

SUB 8100

POWERED SUBWOOFER

USER'S MANUAL



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Thank you for purchasing a RetroSound® SUB8100 powered subwoofer.

General Features

- 8-inch (203mm) flat subwoofer
- Cast aluminum enclosure for optimum heat dissipation
- Compact footprint 13^{3/4}" x 2^{3/4}" x 9^{1/4}" (350mm x 70mm x 235mm)
- Built-in 100 Watt RMS Class D digital amplifier
- Fully adjustable electronic cross-over (50-100Hz)
- Switchable 0°/180° phase control
- Frequency response: 35-160Hz
- Remote Gain Control with 4' 8" (142.25cm) cable

The information enclosed in this user's manual is to be used as a guide to assist you with installation and operation of your powered subwoofer. This guide does not cover every installation possibility, vehicle, or aspect of the installation process.

Retro Manufacturing, LLC, RetroSound®, or its subsidiaries assume no responsibility for any installation. Due to continuing improvements, features and specifications are subject to change without notice. This manual may be updated from time to time without notice.

Visit our website for the latest updates: www.retromanufacturing.com.

WHAT'S IN THE BOX

The items shown below are packaged with your SUB8100.



Wiring Harness



SUB8100 Powered Subwoofer



Mounting Brackets



Mounting Hardware



Adhesive Tape



Remote Gain Control

PRECAUTIONS

This equipment has been tested and found to comply with the limits for a Class B device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency (RF) energy. If not installed and used in accordance with the instructions, this equipment may cause harmful interference with radio communications. However, there is no guarantee that RF interference will not occur in a particular installation. If this equipment does cause harmful interference to radio reception (which can be determined by turning the equipment off and on) the user is encouraged to consult their dealer or an experienced radio technician for help. You are cautioned that any changes or modifications not expressly approved in this manual will void your warranty.

Always observe these precautions when operating this unit

This user's manual does not cover all possible installation scenarios. If you feel that you can't install this unit yourself, take it to a local car audio professional. If you have questions about installing your unit, you may contact us at tech@retromanufacturing.com or by calling 888.325.1555.

- Do not disassemble, modify or attempt to repair the unit yourself. If the unit needs to be repaired, consult your dealer or Retro Manufacturing, LLC.
- Do not use the unit when it is out of order. If the unit is out of order or is in an abnormal state (has foreign objects in it, is exposed to water, smokes or smells), turn it off immediately, remove power and consult your dealer or Retro Manufacturing, LLC.
- Refer fuse replacement to qualified service personnel. If a fuse fails, eliminate the cause and have it replaced by a qualified service technician with the fuse prescribed for this unit. Incorrect replacement of fuses may lead to smoke, fire and damage to the unit.
- If the unit does not turn on, check the connections first. Then check the fuses in your vehicle's fuse panel and the fuse at the unit's wiring harness. Do not expose the unit to direct sunlight or excessive heat. Excessive heat will raise the interior temperature of the unit, which may damage it.

PRECAUTIONS

- Do not use the unit where it is exposed to moisture or dust. Exposure to moisture or dust may lead to smoke, fire or other damage to the unit and will void your warranty. Make sure the unit does not get wet in car washes or on rainy days. Exposure to moisture will damage the unit and void your warranty.
- Refer wiring and installation to qualified service personnel. Installation of this unit requires special skills and experience. Retro Manufacturing, LLC is not liable for any problems resulting from improper installation of the unit. Please be sure to follow the instructions carefully while attempting installation.
- Follow the instructions to wire the unit. Failure to follow the instructions could cause damage to the unit, fire, injury or death.
- Be careful not to damage the leads. Prevent them from being caught in the vehicle chassis or from being damaged by screws or moving parts such as seat rails. Do not scratch, pull, bend or twist the leads. Do not install them near heat sources or place heavy objects on them. If the wiring must be routed around sharp metal edges, protect them by wrapping them with vinyl tape or similar protections.
- We recommend only using the designated parts and tools when installing this unit. Use extreme caution not to damage internal parts when choosing to use custom hardware, brackets and screws.
- Do not interfere with safety-related vehicle components. Do not wire or affix this unit to the fuel tank, brakes, suspension, steering wheel, pedals, etc. Check for electric wiring, piping and other items before installing the unit.
- Never install the unit in a location where it interferes with your field of vision.

PRECAUTIONS

- Never splice into the power lead to supply other equipment with power.
- After installation and wiring, always check the normal operation of other electrical equipment.
- Make sure that no wires interfere with driving or getting in and out of the vehicle.
- Insulate all exposed wires to prevent short-circuiting or electric shock.
- Do not operate the unit for prolonged periods with the engine off. Prolonged operation with the engine turned off will drain the battery.
- Keep the volume of your system at a level that allows you to hear outside noises such as emergency sirens and train crossing warnings. Prolonged exposure to high volume levels may also result in hearing loss.
- Always disconnect the negative (-) battery cable before beginning installation. Verify the battery ground by checking that one wire is connected to the vehicle's starter mounting bolt or engine block and the other to the vehicle's chassis using at least 8 gauge wire. Make sure the alternator or generator connections are secure and free from corrosion, rust or dirt.
- This unit is designed for operation with a negative ground 12 volt DC battery system. Do not operate this unit with other battery systems – especially an 18 or 24 volt DC or a positive ground system.
- The unit must not be covered. Do not cover the unit with carpets or enclose it behind trim panels. Covering the unit may cause it to overheat. Do not mount the unit in an inverted or upside-down position. This unit is designed to dissipate heat from the top of the unit. Installing it at an inverted angle or upside down will not allow the heat to escape and can cause it to overheat. Damage caused by failure to follow these instructions will void your warranty.

INSTALLATION INSTRUCTIONS

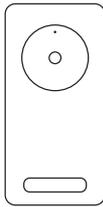
STEP 1: Install the Mounting Brackets

NOTE: You may also use the supplied adhesive tape in place of the sheet metal screws if you do not wish you make holes in your vehicle.

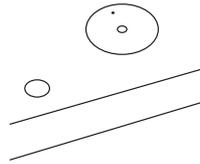
Affix the mounting brackets to the bottom of the powered subwoofer using the machine screws from your mounting hardware (see Figure 1).

Figure 1

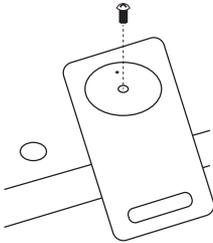
Mounting Bracket



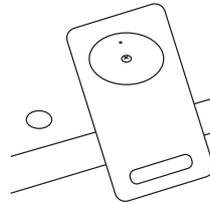
Bottom of SUB8100



Insert Machine Screw



Bracket Installed



STEP 2: Mount the Powered Subwoofer

Make sure the mounting location allows adequate space for the amplifier to dissipate heat. You should also insure that the controls will be accessible after installation. Use the sheet metal screws from your mounting hardware to securely mount the powered subwoofer. When drilling the holes, make sure you don't drill into the exhaust system, fuel lines or any electrical wires. For best performance, mount in the passenger compartment.

INSTALLATION INSTRUCTIONS

STEP 3: Wiring Your Powered Subwoofer

First, locate the wiring harness. This wiring harness contains the power, ground, remote turn-on and high-level input leads. Plug the wiring harness into the power/high-level input (#7) (see Figure 2).

Next, attach the main power lead (yellow wire) to a constant 12 volt power source. It is best to connect it directly to the positive lead of your battery. Then, connect the ground lead (black wire) to the chassis of your vehicle. Make sure to remove any paint or residue at the ground point to achieve good, consistent ground contact. Connect the remote turn-on wire (blue/white) to the amplifier turn-on lead at the back of the radio. This will turn the powered subwoofer on when the radio turns on, and turn the powered subwoofer off when the radio turns off.

Finally, plug your radio's low-level RCA outputs into the RCA inputs (#5) on your powered subwoofer.

NOTE: If your radio does not have RCA outputs, you can use the high-level input leads (the separate white, gray and black wires that plug into the wiring harness) to connect your speaker wires directly to the powered subwoofer.

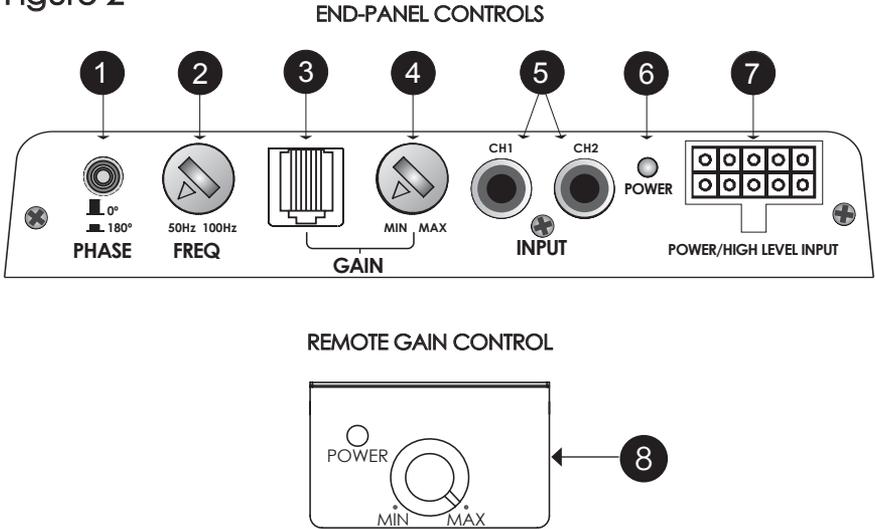
WARNING: Never connect both the RCA and high-level input leads at the same time. Doing so can damage your unit and will void your warranty.

Your powered subwoofer came with a remote gain control that allows you to remotely adjust the gain. To use this control, you must plug it into the remote input on the front of the powered subwoofer (see Figure 2 on the next page). The remote gain control can be mounted under the dash or tucked in between the seat and console. Make sure you don't mount it anywhere that could interfere with driving.

CAUTION: Do not plug or unplug the remote gain control while the amplifier is powered on.

CONTROLS

Figure 2



- 1. PHASE:** The Phase Control (#1) toggles polarity between 0° (normal) and 180° (reverse). When set to 0° , the powered subwoofer is in-phase (when the speakers move out, the subwoofer speaker also moves out). When this is set to 180° , the powered subwoofer is out of phase (when the speakers move out, the subwoofer speaker moves in). Normally this should be left at 0° . Setting the phase to 180° can be useful in certain situations depending on the subwoofer placement and your vehicle's acoustics.
- 2. FREQ:** The Frequency Control (#2) adjusts the frequency crossover point between 50 and 100Hz. The frequency crossover adjusts the frequency cutoffs. This cuts off any frequencies above that in which this control is set.
- 3. REMOTE INPUT:** The Remote Input (#3) is the input for the remote gain control (see #8).

4. **GAIN:** The Gain Control (#4) is used to match the output of your radio to the output of your powered subwoofer. To properly set the gain, first rotate it all the way counter-clockwise to MIN. Turn on your radio, set your EQ settings to flat and slowly increase the volume of your radio until you start to hear distortion. Then turn the volume down to the point where the distortion goes away. Next increase the gain on your powered subwoofer until you begin to hear distortion. Finally, adjust the gain back down until you find the point where the distortion goes away. Your radio and powered subwoofer levels are now matched.
5. **RCA INPUT (CH1):** This is the input for the left RCA connector.
RCA INPUT (CH2): This is the input for the right RCA connector.
6. **POWER:** The Power LED (#6) illuminates when the powered subwoofer is activated.
7. **POWER/HIGH LEVEL INPUT:** This is the input for the wiring harness.
8. **REMOTE GAIN CONTROL:** The Remote Gain Control (#8) adjusts the gain between MIN and the setting you choose with the gain control (#4). For example, if you set the gain to halfway using the gain control (#4) on the front of the powered subwoofer, the remote gain control (#8), when set to max, will set the powered subwoofer to 50% gain.

TROUBLESHOOTING

Problem	Possible Cause	Action to Solve Problem
Powered subwoofer will not turn on	12 volt battery + wire not connected or incorrect voltage	Check all connections for proper voltage with a volt meter. Voltage range: 12-15 volts
	Remote turn-on wire not connected or incorrect voltage	Check remote turn-on wire connection
	Ground wire not connected	Check ground connection for possible shorts
	Fuse on battery + has failed	Replace failed fuse
No sound heard from unit but unit's power light illuminates	Volume or gain turned all the way down	Increase radio volume or powered subwoofer gain
	Amplifier is in protection mode	Check speaker leads for possible shorts
	Input signal not connected	Check inputs for proper connections
Fuses keep failing	Possible short in wiring	Check all wiring connections for possible shorts
	Battery connected backwards	Make sure battery is properly connected
	Incorrect fuse rating	Use a fuse with the correct 10 amp rating
Engine noise heard through speakers	Bad ground connection	Make sure the powered subwoofer is ground to clean, bare metal
	Ground loop or RF interference	Reroute RCA cables away from other wiring
	Gain is set too high	Adjust the gain control down until the noise goes away
Distorted audio output	Incorrect input signal type or input signal volume is too high	Check connections and reduce input volume
Weak bass response	Subwoofer is out of phase	Toggle phase control
		Check polarity of speaker wires on high-level input
Low audio output	Incorrect input signal type or input signal volume is too low	Check connections and increase input volume

SPECIFICATIONS

Power Usage

Voltage.....10.5-16 volts DC
Idling Current (ON).....0.4 amps
Idling Current (OFF).....<0.002 mA

Amplifier

Output Power @ 14.4 volts.....100 Watts RMS / 135 Watts Peak
Signal to Noise Ratio.....>100dB
Input Sensitivity.....100 mV-6V
Frequency Response.....35Hz-160Hz
Total Harmonic Distortion.....0.1%

Filters

Low Pass Filter/Slope.....50Hz-100Hz/12dB/octave
Phase Control (variable).....0°/180°

Other Specifications

Fuse.....10 amps AGC Style (x1)
Size (W x H x L).....9^{1/4}" x 2^{3/4}" x 13^{3/4}" / 350mm x 70mm x 235mm
Weight.....9lbs / 4.08Kg

NOTE: All specifications are subject to change without notice.

LIMITED WARRANTY

Limited Warranty

If your unit does not work properly because of defects in materials or workmanship, Retro Manufacturing, LLC (collectively referred to as "the warranter") will for the length of the period indicated in the chart below at its option either (a) repair your unit with new or refurbished parts, or (b) replace it with a new or refurbished unit. The warranty period starts with the date of original purchase. The decision to repair or replace will be made by the warranter.

MODEL	WARRANTY
SUB8100	One (1) Year

During the warranty period, there will be no charge for parts. You must mail in your unit prepaid during the warranty period. This warranty only applies to products purchased and serviced in the United States. This warranty is extended only to the original purchaser of a new product which was not sold "as is."

A purchase receipt or other proof of the original purchase date is required for warranty service.

To handle a warranty issue, contact us at tech@retromanufacturing.com or 888.325.1555 for a Return Authorization (RA) number. All returns and warranty issues must be accompanied by a Return Authorization number. Any product received without a RA number will be refused.

LIMITED WARRANTY-LIMITS AND EXCLUSIONS

This warranty ONLY COVERS failures due to defects in materials or workmanship, and DOES NOT COVER normal wear and tear or cosmetic damage. The warranty ALSO DOES NOT COVER damages which occurred during shipment, failures which are caused by products not supplied by the warranter, failures which result from accident, misuse, abuse, neglect, bug infestation, mishandling, misapplication, alteration, faulty installation, set-up adjustment, maladjustment of consumer control, improper maintenance, improper antenna, inadequate signal reception or pickup, power line surge, improper voltage supply, lightning, modification, commercial use (such as use in hotels, offices, restaurants, or other business uses) or rental use of the product, or service by anyone other than Retro Manufacturing, LLC, or damage that is attributable to acts of God.

THERE ARE NO EXPRESS WARRANTIES EXCEPT AS LISTED UNDER "LIMITED WARRANTY". THE WARRANTER IS NOT LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THIS UNIT, OR ARISING OUT OF ANY BREACH OF THIS WARRANTY. (As examples, this excludes damages for lost time, cost of having someone remove or re-install an installed unit if applicable, travel to and from the servicer, and loss of media, data or other memory contents. The items listed are not exclusive, but are for illustration only.) ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTY OF MERCHANTABILITY, ARE LIMITED TO THE PERIOD OF THE LIMITED WARRANTY.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state. If a problem with this unit develops during or after the warranty period, you may contact your dealer or Retro Manufacturing, LLC.

INSTALLATION NOTES

A series of 20 horizontal dotted lines for writing installation notes.



MODERN SOUND FOR YOUR CLASSIC