HIFONICS®
CAR AUDIO
POWER FROM THE GODS

MT OLYMPUS
AMPLIFIERS

BOLTAR 2K / COLOSSUS PRO 5K

HERCULES 4K / ATLAS 6K

GENERAL INSTALLATION PROCEDURE

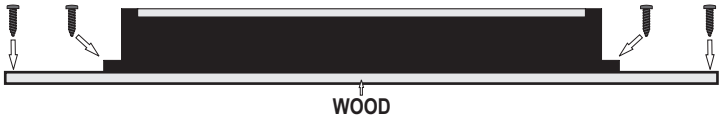
System Design

The success of any car stereo system relies on several factors, such as the system design, execution of the installation, and system setup. Please remember that any system is only as good as its weakest link.

Please remember that higher power systems are not necessarily useful purely for high sound pressure levels, but also to establish a headroom capability, to reproduce musical peaks cleanly without distortion. Lower power amplifiers will clip earlier than their more powerful cousins, and cause loudspeaker failure when overdriven, due to the harmonics generated by a clipped signal, thus overheating voice coils.

Amplifiers should be mounted with the fins running horizontally for best convection cooling, to minimize overheating. Purchase the best quality RCA cables you can afford, for reliability and less engine noise interference in the audio system.

Installation



It is highly recommended that the amplifier be mounted to a board of MDF or other solid structure using the 4 mounting screws provided. Avoid mounting the amplifier to metal as this can introduce noise and other unwanted issues. When mounting the amplifier, ensure that it is mounted HORIZONTALLY, as shown in the diagram above, for optimal heat dissipation. Mounting amplifiers to speaker enclosures is not recommended as this can cause damage to the amplifier components. When choosing a location for mounting the amplifier, ensure that you check for clearance from wires, gas tank, electrical devices and brake lines etc.

General:

Run the wiring so that RCA cables are at least 18“ away from power and speaker cables. Keep RCA cables away from electrical devices in the vehicle that can cause electrical noise, such as electric fuel pumps, emission control modules and other on-board electronic modules.

Power and ground connections(see the features matrix on page 10 for proper gauge cables per amplifier):

Use a sufficient gauge power cable and ground cable using the chart below as reference to what size wire you require. MT OLYMPUS series amplifiers require at least 4 gauge power wire. In a multi amplifier system, add the total value of the manufacture recommended fusing to get your total system amperage. Some applications may require multiple runs of power wire to meet the system requirements. In multi amplifier systems it is advisable to mount a large enough fuse right at the battery, and run one or multiple +12 volt power cables to a fused distribution block near the amplifiers. It is then a simple matter to connect the +12 volt terminal of each amplifier to the distribution block. During this process, please ensure that the main power fuse is removed to avoid shorting the electrical system. The main fuse must be within 12" of the vehicles battery.

Ground each amplifier with as short a ground lead as possible directly to the vehicle chassis using at least 4 gauge wire or equivalent to the size of the amplifiers' power wire. Use a ground distribution block, if you wish, but it is extremely important to keep the main ground lead from this distribution block to the chassis as short as possible , not more than 12“. The ground connection integrity to the chassis is very important, and the best way to achieve a good, solid electrical and mechanical contact is to use a large round crimp lug, crimped and soldered to the ground cable. The next step is to scrape the paint off the vehicle chassis , slightly larger than the ground lug, at the connection point. Drill a clearance hole in the chassis, the same size as the lug hole, and use a bolt, spring washer and nut to securely fasten the ground lug. Use petroleum jelly to coat the bolt/lug connection, to prevent oxidization with time.

TIP: Use the same approach when installing head units, equalizers or any audio equipment for that matter - run short individual grounds from each piece directly to the vehicle chassis, to minimize ground loops and system noise. All power, ground and speaker connections should be crimped and soldered for reliability. Make sure that none of the cable insulation can chafe against exposed metal in the vehicle, causing short circuits to the chassis.

WIRE LENGTH

SYSTEM AMPERAGE	7-10 ft.	10-13 ft.	13-16 ft.	16-19 ft.	19-22 ft.	22-28 ft.
35-50	8	6	4	4	4	4
50-65	6	4	4	4	4	2
68-85	4	4	2	2	2	0
85-105	4	2	2	2	2	0
105-125	4	2	0	0	0	0
125-150	2	0	0	0	0	0

WIRE GAUGE

Safe connection sequence:

After all cables are run, connect speaker wires to the speakers and amplifiers, then run and plug in RCA cables. Next, connect all power, ground, and remote turn on leads. Now connect all +12 volt cables to the amplifier/s and distribution blocks and fuse holders. Finally, connect the main +12 volt cable to the battery, with the main fuse removed, and we are almost ready to power up the system.

Power up the system:

The following procedure may seem like overkill, but there is nothing more frustrating when turning on a system for the first time, and it does not work properly immediately.

First, make sure the head unit is off, and turn all level controls to minimum (counterclockwise), including the head unit volume control. Set all equalizers to 0 dB (no boost), and all crossover frequency controls at approximate frequencies, as recommended by the loudspeaker manufacturer. Set all input selector and crossover switches as required for the application. Remove all amplifier fuses, and insert the main fuse at the battery. If the fuse does not blow, you can insert the fuse in one of the amplifiers, and we are ready to turn on the system. Turn the head unit on, insert a CD, or select a radio station, and increase the head unit volume control. If the system sounds fine, turn off the head unit, and install fuses in the remaining amplifiers, one by one, till the complete system is powered up and functioning properly.

AMPLIFIER FEATURE DESCRIPTIONS

MT OLYMPUS AMPLIFIERS:

This is a unique series of amplifiers regarding channel stability and design.
The COLOSSUS and COLOSSUS PRO are stable at 4/2/1-Ohm per channel and 4/2-Ohms bridged.
The BOLTAR and JUPITER are stable at 4/2-Ohms per channel and 4-Ohms bridged.
The HERCULES and ATLAS is stable at 4/2/1-Ohm.
The input sensitivities for rated output powers are variable from 0.2V to 9V.
All crossovers are fully variable in their respective ranges.
Crossover filters are 12dB/Octave.

A **POWER** LED indicates the powered up and turned on condition.
All HIFONICS amplifiers feature a comprehensive diagnostic system, with speaker lead short circuit, and amplifier DC faults indicated by the red **"PROTECT"** LED.
CAUTION: DO NOT OPERATE ANY AMPLIFIER BELOW THE INTENDED IMPEDANCE. YOU WILL CAUSE DAMAGE TO THE AMPLIFIER THAT WILL NOT BE COVERED UNDER THE WARRANTY PRINTED IN THE BACK OF THE MANUAL.

FEATURES FOR BOLTAR / COLOSSUS PRO / JUPITER:

X-OVER:
-FULL RANGE: Bypasses all frequency adjustments except Subsonic.
-HP: High Pass operation uses Subsonic to cutoff the low frequencies and the FREQUENCY adjustment can be used to create a sharper cutoff on the low end.
-LP/BP: Low Pass/Band Pass operation which allows for use of the Subsonic and Frequency (Low Pass) shaping controls.

LOW PASS X-OVER:
-LP/BP STEREO 12dB/OCT: Stereo operation with a smooth 12dB/octave rolloff.
-LP DIRECT MONO 24dB/OCT: Bridged operation with a sharp 24dB/octave cutoff.

SUBSONIC FILTER: Low frequency cutoff variable from 15Hz to 150Hz.

PARAMETRIC EQ:
-X1 or X10 FREQUENCY MULTIPLIER: Multiplies frequency of enhancement in PARAMETRIC EQ.
-FREQUENCY: Variable enhancement from 40Hz to 400Hz at X1 or 400Hz to 4000Hz at X10.
-BANDWIDTH: Narrow to Wide range enhancements above and below the center FREQUENCY.
-CUT/BOOST: -10 to +10 enhancements centered at the FREQUENCY selected.

FREQUENCY: Variable from 40Hz to 400Hz at X1 and 400Hz to 4000Hz at X10 enhancement on the multiplier. This FREQUENCY function varies based on the X-OVER selections described above.

PHASE: Variable time alignment from 0 to 180 degrees for both LEFT and RIGHT channels.

INPUT LEVEL: Variable from 0.2V to 9V.

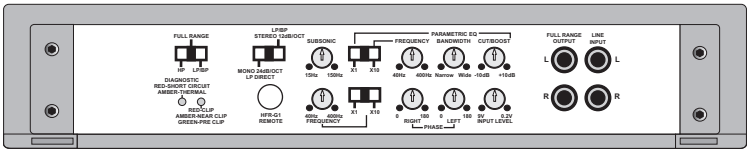
FULL RANGE OUTPUT: Passes RCA signal through the amplifier unchanged by settings.

LINE INPUT: RCA Inputs.

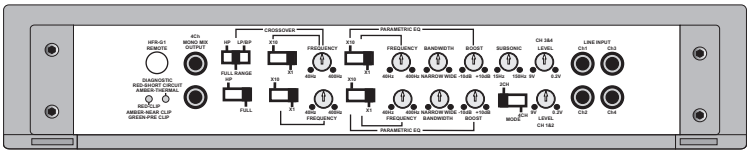
FEATURES FOR JUPITER ONLY:

MODE: Internal routing of RCA signal. Selecting 2CH indicates RCA's are being connected to Channel 1&2 Inputs and the amplifier will internally route signal to Channels 3&4. Selecting 4CH indicates RCA's are being connected to Channel Inputs on 1-4.

BOLTAR / COLOSSUS PRO 2-CHANNEL AMPLIFIERS



JUPITER 4-CHANNEL AMPLIFIERS



**These amplifiers feature two DIAGNOSTIC LED's.
One monitors Short Circuits and Thermal Protection while the second monitors Clipping status.**

FEATURES FOR COLOSSUS / HERCULES / ATLAS:

LINE INPUT: RCA Inputs

FULL RANGE OUTPUT: Passes RCA signal through the amplifier unchanged by settings.

INPUT LEVEL: Variable from 0.2V to 9V.

PHASE: Variable time alignment from 0 to 180 degrees.

PARAMETRIC EQ:
-FREQUENCY: Variable enhancement from 30Hz to 100Hz.
-BANDWIDTH: Narrow to Wide range enhancements above and below the center FREQUENCY.
-BOOST: 0 to +10 enhancements centered at the FREQUENCY selected.

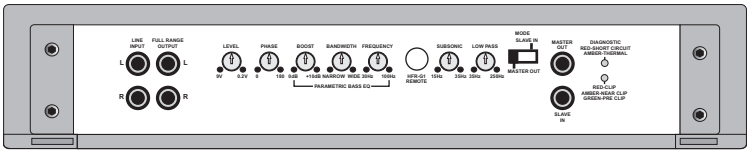
SUBSONIC FILTER: Low frequency cutoff variable from 15Hz to 35Hz.

LOW PASS FILTER: High frequency cutoff variable from 35Hz to 250Hz.

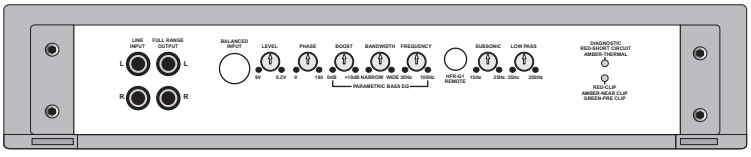
MODE (HERCULES/ATLAS ONLY):
-MASTER OUT: Factory setting for the switch location when using the amp alone. Also used when linking a pair of HERCULES/ATLAS amplifier at 2-Ohms. When in MASTER OUT position, a single RCA can be connected to the MASTER OUT RCA receptacle to provide signal to the SLAVE INPUT on the SLAVE amplifier.
-SLAVE IN: Your MODE switch should only be in this position if you are linking a pair of HERCULES/ATLAS amplifiers and this amp is the SLAVE. At that point the SLAVE amp will receive the single RCA on the SLAVE IN. No other RCA's can be connected to your amplifier other than SLAVE IN when in SLAVE IN position.

BALANCED INPUT (COLOSSUS ONLY): DIN connection which is a step above the standard RCA signal as it accepts from 0.4V to 18V.

HERCULES / ATLAS MONO AMPLIFIERS



COLOSSUS DUAL MONO AMPLIFIERS



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One monitors Short Circuits and Thermal Protection while the second monitors Clipping status.**

BOLTAR / COLOSSUS PRO 2-CHANNEL AMPLIFIER APPLICATIONS

FULL RANGE STEREO

This is the most basic application for the BOLTAR & COLOSSUS PRO 2 channel amplifiers.

1. Interconnect cable checklist:
Connect the **LINE INPUTS** to the Radio/CD with good quality RCA cables.
2. Crossover Switch:
The **X-OVER** switch must be in the **FULL** position.
3. Crossover frequency control checklist:
N/A for full range operation.
4. Line Level:
Refer to the section *"Setting up systems after installation for best performance"*

NOTE: Minimum final loudspeaker impedances:
BOLTAR: 4/2 Ohm stereo mode or 4 Ohms mono mode

COLOSSUS PRO: 4/2/1 Ohm stereo mode or 4/2 Ohms mono mode

COLOSSUS PRO is pictured above. BOLTAR has a different connection layout

MONO

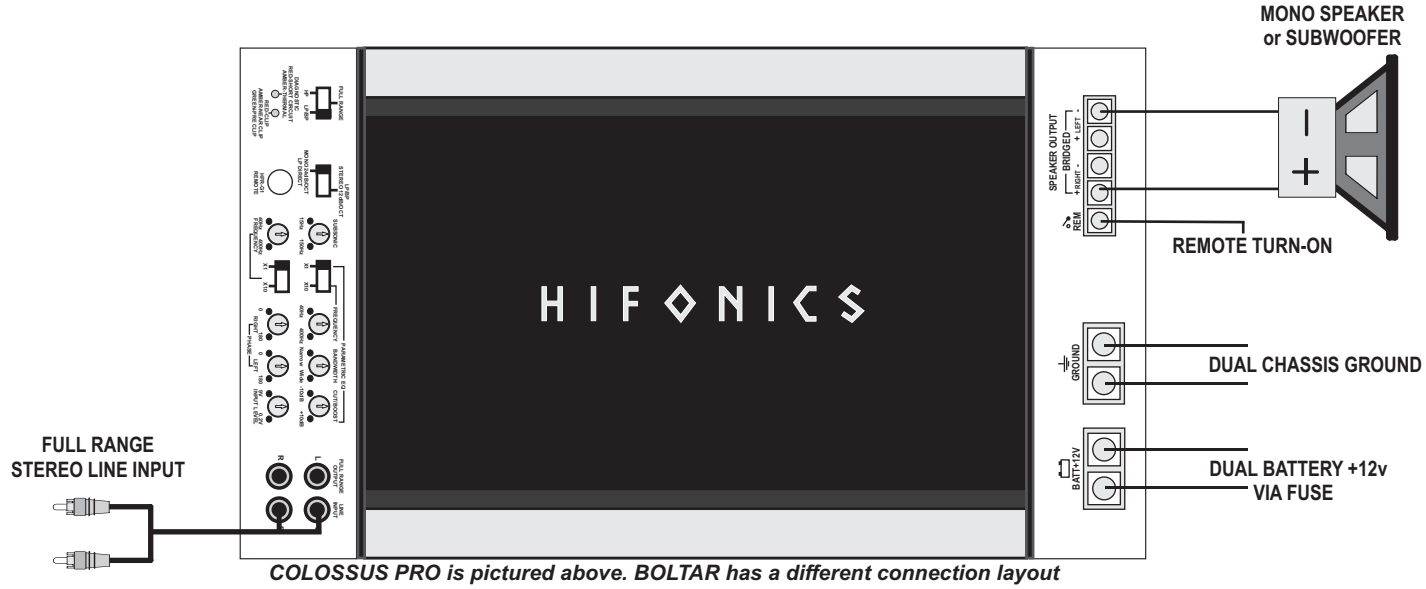
This application illustrates the basic mono bridging method for all Hifonics amplifiers.

Interconnect cable checklist:
A MONO signal source is suggested, such as would be available from the mono sub bass output of an active crossover, whether stand alone, or built into a head unit or equalizer. **Important:** Do not be tempted to connect the hot, or positive outputs, from any source together to obtain a mono signal, as this could very well damage the output stage of that source.
It is not necessary, but recommended, to feed the SAME signal to both left and right inputs via a Y-adapter RCA cable. Connect the mono speaker positive terminal to the
RIGHT +, and its negative terminal to LEFT -.

Switch setting checklist:
- The **AMPLIFIER X-OVER** switch should be in the **LP/BP** position.
- **MONO LP DIRECT**
- **PARAMETRIC BASS EQ** switch to **X1**
- **FREQUENCY** switch to **X1**

Crossover frequency control setting checklist:
LPF: 11 o'clock

Minimum final loudspeaker impedance:
BOLTAR: 4 Ohms mono.
COLOSSUS PRO: 2 Ohms mono.



COLOSSUS PRO is pictured above. BOLTAR has a different connection layout

JUPITER 4-CHANNEL AMPLIFIER APPLICATIONS

4 CHANNEL FULL RANGE SYSTEM

Here we show how to use the 4 channel amplifiers as straightforward discrete 4 channel full range units.

Interconnect cable checklist:
- Connect the four inputs of the amplifier to a Radio/CD with quality RCA cables.

Switch setting checklist:
- **1/2CH X-OVER:** FULL
- **3/4CH X-OVER:** FULL

Crossover frequency control checklist:
Channels 1/2:
- **HI PASS: N/A**
- **LOW PASS: N/A**

Channels 3/4:
- **HI PASS: N/A**
- **LOW PASS: N/A**

Level control checklist:
- Refer to the section *"Setting up systems after installation for best performance"*

Minimum final loudspeaker impedances:
- **2 ohm per channel.**

2 or 3 CHANNEL SYSTEM

Here we show how to use the 4 channel amplifiers as a 3 channel unit by taking advantage of the mono bridging capability of all Hifonics amplifiers.

The following example shows how to create a 3 channel system by mono bridging channel pair 3 / 4. In order to create a 2 channel system, simply follow the example to also mono bridge channel pair 1 / 2.

Interconnect cable checklist:
- Connect the inputs of channel pair 1/2 to a suitable stereo source, e.g. a head unit with good quality RCA cables.
- A MONO signal source is suggested to bridge channel pair 3/4, such as would be available from the mono sub bass output of an active crossover, whether standalone, or built into a head unit or equalizer. If you only have 1 set of RCA outputs from your headunit, you can simply connect those to the inputs for ch 1/2 and switch the **MODE** to 2ch. The amplifier will auto sum the signal and provide mono output for bridged channels 3/4 once the X-OVER is switched to LP/BP.

Important: Do not be tempted to connect the hot, or positive outputs, from any source together to obtain a mono signal, as this could very well damage the output stage of that source.
- It is suggested to feed the SAME signal to both left and right inputs via a Y-adapter RCA cable.
- Connect the mono speaker positive terminal to the RIGHT +, and its negative terminal to LEFT - as shown.

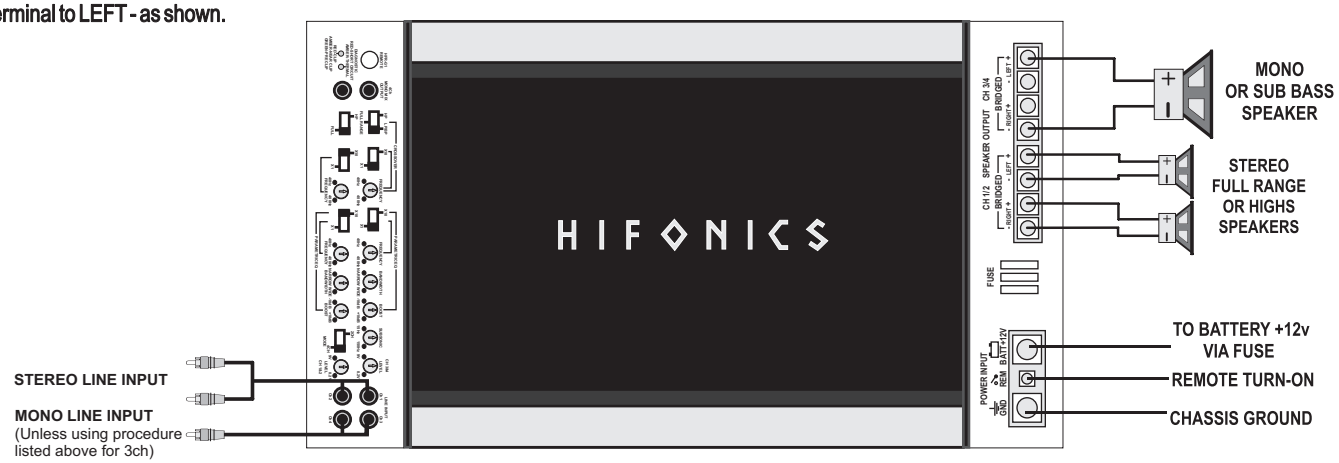
Switch setting checklist:
- **1/2CH X-OVER:** FULL
- **PARAMETRIC BASS EQ:** X10
- **FREQUENCY:** X10

- **3/4CH X-OVER:** LP/BP
- **PARAMETRIC BASS EQ:** X1
- **FREQUENCY:** X1

TIP: If you are using the mono sub bass output of an active crossover, there is nothing wrong with switching in the low pass filter in these amplifiers for a steeper low pass rolloff.

Level control checklist:
- Refer to the section *"Setting up systems after installation for best performance"*

Minimum final loudspeaker impedances:
- **2 ohm per channel in stereo mode.**
- **4 ohm mono bridged.**



MULTI-AMPLIFIER APPLICATIONS

Front/Rear high pass, using a 2 channel amplifier for mono sub bass

The combination of a BOLTAR or COLOSSUS PRO and a JUPITER amplifier, utilizing their built in crossovers, makes it a snap to put together a full system with front and rear highs, with mono sub bass.

Interconnect cable checklist:
- Using good quality RCA cables, feed the front and rear outputs of a head unit to the inputs of the 4 channel JUPITER as shown.
- Also connect the **LINE OUT** of the JUPITER to the **LINE INPUT** of the 2 channel COLOSSUS PRO amplifier as shown.

Mono bass woofer wiring:
Connect the mono speaker positive terminal to the LEFT +, and its negative terminal to RIGHT -.

Switch setting checklist:
4 channel highs amplifier:
- 1/2CH X-OVER: HP
- PARAMETRIC EQ FREQUENCY: X10
- CROSSOVER FREQUENCY: X10

- 3/4CH X-OVER: HP
- PARAMETRIC EQ FREQUENCY: X10
- CROSSOVER FREQUENCY: X10

2 channel bass amplifier(COLOSSUS PRO is used in the example below):
- X-OVER switch: LP/BP
- PARAMETRIC EQ FREQUENCY: X1
- CROSSOVER FREQUENCY: X1

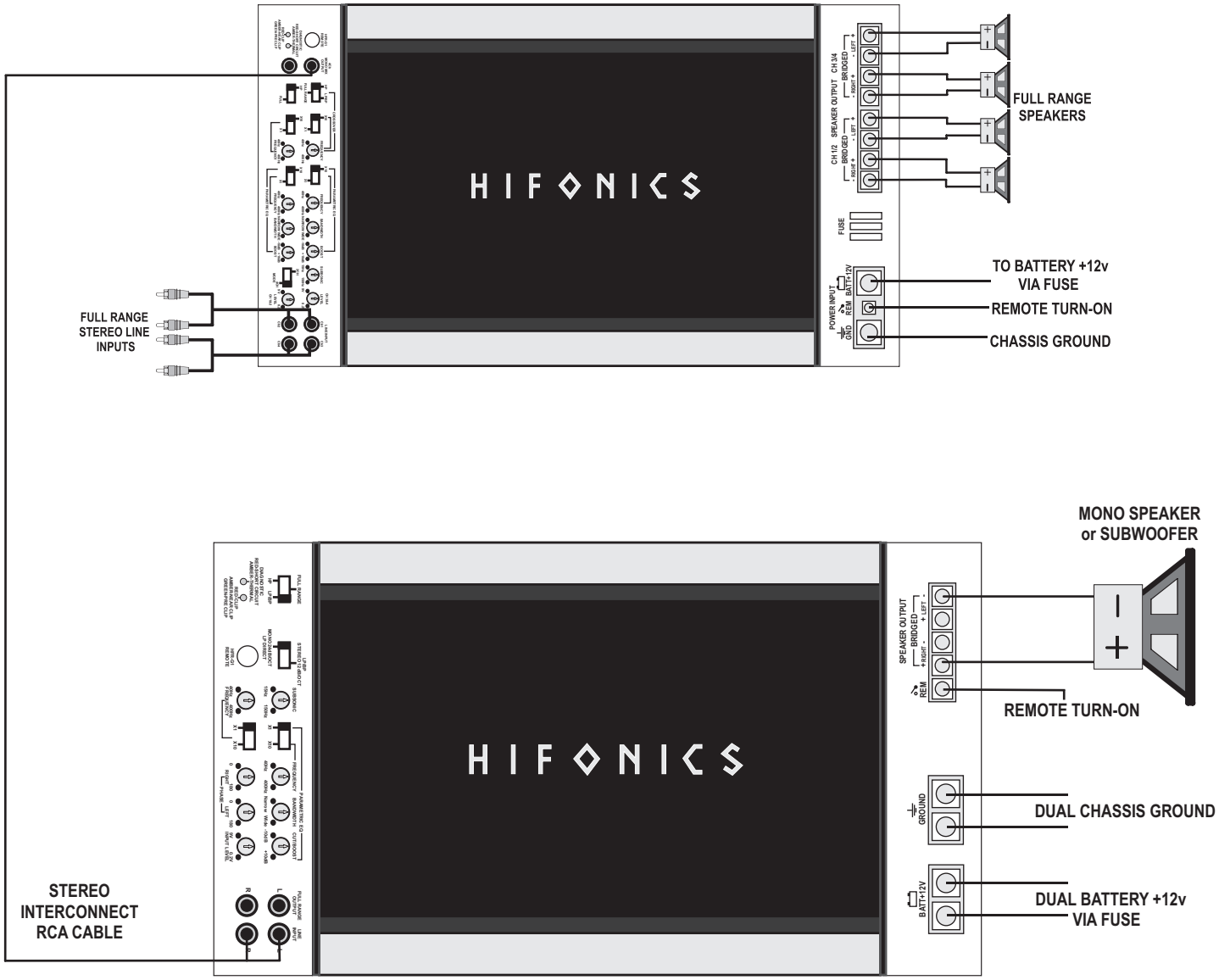
Please note that these frequency points are suggestions only. Refer to the loudspeaker manufacturer specifications and the section *"Setting up systems after installation for best performance"*

Level control checklist:
- Refer to the section *"Setting up systems after installation for best performance"*

Minimum final loudspeaker impedances:
TITAN:
- 2-Ohm per channel in stereo mode.
- 4-Ohms mono bridged.

COLOSSUS PRO:
- 1-Ohm per channel in stereo mode.
- 2-Ohms mono bridged.

JUPITER:
- 2-Ohms per channel in stereo mode.
- 4-Ohms mono bridged.



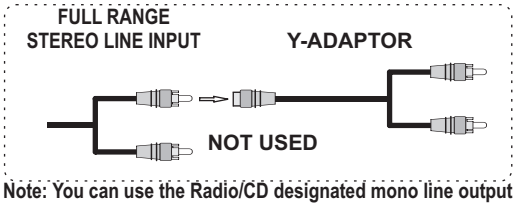
HERCULES / ATLAS MONO AMPLIFIER APPLICATIONS

Basic application

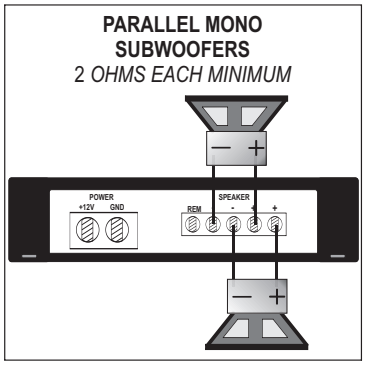
SINGLE AMP INSTALLATION PROCEDURE:

1. Connect the amp LINE INPUTS to the Radio/CD player full range or mono line out puts with good quality RCA interconnect cables.
2. Plug the HFR-G1 remote module into the amp remote input DIN connection.
3. Route a 0 gauge power cables directly to the vehicle battery with an in-line fuse.
4. Connect a 0 gauge ground cables directly to chassis ground with in 36" of the amp.
   - Be sure to remove any paint or primer from the ground point.
   - Use a nut, bolt and lock washer to secure the ground cable to the chassis ground.
5. Connect the subwoofer(s) in accordance to the diagrams below.
6. Make sure the MASTER/SLAVE switch is in the MASTER position.

Note: The amplifier will not work if the MASTER/SLAVE switch is in the Slave position



Note: You can use the Radio/CD designated mono line output or a full range stereo line output. For full range stereo line output, you will need an optional "Y-Adaptor" as shown.

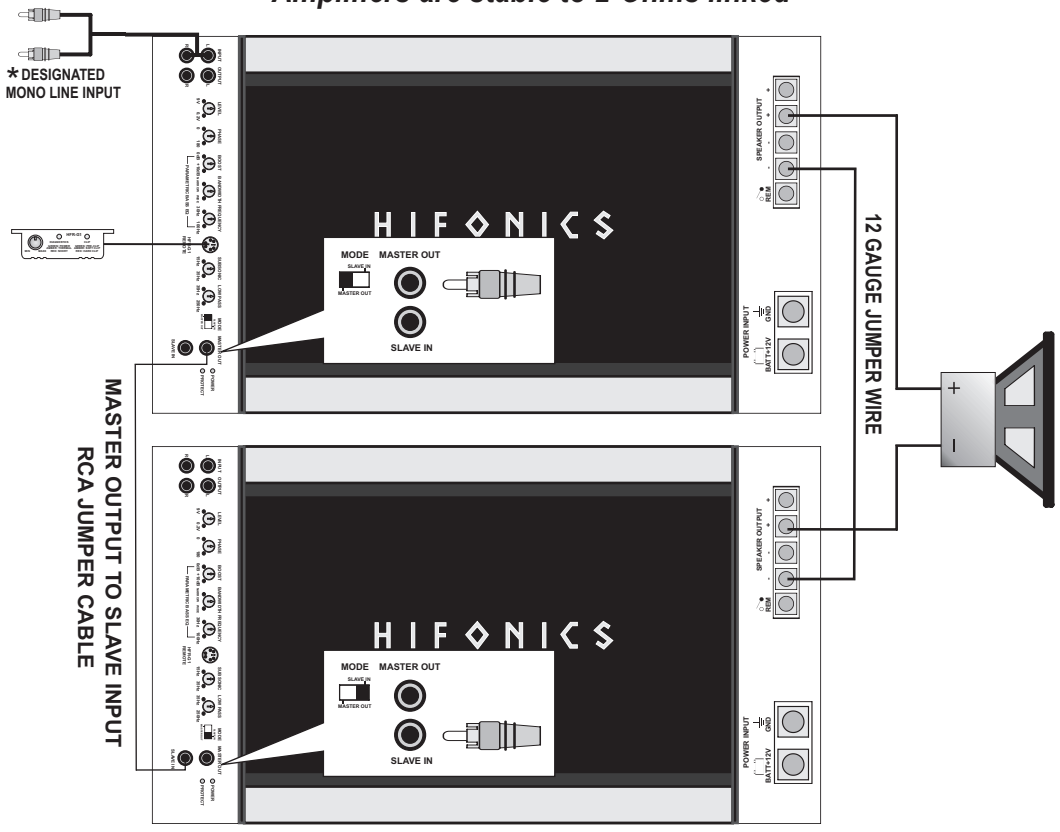


DUAL AMP INSTALLATION PROCEDURE:

1. Connect the amp LINE INPUTS to the Radio/CD player full range or mono line out puts with good quality RCA interconnect cables.
2. Plug in the HFR-G1 bass remote module into the amp remote input DIN connection on the Master amp. This will allow the Master amp to control both Master and Slave amps with just one Bass Remote.
3. Connect an RCA jumper cable from the Master amp MASTER OUTPUT to the Slave amp SLAVE INPUT. *Note: This will "link" the amps so that the Master amp crossover switches will control both the Master and Slave amps. The Slave amp crossover switches will be bypassed.*
4. Route two 0 gauge power cables directly to the vehicle battery with an in-line fuse.
5. Connect two 0 gauge ground cables directly to the chassis with in 36" of the amp.
   - Be sure to remove any paint or primer from the ground point.
   - Use a nut, bolt and lock washer to secure the ground cable to the chassis ground.
6. Make sure the Master amp MASTER/SLAVE switch is in the MASTER position. Make sure the Slave amp MASTER/SLAVE switch is in the SLAVE position.
7. Connect the subwoofer(s) in accordance to the diagrams below.
8. Connect a 12 gauge jumper from Master amp speaker - to Slave amp speaker - as shown below.

Linking two amps for single or dual subwoofer application

Amplifiers are stable to 2-Ohms linked



COLOSSUS DUAL MONO AMPLIFIER APPLICATIONS

BASIC APPLICATION

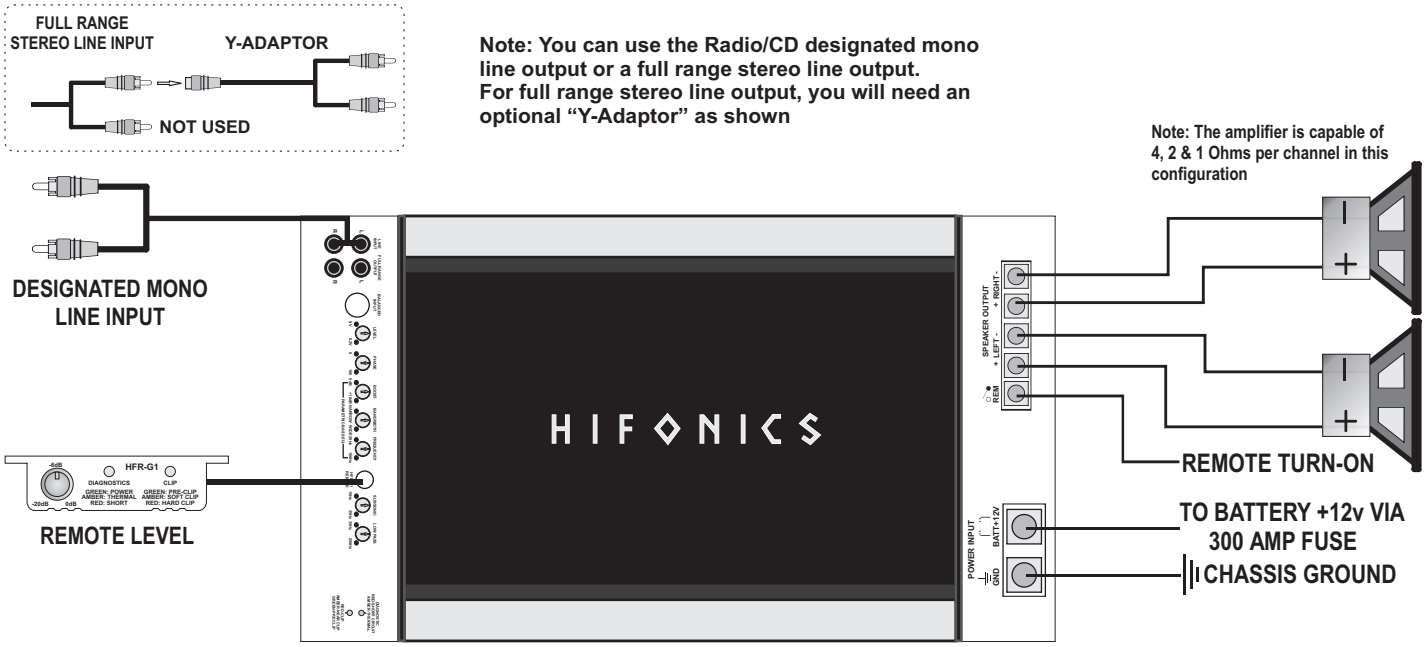
The Colossus Dual Mono Block amplifiers are capable of 4, 2 & 1 Ohm stereo and 4 & 2 bridged loads.

This will allow you to operate separate subs independently (on each channel L or R) at 4, 2 or 1 Ohm at up to 1600 watts or bridged across L & R to operate a single sub up to 3200 watts at 4 or 2 Ohms.
Note: The amp is not capable of 1 Ohm when bridged across L & R.
The crossovers and HFR-G1 Remote Module will operate both L & R channels simultaneously.

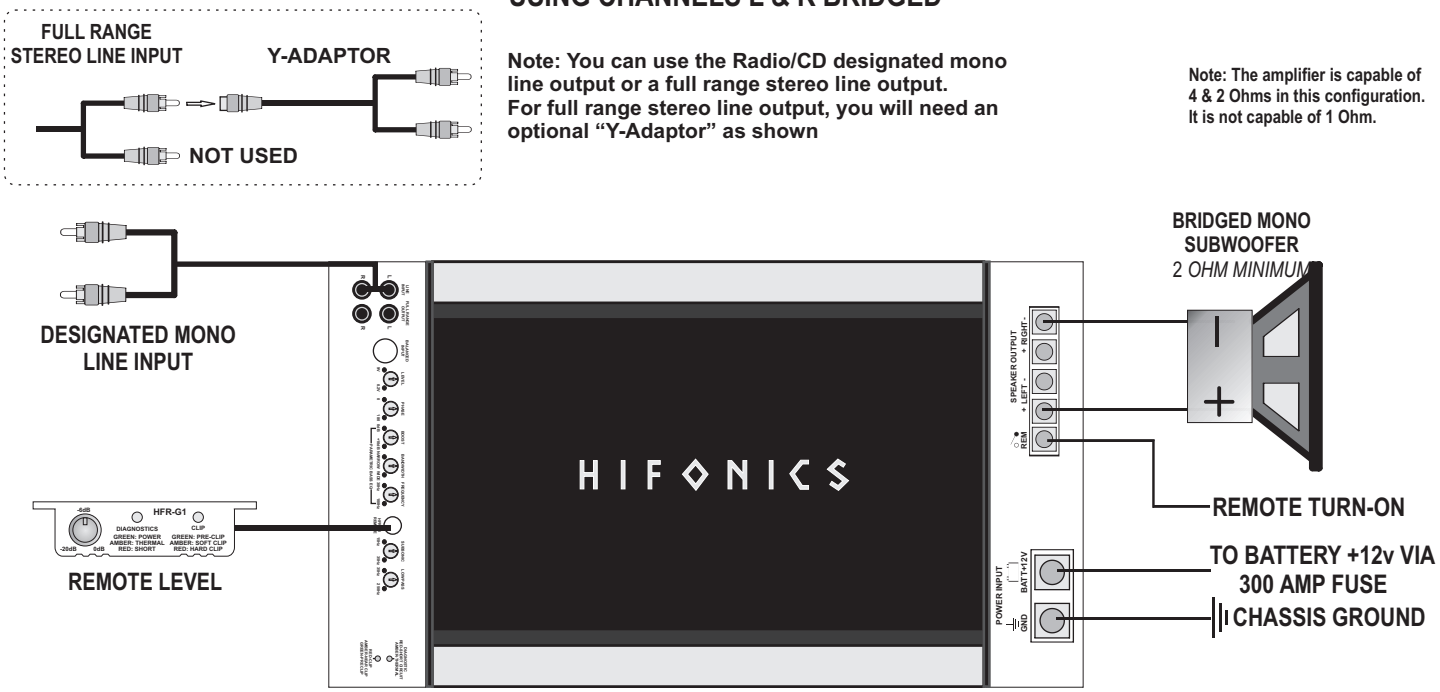
SINGLE AMP INSTALLATION PROCEDURE:

1. Connect the amp LINE INPUTS to the Radio/CD player full range or mono line out puts with good quality RCA interconnect cables.
2. Plug in the HFR-G1 bass remote module into the amp REMOTE INPUT jack.
3. Route a 0 gauge power cable directly to the vehicle battery with an in-line 300 amp fuse.
4. Connect a 0 gauge ground cable directly to chassis ground with in 36" of the amp.
   - Be sure to remove any paint or primer from the ground point.
   - Use a nut, bolt and lock washer to secure the ground cable to the chassis ground.
5. Connect the subwoofer(s) in accordance to the diagrams below.

USING CHANNELS L & R INDEPENDENTLY



USING CHANNELS L & R BRIDGED



SETTING UP SYSTEMS AFTER INSTALLATION FOR BEST PERFORMANCE

BOLTAR / COLOSSUS PRO / JUPITER

General:
At this point you are ready to get more specific on the settings for your amplifier.

X-OVER:
-When in HP operation, this setting acts as a low frequency cut off for your system reproduction. The point that you set your FILTER FREQUENCY at cuts off all frequencies from reproduction below this point. EXAMPLE: If you adjust the FILTER FREQUENCY to 100Hz, the amplifier will not play frequencies below 100Hz but will play frequencies from 100Hz to the highest frequency the amplifier is capable of reproducing.
-When in FULL, all frequencies are sent to your speakers for reproduction.
-When in LP-BP operation, this setting acts as a high frequency cut off for your system reproduction. The point that you set your FILTER FREQUENCY at cuts off all frequencies from reproduction above this point. EXAMPLE: If you adjust the FILTER FREQUENCY to 400Hz, the amplifier will not play frequencies above 400Hz but will play frequencies from 400Hz down to the lowest frequency.

PARAMETRIC EQ:
Used for fine tunning the boost enhancements in your system. Select the FREQUENCY you want to be the focus of your enhancement. Then select the range above and below this center frequency you want to enhance using the Narrow to Wide adjustment. Your final adjustment is determining the amount of Cut or Boost you plan at the given frequency and range selected.

PHASE:
The PHASE adjustment allows for tweaking of time alignment which is an advanced Sound Quality feature. Leaving these levels at 0 will allow for standard stereo imaging.

Level Control Setup:
Ensure that the Level is turned completely to the left prior to turning the system on. Next you should insert a CD or cassette that you are familiar with to use as a reference, and turn the head unit volume control to about 80% of its full setting. The system sound level will of course be very low, and the following procedures will help you to match the amplifier input sensitivities properly to the head unit output signal level.
It is important to match the amplifier **LEVEL** input sensitivity to the Radio/CD output sensitivity. This can be located in the Radio/CD manual.
If the Radio/CD output sensitivity is 2 volts, then adjust the amplifier **LEVEL** input to 2 volts.

If you are not sure what the Radio output sensitivity is, follow these general guide lines:
Turn the level control up slowly, till you hear distortion, then back off a few degrees on the control. If at any point your amplifier goes into protection, you will need to turn the Level to the left a bit and then try again. If you reach a point where the output does not increase, stop turning the Level control to the right as the amplifier/speaker combo has reached its maxx output in this application.

HERCULES / ATLAS / COLOSSUS

General:
At this point you are ready to get more specific on the settings for your amplifier.

Phase:
Time alignment, typically recommended at 0 degrees unless using multiple amps and subs in both the front and rear of the vehicle. The Phase can be adjusted to give the perception of bass reaching the listener at the same time regardless of location.

Subsonic:
This setting acts as a low frequency cut off for your system bass reproduction. The point that you set it at cuts off any frequencies from reproduction below this point. EXAMPLE: If you adjust the Subsonic to 25Hz, the amplifier will not play frequencies below 25Hz but will play frequencies from 25Hz to the chosen Low Pass frequency.

PARAMETRIC BASS EQ:
Frequency:
This setting is used for selecting the frequency you want to focus your enhancement on. Suggested enhancement is from 35-45Hz, but you should be careful not to set enhancement below the F3 or -3dB point of your sub/enclosure combo.
Bandwidth:
This setting controls the amount of frequencies included in the Bass Boost. The bandwidth varies from narrow to wide in a pyramid style boost with the selected Bass Frequency value being the center.
Boost:
This setting adjusts the amount of boost on the selected Bass Frequency and Bandwidth. This setting is variable from 0-10dB. This feature provides impact to your bass, but if not adjusted correctly, it can be over used and cause damage to your subwoofers and amplifiers. It is best to slowly turn this setting clockwise until the desired punch is felt. It is not recommended to exceed the 12 o'clock position unless listening at a low volume or a low recording quality as this can result in high distortion and possibly clipping.

Low Pass:
The Low Pass control acts as a ceiling and doesn't allow frequencies above the desired setting to be reproduced. EXAMPLE: If you adjust the Low Pass to 80Hz, the amplifier will not play frequencies above 80Hz but will play frequencies from 80Hz to the chosen Subsonic frequency.

Level Control Setup:
Ensure that the Level is turned completely to the left prior to turning the system on. Next you should insert a CD or cassette that you are familiar with to use as a reference, and turn the head unit volume control to about 80% of its full setting. The system sound level will of course be very low, and the following procedures will help you to match the amplifier input sensitivities properly to the head unit output signal level.
It is important to match the amplifier **LEVEL** input sensitivity to the Radio/CD output sensitivity. This can be located in the Radio/CD manual.
If the Radio/CD output sensitivity is 2 volts, then adjust the amplifier **LEVEL** input to 2 volts.

If you are not sure what the Radio output sensitivity is, follow these general guide lines:
Turn the level control up slowly, till you hear distortion, then back off a few degrees on the control. If at any point your amplifier goes into protection, you will need to turn the Level to the left a bit and then try again. If you reach a point where the output does not increase, stop turning the Level control to the right as the amplifier/subwoofer combo has reached its maxx output in this application.

TROUBLESHOOTING A SYSTEM

The key to finding the problem in a misbehaving sound system is to isolate parts of that system in a logical fashion to track down the fault.

Description of the Diagnostic system built into all HIFONICS amplifiers
The diagnostic system will shut down the amplifier, until reset by turning the head unit off, and back on. This state of affairs will be indicated by the front panel PROTECT LED lighting up under the following conditions:
1 - A sort circuit on the loudspeaker leads.
2 - An internal amplifier fault that causes a DC offset on the loudspeaker output.

Should the amplifier go into diagnostic mode, simply disconnect all RCA and speaker leads, while keeping +12 volt, power ground and remote leads connected.
1. Now turn the amplifier back on, and if the diagnostic LED lights, the amplifier has an internal fault.
2. If not, plug the RCA cables back, and reset the amplifier. If it goes into diagnostic now, the fault lies in the input, either with bad cables or source unit.
3. If the amplifier seems ok with RCA cables plugged in, connect the speakers, one at a time, and if one of speaker or its wiring is faulty, it will activate the diagnostic system.
4. If the amplifier is still in Protection mode after the above steps, remove all RCA's and wires from the amplifier. Take a 12" length of speaker wire, trim the plastic off of each end exposing the wire. Now connect one end of the wire to the12V+ on the amplifier and connect the other to the Ground on the amplifier. You will have a brief spark indicating that the Capacitors have been discharged and the drivercard has been reset. Remove the jumper wire and reconnect your Power, Ground and Remote wires. Attempt to power the amplifier up like normal. In some cases this can Reset the amplifier if permanent damage has not previously been done.

Amplifier heatsink overheating
The amplifiers will shut down when the heatsink temperature reaches 80 degrees centigrade, and turn back on once the unit has cooled down below that point.
Causes of overheating:
1 - Inadequate cooling - relocate or remount to provide better natural airflow over the fins.
2 - Driving high power levels into low impedances - back off on the volume control, and/or make sure you are not loading the amplifier with less than the recommended loudspeaker impedance.
3 - Excessive voltage drop can also cause overheating.

Low output power
1 - Check that level controls have been set up properly.
2 - Make sure that the battery voltage, as measured at the amplifier's +12 volt and ground terminals, is 11 volts or more.
3 - Check all +12 volt and ground connections.

Fuses blowing
1 - The use of loudspeaker impedances below the recommended minimums will draw more current - check.
2 - A short on the main +12 volt cable from the battery to the vehicle chassis will cause the main fuse to blow.
3 - If an amplifier fuse blows continually, with only +12 volt, ground and remote leads connected, the amplifier may be faulty.

System does not turn on
1 - Check all fuses.
2 - Check all connections.
3 - Measure the +12 volt and remote turn on voltages at the amplifier terminals. If these are non existent or low, take voltage measurements at fuse holders, distribution blocks, the head unit's +12 volt and remote leads to localize the problem.
4 - If the HIFONICS lettering is illuminated but you do not have Power or Protection illuminated, simply remove your remote wire and use a jumper wire from 12V+ on the amplifier to the Remote connection on the amplifier. If the amplifier powers on like normal then you do not have adequate voltage/amperage from your Remote source to turn your amplifier on. You will need to seek out a certified installer to install a relay for your amplifier. If the jumper does not power your amplifier on, you may have internal damage and should contact Hifonics Customer Service to locate an Authorized Repair Center.

Noise problems
System noise can be divided into two categories, hiss, and electrical interference.

Hiss, or white noise:
1 - High levels of white noise usually occurs when amplifier level controls are turned up too high - readjust according to the procedures in section *"Setting up systems after installation for best performance"*
2 - Another major problem that can cause excessive hiss, is a noisy head unit - unplug the amplifier input RCA cables, and if the hiss level reduces, the source unit is at fault.

Electrical interference:
The inside of an automobile is a very hostile electrical environment. The multitude of electrical systems, such as the ignition system, alternator, fuel pumps, air conditioners, to mention just a few, create radiated electrical fields, as well as noise on the +12 volt supply and ground. Remember to isolate the problem - first unplug amplifier input RCA cables, if the noise is still present, check the speaker leads, if not, plug the RCA's back, and investigate the source driving the amplifier, one component at a time.

A ticking or whine that changes with engine RPM:
1 - This problem could be caused by radiation pickup of RCA cables too near to a fuel pump or a distributor, for instance, - relocate cables.
2 - Check that the head unit ground is connected straight to the vehicle chassis, and does not use factory wiring for ground.
3 - Try to supply the head unit with a clean +12 volt supply directly from the battery +, instead of using a supply from the in dash wiring/fusebox.

A constant whine:
This type of noise can be more difficult to pinpoint, but is usually caused by some kind of instability, causing oscillations in the system.
1 - Check all connections, especially for good grounds.
2 - Make sure that no speaker leads are shorting to exposed metal on the vehicle chassis.
3 -RCA cables are notorious for their problematic nature, so check that these are good, in particular the shield connections.

FEATURES	2-CHANNEL		4-CHANNEL	1-CHANNEL	1-CHANNEL	DUAL MONO
	BOLTAR 2K	COLOSSUS PRO 5K	JUPITER 1.5K	HERCULES 4K	ATLAS 6K	COLOSSUS 6.5K
Output Power Rating	RMS / DYNAMIC	RMS / DYNAMIC	RMS / DYNAMIC	RMS / DYNAMIC	RMS / DYNAMIC	RMS / DYNAMIC
4-Ohms	2 x 350 / 700	2 x 600 / 1200	4 x 130 / 260	1 x 900 / 1800	1 x 1200 / 2400	2 x 625 / 1250
2-Ohms	2 x 500 / 1000	2 x 950 / 1900	4 x 188 / 375	1 x 1600 / 3200	1 x 2100 / 4200	2 x 1125 / 2250
1-Ohm	N/A	2 x 1250 / 2500	N/A	1 x 2000 / 4000	1 x 3000 / 6000	2 x 1625 / 3250
Mono Bridge at 4-Ohms	1 x 1000 / 2000	1 x 1900 / 3800	2 x 375 / 750	N/A	N/A	1 x 2250 / 4500
Mono Bridge at 2-Ohms	N/A	2400 x 1	N/A	N/A	N/A	1 x 3250 / 6500
Power Supply	PWM	PWM	PWM	PWM	PWM	PWM
Output Power Circuit Configuration	Mosfet	Mosfet	Mosfet	Mosfet	Mosfet	Mosfet
Miscellaneous Spec						
Soft Start Sound	Yes	Yes	Yes	Yes	Yes	Yes
Frequency Response-3dB	15Hz - 45kHz	15Hz - 45kHz	15Hz - 45kHz	15Hz - 250Hz	15Hz - 250Hz	15Hz - 250Hz
Damping Factor	>180	>180	>180	>200	>200	>200
S/N Ratio(A-Weight)	>90dB	>90dB	>90dB	>95dB	>95dB	>95dB
THD & Noise	<0.05	<0.05	<0.05	<0.1	<0.1	<0.1
Channel Separation	>80dB	>80dB	>80dB	N/A	N/A	N/A
Variable Input Level Control	0.2V-9.0V	0.2V-9.0V	0.2V-9.0V	0.2V-9.0V	0.2V-9.0V	0.2V-9.0V
Input Impedance	47kΩ	47kΩ	47kΩ	47kΩ	47kΩ	47kΩ
Diagnostic Indicator(power: blue / protect: red)	Power/Protect	Power/Protect	Power/Protect	Power/Protect	Power/Protect	Power/Protect
Protection(DC, Short, Thermal, Overload)	Yes	Yes	Yes	Yes	Yes	Yes
Crossover Operation						
Crossover for 1+2 channel	HP/FULL/LP-BP	HP/FULL/LP-BP	HP/FULL/LP-BP			
Variable Low Pass Frequency	(x1) 40Hz - 400Hz (x10) 400Hz - 4KHz	(x1) 40Hz - 400Hz (x10) 400Hz - 4KHz	(x1) 40Hz - 400Hz (x10) 400Hz - 4KHz	35Hz - 250Hz	35Hz - 250Hz	35Hz - 250Hz
Multiplier Frequency	x1 / x10	x1 / x10	x1 / x10	No	No	No
Variable Subsonic Filter	(x1) 15Hz - 150Hz (x10) 150Hz - 1.5KHz	(x1) 15Hz - 150Hz (x10) 150Hz - 1.5KHz	(x1) 15Hz - 150Hz (x10) 150Hz - 1.5KHz	15Hz - 35Hz	15Hz - 35Hz	15Hz - 35Hz
Parametric EQ						
Frequency	40Hz ~ 400Hz	40Hz ~ 400Hz	40Hz ~ 400Hz	30Hz ~ 100Hz	30Hz ~ 100Hz	30Hz ~ 100Hz
Bandwidth	Narrow ~ Wide	Narrow ~ Wide	Narrow ~ Wide	Wide ~ Narrow	Wide ~ Narrow	Wide ~ Narrow
Boost	Negative 10dB to Positive 10dB	Negative 10dB to Positive 10dB	Negative 10dB to Positive 10dB	0 ~ 10dB	0 ~ 10dB	0 ~ 10dB
Phase Shift	YES: Left & Right CH 0~180	YES: Left & Right CH 0~180	No	0 ~ 180	0 ~ 180	0 ~ 180
Crossover for 3+4 channel	N/A	N/A	HP/FULL/LP-BP	N/A	N/A	N/A
Variable Low Pass Frequency	N/A	N/A	(x1) 40Hz - 400Hz (x10) 400Hz - 4KHz	N/A	N/A	N/A
Multiplier Frequency	N/A	N/A	x1 / x10	N/A	N/A	N/A
Variable Subsonic Filter	N/A	N/A	(x1) 15Hz - 150Hz (x10) 150Hz - 1.5KHz	N/A	N/A	N/A
Parametric EQ	N/A	N/A		N/A	N/A	N/A
Frequency	N/A	N/A	40Hz ~ 400Hz	N/A	N/A	N/A
Bandwidth	N/A	N/A	Narrow ~ Wide	N/A	N/A	N/A
Boost	N/A	N/A	Negative 10dB to Positive 10dB	N/A	N/A	N/A
Phase Shift	N/A	N/A	No	N/A	N/A	N/A
Remote Control Module *(HFR-G1)*	Yes	Yes	Yes	Yes	Yes	Yes
Others						
Power Terminal	4-GA	DUAL 0-GA	4-GA	0-GA	0-GA	0-GA
Speaker Terminal	12-GA	12-GA	12-GA	12-GA	12-GA	12-GA
Fuse Size	30Amps x 4	250Amp (not included)	35Amps x 3	200Amp (not included)	300Amp (not included)	300Amp (not included)
Dimensions Length x Width x Height (inches)	21.71" x 8.97" x 2.76"	38.64" x 8.97" x 2.76"	17.77" x 8.97" x 2.76"	19.74" x 8.97" x 2.76"	21.71" x 8.97" x 2.76"	23.64" x 8.97" x 2.76"
Note: Features subject to change with out notice						