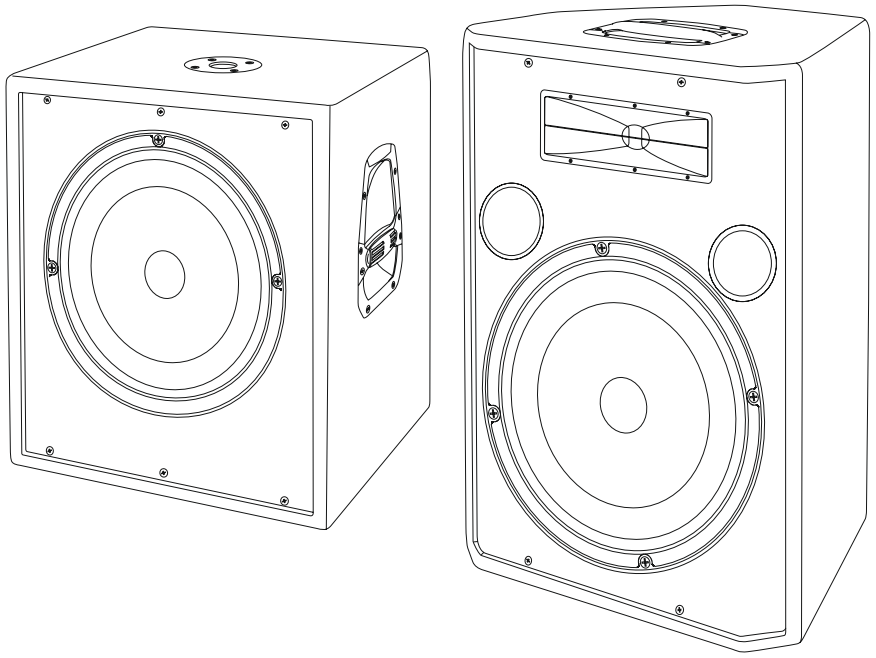
PS 12 / PS 15 / PS 18 / PP 12 / PP 15 / PP 18

User manual



1. INTRODUCTION

By purchasing a PS /PP Series loudspeaker, you have obtained an outstanding PA loudspeaker system. Now, you own (at least) one component of an expandable system that reproduces your music with a balanced and pure sound. Thanks to its numerous features, the P Series is the ideal PA loudspeaker system: it is equally well-suited for both small gigs and larger stages. We have brought it to life in order to offer you a complete selection of loudspeakers. In doing so, we have left open all the options for expanding your PA system. All loudspeakers feature professional inputs and outputs (compatible with Neutrik Speakon connectors), letting you flexibly expand your setup whenever you need to.

☞ **The following instructions are intended to familiarize you with the specialized terminology used throughout this user manual in order for you to master all the functions. After having thoroughly read the user manual, store it in a safe place for future reference.**

1.1 Before you get started

1.1.1 Shipment

Your loudspeaker was carefully packed at the assembly plant to assure secure transport. Should the condition of the cardboard box suggest that damage may have taken place, please inspect the unit immediately and look for physical indications of damage.

☞ **Damaged units should NEVER be sent directly to us. Please inform the dealer from whom you acquired the unit immediately as well as the transportation company from which you took delivery of the unit. Otherwise, all claims for replacement/repair may be rendered invalid.**

☞ **Please always use the original packaging to avoid damage due to storage or shipping.**

☞ **Never let unsupervised children play with the loudspeaker or its packaging.**

☞ **Please dispose of all packaging materials in an environmentally friendly fashion.**

INFORMATION

☞ **The sound quality may diminish within the range of powerful broadcasting stations and high-frequency sources. Increase the distance between the transmitter and the device and use shielded cables for all connections.**

☞ **ATTENTION: Never connect more than one power amp output to the loudspeaker system. This may permanently damage your setup.**

2. CONNECTIONS

The loudspeaker includes two different types of speaker inputs. You will find these on the connection panel at the rear of the loudspeaker.

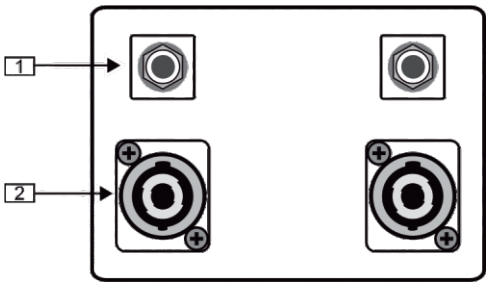


Fig. 2.1: Connection panel

[1] ¼" TS loudspeaker connectors.

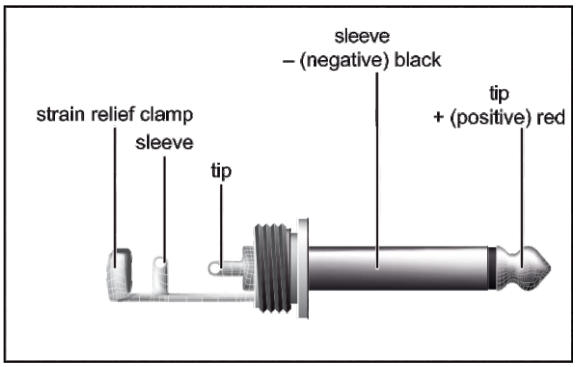


Fig. 2.2: ¼" TS loudspeaker connector

[2] Professional speaker connectors (compatible with Neutrik Speakon connectors). The pin designation of the speaker is pins 1+ and 1-. Pins 2+ and 2- are not connected.

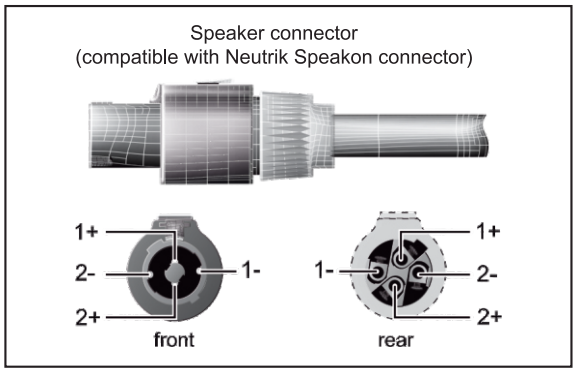


Fig. 2.3: Professional connector (Neutrik Speakon-compatible connector)

Both connectors of each type are wired in parallel. You can optionally connect one of the connectors to the output on your power amp, and tap into the signal on the second connector in order to feed this signal into an additional loudspeaker.

Mode No.	PS-12	PS-15	PS-18
	12" 2-way full range Stage Speaker	15" 2-way full range Stage Speaker	18" Subwoofer
Power RMS (W)	200W	250W	500W
Peak Power (W)	800W	1000W	2000W
Frequancy Response:	65 - 20kHz	55 - 20kHz	35-250Hz
Sensitivity @ 1W/1M (+/- dB)	96 dB	97 dB	98 dB
Nominal Impedance	8 Ohm	8 Ohm	8 Ohm
LF loudspeaker	12" woofer / 2" Voice Coil / 40 Oz Magnet	15" woofer / 2.5" Voice Coil / 50 Oz Magnet	18" woofer / 3" Voice Coil / 100 Oz Magnet
HF loudspeaker	1" Titanium Compressium Driver	1" Titanium Compressium Driver	-
Built-in Crossover	Yes	Yes	-
Box	Trapezoid / Black Carpet	Trapezoid / Black Carpet	Rectangular / Black Carpet
Handles	2	2	2
Stand Socket	35mm	35mm	35mm
Connector	2 x professional Speakon	2 x professional Speakon	2 x professional Speakon
Dimension (WxDxH)	390 x 340 x 580mm	450 x 380 x 660mm	545 x 500 x 720mm
Net Weight	16,5 kg	22 kg	48 kg

Mode No.	PP-12	PP-15	PP-18
	12" 2-way full range Stage Speaker	15" 2-way full range Stage Speaker	18" Subwoofer
Power RMS (W)	250W	350W	800W
Peak Power (W)	1000W	1400W	3200W
Frequancy Response:	55 - 20kHz	45 - 20kHz	33-250Hz
Sensitivity @ 1W/1M (+/- dB)	97 dB	97 dB	98 dB
Nominal Impedance	8 Ohm	8 Ohm	8 Ohm
LF loudspeaker	12" woofer / 2.5" Voice Coil / 50 Oz Magnet	15" woofer / 3" Voice Coil / 60 Oz Magnet	18" woofer / 4" Voice Coil / 120 Oz Magnet
HF loudspeaker	1.35" Titanium Compressium Driver	1.75" Titanium Compressium Driver	-
Built-in Crossover	Yes	Yes	-
Box	Trapezoid / Black Carpet	Trapezoid / Black Carpet	Rectangular / Black Carpet
Handles	2	2	2
Stand Socket	35mm	35mm	35mm
Connector	2 x professional Speakon	2 x professional Speakon	2 x professional Speakon
Dimension (WxDxH)	430 x 340 x 580mm	460 x 380 x 660mm	525 x 600 x 690mm
Net Weight	18 kg	23 kg	51 kg

3. POWER AMP RATING

The power rating of your amplifier should be roughly twice the continuous speaker load capacity. A speaker rated at 200 Watts continuous power can easily be powered by an amp rated at 400 Watts output power.

ATTENTION!

☞ **When several loudspeakers are wired in parallel the overall impedance Z_{total} to be handled by the power amp can be calculated, as shown below, from the individual impedance values of the connected speakers:**

$$Z_{total} = \frac{1}{1/Z_1 + 1/Z_2 + \ldots}$$

Your amplifier may be damaged if the actual impedance drops below the minimum impedance specified for your amplifier. Please make sure that the calculated total impedance Z_{total} is not smaller than specified.

4. WIRING

4.1 Full-range stereo operation

This application is for the full-range loudspeakers PS 12, PS 12, PS 18, PP 12 and PP 15, PP 18

In the following example, the main output signal of a mixing console is connected to a power amplifier. Both the outputs and inputs are stereo. A full-range loudspeaker is connected to each amp output, and these loudspeakers reproduce the entire frequency range (full range).

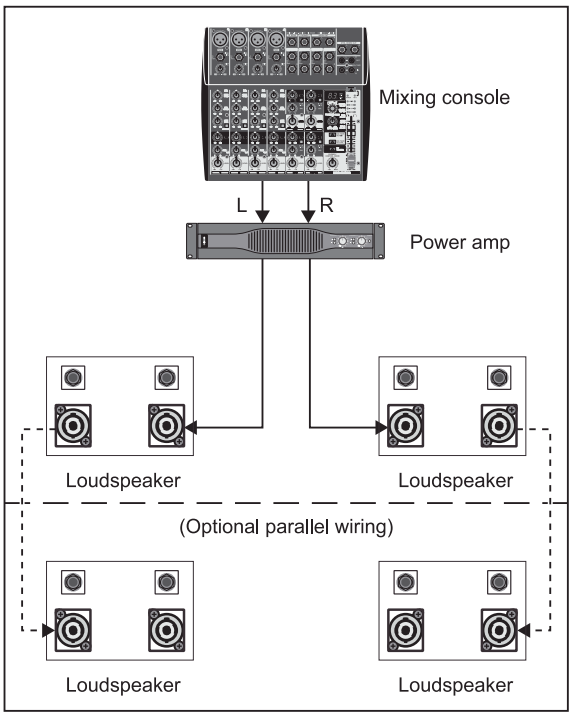


Fig. 4.1: Full-range stereo operation

4.2 Two-way stereo operation with subwoofers

This application is for the subwoofer **PS18/ PP18** in combination with the full-range speakers **PS12, PS 15, PP12** and **PP15** .

Using an external (active) crossover, the main output signal of a mixing console is divided into two signals. One signal covers the lower frequency range and the other signal covers the mid-to-high-frequency range. The recommended crossover frequency is 200 Hz. Then, the mid-high frequency signal is connected to a stereo power amplifier. A loudspeaker is connected to each of the amplifers outputs. The low-frequency signal is connected to an additional power amplifier, which powers the subwoofers.

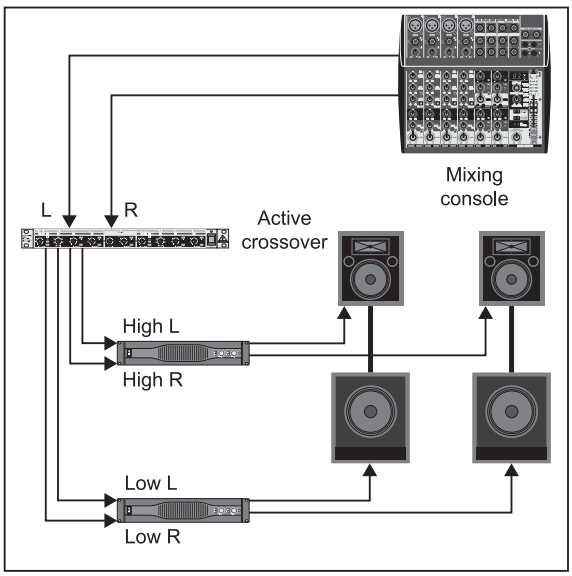


Fig. 4.2: Two-way stereo operation with subwoofers