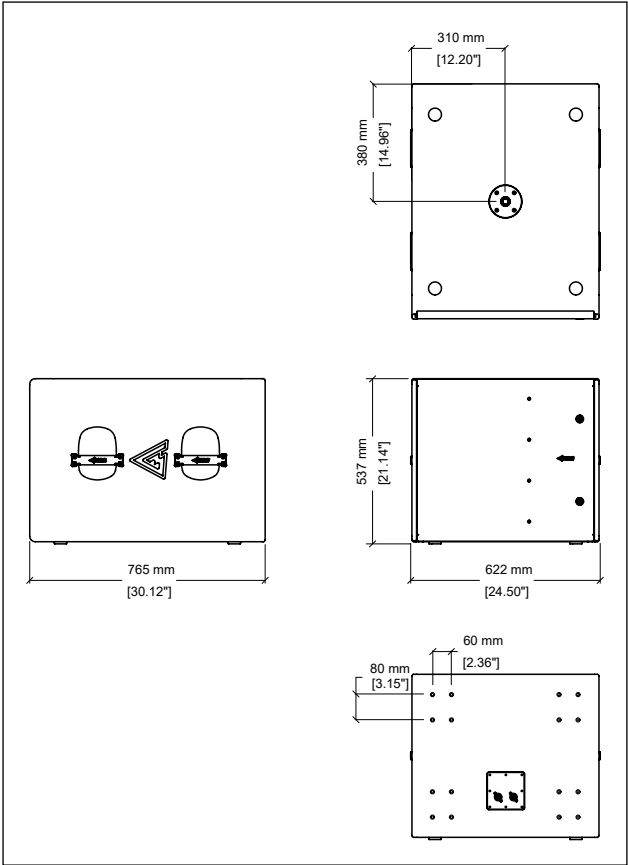


SUB 28A





SUB-H18



1. Safety instructions



EXPLANATIONS OF GRAPHICAL SYMBOLS



The triangle with the lightning bolt is used to alert the user to the risk of electric shock.



The triangle with the exclamation point is used to alert the user to important operating or maintenance instructions.



The CE mark indicates conformity with the applicable European requirements.



The symbol for earth/ground connection.



A symbol indicating that the equipment is for indoor use only.



Symbol for conformity with Directive 2002/96/EC and Directive 2003/108/EC of the European Parliament on waste electrical and electronic equipment (WEEE).



WARNING: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT ATTEMPT TO OPEN ANY PART OF THE UNIT. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



TO COMPLETELY DISCONNECT THIS APPARATUS FROM THE AC MAINS, DISCONNECT THE POWER SUPPLY CORD PLUG FROM THE AC RECEPTACLE.



THE MAINS PLUG OF THE POWER SUPPLY CORD MUST REMAIN READILY ACCESSIBLE.



DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE, DRIPPING OR SPLASHING LIQUIDS. OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHOULD NOT BE PLACED ON THIS APPARATUS.



CONNECTIONS TO THE MAINS SHALL BE DONE ONLY BY AN ELECTRO-TECHNICALLY SKILLED PERSON ACCORDING TO THE NATIONAL REQUIREMENTS OF THE COUNTRIES WHERE THE UNIT IS SOLD.

IMPORTANT SAFETY INSTRUCTIONS

The mains-related instructions in this section apply only to powered models: Sub 12A, Sub 15A, Sub 18A, and Sub 28A.

1. Read these instructions carefully.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this equipment near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install the unit according to the manufacturer's instructions.
8. Do not use near heat sources such as stoves, heat registers, radiators, or other equipment (including amplifiers) that produces heat.
9. Do not use the unit near open fire sources.
10. For powered models only, connect the unit only to a properly grounded mains supply. Use only mains plugs with protective earth.
11. Protect the power cord from being walked on, pinched, or otherwise damaged.
12. Use only accessories specified by the manufacturer.
13. Unplug this unit during lightning storms or when unused for long periods.
14. Refer all servicing to qualified service personnel. Servicing is required when the system has been damaged in any way, such as when the power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the unit, the unit has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. **WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS SYSTEM UNIT TO RAIN OR MOISTURE.**

THIS UNIT CONTAINS POTENTIALLY LETHAL VOLTAGES. TO PREVENT ELECTRIC SHOCK OR HAZARD, DO NOT REMOVE THE AMPLIFIER MODULE. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

INSTALLING THIS UNIT MUST BE PERFORMED ONLY BY QUALIFIED TRAINED PERSONNEL FOLLOWING APPLICABLE SAFETY RULES. DO NOT ALLOW INSTALLATION OF THIS UNIT IF INSTALLATION HARDWARE IS BROKEN, BENT, PARTS ARE MISSING, OR THE HARDWARE IS OTHERWISE DAMAGED.





2. Regulatory information

FCC COMPLIANCE NOTICE

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the distance between the equipment and the receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

EC DECLARATION OF CONFORMITY

Manufacturer:

MAG Audio LLC
Merezhna 2
Bila Tserkva, Kyiv region
09100 Ukraine

We declare that under our sole responsibility the products:

Model Names: Sub 12, Sub 12-WH,
Sub 15, Sub 15-WH,
Sub 18, Sub 18-WH,
Sub 12 IP, Sub 12 IP-WH,
Sub 15 IP, Sub 15 IP-WH,
Sub 18 IP, Sub 18 IP-WH,
Sub 12A, Sub 12A-WH,
Sub 15A, Sub 15A-WH,
Sub 18A, Sub 18A-WH,
Sub 28, Sub 28-WH, Sub 28 IP,
Sub 28 IP-WH, Sub 28A,
Sub 28A-WH, SUB-H18

Intended use: Professional Speaker System

Are in conformity with the provisions of the following EC Directives, including all amendments, and with the national legislation implementing these directives:

- 2006/95/EC Low Voltage Directive
- 2004/108/EC Electromagnetic Compatibility Directive
- 2002/95/CE RoHS Directive

The following harmonized standards are applied:

EN 55103-1:2009 /A1:2012
EN 55014-1:2006 /A1:2009 /A2:2011
EN 55022:2010 /AC:2011
EN 61000-3-2:2006 /A1:2009 /A2: 2009
EN 61000-3-3:2013
EN 61000-3-11:2000
EN 61000-3-12:2011
EN 55103-2:2009 /IS:2012
EN 61000-4-2:2009
EN 61000-4-3:2006 /A1:2008 /IS1:2009 /A2:2010
EN 61000-4-4:2012
EN 61000-4-5:2006
EN 61000-4-6:2014
EN 61000-4-11:2004
EN 60065:2002 /A1:2006 /A11:2008 /A2:2010 /A12:2011

Bila Tserkva,

Alexey Asanov
CEO

For compliance questions: info@mag-audio.com

3. SUBWOOFER series

3.1 Introduction

The SUBWOOFER series is a range of low-frequency reinforcement systems designed for a wide variety of professional audio applications.

The series includes passive and powered models for mobile and fixed use, installation-ready cabinets with multiple mounting options, weather-resistant versions, and dedicated subwoofers for touring and concert applications.

3.2 SUBWOOFER series speaker models

The SUBWOOFER series includes the following models:

Sub 12-4 part number 00-0005856

Sub 12-8 part number 00-0004616

Sub 12 IP-4 part number 00-0020017

Sub 12 IP-8 part number 00-0019981

Sub 15-4 part number 00-0005854

Sub 15-8 part number 00-0004613

Sub 15 IP-4 part number 00-0020018

Sub 15 IP-8 part number 00-0019982

Sub 18-4 part number 00-0005855

Sub 18-8 part number 00-0004478

Sub 18 IP-4 part number 00-0020019

Sub 18 IP-8 part number 00-0019983

Sub 28-4 part number 00-0017036

Sub 28 IP-4 part number 00-0025333

Sub 12A part number 00-0004615

Sub 15A part number 00-0004614

Sub 18A part number 00-0004328

Sub 28A part number 00-0004618

SUB-H18 part number 00-0007143



4. Specifications

System	Sub 12 Passive subwoofer	Sub 15 Passive subwoofer
Frequency response (-10 dB)	45 – 300 Hz	37 – 300 Hz
Peak SPL ¹	133.5 dB	139 dB
Sensitivity (1W/1m)	95 dB	97 dB
LF driver	12", 3" VC	15", 4" VC
Impedance	4 Ohm (Sub 12-4) 8 Ohm (Sub 12-8)	4 Ohm (Sub 15-4) 8 Ohm (Sub 15-8)
Nominal power ²	450 W	1 000 W
Connectors	2 × Neutrik speakON	2 × Neutrik speakON
Dimensions (W × H × D), mm	400 × 480 × 494 mm	530 × 560 × 551 mm
Net weight, kg	29 kg	37 kg
Shipping weight, kg	32 kg	40 kg
Mounting	M20 distance pole adapter Wheel mounting: 4 × 4 M10 mounting points	M20 distance pole adapter Wheel mounting: 4 × 4 M10 mounting points
Enclosure material	Plywood; wear-resistant paint	Plywood; wear-resistant paint
Grille	Steel grille, acoustically transparent foam	Steel grille, acoustically transparent foam

System	Sub 12 IP Weather-resistant Passive subwoofer	Sub 15 IP Weather-resistant Passive subwoofer
Frequency response (-10 dB)	45 – 300 Hz	37 – 300 Hz
Peak SPL ¹	133.5 dB	139 dB
Sensitivity (1W/1m)	95 dB	97 dB
LF driver	12", 3" VC	15", 4" VC
Impedance	4 Ohm (Sub 12 IP-4) 8 Ohm (Sub 12 IP-8)	4 Ohm (Sub 15 IP-4) 8 Ohm (Sub 15 IP-8)
Nominal power ²	450 W	1 000 W
Connectors	Phoenix / gland nut cover plate	Phoenix / gland nut cover plate
Dimensions (W × H × D), mm	400 × 480 × 494 mm	530 × 560 × 551 mm
Net weight, kg	29 kg	37 kg
Shipping weight, kg	32 kg	40 kg
Weather protection	IP54	IP54
Enclosure material	Plywood; wear-resistant paint	Plywood; wear-resistant paint
Grille	Steel grille, acoustically transparent foam	Steel grille, acoustically transparent foam

¹ - pink noise, filtered according to AES 2 - 2012, crest factor 12 dB

² - based on transducer power measured according to AES 2 - 2012

System	Sub 18 Passive subwoofer	Sub 28 Passive subwoofer
Frequency response (-10 dB)	33 – 300 Hz	30 – 220 Hz
Peak SPL ¹	140 dB	144.5 dB
Sensitivity (1W/1m)	98 dB	100 dB
LF driver	18", 4" VC	2 × 18", 4" VC
Impedance	4 Ohm (Sub 18-4) 8 Ohm (Sub 18-8)	4 Ohm
Nominal power ²	1 000 W	2 000 W
Connectors	2 × Neutrik speakON	2 × Neutrik speakON
Dimensions (W × H × D), mm	530 × 640 × 665 mm	530 × 1170 × 665 mm
Net weight, kg	42 kg	78 kg
Shipping weight, kg	45 kg	81 kg
Mounting	M20 distance pole adapter Wheel mounting: 4 × 4 M10 mounting points	M20 distance pole adapter Wheel mounting: 4 × 4 M10 mounting points
Enclosure material	Plywood; wear-resistant paint	Plywood; wear-resistant paint
Grille	Steel grille, acoustically transparent foam	Steel grille, acoustically transparent foam

System	Sub 18 IP Weather-resistant Passive subwoofer	Sub 28 IP Weather-resistant Passive subwoofer
Frequency response (-10 dB)	33 – 300 Hz	30 – 220 Hz
Peak SPL ¹	140 dB	144.5 dB
Sensitivity (1W/1m)	98 dB	100 dB
LF driver	18", 4" VC	2 × 18", 4" VC
Impedance	4 Ohm (Sub 18 IP-4) 8 Ohm (Sub 18 IP-8)	4 Ohm
Nominal power ²	1 000 W	2 000 W
Connectors	Phoenix / gland nut cover plate	Phoenix / gland nut cover plate
Dimensions (W × H × D), mm	530 × 640 × 665 mm	530 × 1170 × 665 mm
Net weight, kg	42 kg	78 kg
Shipping weight, kg	45 kg	81 kg
Weather protection	IP54	IP54
Enclosure material	Plywood; wear-resistant paint	Plywood; wear-resistant paint
Grille	Steel grille, acoustically transparent foam	Steel grille, acoustically transparent foam

¹ - pink noise, filtered according to AES 2 - 2012, crest factor 12 dB

² - based on transducer power measured according to AES 2 - 2012

System	Sub 12A Powered subwoofer	Sub 15A Powered subwoofer
Frequency response (-10 dB)	43 – 170 Hz	35 – 170 Hz
Max SPL (calculated)	127.5 dB	134 dB
LF driver	12", 3" VC	15", 4" VC
Amplifier power	650 W	1 400 W
Amplifier	Class D, fan cooling, DSP	Class D, fan cooling, DSP
Input sensitivity	0 dBV (1 V RMS)	0 dBV (1 V RMS)
Connectors	XLR input, XLR output, PowerCON mains	XLR input, XLR output, PowerCON mains
Dimensions (W × H × D), mm	400 × 480 × 494 mm	530 × 560 × 551 mm
Net weight, kg	32 kg	40 kg
Shipping weight, kg	35 kg	43 kg
Mounting	M20 distance pole adapter Wheel mounting: 4 × 4 M10 mounting points	M20 distance pole adapter Wheel mounting: 4 × 4 M10 mounting points
Enclosure material	Plywood; wear-resistant paint	Plywood; wear-resistant paint
Grille	Steel grille, acoustically transparent foam	Steel grille, acoustically transparent foam

System	SUB-H18 Passive subwoofer
Frequency response (-10 dB)	32 – 200 Hz
Peak SPL ¹	141 dB
Sensitivity (1W/1m)	98 dB
LF driver	18", 4" VC
Impedance	8 Ohm
Nominal power ²	1 300 W
Connectors	4 × Neutrik speakON
Dimensions (W × H × D), mm	622 × 537 × 765 mm
Net weight, kg	45.8 kg
Shipping weight, kg	48.8 kg
Mounting	M20 distance pole adapter Wheel mounting: 4 × 4 M10 mounting points
Enclosure material	Plywood; wear-resistant paint
Grille	Steel grille, acoustically transparent backing

¹ – pink noise, filtered according to AES 2 – 2012, crest factor 12 dB

² – based on transducer power measured according to AES 2 – 2012

System	Sub 18A Powered subwoofer	Sub 28A Powered subwoofer
Frequency response (-10 dB)	31 – 170 Hz	30 – 170 Hz
Max SPL (calculated)	139 dB	141.5 dB
LF driver	18", 4" VC	2 × 18", 4" VC
Amplifier power	2 000 W	3 000 W
Amplifier	Class D, fan cooling, DSP	Class D, fan cooling, DSP
Input sensitivity	0 dBV (1 V RMS)	0 dBV (1 V RMS)
Connectors	XLR input, XLR output, PowerCON mains	XLR input, XLR output, PowerCON mains
Dimensions (W × H × D), mm	530 × 640 × 665 mm	530 × 1170 × 665 mm
Net weight, kg	45 kg	81 kg
Shipping weight, kg	48 kg	84 kg
Mounting	M20 distance pole adapter Wheel mounting: 4 × 4 M10 mounting points	M20 distance pole adapter Wheel mounting: 4 × 4 M10 mounting points
Enclosure material	Plywood; wear-resistant paint	Plywood; wear-resistant paint
Grille	Steel grille, acoustically transparent foam	Steel grille, acoustically transparent foam

5. System operation

5.1. Rigging

Several SUBWOOFER series systems are equipped with M10 mounting points for flown installation.

Rigging must be performed only by trained personnel following the established safety rules.

MAXIMUM WEIGHT RESTRICTIONS MUST BE FOLLOWED AT ALL TIMES!

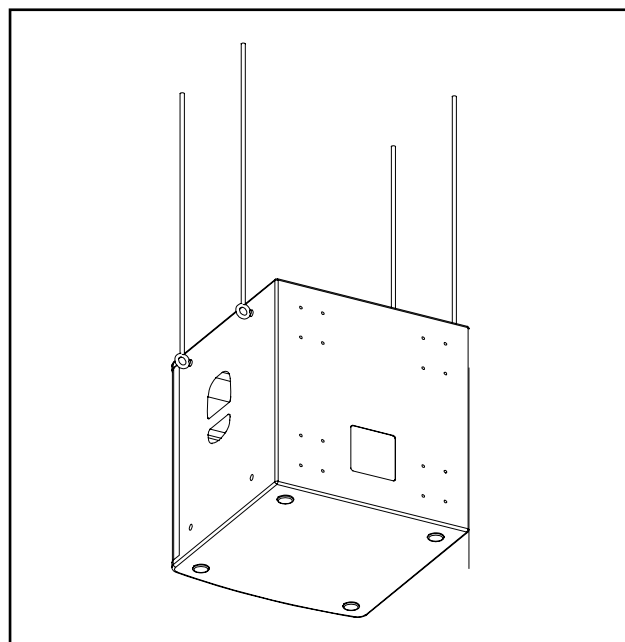
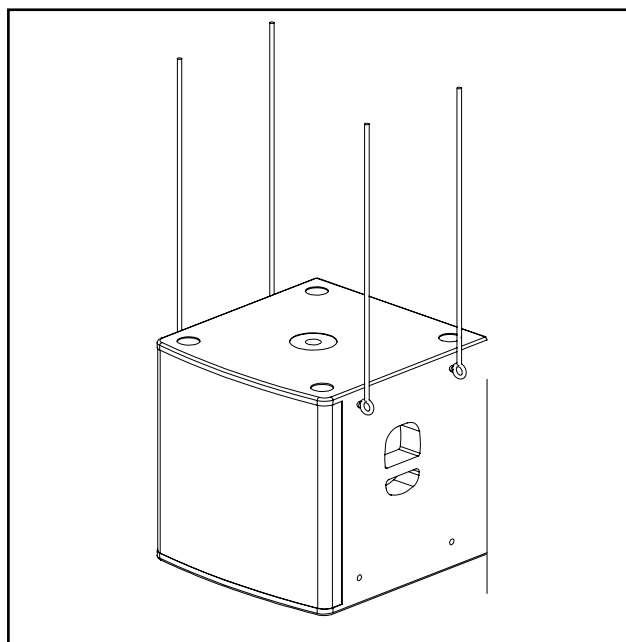
MAKE SURE THE SUPPORT STRUCTURE IS CAPABLE OF HOLDING THE APPLIED WEIGHT WHILE SUSPENDING THE SYSTEM!

5.2. Flying Sub 12, Sub 12A, Sub 15, Sub 15A, Sub 18, Sub 18A, Sub 28 or Sub 28A with M10 mounting points

Required accessories:

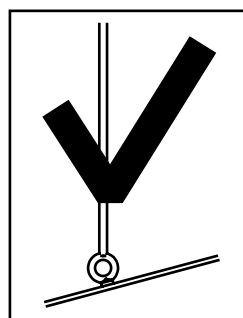
VA-0016 (part No. 00-00003695)

Sub 12, Sub 12A, Sub 15, Sub 15A, Sub 18, Sub 18A, Sub 28 or Sub 28A are fit with eight M10 mounting points, allowing for suspended mounting with M10 eyebolts.

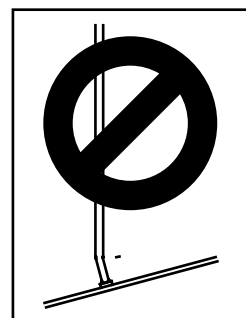


5.3. Eye-bolt orientation

While flying, applied force must be in the plane of the VA-0016 eyebolt's ring. It is prohibited to arrange the rig in a way that force is at the angle from the eyebolt's ring plane.



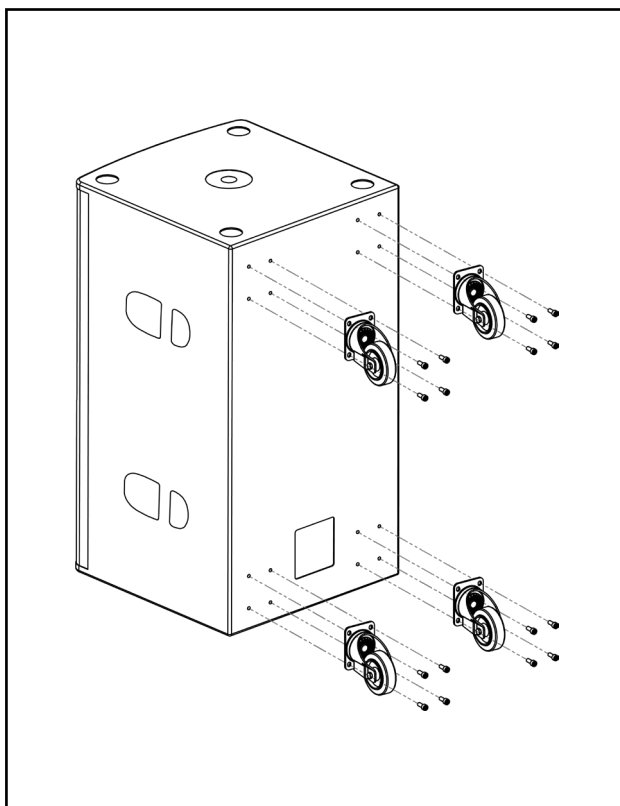
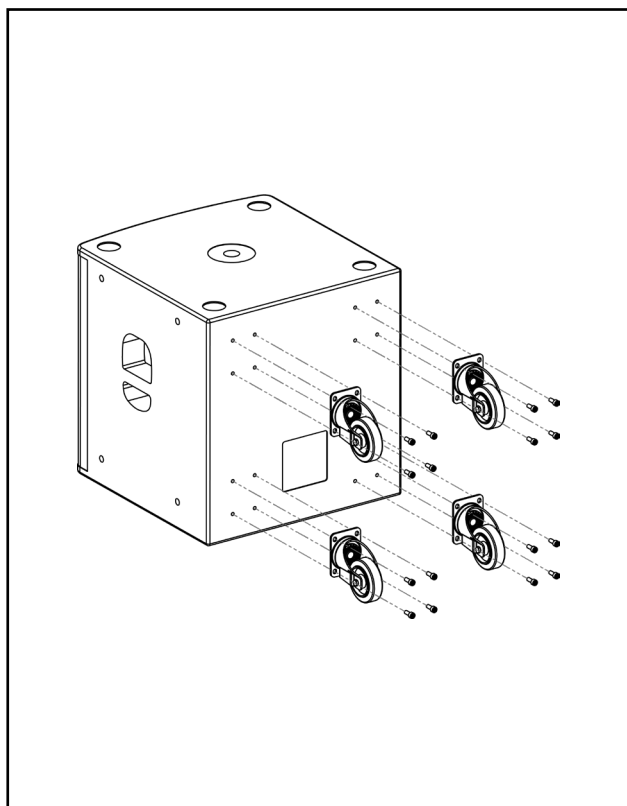
Right



Wrong

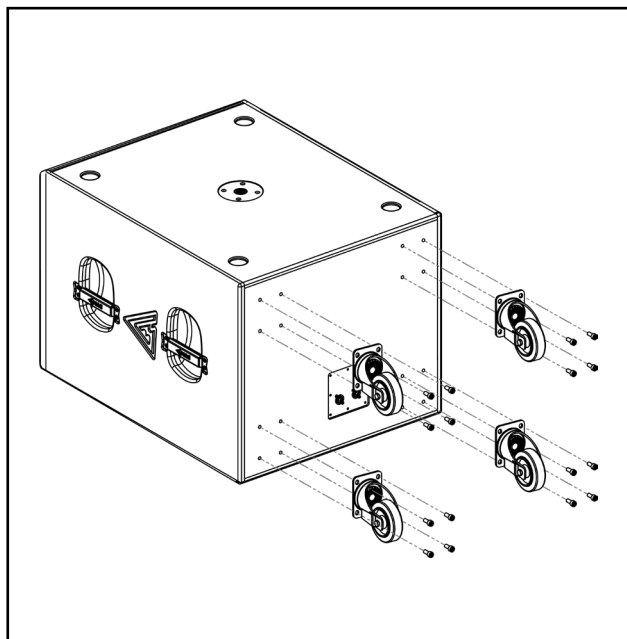
5.4. Installing wheels on Sub 12, Sub 12A, Sub 15, Sub 15A, Sub 18, Sub 18A, Sub 28, and Sub 28A

The Sub 12, Sub 12A, Sub 15, Sub 15A, Sub 18, Sub 18A, Sub 28 or Sub 28A can be fitted with four 100 mm wheels for easy transport.



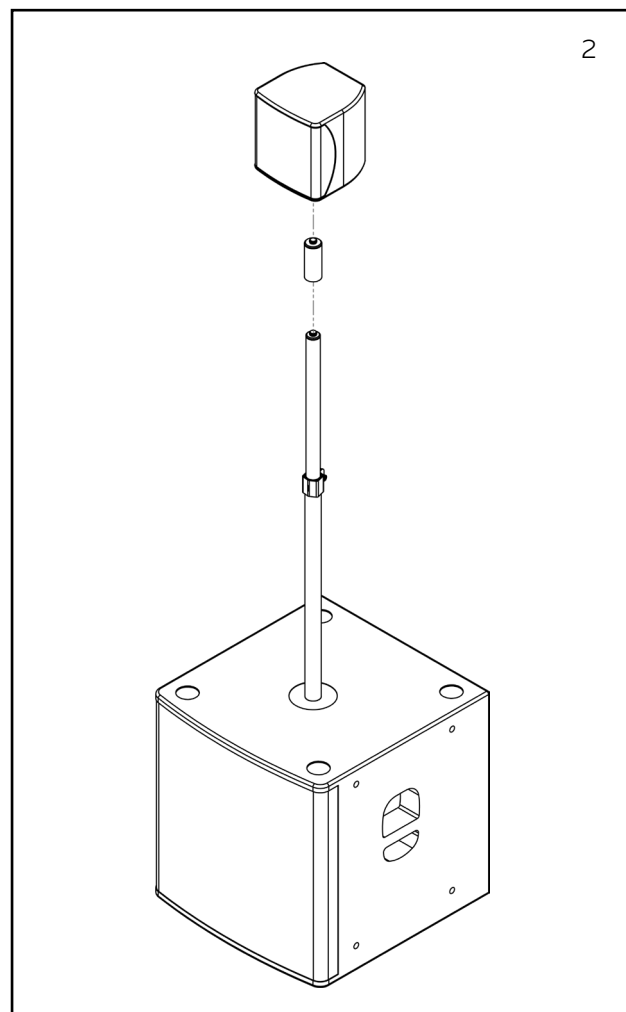
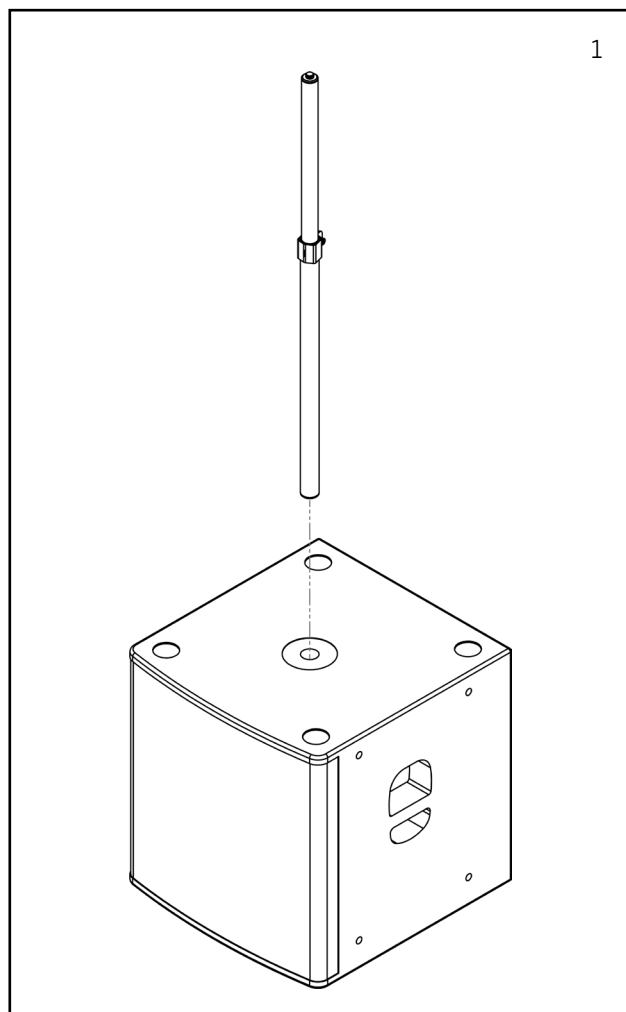
5.5. Installing wheels on the SUB-H18

The SUB-H18 can be fitted with four 100 mm wheels for easy transport too.



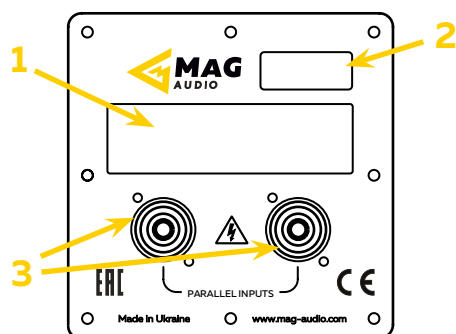
5.6. Mounting a TOP speaker on Sub 12, Sub 12A, Sub 15, Sub 15A, Sub 18, Sub 18A, Sub 28, Sub 28A, or SUB-H18 using a stand

Sub 12, Sub 12A, Sub 15, Sub 15A, Sub 18, Sub 18A, Sub 28, Sub 28A, and SUB-H18 can be fitted with a telescopic stand for mounting a TOP speaker.



5.7. Passive speakers

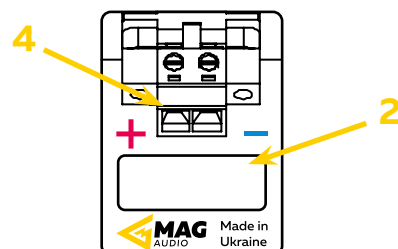
Sub 12, Sub 15, Sub 18, Sub 28, SUB-H18, connection plate



1. LABEL FIELD. The name of the system, along with its basic parameters is noted here.

2. SERIAL NUMBER FIELD. The sticker with the system's serial number is located here. NEVER REMOVE OR DEFACE THE SERIAL NUMBER LABEL. DOING SO WILL VOID THE WARRANTY.

Sub 12 IP, Sub 15 IP, Sub 18 IP, Sub 28 IP connection plate



3. PARALLEL INPUTS. The pair of parallel Neutrik® SpeakON connectors. Use these connectors to connect the power amplifier and, if required, to route the signal to an additional parallel cabinet.

4. INPUT is the Phoenix connector. Use this connector to connect the power amplifier and, if required, to route the signal to an additional parallel cabinet.

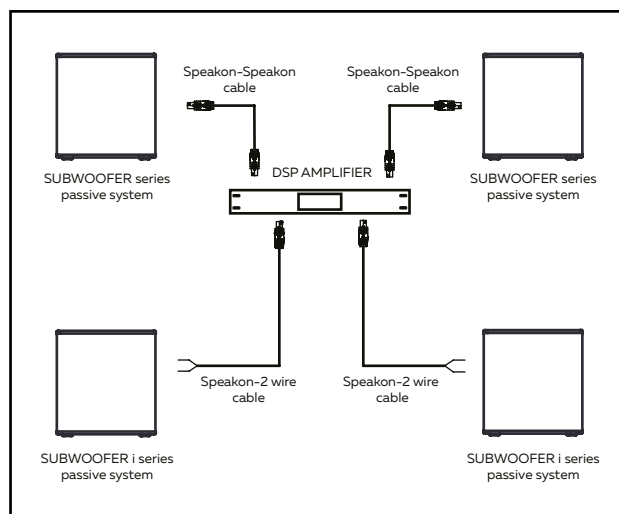
5.7.1. Passive connections

Use power amplifiers with DSP or power amplifiers with external speaker processors with SUBWOOFER series passive systems.

MAKE SURE TO USE HIGH PASS FILTER FOR ALL SUBWOOFER SERIES SYSTEMS TO PREVENT EXCESSIVE CONE MOVEMENT, RESULTING IN TRANSDUCER DAMAGE OR FAST DETERIORATION.

Recommended HPF settings, suggested power amplifier ratings and connection pins are found in the table below:

SUBWOOFER series passive connection diagram



System	Amplifier power	Impedance	Connection pins	Recommended HPF
Sub 12-4	450 – 900 W	4 Ohm	1+ / 1-	40 Hz or higher, 18 dB/oct min
Sub 12-8	450 – 900 W	8 Ohm	1+ / 1-	40 Hz or higher, 18 dB/oct min
Sub 15-4	1000 – 2000 W	4 Ohm	1+ / 1-	35 Hz or higher, 18 dB/oct min
Sub 15-8	1000 – 2000 W	8 Ohm	1+ / 1-	35 Hz or higher, 18 dB/oct min
Sub 18-4	1000 – 2000 W	4 Ohm	1+ / 1-	30 Hz or higher, 18 dB/oct min
Sub 18-8	1000 – 2000 W	8 Ohm	1+ / 1-	30 Hz or higher, 18 dB/oct min
Sub 28-4	2000 – 4000 W	4 Ohm	1+ / 1-	27 Hz or higher, 18 dB/oct min
SUB-H18	1300 – 2600 W	8 Ohm	1+ / 1-	30 Hz or higher, 18 dB/oct min

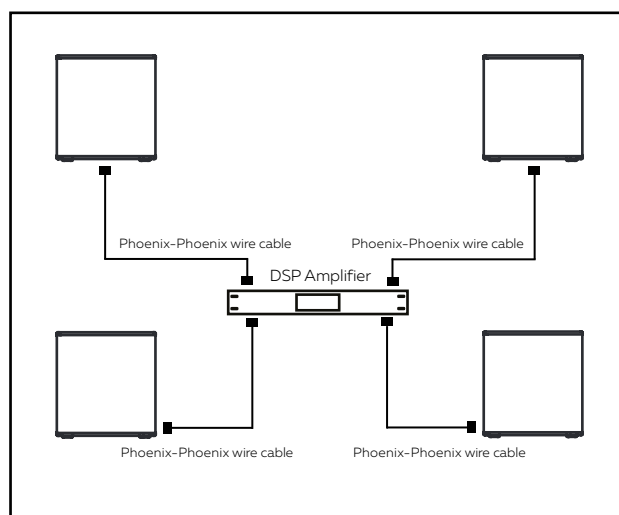
5.7.2. SUBWOOFER IP series connections

Use power amplifiers with DSP or power amplifiers with external speaker processors with SUBWOOFER series passive systems.

MAKE SURE TO USE HIGH PASS FILTER FOR ALL SUBWOOFER SERIES SYSTEMS TO PREVENT EXCESSIVE CONE MOVEMENT, RESULTING IN TRANSDUCER DAMAGE OR PREMATURE DETERIORATION.

Recommended HPF settings, suggested power amplifier ratings and connection pins are found in the table below:

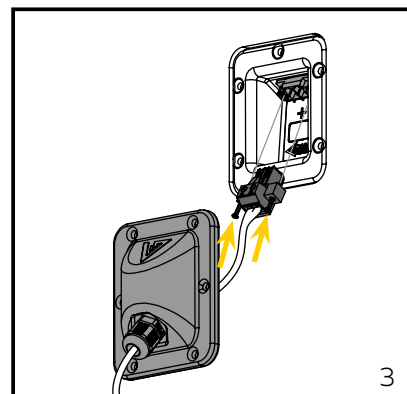
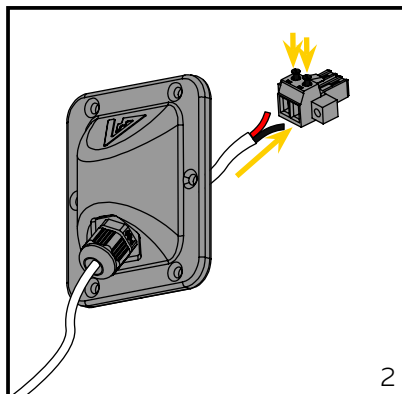
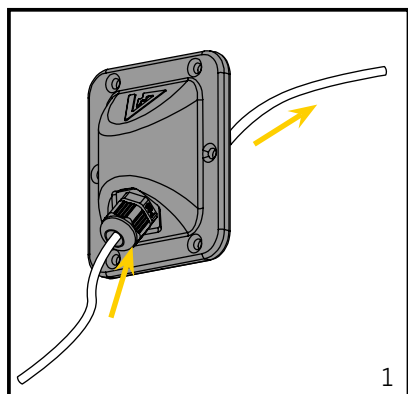
SUBWOOFER IP series connection diagram



System	Amplifier power	Impedance	Connection pins	Recommended HPF
Sub 12 IP-4	450 – 900 W	4 Ohm	1+ / 1-	40 Hz or higher, 18 dB/oct min
Sub 12 IP-8	450 – 900 W	8 Ohm	1+ / 1-	40 Hz or higher, 18 dB/oct min
Sub 15 IP-4	1000 – 2000 W	4 Ohm	1+ / 1-	35 Hz or higher, 18 dB/oct min
Sub 15 IP-8	1000 – 2000 W	8 Ohm	1+ / 1-	35 Hz or higher, 18 dB/oct min
Sub 18 IP-4	1000 – 2000 W	4 Ohm	1+ / 1-	30 Hz or higher, 18 dB/oct min
Sub 18 IP-8	1000 – 2000 W	8 Ohm	1+ / 1-	30 Hz or higher, 18 dB/oct min
Sub 28 IP-4	2000 – 4000 W	4 Ohm	1+ / 1-	27 Hz or higher, 18 dB/oct min

5.7.3. SUBWOOFER IP series panel

Equipped with an IP-rated input plate, IP SUB series subwoofers offer enhanced protection for cable connections. The IP panel provides a reliable connection and protection against moisture and dust. Reliable fixation of cables from the amplifier using professional connectors (in this case, Phoenix).



1. Push the cable into the cable hole of the IP panel.

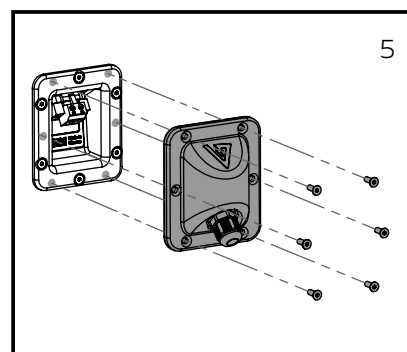
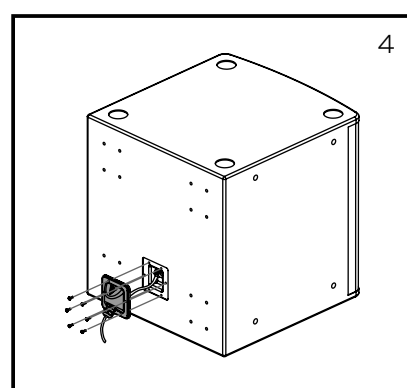
2. Strip the ends of the wire by about 7–10 mm (it is advisable to crimp them with cable lugs). Loosen the screws on the terminals of the Phoenix connector marked "+" and "-".

Insert the wire from the positive terminal of the amplifier (red) into the "+" terminal of the Phoenix connector, and the negative (black) into the "-" terminal. Tighten the screws securely to ensure reliable contact and avoid sparking under heavy load. **Attention: Always observe polarity!**

3. Insert the Phoenix connector into its socket. Tighten the screws securely.

4. To install the IP panel on other speakers, align the edges of the IP panel with the main one and screw the screws into the holes in the IP panel.

5. **For reference:** In the main panel, the holes for screwing the IP are hidden and it is easy enough to push through the plastic of the main panel to install it.



5.8. SUB-H18 in the cardioid stack

Traditional subwoofers are omnidirectional sources: at low frequencies, sound energy is distributed evenly over 360°, creating powerful rear pressure. Cardioid Array is a special configuration of two or more subwoofers that allows you to change the radiation pattern to unidirectional. This provides maximum focus of low-frequency energy forward and effective suppression of the sound wave behind the array.

Correct cardioid operation requires independent signal processing for the front-facing and rear-facing subwoofers, typically via DSP. In a typical cardioid stack, the DSP controls each cabinet separately. The DSP delays the signal for the front or rear subwoofers for a time equal to the physical distance between their acoustic centers. This is necessary so that the waves from both groups of loudspeakers reach the conditional "cancellation point" behind the array at the same time.

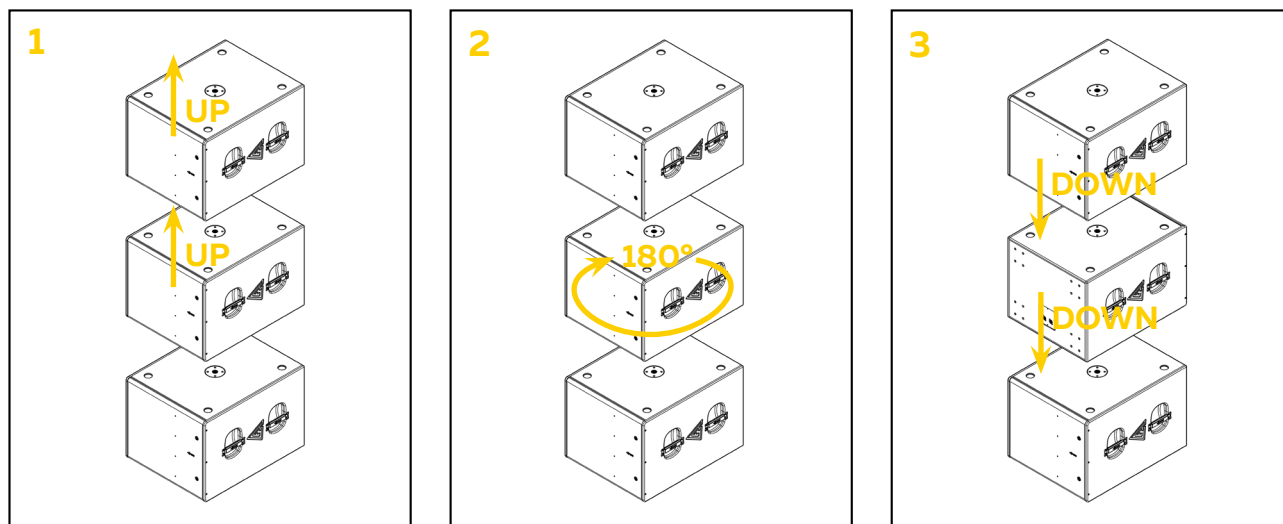
The DSP also inverts the polarity of the rear-facing cabinet signal. As a result, the direct wave and the delayed wave fully or partially compensate (dampen) each other. The area behind the subwoofers remains free of low-frequency hum. And in front of the array in the audience area, the signals from all subwoofers are combined in phase, providing dense, articulate bass and additional acoustic pressure.

Attention: For correct cardioid operation, do not connect the front-facing and rear-facing subwoofers to the same amplifier channel or link them without independent DSP processing. Use only the appropriate factory amplifier presets, where delay, gain, and polarity values have been calculated by the manufacturer.

5.8.1. Installation 3 × SUB-H18 in the cardioid stack

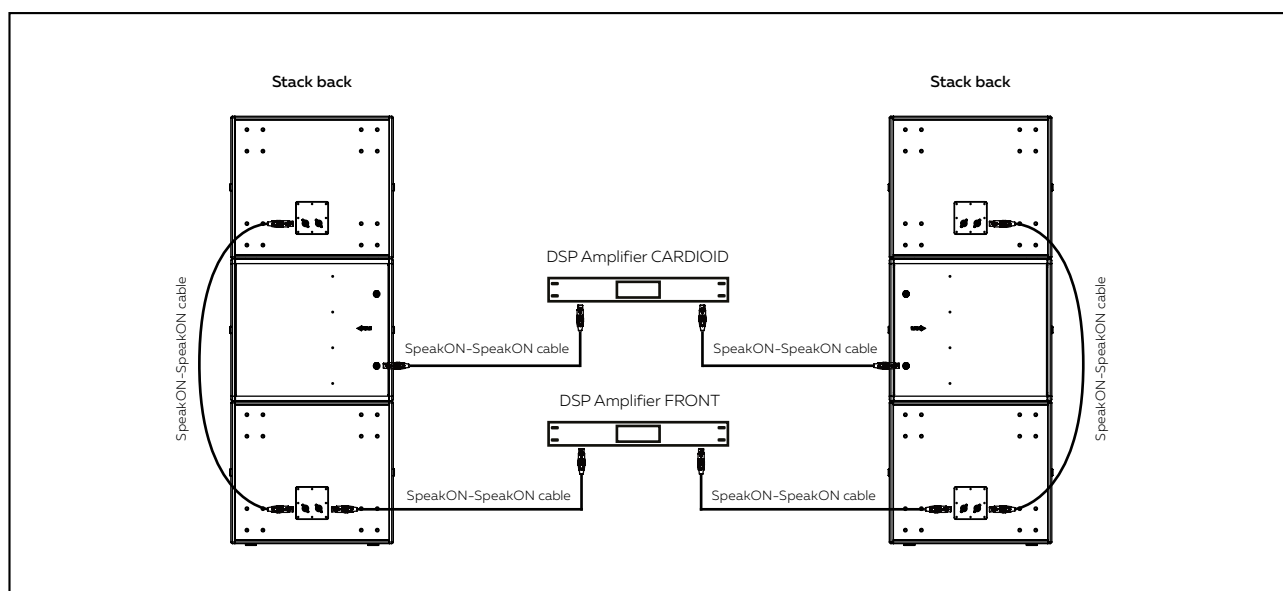
1. SUB-H18 subwoofers can be used in the cardioid stack just as easily as in the frontal stack. To do this, raise the subwoofers.
2. Rotate the cardioid subwoofer 180°.
3. Bring all the cabinets together.

Attention! Make sure that the legs of the upper subwoofers match the grooves for the legs.



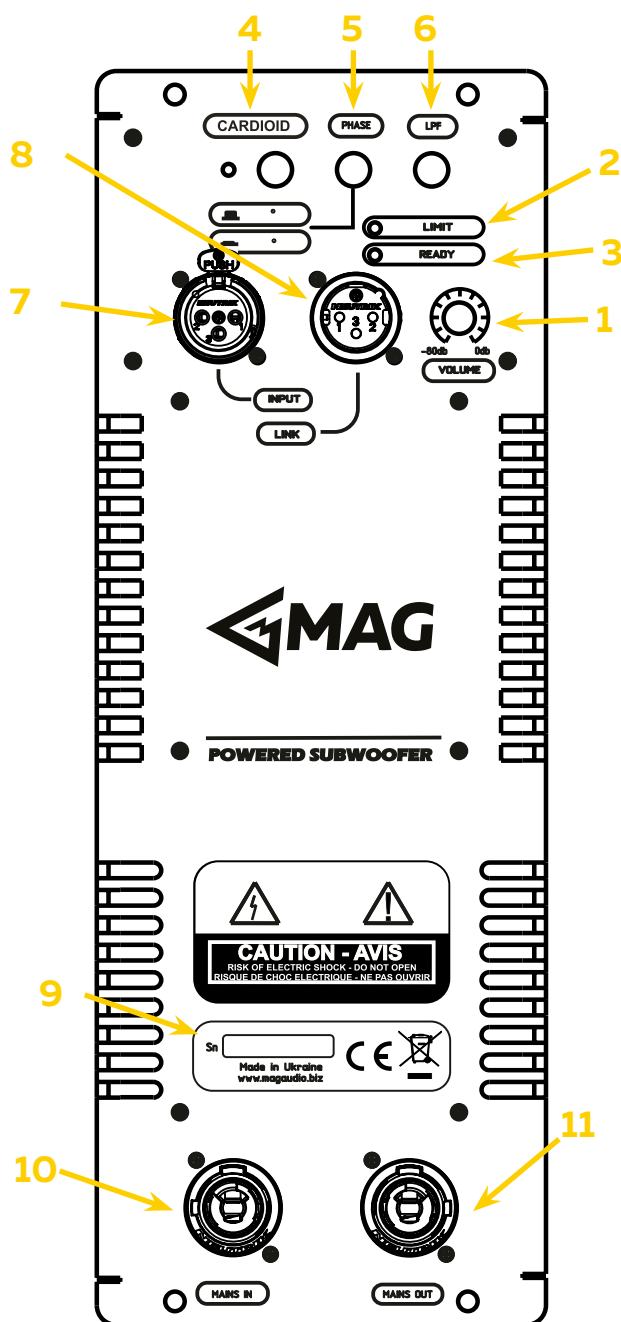
5.8.2. Connecting 3 × SUB-H18 in the cardioid stack

All 4 connectors inside one SUB-H18 subwoofer are connected in parallel (pins 1+/1- and 2+/2- are duplicated). The fact that they are brought out on different sides is done solely for the convenience of cable management. **Attention!** All connections are made from one side.

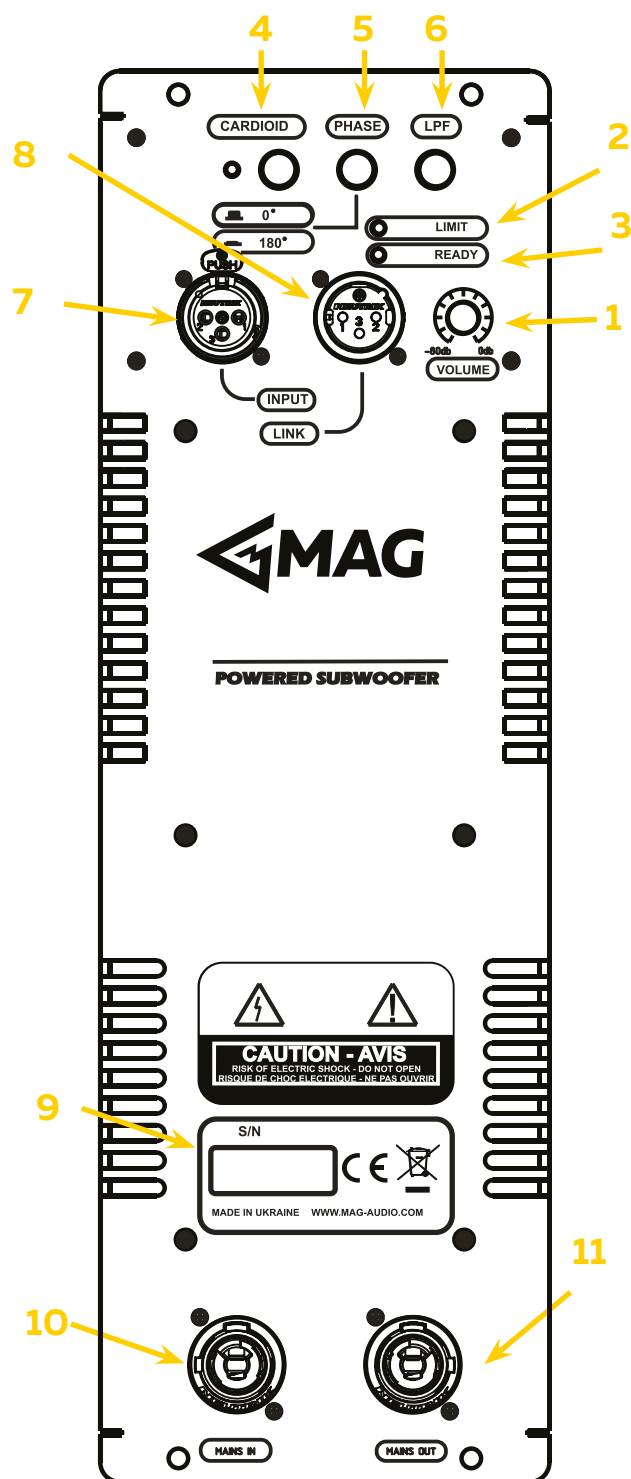


5.9. Powered subwoofers

Sub 12A amplifier



Sub 15A, Sub 18A amplifier



1. VOLUME KNOB. Used for adjusting the volume of the system. Remember to turn the volume down before connecting/disconnecting INPUT or LINK connectors.

2. LIMIT LED. Lights when the limiter is operational, indicating excessive signal level in the system.

3. READY LED. Lights when the system is fully operational.

4. CARDIOID BUTTON. Engage on the rear-facing subwoofer, enables cardioid operation of a subwoofer array.

5. PHASE BUTTON. Switches the polarity.

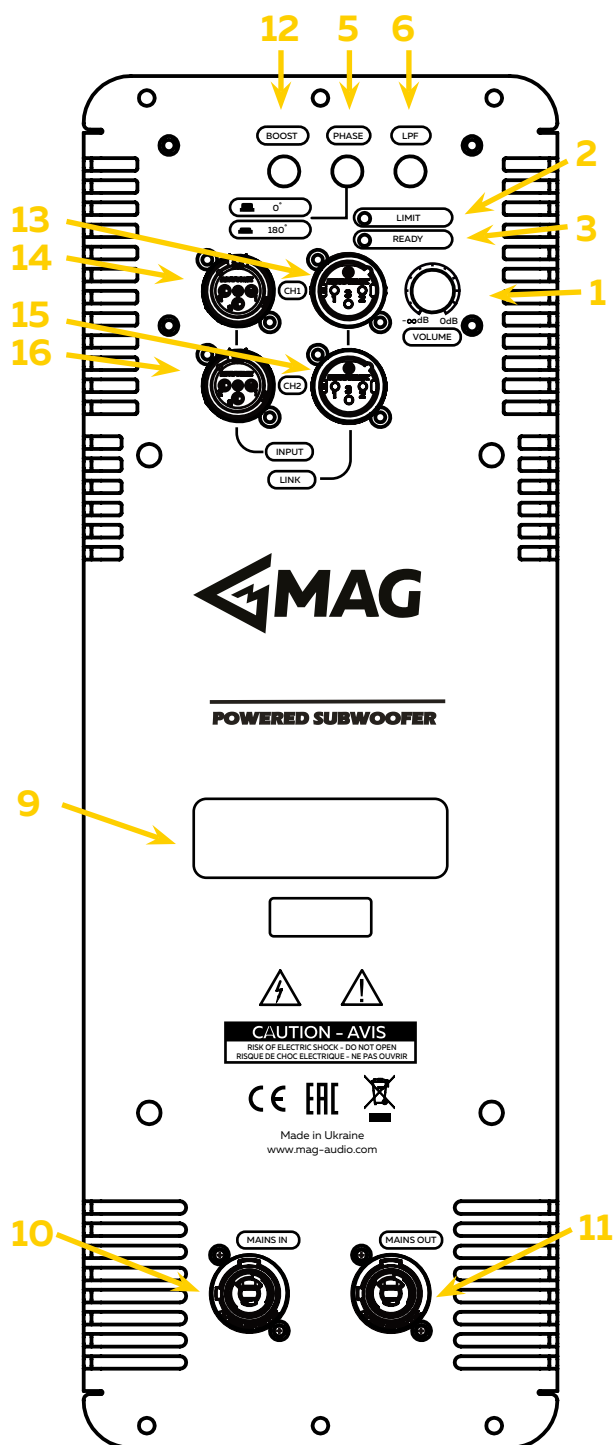
6. LPF BUTTON. Engages a 100 Hz low-pass filter.

7. INPUT CONNECTOR. Used for connecting the system to the signal source (mixing console etc.)

8. LINK CONNECTOR. Used for linking additional compatible systems to the same signal source.

9. HEAT SINK. Do not block the ventilation openings on the heat sink, as it may cause the system to overheat and switch off by itself.

Sub 28A amplifier



14. CH1 LINK CONNECTOR. Used for linking additional compatible systems to the same signal source, left channel.

15. CH2 INPUT CONNECTOR. Used for connecting the system to the signal source, right channel. (mixing console etc.)

16. CH2 LINK CONNECTOR. Used for linking additional compatible systems to the same signal source, right channel.

5.9.1. Mains connection

SUBWOOFER series powered systems are supplied with CN-0010 PowerCon-E/F CEE 7/7 mains cable (part number 00-00005561). Use only original mains cables or mains cables supplied by the manufacturer.

SUBWOOFER series powered systems are equipped with PowerCon B mains power outlets for mains link to an additional SUBWOOFER series powered system.

SUBWOOFER series powered systems operating voltage range: 100–250 V AC, 50/60 Hz.

To power up the system, connect the mains cable to the system, and then to the power outlet.

To completely power down the system, disconnect the mains cable from the power outlet.

5.9.2. Signal connections

SUBWOOFER series systems are equipped with XLR INPUT and XLR LINK connectors for signal connection.

The use of balanced XLR connector cables is recommended. In case when balanced XLR connections are not available, an unbalanced XLR connection is acceptable.

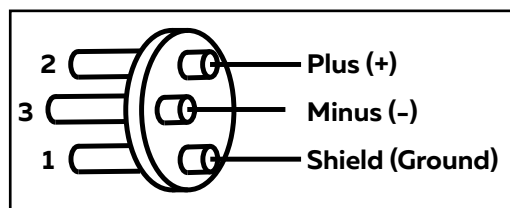
For linking the additional system to the same signal bus LINK connector may be used.

10. MAINS IN. Used for connecting mains supply to the system.

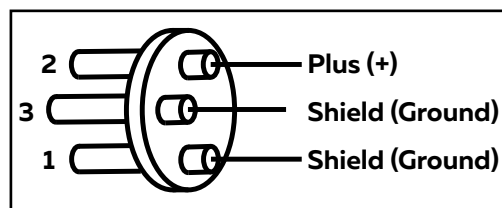
11. MAINS OUT. Used for feeding the mains supply to the additional system.

12. BOOST BUTTON. Engages Dynamic bass boost mode (see 5.9.4).

13. CH1 INPUT CONNECTOR. Used for connecting the system to the signal source, left channel. (mixing console etc.)



Balanced XLR Plug connections



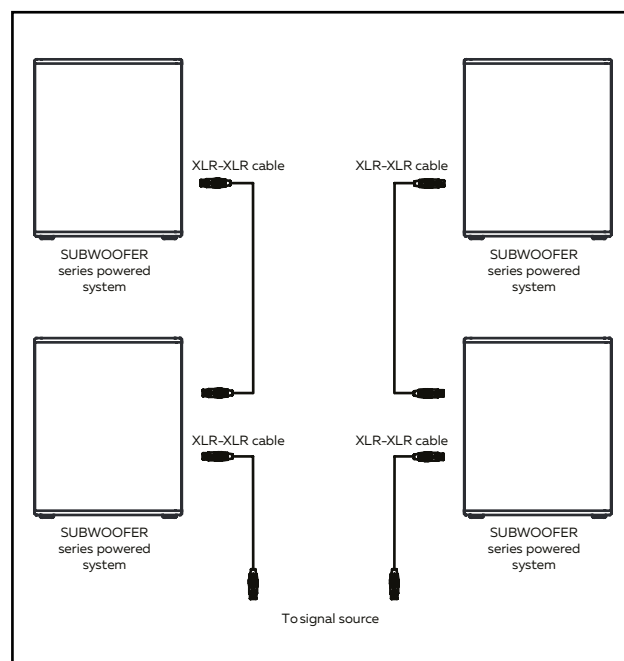
Unbalanced XLR Plug connections

Amplifier controls. Use several available SUBWOOFER series speaker system amplifier controls to set up the entire system:

LPF 100 Hz: Provides a 100 Hz low-pass filter to seamlessly couple a powered subwoofer with full-range systems.

PHASE: Switches the polarity of the subwoofer for better coupling with the rest of the sound system.

CARDIOID: Enables the inverted subwoofer mode, allowing the creation of subwoofer arrays with cardioid coverage.



SUBWOOFER series powered signal connection diagram

5.9.3. Sub 28A input signal summing

Powered Sub 28A subwoofer has two XLR input and two XLR link connectors.

Sub 28A reproduces the mono sum of CH1 and CH2 inputs.

Mono signal can be connected to either CH1 or CH2 inputs.

5.9.4. Dynamic Bass Boost mode

Dynamic Bass Boost mode is designed to make the most out of the subwoofer's low-frequency performance. It creates an additional boost at low power levels, while limiting and protecting the system from overload at output peaks.

6. Standard contents

Please check the contents of your SUBWOOFER Series system upon receiving the package.

Standard contents of SUBWOOFER series systems:

System	Supplied SUBWOOFER series system	IP panel and mount kit	CN-0010 mains cord	Polyethylene bag	Cardboard box
Sub 12-4	Sub 12 4 Ohm passive system			+	+
Sub 12-8	Sub 12 8 Ohm passive system			+	+
Sub 15-4	Sub 15 4 Ohm passive system			+	+
Sub 15-8	Sub 15 8 Ohm passive system			+	+
Sub 18-4	Sub 18 4 Ohm passive system			+	+
Sub 18-8	Sub 18 8 Ohm passive system			+	+
Sub 28-4	Sub 28 4 Ohm passive system			+	+
Sub 12 IP-4	Sub 12 IP 4 Ohm passive system	+		+	+
Sub 12 IP-8	Sub 12 IP 8 Ohm passive system	+		+	+
Sub 15 IP-4	Sub 15 IP 4 Ohm passive system	+		+	+
Sub 15 IP-8	Sub 15 IP 8 Ohm passive system	+		+	+
Sub 18 IP-4	Sub 18 IP 4 Ohm passive system	+		+	+
Sub 18 IP-8	Sub 18 IP 8 Ohm passive system	+		+	+
Sub 28 IP-4	Sub 28 IP 4 Ohm passive system	+		+	+
Sub 12A	Sub 12A powered system		+	+	+
Sub 15A	Sub 15A powered system		+	+	+
Sub 18A	Sub 18A powered system		+	+	+
Sub 28A	Sub 28A powered system		+	+	+
SUB-H18	SUB-H18 8 Ohm passive system			+	+



7. Accessories

Various accessories are available for SUBWOOFER series systems:



Telescopic Stand



SUB12-TB – Sub 12 transportation bag Part No. 00-0006747
 SUB12A-TB – Sub 12A transportation bag Part No. 00-0006746
 SUB15-TB – Sub 15 transportation bag Part No. 00-0006749
 SUB15A-TB – Sub 15A transportation bag Part No. 00-0006748
 SUB18-TB – Sub 18 transportation bag Part No. 00-0006750
 SUB18A-TB – Sub 18A transportation bag Part No. 00-0006696
 SUB28-TB – Sub 28 transportation bag Part No. 00-0006751
 SUB28A-TB – Sub 28A transportation bag Part No. 00-0006752
 SUBH18-TB – SUB-H18 transportation bag Part No. 00-0006753



Wheel 0990



Wheel 0985



VA-0016 part
 No. 00-00003695

8. Warranty and assistance

8.1. Product warranty

1. Under this warranty, MAG Audio warrants that all equipment manufactured under the MAG Audio trademark is free from defects in material, components, and factory workmanship under normal use and maintenance for the time as specified below.

2. All warranty repairs and maintenance of MAG Audio products shall be carried out at MAG Audio production sites or by MAG Audio authorized personnel at no cost to the product purchaser.

3. The warranty period for cone transducers, high-frequency drivers, and crossovers, whether sold separately or as a component of a speaker system, is 60 months from the production date.

4. The warranty period for enclosures, grilles, connection plates, and accessories, whether sold separately or as a component of a speaker system, is 60 months from the production date.

5. The warranty period for built-in power amplifiers, whether sold separately or as a component of a speaker system, is 36 months from the production date.

6. Warranty repairs or maintenance will be performed only if a) the MAG Audio product was purchased from an official MAG Audio distributor/dealer and b) the warranty card with specified serial number, production date, date of sale, vendor's signature, and stamp is presented.

7. This warranty does not cover the following: damage caused by accident, misuse, or failure to follow the operating instructions stated in this manual; repairs performed by non-authorized personnel; mechanical damage caused by shipping accidents and normal wear and tear.

8. This warranty does not apply to any product with a defaced, removed, or modified serial number.

9. If your MAG Audio product requires repair or maintenance, contact your official MAG Audio distributor/dealer. Please do not ship your MAG Audio product without prior authorization.

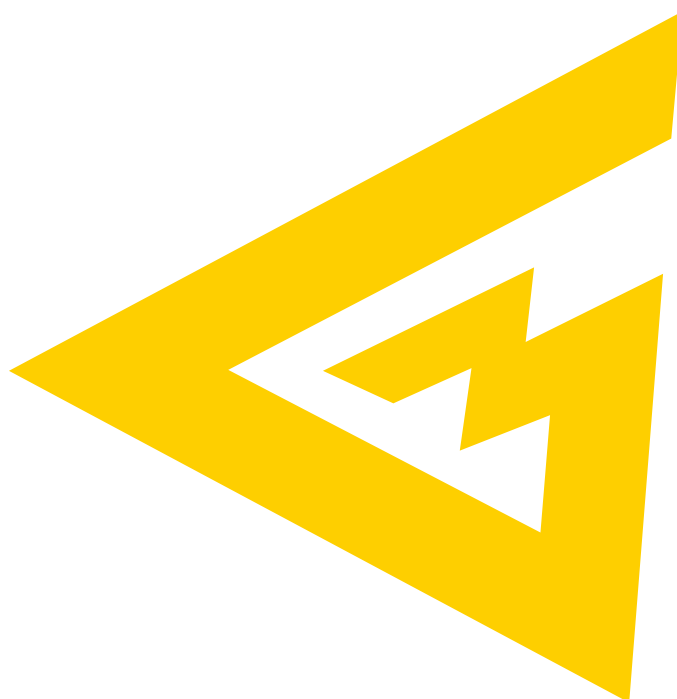
8.2. Assistance

There are no user-serviceable parts inside the unit. Refer all servicing to qualified technical personnel. In addition to its in-house service department, MAG Audio works through a network of distributors and authorized service partners. If your unit requires repair, contact your MAG Audio dealer or distributor.

Occasionally, due to the nature of the failure, it might be necessary to return defective products to MAG Audio for repair. In this case, before shipping, Please contact your MAG Audio distributor or dealer, or MAG Audio directly. You will be provided with an RMA number and detailed instructions for your particular case. Please do not send products without prior authorization.

Thank you for your understanding, cooperation, and choice of MAG Audio products.





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