



The DCM150 professional amp is designed utilizing Carvin's 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 aluminum chassis reflect the manufacturing quality within. The DCM150 "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 high levels. Linear feedback circuits reduce distortion to near the theoretical zero limit preventing any type of harshness which would lead to ear fatigue. The DCM150 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. Heavy-duty power switches, recessed knobs & machined aluminum front panels all give the DCM amps a "tank-like" ability to handle rough, touring transport.

TOTALLY MODULAR

With the DCM150, 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 DCM150 amp including the power supply, power cards, and heat sinks. 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.

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

Serial No. _____ Invoice Date _____

FRONT PANELS & CONNECTING UP

The DCM Series feature front panel signal, clip and protect LEDs which let you monitor the status of the amp. Both channels use precision 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 mono 8Ω load.

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.

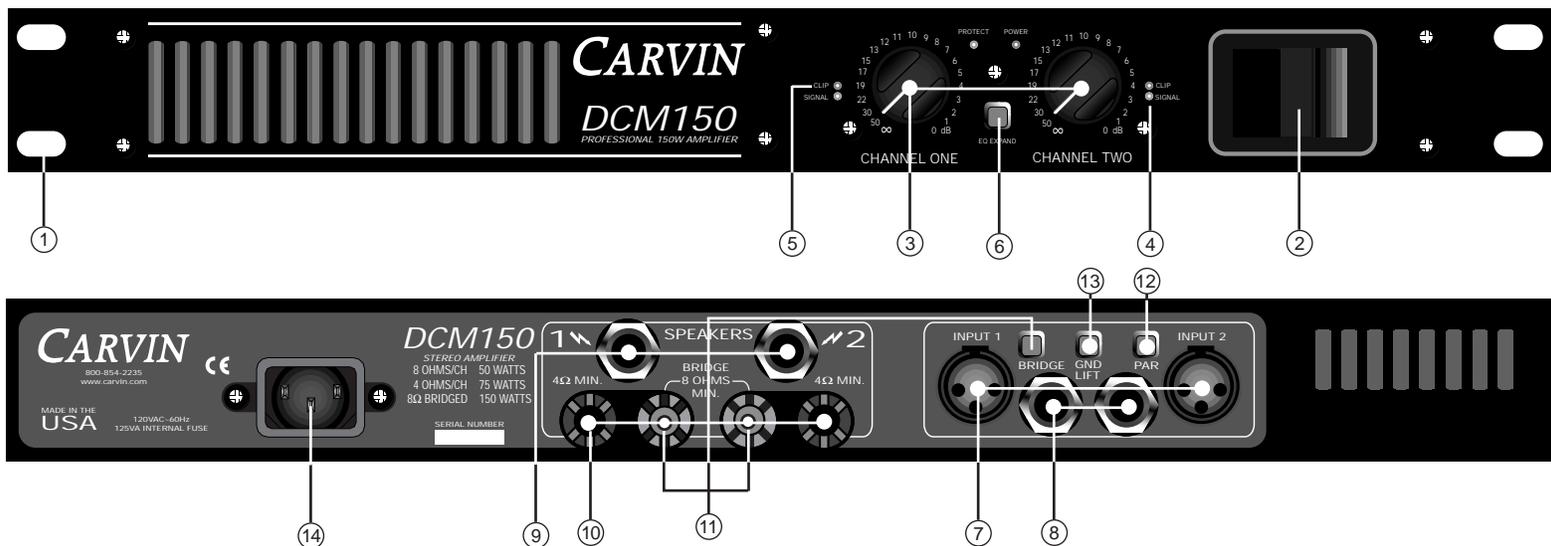
DCM150 POWER AMP SPECIFICATIONS:

Output Power	
(BRIDGE MONO)	
8Ω, 1kHz, < 1% THD	150 Watts
Minimum Impedance (Bridged)	8 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
Dimensions	1 3/4" High x 19" Wide x 10" Deep
Weight (Net)	9lbs.



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FRONT & REAR PANEL CONTROLS



FRONT PANEL

1. MOUNTING

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 the red protect indicator from a distance.

3. CHANNEL LEVEL CONTROL

A precision input LEVEL attenuator 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 full.

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

When set to the 'in' position this circuit will cut the mids by -4dB at 1KHz. This works well as a loudness contour when operating at low volume levels or adds tone when using it in a bass or guitar rack. When set to the 'out' position it provides a flat, normal 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 a non balanced 1/4" input. 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

These 1/4" TRS phone jacks are designed to receive either balanced or unbalanced input signals. Balanced signals coming into this jacks 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 to ground through the GROUND LIFT switch-.

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—70V DISTRIBUTION SYSTEMS

The DCM150 can be operated in bridge mode if you require a 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 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 8 ohms. CAUTION: The power developed by bridging your amp can destroy speakers!

12. 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.

13. 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 GND LIFT (1/4" & XLR) 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 and cut the ground wire to PIN 1.

14. AC POWER

Your amp is designed to run on either 120V 60 Hz. The voltage range for 120V is 95V to 132V. 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!

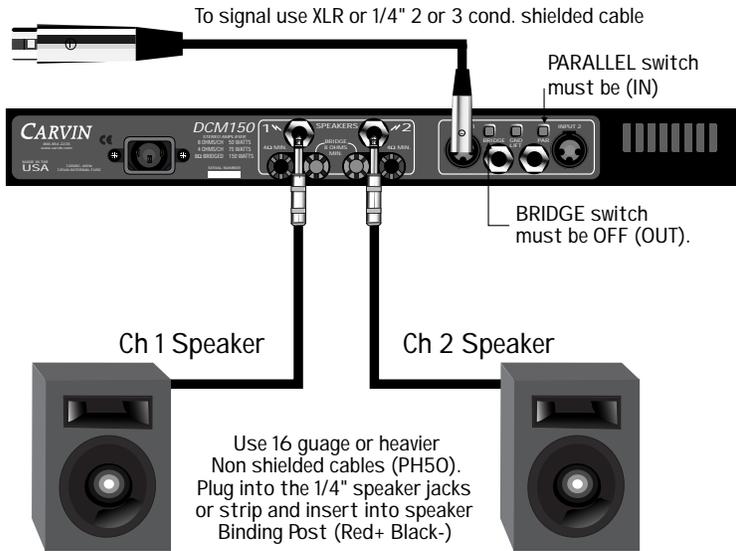
CONNECTING THE SYSTEM

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 on the right if the program is done in true stereo.

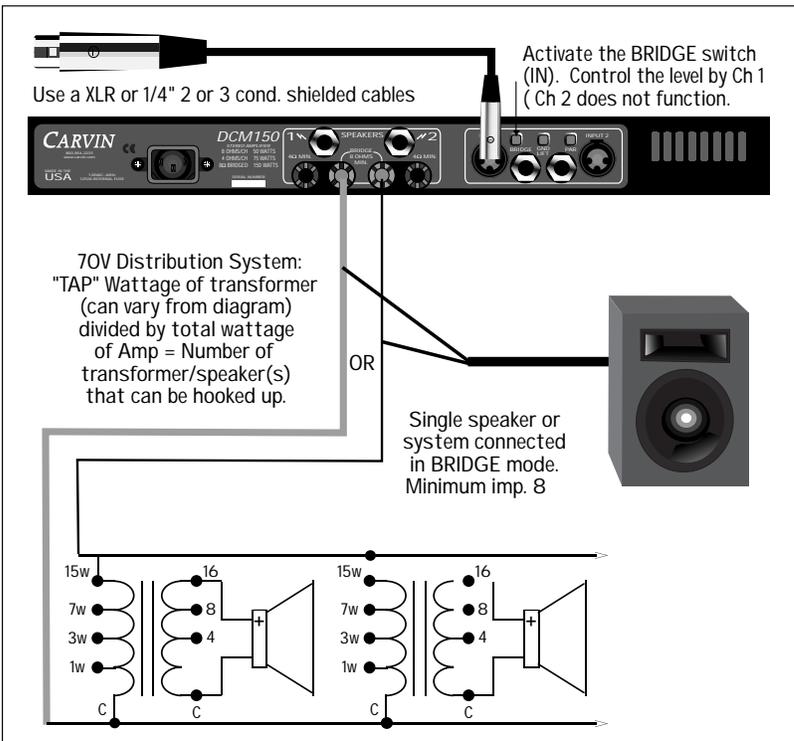
INPUT CONNECTIONS

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



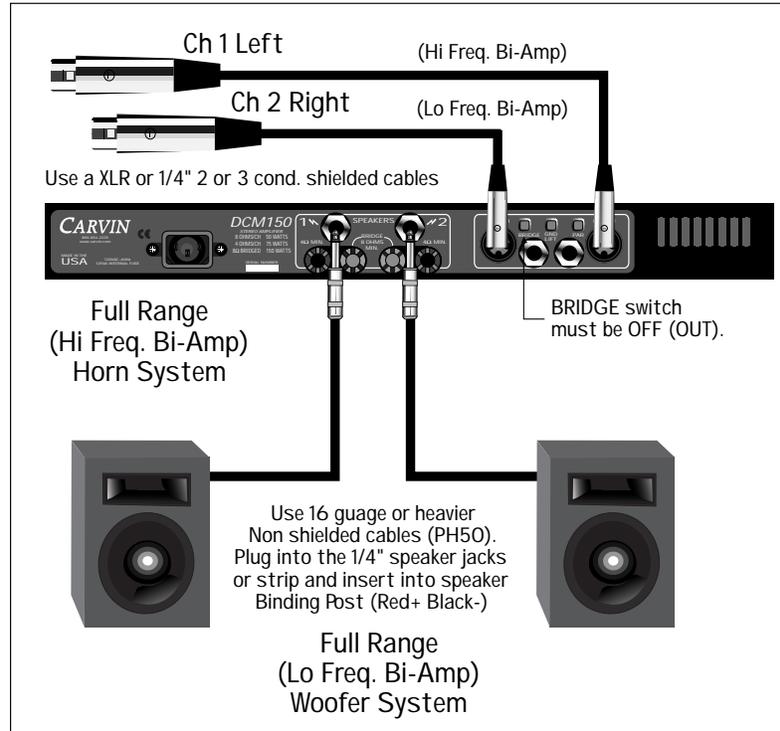
TYPICAL BRIDGED SETUP



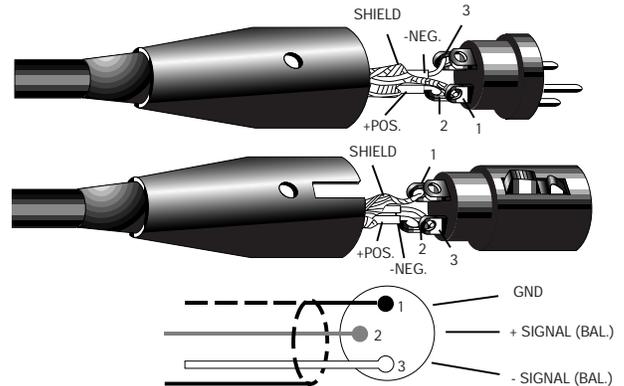
SPEAKER CONNECTIONS

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.

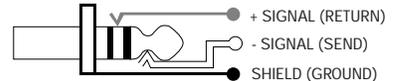
TYPICAL STEREO (BIAMP) SETUP



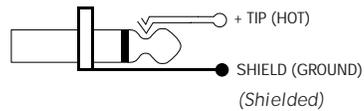
BALANCED MIC/LINE XLR CABLES



INTERRUPT (PATCH) STEREO OR BALANCED SIGNAL LINE



(Unshielded) (Shielded) SPEAKER OR SIGNAL LINE CABLE



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 DCM AMPS



CAUTION
RISK OF ELECTRIC SHOCK

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

DCM150		REV A											
	21-50311	2 EACH	JACK PHONO MONO PCB MOUNT	58-10035	1 EACH	1K SMT .25W 1206 1%	58-56025	2 EACH	560.5 SMT .25W 1206 1%				
			J5, J6			R112, R115, R116, R212, R215, R216, R29, R113, R213, R1117, R217			R107, R207				
	21-51545	2 EACH	JACK .250"PHONE STEREO PLASTIC				58-68025	6 EACH	680 SMT .25W 1206 1%				
			J1, J2						R127, R227, R4, R1, R2, R3				
	21-40000	2 EACH	XLR FEMALE CONNECTOR W/O GRND	58-10045	3 EACH	10K SMT .25W 1206 1%	58-91025	4 EACH	910.5 SMT .25W 1206 1%				
			J3, J4			R122, R13, R222, R20, R21			R6, R7, R8, R9				
	23-03529	2 EACH	FUSEHOLDER CLIPS 3AG VERT MTG			R100, R101, R102, R103, R200, R201, R202, R203	60-00083	2 EACH	TRANSISTOR 15A 100V NPN				
			F1						Q18, Q28				
	23-11004	2 EACH	CONNECT HEADER 4 PIN STRAIGHT	58-10055	7 EACH	100K SMT .25W 1206 1%	60-00084	2 EACH	TRANSISTOR 15A 100V PNP				
			H1A, H1B			R108, R208, R114, R214, R125, R225, R138			Q19, Q29				
	23-11008	2 EACH	CONNECT HEADER 8 PIN STRAIGHT	58-10065	2 EACH	1M SMT .25W 1206 1%	60-55500	4 EACH	TRANS 2N5550 HV NPN 250V				
			H3A, H3B			R19, R22			T0-92 Q5, Q6, Q17, Q27				
	23-11010	2 EACH	CONNECT HEADER 10 PIN STRAIGHT	58-15035	2 EACH	1.5K SMT .25W 1206 1%	60-75200	4 EACH	DIODE GEN RECT MR752 6A 200V				
			H2A, H2B			R141, R241			D1, D2, D3, D4				
	25-02201	3 EACH	SWITCH DPDT PUSH PC MTG LOCKNG	58-15045	2 EACH	15K SMT .25W 1206 1%	60-75320	3 EACH	LED RED DIFFUSED 3MM T-1.00				
			S2, S3, S4			R28, R11			D12, D100, D200				
	25-04201	1 EACH	SWITCH 4PDT PUSH PC MTG LOCKNG	58-15055	4 EACH	150K SMT .25W 1206 1%	60-75330	2 EACH	LED GREEN DIFFUSED 3MM T-1.00				
			S1			R109, R209, R110, R210			D102, D202				
	30-01528	1 EACH	PCB CARD MAIN HT150 PWR AMP	58-22025	2 EACH	220.5 SMT .25W 1206 1%	60-75340	1 EACH	LED YELLOW DIFFUSED 3MM T-1.00				
			PCB REV B			R121, R221			D5				
	42-22235	6 EACH	CAP ELEC 2,200 MFD 35V 20%	58-22035	11 EACH	2.2K SMT .25W 1206 1%	60-78120-1	1 EACH	REGULATOR VOLTAGE 12 (PREPPED)				
			C1, C2, C3, C4, C5, C6			R118, R119, R126, R133, R139, R15, R218, R219, R226, R233, R239			Q1				
	49-10312	9 EACH	0.01UF SMT 10% FILM 080550V				60-79120-1	1 EACH	REGULATOR VOLTAGE 12 (PREPPED)				
			C10, C110, C118, C119, C210, C218, C219, C9, C13						Q2				
	49-10451	2 EACH	0.1 uF SMT 10% FILM 1206 50V	58-22045	3 EACH	22K SMT .25W 1206 1%	62-00014	2 EACH	MMBT14 SOT-23 SMT				
			C111, C211			R27, R134, R234			Q102, Q202				
	49-22035	16 EACH	SMT CAP 22uF 35v ELECTROLITIC	58-22055	2 EACH	220K SMT .25W 1206 1%	62-19140	12 EACH	1N914 HI SPD SMT 250mW DIODE				
			C103, C104, C107, C11, C112, C116, C12, C120, C203, C204, C207, C212, C216, C220, C7, C8			R111, R211			D10, D101, D103, D104, D11, D201, D203, D204, D214, D7, D8, D9				
	49-25152	2 EACH	220PF SMT 5% CERAMIC 0805	58-33025	1 EACH	330.5 SMT .25W 1206 1%	62-45650	3 EACH	NUM4565 SMT DUAL HI FREQ				
			C113, C213			R24			A1, A2, A3				
	49-33212	2 EACH	0.0033UF SMT 10% FILM 0805 50	58-33035	1 EACH	3.3K SMT .25W 1206 1%	62-04739	1 EACH	SMT DIODE ZENER 4739				
			C108, C208			R14			Z1				
	49-33312	2 EACH	0.033UF SMT 10% FILM 0805 50V	58-33045	2 EACH	33K SMT .25W 1206 1%	62-54001	14 EACH	MMBT5401LT1 PNP SOT-23 SMT				
			C109, C209			R132, R232			Q10, Q11, Q12, Q13, Q16, Q20, Q21, Q22, Q23, Q26, Q3, Q4				
	49-39052	6 EACH	39PF SMT 5% CERAMIC 0805	58-36055	1 EACH	365K SMT .25W 1206 1%			Q100, Q200				
			C101, C102, C114, C214, C201 C202			R12			MMBT5550 NPN SOT-23				
	49-47312	2 EACH	0.047UF SMT 10% FILM 0805 50V	58-39035	1 EACH	3.9K SMT .25W 1206 1%	62-55500	6 EACH	Q201, Q101, Q14, Q15, Q24, Q25				
			C117, C217			R16			FUSE ABC 5.00A FAST 6.35X32MM				
	49-82052	7 EACH	82PF SMT 5% CERAMIC 0805	58-47025	1 EACH	470.5 SMT .25W 1206 1%			F1				
			C105, C115, C205, C215, C14, C106, C206			R17			RELAY SPDT 12A@120VAC/24V COIL				
	55-04705	4 EACH	RES .47 OHM 5W 10% SB	58-47035	2 EACH	4.7K SMT .25W 1206 1%			K1, K2				
			R130, R131, R230, R231			R5, R18			POT 9 D-P 25F B10K THREAD BSH				
	58-00035	4 EACH	0.0 SMT JUMPER 1206	58-47045	17 EACH	47K SMT .25W 1206 1%			P1, P2				
			R129, R229, R26, R30			R104, R105, R106, R120, R135, R137, R17, R204, R205, R206, R220, R23, R235, R237, R238							
	58-10025	5 EACH	100.5 SMT .25W 1206 1%			R136, R236							
			R10, R123, R124, R223, R224			R140, R240							

DCM150 PCB Sub Assemblies

PART	#QTY	DESCRIPTION
80-01528	REV B	
03-92521	6 EACH	STANDOFF LED .925 x .215 T1
05-22102	4 INCH	POLYOLEFIN SHRINK TUBING 1/16"
06-40050	1 EACH	TERMINAL VERT MALE PC MTG. 250
		QC7
06-40060	6 EACH	TERMINAL 90dg MALE PC MTG. 250
		QC1, QC2, QC3, QC4, QC5, QC6
07-01603	4 EACH	KNOB "6L" 6x6x17.4mm GREY CAP
21-31100	1 EACH	RECEPTACLE AC W/FAST-ON CHASS
		PL1