



RECOIL[®]

MS69-4P

Midrange speaker system 6x9-inch

User Manual

INSTALLATION

Congratulations on your purchase of our product! We hope that RECOIL acoustics will delight you with impressive performance. In the production of MS acoustics, high-quality components and ultramodern materials are used. This manual contains the basic instructions required for the correct installation and use of the system. Before installing the components, please read all instructions in this manual carefully. Failure to follow instructions can result in unintentional damage or product damage.

To install MS69-4P speakers, it is recommended to contact a professional car audio installation service. Correct acoustics setting allows you to achieve excellent sound and extend the service life.

PRECAUTIONS

ATTENTION!

Prolonged exposure to sound pressure 100 dB and higher can cause hearing loss. Use common sense and practice safe sound. Remember that prolonged exposure to excessively high sound levels can damage your hearing. Driving safety comes first.

The manufacturer is not responsible for hearing loss, body damage or property damage due to misuse of this product.

ATTENTION!

Proceed with the installation only if you are a qualified car audio installer, otherwise contact a professional installation service.

- Always wear safety glasses when using tools.
- Before proceeding with the installation, turn off the car head unit and other electronic devices.
- Disconnect the negative (-) terminal from the car battery before starting the installation.
- Store the loudspeaker in its packaging if you have not proceeded to install it, and always place the loudspeaker with the cone facing up. Never use force when installing speakers.
- Determine the location of the fuel lines, brake pipes, oil lines, and vehicle electrical wiring before proceeding with the installation.

- Check that the installation site has sufficient air exchange on both sides of the speakers before drilling holes.
- Check that nothing interferes with the normal operation of the cone, otherwise the cone will be damaged.
- Use a utility knife to cut off excess pieces of fabric near the hole where the speaker will be installed before starting drilling.
- Use a grommet for the speaker wires (not included) when pulling through sheet metal, otherwise the wire may be damaged by the metal edges of the hole.

PRECAUTIONS

Speaker - 1 pair

Instruction - 1 pc

Mounting Screws - 8 pcs

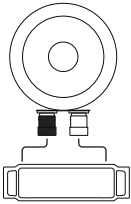
EXAMPLES OF CONNECTING SPEAKERS

Your midrange speakers have a single voice coil and 4Ω impedance.

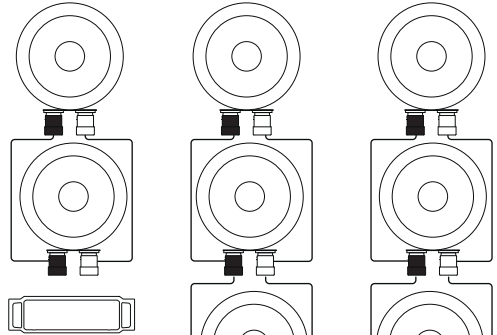
You need to know the maximum power of your amplifier to optimize your sound,

You can vary the impedance parameter by connecting the midrange acoustics: in series, in parallel or mixed. Please select a suitable midrange speaker connection scheme depending on the number of speakers to be connected through the speaker system and the stability of the amplifier impedance. The most important thing when connecting speakers is to make the connection so that none of the speakers are overloaded. Overload threatens to damage the speaker. It is important to understand that the speaker can be powered either less or equal to the rated power for which it is designed. Otherwise, any speaker will be damaged due to overload. Before connecting the speakers, you need to determine their nominal power (W), the active resistance of the voice coil (Ohm), which are indicated on the magnet or in the technical specifications in the attached instructions.

1 Speaker



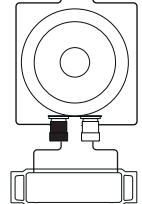
Connection in Series



2

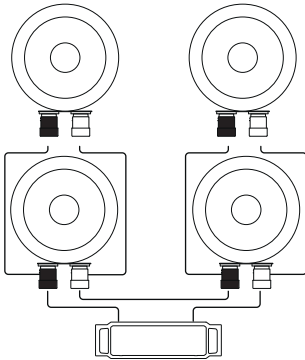


3



4

Mixed Connection



1 Speaker DC resistance	MS69-4P
1 Speaker	3.00
Parallel Connection	2 1.50
	3 1.00
	4 0.75
Mixed Connection	3.00
Measurements in Ohm (Ω)	

INSTALLATION

To install the MS midrange speakers, the help of a professional installation service is required. In this manual, only the basic rules for connecting mid-range speakers and technical specifications are presented.

SELECTING SPEAKER LOCATIONS

The choice of where the speaker will be installed has the greatest influence on sound quality. You need to think carefully about where the speaker system will be installed. Places for installing speakers should be of sufficient size. It is necessary to check that, due to the chosen installation locations of the speakers, there is no interference in the operation of the mechanical parts and electronics of the car.

PREPARING FOR INSTALLATION

Note: You may need the tools listed below

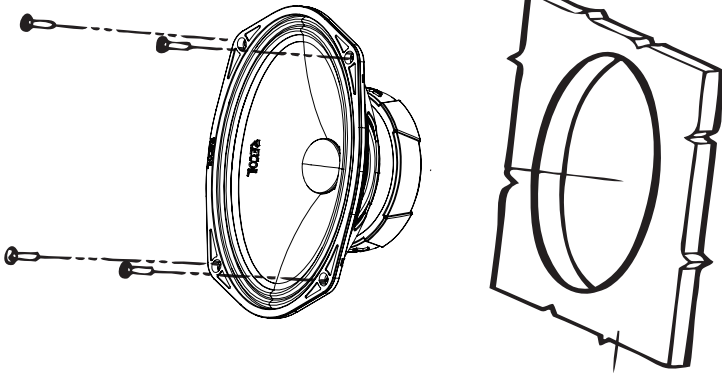
- Electric drill + drills
- Electric hacksaw for metal
- Standard set of screwdrivers
- Stripping pliers
- Crimping tool and needle nose pliers
- Silicone sealant (for acoustic enclosure), sealing strip (for speakers)

INSTALLATION IN THE DOOR

Before proceeding with the installation of speakers in the car door, please check its construction and window operation. There is a stabilizing stop bar in the car door, which is located between the door and the door arch. The lock bar prevents the door from being opened unnecessarily.

INSTALLATION IN THE REAR PART OF CAR

Before installing the speakers in the rear part of carbody, please check the operation of the suspension springs of the trunk or the tension rods. The rods move inward when the trunk is opened. Do not install the speakers too close to the rear window, otherwise it will have to be removed when you screw in the screws.



Mounting surface
Installation surface should be flat

INSTALLATION OF MIDRANGE SPEAKERS

1. Choose a place to install the speaker. Make sure the mounting surface is flat and fits the mounting dimensions of the speaker. Placing the speaker on an uneven surface will damage the speaker.
2. Make sure that the chosen location for the speaker does not interfere with the operation of the vehicle,
3. Cut the template based on the speaker outer diameter. Place the template on the mounting surface where the speaker should be installed and trace around it with a pencil.
4. Make a hole for the speaker. The hole can be made either with a metal shears or with an electric hacksaw for metal.
5. The speaker wire (not included) needs to be connected to the speaker. Use a grommet for the speaker wire when pulling through sheet metal, otherwise the wire may be damaged by the metal edges of the hole.
6. Drill holes with a 1/8 "(3mm) drill.
7. Pull the speaker wire through the hole made and connect to the speaker. Observe the polarity when connecting the speakers.
8. Secure the speaker with screws.

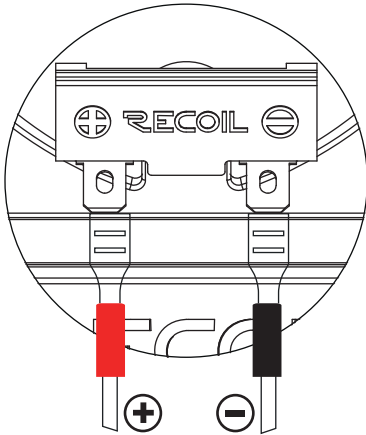
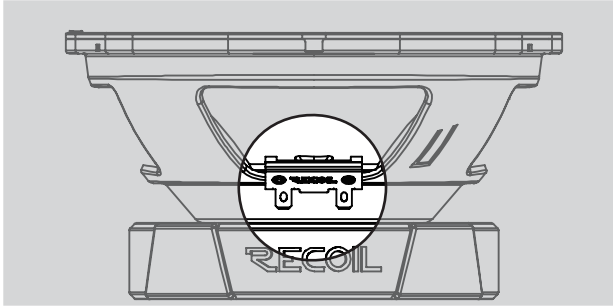
RECOMMENDED CROSSOVER SETTINGS

For optimum performance, it is recommended to adjust the crossover according to the recommendations below.

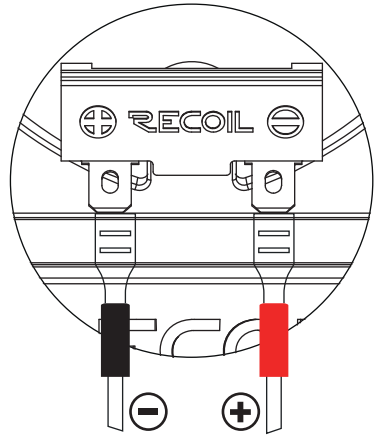
NOTE Crossover settings depend on speaker sizes.

Recommended active crossover 75Hz - 12kHz, 12dB per octave.

CONNECTION

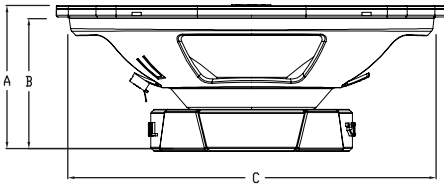
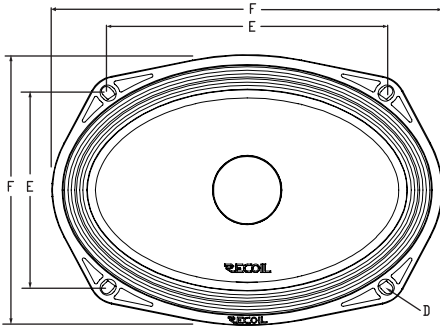


YES



NO

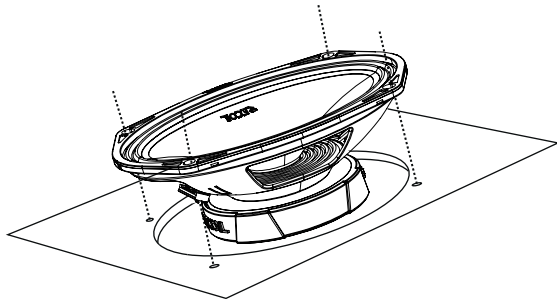
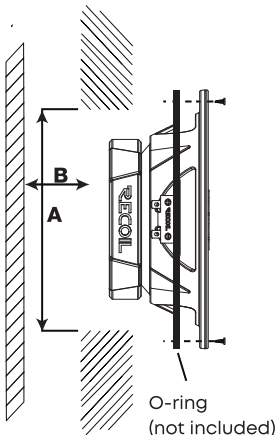
SPEAKER DIMENSIONS



Code	MS69-4P
A	87
B	80
C	152x222
D	5.8x8.5
E	122x170
F	163.5x235.5

Unit:mm

INSTALLATION DIMENSIONS



Installation Dimensions	
Model	MS69-4P
A	87mm
B	80mm

SPECIFICATIONS

Type: Midrange speaker

Configuration: 1-way

Size: 163.5x235.5mm (6x9")

RMS Power: 175 Watts

Peak Power: 350 Watts

Nominal Resistance (Ohm): 4Ω

Mounting Depth: 80mm (3.15")

Mounting Diameter: 152x222mm (5.98"x8.74")

Sensitivity (1W/1m): 93dB (+/-3dB)

Frequency Range: 75-12kHz

Cone Material: Pressed Paper Fiber

Suspension Material: Fabric

Voice Coil Diameter: 38mm (1.5")

Coil Material: KSV

Wire Winding Height: 6mm (0.24")

Magnet Material: Ferrite

Magnet Size/Weight: 115 x 45 x 13mm/ (20oz)

THIELE- SMALL PARAMETERS

Fs: 83 Hz

Sd: 229.7 cm²

Re: 3.0 Ω

X max: 0.5 mm/ 0.02 in

Qes: 1.02

Mms: 11 g

Qms: 4.41

Bl: 4.2 Tm

Qts: 0.83

Le: 0.01 Mh

Vas: 25 L/0.88 ft³

User Manual



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