

# LEGACY<sup>®</sup>

**USER'S MANUAL**



**HIGH SPEED  
CAR AMPLIFIER**

**LA480 LA1080  
LA580 LA1480  
LA680 LA1880  
LA780 LA2080**



## Congratulations

on your purchase of a new

# Legacy Blue Diamond Series amplifier!

Legacy amps are some of the most advanced car amplification products available. These quality audio products are designed and engineered to afford you years of uncompromised musical service. Legacy has utilized the latest electronic technologies in order to deliver a superb listening experience.

This innovative system has been designed utilizing a 12 V DC Negative Ground power supply. The LEGACY Blue Diamond Series amps incorporate two to eight MOSFETS in the different models.

This design produces enough available voltage to supply the main amplifier sections, and still have a huge amount of reserve voltage for peak “high demand” situations.

The Legacy line has been designed to ensure adequate headroom for even the most demanding peaks and dynamic ranges found on today’s CD’s and recordings. Used properly, these amplifiers will provide you with years of listening pleasure.

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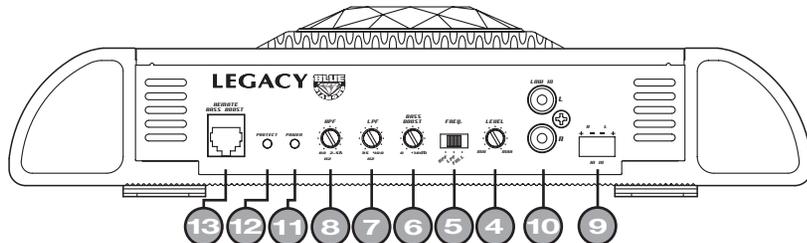
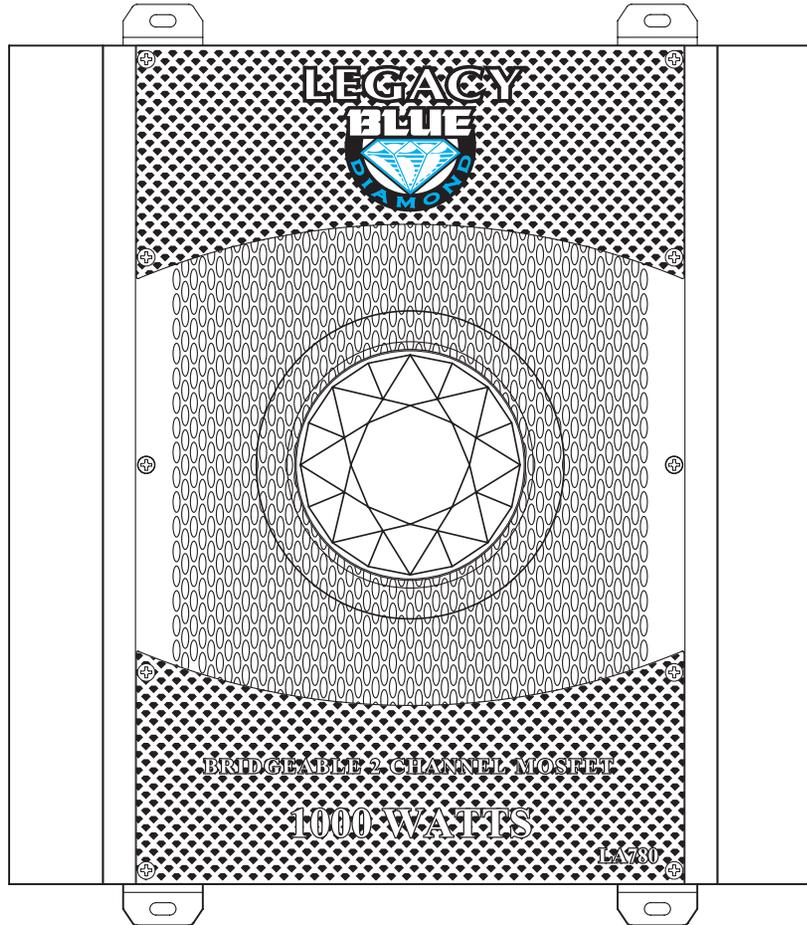
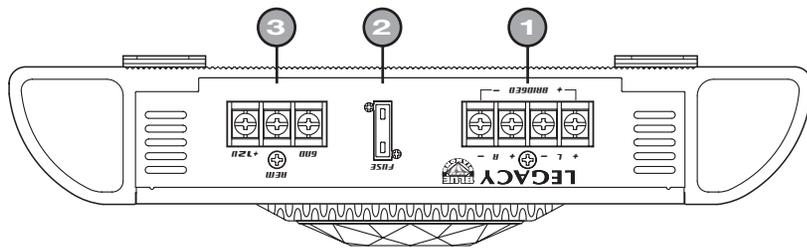
# Legacy Blue Diamond Amplifier Features

## all amps feature:

- Polished chrome finish w/plexiglass panel
- Soft turn on/off circuit
- Variable gain control
- Remote turn on/off
- Hi/low level inputs
- Power on LED indicator
- Fully adjustable electronic crossover network
- Remote control Bass boost ( 0 - +18dB @ 60Hz )
- 2 ohm stereo stable
- Bridgeable into 4 ohms
- MOSFET PWM power supplies
- LED protection indicator

## Specifications

	<b>LA480</b> 2CH amplifier	<b>LA580</b> 2CH amplifier	<b>LA680</b> 4CH amplifier	<b>LA780</b> 2CH amplifier	<b>LA1080</b> 4CH amplifier	<b>LA1480</b> 2CH amplifier	<b>LA1880</b> 2CH amplifier	<b>LA2080</b> 2CH amplifier
<b>OUTPUT POWER</b>								
RMS @ 4 OHMS	2 X 40W	2 X 50W	4 X 35W	2 X 75W	4 X 75W	2 X 125W	2 X 150W	2 X 200W
RMS @ 2 OHMS	2 X 60W	2 X 85W	4 X 55W	2 X 125W	4 X 125W	2 X 200W	2 X 230W	2 X 320W
MAX OUTPUT	2 X 300W	2 X 400W	4 X 250W	2 X 500W	4 X 500W	2 X 800W	2 X 900W	2 X 1200W
BRIDGE MODE	1 X 600W	1 X 800W	2 X 500W (2 X 250W+1X500W)	1 X 1000W	2 X 1000W (2 X 500W+1X1000W)	1 X 1600W	1 X 1800W	1 X 2400W
<b>FREQUENCY RESPONSE</b>	10-30 kHz							
<b>INPUT IMPEDANCE</b>								
LOW LEVEL INPUTS	10 k-Ohms							
HIGH LEVEL INPUTS	100 Ohms							
<b>INPUT SENSITIVITY</b>								
LOW LEVEL INPUTS	250 mV							
HIGH LEVEL INPUTS	2.5V							
<b>POWER SUPPLY VOLTAGE</b>	14.4 VDC/NEG GD (10.5-16V)							
<b>MATCHING SPEAKER IMPEDANCE</b>								
STEREO MODE	2-4 OHMS	2-4 OHMS	2-4 OHMS	2-4 OHMS	2-4 OHMS	2-4 OHMS	2-4 OHMS	2-4 OHMS
BRIDGED MODE	4-8 OHMS	4-8 OHMS	4-8 OHMS	4-8 OHMS	4-8 OHMS	4-8 OHMS	4-8 OHMS	4-8 OHMS
<b>MAXIMUM CURRENT DRAW</b>	15 A	15 A	20 A	20 A	40 A	30 A	40 A	50 A
<b>DIMENSIONS, W x H x L, inches (mm)</b>	11.5 X 2 X 8.25 (292 X 51 X 209)	11.5 X 2 X 9.25 (292 X 51 X 241)	11.5 X 2 X 12 (292 X 51 X 305)	11.5 X 2 X 12 (292 X 51 X 305)	11.5 X 2 X 15 (292 X 51 X 381)	11.5 X 2 X 15 (292 X 51 X 381)	11.5 X 2 X 17 (292 X 51 X 432)	11.5 X 2 X 19 (292 X 51 X 482)
<b>NET WEIGHT, LBS (KG)</b>	5.4 (2.45)	6 (2.72)	8.1 (3.66)	7.4 (3.35)	9.5 (4.3)	9.24 (4.2)	10.3 (4.66)	11.44 (5.2)



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**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 Crossover Mode Switch**

In a full range system, set this to FULL. If the amp is being used to power a crossover system, set to either HPF or LPF as needed.

**6 Bass Boost Control**

Allows you to increase the bass signal level sent to the speakers

**7 Low Pass Control**

Permits you to adjust the crossover frequency from 35 Hz to 400 Hz to suit the subwoofers

**8 High Pass Control**

Permits you to adjust the crossover frequency from 80 Hz to 2.5 kHz to suit the tweeters

**9 High Level Input (Low Impedance)**

Use these if your car stereo does not have RCA output jacks: connect the speaker output from the head unit to these inputs

**10 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.

**11 Power LED Indicator**

This LED is illuminated when the REMOTE ON system is turned on.

**12 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.

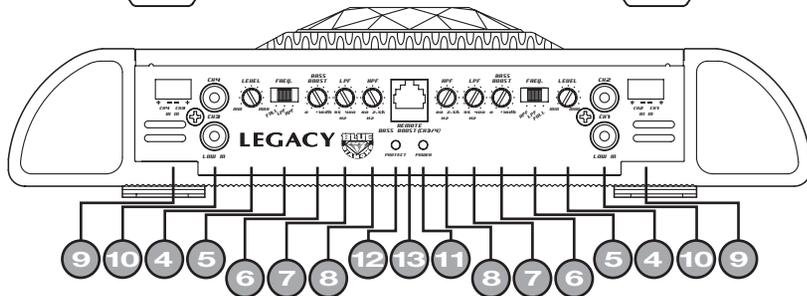
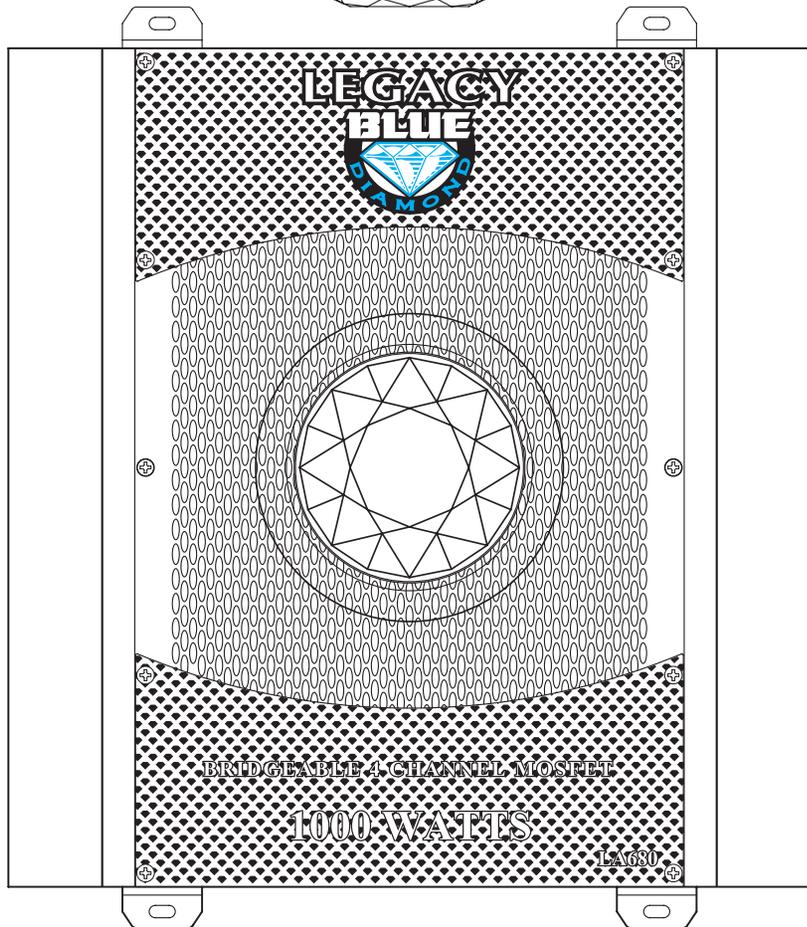
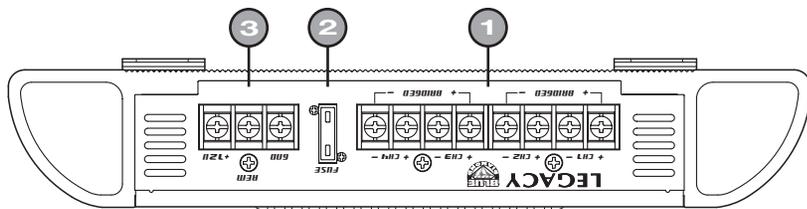
If the amp shut off because of a thermal overload, allow it to cool down before attempting to restart.

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.

**13 Remote Bass Boost(LA480 Without)**

Plug in the Remote Bass Boost Control wire in here.



- 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 Crossover Mode Switch**  
In a full range system, set this to FULL. If the amp is being used to power a crossover system, set to either HPF or LPF as needed.
- 6 Bass Boost Control**  
Allows you to increase the bass signal level sent to the speakers
- 7 Low Pass Control**  
Permits you to adjust the crossover frequency from 35 Hz to 400 Hz to suit the subwoofers
- 8 High Pass Control**  
Permits you to adjust the crossover frequency from 80 Hz to 2.5 kHz to suit the tweeters
- 9 High Level Input (Low Impedance)**  
Use these if your car stereo does not have RCA output jacks: connect the speaker output from the head unit to these inputs
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This LED is illuminated when the REMOTE ON system is turned on.
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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.
- 13 Remote Bass Boost**  
Plug in the Remote Bass Boost Control wire in here.

3

# LA680/1080

## Features and Controls

### Making Power Connections

1. Connect the +12V terminal directly to the car battery (+) terminal.
2. Connect the GROUND terminal directly to the car battery (-) terminal OR to a good clean, paint-free chassis ground point.
3. To ensure a good ground, and to prevent "motor-boating" noise in the system, make an additional connection from the car battery (-) terminal to the chassis of the stereo unit, using 12 gauge minimum wire.
4. Connect the REMOTE terminal to an external switch for positive 12V turnon-off. This may be connected to the head unit power antenna lead.

### Installation Precautions

This amplifier comes complete with all mounting hardware required. Please remember that this is a high-power unit, which generates considerable electrical energy and heat. Therefore, be sure to install the unit in a place with sufficient airflow, a minimum of dust, and no moisture. Allow enough space around the cooling fins to permit reasonable airflow and cooling.

- Before you drill or cut any holes, investigate your car's layout very carefully. Take care when you work near the gas tank, fuel lines, hydraulic line and electrical wiring.
- Do not operate the amplifier when it is unmounted. Attach all audio system components securely within the automobile to prevent damage, especially in an accident.
- Do not mount this amplifier so that the wire connections are unprotected or in a pinched condition, or likely to be damaged by nearby objects. Be sure to select a location inside your vehicle which has adequate ventilation.
- Before making or breaking power connections in your system, disconnect the vehicle battery. Confirm that your head unit or other equipment is turned off while connecting the input jacks and speaker terminals.
- If you need to replace the power fuse, only replace it with a fuse identical to that supplied with the system. Using a fuse of a different type or rating may result in damage to your system which isn't covered by the manufacturer's warranty.

### 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.

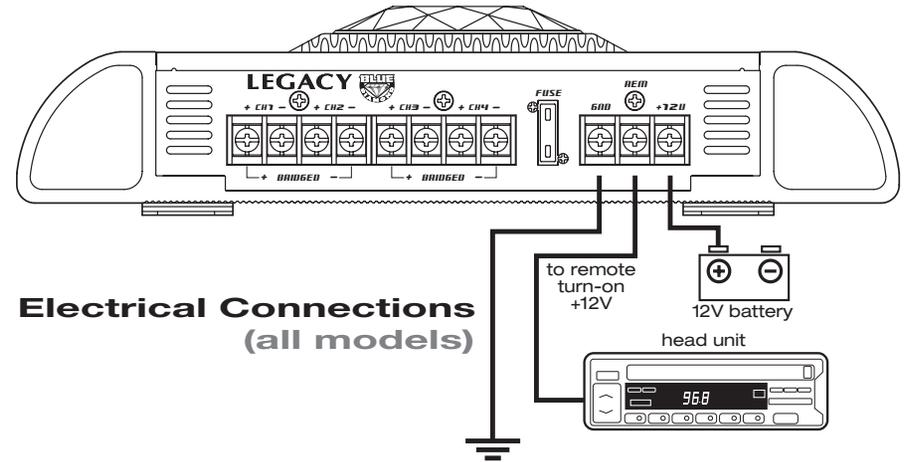
Assuming the amplifier turn on normally, you may have to adjust the LEVEL control(s) to match the output levels from your head unit. Follow these steps:

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.

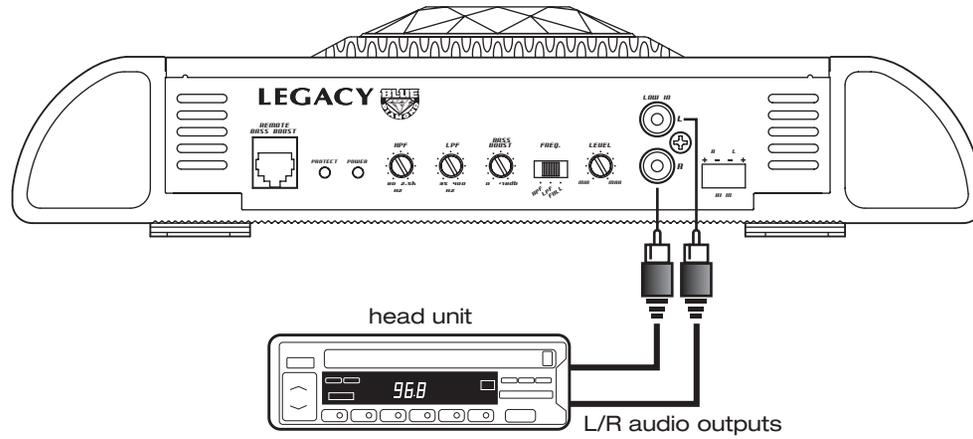
These adjustments should only be made once. After that, use the head unit volume control to adjust the system volume, not the LEVEL control(s).

**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 Wiring and Installation



## Low Level Stereo Input Connection

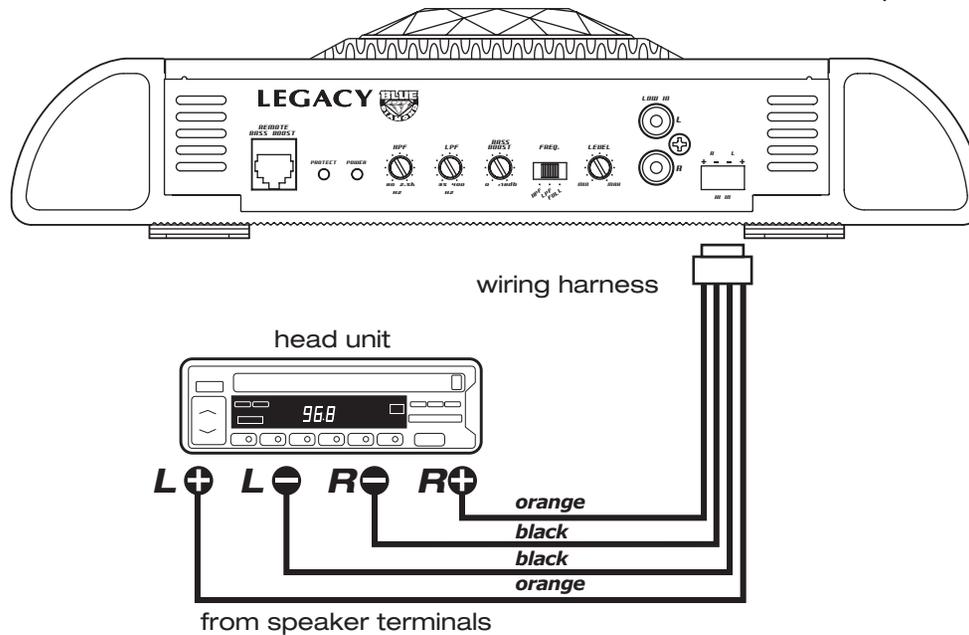


**LA480**  
**LA580**  
**LA780**  
**LA1480**  
**LA1880**  
**LA2080**  
**2CH AMPS**

5

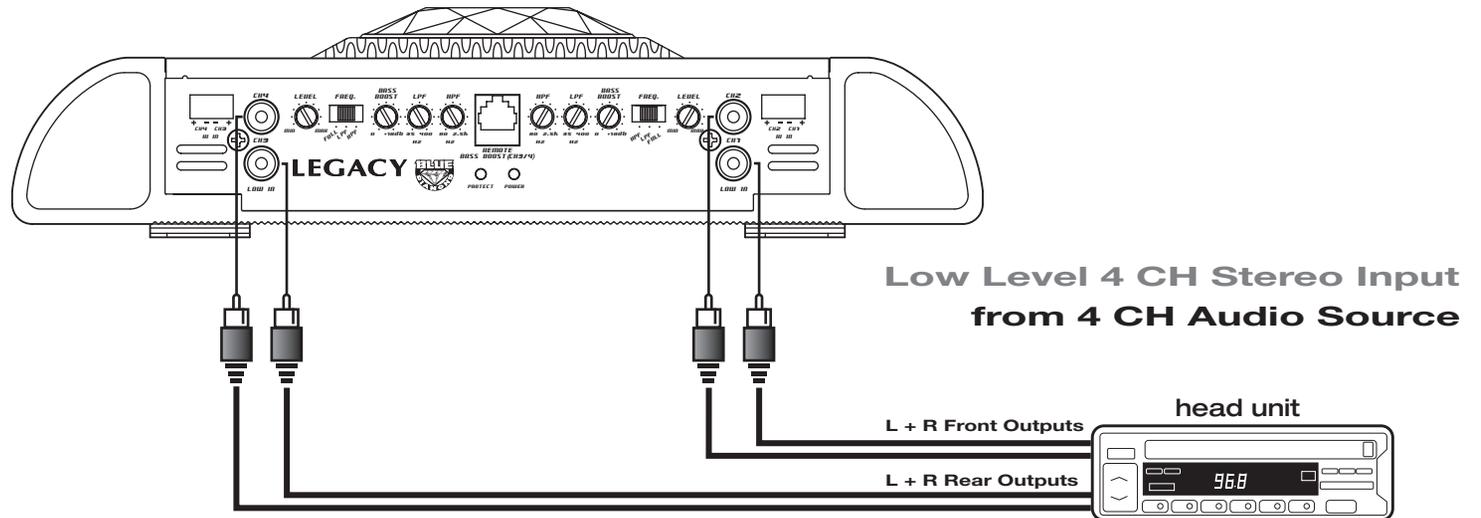
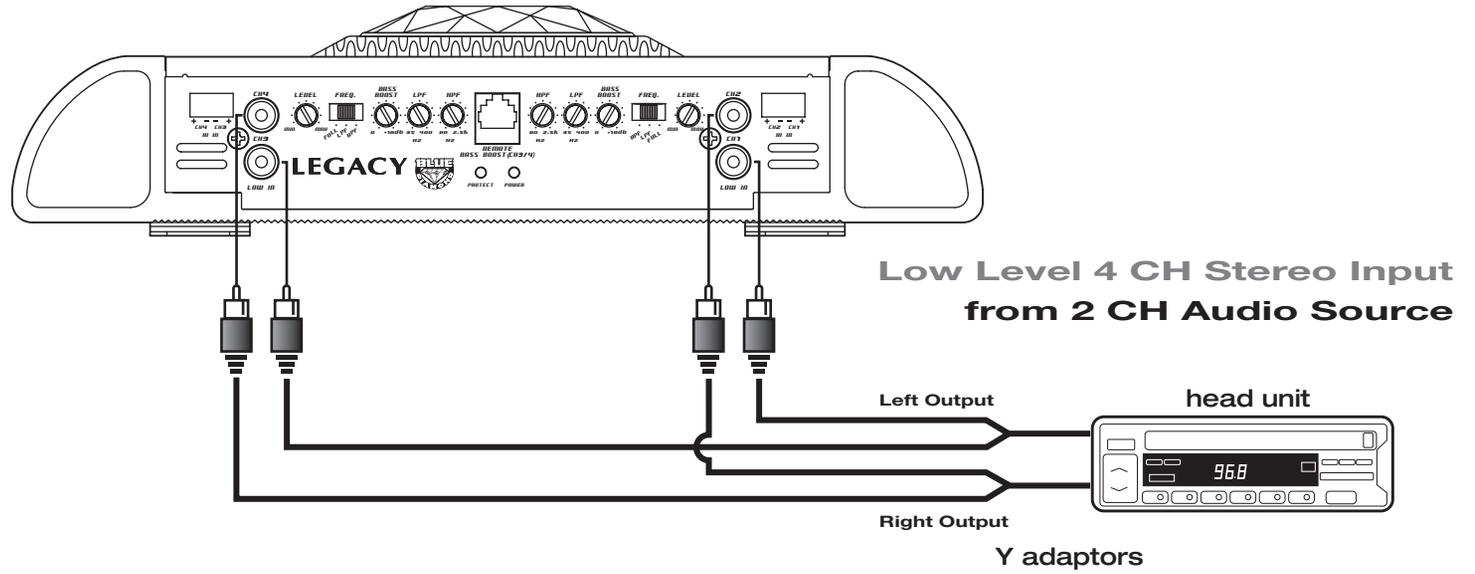
## High Level Stereo Input Connection

PLEASE NOTE! If using high level inputs, do not use the low level RCA inputs at the same time!



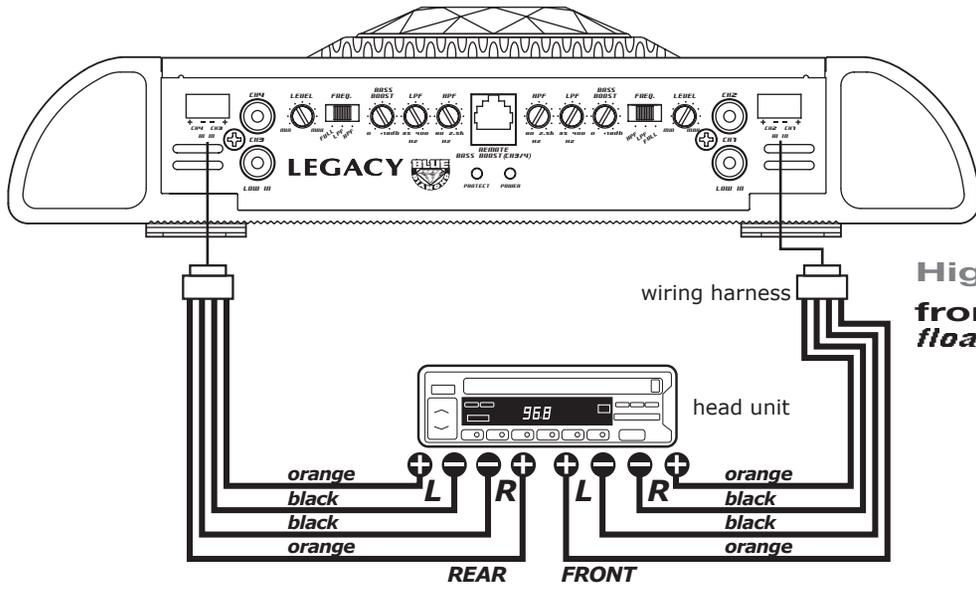
# LA680 LA1080

4CH AMPS

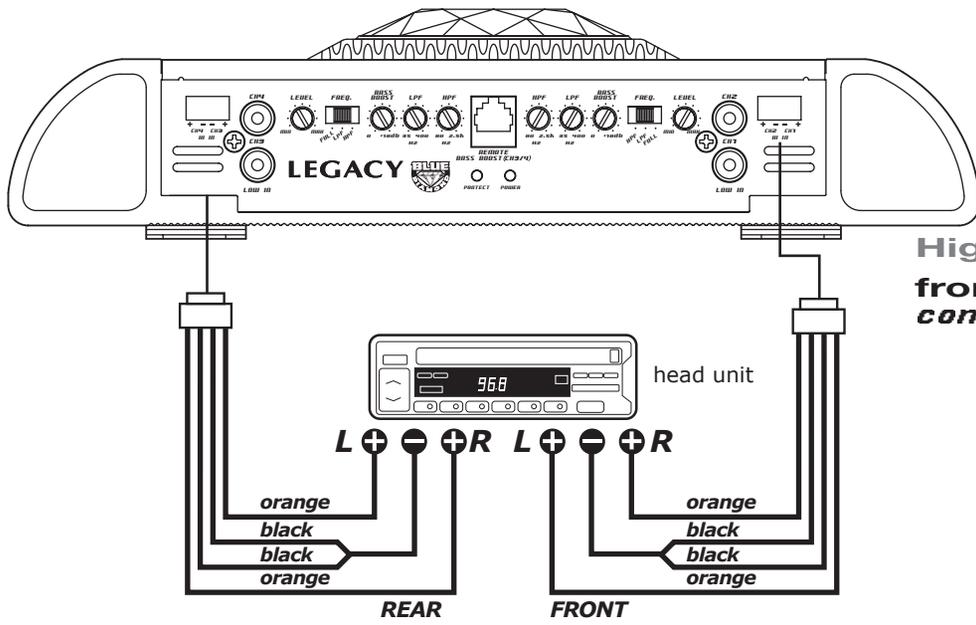


## Input Connections

# LA680 LA1080 4CH AMPS

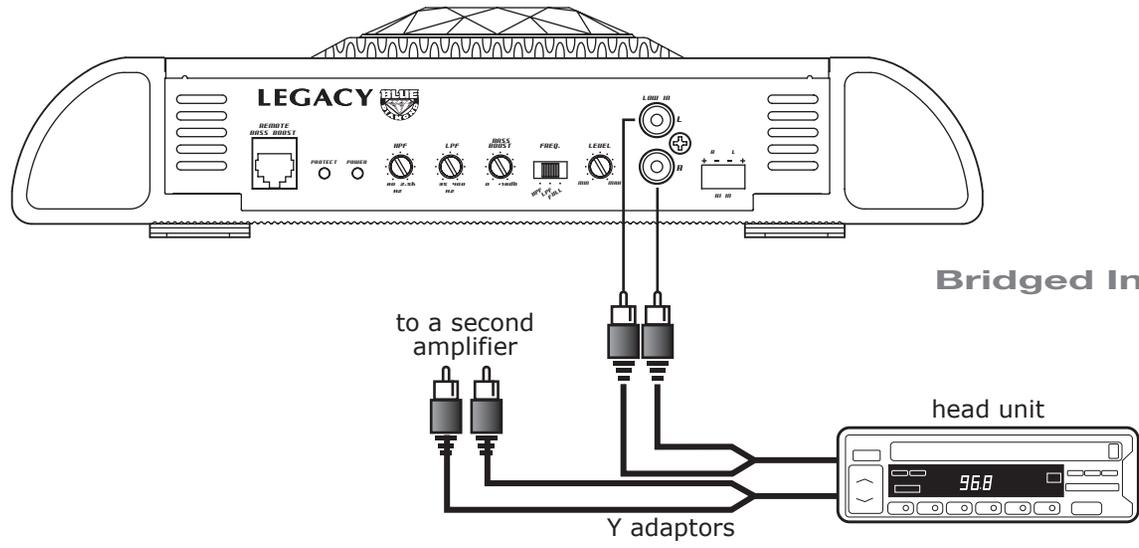


**High Level 4 CH Stereo Input  
from 4CH Audio Source  
*floating ground connection***

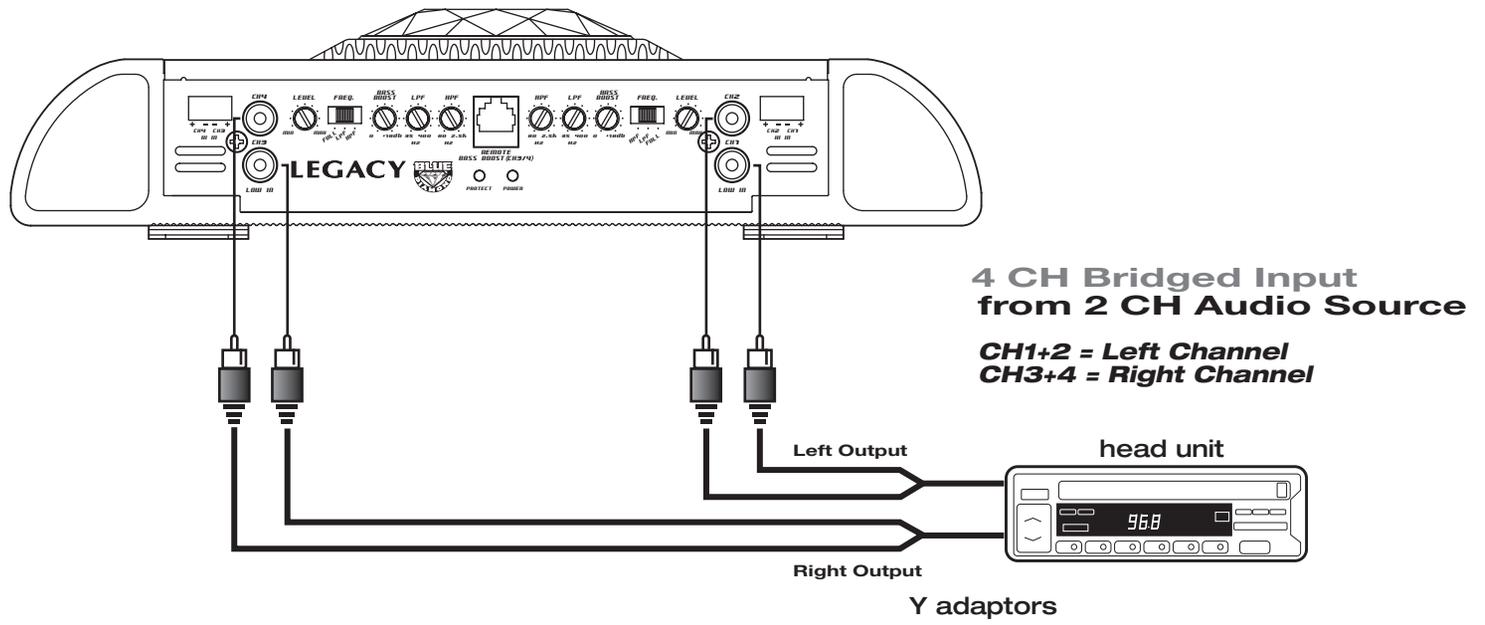


**High Level 4 CH Stereo Input  
from 4CH Audio Source  
*common ground connection***

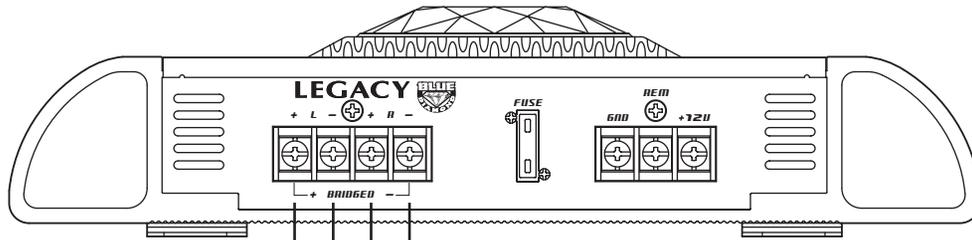
**LA480**  
**LA580**  
**LA780**  
**LA1480**  
**LA1880**  
**LA2080**  
**2CH AMPS**



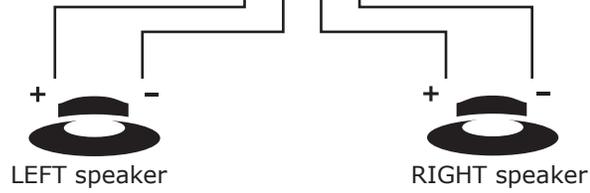
**LA680**  
**LA1080**  
**4CH AMPS**



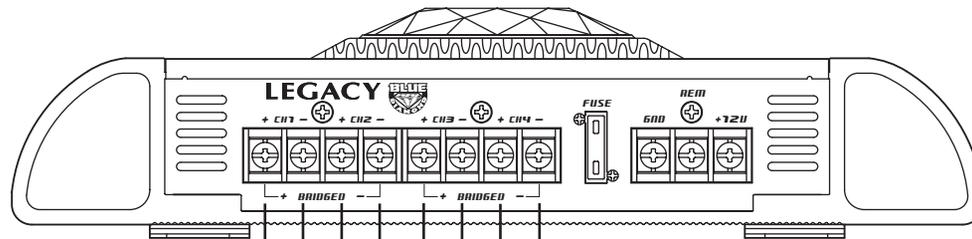
**Input Connections**



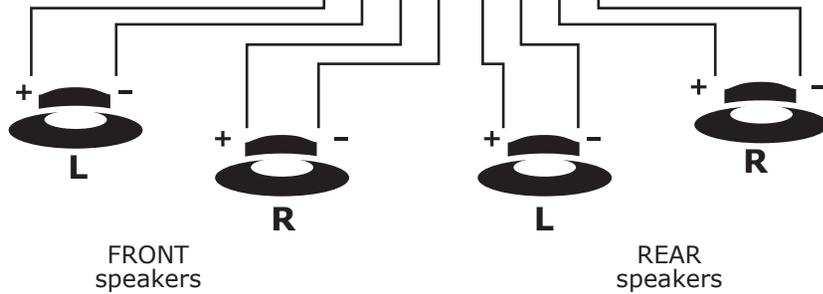
Basic Stereo Output



LA480  
LA580  
LA780  
LA1480  
LA1880  
LA2080  
2CH AMPS

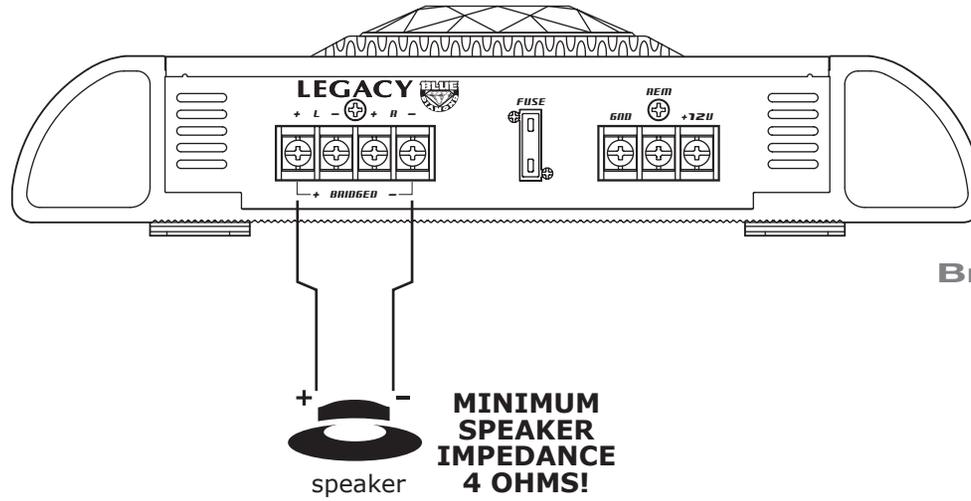


Basic 4CH Output



LA680  
LA1080  
4CH AMPS

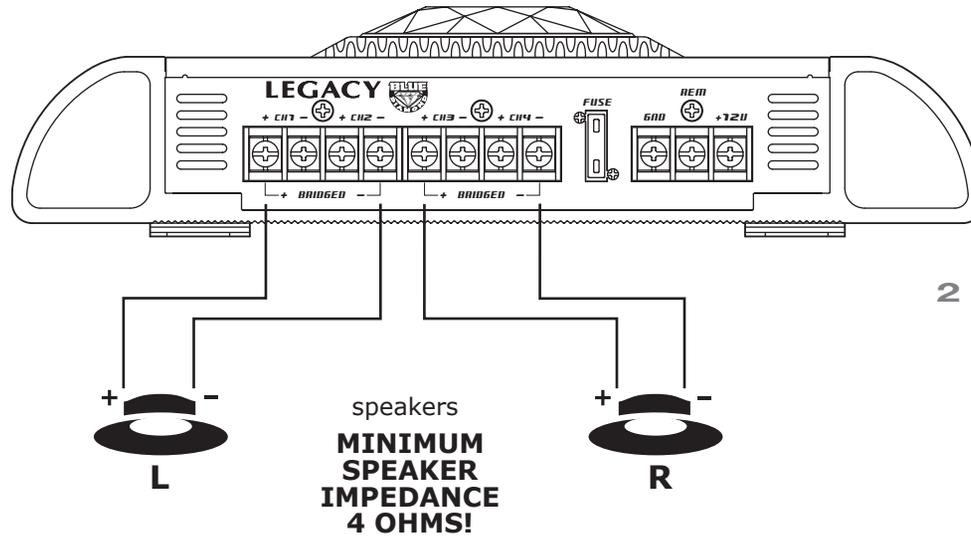
**LA480**  
**LA580**  
**LA780**  
**LA1480**  
**LA1880**  
**LA2080**  
2CH AMPS



**Bridged Mono Output**

**MINIMUM  
SPEAKER  
IMPEDANCE  
4 OHMS!**  
speaker

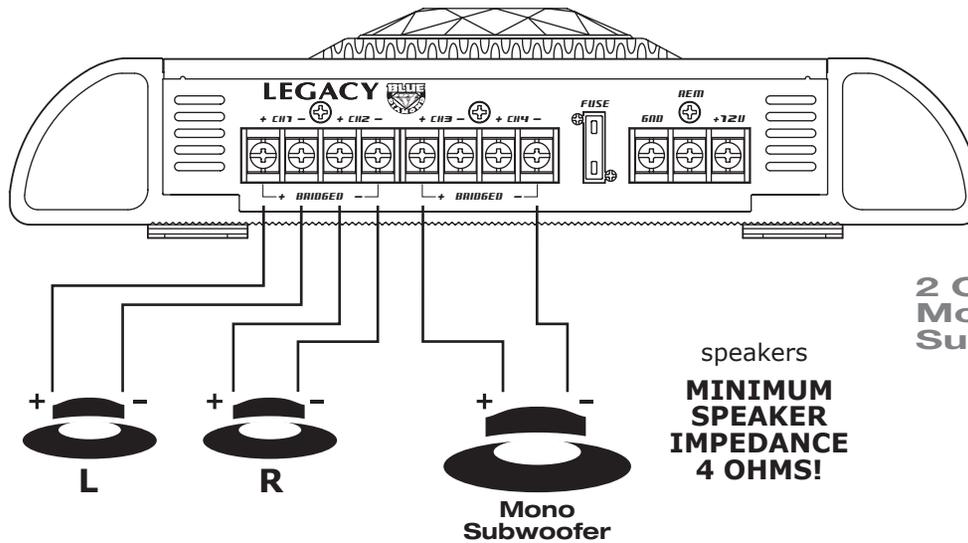
**LA680**  
**LA1080**  
4CH AMPS



**2 CH Mono-Bridged Output**

**speakers**  
**MINIMUM  
SPEAKER  
IMPEDANCE  
4 OHMS!**  
L R

**Speaker Connections**



**LA680**  
**LA1080**  
**4CH AMPS**

**2 CH Stereo plus  
Mono-Bridged  
Subwoofer Output**

speakers  
**MINIMUM  
SPEAKER  
IMPEDANCE  
4 OHMS!**

## 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.

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**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**

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**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.

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**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<sup>®</sup>**  
[www.legacycaraudio.com](http://www.legacycaraudio.com)

