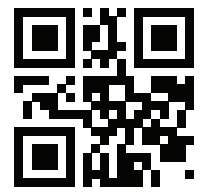


AUDIOPHILE ACOUSTICS



B2[®]

SWEET LIKE DANISH

RIOT 3200/7500

USER MANUAL

PRODUCT ID:

RIOT3200FR21 / RIOT7500FR21

WWW.B2AUDIO.COM / WWW.FACEBOOK.COM/B2AUDIO



INTRODUCTION

There are times when you need to make a statement, such as raising the bar & going beyond what has become the standard. For nearly a decade this has become synonymous with B2 audio. Whether it being product like subwoofers & amplifiers or even various competition formats in car audio, we have continuously set our standards higher. At times it might not be the most financially wise decision, but we are more than product and profits, we are first and foremost passionate about what we do, thus we want to implement our soul into each product.

RIOT

Go all the way across. Fullbridges have come to stay. The RIOT 3200 & The RIOT 7500 has now had it's first revision, offering even better features than previously. The V2 has gotten better crossovers, an increased operational voltage, so your LTO battery system can be charged correctly. In addition the clip protection has been revised for better operation. To top it all off, is the new bass remote with the built in voltmeter. B2 audio has downsized, but increased the performance with this new RIOT amplifier. The side benefit is also the power vs cost ratio is by far greater than before. Riot is for B2 audio equivalent to an uprising and something most can relate to. The entire Riot line offers subwoofers, speakers and amplifiers. It is the most complete series from B2 audio and will be superior in both performance and power. Given the small size of the Riot amplifiers they should also fit in any vehicle.

Stay updated on B2 audio, follow us on social media & our website. www.b2audio.com - www.facebook.com/b2audio - www.instagram.com/b2_audio www.youtube.com/b2audio - twitter: @b2_audio



AUDIOPHILE ACOUSTICS

IS THE DNA OF B2 AUDIO. ANY PRODUCT IS DEVELOPED BY ADDING THE UNIQUENESS AND THOUGHT OF EVOLUTION IN THE SPECIFIC APPLICATION OF THE PRODUCT'S DESIGN.

KEEP IN MIND THAT CONTINUOUS EXPOSURE TO SPL ABOVE 100 DB CAN SERIOUSLY DAMAGE YOUR HEARING. TODAY'S HIGH POWER AUTO SOUND SYSTEMS CAN EASILY PRODUCE SPL ABOVE 140 DB. ENJOY YOUR PASSION WITH SENSE AND RESPECT FOR THE ENVIRONMENT.

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DESIGN FEATURES

	RIOT 3200	RIOT 7500
CIRCUIT CONFIGURATION:	FULLBRIDGE CLASS D	FULLBRIDGE CLASS D
FREQUENCY RESPONSE:	10 HZ ~ 24 KHZ (- 3 DB)	10 HZ ~ 24 KHZ (- 3 DB)
SIGNAL TO NOISE RATIO:	90.5 DB (MIN GAIN @ RATED POWER)	90.5 DB (MIN GAIN)
INPUT SENSITIVITY:	0.2 V ~ 6 V	0.2 V ~ 6 V
CROSSOVER CIRCUIT:	12 DB / OCTAVE	12 DB / OCTAVE
LOW PASS CROSSOVER:	50 HZ ~ 20 KHZ	50 HZ ~ 20 KHZ
HIGH PASS CROSSOVER:	10 HZ ~ 2 KHZ (SUBSONIC)	10 HZ ~ 2 KHZ (SUBSONIC)
BAND PASS CROSSOVER:	10 HZ ~ 20 KHZ	10 HZ ~ 20 KHZ
DAMPING FACTOR:	> 200	>200
REMOTE CONTROL W/CLIP & VOLTMETER:	INCLUDED	INCLUDED
POWER TERMINAL GAUGE:	0 AWG	0 AWG X 2
FUSE RATING:	250 A	600 A
DIMENSIONS:	8.54" X 2.4" X 8.1" - 217 X 61 X 205 MM	8.54" X 2.4" X 13.4" - 217 X 61 X 340 MM

CONTINUOUS OUTPUT POWER (RMS)

MEASURED @ 14.4 V < 1 % THD (100 HZ) USING AUDIO PRECISION (** MEASURED @ 1000 HZ / INDUSTRY STANDARD FOR FULLRANGE AMPLIFIERS)

	RIOT 3200		RIOT 7500	
OUTPUT POWER @ 4 Ω:	1 X 1000 W	(1 X 1100)**	1 X 2400 W	(1 X 2600)**
OUTPUT POWER @ 2 Ω:	1 X 2000 W	(1 X 2100)**	1 X 4200 W	(1 X 4500)**
OUTPUT POWER @ 1 Ω:	1 X 3000 W	(1 X 3200)**	1 X 7500 W	(1 X 8000)**

DESCRIPTION OF SPECIFICATIONS

OPERATION BELOW MINIMUM IMPEDANCE WILL STRESS THE AMPLIFIER & VOID THE WARRANTY. EXCESSIVE HEAT WILL OCCUR, CAUSING THE AMPLIFIER TO GO INTO THERMAL PROTECTION.

WORST CASE SCENARIO, THE CIRCUIT WILL SUSTAIN PERMANENT DAMAGE AND THE CLIP & PROTECT LIGHT WON'T TURN OFF OR FLASH IN A SEQUENCE. THE RIOT SERIES AMPLIFIERS CAN'T

BE BRIDGED/STRAPPED. FOR AMPLIFIERS ABOVE THE RIOT 7500, IT IS NECESSARY TO SET GAINS WITH A LOAD TO AVOID STRESS TO THE CIRCUIT. FOR THE RIOT 7500 THIS IS A RECOMMENDATION.

PROTECTION CAN ALSO BE CAUSED BY THE FOLLOWING

* INPUT VOLTAGE FROM EITHER SOURCE UNIT AND / OR THE POWER SUPPLY INPUT.

* SPEAKER OVERLOAD

* SHORT CIRCUIT

NOTE, SPEAKER OUTPUTS WILL HAVE RAIL VOLTAGE EVEN AFTER THE AMPLIFIER HAS BEEN TURNED OFF FOR A WHILE! DO NOT SHORT THE CONNECTIONS!

MEASURE WITH A DMM PRIOR TO MAKE ANY CHANGES TO THE SPEAKER WIRES .

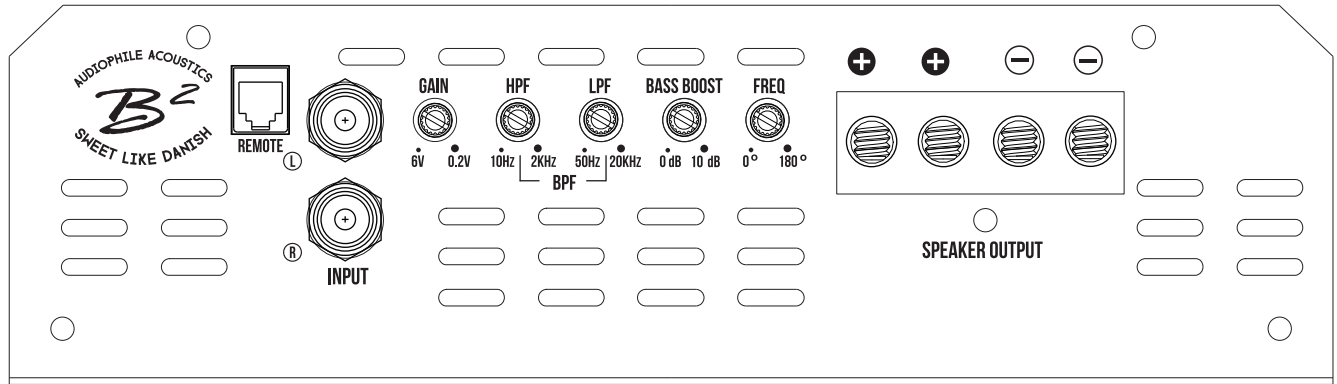
OPERATIONAL VOLTAGE IS 10 V ~ 16.5 V

* FULL OUTPUT POWER ACCORDING TO THE SPEC IS BASED ON A SUFFICIENT ELECTRICAL SUPPLY SYSTEM. IF YOUR SYSTEM IS INADEQUATE, THE EFFICIENCY OF THE AMPLIFIER DECREASES AND PERFORMANCE WILL BE AFFECTED!

THE RIOT 3200 WILL NEED A DEDICATED AGM BATTERY OF MIN 150 AH AND 2000 CCA. IF YOU ARE USING A COMMON LITHIUM SOURCE OF 6C, A 50 AH LITHIUM BATTERY WILL SUFFICE.

THE RIOT 7500 WILL NEED 3 DEDICATED AGM BATTERIES OF MIN 125 AH AND 1750 CCA. IF YOU ARE USING A COMMON LITHIUM SOURCE OF 6C, USE A 130 AH LITHIUM BATTERY.

PANEL LAYOUT



REMOTE LEVEL CONTROL PORT

Connection of external level controller with clipsensor and voltmeter. Caution, it is not a volume knob and shall be adjusted in accordance with the amplifiers gain.

GAIN (6V-0.2V)

Adjusts signal input voltage from the input source to match the amplifiers input stage. 6V ~ 0.2V is the voltage range. Sudden voltage spikes or voltages beyond the above may cause errors or damages to the input section. Eventually the amplifier can go into protect. It is advisable to use a low (< 1V) input if the amplifier is driven into a low ohm load.

LPF (12 DB/OCT)

Variable low pass crossover from 50 Hz to 20 KHz. If used with the HPF, it will create a bandpass configuration of the crossover. The frequencies within that setting is BPF.

SPEAKER OUTPUT

4 pin layout speaker terminal. Each pair is internally bridged. Do not attempt to bridge externally. **The minimum load is 1 Ω.** Any connection below 1 Ω is not warranted. The amp can't be strapped or bridged in any way either.

This circuit design will have a **high output voltage** on **BOTH** speaker terminals, even after the amplifier has been shut of for a while. For any connections or changes in configuration, do measure if voltage is still present prior to doing so. This will avoid potential shorted circuits.

INPUT

RCA signal input from the source unit. Use a signal of min 0.2 V to max 6 V to ensure proper operation.

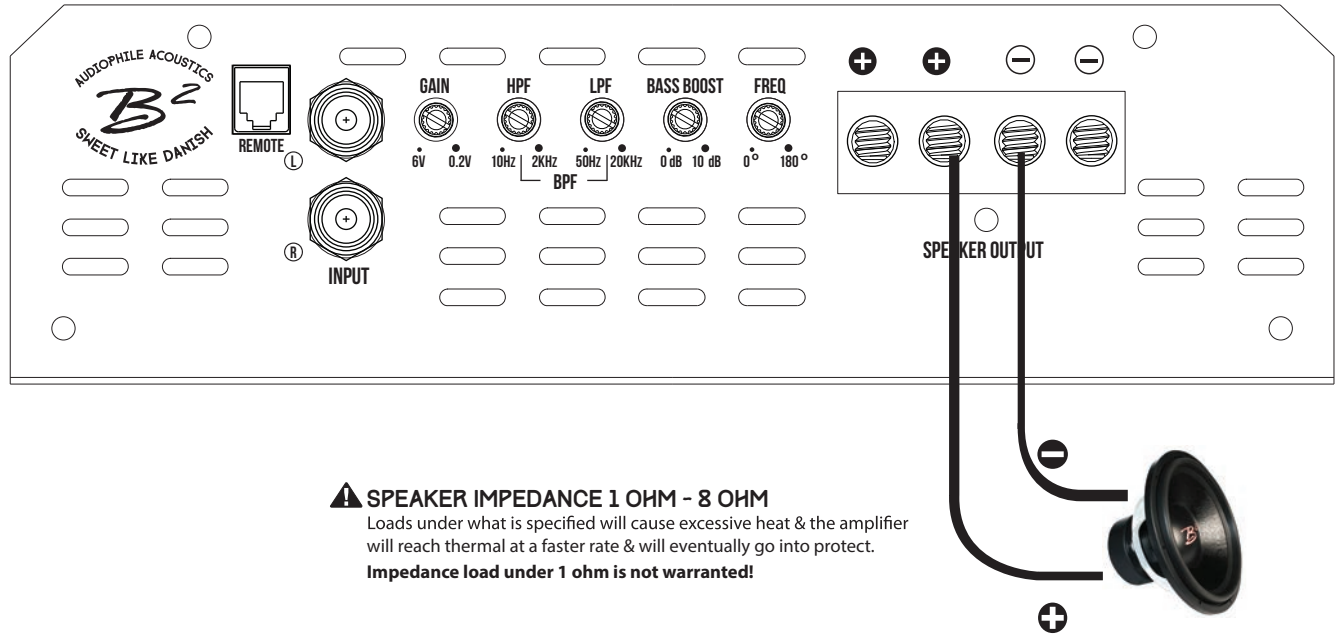
HPF (12 DB/OCT)

Variable high pass crossover from 10 Hz to 2 KHz. It is highly recommended to set it according to the tuning of your loudspeakers enclosure / t/s parameters to avoid unnecessary strain to your sound system.

BASS BOOST / FREQ

Level control with 0~10 dB of the frequency chosen. Any level of more than 3 dB is not advisable. It can lead to a highly clipped signal, which can damage your sepakers. Use it with caution and set your gain correctly.

PANEL LAYOUT



⚠ SPEAKER IMPEDANCE 1 OHM - 8 OHM
Loads under what is specified will cause excessive heat & the amplifier will reach thermal at a faster rate & will eventually go into protect.
Impedance load under 1 ohm is not warranted!

We recommend using minimum 10 Ga speaker cables to acquire the intended performance & efficiency. Run the speaker cables from your speakers to the amplifier's mounting location. Ensure these are ran separately and away from high current cables and if possible the RCA cables as well. In all cases where cables are penetrating the vehicle's chassis use grommets to protect the cable.

Connect the speaker wires according to the terminals on the speaker(s). Strip 3/8" / 1 cm of insulation of the end of each cable and twist the cable strands together tightly. Make sure there are no stray strands that could touch other cables or terminals as it can cause a short circuit.

Crimp spade plugs over the end of the cable or tin the ends with solder to provide a solid terminal. Connect the cable ends to the amplifier as shown in the diagram.

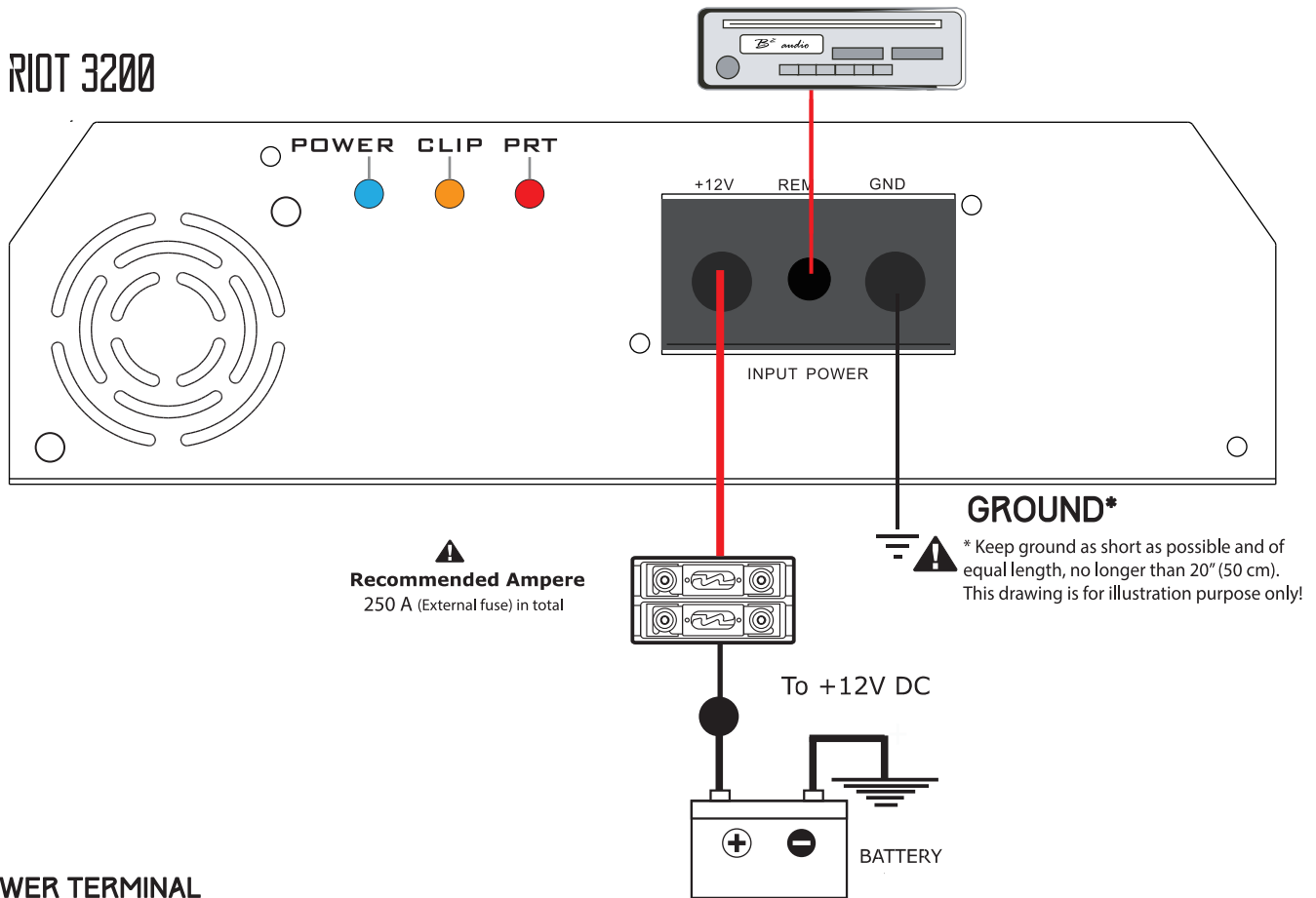
⚠ CAUTION

INSTALLATION OF THE AMPLIFIER SHALL BE DONE IN THE FOLLOWING STEPS:

1. Connect the +12V wire, keep in mind this wire has to be fused at the battery as well.
2. Ensure the ground is appropriate, then connect it to the amplifier.
3. Connect the switched remote.
4. Reattach negative wire (ground) to the battery.
5. Operation over 17V will cause the amplifier to go into protect & can void the warranty!
6. Both speaker terminals will have rail voltage present, even after the amplifier has been turned off for a while. Measure the terminals before reconfiguring anything, to make sure there's no voltage.

POWER TERMINALS

RIOT 3200



POWER TERMINAL

+12V (POWER CONNECTION)

Connects to the positive terminal of the battery. For specified performance 0AWG cable is required. Fuses shall be placed within 8" / 20 cm of the battery.

GND (GROUND CONNECTION)

Connects to the vehicle's chassis. Keep as short as possible (< 20" / 50 cm). Use minimum 0AWG cable for optimal operation.

REM (REMOTE INPUT)

Switched 12V connection from source unit, it is advisable to use a common relay to ensure a stable voltage connection without dips.

LED INDICATORS

Power lit, amplifier is operational and on.
Clip flashing shows the signal is not constantly clean.
Clip constant lit, signal is heavily distorted. The Loudspeakers and amplifier can be damaged over a short period of time.
Protect, the amp has shut off. It can be caused by various elements. Thermal shutdown, due to heat and insufficient air flow. Speaker short circuit, low voltage, circuit damage.

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INSTALLATION

INSTALLATION CONSIDERATIONS

If you choose to install the amplifier by yourself, please read the entire owner's manual carefully. Before you start your installation, please take all steps into consideration. If in doubt, please go to www.b2audio.com for authorized distributors / dealers that will be able to configure your set up & ensure the warranty of your amplifier.

PREPARATION

Disconnect the negative (-) battery cable before mounting or making any connection. Check the battery & alternator ground (-) connection. Make sure they are properly connected/dimensioned & free of corrosion. Before selecting a mounting location for the amplifier, please take cooling & safety into consideration. Avoid areas with excessive vibration & up side down installation!

In order to avoid excessive heat from the amplifier, it is recommended to find a mounting location that allows for vertical positioning of the heatsink fins. For safety purposes, install the amplifier in a dry and well ventilated location and make sure no cables or other harness of the car is interfaced with the mounting location or will present a hazard to the car's cable, control cables, fuel lines/tanks, hydraulic lines or other components of the vehicle. Route the RCA cables away from high current wires, if possible run RCA, Power and Speaker cables individually and with a good distance from each other.

POWER CONNECTORS

12V (POWER CONNECTION)

Before mounting the amplifier, disconnect the negative (-) wire from the battery to protect any accidental damage to the amplifier or the audio system. The amplifier is equipped with 0 AWG power & ground and 4GA for the 1200. terminals. It is crucial that all terminals are used with the adequate cable to ensure correct operation. Connect the power cables to the power terminal labeled as +12V. The amplifier is not equipped with fuses, so external fuses are required at both the battery and the amplifier. Connect one end of the fuse holder to the power cable and the other end of the fuse holder to the positive battery terminal within 8" / 20 cm of the same cable. The same shall be done at the other end of the cable that connects to the amplifier. The fuses will protect the system and the vehicle against the possibility of a short circuit in the power cable. Make sure that the fuses and the fuse holder is according to the system requirements.

GND (GROUND CONNECTION)

Locate a secure grounding connection as close as possible to the amplifier. Make sure the location is clean and provides a direct electrical connection to the chassis of the vehicle. Connect one end of an equal sized cable as the positive cable to the location of ground. It is important that the ground cable is as short as possible, but no longer than 20" / 50 cm at maximum. Run one end of the cable to the grounding point. Run the other end of the cable to the mounting location. Connect the ground cable to the terminals labeled as GND.

REM (REMOTE CONNECTION)

Run a remote turn on cable from the switched +12 V source. This may be a toggle switch, a relay, the source unit's remote output cable or power antenna trigger cable. Connect the remote turn on cable to the power terminal labeled as REM. The REM out terminal is mainly intended for connection of another amplifier ran in a chain, but it can also be used for other units.

INPUT (RCA CABLE)

Run the RCA cables away from the high current cables / speaker cables and connect to the amplifier. Use high quality cables with a secure grounding point to avoid amplifier malfunction and / or alternator whine.

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TROUBLESHOOTING

The protection circuits of the amplifier prevents severe damages from faulty conditions & improper use. The protection indicator will switch on due to short circuit connection & speaker overload, thus the amplifier will be turned off. Prior to inspecting the occurred problem, turn all levels down & all power off, then carefully check the installation for wiring mistakes, shorts or faulty ground (GND). If the amplifier shuts down due to excessive heat, the protection indicator will light up; please allow time for the unit to be cooled off. Before removing your amplifier, refer to the list below and follow the suggested procedures step by step. If not at ease, contact an authorized installer which can assist you.

AMPLIFIER DOESN'T TURN ON

- Measure voltage on the +12V terminal.
- Ensure that the remote terminal has min. 13.8 V DC remote connection.
- Recheck the ground (GND) connection. Inspect the in-line fuses.
- Check the protection LED is not on.

PROTECTION LED IS LIT ONCE THE AMPLIFIER IS TURNED ON

- Check shorts on speaker wires & the connected load / impedance. Check power cables & GND.
- Disconnect the speaker cables and reset the amplifier.
- High / Low voltage, operation voltage is 10 V ~ 17 V. Voltages below / beyond this will cause the amplifier to go into protect.

FUSE BLOWING

- Measure the speaker impedance & that it is in accordance with the configuration.
- Inspect the power cable for shorts along with vehicle chassis.

OVERHEATING

- Measure the speaker impedance & that it is in accordance with the configuration.
- Check speaker shorts.
- Ensure airflow around the amplifier is sufficient & that the amplifier is not installed in areas of excessive vibration & upside down!

AUDIO OUTPUT INSUFFICIENT - DISTORTED SOUND

- Ensure that the gain settings on the amplifier is matched with the output level of the head unit.
- Adjust the head unit volume.
- Check speaker shorts.
- Adjust the crossover frequencies in accordance with the setup.
- If no output at all, check the RCA connections & the cable itself.

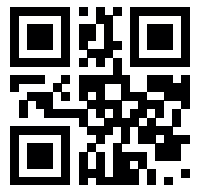
TURN ON THUMP

- Disconnect the signal input to the amplifier, then turn it on and off.
 - a) If the noise is cancelled, then connect a delay turn on module on the REM wire running from the source unit to the amplifier.
 - b) Use another 12V source for REM lead to the amplifier. If the noise is cancelled, use a relay to isolate the amplifier from the turn on thump.

HIGH HISS-ENGINE NOISE IN SPEAKERS

- Ensure that all signal transferring wires (RCA, speaker cables etc) are kept separately / away from the power and the ground wires.
- Bypass all electrical components between the Head unit and the amplifier.
Connect the Head unit directly to the amplifier's input. If the noise is eliminated, the unit bypassed is the one causing the noise.
- Remove the existing ground wires for all electrical components installed. Ensure that the point of ground is 100% metal which has been grinded free of rust, paint etc.
- Replace the ground cable from the OEM battery / alternator and ensure it is grounded accordingly.
- Test the battery and alternator load (can be carried out by a professional).
Ensure that the vehicle's electrical system is in a good condition, this includes distributor, alternator, spark plugs / wires, voltage regulators etc.

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LIMITED WARRANTY INFORMATION

B2 audio offers a limited warranty under the following terms:

The product is to be free of defects in material & workmanship under normal use for a period of 1 year from the date of the original purchase, when installed by an authorized dealer. Items not installed by authorized dealers will be warranted for 30 days from the original purchase. Original sales receipts must be accompanied with all returns. The warranty applies to the original purchaser of the product & it being sold by authorized B2 audio dealers.

- The warranty does not cover:
1. Damage caused by accident, abuse, misuse, improper operation, water / solvents & shipping.
 2. Product modification, neglect, failure to follow installation instructions & misrepresentation by the seller.
 3. Products used for competition purposes or are of such a character 4. Any product that has been opened.
 5. Products that has had the serial number defaced, altered or removed.
 6. The cost of shipping the product back for repair to an authorized repair centre & cost of return of non-defective items.

