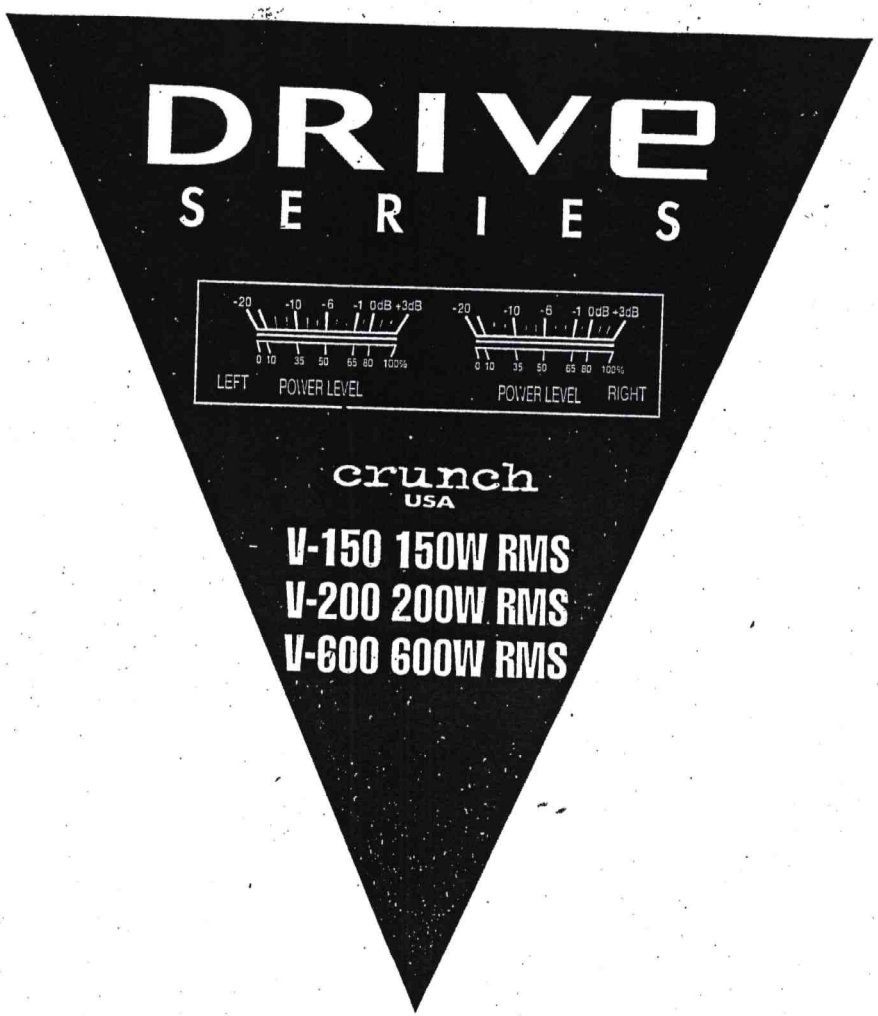
DRIVE
SERIES
-20 -10 -6 -1 0dB +3dB
0 10 35 50 65 80 100%
LEFT POWER LEVEL
-20 -10 -6 -1 0dB +3dB
0 10 35 50 65 80 100%
POWER LEVEL RIGHT
crunch
USA
V-150 150W RMS
V-200 200W RMS
V-600 600W RMS

Dear Customer

Selecting fine audio equipment, such as the unit you have just purchased, is only the beginning of your musical enjoyment. Now is the time to consider how to maximize the fun and excitement your equipment has to offer.
CRUNCH USA and the Electronic Industry Associations consumer Electronic Group want you to get the most out of your equipment by playing it at a safe level, a level that lets the sound come through loud and clear without annoying blaring distortion; most importantly, without affecting your sensitive hearing.

Sound can be deceiving. Over time your hearing "comfort level" adapts to higher volumes of sound, what may have sounded "normal" can actually be too loud and harmful to your hearing. Guard against this by setting your equipment at a safe level BEFORE your hearing adapts.

To establish a "safe level"

- Start your volume control at a low setting.
- Slowly increase the sound until you can hear it comfortably and clearly, and without distortion.
- Once you have established a comfortable "sound level".
- Make a note of this position and do not go above this setting.

Talking a minute to do this will help to prevent hearing damage in the future. After all, we want you listening for a lifetime.

crunch USA

Introduction

This car power amplifier has high power and low distortion performance typical of a fine home stereo amplifier. You can be proud of yourself for making a fine choice. Before beginning your installation of this amplifier, please be sure to read this manual throughly and follow the instructions carefully.

Installation

The quality of the installation will affect system performance and reliability. You may wish to contact a dealer or professional installer. The amplifier is generally mounted in the rear trunk area but can be mounted in any convenient area such as beneath a seat. Please be sure to locate this unit where you have reasonable air circulation and protection from any hazard with moisture. When considering the mounting location you should minimize the length of the power supply and speaker leads. Minimizing both leads will provide higher audio output from the system. It is important to ensure that the cooling fans or the heat sink are not against a panel or a surface preventing air circulation. Mark the location for the mounting screw holes by using the amplifier as a template. Drill #29 or 9/64" diameter holes at the marked locations and firmly fasten the amplifier in place with the mounting screws supplied in the accessory kit.(Refer to Fig. 1)

Caution

Before drilling or cutting any holes investigate the layout of your automobile throughly: Take care when working near the gas lines or hydraulic lines and electrical wiring.

Warning

This power amplifier has a protection feature to prevent any damage from misuse or faulty conditions-excessive heat, short circuited speakers or overload. If the unit senses one of the above conditions, the protection indicator will light and the system will shut down. To diagnose the problem turn all levels down, all power off and check the installation for possible wiring mistakes or shorts. In the event the amplifier shuts down due to excessive heat under adverse conditions simply allow time for the unit to cool down at which time, the protection indicator will not light.

Power Supply Connections

Fig.1 Installation of amplifier

The +12VDC and ground wires should be heavy gauge standard copper wire with heavy insulation. The wire gauge should be 10AWG for the V-150, V-200, and V-600 or lager. In addition it has a 12V control wire and it should be 14AWG-18AWG. It is preferable to have longer speaker wires and shorter power supply wires so as to minimize power losses.

+12V Power

This wire is usually connected directly to the positive battery terminal. Ensure that the + power supply wire is fused via an assigned fuse in line with the +power supply wire. This connection must be completed by using spade lug with insulating sleeve.

Ground

This connection must be completed by using spade lug with insulating sleeve. This wire is the electrical ground and must be fastened securely to the vehicle chassis. The best method is to use a shelf threading sheet metal screw since the threads cut into bare metal. Ensure that all paint coating or other insulatio is remove from around the hole area and using selftapping screw, securely affix the bare wire ends to the vehicle chassis. Use as short a piece of cable as possible-use the same gauge as for the +12V.

Remote

Many radios or other music sources have an output terminal for connection of the remote turn-on of the power amplifier. If a radio doesn't have a remote turn-on feature, then you can use the antenna relay wire which activates the antenna motor. But you must take notice if the antenna is come down when the tape player is operating. In this case, you can't use the antenna relay wire to operate the remote turn-on.

Power Input Connection

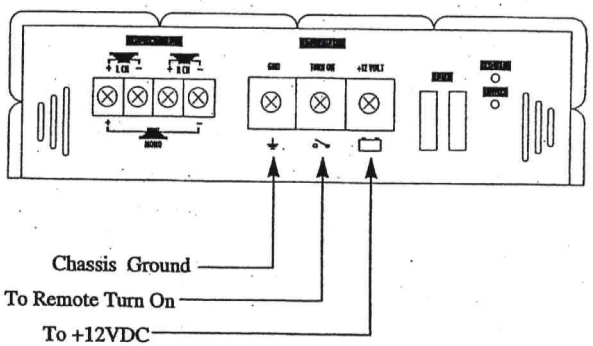

Fig.2 Power Input Connections

Caution

First make +12V wire connection then the ground connection and finally the remote connection.
Furthermore the +12V wire must always be fused at the battery for production against possible damage. If you need to replace the power fuse, replace it with a fuse of the same value. Using a fuse of a different type or rating may result in a serious hazard.

SPEAKER INPUT CONNECTIONS

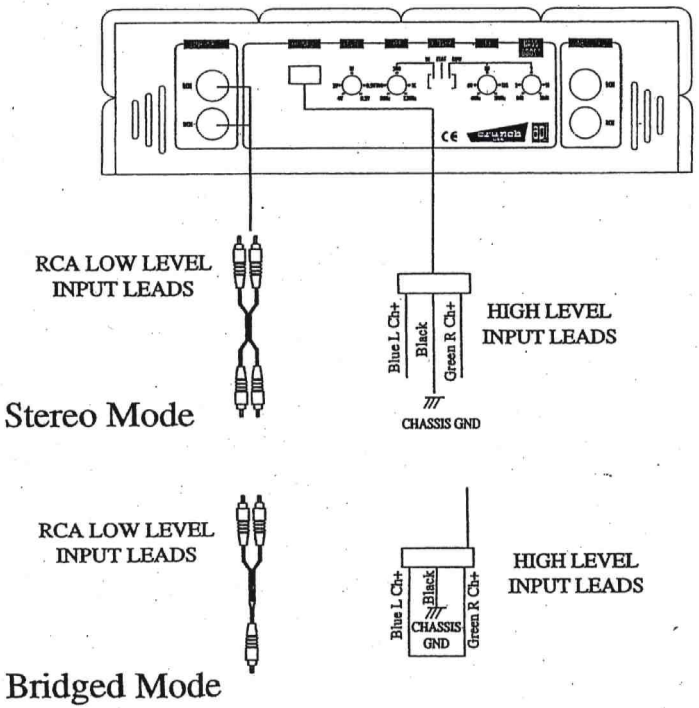

Fig. 3 Signal Input Connections

Note:RCA Cable not supplied with unit:
Caution:Do not use both low and high level inputs simultaneously!

SPEAKER OUTPUT CONNECTIONS

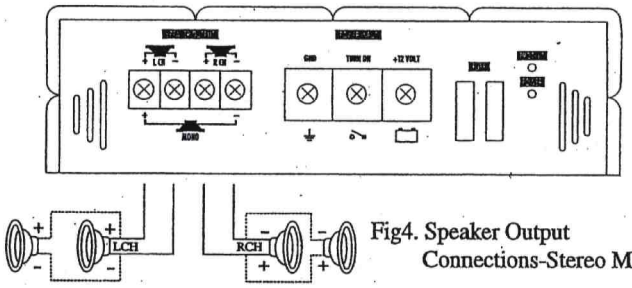

Fig4. Speaker Output Connections-Stereo Mode

DOTTED LINES SHOW 4-SPEAKER CONNECTIONS.
IN THIS CASE, IT IS BETTER TO USE 8 ohm SPEAKER TO PREVENT ANY DAMAGES.

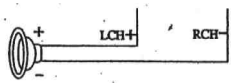

Fig5. Speaker Output Connections-Bridge Mode

- The amplifier can be used in the STEREO and BRIDGED mode as shown in Fig.4, Fig5.
- The speaker wires should be connected to the speaker terminal on amplifier.
- Notice that most speakers have a polarity marking such as "+" or a dot on speaker terminals and these marking denote the positive terminals of the speaker and are used as a guide to phase the speakers. Improper phasing causes a loss of bass response.

- When used in the BRIDGE mode the speaker wires should be connected to the output terminals of the amplifier as shown.(Ref. to Fig.5)
- When operating 4-speaker system, the impedance of the speaker is an important factor. Do not use less than 2 ohm in the mono mode.
- Do not use speakers in parallel for less than a 1ohm load per channel in the stereo mode.
- Too low impedance loads will cause excessive heat radiation from the amplifier and the protection circuit will be operated to prevent a damage. In this case, you must reduce the volume to the proper level.

Caution

Be careful not to connect speacker(-) to the ground or chassis.

FEATURES AND CONTROLS

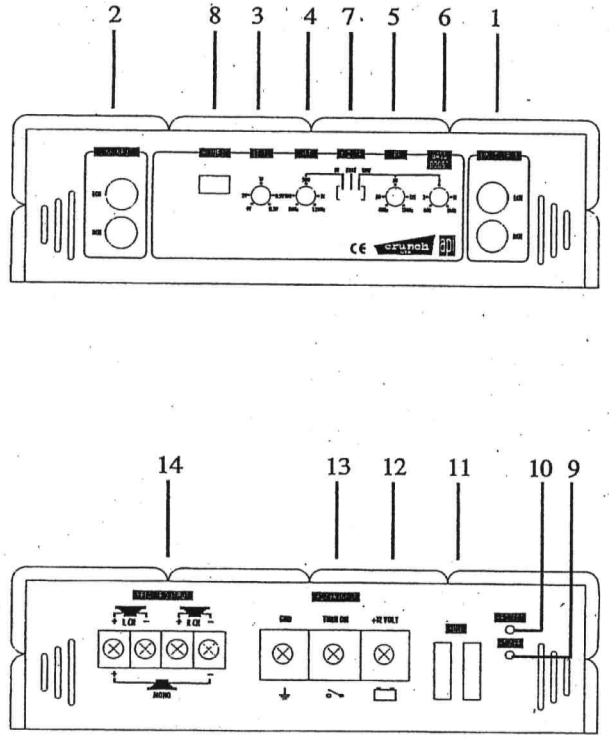

Fig5. Features and Controls

1. RCA Line Output Jacks
   Full range output from channel 1 + 2 inputs is provided at Line Out Jacks
2. RCA Low Level Input Jacks
   It allows left and right inputs to be connected to the amplifier using RCA plugs.
3. Input Level Control
   It allows for the adjustment of the gain of both channel so as to match the output level of the source.
4. High Variable Controls
   Adjust the crossover frequency of the High Pass output only, from 80Hz to 1.2kHz.
5. Sub Variable Controls
   Adjust crossover frequency of the LOW pass output only, from 40Hz to 150Hz.
6. Sub Boost Controls
   Adjust the sub boost level from 0dB to +12dB.
7. X-over switch
   a) Low position:Allows for the control of the low pass frequency range(40Hz-150Hz)by using the Sub Variable & Sub Boost Control knobs.
   b) Flat position:Allows for full range pass through.
   c) High position: Allows for the control of the high pass frequency range(80Hz-1.2kHz)by using the High Variable & High Boost Control knobs.
8. Hi Level input connector
   Connect the radio's speaker output to the high level inputs connector. Do not use both low and high level input at the same time. Be sure not to confuse high level input with speaker outputs. Incorrect connections may damage the amplifier or your source (High level input is based on common ground signal)

   * High Input Connector
   Blue:LCH(+) Green:RCH(+) Black:Chassis Ground
9. Power indicator
   It indicates amplifier has turn on signal.
10. Protection indicator
    It indicates the fault operation of the amplifier. When the fault conditions(overload, excessive heat or short circuit of speaker)arise, the protection circuit is engaged to protect both the speakers and amplifier against damage.
11. Fuse
    It protects both the amplifier and automobile electrical system from fault conditions. Use a standard automotive fuse, V-150:15Amp, V-200:20Amp, V-600:25Amp x 2.
12. Power connection
    Connects +12VDC power wire from the battery and also connects ground wire form a suitable ground point on the chassis.
13. Remote connection
    Connects the control wire which allows the amplifier to be turned on and off by the radio cassette player.
14. Speaker Terminal
    It allows the connection of speakers to the amplifier.

SPECIFICATIONS

Drive Series	V-150	V-200	V-600
*Audio power output per Channel, both channels driven at 12.6VDC.			
- 4 Ohms 1kHz, THD 0.03%	75W x 2	100W x 2	300W x 2
- 2 Ohms 1kHz, THD 0.05%	125W x 2	175W x 2	500W x 2
- 4 Ohms Bridged, THD 0.05%	250W x 1	350W x 1	1000W x 1
* Signal to Noise Ratio	>90dB	>90dB	>90dB
* Frequency Response		10Hz - 40kHz, +/- 1dB	
* Crossover: Separate			
- High Pass		80Hz - 1.2kHz Variable	
- Low Pass		40Hz - 150Hz Variable	
- Sub Boost		0dB +12dB Variable	
* Input Sensitivity		200mV - 4V Adjustable	
* High Input Sensitivity		1V-10V Adjustable	
* Input Impedance		47K Ohms	
* Damping Factor		180 into 4 Ohms	
* Channel Separation		>98dB	
* Power Consumption (Bridge RMS)	13A	18A	45A
* Fuse Rating	15A	20A	25A x 2
* Dimension(W x H xL)	8.4"W x 2.2"H x 9.5"L	8.4"W x 2.2"H x 9.9"L	8.4"W x 2.2"H x 15"L

** 1. These specifications can be changed without notice
2. Please note that the features shown in this manual may vary from model to model.

LIMITED WARRANTY

Speakers: 1 year Electronics:1 year
Note:A stock=(new goods) 1 year speakers/electronics
B stock=(refrubished or repaired goods) 90 days

30 DAY EXCHANGE:A stock; Crunch will replace all products with another A stock product(over the counter exchange)within 30 days of original purchase, providing the product is found to be defective. Reciept required. After 30 days, Crunch will repair or replace product(with a product we deem to be equivelent)at our discretion.

WHAT IS COVERED:This warranty applies only to Crunch products sold by authorized Crunch dealers in the USA Products purchased by consumers from authorized Crunch dealers in another country are covered only by that country's distributor and not by Crunch USA.

WHO IS COVERED: Original purchaser(non-transferrable)of Crunch products pruchased at an authorized Crunch dealer. in order to receive service, purchaser must provide Crunch with a copy of the sales receipt stating the customer's name, dealer name, product purchased and date of purchase.

LIMITED WARRANTY: Warranty is in effect for the period after date of original purchase by consumer. One year for Speakers and Electronics. No person is authorized by Crunch to assume any other liability in connection with the sale of this product. This warranty DOES NOT COVER the following:1) Damage caused by abuse, misuse, accident, water or theft. 2) Damage caused by improper installation . 3) Any cost of expense related to removal and reinstallation. 4) Service performed by anyone other than an authorized Crunch service center. 5) Any product which has had the serial number removed, altered or defaced. 6) Subsequent damage to other components. 7) Any product purchased outside the USA. 8) Any product not purchased from an authorized Crunch dealer.

How to receive service; Call(800) 635-4380 for customer serivce. Obtain a return authorization number(RA #).
Customers are responsible for shipping to Audio Products, Ship to:2510 Commonwealth Ave. North Chicago, IL 60064