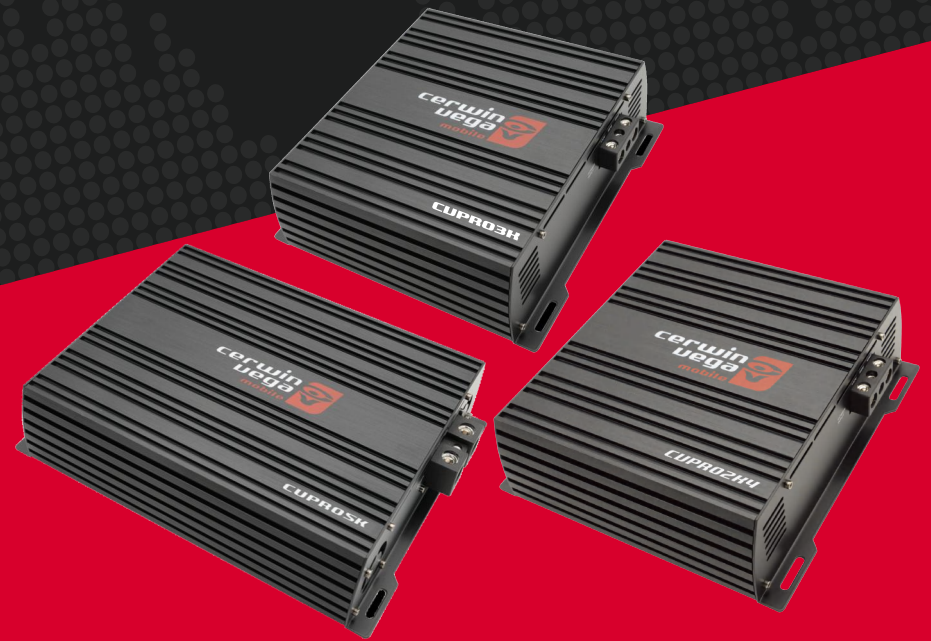


CERWIN-VEGA!

CUPRO SERIES AMPLIFIERS



**CUPRO2K4
CUPRO3K
CUPRO5K**

CERWIN-VEGA!

cerwinvega.com

MANUAL

Cerwin Vega CVPRO series Amplifiers

Thank you for purchasing a Cerwin Vega CVPRO series amplifier for your car audio system. You have chosen Cerwin Vega because you deserve the best!

Cerwin Vega CVPRO series amplifiers are designed and engineered to the highest quality standards in the industry to create the ultimate listening experience in your vehicle. For optimal performance of this product, it is highly recommended that you have your new amplifier installed by an authorized Cerwin Vega retailer. Our authorized dealers have the necessary experience and installation equipment to ensure that your amplifier will deliver maximum performance and explain all the details pertaining to our warranty coverage as well.

If you decide to install the amplifier by yourself, please thoroughly read through this manual before getting started. This manual will help familiarize yourself with this amplifier and guide you through the installation process and procedures.

Please contact your local authorized Cerwin Vega retailer if you have any questions regarding the instructions in this manual or the amplifier's operation capabilities. If you require additional assistance, please contact the Cerwin Vega Technical Support Department during business hours at 213-261-4161.(9-5PST)

CERWIN VEGA (a division of CV & DA Holdings, Inc.) warrants this product to be free from defects in material and workmanship for a period of one (1) year from the original date of purchase provided, it was purchased from an authorized Cerwin Vega, retailer within the United States.

THIS WARRANTY IS NOT TRANSFERABLE AND APPLIES ONLY TO THE ORIGINAL PURCHASE OF THIS PRODUCT IN ITS ORIGINAL INSTALLATION. The original purchaser must reside in the United States and be able to provide proof of purchase and installation with the sales from the authorized Cerwin Vega retailer and completion of online registration that sold and installed the product.

Should a manufacturing defect occur during above said warranty period, Cerwin Vega will replace or repair the defective product with a product of the same or equivalent value and performance.

Damage or failure caused by any of the following is not covered under this warranty policy: burnt voice coils, negligence, improper use, abuse, product modification, unauthorized repair attempts, accident, acts of God, misrepresentations by Cerwin Vega retailers, and improper/inadequate packaging during return shipping.

WARNING:

Prolonged exposure to sound pressure levels in excess of 100dB can cause permanent hearing loss. Cerwin Vega amplifiers can exceed that level so please exercise restraint when listening and enjoying your new amplifier.

GENERAL PRECAUTIONS

- This unit is designed for negative ground 12V DC operation only.
- Total system impedance must not be less than 1ohms.
- Avoid installing the unit where:
 - It would be subject to high temperatures, such as in direct sunlight or hot air from the heater.
 - It would be exposed to rain or moisture.
 - It would be subject to dust or dirt.
- Do not cover the unit with carpet or wires.
- Do not use the unit with a weak auto battery. Optimum performance depends on a normal battery supply voltage.
- For safety reasons, keep the volume of your car audio system moderate while driving your vehicle so that you can still hear normal traffic sounds and emergency vehicles outside your car.

MOUNTING PRECAUTIONS

Although Cerwin Vega amplifiers incorporate heat sinks and protection circuits mounting the amplifier in a tight space without any air movement can still damage internal circuitry over time. Choose a location that provides adequate ventilation around the amplifier. For easy system set-up, mount the amplifier so the side panel walls will be accessible after installation. To increase thermal run times on low impedance loads, an additional fan is recommended, remember any moving air across the amplifier will reduce heat. In addition, observe the following precautions:

1. Using a felt pen mark, the mounting hole locations,
2. Mounting the amplifier on carpet will significantly reduce air flow, resulting in reduced thermal run times.
3. Mount the amplifier on a solid surface. Avoid mounting to sub woofer enclosures or areas prone to vibration. Do not install the amplifier on plastic or other combustible materials.
4. Prior to mounting the amplifier, make sure not to cut or drill into the fuel tank, fuel lines, brake lines (under chassis) or electrical wiring.

WIRING PRECAUTIONS

1. Before installation, make sure the source unit power switch is in the OFF position.
2. Disconnect the negative (-) lead of the battery before making any power connections.
3. When making connections, be sure that each one is clean and secure. Insulate all of your connections. Failure to do so may damage your equipment.
4. A secure clean ground connection is critical to the performance of your amplifier. Connect the ground directly to the car chassis to minimize resistance and avoid any noise problems **CURRENT FLOWS FROM THE GROUND SIDE!!!**
5. Add an external fuse on the amplifier's positive (+) power lead and connect it as close as possible to the vehicle's (+) battery terminal. Use a fuse rating that equals 1/2 the total current consumption at full output of all amplifiers in the system. This external fuse will protect the vehicle, NOT the amplifier(s) from short circuits that can cause a fire.

VEHICLE ELECTRICAL SYSTEM

Amplifiers (regardless of brand name) will put an increased load on the vehicles battery and charging system. Cerwin Vega recommends checking your alternator and battery condition to ensure that the electrical system has enough capacity to handle the increased load of your stereo system. Original equipment electrical systems which are in good condition should be able to handle the extra load of any CV amplifier without problems although battery and alternator life can be reduced depending on your individual listening habits. To minimize the performance of your amplifiers, we suggest the use of additional batteries. Remember that it takes power to make power. Energy isn't FREE.

SPECIAL NOTE: YOU WILL NEED 1/0 GAUGE WIRE ...OFC...NOT CCA WIRE!!!

WARNING:

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 radiate noise into the audio system through the audio cables.

1. Plan the wire routing as described in the "Importance of Pre-Planning" section. 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 power wire for attachment to the amplifier by stripping 5/8 inch (15.9mm) of insulation from the end of the wire. Insert the bare wire into the B+ terminal. And tighten the set screw to secure the cable in place.

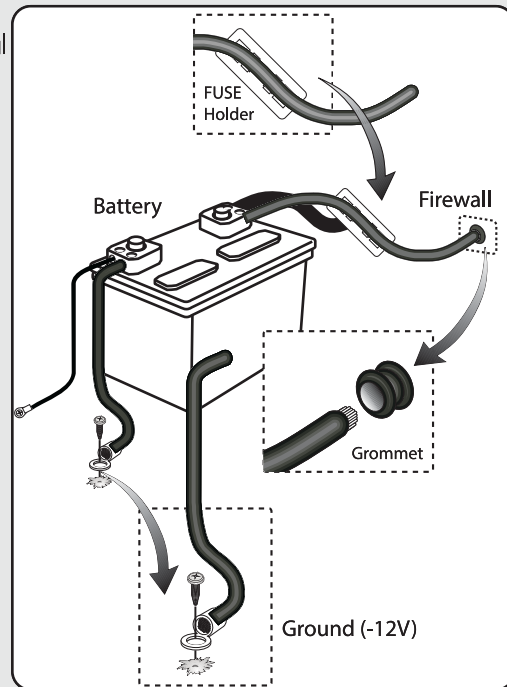
WARNING:

The B+ cable **MUST** be fused 18" or less from the Vehicles positive battery post. Choose a location to install waterproof fuse-holder under the hood and ensure connections are water tight. If you do not use the appropriate fuse-holder, the connection will eventually suffer corrosion from moisture and heat.

3. Trim the power cable within 18 inches (457.2 mm) of the positive battery post and splice an inline fuse holder. **DO NOT** install the fuse at this time
4. Strip 1/2 inch (12.7mm) from the battery end of the power cable. Crimp and solder a large ring terminal to the cable. Connect the ring terminal to the positive (+) battery post.

**SPECIAL NOTE: THESE AMPLIFIERS CAN DRAW MASSIVE AMOUNTS OF CURRENT
BE AWARE!!!!**

FUSE WIRE DIAGRAM



Troubleshooting Steps

- 1 **NO POWER:**
Check voltage at the amplifier with a DMM (volt meter), +12v and R (with head unit on) the voltage should register between 11.5V and 16.1V when using the attached ground lead of the amplifier. Check that the amplifier's ground is good and has a solid connection. Check fuse at the battery. Use a meter to verify connection from one end of the fuse to the other, breaks may not always be visible. If the fuse is blown, check the power wire and also the amplifier for a short. If the short is in the amplifier itself, see your Phoenix Gold dealer. If no short is present, replace the fuse.
- 2 **PROTECTION LIGHT:**
Check charging system for cause of high voltage. Measure with DMM and verify voltage is not exceeding 16.1V with vehicle running and RPM above 2000. For thermal protection, check for adequate ventilation or if restricted ventilation, may require addition of fans.

Turn the amplifier off and check all input and output signal cables and power connections. Check the speakers for shorts with a DMM (volt meter) or by connecting them to another audio source. After making sure everything is correct, turn the amplifier on again.

DC/Short Protection. Check all connections. Disconnect all speaker wires and restart amplifier. If status returns to Blue, then meter speaker leads and verify not shorted to one another or to ground. Reconnect speaker leads and retest.
- 3 **NO SOUND FROM ONE OR MORE CHANNELS:**
Check the balance control in the head unit. Check speaker connections. Check signal Input connection. Very low output: Check your head unit's fader control or the amplifier's input sensitivity level.
- 4 **FREQUENT AMPLIFIER SHUTDOWN WITH AUTOMATIC RECOVERY:**
This indicates chronic amplifier thermal shutdown because of operation at consistently high internal temperatures. High operating temperature can be caused by inadequate ventilation. Make sure you are not running a lower than recommend impedance. Also check for damaged speakers or passive crossover systems. Finally, chronic thermal shutdown may result from otherwise normal operation of the amplifier at elevated output power levels, which can be resolved by providing additional amplifier cooling, installing a higher-power amplifier, or reducing amplifier output level.
- 5 **POWER CYCLES ON/OFF QUICKLY:**
If the power indicator is going off repeatedly when the audio system is on, check all ground connections. Check the amplifier's connection to the battery. Check battery voltage. If low, recharge or replace the battery.

PRODUCT SPECIFICATIONS

	CVPRO2K4	CVPRO3K	CVPRO5K
RMS Power Rating (rated at 0.1% THD)			
Max Power	1000 W MAX	6000 W MAX	10000 W MAX
RMS Power (1 Ω)	520X4 @2Ω	3000	5000
RMS Power (2 Ω)	325X4 @4Ω	2050	3300
RMS Power (4Ω)	1035X2 @4Ω Bridged	1100	1900
Type			
Topology	FR Class D	FR Class D	FR Class D
Power Supply			
Power Supply	Full PWM	Full PWM	Full PWM
Power Supply (Threshold)	10.0VDC - 17.0VDC	10.0VDC - 17.0VDC	10.0VDC - 17.0VDC
Idle Current	(2.6A)	(2.6A)	(2.6A)
Distortion			
THD (1KHz @4Ω)	0.1%	0.1%	0.1%
S/N Ratio (A weighted @1W)	-90dBA	-90dBA	-90dBA
S/N Ratio (A weighted @ FP)	-105dBA	-105dBA	-105dBA
Input Sensitivity			
Hi/Low Input Level	0.2V - 5.0V	0.2V - 5.0V	0.2V - 5V
Input Impedance			
Low Input Level	20 KΩ	20 KΩ	20 KΩ
Output Stage			
Output Impedance	0.0201Ω	0.0297 Ω	0.018 Ω
Damping Factor	>150	>150	>150
Bandwidth (-3dB)	15Hz-20KHz	15Hz-20KHz	15Hz-20kHz
Crossover (-12dB/Oct)			
Variable High-Pass	50Hz - 6kHz	50Hz - 20kHz	50Hz - 20kHz
Variable Low-Pass	15Hz - 6kHz	15Hz - 1kHz	15Hz - 1kHz
Variable Sub-Sonic	15Hz - 1kHz	15Hz - 1kHz	15Hz - 1kHz
Fuse Ratings (We recommend 1/2 the full power current draw for fusing)			
FUSE NOT INCLUDED	150A	150A	200A
Dimensions:			
Length x Width x Height (inches)	10.4" x 8.8" x 2.61"	7.95" x 8.85" x 2.61"	10.4" x 8.85" x 2.61"
Length x Width x Height (mm)	265 x 225 x 66.5 mm	202 x 225 x 66.5mm	265 x 225 x 66.5 mm

- Prepare the ground wire for attachment to the amplifier by stripping 5/8" of insulation from the end of the wire. Always use a wire of the same gauge as the power connection, never smaller. Insert the bare wire into the GND 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, crimp and solder a ring connector. Fasten the cable to the chassis using a non-anodized screw with a star washer.

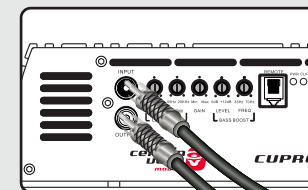
WARNING: It is important to upgrade the ground connection between the negative (-) battery post and the vehicle body or chassis to achieve optimum electrical performance.

- Prepare the REM turn on wire for attachment to the amplifier by stripping 5/8 inch (15.9mm) of insulation from the end of the wire. Insert the bare wire into the REM terminal and tighten the set screw to secure the wire in place. Connect the other end of the REM wire to a switched 12 volt positive source. The switched voltage is usually taken from the source unit's remote amp turn on lead. If the source unit does not have this output available, the recommended solution is to wire to an accessory terminal in the cars fuse block using a relay to isolate the amplifier from the vehicles accessory circuit. This however will turn the amplifier on and off with the ignition key, regardless of whether the car stereo is on or off.

- 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.

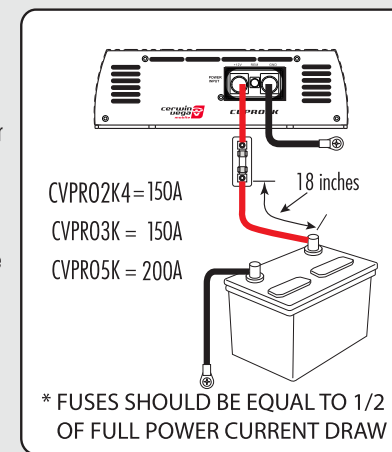
- Connect from source signal by connecting the RCA audio cables to the input jacks at the amplifier.

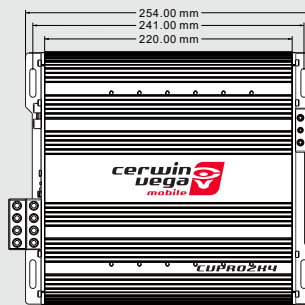
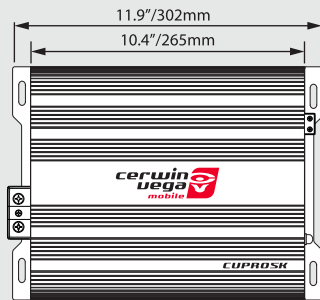
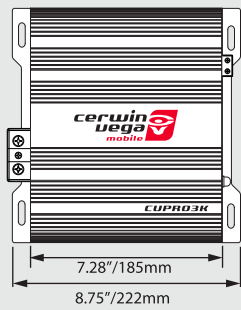
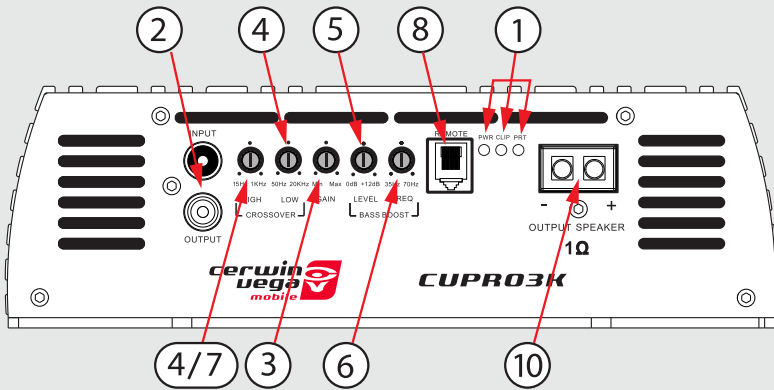
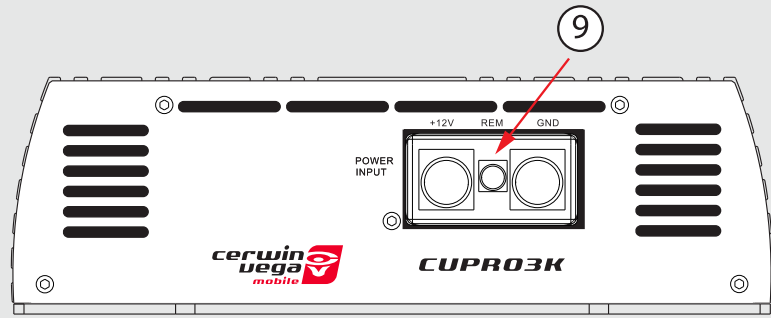
RCA CONNECTION DIAGRAM



- Connect the speakers. Speakers impedance should NEVER be less than 1 Ohms MONO (The 3K AND 5K are stable into 1ohm). For most applications 16 gauge wire is adequate for the speaker leads. For leads in excess of ten feet 12 gauge wire is recommended. Strip the speaker wires 1/2" (12.7mm) and insert into the speaker terminal block, then tighten the set screw to secure into place. When wiring the speakers, pay careful attention to the polarity of the terminals on the speakers and make certain they correspond to the polarity on the amplifier. DO NOT chassis ground any of the speaker leads as unstable operation or damage to the amplifier and/or speaker may result.

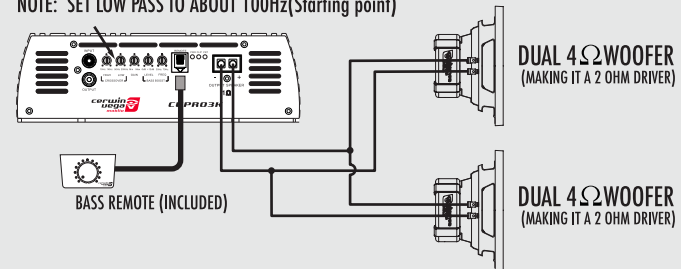
FUSE CONNECTION DIAGRAM





TRADITIONAL SUBWOOFER 1 OHM CONFIGURATION (CVPRO3K/5K):

NOTE: SET LOW PASS TO ABOUT 100Hz(Starting point)

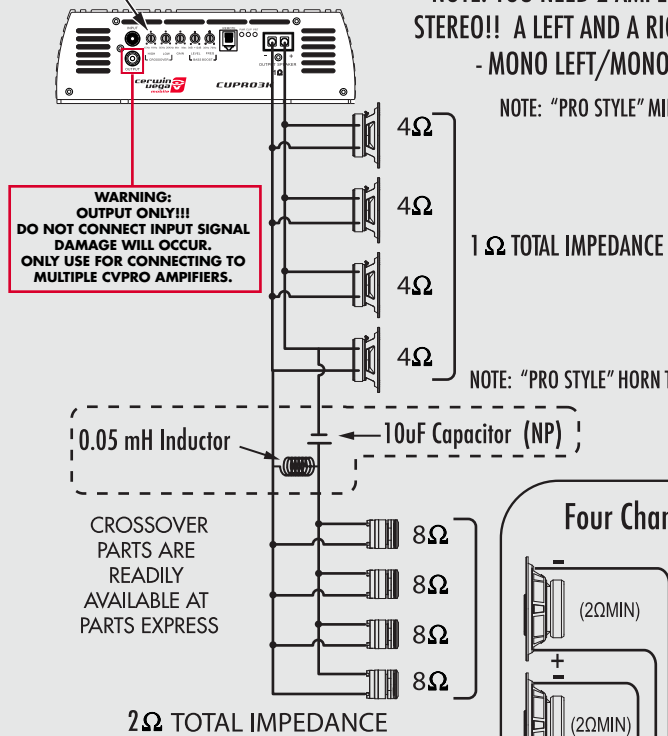


PRO AUDIO FULL RANGE MONO 1 OHM CONFIGURATION:

NOTE: SET HIGH PASS TO ABOUT 100Hz

NOTE: YOU NEED 2 AMPLIFIERS TO DO STEREO!! A LEFT AND A RIGHT AMPLIFIER - MONO LEFT/MONO RIGHT -

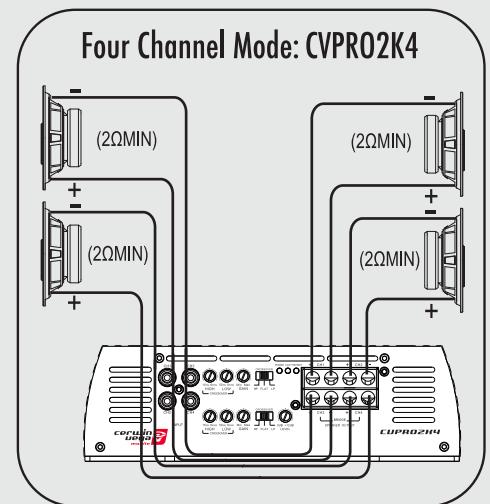
NOTE: "PRO STYLE" MID DRIVERS



NOTE: "PRO STYLE" HORN TWEETERS

CROSSOVER PARTS ARE READILY AVAILABLE AT PARTS EXPRESS

Four Channel Mode: CVPRO2K4



Set up

Before setting gainAdjust the crossover filters, since they are always on....you must set them up. Assuming you are using the CVPRO3K, 5K or CVPRO2k4 as a subwoofer amplifier adjust the LowPass Filter. Typically start at about 80-100Hz. This setting allows ALL frequencies to pass to the subwoofers.

To adjust the gain setting, turn the amplifier gains all the way down (counterclockwise). If using the included Bass Remote Level control plug the remote level control into the amplifier and turn it to about 1/2 way up. Next turn the source unit volume up to almost full volume (usually about 2/3rds of the way up) or until the output starts to distort on an oscilloscope. This will be NEARLY full volume on most source units, perhaps one or two "clicks" down from maximum volume. Next, increase the amplifier gain setting until adequate volume is achieved, or until distortion is audible and then turn it down a bit until the distortion is inaudible.

The HPF or LPF crossover adjustment can now be fine tuned. If you are using the amplifier in a HPF configuration and would like the system to be a little bit louder you can increase the HP Filter frequency and reset the "Gain" of the amplifier. Raising the HPF frequency up too high, however will cause a loss of mid range and bass. If you are using the amplifier in a HPF filter configuration and you hear voice or vocals coming from your subwoofer system you can turn the Low Pass Filter frequency down (lower).

After setting the input gain adjustment and crossover, you may choose to add a small amount of "Vega Bass Boost" in the low frequency region. Remember that the Bass Boost feature will not fix a poorly designed subwoofer enclosure or subwoofers that didn't sound good to begin with. You'll need to play with the Frequency also. Depending on the length of your vehicle will change the boost frequency. Now would be a good time to use your RTA app on your phone.

For a Pro Audio "type" driver begin tuning with the frequency set between 60Hz - 100Hz.

Placing the switch in the LPF position sets the amplifier to the Low Pass Filter mode, enabling frequencies below the cutoff point to pass. For a subwoofer system begin tuning with the frequency set between 80Hz - 120Hz.

NOTE: Ideal signal to noise and dynamic range are achieved with the gain at minimum. Most users find adequate gain and volume is achieved at less than halfway in the adjustment range. Avoid setting the amplifier gain very high as noise and distortion will increase significantly. For a more in depth level setting (gain adjustment) procedure AND system designs, visit the CV website.

1. Make sure any bass EQ, loudness or low frequency equalization from the source unit is set to OFF or FLAT.
2. While playing the same musical selections used during the gain setting process, slowly increase the level of the Bass EQ. You should be able to notice a obvious change between 0 and +12dB. If you do not notice much difference, then it will not serve any benefit to increase the boost further.
3. If the boost has audible benefits without adding appreciable distortion, find a level that suits your taste. Remember: it's much easier to construct the right subwoofer enclosure for your listening preferences than relying on a bass boost control to do the job!

Functions

- 1 STATUS - These lights indicate when the amplifier is powered up normally and when there is a protection fault. The Protect LED is luminated when there is a problem with your amplifier.
- 2 RCA INPUT (MONOBLOCK AMPLIFIER) -
WARNING: FOR MONOBLOCK AMPLIFIERS- ONLY ONE INPUT IS USED. CONNECTING TO THE OUTPUT WITH INPUT SIGNAL WILL DAMAGE THE AMPLIFIER
RCA INPUT (PRE INPUT) - The RCA jacks allow for a normal Left and Right channel signal input. Simply connect to the source unit using RCA type audio cables- keeping them away from power wiring wherever possible to reduce risk of noise-
- 3 GAIN - This control matches the preamp stage of the Cerwin-Vega amplifier to your source unit. This is NOT a volume control. The range is between aprox 150mV -12V.
- 4 XOVERS - Crossover are ALWAYS ACTIVE. Use this adjustment to select the crossover point. Remember that you must select the High Pass or Low Pass crossover, this ALL depends on what you are doing. Subwoofer ONLY? Then it is a Low Pass setup. Building a super crazy Pro Sound Bus with 8 Pro Mids and 8 Pro tweeters, then you select High Pass. This is adjustable 15Hz -1,500Hz for High Pass and 50Hz - 20,000Hz for Low Pass
- 5 BASS BOOST LEVEL- This control the level of Bass Boost up to +12 dB of increase in level. NOT frequency, that is a seperate control. Be cautious when adding boost to subwoofer systems as they may not be able to handle the additional low frequency boost.
- 6 BASS BOOST FREQ- This control adds 0 to +12dB of Bass boost at 35Hz - 70Hz. Be cautious when adding boost to subwoofer systems as they may not be able to handle the additional low frequency boost.
- 7 SUBSONIC *- Use the High Pass Filter to be the sub-sonic FILTER below the tuning frequency of a ported enclosure. This helps to protect the woofer from over excursion. Adjustable from 15Hz - 1,500Hz
- 8 BASS REMOTE - This port is for the remote level control (included with the CVPro3K and CVPro5K). The control is intended to allow the user to control the level of gain of the subwoofer up to the maximum adjustment level set on the amplifier. The control does not add additional boost, it only attenuates the setting that is fixed at the amplifier's control panel.
- 9 POWER INPUT - These connections are for input power, chassis ground, and remote turn-on. Use a minimum of 1/0 gauge wiring for power and ground connections, 20 gauge for remote turn-on. Be sure any wiring that passes through metal has a grommet! .
- 10 SPEAKER OUTPUT - Connect your speakers to these terminals. Mono connections are connected as labeled. The mono blocks will run 1 ohm mono - both low frequency and HIGH frequency. BUT you will need 2 of these for STEREO. MONO left and MONO right.

THE CVPRO3K/5K ARE THE SAME HEIGHT AND WIDTH - ONLY LENGTH CHANGES

