



CP900, CP1800

Pristine sound, brute power and no-fault reliability make the DCM amps the power amp of choice for pro audio. Massive Toroid power supplies with huge capacitors deliver the bass that kick drums demand. Designed for continuous operation, overheating is not a problem, especially down at 2 ohms where other amps simply turn off. Drive up to four 8 ohm speaker systems per channel and never worry about a shutdown!

Each DCM 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 DCM an amp you'll own for years.

### PURE—TRANSPARENT SOUND

Carvin considers the sound of an amp equally important as to 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 DCM deliver transparent, unaltered sound—especially important to the studio user. Drive any type of reactive loads, including 70V transformer distribution systems.

### ULTRA RUGGED FOR TOURING

Every chassis is made from heavy-duty 16 gauge steel that is plated before painted to prevent rust. All internal cabling is neatly tied and harnessed. Every circuit card is FR-4 MILITARY SPEC, double-sided, fire retardant glass epoxy. Plated through-holes insure that the solder flows on the top, bottom and through each hole of every component preventing components from shaking loose. Speakon™ connectors, heavy-duty power switches, recessed knobs, all give the DCM 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 DCM 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 DCM 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.

### DISTORTION-FREE LIMITERS

The purpose of a limiter is to hold down peaks so the amp won't distort with extra hot input signals (helps protect speakers). In addition, a well designed limiter can increase your amp's average output as much as 3 dB allowing levels to be turned up without peak distortion. Part of Carvin's design uses the more expensive, distortion-free linear “opto isolators”. Unlike amps that use FET controlled limiters, which inject small amounts of distortion, the DCM Series limiters keep your sound pure and uncolored!

### 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.

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 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, Speakon™ connectors and 1/4” jacks.

The rear professional accessory group offers a GROUND switch to remove the chassis ground from the XLR input. A PARALLEL input switch connects the input 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 full power into a 70V distribution system, and a LIMITER ON/OFF switch gives the choice of using the internal limiter circuitry.

### CP POWER AMP SPECIFICATIONS:

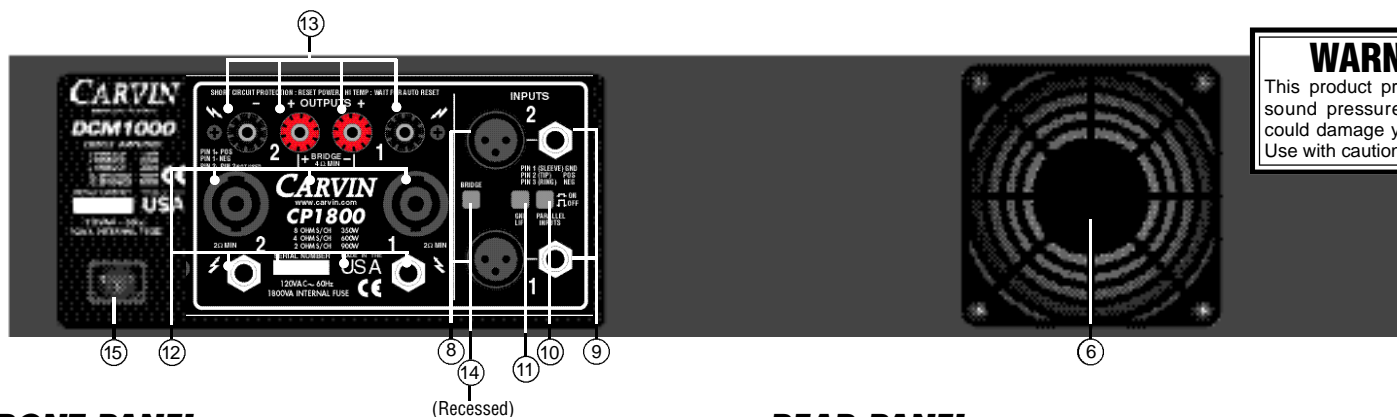
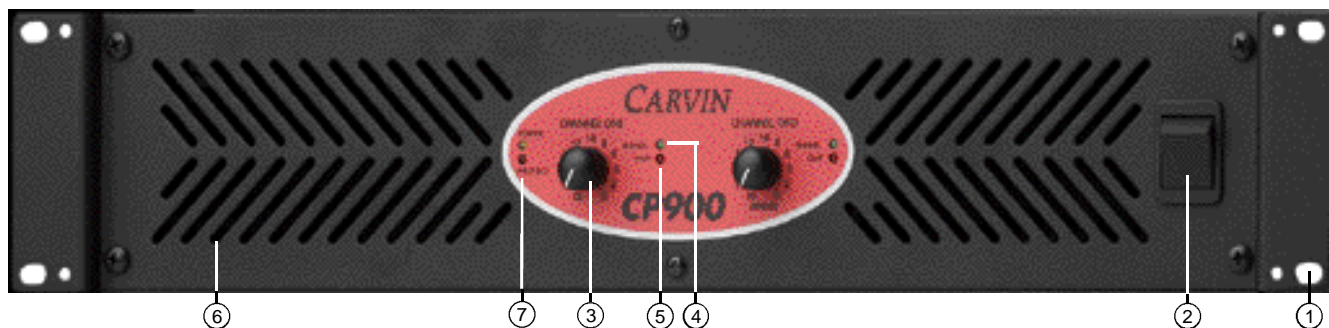
MODEL	CP900	CP1800
<b>Bridged RMS Continuous</b>		
4, (20-20k Hz, <1.0%)	900w	1800w
8, (20-20k Hz, <1.0%)	600w	1200w
<b>Both Channels RMS Continuous</b>		
2 (20-20k Hz, <1.0%)	450/450w	900/900w
4 (20-20k Hz, <1.0%)	300/300w	600/600w
8 (20-20k Hz, <1.0%)	175/185w	350/350w
<b>THD (20-20k Hz 50% power)</b>	0.03%	0.03%
<b>THD (20-20k Hz 90% power)</b>	0.1%	0.1%
<b>Damping Factor:</b>	>500	>500
<b>Slew Rate: bridged mode</b>	>50v/μs	>50v/μs
<b>Sensitivity: (4, Vrms)</b>	1.0 V	1.0 V
<b>Signal to Noise Ratio:</b>	Above 100dB	
<b>Frequency Response:</b>	±0.5 dB, 20 Hz to 20kHz (±1.5 dB, 10 Hz & 40 kHz) >20K, balanced	
<b>Input Impedance:</b>	>20K, balanced	
<b>Protection Circuits:</b>	Short Circuit • No Load Protection • SpeakerGuard™ • Thermal Shut-Off • Mute On/Off	
<b>Control and Indicators:</b>	Front: Power switch • Recessed detente attenuators • Signal LED • Clip LED • Protect LED • Power Indicator Rear: 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 Speakon™ & four 1/4”	
<b>Internal Fuse</b>	SLOW BLOW - DCM600: 15A, DCM1000: 20A, 240V/10A, DCM1500: 20A, 240V/10A	
<b>Dimensions:</b>	3 1/2” High x 19” Wide x 10” Depth (2-space)	
<b>Net Weight:</b>	CP900: 24 lbs. CP1800: 26 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



## 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 attenuate 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

For most applications, 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" AND SPEAKON™ OUTPUTS

The standard 1/4" SPEAKER jacks are offered for low power applications. Speakon™ connectors are provided for high power application. Secure the Speakon™ connection by turning to the right. The center Speakon™ is for the "Bridge" output only. Turn the amp off before connecting your speakers.

### 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 (remove colored caps from end of binding posts). Binding posts are spaced on ISO standards. Use the two center RED binding posts to BRIDGE speaker connections (see 15 BRIDGE MODE).

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

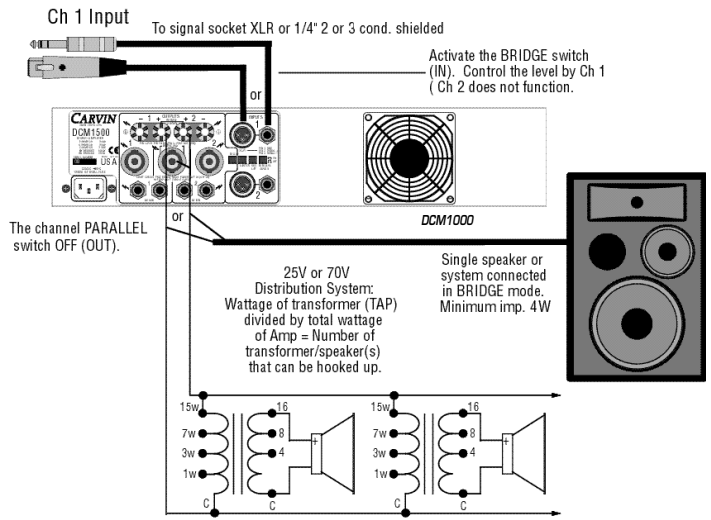
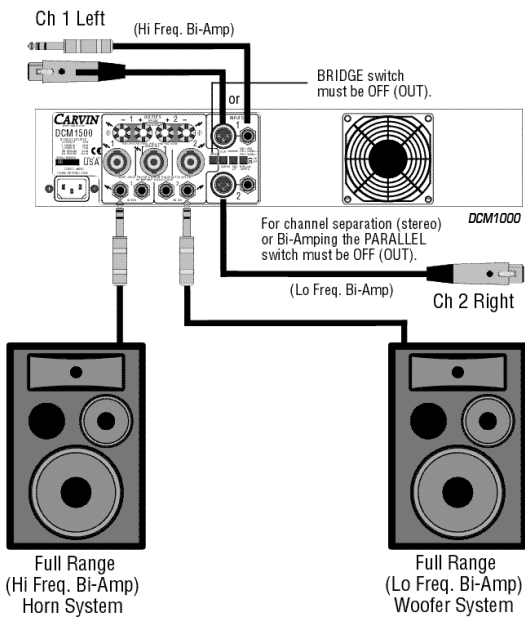
The DCM's can be operated in bridge mode if you require a 25V / 70V mono distribution speaker system or a mono (single channel) amp, which doubles the power into a single load. With your amp off, push "IN" the rear (recessed) BRIDGE switch after you have made your connections to either the bridge Speakon™ or 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

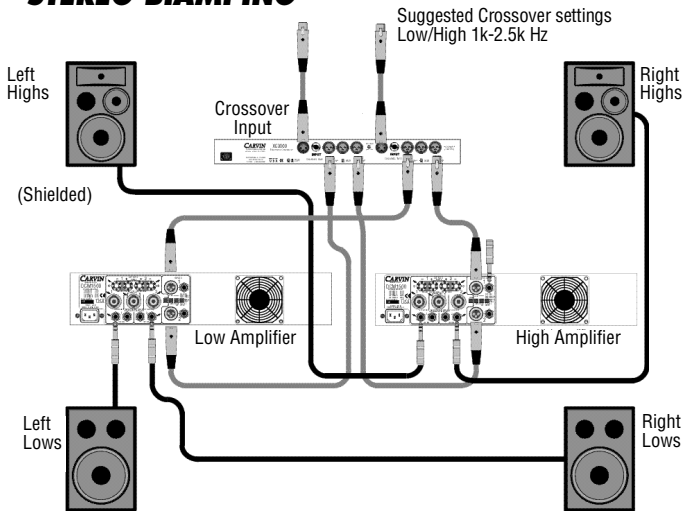
Your amp is designed to run on either 120V 60 Hz or 240V 50Hz depending on the model purchased. The voltage range for 120V model is 95V to 132V and for 240V model it is 195V to 255V. The rear heavy-duty AC receptacle will accept a universal grounded AC cord that is designed your country. Be sure to check 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.

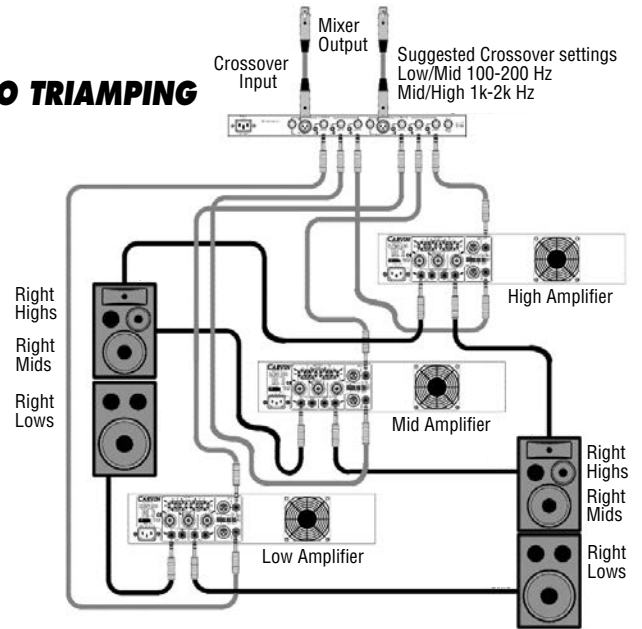
**NOTE:** Each amp will require a dedicated 20 amp circuit if you are driving the amp to its full output. There will be a sustained loss of power if the AC voltage is below the rated 120V or 230/240V. Use a heavy gauge power cable and power source.



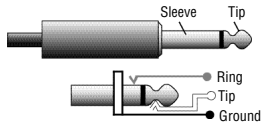
## STEREO BIAMPING



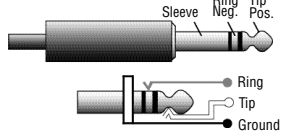
## STEREO TRIAMPING



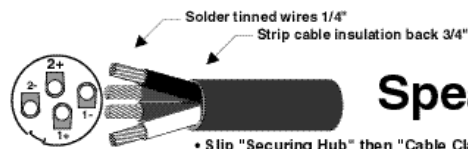
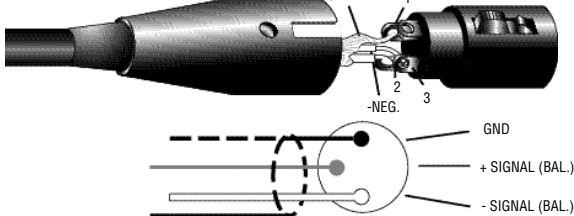
TS 1/4" Unbalanced Tip-Sleeve



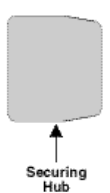
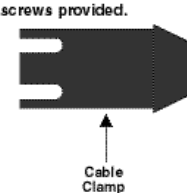
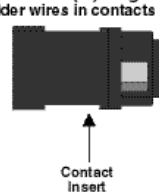
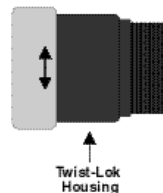
TRS 1/4" Balanced Tip-Ring-Sleeve



XLR



- Slip "Securing Hub" then "Cable Clamp" over cable before attaching wires.
- Connection Configuration:  
Black (1+)/ positive  
White (1-)/ negative  
Red (2+)/ positive  
Green (2-)/ negative
- Solder wires in contacts or use hex screws provided.



## 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 overpowering.
- 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 or 230/240V input.

