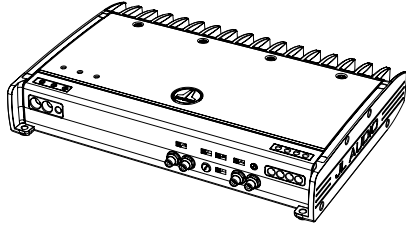


# OWNER'S MANUAL

## 300/2v2

two-channel full-range amplifier



*Thank you for purchasing a JL Audio amplifier for  
your automotive sound system.*

*Your amplifier has been designed and manufactured to exacting  
standards in order to ensure years of musical enjoyment in your vehicle.*

*For maximum performance and extended warranty  
coverage, we highly recommend that you have your new amplifier  
installed by an authorized JL Audio dealer. Your authorized  
dealer has the training, expertise and installation equipment to ensure  
optimum performance from this product. Should you  
decide to install the amplifier yourself, please take the time  
to read this manual thoroughly so as to familiarize yourself  
with its installation requirements and setup procedures.*

*If you have any questions regarding the instructions in this  
manual or any aspect of your amplifier's operation, please contact your  
authorized JL Audio dealer for assistance. If you need further assistance,  
please call the JL Audio Technical Support Department  
at (954) 443-1100 during business hours.*



## PROTECT YOUR HEARING!

We value you as a long-term customer. For that reason, we urge you to practice restraint in the operation of this product so as not to damage your hearing and that of others in your vehicle. Studies have shown that continuous exposure to high sound pressure levels can lead to permanent (irreparable) hearing loss. This and all other high-power amplifiers are capable of producing such high sound pressure levels when connected to a speaker system. Please limit your continuous exposure to high volume levels.

While driving, operate your audio system in a manner that still allows you to hear necessary noises to operate your vehicle safely (horns, sirens, etc.).

## SERIAL NUMBER

In the event that your amplifier requires service or is ever stolen, you will need to have a record of the product's serial number. Please take the time to enter that number in the space provided below. The serial number can be found on the bottom panel of the amplifier and on the amplifier packaging.

### Serial Number:

\_\_\_\_\_

## INSTALLATION APPLICATIONS

This amplifier is designed for operation in vehicles with 12V, negative-ground electrical systems. Use of this product in vehicles with positive ground and/or voltages other than 12V may result in damage to the product and will void the warranty.

This product is not certified or approved for use in aircraft.

Do not attempt to "bridge" the outputs of this amplifier with the outputs of a second amplifier, including an identical one.

## PLANNING YOUR INSTALLATION

It is important that you take the time to read this manual and that you plan out your installation carefully. The following are some considerations that you must take into account when planning your installation.

## Cooling Efficiency Considerations:

Your JL Audio amplifier employs an advanced type of heat management, called RealSink™. This feature takes advantage of convection and radiation effects to remove heat from the amplifier circuitry. For optimum cooling performance, the vertical heat sinks located at the back of the amplifier should be exposed to as large a volume of air as possible. Enclosing the amplifier in a small, poorly ventilated chamber can lead to excessive heat build-up and degraded performance. If an installation calls for an enclosure around the amplifier, we recommend that this enclosure be ventilated with the aid of a fan. In normal applications, fan-cooling is not necessary, but you still need to follow some basic guidelines:

- Amplifier mounted vertically with heat sink fins pointing up: Optimum
- Amplifier mounted horizontally, right side up: Good
- Amplifier mounted horizontally, but upside down: Fair (not recommended if there is less than 1 inch (2.5 cm) clearance above the amplifier heat sinks)
- Amplifier mounted vertically with heat sink fins pointing laterally: Fair
- Amplifier mounted vertically with heat sink fins pointing down: Poor (not recommended)

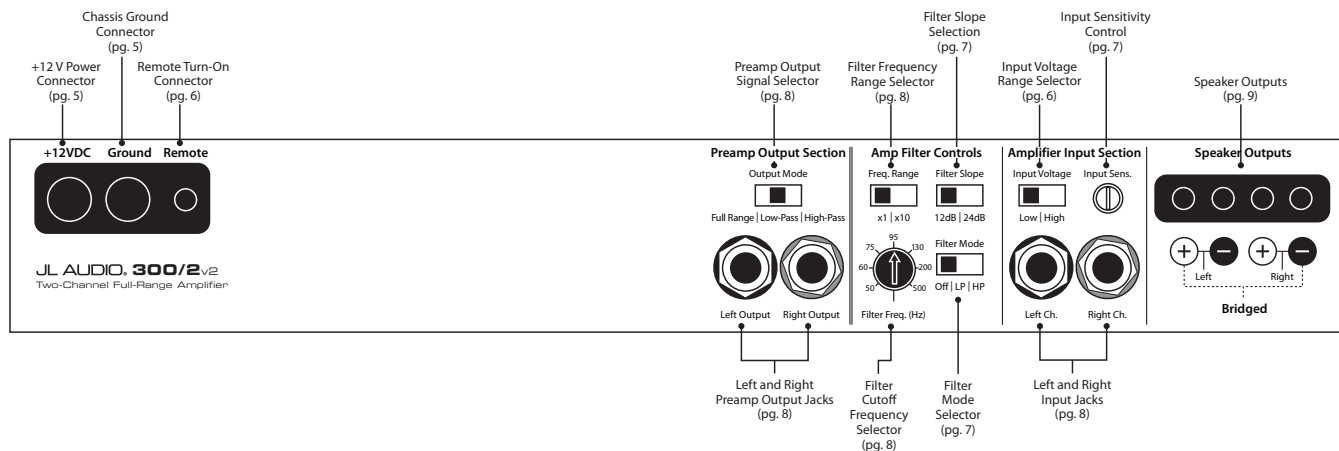
If mounting the amplifier under a seat, make sure there is at least 1 inch (2.5 cm) of space above the amplifier's outer shell to permit proper cooling.

## Safety Considerations:

Your amplifier needs to be installed in a dry, well-ventilated environment and in a manner which does not interfere with your vehicle's safety equipment (air bags, seat belt systems, ABS brake systems, etc.). You should also take the time to securely mount the amplifier using appropriate hardware so that it does not come loose in the event of a collision or a sudden jolt to the vehicle.

## Stupid Mistakes to Avoid:

- Check before drilling any holes in your vehicle to make sure that you will not be drilling through a gas tank, brake line, wiring harness or other vital vehicle system.
- Do not run system wiring outside or underneath the vehicle. This is an extremely dangerous practice which can result in severe damage to your vehicle and person.
- Protect all system wires from sharp metal edges and wear by carefully routing them, tying them down and using grommets and loom where appropriate.
- Do not mount the amplifier in the engine compartment, under the vehicle, on the roof or in any other area that will expose the amplifier circuitry to the elements.



## PRODUCT DESCRIPTION

The JL Audio 300/2v2 is a two-channel full-range amplifier utilizing patented Absolute Symmetry™ Class A/B technology for both channels. These channels benefit from JL Audio's exclusive R.I.P.S. power supply design which optimizes the output for any impedance between 1.5 and 4 ohms per channel (3 - 8Ω bridged).

The 300/2v2's flexible input and crossover sections permit operation with a wide variety of source units and system configurations.

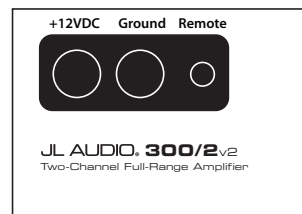
## TYPICAL INSTALLATION SEQUENCE

The following represents the sequence for a typical amplifier installation, using an aftermarket source unit or OEM Interface processor (like the CleanSweep® CL441dsp). Additional steps and different procedures may be required in some applications. If you have any questions, please contact your authorized JL Audio dealer for assistance.

- 1) Disconnect the negative battery post connection and secure the disconnected cable to prevent accidental re-connection during installation. **This step is not optional!**
- 2) Run power wire (minimum 8 AWG) from the battery location to the amplifier mounting location, taking care to route it in such a way that it will not be damaged and will not interfere with vehicle operation. Use 4 , 2 or 1/0 AWG power wire if additional amplifiers are being installed with the 300/2v2.
- 3) Connect power wire to the positive battery post. Fuse the wire with an appropriate fuse block (and connectors) within 18 inches (45 cm) wire length of the positive battery post. This fuse is essential to protect the vehicle. Do not install the fuse until the power wire has been connected to the amplifier.
- 4) Run signal cables (RCA cables) and remote turn-on wire from the source unit to the amplifier mounting location.
- 5) Run speaker wire from the speaker systems to the amplifier mounting location.
- 6) Find a good, solid metal grounding point close to the amplifier and connect the negative power wire to it using appropriate hardware. Use minimum 8 AWG power wire, no longer than 36 inches (90 cm) from the amplifier to the ground connection point. In some vehicles, it may be necessary to upgrade the battery ground wire. (See page 5 for important notice).
- 7) Securely mount the amplifier using appropriate hardware.
- 8) Connect the positive and negative power wires to the amplifier. A fuse near the amplifier is not necessary.
- 9) Connect the remote turn-on wire to the amplifier.
- 10) Connect the RCA input cables to the amplifier.
- 11) Connect the speaker wires to the amplifier.
- 12) Carefully review the amplifier's control settings to make sure that they are set according to the needs of the system.
- 13) Install power wire fuse (40A for a single 300/2v2) and reconnect the negative battery post terminal.
- 14) Turn on the source unit at a low level to double-check that the amplifier is configured correctly. Resist the temptation to crank it up until you have verified the control settings.
- 15) Make necessary adjustments to the input sensitivity controls to obtain the right overall output and the desired balance in the system. See Appendix A (page 12) for the recommended input sensitivity setting method.
- 16) Enjoy the fruits of your labor with your favorite music.

## POWER CONNECTIONS

Before installing the amplifier, disconnect the negative (ground) wire from the vehicle's battery. This will prevent accidental damage to the system, the vehicle and your person during installation.



The 300/2v2's “+12 VDC” and “Ground” connections are designed to accept 8 - 4 AWG power wire. 8 AWG is the minimum recommended power wire size for this amplifier.

If you are installing the 300/2v2 with other amplifiers and wish to use a single main power wire, use 2 AWG or 1/0 AWG main power wire (depending on the overall current demands of all the amplifiers in the system). This 2 AWG or 1/0 AWG power wire should terminate into a distribution block mounted as close to the amplifiers as possible and should connect to the 300/2v2 with 8 - 4 AWG power wire.

**Note:** that smaller AWG numbers mean bigger wire and vice-versa (1/0 AWG is the largest, 2 AWG is smaller, then 4 AWG, then 8 AWG, etc.).

To connect the power wires to the amplifier, first back out the set screw on the top of the terminal block, using the supplied 2.5 mm hex wrench. Strip 1/2 inch (12 mm) of insulation from the end of each wire and insert the bare wire into the terminal block, seating it firmly so that no bare wire is exposed. While holding the wire in place, tighten the set screw firmly, taking care not to strip the head of the screw.

The ground connection should be made using the same gauge wire as the power connection and should be kept as short as possible, while accessing a solid piece of sheet metal in the vehicle. The surface of the sheet metal should be sanded at the contact point to create a clean, metal-to-metal connection between the chassis and the termination of the ground wire. For optimal grounding, we recommend the use of a JL Audio ECS master ground lug (XB-MGLU). Alternatively, a sheet metal screw or bolt can be used with a star washer.

Any wires run through metal barriers (such as firewalls), must be protected with a high quality insulating grommet to prevent damage to the insulation of the wire. Failure to do so may result in a dangerous short circuit.

## ! IMPORTANT

**Many vehicles employ small (10 AWG - 6 AWG) wire to ground the battery to the vehicle chassis and to connect the alternator's positive connection to the battery. To prevent voltage drops, these wires should be upgraded to 4 AWG when installing amplifier systems with main fuse ratings above 60A.**

## FUSE REQUIREMENTS

It is absolutely vital that the main power lead to the amplifier(s) in the system be fused within 18 inches (45 cm) of the positive battery post connection. The fuse value at each power wire should be high enough for all of the equipment being run from that power wire.

If only the 300/2v2 is being run from that power wire, we recommend a 40A fuse be used. AGU (big glass fuse), MaxiFuse™ (big plastic-body fuse) or AFS (mini-blade fuse) types are recommended.

No fuse is required or recommended directly before the amplifier power connection. If one is desired, we recommend the use of a 40A AGU, AFS or MaxiFuse™ type fuse.

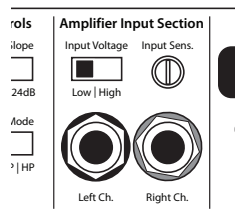
## TURN-ON LEAD

The 300/2v2 uses a conventional +12V remote turn-on lead, typically controlled by the source unit's remote turn-on output. The amplifier will turn on when +12V is present at its “**Remote**” input and turn off when +12V is switched off. If a source unit does not have a dedicated remote turn-on output, the amplifier's turn-on lead can be connected to +12V via a switch that derives power from an ignition-switched circuit.

The 300/2v2's “**Remote**” turn-on connector is designed to accept 18 AWG – 8 AWG wire. 12 AWG is more than adequate for this purpose. To connect the remote turn-on wire to the amplifier, first back out the set screw on the top of the amplifier, using the supplied hex wrench. Strip 1/2 inch (12mm) of wire and insert the bare wire into the receptacle on the front panel of the amplifier, seating it firmly so that no bare wire is exposed. When using smaller wire, it may be necessary to strip 1 inch of insulation from the wire and fold the bare wire in half prior to insertion. While holding the wire in the terminal, tighten the set screw firmly, taking care not to strip the head of the screw and making sure that the wire is firmly gripped by the set screw.

## INPUT SECTION

The 300/2v2 has one input section, which contains a pair of RCA-type input jacks, an “**Input Voltage**” switch and an “**Input Sens.**” rotary control.



1) **Input Voltage Range:** A wide range of signal input voltages can be accommodated by the 300/2v2's input section (200mV – 8V). This wide range is split up into two sub-ranges, accessible via a switch located in the “**Amplifier Input Section**”. The “**Low**” position on the “**Input Voltage**” switch selects an input sensitivity range between 200mV and 2V. This means that the “**Input Sens.**” rotary control will operate within that voltage window. If you are using an aftermarket source unit, with conventional preamp-level outputs, this is most likely the position that you will use. The “**High**” position on the “**Input Voltage**” switch selects an input sensitivity range between 800mV and 8V. This is useful for certain high-output preamp level signals as well as speaker-level output from source units and small amplifiers. To use speaker-level sources, splice the speaker output wires of the source unit or small amplifier onto a pair of RCA plugs or use the JL Audio ECS Speaker Wire to RCA adaptor (XB-CLRAIC2-SW).

## ! IMPORTANT

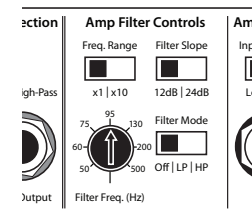
The output of the amplifier will decrease for a given input voltage when the “**Input Range**” switch is placed in the “**High**” position. Conversely, the output will be higher with the switch in the “**Low**” position. While this may sound counter-intuitive, it is correct as described.

2) **Input Sensitivity Adjustment:** Located next to the “**Input Voltage**” switch in the “**Amplifier Input Section**” is a rotary control labeled “**Input Sens.**”. Once the appropriate “**Input Voltage**” range has been selected, this control can be used to match the source unit's output voltage to the input stage of the 300/2v2 for maximum clean output. Rotating the control clockwise will result in higher sensitivity (louder for a given input voltage). Rotating the control counter-clockwise will result in lower sensitivity (quieter for a given input voltage). To properly set the amplifier for maximum clean output, please refer to Appendix A (page 12) in this manual. After using this procedure, you can then adjust the “**Input Sens.**” level downward if this is required to achieve the desired system balance. Do not increase the “**Input Sens.**” setting for any amplifier in the system beyond the maximum level established during the procedure outlined in Appendix A (page 12). Doing so will result in audible distortion and possible speaker damage.

## CROSSOVER CONTROLS

Crossovers are groups of individual electronic filters which allow only certain frequency ranges to pass through them by attenuating frequencies outside the selected range. These filters allow the user to specify what frequency range will be sent to the each amplifier (or channels) in a system. This, in turn, allows each speaker system to only reproduce a range of frequencies it is well-suited for, resulting in reduced distortion and improved fidelity.

## AMPLIFIER FILTER SECTION



1) “**Filter Mode**” Control: This switch allows you to configure the filter into one of two filter types or to defeat it completely:

“**Off**”: Defeats the filter for that channel section completely, allowing the full range of frequencies present at the inputs to feed the amplifier. This is useful for systems utilizing outboard crossovers or requiring full-range reproduction from the 300/2v2.

“**LP**” (Low-Pass): Configures the filter to attenuate frequencies above the selected filter frequency. Useful for connection of subwoofer(s) to the 300/2v2.

“**HP**” (High-Pass): Configures the filter to attenuate frequencies below the selected filter frequency. Useful for connection of component speakers to the 300/2v2 in a bi-amplified system.

2) “**Filter Slope**” Control: This switch allows you to select from two filter slopes for that channel section.

“**12dB**”: Configures the filter to attenuate frequencies above or below the selected filter frequency at a rate of 12 dB per octave (Butterworth alignment).

“**24dB**”: Configures the filter to attenuate frequencies above or below the selected filter frequency at a rate of 24 dB per octave (Linkwitz-Riley alignment).

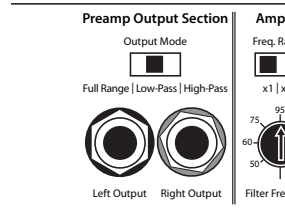
Depending on the speaker system and the vehicle, different filter slopes may be required to produce a smooth transition between the sound of different speakers in the system. Experiment to find the slope which best matches the acoustic requirements of the system. The sharper “24dB” setting will do a better job of protecting small speakers with limited power handling. The shallower “12dB” octave setting allows for greater energy overlap with the rest of the speaker system. In some cases, this results in better overall response and sound quality.

3) **“Freq. Range” Control:** When thrown to the right, this switch multiplies the cutoff frequency selected by the rotary “Filter Freq. (Hz)” control by a factor of 10. In the “x1” position, the range of the rotary control is 50 - 500 Hz (as marked). In the “x10” position, the range of the rotary control is 500 Hz - 5 kHz (5000 Hz).

4) **“Filter Freq. (Hz)”** The filter frequency markings surrounding this rotary control are for reference purposes and are generally accurate to within 1/3 octave or better. If you would like to select the filter cutoff frequency with a higher level of precision, consult the chart in Appendix B (page 13) of this manual.

## PREAMP OUTPUT SECTION

The 300/2v2 incorporates a flexible preamp output section, so that additional amplifiers can be added to the system. This pre-amp output can be configured three different ways using the switch labeled “Output Mode” in the “Preamp Output Section”.



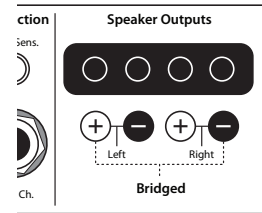
- 1) **“Full-Range”:** The preamp output delivers the same signal that is connected to the 300/2v2’s Amplifier Inputs.
- 2) **“Low-Pass”:** The preamp output delivers the same signal that is connected to the 300/2v2’s Amplifier Inputs with Low-Pass filtering applied to it at the “Filter Freq.” and “Filter Slope” selected in the “Amplifier Filter” section. This mode can be useful for feeding a subwoofer amplifier when the 300/2v2 is being used to drive the main speaker system.
- 3) **“High-Pass”:** The preamp output delivers the same signal that is connected to the 300/2v2’s “Amplifier Input Section” with High-Pass filtering applied to it at the “Filter Freq.” and “Filter Slope” selected in the “Amplifier Filter” section. This mode can be useful for feeding a second satellite amplifier when the 300/2v2 is being used to drive the main speaker system.

**Note:** The signal level of the “Preamp Output” is always low level regardless of the voltage applied to this amplifier’s inputs and the setting chosen on this amplifier’s “Input Range” switch. A JL Audio amplifier receiving signal from this preamp output should have its “Input Range” switch set to “Low”.

## SPEAKER OUTPUTS

The 300/2v2 employs JL Audio’s exclusive Regulated, Intelligent Power Supply (R.I.P.S.) design. This sophisticated power supply allows the amplifier to produce its optimum power (300 watts) over a wide range of speaker impedances. Unlike conventional amplifiers that require a specific impedance to produce optimum power, the R.I.P.S.-equipped 300/2v2 gives you the freedom to use a variety of speaker configurations that achieve final impedances between 1.5 – 4Ω nominal per channel (without sacrificing power output or sound quality).

The operation of the R.I.P.S. circuitry is entirely automatic and adjusts itself every time the amplifier is turned on according to the lowest impedance present at the speaker outputs. There are no user controls to configure. The system operates through multiple stages of impedance optimization, choosing the stage most appropriate to the actual impedance of the speakers you connect to it.



## ! IMPORTANT

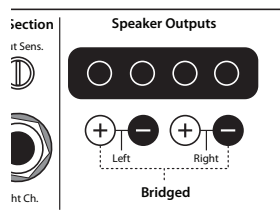
If you connect a load higher than 4Ω nominal per channel in stereo mode (or 8Ω in bridged mode), power will drop by half with every doubling of impedance above 4Ω stereo / 8Ω mono. If you connect a load lower than 1.5Ω nominal per channel in stereo mode (or 3Ω in bridged mode), the amplifier protection circuitry activates a “safe” mode which reduces amplifier power to protect the circuitry from failure (the yellow “Low Ω” LED lights to indicate that this has happened). See page 10 for details.

## ! IMPORTANT

Speaker loads below 1.5Ω nominal per channel in stereo or 3Ω nominal in bridged mode are not recommended and may cause the amplifier output to distort excessively.

## BRIDGING CONSIDERATIONS

Bridging is the practice of combining the output of two amplifier channels to drive a single load. When bridged, each channel produces signals of equal magnitude, but opposite polarity. The combined output of the two channels provides twice the output voltage available from a single channel. The 300/2v2 has been designed for bridging of its channel pairs without the need for input inversion adaptors.



To bridge a pair of channels, use the “Left +” and “Right -” speaker connectors only (the “Left -” and “Right +” remain unused). When bridged, the 300/2v2 will deliver optimum power into a 3 - 8 $\Omega$  load. Operating a bridged 300/2v2 into a load lower than 3 $\Omega$  is not recommended.

Because a bridged pair of channels requires that both channels receive input, you need to connect both left and right RCA inputs to the source unit. Connection of only one RCA input will result in reduced power output, increased distortion and can cause the amplifier to overheat. Do not do this! Instead, use a “Y-Adaptor” like the JL Audio ECS model XB-CLRAICY-1F2M to split the mono signal into both left and right RCA inputs to split the mono signal into both left and right RCA inputs.

Why a mono signal? If you are bridging a pair of channels and use a stereo input, the only information that will reach the amplifier stage is the common-phase portion of the signal. This may be useful for passively deriving a center-channel signal, but is not going to give you a defined left or right channel. If you are looking to reproduce a single channel’s signal, you must split the mono signal with a “Y-Adaptor” and connect it to both left and right RCA inputs for the bridged channel pair.

## STATUS INDICATOR LIGHTS / PROTECTION CIRCUITRY

There are three status indicator lights on the top of the amplifier. These are as follows:

- 1) “**Power**” (**Green**): lights to indicate that the amplifier is turned on and operating normally.
- 2) “**Thermal**” (**Red**): lights to indicate that the amplifier has exceeded its safe operating temperature, putting the amplifier into a self-protection mode, which reduces the power output of the amplifier. The red light will shut off and the amplifier will return to normal, full-power operating mode if the heat sink temperature drops back to a safe level.
- 3) “**Low  $\Omega$** ” (**Amber**): lights to indicate that the impedance of the speaker load connected to the amplifier is lower than the optimum impedance load range for the amplifier. When this light is on, a protection circuit engages and reduces the power output of the amplifier. The amber indicator will also light when a short-circuit is detected in the speaker wiring (this can be a short between the positive and negative speaker wires or between either speaker wire and the vehicle chassis).

There is only one condition that will shut down an undamaged 300/2v2 completely... If battery voltage drops below 10 volts, the entire amplifier will shut itself off. The green “**Power**” indicator on the top of the amplifier will turn off when this occurs. The amplifier will turn back on when voltage climbs back above 10 volts. This may happen in a rapid cycle when bass-heavy program material causes a weak charging system to dip below 10 volts momentarily. If this is happening in your system, have your charging system inspected to make sure it is working properly.

For information on troubleshooting this amplifier, refer to Appendix D (page 14).

## SERVICING YOUR JL AUDIO AMPLIFIER

If your amplifier fails or malfunctions, please return it to your authorized JL Audio dealer so that it may be sent in to JL Audio for service. There are no user serviceable parts or fuses inside the amplifier. The unique nature of the circuitry in the JL Audio amplifiers requires specifically trained service personnel. Do not attempt to service the amplifier yourself or through unauthorized repair facilities. This will not only void the warranty, but may result in the creation of more problems within the amplifier.

If you have any questions about the installation or setup of the amplifier not covered in this manual, please contact your dealer or technical support.

### JL Audio Technical Support:

(954) 443-1100

9:00 AM – 5:30 PM (Eastern Time Zone)

Monday - Friday

## APPENDIX A:

### Input Sensitivity Level Setting

JL Audio amplifiers utilizing the Regulated Intelligent Power Supply (R.I.P.S.) allow delivery of their rated power when connected to any load impedance from 1.5 - 4Ω per channel and when connected to a charging system with any voltage from 11 - 14.5V. This design is beneficial for many reasons. One of these reasons is ease of setup. Because each JL Audio amplifier will always deliver the same amount of power within its operational range of impedances and supply voltages, the maximum, unclipped output is very predictable.

This makes setting the gain structure via the input sensitivity controls very simple. Following the directions below will allow the user to adjust the input sensitivity of the amplifier(s) simply and easily in just a few minutes using equipment which is commonly available in installation bays.

### Necessary Equipment

- Digital AC Voltmeter
- CD with a sine-wave test tone recorded at 0 dB reference level in the frequency range to be amplified for that set of channels (50 Hz for subwoofer channels, 1 kHz for a midrange application). The CleanSweep® Calibration Disc contains the appropriate test tones and is available for sale at <http://store.jlaudio.com>. Do not use attenuated test tones (-10 dB, -20 dB, etc.).

### The Nine-Step Procedure

- 1) Disconnect the speaker(s) from the amplifier's speaker output connectors.
- 2) Turn off all processing (bass/treble, loudness, EQ, etc.) on the source unit, processors (if used) and amplifier. Set fader control to center position and subwoofer level control to 3/4 of maximum (if used to feed the 300/2v2).
- 3) Switch the "Input Voltage" switch to "Low" and turn the "Input Sens." control all the way down.
- 4) Set the source unit volume to 3/4 of full volume. This will allow for reasonable gain overlap with moderate clipping at full volume.
- 5) Using the chart on this page, determine the target voltage for input sensitivity adjustment according to the nominal impedance of the speaker system connected to the amplifier outputs.

- 6) Verify that you have disconnected the speakers before proceeding. Play a track with an appropriate sine wave (within the frequency range to be amplified by the 300/2v2) at 3/4 source unit volume.
- 7) Connect the AC voltmeter to the speaker output connectors of the amplifier. If the channel pair is operating in stereo, it is only necessary to measure one channel. If bridged, make sure you test the voltage at the correct connectors (L+ and R-).
- 8) Increase the "Input Sens." control until the target voltage is observed with the voltmeter.
- 9) Once you have adjusted the 300/2v2 to its maximum low-distortion output level, reconnect the speaker(s). The "Input Sens." controls can now be adjusted downward if the amplifier requires attenuation to achieve the desired system balance.

### ! IMPORTANT

**Do not increase any "Input Sens." setting for any amplifier channel or channel pair in the system beyond the maximum level established during this procedure. Doing so will result in audible distortion and possible speaker damage.**

It will be necessary to re-adjust the "Input Sens." for the affected channels if any equalizer boost is activated after setting the "Input Sens." with this procedure. This applies to any EQ boost circuit, including source unit tone controls or EQ circuits. EQ cuts will not require re-adjustment.

Nom. Impedance	Target AC Voltage	
	Stereo	Bridged
8Ω	24.5V	49.0V
6Ω	24.5V	42.4V
4Ω	24.5V	34.6V
3Ω	21.2V	30.0V
2Ω	17.3V	not recommended
1.5Ω	18.0V	not recommended

## APPENDIX B:

### Precise Frequency Selection Chart

Detent Number	Panel Marking	Actual Freq.
<b>"FILTER FREQ" AMP FILTER</b>		
<b>Full counter-clockwise: 58</b>		
01		.58
02	"50"	.58
03		.58
04		.58
05		.59
06		.60
07		.61
08	"60"	.63
09		.65
10		.67
11		.69
12		.71
13		.74
14	"75"	.77
15		.80
16		.82
17		.85
18		.90
19		.93
20	"95"	.97
21		1.02
22		1.07
23		1.13
24		1.20
25		1.27
26	"130"	1.35
27		1.43
28		1.53
29		1.71
30		1.82
31		2.01
32	"200"	2.23
33		2.53
34		2.89
35		3.37
36		4.04
37		4.74
38	"500"	5.14
39		5.25
<b>Full-clockwise: 542</b>		

## APPENDIX C:

### 300/2v2 Specifications

#### General Specifications:

Recommended Fuse Value: 40A

Recommended Fuse Type: AFS, AGU or MaxiFuse™

#### Input Sections:

No. of Inputs: One Stereo Pair

Input Type: Differential-balanced with RCA jack inputs

Input Range: Switchable from 200mV - 2V RMS to 800mV - 8V RMS

#### Amplifier Section:

Amplifier Topology: Class AB with patented Absolute Symmetry™ dual N-Channel MOSFET output design

Power Supply: Independent, pulse width modulation-regulated switching power supply with multistage impedance optimizing circuitry.

Rated Power (Stereo):

150W RMS x 2 @ 1.5-4Ω (11V - 14.5V)

Rated Power (Bridged):

300W RMS x 1 @ 3-8Ω (11V - 14.5V)

THD at Rated Power: <0.03% @ 4Ω per channel (20 Hz-20 kHz)

Signal to Noise Ratio: >108.5 dB referred to rated power (A-weighted, 20 Hz-20 kHz noise bandwidth)

Frequency Response: 5 Hz - 30 kHz (+0, -1 dB)

Damping Factor: >200 @ 4Ω per ch. / 50 Hz, >100 @ 2Ω per ch. / 50 Hz

Slew Rate: ± 25V/μs

#### Amplifier Filter:

Filter Type: State-variable, 12 dB/octave Butterworth or 24 dB/octave Linkwitz-Riley Low-Pass or High-Pass with continuously variable cutoff frequency from 50 - 500 Hz, switchable to a range of 500 - 5000 Hz, via x10 switch. Defeatable.

#### Preamp Output:

2-Channel, switch-selectable as pass-through type, tracking High-Pass, or tracking Low-Pass linked to Amplifier Filter.

#### Dimension (LxWxH):

13.4" x 9.25" x 2.36" (340mm x 235mm x 60mm)

Due to ongoing product development, all specifications are subject to change without notice.

## APPENDIX E: TROUBLE SHOOTING

### “How do I properly set the input sensitivity on my amplifier”

Please refer to Appendix A (page 12) to set the input sensitivity for maximum, low-distortion output.

### “My amplifier doesn’t turn on”

**Check** the fuse, not just visually, but with a continuity meter. It is possible for a fuse to have poor internal connections that cannot be found by visual inspection. It is best to take the fuse out of the holder for testing. If no problem is found with the fuse, inspect the fuse-holder.

**Check** the integrity of the connections made to each of the “+12VDC”, “Ground”, and “Remote” terminals. Ensure that no wire insulation is pinched by the terminal set screw and that each connection is tight.

**Check** to make sure there is +12V at the “Remote” connection of the amplifier. In some cases, the turn-on lead from the source unit is insufficient to turn on multiple devices and the use of a relay is required. To test for this problem, jump the “+12VDC” wire to the “Remote” terminal to see if the amplifier turns on.

### “I get a distorted / attenuated sound coming out of the speaker(s)”

**Check** the speaker wires for a possible short, either between the positive and negative leads or between either speaker lead and the vehicle’s chassis ground. If a short is present, you will experience distorted and/or attenuated output. The “Low  $\Omega$ ” light will illuminate in this situation. It may be helpful to disconnect the speaker wires from the amplifier and use a different set of wires connected to a test speaker.

**Check** the nominal load impedance to verify that each channel of the amplifier is driving a load equal to or greater than 1.5 ohms in stereo mode (3 ohms bridged).

**Check** the input signal and input signal cables to make sure signal is present at the “Amplifier Inputs” and the cables are not pinched or loose. It may be helpful to try a different set of cables and/or a different signal source to be sure.

### “My amplifier’s output fluctuates when I tap on it or hit a bump”

**Check** the connections to the amplifier. Make sure that the insulation for all wires has been stripped back far enough to allow a good contact area inside the terminal block.

**Check** the input connectors to ensure that they all are making good contact with the input jacks on the amplifier.

### “My amplifier shuts off once in a while, usually at higher volumes”

**Check** your voltage source and grounding point. The power supply of the 300/2v2 will operate with charging system voltages down to 10V. Shutdown problems at higher volume levels can occur when the charging system voltage drops below 10V. These dips can be of very short duration making them extremely difficult to detect with a common DC voltmeter. To ensure proper voltage, inspect all wiring and termination points. It may also be necessary to upgrade the ground wire connecting the battery to the vehicle’s chassis and the power wire connecting the alternator to the battery. Many vehicles employ small (10 AWG - 6 AWG) wire to ground the battery to the vehicle’s chassis and to connect the alternator to the battery. To prevent voltage drops, these wires should be upgraded to 4 AWG when installing amplifier systems with main fuse ratings above 60A. **Grounding problems are the leading cause of misdiagnosed amplifier “failures.”**

### “My amplifier turns on, but there is no output”

**Check** the input signal using an AC voltmeter to measure the voltage from the source unit while an appropriate test tone is played through the source unit (disconnect the input cables from the amplifier prior to this test). The frequency used should be in the range that is to be amplified by the amplifier (example: 50 Hz for a sub bass application or 1 kHz for a full range / high-pass application). A steady, sufficient voltage (between 200mV and 8.0-volts) should be present at the output of the signal cables.

**Check** the output of the amplifier. Using the procedure explained in the previous check item (after plugging the input cables back into the amplifier) test for output at the speaker outputs of the amplifier. Unless you enjoy test tones at high levels, it is a good idea to remove the speaker wires from the amplifier while doing this. Turn the volume up approximately half way. 5V or more should be measured at the speaker outputs. This output level can vary greatly between amplifiers but it should not be in the millivolt range with the source unit at half volume. If you are reading sufficient voltage, check your speaker connections as explained below.

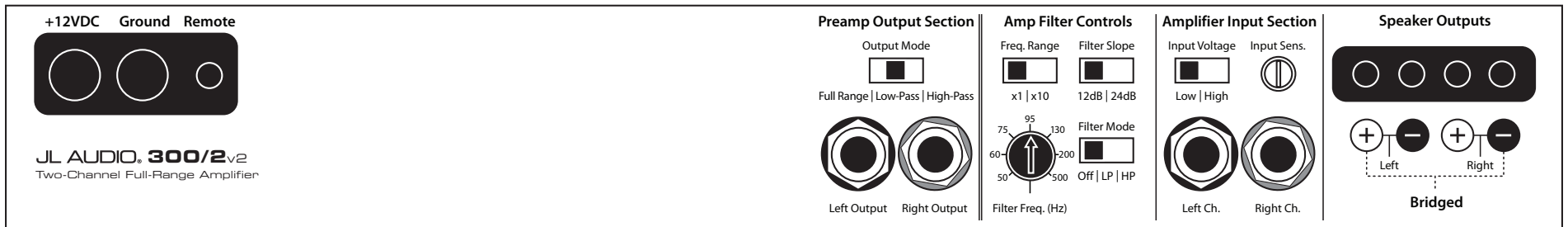
**Check** to ensure that the speaker wires are making a good connection with the metal inside the terminal block. The speaker wire connectors are designed to accept up to 8 AWG wire. Make sure to strip the wire to allow for a sufficient connection with the metal inside the terminal block.





**INSTALLATION NOTES:**

Use this diagram to document your amplifier's switch and control positions.



## LIMITED WARRANTY - AMPLIFIERS (USA)

JL AUDIO warrants this product to be free of defects in materials and workmanship for a period of ninety (90) days from the original date of purchase. The warranty term is extended to two (2) years if installation is performed or approved by an authorized JL AUDIO dealer (proof of installation or approval required on purchase receipt).

This warranty is not transferrable and applies only to the original purchaser from an authorized JL AUDIO dealer. Should service be necessary under this warranty for any reason due to manufacturing defect or malfunction, JL AUDIO will (at its discretion), repair or replace the defective product with new or remanufactured product at no charge. Damage caused by the following is not covered under warranty: accident, misuse, abuse, product modification or neglect, failure to follow installation instructions, unauthorized repair attempts, misrepresentations by the seller. This warranty does not cover incidental or consequential damages and does not cover the cost of removing or reinstalling the unit(s). Cosmetic damage due to accident or normal wear and tear is not covered under warranty.

### **Warranty is void if the product's serial number has been removed or defaced.**

Any applicable implied warranties are limited in duration to the period of the express warranty as provided herein beginning with the date of the original purchase at retail, and no warranties, whether express or implied, shall apply to this product thereafter. Some states do not allow limitations on implied warranties, therefore these exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

### **If you need service on your JL AUDIO product:**

All warranty returns should be sent to JL AUDIO's Amplifier Service Facility freight-prepaid through an authorized JL AUDIO dealer and must be accompanied by proof of purchase (a copy of the original sales receipt). Direct returns from consumers or non-authorized dealers will be refused unless specifically authorized by JL AUDIO with a valid return authorization number.

Warranty expiration on products returned without proof of purchase will be determined from the manufacturing date code. Coverage may be invalidated as this date is previous to purchase date. Non-defective items received will be returned freight-collect. Customer is responsible for shipping charges and insurance in sending the product to JL AUDIO. Freight damage on returns is not covered under warranty.

### **For Service Information in the U.S.A. please call**

**JL Audio Customer Service:** (954) 443-1100

9:00 AM – 5:30 PM (Eastern Time Zone)

**JL Audio, Inc**

10369 North Commerce Pkwy.

Miramar, FL 33025

(do not send product for repair to this address)

### **International Warranties:**

Products purchased outside the United States of America are covered only by that country's distributor and not by JL Audio, Inc.

Absolute Symmetry™ Class A/B Amplifier Circuit is covered by U.S. Patent #6,294,959 and is pending in the countries listed below. Austria, Belgium, Brazil, Canada, China, France, Germany, Indonesia, Italy, Japan, Republic of Korea, Mexico, Netherlands, Norway, Russian Federation, Singapore, Sweden, Switzerland, United Kingdom, and all other PCT countries.