POWER ACOUSTIK

RAZOR

Class D Full Range & Monoblock Amplifiers

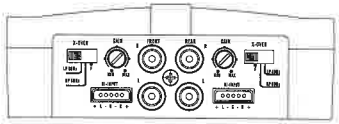
MA4-3000D MA1-2300D MA5-2500D

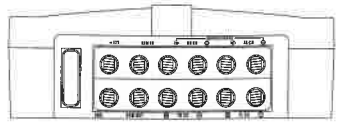
WWW.POWERACOUSTIK.COM

Features MA4-3000D

- Compact 4.75" Chassis Design for Installation Versatility
- MOSFET Power Supply w/ Audiophile Grade IR™ Transistors
- Military Grade SMT PCB Maintains Dynamic Performance
- 2-ohm Stereo & 4-ohm Bridged Full Range Operation
- Direct Short, Thermal, & Overload Circuits Protect Amplifier
- 200mv-6V Low Level RCA Balanced Inputs
- High Level Input w/ Signal Sense Auto Turn-on
- Variable 12dB High Pass & Low Pass Crossovers
- 8ga Direct Connect Speaker Wire Terminals
- 8ga Direct Connect Power/Ground Wire Terminals
- Variable 35-250Hz 12dB High Pass Crossover
- Variable 35-250Hz 12dB Low Pass Crossover

MA4-3000D

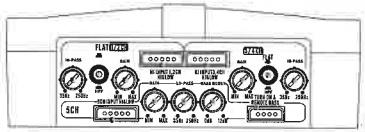


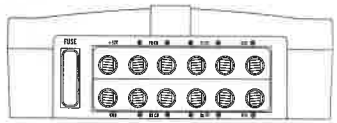


Features

- Compact 4.75" Chassis Design for Installation Versatility
- MOSFET Power Supply w/ Audiophile Grade IR™ Transistors
- Military Grade SMT PCB Maintains Dynamic Performance
- 2-ohm Stereo & 4-ohm Bridged Full Range Operation
- Direct Short, Thermal, & Overload Circuits Protect Amplifier
- 200mv-12V Low Level RCA Balanced Inputs
- High Level Input w/ Signal Sense Auto Turn-on
- Dash Mount Remote Gain Control Included
- Variable 12dB High Pass & Low Pass Crossovers
- 8ga Direct Connect Speaker Wire Terminals
- 8ga Direct Connect Power/Ground Wire Terminals
- Variable 35-250Hz 12dB High Pass Crossover (ch. 1-4)
- Variable 35-250Hz 12dB Low Pass Crossover (ch. 5)
- Variable 0-12dB 50Hz Bass Boost (ch. 5)

MA5-2500D

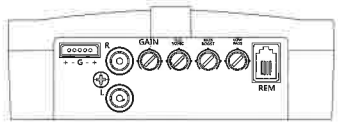


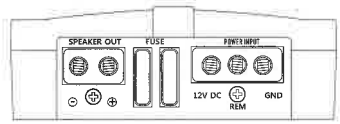


Features MA1-2300D

- Compact 4.75" Chassis Design for Installation Versatility
- MOSFET Power Supply w/ Audiophile Grade IR™ Transistors
- Military Grade SMT PCB Maintains Dynamic Performance
- 2-Ohm Minimum Impedance Stable Class D Amplifier
- Direct Short, Thermal, & Overload Circuits Protect Amplifier
- 200mv-6V Low Level RCA Balanced Inputs
- High Level Input w/ Signal Sense Auto Turn-on
- Dash Mount Remote Gain Control Included
- Variable 12dB Low Pass & Subsonic Crossovers
- 8ga Direct Connect Speaker Wire Terminals
- 8ga Direct Connect Power/Ground Wire Terminals
- Variable 35Hz-250Hz 12dB Low Pass Crossover
- Variable 10Hz-50Hz 12dB Subsonic Crossover
- Variable 0-12dB 45Hz Subwoofer Bass Boost

MA1-2300D





Specification

POWER RATINGS	MA4-3000D	MA5-2500D	MA1-2300D
RMS Power 4Ω, 14.4V	285w x 4	100w x 4ch + 400w	900w
RMS Power 2Ω, 14.4V	375w x 4	150w x 4ch + 600w	1,400w
RMS Power 4Ω Bridged,14.4V	750w x 2	300w x 2ch + 600w	-
Dimensions (4.75"w x 1.5"h)	12.25"	12.25"	11"

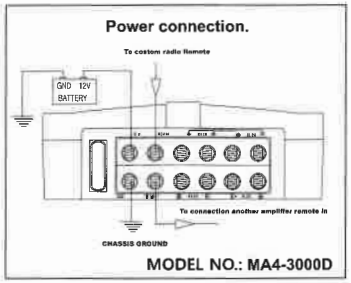
Power Connections

It is important to have good quality power and ground connections. Remember, to complete an electrical circuit, the ground connection is just as important as the positive power connection. Before any power connections are made, disconnect the ground cable of the battery. Use 8 gauge or larger automotive grade wire if the distance from the battery to the amp is excessive. Avoid sharp or rough edges as a safeguard against short circuiting and potential fire hazards.

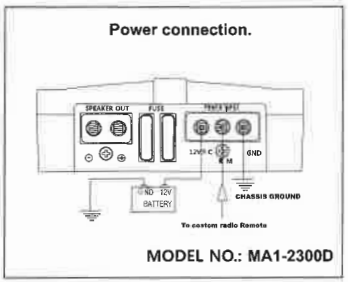
GND = Connect the proper gauge ground wire to the amplifier GND terminal. Locate the position on the chassis of the car where the amplifier will be grounded. Use solder or a crimped ring terminal to connect the ground wire. Pre-drill the prepped chassis to bolt the ground ring terminal with a nut, bolt, and lock washer. Insulate the metal and the connector with paint or silicone to prevent rust and oxidation. Silicone also works great to prevent nuts and bolts from working loose in harsh environments of an automobile. Upon completion of the ground connection, grab the wire and connector to confirm the connection is solid. To prevent engine noise, it is recommended to ground the head unit and other electronic audio devices to the same location.

REM = Connect the remote wire (power antenna output) from the head unit to the REM terminal. If the head unit is not equipped with a remote/antenna output, locate a wire that is controlled by the accessory position of the key. It is important to have the amplifier turn off with the radio or key. If the amplifier remains on, the battery will drain.

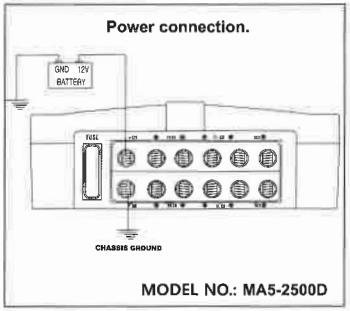
12V = Connect the proper gauge power wire to the B+ terminal. Trace the power wire through the car to the in-line fuse or circuit breaker that is no more than 18" from the battery. Remember, the in-line fuse or circuit breaker protects the car in the event of short circuit. Connect the in-line fuse or circuit breaker to the battery, but do not install the fuse or activate the circuit breaker yet.



MODEL NO.: MA4-3000D



MODEL NO.: MA1-2300D

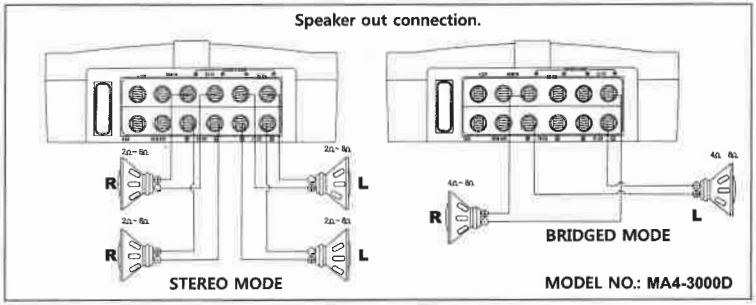


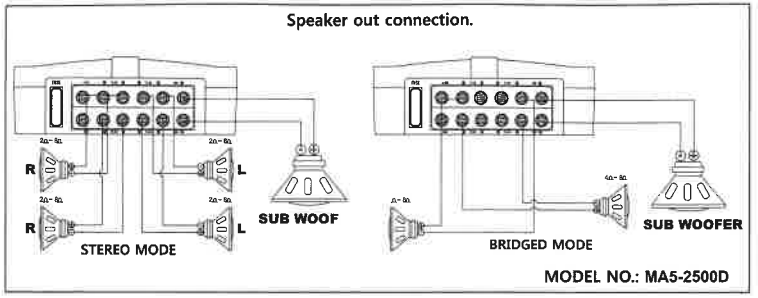
MODEL NO.: MA5-2500D

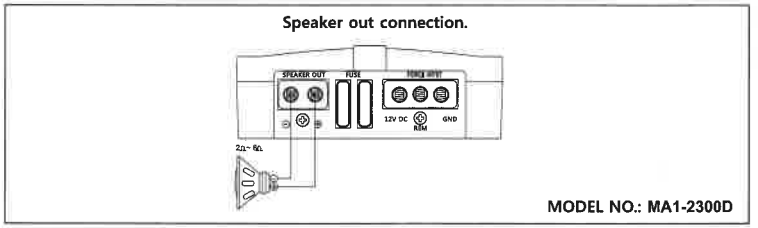
High Level input connections

The high level inputs are for use with speaker level wiring. Most factory source units do not have RCA outputs. Use this connection if your source unit does not have RCA outputs.

CAUTION: Never use the high and low level inputs at the same time!







RAZOR PRE-AMP FEATURES

1. Remote Level Control Connection
Connect the remote level control to this terminal. The remote level control allows adjustment of the subwoofer level from a remote location in the vehicle.

2. Low Pass Crossover
Adjust the frequency setting of the low pass crossover. The frequency range is 35Hz-250Hz. Frequencies higher than the setting will be filtered out of the audio signal.

3. Subsonic Crossover
Adjust the frequency setting of the subsonic crossover. The frequency range is 10Hz-50Hz. Frequencies lower than the setting will be filtered out of the audio signal.

4. Power & Protection Indicator LED
When the amplifier is on and in proper working condition, the green LED will illuminate. Refer to the Troubleshooting Guide for possible solutions if the amplifer will not power on.If the amplifier activates its protection mode, the red LED will illuminate. Refer to the Troubleshooting Guide for possible solutions if the amplifier activates its protection mode.

5. Level Sensitivity
Adjust the amplifers pre-amp sensitivity level. The minimum sensitivity level is 250mv, while the maximum level is 6V.

6. RCA Audio Input Connection
Using high quality shielded stereo RCA cables, connect the source signal to the amplifier RCA inputs.

7. High Level Input
Connect the speaker outputs from the head unit tot he high level input if RCA outputs are not available. NEVER use high level and RCA inputs at the same time.

8. Bass Boost
Adjust the amplifiers 45Hz Bass Boost level up to 12dB.

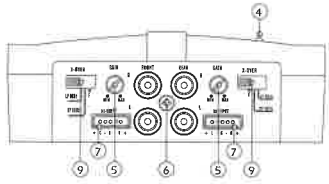
9. Crossover Selection Switch
Choose an 80Hz fixed frequency high pass crossover, 80Hz fixed frequency low pass crossover, or full range operation.

10. Variable High Pass Filter 35Hz~250Hz
For use as a cledicated rnid high range channel, set filter switch to " HIGH PASS". The Input circuit filters out all frequencies below 35Hz~250Hz

11. The 5 channel amplifier will be activated remote trigger input with bass control unit on the 3.5 pie port same time in the mode. It requires connect remote trigger input on power input connector section to turn on the amplifier if user won't need to connect the bass control unit

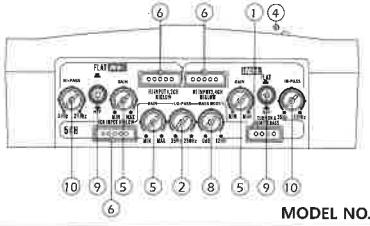
Note : Remote trigger input power must be connected well tight and firmly on the 3.5 pie port, Amplifier won't be able to turn on if its loosen or not connected.

4 CH. FUNCTIONS.



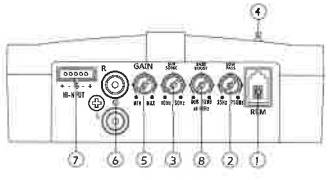
MODEL NO.: MA4-3000D

5 CH. FUNCTIONS.



MODEL NO.: MA5-2500D

MONO BLOCK FUNCTIONS.



MODEL NO.: MA1-2300D

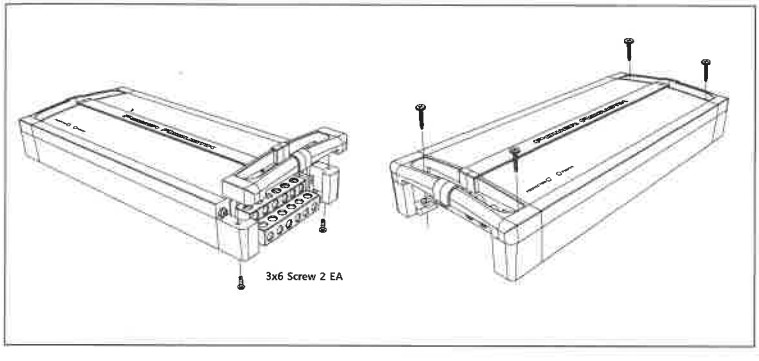
Mounting Your Razor

Choosing the best mounting location for your Razor amplifier is crucial. The amplifier should be mounted to any wood, metal, or carpeted surface. The heatsink can be mounted directly to the chassis of the car, or isolated for best performance. It needs proper ventilation, so avoid mounting the amp under seats, in the engine bay, or any other area that moisture might accumulate. Be sure the mounting screws do not penetrate the fuel tank, brake lines, or any other crucial fluid lines. Never mount the amplifier to a subwoofer enclosure, as excessive vibrations can cause damage.

Warning

Power Acoustik highly recommends that an in-line fuse or circuit breaker be installed within 18" of the battery. Although your Razor amplifier has adequate internal protection, it is possible a damaged wire between the component and the battery may result in a fire. The in-line fuse or circuit breaker should be installed in a location that is easy to access, and all wiring should be routed safely, following the below suggestions:

- Avoid placing wires near hot or moving objects
- Always use wire grommets when routing wire through the firewall or any other metal surfaces
- Avoid the potential for damaged wires by routing all wires away from moving hinges, seats, brake & gas pedals, hood and trunk hinges, etc.



Setting the gains:

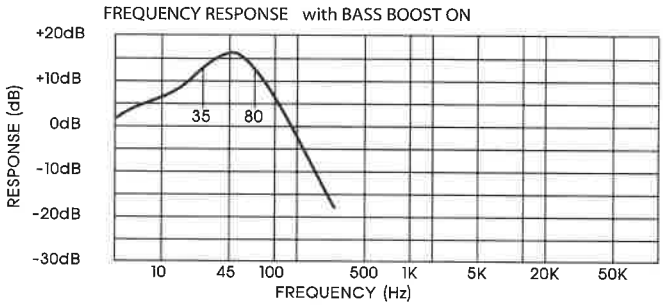
It is a fact that very few people, including professional installers, know how to set gains correctly. Failure to do so yields higher distortion, a higher noise floor which decreases dynamic headroom, less than optimum operating conditions for electronic equipment, and higher failure rate for both the electronic equipment and transducers alike.

While most people set this control by ear to how loud they want their music, this is not the intent of this control. The range is from 0.25 volts to 6 volts. The control is meant for matching the output of the source unit's signal voltage. For example, if you have a source unit with low output voltage, you would probably have the control set fairly high, towards the 0.25V range. A lot of head units have 4 volts of output signal voltage which means that your control would be set midway through the range. If you happen to have a line driver (signal booster) that yields 6 volts or more, you will set the gain at the minimum position, towards the 6V range.

In all of these examples, when properly level matched, the amplifier will put out full volume. Setting the control above the proper point may cause damage to the amplifier and speakers, and can result in poor sound quality and overall undesirable results.

Bass Boost control:

The monoblock amplifiers feature a variable Bass Boost control, centered at 45Hz. You can adjust the amount of boost from 0dB to 18dB.



Trouble shooting.

SYMPTOMS	CHECK	REMEDY
NO SOUND	Is the power LED illuminated? (NO)	Check all fuses to amplifier. Be sure Turn-on lead is connected Check signal leads. Check gain control. Check Tuner/Deck volume level. Clean contacts on fuse holders.
	Is the Diagnostic LED illuminated? (YES)	Check for speaker short or amplifier overheating.
AMP NOT SWITCHING ON	No power to power wire	Repair power wire or connections.
	No power to remote wire with receiver on	Check connections to radio.
	Burnt or broken fuse	Replace fuse
NO SOUND, ON ONE CHANNEL	Check Speaker Leads	Inspect for short circuit or an open connection.
	Check Audio Leads	Reverse Left and Right RCA inputs to determine if the problem is occurring before the amp.
AMP TURNING OFF MEDIUM/ HIGH VOLUME	Check Speaker load impedance	Be sure proper speaker load impedance recommendations are observed. (If you use an ohmmeter to check speaker resistance, please remember that DC resistance and AC impedance may not be the same.)
PROTECTION LAMP ON	Shut down	Turn radio down Wait for AMP to cool
	Speaker wires shorted	Separate speaker wires and insulate

Warning

Investigate the layout of your vehicle before drilling or cutting any holes. Take care when you are working near the gas tank, brake lines, hydraulic lines, and electrical wiring. Do not use the amplifier without securly mounting it, as the amp or vehicle may be damaged in the event of an accident. Do not mount the amplifier where the wire connections are unprotected or are subject to pinching or damage from other vehicle components. The 12V power wire must be fused within 18" of the battery. Ensure the source unit is powered off before making any wiring connections. If you need to replace the fuses, use only the same type and size. Using a fuse of a different type or rating may result in damage to the amplifier or vehicle, which will not be covered under the manufacturer's warranty.