

CARVER

P R O F E S S I O N A L

PM-600/PM-900 MAGNETIC FIELD POWER AMPLIFIERS SERVICE MANUAL

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SECTION 1

SAFETY INFORMATION

WARNING.

Any person performing the procedures described in this manual will be exposed to hazardous voltages and the risk of electric shock.

Carver Corporation assumes that any person who removes the cover from the unit has been properly trained in protecting against avoidable injury and shock.

Therefore, the procedures described here are to be performed by qualified electronics service personnel only.

We recommend that the unit be tested only when line isolation is provided by an isolation transformer. The line cord of the unit must be disconnected and the power supply fully discharged before any components are replaced. Failure to do so may result in severe damage to the unit and the risk of electric shock.

The safety tests described below must be performed properly.

CAUTION:

Before returning the unit to the customer, one of the following safety tests must be performed.

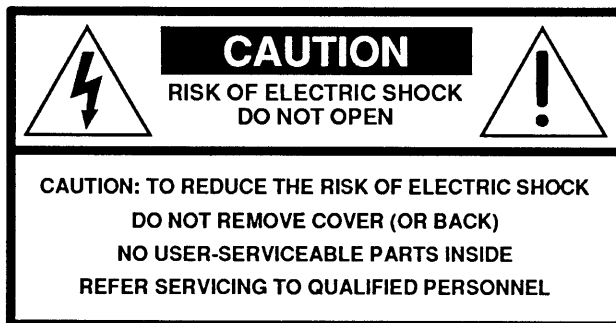
1. Check the leakage current. Connect the unit to 120 VAC supply and turn the power switch "ON". Using an ammeter, measure the current between the neutral side of the AC supply and chassis ground of the unit under test. If leakage current exceeds 0.5mA, the unit is defective.

Reverse the polarity of the AC supply and repeat.

2. Measure the resistance from either side of the linecord to chassis ground. If it is less than 500k ohms, the unit is defective.

WARNING - DO NOT return the unit to the customer if it fails one of these tests until the problem is located and corrected.

CAUTION



The lightning flash with arrowhead symbol within an equilateral triangle 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.



The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

SECTION 2

INTRODUCTION

This manual is intended for use by qualified, authorized personnel only.

Due to the unique and complex circuit designs of Carver Corporation, the following procedure is recommended to diagnose & repair problems with speed and accuracy.

The best way to figure out what is wrong is to learn what is working properly first. Then, through the process of elimination, the defective area can be located. Upon locating the defective area, you then would use your own preferred troubleshooting skills.

The removal of parts for testing, should be kept to an absolute minimum. "In circuit" analysis should provide you with enough data to determine correct operation.

At Carver Corporation we continually strive for the most reliable, cost-efficient product available.

When updates and service bulletins are sent to you, please take the time to review them and insert them into the correct service manuals.

The Carver PM-600 and PM-900 Magnetic Field Power Amplifiers are updated versions of the Carver PM-175 and PM-350 power amplifiers. They were released in March of 1990, in conjunction with the redesign and renaming of our entire professional line of power amplifiers for the 1990's.

The PM-600 and PM-900 are rack-mountable (dual-rack space) stereo power amplifiers rated at 200W per channel into 8 ohms and 300W per channel into 4 ohms for the PM-600, and 350W per channel into 8 ohms and 450W per channel into 4 ohms for the PM-900. In series-mono mode (bridged), the PM-600 will deliver 700W into 8 ohms and the PM-900 will deliver 900W into 8 ohms.

The PM-600/PM-900 features:

Left and right detented level controls

XLR, TRS and barrier strip inputs

Switch configurable XLR (Pin 2/Pin 3 High)

5-way speaker binding post outputs

Chassis/Signal ground lift

Dual channel 7-segment LED display

Triac regulated primary voltage

Triple-rail power supply for increased efficiency

Remote sequential power On/Off

Rear panel slot for Carver add-on accessories

Protection Circuitry:

Thermal

Independent L/R Short Circuit

Independent L/R High Frequency

L/R DC Offset

Clipping Eliminator (switchable)

SECTION 3

SPECIFICATIONS

Specifications for the PM-600 Magnetic Field Power Amplifier

Power Output:

Continuous Average Output Power, both channels driven:

200 watts per channel into 8 ohms from 20 Hz to 20 kHz, with no more than 2.0% THD

300 watts per channel into 4 ohms from 20 Hz to 20 kHz, with no more than 3.0% THD

Bridged-mono operation:

700 watts into 8 ohms from 20Hz to 20 kHz, with no more than 3.0% THD

Power at Clipping, both channels driven:

265 watts per channel into 8 ohms at 1 kHz

360 watts per channel into 4 ohms at 1 kHz

Dynamic Headroom:	1.2dB @ 8 ohms 1.5dB @ 4 ohms
Frequency Response:	20Hz to 20kHz (+0, - 0.5dB)
Crosstalk:	-60dB, 100Hz-10kHz
Output Impedance:	.05 ohms
Damping Factor:	Greater than 150 at 1kHz
Input Impedance:	30k ohms balanced (15k Ω each leg to ground) 30k ohms unbalanced (Noninverting input "+") 15k ohms unbalanced (Inverting input "-")
Sensitivity:	1.5V rms for rated power into 8 ohms at 1kHz 105mV for 1W output into 8 ohms at 1kHz
Gain:	28.5dB (+/- 0.5dB)
Input Overload:	+15dBu
IM Distortion:	Less than 0.1%
THD:	Less than 3.0%
Signal-to-Noise Ratio:	-106dB A-weighted, referenced to rated power -83dBW A-weighted, referenced to 1W
Slew Rate:	25V/ μ S
CMRR:	-50dB at 1kHz
Power Consumption:	1000W at full power into 8 ohms 55W at idle
Power Requirements:	120VAC/60Hz (USA and Canada) Other voltages as required for export
Display:	LED ladder; 7 indicators per channel 1mS attack time; 500mS decay time
Size (H x W x D):	3.5" (3.75" with feet) x 19" x 13.75" 89mm (95mm w/feet) x 483mm x 349mm
Net Weight:	22.5 lbs. (10.2 kg)
Shipping Weight:	25.9 lbs. (11.7 kg)

Test Note: Accurate measurement depends on a sufficiently "stiff" AC supply. The 60 Hz AC line distortion must be below IHF specifications.

Features and specifications are subject to change without notice.

Specifications for the PM-900 Magnetic Field Power Amplifier

Power Output:

Continuous Average Output Power, both channels driven:

350 watts per channel into 8 ohms from 20 Hz to 20 kHz, with no more than 1.0% THD
450 watts per channel into 4 ohms from 20 Hz to 20 kHz, with no more than 2.0% THD

Bridged-mono operation:

900 watts into 8 ohms from 20Hz to 20 kHz, with no more than 2.0% THD

Power at Clipping, both channels driven:

375 watts per channel into 8 ohms at 1 kHz
490 watts per channel into 4 ohms at 1 kHz

Dynamic Headroom:	1.4dB @ 8 ohms 2.1dB @ 4 ohms
Frequency Response:	20Hz to 20kHz (+0, - 0.5dB)
Crosstalk:	-60dB, 100Hz-10kHz
Output Impedance:	.05 ohms
Damping Factor:	Greater than 150 at 1kHz
Input Impedance:	30k ohms balanced (15k Ω each leg to ground) 30k ohms unbalanced (Noninverting input "+") 15k ohms unbalanced (Inverting input "-")
Sensitivity:	1.7V rms for rated power into 8 ohms at 1kHz 89mV for 1W output into 8 ohms at 1kHz
Gain:	30.0dB (+/- 0.5dB)
Input Overload:	+15dBu
IM Distortion:	Less than 0.1%
THD:	Less than 2.0%
Signal-to-Noise Ratio:	-104dB A-weighted, referenced to rated power -78dBW A-weighted, referenced to 1W
Slew Rate:	25V/ μ S
CMRR:	-50dB at 1kHz
Power Consumption:	1700W at full power into 8 ohms 75W at idle
Power Requirements:	120VAC/60Hz (USA and Canada) Other voltages as required for export
Display:	LED ladder; 7 indicators per channel 1mS attack time; 500mS decay time
Size (H x W x D):	3.5" (3.75" with feet) x 19" x 13.75" 89mm (95mm w/feet) x 483mm x 349mm
Net Weight:	24.3 lbs. (11.0 kg)
Shipping Weight:	27.7 lbs. (12.6 kg)

Test Note: Accurate measurement depends on a sufficiently "stiff" AC supply. The 60 Hz AC line distortion must be below IHF specifications.

Features and specifications are subject to change without notice.

SECTION 4

CIRCUIT DESCRIPTION PM-600/PM-900

TECHNICAL DESCRIPTION

This section discusses the theory of operation of the PM-600 and PM-900 magnetic field power amplifiers. The circuit descriptions discussed here apply to both amplifiers since they were developed from the same design. When there are differences between the two, the PM-600 data will be given first followed by the PM-900 data in parenthesis. For a better understanding of the circuitry involved, refer to the schematic diagrams presented later in this manual. Op-amps described in the circuitry use the following notation: U1(7) means U1, whose output appears on pin 7. Unless otherwise noted, this discussion centers around the left-channel circuitry. The right-channel circuitry is essentially identical.

Low Level Circuitry

Input signals enter the circuit via the rear-panel XLR connector, tip-ring-sleeve (TRS) phone jack, or screw terminal connections. S3 allows the polarity of the XLR connector to be configured for pin 3 hot (U.S. standard) or pin 2 hot (DIN standard). As supplied from the factory, the PM-600 and PM-900 are configured for pin 3 hot. The switch setting does not affect the wiring of the TRS jack (tip=hot) or the screw terminal connections.

U2(1) is configured as a unity gain differential amplifier driving the left-channel level control via J5 pins 7 and 8. Connector J5 provides a means of inserting into the signal chain one of several Carver add-on accessories specifically designed to be plugged into the accessory slot in the rear panel of the amplifier. U201(7) is configured as a unity gain inverting amplifier. When S1 is switched to bridge mode, U201(7) supplies an inverted input signal to the left amplifier channel while the right amplifier receives an identical but non-inverted input signal from the left channel input.

R201, R202, and U202 form an attenuator whose loss is dependent on the resistance of U202, an LED-LDR module. The drive for the LED portion of U202 comes from the clipping eliminator circuitry, which will be discussed later on.

Power Amplifier Circuitry

The PM-600 and PM-900 use the patented Carver Magnetic Field power amplifier circuitry. This innovative circuit uses the combination of a smart power supply and a highly linear, triple-rail power amplifier circuit.

U201(1) is the input stage, providing differential inputs for input and feedback connections as well as most of the open-loop voltage gain of the circuit. Overall negative feedback from the output stage via R238 and R204/R206 sets the closed-loop gain at 29.8 dB (31.9 dB). The specified 28.5 dB (30.0 dB) overall amplifier gain takes into account the small but finite losses associated with R67 and the input level controls as well as R201/R202. The output of U201(1) drives Q201 and Q210, operating as common emitter amplifiers that level-shift the drive signal and couple it to the pre-driver amplifiers Q202 and Q211. Q202 and Q211 provide additional voltage gain, and when combined with the voltage gain of the input op-amp is sufficient to swing the input signal between the +/-73V (+/-97V) power supply rails. Q203 and Q204 are connected as an NPN-PNP conjugate pair and used as a V_{BE} multiplier for bias control. Q204 is thermally connected to the output transistors and together with Q203 provides bias stabilization over a wide temperature range. RP200 allows the bias current to be adjusted to its optimum value.

Up to now, the amplifier circuitry has been fairly conventional. From this point on, there is a marked departure from convention.

The positive-going portion of the output stage is comprised of three series-connected NPN emitter-followers (Q209, Q207/Q208, Q219). The negative-going portion of the output stage is exactly complementary to the positive-going portion; three series-connected PNP emitter-followers (Q217, Q215/Q216, Q222).

The innermost pair (Q209/Q217) are driven from the opposite sides of the V_{BE} multiplier (Q203/Q204) via emitter follower drivers Q206, Q213. This looks suspiciously like a full-complementary amplifier. It is exactly that.

Q214 is also connected as a V_{BE} multiplier to maintain the operating conditions of the Q209/Q217 output pair. Q205 operates as a V-I limiter, sensing the voltage drop across emitter resistor R233, and reducing the drive signal to the output stage under overload conditions (see section on Over-Current Protection further on).

The middle set of output transistors (Q207/Q208) are driven from driver Q206. Diodes D206, D207, D208 and D209 initially force these transistors off and the innermost transistors on. This condition is true for output signals not exceeding around 22 volts (27V) peak. Once the drive signal from Q206 is sufficient to saturate Q209, Q207/Q208 take over. D210 disconnects the +22V (+27V) supply and the output signal can now swing to about +46 volts (+56V).

The outermost pair of output transistors (Q219 and Q222) are driven (by means of Q218, Q220 and Q221, Q223) from the output terminal of the amplifier via diodes D220 and D223. Looking again at the positive-half of the amplifier, Q220 level shifts the output signal towards the +73 (+97) volt supply rail. Zener D219 provides a voltage reference for Q220, preventing it from conducting until the base voltage exceeds 46V (56V) minus the 12 volt zener voltage. As long as the peak AC output voltage remains below this threshold, Q220 does not conduct. Once the AC output voltage exceeds the threshold voltage, Q220 begins conducting which turns on Q218 and Q219. Q221, Q222 and Q223 function similarly for the negative-half of the amplifier. Diodes D218 and D221 are commutator diodes that disconnect the output stage from the 46V (56V) power supply whenever the voltage at the emitters of Q219 or Q222 exceeds 46V (56V). Under high-frequency conditions, C218 and C221 provide phase lead for the outermost output transistors, ensuring that they can "stay ahead" of the audio signal.

Under small-signal conditions, the innermost pair of transistors do all the work. As the signal level grows larger and larger, the middle pairs of transistors take over. Finally, the outermost pair of transistors assume the remainder of the burden of providing a high voltage output signal to the load. This three-stage approach minimizes the voltage across each of the output devices which also minimizes the power dissipation required. Without this approach, the output transistors would be required to support the entire power supply voltage under small-signal conditions and the "unused" portion of the power supply voltage would be turned into heat.

Magnetic Field Power Supply

The main power supply for the PM-600 and PM-900 is a triple-voltage design which provides no-load voltages of ± 73 , ± 46 and ± 22 volts DC (± 97 , ± 56 and ± 27 volts DC). The triac drives the primary of the magnetic field power transformer by operating as a phase controlled switch; its gate signal depends on the signal supplied to opto-isolator U1 located on the regulator board, which isolates the drive circuitry from the AC power line. Diode bridge D1 through D4 provides steering for the phototransistor in U1, allowing the triac to fire on both alternations of the power line.

Start-up Sequence

The phase shift voltage at the junction of R2 and R8 is obtained through the POWER or SEQUENCE switches and is approximately 110-120V, regardless of whether the amplifier is configured for 115V or 230V operation.

The amplifier can be turned on remotely via the SEQUENCE RECEIVE terminal. When the Sequence Switch is turned on, power to the amplifier is held off by the diac portion of opto-isolator U2 on the Regulator Board. When a +5Vdc to +15Vdc control voltage is applied to the sequence receive terminal, base current is supplied to Q5 through R14 and collector current is supplied through D10 and the LED portion of U2. This illuminates the LED and fires the diac, which effectively bypasses the main power switch, allowing AC current to flow. Once the power supply is energized, Q6 is biased on by the +11.4V supply via D11 after a delay established by R15 and C7. This allows approximately 11Vdc to pass to the sequence send terminal, providing the ability to turn on several power amplifiers sequentially by daisy chaining the sequence terminals.

When the power switch on the front of the amplifier is turned on, capacitor C4 begins charging up through R8 and either Q2 or Q3, depending on the polarity. The positive half-cycle of the AC line will charge C4 through R8 and Q3. This charging current forward biases the base emitter junction of Q3, causing it to conduct. Q3 turns on Q4, but no gate current can flow in the triac because D6 is reverse biased. C4 continues charging until the charge on C4 exceeds the now falling voltage at the junction of the bases of Q3 and Q2, formed by divider R8 and R9. Q3 and Q4 will turn off and C4 will begin to discharge through Q2 because the junction of R8 and R9 is more negative than the emitter of Q2 (C4). Q2 will conduct and turn on Q1, and gate current will flow through forward biased D5, firing and latching the triac. On the negative half cycle, C4 is charged through Q2 and discharged through Q3, Q4, D6 and R10 into the gate of the triac. The triac begins to conduct at a minimum phase angle and applies 30-40 VAC to the primary of the transformer.

The triac is switched on and off every half-cycle of the 60Hz AC line. Thus, the triac switches the AC line current off at a rate twice the line frequency, at the instant the line current crosses the zero axis. The triac will then remain off for a number of degrees of the sinusoid, before switching on again. The phase angle at which the triac switches on is the "firing angle" of the triac.

This produces enough voltage to the primary of the power transformer to allow the secondary regulator stage to begin to operate.

Power Supply Regulation

The firing angle of the triac controls the voltage on the primary of the transformer, and is determined by the conduction of the optocoupler U1 on the Regulator Board.

As the conduction of the optocoupler increases, the amount of phase shift on C4 decreases, which increases the conduction angle of the triac. The phototransistor conduction of the optocoupler is controlled by the current through the LED portion of the optocoupler. When the LED in U1 is fully ON, the triac conducts earliest in the AC cycle: the power supply is operating at maximum output. The LED current is supplied by U1(1) on the amplifier board. This differential amplifier senses the secondary supply voltages through R22, R23, R24, R28, R29 and R30. The output voltage at U1(1) increases at the rate determined by C4 (slow start-up). The photo-transistor in the optocoupler will begin to conduct and charge C4 at a faster rate

through R2 and D1/D4 or D2/D3 "steering" diodes, depending on the polarity. This decrease in phase shift results in a longer triac conduction time and higher secondary voltages. The idle secondary voltages are set by RP1 on the amplifier board.

Load Regulation

When the amplifier is driven into a load, the DC supplies (rail voltages) will begin to "sag". Differential amplifier U1(1) senses this and increases the LED current to the optocoupler. This action increases the phototransistor conduction, which increases the triac conduction, which increases the primary voltage, which increases the secondary voltages, thus providing steady, regulated DC supplies for the amplifier stage.

Secondary Voltages

The secondary winding of the power transformer has three taps that supply the three pairs of DC supply voltages $\pm 73V$, $\pm 46V$, $\pm 22V$ ($\pm 97V$, $\pm 56V$, $\pm 27V$), each having its own bridge rectifier and filter capacitors.

Load resistor R81 on the 22V bridge rectifier (PM-600 only) insures that the triac remains latched by providing primary holding current during the time when the secondary supply rectifiers normally stop conducting.

The PM-900 does not require this loading resistor because the fan drive is tapped off the 27V supply. The fan in the PM-900 varies the airflow in direct proportion to the power output of the amplifier. This is accomplished by controlling the voltage to the fan directly in relation to the triac conduction angle through D25 and D26. When the heatsink reaches a temperature of 50° Celsius, the thermal switch closes and shorts out R68, doubling the airflow and cooling capacity. Should the heatsink temperature exceed 100° C, a second thermal switch in series with the AC line voltage opens and disables the amplifier until the heatsink temperature cools below the turn-on threshold of the thermal switch (approximately 85° C).

The $\pm 11.4Vdc$ supply is referenced to the $\pm 22Vdc$ ($\pm 27Vdc$) supply, drawn from the $\pm 73Vdc$ ($\pm 97Vdc$) supply, and regulated by Q5, Q6 and zener diodes D2 and D3. Resistors R9, R10, R61 and R62 provide a residual DC voltage after the unit is turned off, thus keeping the front end of each amplifier biased up to prevent excessive thumping. The $\pm 11.4Vdc$ supply powers the op-amps and small-signal transistors.

Protection Circuitry

Protection functions are shared by the amplifiers and the power supply. Active shutdown protection is provided for the following faults.

Over-Current and High Frequency Output Muting

The amplifiers are protected from short-term excess current through the output stage by electronic current-limiters. When the current through the output transistors becomes excessive, the voltage drop across the emitter resistors R233 and R257 bias the current limiter transistors Q205 and Q212 on, which shunt the drive current via D204 and D211. Q205 provides base current for Q7 through D203 and R279, which drives Q11. When Q11 turns on, C28 charges and turns on Q10, which in turn activates the N-channel muting FET Q1 (the FET is off with -DCV on the gate, and turns on with 0VDC). This attenuates the input signal, removing the high current condition. The input remains muted as C28 discharges through R79, which takes about 5 seconds. Q212 operates in similar fashion for the negative-portion of the output stage. R223, D205, R247 and D212 on the Amplifier Board determine the V-I limits.

As the frequency increases, C208 on the Amplifier Board causes Q205 to bias on sooner, providing a measure of protection against excessive high frequency content or high frequency oscillation.

Q7 also biases on Q12, lighting the Protect/Clip LED. C16 is charged and continues to provide base current to Q12, keeping the LED lit during the mute time.

The inputs are also muted for about 5 seconds when the amplifier is first switched on.

Clipping Eliminator Circuit

This circuit is controlled by the LED/LDR optoisolator U202, located on the Amplifier Board. The LED portion of this component is driven from a bridge rectifier (D226/D227, D225/D228) that gets its input signal from U201(1). Under normal conditions (undistorted amplifier output) there is almost no signal at this point. If the amplifier is driven into clipping, the signal level at U201(1) rises rapidly because the feedback signal no longer represents the input signal. Once this occurs, the LED in U202 illuminates, reducing the resistance of the LDR portion which in turn reduces the input signal. The clipping-eliminator circuit is activated

by switch S2 (accessed from the rear panel). When the switch is off, the signal driving the bridge rectifier is shorted to ground.

DC Offset

DC offset is sensed by a low-pass differential amplifier, formed by U1-pins 5 and 6. Left and right amplifier outputs are summed by R44 and R45, and capacitor C7 rolls off the output in the audio spectrum while +/- DC offset and single channel low frequency signals below 5 Hz are amplified. R44 and R45 have different values to ensure circuit operation if opposite halves of the amplifier decide to fail in opposite ways at the same time. If pin 7 goes positive, current through D7, R31, and U1(2) drives the output of U1(1) negative. This reverse biases the optocoupler LED on the Regulator Board and forces the conduction angle of the triac back to its initial startup position, thereby lowering all secondary power supply voltages and insuring the offset is held to a minimum value.

Overheated Output Transistors

A 100° C resettable thermal switch is mounted on the heatsink in series with the AC line, which protects the output transistors if the top cover vents are blocked or if the unit is run with excessive continuous sinewaves.

Major Faults

The slo-blo line fuse protects the unit from further damage when a major fault such as a shorted triac, shorted output transistor, or a major secondary power supply fault occurs.

If the unit is run at or near its rated power, the fuse will eventually blow. The rated line fuse does allow the unit to be operated without interruption for all musical applications.

Display Circuit

The Protect/Clip LED's are independently driven by Q9 and Q12, and illuminate any time that their respective drive transistors are biased on. Q9 and Q12 are activated by two possible sources:

- 1) The outputs of U101(1) and U201(1). These signals indicate amplifier clipping, and are the same signals that activate the clipping eliminator circuit. C36 and R76 (C27 and R17 for the right channel) establish the time constant of the clipping indicator.

2) The output of Q7 or Q8. This signal goes positive any time that the high frequency or current limit protection circuits are activated.

The display driver circuit comprised of U1(4,3,12,10) and U2(12,10,4,3) is basically a ladder comparator driving LEDs, with a twist. Assume that the signal at U1(2) is zero volts and ignore R23 and D4 for now. R12 and R13 are a voltage divider that establishes a reference voltage for the comparators (four per channel). The comparators compare their input signal against the voltages established by the tapped voltage divider made up of R21, R19, R17, and R24. The left channel LEDs are in the following sequence (lowest to highest): D11 (green), D10 (red), D9 (red), D8 (red), D7 (red), D6 (red), D5 (yellow).

The display board receives a signal from the amplifier outputs and converts it to a positive-going half-wave rectified and smoothed signal. With the input signal at zero volts, all of the comparator outputs are at -1.4V, except for U1(4) which is high. None of the LEDs (D6-D10, D13-D17) have any voltage across them; all are extinguished. As the input signal rises, it crosses, in sequence, the thresholds established at each of the four comparators. First U1(3) fires; its output goes high, and D10 illuminates. Next U1(12) fires, its output goes high; D10 extinguishes (no net voltage across it) and D9 illuminates. Finally U1(10) fires; D9 extinguishes, and (this is the twist) D4/R23 supply current to the bottom of the R17, R19 and R21 voltage divider, which inverts the relationship of the comparators to each other.

When U1(10) fires, the current through R23 reverses the sequence of the voltages that establish the thresholds for the three comparators. This allows the same comparators to perform double-duty. The new thresholds leave U1(10) high, U1(4) low, U1(12) and U1(3) low and D8 on. D6 and D7 are off. As the input signal rises further, U1(12) fires, extinguishing D8 and illuminating D7. Next, U1(3) fires, extinguishing D7 and illuminating D6. Finally U1(4) fires, extinguishing D6. The last LED is the clipping indicator, D5.

SECTION 5

CALIBRATION PROCEDURE PM-600

High Rail Voltage Adjust

With no signal and no load:

1. Adjust RP1 on the amplifier board for $\pm 73\text{VDC}$ ($\pm 0.5\text{V}$) when measured at the large filter capacitors.

2. Verify the following DC voltages on the amplifier board:

D15 Cathode	+23.5VDC ($\pm 1\text{V}$)
D17 Anode	-23.5VDC ($\pm 1\text{V}$)
D19 Cathode	+48.0VDC ($\pm 1\text{V}$)
D21 Anode	-48.0VDC ($\pm 1\text{V}$)
U1 Pin 4	-11.0VDC ($\pm 0.75\text{V}$)
U1 Pin 8	+11.0VDC ($\pm 0.75\text{V}$)

Idle Bias Adjust

With no signal and no load:

1. Adjust RP100 on the amp board for 5.0mV ($\pm 1.0\text{mV}$) across both right channel emitter resistors (R133/R157).

2. Adjust RP200 on the amp board for 5.0mV ($\pm 1.0\text{mV}$) across both left channel emitter resistors (R233/R257).

Note: This adjustment should be made after the amplifier has been on approximately two minutes, while it is still cool. After the amplifier warms up, the bias reading may be higher.

CALIBRATION PROCEDURE PM-900

High Rail Voltage Adjust

With no signal and no load:

1. Adjust RP1 on the amplifier board for $\pm 97\text{VDC}$ ($\pm 0.5\text{V}$) when measured at the large filter capacitors.

2. Verify the following DC voltages on the amplifier board:

D15 Cathode	+27.5VDC ($\pm 1\text{V}$)
D17 Anode	-27.5VDC ($\pm 1\text{V}$)
D19 Cathode	+56.3VDC ($\pm 1\text{V}$)
D21 Anode	-56.3VDC ($\pm 1\text{V}$)
U1 Pin 4	-11.0VDC ($\pm 0.75\text{V}$)
U1 Pin 8	+11.0VDC ($\pm 0.75\text{V}$)

Idle Bias Adjust

With no signal and no load:

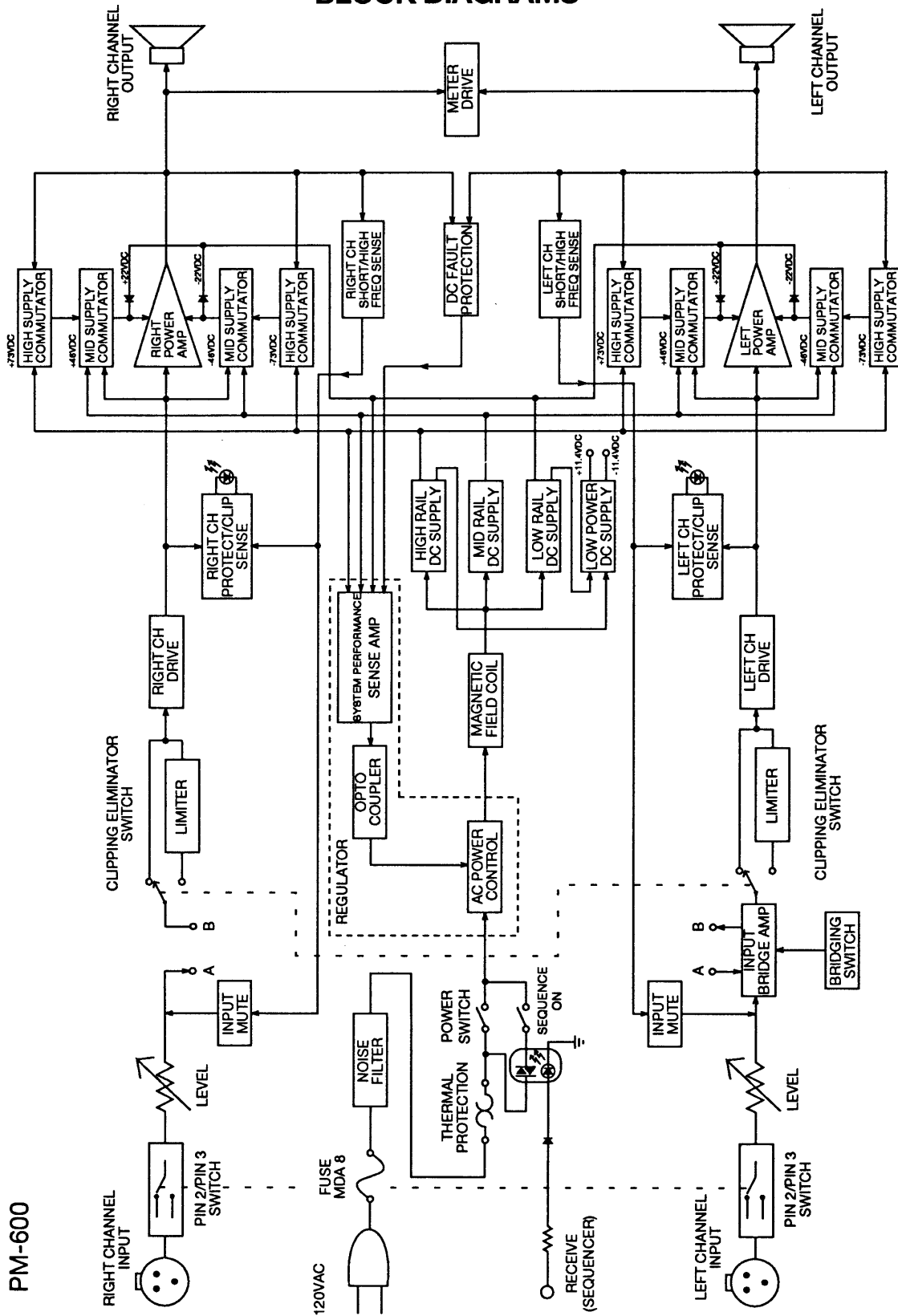
1. Adjust RP100 on the amp board for 5.0mV ($\pm 1.0\text{mV}$) across both right channel emitter resistors (R133/R157).

2. Adjust RP200 on the amp board for 5.0mV ($\pm 1.0\text{mV}$) across both left channel emitter resistors (R233/R257).

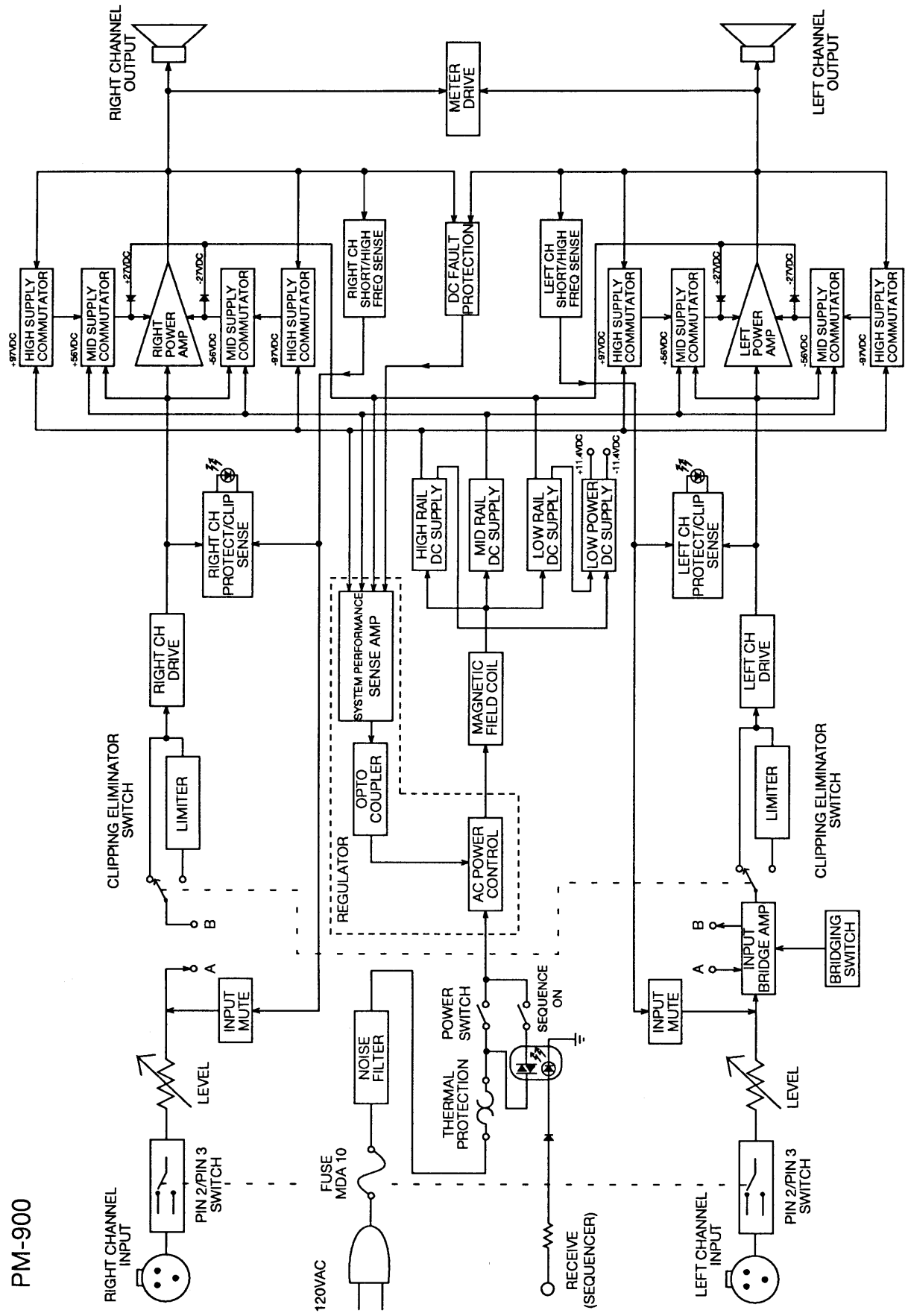
Note: This adjustment should be made after the amplifier has been on approximately two minutes, while it is still cool. After the amplifier warms up, the bias reading may be higher.

SECTION 6 BLOCK DIAGRAMS

**BLOCK DIAGRAM
PM-600**



BLOCK DIAGRAM PM-900

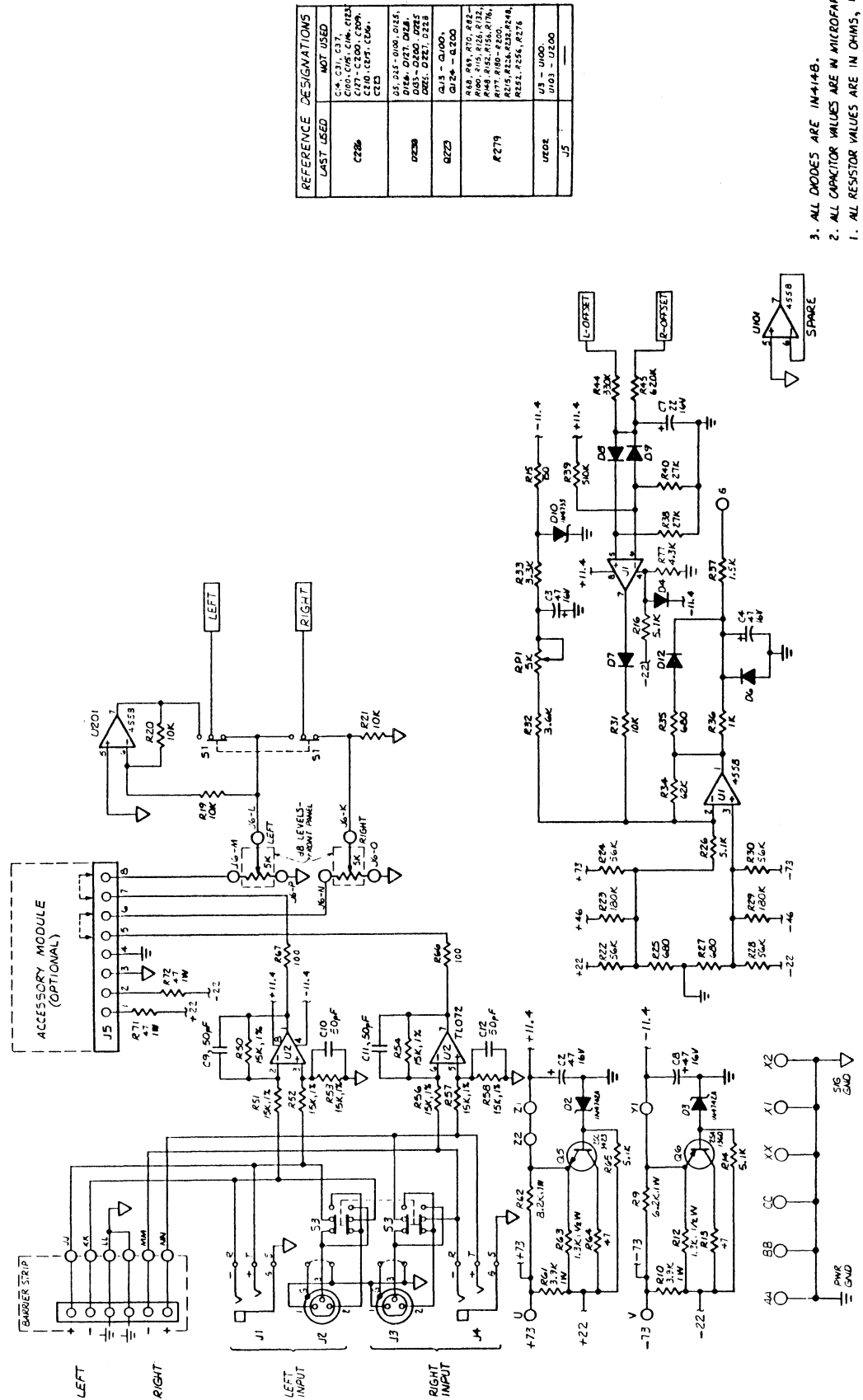




SECTION 7

SCHEMATICS AND LAYOUTS

	Page
PM-600 Amp Schematic	16-17
PM-900 Amp Schematic	18-19
PM-600/900 Amp Board Layout	20-21
PM-600/900 Regulator Schematic	22
PM-600/900 Regulator Board Layout	23
PM-600/900 Display Schematic	24
PM-600/900 Display Board Layout	25
PM-600 Wiring Diagram	26
PM-900 Wiring Diagram	27
PM-600 Final Assembly	28-29
PM-900 Final Assembly	30-31



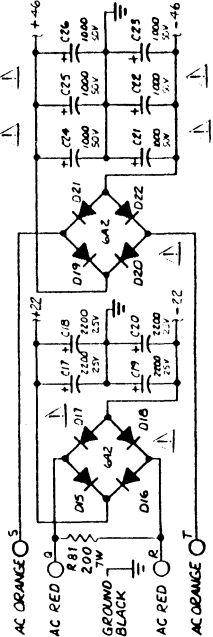
REFERENCE DESIGNATIONS	LAST USED	NOT USED
C28b	C4, C31, C37, C100, C105, C106, C123, C179, C200, C209, C23, C27, C28a	
D23b	D16, D17, D24, D33, D260, D265, D267, D268	
Q23	Q13 - Q100, Q124 - Q200	
R279	R68, R99, R70, R82, R90, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R47, R48, R49, R50, R51, R52, R53, R54, R55, R56, R57, R58, R59, R60, R61, R62, R63, R64, R65, R66, R67, R68, R69, R70, R71, R72, R73, R74, R75, R76, R77, R78, R79, R80, R81, R82, R83, R84, R85, R86, R87, R88, R89, R90, R91, R92, R93, R94, R95, R96, R97, R98, R99, R100	
U202	U3 - U100, U103 - U200	
J5		

- 3. ALL DIODES ARE IN-414B.
 - 2. ALL CAPACITOR VALUES ARE IN MICROFARADS, 10%.
 - 1. ALL RESISTOR VALUES ARE IN OHMS, 1/4W, 5%.
- NOTES: UNLESS OTHERWISE SPECIFIED.

PARTS LIST		REVISIONS	
QTY	DESCRIPTION	NO.	DATE
1	4558	1	1-6-60
1	4558	2	1-6-60
1	4558	3	1-6-60
1	4558	4	1-6-60
1	4558	5	1-6-60
1	4558	6	1-6-60
1	4558	7	1-6-60
1	4558	8	1-6-60
1	4558	9	1-6-60
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1	4558	99	1-6-60
1	4558	100	1-6-60

Q3	4558	1	1-6-60
Q2	4558	1	1-6-60
Q1	4558	1	1-6-60
Q0	4558	1	1-6-60

- 03 = SHEET 3 & 4
- 02 = SHEET 1 & 2
- 01 = SHEET 3 & 4
- 00 = SHEET 1 & 2



CARVER

SCHEMATIC DIAGRAM
AMPLIFIER, PM-600

605-00412-XX

REV. H

DATE

BY

CHKD BY

APP. NO.

REV. NO.

REV. DATE

REV. BY

REV. DATE

REV. BY

REV. DATE

REV. BY

REV. DATE

REV. BY

REV. DATE

REV. BY

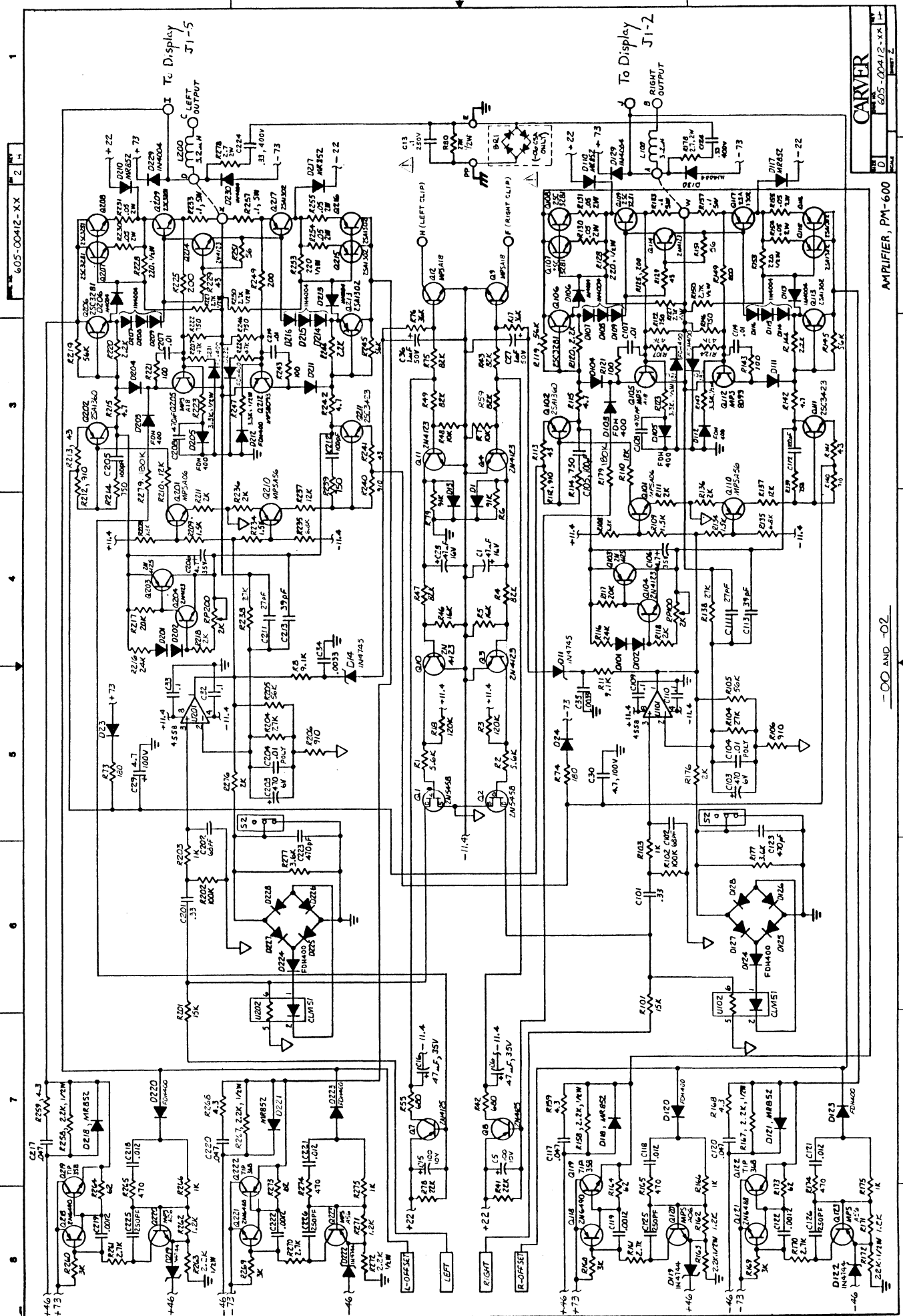
REV. DATE

REV. BY

REV. DATE

REV. BY

REV. DATE



605-00412-XX 2

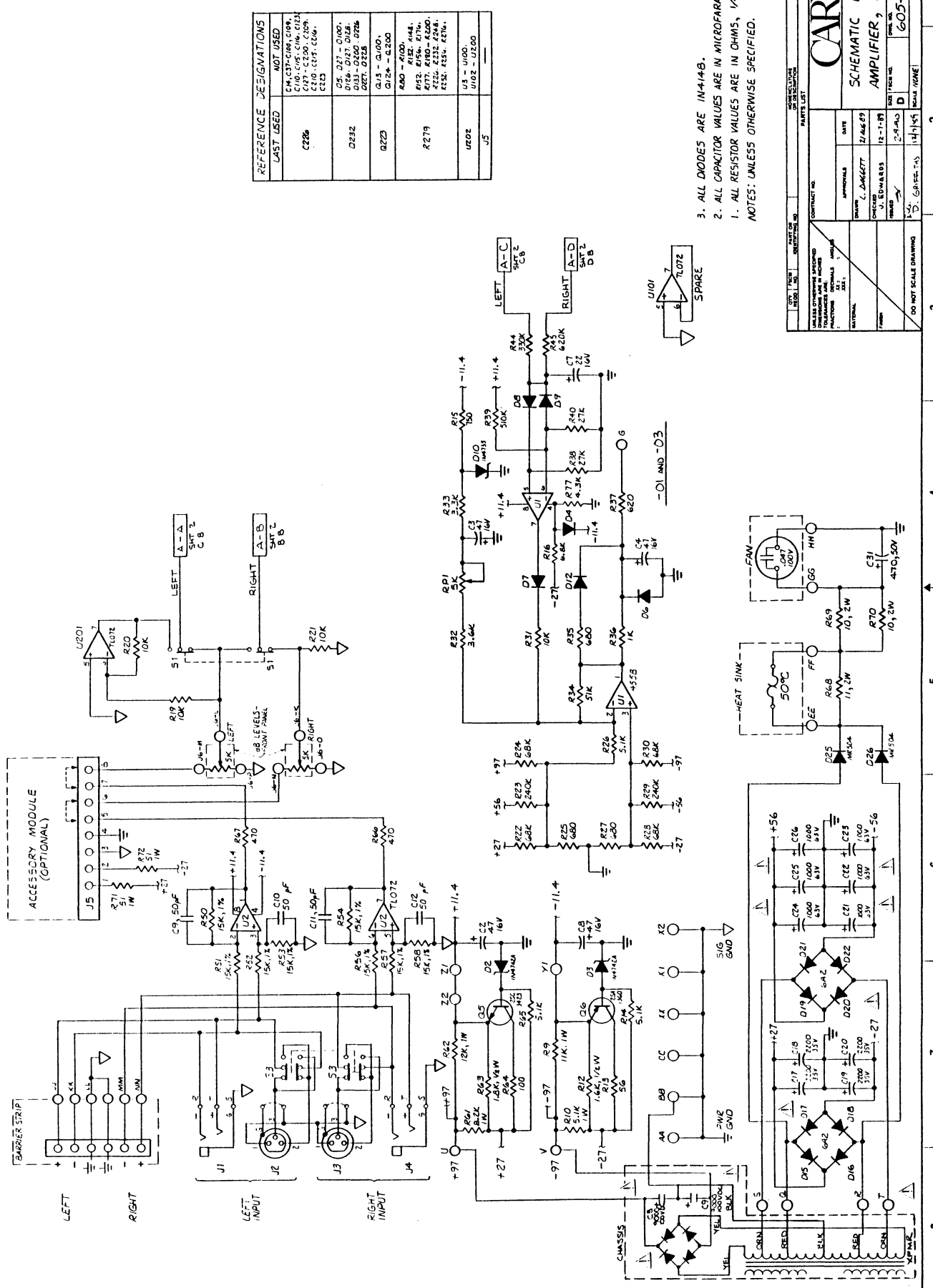
AMPLIFIER, PM-600

CARVER

605-00412-XX 1

-00 AND -02

FORM 605-00412-XX 1 3 1 W

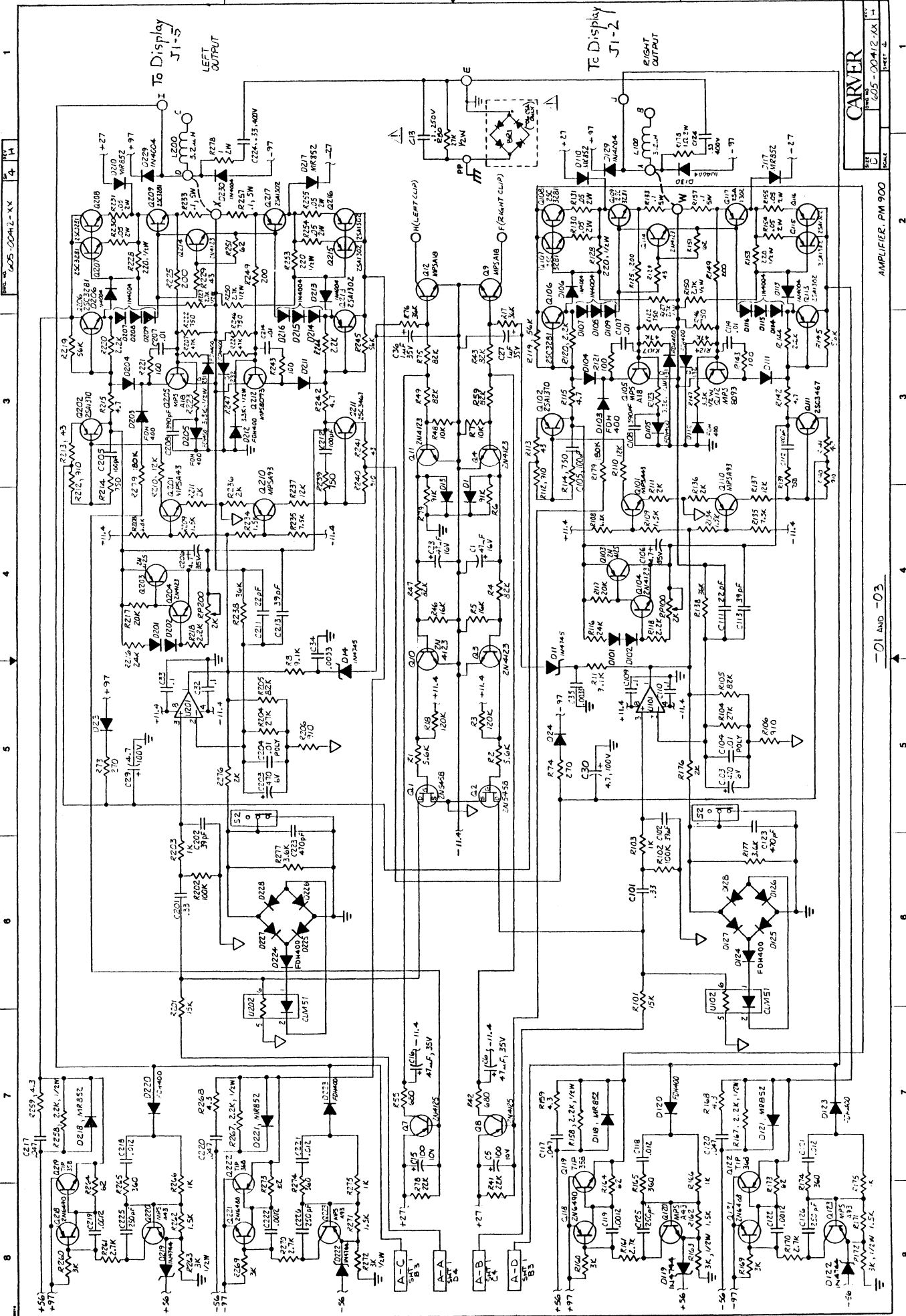


REFERENCE DESIGNATIONS

LAST USED	NOT USED
C226	C4, C37-C46, C109, C110, C111, C112, C113, C114, C115, C116, C117, C118, C119, C120, C121, C122, C123
D232	D5, D7-D10, D16, D17, D18, D19, D20, D26, DET, D153
D223	D15-D18, D24-D25, R40-R43, R101, R12, R15, R16, R17, R18, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R47, R48, R49, R50, R51, R52, R53, R54, R55, R56, R57, R58, R59, R60, R61, R62, R63, R64, R65, R66, R67, R68, R69, R70, R71, R72, R73, R74, R75, R76, R77, R78, R79, R80, R81, R82, R83, R84, R85, R86, R87, R88, R89, R90, R91, R92, R93, R94, R95, R96, R97, R98, R99, R100
R279	U5 - U100
U202	U102 - U200
J5	

3. ALL DIODES ARE IN-414B.
 2. ALL CAPACITOR VALUES ARE IN MICROFARADS, 10%.
 1. ALL RESISTOR VALUES ARE IN OHMS, 1/4W, 5%.
 NOTES: UNLESS OTHERWISE SPECIFIED.

CONTRACT NO. _____
 PARTS LIST
 CARVER
 SCHEMATIC DIAGRAM
 AMPLIFIER, PM-900
 DRAWN BY: J. D. WARETT
 DATE: 2/8/69
 CHECKED BY: J. D. WARETT
 DATE: 12-7-69
 DRAWN BY: J. D. WARETT
 DATE: 2-9-69
 CHECKED BY: J. D. WARETT
 DATE: 11-11-69
 SCALE: 100%
 SHEET: 3 OF 3
 PROJECT: 605-00412-XX



1
2
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6
7
8

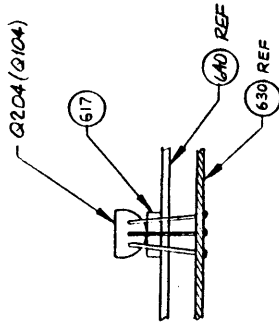
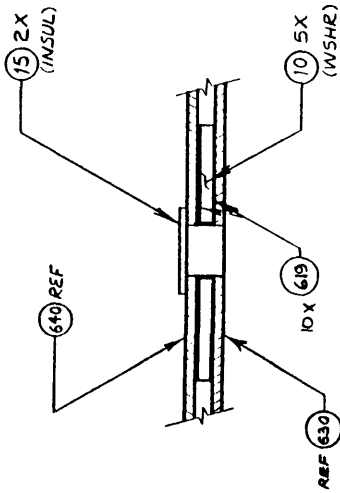
1
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AMPLIFIER, PM 900
CARVER
PART NO. 605-00412-XX
REV. 1
PRINTED IN U.S.A.

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8



SECTION A-A

SECTION B-B
SCALE: NONE
2 PLACES
(G20A, 10A)

- 1. BOND WIRE (ITEM 54) EVERY 4" USING ADHESIVE (ITEM 618).
- 2. COVER RESISTOR AS SHOWN USING ITEM 616 (-02 ONLY).
- 3. TYPICAL INSTALLATION OF:
G106 THRU G109, G206 THRU G209,
G115 THRU G117, G215 THRU G217,
G113, G213, G119, G219, G122, G222.
ALL OF THE ABOVE ARE TO BE INSTALLED
WITH THE METAL SIDE UP.
- 4. THE FOLLOWING DEVICES ARE TO BE OMITTED
FROM THE -00 (PM 600) VERSION:
EE C31 D85 R68
FF D26 R69
GG R70
HH
- 5. COMPONENT VALUES OF 1/2W OR LESS ARE TO BE
MOUNTED FLUSH TO PCB. COMPONENT VALUES OVER 1/2W
AND ALL FLAME-PROOF RESISTORS ARE TO BE
MOUNTED 1/4 INCH ABOVE SURFACE OF PCB.
- 6. ALL ITEMS ARE ON 602-00412-XX PARTS LIST; SEE TABULATION
THRU FOR PART NO. AND REV. LEVEL.

2

TABULATION CHART	
DRAWING	REV.
-00	N
-01	R
-02	B
-03	B

3

TABULATION CHART	
DASH	VERSION / USAGE
-00	PM 600
-01	PM 900

NOTES: UNLESS OTHERWISE SPECIFIED:

DATE	BY	CHKD	APP'D
11-11-69	J. Edwards		
12-1-69	J. Edwards		

DO NOT SCALE DRAWING

REV.	DESCRIPTION	DATE	BY	CHKD	APP'D
01	602-00412-01 PM 600 (30V)				
02	602-00412-02 PM 600 (150V)				
03	602-00412-03 PM 600 (30V)				
04	602-00412-04 PM 600 (150V)				
05	602-00412-05 PM 600 (30V)				
06	602-00412-06 PM 600 (150V)				

CONTRACT NO. 602-00412-XX

DATE 11-11-69

BY J. Edwards

CHKD J. Edwards

APP'D J. Edwards

REV. 01

DESCRIPTION ASSY, PCB AMPLIFIER

DATE 11-11-69

BY J. Edwards

CHKD J. Edwards

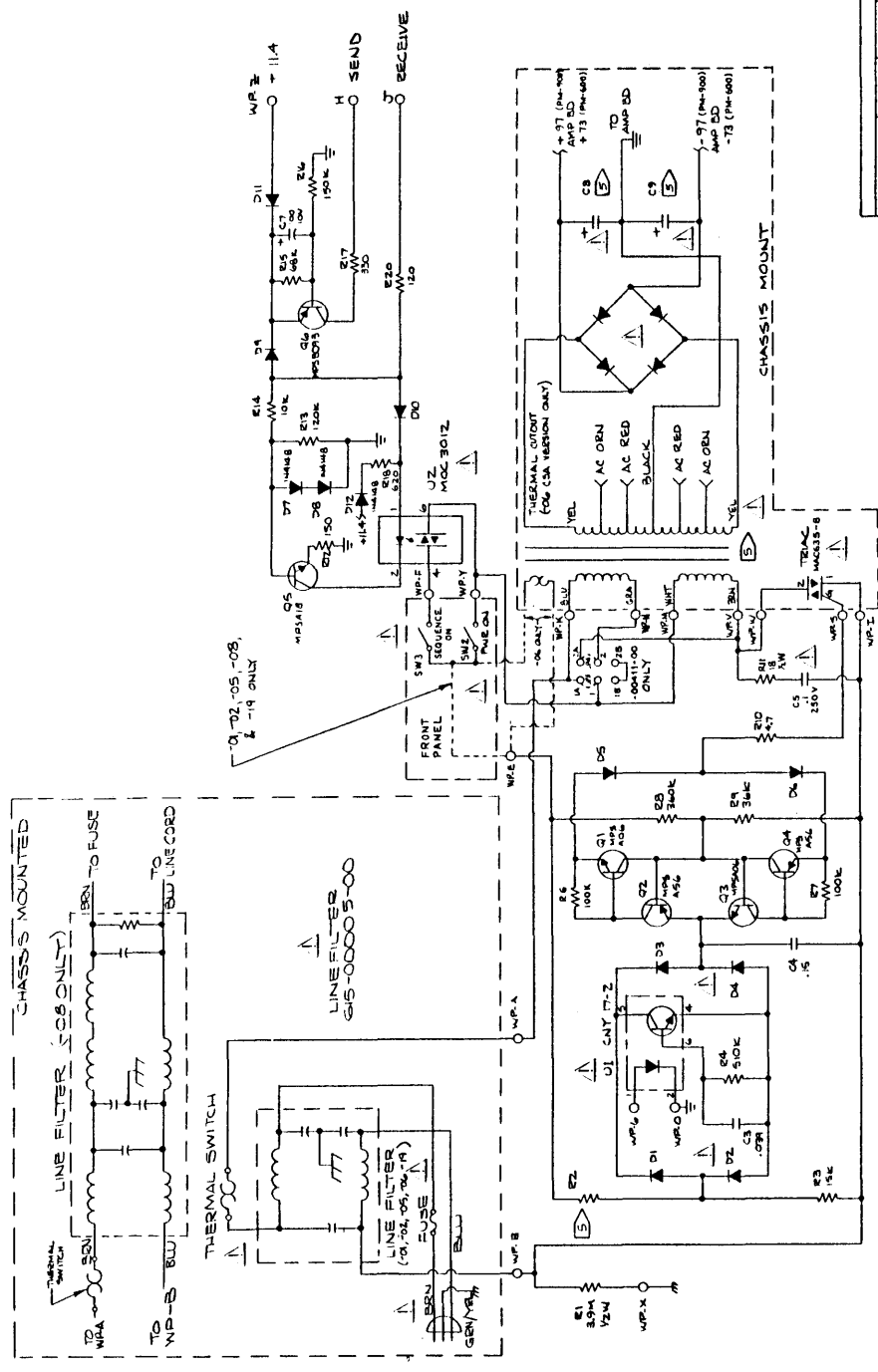
APP'D J. Edwards

REV. 01

DESCRIPTION 602-00412-XX U

SCALE 2:1

SHEET 1 OF 2



NOTES: UNLESS OTHERWISE SPECIFIED.
 1. ALL RESISTORS ARE IN OHMS 1/4 WATT.
 2. ALL CAPACITORS ARE IN MICROFARADS.
 3. ALL DIODES ARE IN 400V.
 4. ALL COMPONENTS OFF THE REGULATOR BOARD ARE SURROUNDED BY DASHED LINES.
 5. SEE TABULATION TABLE.

UNIT QTY (REQ)	NOTES	VERSION	MANUFACTURER	PIN	VALUES	COMPONENT VALUE	RESISTOR VALUE
1	AMP BD	PM-100	GERMAN	1	100K	100K	100K
1	AMP BD	PM-100	GERMAN	2	100K	100K	100K
1	AMP BD	PM-100	GERMAN	3	100K	100K	100K
1	AMP BD	PM-100	GERMAN	4	100K	100K	100K
1	AMP BD	PM-100	GERMAN	5	100K	100K	100K
1	AMP BD	PM-100	GERMAN	6	100K	100K	100K
1	AMP BD	PM-100	GERMAN	7	100K	100K	100K
1	AMP BD	PM-100	GERMAN	8	100K	100K	100K
1	AMP BD	PM-100	GERMAN	9	100K	100K	100K
1	AMP BD	PM-100	GERMAN	10	100K	100K	100K
1	AMP BD	PM-100	GERMAN	11	100K	100K	100K
1	AMP BD	PM-100	GERMAN	12	100K	100K	100K
1	AMP BD	PM-100	GERMAN	13	100K	100K	100K
1	AMP BD	PM-100	GERMAN	14	100K	100K	100K
1	AMP BD	PM-100	GERMAN	15	100K	100K	100K
1	AMP BD	PM-100	GERMAN	16	100K	100K	100K
1	AMP BD	PM-100	GERMAN	17	100K	100K	100K
1	AMP BD	PM-100	GERMAN	18	100K	100K	100K
1	AMP BD	PM-100	GERMAN	19	100K	100K	100K
1	AMP BD	PM-100	GERMAN	20	100K	100K	100K
1	AMP BD	PM-100	GERMAN	21	100K	100K	100K
1	AMP BD	PM-100	GERMAN	22	100K	100K	100K
1	AMP BD	PM-100	GERMAN	23	100K	100K	100K
1	AMP BD	PM-100	GERMAN	24	100K	100K	100K
1	AMP BD	PM-100	GERMAN	25	100K	100K	100K
1	AMP BD	PM-100	GERMAN	26	100K	100K	100K
1	AMP BD	PM-100	GERMAN	27	100K	100K	100K
1	AMP BD	PM-100	GERMAN	28	100K	100K	100K
1	AMP BD	PM-100	GERMAN	29	100K	100K	100K
1	AMP BD	PM-100	GERMAN	30	100K	100K	100K
1	AMP BD	PM-100	GERMAN	31	100K	100K	100K
1	AMP BD	PM-100	GERMAN	32	100K	100K	100K
1	AMP BD	PM-100	GERMAN	33	100K	100K	100K
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1	AMP BD	PM-100	GERMAN	35	100K	100K	100K
1	AMP BD	PM-100	GERMAN	36	100K	100K	100K
1	AMP BD	PM-100	GERMAN	37	100K	100K	100K
1	AMP BD	PM-100	GERMAN	38	100K	100K	100K
1	AMP BD	PM-100	GERMAN	39	100K	100K	100K
1	AMP BD	PM-100	GERMAN	40	100K	100K	100K
1	AMP BD	PM-100	GERMAN	41	100K	100K	100K
1	AMP BD	PM-100	GERMAN	42	100K	100K	100K
1	AMP BD	PM-100	GERMAN	43	100K	100K	100K
1	AMP BD	PM-100	GERMAN	44	100K	100K	100K
1	AMP BD	PM-100	GERMAN	45	100K	100K	100K
1	AMP BD	PM-100	GERMAN	46	100K	100K	100K
1	AMP BD	PM-100	GERMAN	47	100K	100K	100K
1	AMP BD	PM-100	GERMAN	48	100K	100K	100K
1	AMP BD	PM-100	GERMAN	49	100K	100K	100K
1	AMP BD	PM-100	GERMAN	50	100K	100K	100K

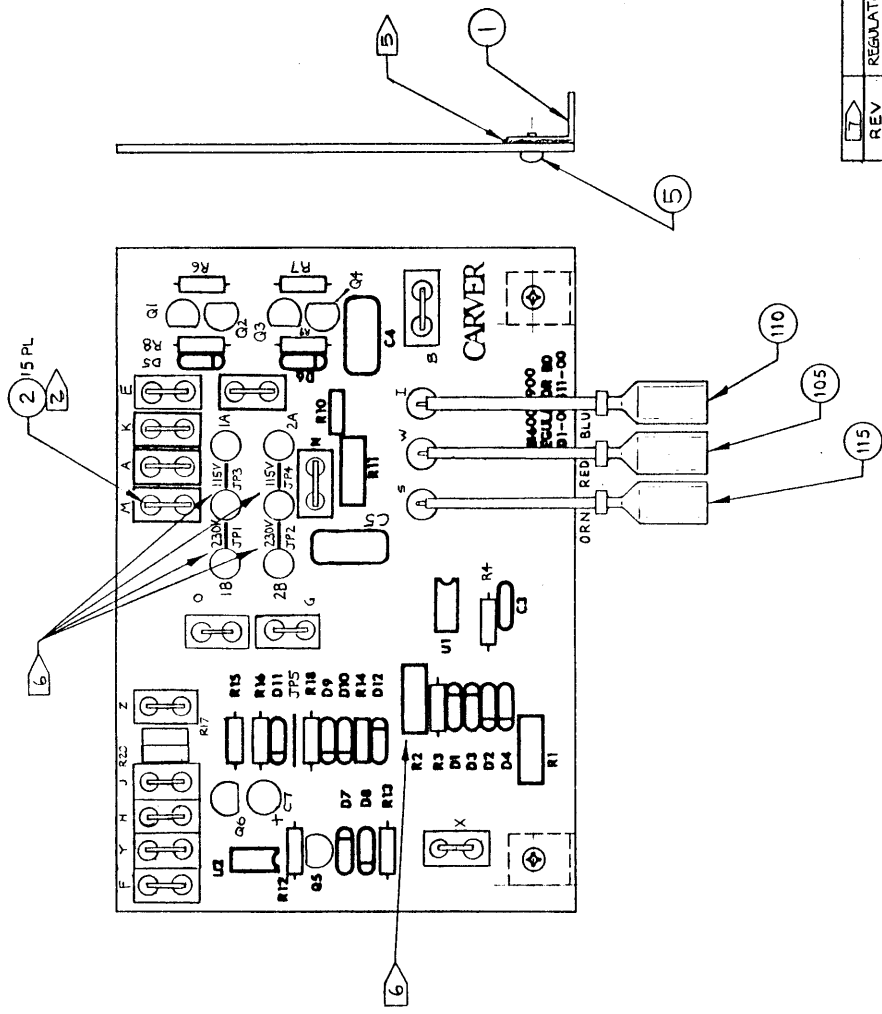
CARVER
 SCHEMATIC
 REGULATOR BOARD

DATE: 7-17-54
 DRAWN BY: J. EDWARDS
 CHECKED BY: J. EDWARDS
 APPROVED BY: J. EDWARDS

UNIT: 605-XX411-00
 PART: 1 OF 1

D C B A

D C B A



- 7 FOR PARTS LIST REVISION STATUS, SEE TABULATION TABLE.
- 6 SEE TABULATION TABLE
- 5 SOLDER AFTER ASSY.
- 4 DELETED
- 3 DELETED
- 2 INSTALL SPADE LUGS, ITEM # 2, SO THAT PART IS FULLY SEATED ON PCB AT LOCATIONS A, B, E, F, G, H, J, K, M, N, O, V, W, X, AND Y.
- 1 DELETED UNLESS OTHERWISE SPECIFIED

REV	REGULATOR PN	USED ON	MODEL	VERSION	LUMPERS	R2 PART NUMBER
F	602-00411-00	607-00100-D1	PM-600	120V	JP2, JP4	251-10115-00
F	602-00411-01	607-00101-D1	PM-900	120V	JP3, JP4	251-10115-00
G	602-76411-00	607-00100-D2	PM-600	230V	JP1, JP2	251-10115-00
G	602-76411-00	607-00100-D5	PM-600	EURO	JP1, JP2	251-10115-00
G	602-76411-01	607-00101-D2	PM-900	230V	JP1, JP2	251-10113-00
G	602-76411-01	607-00101-D5	PM-900	EURO	JP1, JP2	251-10113-00

CONTRACT NO. _____

APPROVALS: DRAWN M. CHEW, CHECKED J. EDWARDS, ISSUED [Signature], DATE 9/26/89, 11-16-89, 2-9-90, 11-17-89, 2/15/89

MATERIAL _____ FINISH _____

DO NOT SCALE DRAWINGS

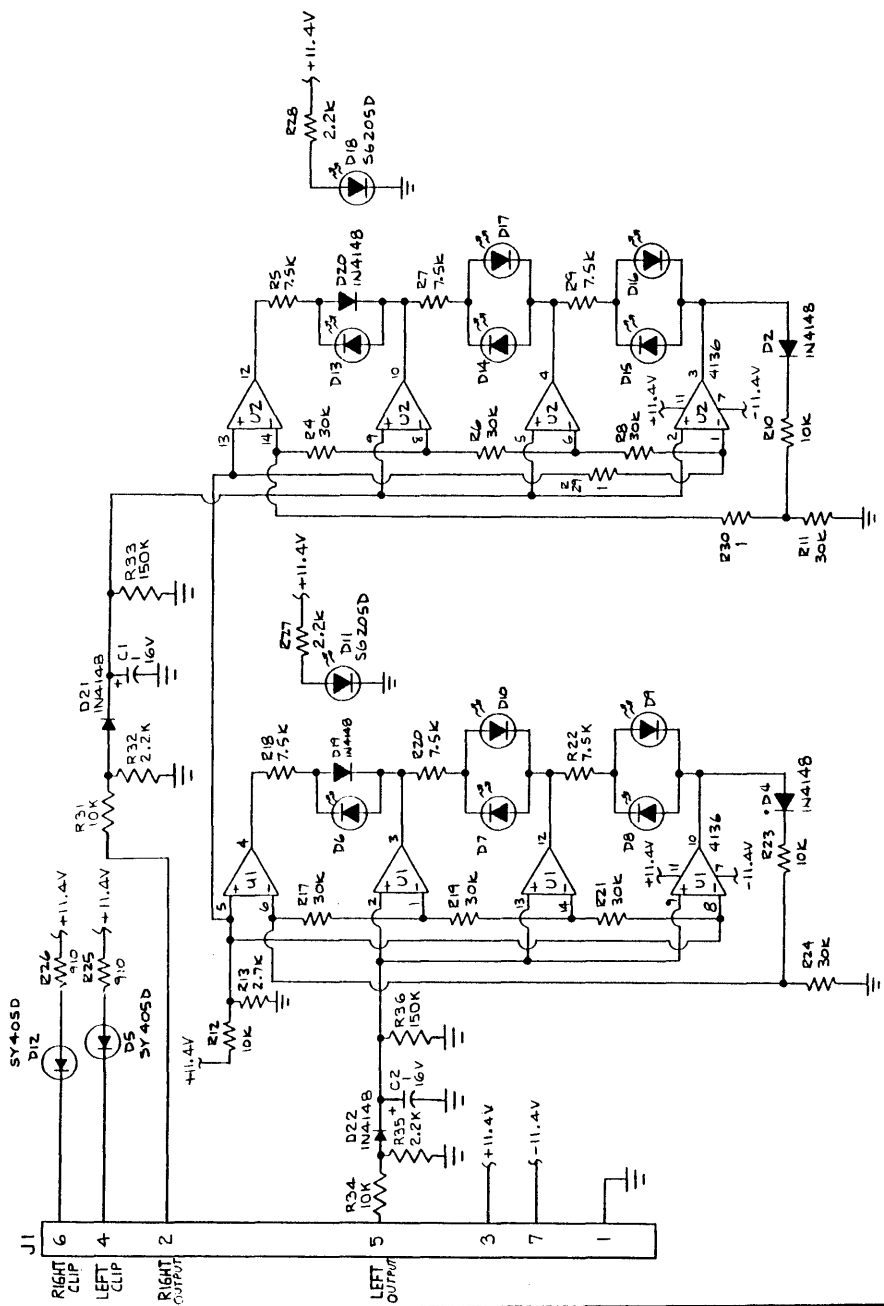
DRAWN NO. _____ MATT ARMY APPLICATION _____

DATE NO. _____ USED ON _____

SIZE C DWG NO. 602-XX 411-XX SHEET 1

CARVER

ASSY, PCB
REGULATOR



- NOTES: UNLESS OTHERWISE SPECIFIED.
1. ALL RESISTORS ARE IN OHMS, 1/4 W.
 2. ALL DIODES ARE 5E 505 W.
 3. ALL CAPACITORS ARE IN MICROFARADS, 5%.
 4. REF DESIGNATORS LAST USED: C2, D22, R36, U2.
- NOT USED: D1, 3, R1, 2, 3, 14, 15, 16.

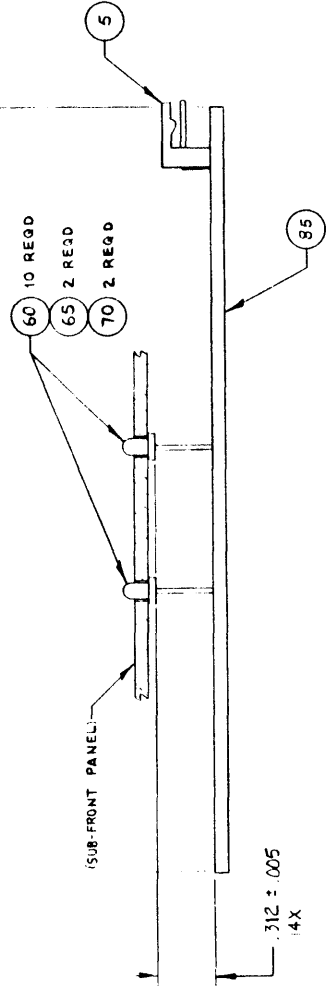
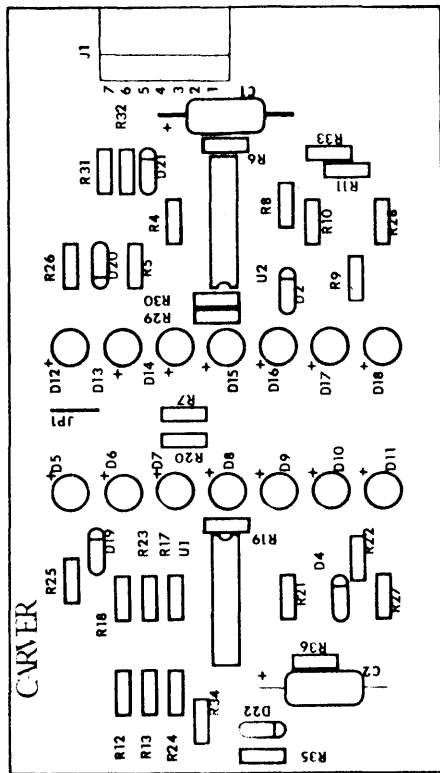
CARVER

SCHEMATIC,
DISPLAY

CONTRACT NO.		APPROVALS	DATE
		TB	7-19-79
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS DECIMALS ANGLES		CHECKED BY	7-19-99
		U. EDWARDS	
		ISSUED BY	29-50
		ENG	12/7/84
		DATE	9/10/90

MATERIAL		DO NOT SCALE DRAWING	
00	602-00410-00	PM 900	
00	602-00410-00	PM 600	
DASH NO	NET ASSY	USED ON	
		APPLICATION	

SCALE		SHEET	
PM 600/900	1	OF 1	



2. ALL ITEMS ARE ON 602-00410-00 PARTS LIST.
1. DELETED

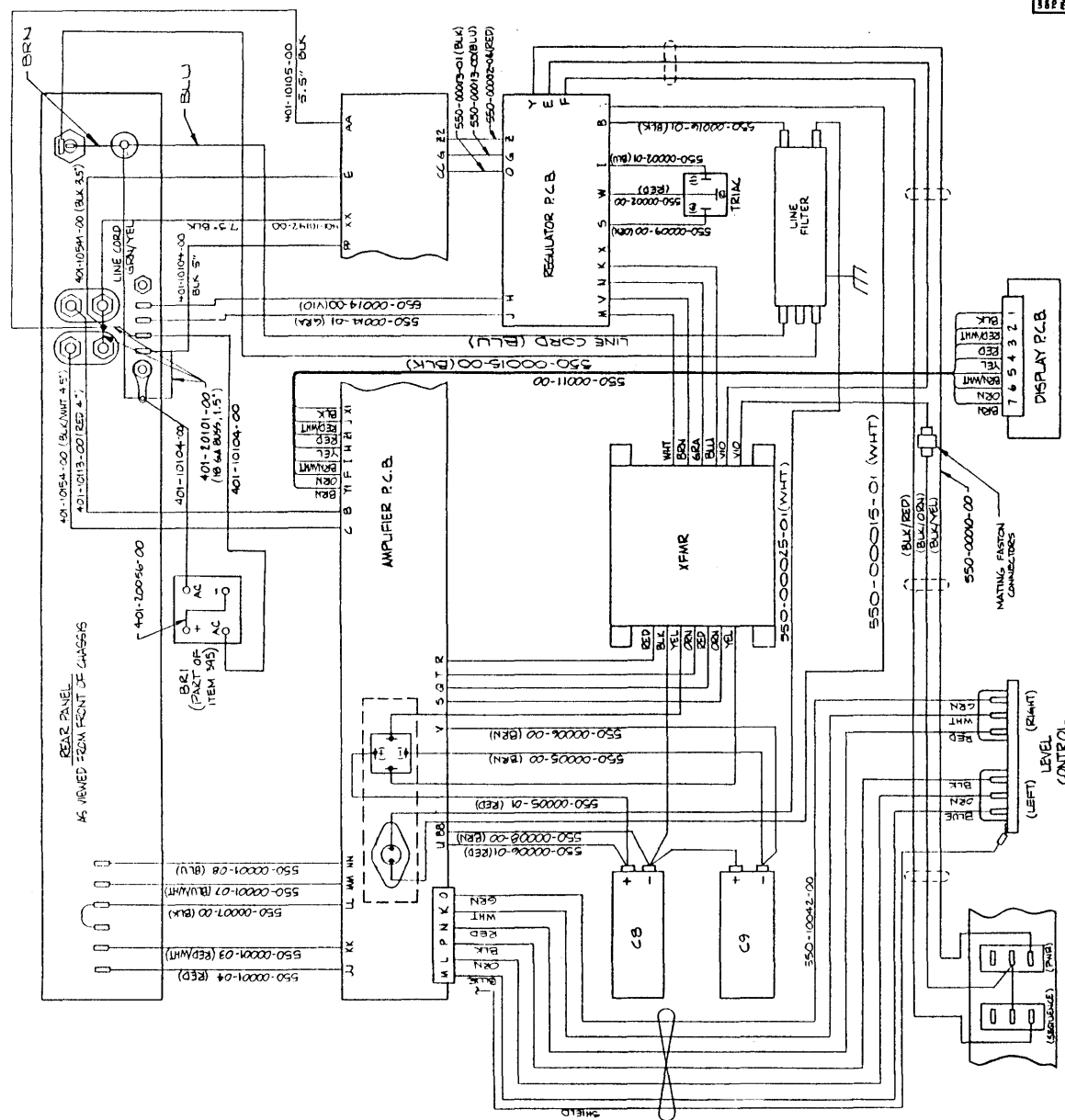
NOTES: UNLESS OTHERWISE SPECIFIED

QTY	UNIT	DESCRIPTION	DATE
00	602-00516-19	PRINTED BOARD	10/11/89
00	602-00516-18	GERMAN	10/11/89
00	602-00516-17	USA	10/11/89
00	602-00516-16	USA	10/11/89
00	602-00516-15	USA	10/11/89
00	602-00516-14	USA	10/11/89
00	602-00516-13	USA	10/11/89
00	602-00516-12	USA	10/11/89
00	602-00516-11	PRINTED BOARD	10/11/89
00	602-00516-10	PRINTED BOARD	10/11/89
00	602-00516-09	PRINTED BOARD	10/11/89
00	602-00516-08	PRINTED BOARD	10/11/89
00	602-00516-07	PRINTED BOARD	10/11/89
00	602-00516-06	PRINTED BOARD	10/11/89
00	602-00516-05	PRINTED BOARD	10/11/89
00	602-00516-04	PRINTED BOARD	10/11/89
00	602-00516-03	PRINTED BOARD	10/11/89
00	602-00516-02	PRINTED BOARD	10/11/89
00	602-00516-01	PRINTED BOARD	10/11/89
00	602-00516-00	PRINTED BOARD	10/11/89

CARVER

ASSY, PCB
DISPLAY

602-00410-00



-06 (CSA)

SWITCHES
AS VIEWED FROM REAR OF CHASSIS

CARVER

WIRED DIAGRAM,
PM-600

CONTRACT NO.	DATE
APPROVALS	DATE
DRAWN BY	DATE
CHECKED BY	DATE
TESTED BY	DATE
SCALE	1:1
DO NOT SCALE DRAWING	

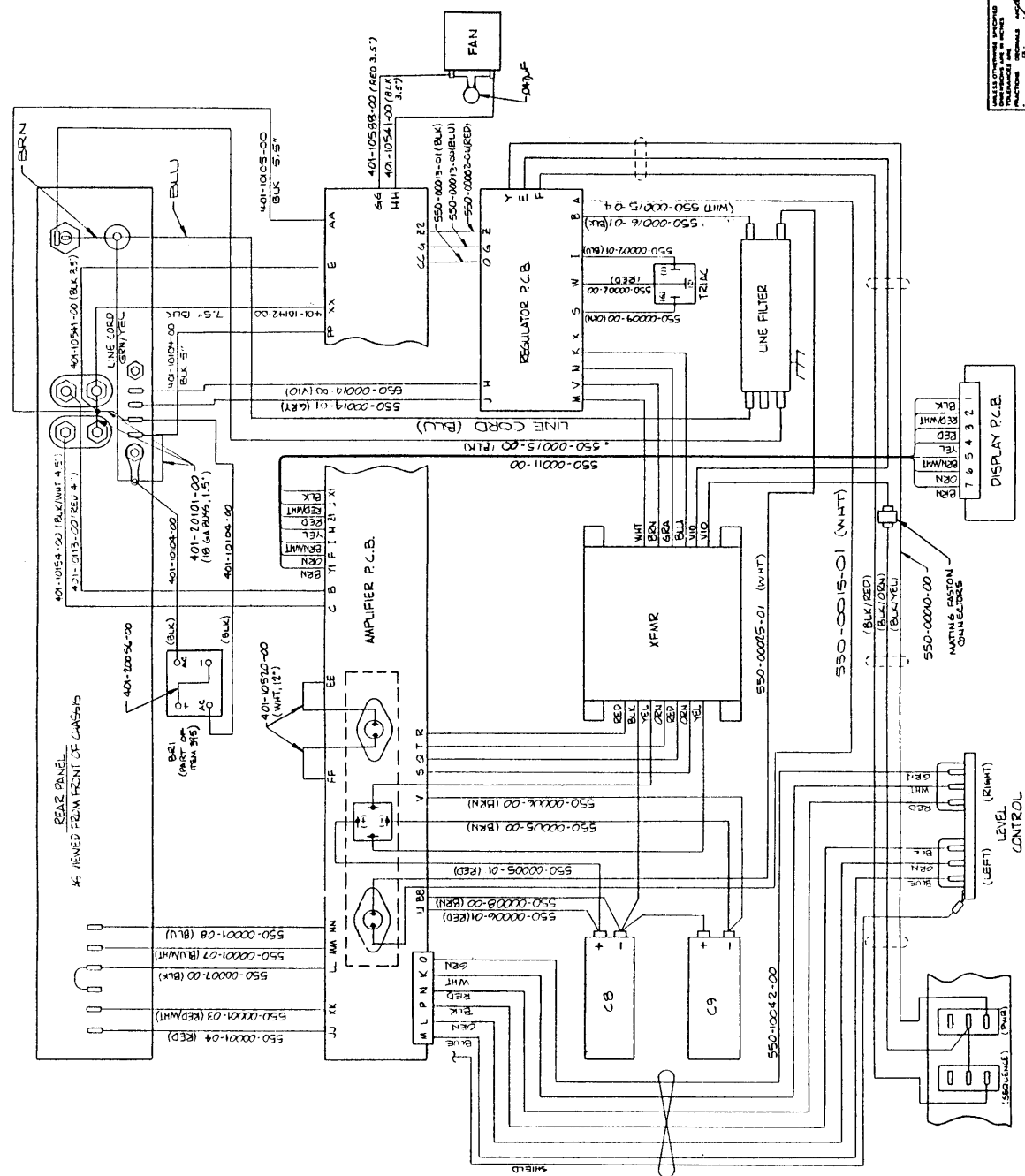
606-00100-XX	SHEET 2
--------------	---------

PARTS LISTED IN THIS DRAWING ARE TO BE OBTAINED FROM THE MANUFACTURER'S CATALOGS AND PARTS LIST.		CONTRACT NO.	
DATE	REVISED	DATE	REVISED
12-4-89	12-4-89	12-4-89	12-4-89
DESIGNED BY	CHECKED BY	DATE	REVISED
12-4-89	12-4-89	12-4-89	12-4-89
DRW. NO.	REV. NO.	DATE	REVISED
606-00101-XX	2	12-4-89	12-4-89
DO NOT SCALE DRAWING		FORM LINE PM 900	
Sheet 2		Sheet 2	

CARVER

WIRING DIAGRAM
PM-900

606-00101-XX 2 K

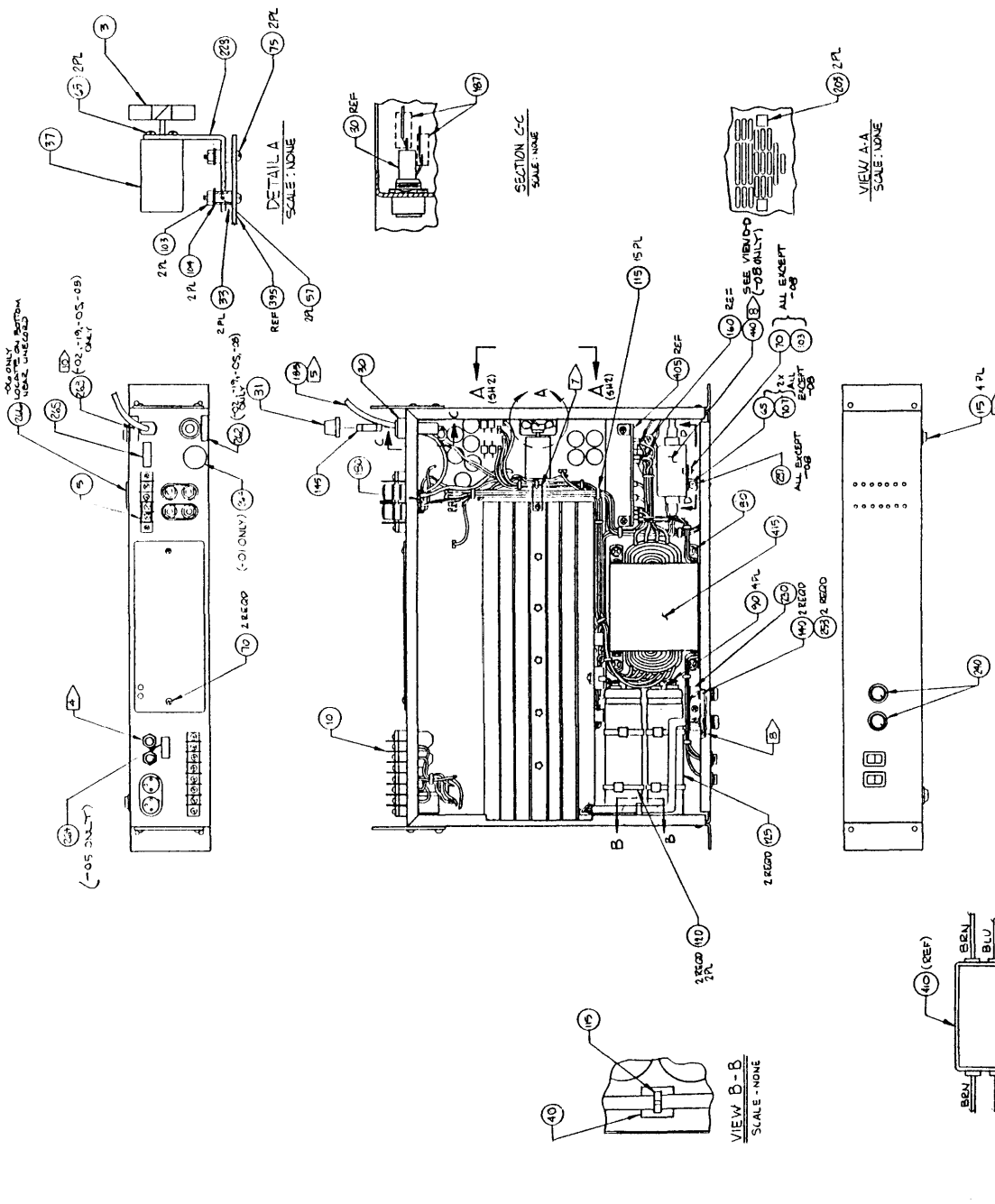


-06 (CSA)

SWITCHES AS VIEWED FROM REAR OF CHASSIS

1 2 3 4 5 6 7 8

A B C D



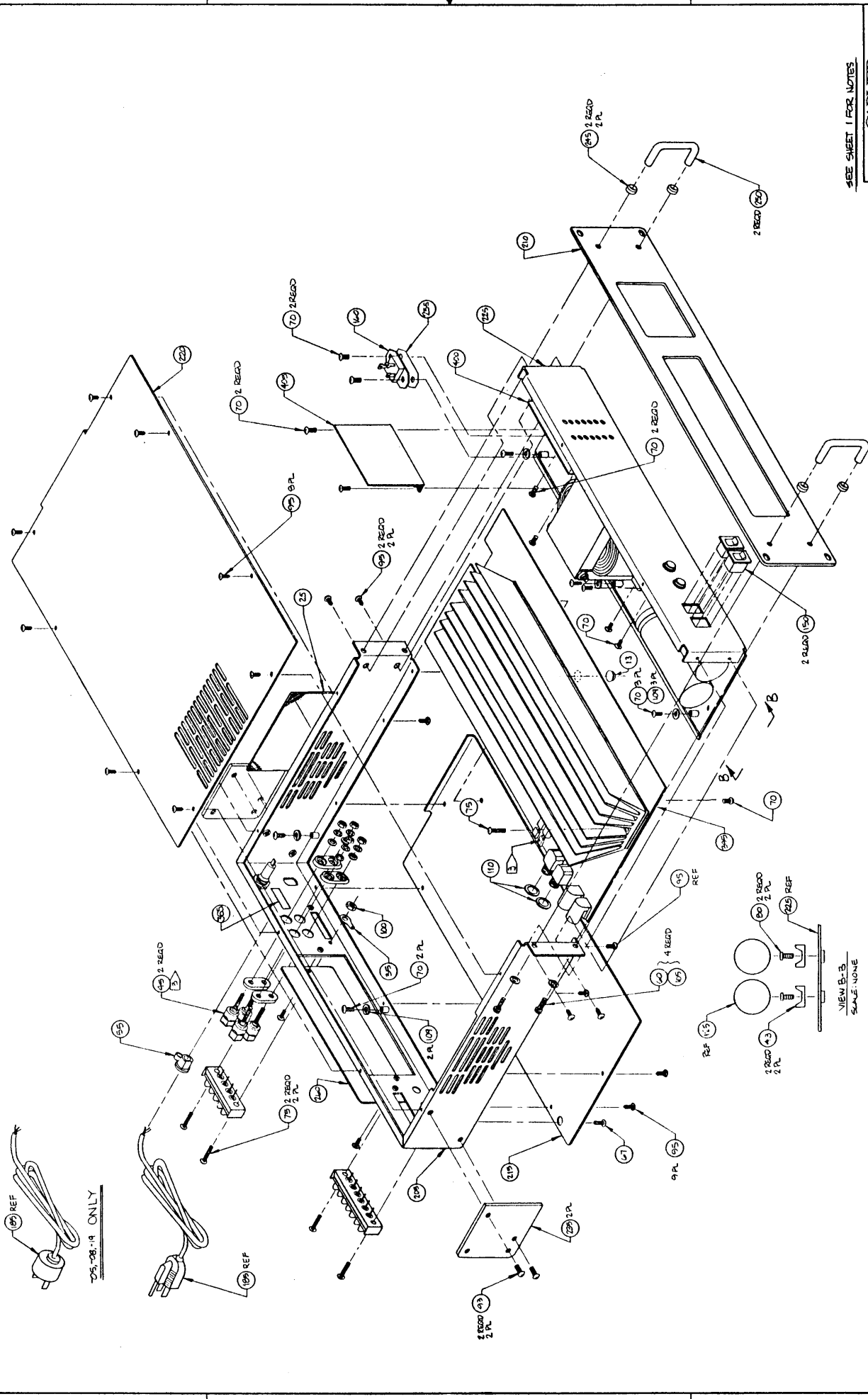
- 10 <19 ONLY> CAREFULLY REMOVE, USING AN ABRASIVE AS REQUIRED, THE SILVER-PLATED TEXT IS TO BE PLACED.
- 11 ALL ITEMS ARE ON PARTS LIST 607-0001-XX.
- 12 MOUNT RING LUG WHERE SHOWN.
- 13 INSTALL CUP WITH LOOP FACING DOWNWARD. LOOP THROUGH TWO WIRES MINIMUM.
- 14 INSTALL BANDING 1/4" FROM EDGES OF CHASSIS.
- 15 PER 70, 70, 70, 70, 70 ALONG SET OF LINEAR (ITEM 185) TO BE INSIDE CHASSIS PER 70 ALONG SET OF LINEAR (ITEM 185) TO BE INSIDE CHASSIS (CONNECTED WITH ITEM 14).
- 16 PRESS NUT SUPPLIED WITH BOXED MOUNTED JACK (LOCATED ON 607-0001-01 PARTS LIST).
- 17 MOUNTING HARDWARE SUPPLIED WITH ITEM.
- 18 FOR ACCURATE WIRING/CABLE DESTINATIONS SEE 606-00101-X-X.
- 19 DO NOT BUNDLE TRANSFORMER WIRES WITH WIRES FROM DISPLAY BOARD.

NOTES: UNLESS OTHERWISE SPECIFIED;

<p>CONTRACT NO. CARVER</p> <p>FINAL ASSEMBLY, PM-900</p>																															
<p>DATE: 12-2-59</p> <p>BY: J. EDWARDS</p>	<p>DATE: 12-2-59</p> <p>BY: J. EDWARDS</p>																														
<p>PROJECT: 607-00101-X-X</p> <p>SCALE: 1/2"</p>	<p>PROJECT: 607-00101-X-X</p> <p>SCALE: 1/2"</p>																														
<p>REVISIONS:</p> <table border="1"> <tr> <th>NO.</th> <th>REV.</th> <th>DATE</th> <th>BY</th> <th>DESCRIPTION</th> </tr> <tr> <td>1</td> <td>1</td> <td>12-2-59</td> <td>J. EDWARDS</td> <td>INITIAL DESIGN</td> </tr> <tr> <td>2</td> <td>1</td> <td>12-2-59</td> <td>J. EDWARDS</td> <td>REVISED FOR MANUFACTURE</td> </tr> </table>	NO.	REV.	DATE	BY	DESCRIPTION	1	1	12-2-59	J. EDWARDS	INITIAL DESIGN	2	1	12-2-59	J. EDWARDS	REVISED FOR MANUFACTURE	<p>REVISIONS:</p> <table border="1"> <tr> <th>NO.</th> <th>REV.</th> <th>DATE</th> <th>BY</th> <th>DESCRIPTION</th> </tr> <tr> <td>1</td> <td>1</td> <td>12-2-59</td> <td>J. EDWARDS</td> <td>INITIAL DESIGN</td> </tr> <tr> <td>2</td> <td>1</td> <td>12-2-59</td> <td>J. EDWARDS</td> <td>REVISED FOR MANUFACTURE</td> </tr> </table>	NO.	REV.	DATE	BY	DESCRIPTION	1	1	12-2-59	J. EDWARDS	INITIAL DESIGN	2	1	12-2-59	J. EDWARDS	REVISED FOR MANUFACTURE
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<p>607-00101-00A (10) (GERMAN)</p> <p>607-00101-00A (10) (USA)</p> <p>607-00101-00A (10) (CANADA)</p> <p>607-00101-00A (10) (EUROPE)</p> <p>607-00101-00A (10) (AFRICA)</p> <p>607-00101-00A (10) (ASIA)</p> <p>607-00101-00A (10) (AUSTRALIA)</p>	<p>607-00101-00A (10) (GERMAN)</p> <p>607-00101-00A (10) (USA)</p> <p>607-00101-00A (10) (CANADA)</p> <p>607-00101-00A (10) (EUROPE)</p> <p>607-00101-00A (10) (AFRICA)</p> <p>607-00101-00A (10) (ASIA)</p> <p>607-00101-00A (10) (AUSTRALIA)</p>																														

607-00101-SX 1 IAE

1 3 4 5 6 7 8



SEE SHEET 1 FOR NOTES

CARVER
 607-00101-SX IAE
 PART 2 OF 4

PM-900

1 2 3 4 5 6 7 8



SECTION 8

PARTS ORDERING

Please provide the Model numbers of the units involved when ordering genuine CARVER replacement parts. Also provide the CARVER part number and the generic part number to confirm the correct part needed.

The Carver Parts Department is open Monday thru Friday, 7:00 a.m. to 4:45 p.m. PST.

The following phone number is to be used for part orders only!

Technical assistance is not available on this line.

1-800-433-0547

Or if you prefer to FAX in your part order, please use the following FAX number:

1-206-775-9180

From time to time, when it is necessary, we may make a substitution for the original part ordered, due to circuit revisions or part availability.

Random deviation from the original CARVER designated part is not recommended!




Complete PCB replacement is not recommended. You must have prior approval for warranty repair should PCB replacement be necessary.

SECTION 9

PARTS LISTS

PM-600 AMP BOARD P/N 602-00412-00

CAPACITORS


CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
201-00005-00	CAP CER DISC 27pF 10% 1000V	C111,211	
201-00006-00	CAP CER DISC 39pF 10% 1000V	C113,213	
201-00008-00	CAP CER DISC 50pF 10% 1000V	C9,10,11,12	
201-00009-00	CAP CER DISC 68pF 10% 1000V	C102,202	
201-00012-00	CAP CER DISC 100pF 10% 1000V	C105,112,205,212	
201-00019-00	CAP CER DISC 250pF 10% 1000V	C125,126,225,226	
201-00023-00	CAP CER DISC 470pF 10% 1000V	C108,123,208,223	
204-00004-00	CAP MYLAR .0012 μ F	C119,122,219,222	
204-00008-00	CAP MYLAR .0033 μ F	C34,35	
204-00015-00	CAP MYLAR .01 μ F	C107,114,207,214	
204-00016-00	CAP MYLAR .047 μ F	C118,121,218,221	
204-00027-00	CAP MYLAR .1 μ F	C32,33,109,110	
204-00031-00	CAP MYLAR .33 μ F/100V	C101,201	
204-00033-00	CAP MYLAR .33 μ F/400V	C124,224	
205-00001-00	CAP LYTIC 1 μ F/50V RAD	C27,36	
205-00005-00	CAP LYTIC 4.7 μ F/63V 20% RAD	C106,206	
205-00008-00	CAP LYTIC 4.7 μ F/100V 20% RAD	C29,30	
205-00011-00	CAP LYTIC 22 μ F/25V 20% RAD	C7	
205-00013-00	CAP LYTIC 47 μ F/25V 20% RAD	C1-4,8,28	
205-00014-00	CAP LYTIC 47 μ F/50V 20% RAD	C6,16	
205-00015-00	CAP LYTIC 100 μ F/10V RAD	C5,15	Was 2.2 μ F/35V (205-00002-00)
205-00019-00	CAP LYTIC 470 μ F/6.3V RAD	C103,203	
205-00027-00	CAP LYTIC 2200 μ F/25V RAD	C17-20	
205-00045-00	CAP LYTIC 1000 μ F/50V RAD	C21-26	
207-10002-00	CAP MET POLY .1 μ F/250V 10% AX	C13	
207-20001-00	CAP POLYPROP .01 μ F/50V RAD	C104,204	
207-20002-00	CAP POLY .047 μ F	C117,120,217,220	

RESISTORS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
250-00107-00	RES CFILM 36K 1/8W PREP .3	R17	Was 1/4W
251-00013-00	RES CFILM 4.3 OHM 1/4W PREP .4	R159,168,259,268	
251-00014-00	RES CFILM 4.7 OHM 1/4W PREP .4	R115,142,215,242	
251-00037-00	RES CFILM 43 OHM 1/4W PREP .4	R113,129,141,213,229,241	
251-00038-00	RES CFILM 47 OHM 1/4W PREP .4	R13,64	
251-00040-00	RES CFILM 56 OHM 1/4W PREP .4	R151,251	
251-00041-00	RES CFILM 62 OHM 1/4W PREP .4	R164,173,264,273	
251-00046-00	RES CFILM 100 OHM 1/4W PREP .4	R66,67,121,143,221,243	
251-00052-00	RES CFILM 180 OHM 1/4W PREP .4	R73,74	
251-00053-00	RES CFILM 200 OHM 1/4W PREP .4	R125,149,225,249	
251-00062-00	RES CFILM 470 OHM 1/4W PREP .4	R165,174,265,274	
251-00066-00	RES CFILM 680 OHM 1/4W PREP .4	R25,27,35,42,55	
251-00067-00	RES CFILM 750 OHM 1/4W PREP .4	R15,114,122,139,146,214,222,239,246	
251-00069-00	RES CFILM 910 OHM 1/4W PREP .4	R106,112,140,206,212,240	
251-00070-00	RES CFILM 1K 1/4W PREP .4	R36,103,166,175,203,266,275	
251-00072-00	RES CFILM 1.2K 1/4W PREP .4	R162,171,262,271	
251-00074-00	RES CFILM 1.5K 1/4W PREP .4	R37,109,134,209,234	
251-00077-00	RES CFILM 2.0K 1/4W PREP .4	R111,118,136,211,218,236	
251-00078-00	RES CFILM 2.2K 1/4W PREP .4	R120,144,220,244	
251-00080-00	RES CFILM 2.7K 1/4W PREP .4	R161,170,261,270	
251-00081-00	RES CFILM 3.0K 1/4W PREP .4	R160,169,260,269	
251-00082-00	RES CFILM 3.3K 1/4W PREP .4	R33	
251-00083-00	RES CFILM 3.6K 1/4W PREP .4	R32,177,277	
251-00085-00	RES CFILM 4.3K 1/4W PREP .4	R77	
251-00087-00	RES CFILM 5.1K 1/4W PREP .4	R14,16,26,65	
251-00088-00	RES CFILM 5.6K 1/4W PREP .4	R1,2	
251-00090-00	RES CFILM 6.8K 1/4W PREP .4	R108,135,208,235	
251-00093-00	RES CFILM 9.1K 1/4W PREP .4	R8,11	
251-00094-00	RES CFILM 10K 1/4W PREP .4	R7,19-21,31,48	
251-00096-00	RES CFILM 12K 1/4W PREP .4	R110,137,210,237	
251-00098-00	RES CFILM 15K 1/4W PREP .4	R101,201	
251-00099-00	RES CFILM 16K 1/4W PREP .4	R5,46	
251-00101-00	RES CFILM 20K 1/4W PREP .4	R117,217	
251-00102-00	RES CFILM 22K 1/4W PREP .4	R41,78	
251-00103-00	RES CFILM 24K 1/4W PREP .4	R116,216	
251-00104-00	RES CFILM 27K 1/4W PREP .4	R38,40,104,138,204,238	
251-00107-00	RES CFILM 36K 1/4W PREP .4	R76	
251-00110-00	RES CFILM 47K 1/4W PREP .4	R107,124,207,224	
251-00112-00	RES CFILM 56K 1/4W PREP .4	R22,24,28,30,105,119,145,205,219,245	
251-00113-00	RES CFILM 62K 1/4W PREP .4	R34	
251-00116-00	RES CFILM 82K 1/4W PREP .4	R4,43,47,49,59,75	
251-00117-00	RES CFILM 91K 1/4W PREP .4	R6,79	
251-00118-00	RES CFILM 100K 1/4W PREP .4	R102,202	
251-00120-00	RES CFILM 120K 1/4W PREP .4	R3,18	
251-00124-00	RES CFILM 180K 1/4W PREP .4	R23,29	
251-00130-00	RES CFILM 330K 1/4W PREP .4	R44	
251-00135-00	RES CFILM 510K 1/4W PREP .4	R39	
251-00137-00	RES CFILM 620K 1/4W PREP .4	R45	

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
251-10054-00	RES CFILM 220 OHM 1/2W PREP .5	R128,153,228,253	
251-10073-00	RES CFILM 1.3K 1/2W PREP .5	R12,63	
251-10078-00	RES CFILM 2.2K 1/2W PREP .5	R158,163,167,172,258,263,267,272	
251-10080-00	RES CFILM 2.7K 1/2W PREP .5	R127,150,227,250	
251-10082-00	RES CFILM 3.3K 1/2W PREP .5	R123,147,223,247	
251-10104-00	RES CFILM 27K 1/2W UNPREP	R80	Was 1/4W
252-00402-00	RES CFILM 15.0K 1/4W 1%	R50-54,56-58	
253-10057-00	RES CFILM 47 OHM 1W	R71,72	
253-20000-00	RES WIRE WOUND .05 OHM 2W 10%	R130,131,154,155,230,231,254,255	
253-20025-00	RES WIRE WOUND 2.7 OHM 2W	R178,278	
253-40001-00	RES WIRE WOUND .1 OHM 5W 10%	R133,157,233,257	
253-50028-00	RES WIRE WOUND 200 OHM 7W 10%	R81	
255-10118-00	RES MET OXIDE 3.9K 1W	R10,61	
255-10121-00	RES MET OXIDE 8.2K 1W	R62	
255-10122-00	RES MET OXIDE 6.2K 1W	R9	
259-20003-00	TRIM POT 5K PCB MOUNT	RP1	
259-20011-00	TRIM POT 2K PCB MOUNT	RP100,200	
260-51803-04D	RES CFILM 180K 1/4W PREP .5	R179,279	Was 39K 1/4W (251-00108-00)

DIODES

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
320-20001-00	DIODE 1N4148 75V PREP	D1,4,6-9,12,13,23,24,101,102,104,111,125-128,201,202,204,211,225-228	
320-20004-00	DIODE 1N4004 400V PREP .4	D106-109,113-116,129,130,206-209,213-216,229,230	
320-20006-00	DIODE BAV20 400V PREP .4	D103,105,112,120,123,124,131,132,203,205,212,220,223,224,231,232	
320-20007-03	DIODE MR852	D110,117,118,121,210,217,218,221	
320-20010-03	DIODE 6 AMP 200V UNPREP	D15-22	
320-30001-00	DIODE ZENER 1N4742 12V PREP .4	D2,3	
320-30002-00	DIODE ZENER 1N4744 15V PREP .4	D119,122,219,222	Was 1N4742 (320-30001-00)
320-30009-00	DIODE ZENER 1N4735 6.2V PREP .4	D10	
320-30014-00	DIODE ZENER 1N4745A 16V PREP .4	D11,14	

TRANSISTORS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
321-30013-00	XISTOR TO3P(L) NPN PWR 2SC3281	Q106-109,206-209	
321-30014-00	XISTOR TO3P(L) PNP PWR 2SA1302	Q113,115-117,213,215-217	
321-40003-00	XISTOR TO92 PNP SM SG MPS8093	Q112,212	
321-40005-00	XISTOR TO92 JFET SM SG 2N5458	Q1,2	
321-40009-00	XISTOR TO92 PNP SM SG 2N4125	Q7,8,103,203	
321-40010-00	XISTOR TO92 NPN SM SG 2N4123	Q3,4,10,11,104,114,204,214	
321-40011-00	XISTOR TO92 NPN SM SG MPSA06	Q101,120,201,220	

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
321-40012-00	XISTOR TO92 PNP SM SG MPSA56	Q110,123,210,223	
321-40013-00	XISTOR TO92 NPN SM SG MPSA18	Q9,12,105,205	Was MPS8097 (321-40000-00)
321-60004-00	XISTOR TO220 NPN 2N6488	Q121,221	
321-60006-00	XISTOR TO220 PNP 2N6490	Q118,218	
321-80000-00	XISTOR TO218AA NPN TIP358	Q119,219	
321-80003-00	XISTOR TO218AA PNP TIP36B	Q122,222	
321-90000-00	XISTOR B100 PNP PWR 2SA1360-Y	Q102,202	
321-90001-00	XISTOR B100 NPN PWR 2SC3423-Y	Q5,111,211	

INTEGRATED CIRCUITS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
330-30001-00	IC DUAL OP AMP BIFET TL072	U2	
330-30008-00	IC DUAL OP AMP 4558	U1,101,201	
330-40008-00	IC OPTOISOLATOR VTL5C4	U102,202	

MISCELLANEOUS ITEMS




CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
109-00002-00	JACK, RT ANGLE XLR CONNECTOR	J2,3	
109-20001-00	JACK, PHONE 1/4" PC MT	J1,4	
115-60000-00	CONNECTOR, QD TAB .250" PCB MNT	F,H,I,J,Q,R,S,T,X1,Y1,Z1	
151-20001-00	SCREW MACH PP BLK 440 x 1/4"		Use on J2,3
154-00006-00	WASHER, FIBER 1.56"OD x .32"ID BLK		
154-40302-01	WASHER, SHLDR NYLON 1/4"ID		
160-20007-00	CONNECTOR, MINI LINK .025" SPACING	J5	
160-30013-00	HEADER LOCKING GOLD MOLEX	J5	
160-30028-00	HEADER 6-PIN .100" LOCK ST POST	J6	
318-10009-00	SWITCH PUSH 1 KEY NO FRAME MINI W/BUTTON	S1,2	
318-40005-00	SWITCH SLIDE 4-POLE	S3	
401-10104-00	WIRE 18 AWG TEW BLACK 5"	WP-PP	
401-10105-00	WIRE 18 AWG TEW BLACK 5.5"	WP-AA	
401-10113-00	WIRE 18 AWG TR-64 RED 4"	WP-B	
401-10142-00	WIRE 18 AWG TEW BLACK 7.5"	WP-XX	
401-10154-00	WIRE 18 AWG TR-64 BLACK/WHITE 4.5"	WP-C, WP-D, WP-X	
401-10193-00	WIRE 18 AWG TR-64 RED 4.75"	WP-A to WP-W	
401-10541-00	WIRE 22 AWG TR-64 BLACK 3.5"	WP-E	
401-30005-00	JUMPER INSULATED .5"	JP59,JP60	
401-30012-00	JUMPER .10" NON-INSULATED	J5	
403-40001-00	TAPE FOAM DOUBLE BACK 1/8"H x 1"W		
403-40013-00	TAPE DOUBLE BACK 1-1/2" DIA		Use between Fiber Washer and Amp Bd
501-00412-00	PCB, AMP PM-600/900		

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
512-10501-00	SHIM		
512-10704-00	PLATE THERMAL PRESSURE		
550-00001-03	CABLE, .110 #22 TEW 4" RED/WHITE	WP-KK	
550-00001-04	CABLE, .110 #22 TEW 4" RED	JJ	
550-00001-07	CABLE, .110 #22 TEW 4" BLUE/WHITE	MM	
550-00001-08	CABLE, .110 #22 TEW 4" BLUE	NN	
550-00002-06	CABLE, .250 FAST, 18 AWG TEW RED 12"		Z2 to Reg. Bd. Z
550-00007-00	CABLE, .110 #22, JUMPER .110, BLACK 4"	WP-LL	
550-00013-00	CABLE, .250 FAST, 22 AWG TEW BLUE 13"	WP-G	
550-00013-01	CABLE, .250 FAST, 22 AWG TEW BLACK 8"	WP-CC	
550-00029-01	CABLE, .110 #18, JUMPER BLACK 4"	WP-LL	CSA Version only
616-00005-00	COIL AIR-CORE	3.2μH	L100,200

PM-900 AMP BOARD P/N 602-00412-01

CAPACITORS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
201-00004-00	CAP CER DISC 22pF 10% 1000V	C111,211	
201-00006-00	CAP CER DISC 39pF 10% 1000V	C102,113,202,213	
201-00008-00	CAP CER DISC 50pF 10% 1000V	C9,10,11,12	
201-00012-00	CAP CER DISC 100pF 10% 1000V	C105,112,205,212	
201-00019-00	CAP CER DISC 250pF 10% 1000V	C125,126,225,226	
201-00022-00	CAP CER DISC 390pF 10% 1000V	C108,208	
201-00023-00	CAP CER DISC 470pF 10% 1000V	C123,223	
204-00004-00	CAP MYLAR .0012μF	C119,122,219,222	
204-00009-00	CAP MYLAR .0033μF	C34,35	
204-00015-00	CAP MYLAR .01μF	C107,114,207,214	
204-00016-00	CAP MYLAR .047μF	C118,121,218,221	
204-00024-00	CAP MYLAR .047μF	C117,120,217,220	
204-00027-00	CAP MYLAR .1μF	C32,33,109,110	
204-00031-00	CAP MYLAR .33μF/100V	C101,201	
204-00033-00	CAP MYLAR .33μF/400V	C124,224	
205-00001-00	CAP LYTIC 1μF/50V RAD	C27,36	
205-00005-00	CAP LYTIC 4.7μF/63V 20% RAD	C106,206	
205-00009-00	CAP LYTIC 4.7μF/100V 20% RAD	C29,30	
205-00011-00	CAP LYTIC 22μF/25V 20% RAD	C7	
205-00013-00	CAP LYTIC 47μF/25V 20% RAD	C1-4,8,28	
205-00014-00	CAP LYTIC 47μF/50V 20% RAD	C6,16	
205-00015-00	CAP LYTIC 100μF/10V RAD	C5,15	Was 2.2μF/35V (205-00002-00)

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
205-00019-00	CAP LYTIC 470 μ F/6.3V RAD	C103,203	
205-00037-00	CAP LYTIC 470 μ F/50V AX	C31	
205-00056-00	CAP LYTIC 1000 μ F/63V RAD	C21-26	 Max Dia. .71"
205-00057-00	CAP LYTIC 2200 μ F/35V RAD	C17-20	 Max Dia. .71"
207-10002-00	CAP MET POLY .1 μ F/250V 10% AX	C13	
207-20001-00	CAP POLYPROP .01 μ F/50V RAD	C104,204	


RESISTORS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
250-00107-00	RES CFILM 36K 1/8W PREP .3	R17	Was 1/4W
251-00013-00	RES CFILM 4.3 OHM 1/4W PREP .4	R159,168,259,268	
251-00014-00	RES CFILM 4.7 OHM 1/4W PREP .4	R115,142,215,242	
251-00037-00	RES CFILM 43 OHM 1/4W PREP .4	R113,129,141,213,229,241	
251-00040-00	RES CFILM 56 OHM 1/4W PREP .4	R13	
251-00041-00	RES CFILM 62 OHM 1/4W PREP .4	R151,164,173,251,264,273	
251-00046-00	RES CFILM 100 OHM 1/4W PREP .4	R64,121,143,221,243	
251-00053-00	RES CFILM 200 OHM 1/4W PREP .4	R125,149,225,249	
251-00056-00	RES CFILM 270 OHM 1/4W PREP .4	R73,74	
251-00059-00	RES CFILM 360 OHM 1/4W PREP .4	R165,174,265,274	
251-00062-00	RES CFILM 470 OHM 1/4W PREP .4	R66,67	
251-00065-00	RES CFILM 620 OHM 1/4W PREP .4	R37	
251-00066-00	RES CFILM 680 OHM 1/4W PREP .4	R25,27,35,42,55	
251-00067-00	RES CFILM 750 OHM 1/4W PREP .4	R15,114,122,139,146,214,222,239,246	
251-00069-00	RES CFILM 910 OHM 1/4W PREP .4	R106,112,140,206,212,240	
251-00070-00	RES CFILM 1K 1/4W PREP .4	R36,103,166,175,203,266,275	
251-00074-00	RES CFILM 1.5K 1/4W PREP .4	R109,134,162,171,209,234,262,271	
251-00077-00	RES CFILM 2.0K 1/4W PREP .4	R111,136,176,211,236,276	
251-00078-00	RES CFILM 2.2K 1/4W PREP .4	R118,120,144,218,220,244	
251-00080-00	RES CFILM 2.7K 1/4W PREP .4	R161,170,261,270	
251-00081-00	RES CFILM 3.0K 1/4W PREP .4	R160,169,260,269	
251-00082-00	RES CFILM 3.3K 1/4W PREP .4	R33	
251-00083-00	RES CFILM 3.6K 1/4W PREP .4	R32,177,277	
251-00085-00	RES CFILM 4.3K 1/4W PREP .4	R77	
251-00087-00	RES CFILM 5.1K 1/4W PREP .4	R14,26,65	
251-00088-00	RES CFILM 5.6K 1/4W PREP .4	R1,2	
251-00090-00	RES CFILM 6.8K 1/4W PREP .4	R16,108,208	
251-00091-00	RES CFILM 7.5K 1/4W PREP .4	R135,235	
251-00093-00	RES CFILM 9.1K 1/4W PREP .4	R8,11	
251-00094-00	RES CFILM 10K 1/4W PREP .4	R7,19-21,31,48	
251-00096-00	RES CFILM 12K 1/4W PREP .4	R110,137,210,237	
251-00098-00	RES CFILM 15K 1/4W PREP .4	R101,201	
251-00099-00	RES CFILM 16K 1/4W PREP .4	R5,46	
251-00101-00	RES CFILM 20K 1/4W PREP .4	R117,217	
251-00102-00	RES CFILM 22K 1/4W PREP .4	R41,78	
251-00103-00	RES CFILM 24K 1/4W PREP .4	R116,216	
251-00104-00	RES CFILM 27K 1/4W PREP .4	R38,40,104,204	
251-00107-00	RES CFILM 36K 1/4W PREP .4	R76,138,238	

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
251-00110-00	RES CFILM 47K 1/4W PREP .4	R107,124,207,224	
251-00111-00	RES CFILM 51K 1/4W PREP .4	R34	
251-00112-00	RES CFILM 56K 1/4W PREP .4	R119,145,219,245	
251-00114-00	RES CFILM 68K 1/4W PREP .4	R22,24,28,30	
251-00116-00	RES CFILM 82K 1/4W PREP .4	R4,43,47,49,59,75,105,205	
251-00117-00	RES CFILM 91K 1/4W PREP .4	R6,79	
251-00118-00	RES CFILM 100K 1/4W PREP .4	R102,202	
251-00120-00	RES CFILM 120K 1/4W PREP .4	R3,18	
251-00127-00	RES CFILM 240K 1/4W PREP .4	R23,29	
251-00130-00	RES CFILM 330K 1/4W PREP .4	R44	
251-00135-00	RES CFILM 510K 1/4W PREP .4	R39	
251-00137-00	RES CFILM 620K 1/4W PREP .4	R45	
251-10054-00	RES CFILM 220 OHM 1/2W PREP .5	R128,153,228,253	
251-10075-00	RES CFILM 1.6K 1/2W PREP .5	R12	
251-10076-00	RES CFILM 1.8K 1/2W PREP .5	R63	
251-10078-00	RES CFILM 2.2K 1/2W PREP .5	R158,167,258,267	
251-10080-00	RES CFILM 2.7K 1/2W PREP .5	R127,150,227,250	
251-10081-00	RES CFILM 3.0K 1/2W PREP .5	R163,172,263,272	
251-10082-00	RES CFILM 3.3K 1/2W PREP .5	R123,147,223,247	
251-10104-00	RES CFILM 27K 1/2W UNPREP	R80	Was 1/4W
252-00402-00	RES CFILM 15.0K 1/4W 1%	R50-54,56-58	
253-20000-00	RES WIRE WOUND .05 OHM 2W 10%	R130,131,154,155,230,231,254,255	
253-20018-00	RES WIRE WOUND 1 OHM 2W	R178,278	
253-40001-00	RES WIRE WOUND .1 OHM 5W 10%	R133,157,233,257	
255-10060-00	RES MET OXIDE 51 OHM 1W 5%	R71,72	Was 1/2W
255-10121-00	RES MET OXIDE 8.2K 1W	R61	
255-10123-00	RES MET OXIDE 5.1K 1W	R10	
255-10129-00	RES MET OXIDE 11K 1W	R9	
255-10130-00	RES MET OXIDE 12K 1W	R62	
255-20041-00	RES MET OXIDE 10 OHM 2W	R69,70	
255-20042-00	RES MET OXIDE 11 OHM 2W	R68	
259-20003-00	TRIM POT 5K PCB MOUNT	RP1	
259-20011-00	TRIM POT 2K PCB MOUNT	RP100,200	
260-51803-04D	RES CFILM 180K 1/4W PREP .5	R179,279	Was 39K 1/4W (251-00108-00)

DIODES

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
320-20001-00	DIODE 1N4148 75V PREP	D1,4,6-9,12,13,23,24,101,102,104,111,125-128,201,202,204,211,225-228	
320-20004-00	DIODE 1N4004 400V PREP .4	D106-109,113-116,129,130,206-209,213-216,229,230	
320-20005-03	DIODE MR504 400V UNPREP	D25,26	

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
320-20006-00	DIODE BAV20 400V PREP .4	D103,105,112,120,123,124,131,132,203,205,212,220,223,224,231,232	
320-20007-03	DIODE MR852	D110,117,118,121,210,217,218,221	
320-20010-03	DIODE 6 AMP 200V UNPREP	D15-22	
320-30001-00	DIODE ZENER 1N4742 12V PREP .4	D2,3	
320-30002-00	DIODE ZENER 1N4744 15V PREP .4	D119,122,219,222	Was 1N4742 (330-30001-00)
320-30009-00	DIODE ZENER 1N4735 6.2V PREP .4	D10	
320-30014-00	DIODE ZENER 1N4745A 16V PREP .4	D11,14	

TRANSISTORS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
321-30013-00	XISTOR TO3P(L) NPN PWR 2SC3281	Q106-109,206-209	
321-30014-00	XISTOR TO3P(L) PNP PWR 2SA1302	Q113,115-117,213,215-217	
321-40001-00	XISTOR TO92 NPN SM SG MPSA43	Q101,120,201,220	
321-40003-00	XISTOR TO92 PNP SM SG MPS8093	Q112,212	
321-40004-00	XISTOR TO92 PNP SM SG MPSA93	Q110,123,210,223	
321-40005-00	XISTOR TO92 JFET SM SG 2N5458	Q1,2	
321-40009-00	XISTOR TO92 PNP SM SG 2N4125	Q7,8,103,203	
321-40010-00	XISTOR TO92 NPN SM SG 2N4123	Q3,4,10,11,104,114,204,214	
321-40013-00	XISTOR TO92 NPN SM SG MPSA18	Q9,12,105,205	Was MPS8097 (321-40000-00)
321-60004-00	XISTOR TO220 NPN 2N6488	Q121,221	
321-60006-00	XISTOR TO220 PNP 2N6490	Q118,218	
321-60008-00	XISTOR TO200 PNP 2SA1370	Q101,202	
321-60009-00	XISTOR TO200 NPN 2SC3467	Q111,211	
321-80000-00	XISTOR TO218AA NPN TIP358	Q119,219	
321-80003-00	XISTOR TO218AA PNP TIP36B	Q122,222	
321-90000-00	XISTOR B100 PNP PWR 2SA1360-Y	Q6	
321-90001-00	XISTOR B100 NPN PWR 2SC3423-Y	Q5	

INTEGRATED CIRCUITS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
330-30001-00	IC DUAL OP AMP BIFET TL072	U2,101,201	
330-30008-00	IC DUAL OP AMP 4558	U1	
330-40008-00	IC OPTOISOLATOR VTL5C4	U102,202	



MISCELLANEOUS ITEMS


CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
109-00002-00	JACK, RT ANGLE XLR CONNECTOR	J2,3	
109-20001-00	JACK, PHONE 1/4" PC MT	J1,4	
115-60000-00	CONNECTOR, QD TAB .250" PCB MNT	F,H,I,J,Q,R,S,T,X1,Y1,Z1	
151-20001-00	SCREW MACH PP BLK 440 x 1/4"		Use on J2,3
154-00006-00	WASHER, FIBER 1.56"OD x .32"ID BLK		
154-40302-01	WASHER, SHLDR NYLON 1/4"ID		

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
160-20007-00	CONNECTOR, MINI LINK .025" SPACING	J5	
160-30013-00	HEADER LOCKING GOLD MOLEX	J5	
160-30028-00	HEADER 6-PIN .100" LOCK ST POST	J6	
318-10009-00	SWITCH PUSH 1 KEY NO FRAME MINI W/BUTTON	S1,2	
318-40005-00	SWITCH SLIDE 4-POLE	S3	
401-10104-00	WIRE 18 AWG TEW BLACK 5"	WP-PP	Was Green
401-10105-00	WIRE 18 AWG TEW BLACK 5.5"	WP-AA	
401-10113-00	WIRE 18 AWG TR-64 RED 4"	WP-B	
401-10142-00	WIRE 18 AWG TEW BLACK 7.5"	WP-XX	
401-10154-00	WIRE 18 AWG TR-64 BLACK/WHITE 4.5"	WP-C, WP-D, WP-X	
401-10193-00	WIRE 18 AWG TR-64 RED 4.75"	WP-A to WP-W	
401-10238-01	WIRE 18 AWG TR-64 BLACK 15.25"	WP-CC to WP-LL	CSA Version only
401-10520-00	WIRE 22 AWG TR-64 WHITE 12.5"	Thermo to WP-EE & WP-FF	
401-10541-00	WIRE 22 AWG TR-64 BLACK 3.5"	WP-E	
401-30005-00	JUMPER INSULATED .5"	JP59,JP60	
403-40001-00	TAPE FOAM DOUBLE BACK 1/8"H x 1"W		
403-40013-00	TAPE DOUBLE BACK 1-1/2" DIA		Use between Fiber Washer and Amp Bd
501-00412-00	PCB, AMP PM-600/900		
512-10501-00	SHIM		
512-10704-00	PLATE THERMAL PRESSURE		
550-00001-03	CABLE, .110 #22 TEW 4" RED/WHITE	WP-KK	
550-00001-04	CABLE, .110 #22 TEW 4" RED	WP-JJ	
550-00001-07	CABLE, .110 #22 TEW 4" BLUE/WHITE	WP-MM	
550-00001-08	CABLE, .110 #22 TEW 4" BLUE	WP-NN	
550-00002-06	CABLE, .250 FAST, 18 AWG TEW RED 12"	Z2 to Reg. Bd. Z	
550-00007-00	CABLE, .110 #22, JUMPER .110, BLACK 4"	WP-LL	Use 401-10238-01 on CSA Version
550-00013-00	CABLE, .250 FAST, 22 AWG TEW BLUE 13"	WP-G	
550-00013-01	CABLE, .250 FAST, 22 AWG TEW BLACK 8"	WP-CC	
616-00005-00	COIL AIR-CORE 3.2μH	L100,200	

PM-600/PM-900 HEATSINK ASSEMBLY

P/N 601-00192-00 PM-600
601-00192-01 PM-900


CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
101-30002-00	BUMPONS, RUBBER ROUND SMALL		
118-80011-00	STANDOFF THREADED 6-32 x .750"L		
151-20055-00	SCREW MACH PP BLK 6-32 x 5/8"		
151-20106-00	SCREW MACH PP BLK 8-32 x 3/4"		
151-20181-00	SCREW MACH PHP BLK 1/4-20 x 3/4"		
151-30051-05	SCREW SELF-TAP PP BLK 6 x 1/4"		
152-10003-00	KEPNUT 8-32 x 11/32" ZC		
154-00005-01	WASHER BELL ZC 1/4" ID		
159-60001-00	CLIP, ELASTIC WIRE HARNESS		PM-900 Was Snake Lug (112-20002-00)
318-50003-00	SWITCH THERMAL 100 DEG C		
319-00035-01	RECTIFIER BRIDGE, 25A/200V CERAMIC		

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
319-00036-01	RECTIFIER BRIDGE, 35A/200V	BR1	 CSA Version only
511-10020-01	HEATSINK, ANODIZED PM-600/900		
512-10632-00	INSULATOR, SIL-PAD K-6 PM-600/900		
602-00412-00	ASSY, PCB PM-600		PM-600
602-00412-01	ASSY, PCB PM-900		PM-900

PM-600/PM-900 REGULATOR BOARD

P/N 602-00411-00	PM-600 115V
602-76411-00	PM-600 230V
602-00411-01	PM-900 115V
602-76411-01	PM-900 230V


CAPACITORS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
204-00023-00	CAP MYLAR .039 μ F	C3	
204-00029-00	CAP MYLAR .15 μ F	C4	
205-00015-00	CAP LYTIC 100 μ F/10V RAD	C7	
207-10010-00	CAP MET POLY .1 μ F/250V 10% RAD	C5	

RESISTORS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
251-00014-00	RES CFILM 4.7 OHM 1/4W PREP .4	R10	
251-00048-00	RES CFILM 120 OHM 1/4W PREP .4	R20	
251-00050-00	RES CFILM 150 OHM 1/4W PREP .4	R12	
251-00058-00	RES CFILM 330 OHM 1/4W PREP .4	R17	
251-00065-00	RES CFILM 620 OHM 1/4W PREP .4	R18	
251-00094-00	RES CFILM 10K 1/4W PREP .4	R14	
251-00098-00	RES CFILM 15K 1/4W PREP .4	R3	
251-00107-00	RES CFILM 36K 1/4W PREP .4	R9	
251-00114-00	RES CFILM 68K 1/4W PREP .4	R15	
251-00118-00	RES CFILM 100K 1/4W PREP .4	R6,7	
251-00120-00	RES CFILM 120K 1/4W PREP .4	R13	
251-00122-00	RES CFILM 150K 1/4W PREP .4	R16	
251-00131-00	RES CFILM 360K 1/4W PREP .4	R8	
251-00135-00	RES CFILM 510K 1/4W PREP .4	R4	
251-10028-00	RES CFILM 18 OHM 1/2W PREP .5	R11	
251-10113-00	RES CFILM 62K 1/2W PREP .5	R2	PM-900 230V/EURO
251-10115-00	RES CFILM 75K 1/2W PREP .5	R2	
251-10156-00	RES CFILM 3.9M 1/2W PREP .5	R1	



DIODES

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
320-20001-00	DIODE 1N4148 75V PREP .4	D7,8,12	
320-20004-00	DIODE 1N4004 400V PREP .4	D1-6,9-11	

TRANSISTORS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
321-40003-00	XISTOR TO92 PNP SM SG MPS8093	Q6	
321-40011-00	XISTOR TO92 NPN SM SG MPSA06	Q1,3	
321-40012-00	XISTOR TO92 PNP SM SG MPSA56	Q2,4	
321-40013-01	XISTOR TO92 NPN SM SG MPSA18	Q5	

MISCELLANEOUS ITEMS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
101-22001-00	BRACKET, RT ANGLE PCB MNT 1/2"		
115-60000-00	CONNECTOR, QD TAB .250 PCB MNT	M,A,K,V,N,B,F,Y,H,J,Z,O,G,X,E	
151-20051-00	SCREW MACH PP JBLK 6-32 x 1/4"		
330-40002-00	OPTOISOLATOR PHOTOTRANSISTOR CNY172	U1	
330-40007-00	OPTOISOLATOR, TRIAC DRIVER 250V	U2	
401-30003-00	JUMPER INSULATED #22 .4"	JP1,2,3,4,5	
501-00411-00	PCB REGULATOR PM-600/900		
550-00002-00	CABLE, .250, #18, TEW 2.5" RED	WP-W	
550-00002-01	CABLE, .250, #18, TEW 2.5" BLUE	WP-I	
550-00009-00	CABLE, .250, #18, TEW 2.5" ORN	WP-S	

PM-600/PM-900 DISPLAY BOARD P/N 602-00410-00

CAPACITORS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
205-00129-00	CAP LYTIC 1μF/50V AX	C1,2	

RESISTORS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
251-00001-00	RES CFILM 1 OHM 1/4W PREP .4	R29,30	
251-00069-00	RES CFILM 910 OHM 1/4W PREP .4	R25,26	
251-00078-00	RES CFILM 2.2K 1/4W PREP .4	R27,28,32,35	
251-00080-00	RES CFILM 2.7K 1/4W PREP .4	R13	
251-00091-00	RES CFILM 7.5K 1/4W PREP .4	R5,7,9,18,20,22	
251-00094-00	RES CFILM 10K 1/4W PREP .4	R10,12,23,31,34	
251-00105-00	RES CFILM 30K 1/4W PREP .4	R4,6,8,11,17,19,21,24	
251-00122-00	RES CFILM 150K 1/4W PREP .4	R33,36	

DIODES

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
320-20001-00	DIODE 1N4148 75V PREP .4	D2,4,19,20,21,22	
320-40001-00	LED RED	D6-10,13-17	
320-40002-00	LED AMBER	D5,12	
320-40004-00	LED GREEN H.E.	D11,18	

INTEGRATED CIRCUITS





CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
330-30003-00	IC QUAD OP AMP (4136)	U1,2	











MISCELLANEOUS ITEMS





CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
160-30018-00	HEADER 7 PIN LOCK RT ANGLE PST	J1	
401-30003-00	JUMPER INSUL .4"		
501-00410-00	PCB DISPLAY PM-600/900		

PM-600/PM-900 FINAL ASSEMBLY

P/N 607-00100-01	PM-600 115V
607-00100-05	PM-600 EURO
607-00101-01	PM-900 115V
607-00101-05	PM-900 EURO

CARVER P/N	ITEM NO.	DESCRIPTION	REF DESIGNATORS	NOTES
101-00105-00	5	BARRIER STRIP 4 POS PANEL MNT		
101-00106-00	10	BARRIER STRIP 6 POS QUICK DISCONNECT		
101-10004-00	3	BLADE, FAN PLASTIC 2.5" CCW		PM-900
101-30001-00	13	BUMPS RUBBER ROUND MEDIUM		
101-30003-00	15	BUMPS RUBBER SQUARE .81 x .515"H		
105-10007-00	25	FILTER ELEMENT 2-7/8" x 5" 3/16" TH		PM-900
105-40014-00	30	FUSEHOLDER PANEL MOUNT 120V-230V		
105-50000-00	31	FUSE CARRIER 120V		 120V Version
105-50001-00	31	FUSE CARRIER 230V		 230V Version
106-30004-00	33	GROMMET, FAN MOUNTING PM-900		PM-900
111-20051-00	35	SOLDER LUG #6		
112-10003-00	37	MOTOR, FAN 18 VOLT		PM-900
112-20001-00	40	MOUNT TYRAP WHITE		
112-20003-00	43	MOUNT TYRAP, SCREW MNT #10		
115-10001-00	45	POST, BINDING DUAL RED/BLACK		
118-90011-00	55	STRAIN RELIEF MCT.125 SJT 16/3 & 18/3		
118-60010-00	57	SPACER #6 CLR .25"OD x 32L		PM-900
151-00154-00	60	SCREW MACH SCKT H BLK 10-32 x 1/2"		Use on Handles
151-20001-00	65	SCREW MACH PP BLK 440 x 1/4"		115V Version Linefilter Mounting and PM-900 Fan Mounting

CARVER P/N	ITEM NO.	DESCRIPTION	REF DESIGNATORS	NOTES
151-20003-00	67	SCREW MACH PP BLK 4-40 x 1/2"		
151-20051-00	70	SCREW MACH PP BLK 6-32 x 1/4"		
151-20052-00	77	SCREW MACH PP BLK 6-32 x 3/8"		Use on Linefilter, EURO 8A Version
151-20055-00	75	SCREW MACH PP BLK 6-32 x 5/8"		Use on Barrier Strips
151-20101-00	80	SCREW MACH PP BLK 8-32 x 1/4"		Use on X-fmr Mounting
151-20151-01	90	SCREW MACH PP BLK 10-32 x 1/4"		Use on Large Filter Capacitors
151-20152-00	93	SCREW MACH PP BLK 10-32 x 3/8"		Use on Rear Support Brackets
151-30051-05	95	SCREW SELF-TAP PP BLK 6 x 1/4" "F"		
152-00001-00	100	NUT HEX 6-32 x 5/16" ZC		
152-10002-00	103	KEPNUT 6-32 x 5/16" ZC		Use on Linefilter and Triac Mounting
154-10052-00	104	WASHER FLAT #6 .156"ID x .562"OD x .040"TH		PM-900
154-20001-00	107	WASHER INT LOCK CAD PLATED #4		Use on Linefilter Mounting Bracket, 115V Version
154-20053-03	109	WASHER, SPLIT LOCK #6 ZINC		
154-30001-00	105	WASHER, SPLIT LOCK #10		PM-900
154-40351-01	110	WASHER FLAT NYL 3/8"ID x 5/8"OD		
159-50002-00	115	TYRAP 4" L WHT		
159-50004-00	120	TYRAP 7.4" L NATURAL		
160-20014-00	121	CONNECTOR, SPLICE NYLON INSUL		Linefilter to Linecord (Blue), 230V Version only.
204-00024-00	123	CAP MYLAR .047μF/100V 10%		PM-900, Mount on Back of Fan Was ceramic disc type
205-00058-00	125	CAP LYTIC 9000μF/100V RAD		 PM-900
205-00133-00	125	CAP LYTIC 9400μF/75V		 PM-600
259-10024-00	140	POT 5KB PANEL MOUNT 11 DETENT		
315-13003-00	145	FUSE MDA8		 PM-600 115V Version
315-13006-00	145	FUSE MDA10		 PM-900 115V Version
315-16001-00	145	FUSE 6.3A TIME LAG		 PM-900 230V Version
315-16002-00	145	FUSE 4A TIME LAG		 PM-600 230V Version
318-20004-00	150	SWITCH ROCKER SPDT QUICK DISCONNECT 15A		
319-00063-00	160	TRIAC T03 F/P 35A 600V		 Was 25A 200V (319-00055-00)
401-10541-00	170	WIRE 22 AWG TR-64 BLACK 3.5"	Fan to WP-HH	PM-900
401-10588-00	175	WIRE 22 AWG TR-64 RED 3.75"	Fan to WP-GG	PM-900
401-20103-00	180	BUSS WIRE 18 GA 3"		
401-90014-00	185	LINECORD, EURO 16A 7'		 EURO Version
401-90019-01	185	LINECORD 16/3 SJT 13A DOMESTIC		 115V and 230V Version
402-10006-00	187	TUBING, HEATSHRINK 3/16"OD x 3/4"L		Use on Fuseholder
403-40006-00	203	VELCRO STRIP, HOOK SIDE 5/8"		PM-900
502-30061-01	205	CHASSIS, BLACK PM-600		PM-600
502-30061-02	205	CHASSIS, BLACK PM-900		PM-900
503-20058-00	210	PANEL FRONT PAINTED PM-600/900		
504-20054-01	215	COVER, BOTTOM BLACK PM-900		PM-900
504-20055-01	215	COVER, BOTTOM BLACK PM-600		PM-600
504-20056-01	220	COVER, TOP BLACK PM-900		PM-900
504-20057-01	220	COVER, TOP BLACK PM-600		PM-600
505-20024-01	225	PANEL, SUB FRONT SCREENED PM-600		PM-600
505-20024-02	225	PANEL, SUB FRONT SCREENED PM-900		PM-900

CARVER P/N	ITEM NO.	DESCRIPTION	REF DESIGNATORS	NOTES
507-00029-00	228	BRACKET FAN MOUNT		PM-900
507-00045-00	230	BRACKET VOLUME POTS		PM-600/900
507-00046-00	235	BRACKET REAR SUPPORT		PM-600/900
507-00062-00	237	BRACKET LINEFILTER, 20A DELTA 20DBAG5		
507-00070-00	237	BRACKET LINEFILTER JMK 12A		EURO Version, JMK 12A Linefilter only
508-00030-04	240	KNOB 14mm KNURL BLACK 90 DG		
509-20005-01	245	FERRULE 5/16" PLASTIC PRO GRAY		
510-10001-03	250	HANDLE 2" PRO PAINT		
512-10401-03	253	NUT, METRIC DRESS 7mm CAD		
512-10629-00	255	INSULATOR T03 SIL-PAD		
512-10703-01	260	PANEL ACCESSORY COVER SCREENED		
530-10138-00	262	LABEL, FUSE 4A SLO-BLO		PM-600 230V Version
530-10139-00	263	LABEL, 230V 50HZ 950VA		PM-600 230V Version
530-10140-00	262	LABEL, FUSE 6A SLO-BLO		PM-900 230V Version
530-10141-00	263	LABEL, 230V 50HZ 1200VA		PM-900 230V Version
550-00005-00	345	CABLE, #10 LUG, #18 AWG TR-64 .250 BROWN 5"		Rectifier Br. to Filter Cape
550-00005-01	350	CABLE, #10 LUG, #18 AWG TR-64 .250 RED 5"		Rectifier Br. to Filter Cape
550-00006-00	355	CABLE, #10 LUG, #18 AWG TR-64 .250 BROWN 9"	WP-V	
550-00006-01	360	CABLE, #10 LUG, #18 AWG TR-64 .250 RED 10"	WP-U	
550-00008-00	365	CABLE, #10 LUG, #18 AWG JUMPER, #10 AWG BROWN 12"	WP-BB	
550-00010-00	380	HARNESS, .250" FAST 3-WIRE, .205" FAST		Front Panel Switches to Reg. Bd.
550-00011-00	385	HARNESS, 7-PIN CONN, #22, .250		Display Bd. to Amp Bd.
550-00014-00	391	CABLE, .110 #22 AWG, .250 TEW VIOLET 13"		Barrier Strip to Reg. Bd. WP-H
550-00014-01	392	CABLE, .110 #22 AWG, .250 TEW GRAY 13"		Barrier Strip to Reg. Bd. WP-J
550-00015-00	320	CABLE, .250 #18 TEW BLACK 12"		Linefilter to Fuseholder, 115V Version
550-00015-01	325	CABLE, .250 #18 TEW WHITE 12"		Linefilter to Thermal Switch, 115V Version
550-00016-01	340	CABLE, .250 #18 TEW, .250 BLACK 4"		Linefilter to Reg. Bd. WP-B, 115V Version
550-00025-01	335	CABLE, RT ANGLE .250 #18 TEW WHITE 13.5"		Reg. Bd. WP-A to Thermal Switch
550-10042-00	394	HARNESS, 6-PIN CONN, #22 SHIELD		Pot to Amp Bd. PM-600-2 See Service Bulletins PM-900-2
601-00192-00	395	ASSY PREP HEATSINK PM-600		
601-00192-01	395	ASSY PREP HEATSINK PM-900		
602-00410-00	400	ASSY PCB DISPLAY PM-600/900		
602-00411-00	405	ASSY PCB REGULATOR PM-600 115V		
602-00411-01	405	ASSY PCB REGULATOR PM-900 115V		
602-76411-00	405	ASSY PCB REGULATOR PM-600 230V		
602-76411-01	405	ASSY PCB REGULATOR PM-900 230V		
615-00003-00	410	LINEFILTER, 20A, DELTA 20DBAG5		 115V and 230V Version Was TDK2206-02 (615-00002-00) Below S/N 90830600001 See Service Bulletins PM-600-3 PM-900-3
615-00003-00	410	LINEFILTER, 20A, DELTA 20DBAG5		 EURO Version Was TDK2206-02 (615-00002-00) Below S/N 90830800001 See Service Bulletins PM-600-3 PM-900-3 Was 20A DELTA 20DBAG5 (615-00003-00) S/N 90830800001 - 91730800001 Was EURO 8A (531-00007-01) S/N 91730800001 - 92330800001 Was JMK 12A (615-00005-01) S/N 92330800001 - 92730800001
617-10044-00	415	TRANSFORMER 115/230V PM-600		
617-10053-01	415	TRANSFORMER 115/230V PM-900		

PM-600 PACKING

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
115-40013-01	PLUG, .75" DIA RUBBER BLACK		Level Defeat Plug for THX installation
530-20101-00	LABEL, 2"x5"		
532-10001-00	BAG, PLASTIC 3" x 5"		
532-10005-00	BAG, PLASTIC 20" x 30"		
532-20062-00	BOX, AMPS		
532-30042-00	FOAM, SET (4) CORNER BLOCK AMP		
607-00100-01	ASSY FINAL PM-600 115V		
990-00026-00	CARD, LIMITED WARRANTY (PRO)		
990-00033-00	CARD, WARRANTY REGISTRATION PRO		
990-00037-00	ENVELOPE, HOLOGRAM TEST DISC		
990-00066-01	INSERT, PM-600 THX		
990-20077-00	OWNER'S MANUAL PM-600		

PM-900 PACKING

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
530-20101-00	LABEL, 2"x5"		
532-10001-00	BAG, PLASTIC 3" x 5"		
532-10005-00	BAG, PLASTIC 20" x 30"		
532-20062-00	BOX, AMPS		
532-30042-00	FOAM, SET (4) CORNER BLOCK AMP		
607-00101-01	ASSY FINAL PM-900 115V		
990-00026-00	CARD, LIMITED WARRANTY (PRO)		
990-00033-00	CARD, WARRANTY REGISTRATION PRO		
990-00037-00	ENVELOPE, HOLOGRAM TEST DISC		
990-20078-00	OWNER'S MANUAL PM-900		

SECTION 10
VOLTAGE CONVERSION

PM-600 VOLTAGE CONVERSION

BILL OF MATERIALS

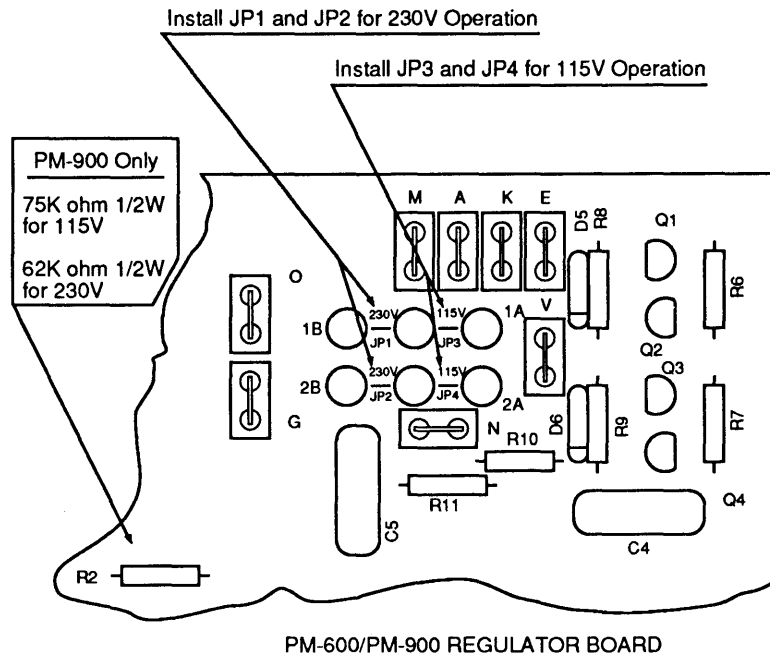
QTY	PART NO.	DESCRIPTION
1	105-50000-00	Fuse Carrier, 120V
1	105-50001-00	Fuse Carrier, 230V
1	315-13003-00	Fuse, MDA8
1	315-16002-00	Fuse, FSM4 Slo-Blo
1	530-10138-00	Label, 4A/230V Slo-Blo
1	530-10139-00	Label, 230V/50Hz 950VA

120V Operation

1. On the regulator board, remove JP1 and JP2 and install JP3 and JP4.
2. Replace the fuse and fuse carrier with an MDA8 Slo-Blo fuse (315-13003-00) and a 120V style fuse carrier (105-50000-00).
3. Remove 230V/50Hz label on rear panel near linecord.
4. Remove 4A/230V Slo-Blo label on rear panel near fuseholder.

230V Operation

1. On regulator board, remove JP3 and JP4 and install JP1 and JP2.
2. Replace the fuse and fuse carrier with an FSM4A Slo-Blo fuse (315-16002-00) and a 230V style fuse carrier (105-50001-00).
3. Apply 230V/50Hz label (530-10139-00) on rear panel near linecord.
4. Apply 4A/230V Slo-Blo label (530-10038-00) on rear panel near fuseholder.



PM-900 VOLTAGE CONVERSION

BILL OF MATERIALS

QTY	PART NO.	DESCRIPTION
1	105-50000-00	Fuse Carrier, 120V
1	105-50001-00	Fuse Carrier, 230V
1	251-10113-00	Res, CFilm, 62k Ω , 1/2W
1	251-10115-00	Res, CFilm, 75k Ω , 1/2W
1	315-13006-00	Fuse, MDA10
1	315-16001-00	Fuse, FSM6.3 Slo-Blo
1	530-10140-00	Label, 6A/230V Slo-Blo
1	530-10141-00	Label, 230V/50Hz 1200VA

120V Operation

1. On the regulator board, remove JP1 and JP2 and install JP3 and JP4.
2. On regulator board, change R2 to 75k Ω , 1/2W resistor (251-10115-00).
3. Replace the fuse and fuse carrier with an MDA10 Slo-Blo fuse (315-13006-00) and a 120V style fuse carrier (105-50000-00).
4. Remove 230V/50Hz label on rear panel near linecord.
5. Remove 6A/230V Slo-Blo label on rear panel near fuseholder.

230V Operation

1. On regulator board, remove JP3 and JP4 and install JP1 and JP2.
2. On regulator board, change R2 to 62k Ω , 1/2W resistor (251-10113-00).
3. Replace the fuse and fuse carrier with an FSM6.3A Slo-Blo fuse (315-16001-00) and a 230V style fuse carrier (105-50001-00).
4. Apply 230V/50Hz label (530-10141-00) on rear panel near linecord.
5. Apply 6A/230V Slo-Blo label (530-10140-00) on rear panel near fuseholder.



SECTION 11

SERVICE BULLETINS

Please insert Carver Service Bulletins pertaining to the PM-600 and PM-900 here to ensure proper repair in the future.

CARVER CORPORATION SERVICE BULLETIN

Service Bulletin # PM-600-1

Model PM-600

Serial # BEFORE 483

Reason: The Molex connector used for the PMX mounting cable may be mounted backwards.

Procedure: The eight pin male Molex connector on the main amp board labeled J5 must be turned around to insure that the PMX cable mounts properly.

The silk screen on the main amp board that shows the polarity of the header is incorrect. Be sure to mount the header so that the tab of the header is towards the rear of the unit.

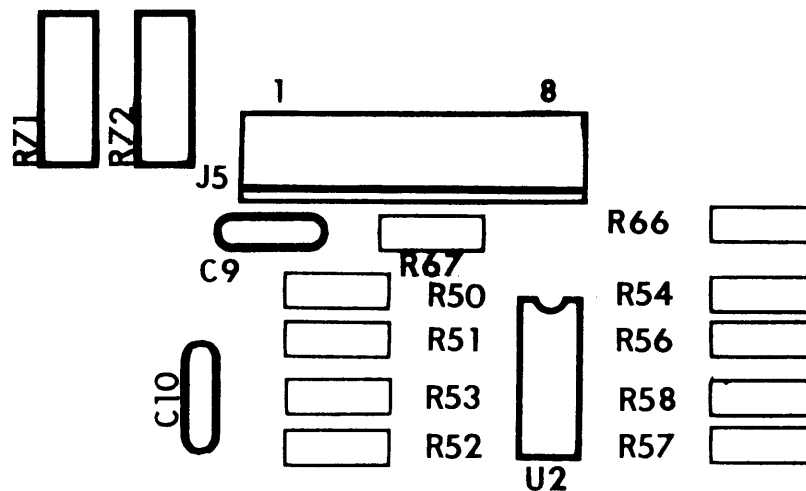
THIS IS OPPOSITE OF THE SILK SCREEN.

*FIGURE 1 SHOWS THE CORRECT HEADER MOUNTING

Delete:

Add

FIGURE 1



SERVICE APPROVAL

ENGINEERING APPROVAL

[Handwritten signature]
DATE

DATE

CARVER CORPORATION SERVICE BULLETIN

Service Bulletin # PM-600-2 Model: PM-600 Serial nos. Below 00701

REASON: Date: 7/17/90

To reduce buzz in speaker outputs.

DELETE

Qty 1 6 conductor cable harness
P/N 550-00012-00

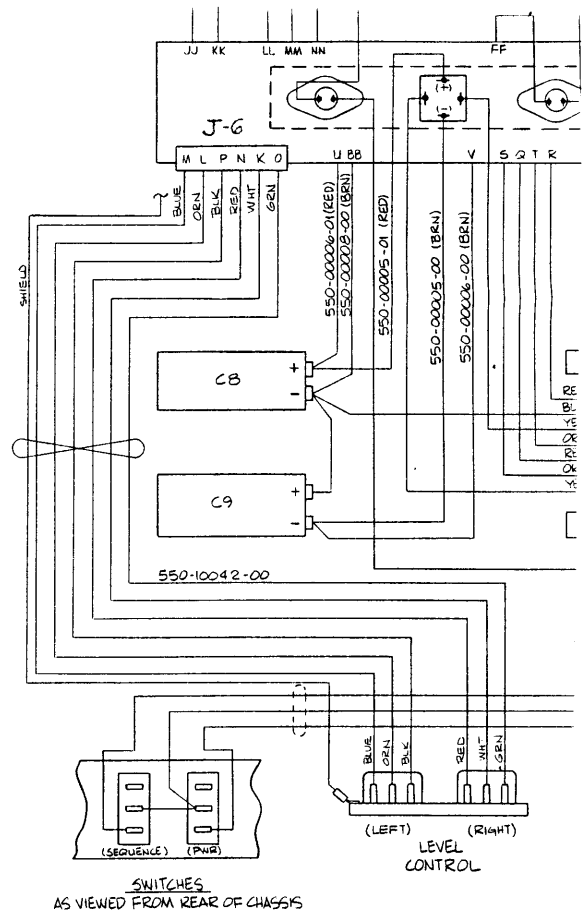
ADD

Qty 1 6 conductor shielded cable harness
P/N 550-10042-00

Qty 1 Tyrap 4"
P/N 159-50002-00

PROCEDURE

1. Remove Cable Harness from J-6 on amplifier board and unsolder from left and right level pots.
2. Clip tyrap securing cable to left side panel, and discard cable.
3. Install shielded cable harness to J-6 and solder onto left and right level pots (see Figure 1).
4. Mount ground lug under screw holding the pot mounting bracket to the front panel.
5. Use tyrap to secure shielded cable to the tyrap mount on the left side panel (located above power supply filter caps).



Engineering approval *[Signature]* 1-8-91

Service approval *[Signature]*

Figure 1

CARVER CORPORATION SERVICE BULLETIN

Service Bulletin # PM-600-3 | Model: PM-600 | Serial nos. 901→90X30600001

REASON:

Date: 11/01/90

To reduce noise in speaker outputs.

DELETE

Qty 1 Cable, Line Filter to
Regulator Board WP-X
550-00017-00

ADD

Qty 2 Washer, Int. Lock #4
154-20001-00

PROCEDURE

NOTE: This procedure only applies to units with the silver colored line filter marked Delta Electronics 20DBAG5.
Do not perform this modification to units with the black TDK brand line filter.

- 1) Disconnect all wires from the Line Filter.
- 2) Remove the black wire from the WP-X position on the regulator board and discard.
- 3) Remove 2 screws securing the line filter bracket to bottom of unit.
- 4) Remove the line filter assembly from unit.
- 5) Remove 2 screws and nuts securing line filter to bracket. Rotate the line filter 180° so that the end marked "LINE" is facing the load, and the end marked "LOAD" is facing the line input.
- 6) Mount the line filter to the bracket in the new position using the 2 screws and nuts previously removed.
- 7) Mount the line filter to the bottom of unit using the two screws previously removed and inserting the #4 lock washers between the screw and bracket (see Figure 1 on next page).
- 8) Connect the wiring as shown in Figure 2.

Engineering approval

Vic R. [Signature] 1-8-91

Service approval

R. [Signature]

CARVER CORPORATION SERVICE BULLETIN

Service Bulletin # PM-900-1

Model PM-900

Serial # BEFORE 528

Reason: The Molex connector used for the PMX mounting cable may be mounted backwards.

Procedure: The eight pin male Molex connector on the main amp board labeled J5 must be turned around to insure that the PMX cable mounts properly.

The silk screen on the main amp board that shows the polarity of the header is incorrect. Be sure to mount the header so that the tab of the header is towards the rear of the unit.

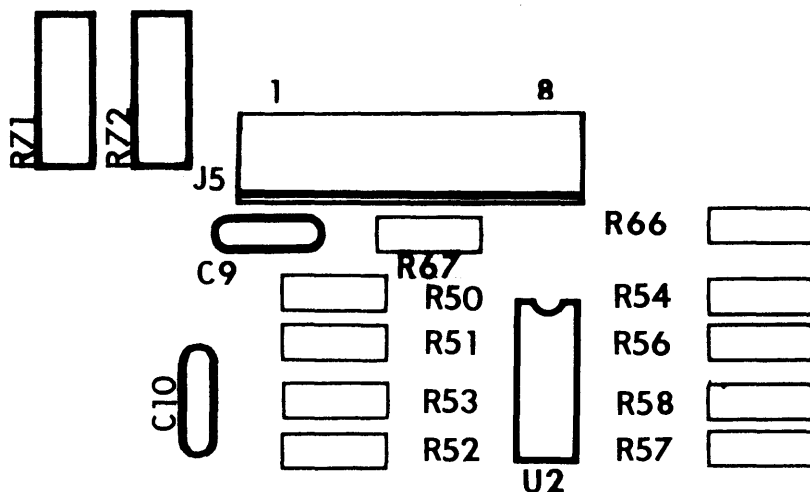
THIS IS OPPOSITE OF THE SILK SCREEN.

***FIGURE 1 SHOWS THE CORRECT HEADER MOUNTING.**

Delete:

Add:

FIGURE 1



SERVICE APPROVAL

ENGINEERING APPROVAL

[Handwritten signature]
6-37-70

DATE

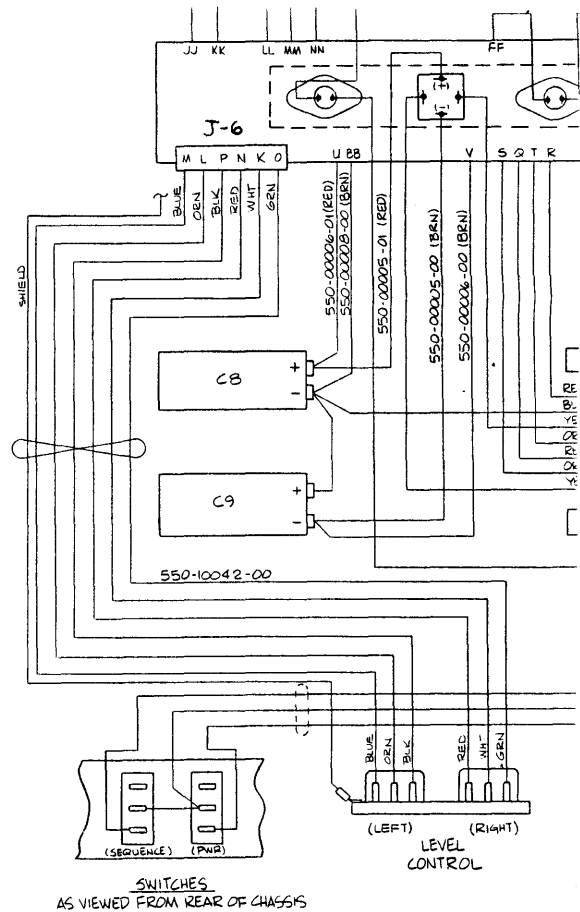
CARVER CORPORATION SERVICE BULLETIN

Service Bulletin # PM-900-2	Model: PM-900	Serial nos. Below 00711
REASON: To reduce buzz in speaker output.		Date: 7/17/90

DELETE	ADD
Qty 1 6 conductor cable harness P/N 550-00012-00	Qty 1 6 conductor shielded cable harness P/N 550-10042-00
	Qty 1 Tyrap 4" P/N 159-50002-00

PROCEDURE

1. Remove Cable Harness from J-6 on amplifier board and unsolder from left and right level pots.
2. Clip tyrap securing cable to left side panel, and discard cable.
3. Install shielded cable harness to J-6 and solder onto left and right level pots (see Figure 1).
4. Mount ground lug under screw holding the pot mounting bracket to the front panel.
5. Use tyrap to secure shielded cable to the tyrap mount on the left side panel (located above power supply filter caps).



Engineering approval *[Signature]* 1-8-91

Service approval *[Signature]*

Figure 1

CARVER CORPORATION SERVICE BULLETIN

01003 to 90X30900001

Service Bulletin # PM-900-3 | Model: PM-900 | Serial nos.

REASON: | Date: 11/01/90

To reduce noise in speaker outputs.

DELETE

Qty 1 Cable, Line Filter to
Regulator Board WP-X
550-00017-00

ADD

Qty 2 Washer, Int. Lock #4
154-20001-00

PROCEDURE

NOTE: This procedure only applies to units with the silver colored line filter marked Delta Electronics 20DBAG5.
Do not perform this modification to units with the black TDK brand line filter.

- 1) Disconnect all wires from the Line Filter.
- 2) Remove the black wire from the WP-X position on the regulator board and discard.
- 3) Remove 2 screws securing the line filter bracket to bottom of unit.
- 4) Remove the line filter assembly from unit.
- 5) Remove 2 screws and nuts securing line filter to bracket. Rotate the line filter 180° so that the end marked "LINE" is facing the load, and the end marked "LOAD" is facing the line input.
- 6) Mount the line filter to the bracket in the new position using the 2 screws and nuts previously removed.
- 7) Mount the line filter to the bottom of unit using the two screws previously removed and inserting the #4 lock washers between the screw and bracket (see Figure 1 on next page).
- 8) Connect the wiring as shown in Figure 2.

Engineering approval

[Signature] 1-5-91

Service approval

[Signature]

Page 1 of 2

CARVER CORPORATION SERVICE BULLETIN

Service Bulletin # PM-900-3 Model: PM-900 Serial nos.

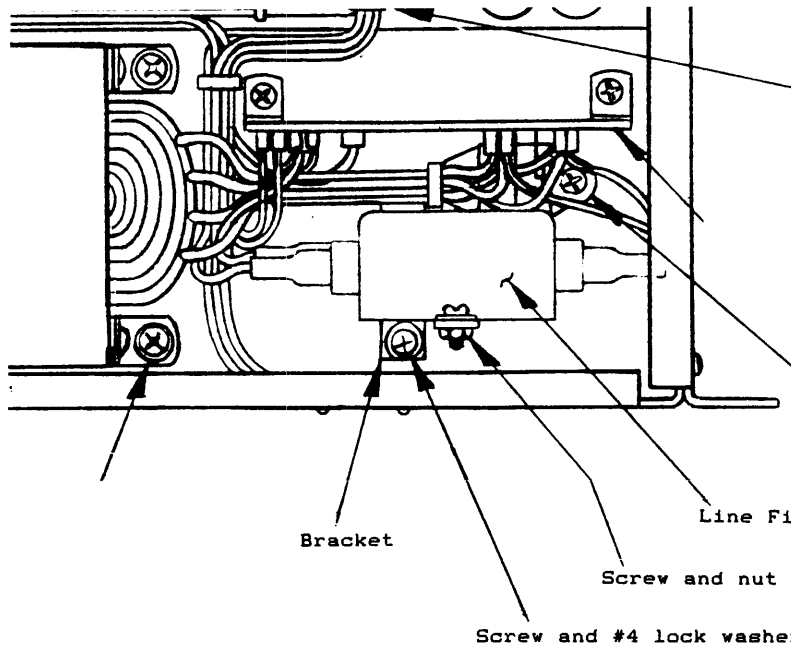


Figure 1

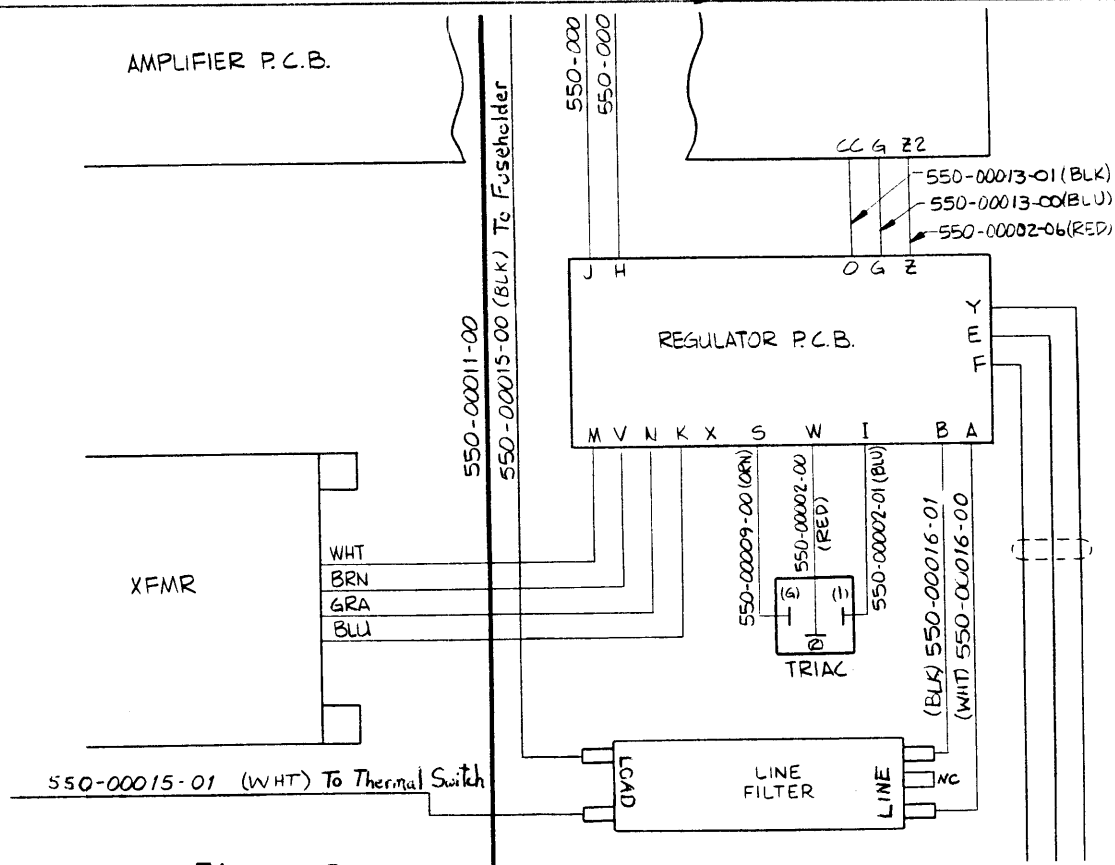


Figure 2

NOTES

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P/N 990-20077-01
Rev. A