

CARVER

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

PT-1800/PT-2400 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.

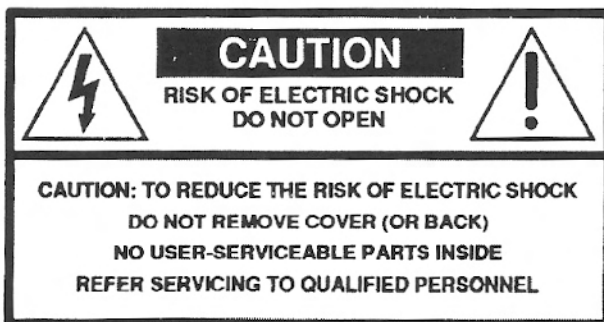
1. Check the leakage current. Connect the unit to 120 VAC supply and turn the power switch "ON". Using an ammeter, measure the current between the neutral side of the AC supply and chassis ground of the unit under test. If leakage current exceeds 0.5mA, the unit is defective.

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 PT-1800 and PT-2400 Magnetic Field Power Amplifiers were released near the end of 1991 as our most powerful professional amplifiers.

The PT-1800 and PT-2400 are rack-mountable (3U rack space) dual-mono power amplifiers rated at 600W per channel into 8 ohms, 900W per channel into 4 ohms and 1100W per channel into 2 ohms for the PT-1800, and 750W per channel into 8 ohms, 1200W per channel into 4 ohms and 1500W per channel into 2 ohms for the PT-2400. In series-mono mode (bridged), the PT-1800 will deliver 1800W into 8 ohms and 2200W into 4 ohms, and the PT-2400 will deliver 2400W into 8 ohms and 3000W into 4 ohms.

PT-1800/PT-2400 Features:

- Left and right detented level controls
- XLR and barrier strip inputs
- Switch configurable XLR (Pin 2/Pin 3 High)
- Series Mono Switch
- Dual Mono Switch
- 5-way speaker binding post outputs
- Chassis/Signal ground lift
- Dual channel 7-segment LED display
- Fully modular dual monaural design
- Positive locking detachable dual AC line cords
- Triac regulated primary voltage
- Triple-rail power supply for increased efficiency
- Remote sequential power On/Off

Protection Circuitry:

- Thermal
- Short Circuit
- Excessive High Frequency
- DC Offset
- Over-Voltage
- Clipping Eliminator (switchable)
- Separate L/R AC Line Fuses

Variations From Previous Carver Professional Amplifiers:

Input Grounding — The PT-1800/PT-2400 amplifiers employ a new input grounding scheme. Pin 1 of the XLR and GND of the barrier terminal are connected to chassis ground rather than to signal ground as in previous Carver Professional amplifiers. This new scheme will reduce noise caused by induced ground currents in unbalanced and balanced systems where Pin 1 may not be lifted. This grounding method will also improve RFI immunity.

Modularity — The PT-1800/PT-2400 are built in modular form. They are comprised of two power supply modules, two amplifier modules, an output board, an input board and a display board. The easy removal of the modules makes servicing of this unit fast and convenient. Modularity also promotes ease of manufacturability, where the subassemblies (modules) may be independently put together and tested.

Protection — The protection mechanisms employed are carefully designed to provide uninterrupted operation. The unique short circuit protection utilizes input compression to keep the output transistors within their Safe Operating Area (SOA) parameters. With this protection system the unit will never shut down into low impedance loads. With any load impedance less than 2 ohms, input compression will occur to limit the peak power and hold the output transistors within their SOA.

CMRR — Common Mode Rejection has been significantly improved to -70dB. This will reduce the need for external input transformers where long input lines are required. This is achieved with precision matching resistors on the differential input and a high frequency trim capacitor to maintain -70dB rejection at 20kHz. 1kHz rejection is typically >-90dB.

Noise — A major effort was made to insure that power supply noise is very low both on the AC line and at the amplifier outputs. AC line noise is reduced by better line filtering (1 mH input choke) on both power supplies. Amplifier output noise is reduced by incorporating the amplifier voltage gain on the input board, which is well shielded from the power transformers.

Low Load Impedance Operation — The design of the output stage is unique in that it has very high current gain and maintains the efficiency of a 3 stage power supply. The high current single output stage yields equal dissipation in the linear output transistors regardless of the voltage and current amplitude or phase. This means the amplifier will have excellent current gain and linearity into highly reactive or low impedance loads. This aspect of performance is something that normal specifications do not reveal.

Detachable Linecords — Some of the advantages of using two linecords are:

- 1) The amplifier can be fully disconnected from the rack and the unit removed or installed without any "wrestling" with power cords.
- 2) If there exists a limited AC main amperage capacity (as there can be in older, smaller venues), it is possible to run the amplifier on different circuits with two linecords.
- 3) Two AC cords will make it unnecessary to rewire AC distribution systems in racks already set up for Carver PM-1200 or PT-1250 power amplifiers.
- 4) A single 12/3 AWG power cord is very stiff and not very manageable.
- 5) Two 16/3 AWG cords can use normal North American outlets (15 amp).
- 6) European amplifiers can be quickly converted with cords that have the IEC connector.
- 7) The positive locking feature insures against accidental disconnects.
- 8) The linecord exits at a right angle to minimize rack depth.

Cooling — The PT-1800/PT-2400 amplifiers use a quiet reliable high CFM fan. Approximately 80% of the air flow is down the heatsink and 10% to either side to provide cooling for the power supply components. The variable speed fan runs off either channel's power supply, whichever channel is being driven the hardest. If the rear of the chassis reaches approximately 60° C., the fan switches to a continuous high speed.

Dual Power Supplies — This feature makes these amplifiers usable even if one channel should fail. Channel independent power switches, fuses, and linecords make a unit two completely independent amplifiers in one package.

Over-Voltage Protection — The PT-1800/PT-2400 employ secondary over-voltage protection systems that will insure that the amplifier and power supply components never see excessive DC voltages. An amplifier configured for 120VAC could accidentally be plugged into AC voltages as high as 270 Volts AC line and not fail. The clip LEDs will inform the user/installer of an over-voltage problem. Other amplifiers do not provide this kind of protection.

Sequencing — The PT-1800/PT-2400 may be sequenced on and off with other Carver amplifiers. There is one sequence circuit per channel. The reason two circuits were provided is to allow the user to remotely power up and down each channel independently. This feature will be useful in a variety of installations and is unique to Carver.

Configuration Switches — Recessed switches provide XLR polarity, Clipping Eliminator, Series Mono and Dual Mono functions. A screw mount clear cover plate can be added to prevent tampering.

Mechanical Integrity — The chassis of this unit has been carefully designed to support the weight of the power transformers and heatsinks. The internal power supply brackets also add rigidity to the unit when the top cover is installed. The modularity concept accommodates a minimum of chassis mounted and "hard to get at" components. Slots in the rear supports allow the amplifier to be supported in the rear when slid into a rack.

SECTION 3

SPECIFICATIONS

Specifications for the PT-1800 Magnetic Field Power Amplifier

Power Output:

Continuous Average Output Power, both channels driven:

600 watts per channel into 8 ohms from 20 Hz to 20 kHz, with no more than 0.5% THD
900 watts per channel into 4 ohms from 20 Hz to 20 kHz, with no more than 0.5% THD
1100 watts per channel into 2 ohms from 20 Hz to 20 kHz, with no more than 0.5% THD

Bridged-mono (series) operation:

1800 watts into 8 ohms from 20Hz to 20 kHz, with no more than 0.5% THD
2200 watts into 4 ohms from 20Hz to 20 kHz, with no more than 0.5% THD

Power at Clipping, both channels driven:

740 watts per channel into 8 ohms at 1 kHz
1120 watts per channel into 4 ohms at 1 kHz

Dynamic Headroom:	1.2dB @ 8 ohms 1.3dB @ 4 ohms
Frequency Response:	20Hz to 20kHz (+0, - 1.0dB)
Crosstalk:	>60dB, 100Hz-10kHz
Output Impedance:	.035 ohms
Damping Factor:	Greater than 200 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 71mV for 1W output into 8 ohms at 1kHz
Gain:	32dB (+/- 0.5dB)
Input Overload:	+15dBu
IM Distortion:	Less than 0.1%
THD:	Less than 0.5%
Signal-to-Noise Ratio:	-105dB A-weighted, referenced to rated power -77dBW A-weighted, referenced to 1W
Slew Rate:	25V/ μ S
CMRR:	>-70dB at 1kHz
Power Consumption:	1200W per channel at full power into 8 ohms 25W per channel at idle
Power Requirements:	120VAC/60Hz (USA and Canada) Other voltages as required for export
Display:	LED ladder; 7 indicators per channel
Size (H x W x D):	5.25" x 19" x 14.6" 133mm x 483mm x 371mm
Net Weight:	49.0 lbs. (22.2 kg)
Shipping Weight:	55.3 lbs. (25.1 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 PT-2400 Magnetic Field Power Amplifier

Power Output:

Continuous Average Output Power, both channels driven:

750 watts per channel into 8 ohms from 20 Hz to 20 kHz, with no more than 0.5% THD
1200 watts per channel into 4 ohms from 20 Hz to 20 kHz, with no more than 0.5% THD
1500 watts per channel into 2 ohms from 20 Hz to 20 kHz, with no more than 0.5% THD

Bridged-mono (series) operation:

2400 watts into 8 ohms from 20Hz to 20 kHz, with no more than 0.5% THD
3000 watts into 4 ohms from 20Hz to 20 kHz, with no more than 0.5% THD

Power at Clipping, both channels driven:

820 watts per channel into 8 ohms at 1 kHz
1360 watts per channel into 4 ohms at 1 kHz

Dynamic Headroom:	0.5dB @ 8 ohms 1.0dB @ 4 ohms
Frequency Response:	20Hz to 20kHz (+0, - 1.0dB)
Crosstalk:	>60dB, 100Hz-10kHz
Output Impedance:	.035 ohms
Damping Factor:	Greater than 200 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 56mV for 1W output into 8 ohms at 1kHz
Gain:	34dB (+/- 0.5dB)
Input Overload:	+15dBu
IM Distortion:	Less than 0.1%
THD:	Less than 0.5%
Signal-to-Noise Ratio:	-105dB A-weighted, referenced to rated power -77dBW A-weighted, referenced to 1W
Slew Rate:	25V/ μ S
CMRR:	>-70dB at 1kHz
Power Consumption:	1440W per channel at full power into 8 ohms 25W per channel at idle
Power Requirements:	120VAC/60Hz (USA and Canada) Other voltages as required for export
Display:	LED ladder; 7 indicators per channel
Size (H x W x D):	5.25" x 19" x 14.6" 133mm x 483mm x 371mm
Net Weight:	51.5 lbs. (23.4 kg)
Shipping Weight:	57.75 lbs. (26.2 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

DISASSEMBLY INSTRUCTIONS PT-1800/PT-2400

Disassembly Instructions

To Remove Cover:

1. Remove 8 screws from the top, 2 screws on each side (near bottom), and 4 screws along the top of the rear panel.

To Remove Left Power Supply Module (Channel 1):

1. Remove cover as described above.
2. Remove the following connectors from the power supply board. Please note the orientation of the wiring so that you can return all wires to their original positions when reassembled. You can use the right power supply module as a guide for correct connector orientation since it is identical to the left.
J1, J2, J3, J4, J5, J6, WL3, WL4, WL9, WL13.
3. Also remove WL1 and WL2 from the Output Board to facilitate removal of the left power supply module.
4. Remove the cable tie at the left rear corner of the power supply module.
5. Remove CH 1 and CH 2 LEVEL knobs by pulling them straight off their shafts.
6. Turn unit on its left side and remove 4 screws from the bottom panel securing the left power supply module.
7. Carefully pull the module out of the chassis.
8. Remove 4 screws securing front switch panel to the power supply module.

To Remove Right Power Supply Module (Channel 2):

1. Remove cover as described above.
2. Remove the following connectors from the power supply board. Please note the orientation of the wiring so that you can return all wires to their original positions when reassembled. You can use the left power supply module as a guide for correct connector orientation since it is identical to the left.
J1, J2, J3, J4, J5, J6, WL3, WL4, WL9, WL13.
3. Remove J3 and J4 from the Input Board and slip the connectors under the cable tie guide near the large filter capacitors. Also remove J1 from the left power supply board to facilitate removal of the right power supply module.
4. Turn unit on its right side and remove 4 screws from the bottom panel securing the right power supply module.
5. Carefully pull the module out of the chassis.

To Remove Display Board:

1. Remove cover as described above.
2. Remove right power supply module as described above.
3. Remove 4 screws securing front panel/display board assembly to the power supply module.
4. Remove 4 screws securing the display board to the front panel.

To Remove Input Board:

1. Remove cover as described above.
2. Remove right power supply module as described above.
3. Disconnect J1, J2, J3 and J4 from the Input Board.
4. Remove 4 screws on the rear panel securing the XLR connectors.
5. Remove 4 screws securing the shield plate to the input board.
6. Remove 4 hexagonal standoffs securing the input board to the rear panel. A 1/4" nut driver fits over the standoffs.

To Remove Output Board:

1. Remove cover as described above.
2. Remove left power supply module as described above.
3. Remove screw in upper left corner of output board.
4. Remove 8 nuts securing output binding posts to output board.

To Remove Left Amplifier Module:

1. Remove cover as described above.
2. Remove cable tie securing shielded cables to top of right heatsink.
3. Disconnect J1, J2 and J3 from Input Board. Pull J3 through the cable tie guide and pull wires toward the left side of unit.
4. Disconnect J1, J2 and J6 from the left power supply board.
5. Disconnect WL13 from the right power supply board and fold over to the left side of unit.

6. Disconnect WL1 and WL2 from the Output Board.
7. Remove the screws securing both of the thermal switch retaining brackets to the heatsinks.
8. Turn unit on its right side and remove 3 screws from bottom panel securing the left amplifier module.
9. Lay unit back down and carefully lift straight up on the left amplifier module.

To Remove Right Amplifier Module:

1. Remove cover as described above.
2. Remove cable tie securing shielded cables to top of right heatsink.
3. Disconnect J1, J2, J3 and J4 from Input Board. Pull J3 and J4 through the cable tie guide and pull wires toward the left side of unit.
4. Disconnect J1 from the left power supply board.
5. Disconnect J2, J6 and WL13 from the right power supply board and fold over to the left side of unit.
6. Disconnect WL1 and WL2 from the Output Board.
7. Remove cable ties on each corner of the fan.
8. Remove the screws securing both of the thermal switch retaining brackets to the heatsinks.
9. Turn unit on its left side and remove 3 screws from bottom panel securing the right amplifier module.
10. Lay unit back down and carefully lift straight up on the right amplifier module.

SECTION 5

CALIBRATION PROCEDURE PT-1800

High Rail Voltage Adjust

With no signal and no load:

1. Adjust R25 on each Power Supply board for $\pm 118\text{VDC}$ ($\pm 0.5\text{V}$) when measured at the large filter capacitors.
Note: Since the filter capacitors on Channel 2 are hard to reach, the high rail voltage can be measured at J2-1 and J6-1 as shown below.

2. Verify the following DC voltages on the Power Supply board:

J2-1	+118V ($\pm 0.5\text{V}$)
J2-2	+75V ($\pm 1.5\text{V}$)
J2-3	+31V ($\pm 1.5\text{V}$)
J2-4	+11.4V ($\pm 0.75\text{V}$)
J6-1	-118V ($\pm 0.5\text{V}$)
J6-2	-75V ($\pm 1.5\text{V}$)
J6-3	-31V ($\pm 1.5\text{V}$)
J6-4	-11.4V ($\pm 0.75\text{V}$)

Idle Bias Adjust

With no signal and no load:

1. Adjust R56 on each amp board for 3.0mV ($\pm 1.0\text{mV}$) across TP1 and TP3 (1.5mV between TP1/TP2 and 1.5mV between TP2/TP3).

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 PT-2400

High Rail Voltage Adjust

With no signal and no load:

1. Adjust R25 on each Power Supply board for $\pm 122\text{VDC}$ ($\pm 0.5\text{V}$) when measured at the large filter capacitors.
Note: Since the filter capacitors on Channel 2 are hard to reach, the high rail voltage can be measured at J2-1 and J6-1 as shown below.

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

J2-1	+122V ($\pm 0.5\text{V}$)
J2-2	+75V ($\pm 1.5\text{V}$)
J2-3	+29V ($\pm 1.5\text{V}$)
J2-4	+11.4V ($\pm 0.75\text{V}$)
J6-1	-122V ($\pm 0.5\text{V}$)
J6-2	-75V ($\pm 1.5\text{V}$)
J6-3	-29V ($\pm 1.5\text{V}$)
J6-4	-11.4V ($\pm 0.75\text{V}$)

Idle Bias Adjust

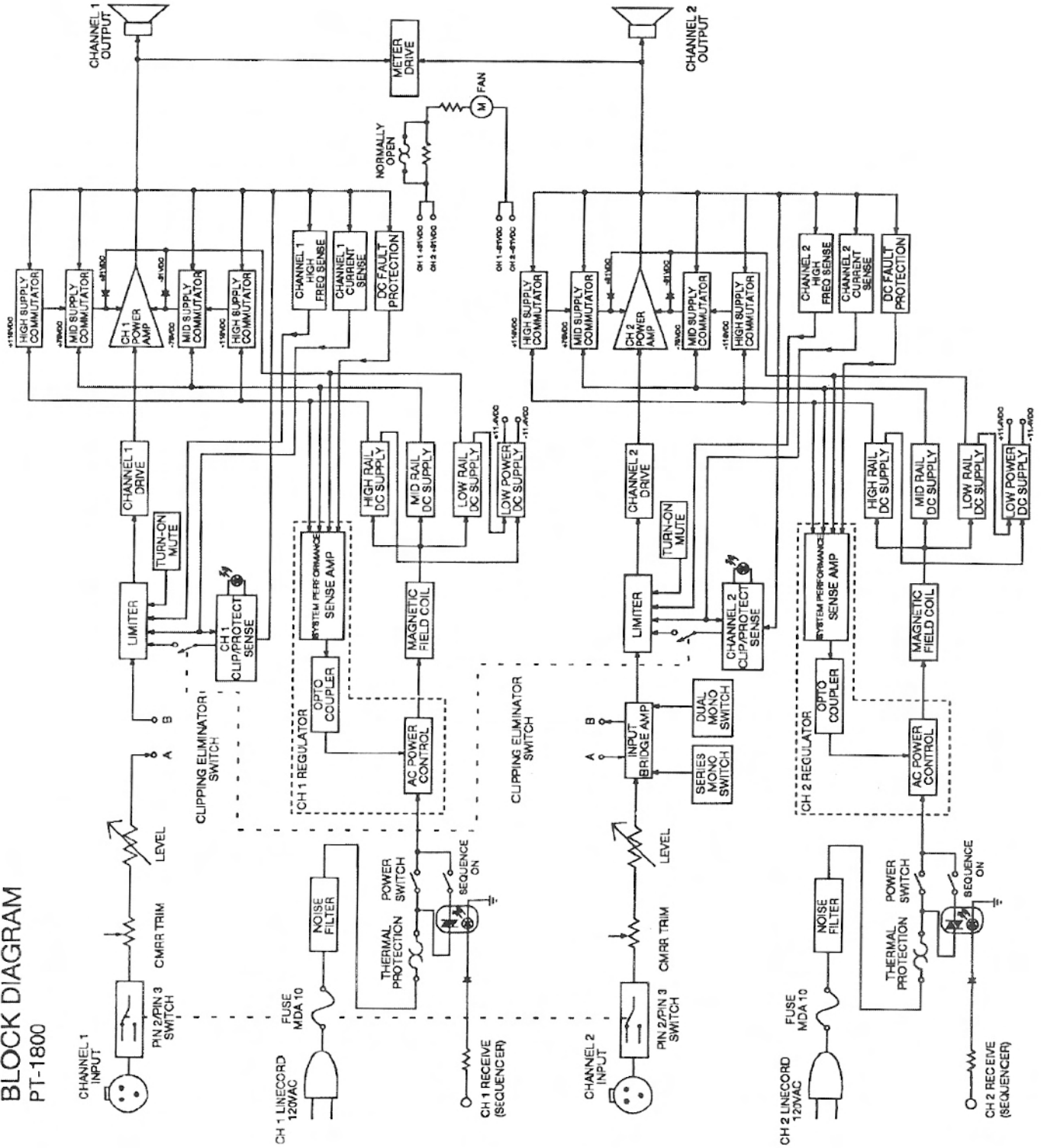
With no signal and no load:

1. Adjust R56 on each amp board for 3.0mV ($\pm 1.0\text{mV}$) across TP1 and TP3 (1.5mV between TP1/TP2 and 1.5mV between TP2/TP3).

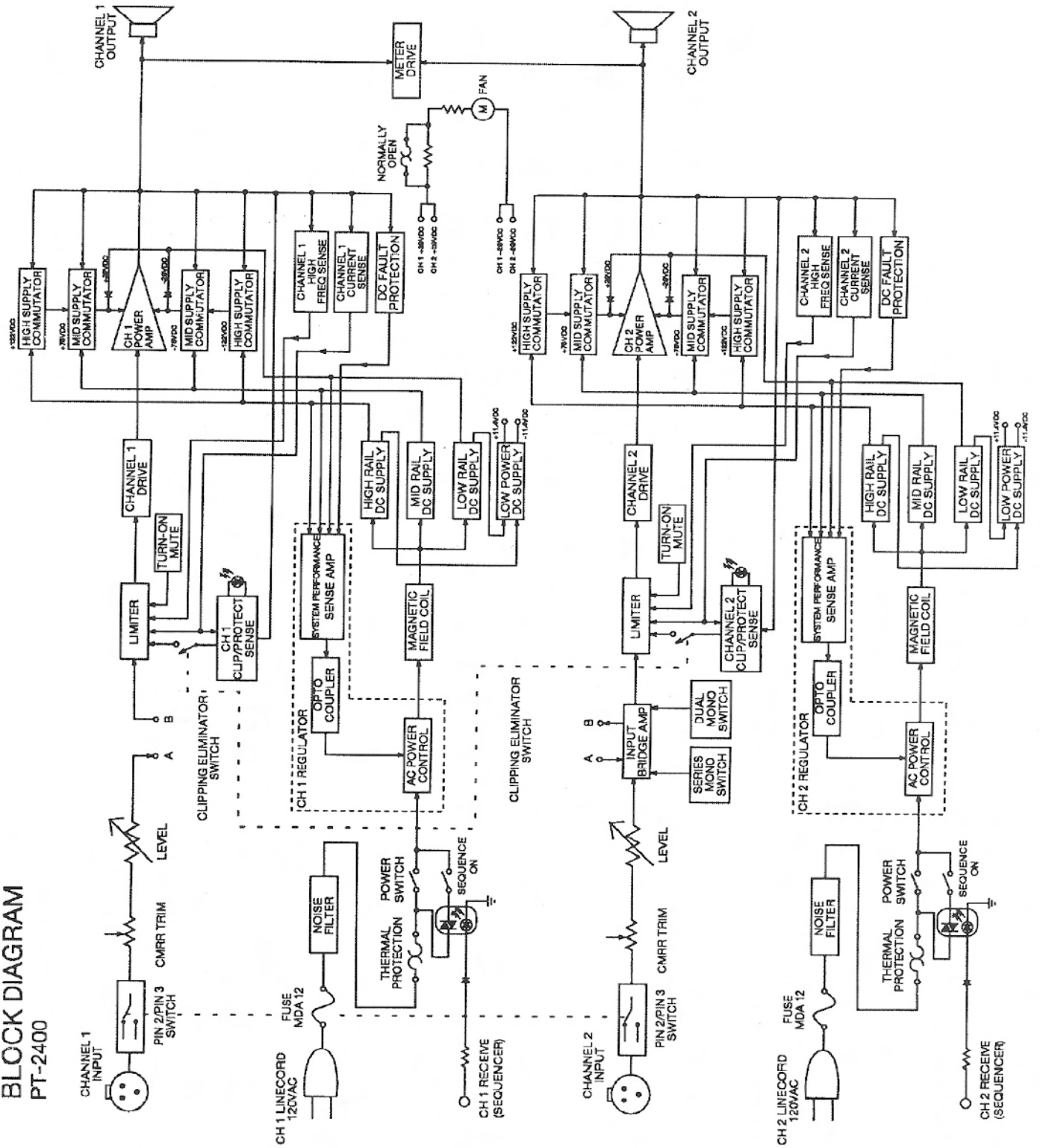
Note: This adjustment should be made after the amplifier has been on approximately two minutes, while it is still cool. After the amplifier warms up, the bias reading may be higher.

SECTION 6 BLOCK DIAGRAMS

**BLOCK DIAGRAM
PT-1800**



BLOCK DIAGRAM PT-2400



SECTION 7
SCHEMATICS AND LAYOUTS

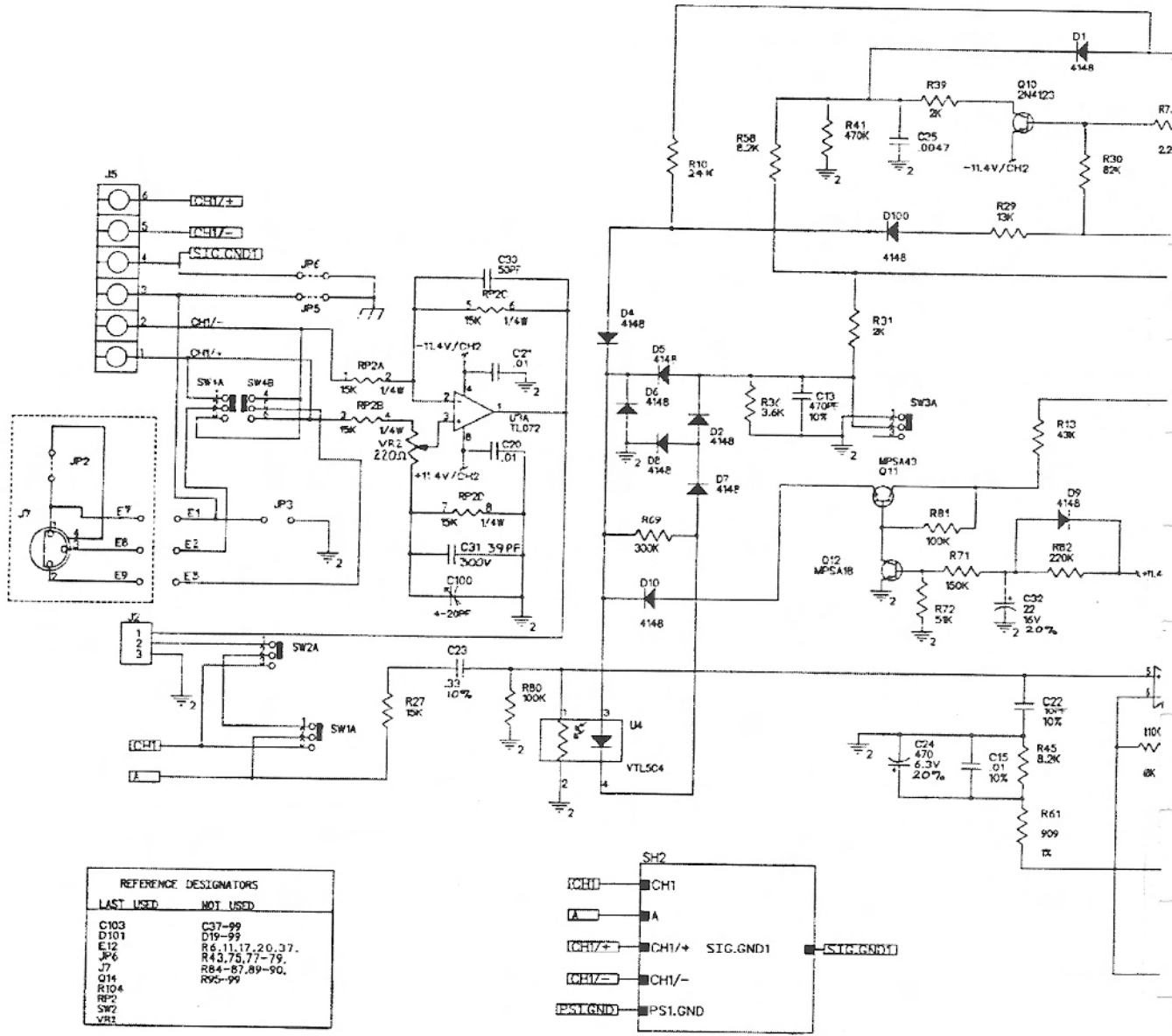
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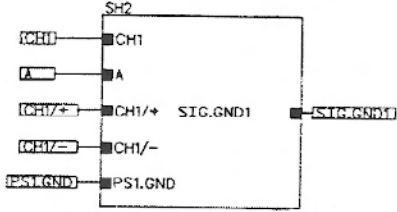
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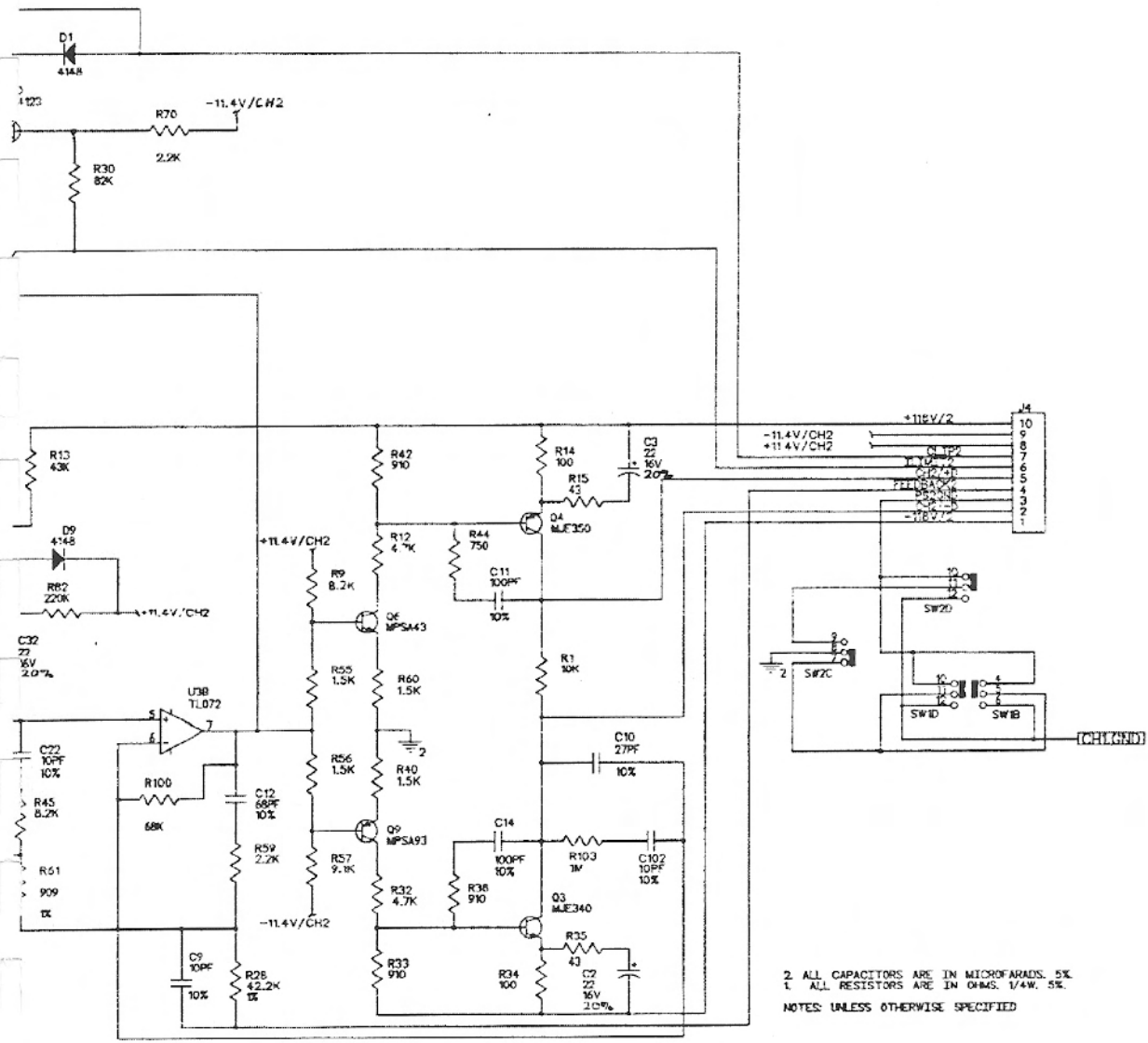
B

A



REFERENCE DESIGNATORS	
LAST USED	NOT USED
C103	C37-99
D101	D19-99
E12	R6, 11, 17, 20, 37,
J6	R43, 75, 77-79,
J7	R84-87, 89-90,
Q14	R95-99
R104	
RP2	
SW2	
VR1	





2 ALL CAPACITORS ARE IN MICROFARADS. 5K
 1 ALL RESISTORS ARE IN OHMS. 1/4W. 5%
 NOTES: UNLESS OTHERWISE SPECIFIED

CHANNEL 2

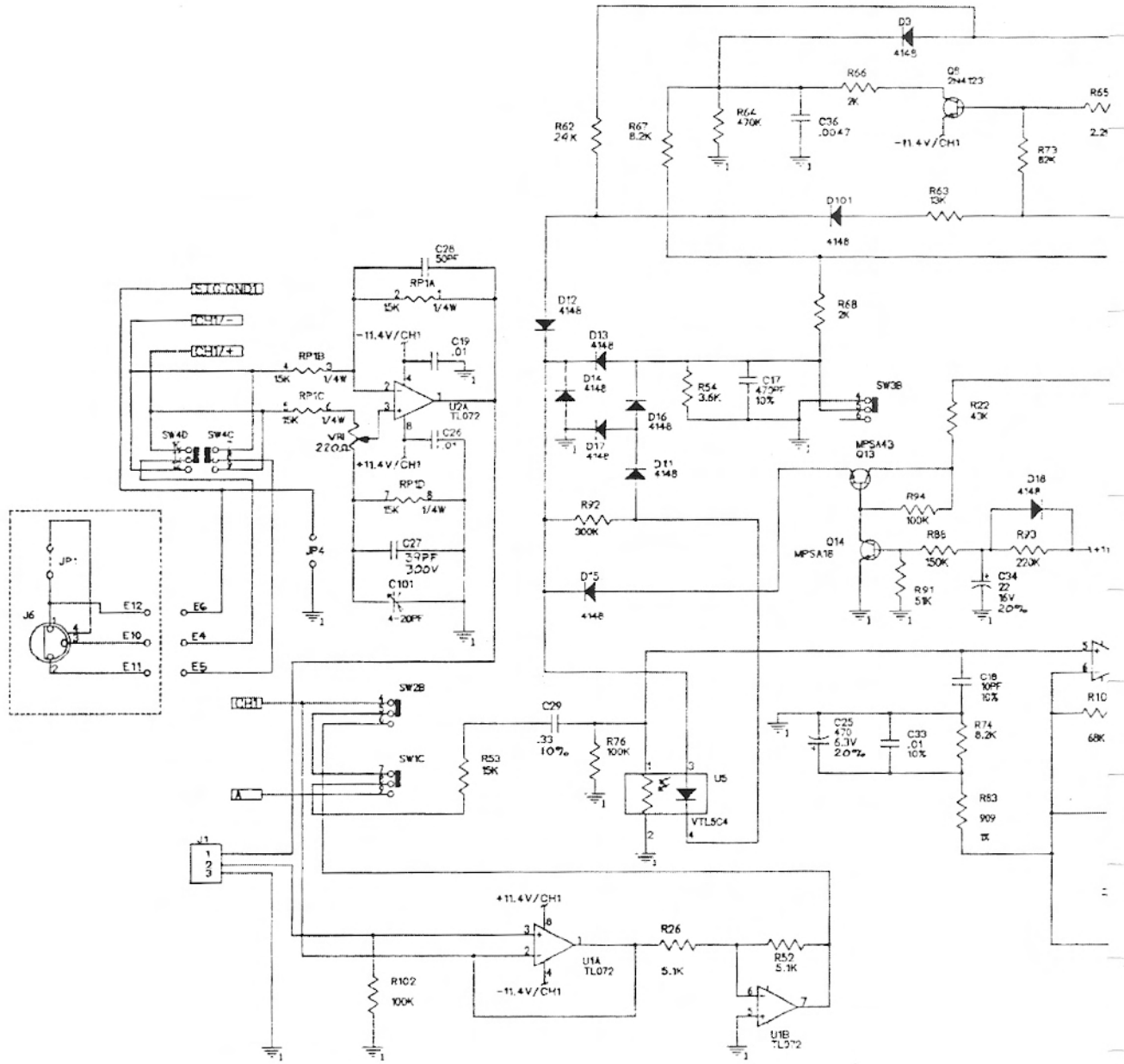
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS: DECIMALS: ANGLES: ± / .XXX ±			CONTRACT NO.		<h1>CARVER</h1>
MATERIAL:			APPROVALS:	DATE:	
FINISH:			DRAWN:		SIZE: D
-01 602-00448-01 PT-1800			CHECKED:	9/91	
NEXT ASSEMBLY: USED DR			ISSUED:	9/91	REV. C
APPLICATION			ENG. D. GRIFFITHS	9/91	
DO NOT SCALE DRAWING			MFG. M. WALTERS	9/91	SHEET 1 OF 2

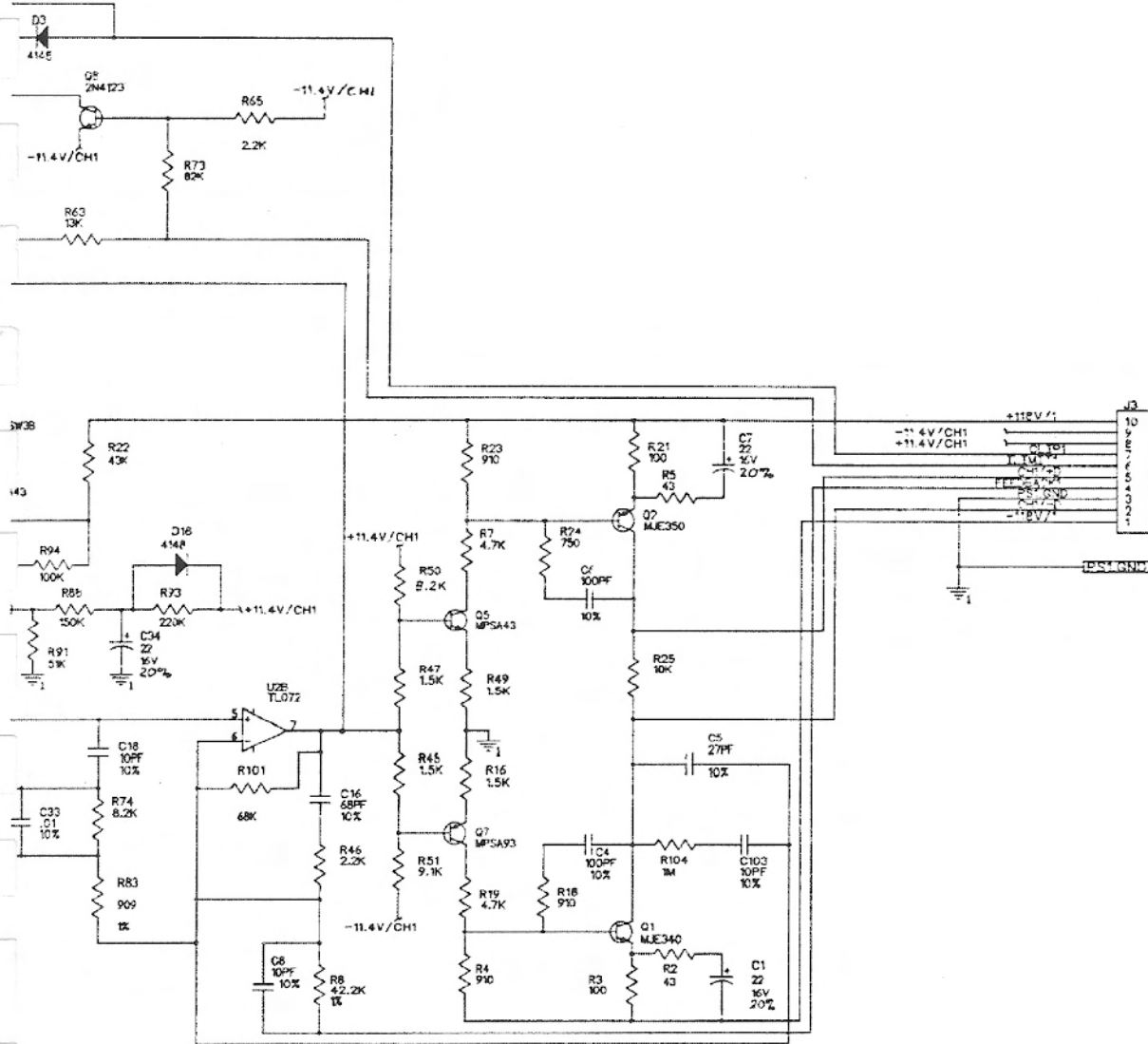
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A





CHANNEL 1

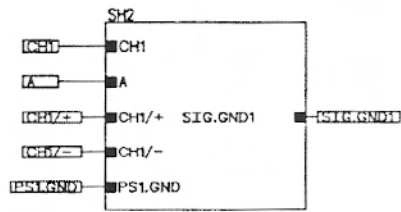
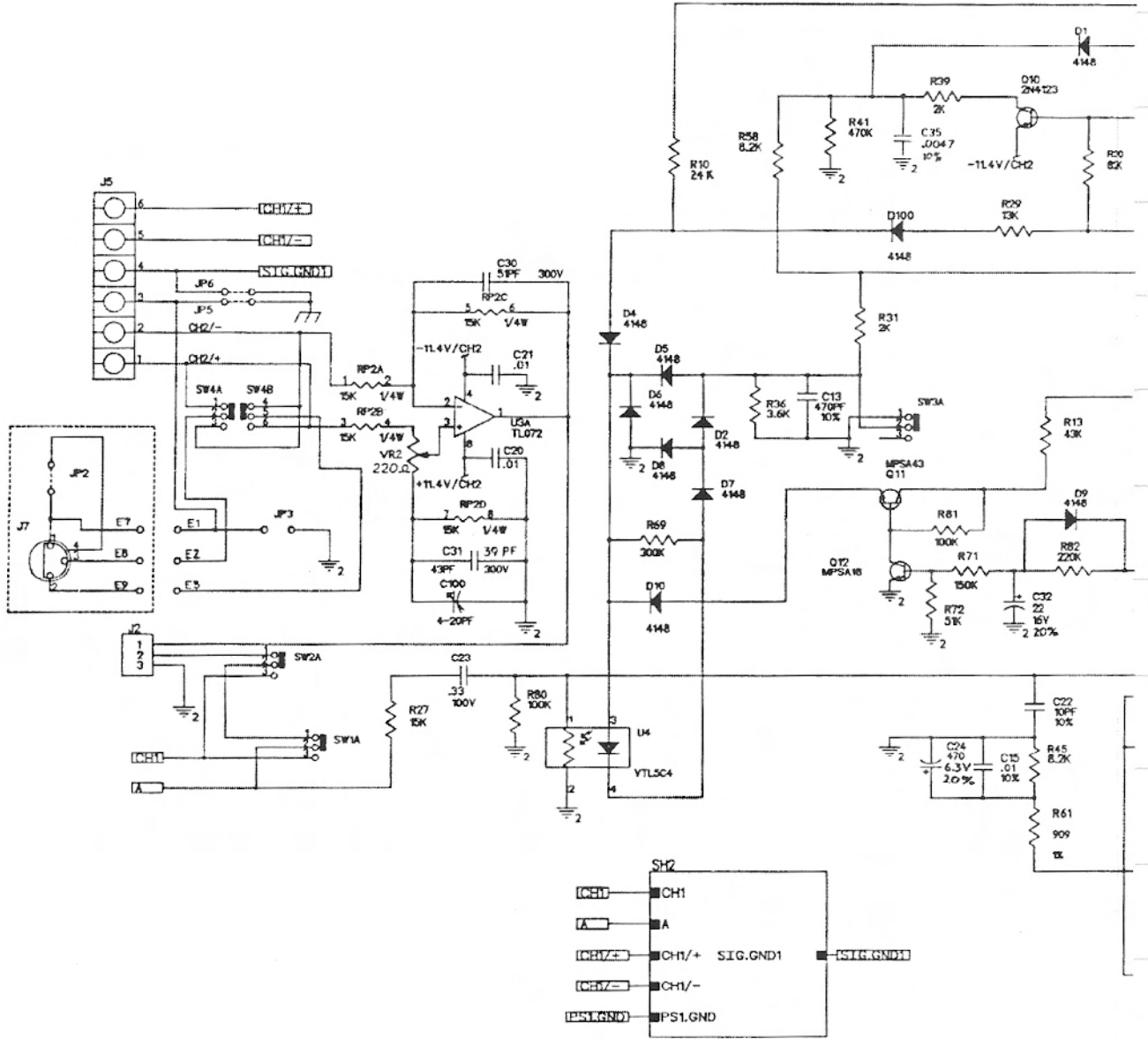
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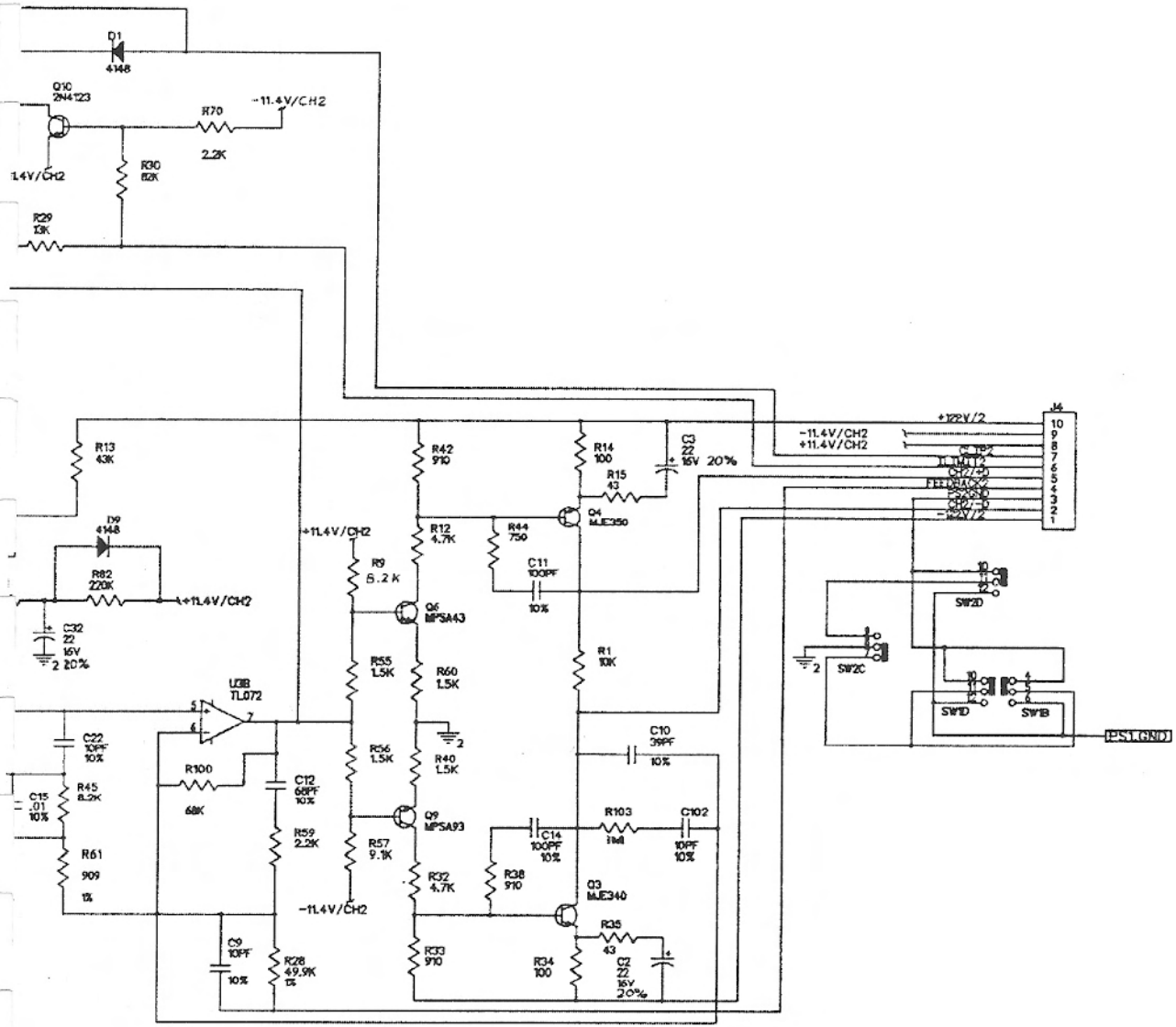
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B

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VR2	
LS	
SW4	
R104	R6,11,17,20,37,43,75,77-79, 84-87,89,90,95-99
RP2	
Q14	
J7	
JP6	
E12	D19-99
D101	C47-99
C103	
LAST USED	NOT USED
REFERENCE DESIGNATORS	



CHANNEL 2

2 ALL CAPACITORS ARE IN MICROFARADS, 5%
1 ALL RESISTOR VALUES ARE IN OHMS, 1/4W, 5%

NOTES: UNLESS OTHERWISE SPECIFIED

.17, .20, .37, .43, .75, .77-79,
.78, .90, .95-99

NOT USED
DESIGNATORS

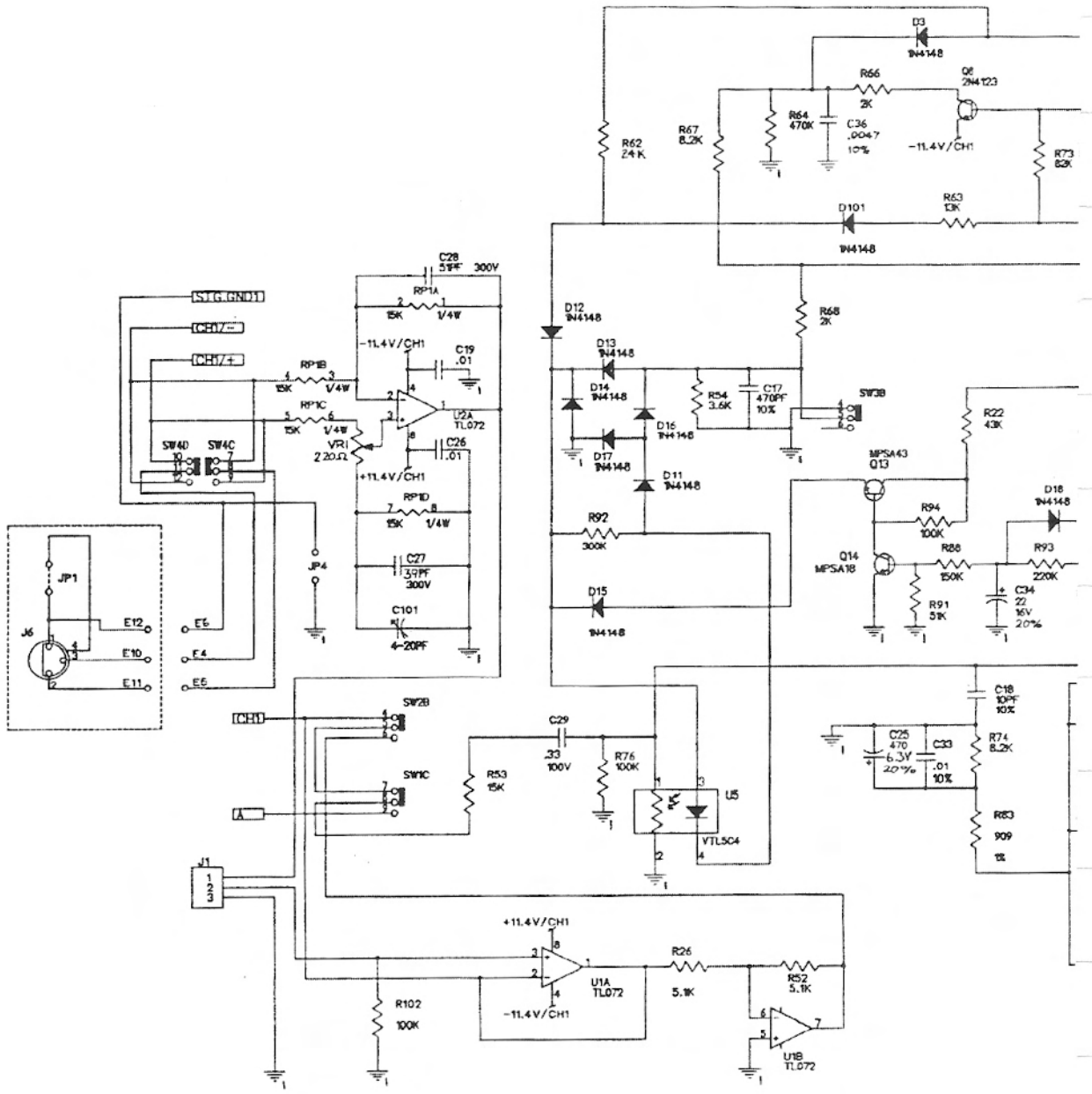
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES ± / .001 ± / .001 ±		CONTRACT NO.:		<h1>CARVER</h1>
MATERIAL:		APPROVALS:	DATE:	
FINISH:		R. PASCO 12/12/90		SCHEMATIC, INPUT BOARD, PT2400
APPLICATION		CHECKED:	2/5/91	
DO NOT SCALE DRAWING		ISSUED:	8/21/91	DWG NO. 605-00448-00 REV. C
		ENG. D. GRIFFITHS	2/5/91	
		SCALE: NONE		SHEET 1 OF 2

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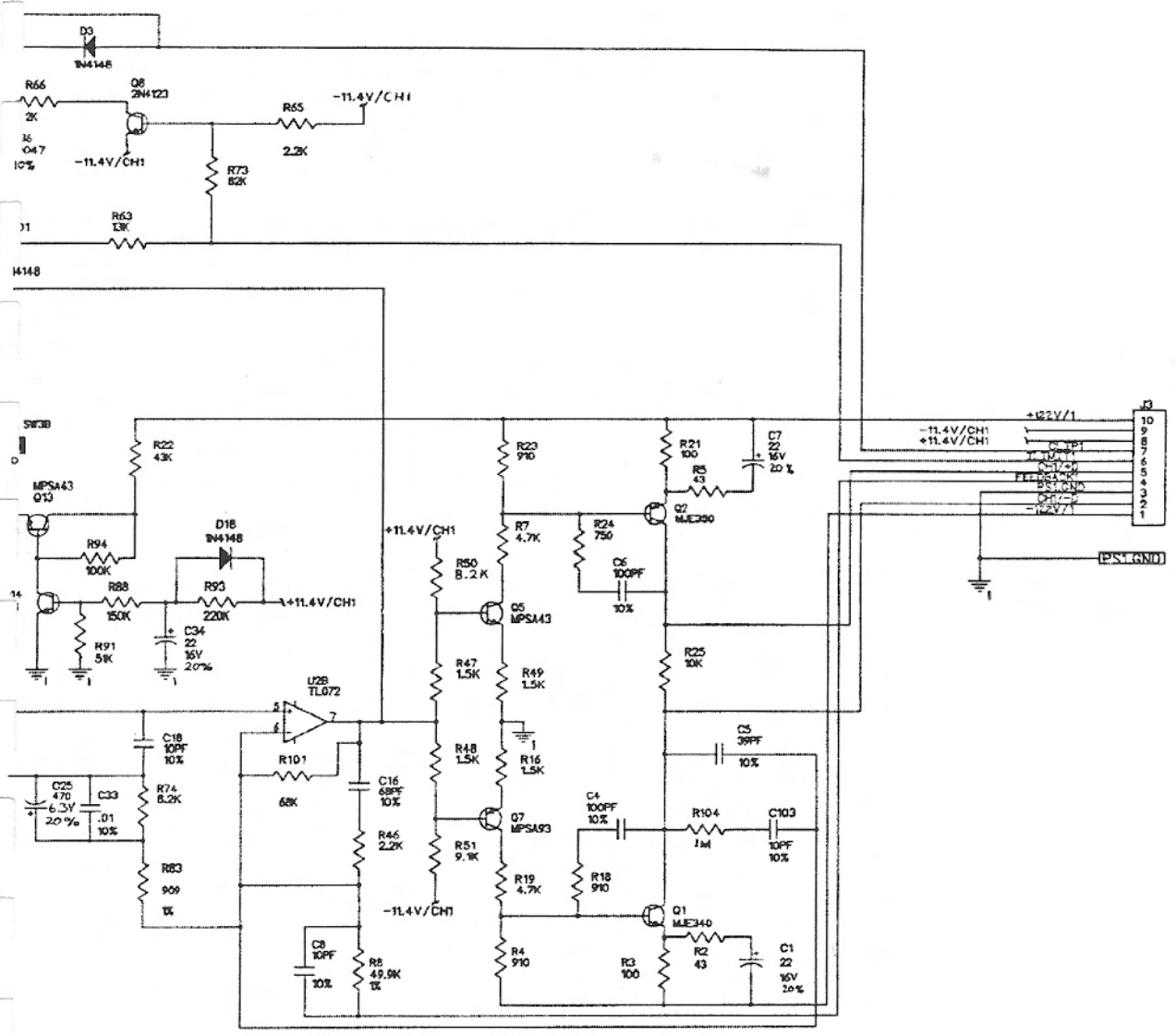
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CHANNEL 1



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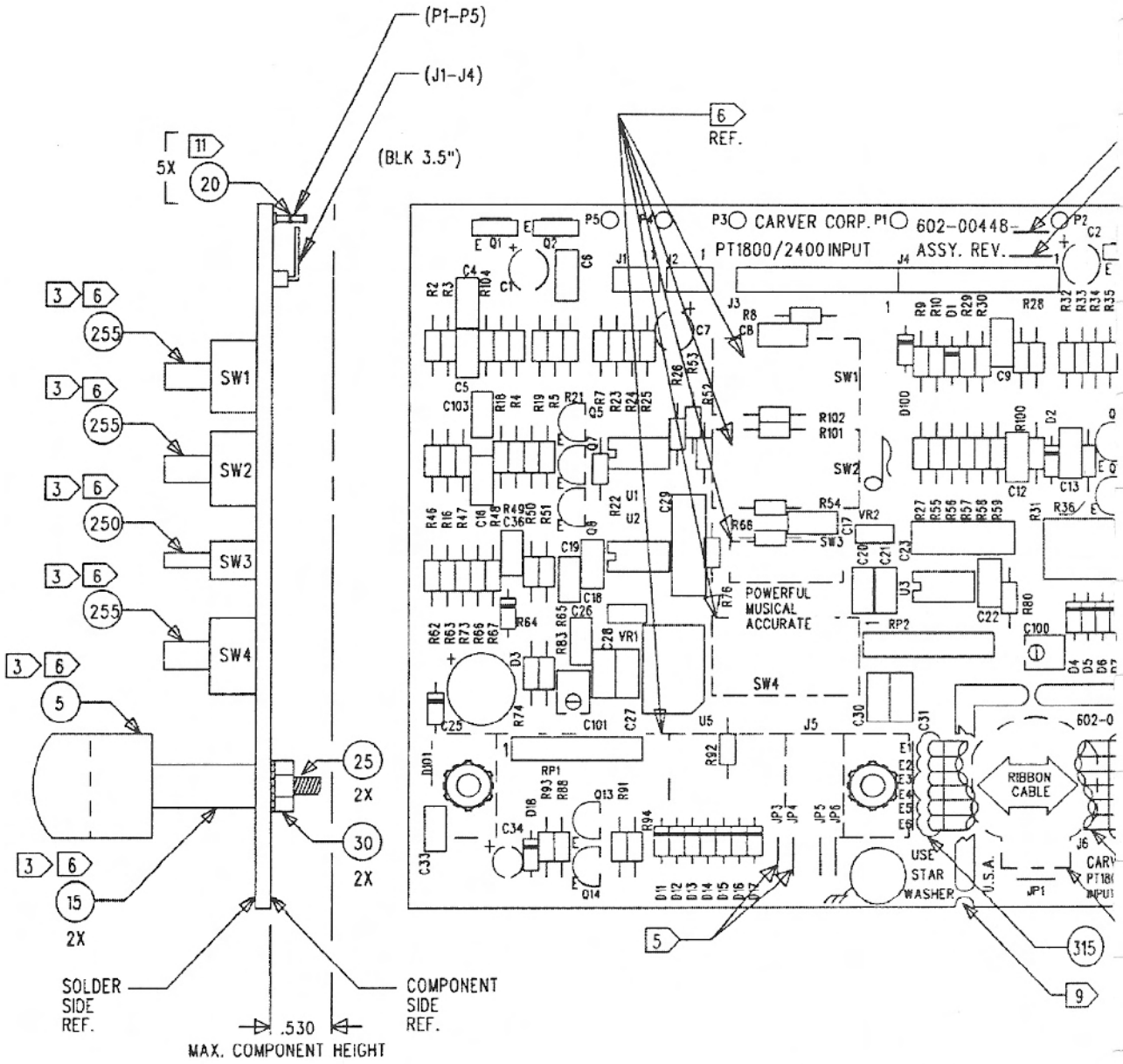
5

D

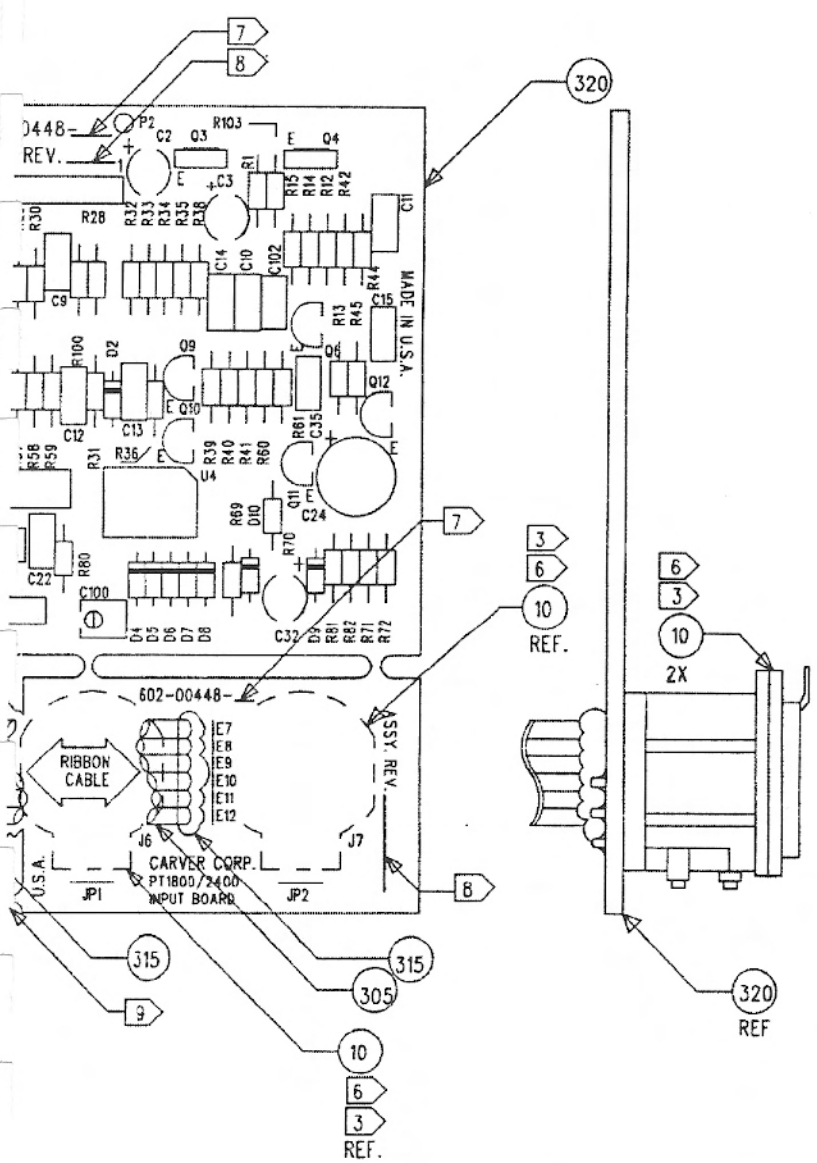
C

B

A



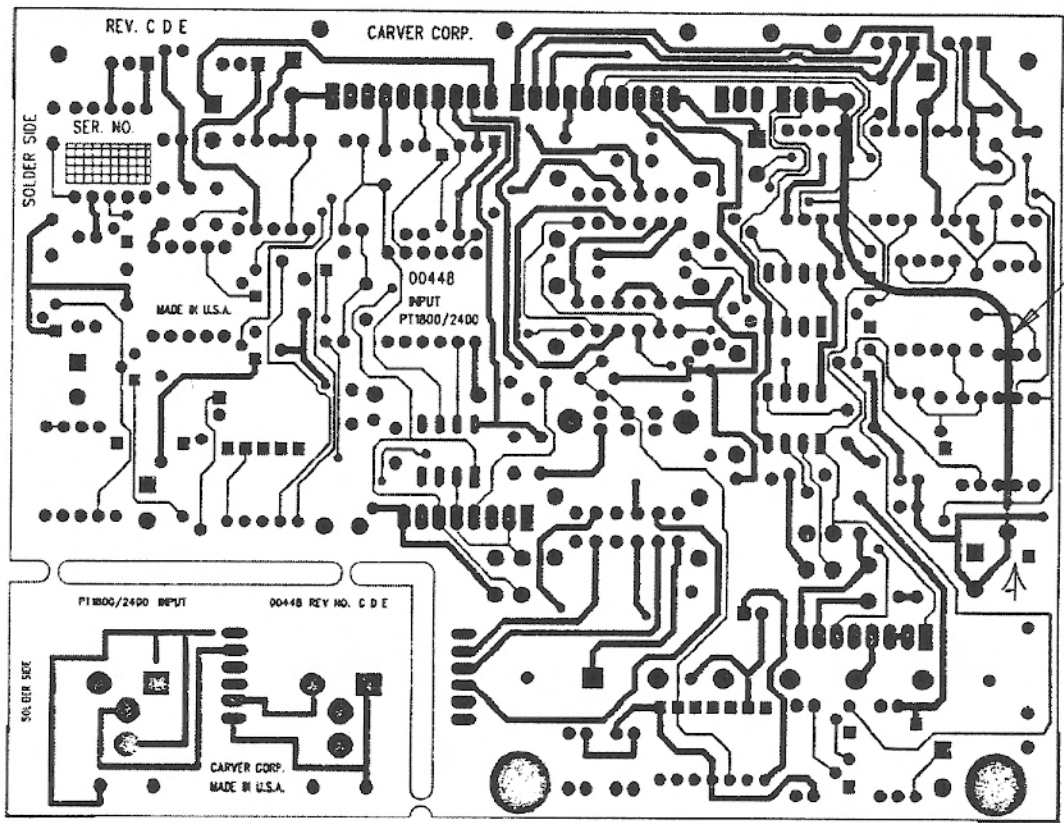
-01 PT1800
-00 PT2400



- 11 SWEDGE IN PRIOR TO SOLDER DIP.
- 10 PRESS FIT PART.
- 9 DO NOT BREAK BOARDS APART UNTIL FINAL ASSEMBLY.
- 8 USING CONTRASTING, NON-CONDUCTIVE INK, MARK ASSY. REV.
- 7 USING CONTRASTING, NON-CONDUCTIVE INK, MARK DASH NO.
- 6 ITEM TO BE MOUNTED ON CIRCUIT SIDE OF PCB AFTER WAVE SOLDER.
- 5 COMPONENT(S) NOT TO BE INSTALLED.
- 4. DELETED
- 3 COMPONENT HOLES TO BE MASKED BEFORE SOLDER DIP.
- 2 ALL ITEMS ON 602-00448-XX PARTS LIST DELETED
- 1 DELETED

NOTES: UNLESS OTHERWISE SPECIFIED.

UNLESS OTHERWISE SPECIFIED INTERPRET DWG PER ANSI Y14.5M-1982 DIMENSIONS ARE IN INCHES		APPROVALS		DATE	<h1 style="margin: 0;">CARVER</h1> <h2 style="margin: 0;">ASSEMBLY, PCB INPUT BOARD, PT2400 /1800</h2>
TOLERANCES		DESIGN	R. PASCO	3/27/91	
FRACTIONS	DECIMALS	CHECKED	B. COLE		
ANGLES	ST. 1 XXX.2	EC	D. GRIFFITHS		
MATERIAL	2	ML			TITLE
PT1800		MTC	M. WALTERS		SIZE
PT2400		DRW	S. WELT		DWG NO.
DO NOT SCALE DRAWING					602-00448-XX
REV STATUS OF SHEETS	SP	7			REV
	REV				J
				SCALE: 2/1	SHEET 1 OF 2



CIRCUIT SIDE

CARVER			
SIZE D	DWG NO 602-00448-XX	REV J	
SCALE 2/1		SHEET 2	

8

7

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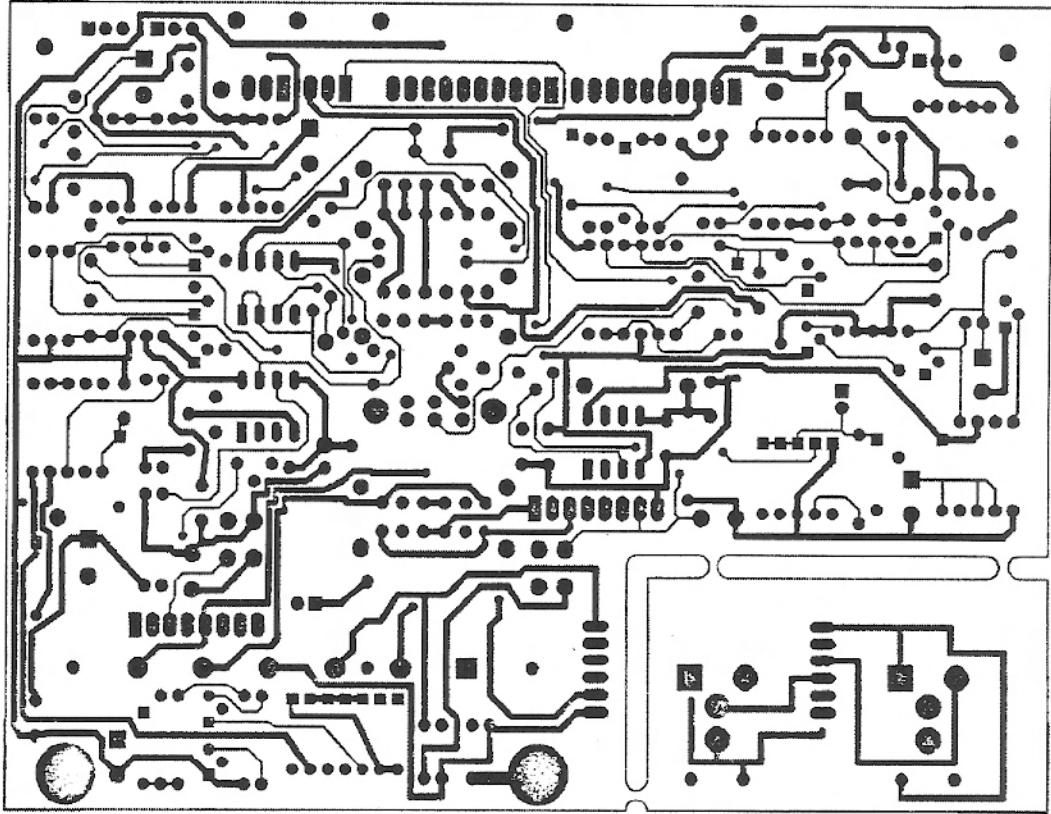
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D

C

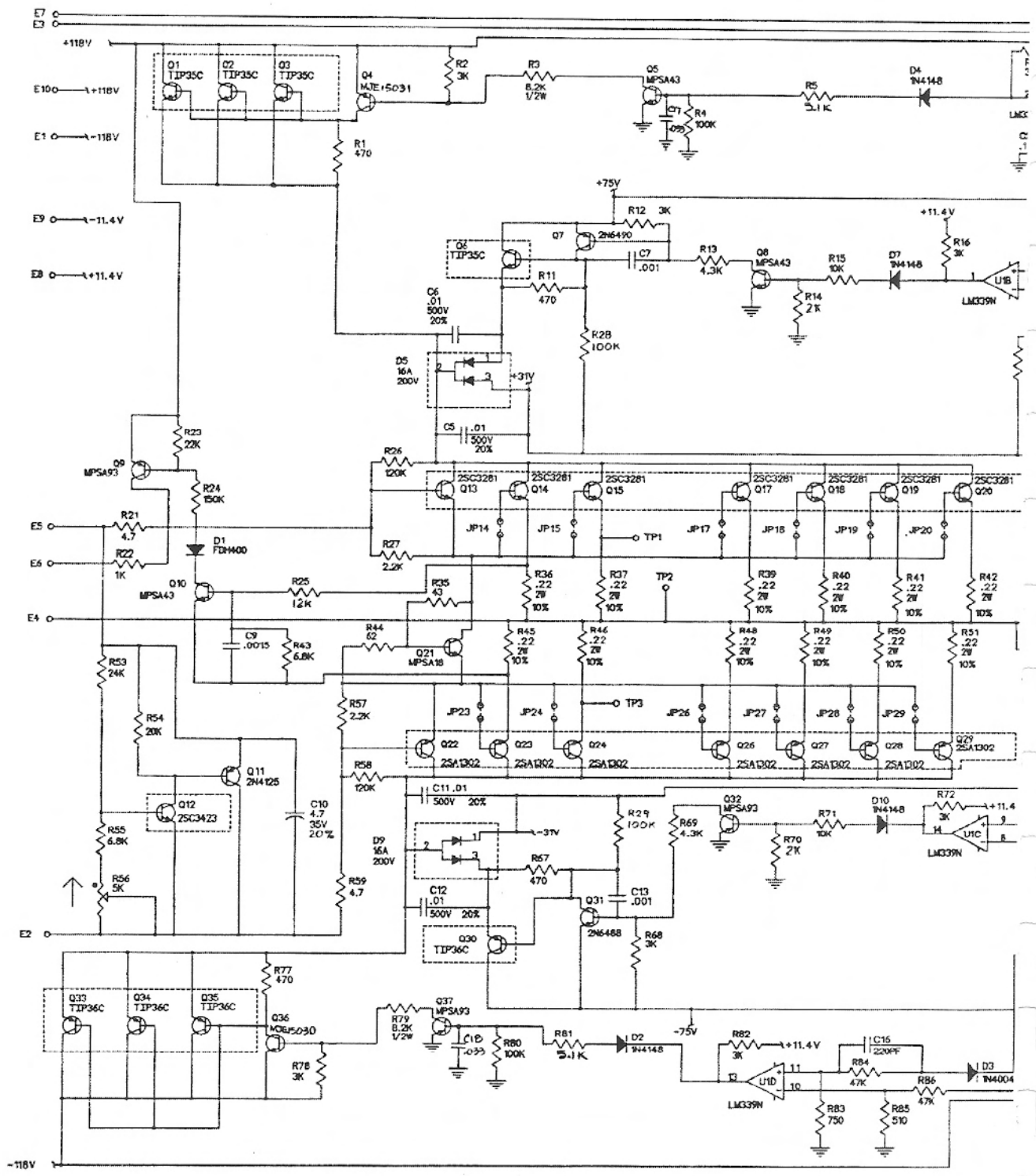
B

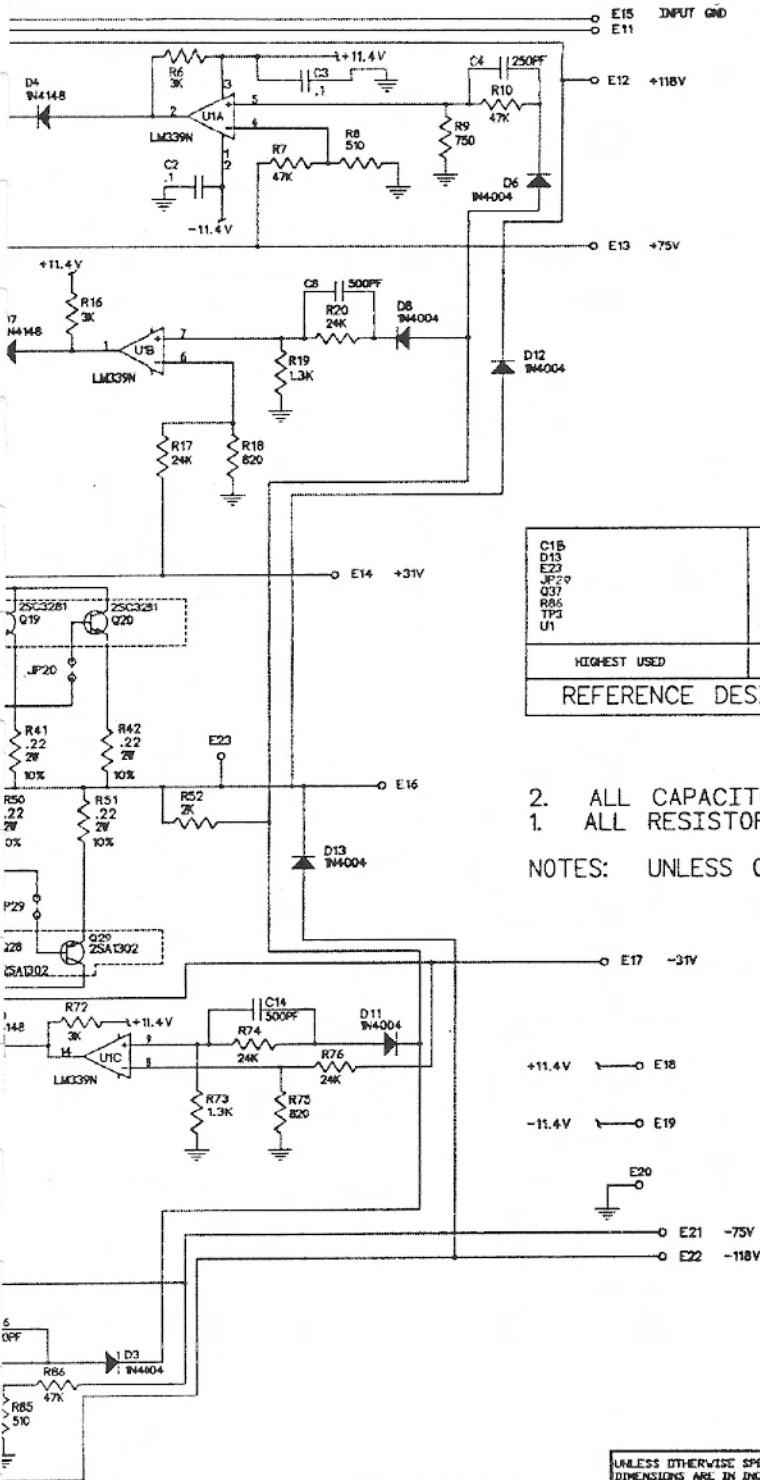
A



COMPONENT SIDE

D
C
B
A





C1B D13 E22 JF19 Q20 R86 TP1 U1	R50-R54, R60-R66 C1, C15
HIGHEST USED	NOT USED
REFERENCE DESIGNATORS	

- 2. ALL CAPACITOR VALUES IN MICROFARADS. 10%.
- 1. ALL RESISTOR VALUES IN OHMS. 1/4W. 5%.

NOTES: UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE FRACTIONS: DECIMALS: ANGLES X / .XXX°			CONTRACT NO.		<h1>CARVER</h1>
MATERIAL:			APPROVALS:	DATE:	
FINISH:			DRAWN: R. PASCO	4/1/91	SCHEMATIC, AMP BOARD, PT1800
-01 602-00408-01 PT1800			CHECKED: B. COTE		
DASH NO. NEXT ASSEMBLY: USED ON:			ISSUED: S. VELIZ		SIZE: D DWG. NO.: 605-00408-01 REV.: E
APPLICATION			ENG.: D. GRIFFITHS		
DO NOT SCALE DRAWING			MFG: M. WALTERS	SCALE: NONE	SHEET 1 OF 1

8

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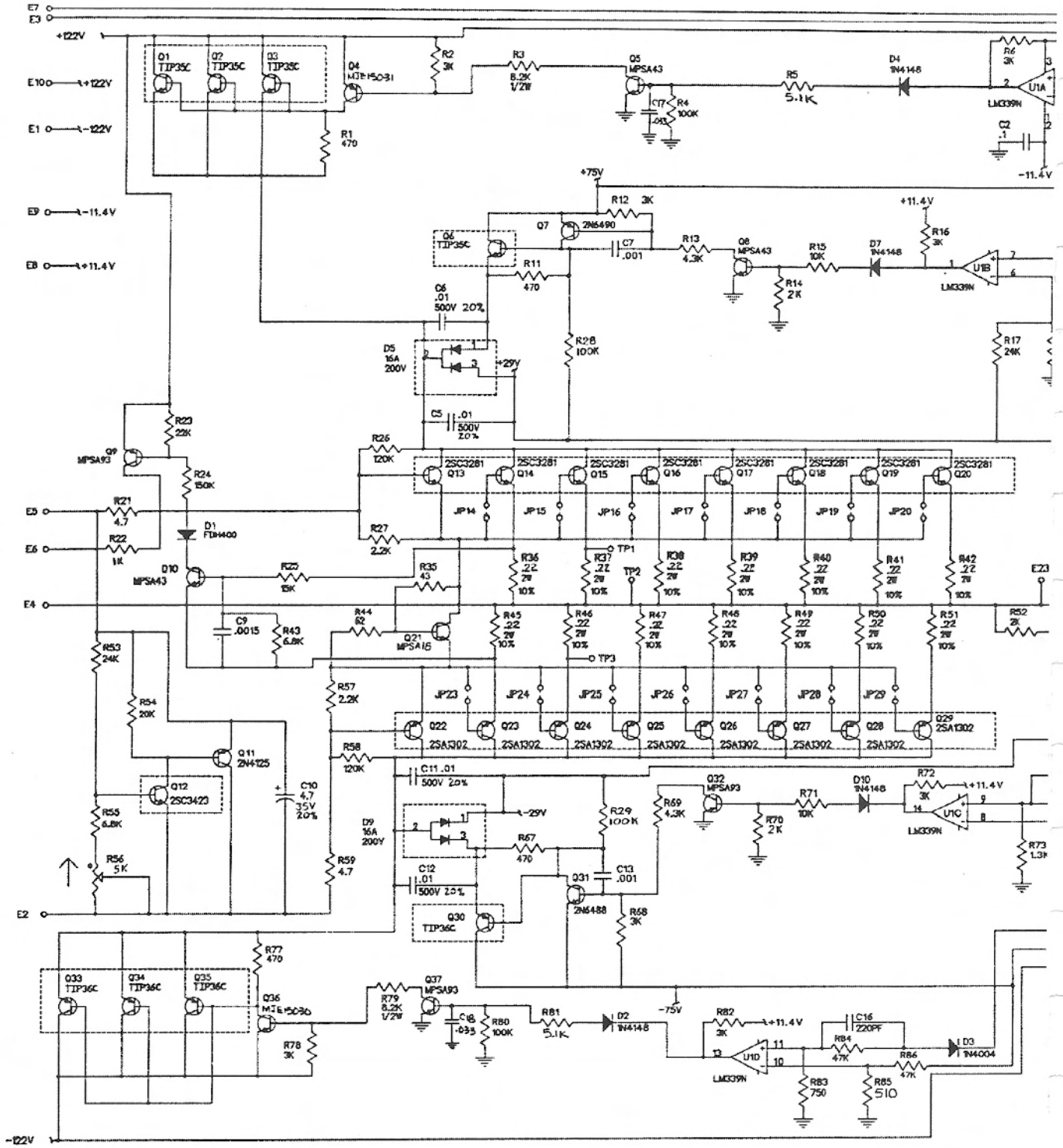
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D

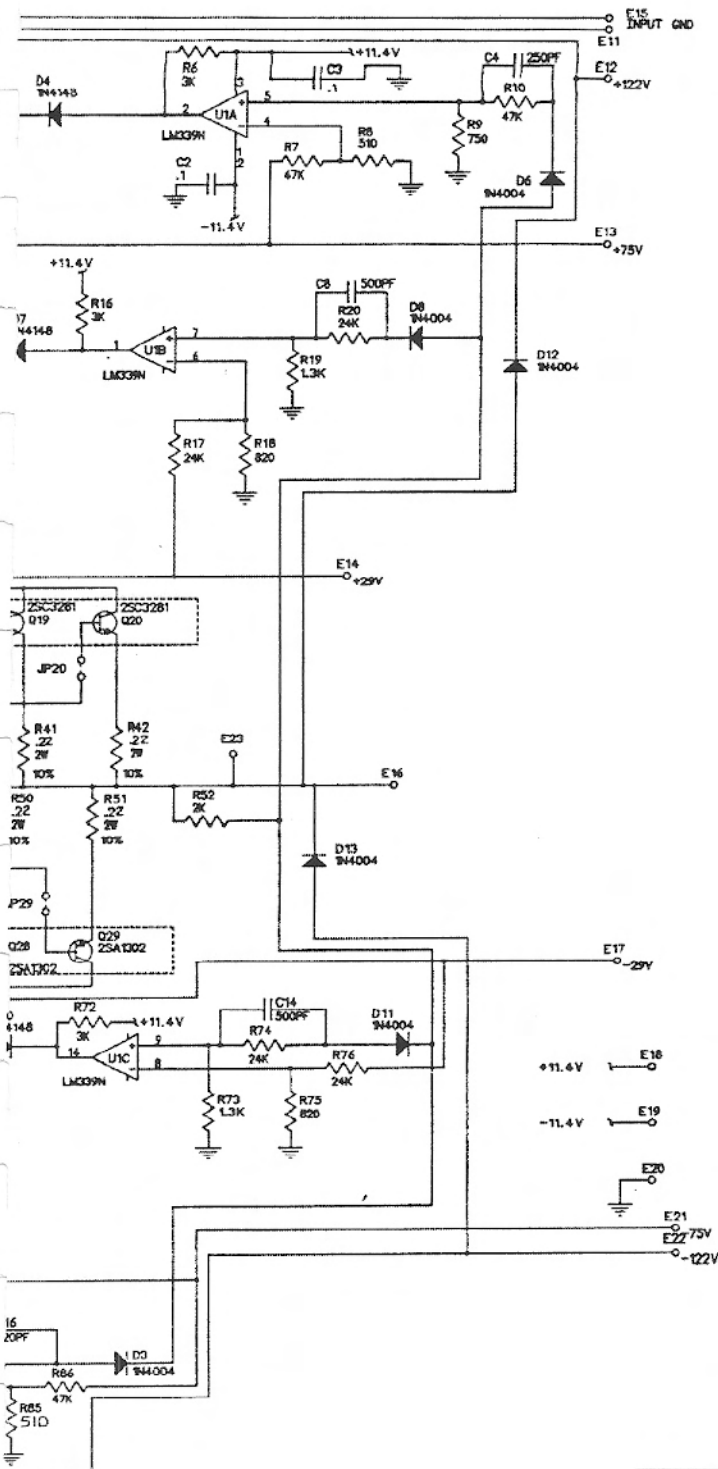
C

B

A



C18	JP1-13, 21, 22
D13	R30-R34, R60-R66
E23	Q1, C15
JP29	
Q37	
R86	
R83	
TP3	
U1	
HIGHEST USED	NOT USED
REFERENCE DESIGNATORS	



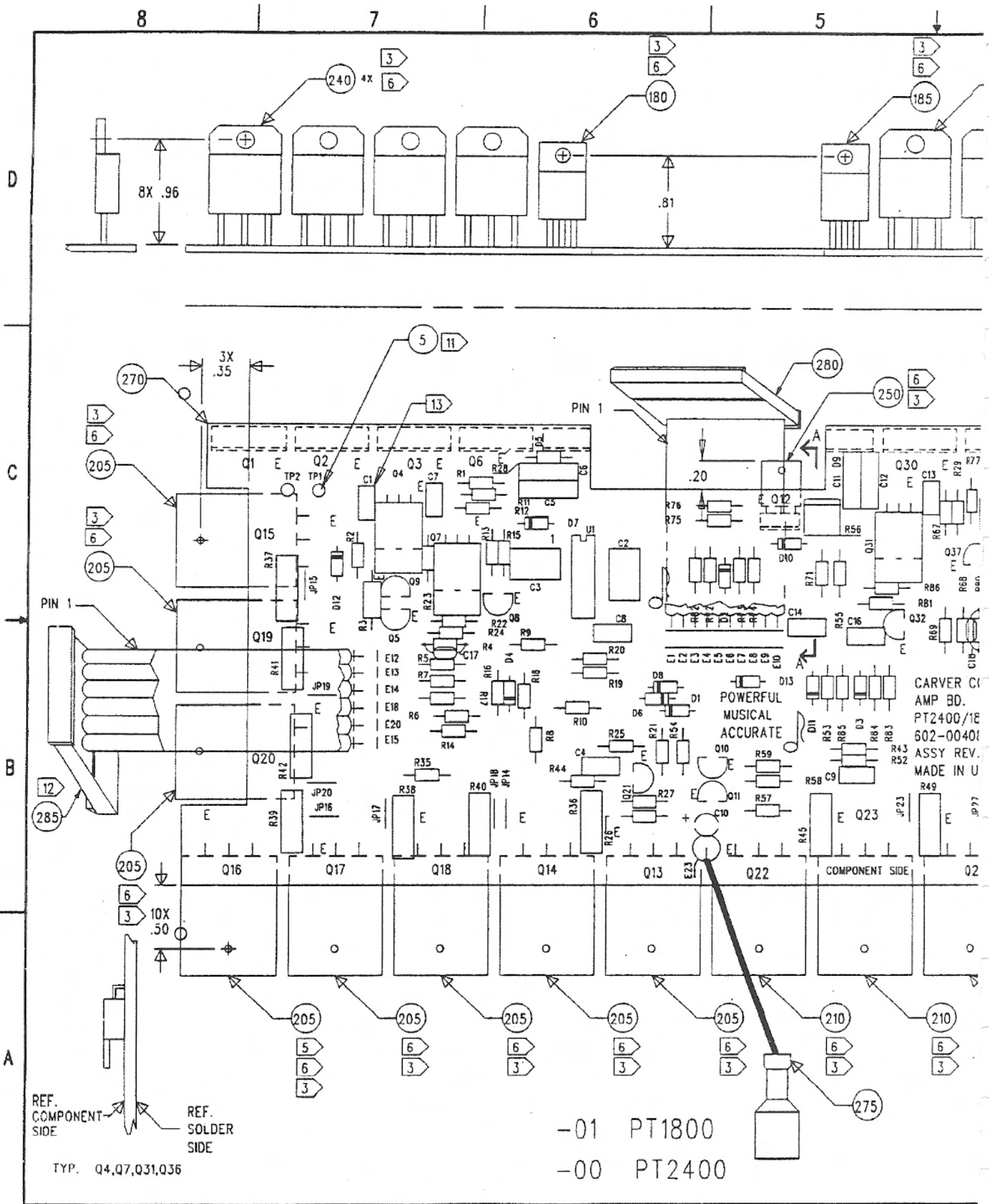
2. ALL CAPACITOR VALUES ARE IN MICROFARADS. 10 ±.
 1. ALL RESISTOR VALUES ARE IN OHMS. 1/4%, 5%.

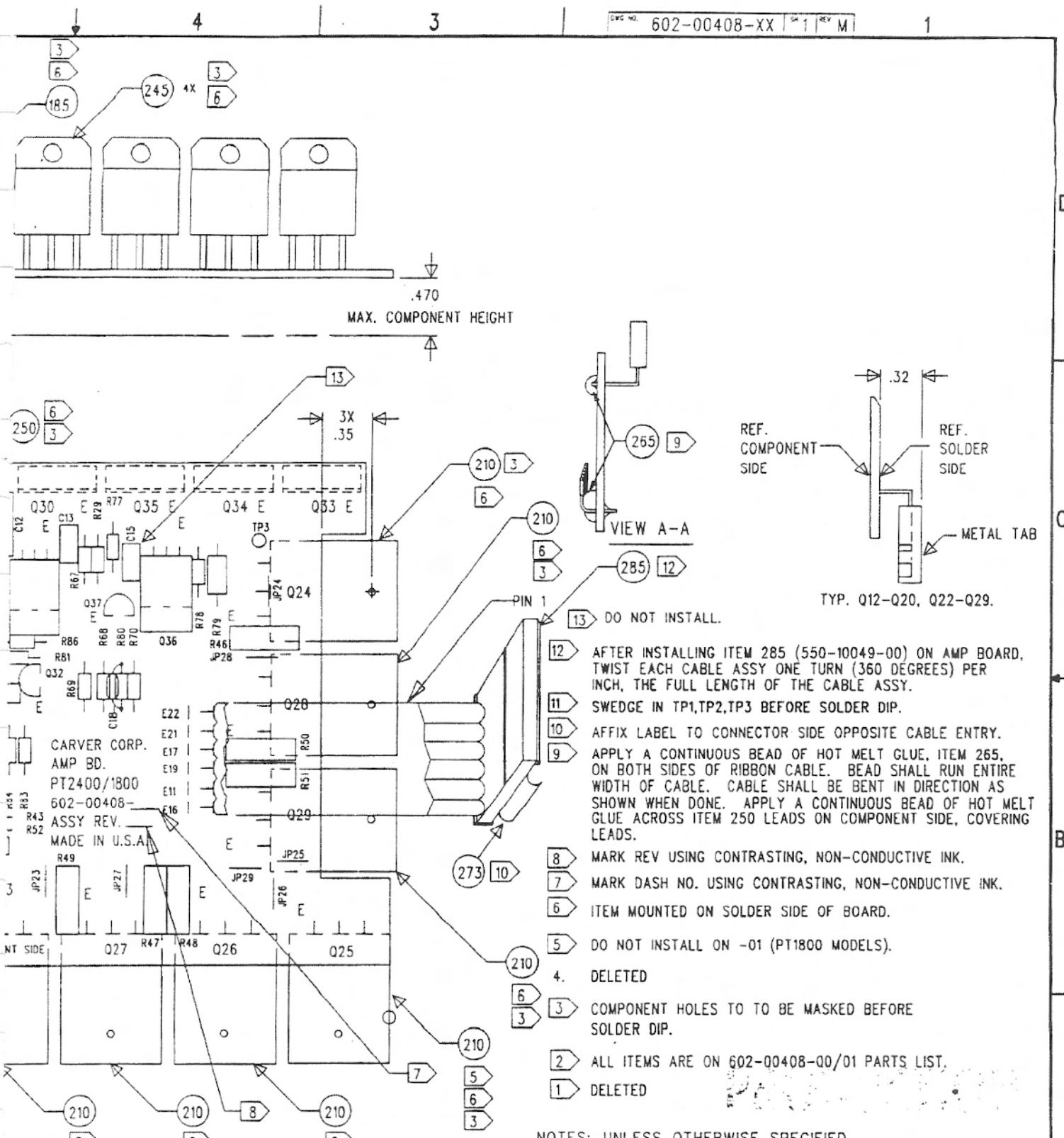
NOTES: UNLESS OTHERWISE SPECIFIED.

22	R60-R66
NOT USED	
INDICATORS	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:	
FRACTIONS	DECIMALS
±	.001
ANGLES	±
XXX ± .01	XXX ± .005
MATERIAL:	
FINISH:	
CONTRACT NO.:	APPROVALS:
DATE:	DRAWN:
CHECKED:	ISSUED:
ENG.:	DATE:
MFG.:	DATE:
APPLICATION:	DO NOT SCALE DRAWING

<h1>CARVER</h1>	
SCHEMATIC, AMP BOARD, PT2400	
SIZE: D	DWG NO: 605-00408-00
SCALE: NONE	REV: F
SHEET 1 OF 1	





- 12 AFTER INSTALLING ITEM 285 (550-10049-00) ON AMP BOARD, TWIST EACH CABLE ASSY ONE TURN (360 DEGREES) PER INCH, THE FULL LENGTH OF THE CABLE ASSY.
- 11 SWEDGE IN TP1, TP2, TP3 BEFORE SOLDER DIP.
- 10 AFFIX LABEL TO CONNECTOR SIDE OPPOSITE CABLE ENTRY.
- 9 APPLY A CONTINUOUS BEAD OF HOT MELT GLUE, ITEM 265, ON BOTH SIDES OF RIBBON CABLE. BEAD SHALL RUN ENTIRE WIDTH OF CABLE. CABLE SHALL BE BENT IN DIRECTION AS SHOWN WHEN DONE. APPLY A CONTINUOUS BEAD OF HOT MELT GLUE ACROSS ITEM 250 LEADS ON COMPONENT SIDE, COVERING LEADS.
- 8 MARK REV USING CONTRASTING, NON-CONDUCTIVE INK.
- 7 MARK DASH NO. USING CONTRASTING, NON-CONDUCTIVE INK.
- 6 ITEM MOUNTED ON SOLDER SIDE OF BOARD.
- 5 DO NOT INSTALL ON -01 (PT1800 MODELS).
- 4. DELETED
- 3 COMPONENT HOLES TO TO BE MASKED BEFORE SOLDER DIP.
- 2 ALL ITEMS ARE ON 602-00408-00/01 PARTS LIST.
- 1 DELETED

NOTES: UNLESS OTHERWISE SPECIFIED.

UNLESS OTHERWISE SPECIFIED WATERPROOF DWG PER ANSI Y14.5M-1982 DIMENSIONS ARE IN INCHES.			APPROVALS		DATE	<h1 style="text-align: center;">CARVER</h1> <h2 style="text-align: center;">ASSEMBLY, PCB</h2> <h3 style="text-align: center;">AMP BOARD, PT2400/1800</h3>
FRACTIONS:	TOLERANCES:	DECIMALS:	ANGLES:	DRAWN:	3/26/91	
	XX ± .01	XXX ± .005	°	CHECKED:	3/91	
				REV:	3/91	
MATERIAL:	2			BY:	3/91	TITLE
FINISH:				APPROVED:	3/91	REV
DATE:	01	601-00255-02	PT1800	ISSUED:	3/91	DWG NO.
NEXT ASSEMBLY:	00	601-00255-01	PT2400			602-00408-XX
USED ON:						REV
APPLICATION	DO NOT SCALE DRAWING					M

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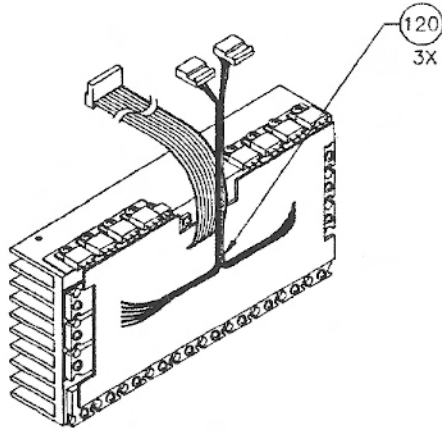
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D

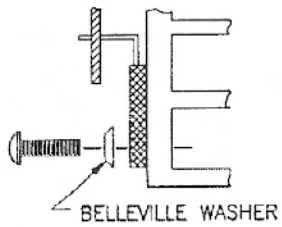
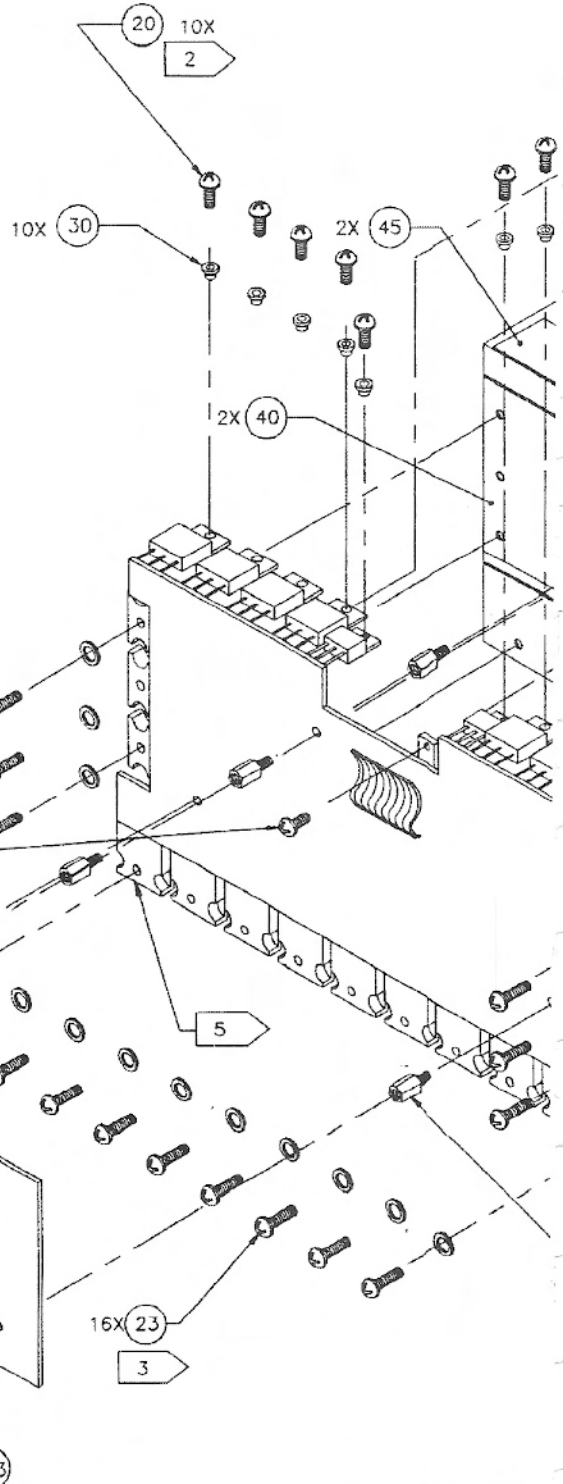
C

B

A

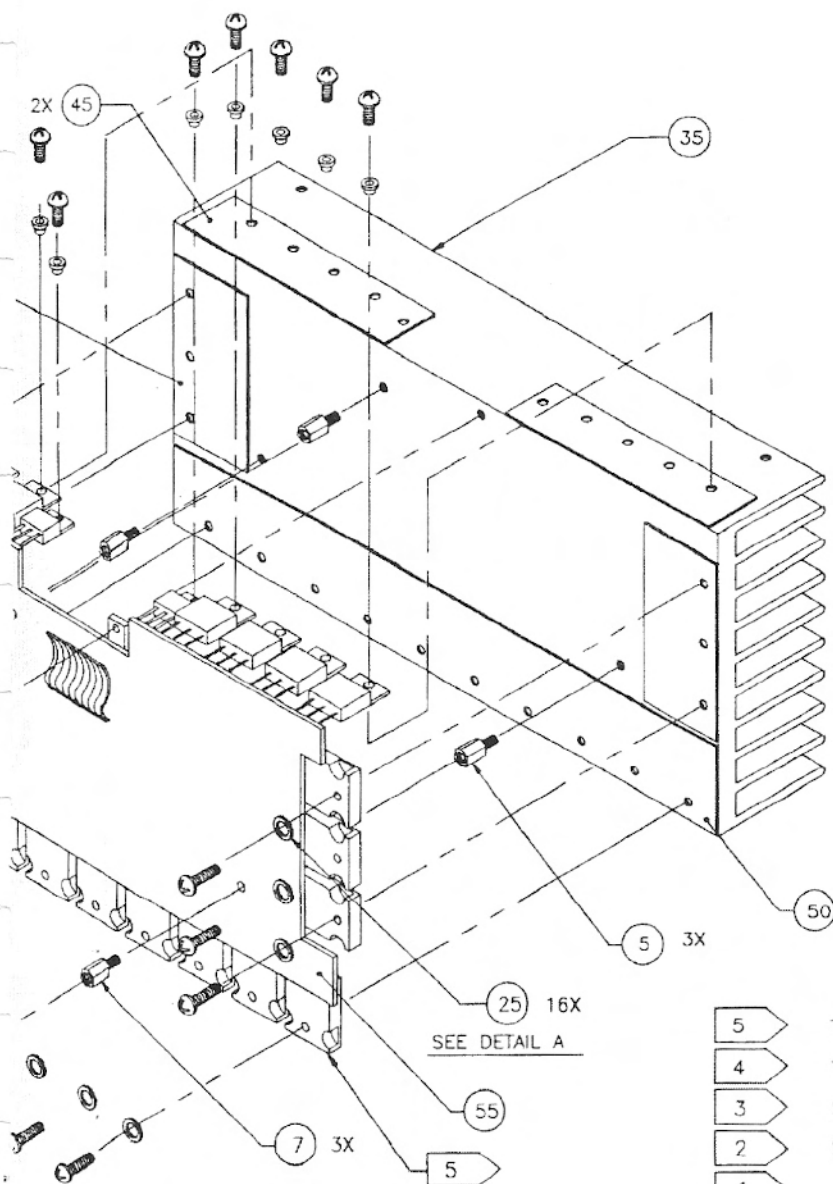


AMP CABLE INFORMATION



DETAIL A

- 03 TFM-75
- 02 PT1800
- 01 PT2400



- 5 TRANSISTOR, WASHER, SCREW NOT USED ON -02 OR -03.
- 4 TWIST AND BUNDLE WIRES PRIOR TO SHIELD ASSEMBLY.
- 3 SCREW TIGHTENING TORQUE: 7 IN/LBS.
- 2 SCREW TIGHTENING TORQUE: 5 IN/LBS.
- 1 ALL ITEMS ARE ON 601-00255-01,-02,-03 PARTS LIST.

03 TFM-75
 02 PT1800
 01 PT2400

-03	607-00621-05	TFM-75
-03	607-00621-02	TFM-75
-03	607-00621-01	TFM-75
-02	607-00135-05	PT1800
-02	607-00135-02	PT1800
-02	607-00135-01	PT1800
-01	607-00140-05	PT2400
-01	607-00140-02	PT2400
-01	607-00140-01	PT2400
DASH NO.:	NEXT ASSEMBLY:	USED ON:
APPLICATION		

UNLESS OTHERWISE SPECIFIED
 DIMENSIONS ARE IN INCHES
 TOLERANCES ARE:
 FRACTIONS: DECIMALS: ANGLES:
 * / .XXX / * /
 MATERIAL: 1
 FINISH:

CONTRACT NO.:
 APPROVALS: DATE:
 DRAWN: GEBENIN, E. 11-28-90
 CHECKED: B. COTE 4/2/91
 ISSUED:
 ENG.: D. GRIFFITHS 4/3/91
 WFC.: M. WALTERS 4/4/91

CARVER

AMPLIFIER ASSEMBLY
 PT2400/PT1800/TFM-75

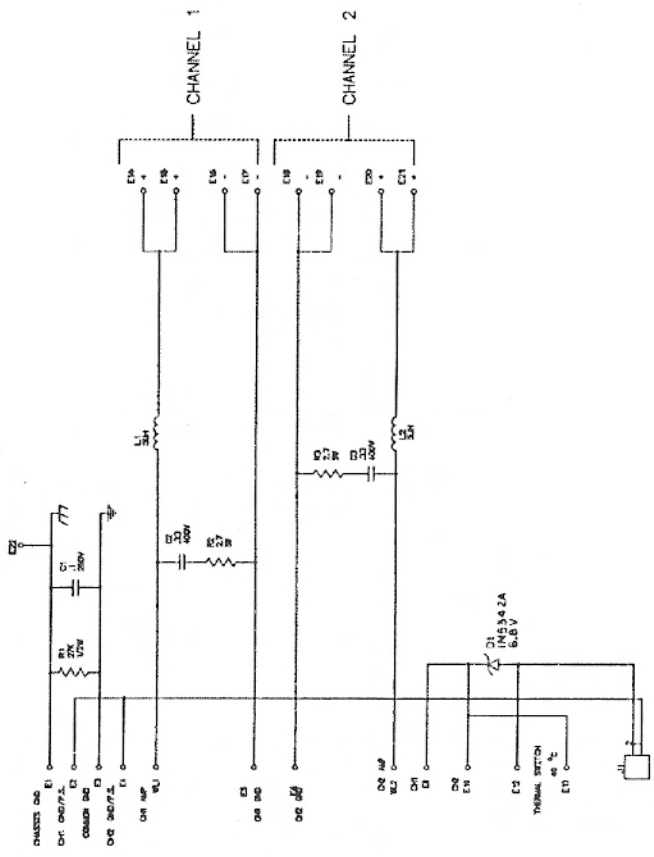
SIZE: D	SA1	DWG. NO.: 601-00255-XX	REV: C
SCALE: NONE	SHEET 1 OF 1		

NOTES: UNLESS OTHERWISE SPECIFIED

FIG. NO. 505-00446-001 A

1 3 4 5 6 7 8

(ORIGINAL VERSION)



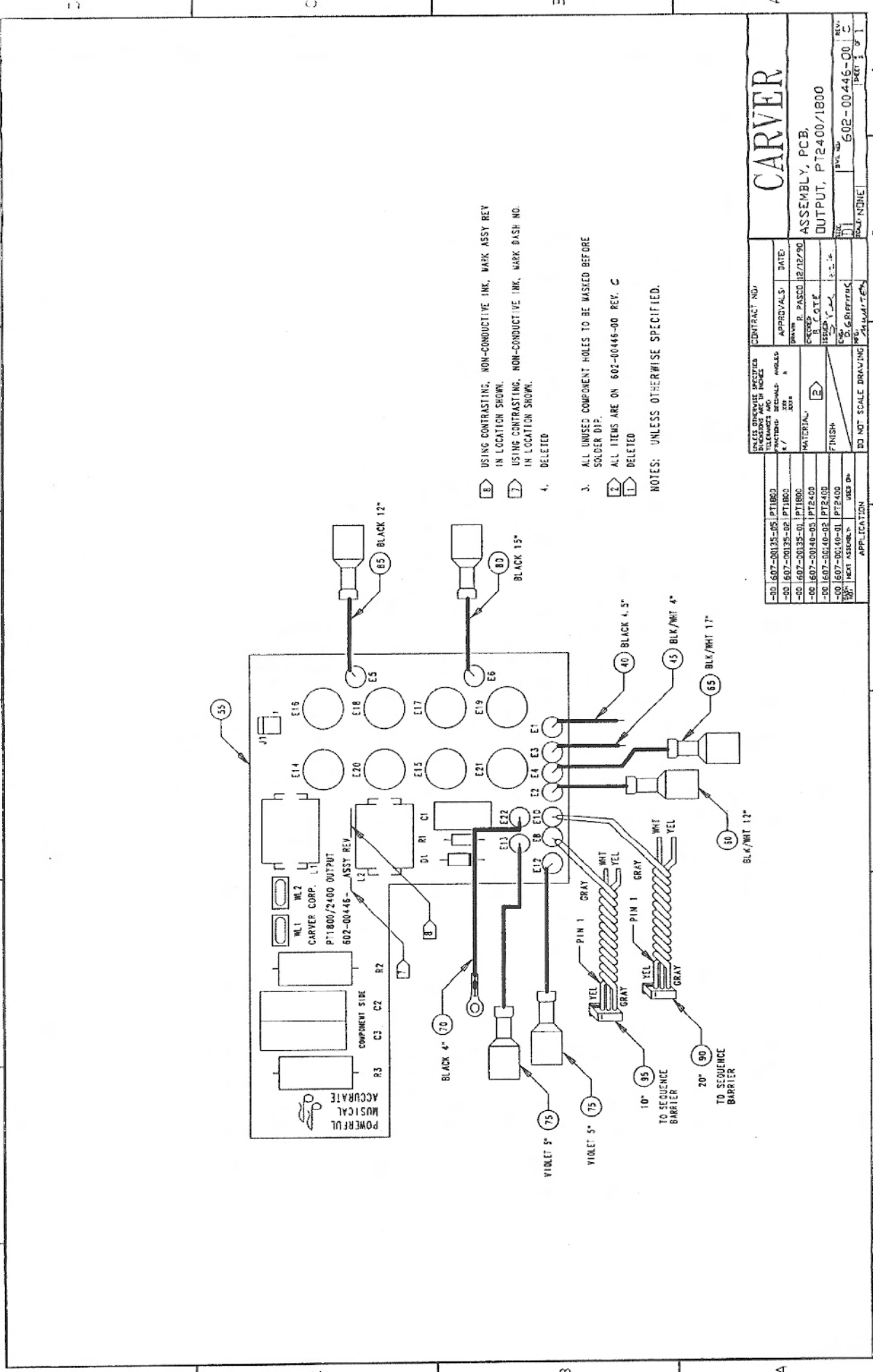
- 2. ALL CAPACITORS ARE IN MICROFARADS, 10⁷.
 - 1. ALL RESISTORS ARE IN OHMS.
- NOTES: UNLESS OTHERWISE SPECIFIED

CONTRACT NO.		DATE	
APPROVALS		DATE	
DESIGNED BY		DATE	
CHECKED BY		DATE	
DRAWN BY		DATE	
MATERIAL		DATE	
PARTS LIST		DATE	
DO NOT SCALE DRAWING		DATE	
APPLICATION		DATE	
-00 605-00446-00 PT2400/1800		DATE	
REV. NEXT ASSM. N. USED IN		DATE	
APPLICATION		DATE	

CARVER

SCHEMATIC,
OUTPUT, PT2400/1800

505-00446-00 1



- 8 USING CONTRASTING, NON-CONDUCTIVE INK, MARK ASSY REV IN LOCATION SHOWN.
- 7 USING CONTRASTING, NON-CONDUCTIVE INK, MARK DASH NO. IN LOCATION SHOWN.
- 4 DELETED

3. ALL UNUSED COMPONENT HOLES TO BE MASKED BEFORE SOLDER DIP.

- 2 ALL ITEMS ARE ON 602-00446-00 REV. C
- 1 DELETED

NOTES: UNLESS OTHERWISE SPECIFIED.

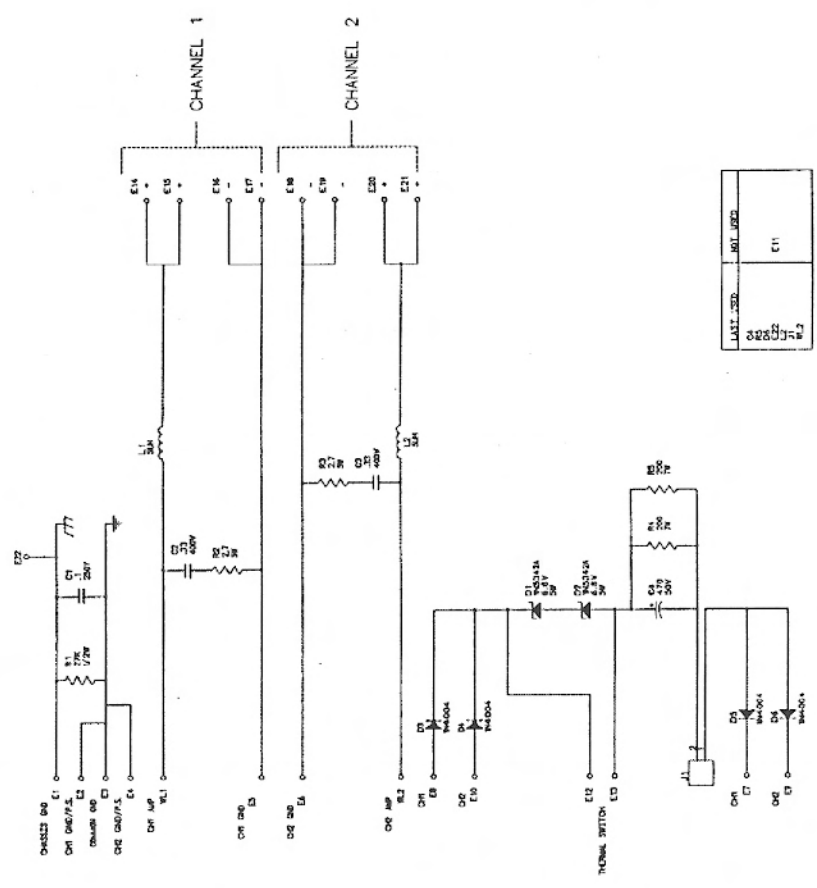
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		CONTRACT NO.
FACTORY	APPROVALS	DATE
REV	BY	DATE
DESIGN	BY	DATE
TEST	BY	DATE
FINISH	BY	DATE
DO NOT SCALE DRAWING	APPLICATION	

00 602-00135-05 PT1800	00 602-00135-02 PT1800
00 602-00135-01 PT1800	00 602-00140-05 PT2400
00 602-00140-02 PT2400	00 602-00140-01 PT2400
00 602-00140-01 PT2400	00 602-00446-00

CARVER

ASSEMBLY, PCB,
OUTPUT, PT2400/1800

REV. NO. 602-00446-001 C
PART 1 3 1

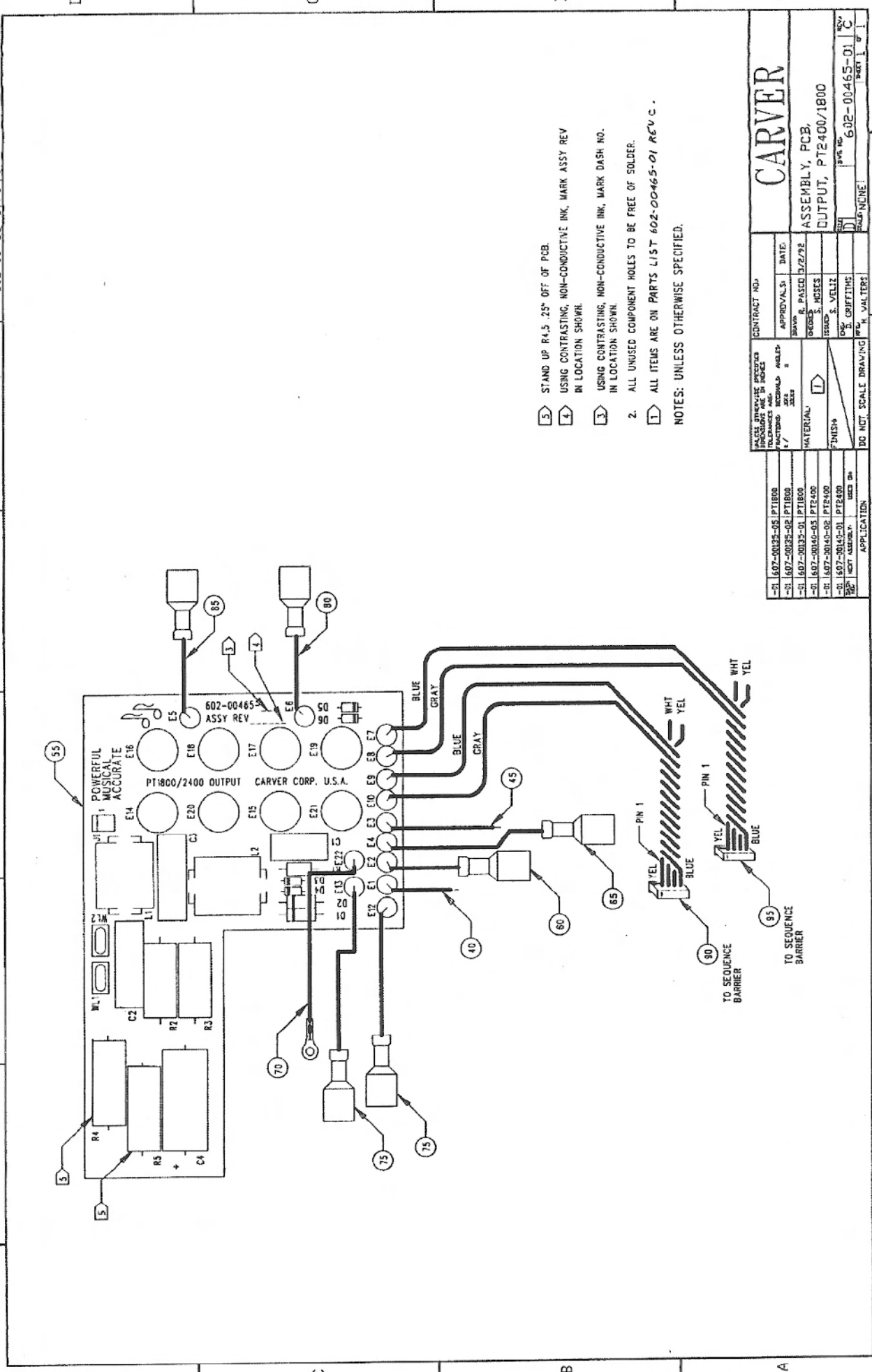


- 2. ALL CAPACITORS ARE IN MICROFARADS, 10%.
 - 1. ALL RESISTORS ARE IN OHMS.
- NOTES: UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED, INDICATED BY FACTOR		CONTRACT NO.	
APPROVALS	DATE	APPROVALS	DATE
BRAND	R. PASCO	4/28/82	
ORDER	S. NOTES		
REVISION	S. VELIZ		
BY	D. GRIFFITHS		
DATE	605-00465-01		
SCALE	NONE		
WALTERS			
MATERIAL		CARVER	
FINISH		SCHEMATIC,	
PT12400/1800		OUTPUT, PT2400/1800	
USED ON		DRAWING NO. 605-00465-01	
APPLICATION		SHEET 1 OF 1	

502-00465-01 1 C

1 3 4 5 6 7 8



- 5 STAND UP RA.5 .25" OFF OF PCB.
 - 4 USING CONTRASTING, NON-CONDUCTIVE INK, MARK ASSY REV IN LOCATION SHOWN.
 - 3 USING CONTRASTING, NON-CONDUCTIVE INK, MARK DASH NO. IN LOCATION SHOWN.
 - 2. ALL UNUSED COMPONENT HOLES TO BE FREE OF SOLDER.
 - 1 ALL ITEMS ARE ON PARTS LIST 602-00465-01 REV C.
- NOTES: UNLESS OTHERWISE SPECIFIED.

MATERIAL		CONTRACT NO.	
FINISH		APPROVALS	DATE
RD ACT SCALE DRAWING		R. PASCO	2/2/78
RD ACT SCALE DRAWING		DESIGNER	DATE
RD ACT SCALE DRAWING		HECKER	DATE
RD ACT SCALE DRAWING		DESIGNER	DATE
RD ACT SCALE DRAWING		HECKER	DATE
RD ACT SCALE DRAWING		DESIGNER	DATE
RD ACT SCALE DRAWING		HECKER	DATE

50 1607-00025-05 PT1800	APPROVALS	DATE
50 1607-00025-05 PT1800	R. PASCO	2/2/78
50 1607-00035-01 PT1800	DESIGNER	DATE
50 1607-00040-05 PT2400	HECKER	DATE
50 1607-00040-05 PT2400	DESIGNER	DATE
50 1607-00045-01 PT2400	HECKER	DATE
50 1607-00045-01 PT2400	DESIGNER	DATE
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8

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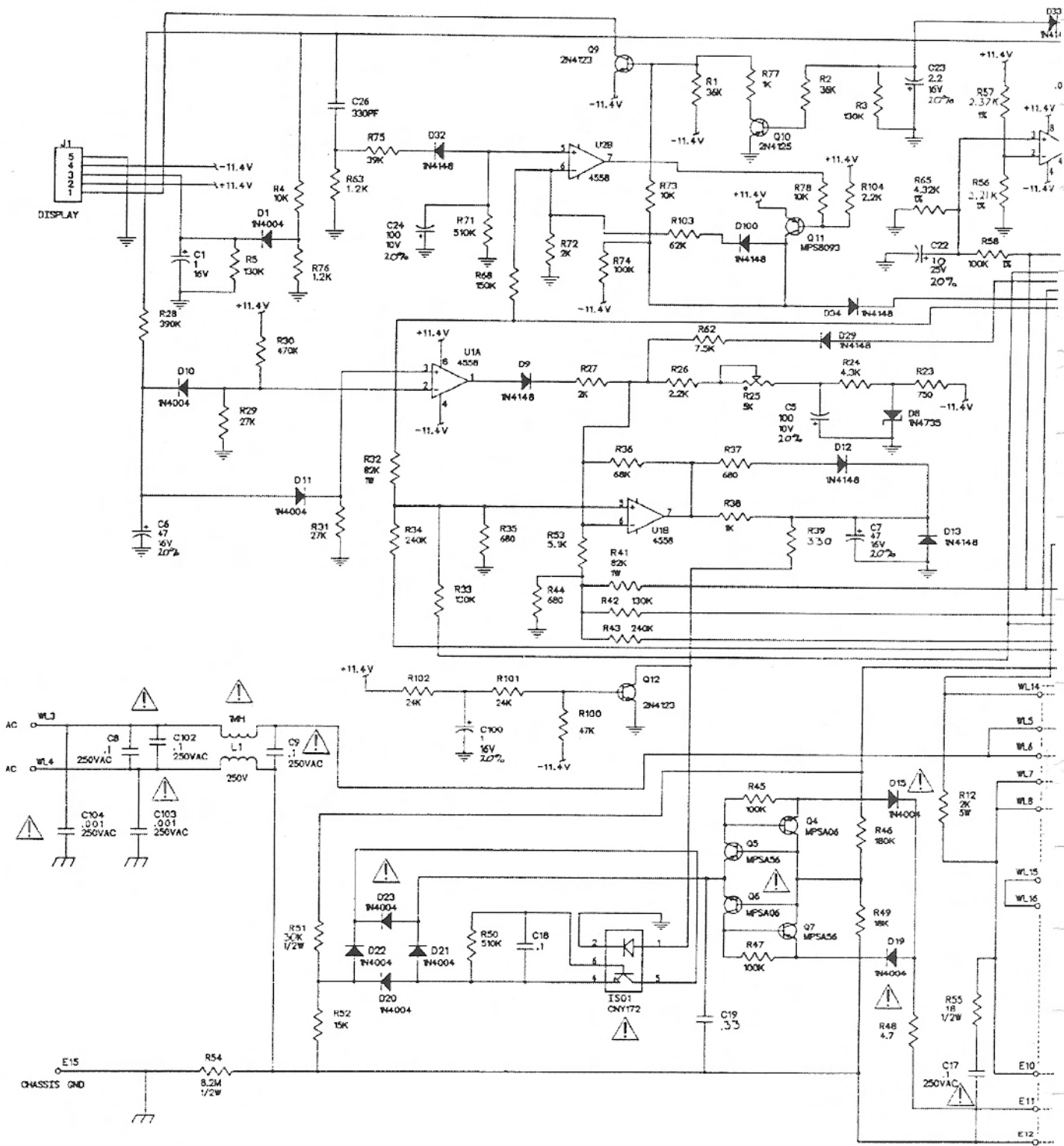
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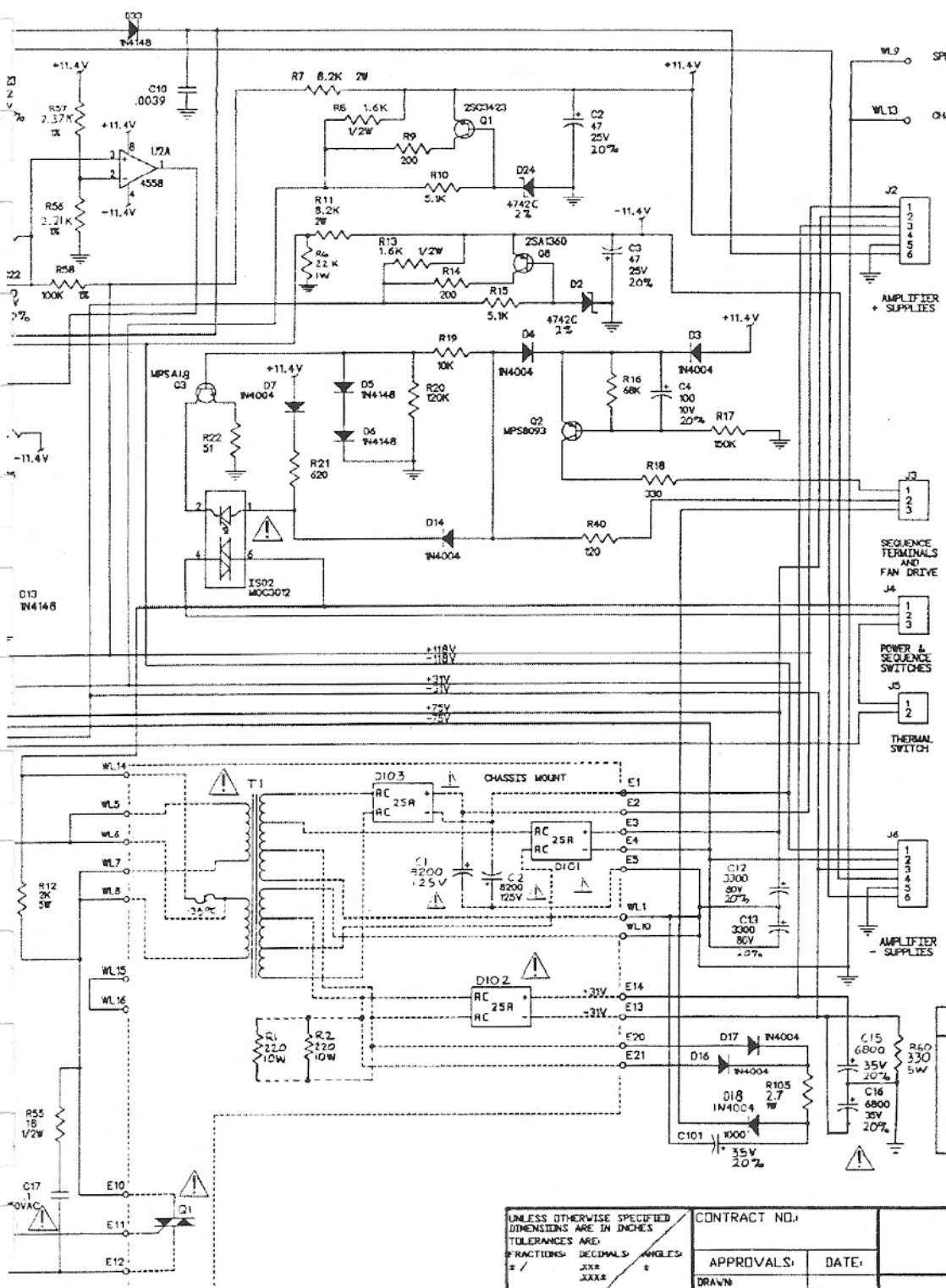
D

C



B

A






PRODUCT SAFETY NOTICE

All safety precautions in this manual should be followed during servicing. Components identified with the IEC symbol  in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with , use only the replacement parts designated, or parts with the same rating of resistance, wattage or voltage that are designated in the parts list in this manual.

REFERENCE DESIGNATORS	
LAST USED	NOT USED
C104	C11,14,20,21,
D100	21,25,27-99
F21	D, 25-28,30,
IS02	E6-9
J4	J1,35-99
R61	E6-9
L1	R61
Q12	64,66,67,69,
R105	70,79-99
U2	WL2,11,12
WL16	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES ± / XXXX XXXX °	CONTRACT NO.:	
	APPROVALS:	DATE:
	DRAWN: R. PASCO	12/12/90
	CHECKED: 	4/2/91
MATERIAL:	ISSUED: 3. 1. 2. 1. 2.	
FINISH:	ENG: J. GRIFFITHS	
DO NOT SCALE DRAWING		

<h1>CARVER</h1>	
SCHEMATIC, POWER SUPPLY, PT 1800	
SIZE: D	DWG. NO.: 605-00409-01
SCALE: NONE	REV.: C
SHEET 1 OF 1	

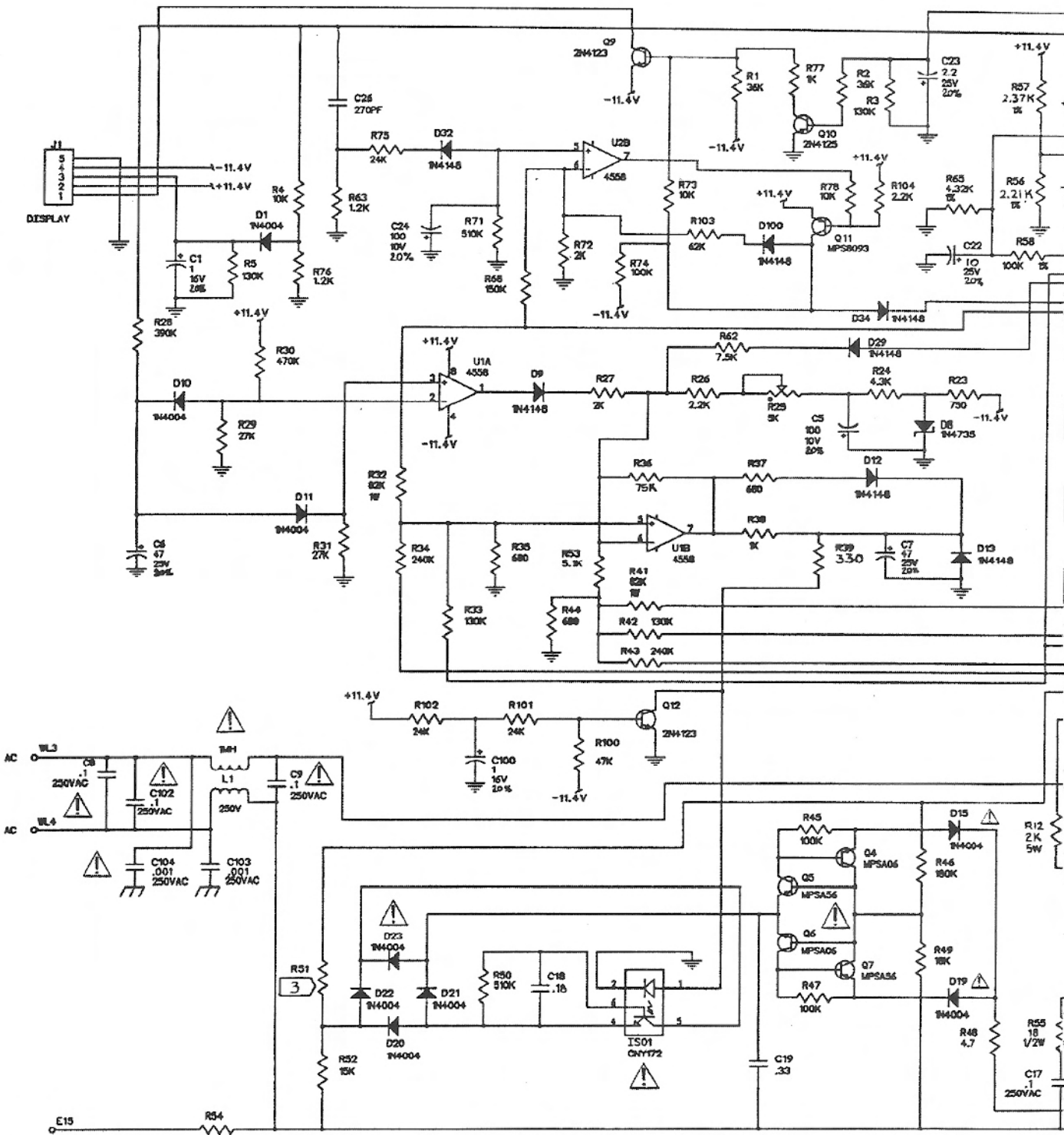
-01	602-00409-01	PT-1800
DASH NO.	MPYT ASSEMBLY	ISSUED 1/86
APPLICATION		

D

C

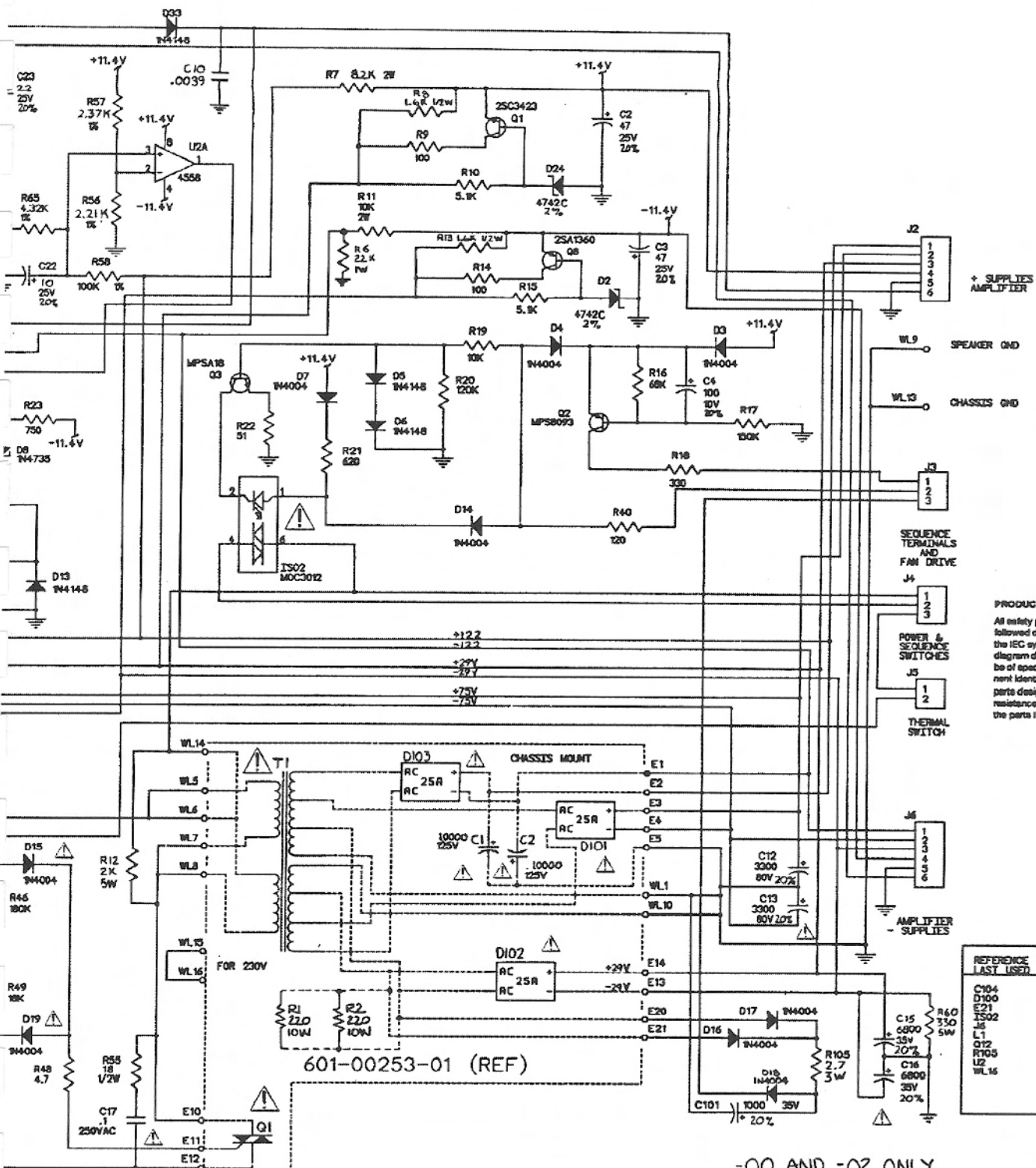
B

A





- 3 FOR 230V -02 R51 IS 30K 1/2W.
FOR 120V -00 R51 IS 24K 1/2W.
- 2 ALL CAPACITOR VALUES ARE IN MICROFARADS, 10%.
1 ALL RESISTOR VALUES ARE IN OHMS, 1/4W, 5%.

NOTES: UNLESS OTHERWISE SPECIFIED



PRODUCT SAFETY NOTICE

All safety precautions in this manual should be followed during servicing. Components identified with the IEC symbol  in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with , use only the replacement parts designated, or parts with the same rating of resistance, wattage or voltage that are designated in the parts list in this manual.

REFERENCE DESIGNATORS LAST USED	NOT USED
C104	C 11,14,20
D100	D 21,25,27-99
E21	E 23-28,30
IS02	I 31,35-99
J5	J 6-9
L1	L 64,66,67,69
Q12	Q 70,79-99
R103	R 70,79-99
U2	U 2,11,12
WL15	

601-00253-01 (REF)

-00 AND -02 ONLY

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES ± / JOE JOE		CONTRACT NO.		<h1>CARVER</h1>	
MATERIAL		APPROVALS:	DATE:		
-02	602-00409-02 PT-2400 (230V)	R. PASCO	12/12/90	SCHEMATIC, POWER SUPPLY, PT2400	
-00	602-00409-00 PT-2400	<i>[Signature]</i>	2/5/91		
FINISH		ISSUED	2/11/91		
NEXT ASSEMBLY USED DIB		CHKD	2/3/91		
APPLICATION		DO NOT SCALE DRAWING	SCALE NONE	SHEET 1 OF 1	

8

7

6

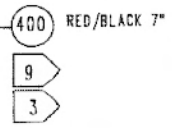
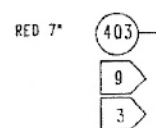
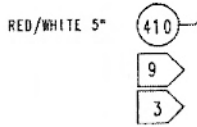
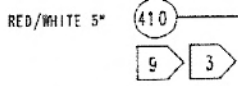
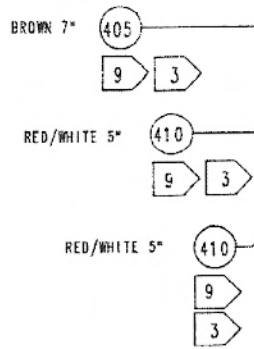
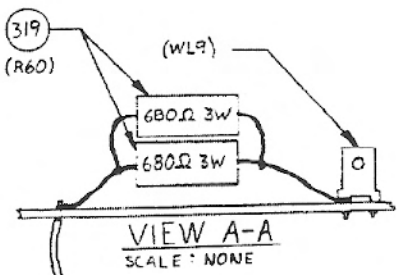
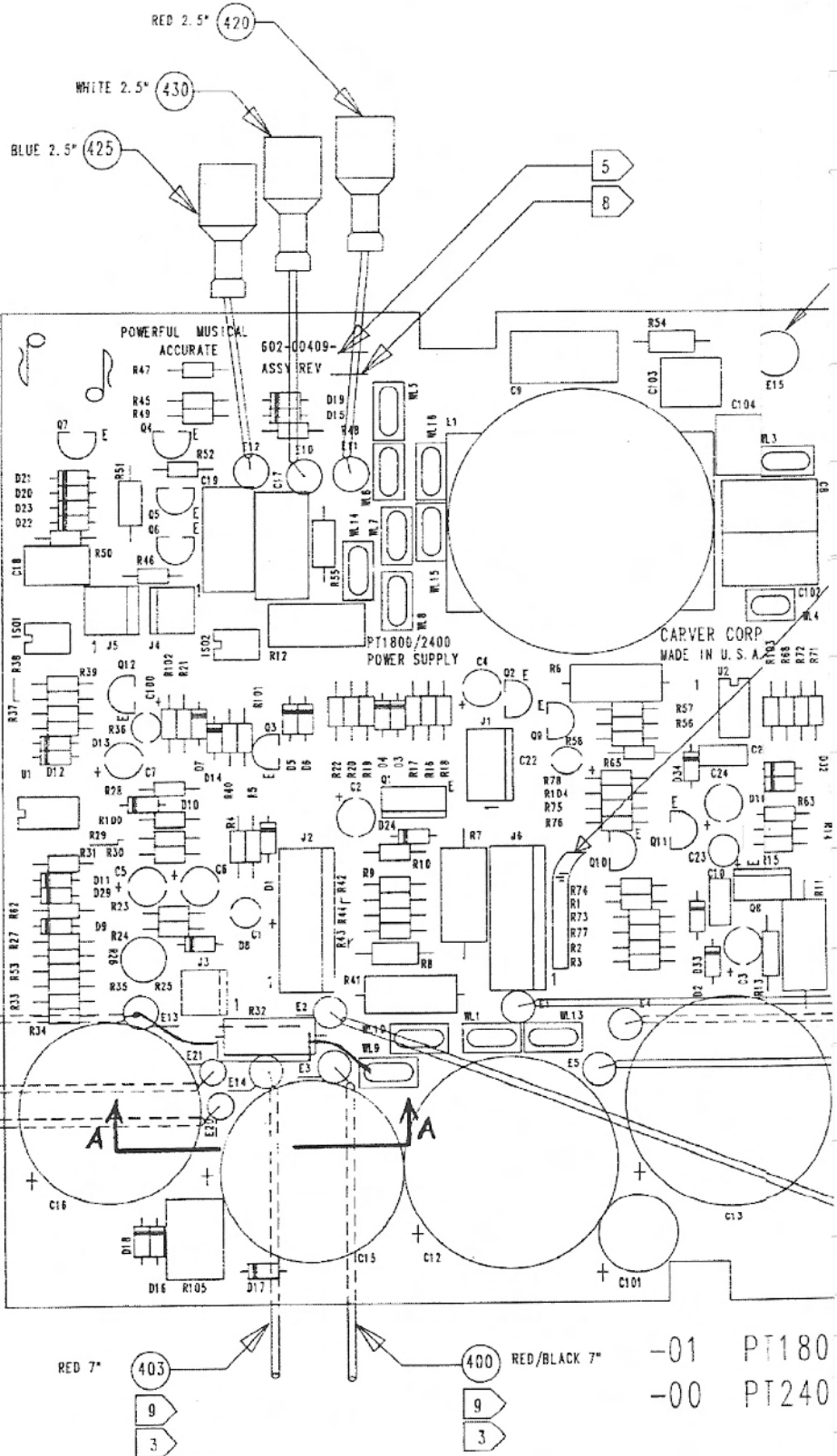
5

D

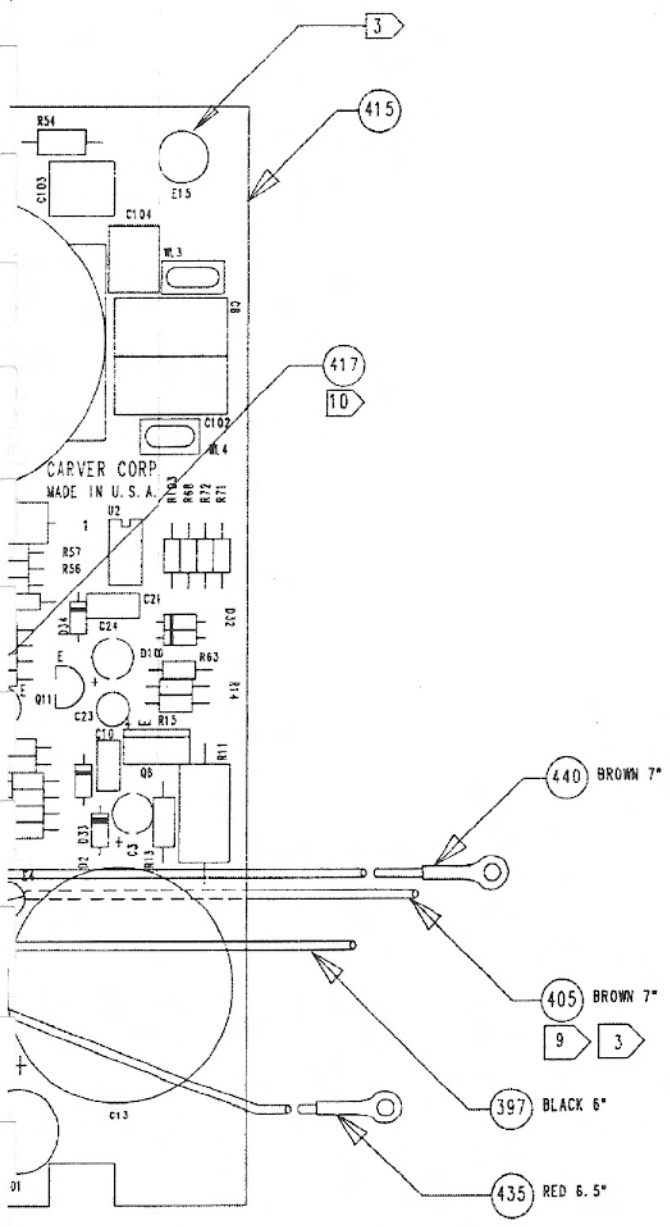
C

B

A



-01 PT180
 -00 PT240



- 10 AFFIX STICKER TO PCB IN LOCATION SHOWN. DO NOT COVER BOARD MARKINGS.
- 9 INSTALL E3, E4, E13, E14, E20, E21 ON SOLDER SIDE OF PCB.
- 8 MARK ASSY. REV. USING CONTRASTING, NON-CONDUCTIVE INK.
- 5 MARK DASH NO. USING CONTRASTING, NON-CONDUCTIVE INK.
- 4. DELETED
- 3 COMPONENT HOLES TO BE MASKED BEFORE SOLDER DIP.
- 2 ALL ITEMS ARE ON 602-00409-XX PARTS LIST. SEE TAB BLOCK.
- 1. DELETED

NOTES: UNLESS OTHERWISE SPECIFIED.

PARTS LIST TABULATION BLOCK		
DASH NO.	MODEL	REV.
-01	PT1800	F
-00	PT2400	F
-02	PT2400(230V)	C

-01 PT1800
 -00 PT2400

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS: DECIMALS: ANGLES: * / .0006 .0008 *		CONTRACT NO.:		<h1>CARVER</h1>	
MATERIAL: 2		APPROVALS: R. PASCO	DATE: 12/12/90		
FINISH:		CHECKED: B. COTE	ISSUED: S. P. [Signature]	ASSEMBLY, PCB, POWER SUPPLY, PT2400/1800	
DO NOT SCALE DRAWING		ENGR: D. G. PFEIFFERS	MFG: M. WALTERS		
APPLICATION		SIZE: D		DWG. NO. 602-00409-XX J	
		SCALE: NONE		SHEET 1 OF 1	

8

7

6

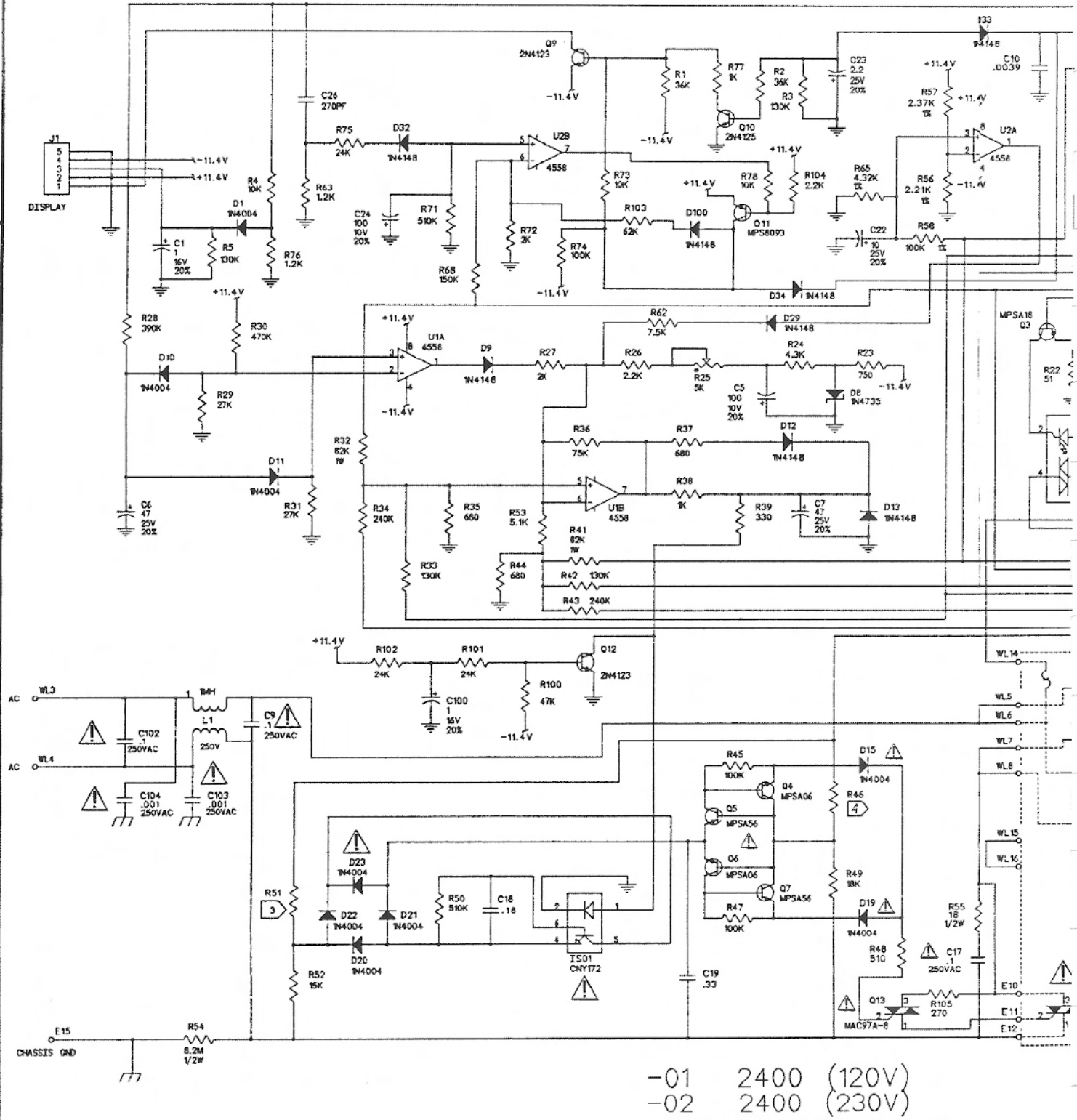
5

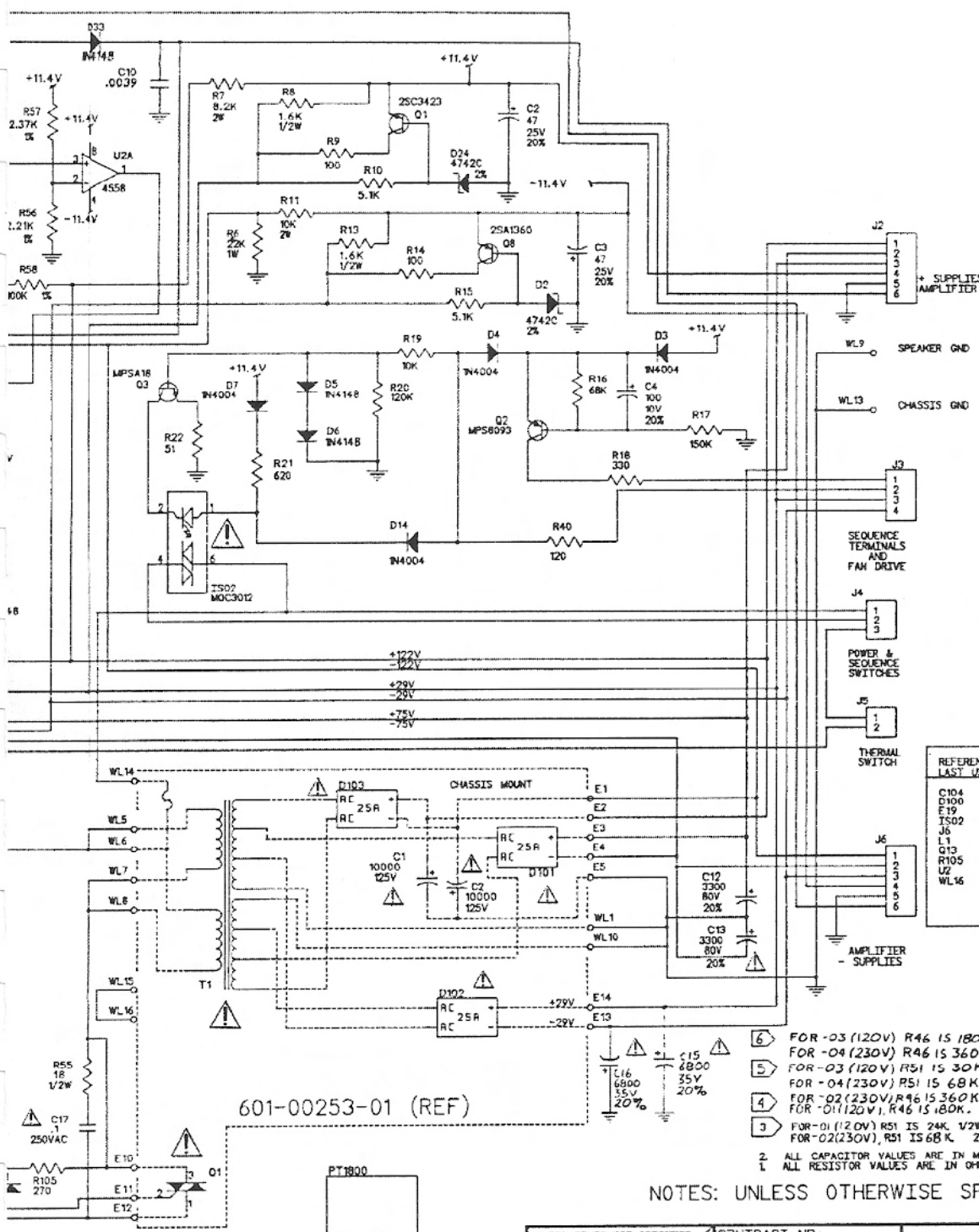
D

C

B

A





PRODUCT SAFETY NOTICE
 All safety precautions in this manual should be followed during servicing. Components identified with the IEC symbol in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with use only the replacement parts designated, or parts with the same rating of resistance, wattage or voltage that are designated in the parts list in this manual.

REFERENCE DESIGNATORS LAST USED	DESIGNATORS NOT USED
C104	C8, 11, 14, 20,
D100	21, 25, 27-99
E19	D16-18, 25-28, 30,
TS02	31, 35-99, 101
J6	E6-9
L1	R12, 60,
Q13	51, 54, 66, 67,
R105	69, 70, 79-99
UZ	WL 2, 11, 12

- 6 FOR -03 (120V) R46 IS 180K.
FOR -04 (230V) R46 IS 360K.
 - 5 FOR -03 (120V) R51 IS 30K 1/2W.
FOR -04 (230V) R51 IS 68K 2W.
 - 4 FOR -02 (230V) R46 IS 360K.
FOR -01 (120V), R46 IS 180K.
 - 3 FOR -01 (120V) R51 IS 24K 1/2W.
FOR -02 (230V), R51 IS 68K 2W.
- 2 ALL CAPACITOR VALUES ARE IN MICROFARADS, 10%
 1 ALL RESISTOR VALUES ARE IN OHMS, 1/4W, 5%

NOTES: UNLESS OTHERWISE SPECIFIED

DASH NO.	APPLICATION	USED D/W
-04	602-00464-04	PT1800 230V
-03	602-00464-03	PT1800
-02	602-00464-02	PT2400 230V
-01	602-00464-01	PT2400

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS: DECIMALS: ANGLES: X / .XXX X		CONTRACT NO.	
MATERIAL:		APPROVALS:	DATE:
FINISH:		DRAWN: R. PASCO	4/27/92
DD NOT SCALE DRAWING		CHECKED: S. MOSES	5/92
		ISSUED: S. VELIZ	5/92
		ENG. D. GRIFFITHS	5/92
		REC'D: M. WALTERS	5/92

CARVER

SCHEMATIC,
POWER SUPPLY, PT2400/1800

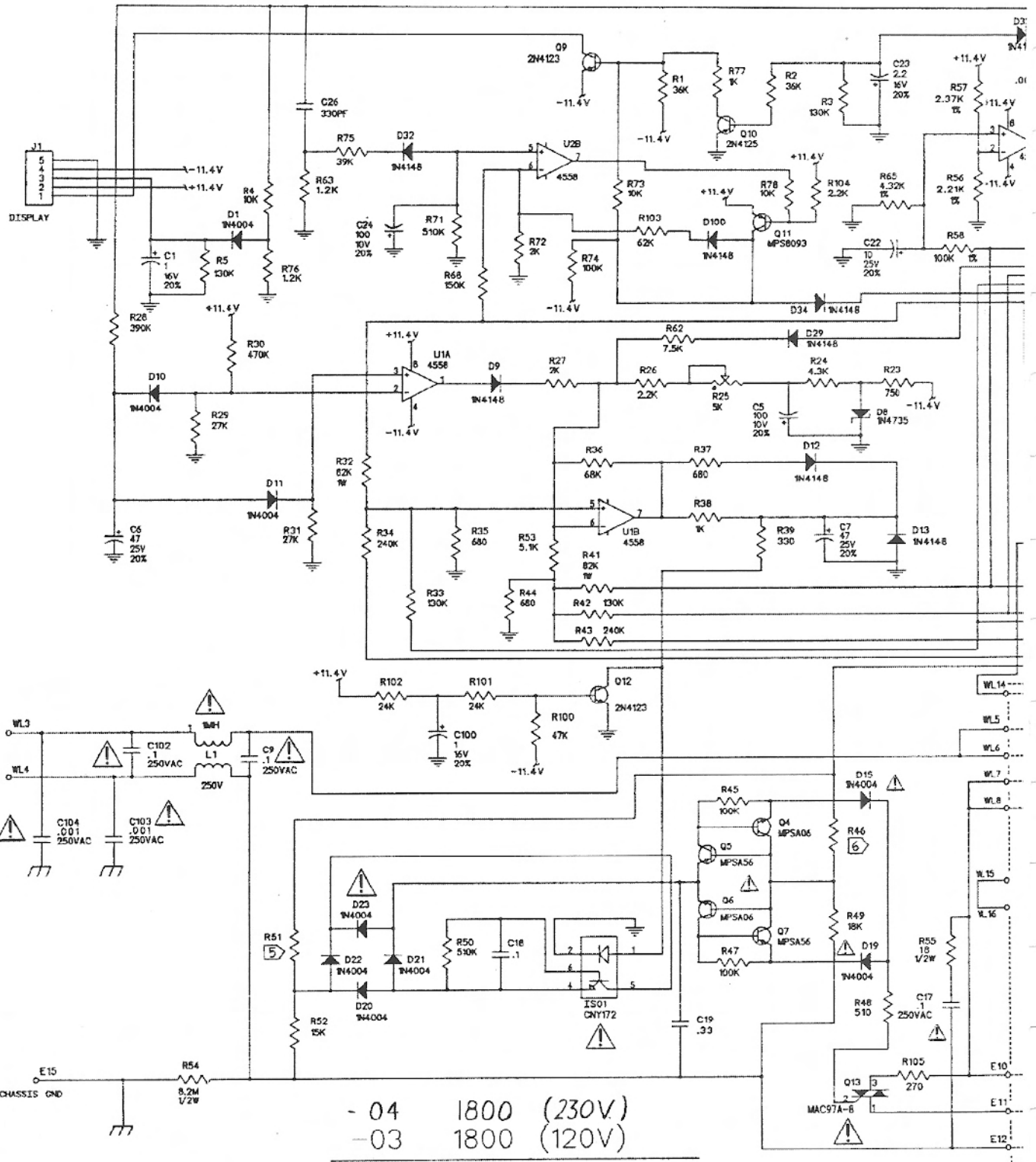
SIZE: D	DWG. NO. 605-00464-XX	REV. C
SCALE: NONE	SHEET 1	OF 2

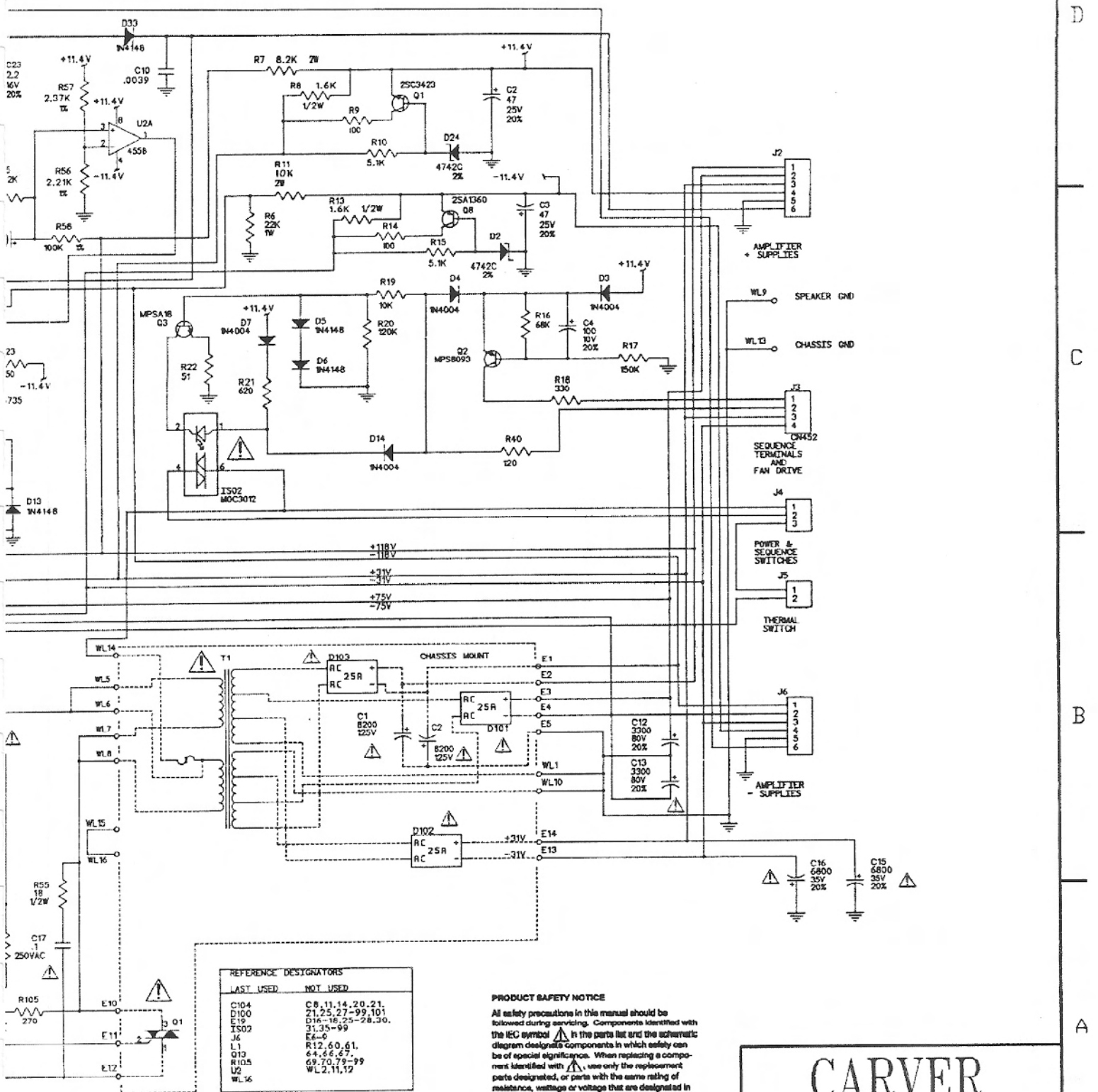
D

C



B

A





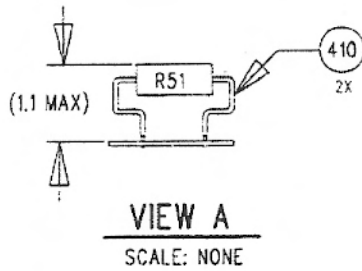
REFERENCE DESIGNATORS	
LAST USED	NOT USED
C104	C8, 11, 14, 20, 21,
D100	21, 25, 27-99, 101
E19	D16-18, 25-28, 30,
IS02	31, 35-99
J6	E6-9
L1	R12, 60, 61,
Q13	64, 66, 67,
R105	69, 70, 79-99
U2	WL 2, 11, 12
WL 16	

PRODUCT SAFETY NOTICE
 All safety precautions in this manual should be followed during servicing. Components identified with the IEC symbol  in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with , use only the replacement parts designated, or parts with the same rating of resistance, wattage or voltage that are designated in the parts list in this manual.

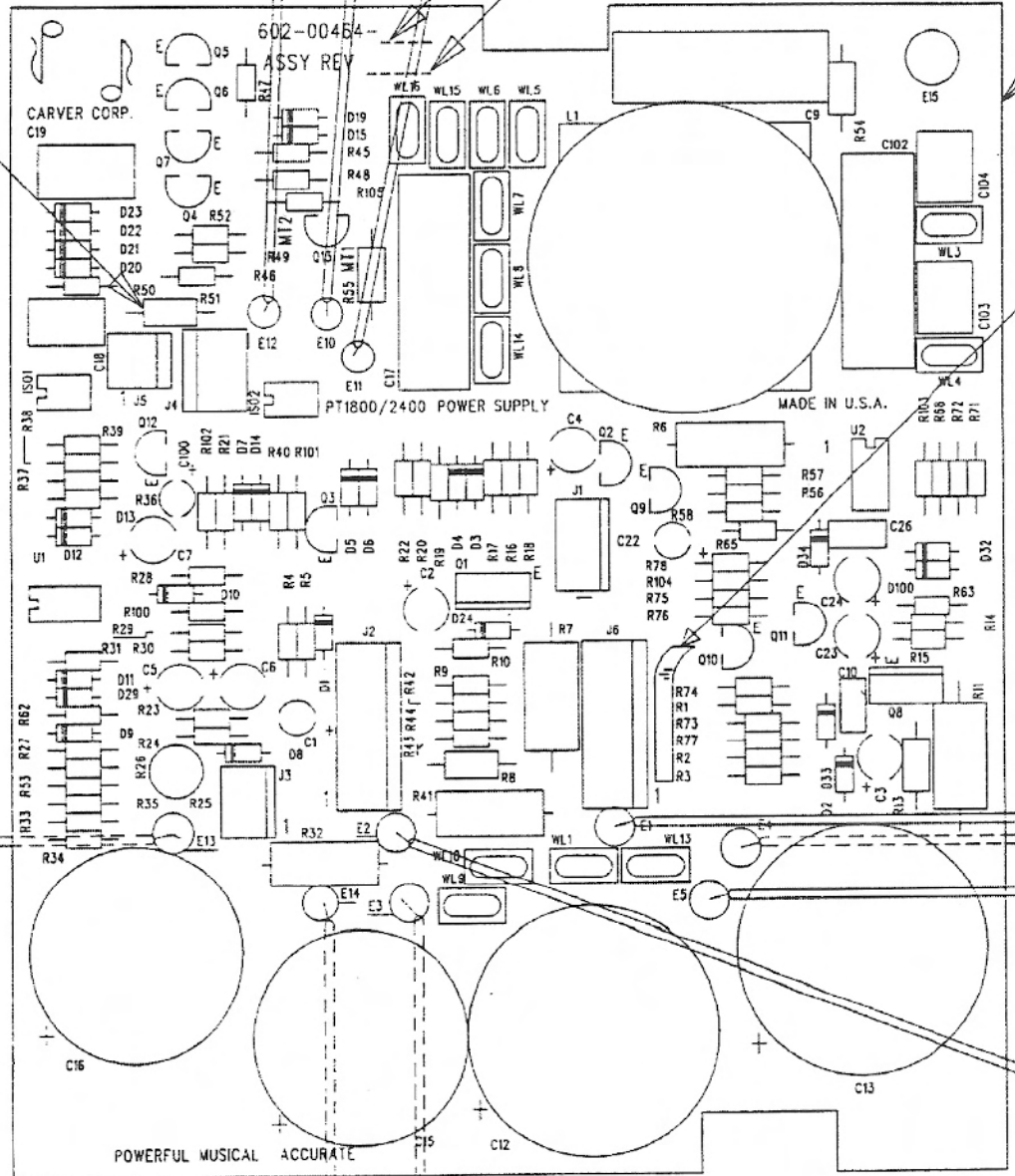
CARVER

SIZE	DWG. NO. 605-00464-XX	REV. C
SCALE: NONE	SHEET 2	

8 | 7 | 6 | 5



-01 & -03 ONLY,
SEE VIEW A
FOR -02 & -04



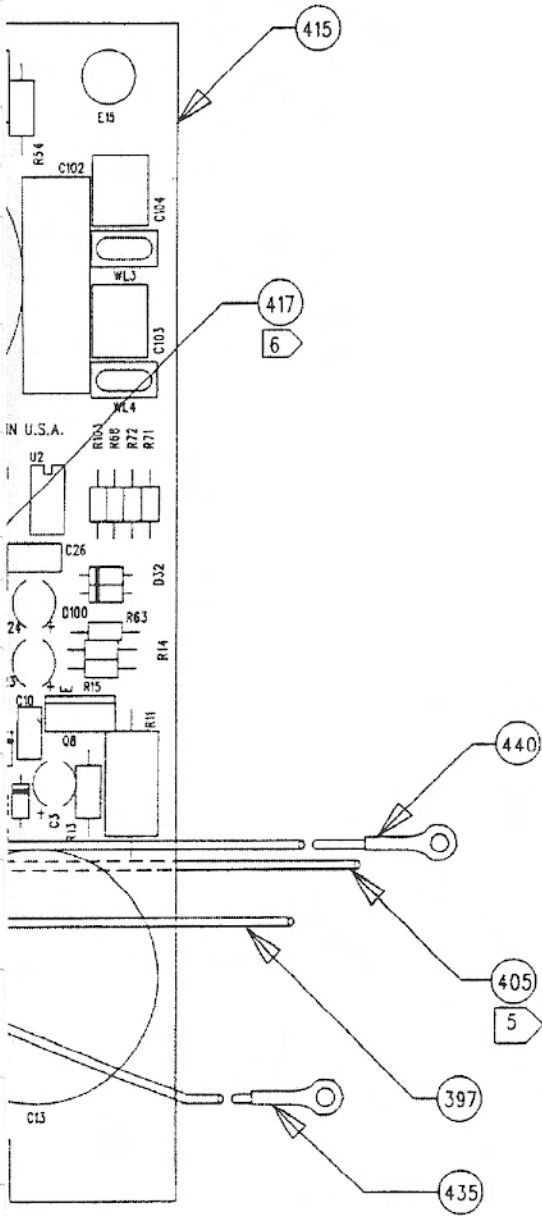
405
5

403
5

400
5

- 01 PT2400
- 02 PT2400 230V
- 03 PT1800
- 04 PT1800 230V

REV STAT
OF SHEET

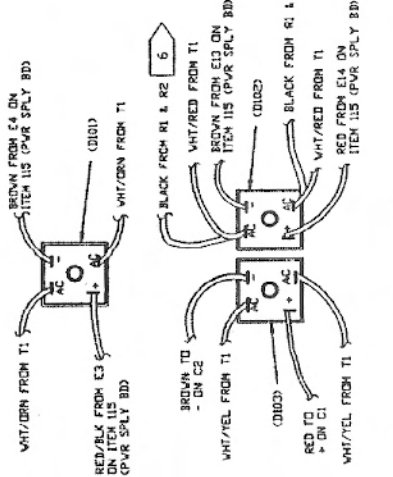
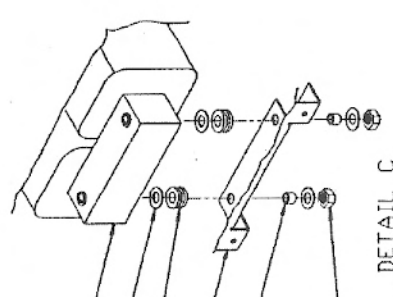
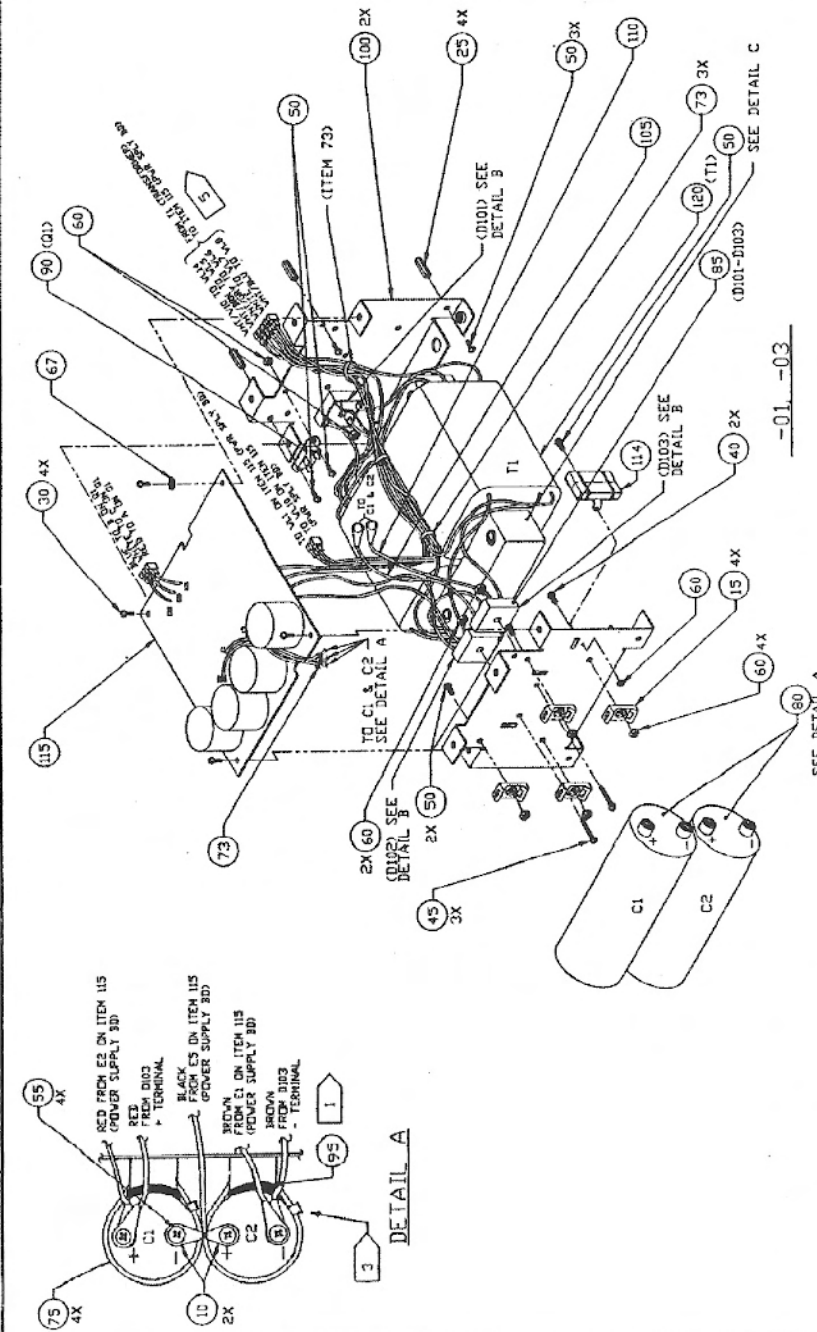


- 7. MAX. COMPONENT HEIGHT 1.10, EXCEPT C12, 13, 15, 16.
- 6 AFFIX STICKER TO PCB IN LOCATION SHOWN. DO NOT COVER BOARD MARKINGS.
- 5 INSTALL E3,E4,E13,E14 ON SOLDER SIDE OF PCB.
- 4 MARK ASSY. REV. USING CONTRASTING, NON-CONDUCTIVE INK.
- 3 MARK DASH NO. USING CONTRASTING, NON-CONDUCTIVE INK.
- 2. ALL UNUSED COMPONENT HOLES TO BE FREE OF SOLDER.
- 1 SEE SEPARATE PARTS LIST.

NOTES: UNLESS OTHERWISE SPECIFIED.

PT2400
PT2400 230V
PT1800
PT1800 230V

UNLESS OTHERWISE SPECIFIED INTERPRET DWG PER ANSI Y14.5M-1982 DIMENSIONS ARE IN INCHES.		APPROVALS : DATE	CARVER
FRACTIONS: TOLERANCES DECIMALS: ANGLES: XX X XXX X		DRAWN: R. PASCO 03/02/92	
MATERIAL: 1		CHECKED: S. MOSES 5/92	ASSEMBLY, PCB, POWER SUPPLY, PT2400/1800
FINISH:		DESIGNED: D. GRIFFITHS 5/92	
REV STATUS OF SHEETS		DATE	SIZE D
REV 1 F - - - -		0302 04	DWG NO 602-00464-XX REV F
DO NOT SCALE DRAWING			SHEET 1 OF 1



- 7 IF ASSY USES PCB ASSY 602-00409-XX WIRE WILL BE RED/WH FROM E2 ON ITEM 115.
- 6 IF ASSY USES PCB ASSY 602-00409-XX WIRE WILL BE RED/WH FROM E2 ON ITEM 115.
- 5 FOR -03 AND -04, WH WIRE GOES TO VL16, GR WIRE TO VL15.
- 4 FOR -01 & -03 WIRE PER WIRE DIAGRAM 606-00140-XX. FOR -02 & -04 WIRE PER WIRE DIAGRAM 606-00135-XX.
- 3 ITEM 75 (TYRAP) TO BE INSTALLED AS SHOWN.
- 2 ALL ITEMS ARE ON 601-00253-XX PARTS LIST.
- 1 USE ITEM 95 AT EACH END TO PREVENT MOVEMENT OF CAPS.

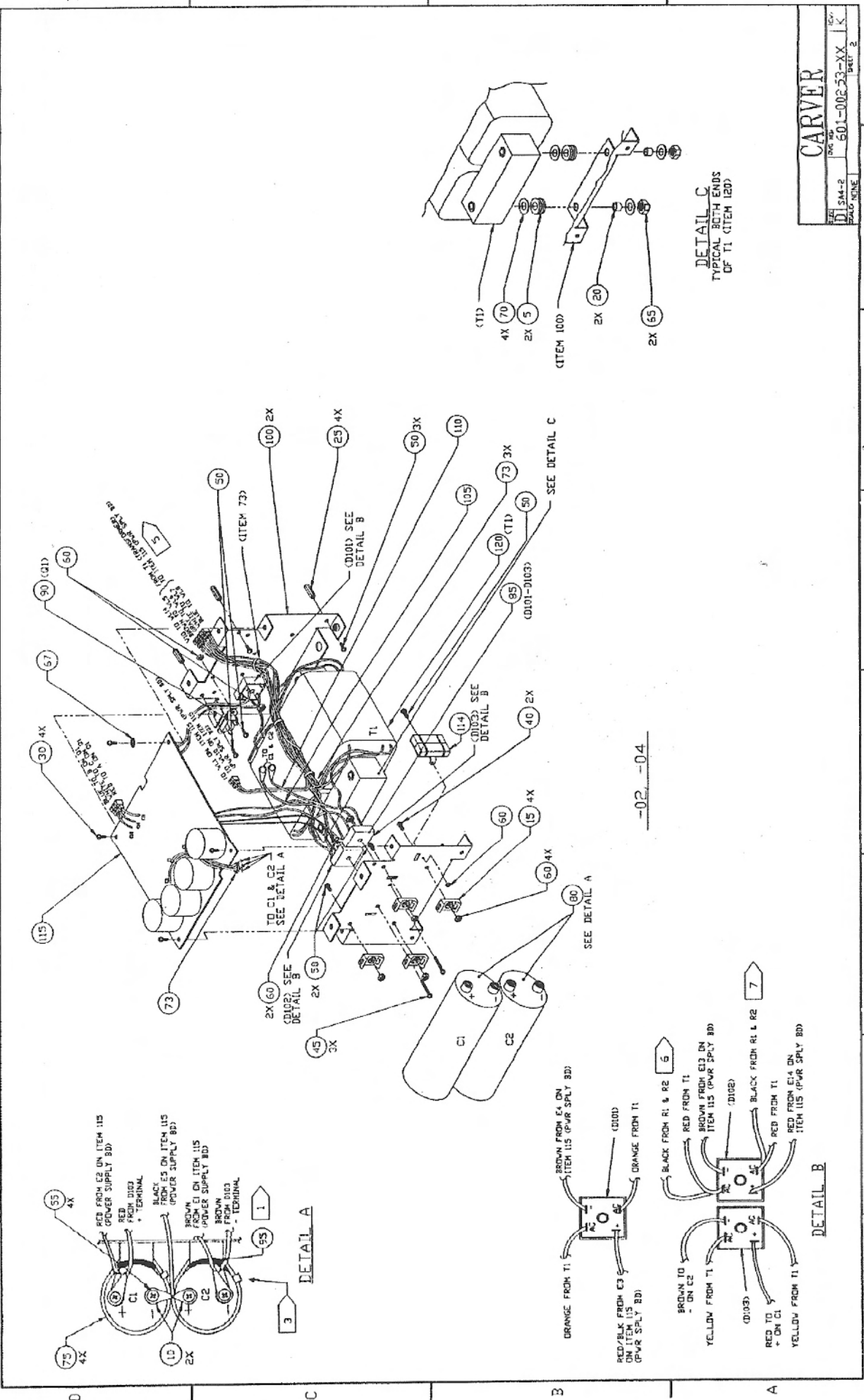
NOTES: UNLESS OTHERWISE SPECIFIED

CONTRACT NO.		APPROVALS:		DATE:
601-00253-XX	1 K	SAW	LEIGH	11/90
MATERIAL:		CHECKED:	DATE:	4/2/91
FINISH:		BY:	DATE:	4/2/91
APPLICATION:		BY:	DATE:	4/2/91
DO NOT SCALE DRAWING		BY:	DATE:	4/2/91
VALUES		BY:	DATE:	4/2/91
VALUES		BY:	DATE:	4/2/91

CARVER
ASSEMBLY PREP
POWER SUPPLY

601-00253-XX-12 K

1 3 4 5 6 7 8



CARVER

REV. NO. 601-00253-XX-12
 DRAWING NO. 601-00253-XX-12
 SHEET 2

605-00447-XX 1 A

3

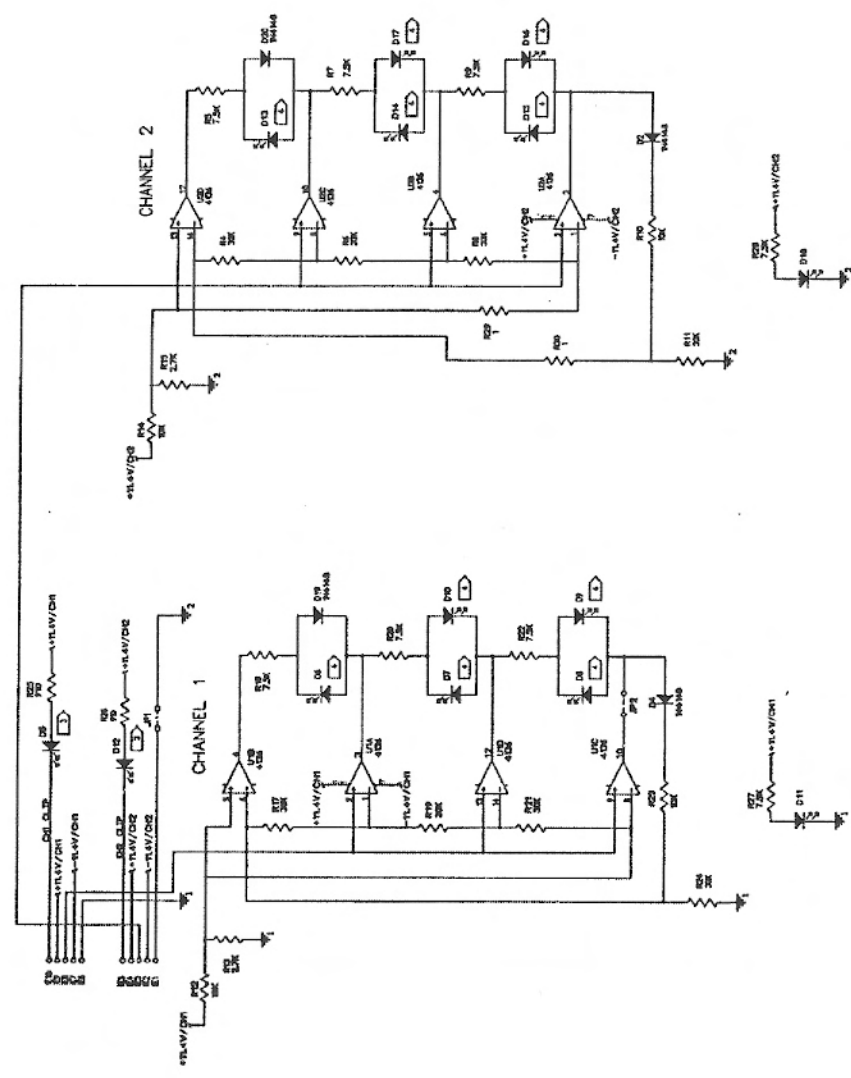
4

5

6

7

8



- 1. USE RES. FOR THE 200V (50) UNITS.
- 2. USE RES. FOR THE 100V (25) UNITS.
- 3. USE RES. FOR THE 50V (12.5) UNITS.
- 4. ALL CONNECTIONS ARE IN UNLESS OTHERWISE SPECIFIED.

NOTES: UNLESS OTHERWISE SPECIFIED

CONTRACT NO.	DATE
APPROVALS:	DATE
DESIGNER	DATE
CHECKED	DATE
APPROVED	DATE
DATE	DATE

MATERIAL	QUANTITY
DESCRIPTION	QUANTITY
DATE	DATE
APPROVED	DATE

CONTRACT NO.	DATE
APPROVALS:	DATE
DESIGNER	DATE
CHECKED	DATE
APPROVED	DATE
DATE	DATE

CONTRACT NO.	DATE
APPROVALS:	DATE
DESIGNER	DATE
CHECKED	DATE
APPROVED	DATE
DATE	DATE

CONTRACT NO.	DATE
APPROVALS:	DATE
DESIGNER	DATE
CHECKED	DATE
APPROVED	DATE
DATE	DATE

CARVER

SCHEMATIC,
DISPLAY, PT2400/1800

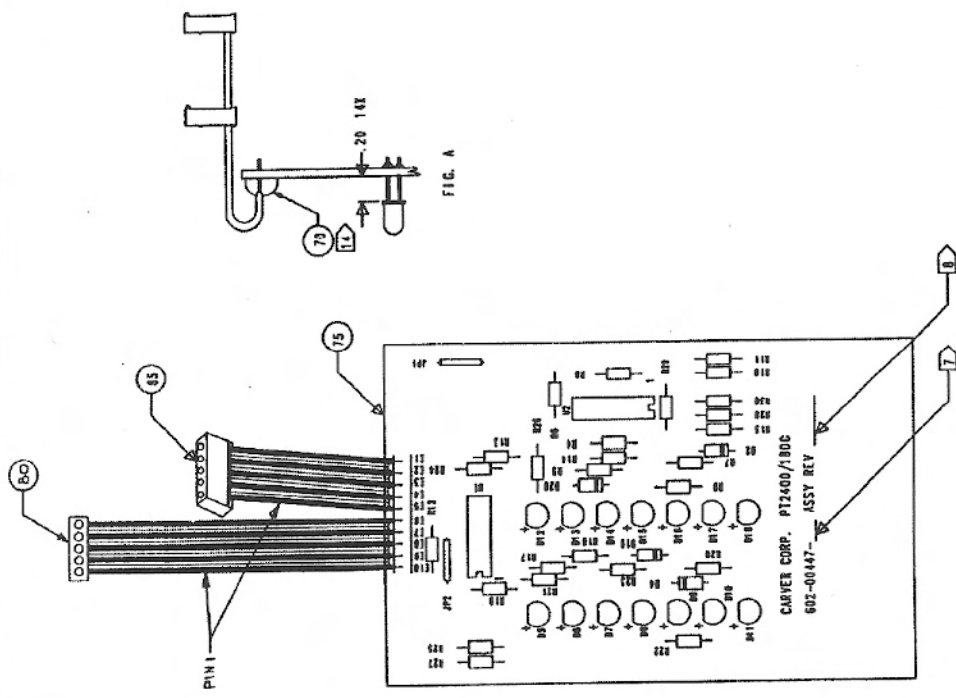
605-00447-XX 1 A

CONTRACT NO.	DATE
APPROVALS:	DATE
DESIGNER	DATE
CHECKED	DATE
APPROVED	DATE
DATE	DATE

-01 EURO 120V, 230V

-00

REFERENCE DESIGNATORS



- 1. TO BE APPLIED AS A CONTIGUOUS BEAD ALONG THE ENTIRE WIDTH OF BOTH SIDES OF THE RIBBON CABLE WHERE THE CABLE MEETS THE BOARD. THE RIBBON CABLE SHALL BE, WHEN FINISHED, PERPENDICULAR TO THE BOARD. (FIG. A)
- 2. USING CONTRASTING NON-CONDUCTING EPOXY INK, MARK ASSY. REV.
- 3. USING CONTRASTING NON-CONDUCTING EPOXY INK, MARK DASH NO.
- 4. DELETED
- 5. MORE TO BE MOUNTED OFF PCB BY 1/4 INCH.
- 6. ALL UNUSED COMPONENT HOLES TO BE MASKED BEFORE SOLDER DTP.
- 7. ALL ITEMS ARE ON PARTS LIST 602-00447- SEE TAB BLOCK.
- 8. DELETED

NOTES: UNLESS OTHERWISE SPECIFIED.

-01 PT2400/1800 EURO
 -00 PT2400/1800

PARTS LIST TABULATION BLOCK		REV. NO.
DASH NO.	MODEL	
-01	PT2400/1800 EURO	A
-00	PT2400/1800	A

-01	607-00183-05	PT1800
-00	607-00183-06	PT1800
-01	607-00183-01	PT1800
-01	607-00140-05	PT2400
-00	607-00140-06	PT2400
-00	607-00140-01	PT2400
REV	PART NUMBER	USED ON
	APPLICATION	

UNLESS OTHERWISE SPECIFIED	CONTRACT NO.
STANDARD	
APPROVALS	DATE
DESIGNED BY	1/17/79
CHECKED BY	1-12-79
TESTED BY	4/2/81
DRAWN BY	
INSTRUMENTED BY	
DATE	12/1/81

UNLESS OTHERWISE SPECIFIED	CONTRACT NO.
STANDARD	
APPROVALS	DATE
DESIGNED BY	1/17/79
CHECKED BY	1-12-79
TESTED BY	4/2/81
DRAWN BY	
INSTRUMENTED BY	
DATE	12/1/81

CARVER

ASSEMBLY, PCB,
 DISPLAY, PT2400/1800

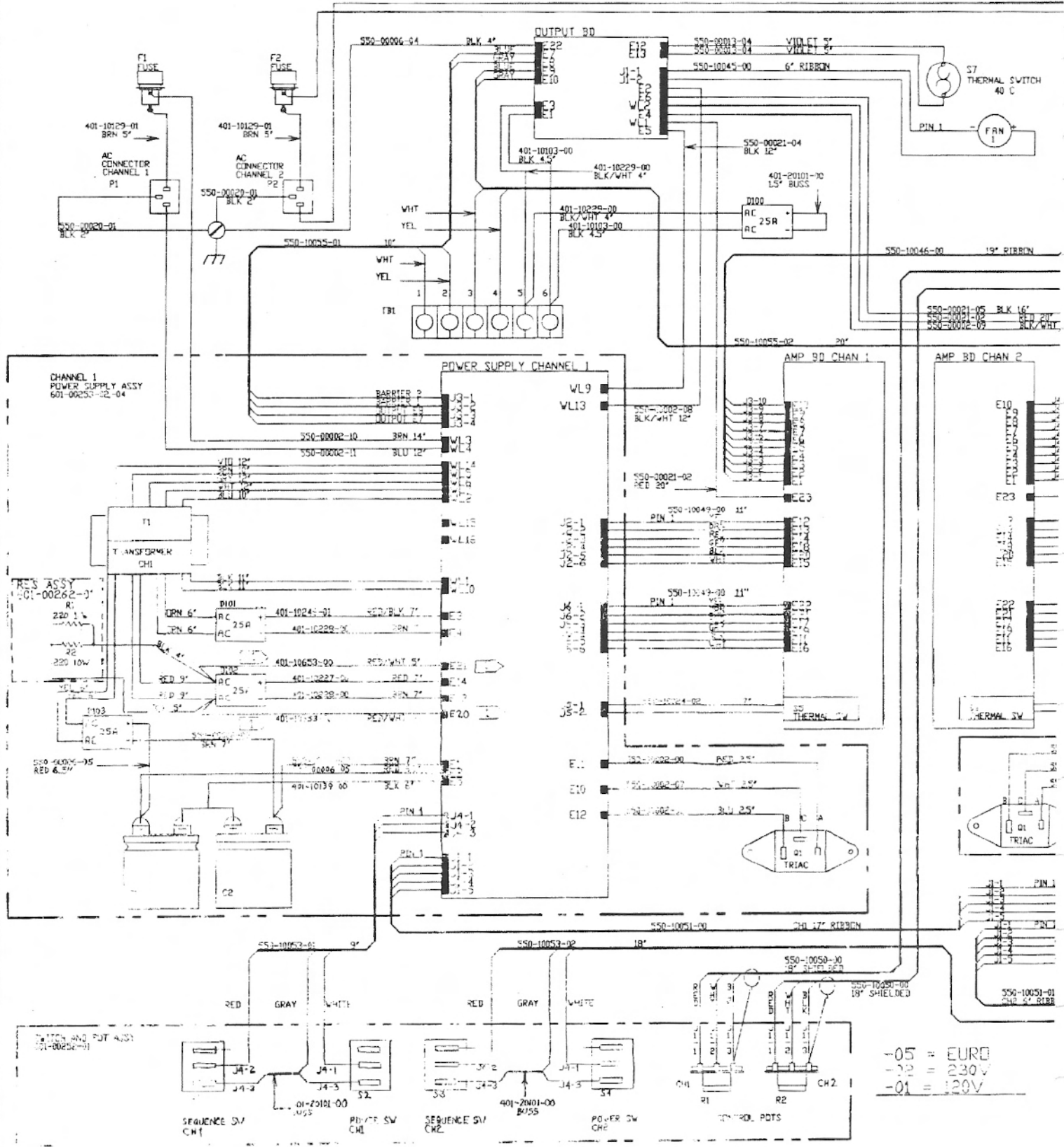
FIG. NO. 602-00447-XX 1 A

D

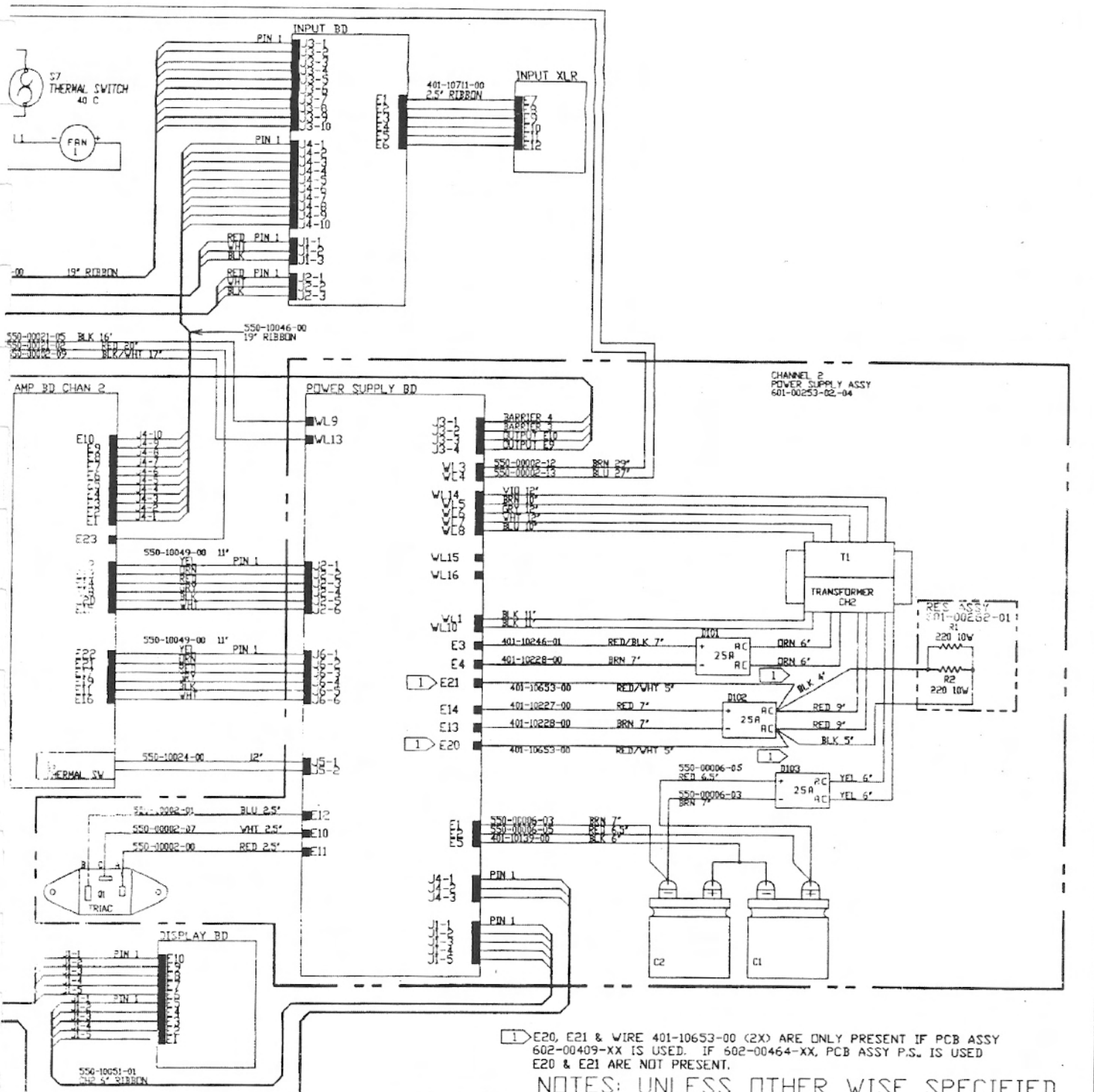
C

B

A



-05 = EURO
 -02 = 230V
 -01 = 120V



① E20, E21 & WIRE 401-10653-00 (2X) ARE ONLY PRESENT IF PCB ASSY 602-00409-XX IS USED. IF 602-00464-XX, PCB ASSY P.S. IS USED E20 & E21 ARE NOT PRESENT.

NOTES: UNLESS OTHERWISE SPECIFIED

= EURO
= 230V
= 120V

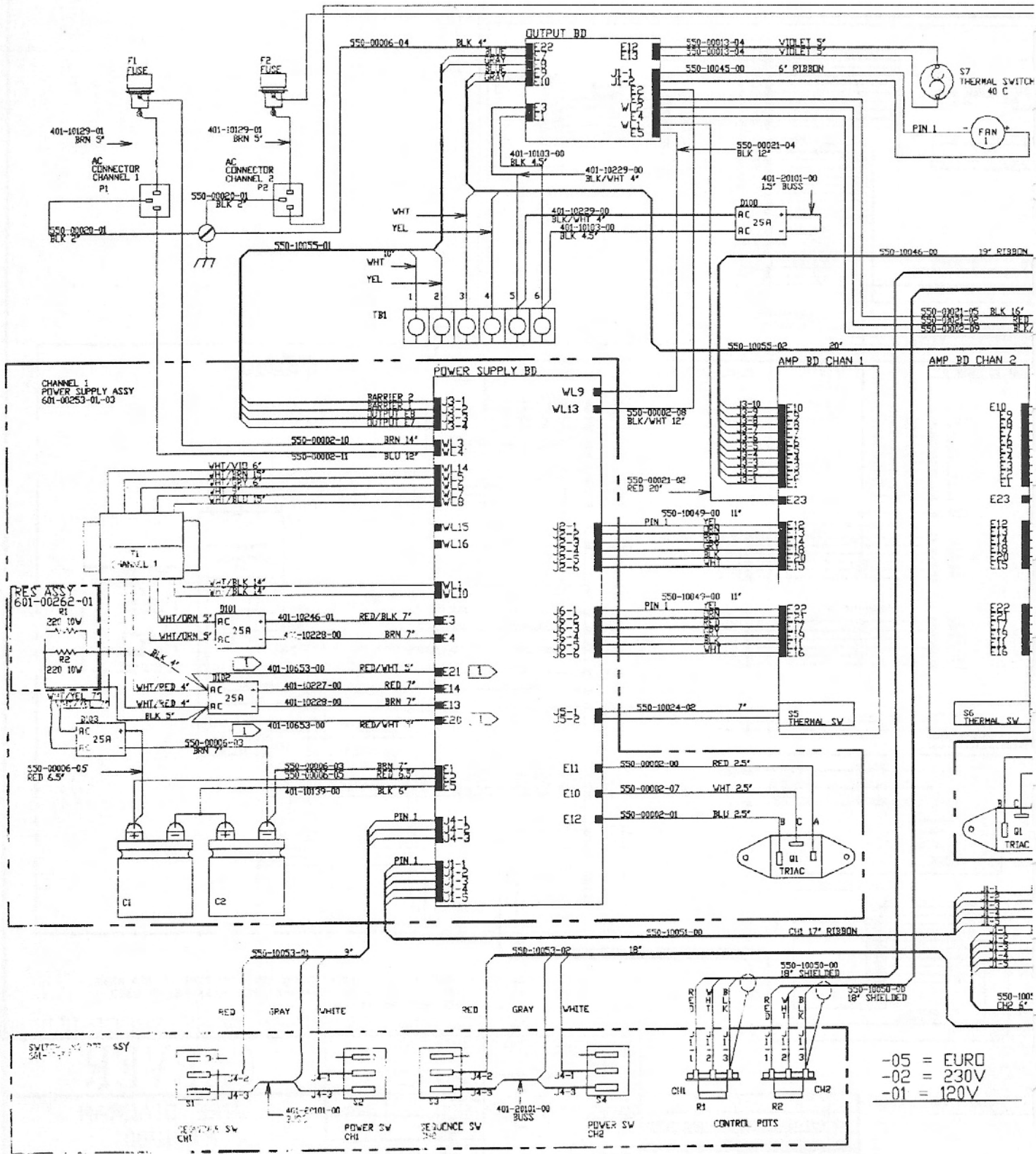
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE FRACTIONS: DECIMALS: ANGLES: .XXX .XXXX °		CONTRACT NO.		<h1>CARVER</h1> <p>WIRE DIAGRAM PT-1800</p>	
MATERIAL:		APPROVALS:	DATE:		
FINISH:		DP: W. LEIGH	3/92	<p>SIZE: D WIRDIA2 DWG. NO. 606-00135-XX REV. F</p> <p>SCALE: NONE SHEET 1 OF 1</p>	
DO NOT SCALE DRAWING		CHECKED: S. MOSES	3/92		
APPLICATION		ISSUED: S. VELTZ	3/92		
NEXT ASSEMBLY: USED IN:		ENG: D. GRIFFITHS	3/92		
		MR: M. WALTERS	3/92		

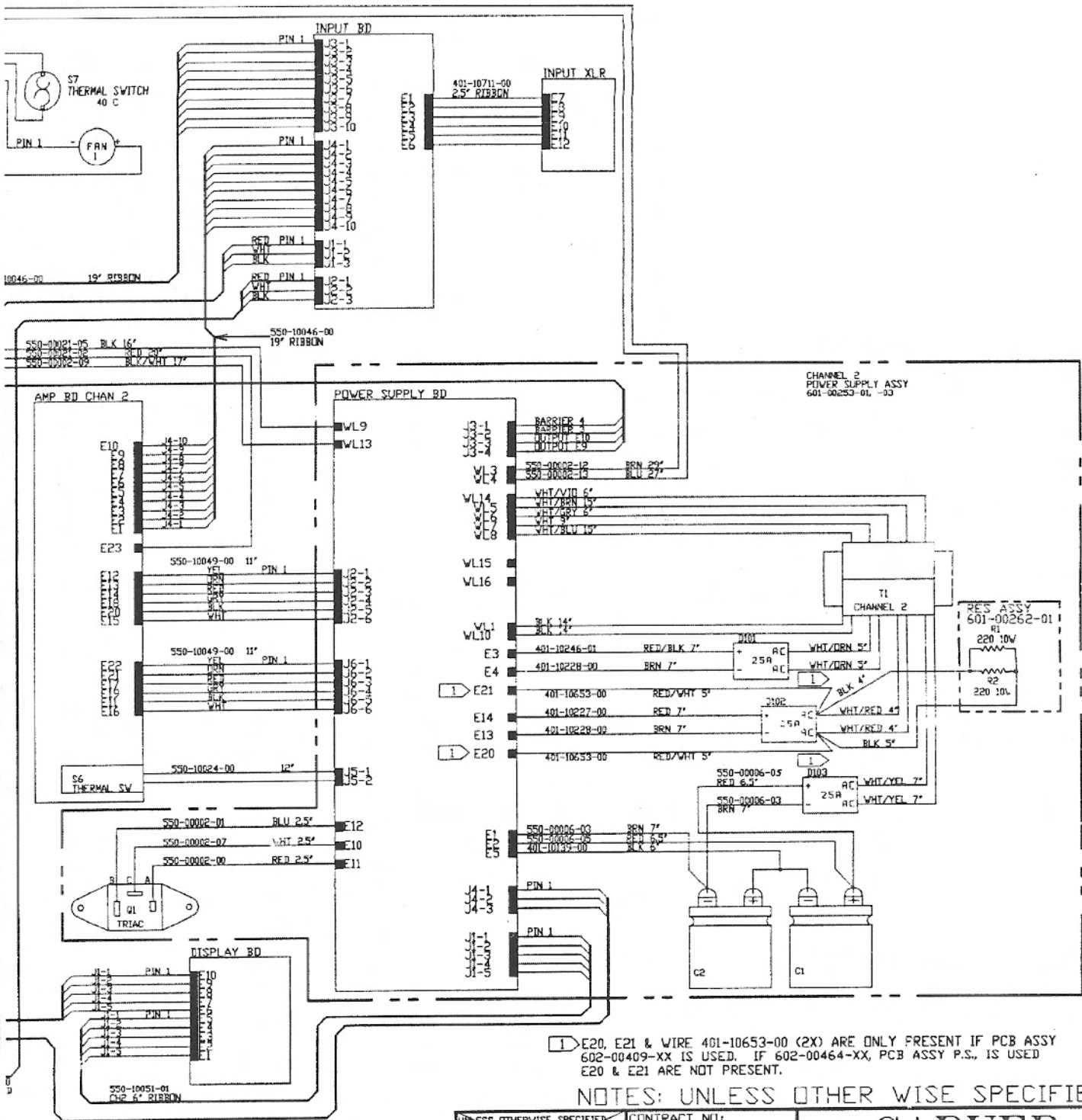
D

C

B

A





5 = EURO
 2 = 230V
 1 = 120V

-05	607-00140-05	PT-2400 EURO
-02	607-00140-02	PT-2400 230V
-01	607-00140-01	PT-2400 120V
TASK NO.	NEXT ASSEMBLY	USED ON
APPLICATION		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE FRACTIONS DECIMALS ANGLES
 Z .XXX .XXX
 MATERIAL:
 FINISH:
 DO NOT SCALE DRAWING

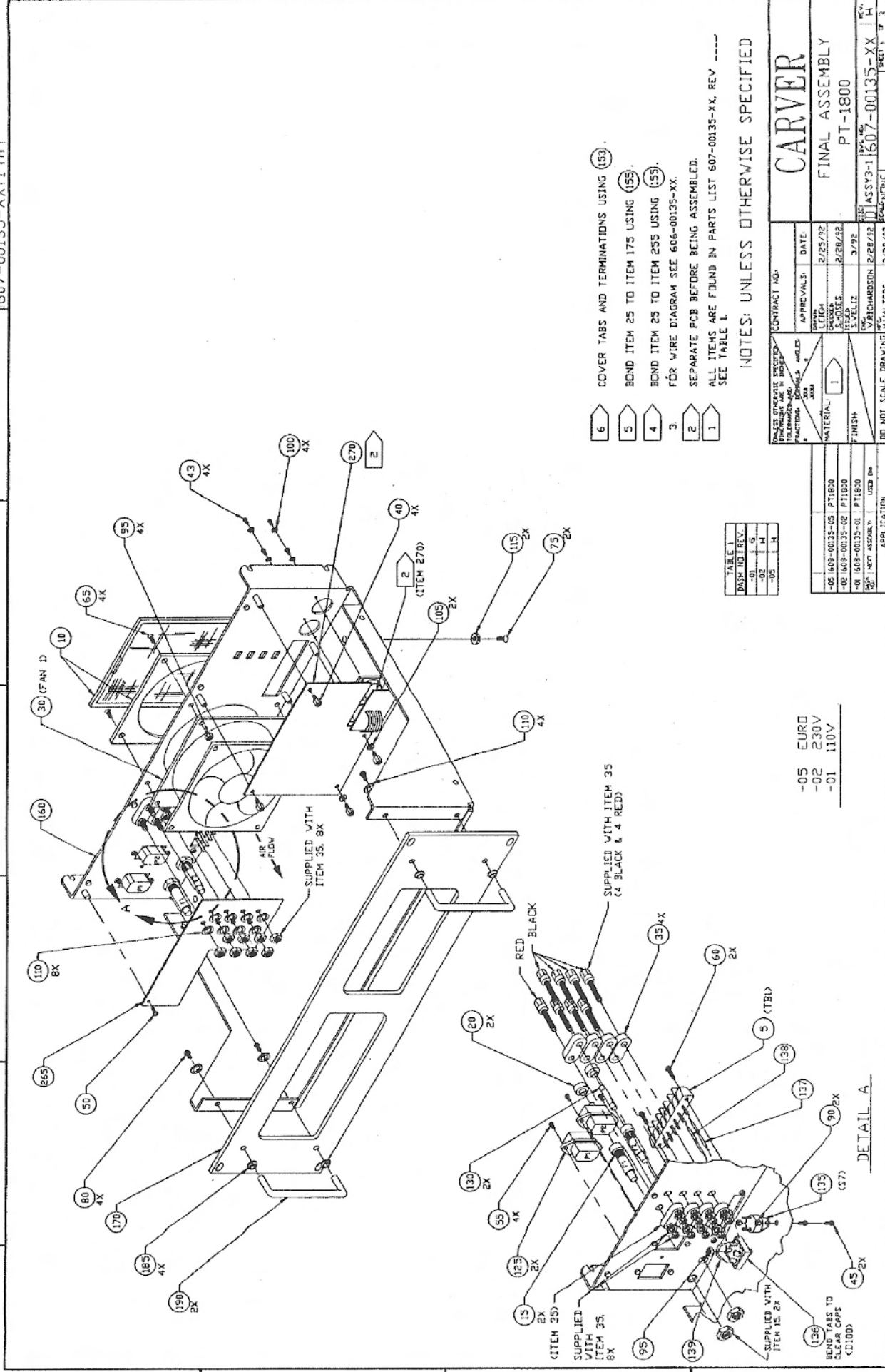
CONTRACT NO.:	
APPROVALS:	DATE:
DRAWN LEIGH	11/90
CHECKED L. MCCLESKEY	2/12/91
ISSUED:	
ENG. D. GRIFFITHS	2/12/91
MFG. T. CONRAD	2/11/91

CONTRACT NO.:

CARVER

WIRE DIAGRAM
PT-2400

SIZE: D	DWG. NO. 606-00140-XX	REV. J
SCALE: NONE	SHEET 1 OF 1	



CARVER
FINAL ASSEMBLY
PT-1800

APPROVALS: DATE: 2/25/92
LITIG
GASKET
S-0085 2/28/92
S-VELT 3/3/92
S-VEEDARDSEN 2/28/92

MATERIAL: 1
FINISH

CONTRACT NO. 1607-00135-XX

REV. 1 OF 3

- 6 COVER TABS AND TERMINATIONS USING (53)
- 5 BOND ITEM 25 TO ITEM 175 USING (53)
- 4 BOND ITEM 25 TO ITEM 255 USING (55)
- 3 FOR WIRE DIAGRAM SEE 606-00135-XX
- 2 SEPARATE PCB BEFORE BEING ASSEMBLED
- 1 ALL ITEMS ARE FOUND IN PARTS LIST 607-00135-XX, REV --- SEE TABLE 1

TABLE 1

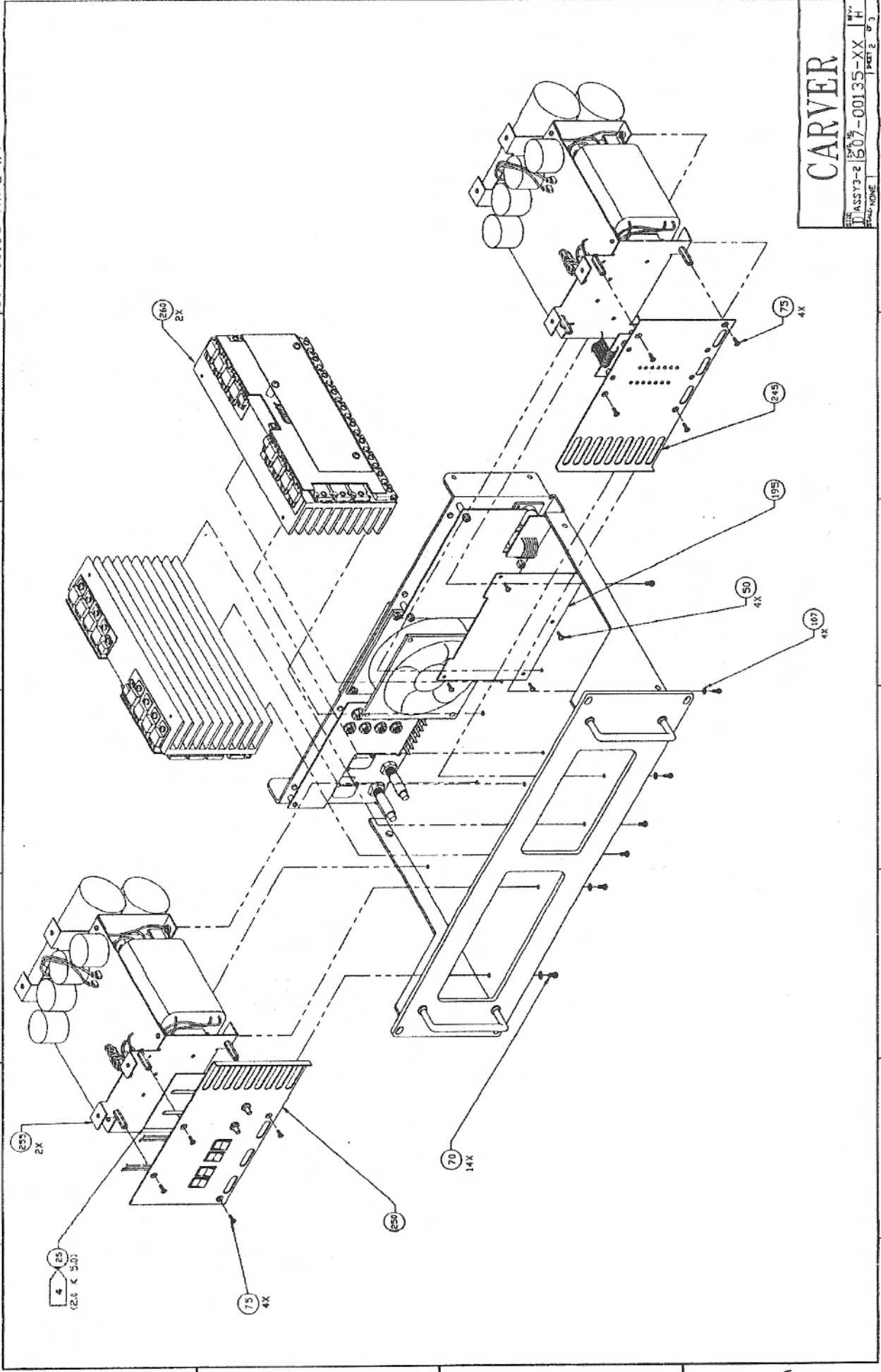
DASH NO.	REV.	DATE	BY	CHKD.
-05	EURD			
-02	230V			
-01	110V			

- 05 EURD
- 02 230V
- 01 110V

DETAIL A

507-00:35-XX(2) H

1 3 4 5 6 7 8



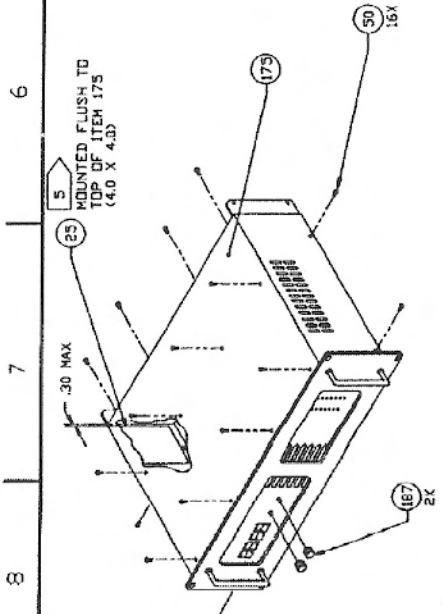
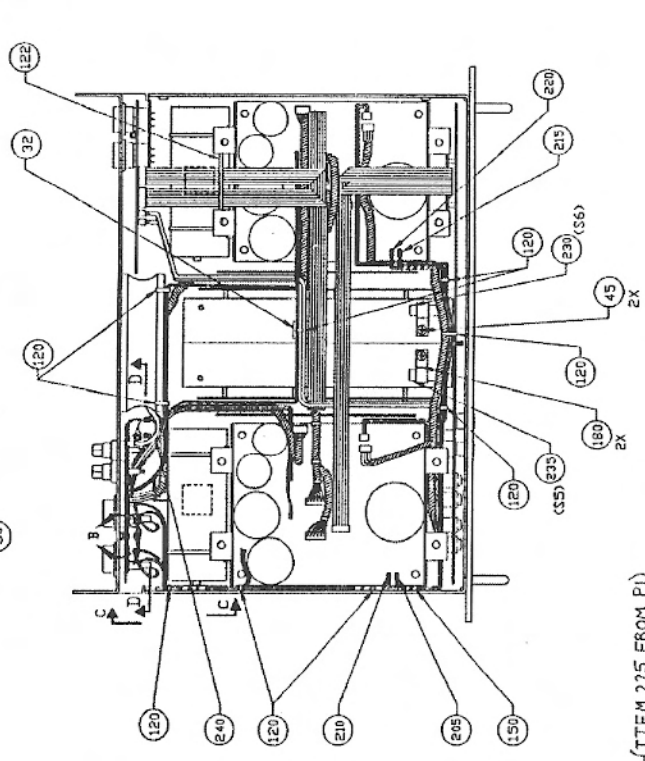
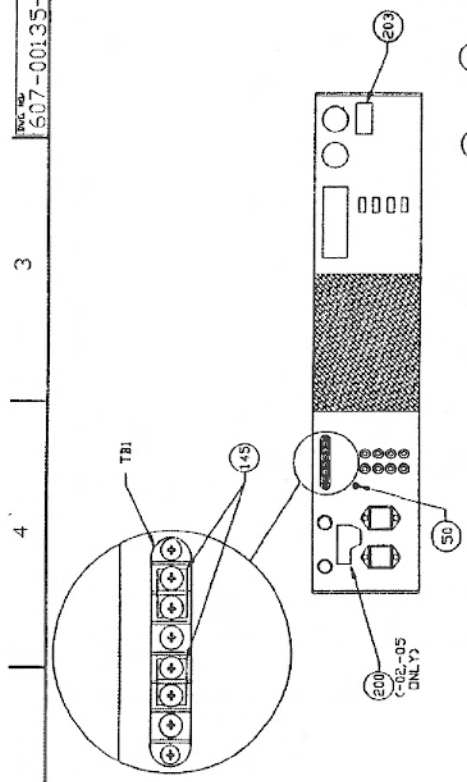
CARVER

PT-1800
 ASSY 3-2 1507-00135-XX H
 FINAL NONE 1 PKCT 2 3

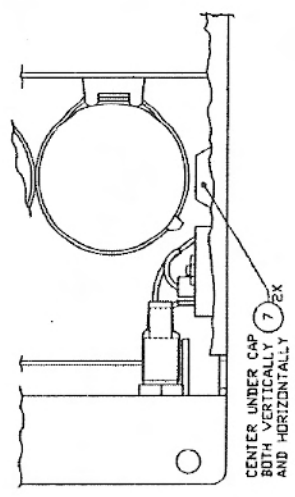
1 2 3 4 5 6 7 8

607-00135-XX 3 H

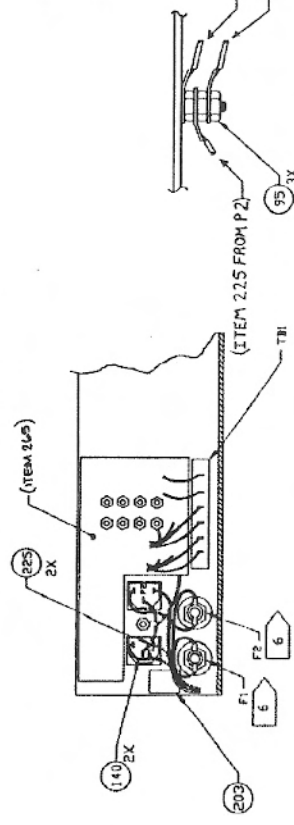
CARVER
 ASSY 3-3 607-00135-XX H
 SCALE NONE SHEET 3 OF 3



FINAL INSTALLATION



VIEW C-C
 SCALE: NONE

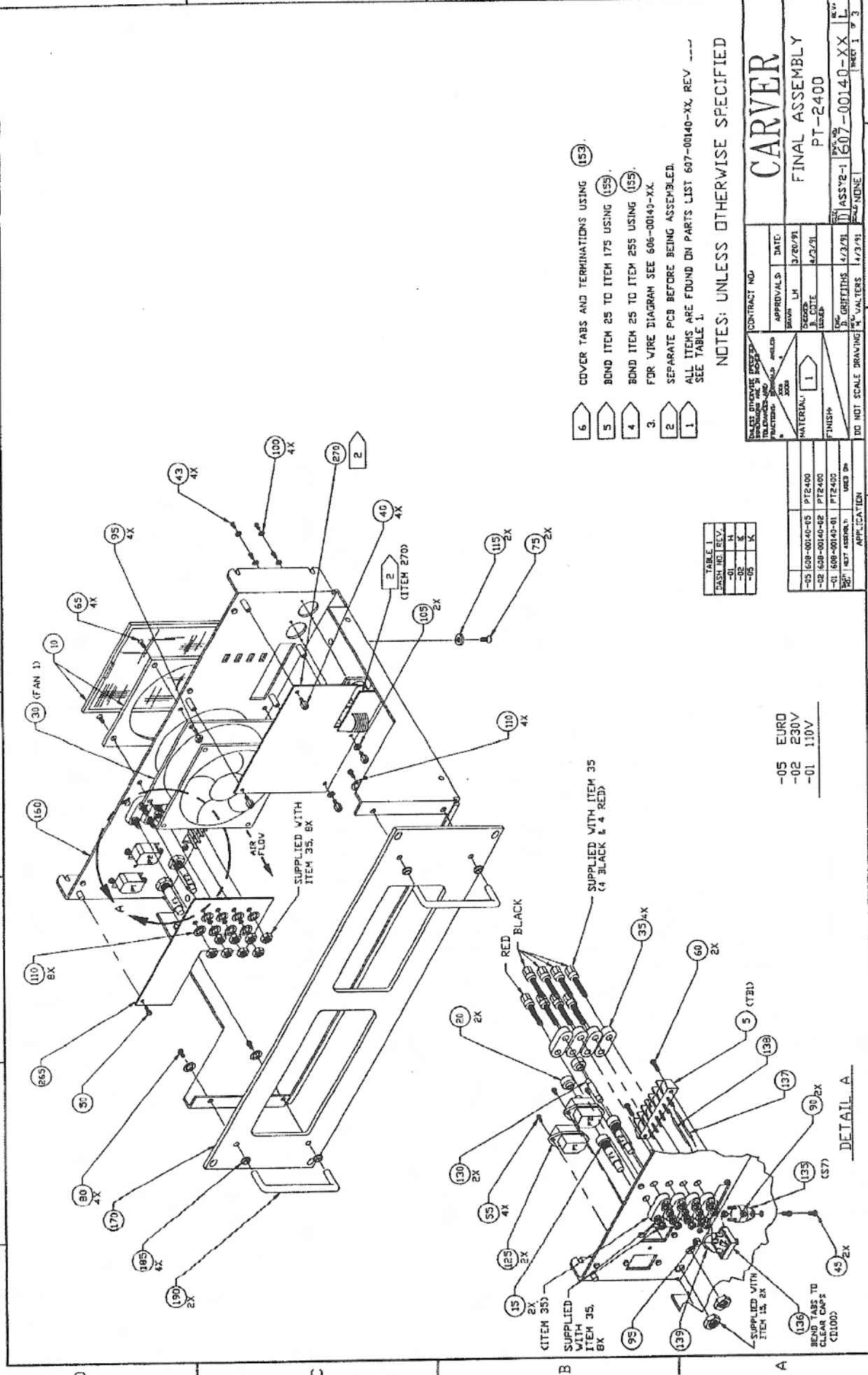


VIEW B
 SCALE: NONE

SECTION D-D
 SCALE: NONE

607-00140-XX 1 L

1 3 4 5 6 7 B



- 6 COVER TABS AND TERMINATIONS USING (153)
- 5 BOND ITEM 25 TO ITEM 175 USING (155)
- 4 BOND ITEM 25 TO ITEM 255 USING (155)
- 3 FOR WIRE DIAGRAM SEE 606-00140-XX
- 2 SEPARATE PCB BEFORE BEING ASSEMBLED
- 1 ALL ITEMS ARE FOUND ON PARTS LIST 607-00140-XX, REV. 1

TABLE 1	
CLASS	REV.
-05	K
-02	K
-01	K

-05 EURO
-02 230V
-01 110V

CONTRACT NO.		APPROVALS		DATE
BRON	LH	3/20/91		
SECOR	J.C.	4/2/91		
ISSUE				
DRG	J. GREFFITHS	4/2/91		
CHK	H. WALTERS	4/2/91		

MATERIAL		FINISH	
1			

APPLICATION	
-05	EURO
-02	230V
-01	110V

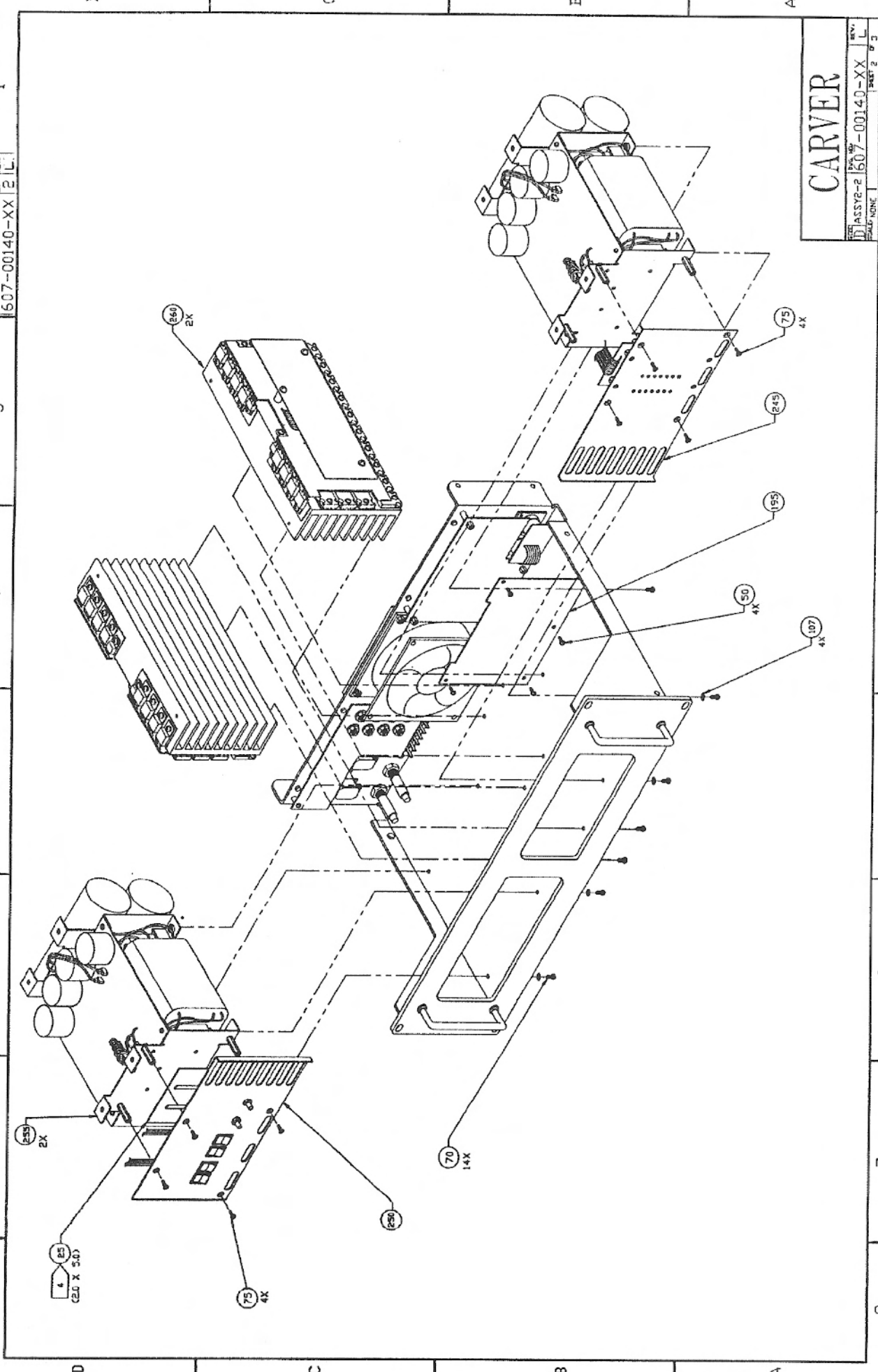
CARVER	
FINAL ASSEMBLY	
PT-2400	
REV. 1	REV. 3
REV. 2	REV. 4
REV. 3	REV. 5
REV. 4	REV. 6
REV. 5	REV. 7
REV. 6	REV. 8
REV. 7	REV. 9
REV. 8	REV. 10

607-00140-XX 2 L

CARVER
ASSY-2 607-00140-XX
PART NONE
PAGE 2 OF 3

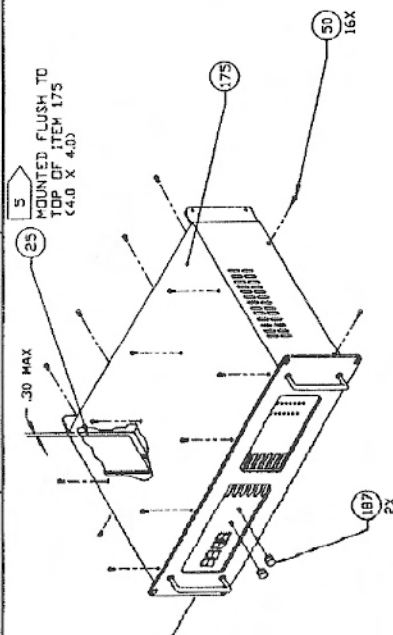
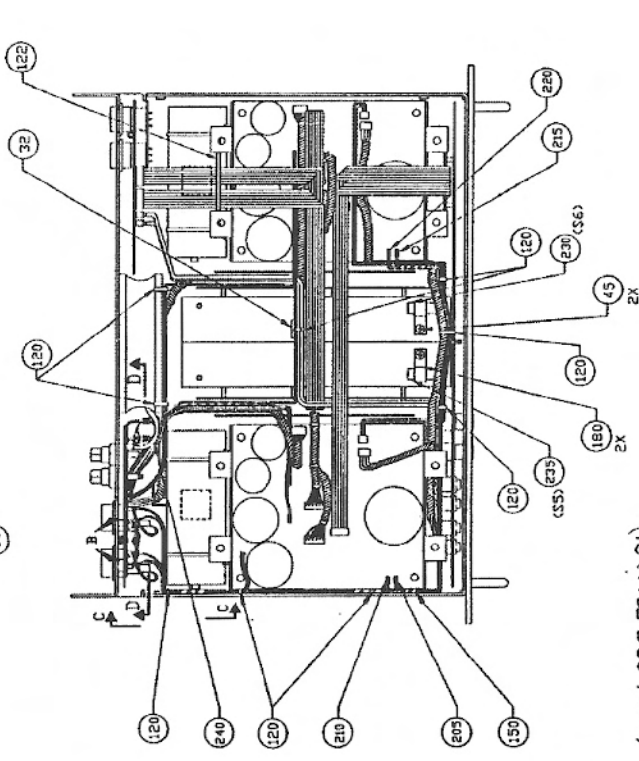
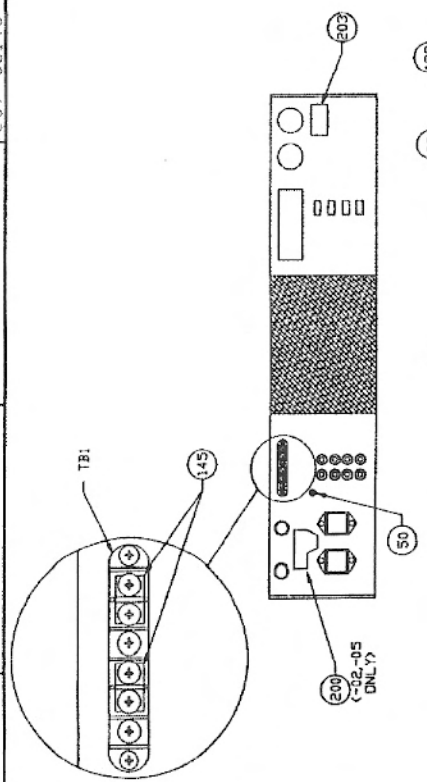
1
3
4
5
6
7
8

1
2
3
4
5
6
7
8

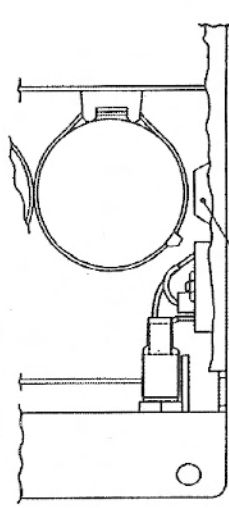


607-00140-XX 3 L

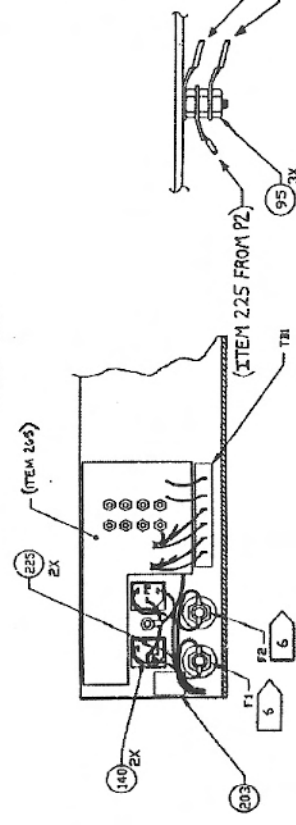
CARVER
 ASSY 2-3 607-00140-XX
 1 2 3



FINAL INSTALLATION



VIEW C-C
 SCALE: NONE
 CENTER UNDER CAP BOTH VERTICALLY AND HORIZONTALLY



VIEW B
 SCALE: NONE

SECTION D-D
 SCALE: NONE



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

PT-1800/2400 INPUT BOARD

P/N 602-00448-00 PT-2400
 602-00448-01 PT-1800

CAPACITORS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
201-00002-00	CAP CER DISC 10pF/1000V 10%	C8,9,18,22,102,103	
201-00005-00	CAP CER DISC 27pF/1000V 10%	C5,10	PT-1800 only.
201-00006-00	CAP CER DISC 39pF/1000V 10%	C5,10	PT-2400 only.
201-00008-00	CAP CER DISC 68pF/1000V 10%	C12,16	
201-00012-00	CAP CER DISC 100pF/1000V 10%	C4,6,11,14	
201-00023-00	CAP CER DISC 470pF/1000V 10%	C13,17	
202-00012-02	CAP MICA 51pF/300V 5% .2	C28,30	
202-00030-02	CAP MICA 39pF/300V 5% .2	C27,31	Was 27pF/300V.
204-00011-00	CAP PLYFLM .0047μF/100V 10% RD	C35,36	
204-00015-00	CAP PLYFLM .01μF/100V 10% RAD	C15,33	
204-00062-00	CAP PLYFLM .01μF/100V 5% RAD	C19,20,21,26	
205-00156-02	CAP LYTIC 22μF/16V 20% RAD .2	C1,2,3,7,32,34	
205-00018-00	CAP LYTIC 470μF/6.3V 20% RAD	C24,25	
207-10012-00	CAP MPOLY .33μF/100V 10% RAD	C23,29	
208-00003-01	CAP TRIMMER 4-20pF 5MM	C100,101	

RESISTORS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
259-30011-01	TRIM POT MINI VERT 220 OHM LIN	VR1,2	Was 200 ohm.
266-50430-04D	RES FLM RTD 43 OHM 1/4W PREP .5	R2,5,15,35	
266-51000-04D	RES FLM RTD 100 OHM 1/4W PREP .5	R3,14,21,34	
266-57500-04D	RES FLM RTD 750 OHM 1/4W PREP .5	R24,44	
266-58100-04D	RES FLM RTD 910 OHM 1/4W PREP .5	R4,18,23,33,38,42	
260-50152-04D	RES CF 1.5K 1/4W PREP .5	R18,40,47,48,49,55,56,60	
260-50023-04D	RES CF 2K 1/4W PREP .5	R31,39,66,68	
260-50222-04D	RES CF 2.2K 1/4W PREP .5	R46,59,65,70	
260-50362-04D	RES CF 3.6K 1/4W PREP .5	R36,54	
260-50472-04D	RES CF 4.7K 1/4W PREP .5	R7,12,19,32	
260-50512-04D	RES CF 5.1K 1/4W PREP .5	R26,52	
260-50622-04D	RES CF 8.2K 1/4W PREP .5	R9,45,50,58,67,74	R9,50 were 9.1K 1/4W.
260-50912-04D	RES CF 9.1K 1/4W PREP .5	R51,57	
260-50103-04D	RES CF 10K 1/4W PREP .5	R1,25	
260-50133-04D	RES CF 13K 1/4W PREP .5	R29,63	

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
260-50153-04D	RES CF 15K 1/4W PREP .5	R27,53	
260-50243-04D	RES CF 24K 1/4W PREP .5	R10,62	Was 51K 1/4W.
260-50433-04D	RES CF 43K 1/4W PREP .5	R13,22	
260-50513-04D	RES CF 51K 1/4W PREP .5	R72,91	
260-50683-04D	RES CF 68K 1/4W PREP .5	R100,101	
260-50823-04D	RES CF 82K 1/4W PREP .5	R30,73	
260-51003-04D	RES CF 100K 1/4W PREP .5	R76,80,81,84,102	
260-51503-04D	RES CF 150K 1/4W PREP .5	R71,88	
260-52203-04D	RES CF 220K 1/4W PREP .5	R82,93	
260-53003-04D	RES CF 300K 1/4W PREP .5	R69,92	
260-54703-04D	RES CF 470K 1/4W PREP .5	R41,64	
260-50016-04D	RES CF 1M 1/4W PREP .5	R103,104	
262-38080-04D	RES MF 909 OHM 1/4W 1% PREP .5	R61,83	
262-34222-04D	RES MF 42.2K 1/4W 1% PREP .5	R8,28	PT-1800 only. Was 49.9K 1/4W 1%.
262-34992-04D	RES MF 49.9K 1/4W 1% PREP .5	R8,28	PT-2400 only.
258-10003-00	RESISTOR NETWORK 15K 1/4W 2%	RP1,2	

DIODES

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
320-20001-00	DIODE 1N4148 75V PREP .4	D1-18,100,101	

TRANSISTORS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
321-40013-01	XISTOR TO92 NPN SM SG MPSA18	Q12,14	Was MPS8097.
321-40001-00	XISTOR TO92 NPN SM SG MPSA43	Q5,6,11,13	
321-40004-00	XISTOR TO92 PNP SM SG MPSA93	Q7,9	
321-40010-00	XISTOR TO92 NPN SM SG 2N4123	Q8,10	
321-60012-00	XISTOR TO225AA NPN PWR MJE340	Q1,3	
321-60013-00	XISTOR TO225AA PNP PWR MJE350	Q2,4	

INTEGRATED CIRCUITS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
330-30001-00	IC DUAL OP AMP BIFET (TL072)	U1,2,3	
330-40008-00	OPTOISOLATOR (VTL5C4)	U4,5	

MISCELLANEOUS ITEMS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
101-00108-00	BARRIER STRIP 6-POS PCB MNT	J5	
108-10017-01	JACK, XLR FEMALE PC MNT VERT	J6,7	
118-80018-08	SPACER #6 AL .312 OD X .625 L		For Barrier Strip.
119-20013-00	TERMINAL, TEST POINT	P1,2,3,4,5	Used as guides for J1-J4
151-20062-00	SCREW, MACH PP BLK 6-32X1 1/2		Barrier Strip Mounting.

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
152-10002-00	KEPNUT 6-32X5/16 ZC		For Barrier Strip.
160-30032-00	HEADER 3-PIN RT. ANGLE SQUARE	J1,2	
160-30033-00	HEADER 10-PIN RT. ANGLE SQUARE	J3,4	
318-40004-00	SWITCH, SLIDE 2-POLE	SW3	
318-40005-00	SWITCH, SLIDE 4-POLE	SW1,2,4	
401-10541-00	WIRE 22 AWG TR-64 BLK 3.5'		From J1 Pin 3 to C25
401-10711-00	RIBB CABLE 6-WIRE 22AWG 2.5'		
401-30002-00	JUMPER INSUL .3"x.25x.25 #22	JP1,2,5,6	
403-10006-00	GLUE, HOT MELT		
501-00448-00	PCB, INPUT PT-2400/PT-1800		

PT-1800/2400 AMP BOARD

P/N 602-00408-00 PT-2400
602-00408-01 PT-1800

CAPACITORS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
201-00018-00	CAP CER DISC 220pF 1000V 10%	C16	
201-00019-00	CAP CER DISC 250pF 1000V 10%	C4	
201-00024-00	CAP CER DISC 500pF 1000V 10%	C8,14	
201-00034-00	CAP CER DISC .01μF 500V 20%	C5,6,11,12	
204-00003-00	CAP PLYFLM .001μF 100V 10% RD	C7,13	
204-00005-00	CAP PLYFLM .0015μF 100V 10% RD	C9	
204-00007-00	CAP PLYFLM .0022μF 100V 10% RD	C1,15	Deleted after S/N 92633000001.
204-00022-00	CAP PLYFLM .033μF 100V 10% RD	C17,18	Added after S/N 92633000001.
204-00027-00	CAP PLYFLM .1μF 100V 10% RAD	C2,3	
205-00005-02	CAP LYTIC 4.7μF 63V 20% RAD .2	C10	

RESISTORS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
260-50477-04D	RES CF 4.7 OHM 1/4W PREP .5	R21,59	
260-50430-04D	RES CF 43 OHM 1/4W PREP .5	R35	
260-50620-04D	RES CF 62 OHM 1/4W PREP .5	R14	
260-54700-04D	RES CF 470 OHM 1/4W PREP .5	R1,11,67,77	
260-55100-04D	RES CF 510 OHM 1/4W PREP .5	R8,85	
260-57500-04D	RES CF 750 OHM 1/4W PREP .5	R9,83	
260-58200-04D	RES CF 820 OHM 1/4W PREP .5	R18,75	
260-50013-04D	RES CF 1K 1/4W PREP .5	R22	
260-50132-04D	RES CF 1.3K 1/4W PREP .5	R10,73	
260-50023-04D	RES CF 2K 1/4W PREP .5	R14,52,70	R14,70 were 47K 1/4W.

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
260-50222-04D	RES CF 2.2K 1/4W PREP .5	R27,57	
260-50033-04D	RES CF 3K 1/4W PREP .5	R2,6,12,16,68,72,78,82	
260-50432-04D	RES CF 4.3K 1/4W PREP .5	R13,69	
260-50512-04D	RES CF 5.1K 1/4W PREP .5	R5,81	Was 10K 1/4W.
260-50682-04D	RES CF 6.8K 1/4W PREP .5	R43,55	
260-50103-04D	RES CF 10K 1/4W PREP .5	R15,71	
260-50123-04D	RES CF 12K 1/4W PREP .5	R25	PT-1800, was 15K 1/4W.
260-50153-04D	RES CF 15K 1/4W PREP .5	R25	
260-50203-04D	RES CF 20K 1/4W PREP .5	R54	
260-50223-04D	RES CF 22K 1/4W PREP .5	R23	
260-50243-04D	RES CF 24K 1/4W PREP .5	R17,20,53,74,76	
260-50473-04D	RES CF 47K 1/4W PREP .5	R7,10,84,86	
260-51003-04D	RES CF 100K 1/4W PREP .5	R4,28,29,80	R28,29 added after S/N 91Y33000001.
260-51203-04D	RES CF 120K 1/4W PREP .5	R26,58	
260-51503-04D	RES CF 150K 1/4W PREP .5	R24	
260-50822-05E	RES CF 8.2K 1/2W PREP .6	R3,79	
257-60228-08A	RES M PL CEM .22 OHM 2W	R36,37,39,40,41,42,45,46,48,49,50,51	
259-30006-00	POT RIGHT ANGLE MINI 5K R56		

DIODES

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
319-00033-00	RECT HW COM CATHODE 16A 200V	D5	
319-00034-00	RECT HW COMMON ANODE 16A 200V	D9	
320-20001-00	DIODE 1N4148 75V PREP .4	D2,4,7,10	
320-20004-00	DIODE 1N4004 400V PREP .4X.25	D3,6,8,11,12,13	
320-20006-00	DIODE 175 WV HIGH SPEED PREP .4	D1	

TRANSISTORS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
321-30013-00	XISTOR TO3P(L) NPN PWR 25C3281-0	Q13,14,15,17,18,19,20	
321-30014-00	XISTOR TO3P(L) PNP PWR 25A1302-0	Q22,23,24,26,27,28,29	
321-40001-00	XISTOR TO92 NPN SM SG MPSA43	Q5,8,10	
321-40004-00	XISTOR TO92 PNP SM SG MPSA93	Q8,32,37	
321-40009-00	XISTOR TO92 PNP SM SG 2N4125	Q11	
321-40013-01	XISTOR TO92 NPN SM SG MPSA18	Q21	
321-60001-00	XISTOR TO220 NPN PWR MJE15030	Q36	Was 2N6488.
321-60004-00	XISTOR TO220 NPN 2N6488	Q31	
321-60003-00	XISTOR TO220 PNP PWR MJE15031	Q4	Was 2N6490.
321-60006-00	XISTOR TO220 PNP 2N6490	Q7	
321-80006-01	XISTOR TO218AA NPN TIP 35C	Q1,2,3,6	
321-80007-01	XISTOR TO218AA PNP TIP 36C	Q30,33,34,35	
321-90001-00	XISTOR B100 NPN PWR 25C3423-Y	Q12	

INTEGRATED CIRCUITS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
330-30008-00	IC QUAD COMPARATOR LM339N	U1	

MISCELLANEOUS ITEMS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
119-20013-00	TERMINAL, TEST POINT	TP1,2,3	
401-30002-00	JUMPER INSUL .3"x.25x.25 #22	JP14-20,23-29	JP16,25 on PT-2400 only.
403-10006-00	GLUE, HOT MELT		
501-00408-00	PCB, AMP PT-2400/PT-1800		
530-20102-01	STICKER, MARKER (VINYL)		On Conn of E22-E16
550-00021-02	CBL, .250 #16 TEW 20" RED	E23	
550-10046-00	HARN CONN, 10-PIN #22 19"		Amp to Input
550-10049-00	HARN CONN, 6-WIRE #18 11"		Amp to Power Supply

PT-1800/2400 AMP ASSEMBLY

P/N 601-00255-01 PT-2400
601-00255-02 PT-1800

CARVER P/N	ITEM NO.	DESCRIPTION	REF DESIGNATORS	NOTES
118-80022-02	5	STDOFF, .25 HEX 6-32 .312L M/F		Between Heatsink & Board
118-80022-05	7	STDOFF, .25 HEX 6-32 .50L M/F		Between Board & Shield
151-20002-00	20	SCREW MACH PP BLK 440X3/8		Transistors
151-20003-00	23	SCREW, MACH PP BLK 4-40X1/2		Transistors
151-20051-00	24	SCREW MACH PP JBLK 6-32X1/4		Shield Mounting
154-00007-00	25	WASHER BELLEVILLE #4 BLACK OX		Used with Item 20
154-40008-01	30	WASHER SHLDR NYLON #4 .050		
159-50001-00	120	TYRAP 3-3/8" L WHITE		Used on Harness Conn. to P/S
511-20017-00	35	HEATSINK, ANO PT-2400		
512-10637-01	40	INSUL SIL-PAD K-6 3-POS		
512-10638-01	45	INSUL SIL-PAD K-6 5-POS		
512-10639-01	50	INSUL SIL-PAD K-6 10-POS		
512-20717-00	53	SHIELD, AMP PT2400/1800		
602-00408-00	55	ASSY, PCB AMP PT-2400		
602-00408-01	55	ASSY, PCB AMP PT-1800		

PT-1800/2400 OUTPUT BOARD (Original Version)

P/N 602-00446-00

CAPACITORS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
204-00033-00	CAP METPOLY .33 μ F/400V 10% RD	C2,3	
207-10010-01	CAP MPLY .1 μ F/250V 10% RAD SHT	C1	

RESISTORS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
260-50273-05E	RES CF 5% 27K 1/2W PREP .6	R1	
264-50277-11K	RES WW 5% 2.7 OHM 5W PREP 1.2	R2,3	

DIODES

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
320-30025-01	DIODE ZENER IN5342A 6.8V	D1	

MISCELLANEOUS ITEMS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
115-80000-00	CONNECTOR, QD TAB .250" PCB	WL1,2	
180-30024-00	HEADER 2 PIN .1" LOCK ST POST	J1	
401-10103-00	WIRE 18 AWG TEW BLK 4.5'	E1	
401-10229-00	WIRE 18 AWG TEW BLK/WHT 4'	E3	
501-00446-00	PCB, OUTPUT PT-1800/PT-2400		
550-00002-08	CBL, .250 18 AWG TEW BLK/WHT 12'	E2	
550-00002-09	CBL, .250 18 AWG TEW BLK/WHT 17'	E4	
550-00008-04	CBL, #10 LUG, 18 AWG TR64 BLK 4'	E22	
550-00013-04	CBL, .250 FAST 22 AWG TEW VIO 5'	E12,13	
550-00021-05	CBL, .250 16 AWG TEW BLK 16'	E5	Was 15'.
550-00021-04	CBL, .250 16 AWG TEW BLK 12'	E5	
660-10054-02	HARN CONN TW 3PIN #22 20"	E10	
550-10054-01	HARN CONN TW 3PIN #22 10"	E8	
618-00018-00	CHOKE, 5 μ H 20A .006 OHMS	L1,2	

PT-1800/2400 OUTPUT BOARD (New Version)

P/N 602-00465-01

CAPACITORS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
204-00033-00	CAP METPOLY .33 μ F/400V 10% RD	C2,3	
206-00037-00	CAP LYTIC 470 μ F/50V 20% AXIAL	C4	
207-10010-01	CAP MPLY .1 μ F/250V 10% RAD SHT	C1	

RESISTORS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
260-50273-05E	RES CF 27K 1/2W PREP .6	R1	
264-50277-11K	RES WW 2.7 OHM 5W PREP 1.2	R2,3	
264-52000-13L	RES WW 200 OHM 7W PREP 1.3	R4,5	

DIODES

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
320-20004-00	DIODE 1N4004 400V PREP .4" x .25"	D3,4,5,6	
320-30025-01	DIODE ZENER IN5342A 6.8V	D1,2	





MISCELLANEOUS ITEMS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
115-60000-00	CONNECTOR, QD TAB .250" PCB	WL1,2	
160-30024-00	HEADER 2 PIN .1" LOCK ST POST	J1	
401-10103-00	WIRE 18 AWG TEW BLK 4.5"	E1	
401-10229-00	WIRE 18 AWG TEW BLK/WHIT 4"	E3	
501-00465-01	PCB OUTPUT PT2400/1800		
550-00002-08	CBL .250" 18 AWG TEW BLK/WHIT 12"	E2	
550-00002-09	CBL .250" 18 AWG TEW BLK/WHIT 17"	E4	
550-00006-04	CBL #10 LUG 18 AWG TR64 4" BLK	E22	
550-00013-04	CBL .250" FAST 22 AWG TEW VIO 5"	E12,13	
550-00021-05	CBL .250" 16 AWG TEW BLK 16"	E8	
550-00021-04	CBL .250" 16 AWG TEW BLK 12"	E5	
550-10055-02	HARN CONN TW 4PIN #22 20"	E10	
550-10055-01	HARN CONN TW 4PIN #22 10"	E8	
616-00016-00	CHOKE, 5 μ H 20A .008 OHMS	L1,2	

PT-1800/2400 POWER SUPPLY BOARD (Original Version)

P/N 602-00409-00 PT-2400 115V
 602-00409-01 PT-1800 115V
 602-00409-02 PT-2400 230V

CAPACITORS


CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
201-00020-00	CAP CER DISC 370pF/1000V 10%	C26	PT-2400
201-00021-00	CAP CER DISC 330pF/1000V 10%	C26	PT-1800
201-00061-00	CAP CER DISC .001 μ F/250V 10%UL	C103,104	
204-00010-00	CAP PLYFLM .0039 μ F/100V 10% RD	C10	
204-00027-00	CAP PLYFLM .1 μ F/100V 10% RAD	C18	PT-1800
204-00038-00	CAP PLYFLM .18 μ F/100V 10% RAD	C18	PT-2400
204-00081-00	CAP PLYFLM .33 μ F/100V 10% RAD	C19	Was .068 μ F/100V PLYFLM.
205-00083-02	CAP LYTIC 2.2 μ F/50V 20% RAD .2	G23	
205-00013-02	CAP LYTIC 47 μ F/25V 20% RAD .2	C2,3,6,7	
205-00015-02	CAP LYTIC 100 μ F/10V 20% RAD .2	C4,5,24	
205-00001-02	CAP LYTIC 1 μ F/50V 20% RAD .2	C1,100	
205-00084-02	CAP LYTIC 10 μ F/25V 20% RAD .2	C22	
205-00136-00	CAP LYTIC 3300 μ F/80V SNAP MT	C12,13	
205-00136-00	CAP LYTIC 6800 μ F/35V SNAP MT	C15,16	
205-00147-01	CAP LYTIC 1000 μ F/35V RADIAL	C101	
207-10010-01	CAP MPOLY .1 μ F/250V 10% RAD SHT	C8,9,17,102	

RESISTORS



CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
260-50477-04D	RES CF 4.7 OHM 1/4W PREP .5	R48	
260-50510-04D	RES CF 51 OHM 1/4W PREP .5	R22	
260-51000-04D	RES CF 100 OHM 1/4W PREP .5	R9,14	Was 200 ohm 1/4W.
260-51200-04D	RES CF 120 OHM 1/4W PREP .5	R40	
260-53300-04D	RES CF 330 OHM 1/4W PREP .5	R18,39	R39 was 680 ohm 1/4W.
260-56200-04D	RES CF 620 OHM 1/4W PREP .5	R21	
260-56800-04D	RES CF 680 OHM 1/4W PREP .5	R25,37,44	
260-57500-04D	RES CF 750 OHM 1/4W PREP .5	R23	
260-50013-04D	RES CF 1K 1/4W PREP .5	R38,77	
260-50122-04D	RES CF 1.2K 1/4W PREP .5	R63,76	
260-50023-04D	RES CF 2K 1/4W PREP .5	R27,72	
260-50222-04D	RES CF 2.2K 1/4W PREP .5	R26,104	
260-50432-04D	RES CF 4.3K 1/4W PREP .5	R24	
260-50512-04D	RES CF 5.1K 1/4W PREP .5	R10,15,53	
260-50752-04D	RES CF 7.5K 1/4W PREP .5	R62	
260-50103-04D	RES CF 10K 1/4W PREP .5	R4,19,73,78	
260-50153-04D	RES CF 15K 1/4W PREP .5	R52	
260-50183-04D	RES CF 18K 1/4W PREP .5	R49	
260-50243-04D	RES CF 24K 1/4W PREP .5	R75,101,102	R75 PT-2400 only.
260-50273-04D	RES CF 27K 1/4W PREP .5	R29,31	

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
260-50363-04D	RES CF 36K 1/4W PREP .5	R1,2	
260-50363-04D	RES CF 39K 1/4W PREP .5	R75	PT-1800 only.
260-50473-04D	RES CF 47K 1/4W PREP .5	R100	
260-50623-04D	RES CF 62K 1/4W PREP .5	R103	
260-50683-04D	RES CF 68K 1/4W PREP .5	R16,36	R36 PT-1800 only.
260-50753-04D	RES CF 75K 1/4W PREP .5	R36	PT-2400 only.
260-51003-04D	RES CF 100K 1/4W PREP .5	R45,47,74	
260-51203-04D	RES CF 120K 1/4W PREP .5	R20	
260-51303-04D	RES CF 130K 1/4W PREP .5	R3,5,33,42	
260-51503-04D	RES CF 150K 1/4W PREP .5	R17,68	
260-51803-04D	RES CF 180K 1/4W PREP .5	R48	
260-52403-04D	RES CF 240K 1/4W PREP .5	R34,43	
260-53903-04D	RES CF 390K 1/4W PREP .5	R28	
260-54703-04D	RES CF 470K 1/4W PREP .5	R30	
260-55103-04D	RES CF 510K 1/4W PREP .5	R50,71	
260-50180-05E	RES CF 18 OHM 1/2W PREP .6	R55	
260-50162-05E	RES CF 1.6K 1/2W PREP .6	R8,13	
260-50243-05E	RES CF 24K 1/2W PREP .6	R51	PT-2400 120V only.
260-50303-05E	RES CF 30K 1/2W PREP .6	R51	PT-1800 120V; PT-2400 230V only. Was 91K 1/2W.
260-50825-05E	RES CF 8.2M 1/2W PREP .6	R54	
262-32371-04D	RES MF 2.37K 1/4W 1% PREP .5	R57	Was 909 ohm 1/4W 1%.
262-32211-04D	RES MF 2.21K 1/4W 1% PREP .5	R56	Was 909 ohm 1/4W 1%.
262-34321-04D	RES MF 4.32K 1/4W 1% PREP .5	R65	
262-31003-04D	RES MF 100K 1/4W 1% PREP .5	R68	
263-50223-07G	RES MO 22K 1W PREP .8	R6	
263-50823-07G	RES MO 82K 1W PREP .8	R32,41	
263-50822-08I	RES MO 8.2K 2W PREP 1.0	R7	
263-50103-08I	RES MO 10K 2W PREP 1.0	R11	
264-50277-08W	RES WW 2.7 OHM 3W PREP .20	R106	
264-50023-11A	RES WW 2K 5W RADIAL	R12	
264-53300-11A	RES WW 330 OHM 5W RAD	R60	
or			
255-30038-00	RES MO 680 OHM 3W	R60	Two resistors mounted in parallel.
259-30002-00	POT 5K MINIATURE PCB MOUNT	R25	



DIODES

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
320-20001-00	DIODE 1N4148 75V PREP .4	D5,6,9,12,13,29,32,33,34,100	
320-20004-00	DIODE 1N4004 400V PREP .4X.25	D1,3,4,7,10,11,14,15,16,17,19,20,21,22,23	
320-30026-00	DIODE ZENER 4742C 12V 2% .4	D2,24	
320-30009-00	DIODE ZENER 1N4736 6.2V .4	D8	


TRANSISTORS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
321-40013-01	XISTOR TO92 NPN 9M 9G MP5A18	Q3	Was MP58097.
321-40003-00	XISTOR TO92 MP58093 (SUB FPN4)	Q2,11	
321-40008-00	XISTOR TO92 PNP 9M 9G 2N4125	Q10	
321-40010-00	XISTOR TO92 NPN 9M 9G 2N4123	Q8,12	
321-40011-00	XISTOR TO92 NPN 9M 9G MP5A06	Q4,6	
321-40012-00	XISTOR TO92 PNP 9M 9G MP5A56	Q5,7	
321-80000-00	XISTOR B100 PNP PWR 2SA1360-Y	Q8	
321-80001-00	XISTOR B100 NPN PWR 2SC3423-Y	Q1	

INTEGRATED CIRCUITS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
330-30008-00	IC DUAL OP AMP (4558)	U1,2	
330-40002-00	OPTOISOLATOR PXSTR CNY17-2Z	I901	
330-40007-00	OPTOISOLATOR, TRIAC DRIVER 250V	I902	



MISCELLANEOUS ITEMS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
115-80000-00	CONNECTOR, QD TAB .250 PCB	WL1,3-10,13-16	
180-30018-00	HEADER 2 PIN .156 LOCK ST POST	J5	
180-30022-00	HEADER 6 PIN .156 LOCK ST POST	J2,6	
180-30038-01	HEADER, 3-PIN .10 LOCK ST POST	J3,4	
180-30039-01	HEADER, 5-PIN .10 LOCK ST POST	J1	
401-10139-00	WIRE 18 AWG TR-64 BLK 8"	E5	Was 4".
401-10246-01	WIRE 18 AWG TEW RED/BLK 7"	E3	Was Red 7".
401-10227-00	WIRE 18 AWG TEW RED 7"	E14	
401-10228-00	WIRE 18 AWG TEW BRN 7"	E4,13	
401-10653-00	WIRE 22 AWG TR-64 RED/WHT 5"	E20,21	
501-00408-00	PCB POWER SUPPLY PT2400/PT1800		
530-20102-01	STICKER, MARKER (VINYL)		On Board by J6
550-00002-00	CBL, .250, #18, TEW, 2.5" RED	E11	
550-00002-01	CBL, .250, #18, TEW, 2.5" BLU	E12	
550-00002-07	CBL, .250, #18, TEW, 2.5" WHT	E10	
550-00006-05	CBL, #10 LUG TR64 #18 6.5" RED	E2	Was 5.5".
550-00006-03	CBL, #10 LUG, TR64, #18, 7" BRN	E1	
816-00017-00	CHOKE 1mH (X2), 250V 15A	L1	

PT-1800/2400 POWER SUPPLY BOARD (NEW VERSION)

P/N 602-00464-01 PT-2400 115V
 602-00464-02 PT-2400 230V
 602-00464-03 PT-1800 115V
 602-00464-04 PT-1800 230V

CAPACITORS


CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
201-00020-00	CAP CER DISC 270 pF 1000V 10%	C26	PT-2400 Only
201-00021-00	CAP CER DISC 330 pF 1000V 10%	C26	PT-1800 Only
201-00061-00	CAP CER DISC .001 μ F 250V 10%UL	C103,104	
204-00010-00	CAP PLYFLM .0039 μ F 100V 10% RD	C10	
204-00027-00	CAP PLYFLM .1 μ F 100V 10% RAD	C18	PT-1800 Only
204-00038-00	CAP PLYFLM .18 μ F 100V 10% RAD	C18	PT-2400 Only
204-00031-00	CAP PLYFLM .33 μ F 100V 10% RAD	C19	
205-00093-02	CAP LYTIC 2.2 μ F 50V 20% RAD .2	C23	
205-00013-02	CAP LYTIC 47 μ F 25V 20% RAD .2	C2,3,6,7	
205-00015-02	CAP LYTIC 100 μ F 10V 20% RAD .2	C4,5,24	
205-00001-02	CAP LYTIC 1 μ F 50V 20% RAD .2	C1,100	
205-00094-02	CAP LYTIC 10 μ F 25V 20% RAD .2	C22	
205-00138-00	CAP LYTIC 3300 μ F 80V SNAP MT	C12,13	
205-00139-00	CAP LYTIC 8800 μ F 35V SNAP MT	C15,18	
207-10015-01	CAP, MET POLY .1 μ F 250V CSA	C9,17,102	

RESISTORS



CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
260-55100-04D	RES CF 510 OHM 1/4W .5	R48	
260-50610-04D	RES CF 51 OHM 1/4W .5	R22	
260-51200-04D	RES CF 120 OHM 1/4W .5	R40	
260-51000-04D	RES CF 100 OHM 1/4W .5	R9,14	
260-53300-04D	RES CF 330 OHM 1/4W .5	R18,39	
260-56200-04D	RES CF 620 OHM 1/4W .5	R21	
260-56800-04D	RES CF 680 OHM 1/4W .5	R35,37,44	
260-57600-04D	RES CF 750 OHM 1/4W .5	R23	
260-50013-04D	RES CF 1K 1/4W .5	R38,77	
260-50122-04D	RES CF 1.2K 1/4W .5	R63,76	
260-50023-04D	RES CF 2K 1/4W .5	R27,72	
260-50182-08E	RES CF 1.6K 1/2W .6	R8,13	
260-50222-04D	RES CF 2.2K 1/4W .5	R26,104	
260-50432-04D	RES CF 4.3K 1/4W .5	R24	
260-50512-04D	RES CF 5.1K 1/4W .5	R10,15,53	
260-50782-04D	RES CF 7.5K 1/4W .5	R62	
260-50103-04D	RES CF 10K 1/4W .5	R4,19,73,78	
260-50153-04D	RES CF 15K 1/4W .5	R52	

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
260-50163-04D	RES CF 18K 1/4W .5	R49	
260-50243-04D	RES CF 24K 1/4W .5	R75,101,102	R75 PT-2400 Only
260-50273-04D	RES CF 27K 1/4W .5	R29,31	
260-50753-04D	RES CF 75K 1/4W .5	R36	PT-2400 Only
260-50363-04D	RES CF 36K 1/4W .5	R1,2	
260-50383-04D	RES CF 39K 1/4W .5	R75	PT-1800 Only
260-50473-04D	RES CF 47K 1/4W .5	R100	
260-50623-04D	RES CF 62K 1/4W .5	R103	
260-50683-04D	RES CF 68K 1/4W .5	R16,36	R36 PT-1800 Only
260-51003-04D	RES CF 100K 1/4W .5	R45,47,74	
260-51203-04D	RES CF 120K 1/4W .5	R20	
260-51303-04D	RES CF 130K 1/4W .5	R3,5,33,42	
260-51503-04D	RES CF 150K 1/4W .5	R17,68	
260-51803-04D	RES CF 180K 1/4W .5	R46	PT-1800/PT-2400 120V
260-53603-04D	RES CF 360K 1/4W .5	R46	PT-1800/PT-2400 230V (Was 180K 1/4W)
260-52403-04D	RES CF 240K 1/4W .5	R34,43	
260-53603-04D	RES CF 360K 1/4W .5	R28	
260-54703-04D	RES CF 470K 1/4W .5	R30	
260-55103-04D	RES CF 510K 1/4W .5	R50,71	
260-50180-05E	RES CF 18 OHM 1/2W .6	R55	
260-50243-05E	RES CF 24K 1/2W .6	R51	PT-2400 120V Only
260-50903-05E	RES CF 30K 1/2W .6	R51	PT-1800 120V Only
260-50683-08A	RES CF 68K 2W .8	R51	PT-2400 230V (Was 30K 1/2W, then 62K 1/2W) PT-1800 230V (Was 30K 1/2W, then 68K 1/2W)
263-50223-07G	RES MO 22K 1W .8	R6	
260-50825-05E	RES CF 8.2M 1/2W .8	R54	
262-32371-04D	RES MF 2.37K 1/4W .5	R57	
262-32211-04D	RES MF 2.21K 1/4W .5	R56	
262-34321-04D	RES MF 4.32K 1/4W .5	R85	
262-31003-04D	RES MF 100K 1/4W .5	R56	
263-50823-07G	RES MO 82K 1W .8	R32,41	
263-50822-08I	RES MO 8.2K 2W 1.0	R7	
263-50103-08I	RES MO 10K 2W 1.0	R11	
260-52700-04D	RES CF 270 OHM 1/4W .5	R105	
259-30002-00	POT 5K MINIATURE PCB MOUNT	R25	



DIODES

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
320-20001-00	DIODE 1N4148 75V PREP .4	D5,6,8,12,13,29,32,33,34,100	
320-20004-00	DIODE 1N4004 400V PREP .4X.25	D1,3,4,7,10,11,14,15,19,20,21,22,23	
320-30028-00	DIODE, ZENER 4742C 12V 2% .4	D2,24	
320-30008-00	DIODE, ZENER 1N4736 6.2V .4	D8	



TRANSISTORS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
321-40013-01	XISTOR TO92 NPN SM SG MPSA18	Q3	
321-40003-00	XISTOR TO92 MPS8093 (SUB FPN4)	Q2,11	
321-40009-00	XISTOR TO92 PNP SM SG 2N4125	Q10	
321-40010-00	XISTOR TO92 NPN SM SG 2N4123	Q8,12	
321-40011-00	XISTOR TO92 NPN SM SG MPSA06	Q4,6	
321-40012-00	XISTOR TO92 PNP SM SG MPSA56	Q5,7	
321-90000-00	XISTOR B100 PNP PWR 25A1380-Y	Q8	
321-90001-00	XISTOR B100 NPN PWR 29C3423-Y	Q1	

INTEGRATED CIRCUITS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
330-30008-00	IC DUAL OP AMP (4558)	U1,2	
330-40002-00	OPTOISOLATOR PXSTR CNY17-2Z	IS01	
330-40007-00	OPTOISOLATOR, TRIAC DRIVER 250V	IS02	

MISCELLANEOUS ITEMS









CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
115-80000-00	CONNECTOR, QD TAB .250 PCB	WL1,3-10,13-16	
180-30019-00	HEADER 2 PIN .156 LOCK ST POST	J5	
180-30022-00	HEADER 6 PIN .156 LOCK ST POST	J2,6	
180-30020-00	HEADER 3 PIN .156 LOCK ST POST	J4	
180-30042-01	HEADER, 4PIN .100 LOCK ST POST	J3	
180-30039-01	HEADER, 5-PIN .10 LOCK ST POST	J1	
319-00064-01	TRIAC, MAC97A-8, TO92	Q13	
401-10139-00	WIRE 18 AWG TR-64 BLK 6"	E5	
401-10246-01	WIRE 18 AWG TEW RED/BLK 7"	E3	
401-10227-00	WIRE 18 AWG TEW RED 7"	E14	
401-10228-00	WIRE 18 AWG TEW BRN 7"	E4,13	
402-00003-00	SLEEVING BLACK 18 GA. (.11 FT)		Used on R51 (230V Ver.)
501-00464-01	PCB, PWR SUPPLY PT2400/1800		
530-20102-01	STICKER, MARKER (MNYL)		On Board by J6
550-00002-00	CBL, .250, #18, TEW, 2.5" RED	E11	
550-00002-01	CBL, .250, #18, TEW, 2.5" BLU	E12	
550-00002-07	CBL, .250, #18, TEW, 2.5" WHT	E10	
550-00008-05	CBL, #10 LUG TR64 #18 6.5" RED	E2	
550-00006-03	CBL, #10 LUG, TR64, #18, 7" BRN	E1	
816-00017-00	CHOKE, 1MH (X2), 250V 15A	L1	

PT-1800/2400 POWER SUPPLY ASSEMBLY

P/N 601-00253-01 PT-2400 115V
601-00253-02 PT-1800 115V

601-00253-03
601-00253-04

PT-2400 230V
PT-1800 230V

CARVER P/N	ITEM NO.	DESCRIPTION	REF DESIGNATORS	NOTES
106-30004-00	5	GROMMET, FAN MOUNTING PM-350		4-Xfmr Mounting
111-20151-00	10	SOLDER LUG #10		On Caps
112-20003-00	15	MOUNT TYRAP, SCREW MNT #10		Mount Caps
118-80005-00	20	STANDOFF ROUND #8X1/4X5/16 ALU		4-Xfmr Mounting
118-80013-13	25	STANDOFF, .25 HEX 6-32 X .875L		Sub-Front Mounting
151-20001-00	30	SCREW MACH PP BLK 440X1/4		4-Bd Mounting
151-20071-02	40	SCRW, BLK FH 100DEG 8-32X5/16		2-Tyrap Mount
151-20055-00	45	SCREW, MACH PP BLK 6-32X5/8		3-Bridge Mounting (Was 3/4")
151-20056-00	50	SCREW, MACH PP BLK 6-32X5/16		2-Triac Mounting, 2-Tyrap, 3-Spacer, 1-Res Assy *
151-20151-01	55	SCREW MACH PP ZC 10-32X1/4		Wire Mounting for Caps
152-10002-00	60	KEPNUT 8-32X5/16 ZC		1-Triac, 3-Br Rect, 4-Tyrap, Screw Mnt, 1-Res Assy *
152-10003-00	65	KEPNUT 8-32X11/32 ZC		4-Xfmr Mounting
154-20002-01	67	WASHER, INT LOCK BLK #4		PC Mounting, Gnd Screw
154-10101-00	70	WASHER FLAT SAE BLK #8		8-Xfmr Mounting
159-50001-00	73	TYRAP 3 3/8" L WHT		
159-50007-01	75	TYRAP 8.4" WHITE HVY .3W		Mount Caps
205-00148-01	80	CAP LYTIC 8200 µF 125V	C1.2	 PT-1800 Only
205-00149-01	80	CAP LYTIC 10,000 µF 125V	C1.2	 PT-2400 Only
319-00036-01	85	RECT BRIDGE, 25A/200V CERAMIC	D101,102,103	
319-00083-00	90	TRIAC TO3 F/P 35 AMP 600V	Q1	
403-10003-00	95	SEALANT SILICONE RUBBER RTV		On Caps
507-00052-00	100	BRACKET, POWER SUPPLY		
550-00008-02	105	CBL, #10LUG, TR64, #18, 5.5" RED		Bridge "B" + To Cap
550-00008-05	105	CBL, #10LUG, TR64, #18, 6.5" RED		D103 + To Cap
550-00008-03	110	CBL, #10LUG, TR64, #18, 7" BRN		Bridge "B" - To Cap
550-00008-03	110	CBL, #10LUG, TR64, #18, 7" BRN		D103 - To Cap
601-00262-01	114	RESISTOR ASSY	R1.2	* See Note Below
602-00464-01	115	ASSY, PCB PWR SUPPLY PT2400		Was 602-00408-00
602-00464-02	115	ASSY, PCB PWR SUPPLY PT2400 230V		Was 602-00408-02
602-00464-03	115	ASSY, PCB PWR SUPPLY PT1800		Was 602-00408-01
602-00464-04	115	ASSY, PCB PWR SUPPLY PT1800 230V		Was 602-00408-01
617-10064-03	120	TRANSFORMER, UI 1200W UL/CSA	T1	 PT-2400 120V (Was 617-10064-02)
617-10064-04	120	TRANSFORMER, UI 1200W 230V	T1	 PT-2400 230V (Was 617-10064-02)
617-10066-01	120	TRANSFORMER, UI 900W UL/CSA	T1	 PT-1800 120V (Was 617-10066-00)
617-10066-02	120	TRANSFORMER, UI 900W 230V	T1	 PT-1800 230V (Was 617-10066-00)

RESISTOR ASSEMBLY P/N 601-00262-01

* Note: Resistor Assembly added after S/N 92X33000001

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
159-50001-00	TYRAP 3 3/8" L WHITE		
204-52200-16A	RES WW220 OHM 10W 5%	R1.2	
401-10555-00	WIRE 22AWG TR-64 BLACK 5"		
401-10637-00	WIRE 22AWG TR-64 BLACK 4"		
607-00068-00	BRACKET, RESISTOR		

PT-1800/2400 SWITCH PANEL ASSEMBLY

P/N 601-00252-01

CARVER P/N	ITEM NO.	DESCRIPTION	REF DESIGNATORS	NOTES
108-00102-00	2	INSULATOR RAG PAPER .015		On Bracket, Between Panel & Brick 2" X 5"
154-20950-00	3	WASHER INT LOCK CAD 7MM		Between Pot & Panel (Inside)
259-10024-00	5	POT 5KB PNL MNT 11 DETENT	R1,2	
318-20004-00	10	SWITCH ROCKER SPDT QUICK DIS. 15A	S1,2,3,4	
401-20201-00	12	BUSS WIRE 22 GAGE 1"		Left and Right Power Switch
908-20030-01	15	PANEL, SUB SW/POT PT-2400		
512-10401-03	25	NUT, METRIC DRESS 7MM CAD		
550-10053-01	30	HARN CONN TW 3 PIN #22 9"		Power Switch to P/S Channel 1
550-10053-01	30	HARN CONN TW 3 PIN #22 9"		Power Switch to P/S Channel 1
550-10054-01	30	HARN CONN TW 3PIN #22 10"		Power Switch to P/S Channel 1
550-10063-02	35	HARN CONN TW 3PIN #22 18"		Power Switch to P/S Channel 2
550-10053-02	35	HARN CONN TW 3PIN #22 18"		Power Switch to P/S Channel 2
550-10054-02	35	HARN CONN TW 3PIN #22 20"		Power Switch to P/S Channel 2
550-10050-00	40	HARN CON, 3PIN #22 W/SHLD 18"		Pots to Input Bd

PT-1800/2400 DISPLAY BOARD

P/N 602-00447-00

RESISTORS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
260-50010-04D	RES CF 1 OHM 1/4W PREP .5	R29,30	
260-59100-04D	RES CF 910 OHM 1/4W PREP .5	R25,26	
260-50272-04D	RES CF 2.7K 1/4W PREP .5	R13,15	
260-90752-04D	RES CF 7.5K 1/4W PREP .5	R5,7,9,18,20,22,27,28	
260-50103-04D	RES CF 10K 1/4W PREP .5	R10,12,14,23	
260-50303-04D	RES CF 30K 1/4W PREP .5	R4,6,8,11,17,19,21,24	

DIODES

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
320-20001-00	DIODE 1N4148 75V PREP .4	D2,4,19,20	
320-40001-00	LED, RED	D6,7,8,9,10,13,14,15,16,17	
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
401-30005-00	JUMPER INSULATED .5"	JP1,2	
403-10006-00	GLUE, HOT MELT		Used on Item No. 75 & 80
501-00447-00	PCB, DISPLAY PT-2400/PT-1800		
550-10051-00	HARN CONN, 5-PIN #22 17"	E6-10	
550-10051-01	HARN CONN, 5-PIN #22 6"	E1-5	

PT-1800/2400 FINAL ASSEMBLY

P/N	607-00135-01	PT-1800 115V
	607-00135-02	PT-1800 230V
	607-00140-01	PT-2400 115V
	607-00140-02	PT-2400 230V

CARVER P/N	ITEM NO.	DESCRIPTION	REF DESIGNATORS	NOTES
101-00005-00	5	BARRIER STRIP 6-POS PNL MNT	TB1	
101-30003-00	7	BUMPS, RUBBER SQR .81" x .515"H		Under Large Filter Caps
105-20001-01	10	ASSY, FILTER GUARD 120MM		
105-40014-00	15	FUSEHOLDER PANEL MNT 120-230V	F1,2	
105-50000-00	20	FUSE CARRIER 120V		 115V Version
105-50001-00	20	FUSE CARRIER 230V		 230V Version
108-00102-00	25	INSULATOR RAG PAPER .015"		4" x 4" ON COVER, 2" x 5" On CH1 Power Supply
112-10005-01	30	FAN, TUBE AXIAL 120MM 24V	Fan 1	
112-20001-00	32	MOUNT TYRAP WHT		
115-10001-00	35	POST, BINDING DUAL RED/BLACK		
118-80022-08	40	STANDOFF, .25 HEX 6-32 .562"L M/F		Input Bd Mounting
151-10108-00	43	SCREW METRIC MA/PP BLK M3x8MM		XLR Mounting
151-20001-00	45	SCREW MACH PP BLK 440x1/4"		2-Thermal Switch Bracket, 2-Thermal Switch Mtg
151-20051-00	50	SCREW MACH PP JBLK 6-32x1/4"		1-Output Bd Mounting, 16-Cover Mtg, 4-Input Shield Mtg, 1-Chassis
151-20052-00	55	SCREW MACH PP BLK 6-32x3/8"		Linacord Jack Mtg
151-20054-00	60	SCREW MACH PP BLK 6-32x3/4"		Barrier Mtg
151-20071-06	65	SCREW BLK FH 100DEG 6-32x3/4"		Fan Mtg
151-20056-00	70	SCREW MACH PP BLK 6-32x5/16"		8-PS Assy, 6-Amp Assy Mtg
151-20071-02	75	SCREW BLK FH 100DEG 6-32x5/16"		4-SW PNL to PS Assy, 4-Display Panel to PS Assy, 2-Nylon Washer
151-20154-00	80	SCREW MACH PP BLK 10-32x8/16"		Handle Mounting
152-10001-00	90	KEPNUT 4-40 ZC		Thermal Switch Mtg
152-10002-00	95	KEPNUT 6-32x5/16" ZC		4-Fan Mtg, 3-Chassis Gnd Stud, 1-Bridge

CARVER P/N	ITEM NO.	DESCRIPTION	REF DESIGNATORS	NOTES
154-20002-01	100	WASHER INT LOCK BLK #4		Input Jack Mtg
154-20051-02	105	WASHER INT LOCK CAD PLTD #6		Input Bd Mtg
154-20052-00	107	WASHER INT LOCK SAE BLK #6		Bottom Front Brit on PS
154-20151-02	110	WASHER INT LOCK CAD PLTD #10		Output PCB to Binding Post, Handles
154-40352-01	115	WASHER CTSK NYL #6 .10" THK		
159-50001-00	120	TYRAP 3 3/8" L WHT		
159-50005-00	122	TYRAP 10" WHITE		PT-1800 only. Amp Cable Restraint.
160-40002-01	125	RECEPTACLE, 250V PANEL MNT	P1,2	
315-13002-00	130	FUSE, MDA 12		 PT-2400 115V Version.
315-13006-00	130	FUSE, MDA 10		 PT-1800 115V Version.
315-16001-00	130	FUSE, 6.3A TIME LAG		 PT-1800 230V Version. Was 5A Time Lag (see Service Bulletin PT-1800-1)
315-16005-01	130	FUSE, 8A TIME LAG		 PT-2400 230V Version. Was 6.3A Time Lag (see Service Bulletin PT-2400-2)
318-50005-01	135	SWITCH, THERMAL 40 DEG C N.O.	S7	Chassis Mounted
319-00036-01	136	RECT BRIDGE 200V 35AMP	D100	 Was 100V 35A
401-10103-00	137	WIRE 18 AWG TEW BLK 4.5"		Bridge AC to Barrier Chassis Ground
401-10229-00	138	WIRE 18 AWG TEW BLK/WHT 4"		Bridge AC to Barrier Signal Ground
401-20101-00	139	BUSS WIRE 18 GAGE 1.5"		Bridge - TO +
401-10129-01	140	WIRE 18 AWG TEW BROWN 5"		Fuse to AC Conn
401-30200-00	145	JUMPER, TERMINAL BLOCK		Mounted on Barrier
402-00017-00	150	SLEEVING SPIRAL 20"		Fuse Holder to PS Boards
402-10007-00	153	TUBING HEATSHRINK DUAL WALL 1/2"		2" Per Fuseholder
403-10003-00	155	SEALANT SILICONE RUBBER RTV		Fishpaper to Cover
502-20045-01	160	CHASSIS, SCREEN PT-2400		PT-2400
502-20045-02	160	CHASSIS, SCREEN PT-1800		PT-1800
503-20040-00	170	PANEL, FRONT PAINT PT-2400		
504-20050-00	175	COVER, TOP PT-2400		
507-00050-00	180	BRACKET THERMAL SW UNIVERSAL		Thermal Switch Mtg
509-20005-01	185	FERRULE 5/16" PLASTIC PRO GRAY		Handle Mtg. Was P/N 509-10001-03 before S/N 92733000001
508-00030-04	187	KNOB 14MM KNURL BLK 80 DG		
510-20007-03	190	HANDLE, 3.5" x 5/16" PRO PAINT		
512-20723-00	195	SHIELD, INPUT PT2400/1800		Was 512-20716-00
530-10176-01	200	LABEL FUSE 6.3A/POWER RATINGS		PT-1800 230V Version. Mount by Fuseholders.
530-10196-01	200	LABEL FUSE 8A/POWER RATINGS		PT-2400 230V Version. Mount by Fuseholders.
530-20100-00	203	STICKER, SERIAL # BLANKS		One Label on back of Chassis, One Label inside Chassis
550-00002-10	205	CBL, .250" 18 AWG TEW BROWN 14"		Fuse to PS WL3 (Channel 1)
550-00002-11	210	CBL, .250" 18 AWG TEW BLUE 12"		P1 (AC Conn) to PS WL4 (Channel 1)
550-00002-12	215	CLB, .250" 18 AWG TEW BROWN 29"		Fuse to PS WL3 (Channel 2)
550-00002-13	220	CBL, .250" 18 AWG TEW BLUE 27"		AC Conn to PS WL4 (Channel 2)
550-00020-01	225	CBL, #10LUG, 18 AWG TEW BLACK 2"		AC Conn to Chassis
550-10024-00	230	HARN CONN, THERMAL SWITCH 12.0"		 Right Amp Assy to Right PS Bd
550-10024-02	235	HARN CONN, THERMAL SWITCH 7"		 Left Amp Assy to Left PS Bd
550-10045-00	240	HARN CONN, 2-PIN, #22 6"		Fan to Output
601-00250-01	245	ASSY, PREP DISPLAY PANEL PT-2400		PT-2400 115V Version.
601-00250-02	245	ASSY, PREP DISPLAY PANEL PT-2400		PT-2400 230V Version.
601-00251-01	245	ASSY, PREP DISPLAY PANEL PT-1800		PT-1800 115V Version.

CARVER P/N	ITEM NO.	DESCRIPTION	REF DESIGNATORS	NOTES
801-00251-02	245	ASSY, PREP DISPLAY PT-1800 EURO		PT-1800 230V Version.
801-00252-01	250	ASSY, PREP SW PNL PT2400/1800		
801-00253-01	250	ASSY, PREP PWR SUPPLY PT-2400		PT-2400 115V Version.
801-00253-02	255	ASSY, PREP PWR SUPPLY PT-1800		PT-1800 115V Version
801-00253-03	255	ASSY, PREP PWR SUPPLY PT-2400		PT-2400 230V Version
801-00253-04	255	ASSY, PREP PWR SUPPLY PT-1800 230V		PT-1800 230V Version
801-00255-01	260	ASSY, PREP AMPLIFIER PT-2400		PT-2400
801-00255-02	260	ASSY, PREP AMPLIFIER PT-1800		PT-1800
802-00485-01	265	ASSY, PCB OUTPUT PT2400/1800		Was P/N 802-00446-00 before S/N 82033000001
802-00448-00	270	ASSY, PCB INPUT PT-2400		PT-2400
802-00448-01	270	ASSY, PCB INPUT PT-1800		PT-1800

PT-1800/2400 PACKING

P/N 608-00135-01A
608-00140-01A

CARVER P/N	ITEM NO.	DESCRIPTION	REF DESIGNATORS	NOTES
101-30003-00	5	BUMPS, RUBBER SQR .81X.515H		Ship Off Unit
151-30001-00	7	SCREW SHT MTL PP BLK 4X1/4 "B"		
401-90018-01	10	LINECORD 16/3 SJT 5' NA DETACH		
503-00088-00	13	PNL, PLASTIC 2.1 X .4		
530-20101-00	15	LBL, 2X5" TTR HIGH TACK ADH		Used For S/N on Shipping Box
532-10001-00	17	BAG PLASTIC 3"X5"		Screw, Panel, Bumps
532-10005-00	20	BAG, PLASTIC 20"X30"		
532-10008-00	20	BAG PLASTIC 29"X29" RCVR		
532-10011-00	23	BAG, PLASTIC 10"X18" CAR AMP		1-Linecord, 1-Screw, Panel, Bumps, Manual
532-20069-01	25	BOX, PT-2400/PT-1800		
532-30059-01	42	FOAM, END CAPS PT2400/1800		
807-00135-01	45	ASSY, FINAL PT-1800		
807-00140-01	45	ASSY, FINAL PT-2400		
990-00026-00	50	CARD, LIMITED WARRANTY (PRO)		
990-00033-00	55	CARD, WARRANTY REGISTRATION PRO		
990-00037-00	57	ENVELOPE, HOLOGRAM TEST DISC		
990-20108-00	60	MANUAL, OWNERS PT-2400/PT-1800		

SECTION 10

VOLTAGE CONVERSION

PT-1800 VOLTAGE CONVERSION

BILL OF MATERIALS

QTY	PART NO.	DESCRIPTION
2	105-50000-00	Fuse Carrier, 120V
2	105-50001-00	Fuse Carrier, 230V
2	260-51803-04D	Res, CFilm, 180k Ω , 1/4W
2	260-53603-04D	Res, CFilm, 360k Ω , 1/4W
2	260-50303-05E	Res, CFilm, 30k Ω , 1/2W
2	260-50683-05E	Res, CFilm, 68k Ω , 1/2W
2	315-13006-00	Fuse, MDA 10
2	315-16001-00	Fuse, 6.3A Time Lag
2	530-10176-01	Label, 6.3A 230V/50Hz

120V Operation

On each Power Supply board:

1. Move the White wire from WL15 to WL7.
2. Move the Grey wire from WL16 to WL6.
3. Change R46 from 360K 1/4W to 180K 1/4W.
4. Change R51 from 68K 1/2W to 30K 1/2W.

On the Rear Panel:

5. Replace both fuses and fuse carriers with MDA 10 Slo-Blo fuses (315-13006-00) and 120V style fuse carriers (105-50000-00).
6. Remove the 6.3A 230V/50Hz labels on rear panel near each linecord.

230V Operation

On each Power Supply board:

1. Move the White wire from WL7 to WL15.
2. Move the Grey wire from WL6 to WL16.
3. Change R46 from 180K 1/4W to 360K 1/4W.
4. Change R51 from 30K 1/2W to 68K 1/2W.

On the Rear Panel:

5. Replace both fuses and fuse carriers with 6.3A Time Lag fuses (315-16001-00) and 230V style fuse carriers (105-50001-00).
6. Install a 6.3A 230V/50Hz label (530-10176-01) on rear panel near each linecord.

PT-2400 VOLTAGE CONVERSION

BILL OF MATERIALS

QTY	PART NO.	DESCRIPTION
2	105-50000-00	Fuse Carrier, 120V
2	105-50001-00	Fuse Carrier, 230V
2	260-51803-04D	Res, CFilm, 180k Ω , 1/4W
2	260-53603-04D	Res, CFilm, 360k Ω , 1/4W
2	260-50243-05E	Res, CFilm, 24k Ω , 1/2W
2	260-50683-05E	Res, CFilm, 68k Ω , 1/2W
2	315-13002-00	Fuse, MDA 12
2	315-16005-00	Fuse, 8A Time Lag
2	530-10196-01	Label, 8A 230V/50Hz

120V Operation

On each Power Supply board:

1. Move the White wire from WL15 to WL7.
2. Move the Grey wire from WL16 to WL6.
3. Change R46 from 360K 1/4W to 180K 1/4W.
4. Change R51 from 68K 1/2W to 24K 1/2W.

On the Rear Panel:

5. Replace both fuses and fuse carriers with MDA 12 Slo-Blo fuses (315-13002-00) and 120V style fuse carriers (105-50000-00).
6. Remove the 8A 230V/50Hz labels on rear panel near each linecord.

230V Operation

On each Power Supply board:

1. Move the White wire from WL7 to WL15.
2. Move the Grey wire from WL6 to WL16.
3. Change R46 from 180K 1/4W to 360K 1/4W.
4. Change R51 from 24K 1/2W to 68K 1/2W.

On the Rear Panel:

5. Replace both fuses and fuse carriers with 8A Time Lag fuses (315-16005-00) and 230V style fuse carriers (105-50001-00).
6. Install a 8A 230V/50Hz label (530-10196-01) on rear panel near each linecord.



SECTION 11

SERVICE BULLETINS

Please insert Carver Service Bulletins pertaining to the PT-1800 and PT-2400 here to ensure proper repair in the future.

CARVER CORPORATION SERVICE BULLETIN

Service Bulletin # PT-1800-1	Model: PT-1800 230V/ Euro	Serial Nos. Below #92633300001
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REASON: To prevent fuse from blowing prematurely when driving a 2 ohm load (230V configuration only).

Date: 6/18/92

DELETE

Qty 2 Fuse, 5A Time Lag
P/N 315-16003-01

Qty 2 Label, Fuse 5A 250V SLO-BLO
P/N 530-10194-01

ADD

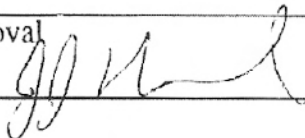
Qty 2 Fuse, 6.3A Time Lag
P/N 315-16001-00

Qty 2 Label, Fuse 6.3A 250V SLO-BLO
P/N 530-10176-01

PROCEDURE

1. Remove the two main line fuses located on the rear of the unit near the two AC line sockets.
2. Replace with 6.3A Slo-Blo fuses (P/N 315-16001-00).
3. Remove the two fuse labels near the fuseholders and replace with 6.3A labels (P/N 530-10176-01).

Service Approval



Engineering Approval

Nic. Richardson 6/19/92

CARVER CORPORATION SERVICE BULLETIN

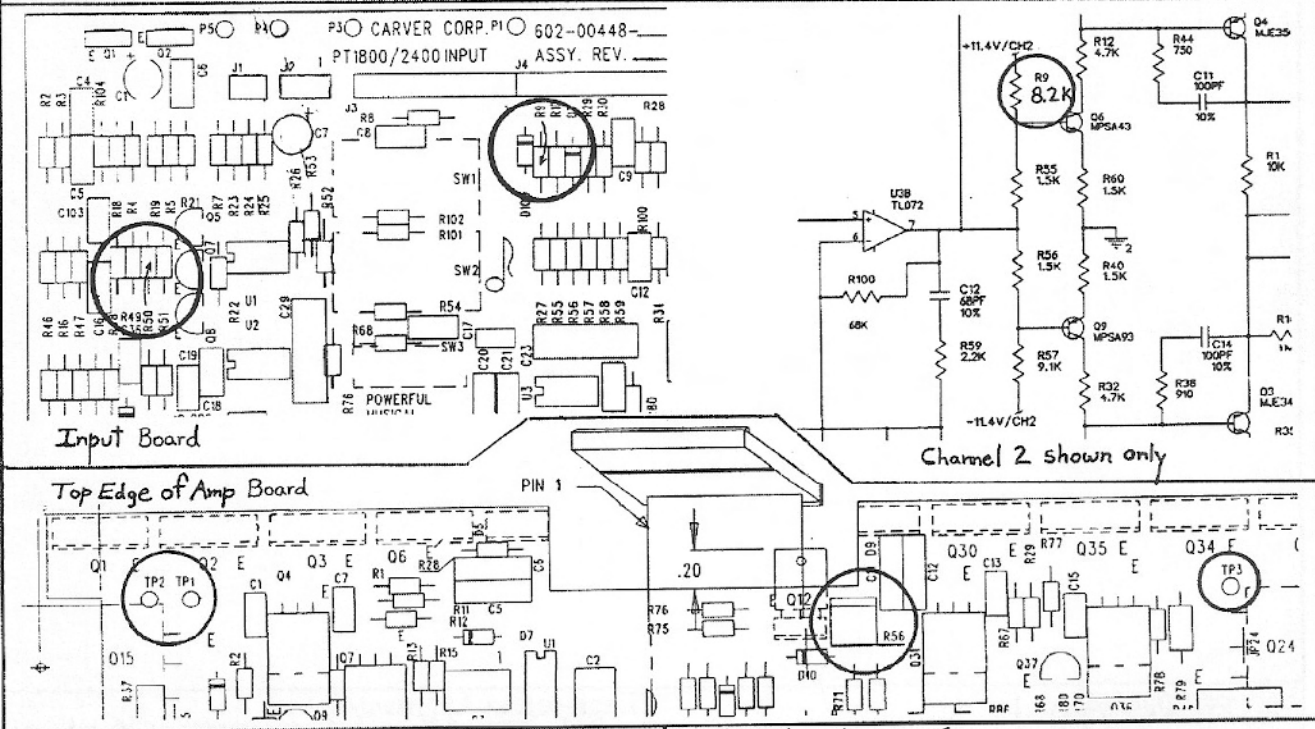
Service Bulletin # PT-2400-1	Model: PT-2400/PT-1800	Serial Nos. PT-2400: Below 92133000001 PT-1800: Below 92133200001
REASON: To improve bias start-up when unit is cold.		Date: 1/28/92

DELETE Qty 2 9.1kΩ 1/4W CF Resistor (R9, R50) 260-50912-04D	ADD Qty 2 8.2kΩ 1/4W CF Resistor (R9, R50) 260-50822-04D
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PROCEDURE

If the customer complains of distortion at low levels when unit is first turned on, perform the following modification to the input board. In order to access the input board, the right channel power supply module must be removed.

1. Remove cover by removing 8 screws from the top, 2 screws on each side (near bottom) and 4 screws along the top of the rear panel.
 2. Unplug the four connectors along the top edge of the input board.
Unplug all the connectors from the top of the power supply board.
- CAUTION:** Notice how the connectors go so you know how to plug them back in the correct spot. You can use the left power supply module as a guide since it is identical to the right.
3. Turn unit on its left side and remove 4 screws from the bottom of the chassis securing the right power supply module into place.
 4. Set the unit back down on its bottom and carefully lift power supply module out of the chassis.
 5. Remove the shield plate from the input board by removing the 4 screws.
 6. On the Input PCB, change R9 and R50 from 9.1kΩ 1/4W resistors to 8.2kΩ 1/4W resistors.
 7. Reverse the above procedure to reassemble unit. Double check connections to make sure they are plugged in correctly.
 8. Turn unit on and reset the bias by adjusting R56 on each amplifier board for a reading of 3.0mVdc across TP1 and TP3 (1.5mV between TP1/TP2 and 1.5mV between TP2/TP3). Test conditions: no signal, no load.



Service Approval 	Engineering Approval 1-29-92
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CARVER CORPORATION SERVICE BULLETIN

Service Bulletin # PT-2400-2	Model: PT-2400 230V/ Euro	Serial Nos. Below #92633100001
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REASON: To prevent fuse from blowing prematurely when driving a 2 ohm load (230V configuration only).

Date: 6/18/92

DELETE

Qty 2 Fuse, 6.3A Time Lag
P/N 315-16001-00

Qty 2 Label, Fuse 6.3A 250V SLO-BLO
P/N 530-10176-01

ADD

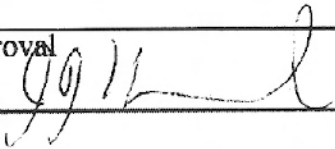
Qty 2 Fuse, 8A Time Lag
P/N 315-16005-01

Qty 2 Label, Fuse 8A 250V SLO-BLO
P/N 530-10196-01

PROCEDURE

1. Remove the two main line fuses located on the rear of the unit near the two AC line sockets.
2. Replace with 8A Slo-Blo fuses (P/N 315-16005-01).
3. Remove the two fuse labels near the fuseholders and replace with 8A labels (P/N 530-10196-01).

Service Approval



Engineering Approval

Vic Richardson 6/19/92

CARVER CORPORATION SERVICE BULLETIN

Service Bulletin # PT-2400-4	Model: PT-2400/1800 230V/Euro	Serial Nos. PT-2400: Below #92933100001 PT-1800: Below #92933300001
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REASON: To prevent triac latching and fuse blowing with low line voltage.	Date: 8/20/92
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DELETE	ADD
	Qty 4 Resistor, Wire Wound (Cement), 220Ω 10W, 5% P/N 264-52200-16A
	Qty 4 Wire, 22AWG, TR-64, Black, 8" P/N 401-10535-00
	Qty 2 Tywrap, 3 3/8" P/N 159-50001-00
	A/R RTV (High Temperature Silicon Adhesive) P/N 403-10003-00

PROCEDURE

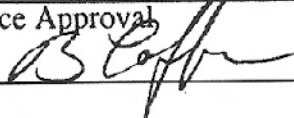

NOTE: This service bulletin supercedes Service Bulletin PT-2400-3. If the amplifier has been modified according to Service Bulletin PT-2400-3, remove the 300Ω resistors mounted between solder pads E20 and E21 on each of the Power Supply Boards before proceeding.

1. Remove the top cover by removing 16 screws.
2. Solder the leads of two of the 220 ohm 10W Wire Wound (Cement Block type) resistors together in parallel, and connect a black wire (TR-64, 22AWG, 8") to each end.
3. Repeat step two for the other two resistors, so there is a parallel pair of resistors for each channel.
4. Solder the free end of one black wire to solder pad E20 and the free end of the other black wire to solder pad E21, on each of the Power Supply Boards.
5. Mount the resistor pairs to the inside of the rear power supply mounting bracket of each channel, as shown in the figure on page 2. Use RTV (High Temperature Silicon Adhesive) to secure the resistors to the bracket.
6. Use a tywrap on each pair of black wires to hold them together.
7. Replace the top cover.

This modification should be performed for applications where the customer is using one or more amplifiers on an AC mains source that may become very unregulated under load, such as might occur in an outdoor concert with generator derived AC power. Under these conditions an unmodified amplifier may blow its line fuse due to asymmetry in its power supply regulation.

This procedure places a 110 ohm loading resistance across the low-rail secondary AC voltage to provide a holding current through the primary circuit, thus keeping the triac operating at all AC line voltage levels.

This procedure only needs to be performed on boards marked with part number 602-00409-__. If the board is marked with part number 602-00464-__, then this modification should not be performed.

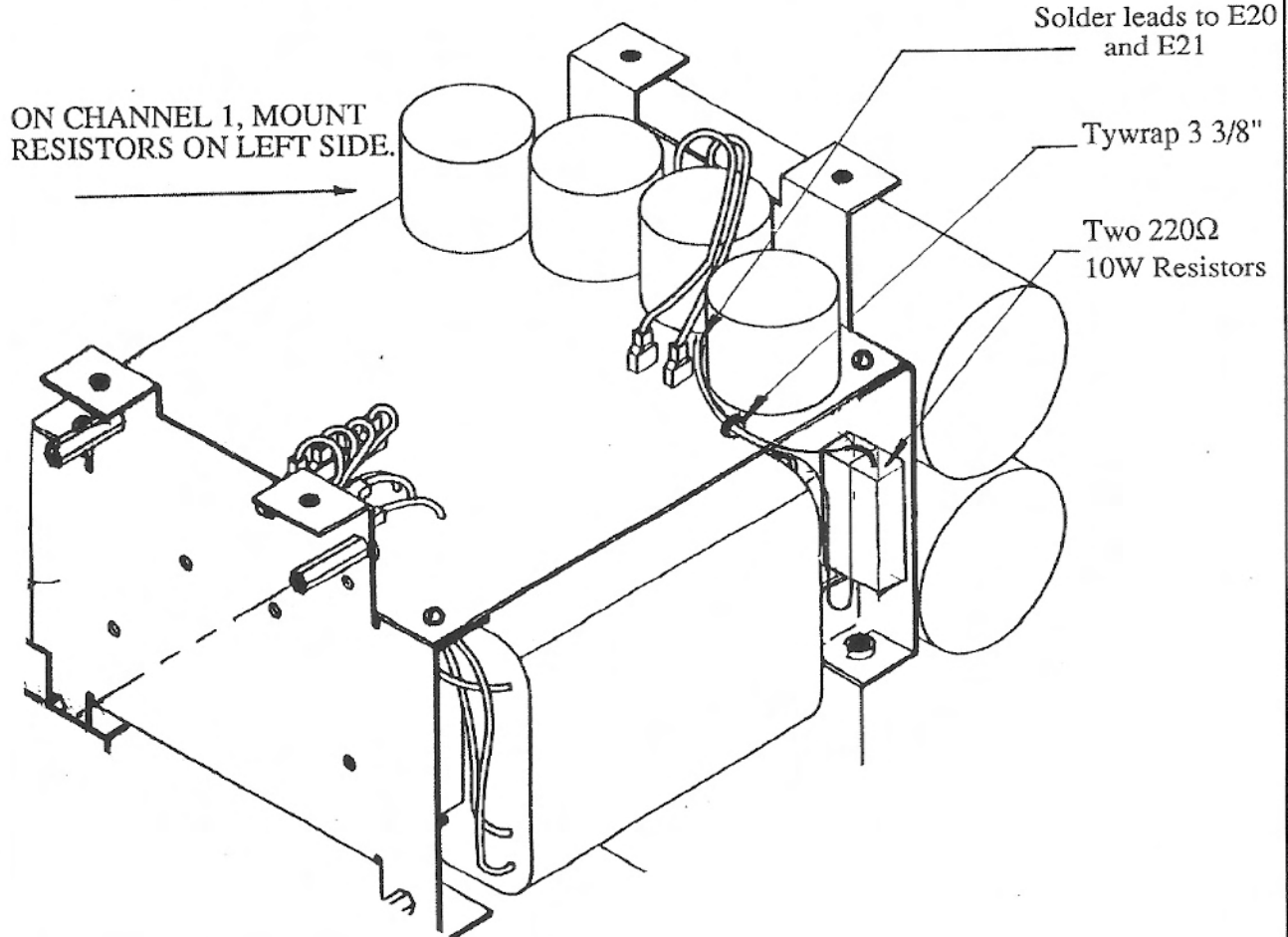
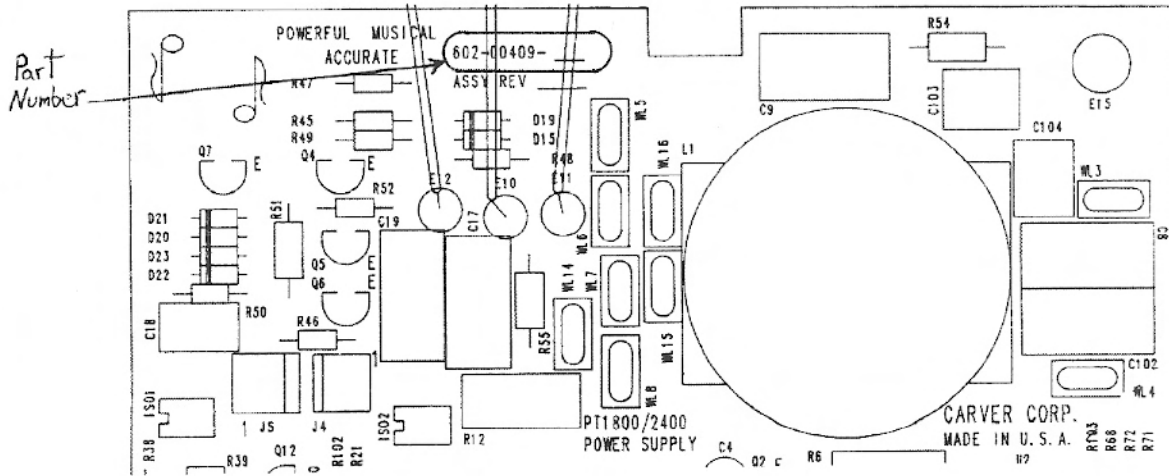
Service Approval  8/21/92	Engineering Approval 
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CARVER CORPORATION SERVICE BULLETIN

Service Bulletin # PT-2400-4

Model: PT-2400/1800 230V/Euro

Serial Nos. (see other side)



PT-1800/PT-2400 POWER SUPPLY ASSY - CHANNEL 2 SHOWN

NOTES

NOTES

CARVER CORPORATION SERVICE BULLETIN

Service Bulletin # PT-2400-6A | Model: PT-2400/1800 230V/ Euro | Serial Nos. PT-2400 Below #94533100001
PT-1800 Below #94533300001

REASON: To prevent fuse from blowing when powered by a generator (230V configuration only).

Date: 5/27/94

DELETE

Qty 2	Resistor, 1/4W CF, 1K	R38
Qty 2	Resistor, 1/4W CF, 180K	R46
Qty 2	Resistor, 1/2W CF, 30K (or 2W CF, 68K for -00464- board)	R51
Qty 1	Resistor, 5W WW, 2K	R12

ADD

Qty 2	Capacitor, Polyfilm, 0.22 μ F/100V P/N 204-00030-00	C105
Qty 2	Resistor, 1/4W CF, 330 Ω P/N 260-50331-04D	R38
Qty 2	Resistor, 1/4W CF, 360K P/N 260-50364-04D	R46
Qty 2	Resistor, 2W MO, 47K P/N 263-50473-08A	R51

PROCEDURE

If the customer complains that the fuse blows at random, it may be caused by operating on an AC power line from a generator. The distortion on the AC mains supplied by a generator can be much greater than from a public utility. This can cause the regulator circuit in the amplifier to overcompensate and blow the fuse.

The following procedure will provide better performance with AC power supplied by a generator.

1. Turn the power switches off and disconnect the linecords from the AC mains.
2. Remove the top cover by removing 16 screws.
3. Check the part number on the power supply board (upper board with the large filter capacitors).
If the number is 602-00409-__, then follow instructions A.
If the number is 602-00464-__, then follow instructions B.
4. Plug the linecords into the AC mains and turn the amplifier on. Reset the high-rail voltage with R26 when measured at the large filter capacitors to:

PT-1800: $\pm 118V (\pm 0.5V)$
PT-2400: $\pm 122V (\pm 0.5V)$

5. Replace the top cover and verify proper operation of the amplifier.

Instructions A

1. Locate R52 on each power supply board (see Figure 1). Install a 0.22 μ F/100V polyfilm capacitor (Carver P/N 204-00030-00) in parallel across R52.
2. Change R51 from 30K 1/2W carbon film to 47K 2W metal oxide (Carver P/N 263-50473-08A).
3. Change R38 from 1K 1/4W carbon film to 330 ohm 1/4W carbon film.
4. Change R46 from 180K 1/4W carbon film to 360K 1/4W carbon film.
5. Remove R12.
6. Change the connections on the power transformer as follows:

Purple stays on	WL14		
Blue	from WL8	to	WL15
Gray	from WL15	to	WL5
White	from WL16	to	WL8
Brown	from WL5	to	WL16

Instructions B

1. Locate R52 on each power supply board (see Figure 2). Install a 0.22 μ F/100V polyfilm capacitor (Carver P/N 204-00030-00) in parallel across R52.
2. Change R51 from 68K 2W carbon film to 47K 2W metal oxide (Carver P/N 263-50473-08A).
3. Change R38 from 1K 1/4W carbon film to 330 ohm 1/4W carbon film.

Service Approval

[Signature] 6/2/94

Engineering Approval

[Signature]

CARVER CORPORATION SERVICE BULLETIN

Service Bulletin # PT-2400-6A | Model: PT-2400/1800 230V/ Euro | Serial Nos. See page 1

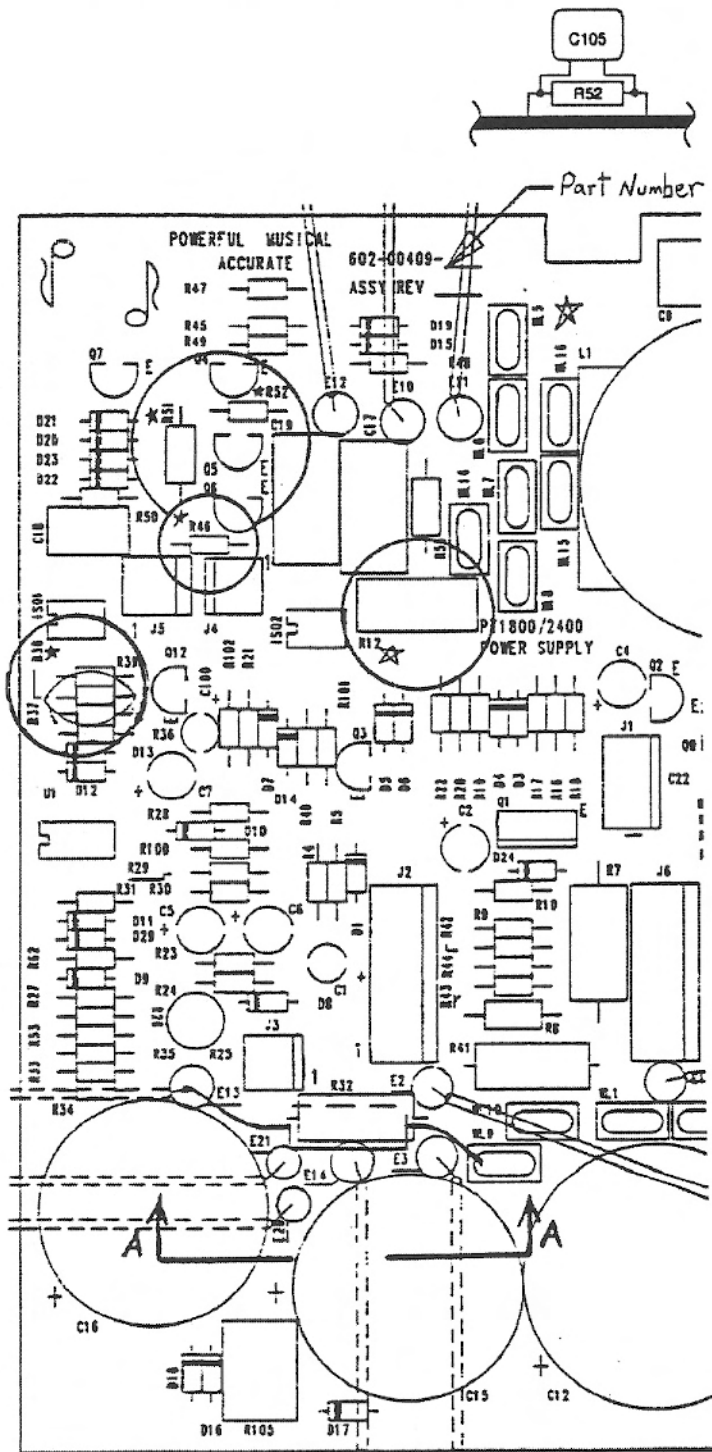


Figure 1. 602-00409-___ Power Supply Board

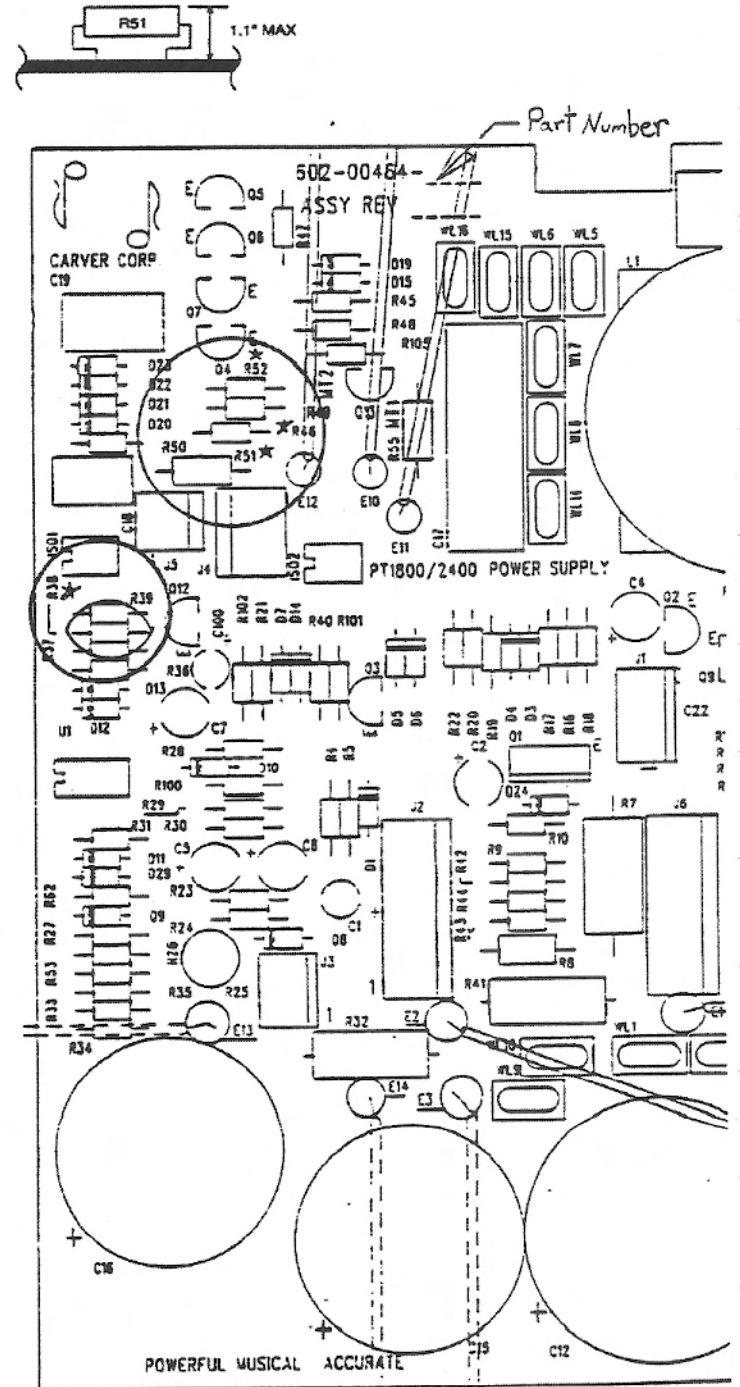


Figure 2. 602-00464-___ Power Supply Board