



P O W E R TM

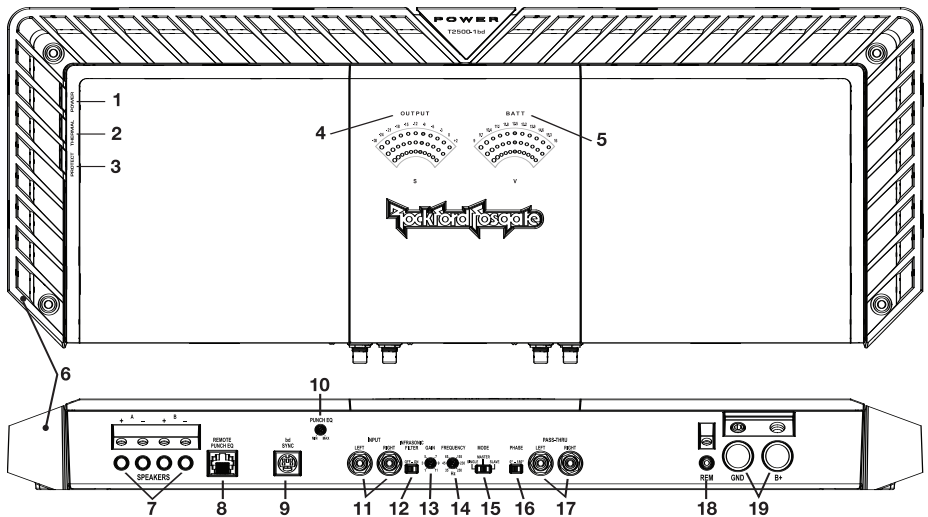
MONO bd

Amplifiers

T2500-1bd

Installation & Operation

Installation et fonctionnement
Instalación y funcionamiento
Einbau und Betrieb
Installazione e funzionamento



1. **Power LED (Top of unit)** – This Blue LED illuminates when the unit is turned on.
2. **Thermal LED (Top of unit)** – This Red LED illuminates if the amplifier internal components become too hot and engage the thermal protection. The amplifier will shut down to cool if this occurs.
3. **Protect LED (Top of unit)** – This Yellow LED illuminates if a short circuit or too low of an impedance is detected at the speaker connections. The amplifier will automatically shut down if this occurs.
4. **Output Display (Top of unit)** – These LEDs simulate VU meters to display the real-time output of the amplifier from - 00 (infinity) to +2dB. During normal operation the indicator should not reach +2dB, as this indicates clipping.
5. **Batt (Battery) Display (Top of unit)** – These LEDs simulate VU meters to display the real-time input voltage to the amplifier from 9 to 16 volts DC.
6. **Cast Aluminum Heatsink** – The cast aluminum heatsink of the Power amplifier dissipates heat generated by the amplifier's circuitry.
7. **Speaker Terminals** – The heavy duty, nickel-plated wire connectors (+ and -) will accept wire sizes from 8 AWG to 16 AWG.
8. **Remote Punch EQ (Optional Controller)** – The Remote Punch EQ connection is made with a RJ-45 cable and can be installed in a variety of ways for easy control access. The control is used to boost low and/or high frequency information to overcome road noise. The remote overrides the Punch EQ on the amplifier when connected.

NOTE: Previous (prior to 2007) Punch Bass and Para-Punch remotes will not work with these amplifiers.

9. **bd Sync Connection** – These amplifiers have a 6 pin mini DIN connector. When operating two amplifiers together in a bridged mode, a bd Sync cable must be used. This will allow the two independent frequency carrier generators in each unit to be synchronized.
10. **Punch EQ** – This control is a narrow band adjustment variable from 0dB to +18dB @ 45Hz with a Gyrator based Punch EQ that eliminates frequency shift with boost.

11. **RCA Input Jacks** – These pro-audio panel mount RCA jacks provide an easy connection for signal level input. They are nickel-plated to resist the signal degradation caused by corrosion. Their design reduces the stress created to internal boards when RCA cables are connected or disconnected.
12. **Infrasonic Filter** – A 28Hz High Pass filter designed to prevent frequencies below the audio range from being applied to the subwoofer from the amplifier. Consequently improving subwoofer performance and power handling, particularly in vented enclosures.
13. **Gain Control** – The input gain control is preset to match the output of most source units. It can be adjusted to match output levels from a variety of source units.
14. **Variable Crossover** – Is a built-in 24dB/octave Butterworth filter with a crossover point variable from 35Hz to 250Hz. The crossover is set to Low-Pass (LP).
15. **Mode Switch** – Used to set the amplifier between single, for single amplifier use, and Master or Slave for when connecting multiple bd amplifiers together. The first amplifier in the series being set as Master and the subsequent amplifiers being set as Slave. This allows one gain, crossover, infrasonic filter and bass boost setting for all slaved amplifiers.

NOTE: Gain on the Slave amplifier allows for fine tuning adjustment.

16. **Phase Switch** – Used when bridging two bd amplifiers together using a bd Sync cable to phase one amplifier 180° from the other when driving a common load.
17. **RCA Pass-Thru Jacks** – The Pass-Thru provides a convenient source for daisy-chaining an additional amplifier without running an extra set of RCA cables from the front of the vehicle to the rear amplifier location.
18. **Remote Terminal** – This heavy duty, nickel-plated wire connector will accept wire sizes from 8 AWG to 16 AWG. This terminal is used to remotely turn-on and turn-off the amplifier when +12V DC is applied.
19. **Power Terminals** – The power and ground connectors on the amplifier are nickel-plated and will accommodate up to 1/0 AWG wire maximizing the input current capability of the amplifier.

INSTALLATION

INSTALLATION CONSIDERATIONS

The following is a list of tools needed for installation:

Volt/Ohm Meter	Hand held drill w/assorted bits
Wire strippers	1/8" diameter heatshrink tubing
Wire crimpers	Assorted connectors
Wire cutters	Adequate Length—Red 1/0 AWG Power Wire
#2 Phillips screwdriver	Adequate Length—Remote Turn-on Wire
Battery post wrench	Adequate Length—Black 1/0 AWG Grounding Wire

BATTERY AND CHARGING

Amplifiers will put an increased load on the vehicle's battery and charging system. We recommend checking your alternator and battery condition to ensure that the electrical system has enough capacity to handle the increased load of your stereo system. Stock electrical systems which are in good condition should be able to handle the extra load of any Power Series amplifier without problems, although battery and alternator life can be reduced slightly. To maximize the performance of your amplifier, we suggest the use of a heavy duty battery and an energy storage capacitor.

WIRING THE SYSTEM

CAUTION: If you do not feel comfortable with wiring your new unit, please see your local Authorized Rockford Fosgate Dealer for installation.

CAUTION: Before installation, disconnect the battery negative (-) terminal to prevent damage to the unit, fire and/or possible injury.

CAUTION: Avoid running power wires near the low level input cables, antenna, power leads, sensitive equipment or harnesses. The power wires carry substantial current and could induce noise into the audio system.

NOTE: Use the Allen wrench provided to tighten the power and speaker terminals.

1. Plan the wire routing. Keep RCA cables close together but isolated from the amplifier's power cables and any high power auto accessories, especially electric motors. This is done to prevent coupling the noise from radiated electrical fields into the audio signal. When feeding the wires through the firewall or any metal barrier, protect them with plastic or rubber grommets to prevent short circuits. Leave the wires long at this point to adjust for a precise fit at a later time.

NOTE: We recommend a 1/0 AWG wire for use on the power (B+) and ground (GND) connections.

2. Prepare the RED wire (power cable) for attachment to the amplifier by stripping 7/8" of insulation from the end of the wire. Insert the bared wire into the B+ terminal and tighten the set screw to secure the cable in place.

NOTE: The B+ cable MUST be fused 18" or less from the vehicle's battery. Install the fuseholder under the hood and ensure connections are water tight.

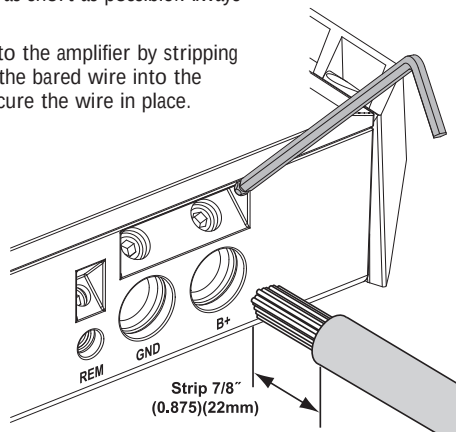
3. Trim the RED wire (power cable) within 18" of the battery and splice in a inline fuse holder. See Specifications for the rating of the fuse to be used. **DO NOT install the fuse at this time.**
4. Strip 1/2" from the battery end of the power cable and crimp a large ring terminal to the cable. Use the ring terminal to connect to the battery positive terminal.
5. Prepare the BLACK wire (Ground cable) for attachment to the amplifier by stripping 7/8" of insulation from the end of the wire. Insert the bare wire into the GROUND terminal and tighten the set screw to secure the cable in place. Prepare the chassis ground by scraping any paint from the metal surface and thoroughly clean the area of all dirt and grease. Strip the other end of the wire and attach a ring connector. Fasten the cable to the chassis using a non-anodized screw and a star washer.

NOTE: Keep the length of the BLACK wire (Ground) as short as possible. Always less than 30"(76.2cm).

6. Prepare the Remote turn-on wire for attachment to the amplifier by stripping 7/8" of insulation from the end of the wire. Insert the bared wire into the REMOTE terminal and tighten the set screw to secure the wire in place.

Connect the other end of the Remote wire to a switched 12 volt positive source. The switched voltage is usually taken from the source unit's remote amp on lead. If the source unit does not have this output available, the recommended solution is to wire a mechanical switch in line with a 12 volt source to activate the amplifier.

7. Securely mount the amplifier to the vehicle or amp rack. Be careful not to mount the amplifier on cardboard or plastic panels. Doing so may enable the screws to pull out from the panel due to road vibration or sudden vehicle stops.



INSTALLATION

- Connect from source signal by plugging the RCA cables into the input jacks at the amplifier.

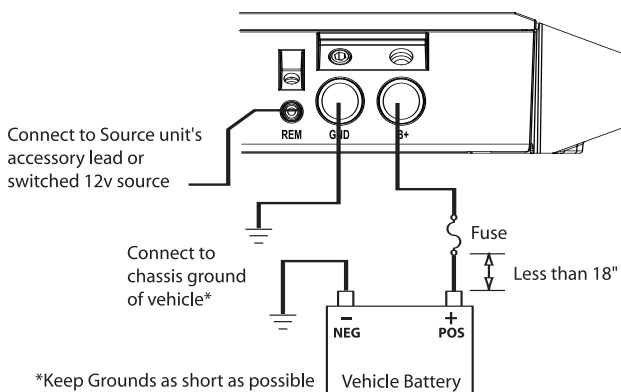
CAUTION: Always ensure power is off or disconnected at the amplifier before connecting RCA cables. Failure to do so may cause injury, damage to the amplifier and/or connected components.

- Connect the speakers. Strip the speaker wires 1/2" and insert into the speaker terminal and tighten the set screw to secure into place. Be sure to maintain proper speaker polarity. DO NOT chassis ground any of the speaker leads as unstable operation may result.
- Perform a final check of the completed system wiring to ensure that all connections are accurate. Check all power and ground connections for frayed wires and loose connections which could cause problems. Install inline fuse near battery connection.

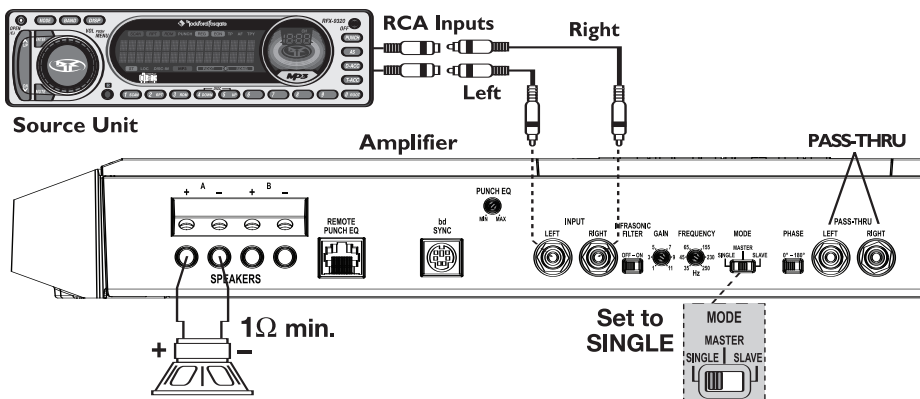
NOTE: Follow the diagrams for proper signal polarity.

CAUTION: These amplifiers are not recommended for impedance loads below $1\ \Omega$ or $2\ \Omega$ per bridged (strapped) amplifier pairs.

Power Connection



Single Amplifier Wiring



REMOTE PUNCH EQ (Option)

NOTE: Previous (prior to 2007) Punch Bass and Para-Punch remotes will not work with these amplifiers.

NOTE: Use the instructions that came with the remote for a variety of mountings that fit your preference.

Quick Install

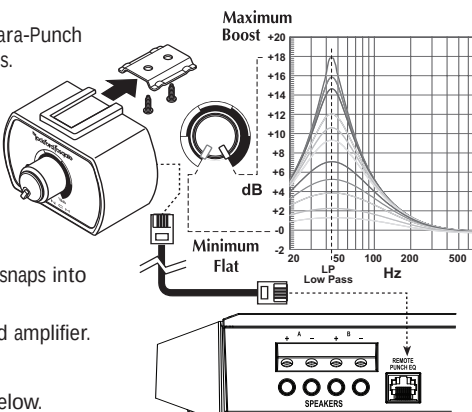
1. Using the screws supplied, install the mounting clip.
2. Slip the remote onto the mounting clip until it snaps into place.
3. Route and connect the cable to the remote and amplifier.

Operation

4. Operation works the same as Punch EQ, see below.

NOTE: Connecting the optional remote overrides the Punch EQ control on the amplifier.

CAUTION: Overexcursion and subsequent damage may occur at high levels of boost.



PUNCH EQ

Turning the knob clockwise increases the bass boost from 0 to +18dB @ 45Hz. Set this to your personal preference while listening to the system.

NOTE: Connecting the optional remote overrides the Punch EQ control on the amplifier.

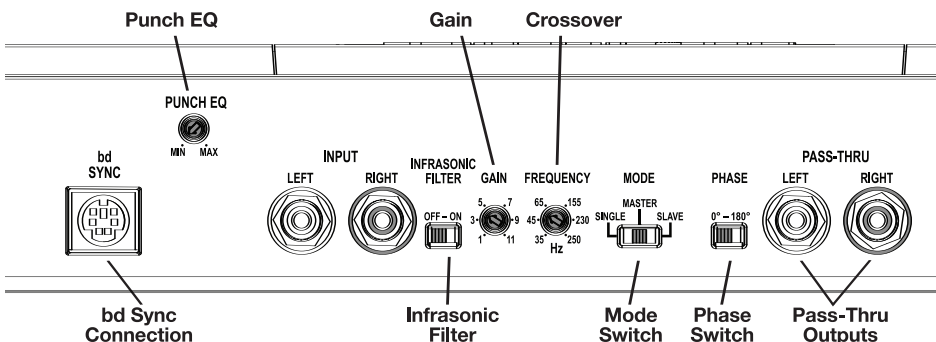
ADJUSTING GAIN

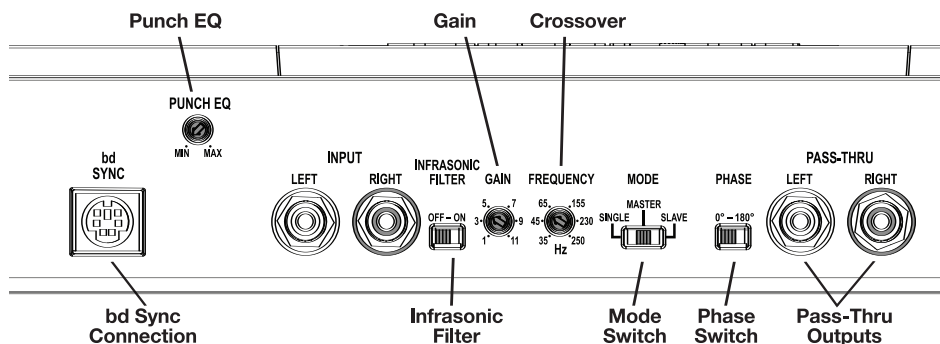
To adjust the gain setting, turn the amplifier gains all the way down (counter-clockwise). Turn the source unit volume up until distortion is audible and then turn it down a bit until the distortion is inaudible. This will be about all the way up on most source units. Next, increase the amplifier gain setting until adequate volume is achieved.

NOTE: Best signal to noise and dynamic range are realized with the gain at minimum.

CAUTION: Avoid setting the amplifier gain very high as noise and distortion will increase significantly.

NOTE: For a more in depth setting procedure, contact Rockford Technical Support.





ADJUSTING CROSSOVER FREQUENCY

The crossover frequency can be adjusted between 35-250Hz. The crossover is set to LP (Low Pass) operation only.

Turn the crossover adjustment knob all the way down. With the system playing, turn the crossover adjustment knob up slowly until the desired crossover point is achieved.

INFRASONIC FILTER

Placing the switch to "ON" engages a 28Hz infrasonic filter limiting the amount of low frequency information going to the woofer. Set this to your personal preference while listening to the system one way, then the other.

NOTE: We recommend using the infrasonic filter when using vented enclosures with this amplifier.

MODE SWITCH

Used to set the amplifier between single, for single amplifier use, and Master or Slave for when connecting multiple bd amplifiers together.

The first amplifier in the series being set as Master and the subsequent amplifiers being set as Slave. This allows one gain, crossover, infrasonic filter and bass boost setting for all slaved amplifiers.

The gain on the subsequent (Slave) amplifiers can be used for fine-tuning.

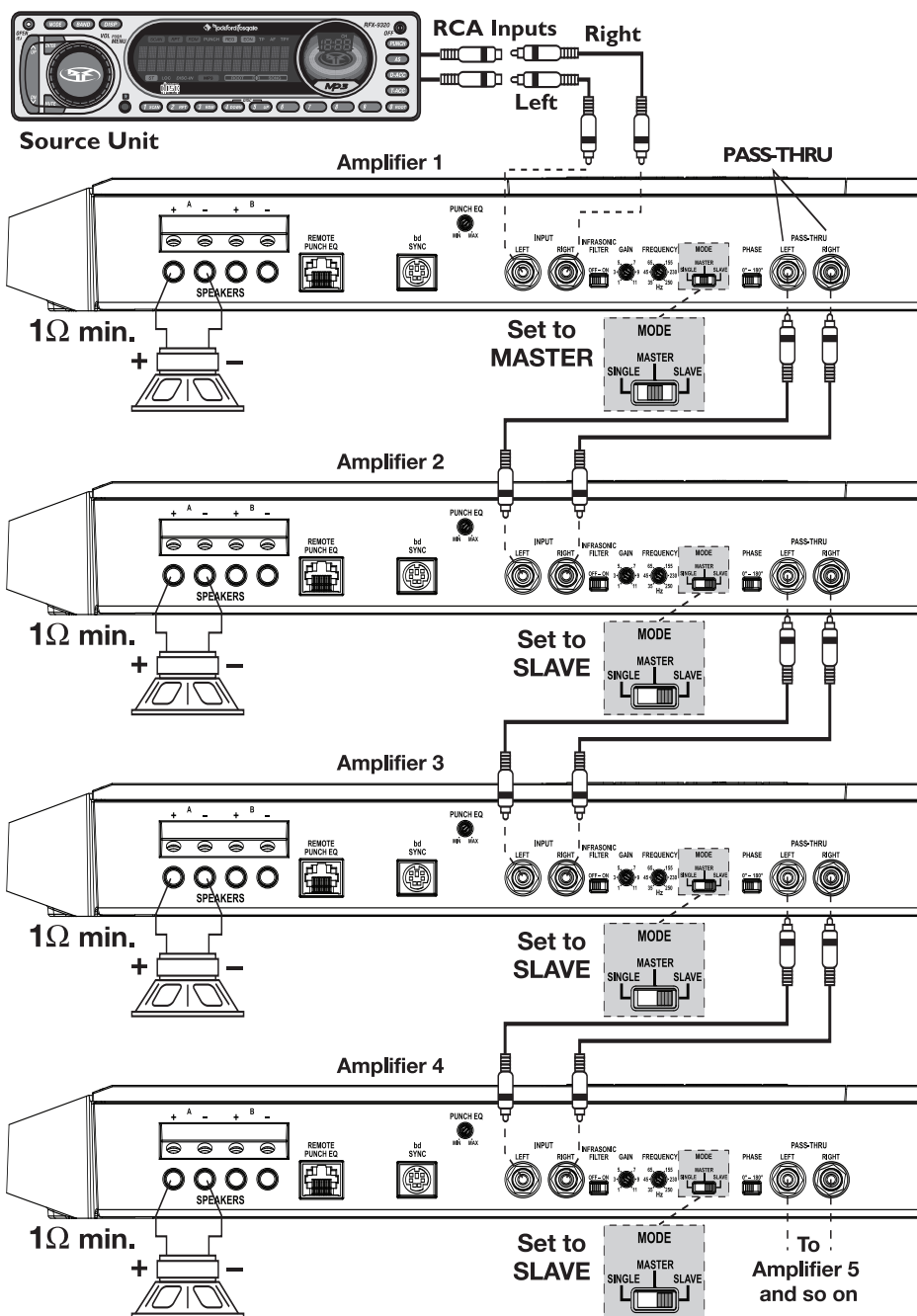
A maximum of 100 bd amplifiers can be connected together using this method.

PHASE SWITCH

Used when bridging two bd amplifiers together using a bd Sync cable to phase one amplifier 180° from the other when driving a common load.

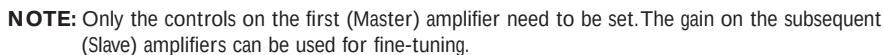
The bd Sync cable must be used to allow the two independent frequency carrier generators in each unit to be synchronized.

Multiple Amplifier Wiring



NOTE: Only the controls on the first (Master) amplifier need to be set. The gain on the subsequent (Slave) amplifiers can be used for fine-tuning.

bd Sync Wiring



NOTE: If you are having problems after installation follow the Troubleshooting procedures below.

Procedure 1: Check Amplifier for proper connections.

Verify that POWER light is on. If POWER light is on skip to Step 3, if not continue.

1. Check in-line fuse on battery positive cable. Replace if necessary.
2. Verify that Ground connection is connected to clean metal on the vehicle's chassis. Repair/replace if necessary.
3. Verify there is 9.0 - 15.5 Volts present at the positive battery and remote turn-on cable. Verify quality connections for both cables at amplifier, stereo, and battery/fuseholder. Repair/replace if necessary.

Procedure 2: Protect or Thermal light is on.

1. If the Protect light is on, this is a sign of a possible short in the speaker connections. Check for proper speaker connections and use an ohm meter to check for possible shorts in the speaker wiring. Too low of a speaker impedance may also cause Protect to light.
2. If the Thermal light is on, this is usually a sign of driving the amplifier at very high power levels without adequate airflow around the amplifier. Shut off the system and allow to cool. Check for proper speaker impedance, rewire if needed. Low battery voltage may also cause Thermal to light. Check that the vehicle charging system is maintaining proper voltage. If the previous items do not solve the problem, a fault may be in the amplifier, call customer service for support.

Procedure 3: Check Amplifier for audio output.

1. Verify good RCA input connections at stereo and amplifier. Check entire length of cables for kinks, splices, etc. Test RCA inputs for AC volts with stereo on. Repair/replace if necessary.
2. Disconnect RCA input from amplifier. Connect RCA input from test stereo directly to amplifier input.

Procedure 4: Check Amplifier if you experience Turn-on Pop.

1. Disconnect input signal to amplifier and turn amplifier on and off.
2. If the noise is eliminated, connect the REMOTE lead of amplifier to source unit with a delay turn-on module.

OR

1. Use a different 12 Volt source for REMOTE lead of amplifier (i.e. battery direct).
2. If the noise is eliminated, use a relay to isolate the amplifier from noisy turn-on output.

Procedure 5: Check Amplifier if you experience excess Engine Noise.

1. Route all signal carrying wires (RCA, Speaker cables) away from power and ground wires.

OR

2. Bypass any and all electrical components between the stereo and the amplifier(s). Connect stereo directly to input of amplifier. If noise goes away the unit being bypassed is the cause of the noise.

OR

3. Remove existing ground wires for all electrical components. Reground wires to different locations. Verify that grounding location is clean, shiny metal free of paint, rust etc.

OR

4. Add secondary ground cable from negative battery terminal to the chassis metal or engine block of vehicle.

OR

5. Have alternator and battery load tested by your mechanic. Verify good working order of vehicle electrical system including distributor, spark plugs, spark plug wires, voltage regulator etc.

SPECIFICATIONS

MODEL- POWER

T2500-1bd

Continuous Power Rating (RMS) - Measured at 14.4 Battery Volts

4 Ω Load Mono	1000 Watts x 1
2 Ω Load Mono	1800 Watts x 1
1 Ω Load Mono	2500 Watts x 1



Continuous Power Rating (RMS) - Two Amplifiers in bdSYNC Configuration

2 Ω Load Bridged/Mono	5000 Watts x 1
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Dimensions:	Height	2.14" (5.44cm)
	Width	8.14" (20.68cm)
	Length	21.875" (55.66cm)

Battery Fuse Rating (Amp) External (Not Supplied)	300A
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"A" Weighted Signal to Noise Ratio Referenced to 1 Watt into 4 ohms	≥ 70 dB
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"A" Weighted Signal to Noise Ratio Referenced to rated output into 4 ohms	≥ 100 dB
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Crossover Slope	24dB/octave Butterworth
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Crossover Frequency (Low Pass Only)	variable from 35Hz to 250Hz
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Frequency Response	20Hz to 250Hz ± 0.5 dB
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Signal Voltage Adjustment Range	Variable from 150mV to 5V (RCA Input)
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Protection	Short circuit protection shut downs the amplifier in case of very low impedance or shorted speaker wires. Thermal switch shuts down the amplifier in case of overheating.
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Equalization PEQ (Punch Equalization)	Variable from 0dB to +18dB @ 45Hz
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Input Impedance	20K ohms
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Infrasonic Filter	Selectable 12dB/Octave, -3dB @ 28Hz
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Operating Voltage	9 to 15.5 Volts DC
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Balanced Inputs	Yes
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CMRR (Common Mode Rejection Ratio)	> 55 dB @ 1KHz
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Damping Factor	> 200
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THD+N (Total Harmonic Distortion + Noise)	$< 1\%$ @ 1 ohm
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These specifications are Amplifier Power Standard CEA-2006 Compliant

Specifications subject to change without notice

Rockford Corporation offers a limited warranty on Rockford Fosgate products on the following terms:

Length of Warranty

Speakers, Signal Processors and PUNCH Amplifiers – 1 Year

POWER Amplifiers – 2 Years

Any Factory Refurbished Product – 90 days (receipt required)

What is Covered

This warranty applies only to Rockford Fosgate products sold to consumers by Authorized Rockford Fosgate Dealers in the United States of America or its possessions. Product purchased by consumers from an Authorized Rockford Fosgate Dealer in another country are covered only by that country's Distributor and not by Rockford Corporation.

Who is Covered

This warranty covers only the original purchaser of Rockford product purchased from an Authorized Rockford Fosgate Dealer in the United States. In order to receive service, the purchaser must provide Rockford with a copy of the receipt stating the customer name, dealer name, product purchased and date of purchase.

Products found to be defective during the warranty period will be repaired or replaced (with a product deemed to be equivalent) at Rockford's discretion.

What is Not Covered

1. Damage caused by accident, abuse, improper operations, water, theft, shipping.
2. Any cost or expense related to the removal or reinstallation of product.
3. Service performed by anyone other than Rockford or an Authorized Rockford Fosgate Service Center.
4. Any product which has had the serial number defaced, altered, or removed.
5. Subsequent damage to other components.
6. Any product purchased outside the U.S.
7. Any product not purchased from an Authorized Rockford Fosgate Dealer.

Limit on Implied Warranties

Any implied warranties including warranties of fitness for use and merchantability are limited in duration to the period of the express warranty set forth above. Some states do not allow limitations on the length of an implied warranty, so this limitation may not apply. No person is authorized to assume for Rockford Fosgate any other liability in connection with the sale of the product.

How to Obtain Service

Contact the Authorized Rockford Fosgate Dealer you purchased this product from.

If you need further assistance, call 1-800-669-9899 for Rockford Customer Service. You **must** obtain an **RA# (Return Authorization number)** to return any product to Rockford Fosgate. You are responsible for shipment of product to Rockford.

EU Warranty

This product meets the current EU warranty requirements, see your Authorized dealer for details.