

Owner's Manual



AL110.4

AL700.1D

AL1200.1D

AL1600.1D



Installation

If you intend to install the amplifier yourself, please read the owner's manual carefully.
Before you start the installation, please take all the necessary precautions into consideration.

Mounting Preparation

Disconnect the negative (-) battery cable before mounting or making any connections.
Check the battery and alternator ground (-) connections. Make sure they are properly connected and free of corrosion. Before selecting a mounting location for the amplifiers, please take cooling and safety into consideration.

Avoid areas such as speaker boxes with excessive vibration !

For safety purposes, install the amplifier in a dry and well ventilated location and make sure no cables or other harnesses in the car interfere with the mounting location.

+12V(B+), GND, REM CONNECTION

+12V / B+ (POWER CONNECTION)

Before mounting the amplifiers, disconnect the negative (-) wire from the battery to protect any accidental damage to the amplifiers or the audio systems.

Connect the power cables to power terminal labeled as + 12V.

Some of the amplifiers are not equipped with fuses, so external fuses are required.

Connect one end of the fuse holder to the power cable and the other end of the fuse holder to the positive battery terminal within 18" of the battery.

This fuse location will protect the system and the vehicle against the possibility of a short circuit in the power cable.

Make sure that the fuses and the fuse holder are adequate for the desired application.

GND (GROUND CONNECTION)

Locate a secure grounding connection as close as possible to the amplifier.

Make sure the location is clean and provides direct electrical connection to the chassis of the vehicle.

Connect one end of an equal sized cable as the positive cable to the location of ground.

It is important that the ground cable is as short as possible, and no longer than 3 feet.

Run one end of the cable to the grounding point.

Run the other end of the cable to the mounting location.

Connect the ground cable to the terminal labeled as GND.

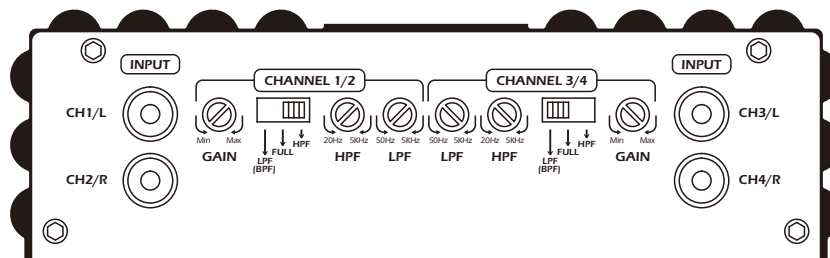
REM (REMOTE CONNECTION)

Run a remote turn on wire from the vehicles head unit.

Connect the remote turn on wire to the power terminal labeled as REM

Panel Layout

(AL110.4)



1) LOW INPUT

Connect preamp signal cables from head unit to RCA input of the amplifiers.
A minimum level input of 0.2V is essential for correct operation.

2) GAIN (8V ~ 0.2V)

Matching the output voltage of the head unit's RCA line-outs to the input section.

3) FILTER SELECTOR SWITCH

Sets the filter in either High Pass (HPF), Full Range or Low Pass (LPF) / Band Pass (BPF) operation.

4) HIGH PASS FILTER (20Hz~5KHz@12dB OCTAVE SLOPE)

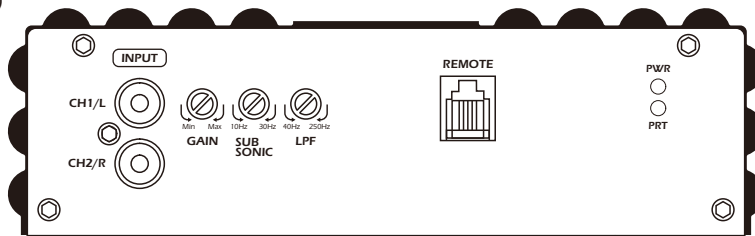
Control the high pass point for the speaker outputs.

5) LOW PASS (Band Pass) FILTER (50Hz~5KHz@12dB OCTAVE SLOPE)

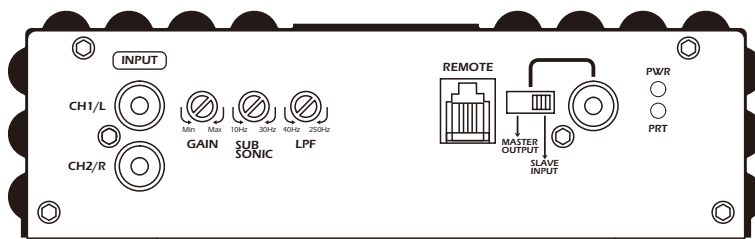
Control the low pass point for the speaker outputs.

Panel Layout

(AL700.1D)



(AL1200.1D / AL1600.1D)



1) INPUT

Connect preamp signal cables from head unit to RCA input of the amplifiers. Minimum level input of 0.2V is essential for correct operation.

2) GAIN (8V ~ 0.2V)

Matches the output voltage of the head unit's RCA line-outs to the input section.

3) SUBSONIC FILTER (10Hz ~ 30Hz)

Control the high pass point for the speaker outputs to eliminate extreme low frequencies.

4) LOW PASS FILTER (40Hz ~ 250Hz)

Controls the low pass point for speaker outputs.

5) REMOTE LEVEL CONTROL PORT

Connects to external level control.

6) REMOTE CONTROL

Turn the knob clockwise to increase level and likewise, turn the knob counter clockwise to decrease level.

7) MASTER OUTPUT / SLAVE INPUT (Only for AL1200.1D & AL1600.1D)

For linkable connection of 2 same amplifiers. Minimum impedance is 2 Ω .

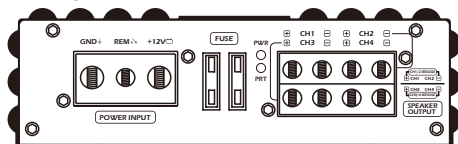
In this mode, the master amplifier will control gain settings on the subsequent slaved amplifier.

8) POWER & PROTECTION INDICATOR

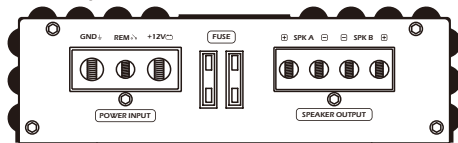
Blue Power LED shows correct operation. Red LED shows general malfunction, faulty connection or thermal protection.

+12V(B+), GND, REM

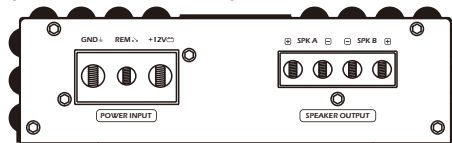
(AL110.4)



(AL700.1D)



(AL1200.1D/AL1600.1D)



GND (GROUND CONNECTION)

For connection to the chassis ground. For optimum performance 4 gauge cable is recommended.

REM (REMOTE)

Connect to switched +12V from the head unit.

+12V / B+ (POWER CONNECTION)

For connection to the positive terminal of the battery (+12).

For optimum performance 4 gauge cable is recommended.

SPEAKER OUTPUTS

Amplifier connection to loudspeakers. Minimum speaker cable is 12 gauge.

Minimum impedance is 2 Ω . (AL110.4)

Minimum impedance is 1 Ω . (AL700.1D / AL1200.1D / AL1600.1D)

POWER & PROTECTION INDICATOR

Blue Power LED shows correct operation. Red LED shows general malfunction, faulty connection or thermal protection.



CAUTION

Before attempting to make any connections to power supply, input and output connectors, make sure the amplifier is in OFF state. Check polarity of cables carefully as using reversed polarity will cause damage to amplifier. And to prevent power loss and overheating of wiring, always use the recommended wire gauges.



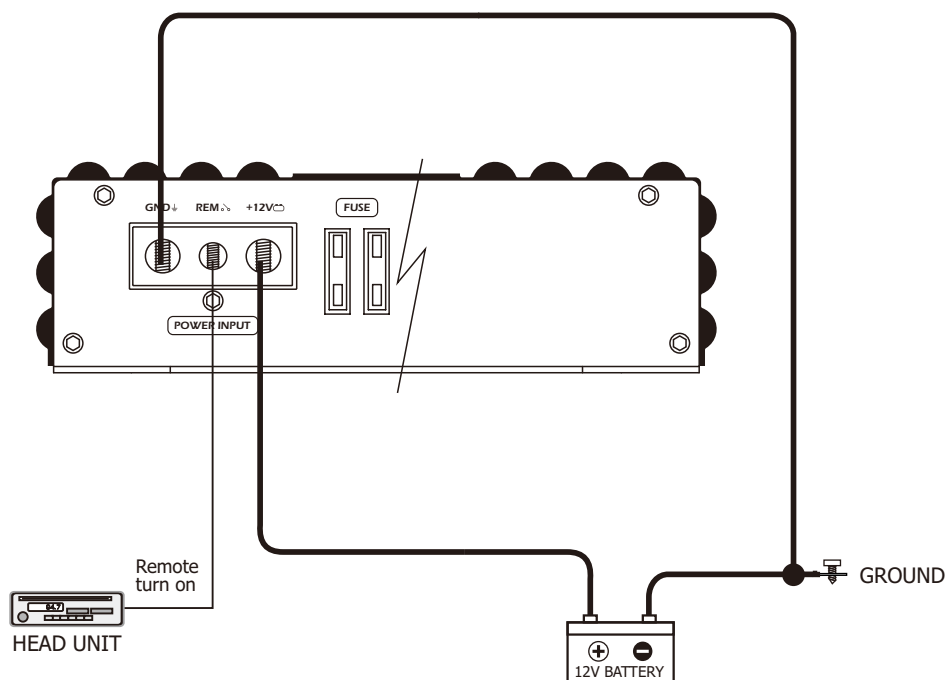
CAUTION

Installation of the amplifier should be done in the following steps:

1. Ensure that the ground is appropriate, then connect it to the amplifier.
2. Next step is to connect the +12V wire. Ensure all power terminals are used.
This cable has to be fused at the battery for safety precautions.
3. The final step is connecting the switched remote.

+12V(B+), GND, REM Connection

(AL110.4 / AL700.1D)



⚠ CAUTION

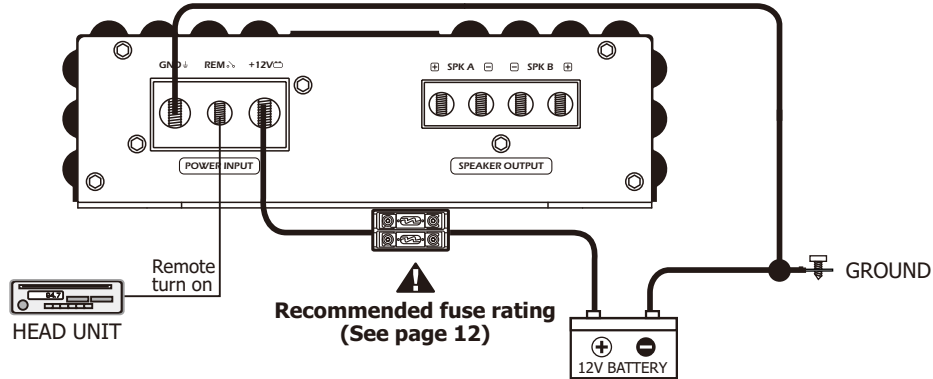
Keep GROUND of equal length. This drawing is for illustration purposes only.

We recommend using 12 AWG speaker cables to obtain intended performance. Run 12 AWG speaker cables from your speakers to the amplifier's mounting location. Keep the speaker cables separate from the power cables and the amplifier's input cables. Use grommets where the cables have to penetrate the vehicle chassis. Connect the speaker wires according to the terminals on each speaker. Strip 1cm, 3/8" of insulation of the end of each cable and twist the cables strands together tightly. Make sure there are no stray strands that might touch other cables or terminals and cause short circuit. Connect the cable ends to the amplifier as shown in the speaker wiring diagram.

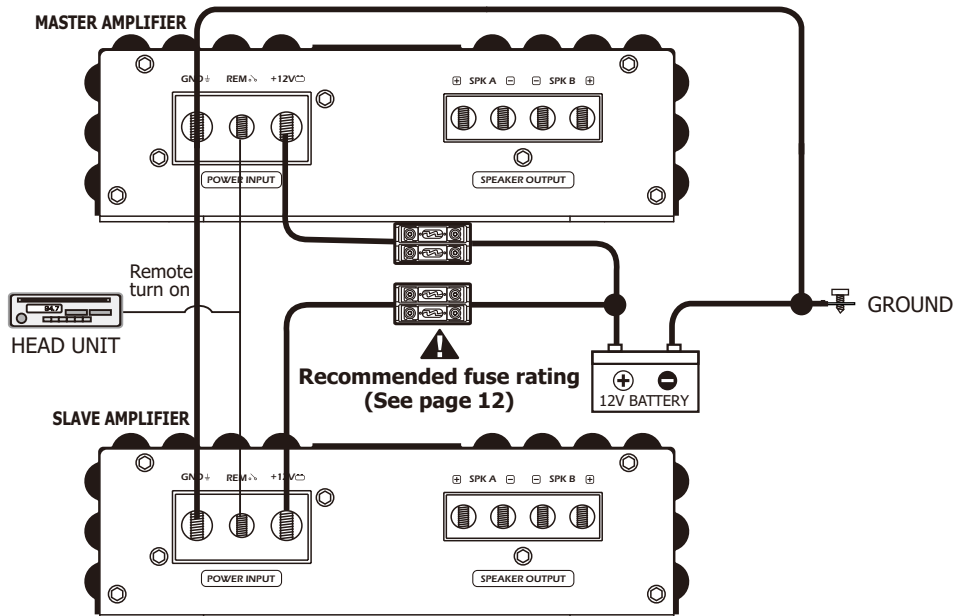
+12V(B+), GND, REM Connection

(AL1200.1D / AL1600.1D)

SINGLE CONNECTION



DAISY CHAIN (LINKED) CONNECTION



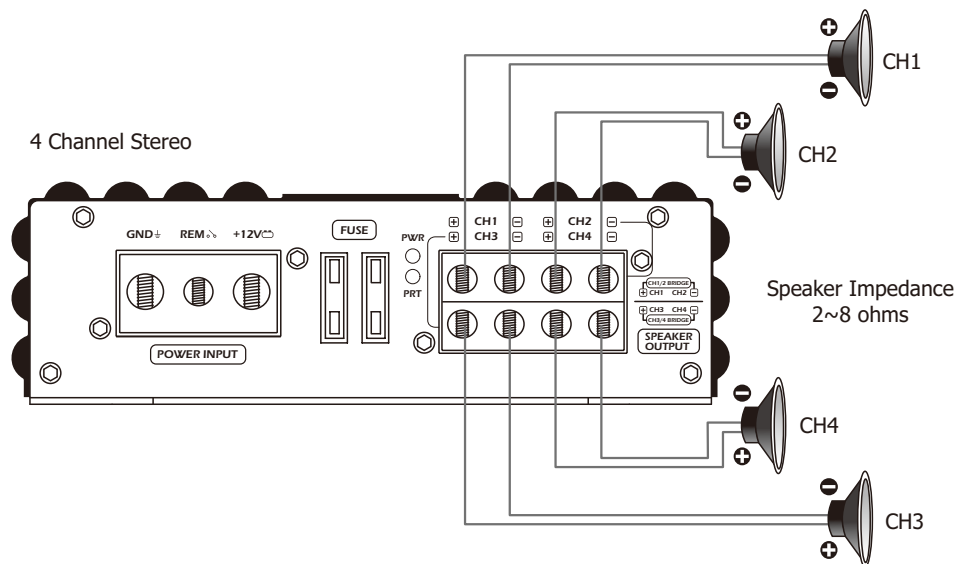
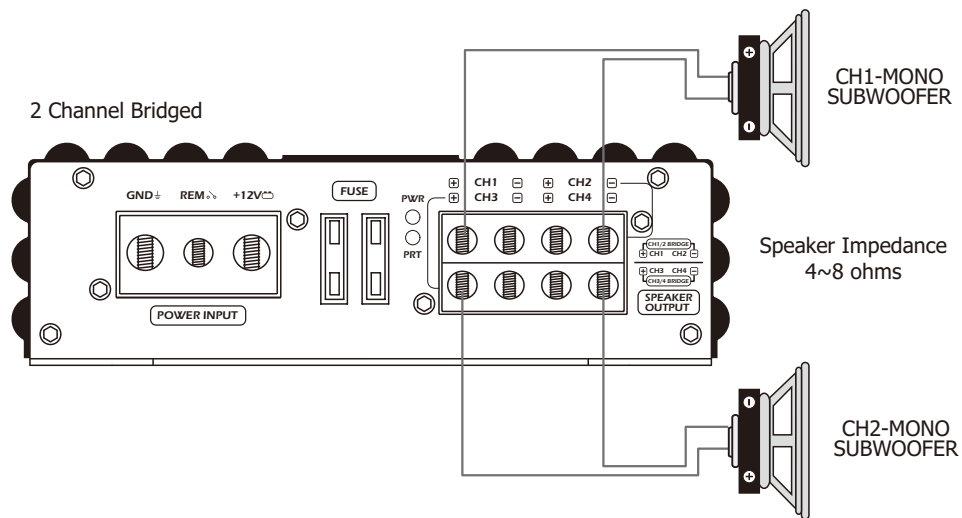
CAUTION

Keep GROUND of equal length. This drawing is for illustration purpose only.

We recommend using 12 AWG speaker cables to obtain intended performance.
Run 12 AWG speaker cables from your speakers to the amplifier's mounting location
Keep the speaker cables separate from the power cables and the amplifier's input cables.
Use grommets where the cables have to penetrate the vehicle chassis.
Connect the speaker wires according to the terminals on each speaker.
Strip 1cm, 3/8" of insulation of the end of each cable and twist the cable strands together tightly.
Make sure there are no stray strands that might touch other cables or terminals and cause short circuit.
Connect the cable ends to the amplifier as shown in the speaker wiring diagram.

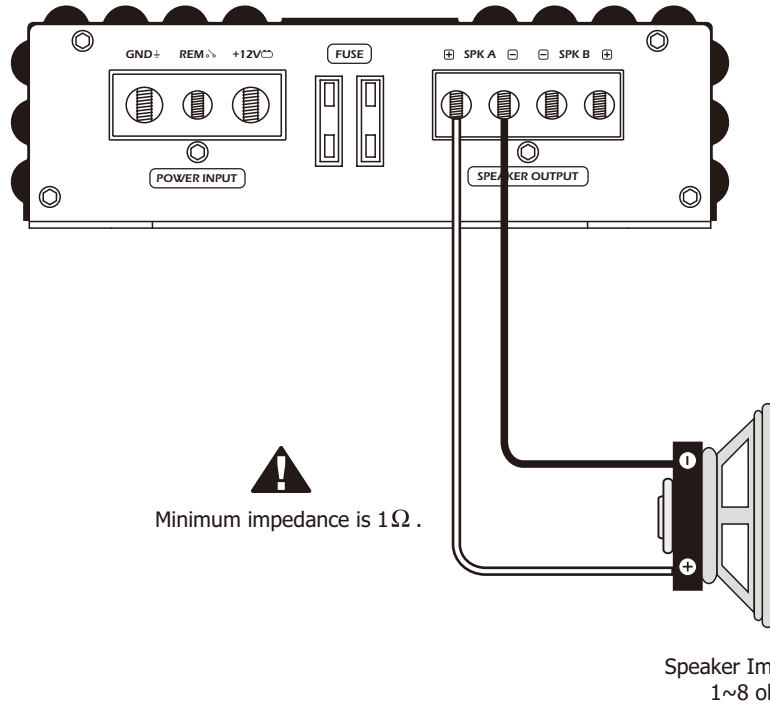
Speaker Connection

(AL110.4)



Speaker Connection

(AL700.1D)

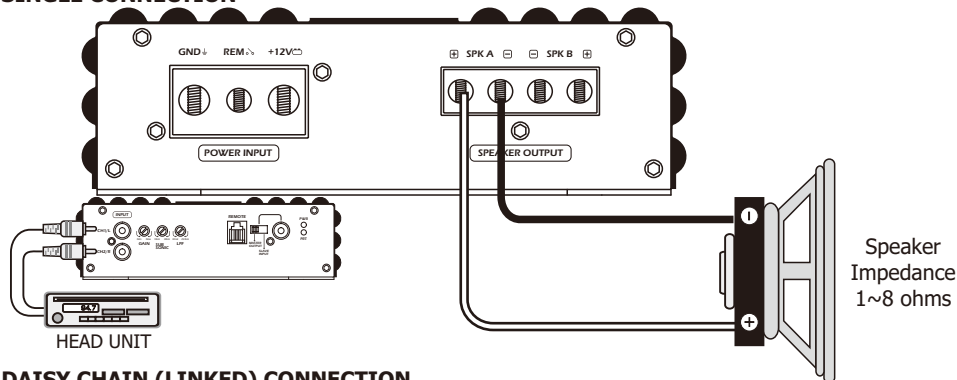


The amplifier is not to be Linked / Strapped.
Severe damages may occur if used in such a configuration.
Attempts to Link / Strap amplifiers will void the warranty!

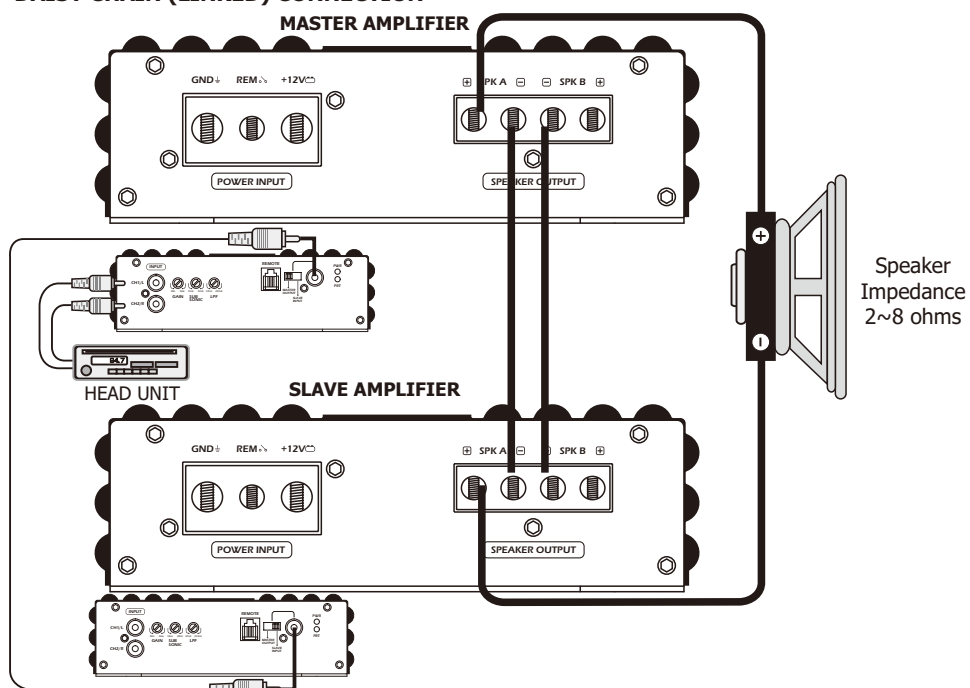
Speaker Connection

(AL1200.1D / AL1600.1D)

SINGLE CONNECTION



DAISY CHAIN (LINKED) CONNECTION



Strapping connection allows linking of 2 same amplifiers to work as 1 single amplifier. Please read the following connection diagram carefully to ensure correct connection.

- Step 1. Connect the master amplifier to the head unit
- Step 2. Connect the master and slave amplifier in daisy chain RCA jack as shown in the diagram.
- Step 3. Connect speaker cable (+) on master amplifier to subwoofer (+)
- Step 4. Connect speaker cable (+) on slave amplifier to subwoofer (-)
- Step 5. Connect speaker cable (-) on master amplifier to speaker cable (-) on slave amplifier using 8 AWG wire cable.



The minimum impedance as 1 unit is 1Ω .
In a daisy chain configuration the minimum impedance is 2Ω .

Troubleshooting

Assure that the Power LED is on, if so please proceed with step # 3, if not, continue with the steps below;

1. Check the in line fuse (s) on the battery's positive cable, replace if needed.
2. Assure that the Ground is properly attached to the vehicle's chassis on a clean metal point, tighten or grind the connection point once again.
3. Our amplifiers have a high voltage protection. Make sure that the operating voltage is between 8.5V~16V and voltages above this range will cause the amplifier to go into protect.

Protect LED is on

1. The Protect LED will come on due to the possible circumstances;
 - a) The impedance connected is under the specified load.
 - b) Thermal (Overheat), allow for a more suitable mounting as recommended in the install section. Thermal may also appear if the impedance is under the specified or the voltage is inadequate.
 - c) Short circuitry, voltage and DC offset.
 - Short circuitry, go through all cables including speaker wires, GND, battery's positive cable. Voltage, please check step # 3, for DC offset, make sure that a voltage of no more than 4V is available. Remove the RCA from the input and check whether the amplifier comes out of protect. If so, check if the output from the Head unit has a DC of 4V, replace / repair if needed.

Audio output (no sound)

1. Assure that RCA connections from the Head unit and the amplifier is properly connected. Check the entire cable for damages or its like. Test the RCA inputs for DC volts with the source unit on, replace / repair if needed.
2. Check the routing of the cables, fuses and verify that all connections are connected accordingly.
3. Check whether the speakers are functional.

Turn on thump

1. Disconnect the signal input to the amplifier, then turn it on and off.
 - a) If the noise is cancelled, then connect a delay turn on module on the REM wire running from the source unit to the amplifier.
 - b) Use another 12V source for REM lead to the amplifier. If the noise is cancelled, use a relay to isolate the amplifier from the turn on thump.

Poor bass response

1. Check that the polarity of the speaker cables are correct. Speakers connected in anti-phase will cancel each other, thus the bass response will be absent.

Engine noise

1. Ensure that all signal transferring wires (RCA, speaker cables etc) are kept separately / away from the power and the ground wires.
2. Bypass all electrical components between the Head unit and the amplifier. Connect the Head unit directly to the amplifier's input. If the noise is eliminated, the unit bypassed is the one causing the noise.
3. Remove the existing ground wires for all electrical components installed. Ensure that the point of ground is 100% metal which has been grinded free of rust, paint etc.
4. Replace the ground cable from the OEM battery / alternator and ensure it is grounded accordingly.
5. Test the battery and alternator load (can be carried out by a professional). Ensure that the vehicle's electrical system is in a good condition, this includes distributor, spark plugs / wires, voltage regulators etc.

Specifications

MODEL CODE

AL110.4

Continuous Power Output @14.4V Input

- RMS power, 4 ohms stereo
- RMS power, 2 ohms stereo
- RMS power, 4 ohms bridged

Signal To Noise Ratio

Low Pass (Band Pass) Frequency Crossover

High Pass Frequency Crossover

Frequency Response

T.H.D Continuous @ 4 ohm, 1KHz

Channel Separation

Input Sensitivity

Dimensions (mm)

Operating Voltage

Recommended Fuse Rating

: **110W x 4CH**
 : **185W x 4CH**
 : **370W x 2CH**
 : **>90dB**
 : **50Hz~5KHz**
 : **20Hz~5KHz**
 : **10Hz~30KHz (+/- 1dB)**
 : **<0.05%**
 : **75dB**
 : **Variable 8V~200mV (+/- 5%)**
 : **175(W)x52.5(H)x240(L)**
 : **DC 8.5V~16V**
 : **30A x 2**

MODEL CODE

AL700.1D

Continuous Power Output @14.4V Input

- RMS power, 4 ohms mono
- RMS power, 2 ohms mono
- RMS power, 1 ohm mono

Signal To Noise Ratio

Low Pass Frequency Crossover

Subsonic Filter

Frequency Response

T.H.D Continuous @ 4 ohm, 100Hz

Efficiency @ 4 ohm, 100Hz

Input Sensitivity

Dimensions (mm)

Operating Voltage

Recommended Fuse Rating

: **220W x 1CH**
 : **420W x 1CH**
 : **700W x 1CH**
 : **>90dB**
 : **40Hz~250Hz**
 : **10Hz~30Hz**
 : **10Hz~350Hz (+/- 1dB)**
 : **<0.15%**
 : **86%**
 : **Variable 200mV~8V (+/- 5%)**
 : **175(W)x52.5(H)x200(L)**
 : **DC 8.5V~16V**
 : **30A x 2**

MODEL CODE

AL1200.1D

AL1600.1D

Continuous Power Output @14.4V Input

- RMS power, 4 ohms mono
- RMS power, 2 ohms mono
- RMS power, 1 ohm mono
- RMS power, 4 ohms linkable/dual mono
- RMS power, 2 ohms linkable/dual mono

Signal To Noise Ratio

Low Pass Frequency Crossover

Subsonic Filter

Frequency Response

T.H.D Continuous @ 4 ohm, 100Hz

Efficiency @ 4 ohm, 100Hz

Input Sensitivity

Dimensions (mm)

Operating Voltage

Recommended Fuse Rating

: 400W x 1CH	: 550W x 1CH
: 750W x 1CH	: 1000W x 1CH
: 1200W x 1CH	: 1560W x 1CH
: 1500W x 1CH	: 2000W x 1CH
: 2400W x 1CH	: 3000W x 1CH
: >90dB	: >90dB
: 40Hz~250Hz	: 40Hz~250Hz
: 10Hz~30Hz	: 10Hz~30Hz
: 10Hz~350Hz (+/- 1dB)	: 10Hz~350Hz (+/- 1dB)
: <0.15%	: <0.15%
: 86%	: 86%
: Variable 200mV~8V (+/- 5%)	: Variable 200mV~8V (+/- 5%)
: 175(W)x52.5(H)x280(L)	: 175(W)x52.5(H)x340(L)
: DC 8.5V~16V	: DC 8.5V~16V
: 100A (linked: 200A)	: 150A (linked: 250A)

The above specifications are subject to modifications without prior notice.

