

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 ONE YEAR. 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.

HELP SECTION

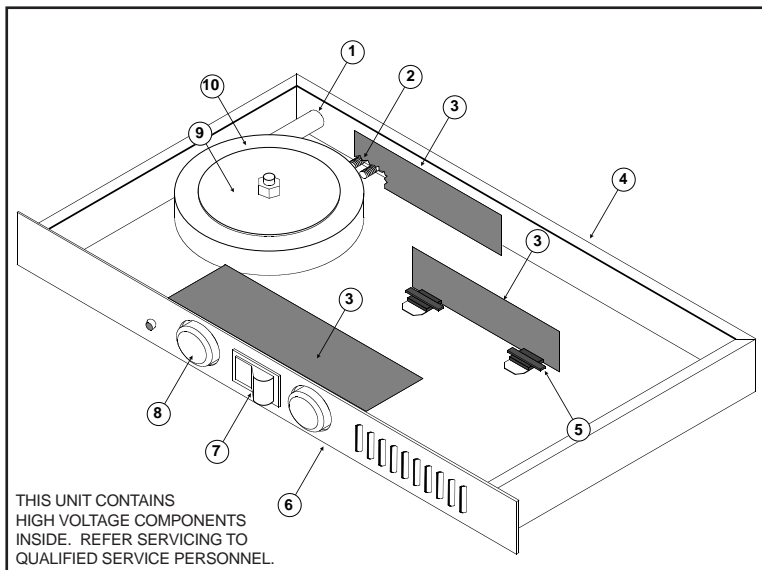
1) WILL NOT TURN ON

Check the power to the unit. Check for tripped circuit breakers, unplugged extension cords or power-strip switches that may be turned off. Check the fuse. If a dark brownish color or no wire can be seen within the glass fuse, then replace. The unit may be perfectly fine but occasionally the fuse may blow because of high AC voltage surges. After the fuse has been replaced with the proper value and if the fuse fails again, the product will require servicing (be sure to use a slow blow fuse if required). Check your input and speaker output cables.

2) 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..

REPLACEMENT PARTS LIST FOR HT AMPS



HT Series Chassis, Cables & Hardware

REF	DESCRIPTION	PART #	QTY	REF	DESCRIPTION	PART #
1	Fuse Holder	23-81116	1	C101	Capacitor, Ceramic, 56pF	45-56052
	Line Fuse Value			C102	Capacitor, Electrolytic, 10µF, 50V	47-10051
	120 VAC 2A, 250V, Slow Blow, 3AG	15-01512	1	C103	Capacitor, Electrolytic, 10µF, 50V	47-10051
	230 VAC 1A, 250V, Slow Blow, 3AG	15-01524	1	C104	Capacitor, Ceramic, 120pF	45-12152
2	Binding Post, Dual, Black/Red, Long	03-10450	2	C105	Capacitor, Ceramic, 120pF	45-12152
3	Circuit Board Assembly (Includes all PCB's)	03-01528	1	C106	Capacitor, Electrolytic, 10µF, 50V	47-10051
4	Unichassis	10-01509	1	C107	Capacitor, Poly, .0047µF, 100V	46-47212
5	Bracket, Tiedown, IC	10-63008	2	C108	Capacitor, Poly, .022µF, 100V	46-22312
6	Front Panel	10-01501	1	C109	Capacitor, Electrolytic, 10µF, 50V	47-10051
7	Switch, Power	25-31350	1	C110	Capacitor, Poly, .1 µF, 100V	46-10412
8	Knob, Power Amp	07-09001	2	C111	Capacitor, Poly, .1 µF, 100V	46-10412
9	Mount, Toroid Cap	10-15004	1	C112	Capacitor, Electrolytic, 10µF, 50V	47-10051
	Insulator, Toroid Pad (Not shown)	03-15010	2	C113	Capacitor, Electrolytic, 10µF, 50V	47-10051
10	Transformer, Power, Toroid	See Chart		C114	Capacitor, Mylar, 0.22µF	46-22412
11	Cover, Chassis (Not shown)	10-06005	1	C115	Capacitor, Electrolytic, 10µF, 50V	47-10051
12	Foot, .875x.3125 (Not shown)	03-19682	4	C200	Capacitor, Ceramic, 56pF	45-56052
13	Power Cord, AC, 16AWG (Not shown)	05-01604	1	C202	Capacitor, Ceramic, 56pF	45-56052
				C203	Capacitor, Electrolytic, 10µF, 50V	47-10051
				C204	Capacitor, Electrolytic, 10µF, 50V	47-10051
				C205	Capacitor, Ceramic, 120pF	45-12152
				C206	Capacitor, Ceramic, 120pF	45-12152
				C207	Capacitor, Electrolytic, 10µF, 50V	47-10051
				C208	Capacitor, Poly, .0047µF, 100V	46-47212
				C209	Capacitor, Poly, .022µF, 100V	46-22312
				C210	Capacitor, Electrolytic, 10µF, 50V	47-10051
				C211	Capacitor, Poly, .1 µF, 100V	46-10412
				C212	Capacitor, Poly, .1 µF, 100V	46-10412
				C213	Capacitor, Electrolytic, 10µF, 50V	47-10051
				C214	Capacitor, Electrolytic, 10µF, 50V	47-10051
				C215	Capacitor, Mylar, 0.22µF	46-22412
				D1	Diode, 6A, 200V, MR752	60-75200

Parts List For HT150 PCB Sub Assemblies

REF	DESCRIPTION	PART #
A1	Op-amp, Low noise	60-45580
A2	Op-amp, Low noise	60-45580
C1	Capacitor, Electrolytic, 4700µF, 50V	42-47251
C2	Capacitor, Electrolytic, 4700µF, 50V	42-47251
C3	Capacitor, Electrolytic, 470µF, 25V	47-47125
C4	Capacitor, Electrolytic, 470µF, 25V	47-47125
C5	Capacitor, Electrolytic, 10µF, 50V	47-10051
C6	Capacitor, Electrolytic, 10µF, 50V	47-10051
C7	Capacitor, Electrolytic, 10µF, 50V	47-10051
C8	Capacitor, Mylar, .047µF, 250V	41-47322
C100	Capacitor, Ceramic, 56pF	45-56052

CAUTION
RISK OF ELECTRIC SHOCK

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

REF	DESCRIPTION	PART #	REF	DESCRIPTION	PART #
D2	Diode, 6A, 200V, MR752	60-75200	R122	Resistor 1/4W, ±5%, 47K	50-47045
D3	Diode, 6A, 200V, MR752	60-75200	R200	Resistor 1/4W, ±5%, 22K	50-22041
D4	Diode, 6A, 200V, MR752	60-75200	R201	Resistor 1/4W, ±5%, 22K	50-22041
D5	LED, Small Yellow	60-24251	R202	Resistor 1/4W, ±5%, 22K	50-22041
D6	Diode, 1A, 200V, 1N4003	61-40030	R203	Resistor 1/4W, ±5%, 22K	50-22041
D100	Diode, 1A, 200V, 1N4003	61-40030	R204	Resistor 1/4W, ±5%, 680Ω	50-68025
D101	Diode, 1A, 200V, 1N4003	61-40030	R205	Resistor 1/4W, ±5%, 5.6K	50-56035
D102	LED, Small Green	60-75330	R206	Resistor 1/4W, ±5%, 2.2K	50-22035
D103	LED, Small Red	60-75320	R207	Resistor 1/4W, ±5%, 2.7K	50-27035
D200	Diode, 1A, 200V, 1N4003	61-40030	R208	Resistor 1/4W, ±5%, 22K	50-20045
D201	Diode, 1A, 200V, 1N4003	61-40030	R209	Resistor 1/4W, ±5%, 10K	50-12045
D202	LED, Small Green	60-75330	R210	Resistor 1/4W, ±5%, 910Ω	50-91025
D203	LED, Small Red	60-75320	R211	Resistor 1/4W, ±5%, 1K	50-10035
H1	Cable, Ribbon, 24AWG, 8Pin	05-24175	R212	Resistor 1/4W, ±5%, 1.5K	50-15035
H2	Cable, Ribbon, 24AWG, 8Pin	05-24255	R213	Resistor 1/4W, ±5%, 24K	50-24045
H3	Cable, Ribbon, 24AWG, 8Pin	05-24175	R214	Resistor 1/4W, ±5%, 2.2K	50-22035
J100	Jack, 1/4" 7P Plastic, 24mm	21-06457	R215	Resistor 1/4W, ±5%, 47K	50-47045
J101	Jack, 1/4" Female, Neutrik	21-40000	R216	Resistor 1/4W, ±5%, 3.3K	50-33035
J102	Jack, 1/4" 3P Plastic, 24mm	21-06453	R217	Resistor 1/4W, ±5%, 470K	50-47055
J200	Jack, 1/4" 7P Plastic, 24mm	21-06457	R218	Resistor 1/4W, ±5%, 470K	50-47055
J201	XLR, Female, Neutrik	21-40000	R219	Resistor 1W, ±5%, 4.7K	53-47035
J202	Jack, 1/4" 3P Plastic, 24mm	21-06453	R220	Resistor 1W, ±5%, 4.7K	53-47035
P100	Pot, B10KΩ, 41 Click, W/BRKT	71-10301	R221	Resistor 1/2W, ±5%, 22Ω	52-22015
P200	Pot, B10KΩ, 41 Click, W/BRKT	71-10301	R222	Resistor 1/4W, ±5%, 47K	50-47045
PR1	Terminal 90deg, .250 OC	06-40060	S1	Switch, DPDT, 2 Position	25-32833
PR2	Terminal 90deg, .250 OC	06-40060	S2	Switch, DPDT, Push, PC Mtg	25-02201
Q100	Trans, Darlington, NPN, 0.5A, 30V	60-00014	U100	Op-amp, Power	60-72940
Q101	Trans, Darlington, NPN, 0.5A, 30V	60-00014	U200	Op-amp, Power	60-72940
Q200	Trans, Darlington, NPN, 0.5A, 30V	60-00014	Z1	Zener Diode, 16V ±5%, 1N4745A	61-47450
Q201	Trans, Darlington, NPN, 0.5A, 30V	60-00014	Z2	Zener Diode, 16V ±5%, 1N4745A	61-47450
QC1	Zierick/Keystone, Straight, .250 OC	06-40050			
QC2	Zierick/Keystone, Straight, .250 OC	06-40050			
QC3	Zierick/Keystone, Straight, .250 OC	06-40050			
R1	Resistor 2W, ±5%, 1.5K	54-15030			
R2	Resistor 2W, ±5%, 1.5K	54-15030			
R3	Resistor 1W, ±5%, 4.7K	53-47035			
R4	Resistor 1/4W, ±5%, 24K	50-24045			
R5	Resistor 1/4W, ±5%, 22K	50-22045			
R6	Resistor 1/4W, ±5%, 10K	50-10045			
R7	Resistor 1/4W, ±5%, 33K	50-33045			
R100	Resistor 1/4W, ±5%, 22K	50-22041			
R101	Resistor 1/4W, ±5%, 22K	50-22041			
R102	Resistor 1/4W, ±5%, 22K	50-22041			
R103	Resistor 1/4W, ±5%, 22K	50-22041			
R104	Resistor 1/4W, ±5%, 680Ω	50-68025			
R105	Resistor 1/4W, ±5%, 5.6K	50-56035			
R106	Resistor 1/4W, ±5%, 2.2K	50-22035			
R107	Resistor 1/4W, ±5%, 2.7K	50-27035			
R108	Resistor 1/4W, ±5%, 22K	50-20045			
R109	Resistor 1/4W, ±5%, 10K	50-12045			
R110	Resistor 1/4W, ±5%, 910Ω	50-91025			
R111	Resistor 1/4W, ±5%, 1K	50-10035			
R112	Resistor 1/4W, ±5%, 1.5K	50-15035			
R113	Resistor 1/4W, ±5%, 24K	50-24045			
R114	Resistor 1/4W, ±5%, 2.2K	50-22035			
R115	Resistor 1/4W, ±5%, 47K	50-47045			
R116	Resistor 1/4W, ±5%, 3.3K	50-33035			
R117	Resistor 1/4W, ±5%, 470K	50-47055			
R118	Resistor 1/4W, ±5%, 470K	50-47055			
R119	Resistor 1W, ±5%, 4.7K	53-47035			
R120	Resistor 1W, ±5%, 4.7K	53-47035			
R121	Resistor 1/2W, ±5%, 22Ω	52-22015			



The HT150 professional amp is designed utilizing Carvin's 33 years of experience in power amp technology. It meets and exceeds every standard for professional amplification. The thick brushed anodized aluminum face plate, large recessed knobs and heavy-duty steel chassis reflect the manufacturing quality within. The HT150 "High Energy Transfer" amp carries 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 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 HT150 amp delivers flat, transparent, unaltered sound—especially important to the studio user. 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 aluminum that is light-weight and prevents rust. All internal cabling is neatly tied and harnessed. Neutrik™ XLR connectors, heavy-duty power switches, recessed knobs & machined aluminum front panels all give the HT amps a "tank-like" ability to handle rough, touring transport.

TOTALLY MODULAR

With the HT150, 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 HT150 amp including the power supply, power cards, heat sinks and fans. Everything is connected by heavy-duty connectors for easy replacement—even the Toroid transformer is a total plug-in.

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 extra amounts of "on demand" current for continuous operation. This gives the power supply a solid foundation, yielding more headroom. 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.

FRONT PANELS & CONNECTING UP

The HT150 features 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. The EQ expand switch offers "loudness compensation" by adding additional bass and treble to improve your sound, especially at lower levels. 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. A bridge mode switch allows the HT150 to deliver its full power into one speaker.

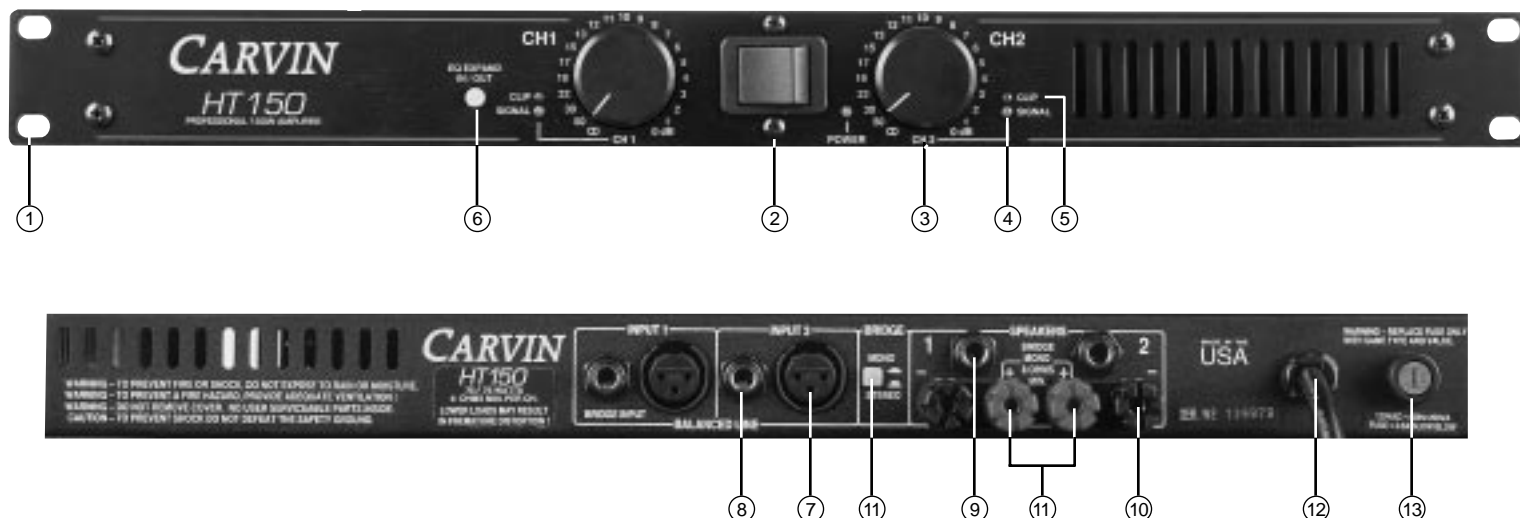
HT150 POWER AMP SPECIFICATIONS:

Output Power	
(BRIDGE MONO)	
8Ω, 1kHz, < 1% THD	150 Watts
Minimum Impedance (Bridged)	4 ohms
(Stereo, both channels driven)	
8Ω, 1kHz, < 0.5% THD	60/60 Watts
4Ω, 1kHz, < 0.5% THD	75/75 Watts
Minimum Impedance	4 ohms per channel
THD	
20-20kHz	< 0.1%
(8Ω typical)	< 0.05%
Frequency Response	±0.5 dB, 20 Hz to 20 kHz
Input Impedance	> 20kΩ Balanced or Unbalanced
Damping Factor	>400
Sensitivity (@ 4Ω)	1.0 Vrms
Output Noise	-102 dBm
Power Consumption	
	120V—200 VA
	230V—200 VA
Dimensions	1 3/4" High x 19" Wide x 10" Deep
Weight (Net)	9lbs.

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

Serial No. _____ Invoice Date _____
76-20300 497

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. This color was chosen so the operator could see other red 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 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 speakers.

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. EQ EXPAND SWITCH

This switch, when set to its 'in' position will boost the highs and lows by +4dB at 80Hz and 12kHz. This works well as a loudness contour when operating at low volume levels or adds flavor when using it in a bass or guitar rack. When set to the 'out' position it provides a flat output response. Try it both ways and set as desired.

REAR PANEL

7. XLR CHANNEL INPUTS

For most professional applications, use the XLR balanced input. This will help to reduce hum and allow of 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 a non balanced line. XLR pin configuration: Pin 1: Grounded through the GROUND LIFT switch, Pin 2: positive Bal. signal and Pin 3: negative Bal. signal.

8. 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 -.

9. SPEAKER OUTPUTS

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

10. 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 posts "side holes". Larger cable can be used with "banana" plugs which plug into the ends of the binding post (remove colored caps). Binding posts are spaced on ISO standards. Use the two center RED binding posts for BRIDGE speaker connections (see 11 BRIDGE MODE).

11. BRIDGE MODE—25V/70V DISTRIBUTION SYSTEMS

The HT150 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 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 jack or binding post can to 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!

12. AC POWER

Your amp is designed to run on either 120V 60 Hz or 230V 50V depending on the model purchased. The voltage range for 120V is 95V to 132V and for 230V it is 190V to 253V. The rear heavy-duty AC cord is designed for 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!

13. AC FUSE VALUES (Slow Blow Type)

120V MODELS: 2.5AGC
230V MODELS: 1.25AGC

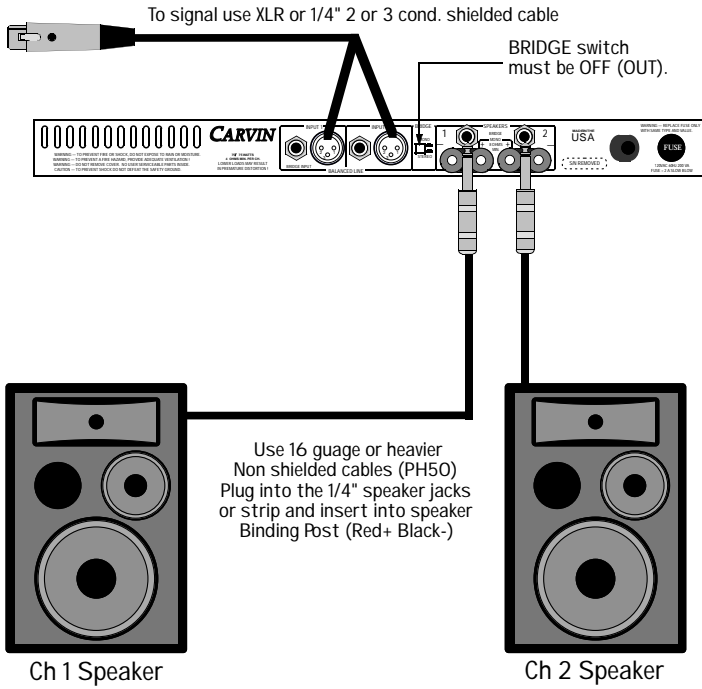
CONNECTING THE SYSTEM

The following diagrams illustrate typical connections. Although these illustrations show XLR's for inputs and 1/4" plugs for outputs, a variety of alternative connectors are available. For most stage setups, mono (not stereo) is recommended. The reason for this is the audience on the left will not hear the same program material the audience on the right hears if the program is done in true stereo.

INPUT CONNECTIONS

The preferred method of connecting input signals is with balanced XLR's (two conductors plus a shield wire, such as Carvin professional XLR cables). Balanced input signals provide the highest gain and best noise rejection. 1/4" stereo cables are also capable of providing balanced input by using a stereo plug (tip-positive, ring-negative & sleeve-ground). Not all sources provide balanced outputs. If this is the case, standard 1/4" input cables work fine with cable lengths under 25 feet (single conductor plus shield) providing there is no ground loop in the system.

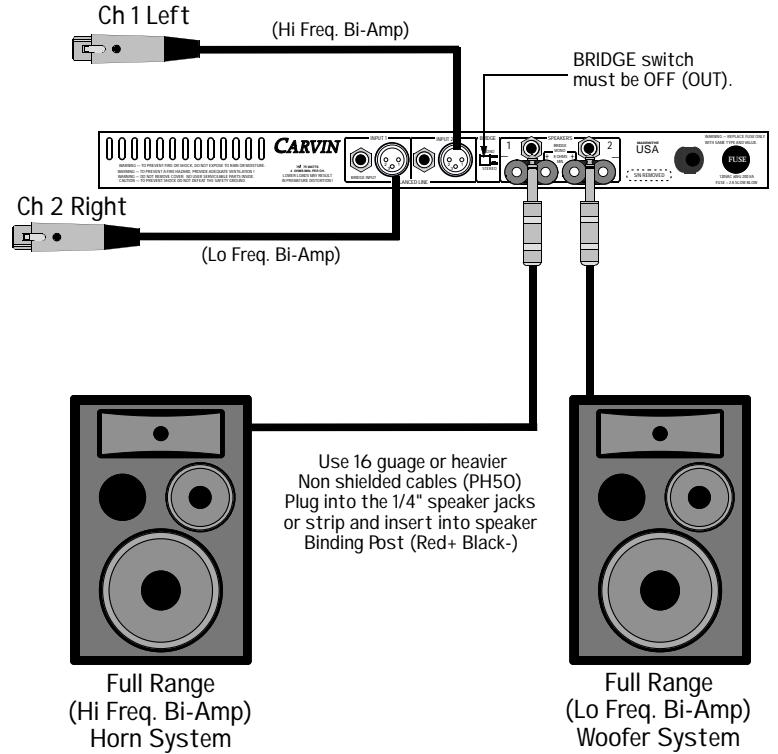
TYPICAL MONURAL SETUP



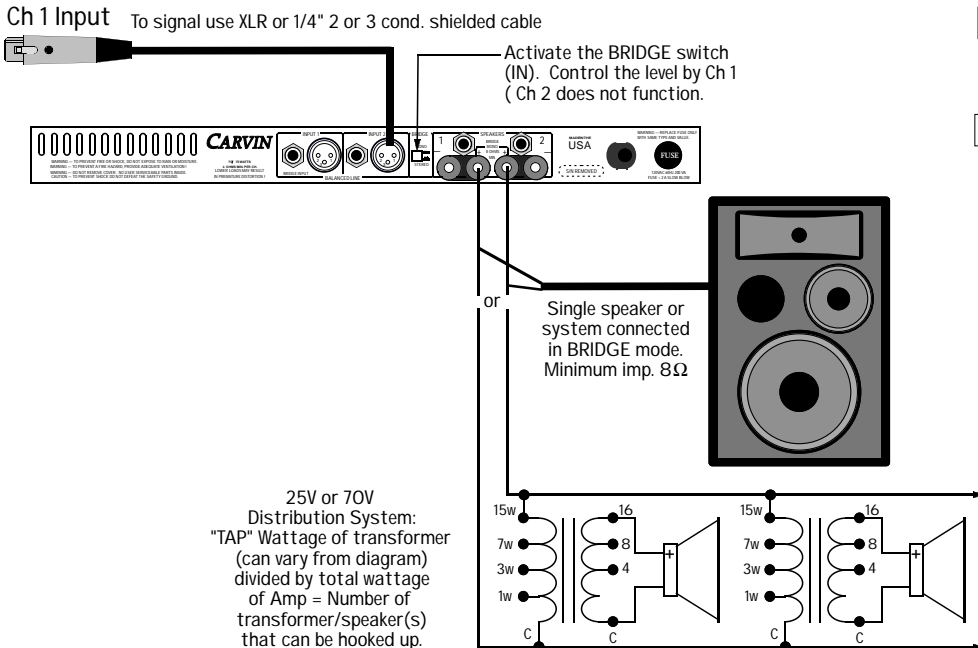
SPEAKER CONNECTIONS

There are two 1/4" speaker jacks available for speaker connections (one for each channel). Additionally, there are two pairs of binding posts that not only allow for high current connections to speakers but are also used for "bridging" the amps output (see rear panel section 14 & 15). Use heavy gauge wire for all speaker connections (no lighter than 16 gauge up to 50', Carvin's PH50). Caution: Never use shielded cable (microphone or instrument input cable) to connect speakers. These cables will not handle the required current and may cause your amplifier to oscillate because of the internal shield.

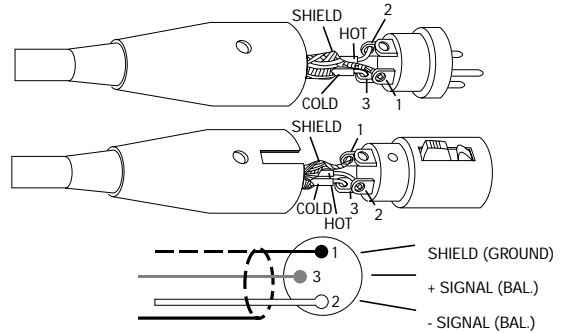
TYPICAL STEREO (BIAMP) SETUP



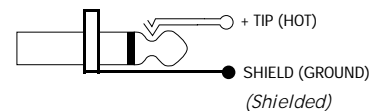
TYPICAL BRIDGED SETUP



(Shielded) BALANCED MIC/LINE



SPEAKER OR SIGNAL LINE CABLE



INTERRUPT (PATCH)

