



Pristine sound, brute power and no-fault reliability make the HD amps one of the best values on the market today. Massive Toroid power supplies with huge capacitors deliver the bass that kick drums demand. The HD series is designed for 2 ohm operation, to drive up to four 8 ohm speaker systems per channel.

Each HD is hand built at our San Diego factory featuring all steel construction, recessed controls and heavy-duty power components. The rock-solid, efficient design with its superb testimonial-proven sound makes the USA built HD an amp you'll own for years.

### PURE—TRANSPARENT SOUND

Carvin considers the sound of an amp to be equally important as its reliability. To insure pure, uncolored sound, we build one of the fastest power stages on the market today. High slew rates of 50v/μs deliver superb transient response. High frequencies are transparent and open - even at extreme levels. Linear feedback circuits reduce distortion to near the theoretical zero limit preventing harshness which would lead to ear fatigue. The HD deliver transparent, unaltered sound—especially important to the studio user. Drive any type of reactive load, including a 70V transformer distribution system.

### ULTRA RUGGED FOR TOURING

Every chassis is made from heavy-duty 16 gauge steel that is zinc plated before painting to prevent rust. All internal cabling is neatly tied and harnessed. Every circuit card is double-sided, through-hole plated, FR-4 MIL SPEC fire retardant glass epoxy. "SMT" surface mount technology, featuring precision 1% resistors, prevents components from vibrating loose. Steel output connectors, heavy-duty power switches, recessed knobs, all give the HD amps a "tank-like" ruggedness.

### TOROID POWER SUPPLY

Toroids deliver massive amounts of "on demand" current for continuous 2 ohm operation. This gives the power supply a solid foundation, yielding more headroom for large subwoofer applications. Not only do toroids deliver high current, but they are known for reducing stray magnetic fields eliminating hum & noise. This is especially important to the recording industry.

### MODULAR CONSTRUCTION

With the HD Series, Carvin brings you totally modular construction. If you ever need an I/O (input/output) connector card because a connector wore-out, just unplug and re-install the replacement card. This applies to every aspect of the HD Series amps including the power supply, power cards, heat sinks and fans. Everything is connected by heavy-duty AMP™ and MOLEX™ type connectors for easy replacement—even the Toroid transformer is a plug-in.

### RECEIVING INSPECTION—read before getting started

INSPECT YOUR UNIT FOR DAMAGE which may have occurred during shipping. If damage is found, please notify the shipping company and CARVIN immediately.

SAVE THE CARTON & ALL PACKING MATERIALS. In the event you have to re-ship your unit, always use the original carton and packing material. This will provide the best possible protection during shipment. CARVIN and the shipping company are not liable for any damage caused by improper packing.

SAVE YOUR INVOICE. It will be required for warranty service if needed in the future.

SHIPMENT SHORTAGE. If you find items missing, they may have been shipped separately. Please allow several days for the rest of your order to arrive before inquiring.

RECORD THE SERIAL NUMBER on the enclosed warranty card or below on this manual for your records. Keep your portion of the card and return the portion with your name and comments to us.

USA customers register online at: [www.carvin.com/registration](http://www.carvin.com/registration)

All other countries register online at: [www.carvinworld.com/registration](http://www.carvinworld.com/registration)

### FRONT PANELS & CONNECTING UP

The HD Series feature front panel signal, peak and protect LEDs to monitor the status of the amp. The recessed Level controls are detented to prevent rotation due to vibration. Balanced TRS & XLR input connectors eliminate hum & noise. Speaker outputs feature heavy-duty binding posts and steel 1/4" jacks.

The rear professional accessory group offers a GROUND switch to remove the chassis ground from the XLR and 1/4" inputs. A PARALLEL input switch connects the inputs together eliminating Y cables for patching multiple amp systems. The accessory group also features a BRIDGE MODE switch to deliver the full power of the amp into a single load or 70V distribution system.

### HD POWER AMP SPECIFICATIONS:

MODEL	HD900	HD1800
<b>Bridged RMS Continuous</b>		
4Ω (20-20k Hz, <1.0%)	900w	1800w
8Ω (20-20k Hz, <1.0%)	600w	1200w
<b>Both Channels RMS Continuous</b>		
2Ω (20-20k Hz, <1.0%)	450/450w	900/900w
4Ω (20-20k Hz, <1.0%)	300/300w	600/600w
8Ω (20-20k Hz, <1.0%)	180/180w	350/350w
THD (20-20k Hz 50% power)	0.03%	0.03%
THD (20-20k Hz 90% power)	0.1%	0.1%
Damping Factor:	>500	>500
Slew Rate: bridged mode	>50v/μs	>50v/μs
Sensitivity: (4Ω, Vms)	1.0 V	1.0 V
Signal to Noise Ratio:	Above 100dB	
Frequency Response:	±0.5 dB, 20 Hz to 20kHz (±1.5 dB, 10 Hz & 40 kHz)	
Input Impedance:	>20K Ω, balanced	
Protection Circuits:	Short Circuit • No Load Protection • SpeakerGuard™ • Thermal Shut-Off • Mute On/Off	
Control and Indicators:	Front: Power switch • Recessed detent attenuators • Signal LED • Clip LED • Protect LED • Power Indicator Rear: Ground Lift (each channel) • Parallel Input Switch • Speaker Output Bridge Switch • Input Connectors: Two each; Balanced XLR & 1/4" • Speaker Output Connectors: Dual heavy duty binding posts, & four 1/4"	
Internal Fuse	SLOW BLOW - HD900: 15A, 240V/10A, HD1800: 20A, 240V/10A	
Dimensions:	(2U) 3 1/2" High x 19" Wide x 10" Deep	
Net Weight:	HD900: 28 lbs.	HD1800: 32 lbs.

For your records, you may wish to record the following information.

Serial No. \_\_\_\_\_ Invoice Date \_\_\_\_\_

# CARVIN

12340 World Trade Drive, San Diego, CA 92128  
800.854.2235 www.carvin.com

## FRONT & REAR PANEL CONTROLS



### FRONT PANEL

#### 1. MOUNTING

Sturdy one piece 12 gauge steel face plate accommodates standard 19" rack installation. The rack mounting holes are designed on ISO standard spacing. Four 10-32 x .5" phillips machine screws are normally used to secure the amp. Rear support brackets are not required.

#### 2. POWER SWITCH

Check the power amp connections and verify the AC line power source before engaging the POWER switch. The yellow LED unmistakably indicates that all circuits are properly powered up. Yellow is used so the operator can see the red indicators (clipping or protect) from a distance.

#### 3. CHANNEL LEVEL CONTROL

A precision input LEVEL attenuator is used to adjust the volume levels. To deliver the amps maximum power without reducing the headroom of the signal source, the level controls should be turned full on.

#### 4. CHANNEL SIGNAL INDICATOR

The green SIGNAL LED indicators will start to flash when there is a low signal passing to your speakers (-30dB $\mu$ ). This lets you know when the amp is passing a signal to your speaker connectors.

#### 5. CHANNEL CLIP INDICATOR

The red CLIP LED indicators flash when each channel has reached its maximum output. Occasional flashing caused by low frequencies is OK. However, consistent flashing caused by higher frequencies may damage high frequency drivers (excessive distortion). This does not cause damage to the amp.

#### 6. COOLING VENTS/FAN

Upon rack installation, the rear of the amp must be fully exposed to room temperature air. The surrounding air should not be warmer than 120° or the thermal protection could activate the PROTECT LED. The front cooling vents are not to be restricted.

#### 7. PROTECT LED INDICATOR

The red PROTECT LED provides the operator with information about the status of the amplifier. The PROTECT LED can come on under 3 different conditions (when this happens, both channels are muted and the speaker relays disconnect the speakers);

- 1) During power-up, the amplifier stays in a muted state for approx. 3 sec until it determines that everything is functioning normally (no output shorts or over temp conditions).
- 2) When the output load draws excessive current or a direct short is detected caused by a shorted speaker cable or speaker system, the RED PROTECT LED will illuminate. Reset this condition by turning the amp off for two seconds and then on again. Check for shorted cables and that the total speaker impedance is not below 2 ohms per channel (4 ohms bridged).
- 3) Overheating is usually determined when the amp stops in the middle of a performance and the PROTECT LED comes on. If this is the cause, leave the amp on for the fan to cool the amp down. The amp will automatically reset within 3 minutes. The PROTECT LED will turn off when ready. Check for the following conditions; a) The rear intake air is not restricted, b) The intake air is not extremely warm, c) The front exhaust vents are not restricted, or d) No excessive speaker load (try other speakers or remove speakers if you have more than one connected to each channel).

### REAR PANEL

#### 8. XLR CHANNEL INPUTS

Whenever possible, use the XLR balanced inputs. This will help to reduce hum and allow longer cable runs from your signal source (mixer, etc). Because this is a balanced input, the gain will be 6 dB higher than using the 1/4" input jack with non balanced lines. XLR pin configuration: Pin 1: Grounded through the GROUND LIFT switch, Pin 2: positive Bal. signal and Pin 3: negative Bal. signal.

#### 9. CHANNEL 1/4" TRS INPUT

This TRS jack is designed to receive either balanced or unbalanced input signals. Balanced signals coming into this jack should be wired with the connector's tip going to signal + and the connector's ring to signal -. The connector's sleeve is then tied internally to ground through the GROUND LIFT switch.

#### 10. PARALLEL OR "Y" INPUTS

The rear PARALLEL switch connects both channels together from either input. This eliminates Y adapter cables. This feature is used to "daisy chain" one piece of equipment to another. Just plug into the unused INPUT (TRS or XLR) and it will become the output for other equipment.

#### 11. INPUT GROUND LIFT

Many times sound systems are connected in such a manner as to cause a grounded loop with the inputs which results in audible hum. The input GND LIFT switch (TRS & XLR) on the rear panel will help eliminate this problem. If not, install a Carvin's MTF55 "Ground lifter" between the amplifier input and the signal.

#### 12. SPEAKER 1/4" OUTPUTS

The standard 1/4" SPEAKER jacks are offered for low power connections.

#### 13. SPEAKER BINDING POSTS

For high power speaker connections, use the rear BINDING POSTS to connect your speakers. Wire sizes up to 7 gauge (50 amps) can be inserted into the binding post "side holes". Larger cable can be used with "banana" plugs which plug into the end of the binding posts. Binding posts are spaced on ISO standards. Use the two center RED binding posts to BRIDGE speaker connections (see 14. BRIDGE MODE).

#### 14. BRIDGE MODE—25V/70V DISTRIBUTION SYSTEMS

The HD's can be operated in bridge mode if you require a 25V / 70V mono distribution speaker system or a mono (single channel) amp, which doubles the power into a single load. With your amp off, push "IN" the rear (recessed) BRIDGE switch after you have made your connections to the rear center RED binding posts (ch 1 is + and ch 2 is -). Carefully select or damage may result to the speakers (this is why the switch has been recessed). No other speaker connectors or binding posts can be used at the same time! The INPUT connector and LEVEL is handled by channel 1. Channel 2 is non-operational. The minimum speaker impedance is 4 ohms. CAUTION: The power developed by bridging your amp can destroy most speakers.

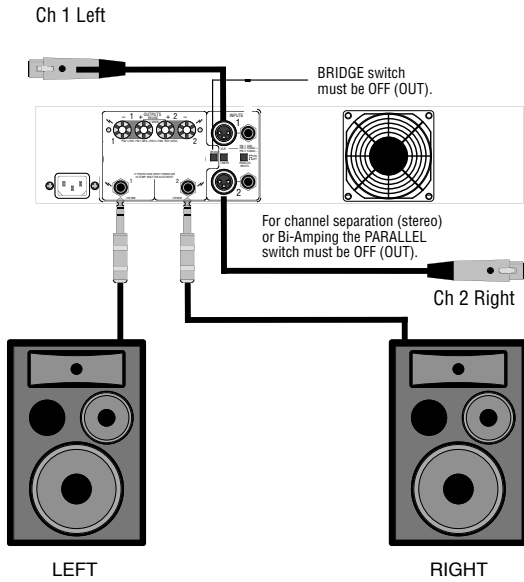
#### 15. AC POWER

Your amp is designed to run on 120V 60 Hz. The voltage range is 95V to 132V. The rear heavy-duty AC receptacle will accept a universal grounded AC cord that is designed your country. Be sure to check your power source before plugging into a grounded (3 prong) outlet. Never defeat the grounded connection or electrocution may result! Firmly push the AC cord all the way into the receptacle.

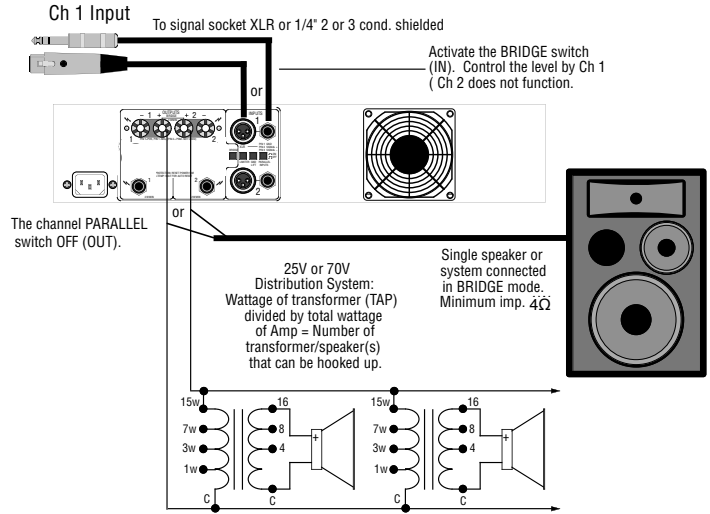
**FUSE:** The fuse is located within the main chassis above the AC connector mounted on the rear, inside the PC card. Normally if the fuse fails, the amp will require service. See spec. chart for fuse values.

**NOTE:** Each amp will require a dedicated 20 amp circuit if you are driving the amp to its full output. There will be a sustained loss of power if the AC voltage is below the rated 120V. Use a heavy gauge power cable and power source.

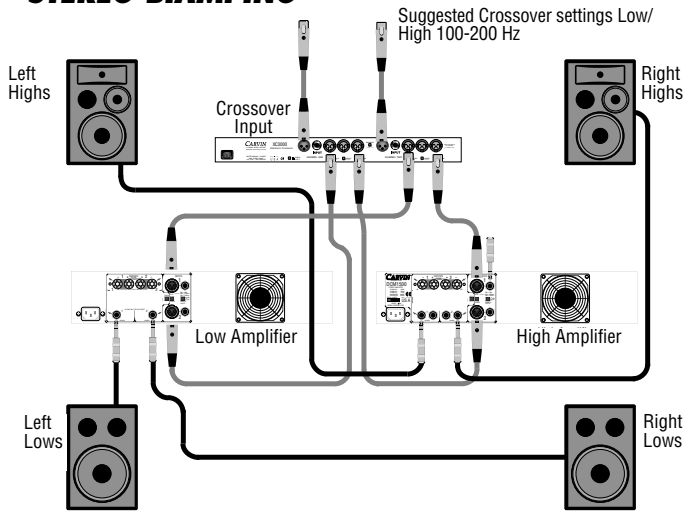
## TYPICAL STEREO SETUP



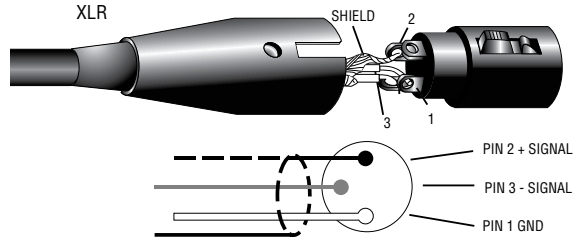
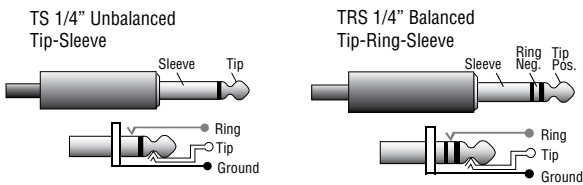
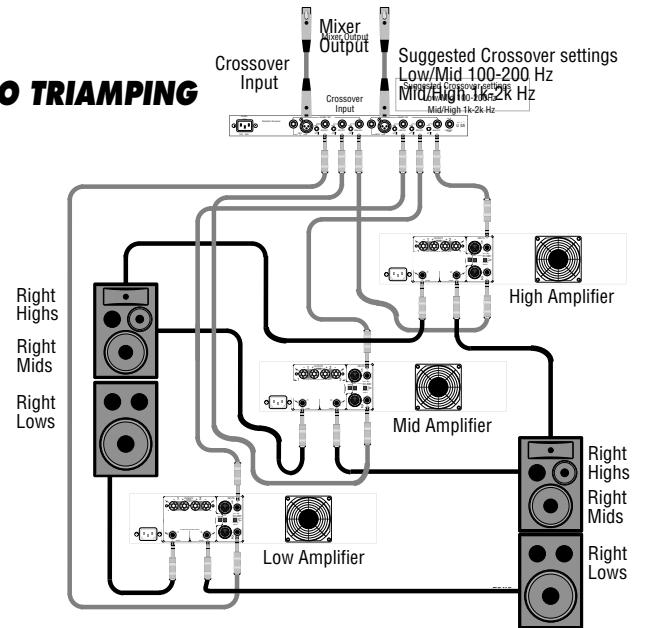
## 25V OR 70V DISTRIBUTION SYSTEM



## STEREO BIAMPING



## STEREO TRIAMPING



## HELPFUL HINTS

- NO SOUND FROM CH 2:** The rear (recessed) BRIDGE switch has been inadvertently pushed in.
- STEREO CHANNELS SOUND THE SAME:** The rear PARALLEL switch has been inadvertently pushed in.
- NO HIGH FREQUENCIES:** Tweeters or midrange drivers have been damaged or blown from feedback or over-powering.
- SYSTEM HUM:** Switch the rear GND LIFT switch IN or OUT. If hum is not eliminated, then install Carvin's MTF55 "Ground Lifter" between the amplifier input and signal source. This isolates the input ground from the AC power ground.
- POOR SOUND (BASS):** The speaker systems are wired out of phase to each other. To correct, reverse the wires on one speaker connector only and your sound, especially bass response will improve.
- 20 AMP CIRCUIT:** Each amp will require a dedicated 20 amp circuit for its full output. There will be a sustained loss of power if the AC voltage is below the rated 120V input.



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

**CAUTION**

RISK OF ELECTRIC SHOCK  
DO NOT OPEN



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.



**IMPORTANT! FOR YOUR PROTECTION, PLEASE READ THE FOLLOWING:**

**WATER AND MOISTURE:** Appliance should not be used near water (near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc). Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

**POWER SOURCES:** The product should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

**GROUNDING OR POLARIZATION:** Precautions should be taken so that the grounding or polarization is not defeated.

**POWER CORD PROTECTION:** Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

**SERVICING:** The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

**FUSING:** If your unit is equipped with a fuse receptacle, replace only with the same type fuse. Refer to replacement text on the unit for correct fuse type.

**SAFETY INSTRUCTIONS (EUROPEAN)**

The conductors in the AC power cord are colored in accordance with the following code.

**GREEN & YELLOW—Earth    BLUE—Neutral    BROWN—Live**

**U.K. MAIN PLUG WARNING:** A molded main plug that has been cut off from the cord is unsafe. NEVER UNDER ANY CIRCUMSTANCES SHOULD YOU INSERT A DAMAGED OR CUT MAIN PLUG INTO A POWER SOCKET.

**LIMITED WARRANTY**

Your Carvin product is guaranteed against failure for 3 YEARS unless otherwise stated. Carvin will service and supply all parts at no charge to the customer providing the unit is under warranty. Shipping costs are the responsibility of the customer. CARVIN DOES NOT PAY FOR PARTS OR SERVICING OTHER THAN OUR OWN. A COPY OF THE ORIGINAL INVOICE IS REQUIRED TO VERIFY YOUR WARRANTY. Carvin assumes no responsibility for horn drivers or speakers damaged by this unit. This warranty does not cover, and no liability is assumed, for damage due to: natural disasters, accidents, abuse, loss of parts, lack of reasonable care, incorrect use, or failure to follow instructions. This warranty is in lieu of all other warranties, expressed or implied. No representative or person is authorized to represent or assume for Carvin any liability in connection with the sale or servicing of Carvin products. CARVIN SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

When RETURNING merchandise to the factory, you may call for a return authorization number. Describe in writing each problem. If your unit is out of warranty, you will be charged the current FLAT RATE for parts and labor to bring your unit up to factory specifications.

**MAINTAINING YOUR EQUIPMENT**

Avoid spilling liquids or allowing any other foreign matter inside the unit. The panel of your unit can be wiped from time to time with a dry or slightly damp cloth in order to remove dust and bring back the new look. As with all pro gear, avoid prolonged use in caustic environments (salt air). When used in such an environment, be sure the amplifier is adequately protected by rack, covers, etc..



**CAUTION**

RISK OF ELECTRIC SHOCK

REFER SERVICING TO QUALIFIED SERVICE PERSONNEL! THIS UNIT CONTAINS HIGH VOLTAGE INSIDE!