



HT400, HT750, HT1000

The HT Series professional amps are designed utilizing Carvin's 33 years of experience in power amp technology. They meet and exceed every standard for professional amplification. Their thick brushed anodized aluminum face plates, large recessed knobs and heavy-duty steel chassis reflect the manufacturing quality within. The HT "High Energy Transfer" amps are available in three different models. All models carry the CE approval for world-wide use.

### PURE—TRANSPARENT SOUND

Carvin considers the sound of an amp equally important as its reliability. To insure pure, uncolored sound, we designed one of the fastest responding power amps on the market today. High slew rates greater than 45v/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 any type of harshness which would lead to ear fatigue. The HT Series amps deliver flat, transparent, unaltered sound—especially important to the studio user. And you can drive any type of reactive loads, including 70V transformer distribution systems. These amps are designed to deliver non-stop, continuous power and are completely protected from heat and short circuits.

### ULTRA RUGGED FOR TOURING

Every chassis is made from heavy-duty 16 gauge steel that is galvanized before being painted to prevent rust. All internal cabling is neatly tied and harnessed. Every circuit card is MIL SPEC, double-sided, through-hole plated, fire retardant FR-4 glass epoxy. This insures that the solder flows on the top, bottom and through each hole of every component, preventing components from shaking loose—even through constant tour use. Neutrik™ XLR connectors, heavy-duty power switches, recessed knobs, machined aluminum front panels and extruded handles all give the HT amps a "tank-like" ability to handle rough, touring transport.

### TOTALLY MODULAR

With the HT 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 it and re-install the replacement card in minutes. You don't have to de-solder anything. This applies to every aspect of the HT 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 total plug-in.

### HEAVY-DUTY COOLING

Carvin offers up to 30% more cooling than comparable amps rated at the same wattage. This means that the HT Series are thermally "over-engineered" to be sure heat will never be a concern. Even outdoor concerts in direct sunlight will not cause thermal shut down. Carvin uses precision 6063 T-5 aluminum high ratio heat sinks that are extruded for massive amounts of cooling. High efficiency, multi-speed fans cool your amp quietly even when moving air at up to 115 CFM!

### LOSE THE WEIGHT...NOT THE PERFORMANCE

For some companies weight reduction means cost reduction. Carvin however, uses expensive TOROID transformers to reduce weight. 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 the largest subwoofer application. Not only do toroids deliver high current, but they are known for reducing stray magnetic fields eliminating hum & noise. This is especially important for the recording industry.

### RECEIVING INSPECTION—read before getting started

INSPECT YOUR UNIT FOR ANY DAMAGE which may have occurred during shipping. If any 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.

### DISTORTION-FREE LIMITERS

While most amps do not offer built-in limiters, this is an important feature to look for. The purpose of a limiter is to hold down peaks so the amp won't distort even with extra hot input signals (this protects your expensive speakers). In addition, a well designed limiter can increase your amp's average output as much as 3 db. Part of Carvin's design uses the more expensive, distortion-free linear "opto isolators". Unlike amps that use FET controlled limiters which can inject small amounts of distortion, the HT Series limiters keep your sound pure and uncolored!

### FRONT PANELS & CONNECTING UP

The HT Series feature front panel signal, peak and protect LEDs which let you monitor the status of the amp easily. Also, both channels use precision 41 detent level controls allowing you to see your settings at a glance. Balanced 1/4 phone & XLR input jacks are used to eliminate hum & noise. Speaker outputs feature 1/4" jacks & heavy-duty binding posts that accept up to 50 amp #7 speaker wires.

The rear professional accessory group offers a GROUND switch to remove the chassis ground from the XLR input, a Parallel input switch connects the inputs of both channels together eliminating Y connectors and allowing amp patching in multiple amp systems. The accessory group also features a bridge mode switch for delivering full power into a 70V distribution system and a limiter ON/OFF switch that gives you the choice of using the internal limiter circuitry.

### HT POWER AMP SPECIFICATIONS:

MODEL	HT400	HT750	HT1000
<b>Bridged RMS Continuous</b>			
4Ω (20-20k Hz, <0.4%)	400w	750w	1000w
8Ω (20-20k Hz, <0.4%)	300w	500w	700w
<b>Both Channels RMS Continuous</b>			
2Ω (20-20k Hz, <0.2%)	200/200w	375/375w	500/500w
4Ω (20-20k Hz, <0.2%)	150/150w	250/250w	350/350w
8Ω (20-20k Hz, <0.2%)	100/100w	175/175w	225/225w
<b>THD (Typical):</b>	0.03%	0.03%	0.03%
<b>Damping Factor:</b>	>350	>350	>400
<b>Slew Rate:</b> bridged mode	>45v/μs	>45v/μs	>45v/μs
<b>Sensitivity:</b> (4Ω, Vms)	0.75 V	0.75 V	0.75 V
<b>Signal to Noise Ratio:</b>	100 dB	103 dB	106 dB
<b>Frequency Response:</b>	±0.5 dB, 20 Hz to 20kHz (±1.5 dB, 10 Hz & 40 kHz)		
<b>Input Impedance:</b>	>20K Ω, balanced		
<b>Protection Circuits:</b>	<ul style="list-style-type: none"> <li>• Short Circuit • No Load Protection</li> <li>• SpeakerGuard™ • Thermal Shut-Off • Mute On/Off</li> </ul>		
<b>Control and Indicators:</b>			
<b>Front:</b>	<ul style="list-style-type: none"> <li>• Power switch • Recessed 41 detent attenuators</li> <li>• Signal LED • Clip LED • Protect LED</li> <li>• Power Indicator</li> </ul>		
<b>Rear:</b>	<ul style="list-style-type: none"> <li>Ground Lift (each channel) • Parallel Input Switch</li> <li>• Speaker Output Bridge Switch • Limiters IN/OUT Sw</li> <li>• Input Connectors: Two each; Balanced XLR &amp; 1/4"</li> <li>• Speaker Output Connectors: Dual heavy-duty binding posts and two 1/4" phone jacks</li> </ul>		
<b>Dimensions:</b>	3 1/2" High x 19" Wide x 10" Depth (2-space)		
<b>Net Weight:</b>	HT400: 16.9 lbs. HT750: 20.25 lbs. HT1000: 22.75 lbs.		

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

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

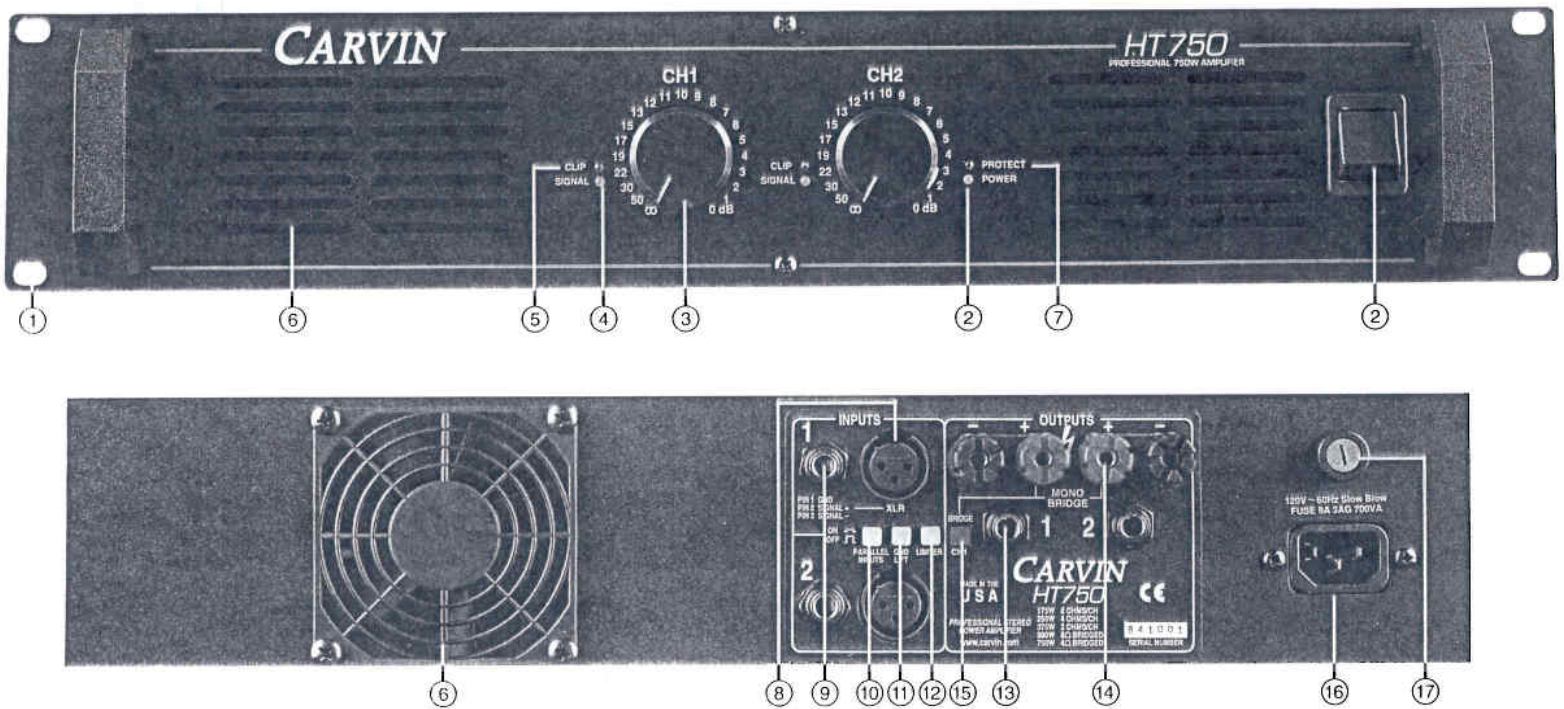
# CARVIN

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## FRONT & REAR PANEL CONTROLS



### FRONT PANEL

#### 1. MOUNTING

Sturdy one piece aluminum handles make for easy transporting along with facilitating rack installation. The rack mounting holes are designed on ISO standard spacing. Four 10-32 x .5" phillip 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 was chosen so the operator could see the other indicators from a distance.

#### 3. CHANNEL LEVEL CONTROL

A precision 41 step input LEVEL attenuate is used to adjust the volume levels. To deliver the amps full power without reducing the headroom of the signal source, the level controls should be turned up approximately 1/3 (15 on the dial).

#### 4. CHANNEL SIGNAL INDICATOR

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

#### 5. CHANNEL CLIP INDICATOR

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

#### 6. FRONT 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 from exhausting the warm air.

#### 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 by disconnecting the output speaker relays):

- 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. Reset this condition by turning the amp off for two seconds and then on again. Check for shorted cables and the total speaker system impedance connected to each channel (2 ohms minimum per ch or 4 ohms BRIDGED).
- 3) Overheating is usually determined when the amp stops in the middle of a performance and the PROTECT LED is on. If this is the cause, leave the amp on for the fan to cool the amp down. The amp will automatically reset within 1 to 3 minutes. The PROTECT LED will turn off when ready. Check for the following conditions: a) The rear intake air is restricted, b) Intake air is extremely warm, c) Front exhaust vents restricted, or d) Excessive speaker load (try other speakers or remove speakers if you have more than one connected to each channel). Again, the minimum impedance is 2 ohms per ch or 4 ohms BRIDGED)

### REAR PANEL

#### 8. XLR CHANNEL INPUTS

For most professional applications, use the XLR balanced inputs. This will help to reduce hum and allow for 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" PHONE JACK INPUT

This stereo phone 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.

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

The rear PARALLEL switch allows you to drive both channels from either input. All signals entering any input will be available on both channels. This eliminates Y adapter cables. This feature is used to "daisy chain" one piece of equipment to another. Just plug into the unused INPUT (1/4" or XLR) and it will become an output for other equipment.

#### 11. INPUT GROUND LIFT

Many times sound systems are connected in such a manner to cause a grounded loop with the inputs that result in audible hum. The input (1/4" & XLR) GROUND LIFT switch on the rear panel will help eliminate this problem. If not, another way to eliminate ground loops is to install a "line matching" transformer between the amplifier input and the signal source.

#### 12. LIMITERS

To activate the LIMITERS, engage the rear limiter switch. The built-in high quality limiters are recommended to hold down peaks that could cause early distortion. Limiters will help to rise the average power so that you can get more output from each channel. To check the effectiveness of the limiters when the channel starts to distort (under the amps full output), engage the limiters and hear the reduction of the distortion. If the distortion stops, you can turn the channel up for more power. The lower bass frequencies are most affected. **WARNING:** Do not check in an environment where the sound level could damage your ears!

#### 13. SPEAKER OUTPUTS

The standard 1/4" SPEAKER jacks are used for most applications. Turn the amp off before connecting your speakers.

#### 14. SPEAKER BINDING POSTS

For heavy-duty 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 (remove colored caps). Binding posts are spaced on ISO standards. Use the two center RED binding posts for BRIDGE speaker connections (see 15 BRIDGE MODE).

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

The "DCM" Series can be operated in bridge mode if you require a 25V / 70V distribution speaker system or a high powered mono (single channel) amp. With your amp off, push in the rear (recessed) BRIDGE switch after you have made your speaker connections to the rear center RED binding posts (ch 1 is + and ch 2 is -). No other speaker connectors or binding posts can be used at the same time!. The INPUT and LEVEL is handled by channel 1. Channel 2 is non-operational. The minimum speaker impedance is 4 ohms or a 25V distribution line. **CAUTION:** The power developed by bridging your amp can destroy most speaker systems!

#### 16. AC POWER

Your amp is designed to run on either 120V 60 Hz or 230V 50Hz depending on the model purchased. The voltage range for 120V model is 95V to 132V and for 230V model it is 195V to 253V. The rear heavy-duty AC receptacle will accept a standard 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!**

#### 17. AC FUSE VALUES (Slow Blow Type)

	HT400	HT750	HT1000
120V MODELS:	5AGC	8 AGC	10 AGC
230V MODELS:	3AGC	4 AGC	5 AGC