



DCM1000L, DCM1540L, DCM2000L, DCM3000L, DCM3800L

The DCM power amps deliver exceptional sound/reliability, ultra-light weight 15lb (6.4kg) from 1500w to 3800w and it's made in the USA. You'll appreciate the ultra-light feature, which comes in part from its heavy-duty aluminum frame. High power, uncompromised sound and maximum reliability is at its best for both touring systems and fixed installations. The concert stage is the ultimate test of professional audio. Concert audio has to be uncompromising, reliable and efficient and that's where the DCM has made its mark night after night, year after year serving top artists and concert venues for the last decade. The DCM is a proven American made workhorse backed by 40 years of manufacturing excellence.

### HIGH POWER TOPOLOGY

The CLASS A/B linear topology features high current bipolar output devices that reduce distortion to a near theoretical zero .03% THD while delivering high slew rate performance for crystal clear highs and chest pounding bass – every note is vibrant, pure and natural. The DCM's headroom reveals its high dynamic power from the Switchmode power supply that operates at 100,000 Hz. Extreme currents are delivered to the most demanding 4 ohm bridged subwoofer systems. The high efficient Switchmode supply is a league above toroids saving not only AC power from the wall but reducing internal heat. The DCM easily handles the most difficult mismatched or reactive loads and is AC generator friendly. The soft-start gently turns the DCM on to prevent tripping AC breakers. The **DCM1000L** and **DCM2000L** feature Class D output raising power amp efficiency even higher! The **DCM1540L**, **DCM3000L** and **DCM3800L** feature linear Class A/B output stages.

### COOL EFFICIENT DESIGN

A high efficiency heat transfer system offers the most advanced cooling, which is one of the keys to reliable power. Five high ratio 6063-T5 flow-through aluminum heat sinks remove heat fast with multi-speed fans that runs quiet under 2 ohms loads (except DCM1540L). Air is pulled from the rear and exhausted to the front to keep the rear of your rack cool. R & D designed a "direct mount" system for the power output devices to be directly mounted to the heat sink, which eliminates any thermal barrier to keep your amp running cool.

### FRONT PANELS & CONNECTING UP

The DCM Series feature front panel signal, peak and protect LEDs which let you monitor the status of the amp. Both channels use detente level controls allowing you to see your settings at a glance. Balanced TRS & XLR input connectors are used to eliminate hum & noise. Speaker outputs feature heavy-duty binding posts and TwistLoc connectors.

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 together eliminating Y cables for patching multiple amp systems. The accessory group also features a BRIDGE MODE switch to deliver twice the power into a "mono" load or a 70V distribution system, and a LIMITER ON/OFF switch gives the choice of using the internal limiter circuitry.

### CONSTRUCTION

The DCM construction starts with a heavy 2RU aluminum chassis. All printed circuit cards are double-sided FR4 military-grade fire retardant with plated through holes - soldered under, on top and through each component. SMT - surface mount technology offers "shock-proof" protection. The CB and CE safety seal assure that each DCM meets strict standards for service anywhere in the world.

### 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 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)

### DCM-L POWER AMP SPECIFICATIONS:

MODEL	DCM1540L	DCM2000L	DCM3000L	DCM3800L	DCM1000L	DCM2004L
<b>1 Channel RMS Continuous</b>						
8Ω (20-20k Hz, <1.0%)	475w	400w	600w	775w	210w	350w
4Ω (20-20k Hz, <1.0%)	825w	700w	1025w	1225w	325w	350w
2Ω (20-20k Hz, <1.0%)	-	1150w	1650w	1950w	520w	-
<b>Both Channels RMS Continuous</b>						
8Ω (20-20k Hz, <1.0%)	425/425w	350/350w	550/550w	700/700w	175/175w	300/300w
4Ω (20-20k Hz, <1.0%)	750/750w	550/500w	950/950w	1150/1150w	325/325w	500/500w
2Ω (20-20k Hz, <1.0%)	-	1000/1000w	1500/1500w*	1800/1800w*	560/560w	-
<b>Bridged RMS Continuous</b>						
8Ω, (20-20k Hz, <1.0%)	1500w	1100w	1900w*	2300w*	650w	-
4Ω, (20-20k Hz, <1.0%)	-	2000w	3000w*	3800w*	1120w	-
All ratings EIA 1% THD at 1 kHz except * tested at 1 k Hz no clipping 33ms on 66ms off						
<b>Net Weight:</b>	14 lbs (6.4kgs)	14 lbs (6.4kgs)	15 lbs (6.8kgs)	15 lbs (6.8kgs)	10 lbs (4.5kgs)	10 lbs (4.5kgs)
<b>Topology:</b>	CLASS AB	CLASS D	CLASS AB	CLASS AB	CLASS D	CLASS D
<b>THD (20-20k Hz 50% power)</b> 0.03%, (20-20k Hz 90% power) 0.1%					<0.1% at 50% power, <0.2% at 90% power	
<b>AC Input:</b>	North American model: 120VAC 60Hz			Europe Model: 240VAC 50Hz		
<b>Damping Factor:</b>	>500				>500	
<b>Slew Rate:</b>	bridged mode >50V/μs					
<b>Sensitivity into 8Ω:</b>	1.4 Vrms				1.4 Vrms	
<b>Signal to Noise Ratio:</b>	above 106dB				above 106dB	
<b>Frequency Response:</b>	±0.5 dB, 20 Hz to 20kHz (±1.5 dB, 10 Hz & 40 kHz)				+0/-3 db 20Hz - 20kHz	
<b>Input Impedance:</b>	>20K Ω, balanced				>20K Ω, balanced	
<b>Protection Circuits:</b> Short Circuit • No Load Protection • SpeakerGuard™ • Thermal Shut-Off • Mute On/Off						
<b>Control/Indicators:</b>						
<b>Front:</b> Power switch • Recessed detente attenuators • Signal LED -30dB • 40% & 80% output LEDs • Clip LED • Protect LED • Power LED						
<b>Rear:</b> Ground Lift (each channel) • Parallel Input Switch • Speaker Output Bridge Switch • Limiters IN/OUT Switch • Input Connectors: Two each; Balanced XLR & 1/4" • Speaker Output Connectors: Dual heavy duty binding posts, three TwistLoc connectors						

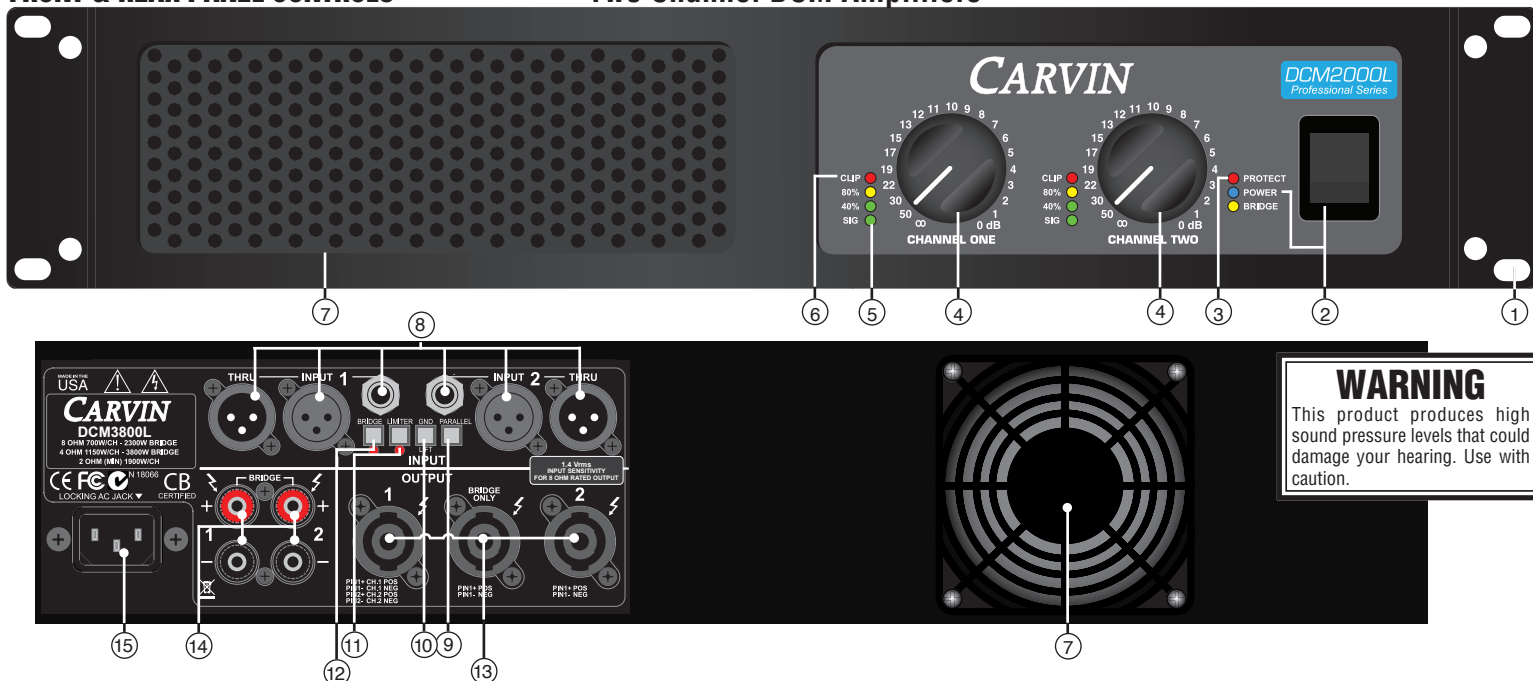
**Internal Fuse:** SLOW BLOW **DCM1540L:** 25A, 240V/15A, **DCM2000L:** 15A, 240V/10A, **DCM1000L:** 15A, 240V/10A, **DCM3000L:** 25A, 240V/15A, **DCM3800L:** 25A, 240V/15A, **DCM2004L:** 15A, 240V/10A

**Dimensions:** 2U rack units: 3 1/2" High x 19" Wide x 10.5" Depth; 8.8 x 48.3 x 26.7cm

# CARVIN

## FRONT & REAR PANEL CONTROLS

## Two Channel DCM Amplifiers



### WARNING

This product produces high sound pressure levels that could damage your hearing. Use with caution.

## 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 10-32x.5" phillips machine screws are normally used to secure the amp. Rear support brackets are not required.

### 2. POWER SWITCH

Check the power amp AC making sure the rear plug is fully inserted before engaging the power switch. The blue POWER LED indicates that all circuits are properly powered up.

### 3. PROTECT RED 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);

- 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).
- The RED PROTECT LED will illuminate 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 that the total speaker impedance is not below 2 ohms per channel - 4 ohms bridged (DCM1540L - 4 ohms per channel/ 8 ohms bridged).
- Overheating is usually determined when the amp stops in the middle of a performance and the RED 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).

Power supply protections are not indicated by the protection LED, but by the power turning off completely. If the protected state is a thermal power supply issue or an over current power supply issue, the power supply with reset it self and go through the same turn on cycle as when first turned on.

### 4. 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. For multi-speaker systems, the volume levels can be used to match loudspeakers with different output sensitivity levels and room locations.

### 5. CHANNEL SIGNAL INDICATOR, 40% & 80% OUTPUT

You have a 3 meter segment per channel to indicate levels (SIGNAL LED only on DCM2004L). The green SIGNAL LED indicator will start to flash when there is a low input signal (-30dBu). The 40% and 80% LED's will light solid when output power has reached 40% and 80% levels.

### 6. CHANNEL CLIP INDICATOR

The RED CLIP LED indicators flash when each channel has reached its maximum output. Occasional flashing caused by low frequency peaks are difficult to prevent and will not harm speakers capable to handle the amplifiers output. However, consistent flashing (excessive clipping/square wave) will damage speakers if not reduced. This does not cause damage to the amp.

### 7. 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° with full loading and heavy usage, or the thermal protection could active early. The front cooling vents are not to be restricted. Air flows from back to front. The use of external fans need to flow the same direction or the amplifier will starve for air and thermal off.

## REAR PANEL

### 8. CHANNEL INPUTS

The XLR balanced inputs will help reduce signal interference 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 an unbalanced 1/4" cable on the 1/4" TRS input jacks. XLR pin configuration: Pin 1: Grounded through the GROUND LIFT switch, Pin 2: positive balanced signal, Pin 3: negative balanced signal. The THRU XLR connector passes the signal out for connection to another amplifier's input. (excludes DCM2004L)

The 1/4" TRS jacks are balanced and designed to receive unbalanced input signals. The DCM12004L features only XLR inputs. 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 tied internally to ground through the GROUND LIFT switch.

### 9. PARALLEL "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.

### 10. INPUT GROUND LIFT

Systems can be 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.

### 11. LIMITERS (excludes DCM2004L)

To activate the LIMITERS, engage the rear limiter switch. The built-in limiters are recommended to hold down peaks that could cause clipping. To check the effectiveness of the limiters, run the amplifier to the point where clipping begins. Then engage the limiters and listen/watch for the reduction of the distortion and clipping. If the distortion stops, you can try to turn the channel up for more power until distortion is heard. The lower bass frequencies are most affected. **WARNING: Do not check in an environment where the sound level could damage your ears!** Limiters only affect the signal if the amplifier has entered clipping so it is best to have the limiters engaged at all times to protect the speakers from excessive clipping.

### 12. BRIDGE MODE (excludes DCM2004L)

With your amp off, push "in" the rear (recessed) BRIDGE switch then make your connections to either the center bridge Speakon™ or the RED binding posts (ch 1 is + and ch 2 is -). In bridged mode, the amplifier channels are out-of-phase from each other. Accidental pressing of the switch will cause damage or improper operation. **WARNING: No other speaker connectors or binding posts may be used at the same time!** Use channel 1 INPUT and LEVEL for bridge mode. Channel 2 is not used, except for parallel to another amplifier (see 9 PARALLEL). The minimum speaker impedance is 4 ohm (8 ohm for the DCM1540L). **CAUTION: The power developed by bridging your amp can destroy most speakers.**

### 13. TWISTLOC SPEAKER OUTPUTS

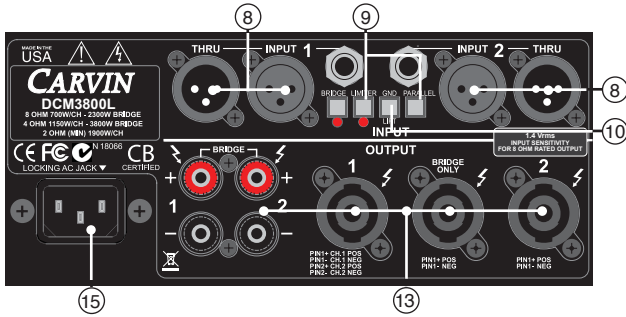
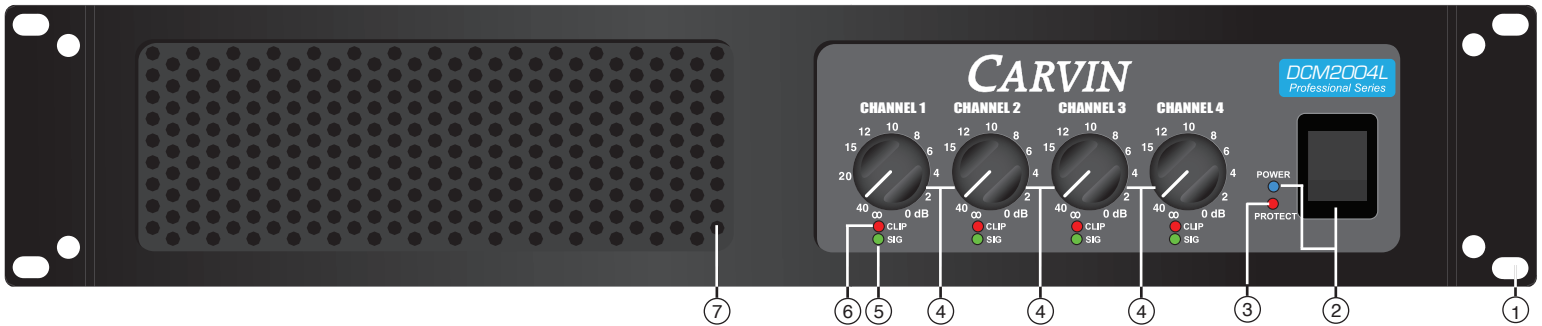
TwistLoc connectors are featured for high power applications. Secure the TwistLoc cable connection by turning to the right to the lock position. The center output on the 2-channel amps is for the "Bridge" output only. Turn the amp off before connecting or disconnecting your speakers. TwistLoc outputs are compatible with standard 2-conductor TwistLoc cables. A 4-conductor TwistLoc cable will enable biamping with one 4 conductor cable. No adaptors needed. See Biamping on the following page.

### 14. SPEAKER BINDING POSTS (excludes DCM2004L)

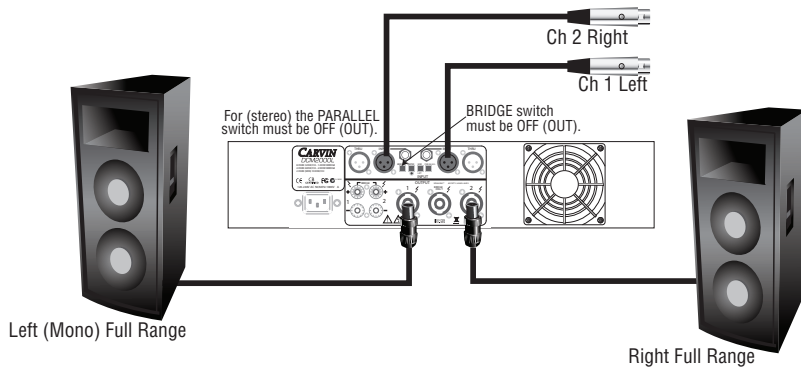
For wire (banana connectors), use the rear BINDING POSTS to connect your speakers. Wire sizes up to 7 gauge (50 amps) can be inserted into the binding post "side holes". Larger cable can be used with "banana" plugs which plug into the end of the binding posts. Binding posts are spaced on ISO standards. For BRIDGE speaker connections (see 12 BRIDGE MODE).

**15. AC POWER** Your amp is designed to work with 120V 60 Hz for North America and a 240V 50Hz model is dedicated for Europe. The rear heavy-duty AC receptacle will accept a universal grounded AC cord. Be sure to check your power source before plugging into a grounded (3 prong) outlet. Firmly push the AC cord all the way into the receptacle or the amp will not function. **WARNING: Never defeat the grounded connection or electrocution may result!** FUSE: The fuse is located within the main chassis near the AC connector on the PC card. Normally if the fuse fails, the amp will require service. See specifications chart for fuse values. **NOTE: Each amp will require a dedicated circuit breaker for the amp to achieve its full output.**

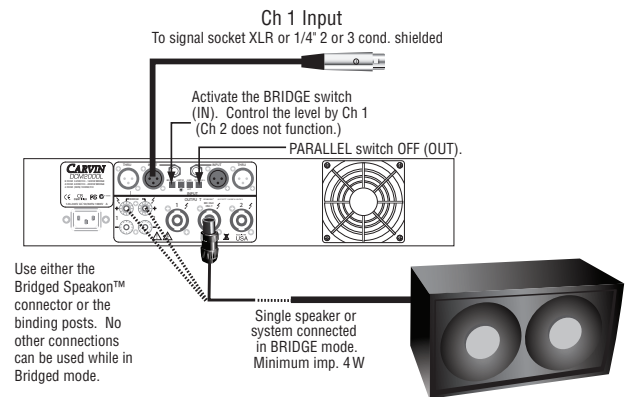
## Four Channel DCM2004L



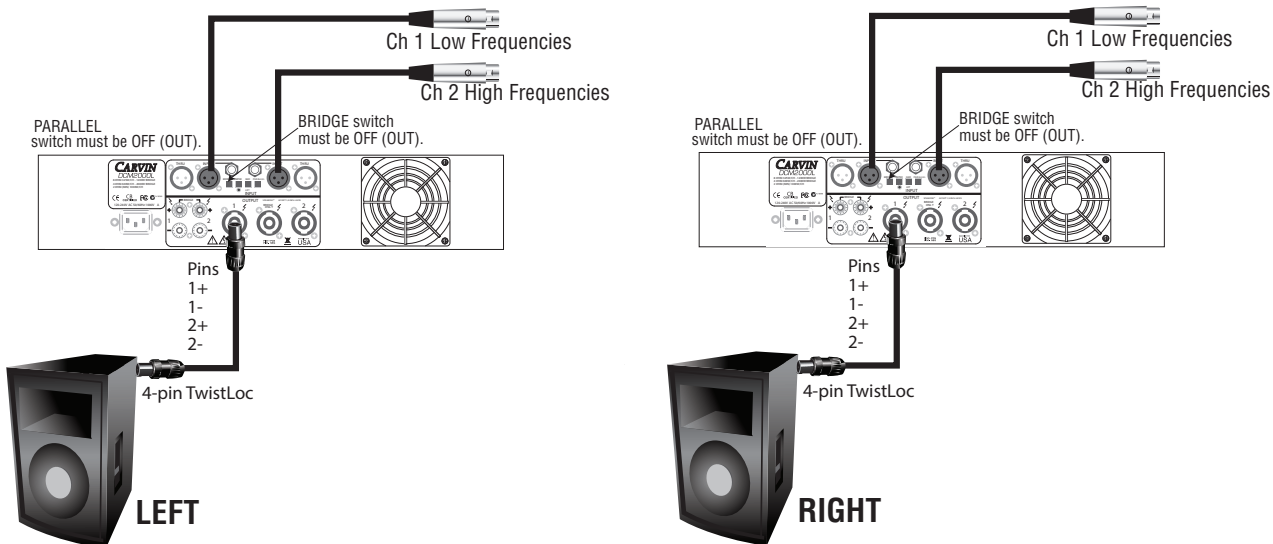
### TYPICAL STEREO SETUP (OR MONO BI-AMP)



### BRIDGED MONO



### BIAMPING MUST USE AN ELECTRONIC CROSSOVER OR SPEAKER MANAGEMENT SYSTEM TO SEPARATE HIGH AND LOW FREQUENCIES



### 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 too much power.
- SYSTEM HUM:** Switch the rear GND LIFT switch IN to reduce hum.
- POOR SOUND (BASS):** The speaker systems are wired out of phase to each other. To correct, check polarity and if necessary reverse the wires on one speaker connector only and your sound, especially the bass will improve.
- DEDICATED CIRCUIT BREAKER:** Each amp will require a dedicated circuit breaker for its full output. There will be a sustained loss of power if the AC voltage falls below the rated 120V or 230/240V input. Normally a 2000w amp or higher would require its own 20 amp circuit to deliver its full power at 2 ohms/channel or 4 ohms bridged.





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.



## 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.

## SERVICE:

In the USA, please go to [www.carvinservice.com](http://www.carvinservice.com)

Outside the USA, contact your dealer or go to <http://www.carvinworld.com> for your nearest service center. Include a written description of the problem with serial number and date of purchase.

## 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!

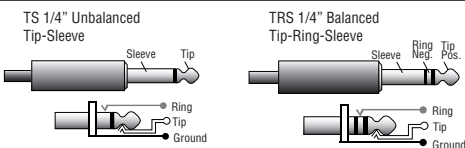
## SAFETY INSTRUCTIONS (EUROPEAN)

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

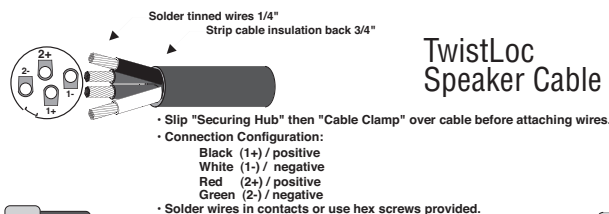
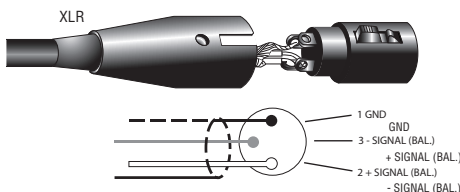
GREEN & YELLOW—Earth BLUE—Neutral BROWN—Live

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.

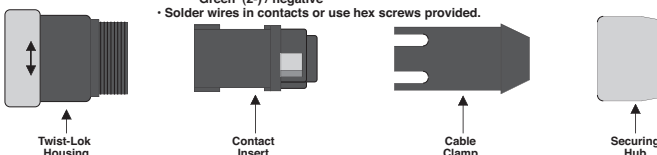
## 1/4" TS & TRS



## XLR



## TwistLoc Speaker Cable



## MIN IMPEDANCE

DCM2000L/DCM2500L/DCM3000L and DCM3800L minimum is 2 ohm per channel and 4 ohm bridged.  
DCM1540L minimum is 4 ohms per channel and 8 ohms bridged.

