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Owner's Manual

Package Content

Sinfoni **EDITION** *Shadow* unit

Owner's Manual

Fixing Kit

One 40A Fuse for substitution

Warranty Card

Preface

First of all, we would like to congratulate with you for your choice of our **EDITION** *Shadow* amplifier.

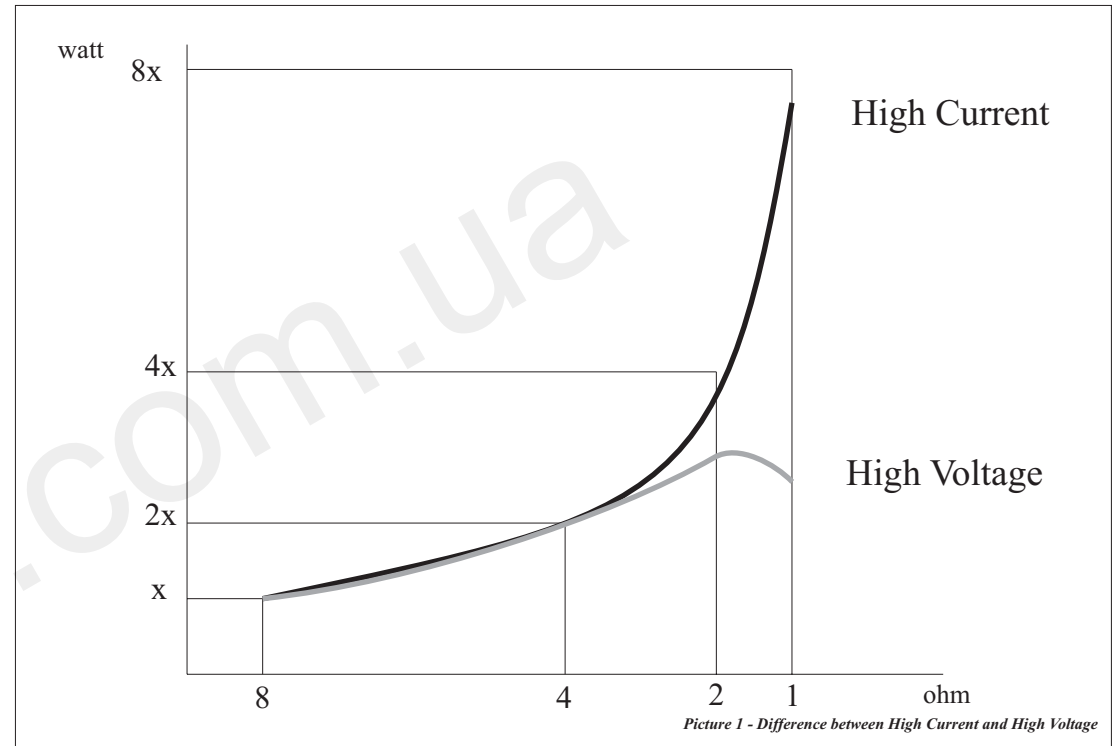
If you are reading this short introduction instead of madly flicking across the pages of this handbook looking for features like the weighted noise or the T.I.M., then maybe we have hit the target to unveil a little bit of the philosophy of our laboratories. In fact, you will not find these figures among the characteristics of our products mainly because it is our firm conviction that it is impossible to value such a product only on the basis of plain numbers. It would be like guessing the taste of a dish reading just the list of its ingredients. Only after a suitable "tasting" you will realise the striking sound properties of our products, and you will appreciate their transparency, their musicality, their depth and all other aspects that probably, as a Sinfoni purchaser, you already know. Try to describe it with cold technical parameters, if you can! In order to get the utmost from our products, we recommend you to use only high-quality components and cables: with a few adjustment every Sinfoni amplifier will give you unexpected emotions and sensations.

We kindly ask you to follow the indications mentioned in this handbook, and we wish you to enjoy Music at its best.

EDITION Shadow SPX

High Current

This amplifier belongs to the **EDITION Shadow** line, which was developed following the rules of the high current amplifiers. These types of amplifiers are projected to work on reduced and multiple-load impedances. They would seem to have a higher cost if compared with traditional (High Voltage) amplifiers, but it's important to not be misled by the performance as declared at 4 Ohms. These amplifiers can easily double the output power, both, in stereo and in bridged mode, by halving the impedance load (look at **Picture 1** for a visual illustration). Ohm's Law, the most known and probably the most important electrical formula says that the current is in inverse relation to the resistance load, so it's easy to imagine how much current must go through the amplifying stage of the unit.



Midbass and Sub

This amplifier follows the philosophy of the Sinfoni sound. To be a high current amplifier means to have a lot of energy resources to drive very difficult loads and everyone knows that the most energy-consuming systems are that ones that make an intense use of midbass and sub frequencies. Therefore we can say that this amplifier can be very useful when working with such systems. This doesn't mean that it only can be used for subwoofers, as shown on the pages of this handbook, in fact this amplifier can be used to drive any kind of system. To facilitate its use with subwoofers this amplifier has among other functionalities phase-regulation for the sub frequency.

A look inside

The power MOSFETs are lined up along the heatsink which has a very well engineered shape to assure a correct dissipation. The heatsink, elegant and practical at the same time, is the result of an in-house design, manufactured from an aluminium extrusion which is brushed and then anodised in black.

The power supply and amplification stages are buffered with multiple and large capacitors. Only carefully selected components are used to assemble these amplifiers. A very precise component location combined with large and short signal tracks are part of the secret of this powerful amplifier. Oversized and larger number of vital components, like the MOSFET, the capacitors and the toroid coils were used with the purpose to enhance quality and performance to the best level possible.

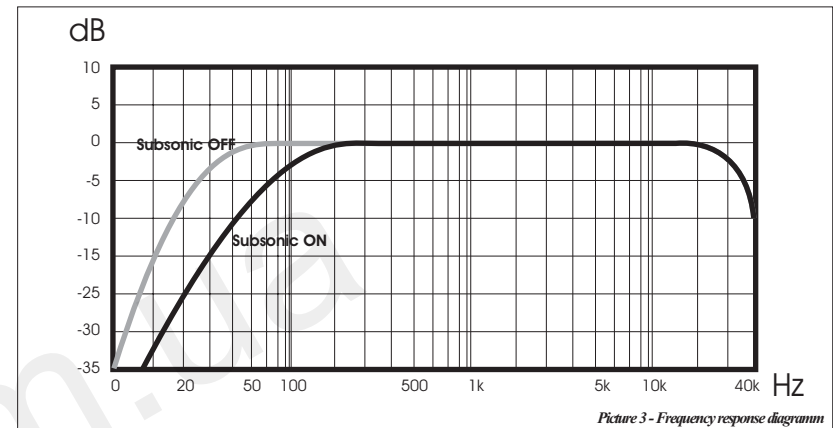
The last step

Before the amplifier is released for sale it must undergo a last test to show if it will be able to work well in almost every condition. Every single amplifier is driven to the maximum power, for not less than 15 minutes, connected to a resistance load of 4 ohms for each channel, sending as input a sinusoidal signal from 20Hz to 20kHz.

Features of **EDITION** Shadow 50.2 $S_{\text{(ubsonic)}}P_{\text{(hase)}}X_{\text{(Over)}}$

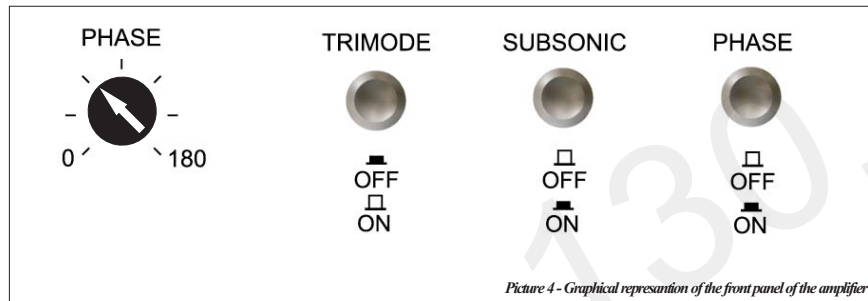
Subsonic

It's impossible for the human ear to be aware of frequencies below 20 Hz, but despite of this fact amplifiers usually reproduce these very low frequencies, consuming so amounts of precious energy. By simply activating the subsonic filter feature, the amplifier will exclude all frequencies below 25 HZ. For that purpose a high pass, 18-dB/octave at 25 Hz, filter is used. For your better understanding, please look at the schematics on the right (**Picture 3**) which shows the different frequency response. This feature is also helpful when using smaller woofers that are not able to reproduce lower frequencies.



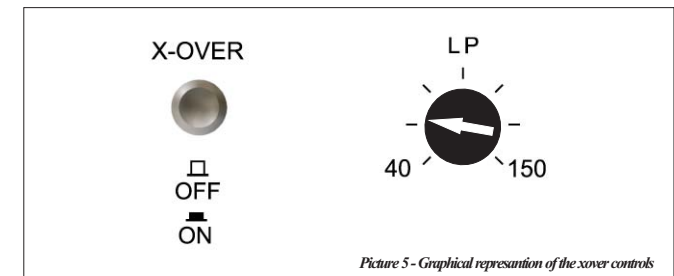
Phase Shifting

Very often the placement of a Subwoofer inside a car compartment can be a very complicated issue. The Phase shifting feature offers a rapid and simple solution to this annoying problem. Switching on the Phase function allows to shift continuously from 0 to 180° the phase of the subwoofer. This means that you can move the wave from the rear to the front of the car by simply using the proper potentiometer on the front panel.



Built in Cross-Over

This amplifier is equipped with a built-in Low Pass Cross-Over, very easy to switch on and off by pushing the button on the front panel. Once the cross-over is activated, the cut-off frequency can be regulated, from 40 to 150 Hz, through the proper potentiometer. Mutli-amplified system installations are now so much easier to implement.

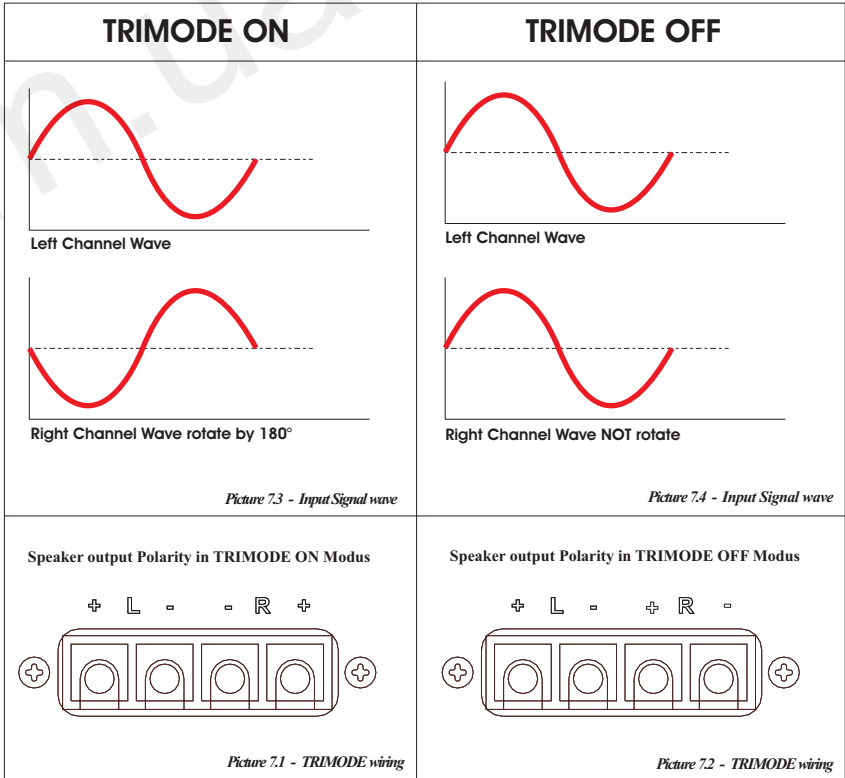
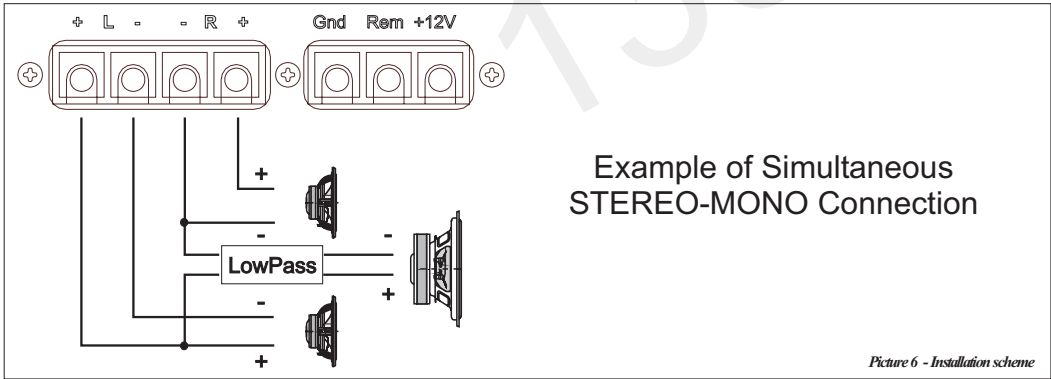


Mono

The most common reason to use a monophonic input is to use the amplifier in a bridged configuration, but as you will discover on this handbook, not the only one. Thanks to this feature, instead of using a Y cable, you can connect only the L input to your source. This will allow you the advantage to have a single input for both channels, since when using a Y cable it's not easy to trim each input level to the same point. A mono input can also be very useful when working with bi-wiring, as example for passive multi-amplification configurations.

Trimode

In order to allow a simultaneous Stereo-Mono connection, the most car amplifiers make use of the Trimode capability, which offers the possibility to connect a Sub Woofer, in bridged mode, to a stereo system (look at *Picture 6*). In order to accomplish this, the Right input channel is inverted by 180°. By switching Off the Trimode modus, the rotation of the Right input does not happen, therefore the left and right channels are now in phase with each other, rather that being 180° out of phase with each other. Of course when in Trimode Off the polarity of the Right output connector is inverted. *Picture 7* offers a graphical illustration of the difference between the two different TRIMODE statuses. Please notice also how the polarity of the speaker connector changes when Trimode is Off.



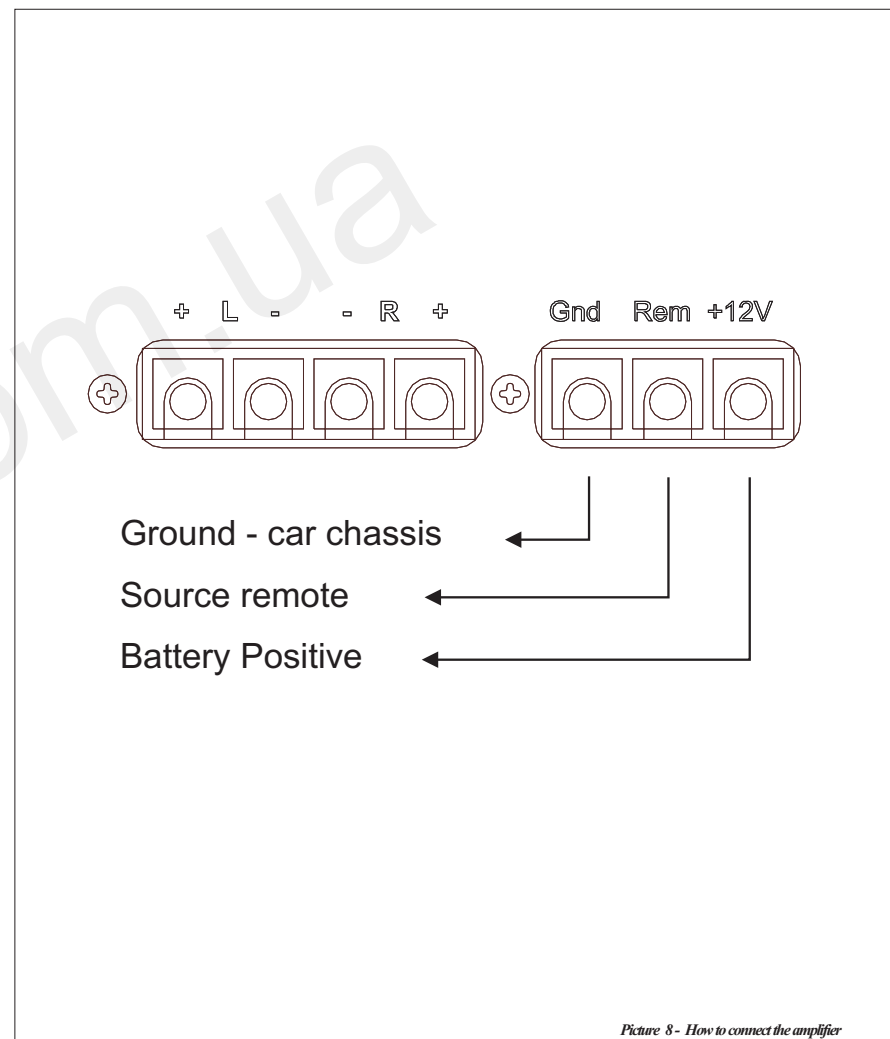
Installation Procedure

Power Supply

The Sinfoni car amplifiers are designed to work with a 12 volts DC power supply, however the voltage can range from between 11V and 14.5V.

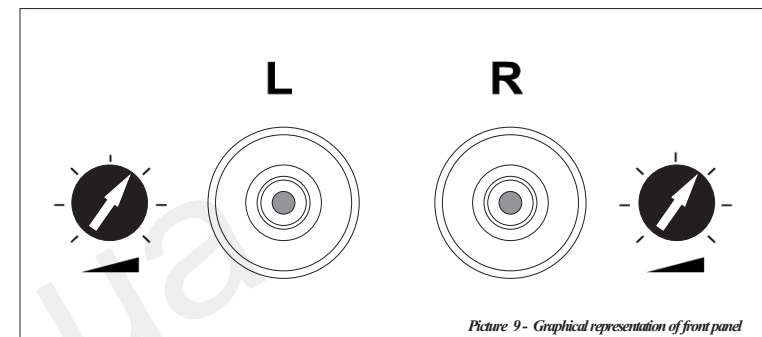
Power Supply cables must be of a suitable gauge, keeping in mind that the negative one must be connected to the ground in the nearest point of the car chassi, while the positive one must come directly from the battery. If the distance from the battery to the device is quite long, then it will be necessary to use thicker cables, in order to avoid any performance loss: we suggest your installer to use at least 6 mm² good quality OFC cables.

The REM input (remote) must be connected to the remote output of the source, which must provide at least a 60 mA current for every installed Sinfoni unit.



Inputs

The input load is 48 Kohms, and its sensitivity is adjustable from 400 mV peak - peak (150 mV RMS) to 8 V peak - peak (2.8 V RMS); therefore it perfectly matches any source, including those that provide a 4 V pre out (1.4 V RMS). The regulation is achieved rotating the input R & L potentiometers with a common screwdriver. Remember that when in MONO mode you only need to connect the L input to the source.



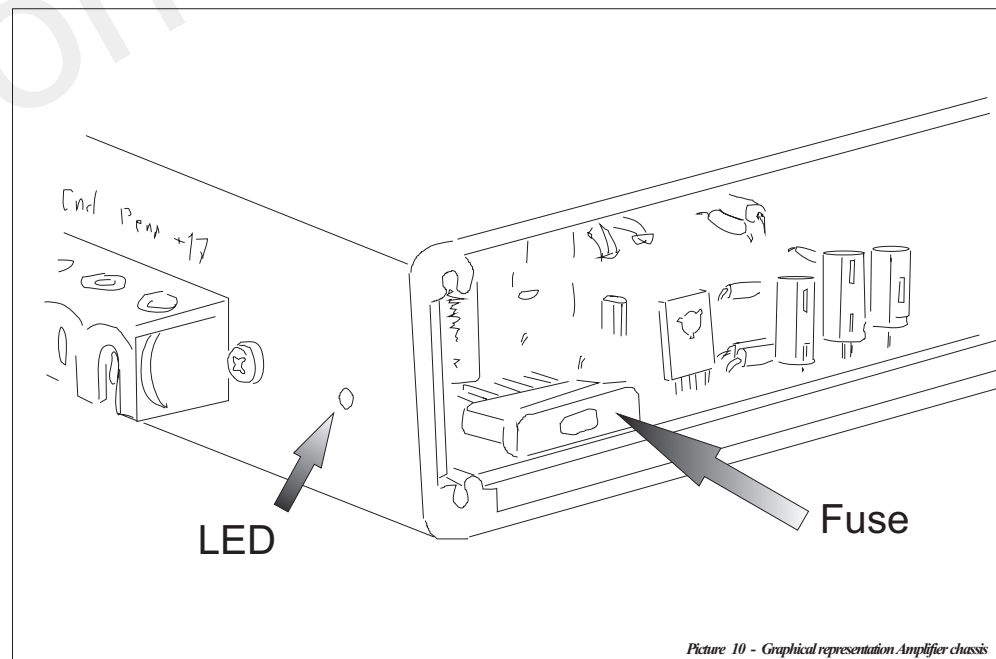
Picture 9 - Graphical representation of front panel

Lights and Protections

The red LED nearby the power connector shows the presence of Remote signal.

The thermal protection prevents the amplifier from exceeding 85°C, in case of over-heating normal operations may continue only after a temperature decrease of 10°C.

Internally, just behind the LED, you can find a fuse (40A) that can be easily reached disassembling just the amplifier's end-cap. In any case, its break is to be considered as an unlikely event, due only to a serious failure, possibly caused by an improper use of the amplifier, or a power surge during connection to the power source.



Picture 10 - Graphical representation Amplifier chassis

Installation Advice

In the following pages you can find several configuration examples to show possible installations using this amplifier. These are only a few combinations to explain the features of this amplifier and to better illustrate the use of functions like TRIMODE and MONO. Please notice the wiring of the speakers in the different TRIMODE statuses, it is very important to understand the technical differences between TRIMODE ON and TRIMODE OFF, since a wrong wiring can affect the quality of the installation.

Only the cerativity and the ability of the installer can tell what system is the best solution for your needs, a lot depends on the musical result you want to achieve, and on the acoustic characteristics of your specific vehicle. Therefore we suggest to always cooperate with professional and trusted installers.

Some features can work in conjunction with others and some features exclude others; please have a look at the diagram below, taking as strating point the xover status you can see featurers that are available and the possible combinations of TRIMODE and MONO.

AVAILABLE	AVAILABLE	Xover ON	ON	ON	Mono Bridged (Picture 15)
				OFF	
			OFF	ON	Mono Double Coil (Picture 16)
				OFF	
PHASE	SUBSONIC		TRIMODE	MONO	SYSTEM
NOT AVAILABLE	AVAILABLE	Xover OFF	ON	ON	Bridged Stereo Multi Amplifier (Picture 12)
				OFF	Simultaneous Stereo-Mono (Picture 11)
			OFF	ON	Stereo Multi Amplifier (Picture 14)
				OFF	Stereo Single Amplifier (Picture 13)

**STEREO-MONO SYSTEM
SINGLE AMPLIFIER - PASSIVE X-OVER**

Speaker Output Polarity

Trimode Switch

Xover Switch

Mono Switch

+


L

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R

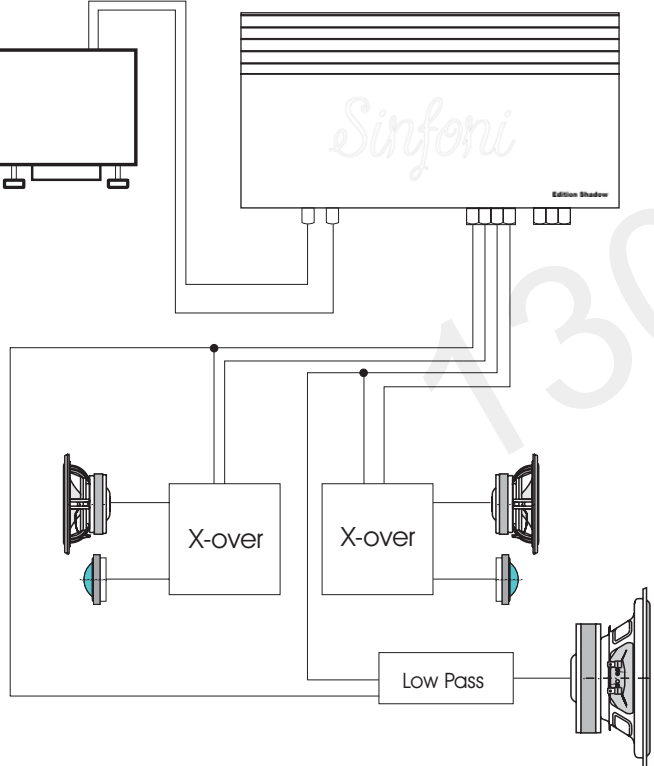
+



ON

OFF

OFF



Picture 11 - Installation example

**BRIDGED STEREO SYSTEM
MULTI AMPLIFIER- PASSIVE X-OVER**

Speaker Output Polarity

Trimode Switch

Xover Switch

Mono Switch

+


L

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.

R

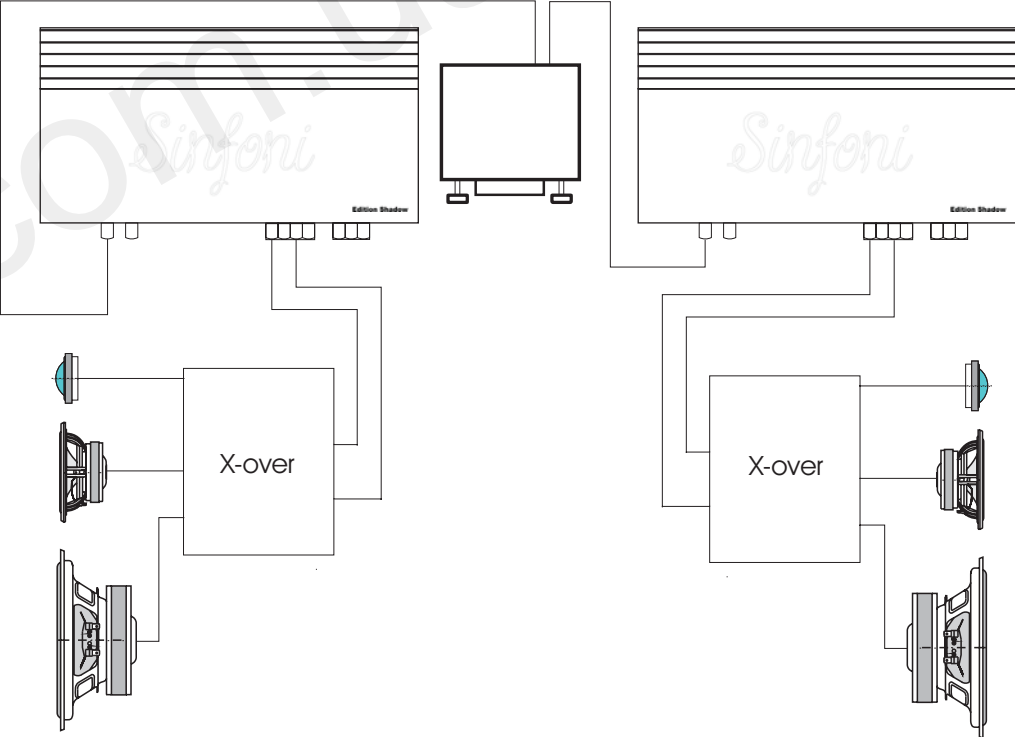
+



ON

OFF

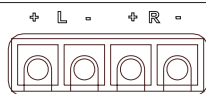
ON



Picture 12 - Installation example

STEREO SYSTEM SINGLE AMPLIFIER

Speaker Output Polarity



Trimode Switch

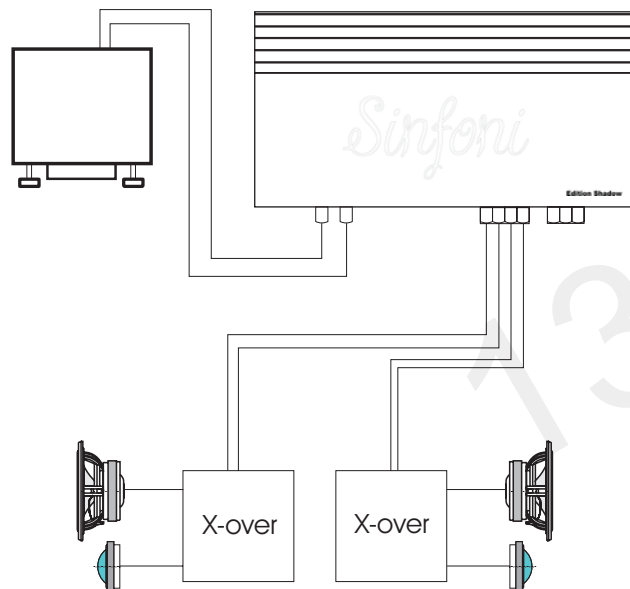
OFF

Xover Switch

OFF

Mono Switch

OFF

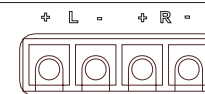


**ATTENTION PLEASE. RIGHT SPEAKER
OUTPUT POLARITY IS INVERTED**

Picture 13 - Installation example

STEREO SYSTEM MULTI AMPLIFIER- PASSIVE X-OVER

Speaker Output Polarity



Trimode Switch

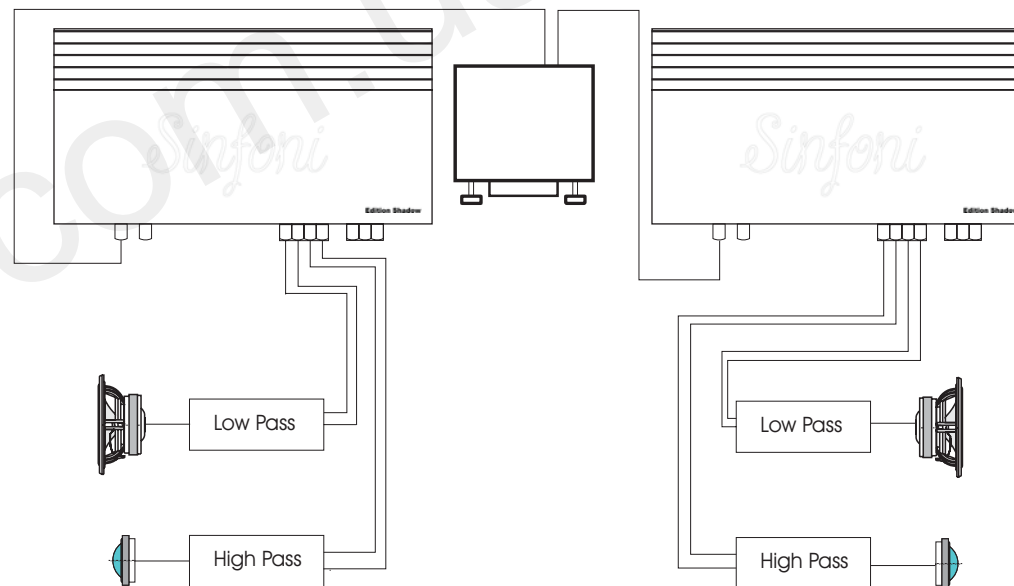
OFF

Xover Switch

OFF

Mono Switch

ON

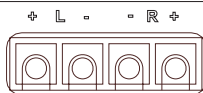


**ATTENTION PLEASE. RIGHT SPEAKER
OUTPUT POLARITY IS INVERTED**

Picture 14 - Installation example

MONO BRIDGED SYSTEM

Speaker Output Polarity



Trimode Switch

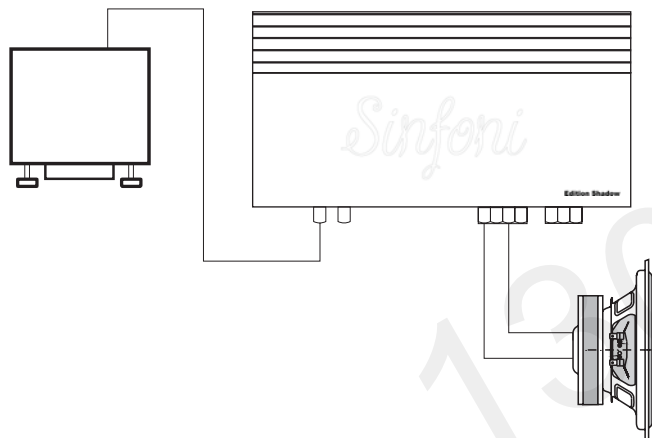
ON

Xover Switch

ON

Mono Switch

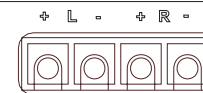
ON



Picture 15 - Installation example

MONO DOUBLE COIL SYSTEM

Speaker Output Polarity



Trimode Switch

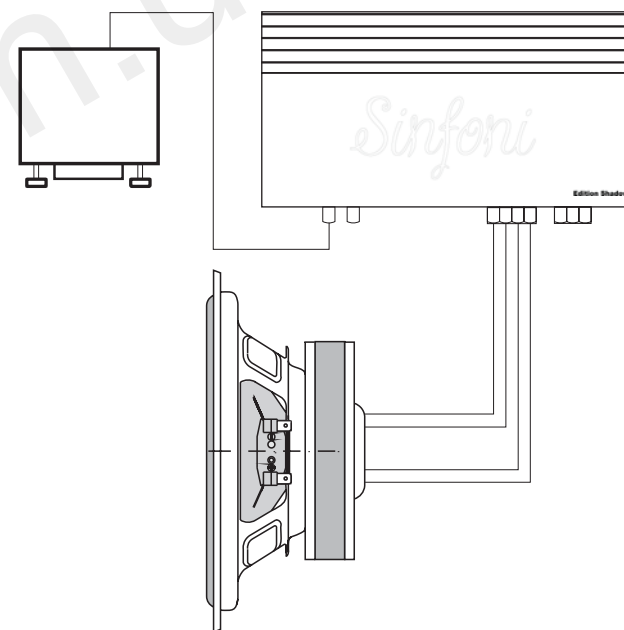
OFF

Xover Switch

ON

Mono Switch

ON



**ATTENTION PLEASE. RIGHT SPEAKER
OUTPUT POLARITY IS INVERTED**

Picture 16 - Installation example

Specifications

Power Supply	9-15 Vcc
Stand-by Current	<1.2 A
Input Sensitivity	0.4-8 V
Input Impedance	48 Kohm
Current Draw@ max output	76 A

Output Power (RMS values)	
4 ohms @ 12 V	80 W x 2
2 ohms @ 12 V	140 W x 2
1 ohms @ 12 V	220 W x 2
4 ohms @ 12 V	280 W x 1
2 ohms @ 12 V	440 W x 1

Dimension	315mm x 187mm x 40mm
Weight	3,5 Kg

Built in Active Cross-Over, subwoofer mono low pass filter 24 dB/oct continuously adjustable from 40 to 150 Hz.

Subsonic stereo high pass filter 18 dB/oct 25 Hz.

Phase shifting controls for subwoofer, continuously adjustable from 0° to 180°.

Trimmode Off function.