

LEGACY®

American
LEGACY
series 2

LA3090D

**Class-D mono block MOSFET
CAR AMPLIFIER**

USER'S MANUAL

Congratulations

on your purchase of a new

American Legacy 2 Class-D amplifier!

Thank you for purchasing the Legacy Class-D amplifier. Rest assured you have purchased a quality product designed and engineered to give you many years of uncompromised musical service. The Legacy Class-D amplifier has been designed using the latest in electronic technology available today.

This mono subwoofer amplifier is the result of advanced high speed switching technology that overcomes the less-efficient Class-D design. The Legacy Class-D amplifier reflects your true appreciation for powerful bass reproduction in the mobile environment.

This amplifier is designed for low-frequency information only and it is not capable of reproducing any mid/high-frequency information.

This is due to the noise introduced into the signal by the switching speed of the power supply, which must be filtered out of the audio signal.

The power supply incorporated into Legacy amplifier is a DC to DC switching power supply designed to have adequate headroom for even the most demanding peak and dynamic range found on today's CDs and recording.

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Legacy Red Series 2 Class-D Amplifier Features

- Mono Block Subwoofer Amplifier
- 1 Ohm Stable
- MOSFET Power Supply
- PWM (Pulse-Width-Modulation) System
- Glass Epoxy PCB
- Gold Plated RCA Inputs for Line Input & Bypass Output.
- Gold Plated Terminals for Speaker Output and Power Input.
- Thermal, Overload and Short Protection
- Variable Sub-sonic Filter (15Hz~40Hz, 24dB/Octave)
- Variable Low-pass Filter (20Hz~250Hz, 24dB/Octave)
- Phase Control 0-180 degree
- Remote Bass Control
- Input Impedance : 10K Ohms
- Soft Turn On/Off
- Advanced Protection Circuitry
- S/N Ratio:>90dB
- Heavy Duty Power Coated Heatsink

Specifications

OUTPUT POWER

RMS @ 4 OHMS
RMS @ 2 OHMS
RMS @ 1.3 OHMS
MAX OUTPUT

LA3090D

Mono channel amplifier

400W mono
800W mono
1200W mono
3000W mono
20-250 Hz(±3dB)

FREQUENCY RESPONSE

INPUT IMPEDANCE

INPUT SENSITIVITY

POWER SUPPLY VOLTAGE

MATCHING SPEAKER IMPEDANCE

MAXIMUM CURRENT DRAW

DIMENSIONS, W x H x L, inches (mm)

NET WEIGHT, LBS (KG)

10k Ohms

250 mV ~ 4V

14.4 VDC/NEG GD (10.5-16V)

1 OHMS

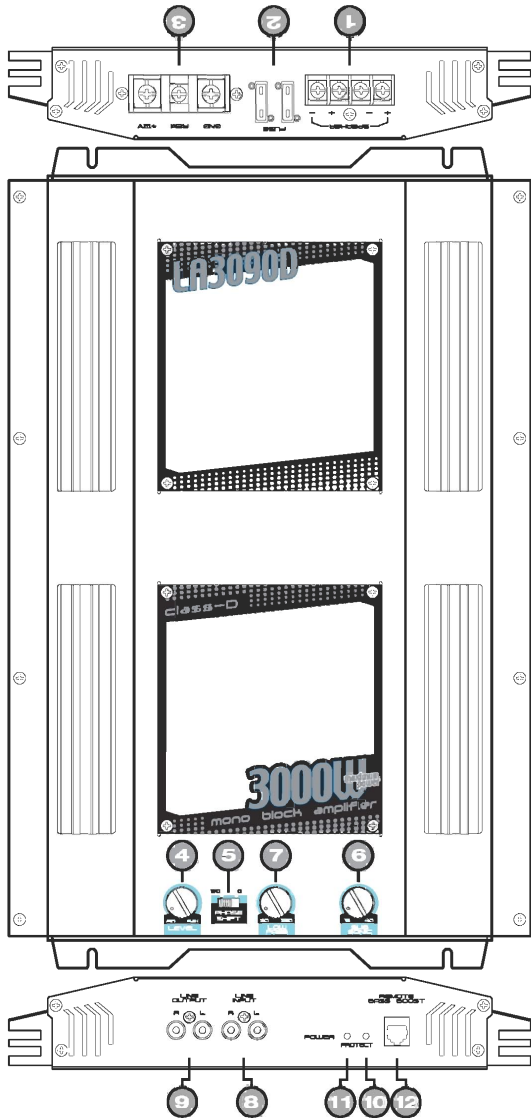
40 A X 2

11 X 1.9 X 16
(279 X 49 X 406)

11.2 (5.1)

Features and Specifications

specs



LA3090D Features and Controls

- 1 Speaker Terminals**
These terminals are 14K Gold plated for high conductivity and minimum impedance loss. The terminals face upwards for easy wiring in tight situations.
- 2 Fuse**
Protects the amplifier as well as the automobile electrical system from short circuit conditions.
- 3 Power Supply Terminals**
- 4 Input Level Control**
Use this control to match the output of the head unit to the amplifier. If distortion is present, reduce the setting of this control.
- 5 Phase Shift Switch**
Allows you to change the phase of your subwoofer from 0 degree to 180 degrees to help compensate from timing difference between drivers.
- 6 High Pass Subsonic Filter**
Adjustable from 15Hz to 40Hz with a slope of 24dB per octave. This allows for the attenuation of frequencies that are mostly inaudible and cause unnecessary strain on the amplifier.
- 7 Crossover Low Pass Filter**
Adjustable from 20Hz to 250Hz with a slope of 24dB per octave. This allows for the adjustment of the upper point of the frequency bandwidth and the respective subwoofer.
- 8 Low Level Input (High Impedance)**
This unit is provided with gold-plated RCA input jacks. Using RCA-RCA type patch cords, connect these inputs to the RCA outputs from your head unit.
- 9 Low Level Output (High Impedance)**
This unit is provided with gold-plated RCA Output jacks. Using RCA-RCA type patch cords, connect these Outputs to the RCA Inputs for your anyther amplifier.
- 10 Protection LED Indicator**
The protection circuitry in the amp will disable it if it senses an input overload, speaker short circuit, or thermal overload conditions. Should this occur, the PROTECT LED will be illuminated. At that time, it is important that you check to determine what has caused the protection circuitry to become activated.

If the amp shut off because of a thermal overload, allow it to cool down before attempting to restart.

If the shutdown occurred because of an input overload, or speaker short circuit, be sure to correct these conditions before attempting to restart the amp.

To reset the amp, turn the REMOTE power off and on again.
- 11 Power LED Indicator**
This LED is illuminated when the REMOTE ON system is turned on.
- 12 Remote Dash-mount Gain Control**
This amplifier come complete with a compact remote GAIN CONTROLLER which can be conveniently mounted on or under the dashboard of your car.

Installation

Mounting

Find a suitable location in the vehicle to mount the amplifier.
Make sure there is sufficient air flow around the intended mounting location.
Bolt the amplifier to the mounting surface.

Wiring Tips

Connect the power ground terminal to the nearest point on the chassis of the car. Keep this ground wire less than one meter (39") in length. Use 4 gauge wire.
Connect the remote terminal to the remote output of the head unit using 14 gauge.
Connect an empty fuse holder within 300mm (12") of the battery and 4 gauge or larger high quality cable from this fuse to the amplifier location.
Make sure there is no fuse in this fuse holder. Then make the connection to the "BATT" connection on the amplifier.
If multiple amplifiers are being used, use cables (each with its own fuse at the battery) or a +0 or a +2 cable from the fuse holder at the battery to a distribution block at or near the amplifier's location.
Connect all line inputs and outputs using high-quality RCA-RCA cables.

Fuses

Insert fuse(s) at the battery fuse holder(s)

Recheck all connections before powering up.

Set all level controls to their least sensitive positions and set all crossover controls, switches, etc., to the desired frequency or position.

Once the system is powered up, set the volume control on the head unit to about the 2 o'clock position, and then set all the amplifiers' level controls for maximum output level. Further fine tuning of the various controls may be necessary to obtain the desired results.

Setting Up and Turning On Your New Amplifier

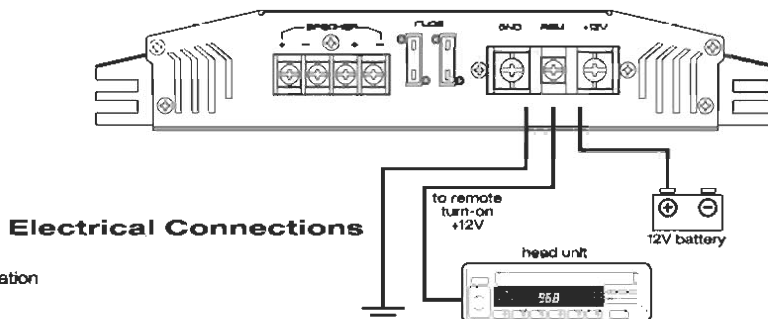
After all electrical connections have been made, and physical installation is complete, turn on your stereo and listen for the amplifier to turn on. If there are any unusual noises from the speakers, turn the stereo off and recheck ALL wiring.

Assuming the amplifier turns on normally, you may have to adjust the LEVEL control(s) to match the output levels from your head unit. Follow these steps:

1. Set the volume control on your head unit to about the 2/3 position.
2. Adjust the amplifier LEVEL control(s) to an average listening position.
3. Turn the head unit volume all the way down, and listen for background noise.
4. Start your vehicle, and again, listen for background noise.
5. By fine tuning the LEVEL control(s), you can reduce background and engine noise, if present.

These adjustments should only be made once. After that, use the head unit volume control to adjust the system volume, not the LEVEL control(s).

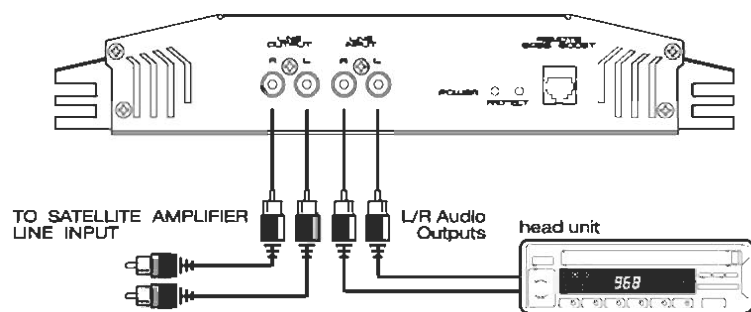
CAUTION: Never turn the LEVEL control(s) up any higher than you need to get clear sound at 2/3 volume on the head unit.



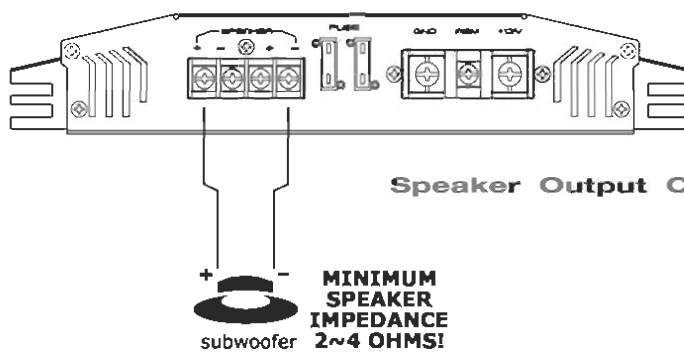
Electrical Connections

Electrical Wiring

Low Level Stereo Input Connection



LA3090D
Mono channel amplifier



inputs/Speaker Input Connections/Speaker Connection

TROUBLESHOOTING

Amplifier will not power up.

- Check for good ground connection.
- Check that remote DC terminal has at least +12v DC.
- Check that there is battery power on the + terminal.
- Check all fuses.
- Check that Protection LED is not lit. If it is lit, shut off amplifier briefly and then repower it.

High hiss or engine noise (alternator whine) in speakers.

- Disconnect all RCA inputs to the amplifier(s) – if hiss/noise disappears, then plug in the component driving the amplifier and unplug its inputs. If hiss/noise disappears, go on until the faulty/noisy component is found.
- It is best to set the amplifier's input level as insensitive as possible. The best subjective S/N ratio is obtainable this way. Try to drive as high a signal level from the head unit as possible.

Protection LED comes on when the amplifier is powered up.

- Check for shorts on speaker leads.
- Check that the volume control on the head unit is turned down low.
- Remove speaker leads, and reset the amplifier. If the Protection LED still comes on, then the amplifier is faulty.

Before removing your amplifier, refer to the list below and follow the suggested procedures. Always test the speakers and their wires first.

Amplifier(s) gets very hot.

- Check that the minimum speaker impedance for that model is correct.
- Check for speaker shorts.
- Check that there is good airflow around the amplifier. In some applications, an external cooling fan may be required.

Distorted sound

- Check that the Level control(s) is set to match the signal level of the head unit.
- Check that all crossover frequencies are properly set.
- Check for shorts on the speaker leads.

High squeal noise from speakers.

- This is almost always caused by a poorly-grounded RCA patch cord.

MANUFACTURER'S LIMITED TWO YEAR WARRANTY

LEGACY SOUND CORP. warrants this unit to be free from defective material or workmanship and will repair or replace this unit or any part thereof if it proves defective in normal use or service within two (2) years from the date of original purchase.

Our obligation under this warranty is limited to repairing or replacing, at our discretion, the defective instrument or any part thereof when it is returned, transportation prepaid to the Legacy Service Center at the address below. This warranty will be considered void if the unit has been tampered with, improperly serviced, subjected to abuse or misuse or if installed in a commercial vehicle. This warranty does not cover accidental damage. When returning this unit for service, please include \$15.00 for return postage and handling. Send your unit to:

IMPORTANT: Pack carefully in original carton if possible. We are not responsible for damage incurred in returning items for repair. A letter stating your exact street address, daytime phone number, and the problem you are experiencing should be included. You must also enclose a copy of the original receipt as proof of date of purchase.

LEGACY SERVICE CENTER
1600 63rd Street
Brooklyn, NY 11204

FOR YOUR PROTECTION

Completely and immediately mail the Product Registration Card so that we may contact you directly in the event a safety notification is issued in accordance with the 1972 Consumer Product Safety Act, or for other reasons Legacy may deem necessary.

TECHNICAL SUPPORT HOTLINE

Our technical department will gladly answer any questions you may have about our products. They cannot, however tell you the status of a repair, or handle other customer service situations.

1-800-934-2277

Monday through Thursday, 9AM to 5PM
Friday 9AM to 2PM Eastern.

LEGACY[®]

www.legacycaraudio.com