



**RECOIL<sup>®</sup>**

## **M1-65/M1-65K**

Marine Speakers with RGB LED System 6.5-inch

## **User Manual**

## INSTALLATION

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Congratulations on your purchase of our product! We hope that RECOIL acoustics will delight you with impressive performance. In the production of our marine speakers, 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 M1-65/ M1-65K speakers, it is recommended to contact a professional audio installation service. Correct acoustics setting allows you to achieve excellent sound and extend the service life.

## PRECAUTIONS

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### 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. 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 marine audio installer, otherwise contact a professional installation service.

- Always wear safety glasses when using tools.
- Before proceeding with the installation, turn off the head unit and other electronic devices.
- Disconnect the negative (-) terminal from the 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 oil lines, and boat 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.

## PACKING LIST

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### M1-65 Bill of Material

6.5" Speakers X 2  
Silver Grills X 2  
White Grills X 2  
Speaker Wire X 2  
Mounting Screws X 12

### M1-65K Bill of Material

6.5" Speakers X 2  
Silver Grills X 2  
White Grills X 2  
RGB LED Rings X 2  
RGB LED Controller X 1  
Speaker Wire X 2  
RGB LED Harness X 2  
Mounting Screws X 12

## EXAMPLES OF CONNECTING SPEAKERS

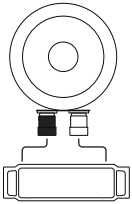
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Your Marine speakers have a single voice coil and  $4\Omega$  impedance.

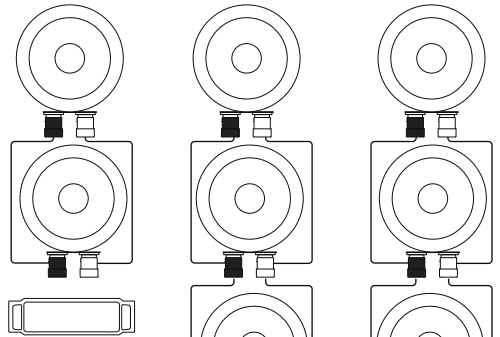
You need to know the maximum power of your amplifier to optimize your sound,

You can vary the impedance parameter by connecting the marine speakers in series, in parallel or mixed. Please select a suitable marine speakers 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



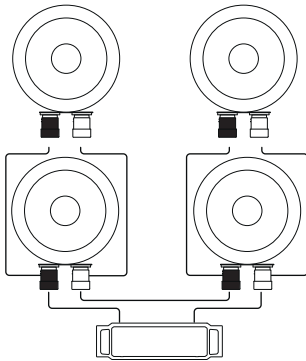
Connection in Series



2

3

Mixed Connection



4

<b>1 Speaker DC resistance</b>	M1-65/M1-65K
<b>1 Speaker</b>	3.20
<b>Parallel Connection</b>	<b>2</b> 1.60
	<b>3</b> 1.10
	<b>4</b> 0.8
<b>Mixed Connection</b>	3.20
<b>Connection</b>	Measurements in Ohm ( $\Omega$ )

## INSTALLATION

To install the M1-65 speakers, the help of a professional installation service is required. In this manual, only the basic rules for connecting speakers and technical specifications are presented.

### SELECTING SPEAKER LOCATIONS

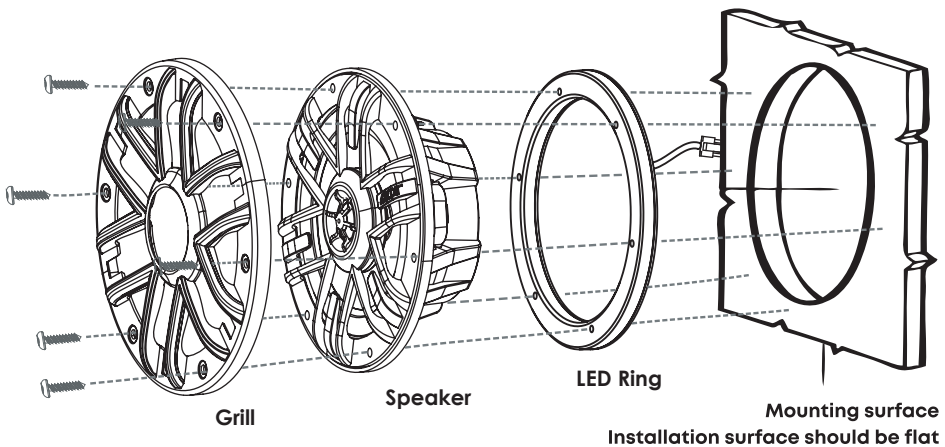
The choice of where the speaker will be installed has the greatest influence on sound quality. You need to think carefully about where the speaker system will be installed. Places for installing speakers should be of sufficient size. It is necessary to check that, due to the chosen installation locations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

### PREPARING FOR INSTALLATION

**Note:** You may need the tools listed below

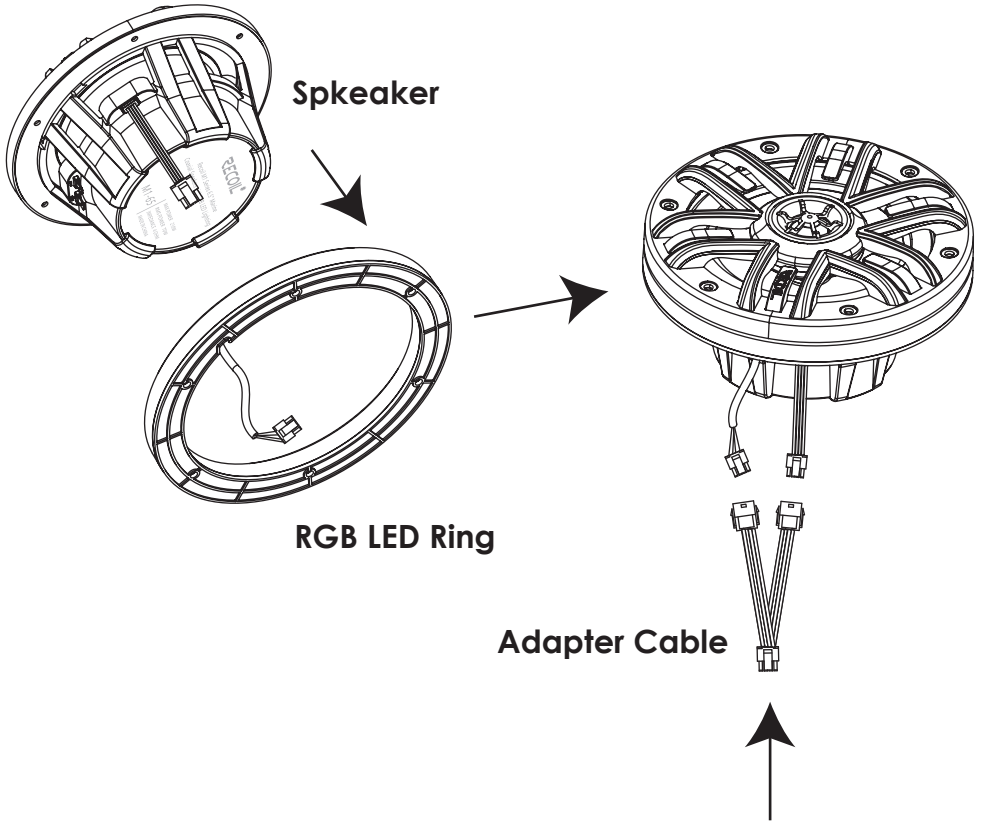
- Electric drill + drills
- Hacksaw, electric hacksaw for metal
- Standard set of screwdrivers
- Stripping pliers
- Crimping tool and needle nose pliers
- Silicone sealant (for acoustic enclosure), sealing strip (for speakers)

### INSTALLATION OF MARINE SPEAKERS

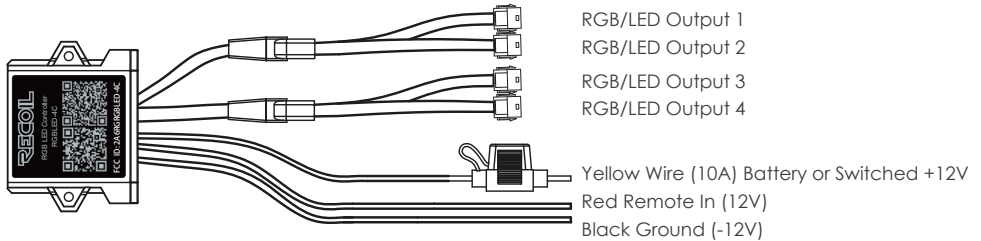


1. Choose a place to install the speaker. Make sure the mounting surface is flat and fits the mounting dimensions of the speaker. Placing the speaker on an uneven surface will damage the speaker.
2. Make sure that the chosen location for the speaker does not interfere with the operation,
3. Cut the template 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.

CONNECTION

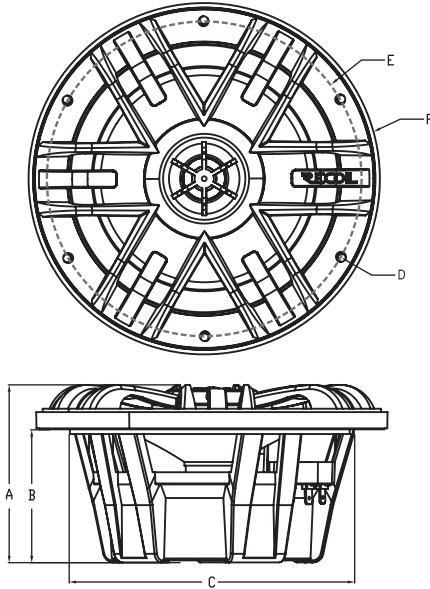


RGB LED Controller



\* Please refer to the RGBLED-4C user manual for the usage of RGB LED Controller.

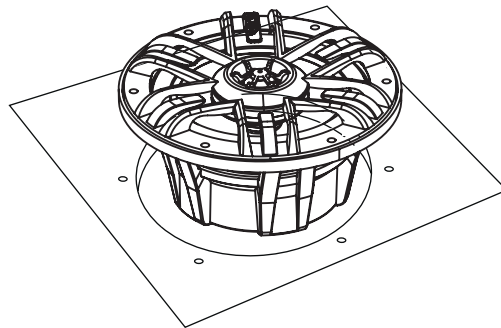
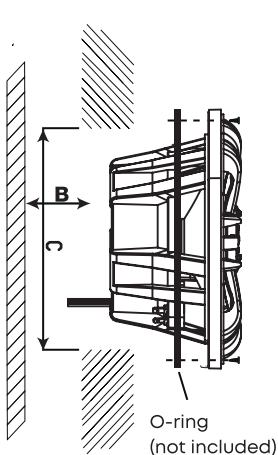
**SPEAKER DIMENSIONS M1-65**



Code	M1-65
A	90.5
B	66
C	140
D	6-4.2
E	156
F	177

Unit: mm

**INSTALLATION DIMENSIONS M1-65**



Installation dimensions (mm)	
Model	M1-65
B	66
C	140



## SPECIFICATIONS M1-65

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Type Marine speaker

Configuration: 2-way

Size: 165mm (6.5")

Minimum Input (RMS): 60 W

Rated Power (RMS): 120 W

Peak Power: 240 W

Nominal Resistance (Ohm): 4  $\Omega$

Minimum Resistance (Ohm): 3.2  $\Omega$

Mounting Depth: 66 mm (2.6")

Mounting Diameter: 140 mm (5.52")

Sensitivity (1W/1m): 89 dB (+/-3dB)

Frequency Range: 50-20 kHz

Cone Material: Pressed Paper Fiber (waterproof)

Suspension Material: Nitrile Butadiene Rubber

Voice coil Diameter: 25.5 mm (1.0")

Coil Material: KSV

Wire Winding Height: 9.5mm (0.37")

Magnet Material Ferrite

Magnet Size /Magnet Weight: 80 x 32 x 15 mm/(11oz)

## THIELE PARAMETERS

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Fs: 58Hz

Re: 3.2  $\Omega$

Qes: 0.9

Qms: 7

Qts: 0.79

Vas: 15.2 L/0.537 FT<sup>3</sup>

Sd: 125 cm<sup>2</sup>

X max: 3.0 mm/ 0.12 in

Mms: 10.8 g

Bl: 3.98 Tm



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