PRIME™

R150X2 • R250X1

R250X4 • R300X4 • R400-4D

R500X1D • R600-4D • R600X5

R750-1D • R1200-1D

Rockford Fosgate

If, after reading your manual, you still have questions regarding this product, we recommend that you see your Rockford Fosgate dealer. Be sure to have your serial number, model number and date of purchase available when you call.

PRACTICE SAFE SOUND

Continuous exposure to sound pressure levels over 100dB may cause permanent hearing loss. High powered auto sound systems may produce sound pressure levels well over 130dB. Use common sense and practice safe sound.

Safety

⚠ WARNING This symbol with "WARNING" is intended to alert the user to the presence of important instructions. Failure to heed the instructions will result in severe injury or death.

⚠ CAUTION This symbol with "CAUTION" is intended to alert the user to the presence of important instructions. Failure to heed the instructions can result in injury or unit damage.

- To prevent injury and damage to the unit, please read and follow the instructions in this manual. We want you to enjoy this system, not get a headache.
- If you feel unsure about installing this system yourself, have it installed by a qualified Rockford Fosgate technician.
- Before installation, disconnect the battery negative (-) terminal to prevent damage to the unit, fire and/or possible injury.

Mode	R150X2	R250X4	R300X4	R400-4D	R600-4D	R600X5	R250X1	R500X1D	R750-1D	R1200-1D
Rated Power - Continuous Power Rating (RMS) Measured @ 14.4V	50x2 @ 4 ohms 75x2 @ 2 ohms 150x1 @ 4 ohms*	40x4 @ 4 ohms 60x4 @ 2 ohms 125x2 @ 4 ohms*	50x4 @ 4 ohms 75x4 @ 2 ohms 150x2 @ 4 ohms*	75x4 @ 4 ohms 100x4 @ 2 ohms 200x2 @ 4 ohms*	100x4 @ 4 ohms 150x4 @ 2 ohms 300x2 @ 4 ohms*	50x4 @ 4 ohms 75x4 @ 2 ohms 150x2 @ 4 ohms* Sub: 200x1 @ 4 ohms Sub: 300x1 @ 2 ohms	150x1 @ 4 ohms 250x1 @ 2 ohms	300x1 @ 4 ohms 500x1 @ 2 ohms	250x1 @ 4 ohms 500x1 @ 2 ohms 750x1 @ 1 ohm	400x1 @ 4 ohms 800x1 @ 2 ohms 1200x1 @ 1 ohm
Crossover Slope	12 dB/Oct	12 dB/Oct	12 dB/Oct	12 dB/Oct	12 dB/Oct	12 dB/Oct	12 dB/Oct	12 dB/Oct	12 dB/Oct	12 dB/Oct
Crossover Frequency	Variable 50Hz-250Hz	Variable 50Hz-250Hz	Variable 50Hz-250Hz	Variable 50Hz-250Hz	Variable 50Hz-250Hz	Variable 50Hz-250Hz	Variable 50Hz-250Hz	Variable 50Hz-250Hz	Variable 50Hz-250Hz SS: 15Hz-40Hz	Variable 50Hz-250Hz SS: 15Hz-40Hz
Punch EQ	Variable 0 -~12dB @ 45Hz	Selectable 0/~6dB/~12dB @ 45Hz	Selectable 0/~6dB/~12dB @ 45Hz	Variable 0 -~18dB @ 45Hz	Variable 0 -~18dB @ 45Hz	Selectable 0/~6dB/~12dB @ 45Hz Sub: Variable 0 -~12dB @ 45Hz	Variable 0 -~12dB @ 45Hz	Variable 0 -~12dB @ 45Hz	Variable 0 -~18dB @ 45Hz	Variable 0 -~18dB @ 45Hz
Operating Voltage	9-16VDC	9-16VDC	9-16VDC	9-16VDC	9-16VDC	9-16VDC	9-16VDC	9-16VDC	9-16VDC	9-16VDC
Frequency Response	20Hz-20kHz	20Hz-20kHz	20Hz-20kHz	20Hz-20kHz	20Hz-20kHz	20Hz-20kHz	20Hz-250Hz	20Hz-250Hz	20Hz-250Hz	20Hz-250Hz
Battery Fuse Rating (not supplied)	20A	50A	50A	50A	100A	80A	30A	50A	100A	150A
THD+N @ Rated Power	<1.0% @ 4 ohms <1.0% @ 2 ohms	<1.0% @ 4 ohms <1.0% @ 2 ohms	<1.0% @ 4 ohms <1.0% @ 2 ohms	<1.0% @ 4 ohms <1.0% @ 2 ohms	<1.0% @ 4 ohms <1.0% @ 2 ohms	F/R: <1.0% @ 4 ohms <1.0% @ 2 ohms Sub: <1.0% @ 4 ohms <1.0% @ 2 ohms	<1.0% @ 4 ohms <1.0% @ 2 ohms	<1.0% @ 4 ohms <1.0% @ 2 ohms	<1.0% @ 4 ohms <1.0% @ 2 ohms <1.0% @ 1 ohm	<1.0% @ 4 ohms <1.0% @ 2 ohms <1.0% @ 1 ohm
Input Sensitivity	150mV-4V Low Level 450mV-12V High Level	150mV-4V Low Level 450mV-12V High Level	150mV-4V Low Level 450mV-12V High Level	150mV-4V	150mV-4V	150mV-4V Low Level 450mV-12V High Level	150mV-4V Low Level 450mV-12V High Level	150mV-4V Low Level 450mV-12V High Level	150mV-4V	150mV-4V
Input Impedance	20k	20k	20k	20k	20k	20k	20k	20k	20k	20k
S/N Ratio CEA 2006	>80dB	>80dB	>80dB	>70dB	>70dB	F/R: > 80dB Sub: >80dB	>80dB	>80dB	>75dB	>75dB
S/N Ratio @ Rated Power	>100dB	>100dB	>100dB	>90dB	>90dB	F/R: >100dB Sub: >100dB	>100dB	>100dB	>100dB	>100dB
Channel Separation	>50dB	>50dB	>50dB	>50dB	>50dB	>50dB	N/A	N/A	N/A	N/A
Common Mode Rejection Ratio	>40dB	>55dB	>40dB	>55dB	>55dB	>55dB	>40dB	>55dB	>55dB	>55dB
Damping Factor	>200dB	>200dB	>200dB	>200dB	>200dB	F/R: >200dB Sub: >200dB	>200dB	>200dB	>200dB	>200dB
Dimensions (LxWxH)	11.2" x 6.8" x 2" (28.5cm x 17.2cm x 5.1 cm)	11.2" x 6.8" x 2" (28.5cm x 17.2cm x 5.1 cm)	13.2" x 6.8" x 2" (33.5cm x 17.2cm x 5.1 cm)	9.1" x 6.8" x 2" (23.1cm x 17.2cm x 5.1 cm)	11.1" x 6.8" x 2" (28.2cm x 17.2cm x 5.1 cm)	13.2" x 6.8" x 2" (33.5cm x 17.2cm x 5.1 cm)	11.2" x 6.8" x 2" (28.5cm x 17.2cm x 5.1 cm)	8.5" x 6.8" x 2" (21.6cm x 17.2cm x 5.1 cm)	9.1" x 6.8" x 2" (23.1cm x 17.2cm x 5.1 cm)	11.1" x 6.8" x 2" (28.2cm x 17.2cm x 5.1 cm)

* Rated power when amplifier is wired in a bridged configuration.

CEA 2006

Power ratings on Rockford Fosgate amplifiers conform to CEA-2006 industry standards. These guidelines mean your amplifier's output power ratings are REAL POWER numbers, not inflated marketing ratings.

Design Features

Variable Phase

The variable 0-180˚ phase control allows the listener to change the arrival time of the subwoofer sound waves relative to the same frequencies from the main speakers.

Variable Crossover

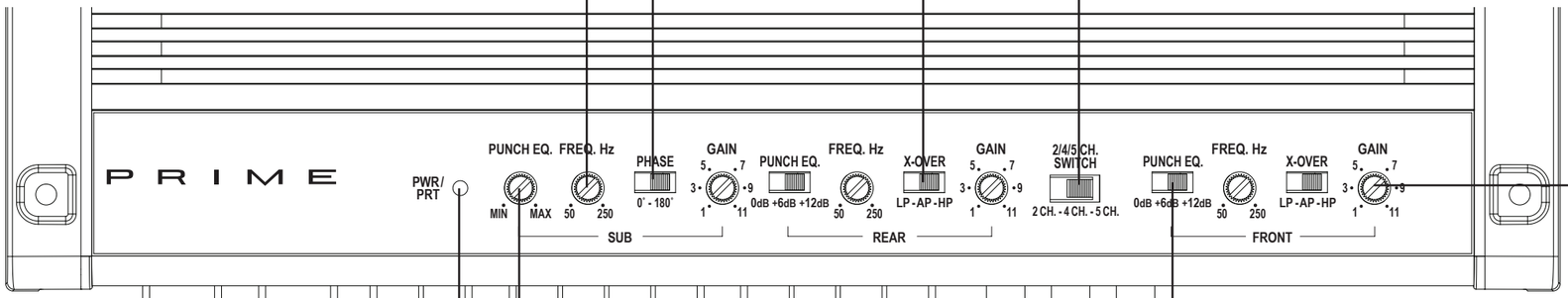
A built-in 12dB/octave Butterworth filter with a crossover point variable from 50Hz to 250Hz. (R750-1D & R1200-1D have an additional 12dB/octave Infrasonic filter with a crossover point variable from 15Hz to 40Hz SS)

Crossover Switch

Selectable switch for Low-Pass (LP) or All Pass (AP) or High-Pass (HP)

Input Switch

Setting this switch to the connected inputs aligns the output signal accordingly or can supplement signal to additional channels when not connected.



Gain Control

The gain control is used to match the output of the audio source.

Power/Protect LED

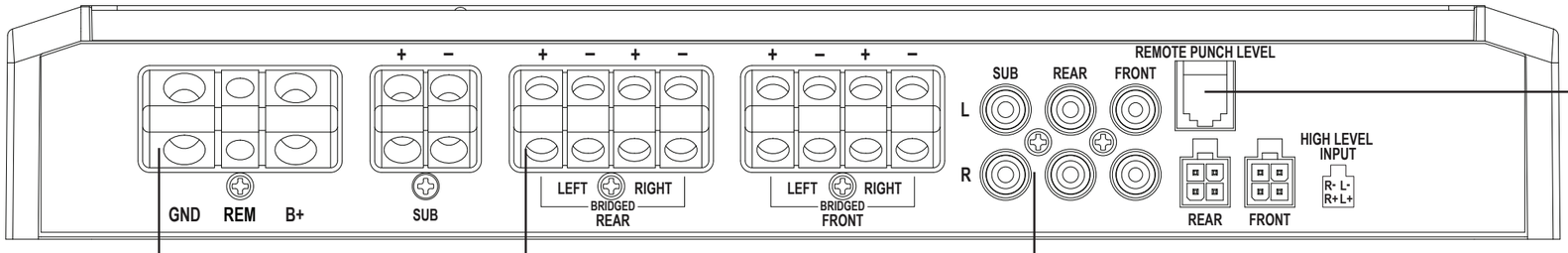
Power LED illuminates blue when the unit is turned on. Protect/ Thermal LED illuminates red when amplifier overheats or short circuits. The amplifier will automatically shut down if this occurs.

Punch EQ - Selectable

This selectable control works along with the crossover switch on the amplifier, boosting the bass frequencies.

Punch EQ - Variable

This variable control works along with the crossover switch on the amplifier, boosting the bass frequencies.



Remote Punch Level Control

Remotely control the subwoofer output level of the amplifier.

Power/REM Terminals

The Power and Ground Terminals are nickel-plated set-screw wire connectors and will accommodate 4 AWG. The REM Terminal is a nickel-plated set-screw wire connector and will accommodate 8 AWG.

Speaker Terminals

The Speaker Terminals are nickel-plated set-screw wire connectors (+ and -) will accommodate 8 AWG.

High Level Inputs - Optional Inputs

Accepts High Level speaker signal when utilizing the 4-pin Molex harness provided.

RCA Input/Pass-Thru Jacks

The RCA Inputs/Pass-Thru Jacks are nickel-plated to resist the signal degradation caused by corrosion. 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.

Contents

- Prime Amplifier
- Mounting Hardware
- Allen Wrench
- Punch Level Control
- 4-pin Molex Connector (if equipped)
- Installation & Operation Manual

Installation Considerations

The following is a list of tools needed for installation:

- Fuse-holder and fuse. (See specifications for fuse rating)
- Volt/Ohm Meter
- Wire strippers
- Wire crimpers
- Wire cutters
- #2 Phillips screwdriver
- Battery post wrench
- Hand held drill w/assorted bits
- Assorted connectors
- Adequate Length—Red PowerWire
- Adequate Length—Remote Turn-onWire
- Adequate Length—Black GroundingWire

This section focuses on some of the vehicle considerations for installing your new amplifier. Pre-planning your system layout and best wiring routes will save installation time. When deciding on the layout of your new system, be sure that each component will be easily accessible for making adjustments.

If you feel unsure about installing this system yourself, have it installed by a qualified technician.

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

⚠ CAUTION Before beginning any installation, follow these simple rules:

1. Be sure to carefully read and understand the instructions before attempting to install the unit.
2. For safety, disconnect the negative lead from the battery prior to beginning the installation.
3. For easier assembly, we suggest you run all wires prior to mounting your unit in place.
4. Route all of the RCA cables close together and away from any high current wires.
5. Use high quality connectors for a reliable installation and to minimize signal or power loss.
6. Think before you drill! Be careful not to cut or drill into gas tanks, fuel lines, brake or hydraulic lines, vacuum lines or electrical wiring when working on any vehicle.
7. Never run wires underneath the vehicle. Running the wires inside the vehicle provides the best protection.
8. Avoid running wires over or through sharp edges. Use rubber or plastic grommets to protect any wires routed through metal, especially the firewall.
9. ALWAYS protect the battery and electrical system from damage with proper fusing. Install the appropriate fuse holder and fuse on the +12V power wire within 18" (45.7 cm) of the battery terminal.
10. When grounding to the chassis of the vehicle, scrape all paint from the metal to ensure a good, clean ground connection. Grounding connections should be as short as possible and always be connected to metal that is welded to the main body, or chassis, of the vehicle. Seatbelt bolts should never be used for connecting to ground.

Mounting Locations

To ensure optimal performance, mount the amplifier with at least 1" (2.54cm) of air gap around the amplifier's heat sink to provide proper cooling.

Trunk Mounting

Mounting the amplifier vertically or inverted will provide adequate cooling of the amplifier. Mounting the amplifier on the floor of the trunk will provide the best cooling of the amplifier.

Passenger Compartment Mounting

Mounting the amplifier in the passenger compartment will work as long as you provide a sufficient amount of air for the amplifier to cool itself. If you are going to mount the amplifier under the seat of the vehicle, you must have at least 1" (2.54cm) of air gap around the amplifier's heatsink.

⚠ CAUTION Never mount this unit in the engine compartment. Mounting the unit in the engine compartment will void your warranty.

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 Prime 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.

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.
2. Prepare the RED wire (power cable) for attachment to the amplifier by stripping 1/2" 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 (not supplied). 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 an appropriate size 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 1/2" 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".

6. Prepare the Remote turn-on wire for attachment to the amplifier by stripping 1/2" 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.
8. Connect from source signal by plugging the RCA cables into the input jacks at the amplifier.

NOTE: All "ACTIVE" inputs must have RCA jacks connected. Switch in 2CH. position,"ACTIVE" - Front channel inputs only. Switch in 4CH. position,"ACTIVE" - All Front and Rear channel inputs. Switch in 5CH position,"ACTIVE" - Sub inputs for sub output. When connecting to the 5-Channel inputs, be sure to route front, rear and sub RCA cables tightly together.

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

Note: When the installation requires a High Level (Speaker) input, use the 4-pin Molex connector to tie into your vehicles speaker wiring.

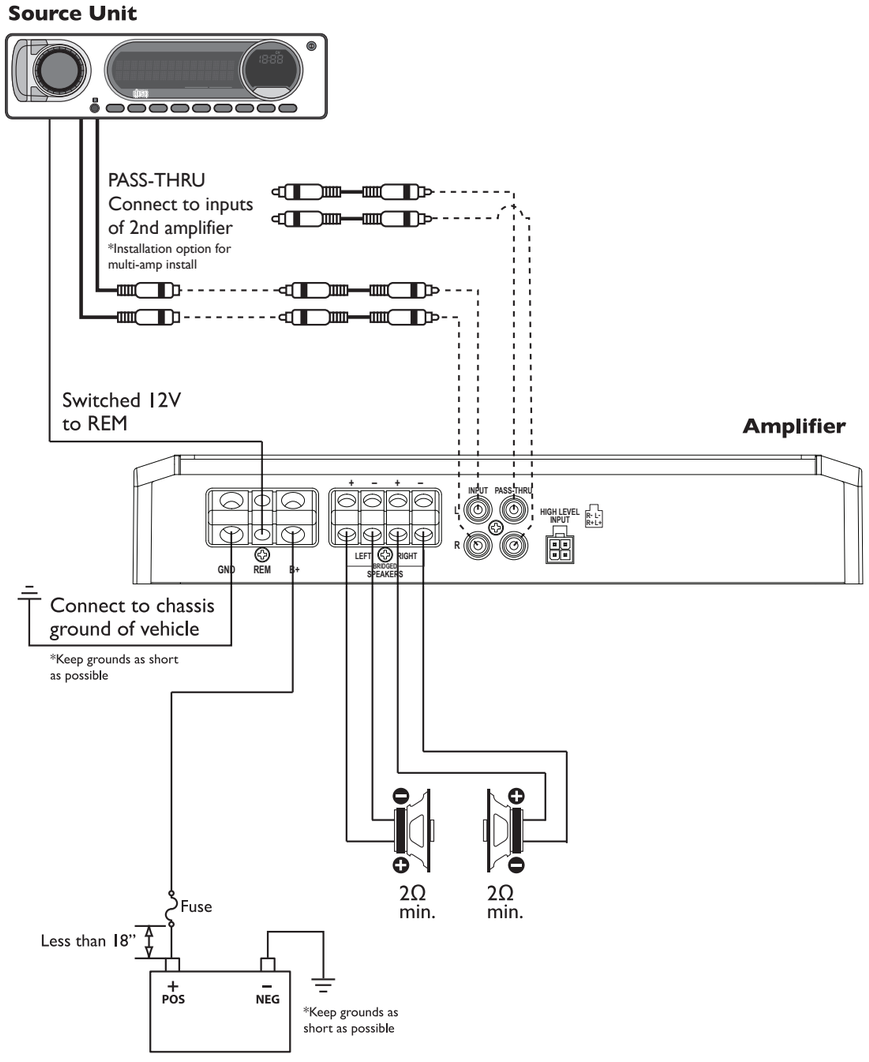
9. Connect the speakers. Strip the speaker wires 1/2" and insert into the speaker terminal and tighten the set screw to secure into place. Be sure to maintain proper speaker polarity. DO NOT chassis ground any of the speaker leads as unstable operation may result.
10. Perform a final check of the completed 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 This amplifier is not recommended for impedance loads below 2-Ohm stereo/4-Ohm bridged for the front/rear channels and 2-ohm for the sub channel. Models R750-1D and R1200-1D are not recommended for impedance loads below 1-Ohm.

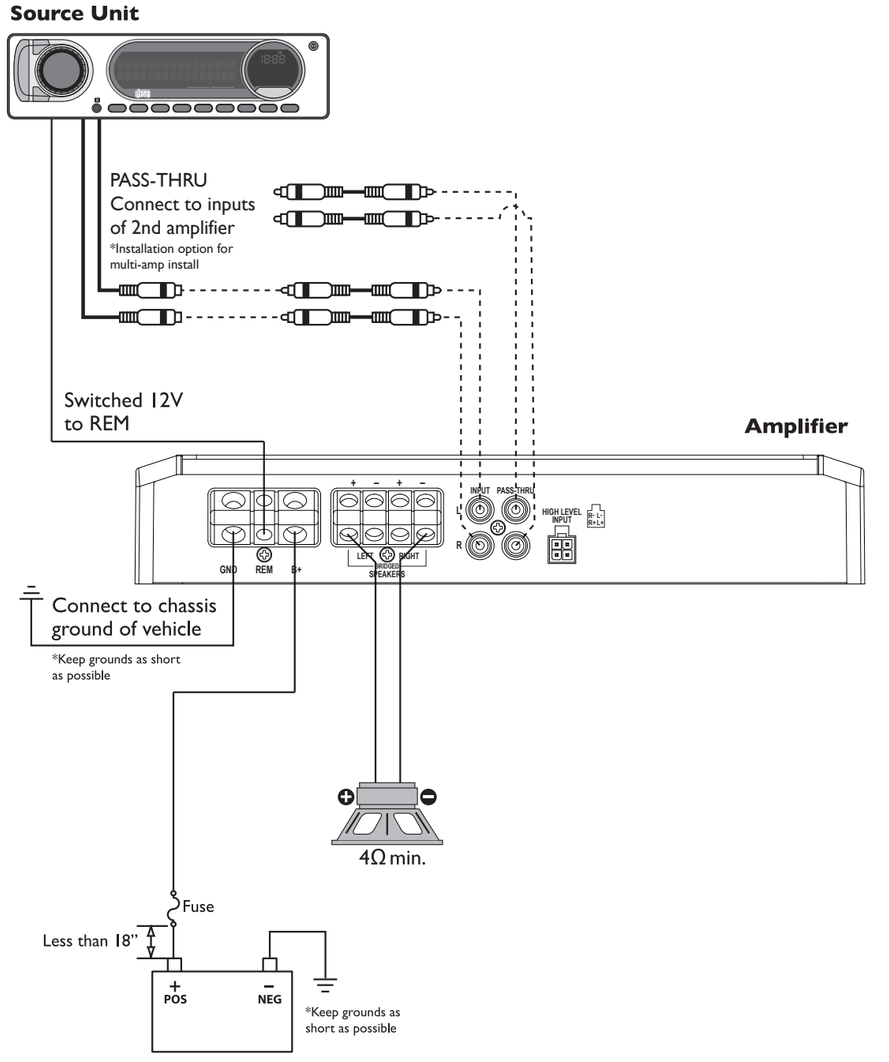
2-Channel (Stereo)

R150X2

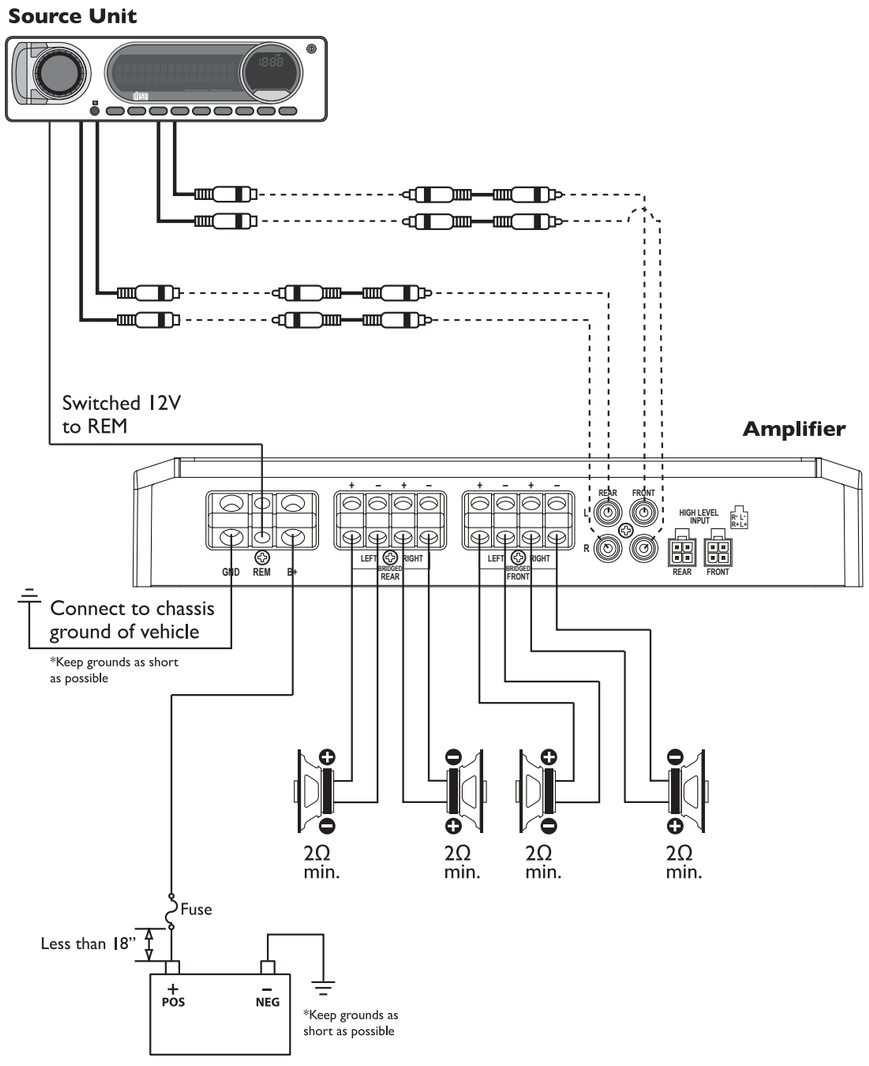


2-Channel (Mono)

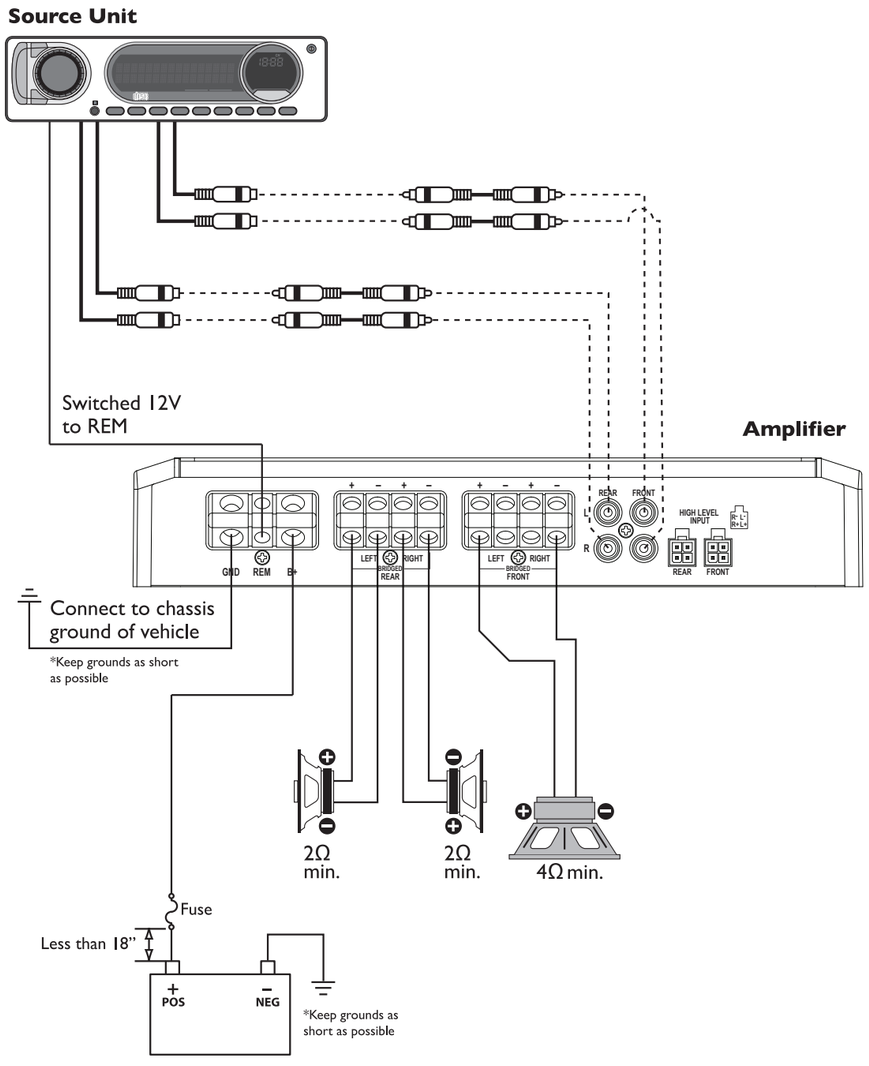
R150X2



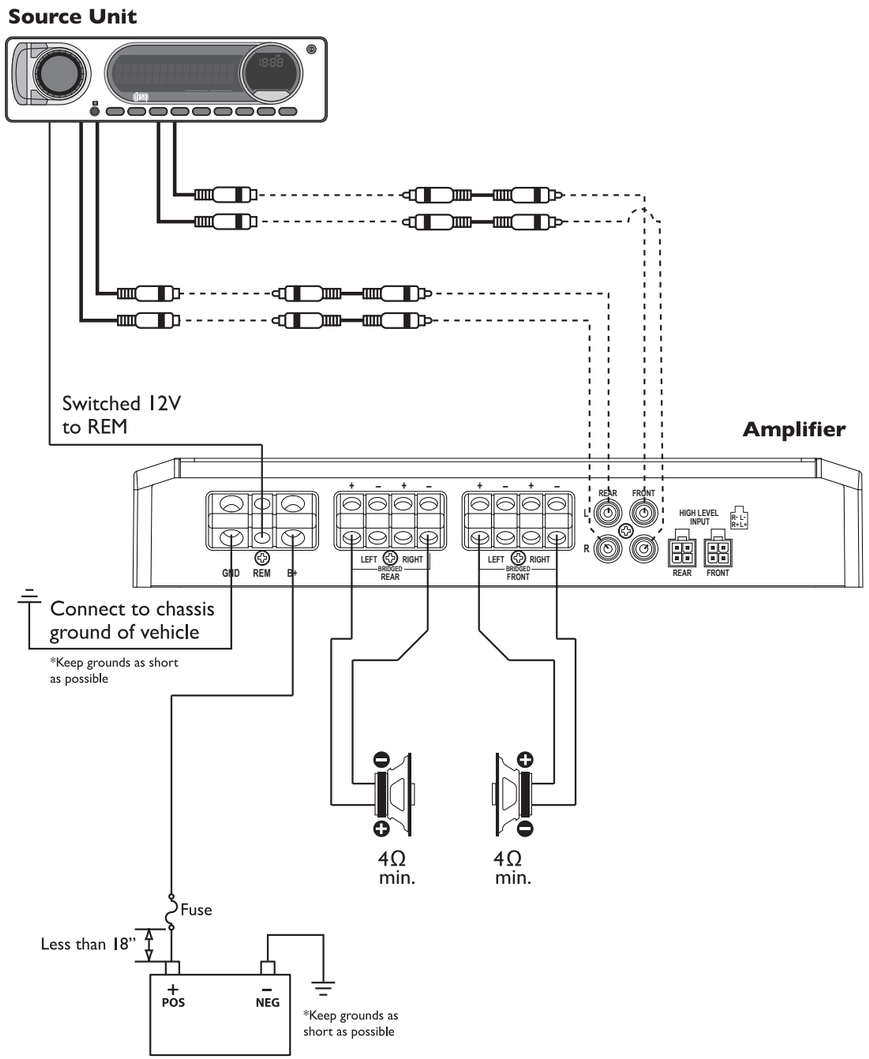
4-Channel (Stereo)
R250X4, R300X4, R400-4D & R600-4D



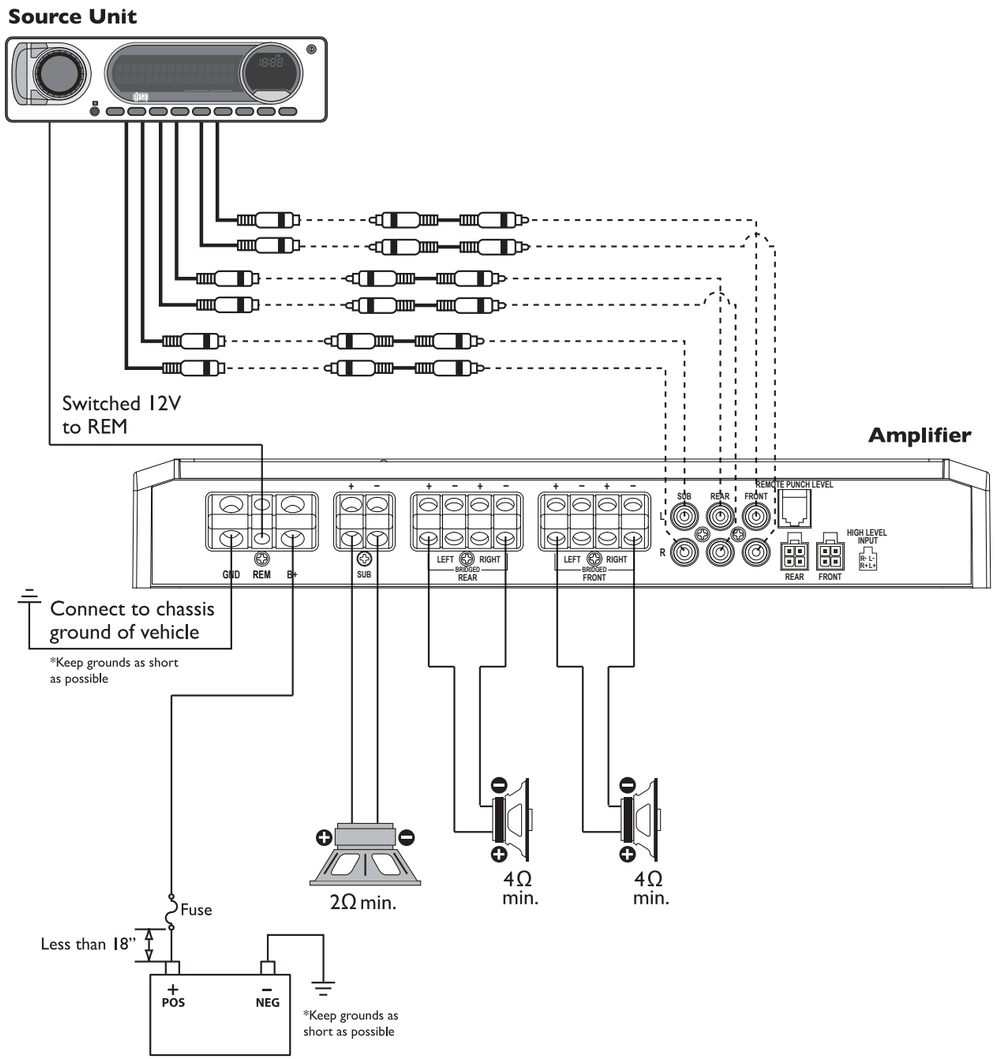
4-Channel (2ch Stereo & 1ch Mono-Bridged)
R250X4, R300X4, R400-4D & R600-4D



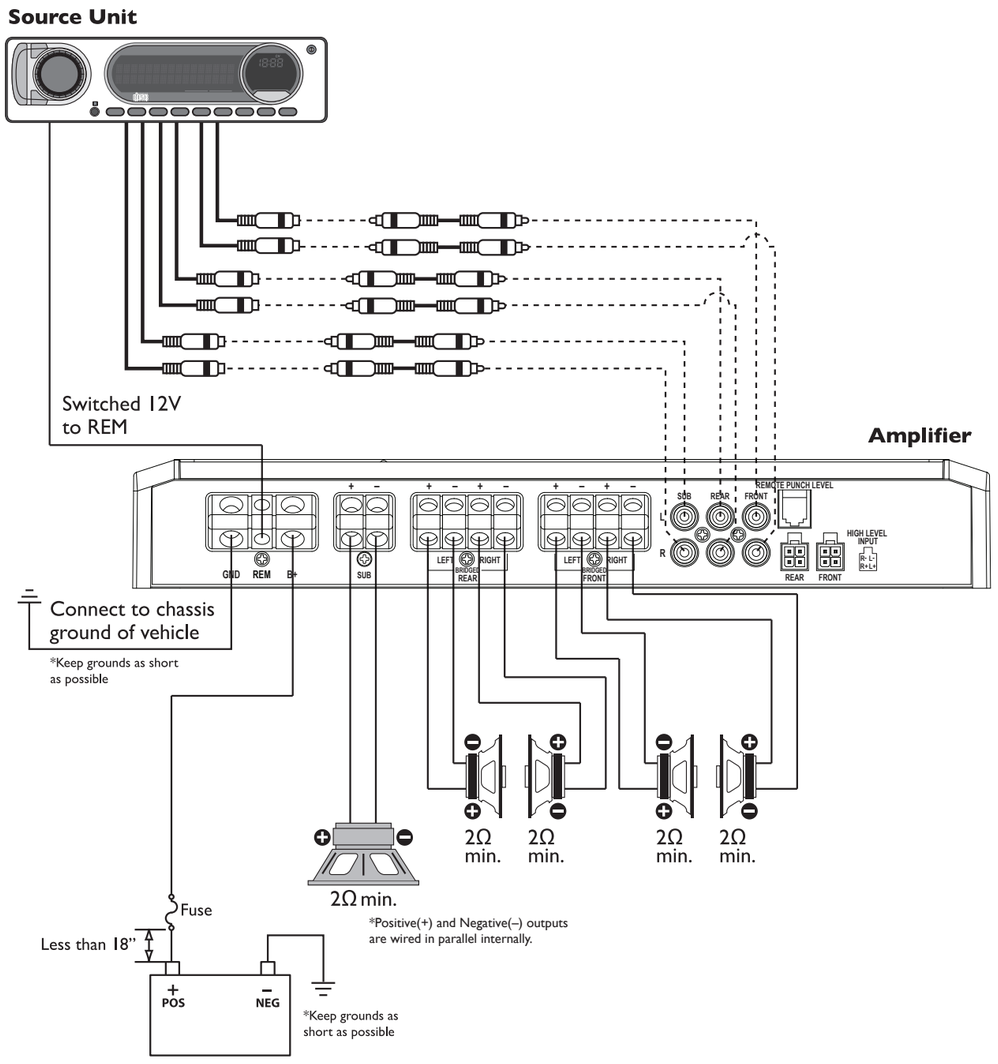
4-Channel (2ch Mono-Bridged)
R250X4, R300X4, R400-4D & R600-4D



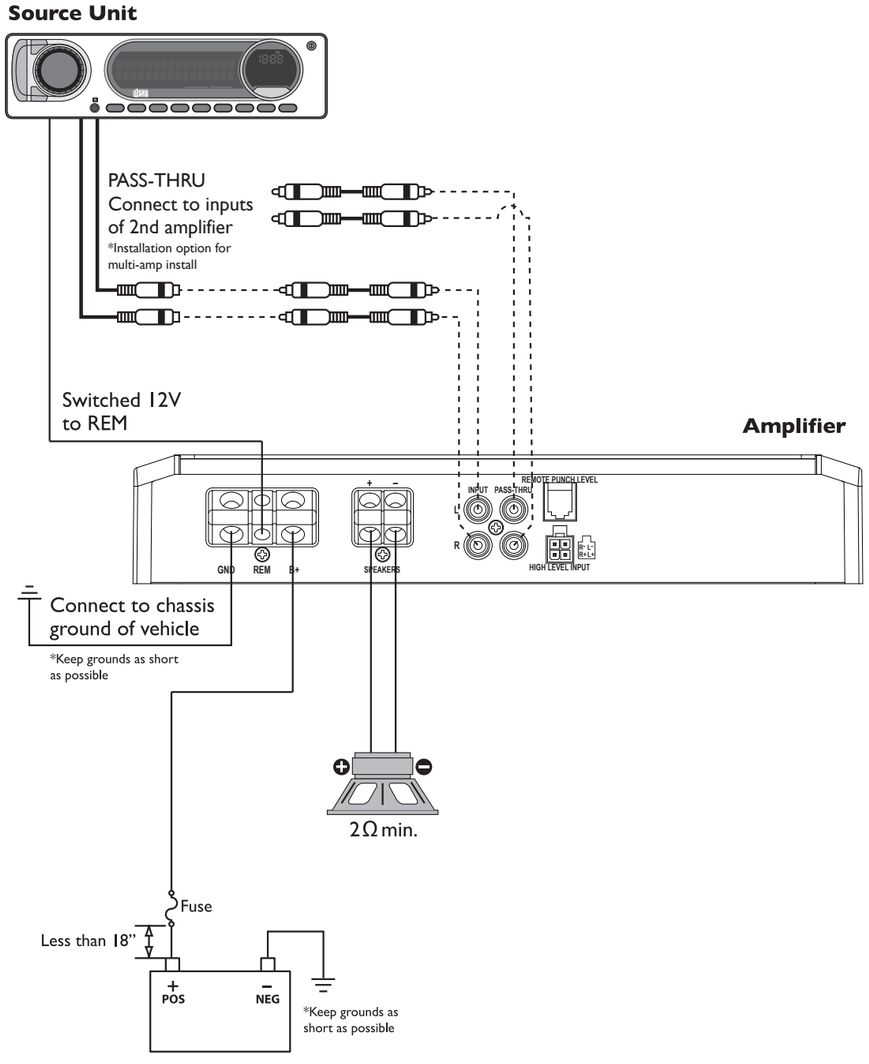
3-Channel (2ch Bridged & 1ch Parallel)
R600X5



5-Channel (4ch Stereo & 1ch Mono)
R600X5

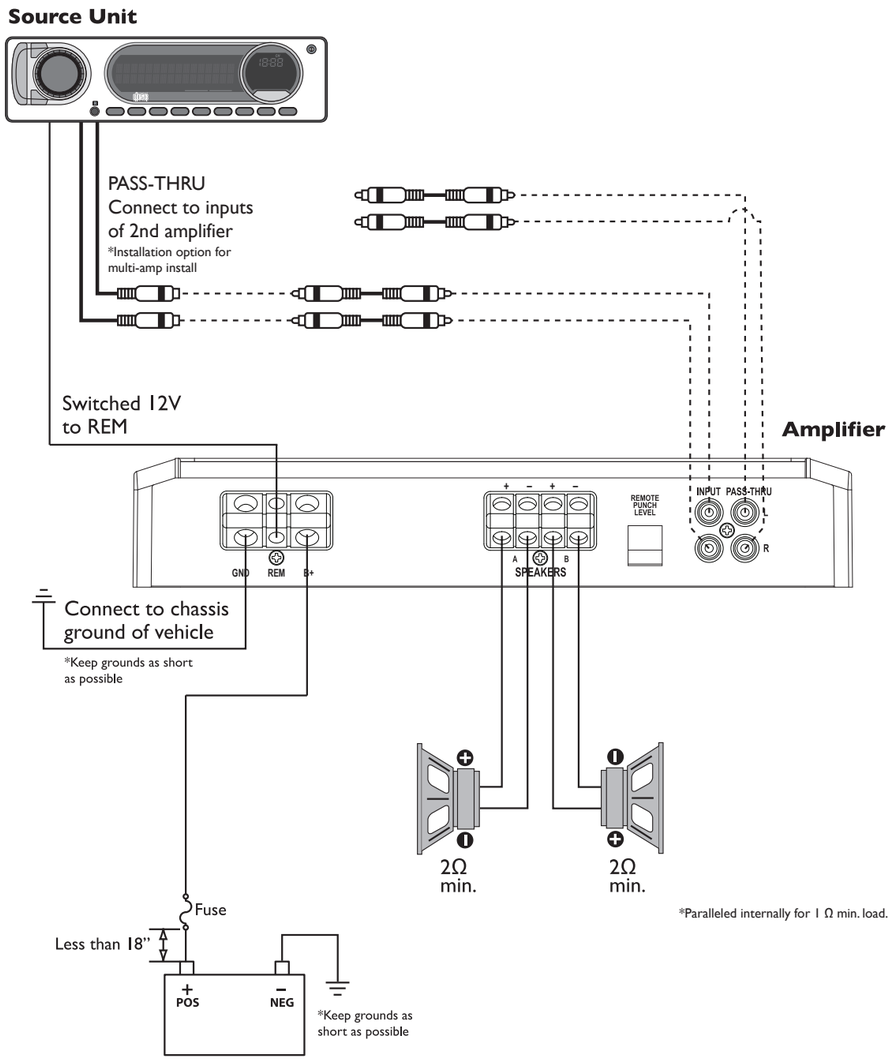


Mono Wiring
R250X1 & R500X1D



Parrallel Wiring*

R750-1D & R1200-1D



illus.-2.9

Adjusting Gain

illus.-3.1

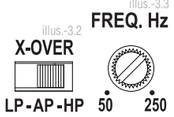
1. Turn amplifier gains to minimum (counter-clockwise).
2. Turn the source unit volume up to 7/8 maximum (or when distortion is just inaudible).
3. Slowly increase amplifier gain control until adequate volume is achieved.

NOTE: Best signal to noise and dynamic range are realized with gain set to minimum. For a more in depth setting procedure, contact Rockford Technical Support.

⚠ CAUTION Avoid setting amplifier gain high as noise and distortion will greatly increase.

Adjusting Crossover Frequency

illus.-3.3



Do the following individually for each channel.

Placing the crossover switch in the HP position sets the amplifier to the High Pass mode, enabling frequencies above the cut-off point to pass, adjustable between 50-250Hz.

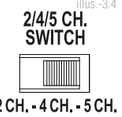
Placing the crossover switch in the AP position sets the amplifier to the All Pass mode, preventing any crossover adjustment, allowing all frequencies to pass.

Placing the crossover switch in the LP position sets the amplifier to the Low Pass mode, enabling frequencies below the cut-off point to pass, adjustable between 50-250Hz.

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.

Input Switch

illus.-3.4



Setting this switch to the 2CH. position, switches the inputs to a 2-channel mode, allowing connection to only the front inputs with a 4-channel output.

Output controls function the same as if the amplifier was in 4-channel mode.

All “ACTIVE” inputs must have RCA jacks connected.
Switch in 2CH. position,“ACTIVE” - Front channel inputs only.
Switch in 4CH. position,“ACTIVE” - All Front and Rear channel inputs.
Switch in 5CH. position,“ACTIVE” - All Front, Rear and Sub channel inputs.

NOTE: When connecting to the 4-Channel inputs, be sure to route both front and rear RCA cables tightly together.

Variable Phase

illus.-3.5

Allows you to conveniently switch the output phase of the amplifier between 0° and 180°. This has the same effect as physically reversing the Positive (+) and Negative (-) speaker wires.

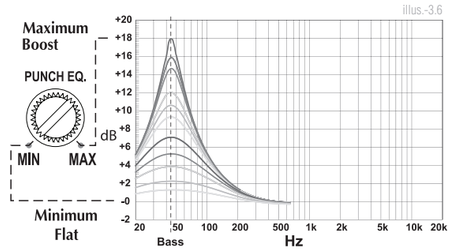
High Level Input

High Level Inputs are used when you want to connect an amplifier to your factory radio or an aftermarket radio that does not have low-level (RCA) inputs. It allows you to use the signal coming from the speaker outputs as an input source for the amplifier.

Punch EQ

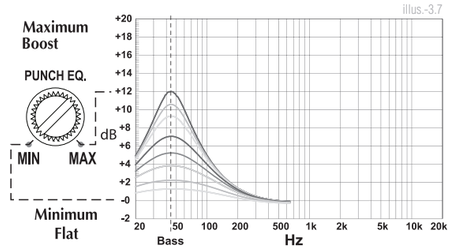
This works along with the crossover switch on the amplifier. When set to Low-Pass (LP) operation, this is a variable Bass Boost. When set to High-Pass (HP) operation, this is a variable Mid-Bass and Treble Boost. When set to All-Pass (AP) operation, both the Bass and Treble frequencies are boosted. Set this to your personal preference while listening to the system.

illus.-3.6



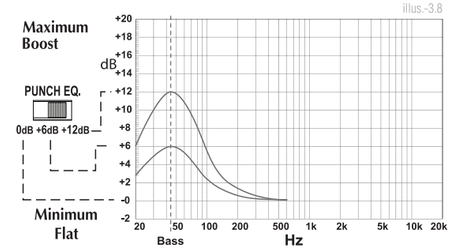
Variable 0-+18dB @ 45Hz (R400-4D, R600-4D, R750-1D & R1200-1D)

illus.-3.7



Variable 0-+12dB @ 45Hz (R150X2, R250X1, R500X1D & R600X5)

illus.-3.8



Selectable: 0/+6dB/+12dB @ 45Hz (R250X4, R300X4 & R600X5)

⚠ CAUTION Over excursion and subsequent damage may occur at high levels of boost.

Remote Punch Level Control (Option)

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. When connected, the “Level Control” is linked and allows you to remotely control the output level of the amplifier from the dash or center console.