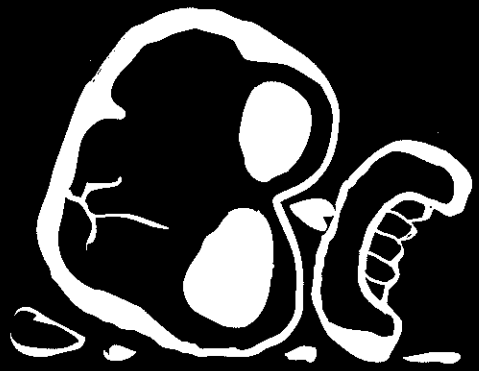

BONE CRUSHER

CLASS D AMPLIFIERS

Model: M3100, M5150,M9750

Thank you for purchasing a Bone Crusher Class D Amplifier. We know this is an important purchase for you and we aim to over deliver for you on Design, Engineering, Specification and Quality.

This Class D amplifier is designed with the latest in hi speed MOSFET switching technology.
This class D switching system allows for greater power output whilst using substantially less input power.
On average, The Bone crusher Class D uses less than 1400W of power to create every 1000W of RMS Output power.
By comparison a class A/B amplifier can draw more than 2200W for the same output.

This is a Subwoofer amplifier only. It does not produce any tones above 250Hz.

BONE CRUSHER

SPECIFICATIONS

MODEL	M3100	M5150	M9750
RMS Power, INTO 4 Ohms	1100 W MONO	1650 W MONO	4150 W MONO
RMS Power, INTO 2 Ohms	2000 W MONO	3100 W MONO	6800 W MONO
RMS Power, INTO 1 Ohm	3100 W MONO	5150 W MONO	9750 W MONO
RMS Power, INTO 1 Ohm (AT 10% THD @ 14.4V)	4150 W MONO	7200 W MONO	13200 W MONO
THD at 1 Watt, 4 Ohm	0.1%	0.1%	0.1%
S/N Ratio, below rated power output	90dB	90dB	90dB
Frequency Response, at 1 Watt, 4 Ohm	10Hz to 250Hz	10Hz to 250Hz	10Hz to 250Hz
Damping Factor at 20Hz, 4 Ohm	157	216	126
Low Pass Filter	50Hz~150Hz, 24dB/Octave	50Hz~150Hz, 24dB/Octave	50Hz~150Hz, 24dB/Octave
Variable Subsonic Filter (Infrasonic)	15Hz~45Hz, 24dB/Octave	15Hz~45Hz, 24dB/Octave	15Hz~45Hz, 24dB/Octave
Variable Bass Boost Control	0~+18dB	0~+18dB	0~+18dB
Variable Bass Boost Frequency	30~80Hz	30~80Hz	45Hz Fixed
Phase Shift Control	0 to 180	0 to 180	0 to 180
Input Sensitivity	200mV to 6V	200mV to 6V	200mV to 6V
Input Impedance	10K Ohm	10K Ohm	10K Ohm
Dimensions(Inches)	11.02" x 2.52" x 21.65"	11.02" x 2.52" x 28.34"	11.02" x 2.52" x 36.22"
Fuse Rating	ANL 150A x 2	ANL 250A x 2	ANL 250A x 4

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Line Out RCA Jacks:
The RCA jacks allow you to daisy chain amplifiers together for large systems without the need to use RCA Splitters.

Variable Infrasonic Filter: (Referred to as a Subsonic Hi Pass filter)
When designing High powered systems, Cone movement vs Power input to subwoofers should be modeled (Calculated) carefully.
As frequency decreases (Gets lower), cone movement increases (This is especially acute when using ported enclosures under the port tuning frequency) When setting up your system, the infrasonic filter can be set at the point were the calculated cone movement exceeds the subwoofers mechanical limits for a given input power. In most cases, this frequency is very low and there is no audible change to the listener. However, a well set Infrasonic filter can greatly reduce the instances of voice coil polling and premature speaker destruction.

Phase shift:
Exponents of Quality Audio reproduction often talk about tightness and clarity of bass. It is often though that this task is solely the responsibility of the subwoofer and its enclosure. However, there are actually 3 things that have to be done right.

1: Enclosure design. Whilst there are many great prefab enclosures on the market, a custom enclosure is going to be the best bet. Alternatively get the technical data of the prefab box's you are looking at and model your subwoofer with that box and see if it is suitable. Tuning frequency alone is no indication of how the box will sound.

2: Mids and Tweeters: Make sure you match your subwoofers with Quality, Mid bass and tweeters. Make sure they are Efficient and give them plenty of power so that they are dynamically powerful enough to keep up with your subs.

3: Phase alignment. This is one of the most misunderstood aspects of great sounding sub bass. At and around the cross over frequency (between the Subwoofer and the Mid bass speakers) both speakers are operating and producing the same waves (They are handing over to one another).
The distance to the listener is different from Subwoofer to listener vs Mid-bass/tweeters to the listener because of the locations of the Mid-bass/tweeters vs the Subwoofers, When sounds from both speakers arrive at the listener at different times it makes the Sub-bass sound Mushy and ill defined. If you dial the correct amount of phase shift on either the sub woofer or the mid-bass/tweeter amplifier you can align them so that the waves are arriving to listener at exactly the same time. This makes the bass far more accurate and will even improve the directivity of the bass. Correct alignment will make the sub-bass sound like it is coming from the location that produces the highest frequency (From the Midrange Tweeters in front of you).

(Setting this correctly requires a signal generator and an SPL Meter.)

Line Out RCA Jacks:
Please check before inserting

Installation considerations and precautions

1. Ensure that you locate the amplifier in a suitable location where it is free from moisture and it has ample room to expel unwanted heat.

2. The amplifier is heavy. We recommend using bolts to secure it rather than self tapping crews.

3. Ensure that the grounding wire is kept as short as possible. Ground it to the chassis of the vehicle if the cars battery is in the engine bay, ground the amplifier directly to the battery if the battery is in the trunk.

4. For Class D amplifiers that have 2 sets of power and earth input terminals. BOTH sets have to be connected for the amplifier to operate correctly. Using only one set may cause damage to the amplifiers circuit.

5. Do not use under sized Power or Earth cable (Recently there has been a flood of poor quality wiring kits on the market were the cable looks to be the correct size but the wire in side the cable is under sized). Call the regional Bone Crusher distributor for cable recommendations if you are unsure. Under sized cable drastically reduces the performance characteristics of the amplifier. It can cause damage to the speaker and the amplifier.
For cable recommendations, please visit www.bonecrusher.com.au

BONE CRUSHER

6. When Connecting more than 3 amplifiers to a head unit it may be necessary to use a relay to trigger the amplifiers from the constant power wire. (This is not a limitation of the amplifier, it is a limitation of some head units).

7. Always use a fuse for the power wire. The fuse must be located as close to the battery as possible. This fuse is for the protection of the cable and is to protect the car from fire in the event of a short in the power cable to ground. The amplifiers are protected by their own internal fuses.

8. For best performance use separate power cables for each amplifier you install.

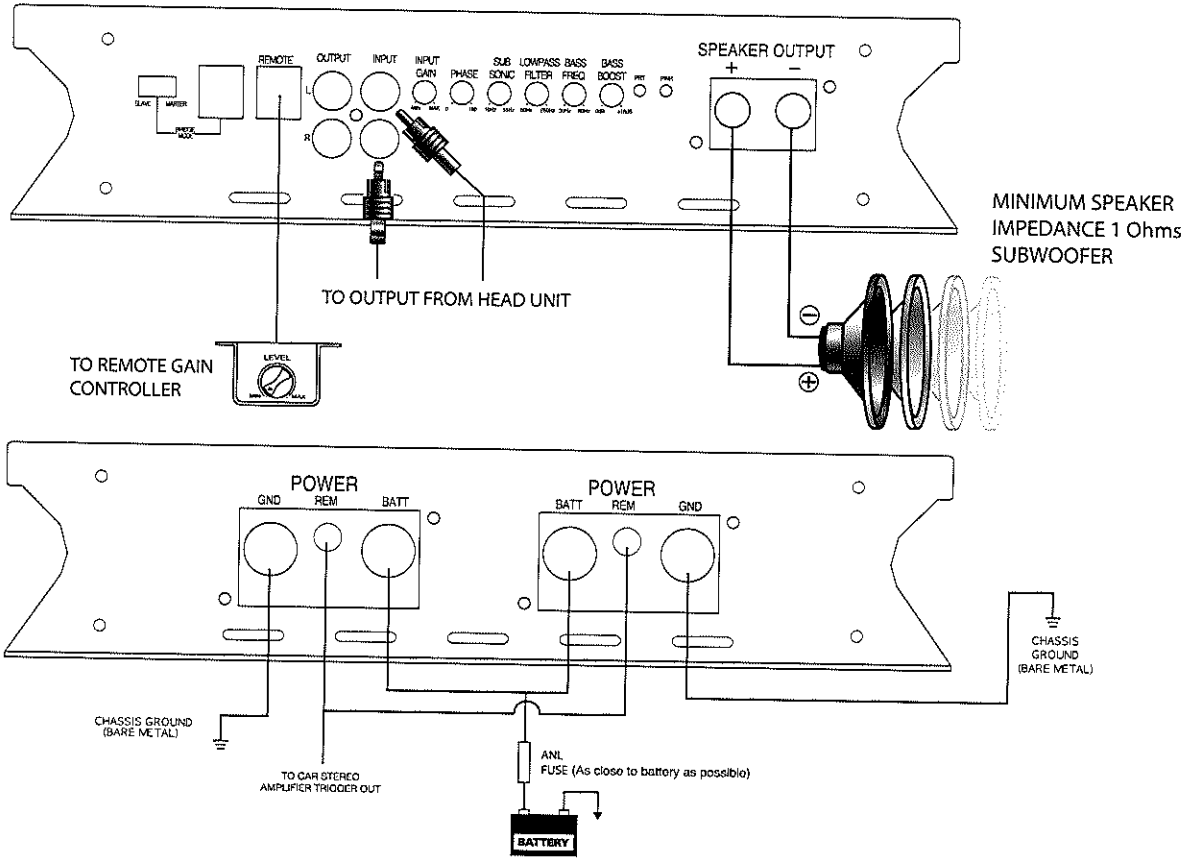
9. Adjust all gain controls to the lowest setting (This is the starting point before you tune the amplifiers settings).

10. Double check all connections, pay special attention to the power wires to ensure there are no stray wires hanging out of the terminal sockets that could short to ground.

11. Only install the Fuses at the battery AFTER the installation is complete (This is the LAST step in the installation before turning it on for the first time).

BONE CRUSHER

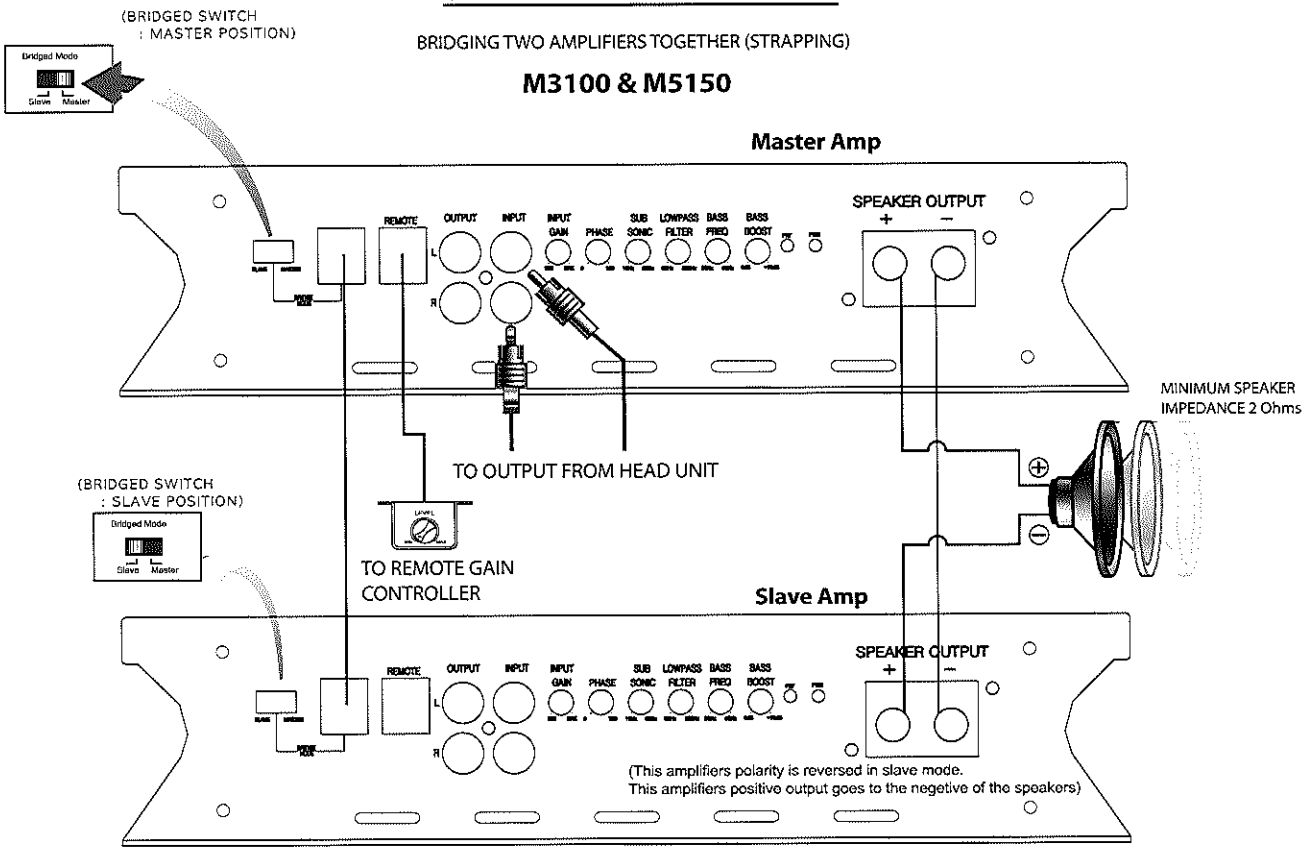
SYSTEM WIRING *M3100, M5150*



SYSTEM WIRING

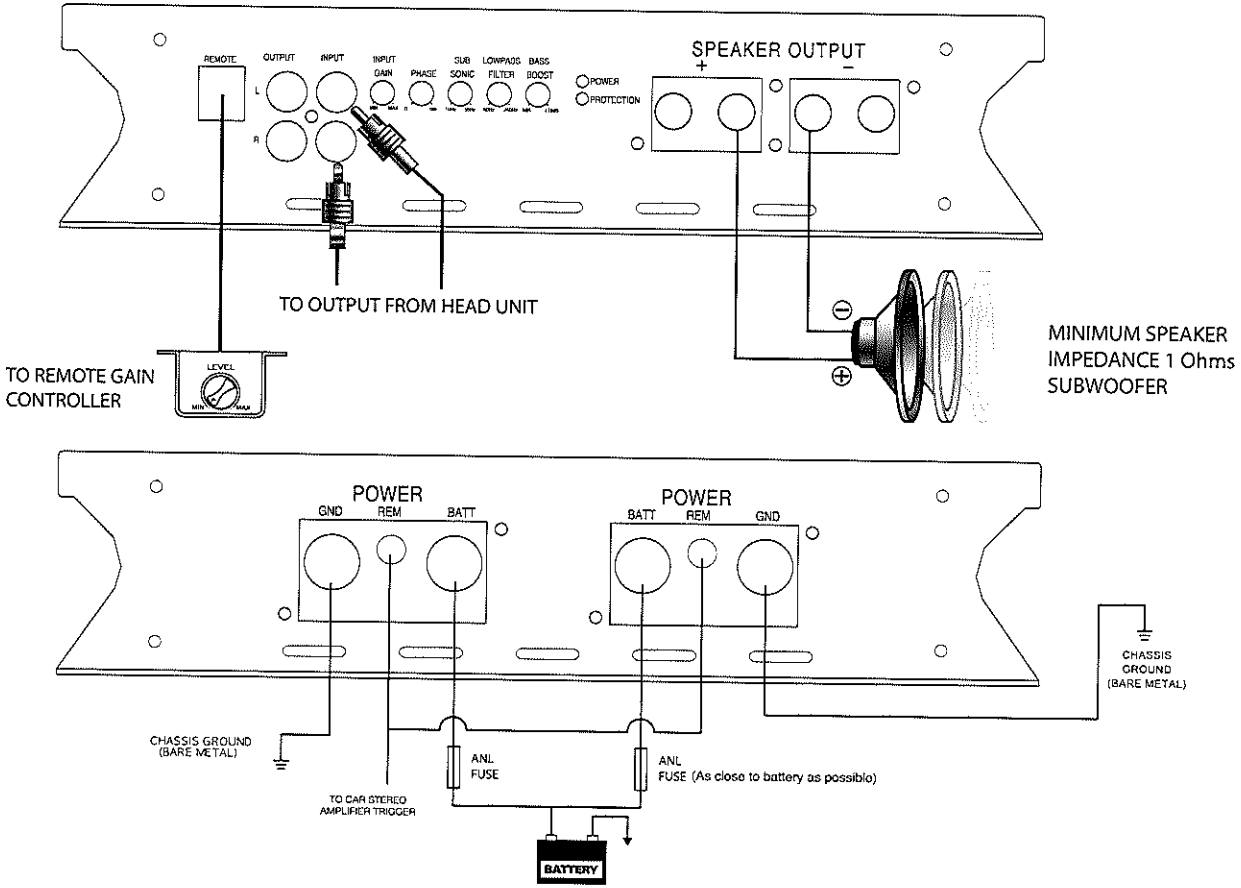
BRIDGING TWO AMPLIFIERS TOGETHER (STRAPPING)

M3100 & M5150

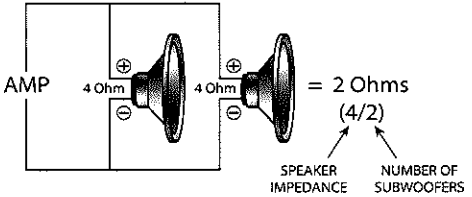


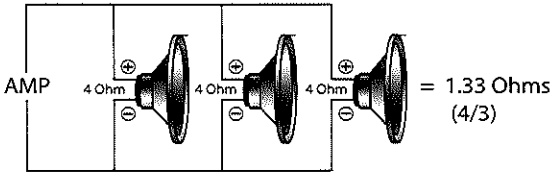
Bridging two amplifiers can be done only between two amplifiers of the same model number

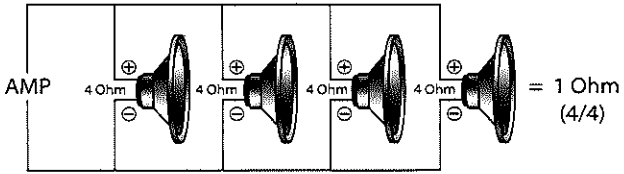
SYSTEM WIRING *M9750*

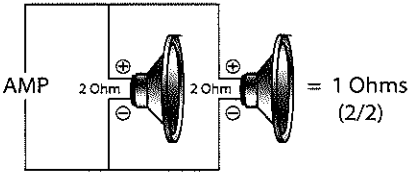


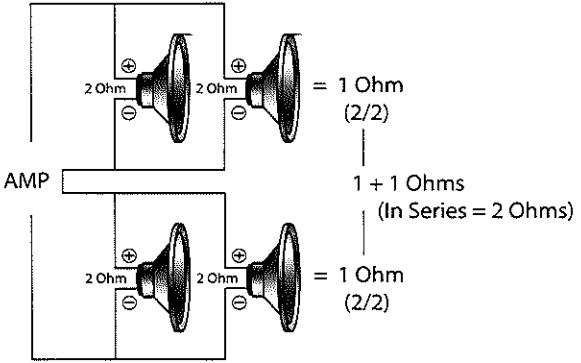
SPEAKER IMPEDANCE EXAMPLES





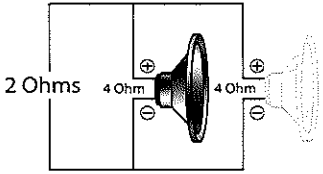




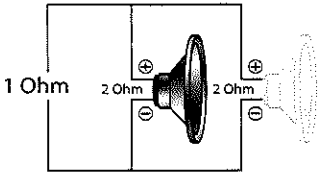


DUAL Voice Coil subwoofers are like 2 subwoofers in one

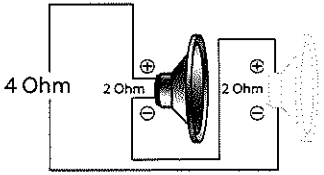
Terminals wired in parallel



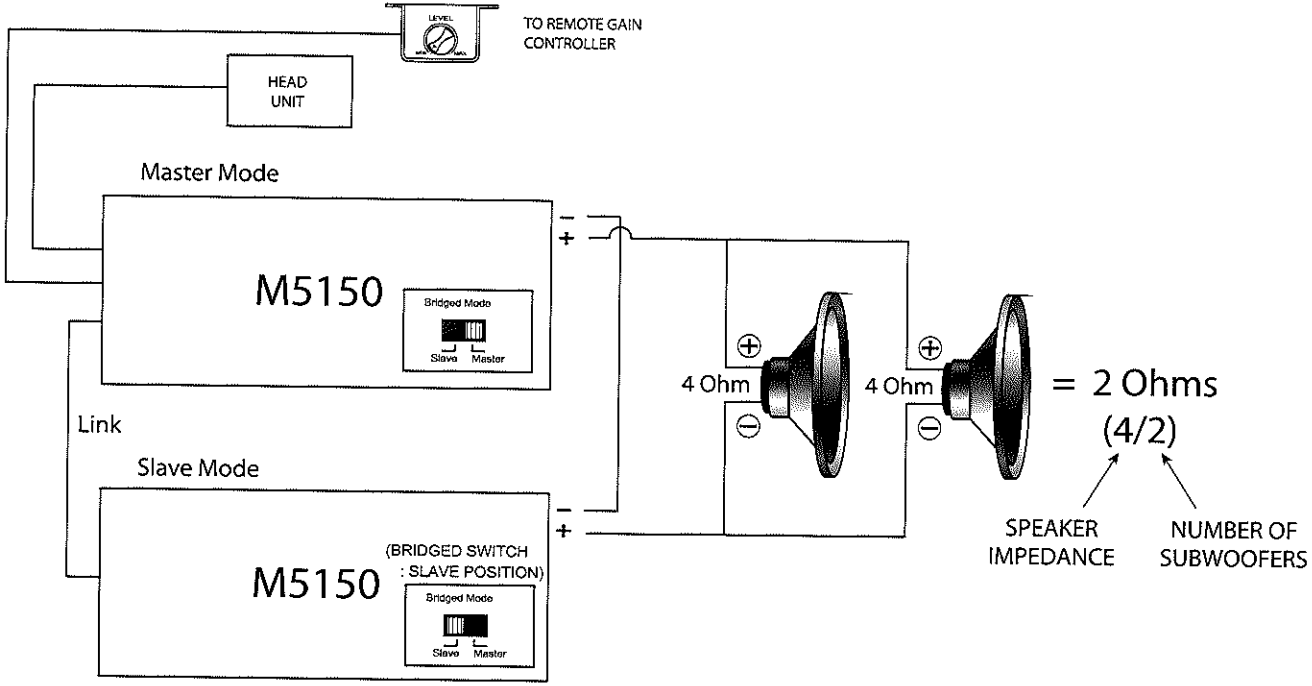
Terminals wired in parallel



Terminals wired in series



POWER FOR THE BROWN NOTE SYSTEM



Each Subwoofer receives up to 5150 watts RMS

Memo

Memo

www.bonecrusher.com.au