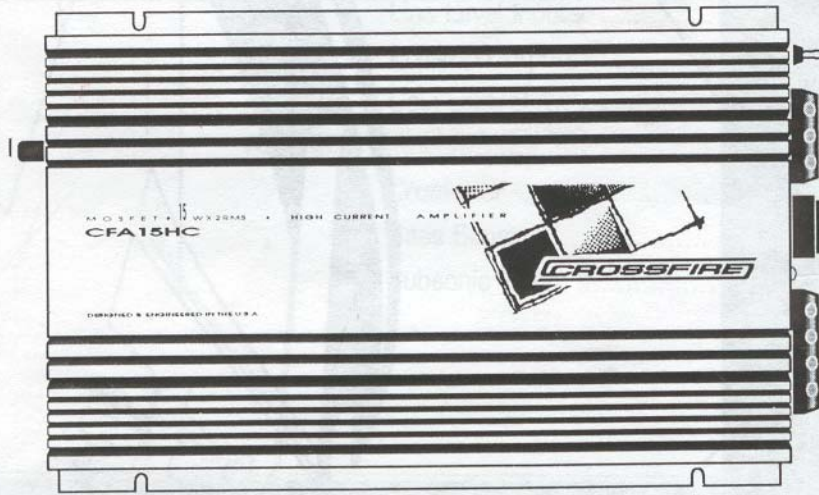


INSTALLATION MANUAL

HIGH CURRENT

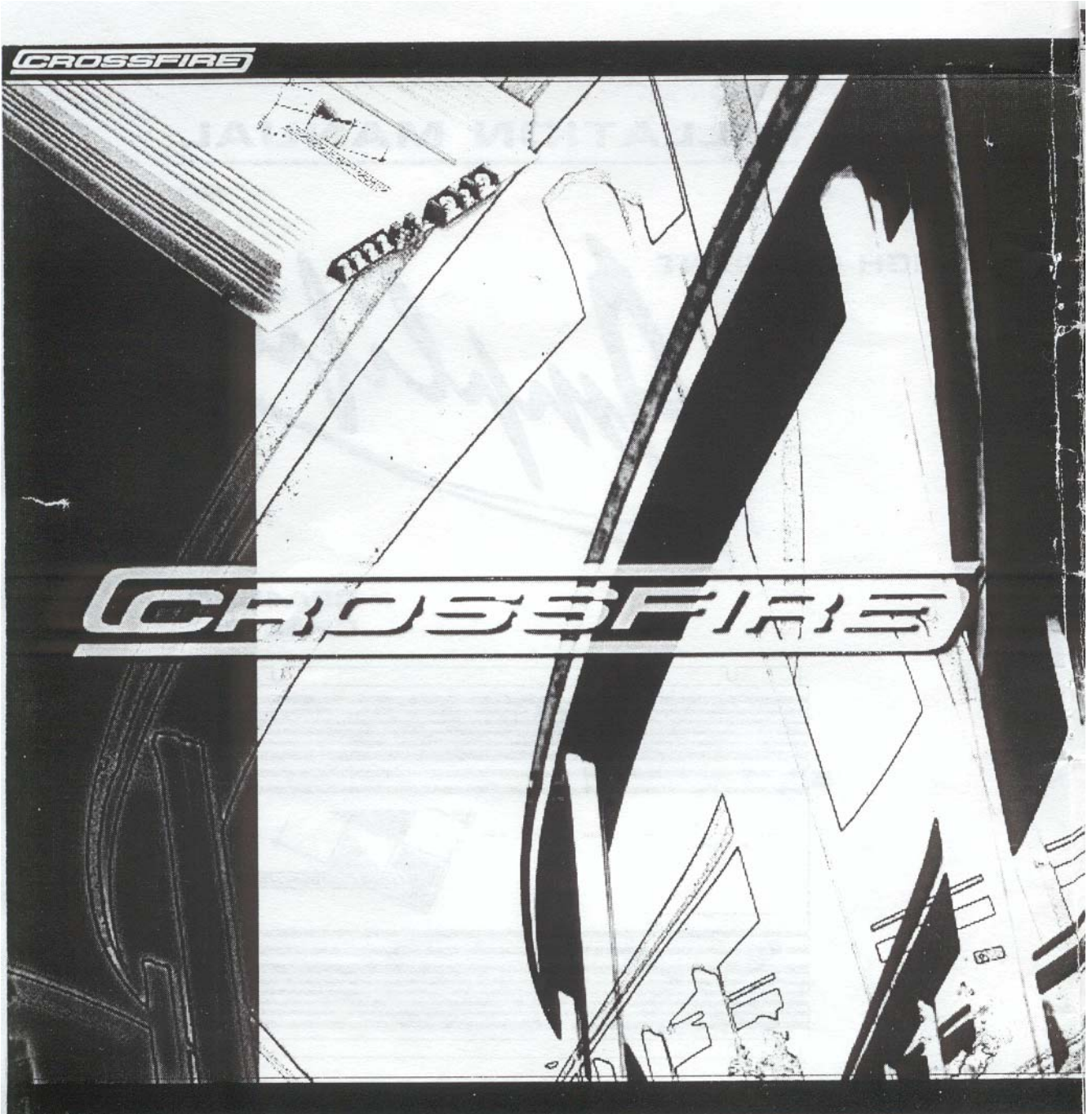
Amplifier

**CFA15HC
CFA30HC**



CROSSFIRE

CROSSFIRE



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Thank you and congratulations for choosing **CROSSFIRE** mobile audio for your amplification needs. **CROSSFIRE** amplifiers have been significantly improved throughout the years to assure quality and reliability. Our goal is to incorporate the latest in technology into every **CROSSFIRE** product providing you with incredible power and unparalleled sound quality. Simple, yet highly developed circuitry contributes to low distortion and the ultimate in efficiency. This is why we are confident that your new **CROSSFIRE** amplifier will provide you with a sound value you will enjoy for years to come.

FEATURES

- Fully 1/2 Ohm Stable Stereo Operation
- Military Spec Audiophile Grade Components
- High Efficiency Mosfet Power Supplies
 - Multi-standed power torroids
 - IRFZ44 MOSFET transistors
- Oversized Capacitor Banks
- Wire Free PC Board Layouts
- Gold Plated Input and Output Connectors
- Variable Highpass or Lowpass Electronic Crossover
- Switchable High Current/High Power Modes
- Variable 45Hz Boost
- RCA Preamp Output
- Simultaneous Mono/Stereo Operation Capability
- Internally Bridgeable
- 5 way Protection Circuitry
- Soft Remote On/Off Circuitry
- Two Year Limited Warranty

SPECIFICATIONS

MODEL	CFA15HC	CFA30HC
High current /High Power		
RMS POWER / 4 ohms @ .008% T.H.D.	15W x 2 / 30W x 2	30W x 2 / 60W x 2
2 ohms @ .02% T.H.D.	60W x 2 / 110W x 2	120W x 2 /210W x 2
1 ohm @ .02% T.H.D.	110W x2 / 185W x 2	210W x2 / 320W x 2
1/2 ohm @ .02% T.H.D.	185W x2	320W x 2
MAX bridge output @.02% T.H.D.	370W x 1	640W x 1
BANDWIDTH ± 3dB	11Hz - 38Khz	11Hz - 38Khz
SIGNAL TO NOISE	>100dB	>100dB
CHANNEL SEPARATION	>70dB	>68dB
DAMPING FACTOR	400	480
INPUT SENSITIVITY	340mV - 5.2V	340mV - 5.2V
INPUT IMPEDANCE	20K ohms	20K ohms
POWER FUSE	40 Amp	80 Amp
DIMENSIONS	9.6"W x 2"H x 13"L	9.6"W x 2"H x 18.5"L
CROSSOVER		
LOW PASS	Variable 45 - 150Hz	Variable 45 - 150Hz
HIGH PASS	Variable 45 - 150Hz	Variable 45 - 150Hz
X-OVER SLOPE	12dB	12dB
SWITCHABLE SUBSONIC FILTER	22Hz @ 12dB	22Hz @ 12dB
45Hz BOOST SWITCH	Variable 0 - + 12dB	Variable 0 - + 12dB

All Specifications are with 12.5 volts DC. Typical output with 14.4 volts DC is 15 to 20% higher

IMPORTANT

PLEASE READ ALL INSTRUCTIONS BEFORE INSTALLATION !

The quality of installation may affect the performance and reliability of your **CROSSFIRE** product. If you have any doubts or questions regarding installation, you may wish to contact your authorized **CROSSFIRE** dealer. Remember to heed all wire and fuse requirements suggested in this manual. Warranty may be void if proper installation technique is not used (refer to warranty section in the rear of this manual).

OPERATION

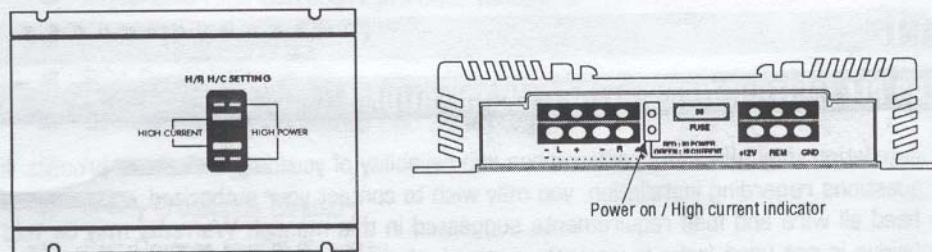
The **CROSSFIRE** high current amplifiers are capable of running in three operating modes: stereo, bridged mono, and stereo/mono simultaneously. This gives the CFA15HC and the CFA30HC amplifiers the capability to operate in one, two, or three channels. Choose the mode from page 8 of this manual that best suits your needs before you wire your speaker leads.

HIGH CURRENT AND HIGH POWER MODES

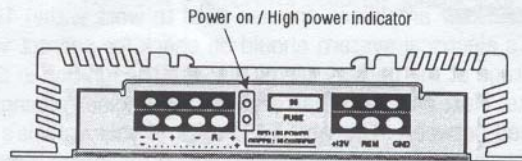
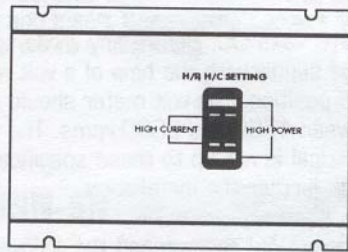
Both the CFA15HC and the CFA30HC have two different power settings: High current and high power. In high current mode, these amplifiers are capable of running into a 1/2 ohm stereo or a 1 ohm mono load trouble free. In high power these amplifiers are stable into no less a 1 ohm stereo or 2 ohm mono load. In either mode, both of these amplifiers supply the same output power into their lowest rated impedance (see SPECIFICATIONS on page 3 for power output).

Before connecting your CFA15HC or CFA30HC, choose the power mode that works best for the application. Switching the power modes should be performed prior to installation. To change from high current to high power, turn the amplifier over. Located in the window marked H/P, H/C SETTING are two fuses. Simply remove these fuses and place them in the corresponding settings of the mode you have chosen. One of the LED's on the right side of the amplifier will illuminate indicating your selection when the amplifier is powered up. Be sure both left and right settings are the same. Also, be sure to **use only high current or only high power** settings for amplifier failure may result as well as damage to your speakers (refer to diagrams).

High Current Mode



High Power Mode



MOUNTING

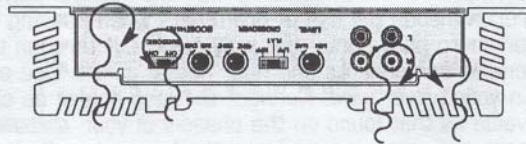
Appropriate mounting of the amplifier is very important for prolonged life expectancy of any amplifier. Select a location of applicable space that allows sufficient airflow. Keep in mind that an amplifier should never be mounted upside down. Upside down mounting will compromise heat dissipation through the heatsinks and will engage the thermal protection circuit much sooner. Excessive heat will shorten your amplifier's life.

To maximize heat dissipation, be sure to leave at least 2.5 inches of clearance around the amplifier. Fans should be used in correspondence with an escape duct for the heat when mounting in an enclosed or restricted area.

To avoid slipping and scratching your new **CROSSFIRE** amplifier, predrill your mounting holes with either a #29 or 9/64" diameter drillbit when using the screws supplied in the accessory kit. Be sure to investigate your mounting area thoroughly for electrical wires, vacuum lines, and brake or fuel lines to prevent any expensive mistakes.

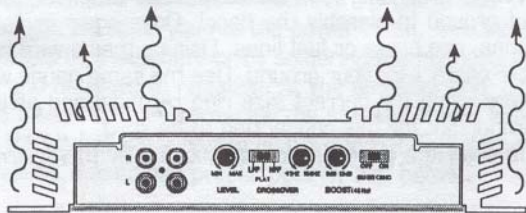
✗ IN CORRECT MOUNTING

Heat is trapped in side if the amplifier, shortening the life of the electronic components



○ CORRECT MOUNTING

Heat is lifted from the amplifier.



POWER SUPPLY CONNECTIONS

CROSSFIRE amplifiers are designed to work within 10 to 16 volts DC. Before any wires are connected, the vehicle's electrical system should be checked for correct voltage supply with the help of a volt meter. First check the voltage at the battery terminals with the ignition in the off position. The volt meter should read no less than 12 volts. Next check the battery with the engine running between 1500 and 2000 rpms. The volt meter should now read between 13.5 and 14.5 volts. If your vehicle's electrical is not up to these specifications, we recommend having it checked by an automotive mechanic before you further the installation.

Once the vehicle is checked, proper wire size should be chosen. We recommend the following wire sizes for lengths up to twenty feet. If a longer length is needed, a larger gauge wire may need to be used.

CFA15HC	8 GAUGE
CFA30HC	4 GAUGE

POWER

All **CROSSFIRE** amplifier's power wire should be wired directly to the battery using the wire requirements listed above. Start at the amplifier and run the power wire through the vehicle to the battery. **CROSSFIRE** recommends the use of grommets when passing the power wire through any metal wall. Avoid sharp corners or sharp body parts that may easily cut through the insulation on the wire. Avoid running the power wire over engine components and near heater cores. Use an inline fuse to eliminate the risk of a fire caused by a short in your power wire. Connect the fuse holder as close to the battery positive as possible. Use a fuse of equal value as that found on the chassis of your **CROSSFIRE** amplifier. You may now connect the wire to the battery, but remember to leave the fuse out until all other wire connections are made.

GROUND

When grounding your **CROSSFIRE** amplifier, locate a metal area close to the amplifier that is a good source of ground (preferably the floor). Once again investigate the area you wish to use for electrical wires, vacuum lines, and brake or fuel lines. Using either a wire brush or sandpaper, eliminate unwanted paint to supply a better contact for your ground. Use the same gauge wire for ground as you did for the power. Terminate the ground wire using the correct size ring terminal and attach it to the bare metal using a #8 sheet metal screw. It is important for this connection to be solid.

To complete the job, spread silicon over the screw and bare metal to prevent rust and possible water leaks.

Now it's time to connect the power and ground wires to the amplifier. Use a 3mm allen key to loosen the **+12v** and the **GND** set screws on the amplifier. Cut both wires to length. Strip approximately 1/2 inch of insulation from both wires and insert them in the correct terminals. Tighten the set screws securely. Check your connection by giving the wires a slight tug.

REMOTE TURN-ON

In between the power and ground is a remote turn-on terminal. This terminal must be connected to a switched +12 volt source. Typically, remote turn-on leads are provided at the source unit that will turn on and off the amplifier in correspondence with the source. If a radio does not have a remote turn-on, then a power antenna wire may be used. Yet, if neither of these leads are available at the source, a switched +12 volt supply must be used.

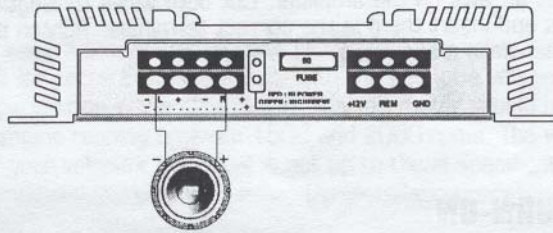
Run a minimum of 18 gauge wire from the amplifier location to the source of the switched +12 volt lead. If possible, route this wire on the same side of the vehicle as your power wire. Connect the source remote output to the wire. Back at the amplifier, loosen the screw for the terminal marked **REM** on the amplifier using a 3mm allen key. Cut the remote wire to length. Strip approximately 1/2 inch of insulation from the end of the wires and insert into the terminal. Tighten the set screw securely.

SPEAKER OUTPUT

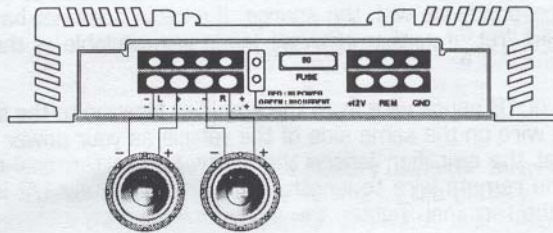
WIRING

Choose the correct speaker wire for your application. Most applications will require between 16 gauge and 12 gauge wire. Route these wires using the same precautions as you did when you ran the power wires. Terminate these wires at the speaker end using insulated speaker terminals (not supplied) or by soldering the connection. Make sure the speaker connections are positive to positive and negative to negative. At the amplifier end, cut the wires to the appropriate length. Use a 3mm Allen key to loosen the set screw for the speaker output connections. Strip off approximately 1/2 inch of insulation from the end of the wire and insert into the correct terminal. Tighten the set screw securely. Check to make sure you've maintained proper polarity and balance.

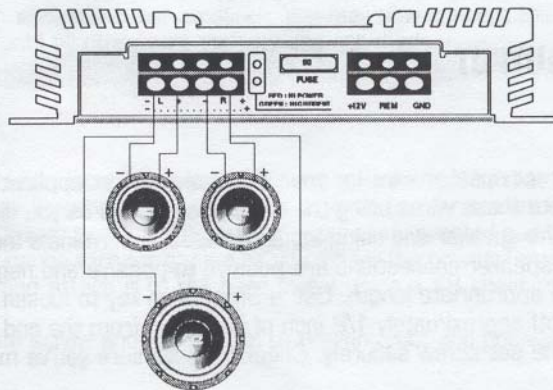
2 Channel Operation (Stereo)



1 Channel Operation (Bridge Mono)



2 Channel Operation (Stereo/Mono)



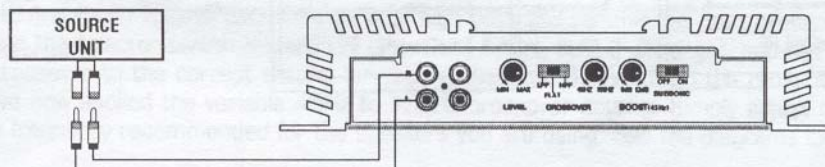
SIGNAL INPUTS & OUTPUTS

Located on the left side of the amplifier are two sets of RCA line level receptacles. Marked **IN**, these receptacles accept signal from the outputs of the source unit via RCA patch cables. The remaining receptacles, marked **OUT**, are full-range preamp outputs allowing for easy daisy chaining of amplifiers with minimal signal loss.

LINE LEVEL INPUTS

Choose the correct length and style of RCA patch cables for your needs. Better RCA's usually have gold plated connectors and multiple layers of shielding and/or twisted pair wiring for better noise rejection (consult your dealer).

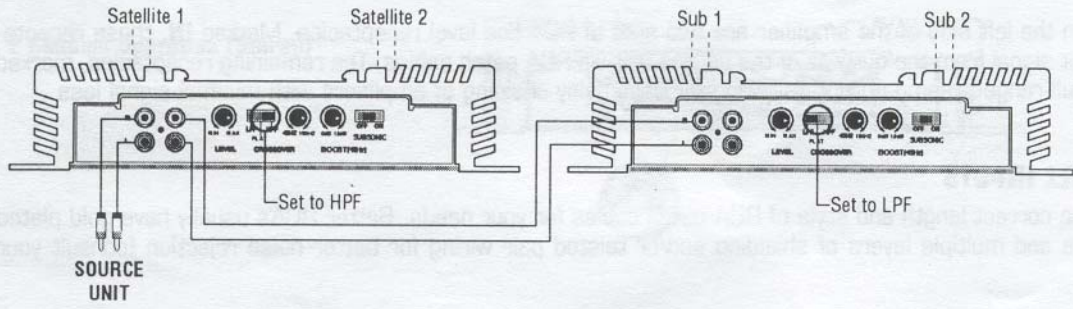
Be extra careful when running your RCA patch cables. Car environments are notorious for poorly insulated wires. This means that hiss, engine noise, and fan noise can easily be picked up through RCA cables if ran incorrectly. To avoid picking up noise, run the RCA's away from large wire looms and electric fans if possible. Be sure to position your patch cables on the opposite side of the vehicle as you did the power wire. Keep in check the balance (red is right and black or white is left) on both the source unit and the amplifier is correct.



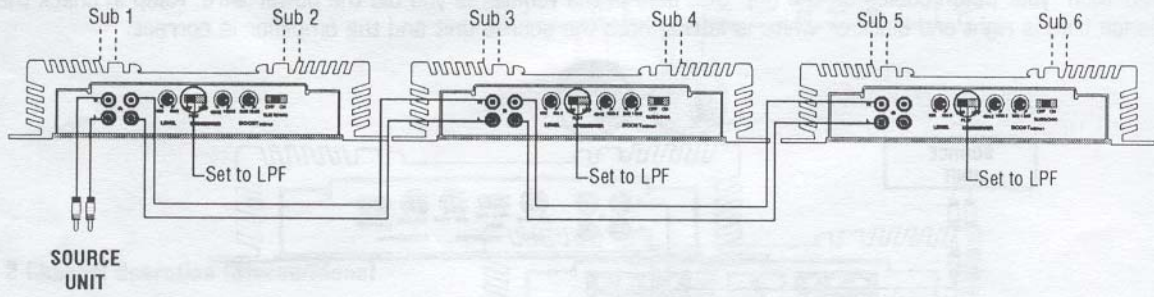
PREAMP OUTPUTS

As mentioned above, the preamp outputs simply allow for easy chaining of amplifiers with minimal signal loss. This feature can be used in a couple different variations as shown below. Please note that the signal passing through these outputs is **not affected** by the gain control of the amplifier.

EXAMPLE 1



EXAMPLE 2



GAIN CONTROL

Next to the inputs, on the left panel of the amplifier, is the gain control (marked *level*). This control allows you to match the input level of the amplifier to the output level of your source unit. Matching the input can be accomplished in three simple steps:

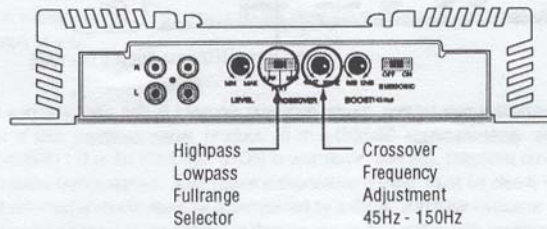
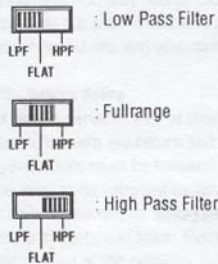
1. Turn gain control all the way down.
2. Turn on the source unit and adjust to 2/3 of max volume.
3. Adjust the gain control until desired volume is achieved without audible distortion

Remember, the gain control is not a volume knob. Ignoring the three steps above may leave you with damaged speakers and possibly a damaged amplifier.

FEATURES

CROSSOVER

The CFA15HC and the CFA30HC both have variable high-pass and variable low-pass crossovers. To activate the crossover, use the selector switch marked **LPF (Low-Pass Filter)**, **FLAT** (Full-range), and **HPF (High-Pass Filter)** to adjust the crossover to the correct setting for your application. By switching the crossover to LPF or HPF, you have now applied the variable 45Hz to 150Hz crossover setting. Simply adjust the crossover to the approximate frequency recommended for the speakers you are using. See the diagrams below.



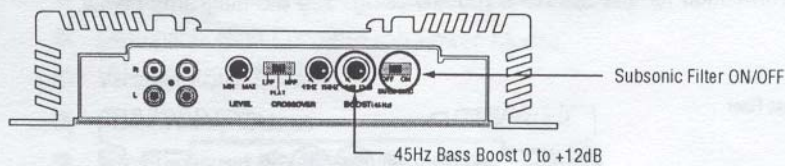
BASS BOOST

To contour the sub bass response, **CROSSFIRE** has added a continuously variable 0 to +12dB boost at 45Hz. This may be utilized in instances where low bass extension is lost due to limited space for a subwoofer enclosure or if using a small subwoofer with a lack of sub bass.

CROSSFIRE recommends exercising extreme caution when using the bass boost. Every 3dB of boost demands that the amplifier double its output power at 45Hz. This equates to approximately four times the output power at 45Hz with the maximum boost of 12dB. Boosting will drive the amplifier into clipping (distortion) at an early rate and may cause damage to your speakers. It is strongly encouraged that the 45Hz boost is kept to a minimum level and to be used only with subwoofers.

SUBSONIC FILTER

The subsonic filter substantially decreases oscillation that may occur below the audible range. This oscillation caused by noise picked up RCA patch cables, ground problems, and/or mismatched components may cause the amplifier to draw unnecessary current and possibly create problems for speakers. By switching the subsonic filter to the ON position, you have activated a basic 12dB high-pass crossover set at 22Hz virtually eliminating the oscillation.



CROSSFIRE LIMITED WARRANTY

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. This Warranty is only valid on **CROSSFIRE** products purchased in the U.S.A. from an authorized **CROSSFIRE** dealer. All **CROSSFIRE** products are warranted to be free from defects in materials and workmanship under normal use and serviced for a period of (2) years when the unit is installed by an authorized **CROSSFIRE** dealer. Non-authorized dealer installed products carry a (1) year parts and labor limited warranty. The extent and conditions of **CROSSFIRE**'s limited warranty are as follow:

I. **CROSSFIRE** will either repair or replace (at its option) any unit which **CROSSFIRE** has examined and found to be defective and under warranty, to the original purchaser, provided the defect occurs within (2) years of the date of purchase when the unit is installed by an authorized **CROSSFIRE** dealer. This warranty includes both parts and labor and applies to the original purchaser only.

II. **CROSSFIRE** will either repair or replace (at its option) any unit which **CROSSFIRE** has examined and found to be defective and under warranty, to the original purchaser, provided the defect occurs within (1) years of the date of purchase when the unit is installed by a non-authorized **CROSSFIRE** dealer. This warranty includes both parts and labor and applies to the original purchaser only.

III. This warranty will be void to any unit found with the original factory serial number removed, altered or defaced. All units received by **CROSSFIRE** for warranty with their original serial numbers removed will not be repaired and returned to sender freight collect.

IV. This provisions of this warranty shall not apply to products used for any industrial, professional or commercial purpose or any other uses for which it was not designed.

V. This warranty does not cover costs for removal of product for repair or reinstallation of the product after repair, nor does it cover the cost of returning the product to **CROSSFIRE**'s service center for repair.

VI. This warranty does not apply to repairs or replacements necessitated by any cause beyond the control of **CROSSFIRE**. Including, but not limited to, any malfunction, defect or failure caused by or resulting from unauthorized service or parts, improper maintenance, operation contrary to furnished instructions, shipping or transit accidents, incorrect power line voltages, fire, flood or any other acts of nature, or normal wear and tear.

VII. The foregoing is in lieu of all other expressed warranties and **CROSSFIRE** does not assume or authorize any party to assume for it any other obligation or liability. The duration of any warranties which may be implied by law (including the warranties of merchantability and fitness) is limited to the term of this warranty. In no event shall **CROSSFIRE** be liable for special, incidental or consequential damages arising from obligations under this warranty due to cause beyond its control. Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusions or limitation of consequential damages, so the above limitations and exclusions may not apply to you.

VIII Return Policy

Your unit will be serviced free of charges on an in-warranty basis only. If improper operation occurs, contact your authorized **CROSSFIRE** dealer for assistance with the return and factory repair of your **CROSSFIRE** product. If an authorized **CROSSFIRE** dealer is not available, the following procedure must be followed: phone (562-483-8111) or fax (562-483-8106) in your name, address, telephone number and the model number of the item to be returned to receive a return authorization number. Your return authorization number must be clearly written on the outside of the packing box returned to **CROSSFIRE**. All returned products must be accompanied by a dated purchase invoice or the product may be subject to costs of parts and labor. Return the unit, prepaid postage, in the original protective carton or a carton with ample protection. Please include a brief description of the problem and send your repair to:

CROSSFIRE
12737 Moore Street,
Cerritos, CA 90703

Faint, illegible text, possibly bleed-through from the reverse side of the page.

CROSSFIRE

12737 Moore Street,
Cerritos, CA 90703