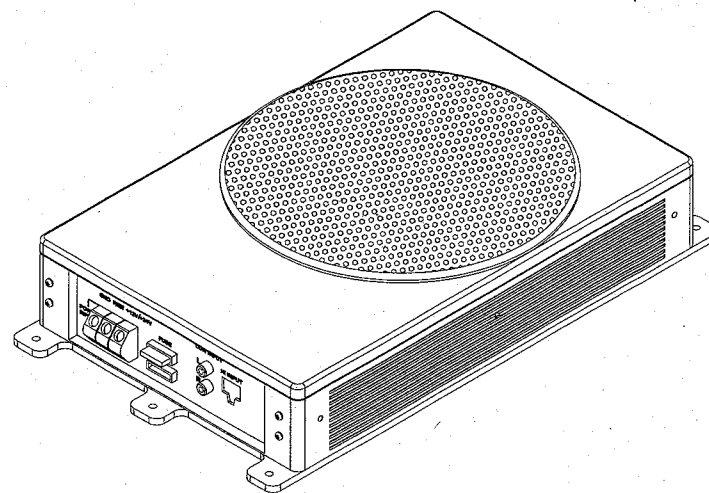




Low Profile 8" 150watt Amplified Subwoofer Installation Instructions



P/N 230067

Radio Engineering Industries, Inc.
www.Radioeng.com
Rev 0 3/30/09

Thank you for purchasing the 150Watt Amplified Subwoofer from REI. This product is designed and tested to withstand temperature and vibration extremes. Please read the owner's manual carefully before attempting to install this unit.

IF ADDITIONAL INSTALLATION COMPONENTS ARE NECESSARY, CONTACT YOUR REI SALES REP FOR:

- ** OEM /FACTORY WIRING HARNESS ADAPTERS**
- ** ANTENNAS & ANTENNA ADAPTERS**
- ** SPEAKERS & GRILLS**

If you have an installation question or need installation assistance, please call the:

SERVICE HOT LINE

1-877-726-4617 Toll Free USA & CANADA

1-402-339-2200

Contents

Introduction	3
What is included	3
Features	3
General precautions	4
Protection circuitry	4
Installation precautions	5
Fuses	5
Mounting the subwoofer	6
Connecting the subwoofer	6
Front panel controls and features	8
Rear panel controls and features	9
Low/High level Input wiring	10
Power connections.....	11
Remote level control connection	11
Troubleshooting	12
Specifications	13

Introduction

The REI 8" Powered Subwoofer is small enough to easily fit below the seat of any vehicle. It offers you a quick and easy way to add a high-powered subwoofer to your audio system.

The REI subwoofer accepts either a +12V or +24V DC Negative Ground input.

The integrated amplifier in the subwoofer features both high pass and low pass crossovers, and a control for adjusting the input sensitivity from 0.2v to 6v.

Both high level (speaker level) and low level (RCA type) inputs are present, making this a universal solution for use with any head unit or other input source.

The subwoofer is equipped with an AUTO TURN ON feature. If switched to ON, it is NOT necessary to connect the remote turn on trigger wire.

For further flexibility in the use of a subwoofer, a variable bass boost control has been included. You can control the subwoofer level with the remote level control module.

What is included?

When first unpacking your new amplified subwoofer, please check first that the package contains all of the items below. If something is missing, contact the store where you purchased it.

- * Amplified subwoofer
- * Remote subwoofer level control
- * Remote subwoofer control cable
- * High level input harness
- * Mounting hardware

Features

Your new powered subwoofer features the following:

- * MOSFET PWM (Pulse Width Modulated) Power Supply
- * Thermal, overload and speaker short protection
- * Soft turn-on circuit
- * Auto turn-on/turn-off circuit
- * Variable input gain control
- * Variable low and high pass crossovers
- * Variable bass boost (0 to 18dB)
- * Variable phase shift (0 to 180 degree)
- * Nickel plated RCA inputs
- * LED power and protection indicators
- * Remote subwoofer level control
- * Protective end-caps

General precautions

* During long periods of use, the chassis of the subwoofer may become HOT. Avoid contact with unit until the subwoofer has had a chance to cool.

* To avoid risk of electronic shock or damage to the unit, do not permit any of this equipment to become damp or wet from water or drinks. If this does occur, immediately unplug the power wires and send the product to your local REI dealer or service center as soon as possible.

* If there is smoke or any peculiar odor present during use or if there is damage to any of the component enclosures, immediately unplug the power cord and send the product to your local REI dealer or service center as soon as possible.

Protection circuitry

The built-in amplifier incorporates special protection circuitry which will disable the amplifier if any of the following should occur:

- * Input overload
- * Short circuit
- * Extremely high temperatures

If any of these conditions is detected, the amplifier will go into a self-preservation mode, and the PROTECT LED on the control panel will glow in RED color.

What should I do if the POWER STATUS LED turns RED?

If you observe that the POWER STATUS LED IS RED, please check the system carefully to determine what has caused the protection circuit to engage.

To reset the amplified subwoofer when it is in PROTECT mode, turn the power off to the system (usually by turning off the head unit or other signal source which feeds the amplifier) and then turn it on again.

If the internal amplifier has shut down due to thermal overload, you should first allow it to cool down before restarting.

If the shut down was due to either an input overload or a short circuit, be sure to correct these conditions before attempting to power up the subwoofer again.

Installation precautions

Before you drill or cut any holes, investigate the vehicles layout very carefully. Take special care when you work near the gas tank, fuel lines, hydraulic lines and electrical wiring.

Never operate the subwoofer when it is un-mounted. Attach all audio system components securely to the amplifier to prevent damage, especially in an accident.

Do not mount this product so that wire connections are unprotected, in a pinched condition, in contact with any metal surfaces in your vehicle, or likely to be damaged by nearby objects.

Before making or breaking power connections in your system, disconnect the vehicle battery. Confirm that your head unit or other equipment is turned off while connecting the input jacks and speaker terminals. If not it is recommended that you use the AUTO TURN ON feature of the amplifier.

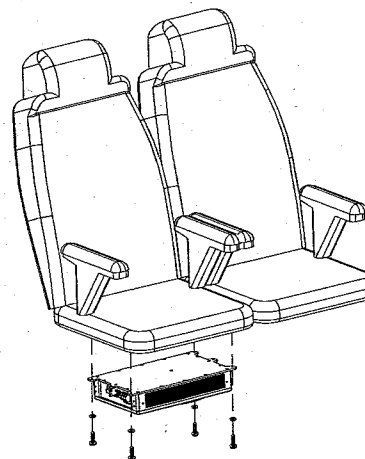
If you need to replace the power fuse, replace it only with a fuse identical to that supplied with the product. Using a fuse of a different type or rating may result in damage to your audio system or your amplifier which is not covered by REI's warranty.

Fuses

Power fuse protect both the amplifier and the electrical system of your car from fault conditions. If you must replace a fuse in your powered subwoofer, use a fuse of exactly the same type and rating (15A). Using a different type or rating of fuse may result in damage to your amp or vehicle or cause a fire.

Mounting the subwoofer

1. Find a suitable location in the vehicle in which to mount the amplifier. Universal mounting tabs are built onto the subwoofer to make the installation as flexible as possible. A typical location under a seat is shown below:



2. Under seat mounting may require the installer to build an adapter plate.

Use Rubber dampers to isolate any vibration from the seat if necessary.

3. Make sure there is sufficient air circulation around the intended mounting location.

4. Mark the location for the mounting hole screws by positioning the cabinet where you wish to install it. Make a small mark to identify the position and remove the unit.

Connecting the subwoofer

Before doing any wiring, look through this manual and identify the diagrams to follow for power, input, and speaker connections for your particular installation. Be sure you understand all the connections before you proceed.

1. Remove both protective end-caps from the amplifier. Connect the ground terminal to the closest point on the chassis of the vehicle. Keep this ground wire to less than 39" (100cm) in length. Use 8ga (or heavier) wire. The ground should be scrapped with a steel brush to remove any paint for a solid noise free ground.

2. If the AUTO TURN ON is set to off, connect the remote terminal to the remote output of the head unit using 16 gauge (or heavier) wire.

3. Connect an empty fuse holder within 18" (45cm) of the car battery, and run 8 gauge (or heavier) cable from this fuse to the amplifier location. If using the amplifiers LOW LEVEL inputs, make sure that the amplifiers power wire is at least 2 feet away from the low level RCA cable to reduce the chance of inducing noise into the system.

4. Check that the fuse holder is empty. Then connect the fuse holder to the +12/24V connection on the amplifier.

5. Connect to one of the line inputs using high-quality cables. Never connect both the High & Low Level inputs together at the same time. If using the High Level inputs, connect all speakers, following the diagrams in this manual. Be sure to observe proper polarity to avoid audio phase problems.

6. Insert fuse(s) into battery fuse holders.

7. Recheck all connections before powering up the subwoofer.

8. Set all level controls to minimum position, and set all crossover control/switches to the desired frequency points.

9. Power up the head unit and the subwoofer. Then set the volume control on the head unit to about 3/4 volume, and adjust the subwoofer's input level controls to just below the level of distortion.

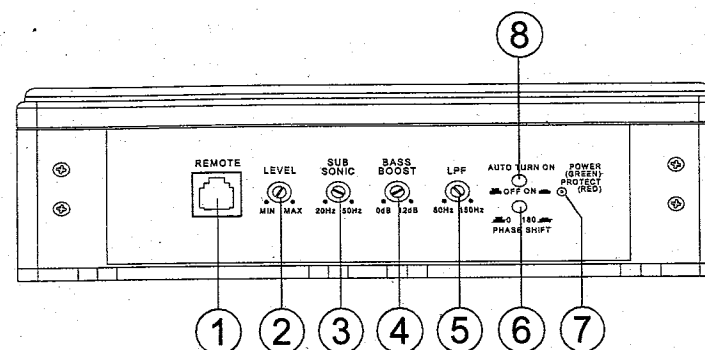
10. Further fine tuning of the various controls may be necessary to obtain best results.

Do not mistake the input level control for a volume control! It is designed **ONLY** to match the output level of your audio source to the input level of your subwoofer.

Do not adjust this input level to maximum unless your input level requires it.

Ignoring these instructions will result in an input overload to the amplifier in the subwoofer, and excessive audio distortion. It can also cause the protection circuit to engage.

Front panel controls and features



① REMOTE LEVEL CONTROL PORT

Attach the included remote level control to control the volume level of the subwoofer independently.

② INPUT GAIN CONTROL

After you have installed your system, turn this control to minimum.

Turn the head unit on (and the subwoofer will turn on via the remote connection). Turn the head unit volume to about 3/4 full level.

Slowly turn up the subwoofer input gain control until you hear a small amount of distortion. Then reduce the level until the distortion is completely gone. Level the control at this setting.

③ SUBSONIC FILTER

Use this control to filter out low frequency noise and rumble.

④ BASS BOOST

The bass boost feature will increase the sound level in the bass frequencies.

⑤ LOW PASS FILTER

This control permits you define the frequency range you want the subwoofer amplifier to receive. The subwoofer will reproduce all sound **BELOW** the frequency you set.

If the rest of your system is weak on the mids, you may wish to set this control relatively high. If the midrange is well covered by the rest of your system, you will probably want the subwoofer to only receive lower frequency signal.

⑥ PHASE SHIFT

Use this switch to help compensate for time alignment problems in the system. Such problems usually result from having the subwoofer at a different distance from the listeners than the other speakers in the system.

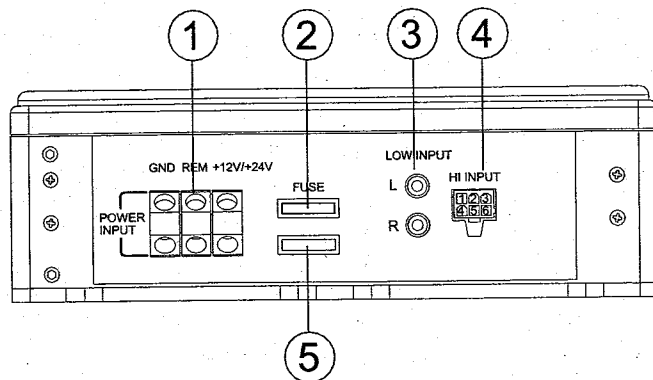
⑦ POWER STATUS LED

This bi-color LED glows green when power is on and no problems are present. If one of the protection circuits comes on, it will change to red.

⑧ AUTO TURN ON

Set the AUTO TURN ON switch to ON if System doesn't have a remote wire. The subwoofer will turn on automatically when it detects incoming signal. Set the switch to OFF when the remote wire is connected.

Rear panel controls and features



① POWER TERMINALS

② FUSE

The fuse in the upper socket is the fuse which provides protection for the circuitry. The lower fuse is a SPARE. If a fault occurs and you need to replace the fuse, use the spare.

The fuse is rated at 15A. Do not use a fuse with a different value and NEVER replace the fuse with a wire or coin.

③ LOW LEVEL RCA INPUTS

Low level inputs are the recommended way to introduce the audio signal to the subwoofer if RCA outputs are present on your head unit or other signal source (such as a sound processor).

④ HIGH LEVEL (speaker level) INPUTS

If your head unit does not have RCA outputs, you can use the speaker outputs for the audio source for the subwoofer. Use the supplied cable and wire harness and connect the outputs properly as shown in the connection diagram in this manual.

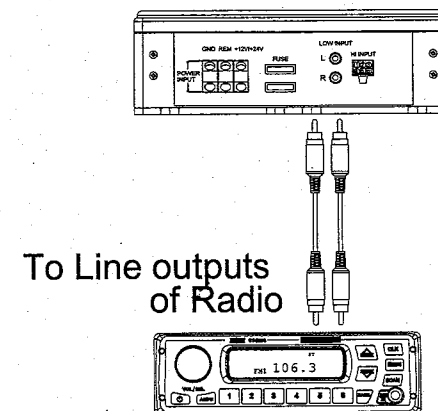
⑤ SPARE FUSE

The lower fuse socket is a storage location for a spare fuse. If the upper fuse blows, you may replace it with this fuse.

Low Level Input Wiring

Low-level (RCA) input wiring is preferred for best audio performance. Always use a high quality cable.

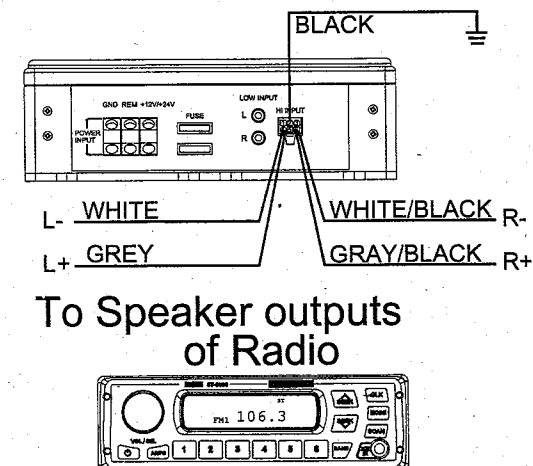
NOTE: Do not connect BOTH the high level and low level inputs from your receiver to your amplifier at the same time!



High Level Input Wiring

The high level input(s) should only be used when your receiver lacks RCA outputs. If the RCA outputs are not present, connect the speaker outputs from the receiver to the high level input connector of the amplifier. Be sure to observe polarity to avoid audio phase problems.

NOTE: Do not connect BOTH the high level and low level inputs from your receiver to your amplifier at the same time!

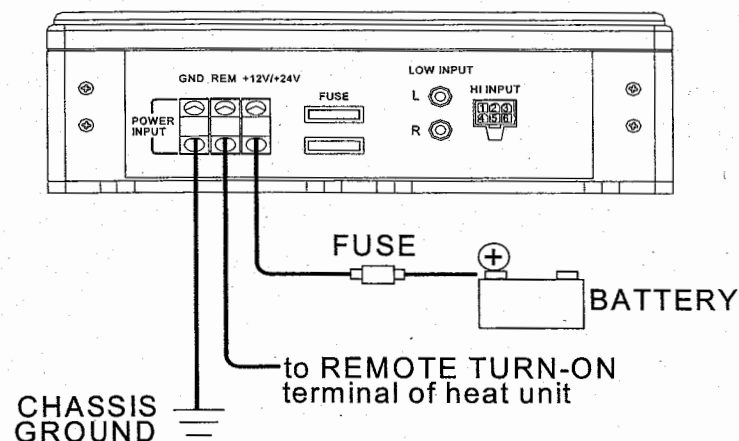


Power Connections

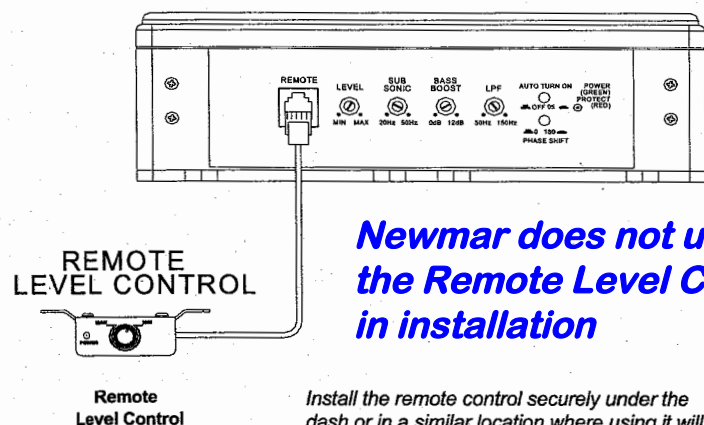
Connect the ground terminal to the closest point on the chassis of the vehicle. Keep this ground wire to less than 39" (100 cm) in length. Use 8 gauge (or heavier) wire.

Connect the remote terminal to the remote output of head unit using 16 gauge (or heavier) wire.

Connect an empty fuse holder within 18" (45 cm) of the car battery, and run 8 gauge (or heavier) cable from this fuse to the amplifier location. Then connect the fuse holder to the "BATT+" (+12V or +24V) connection on the subwoofer rear panel.



Remote Level Control Connection



Newmar does not utilize the Remote Level Control in installation

Install the remote control securely under the dash or in a similar location where using it will not distract the driver.

Troubleshooting

If you experience operation or performance problems with this product, compare your installation with the electrical wiring diagram on the previous pages. If problems persist, read the following troubleshooting tips which may help eliminate the problems.

SYMPTOM	POSSIBLE REMEDY
Amplifier will not power up.	Check to make sure you have a good ground connection to bare metal. Check that the Optional Remote Input (Turn-On) has at least 3VDC. If not using the Remote Input, verify AUTO TURN ON is on. Check that there is at least 12v. Check all fuse, replace if necessary. Make sure that the Protection LED is not illuminated. If it is lit, shut off the amplifier briefly, and then repower it.
Protection LED comes on when amplifier is powered up	Check for short circuits on speaker leads. Turn down the volume control on the Radio to prevent overdriving. Unplug Hi-level inputs or Low level inputs. If the Protection LED still comes on, then the amplifier is faulty and needs servicing.
No output.	Check that all fuses are OK. Check that unit is properly grounded. Check that the Optional Remote Input (Turn-On) has at least 3VDC. Check that the RCA audio cables are plugged into the proper inputs. Check all speaker wiring is correct.
Low output.	Reset the Level Control. Check the Crossover Control settings.
High hiss in the sound.	Disconnect all RCA inputs to the power sub's control panel. If the hiss disappears, then plug in the component driving the amplifier and unplug its inputs. If the hiss disappears at this point, go on until the faulty/noisy component is found. It is best to set the amplifier's input level control as low as possible. The best subjective signal-to-noise ratio is achieved in this manner. Try to set the head unit as high as possible (without distortion) and the amp input level as low as possible.
Squealing noise is present.	Check for improperly grounded RCA interconnects.
Distorted sound.	Check that the Input Level Control is set to match the signal level of the head unit. Always try to set the Input Level as low possible. Check that all crossover frequencies are properly set. Check for short circuits on the speaker leads.
Amplifier gets very hot.	Check that there is good air circulation around the amp.
Engine noise (static type)	This is usually caused by poor quality RCA cables, which can pick up radiated noise. Use only the best quality cables, and route them away from power cables.
Engine noise (alternator whine)	Check that the RCA grounds are not shorted to the vehicle chassis. Check that the head unit and Amplifier is properly grounded.

Specifications

Input Voltage	+12V or 24V DC negative Ground
Max power	150W
THD	<0.4%
Signal-to-noise ratio	>90dB
Frequency response	20Hz - 150Hz
Input sensitivity	0.2V - 6V
Low pass filter	50Hz - 150Hz
Bass Boost	0 to + 12dB
Subsonic filter	20Hz - 50Hz
Fuse rating	15A
Dimensions	15.25" x 8.9" x 2.9"

All specifications subject to change without notice.

