

1975-79

# CARVIN

## FM 250 / S 260 + 500 / SV 125 + 250

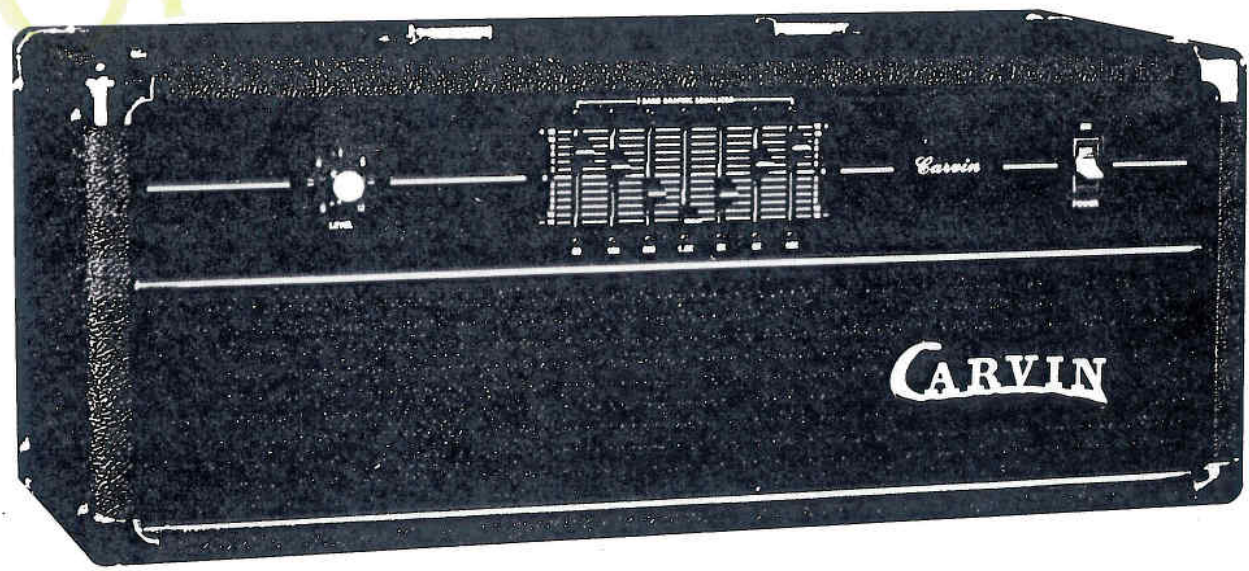
# SV SERIES POWER AMPLIFIERS

### OPERATING / SERVICING MANUAL

The SV Series amplifiers are high power units designed to provide extended reliability under the stress of commercial sound reinforcement conditions. Actual performance standards are excellent (see specifications) making the SV ideally suited for disco or studio applications as well.

Seven band graphic equalization has been included to provide the flexibility and control needed in critical monitoring situations.

Two models are available, both housed in a heavy tolex-covered cabinet. The SV125 delivers a minimum of 125 Watts RMS into 4 Ohms. The SV250 will produce 250 Watts RMS, and may be loaded down to 2 Ohms for professional sound reinforcement applications.



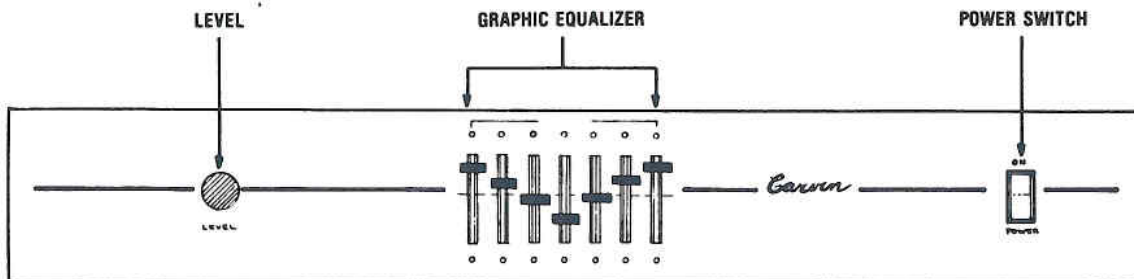
The manual contains specifications, front and rear panel descriptions and practical operating notes.  
Please Note: An amplifier's rated output is specified at some low value of distortion. By overdriving the amplifier, substantially higher wattages are produced and caution must be exercised to prevent damage to speaker systems.

SV250	SV125
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SV7-78

ENGINEERING DATA  
OPERATING / SERVICING MANUAL  
SV250 SV125

# PANEL DESCRIPTIONS



## FRONT PANEL

### LEVEL

This control regulates the output level (volume) of the amplifier.

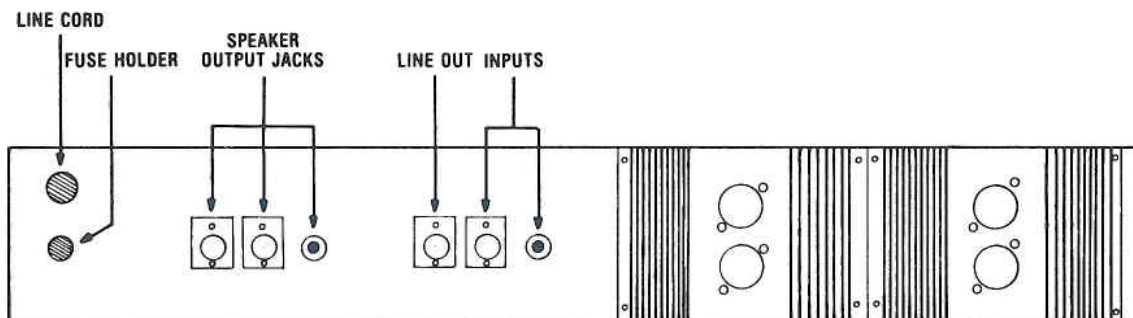
### SEVEN BAND GRAPHIC EQUALIZER

When all slider knobs are centered along the "zero line", the equalizer has no effect. By raising any slider, a certain portion of the audio spectrum is boosted. Lowering the slider reduces the power in that particular band. The left hand sliders control the lower (bass) frequencies and the right hand slider control the higher (treble) frequencies. The middle sliders control the mid-frequencies.

The graphics may be used as basic "tone controls" to compensate for deficiencies in speaker systems or room acoustics. They are also helpful in reducing feedback problems, especially important in monitor applications.

### POWER SWITCH

An illuminated power switch is provided on the front panel. A small delay in the indicator lamp is normal.



## REAR PANEL

### LINE CORD

All Carvin Equipment is supplied with 3-conductor line cords ending in grounding-type plugs. This arrangement will greatly reduce the possibility of electrical shock, provided these outlets have been properly wired. If, at any time, electrical shock is experienced, disconnect the amplifier and have a qualified technician correct the trouble.

Carvin does not recommend the use of the older, 2-conductor non-grounding type of outlets, as there is an increased danger of electrical shock.

### FUSE HOLDER

Access to the fuse can be gained by pushing the fuse-holder inwards, then turning counterclockwise. The type of fuse to be used is printed just below the fuse-holder. Should the fuse ever fail, replace it with an identical fuse. If the second fuse fails, then a problem is indicated, and the amp tubes should be checked. To prevent excessive damage to the amplifier, NEVER USE A FUSE WITH A HIGHER RATING.

## SPEAKER OUTPUT JACKS

A standard ¼" phone jack is provided in addition to two locking D3M connectors. All three connectors are wired in parallel, with D3M pins #2 & #3 both wired to the "hot" line of the amplifier. Pin #1 is Ground.

## LINE OUT

This D3M connector is wired in parallel with the D3F INPUT connector. It may be used to drive an additional power amplifier from one source (mixer, preamp, etc.) without using "Y" cords.

## INPUTS

The SV amplifier features fully-balanced differential-input circuitry utilizing a D3F connector. In addition, a ¼" phone plug is provided for common (single-ended) sources.

# OPERATING NOTES

The SV-series amplifiers are power amplifiers designed to accept "line-level" signals such as preamplifiers, mixers or any sources capable of producing 0.5 VRMS or more. Guitar, microphones, etc. are lower-level and generally higher impedance sources, and must be preamped.

The input of the SV amplifiers features balanced differential circuitry, and balanced sources should be plugged into the D3F INPUT jack. Normal single-ended sources should be plugged into the ¼" phone jack.

The output volume is adjusted by the LEVEL control.

The seven band graphic equalizer provides tonal control. When all sliders are set at mid-position ("flat") the amplifier will reproduce the original signal without coloration. By raising or lowering individual slides, the character at the output may be modified to:

1. Add power and depth to the music.
2. Compensate for deficiencies in the speaker system or room acoustics.
3. Reduce feedback problems, allowing higher volumes without squealing or howling.

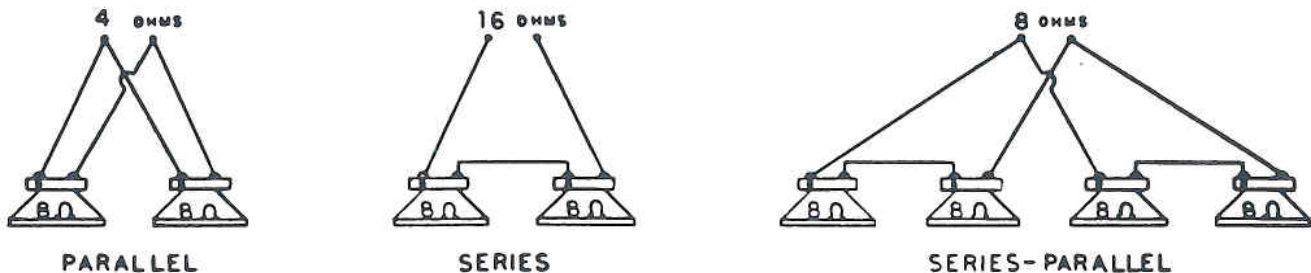
Speaker systems may be plugged into either the ¼" phone plug or the locking D3M connectors. When using the D3M connectors, wire the mating connector (A3F) with pins #2 & #3 going to one ("hot") terminal of the speaker system and pin #1 to the other ("ground") side. **WARNING:** Speaker wires should not be run in a snake containing input (microphone) cables. Such operation will promote oscillation, ground problems and may lead to damage of the amplifier.

The SV250 delivers maximum power into 2 Ohms. Higher impedance speaker systems result in a slightly lower power output. The SV125 is designed to drive 4 Ohms for maximum power output, but may be loaded to 2 Ohms if necessary. Impedances lower than 2 Ohms will activate the Short-Circuit Protection Network, resulting in distortion and lower power.

## HOW TO DETERMINE SPEAKER IMPEDANCE

Single speakers and speaker systems are always rated by the manufacturer. Common impedances are two, four, eight and sixteen Ohms, although other values are sometimes used.

When more than one speaker or speaker system is combined, however, the impedance changes. The three basic interconnecting methods are shown below, with the changes in impedance each method causes. Although the drawing shows single speakers, the same is true of speaker systems.



The actual formula for calculating parallel impedances is  $Z_{\text{parallel}} = \frac{1}{\frac{1}{Z_1} + \frac{1}{Z_2} + \frac{1}{Z_3} + \dots + \frac{1}{Z_n}}$

The formula for series impedance is  $Z_{\text{series}} = Z_1 + Z_2 + Z_3 + \dots + Z_n$

## SV - SERIES SPECIFICATIONS

SV250 Output	250W RMS at 2 Ohms—160W RMS at 4 Ohms.	Inputs	XLR Connector and ¼" phone jack accepts balanced or standard sources from 150 Ohms to 10K Ohms.
SV125 Output	125W RMS at 4 Ohms—80W RMS at 8 Ohms.	Line Output	Low Impedance with XLR connector for other monitor amp hook-ups.
	Note: High Wattage Levels at lower output impedances help to protect speakers. Adding speaker components reduces total impedance for increased power levels.	Spk Outputs	2 XLR Connectors plus 1 ¼" phone jack.
SPEC for Both Models		Short-Circuit Protection	Electronic Current Limiter which automatically engages under any adverse operating conditions.
Frequency Response	20 Hz to 20K Hz ± 1 dB at Full Power.	Power Requirements	110-120 VAC 50-60 Hz Grounded (3 Wire) plug.
Distortion (THD)	.15% at Full Power.	Construction	Solid ¾" 7 ply marine plywood cabinet. Black TOLEX covering with large wrap-around steel corners. 16 gauge steel chassis Black Finished.
S/N Ratio	Better than 85 dB.	Dimensions	Width 24", Height 10", Depth 10".
Damping Factor	Greater than 100.	Weight	SV125: 35 lbs. SV250: 40 lbs.
Main Equalization	One 7-Band Graphic Equalizer. ± 12 dB with center frequencies at 60, 125, 800, 1.5K, 3K, 6K, 12K Hz. Features Gyrtator simulated inductors for precise one-octave bands.	WARRANTY	2 Years Parts & Labor.
Level Control	Controls Output Volume.		
Input Sensitivity	.5 VAC for Full Output.		

### LIMITED WARRANTY

Your Carvin Instrument Amplifier is protected against failure for 2 YEARS. The amplifier will be serviced by Carvin free of charge should anything go wrong within the warranty period (excluding tubes, if so equipped).

While Carvin suggests you utilize the specialized technicians of the Carvin Service Dept. Non-factory repairs will not void the warranty, although all charges for such repairs must be paid by the customer. Furthermore, Carvin will supply amp parts (at no charge) upon receipt of defective parts. Naturally, any damages caused by improper outside repairs will not be covered by the warranty. All Shipping charges are to be paid by the Customer.

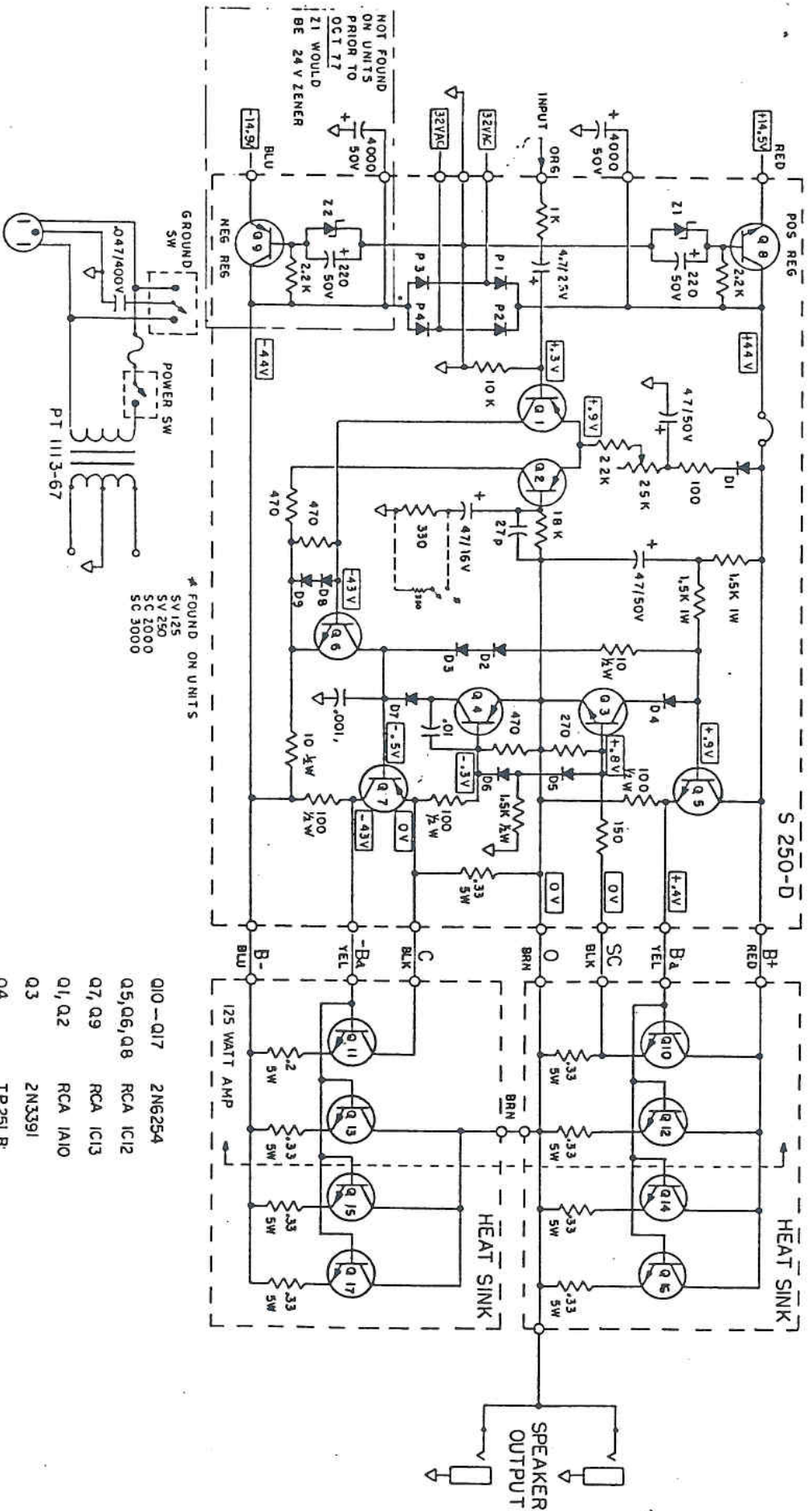
Carvin Speaker Systems are warrantied for a period of 1 Year. All JBL speakers are warrantied by JBL for 5 Years. Any repairs should be sent directly to JBL Service Centers.

Speakers are not warrantied against damage caused by excessive power levels. (Open Voice Coils are not covered by warranty as they are the result of excessive power applications). The description of an open voice coil is: A speaker that will give no sound. NOTE: An amplifier's rated output is specified at a low value of distortion. By overdriving the amp, substantially higher wattages are produced, so caution is advised to prevent damage to the speaker system.

All above warranties are extended to the Original Purchaser Only, by the Carvin Co., and do not cover failures caused by misuse or natural disasters.

**Carvin**

1155 Industrial Ave., Escondido, Calif. 92025



125 WATT AMP	250 WATT AMP
Q10 - Q13	Q10 - Q17
PI-P4 CR3 020	PI-P4 MR 752
PT 1150-64	PT 1113-67

- Q10 - Q17 2N6254
- Q5, Q6, Q8 RCA IC12
- Q7, Q9 RCA IC13
- Q1, Q2 RCA 1A10
- Q3 2N3391
- Q4 TP251 B
- Z1, Z2 C 12 15B
- PI-P4 CR3 020 or MR 752
- D1-D9 1N5392

REVISIONS	DATE	CARVIN MUSIC CO
	8-24-77	POWER AMPLIFIER
		DRIVER BOARD S250-D
		HEAT SINKS
		W. Flaherty





