DL AUDIO

Owner's Manual

1.2K
2.0K
3.5K
5.0K
7.5K
9.0K
10.0K
12.0K
90.4
175.4

HIGH PERFORMANCE AMPLIFIER

Thanks you for purchasing DC audio amplifiers for your car audio system.
DC audio amplifiers are engineered and manufactured to ensure the years of uncompromised musical enjoyment, high performance and reliability.
DC Audio amplifiers are high power audio amplifiers, so very loud music can cause hearing loss and intended for using in vehicles with 12 Volt, Negative ground electrical systems.
Attempting to connect or operate the amplifiers in another type of electrical system may cause damage to the amplifier or the electrical system.
if you like to install the amplifiers by yourself, Pls carefully read whole manual and follow.

FEATURES

DIGITAL MONOBLOCK AMPLIFIERS

*. 1.2K, 2.0K, 3.5K, 5.0K, 7.5K, 9.0K & 10.0K linkable/dual mono block amplifier
*. 12.0K is 0.5 ohm stable 2ch amplifier bridged to 1 ohm.
*. High quality hand-wound power supply transformers
*. High purity 2oz~3oz printed circuit boards
*. Stable into 1 ohm mono load or 2ohm linkable
*. Variable low pass & subsonic filter
*. Variable bass boost
*. Wired remote control included
*. 4 ways protection circuits (thermal, voltage, speaker short and DC)

4CHANNEL CLASS AB AMPLIFIER

*. Sound quality 4channel Class AB amplifier
*. 2ohm stereo or 4ohm mono stable
*. Variable High Pass Filter
*. Variable Low Pass Filter
*. Band Pass Filter
*. Variable Subsonic Filter for 90.4
*. Crossover Multiply for 90.4
*. Wired Remote Control Port for 90.4
*. Dual Power Supply for 90.4 & 175.4
*. Double Sided Printed Circuit Board

DIGITAL MONOBLOCK SPECIFICATIONS

Rated power output	1.2K	2.0K	3.5K	5.0K	7.5K	9.0K	10.0K
- RMS output power @ 4 ohm	480Watts	600Watts	750Watts	900Watts	2200Watts	2400Watts	3030Watts
- RMS output power @ 2 ohm	780Watts	1200Watts	1800Watts	2300Watts	2400Watts	4800Watts	5600Watts
- RMS output power @ 1 ohm	1200Watts	2000Watts	3500Watts	5000Watts	7500Watts	9000Watts	10000Watts
- RMS output power 16V@1ohm	1500Watts	2500Watts	4000Watts	6000Watts	8600Watts	9800Watts	
- RMS output power 18V@1ohm	na	na	5100Watts	7300Watts	9200Watts	11000Watts	
Input Sensitivity				6V ~ 0.2V			
Variable Low Pass Filter				35Hz ~ 250Hz			
Variable Subsonic Filter				10Hz ~ 50Hz			
Variable Bass Boost				0dB ~ 9dB			
Variable Phase				0 ~ 180 degree			
Frequency Response				15Hz ~ 270Hz			
Signal to Noise Ratio				100 <			
Efficiency @ 4ohm				Over 90%			
THD @ 4ohm				Less than 0.1%			
Damping Factor	150 <	150 <	150 <	150 <	150 <	150 <	200 <
Recommended Fuse Rating	120A	200A	300A	500A	750A	900A	1000A
(Linkable connect Fuse Rating)	240A	400A	600A	1000A	1500A	1800A	2000A
Dimensions (L inches)	14.96	15.75	21.26	25.59	32.28	34.65	35.43

All features are subject to change in the continuing effort to improve the products without notice.

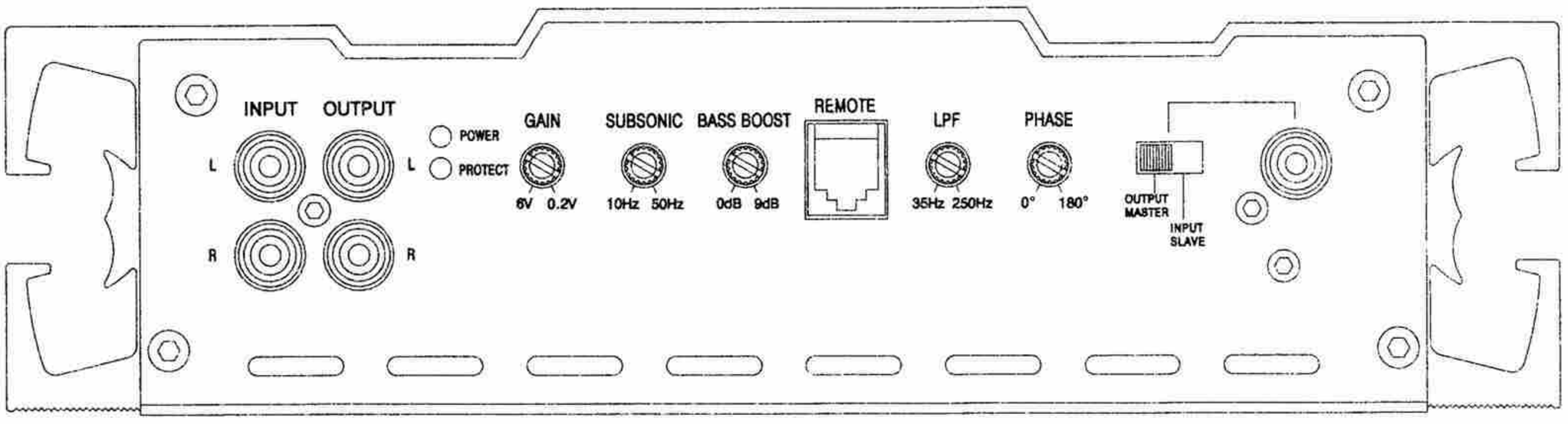
MULTI-CHANNEL SPECIFICATIONS

Rated power output	12.0K	90.4	175.4
- RMS output power @ 4 ohm	1200Watts x 2	90Watts x 4	175Watts x 4
- RMS output power @ 2 ohm	2100Watts x 2	130Watts x 4	250Watts x 4
- RMS output power @ 1 ohm	3400Watts x 2	na	na
- RMS output power @ 0.5 ohm 12V	4200Watts x 2	na	na
- RMS output power @ 0.5 ohm 14.4V	5500Watts x 2	na	na
- RMS output power @ 0.5 ohm 16V	6500Watts x 2	na	na
Input Sensitivity	6V ~ 0.2V	6V ~ 0.2V	6V ~ 0.2V
Variable High Pass Filter	na	50(500)Hz ~ 500(5K)Hz	10Hz ~ 300Hz
Variable Low Pass Filter	35Hz ~ 250Hz	50(500)Hz ~ 500(5K)Hz	30Hz ~ 300Hz
Crossover Multiply	na	x1, x10	na
Variable Subsonic Filter	10Hz ~ 50Hz	10Hz ~ 100Hz	na
Variable Bass Boost	0dB ~ 9dB	0dB ~ 18dB	na
Frequency Response	15Hz ~ 270Hz	20Hz ~ 20KHz	20Hz ~ 20KHz
Signal to Noise Ratio	100 <	105	105
Efficiency @ 4ohm	Over 90%		
THD @ 4ohm	Less than 0.1%	Less than 0.1%	Less than 0.1%
Damping Factor	150 <	200 <	200 <
Recommended Fuse Rating	1000A	40A x 2	140A
Dimensions (L inches)	33.46 inches	13.78 inches	20.47 inches
(W x H inches)	11.42 x 2.72	9.65 x 2.50	9.65 x 2.50

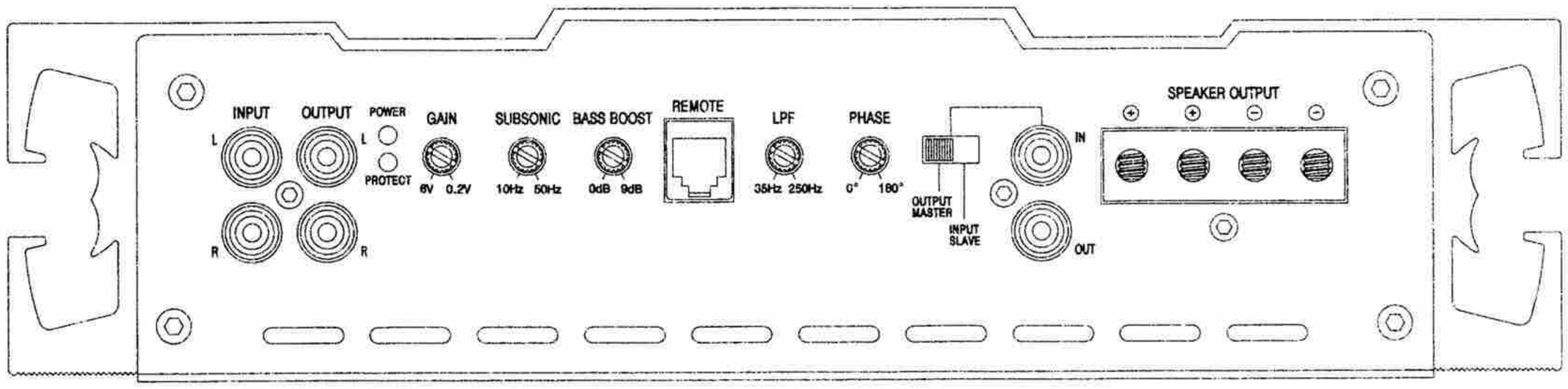
All features are subject to change in the continuing effort to improve the products without notice.

CONTROL PANEL

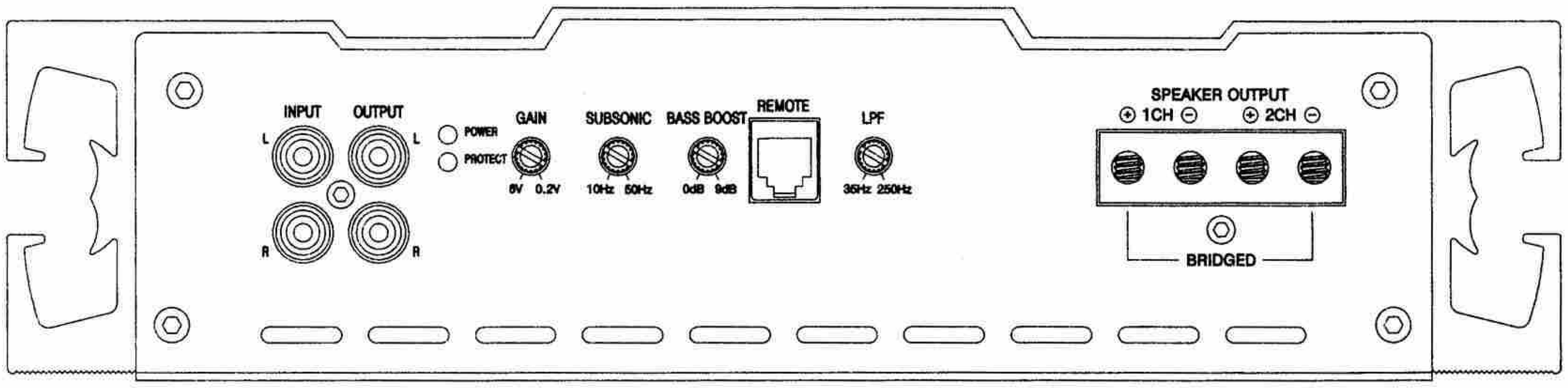
DIGITAL MONOBLOCK AMPLIFIER (1.2K, 2.0K, 3.5K, 5.0K & 7.5K)



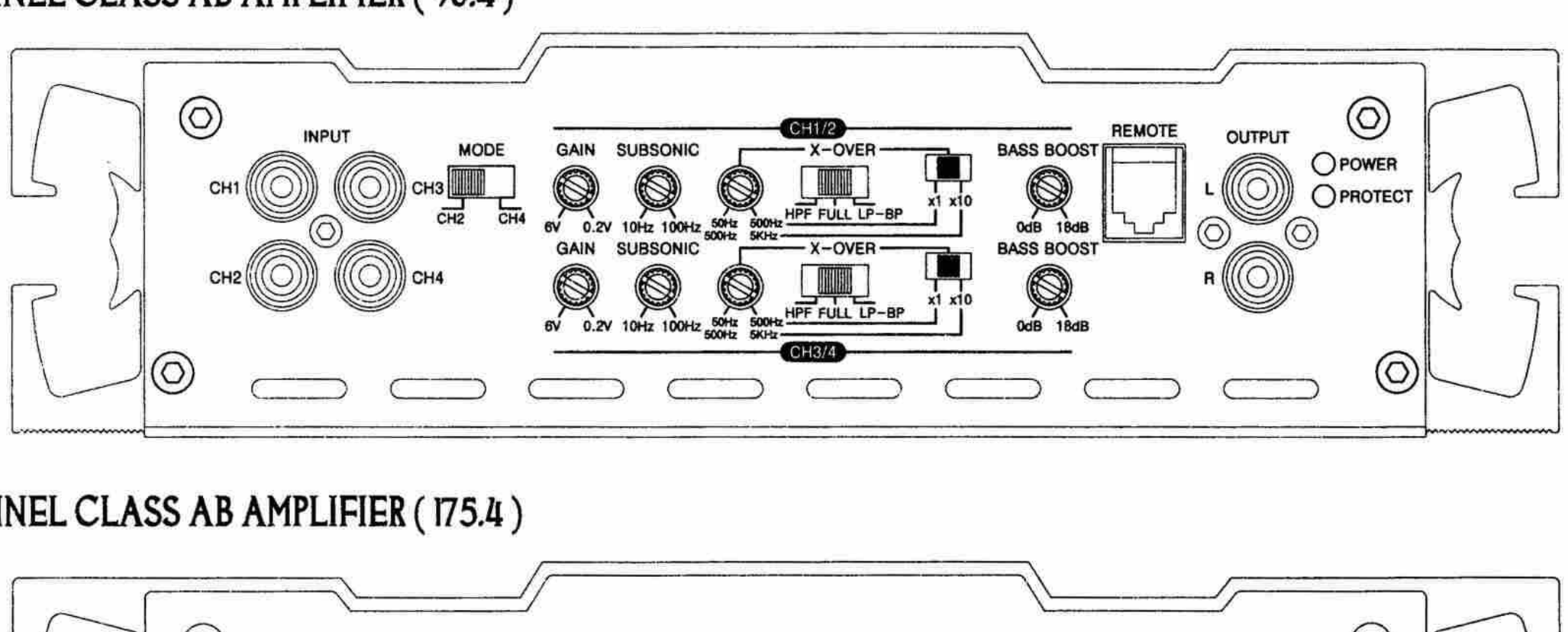
DIGITAL MONOBLOCK AMPLIFIER (9.0K & 10.0K)



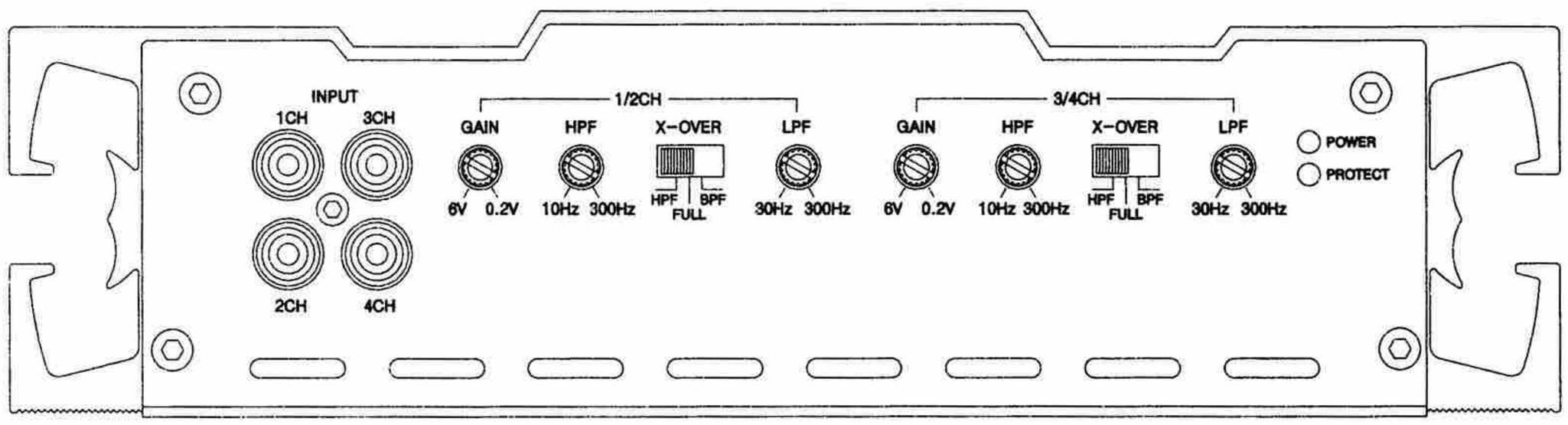
DIGITAL 2CH AMPLIFIER (12.0K)



4CHANNEL CLASS AB AMPLIFIER (90.4)



4CHANNEL CLASS AB AMPLIFIER (175.4)



RCA JACK INPUT
Connect preamp signal cables from the headunit to RCA input of DC amplifiers

RCA JACK OUTPUT
Connection to RCA JACK Input of additional DC Audio amplifiers

POWER & PROTECTION INDICATOR
Power LED, Green-lit shows correct operation.
Protect LED, RED-lits shows general malfunction, faulty connection or protection.

GAIN
Matching the output voltage of the headunit's RCA line-outs to DC amplifier's input section.

SUBSONIC CROSSOVER FREQUENCY
Control the high pass point for the speaker outputs to to eliminate extreme low frequencies.

HPF CROSSOVER FREQUENCY
Controls the high pass point for the speaker outputs.

LPF CROSSOVER FREQUENCY
Controls the low pass point for the speaker outputs.

CROSSOVER CONTROL SELECTOR
Control and switch selects mode and frequency.
Multiply selector (xl, xl0) multiplies frequency x l0, so If you want high or low pass filter frequency, select xl0 to get 500Hz - 5KHz

BASS BOOST
It controls boost.

REMOTE LEVEL CONTROL PORT
Remote level control adjusts the level.

PHASE
It controls phase 0 - l80 degrees

OUTPUT MASTER / INPUT SLAVE
OUTPUT MASTER / INPUT SLAVE connection makes 2pcs of DC amplifiers linkable connection to 2 ohm.
Set Output master for Master amplifier, and set Input slave for Slave amplifier for connection.
Do not use output master/ input slave connection as l ohm

POWER & GROUND CONNECTIONS

Before you make any connections, Pls disconnect Negative (−) battery cable and alternator Ground (−) connection.
Selectng a mounting location by considering cooling efficiency and safety.
Even DC Audio amplifiers use massive heatsink for good heat radiation, it is better to find the mounting location where amplifiers can be installed vertically with heatsink fins and better air flow.
For the safety, You have to find dry and well ventilated location and make sure any wires, cables and car equipment are not interfaced with amplifier installation.
Be sure the mounting location and drilling of pilot cables will not present a hazard to any wires, control cables, fuel lines, tanks, hydraulic lines or other vehicle systems and components

POWER CONNECTION (+12V)

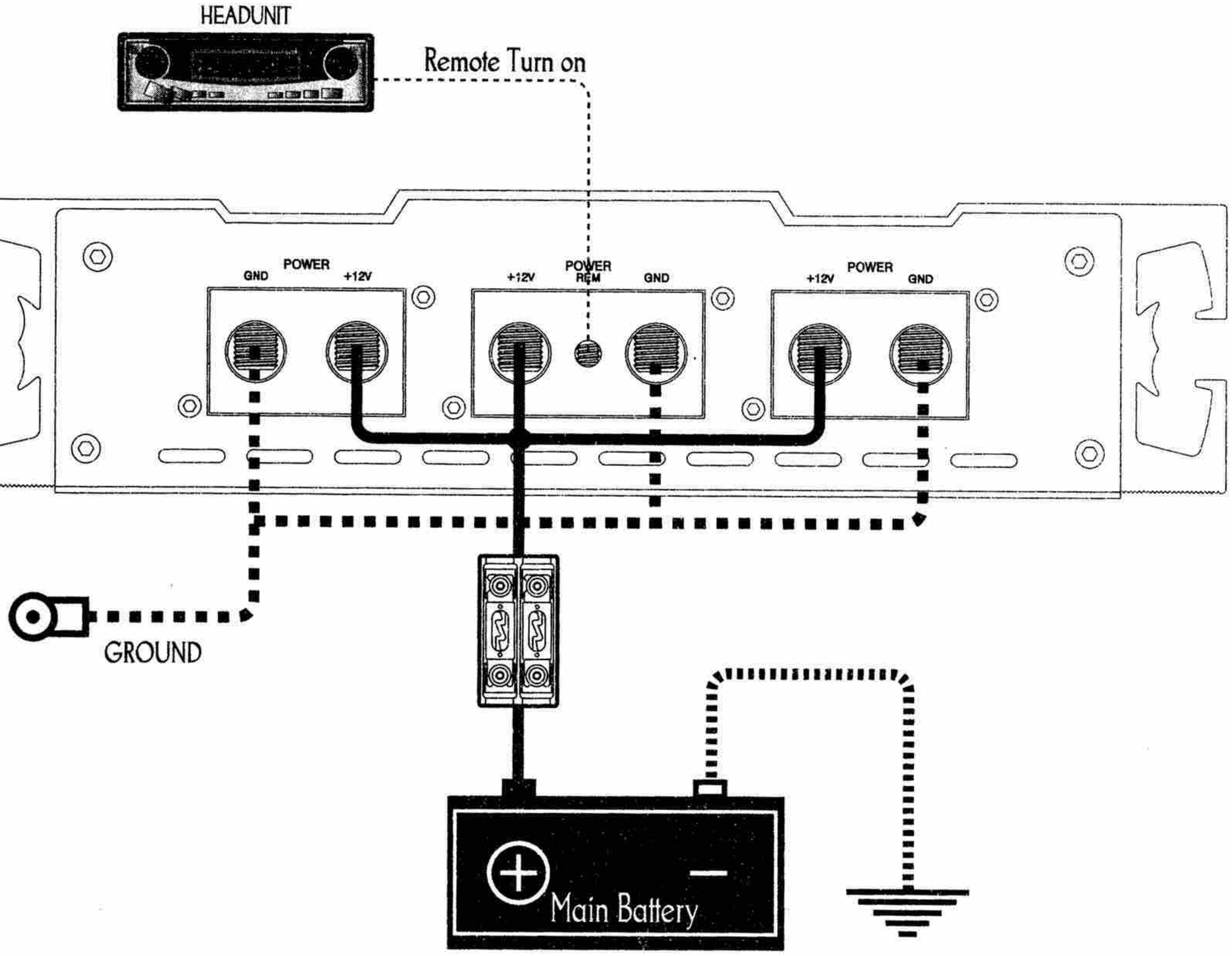
Connect the +12V terminal of the amplifier to the Positive (+) terminal of the battery using 0 gauge or 4 gauge power cables.
DC audio amplifiers do not have fuses, so pls use external fuses on power cables within 20cm from positive of battery
Fuses and fuse holders should be adequate for the application. No fuses are required before the power is connected

GROUND (−)

Locate a secure grounding connection as close as possible to the amplifier.
Disconnect the battery and connect the GND (ground) terminal to the car's chassis.
Make sure that the connection with the chassis is clean and provides a direct electrical connection to the vehicle's frame

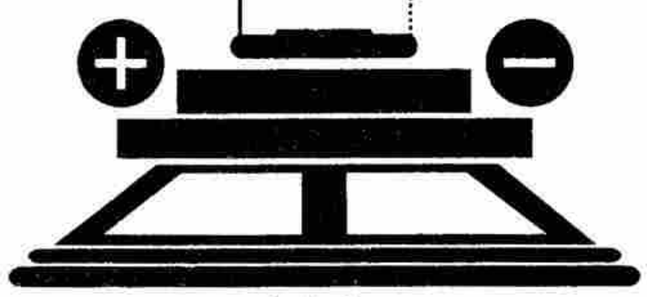
REMOTE

Connect the remote turn on cable from the switched +12V source, then you will be using " Turn on "
Pls use 12 or 16 gauge cables for remote connection



DIGITAL MONOBLOCK SPEAKER CONNECTION

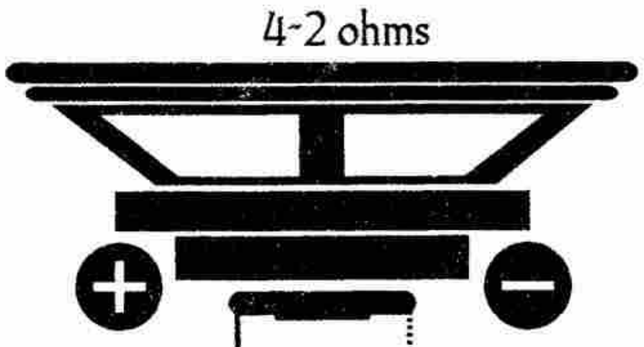
9.0K Speaker Connection I



4-1 ohms

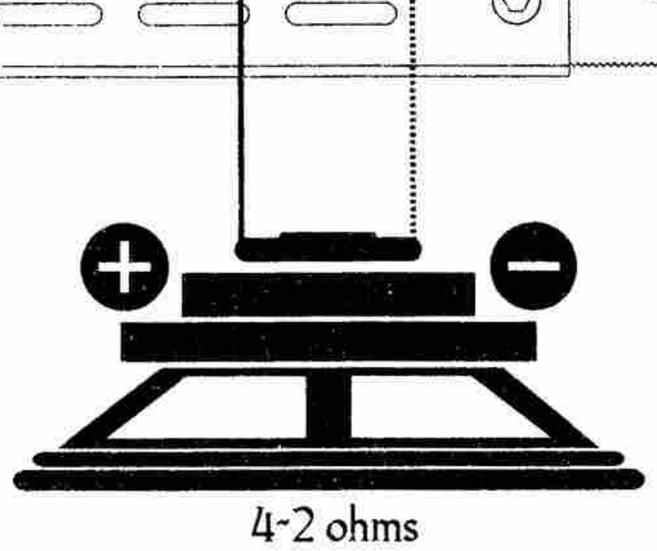
Caution

1.2K, 2.0K, 3.5K, 5.0K, 7.5K, 9.0K & 10.0K minimum working impedance is 1ohm or Linked impedance is 2ohm.
12.0K minimum working impedance is 0.5ohm or 1ohm bridged.
175.4 minimum working impedance is 2ohm stereo or 4ohm mono.
10.0K minimum working voltage is 8.5V ~ 15Volts
1.2K, 2.0K & 12K working voltage is 8.5V ~ 16Volts
3.5K, 5.0K, 7.5K & 9.0K working voltage is 8.5V ~ 18Volts



4-2 ohms

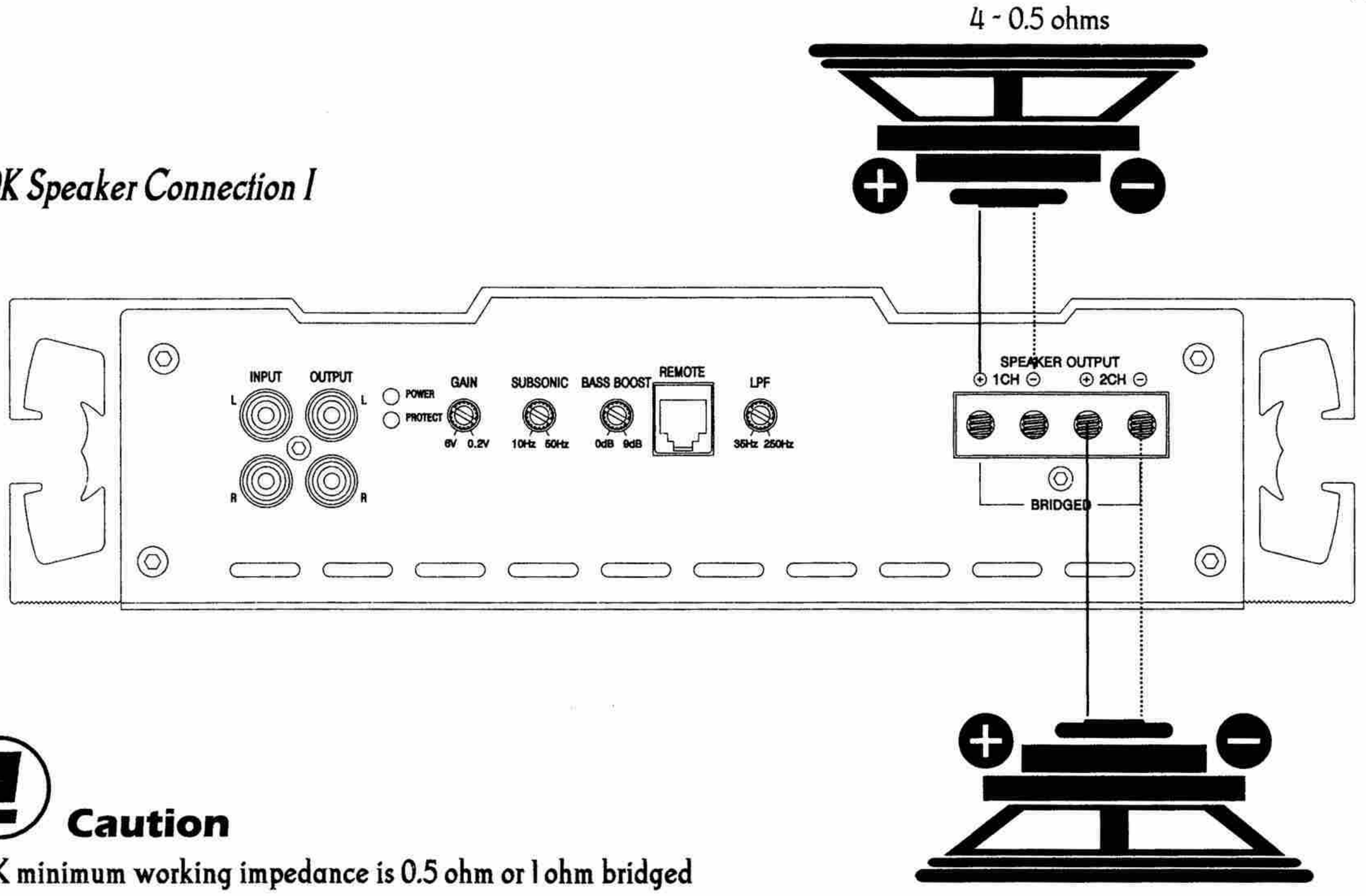
9.0K Speaker Connection II



4-2 ohms

DUAL MONOBLOCK SPEAKER CONNECTION

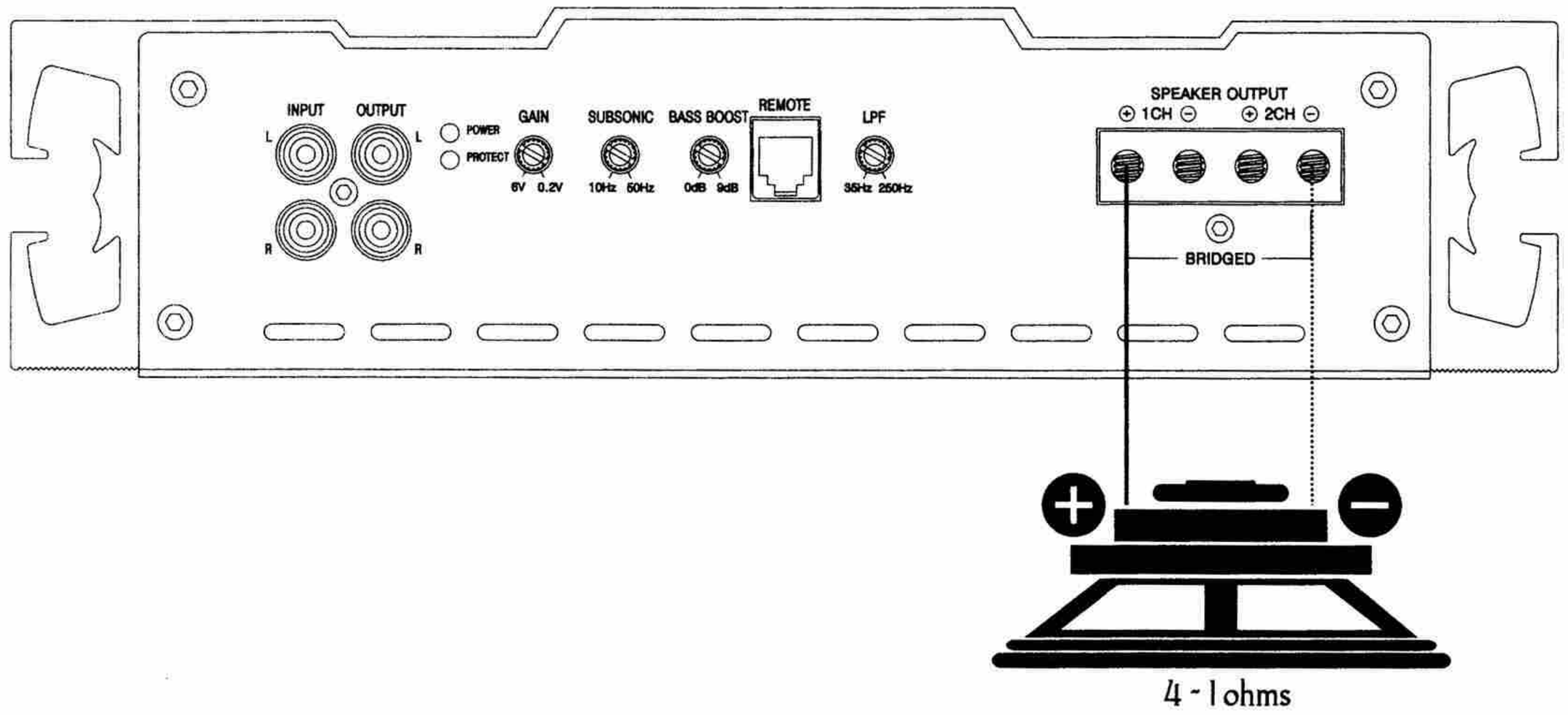
12.0K Speaker Connection I



Caution

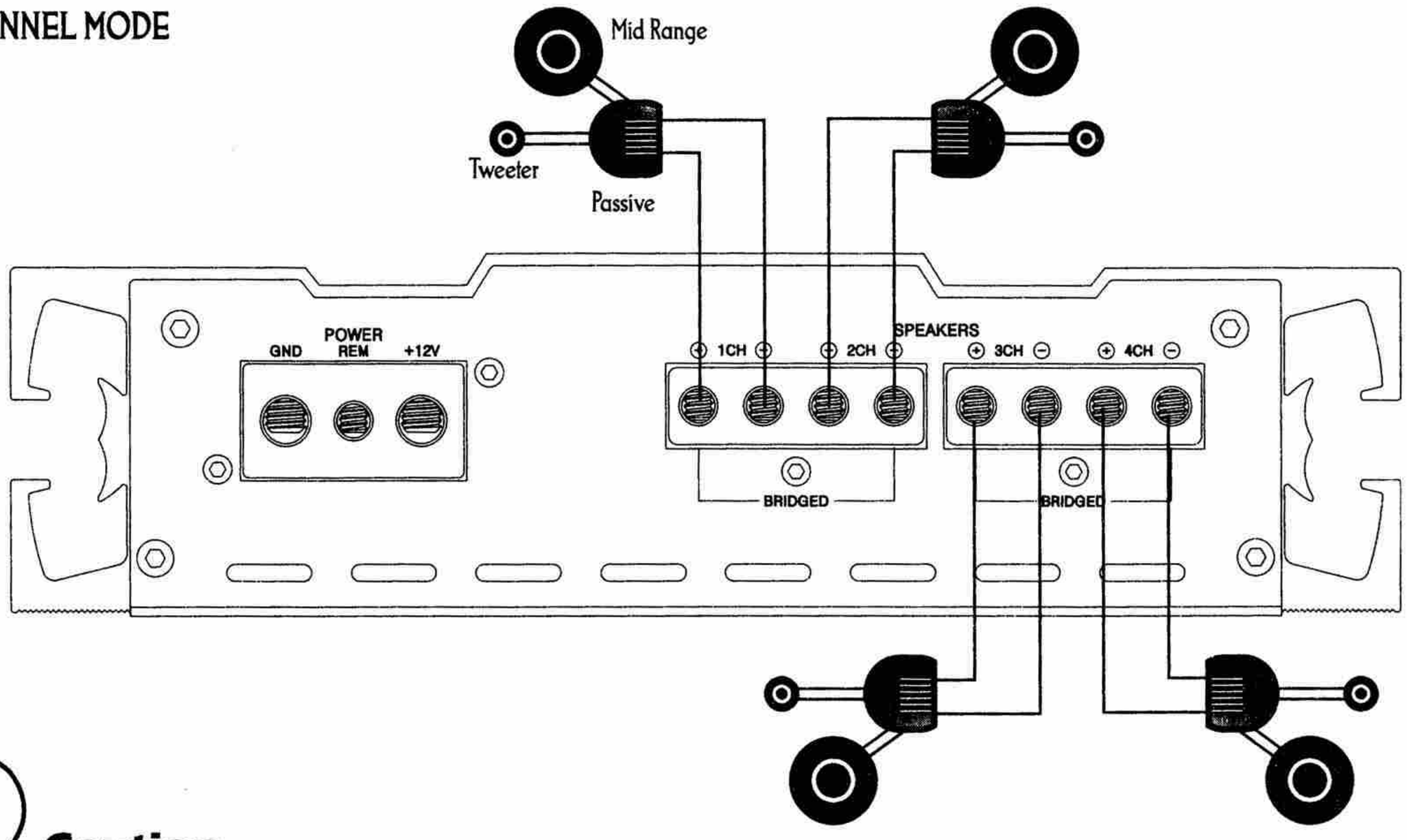
12.0K minimum working impedance is 0.5 ohm or 1 ohm bridged

12.0K Speaker Connection II



4CHANNEL SPEAKER CONNECTIONS

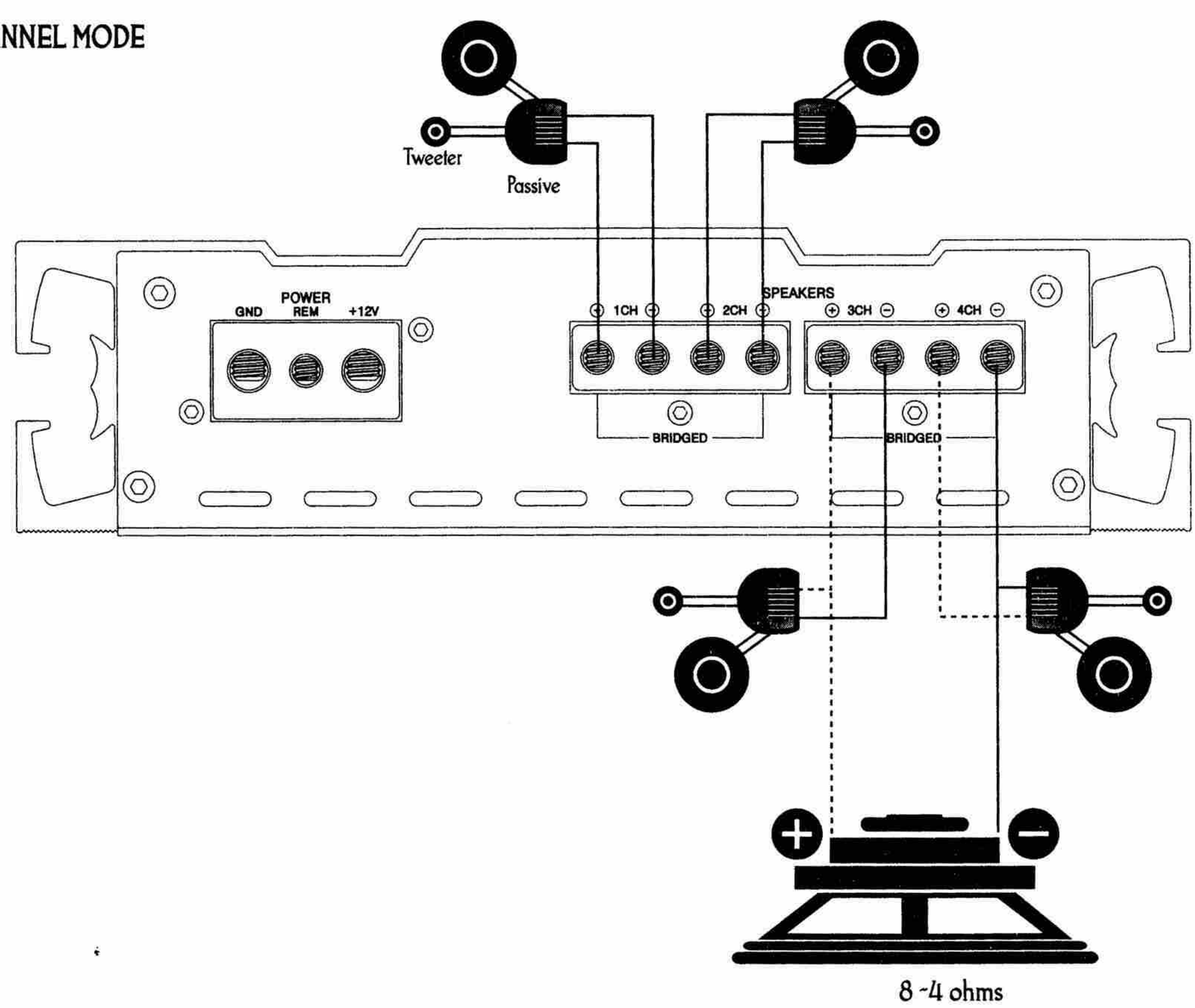
4CHANNEL MODE



Caution

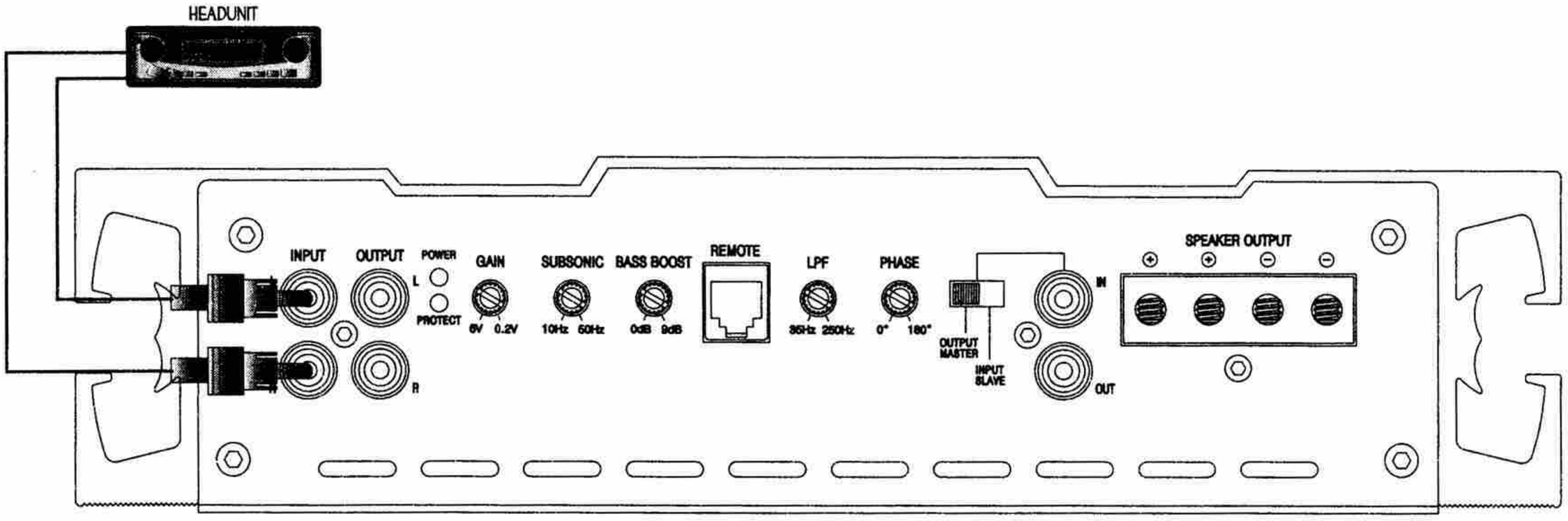
90.4 & 175.4 minimum working impedance is 2 ohm srereo or 4 ohm bridged.

5CHANNEL MODE



INPUT CONNECTIONS

INPUT CONNECTION



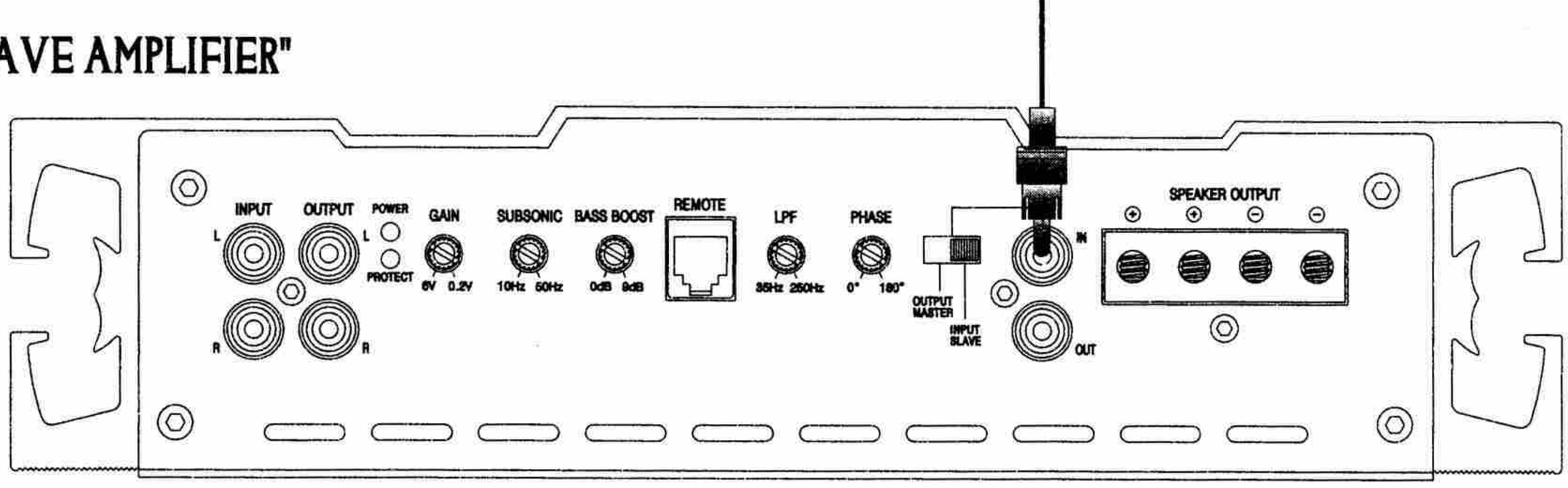
MASTER / SLAVE INPUT CONNECTION

"MASTER AMPLIFIER"

Set Output Master/Input Slave switch to Output Master position on Master amplifier
Set Output Master/Input Slave switch to Input Slave position on Slave amplifier
Connect RCA OUT on Master amplifier to RCA IN on Slave amplifier

Fully adjusted signal is transferred from master amplifier to Slave amplifier via RCA cable

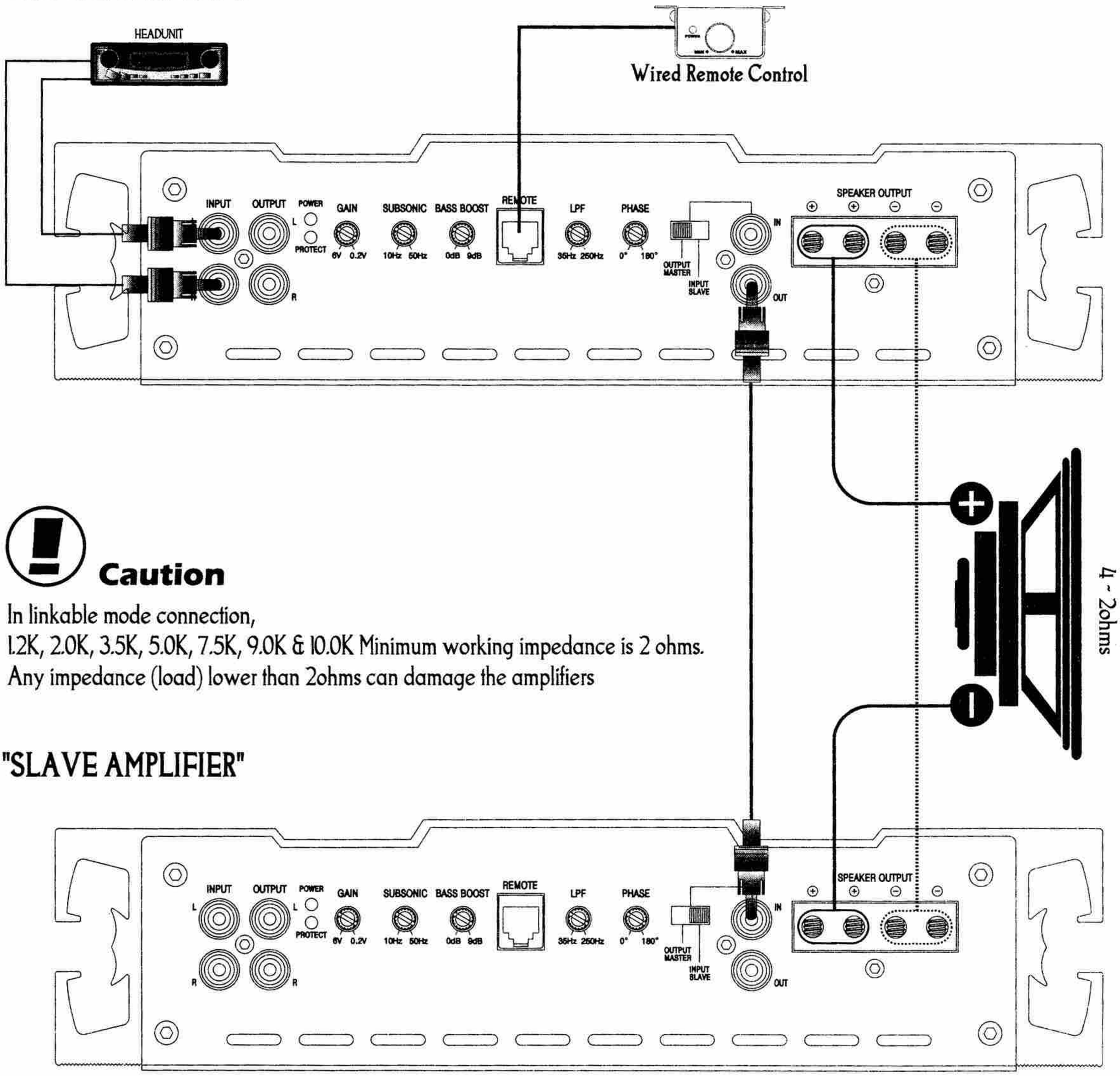
"SLAVE AMPLIFIER"



MASTER / SLAVE SPEAKER CONNECTION

Master/Slave configuration, the MASTER amplifier has total control over the SLAVE amplifier.
Positive terminal of master amplifier should be connected to positive terminal of subwoofer
Positive terminal of slave amplifier should be connected to negative terminal of subwoofer
Negative terminal from both master and slave amplifiers are connected each other as below diagram.
When hooking two amplifiers as linkable, Pls check the power handling capabilities of the subwoofer, impedance and batteries.

"MASTER AMPLIFIER"



Caution

In linkable mode connection,
1.2K, 2.0K, 3.5K, 5.0K, 7.5K, 9.0K & 10.0K Minimum working impedance is 2 ohms.
Any impedance (load) lower than 2ohms can damage the amplifiers

"SLAVE AMPLIFIER"

TROUBLE SHOOTING

DC Audio amplifiers have the protection features to prevent any damages from misuse or faulty conditions.
If DC Audio amplifiers sense excessive heat, short circuited speakers DC, or high and low voltage, then the protection indicator will light and the system will be turned off.
In order to check the problem, You should turn all levels down and all power off and carefully check the installation for wiring mistakes or short.
If DC Audio amplifiers shut down due to excessive heat, They will be working later after they are cooled down.
Before removing your amplifiers, refer to the list below and follow the suggested procedures.

NO OUTPUT

1. Check remote turn-on voltage at amplifier and headunit, when remote turn-on voltage is low or no turn-on voltage, there is no sound.
2. Check fuses at the battery side or external fuses and all wire connections.
3. Check RCA Input is properly connected.

AMPLIFIER SHUT DOWN (PROTECTION)

1. Please check POWER, GND and REMOTE wire connection and other wires properly connected.
2. When DC over 4V come into the amplifiers, amplifiers are DC protected
Pls check whether amplifiers work after removing RCA-Input. If amplifiers work, then check DC by checking RCA-Input.
When DC is over 4V at input, try by replacing headunit or source.
3. When amplifier is over-heated, amplifier goes into the thermal protection.
Amplifier will be back after cooling down little bit. Please install amplifier in better ventilation and make it cool.
4. DC Audio amplifiers (1.2K, 2.0K, 3.5K, 5.0K, 7.5K, 9.0K & 10.0K) have minimum working impedance as 1 ohm as single unit,
Linkable connection is 2ohm.
12.0K's minimum working impedance is 0.5 ohm or bridged to 1 ohm.
90.4 and 175.4's minimum working impedance is 2ohm stereo or 4ohm mono.
5. DC Aduio amplifiers' voltage protection at low and high is 8.5V ~ 16Volts for 1.2K, 2.0K & 12.0K
and 8.5V~ 18Volts for 3.5K, 5.0K, 7.5K & 9.0K
and 8.5V ~ 15Volts for 10.0K
6. Make sure chassis and remote use same Ground.

DISTORTION & NOISE

1. Please readjust amplifier input level which is printed on endplate.
2. Make sure good ground contact of amplifier or headunit.
3. Use sufficiently shielded RCA interconnects and good RCA routing.
4. Check all ground connections of all other audio equipments.

POOR BASS RESPONSE

1. Check speaker wiring and reverse polarity.

DC
AUDIO