Audiobahn®

A2002J/A4002J/A8002J/A4004J
A6004J/A8000J/A16000J/A5005J

OWNER'S MANUAL

FEATURES

- Class A/B MOSFET Power Amplifier
- 2 Ohm stable
- MOSFET High Speed Switching Power Supply
- RCA (Low Level) and Speaker (High Level) Inputs
- RCA Outputs
- Bridgeable
- Variable High Pass Filter : 50Hz~750Hz
- Variable Low Pass Filter : 50Hz~120Hz
- Bass Boost Control : ON / OFF
- Variable Bass Control remote: 0dB ~ 18dB
- Phase Shift Switch : 0°~180°
- Air induction Fan Cooled
- On-Board Digital Volt Meter
- Input Sensitivity 200mV - 8V
- OPTIONAL ITEM Digital Displayed Volt Meter, and Bass Remote Control
- 4-Way Protection Circuitry: Thermal, Short Circuit, Overload, & DC Offset

Recommended Fuse Size

(A2002J : 25A x 1) (A4002J : 40A x 1) (A8002J : 30A x 2) (A4004J : 20A x 2)
(A6004J : 25A x 2) (A8000J : 30A x 2) (A16000J : 40A x 2) (A5005J : 30A x 3)

Power Output

A2002J :
75 watts x 2 @ 4 Ohms RMS power
100 watts x 2 @ 2 Ohms RMS power
300 watts x 1 @ 4 Ohms RMS power

A4002J :
125 watts x 2 @ 4 Ohms RMS power
250 watts x 2 @ 2 Ohms RMS power
500 watts x 1 @ 4 Ohms RMS power

A8002J :
250 watts x 2 @ 4 Ohms RMS power
500 x 2 @ 2 Ohms RMS power
1000 watts x 1 @ 4 Ohms RMS power

A5005J :
50 watts x 4 + 250 x 1 @ 4 Ohms RMS power
100 wattsx 4 + 500 x 1 @ 2 Ohms RMS power
200 watts x 2 @ 500 x 1 @ 2 Ohms RMS power

A4004J :
50 watts x 4 @ 4 Ohms RMS power
100 watts x 4 @ 2 Ohms RMS power
200 watts x 2 @ 4 Ohms RMS power

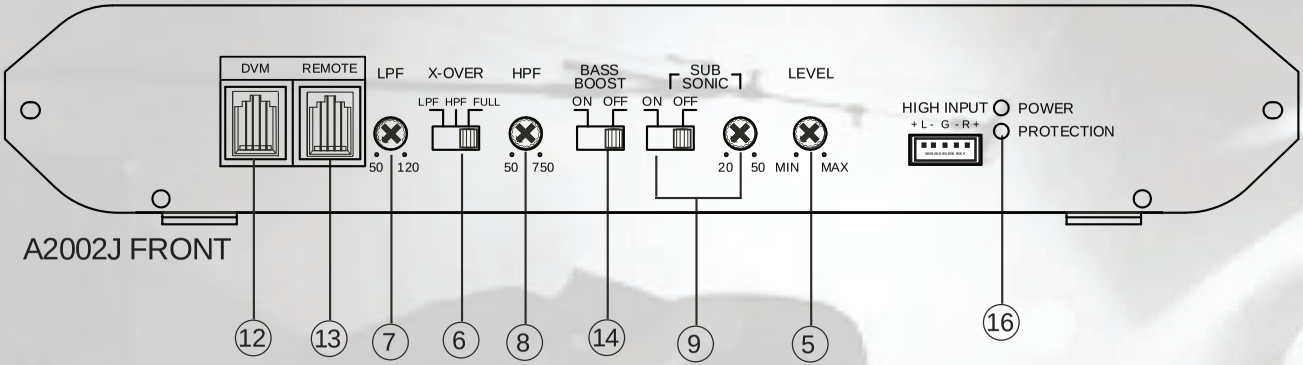
A6004J :
100 watts x 4 @ 4 Ohms RMS power
200 watts x 4 @ 2 Ohms RMS power
400 watts x 2 @ 4 Ohms RMS power

A8000J :
500 watts x 1 @ 4 Ohms RMS Power
1000 watts x 1 @ 2 Ohms RMS power

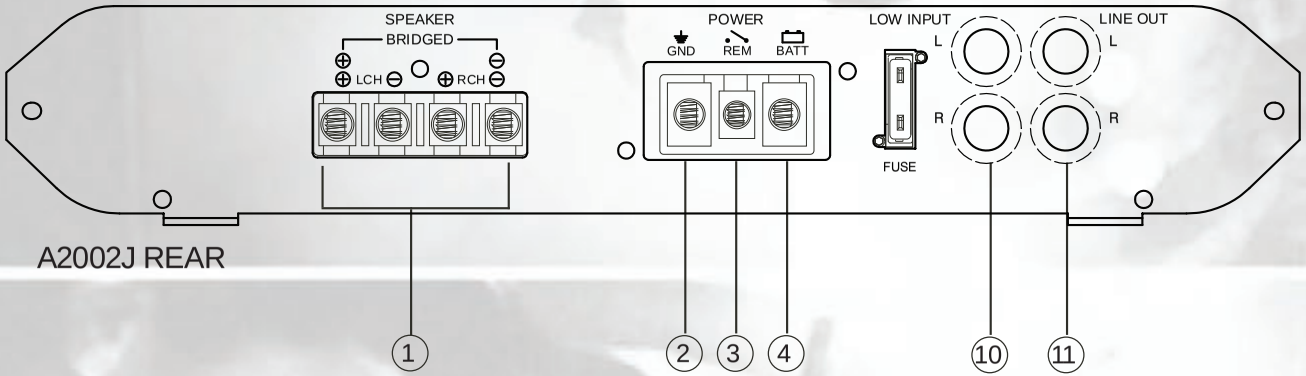
A16000J :
900 watts x 1 @ 4 Ohms RMS Power
1800 watts x 1 @ 2 Ohms RMS power

Dimensions

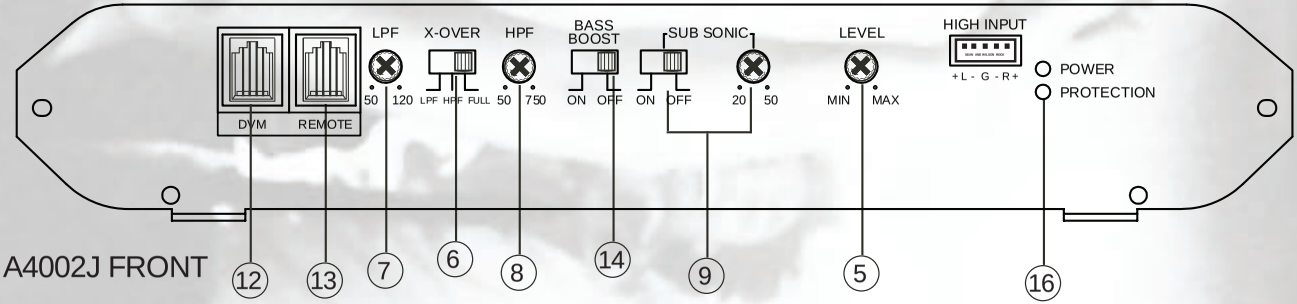
A2002J (W x H x D)	: 11 1/16" x 2 1/8" x 6 13/16"	281 x 55x 173.0mm
A4002J (W x H x D)	: 11 1/16" x 2 1/8" x 8 3/8"	281 x 55 x 212.7mm
A8002J (W x H x D)	: 11 1/16" x 2 1/8" x 11 7/8"	281 x 55 x 282.6mm
A4004J (W x H x D)	: 11 1/16" x 2 1/8" x 9 1/8"	281 x 55 x 231.8mm
A6004J (W x H x D)	: 11 1/16" x 2 1/8" x 9 7/8"	281 x 55 x 250.8mm
A8000J (W x H x D)	: 11 1/16" x 2 1/8" x 11 7/8"	281 x 55 x 301.6mm
A16000J (W x H x D)	: 11 1/16" x 2 1/8" x 15 5/8"	281 x 55 x 398mm
A5005J (W x H x D)	: 11 1/16" x 2 1/8" x 17 1/4"	281 x 55 x 439mm



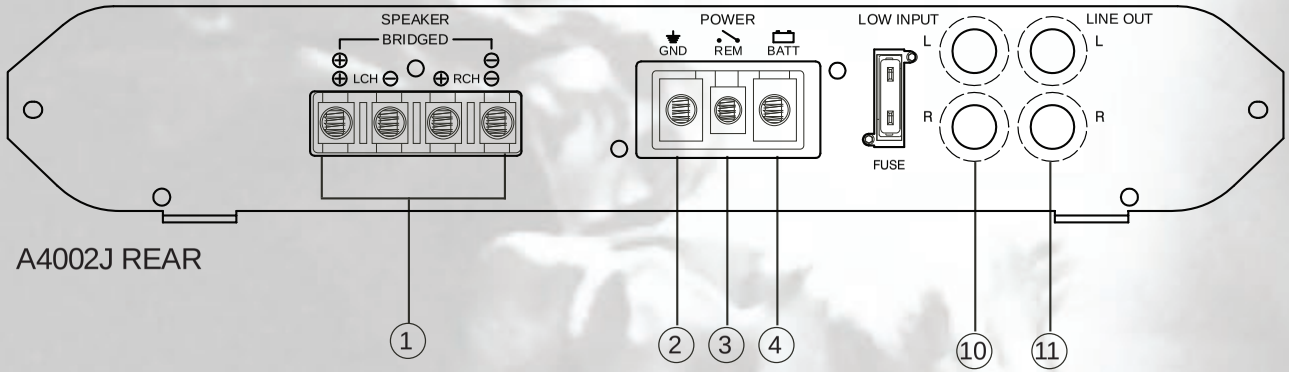
A2002J FRONT



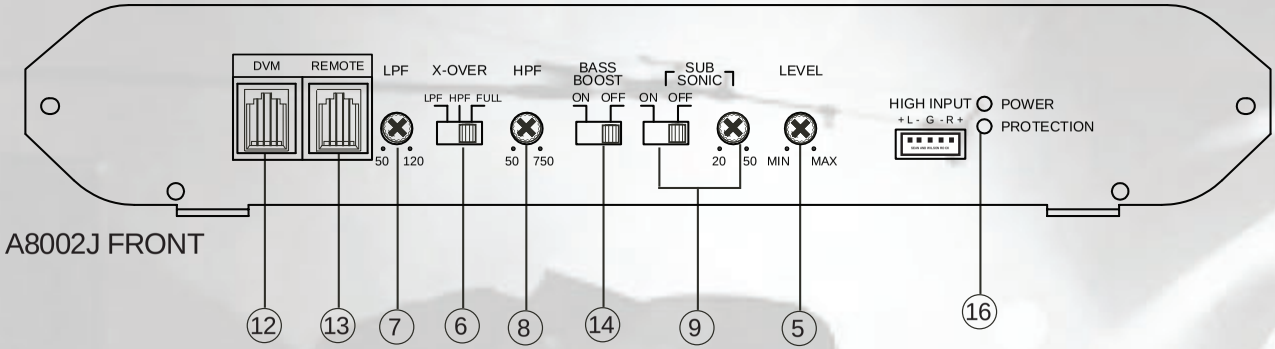
A2002J REAR



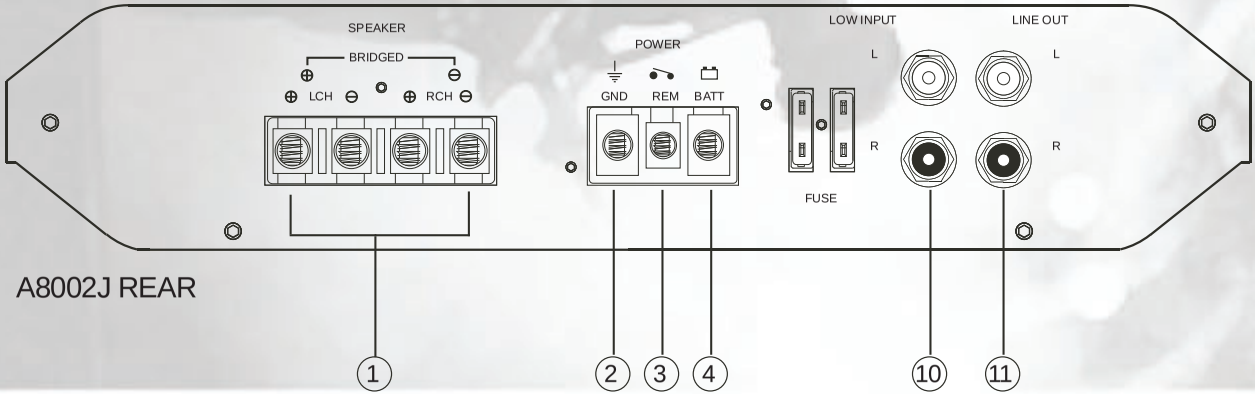
A4002J FRONT



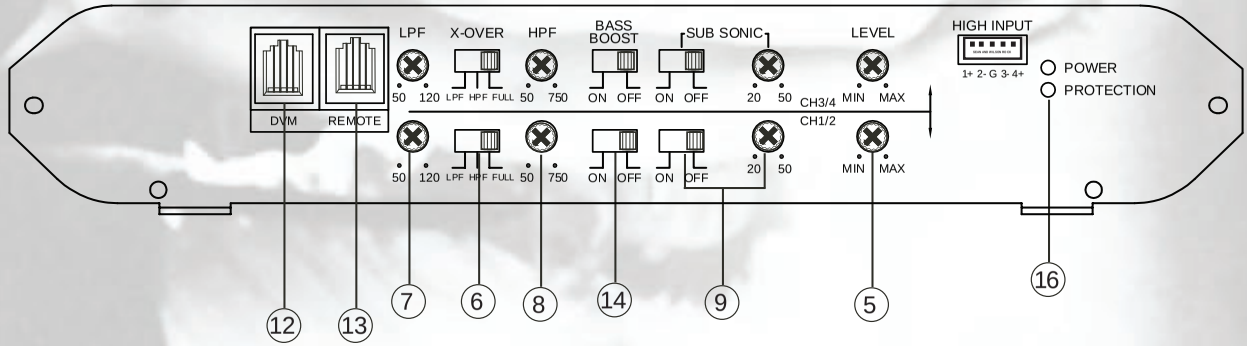
A4002J REAR



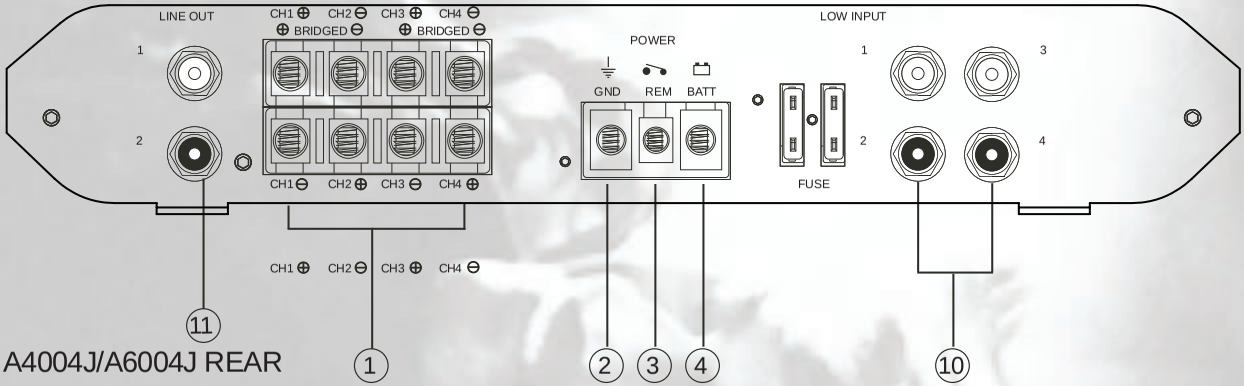
A8002J FRONT



A8002J REAR

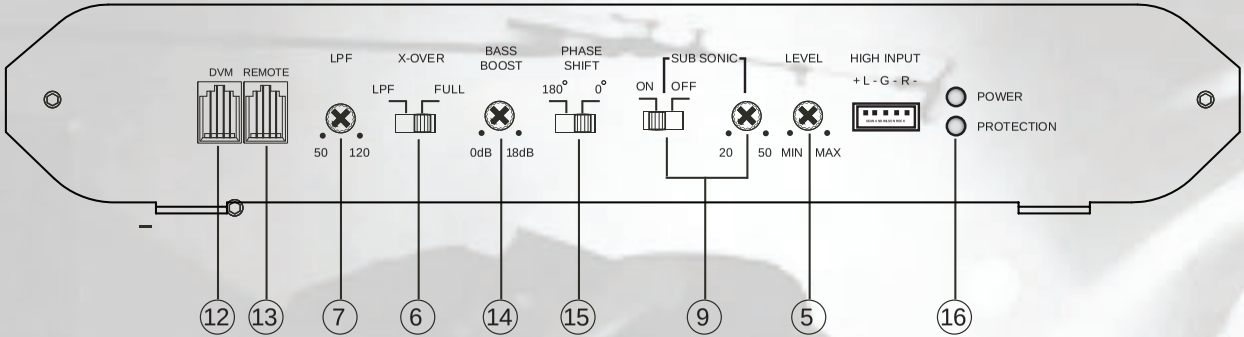


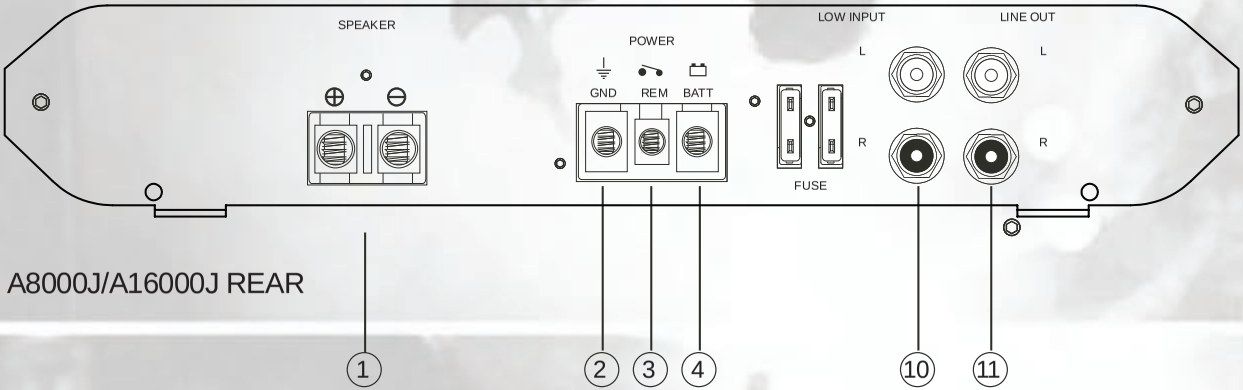
A4004J/A6004J FRONT



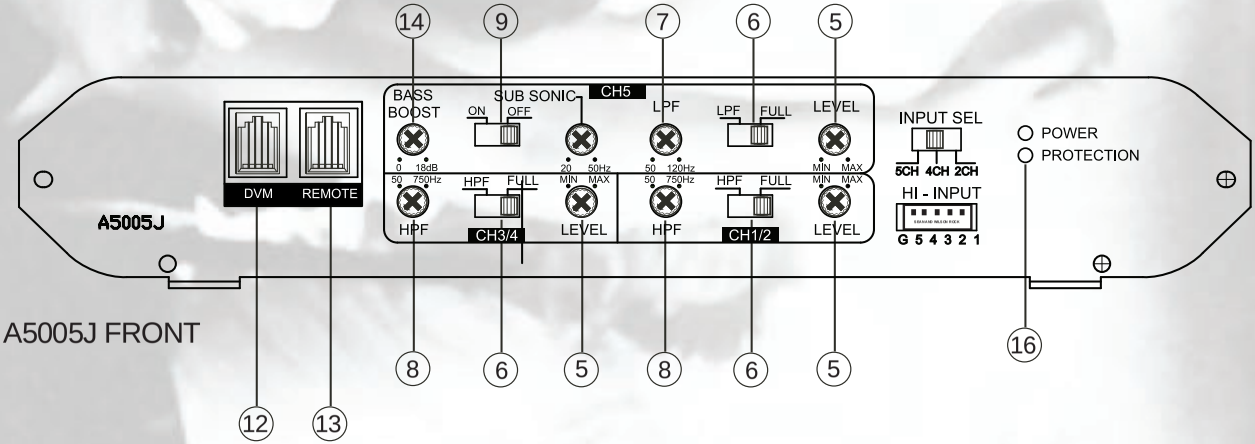
A4004J/A6004J REAR

A8000J/A16000J FRONT

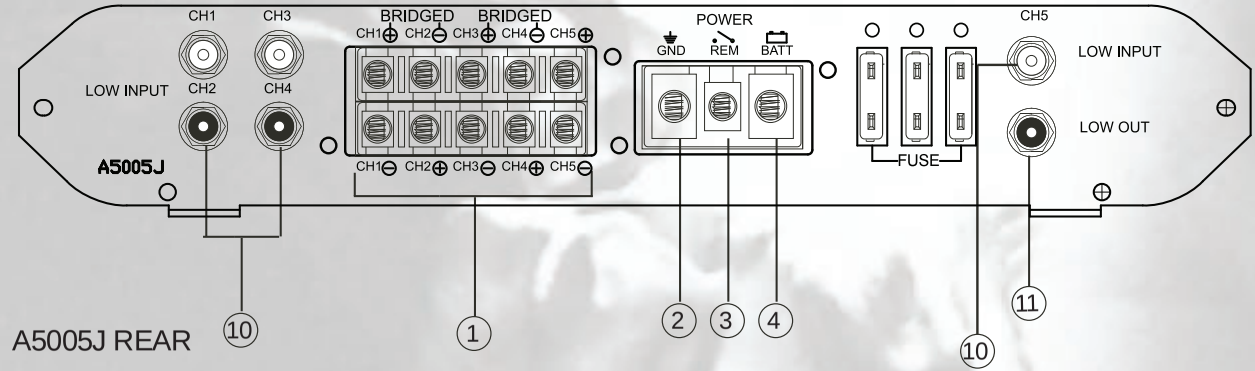




A8000J/A16000J REAR

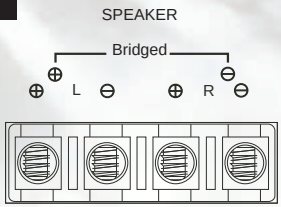


A5005J FRONT



A5005J REAR

1. Speaker Terminals



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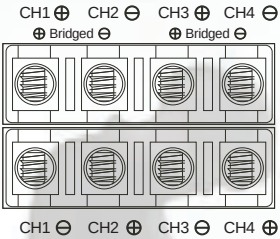
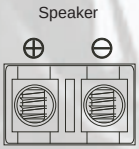


A4004J
A6004J



A8000J
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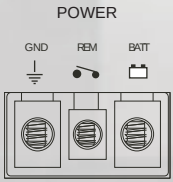
These chrome plated connectors can accept from 16 to 8 gauge wire. Be careful to observe proper polarity when connecting the cables

2. B - Terminal (Chassis ground)



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A8002J
A4004J
A6004J
A8000J
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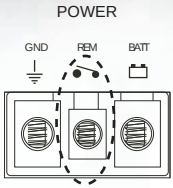
To avoid unwanted ignition noise caused by ground loops, it is essential that the amplifier be grounded to a clean, bare, metal surface of the vehicles chassis.

Note: GROUND WIRE SHOULD NOT BE EXTENDED MORE THAN 3 FT. (1 METER)

3. Remote Turn-On Input



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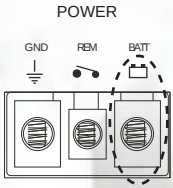
To remote or power antenna output of car stereo. This amplifier is turned "ON" remotely when the vehicle's stereo is turned "ON".

Note: IF YOUR RADIO DOES NOT HAVE +12 VOLT OUTPUT LEAD WHEN THE RADIO IS TURNED ON, THE "REMOTE" TERMINAL ON THE AMPLIFIER CAN BE CONNECTED TO THE VEHICLE'S ACCESSORY CIRCUIT THAT IS LIVE WHEN THE KEY (IGNITION) IS "ON".

4. B+ Terminal (Battery Positive)



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Due to the power requirements of the amplifier, this connection should be made directly to the positive (+) terminal of the battery. For a safety measure, install an in-line fuse holder (not included) as close to the battery positive (+) as possible with an apmere rating not to exceed the total value of fuses in the amp.

5. Input Sensitivity Adjustment

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This control adjusts the amplifier's sensitivity to match the signal strength coming from the source unit. Input sensitivity is variable from 200 Millivolts to 8 volts. Clockwise increases sensitivity. Counterclockwise decreases sensitivity. **THE KNOB IS NOT A VOLUME CONTROL**. A lower signal level will require increased sensitivity for full power. A higher signal will require decreased sensitivity.

6. X-OVER (Crossover) Control

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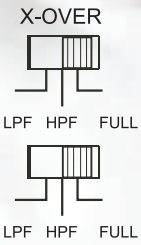
A8002J



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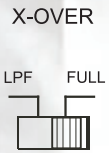
A6004J



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Adjust the crossover for your chosen installation method.
-- LPF: (Low-pass filter) Only bass tones go to the speakers. Use with woofer or sub woofer.
-- FULL: (No filter) All tones go to speakers. Use with full-range speakers or with external crossovers.
-- HPF: (High-pass filter) Blocks very low tones from speakers. Use with tweeters or full-range to eliminate bass tones

7. Variable Low-Pass Filter 50Hz-120Hz

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A8002J
A8000J
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A5005J

Variable Low-Pass Filter (50Hz-120Hz): For use as a dedicated subwoofer channel, set filter switch to "LPF". Adjust variable crossover frequency with control as desired. The amplifier input circuit filters out everything above 50Hz.....120Hz (dependant on the adjustment of the frequency control), so only the deepest bass notes are amplified.

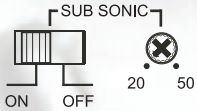
8. Variable High-Pass Filter 50Hz-750Hz

A2002J
A4002J
A8002J

A4004J
A6004J
A5005J

Variable High-Pass Filter (50Hz-750Hz): For use as a dedicated mid high range channel, set filter switch to "HPF". The input circuit filters out all frequencies below 50Hz.....750Hz.

9. Subsonic Switch and Variable



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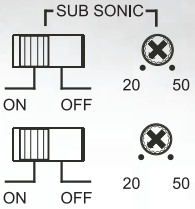
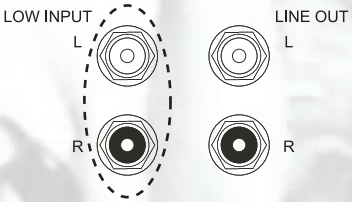


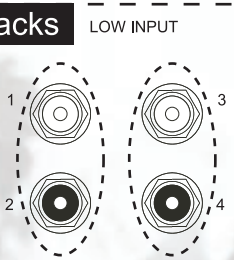
A4004J
A6004J

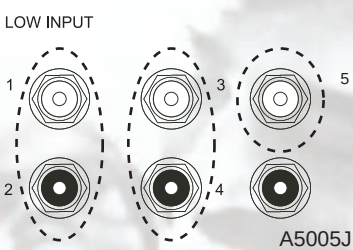
Subsonic Switch: ON and OFF

Subsonic Variable: 20Hz - 50Hz

10. Low Level Input RCA Jacks



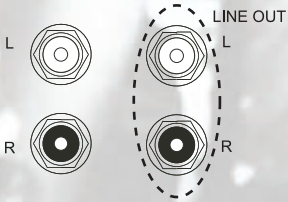


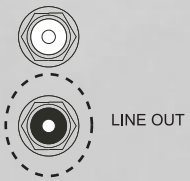


A5005J

These inputs are for signal cables from the source unit or other processor. Always use high quality shielded RCA cables.

11. Low Level OUT RCA Jacks

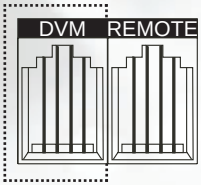




A5005J

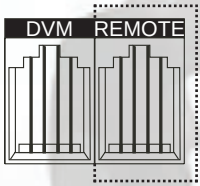
The LINE OUT allows you to build multiple amplifier systems without having to use splitter cords to distribute the signal. Now it is a simple matter of bridging one set of RCA cables into the first amplifier, then using the line out RCA jacks as the feed to the next amplifier.

12. DVM (Digital Volt Meter Input) Fig 1



Remote Control for Digital Display Voltmeter: **Optional**

12. DVM (Digital Volt Meter Input) Fig 1



Bass Boost Control (MIN / MAX) : **Optional**

14. Bass Boost Switch and Variable

A2002J
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A6004J

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A16000J

Bass Boost Switch: ON and OFF

Bass Boost Variable: 0dB - 18dB @ 45Hz

15. Phase Shift Switch

A8000J
A16000J

PHASE SHIFT SWITCH (0 AND 180 DEGREES): Allows you to change the phase of your subwoofer from 0 and 180 degrees to help compensate for timing differences between drivers.

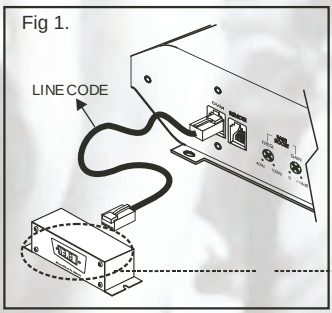
16. LED indicator (Status)

-PWR (Power) : This BLUE LED will illuminate when the amplifier is turned "ON". If it fails to illuminate, check the power connections to the amplifier and fuses.

- PROT (Protection) : The amplifier protection circuitry will disable the amplifier if input overload, short circuit, or extremely high temperature conditions are detected. When the protection mode is in operation, the LED indicator on the side panel will be illuminated, indicating the amplifier has gone into a self-preservation mode.

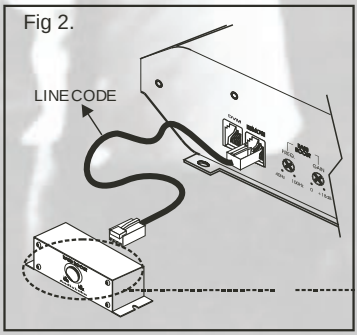
If you observe that the protection LED is lit, please check the system carefully to determine what has caused the protection circuit to engage. The amplifier shut down due to a thermal overload condition, please allow it to cool down before restarting. If the amplifier shut down because of an input overload or short circuit, be sure to repair these conditions before attempting to power up the amplifier again.

Fig 1.



Optional Remote Digital Volt Meter

Fig 2.

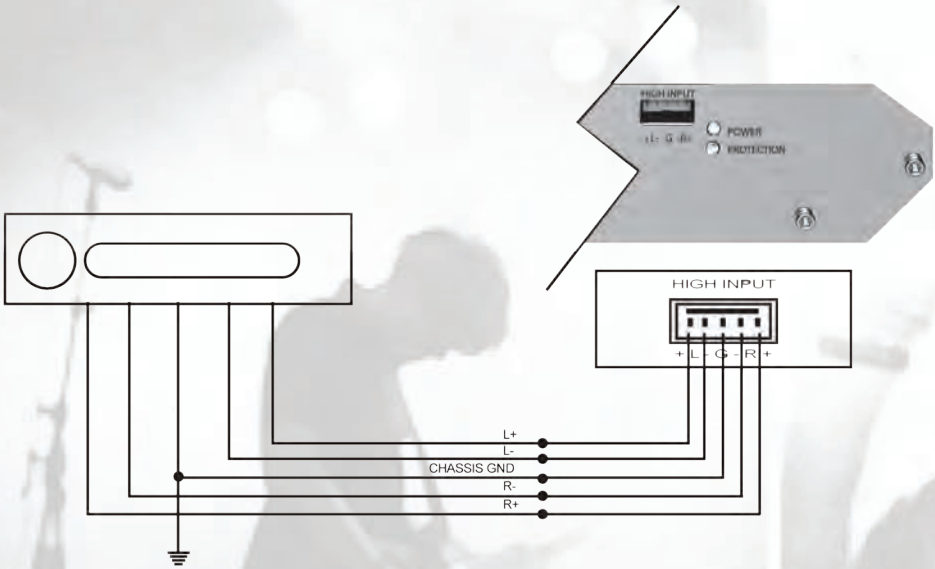


Optional Remote Bass Boost Control

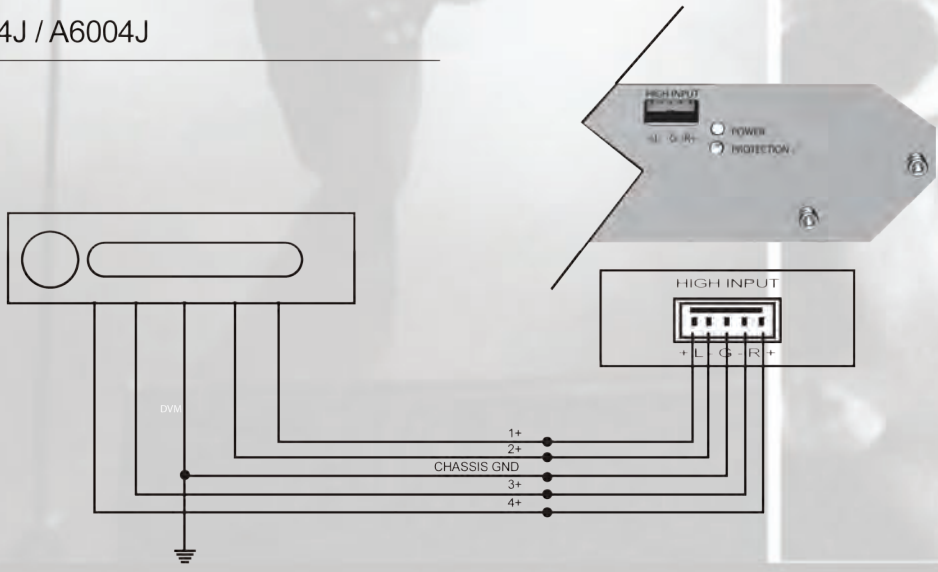
HIGH LEVEL INPUT WIRING

If the HIGH LEVEL INPUTS are used, do not use the low level RCA inputs at the same time

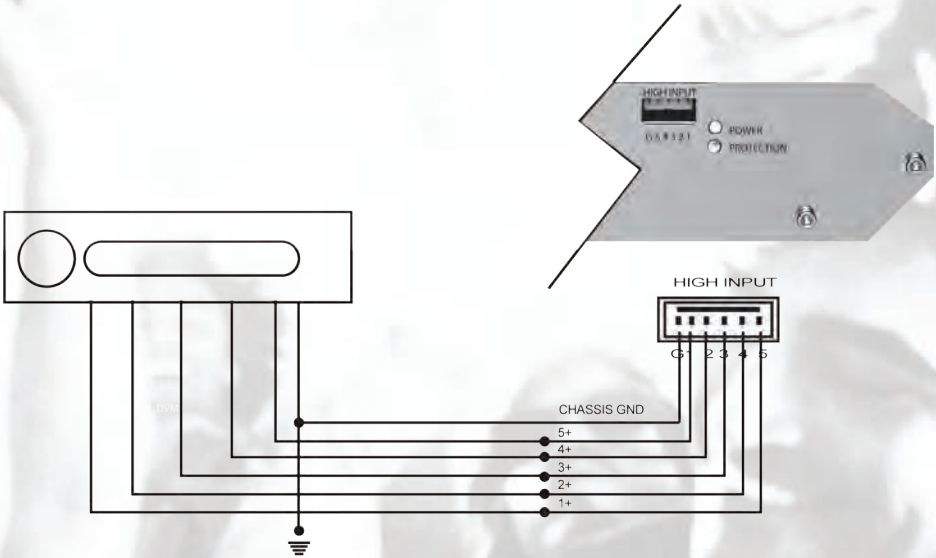
A2002J / A4002J / A8002J / A8000J / A16000J



A4004J / A6004J



A5005J



Planning Your System

Before beginning the installation, consider the following:

a. If you plan to expand your system by adding other components sometime in the future, ensure that adequate space is left, and cooling requirements are met. If your radio/source is equipped with Pre-Amp outputs, it is possible to utilize them to drive an Amplifier and connecting (Amplifier) to the 2 rear speakers. Then, use the built-in power of your radio to drive the 2 front speakers.

NOTE:
DISTORTION LEVEL IS CONSIDERABLY LOWER FROM PRE-AMP (LOW LEVEL) OUTPUTS, THAN SPEAKER (HIGH LEVEL) OUTPUTS.

b. Are your components matched? The RMS power rating of your speakers must be equal or greater than the Amplifier's. They also must be 1-8 Ohms impedance (this information is normally printed on the speaker magnet).

c. Consider both the length of your leads, and routing when determining the mounting location. Pre-Amp input Jacks require a length of high quality shielded male to male RCA patch cord.

Mounting Your System

The mounting position of your Amplifier will have great effect on its ability to dissipate the heat generated during normal operation. It has an ample heat sink for heat dissipation, and also is designed with a thermal shut-down (for heat protection) circuit, having enough air directed over the cooling fins will improve heat dissipation dramatically. DO NOT enclose the amplifier in a small box or cover it so that air can not flow around the fins. Temperatures in car trunks have been measured as high as (155˚F) in the summer time. Since the thermal shut-down point for the Amplifier is (158˚F) it is easy to see that it must be mounted for maximum cooling capability. To achieve the maximum advantage of convection air flow in an enclosed trunk, mount the amplifier in a horizontal position. Cooling requirements are considerably relaxed when mounting inside the passenger compartment since the driver will not allow temperatures to reach a critical point. Floor mounting under the seat is usually satisfactory as long as there is at least 1 inch (2.54cm) above the Amplifier's fins for ventilation.

a. Select a sutable location that is convenient for mounting, accessible for wiring and has ample room for air circulation and cooling.

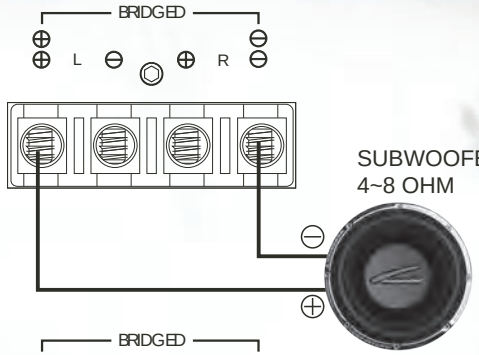
b. Use the amplifier as a template to mark the mounting holes. Remove the amplifier and drill holes. Use extreme caution. Inspect underneath the surfaces before drilling!

c. Secure the Amplifier using the screws provided.

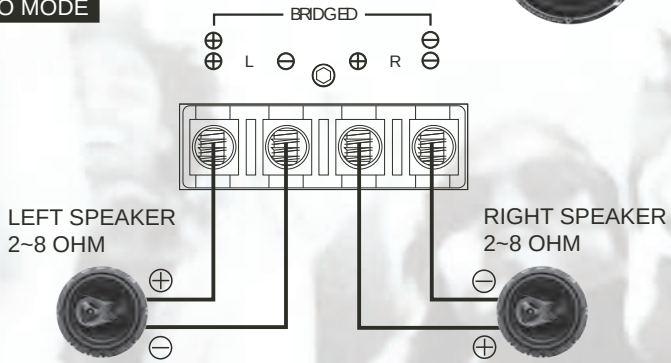
CAUTION: Before connecting any wires to the amplifier, disconnect the ground lead from the battery. Leave the ground lead disconnected until you are done wiring the amplifier.

A2002J / A4002J / A8002J

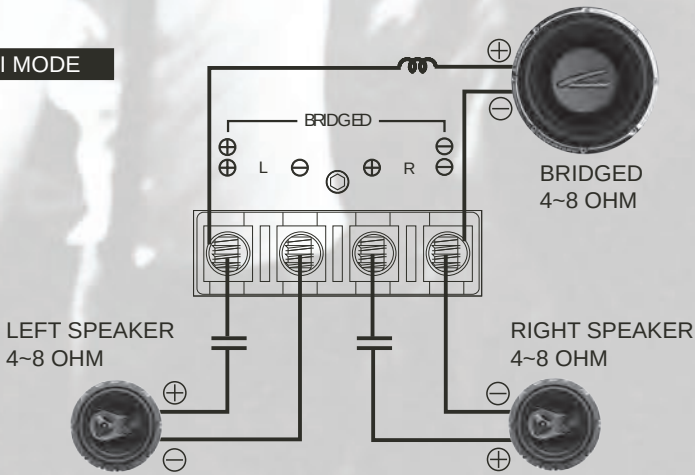
MONO MODE



STEREO MODE



TRI MODE

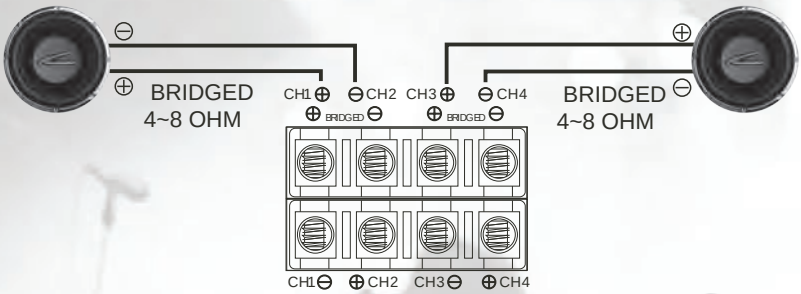


: INDUCTOR LOW PASS FILTER

: CAPACITOR HIGH PASS FILTER

A4004J / A6004J

2 CHANNEL MODE



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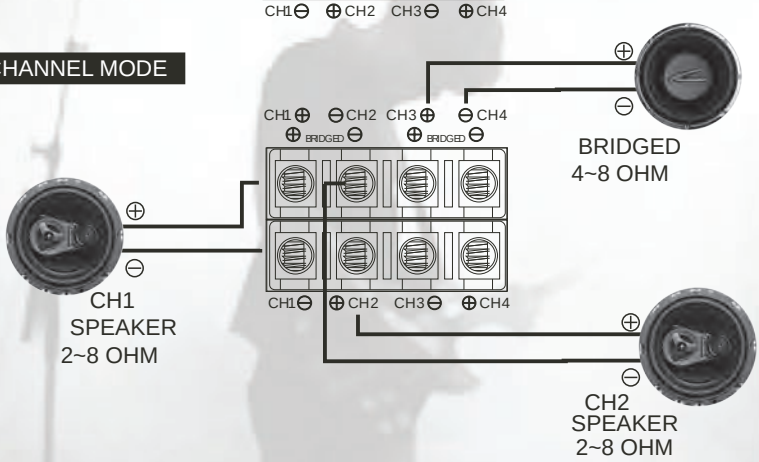
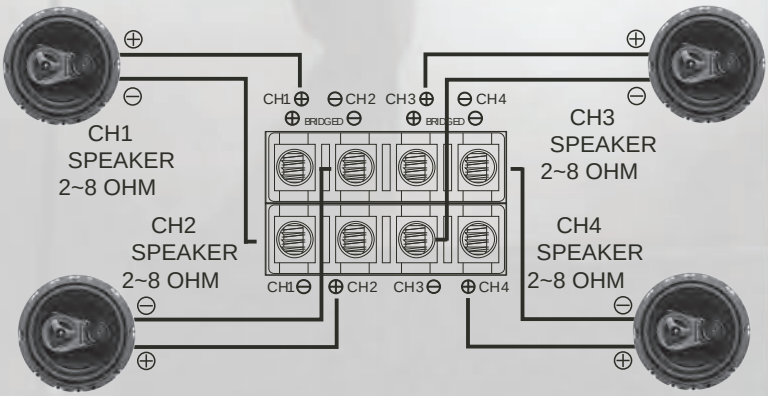
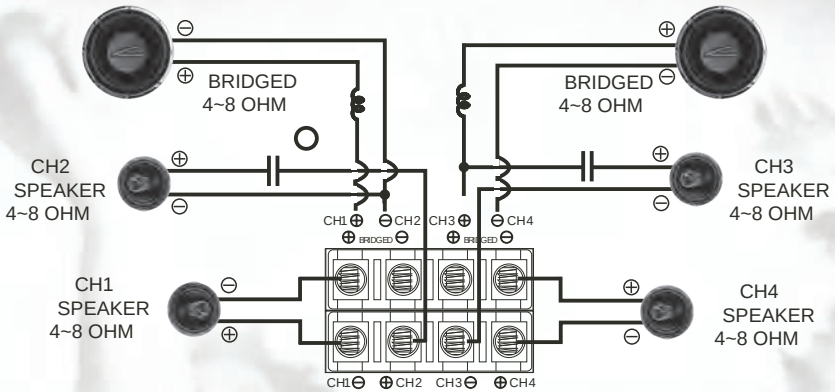


4 CHANNEL MODE



A4004J / A6004J

6 CHANNEL MODE



: INDUCTOR LOW PASS FILTER

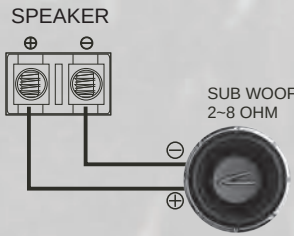
: CAPACITOR HIGH PASS FILTER

COMPONENT VALUES FOR 6 dB PASSIVE CROSSOVER

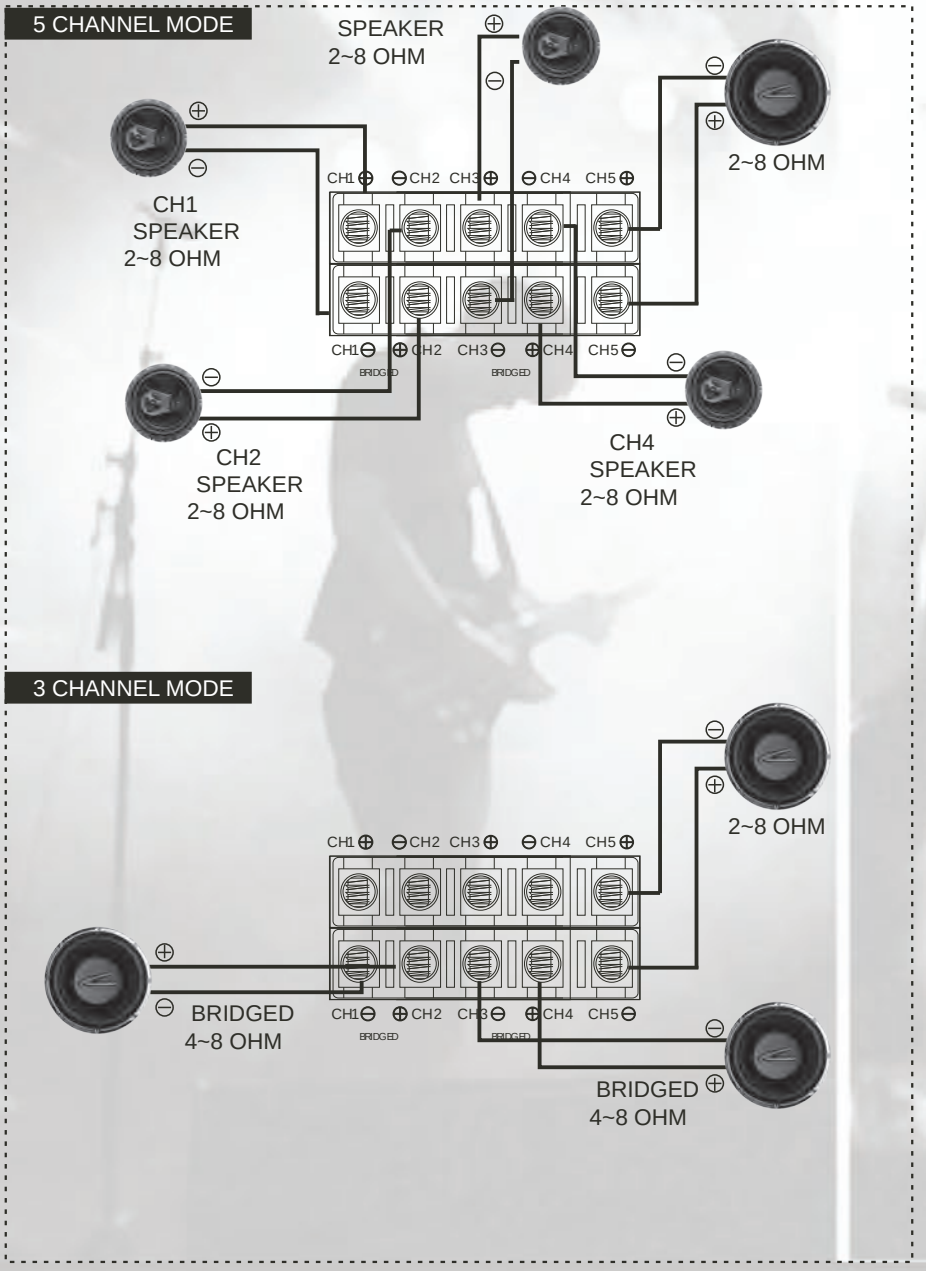
FREQUENCY	INDUCTOR	CAPASITOR
80Hz	7.5 mH	470uF
100Hz	6.5 mH	330uF
120Hz	5.5 mH	330uF
150Hz	4mH	220uF

A8000V / A16000V

MONO MODE



A5005J


5 CHANNEL MODE
SPEAKER
2~8 OHM
2~8 OHM
CH1
SPEAKER
2~8 OHM
CH1 CH2 CH3 CH4 CH5
CH1 CH2 CH3 CH4 CH5
BRIDGED
BRIDGED
CH2
SPEAKER
2~8 OHM
CH4
SPEAKER
2~8 OHM
3 CHANNEL MODE
2~8 OHM
CH1 CH2 CH3 CH4 CH5
CH1 CH2 CH3 CH4 CH5
BRIDGED
BRIDGED
BRIDGED
4~8 OHM
BRIDGED
4~8 OHM

Below you will find information on adjusting the amplifiers gains. Adjusting the gain correctly is essential to proper operation of the amplifier. **If the gain is not adjusted properly it can and will lead to damage of the amplifier and connected speakers and will void your MANUFACTURER WARRANTY.** The gain on an amplifier is not a volume control. It is a signal level setting that tells the amplifier how strong of a signal is coming from the head unit. Your amplifier has an input sensitivity of 200mV-8V. The minimum setting is 8V and the maximum setting is 200mV. Minimum meaning the head unit or processor has 8V output and the maximum meaning it has a 200mV output.

When using **Low-Level (RCA) inputs** you MUST know what the pre-out or line-out voltage of your head unit is rated in Volts. This is not the wattage rating. This can be found in the manual of the head unit or by contacting the manufacturer. If you are using a line-driver or another type of processor that adjusts the output voltage of the signal to the amplifier you will need to know what the output is adjusted to. The gain on the amplifier needs to be set proportionately to the pre-out or line-out voltage rating of the head unit or processor.

If the signal strength is 4V then the gain would be adjusted to about 45 - 50%. Below is a list of commonly found voltage ratings and their appropriate gain adjustments. When adjusting the gain you want to start with the bass boost setting on the amp set to minimum and bass adjustments on the head unit or processor are set at 0 or flat. As these other settings for bass adjustments are increased, the gain setting will need to be adjusted lower.

2V ≥ 70%
4V ≥ 45%
5V ≥ 32.%
8V ≥ 5% (Bass boost must be left at minimum on the amp and 0 or flat on the head unit or processor)
10V ≥ Can not be used with this amplifier.

If your amplifier includes **Hi-Level (speaker wire) inputs** and you are using them for the audio signal connection, please use the below steps to adjust the amplifier. Start with a song with good bass that you know very well.

1. Use a screwdriver to turn GAIN (8V / 0.2V fully counter clockwise to 8V
2. Turn the auto sound system's volume control to about 3/4 of its full range. Any higher normally leads to the signal being distorted.
3. Turn up the amplifiers gain / level control unit the sound begins to distort, then immediately gain / level down to a point just before where the distortion began.
4. Adjust the auto sound system's volume control to a comfortable listening level and you are good to go.

NOTE: The steps to adjusting the gain / level control need to be repeated when you adjust any bass boost setting on the amplifier, processors or significantly on the head unit. Adjusting bass boost settings significantly without adjusting the gain / level can lead to a distorted signal and damage to the amp and speakers.

SYMPTOMS	CHECK POINTS	CURE
NO SOUND	Is the power LED illuminated ? (NO)	Check fuses in 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.
	Fuse broken	Replace fuse.
NO SOUND IN 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 it 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.)
STATUS LAMP ON	Temperature shut down	Turn radio down
	Speaker wires short	Separate speaker wires and insulate