CARVER

PROFESSIONAL

PT-1800/PT-2400

MAGNETIC FIELD POWER AMPLIFIERS

SERVICE MANUAL

CONTENTS **Page**

CARVER Corporation

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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.

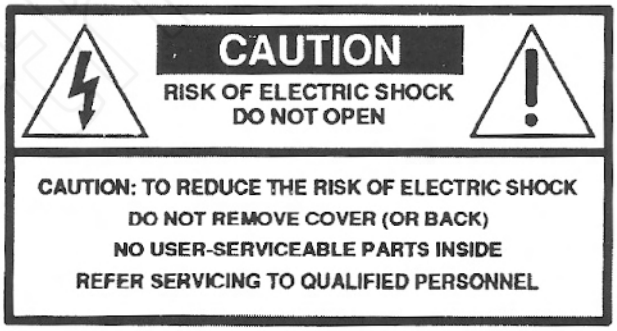
1. Check the leakage current. Connect the unit to 120 VAC supply and turn the power switch "ON". Using an ammeter, measure the current between the neutral side of the AC supply and chassis ground of the unit under test. If leakage current exceeds 0.5mA, the unit is defective.

   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 (1mH 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, which ever 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 (15kΩ 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/µS
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 (15kΩ 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/µS
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 ±118VDC (±0.5V) 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 (±0.5V)
J2-2	+75V (±1.5V)
J2-3	+31V (±1.5V)
J2-4	+11.4V (±0.75V)
J6-1	-118V (±0.5V)
J6-2	-75V (±1.5V)
J6-3	-31V (±1.5V)
J6-4	-11.4V (±0.75)

Idle Bias Adjust

With no signal and no load:

1. Adjust R56 on each amp board for 3.0mV (±1.0mV) 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 ±122VDC (±0.5V) 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 (±0.5V)
J2-2	+75V (±1.5V)
J2-3	+29V (±1.5V)
J2-4	+11.4V (±0.75V)
J6-1	-122V (±0.5V)
J6-2	-75V (±1.5V)
J6-3	-29V (±1.5V)
J6-4	-11.4V (±0.75)

Idle Bias Adjust

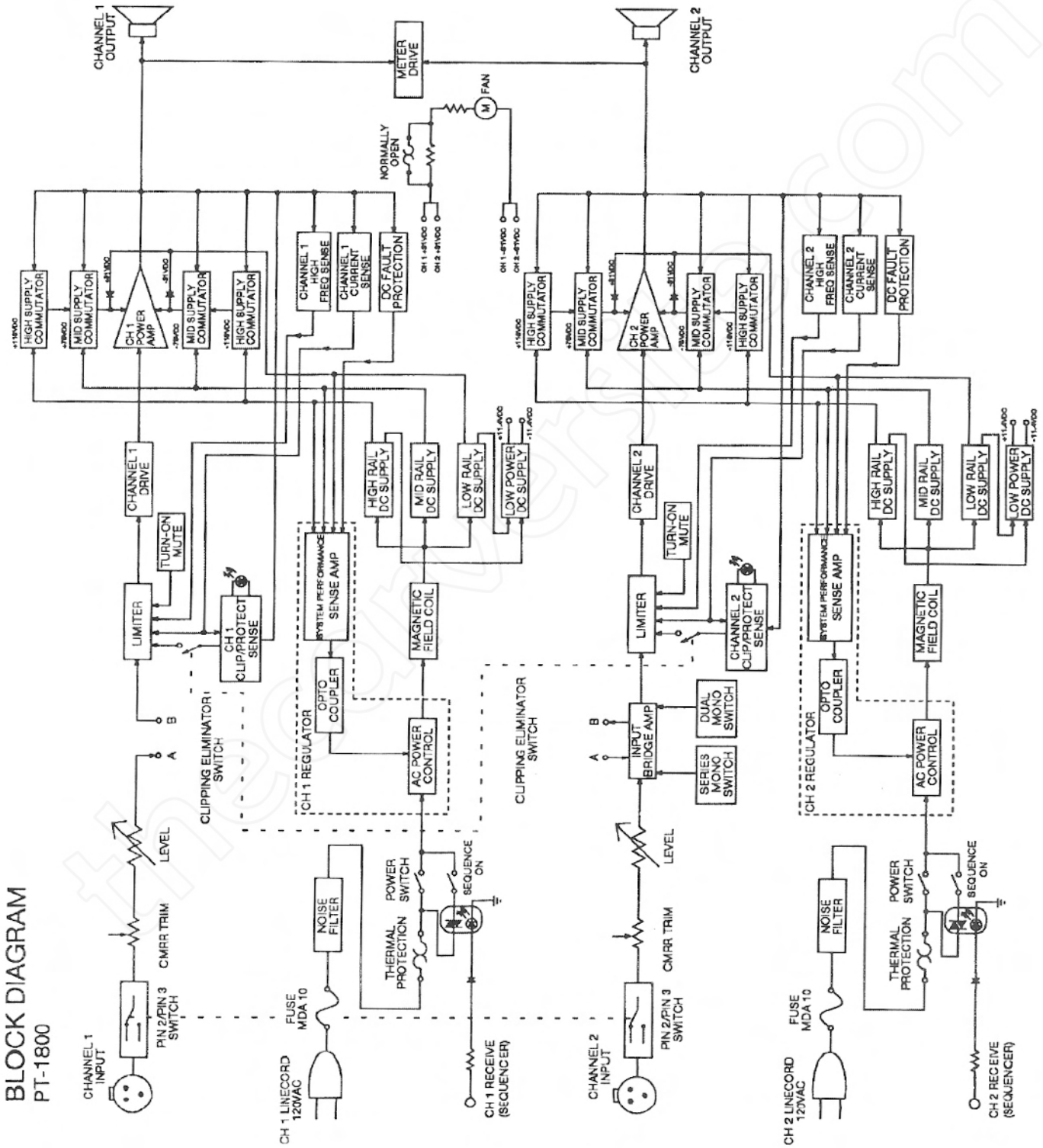
With no signal and no load:

1. Adjust R56 on each amp board for 3.0mV (±1.0mV) across TP1 and TP3 (1.5mV between TP1/TP2 and 1.5mV between TP2/TP3).

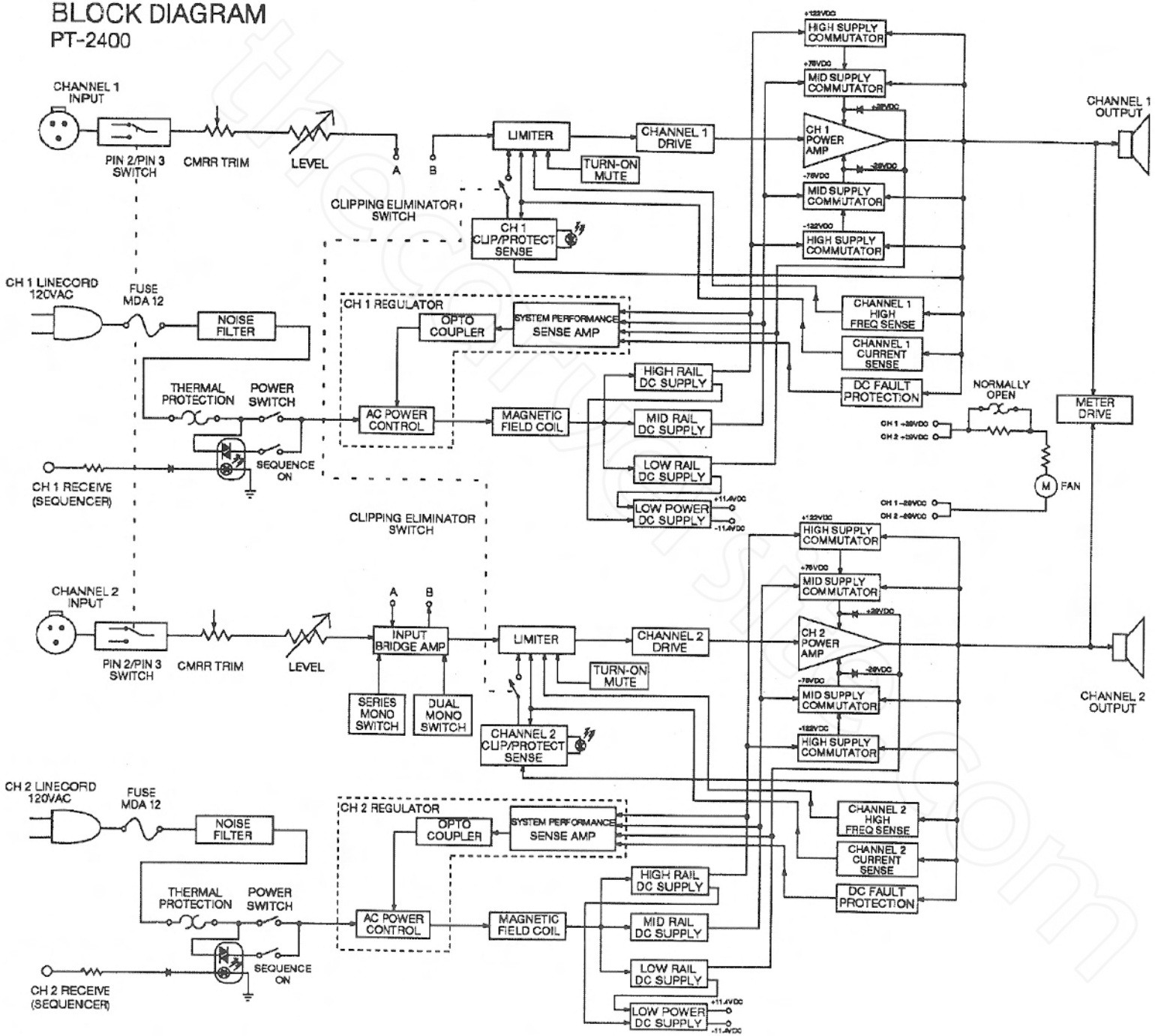
Note: This adjustment should be made after the amplifier has been on approximately two minutes, while it is still cool. After the amplifier warms up, the bias reading may be higher.

SECTION 6

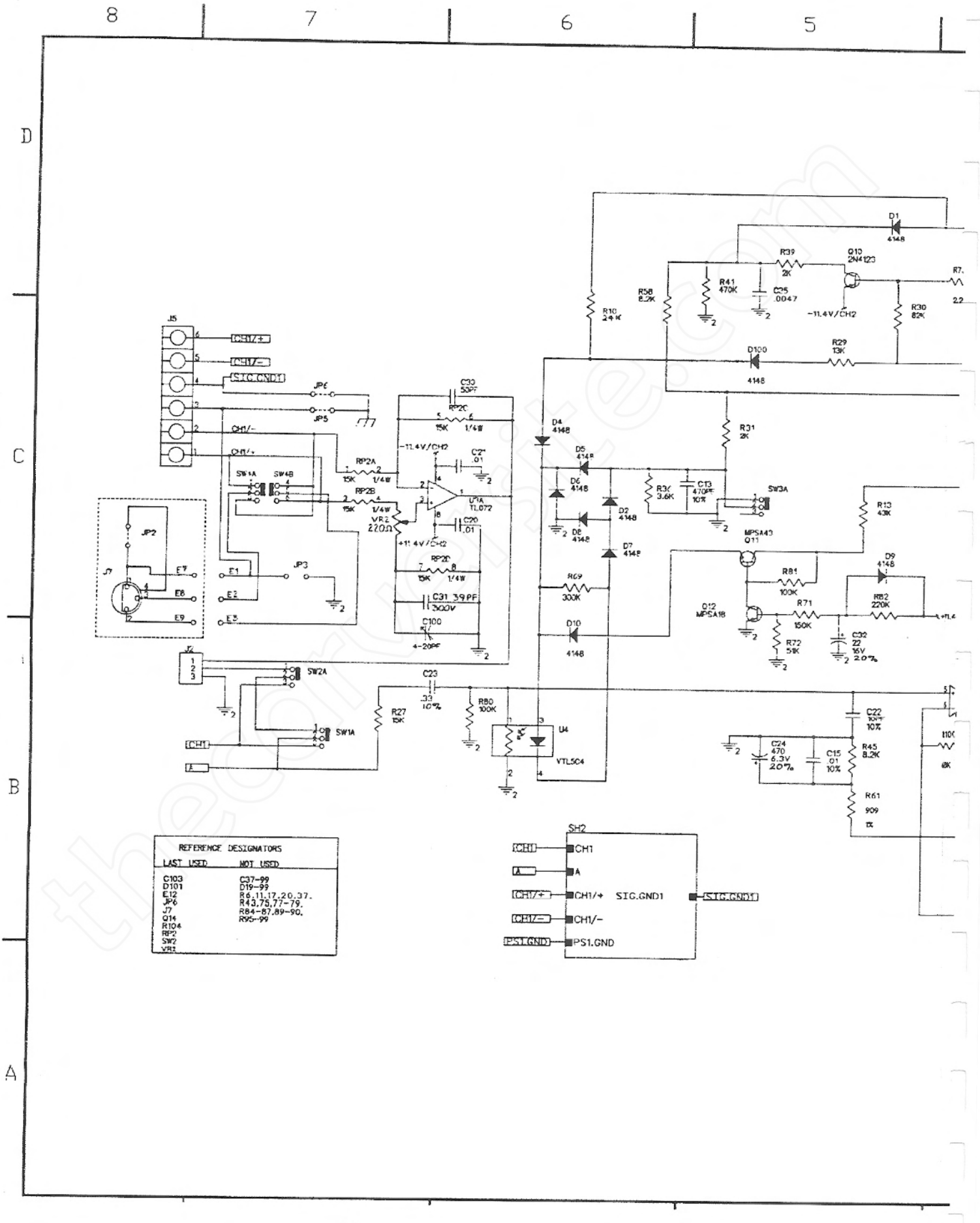
BLOCK DIAGRAMS



BLOCK DIAGRAM
PT-2400



SECTION 7
SCHEMATICS AND LAYOUTS


8
7
6
5
D
C
B
A
J5
CH1/+
CH1/-
SIG.GND1
JP4
JP5
CH1/-
CH1/+
SW1A
SW1B
RP2A
15K 1/4W
RP2B
15K 1/4W
VR2
220Ω
+11.4V/CH2
-11.4V/CH2
C30
33PF
RP2C
15K 1/4W
C21
.01
U1A
TL072
C20
.01
RP2D
15K 1/4W
C31 39PF
300V
C100
4-20PF
JP2
J7
E7
E8
E9
JP3
E1
E2
E3
SW2A
SW1A
C23
.33
10%
R27
15K
R80
100K
U4
VTL5C4
D1
4148
R39
2K
Q10
2N4123
R41
470K
C25
.0047
R58
8.2K
R10
24K
R30
82K
R29
13K
D100
4148
R31
2K
D4
4148
D5
4148
D6
4148
D2
4148
D8
4148
D7
4148
R36
3.6K
C13
470PF
10%
SW3A
MPSA43
Q11
R13
43K
R69
300K
D10
4148
D9
4148
R81
100K
Q12
MPSA18
R71
150K
R82
220K
R72
51K
C32
22
16V
20%
C22
10%
C24
470
6.3V
20%
C15
.01
10%
R45
8.2K
R61
909
1%
SH2
CH1
A
CH1/+
SIG.GND1
CH1/-
PS1.GND
REFERENCE DESIGNATORS
LAST USED
NOT USED
C103
D101
E12
JP6
J7
Q14
R104
RP2
SW2
VR2
C37-99
D19-99
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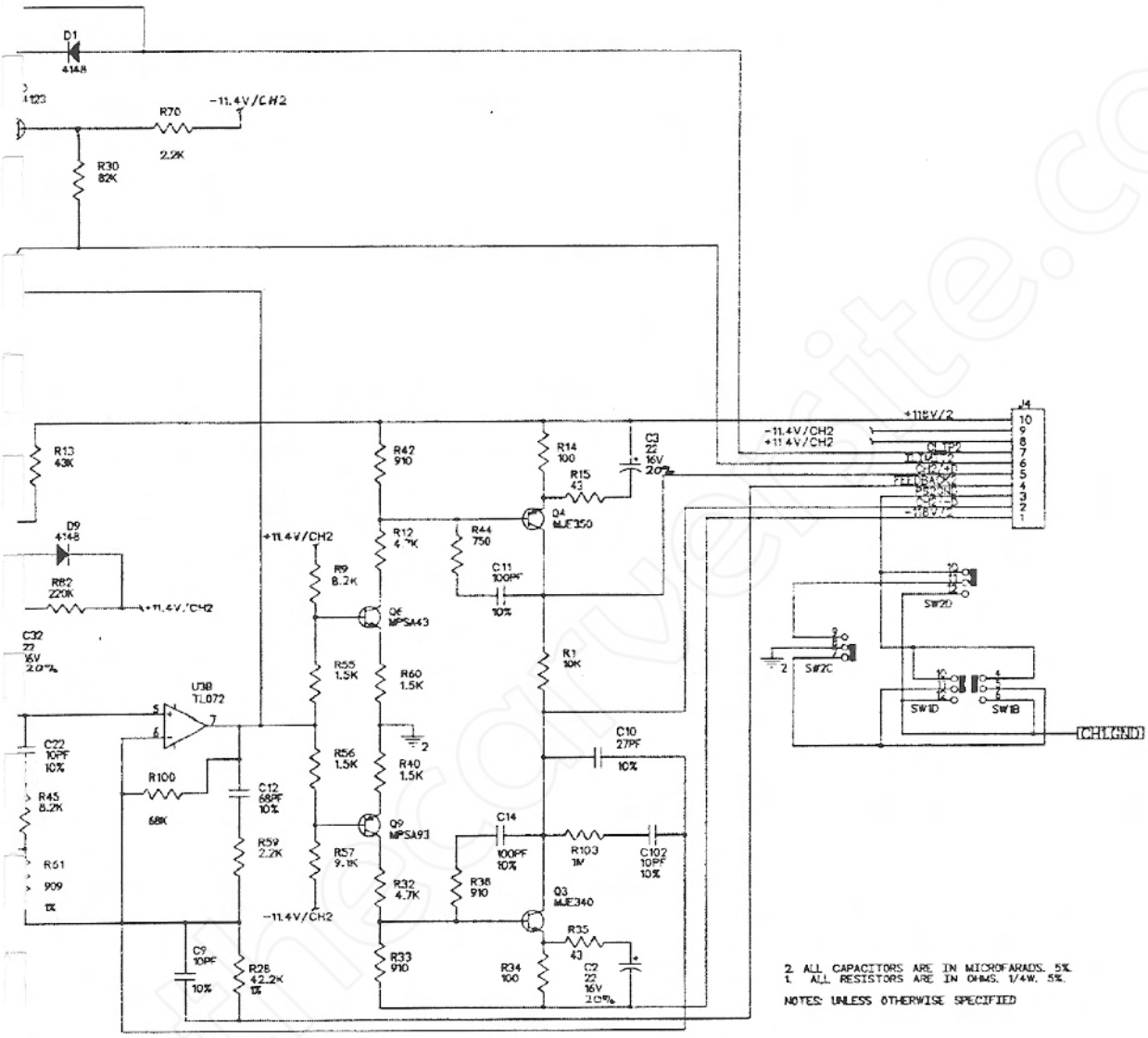
R43,75,77-79,
R84-87,89-90,
R95-99



2. ALL CAPACITORS ARE IN MICROFARADS. 5%.
1. ALL RESISTORS ARE IN OHMS. 1/4W. 5%.

NOTES: UNLESS OTHERWISE SPECIFIED

CHANNEL 2

-01	602-00448-01	PT-1800
DASH NO.	NEXT ASSEMBLY	USED ON
APPLICATION		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± / DECIMALS XX± XXX± ANGLES ±
MATERIAL:
FINISH:
DO NOT SCALE DRAWING

CONTRACT NO.:

APPROVALS:	DATE:
DRAWN: R. PASCO	3/26/91
CHECKED: B. COTE	9/91
ISSUED: S. VELIZ	9/91
ENG: J. GRIFFITHS	9/91
MFG: M. WALTERS	9/91

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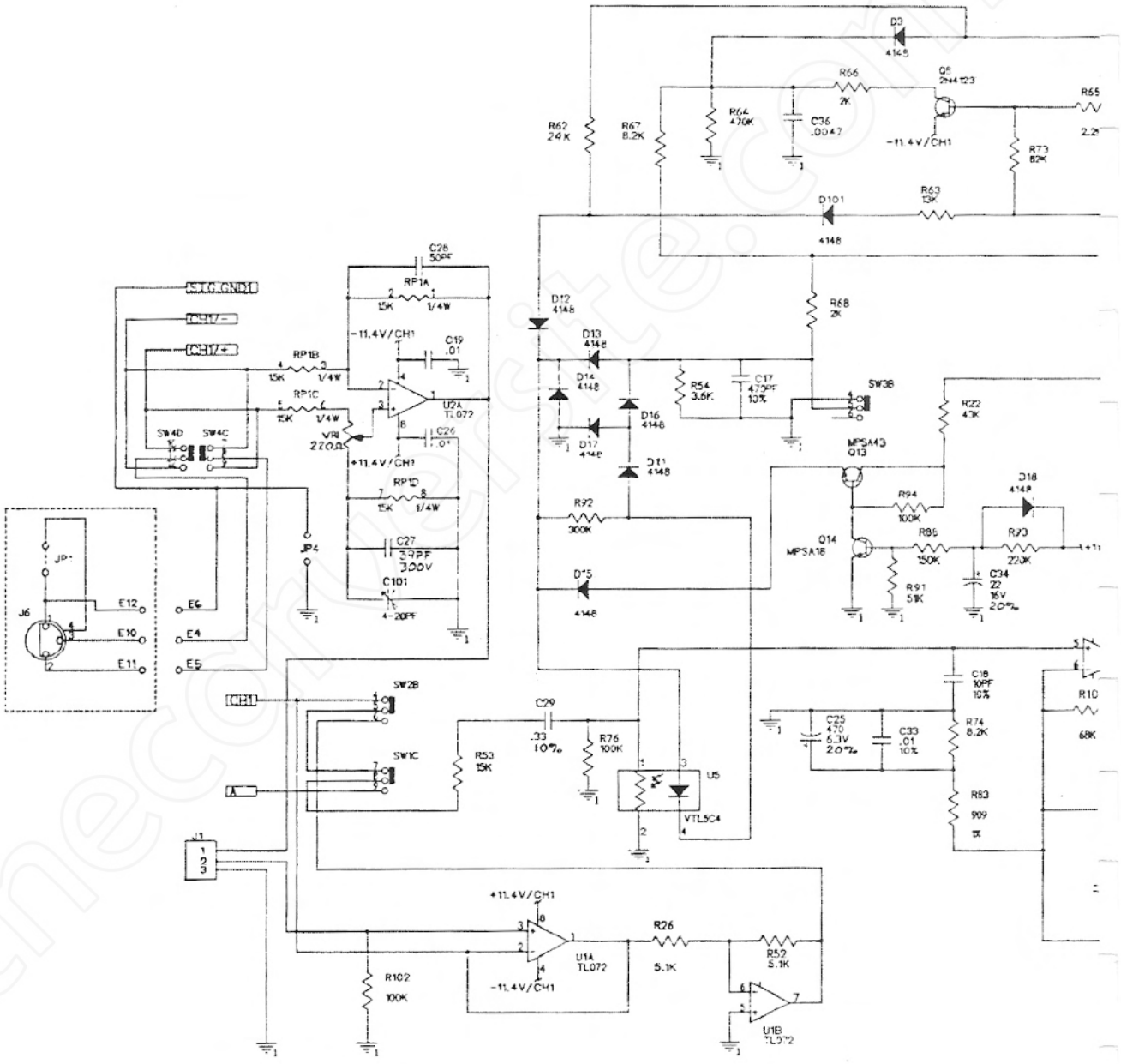
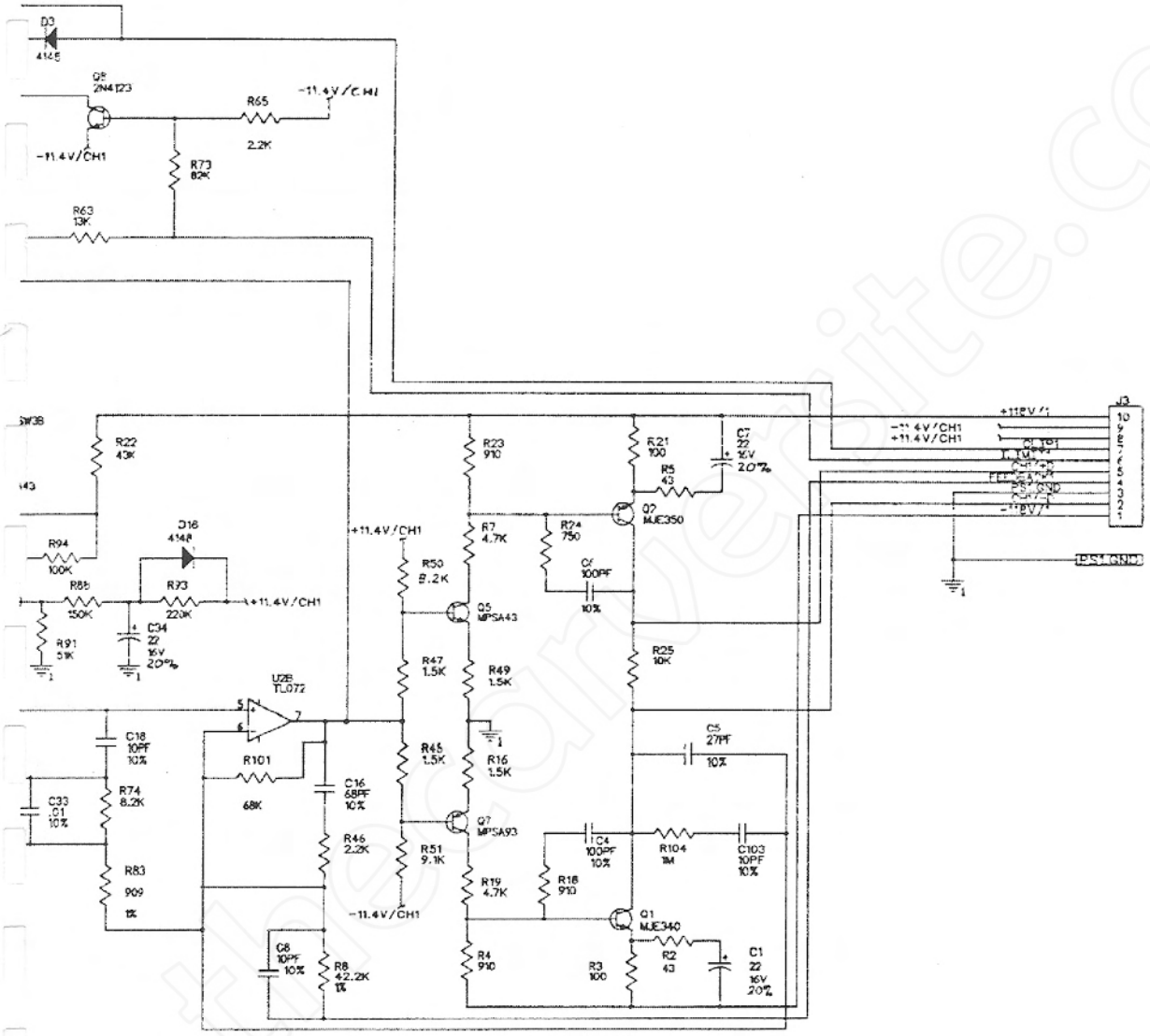
SCHEMATIC,
INPUT BOARD, PT1800

SIZE: D | DWG. NO. 605-00448-01 | REV. C
SCALE: NONE | SHEET 1 OF 2





CHANNEL 1

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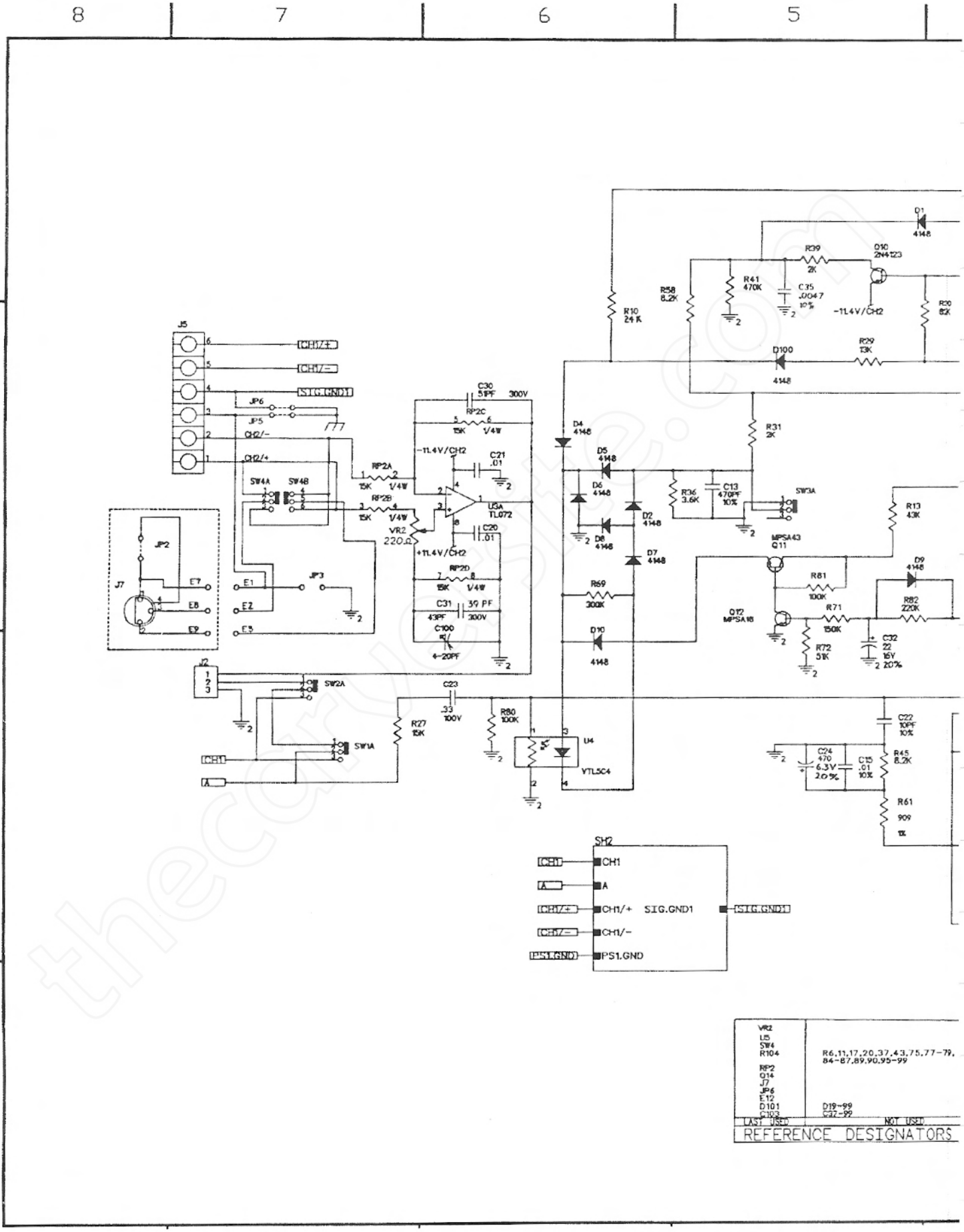
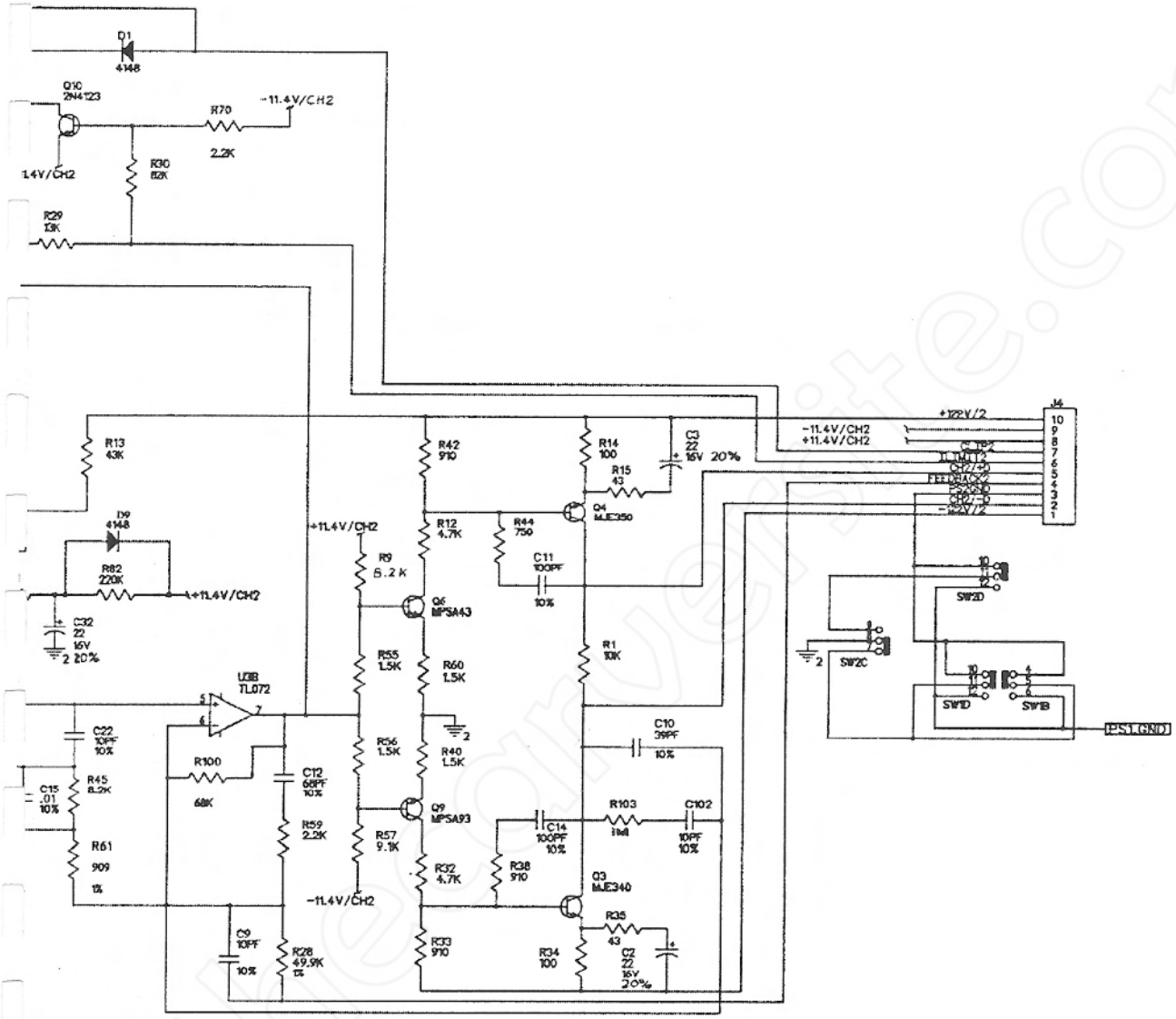
SIZE	DWG. NO.	REV.
D	605-00448-01	C
SCALE: NONE	SHEET 2 OF 2	





CHANNEL 2

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

NOTES: UNLESS OTHERWISE SPECIFIED

DESIGNATORS
17,20,37,43,75,77-79, 7,89,90,95-99
99 09 NOT USED

DASH NO.	NEXT ASSEMBLY	USED ON
-00	602-00448-00	PT-2400

APPLICATION

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

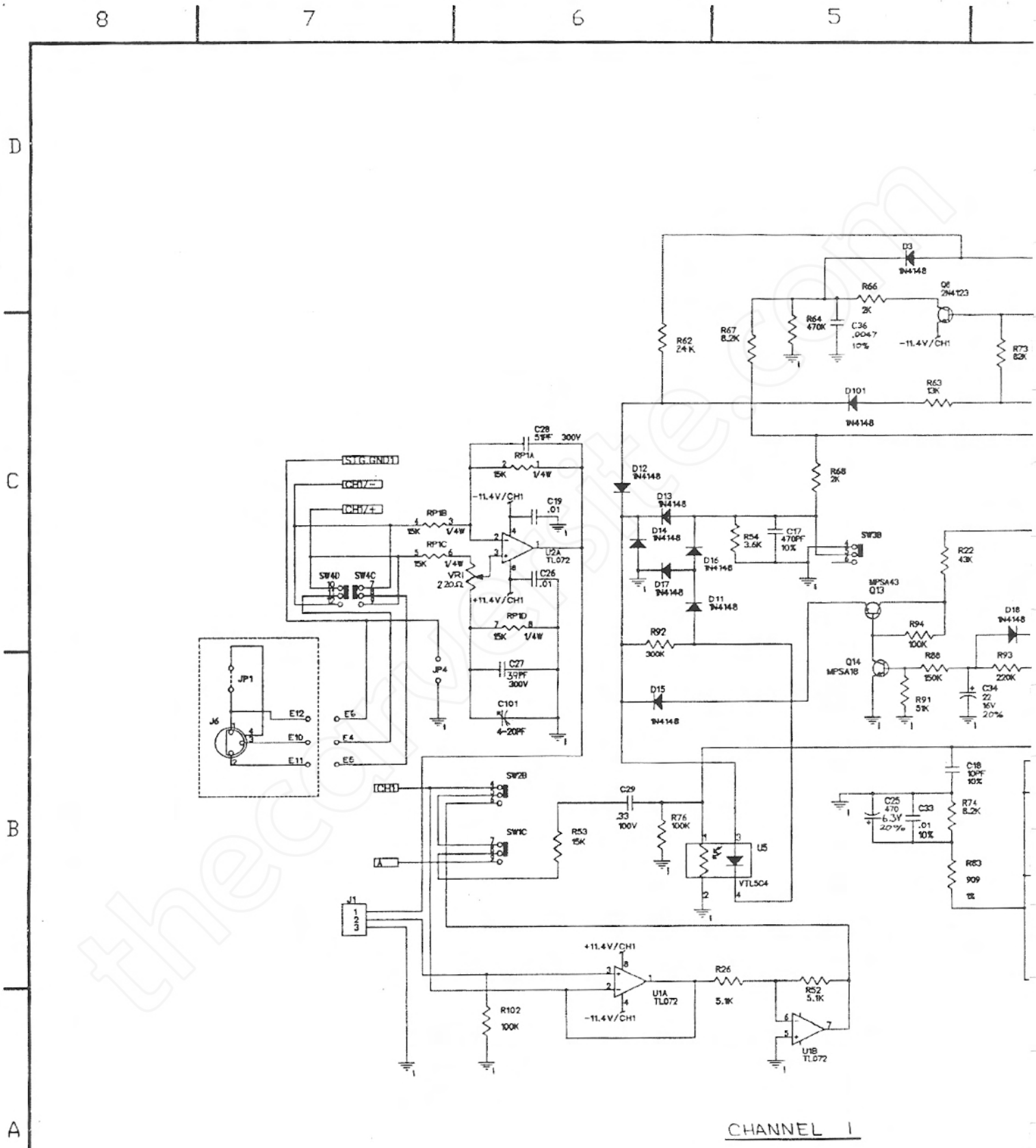
CONTRACT NO.:

APPROVALS:	DATE:
DRAWN R. PASCO	12/12/90
CHECKED	2/5/91
ISSUED	8/21/91
ENG D GRIFFITHS	2/5/91
MFG	2/

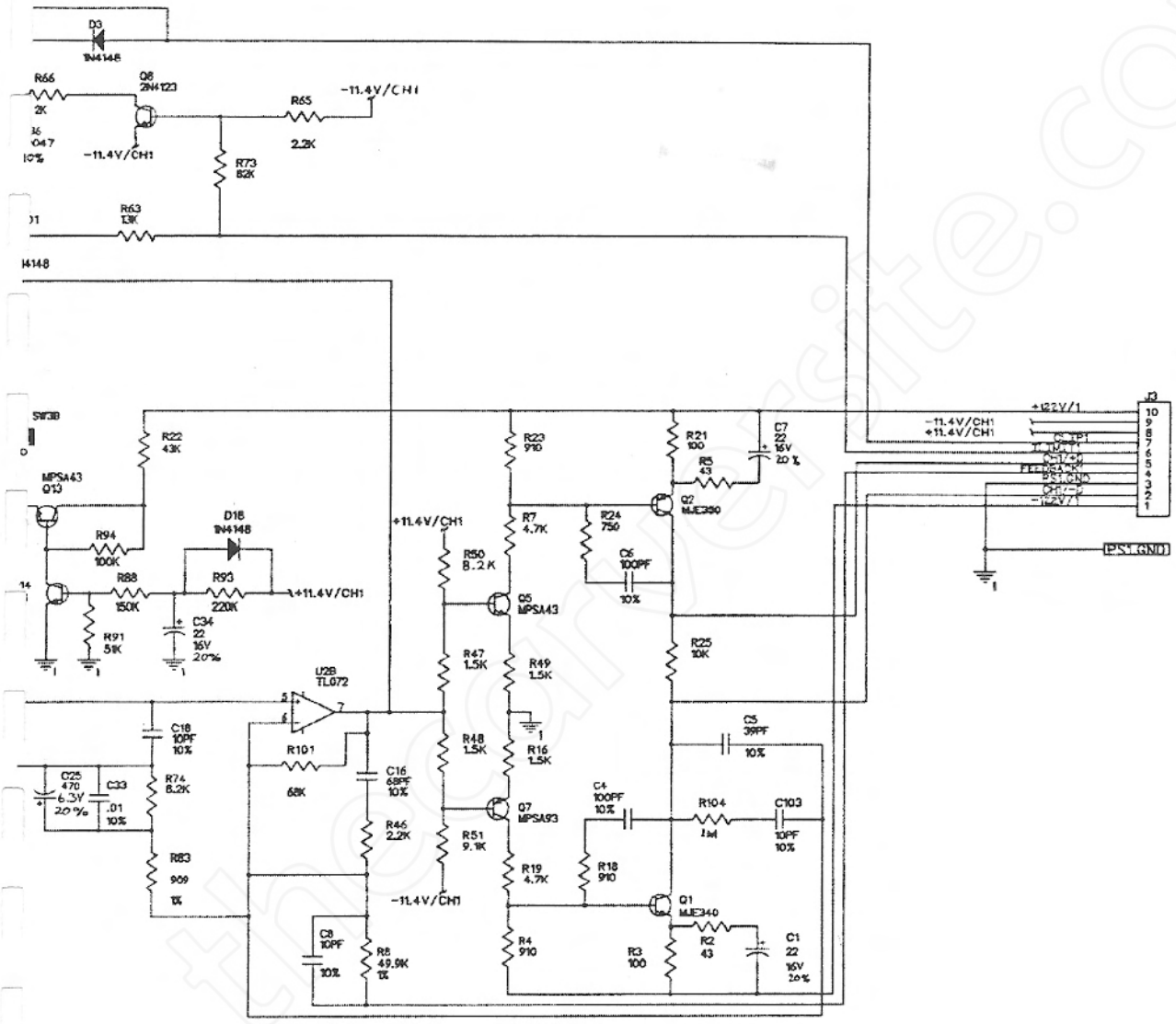
CARVER

SCHEMATIC,
INPUT BOARD, PT2400

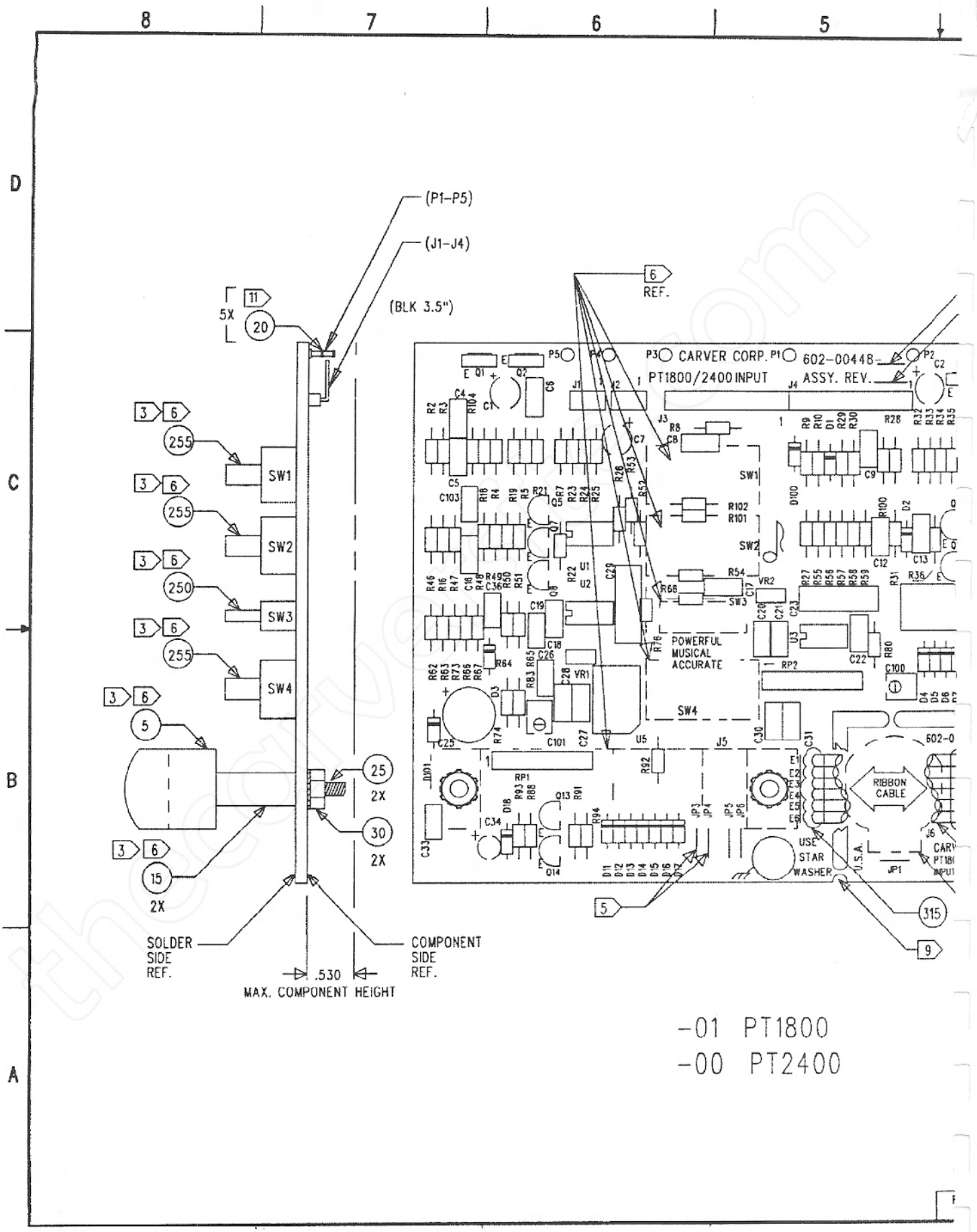
SIZE D | DWG NO. 605-00448-00 | REV. C
SCALE NONE | SHEET 1 OF 2

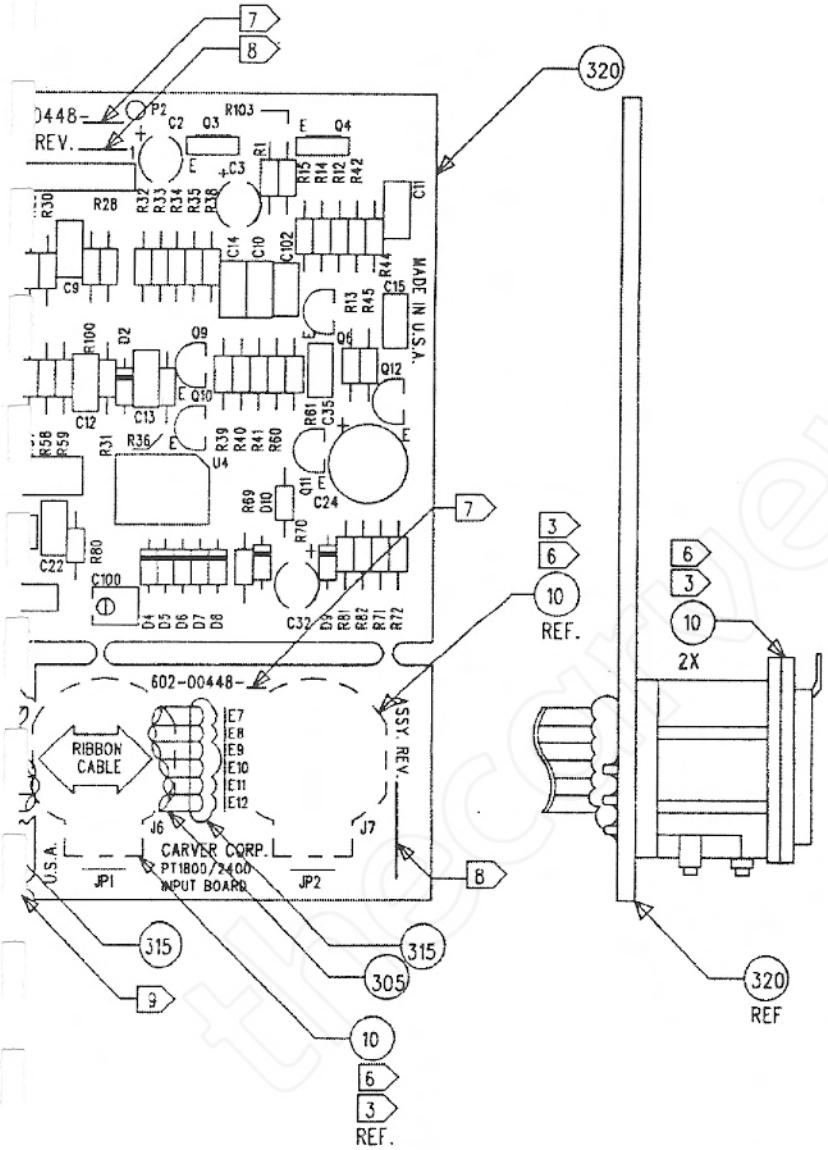


CHANNEL 1



CARVER			
SIZE D		DWG. NO. 605-00448-00	REV. C
SCALE: NONE			SHEET 2 OF 2


8
7
6
5
D
C
B
A
(P1–P5)
(J1–J4)
(BLK 3.5")
5X
11
20
6
REF.
3
6
255
SW1
255
SW2
250
SW3
255
SW4
5
15
2X
25
2X
30
2X
SOLDER
SIDE
REF.
.530
MAX. COMPONENT HEIGHT
COMPONENT
SIDE
REF.
P3 CARVER CORP. P1 602-00448-
PT1800/2400 INPUT
ASSY. REV.
POWERFUL
MUSICAL
ACCURATE
RIBBON
CABLE
USE
STAR
WASHER
U.S.A.
315
9
-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
1. DELETED

NOTES: UNLESS OTHERWISE SPECIFIED.

UNLESS OTHERWISE SPECIFIED
INTERPRET DWG PER ANSI Y14.5M-1982
DIMENSIONS ARE IN INCHES
TOLERANCES
FRACTIONS ± | DECIMALS .XX ± .XXX ± | ANGLES ±
MATERIAL 2
FINISH
DO NOT SCALE DRAWING

APPROVALS	DATE
DRAWN P. PASCO	3/27/91
CHECKED B. COTE	
ENG D. GRIFFITHS	
MFG	
QUALITY M. WATTERS	
S. VELIC	

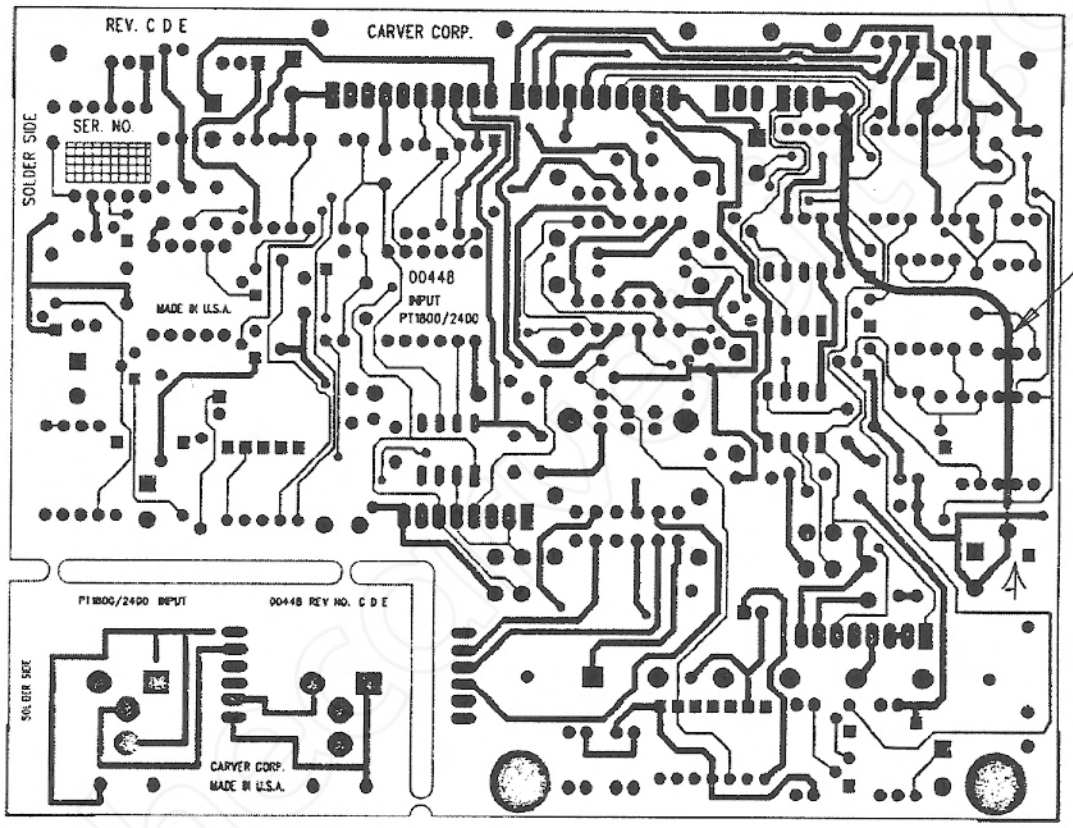
CARVER

TITLE: ASSEMBLY, PCB
INPUT BOARD, PT2400 /1800

REV STATUS OF SHEETS	SH	1	2
	REV	J	-

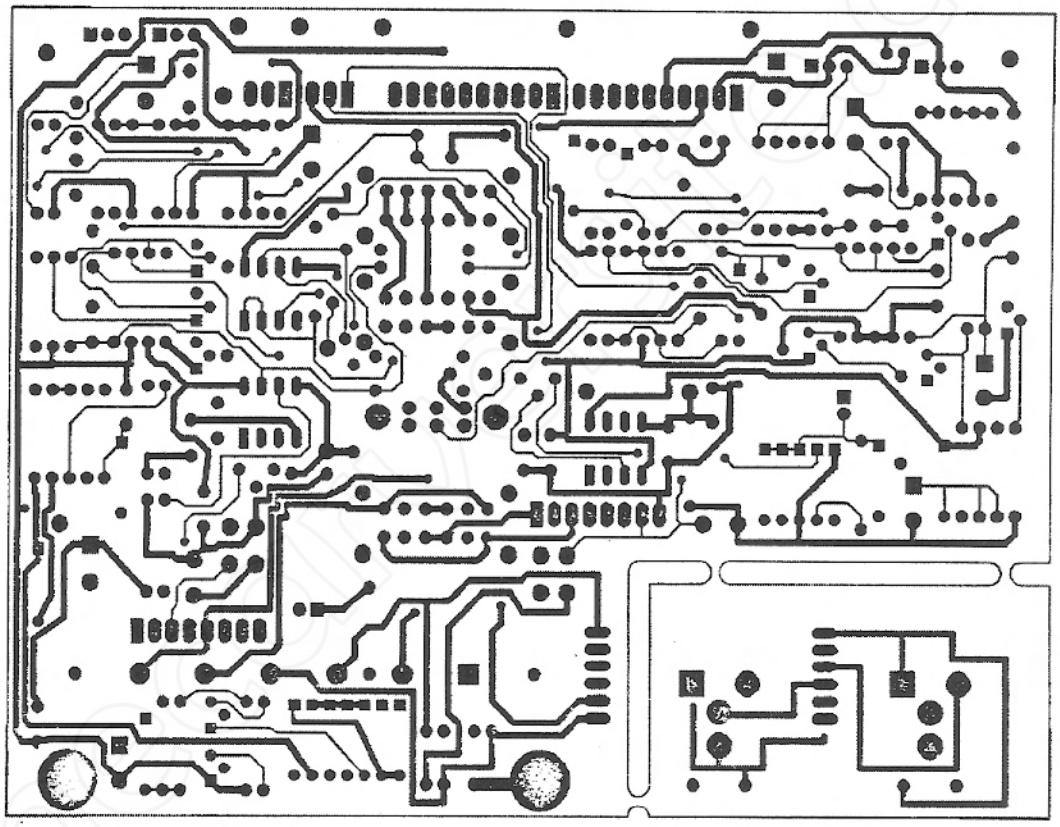
PT1800
PT2400
USED ON

SIZE D | DWG NO. 602-00448-XX | REV J
SCALE 2/1 | SHEET 1 OF 2

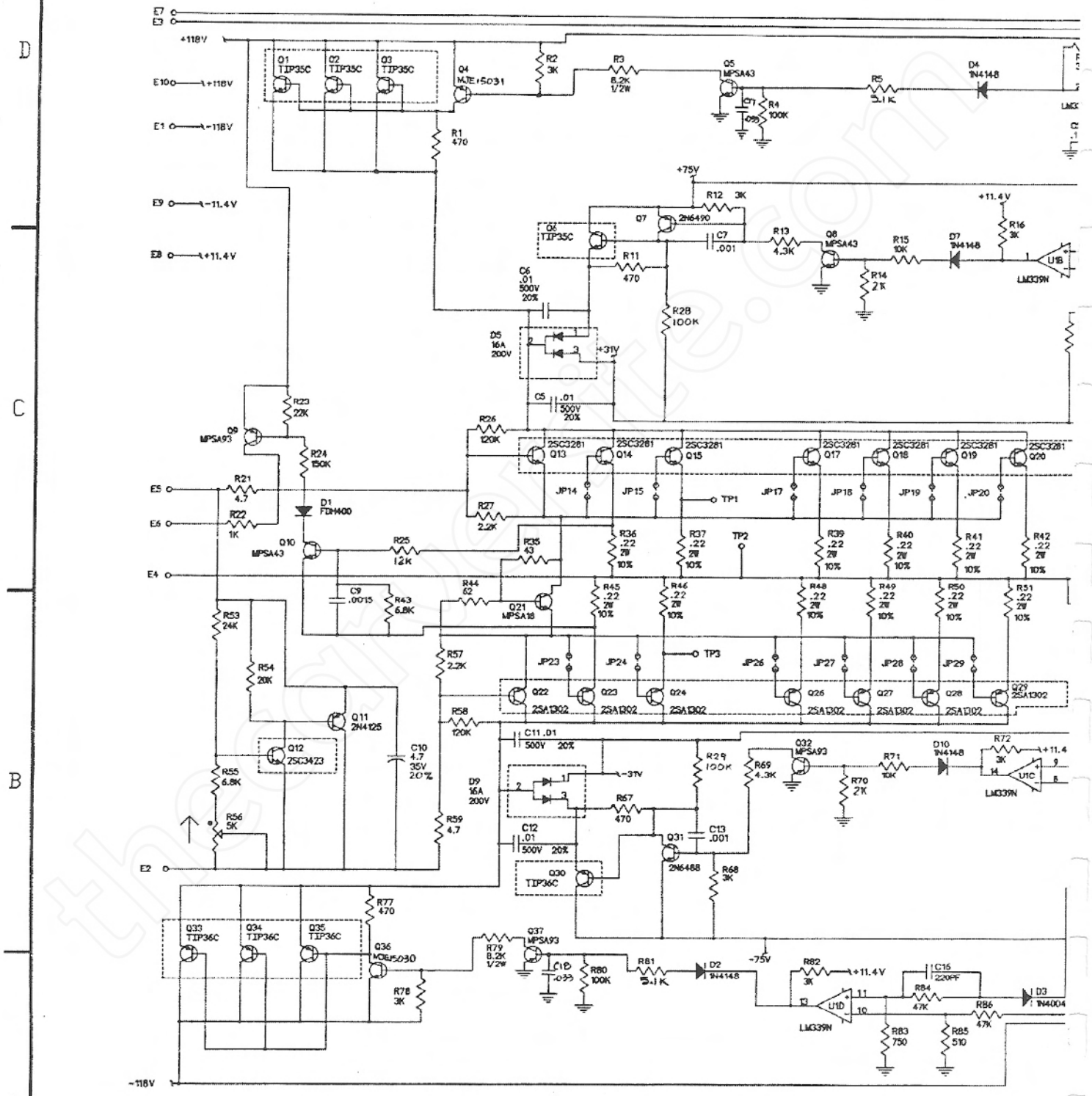


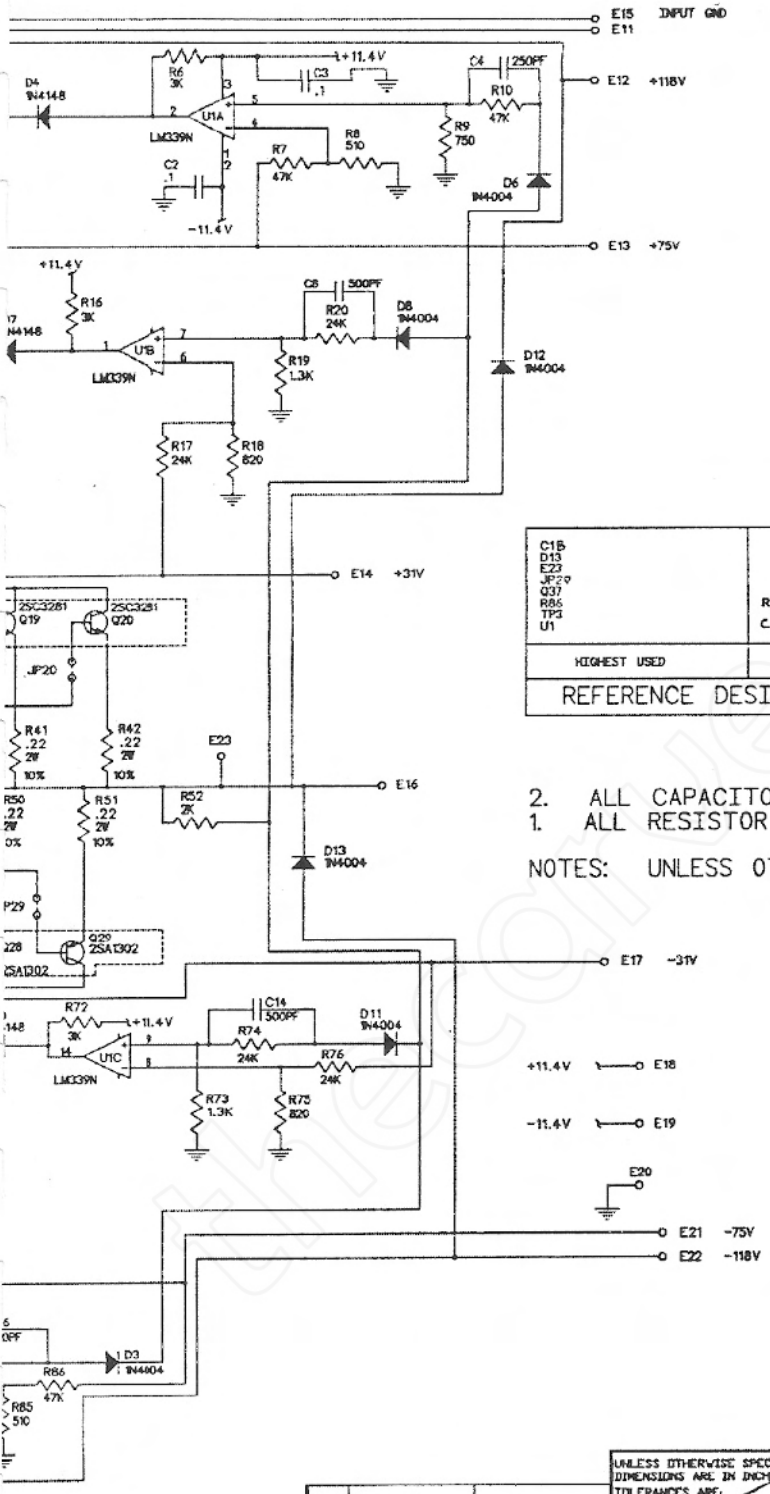
CIRCUIT SIDE

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



COMPONENT SIDE


8
7
6
5
D
C
B
A
+118V
-118V
-11.4V
+11.4V
+75V
-75V
+31V
-31V
Q1 TIP35C
Q2 TIP35C
Q3 TIP35C
Q4 MJE15031
Q5 MPSA43
Q6 TIP35C
Q7 2N6490
Q8 MPSA43
Q9 MPSA93
Q10 MPSA43
Q11 2N4125
Q12 2SC3423
Q13 2SC3281
Q14 2SC3281
Q15 2SC3281
Q17 2SC3281
Q18 2SC3281
Q19 2SC3281
Q20 2SC3281
Q21 MPSA18
Q22 2SA1302
Q23 2SA1302
Q24 2SA1302
Q26 2SA1302
Q27 2SA1302
Q28 2SA1302
Q29 2SA1302
Q30 TIP36C
Q31 2N6488
Q32 MPSA93
Q33 TIP36C
Q34 TIP36C
Q35 TIP36C
Q36 MJE5030
Q37 MPSA93
D1 FDH400
D2 1N4148
D3 1N4004
D4 1N4148
D5 16A 200V
D7 1N4148
D9 16A 200V
D10 1N4148
U1B LM339N
U1C LM339N
U1D LM339N
JP14
JP15
JP17
JP18
JP19
JP20
JP23
JP24
JP26
JP27
JP28
JP29
TP1
TP2
TP3
E1
E2
E3
E4
E5
E6
E7
E8
E9
E10



C15 D13 E23 JP29 Q37 R86 TP3 U1	R30-R34, 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

DASH NO.	NEXT ASSEMBLY	USED ON
-01	602-00408-01	PT1800

APPLICATION

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

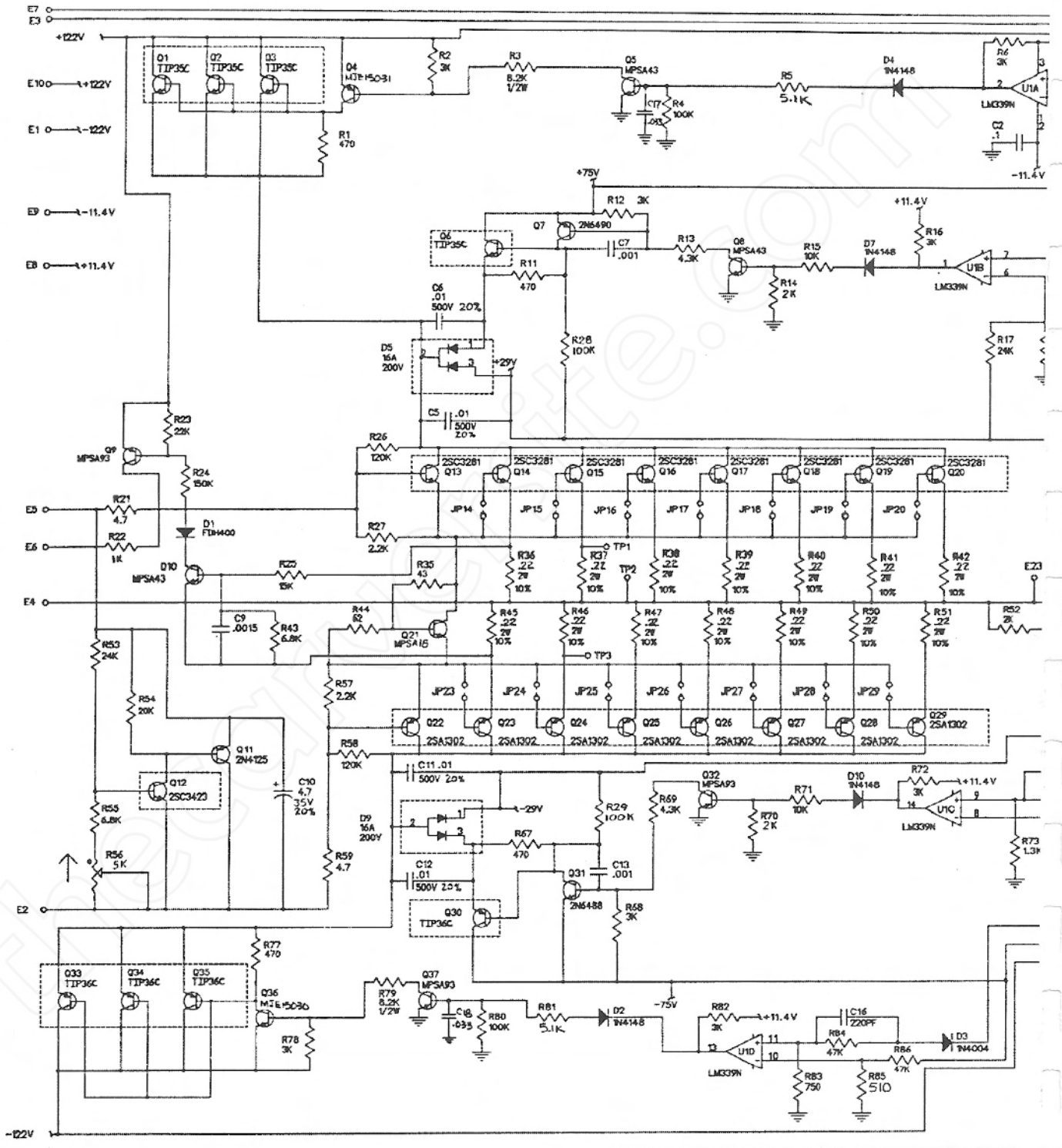
CONTRACT NO.:

APPROVALS:	DATE:
DRAWN: R. PASCO	4/1/91
CHECKED: B.COTE	
ISSUED: S VELIZ	
ENG: D. GRIFFITHS	
MFG: M. WALTERS	

CARVER

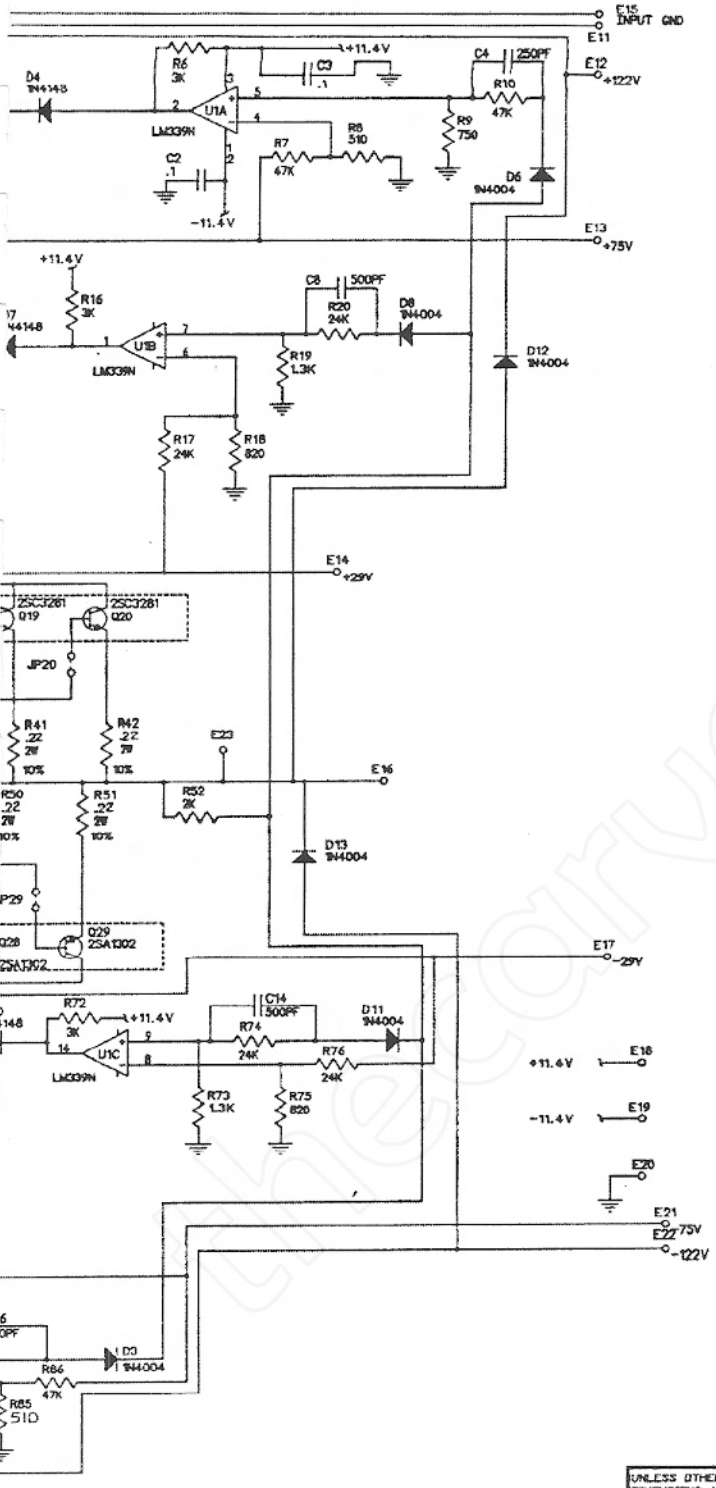
SCHEMATIC,
AMP BOARD, PT1800

SIZE: D | DWG NO: 605-00408-01 | REV: E
SCALE: NONE | SHEET 1 OF 1



C18 D13 E23 JP29 Q37 R86 TP3 U1	JP1-13, 21, 22 R30-R34, R60-R66 C1, C15
HIGHEST USED	NOT USED

REFERENCE DESIGNATORS



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

NOTES: UNLESS OTHERWISE SPECIFIED.

-00	602-00408-00	PT-2400
DASH NO.	NEXT ASSEMBLY	USED ON
APPLICATION		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± / DECIMALS .XX± .01 .XXX± .005 ANGLES ±1°
MATERIAL:
FINISH:
DO NOT SCALE DRAWING

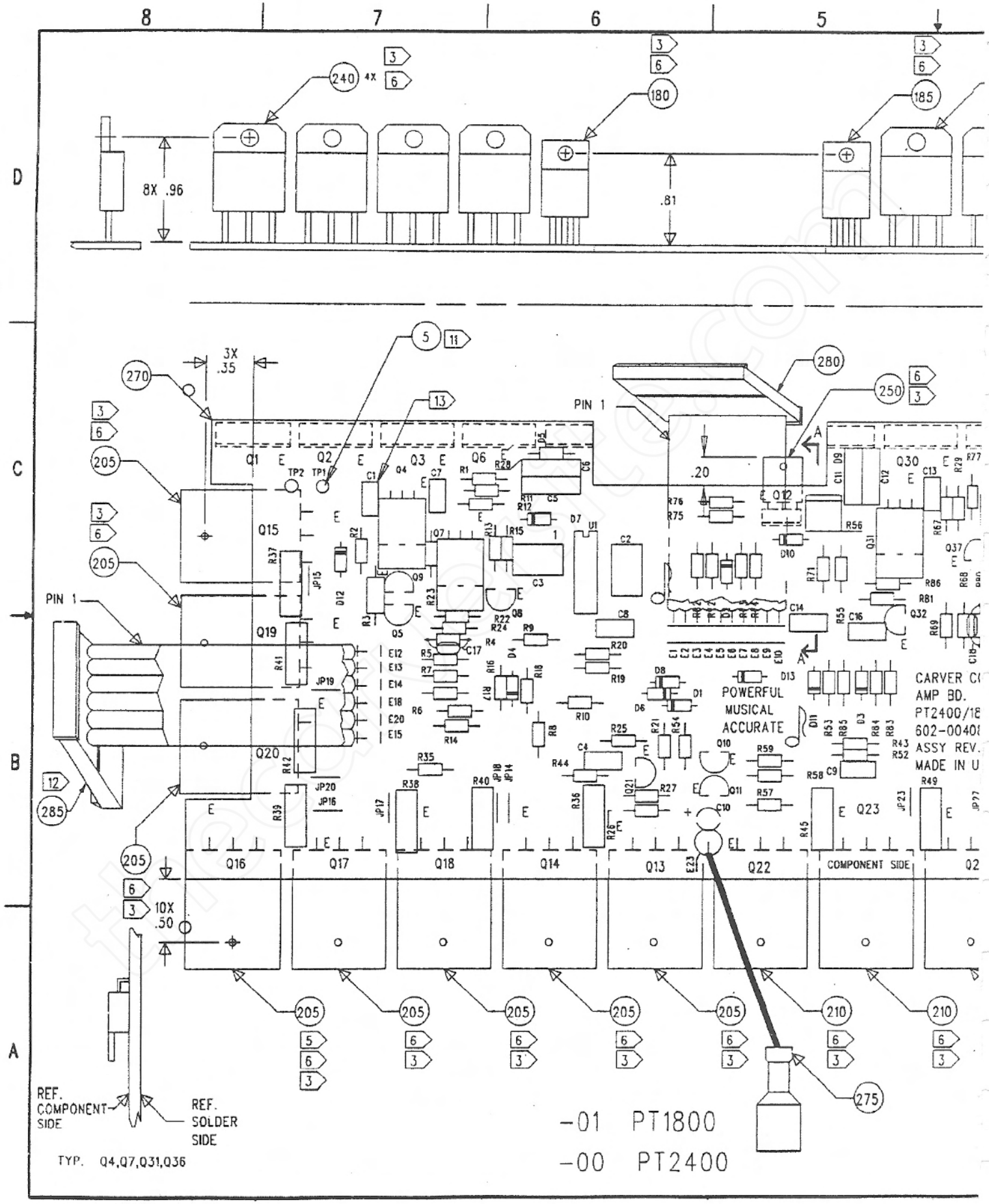
CONTRACT NO.:

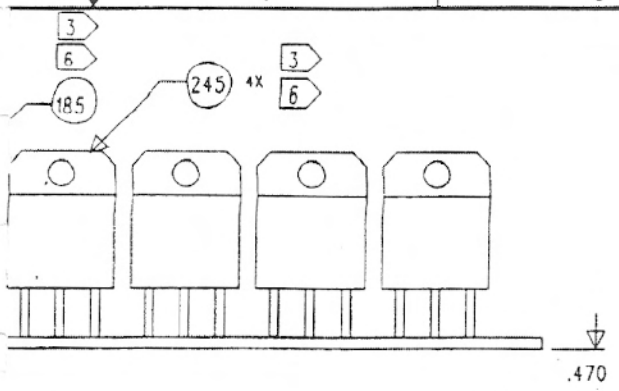
APPROVALS:	DATE:
DRAWN: R. PASCO	12/12/90
CHECKED:	2/5/91
ISSUED:	2/19/91
ENG: D. GRIFFITHS	2/5/91
MFG:	2/2/91

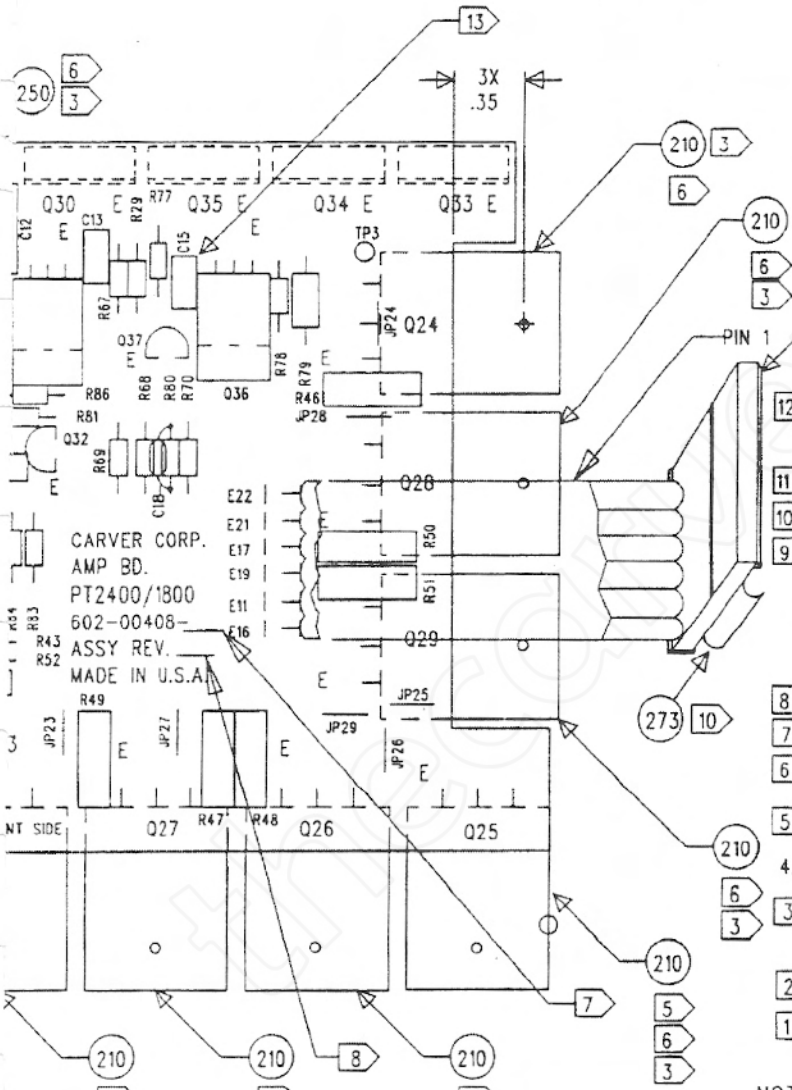
CARVER

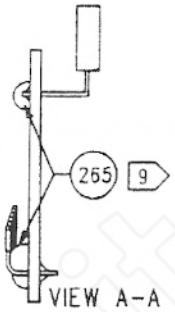
SCHEMATIC,
AMP BOARD, PT2400

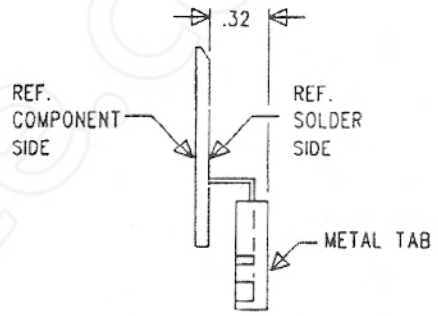
SIZE: D | DWG. NO. 605-00408-00 | REV. F
SCALE: NONE | SHEET 1 OF 1


8
7
6
5
D
C
B
A
240
4X
180
185
8X .96
.81
3X
.35
270
280
250
PIN 1
.20
205
Q1
Q2
Q3
Q6
Q15
Q19
Q20
Q16
Q17
Q18
Q14
Q13
Q22
Q23
Q30
Q12
Q31
Q37
Q32
TP2
TP1
JP15
JP19
JP20
JP16
JP17
JP18
JP14
JP23
285
10X
.50
REF.
COMPONENT
SIDE
REF.
SOLDER
SIDE
TYP. Q4,Q7,Q31,Q36
POWERFUL
MUSICAL
ACCURATE
COMPONENT SIDE
CARVER C
AMP BD.
PT2400/18
602-0040
ASSY REV.
MADE IN U
-01 PT1800
-00 PT2400
275
210









TYP. Q12–Q20, Q22–Q29.

PIN 1

13. DO NOT INSTALL.
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.

-01	601-00255-02	PT1800
-00	601-00255-01	PT2400
DASH NO.	NEXT ASSEMBLY	USED ON

APPLICATION

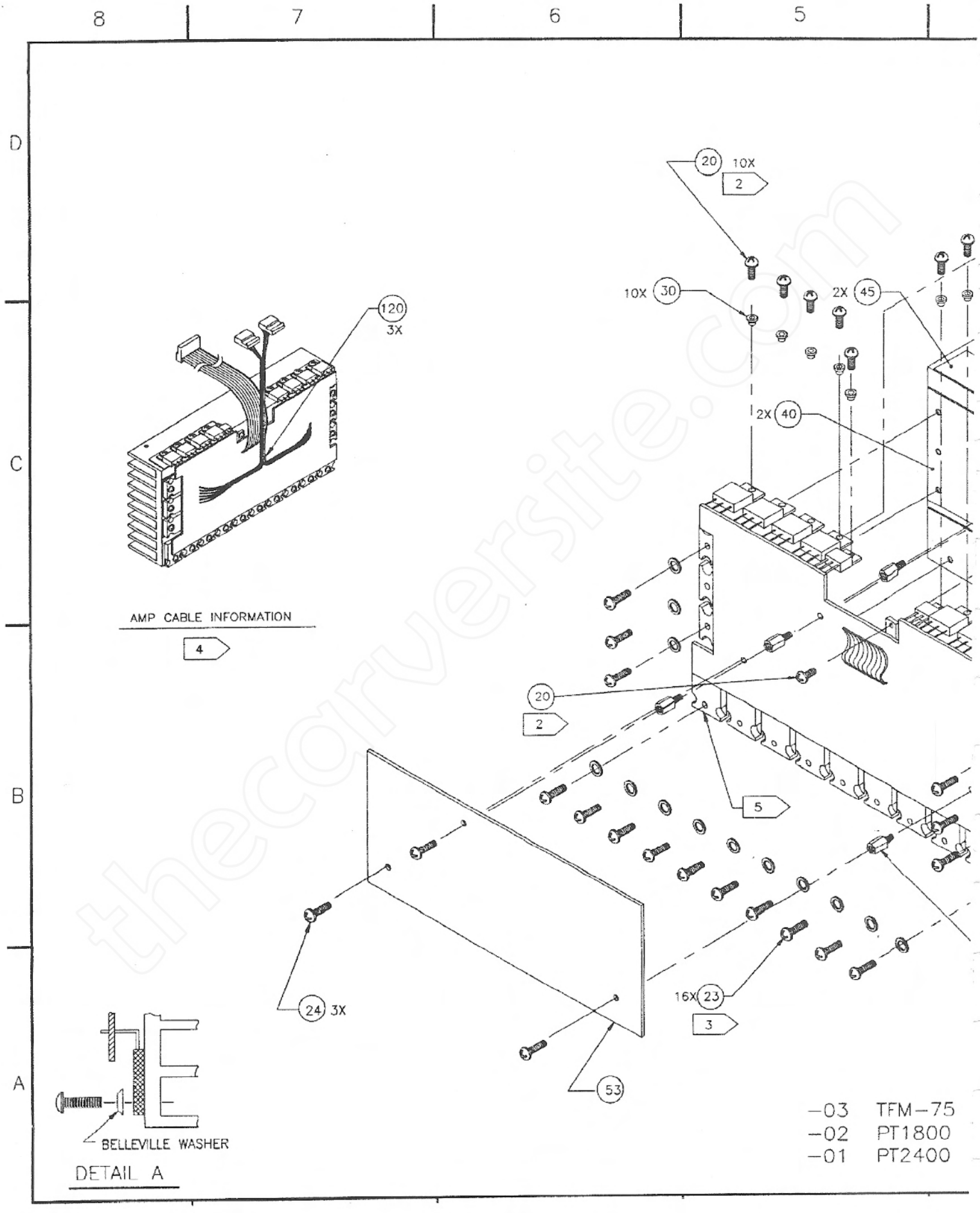
UNLESS OTHERWISE SPECIFIED INTERPRET DRG PER ANSI Y14.5M-1982. DIMENSIONS ARE IN INCHES.
TOLERANCES: FRACTIONS: DECIMALS: XX ± .01, XXX ± .005; ANGLES: ±
MATERIAL: 2
FINISH:
DO NOT SCALE DRAWING

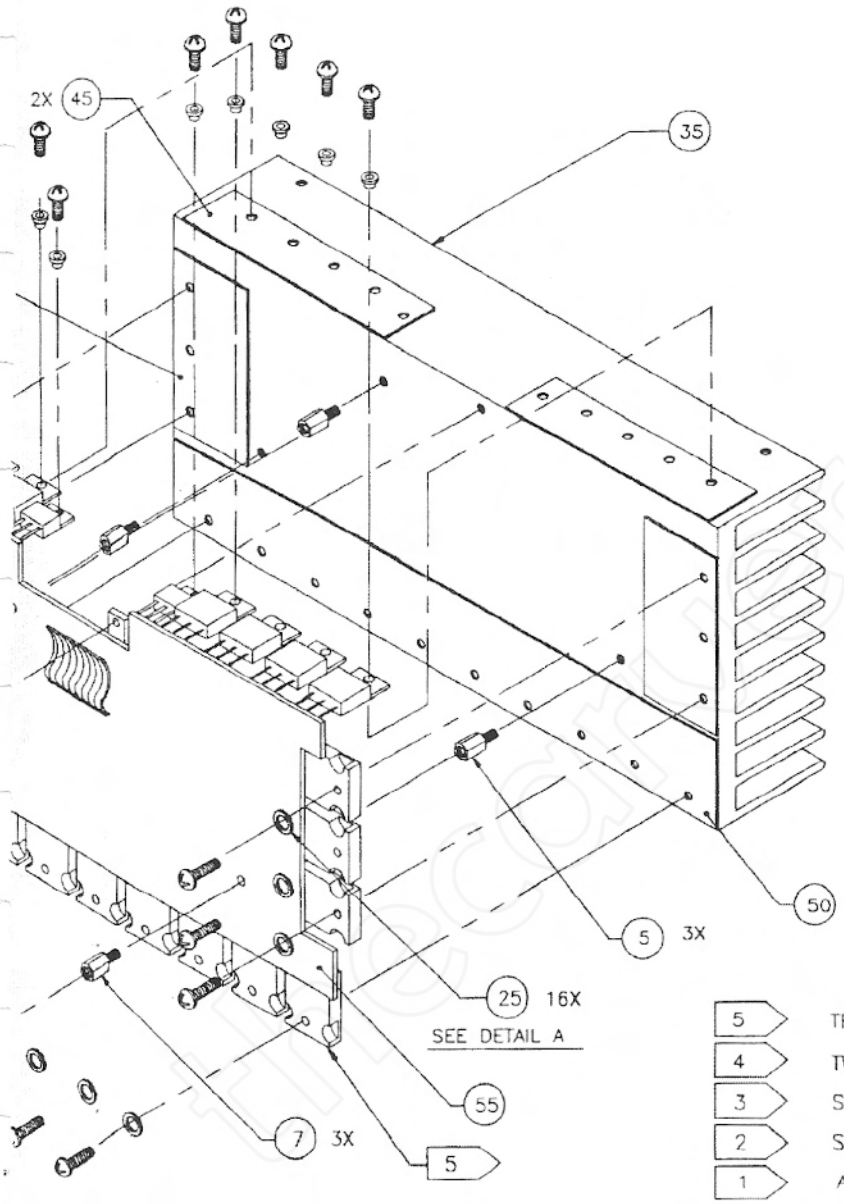
APPROVALS	DATE
DRAWN: R. PASCO	3/26/91
CHECKED: B. COTE	3/91
ENG: D. GRIFFITHS	3/91
MFG:	
QUAL: M. WALTERS	3/91
ISSUED: S. VELIZ	3/91

CARVER

TITLE: ASSEMBLY, PCB
AMP BOARD, PT2400/1800

SIZE D | DWG NO 602-00408-XX | REV M
SCALE 2:1 | SHEET 1 OF 1





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.

NOTES: UNLESS OTHERWISE SPECIFIED

-03 TFM-75
-02 PT1800
-01 PT2400

DASH NO.	NEXT ASSEMBLY:	USED ON:
-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

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS: ± DECIMALS: .XX± .XXX± ANGLES: ±

MATERIAL: 1

FINISH:

DO NOT SCALE DRAWING

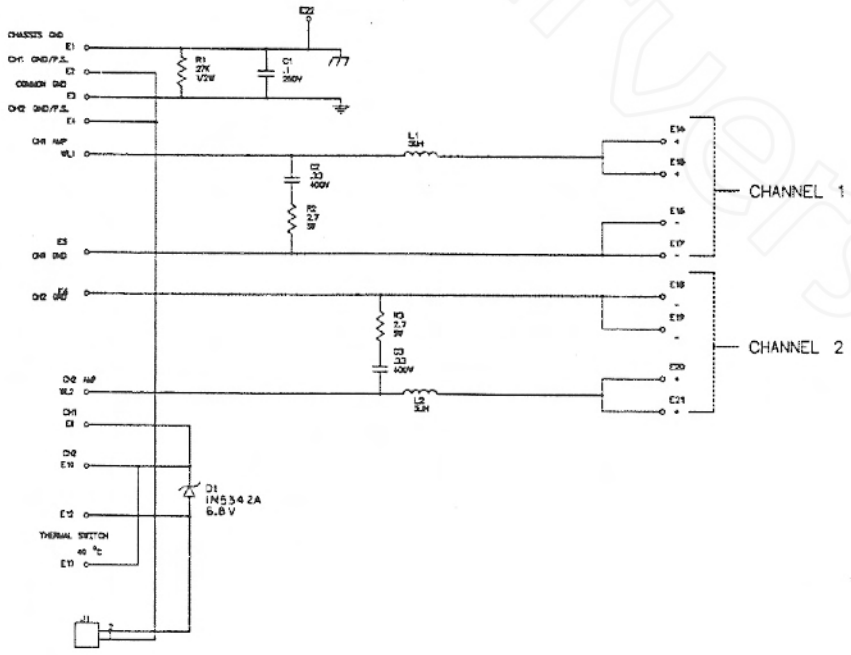
CONTRACT NO.:

APPROVALS:	DATE:
DRAWN: GEDENINI, E.	11-28-90
CHECKED: B. COTE	4/2/91
ISSUED:	
ENG.: D. GRIFFITHS	4/3/91
MFG.: 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



2. ALL CAPACITORS ARE IN MICROFARADS, 10%.
1. ALL RESISTORS ARE IN OHMS.

NOTES: UNLESS OTHERWISE SPECIFIED

-00	602-00446-00	PT2400/1800			
DASH NO	NEXT ASSEMBLY	USED ON			
APPLICATION	DO NOT SCALE DRAWING				

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± / DECIMALS .XX ± .XXX ANGLES ±

MATERIAL:

FINISH:

CONTRACT NO.:

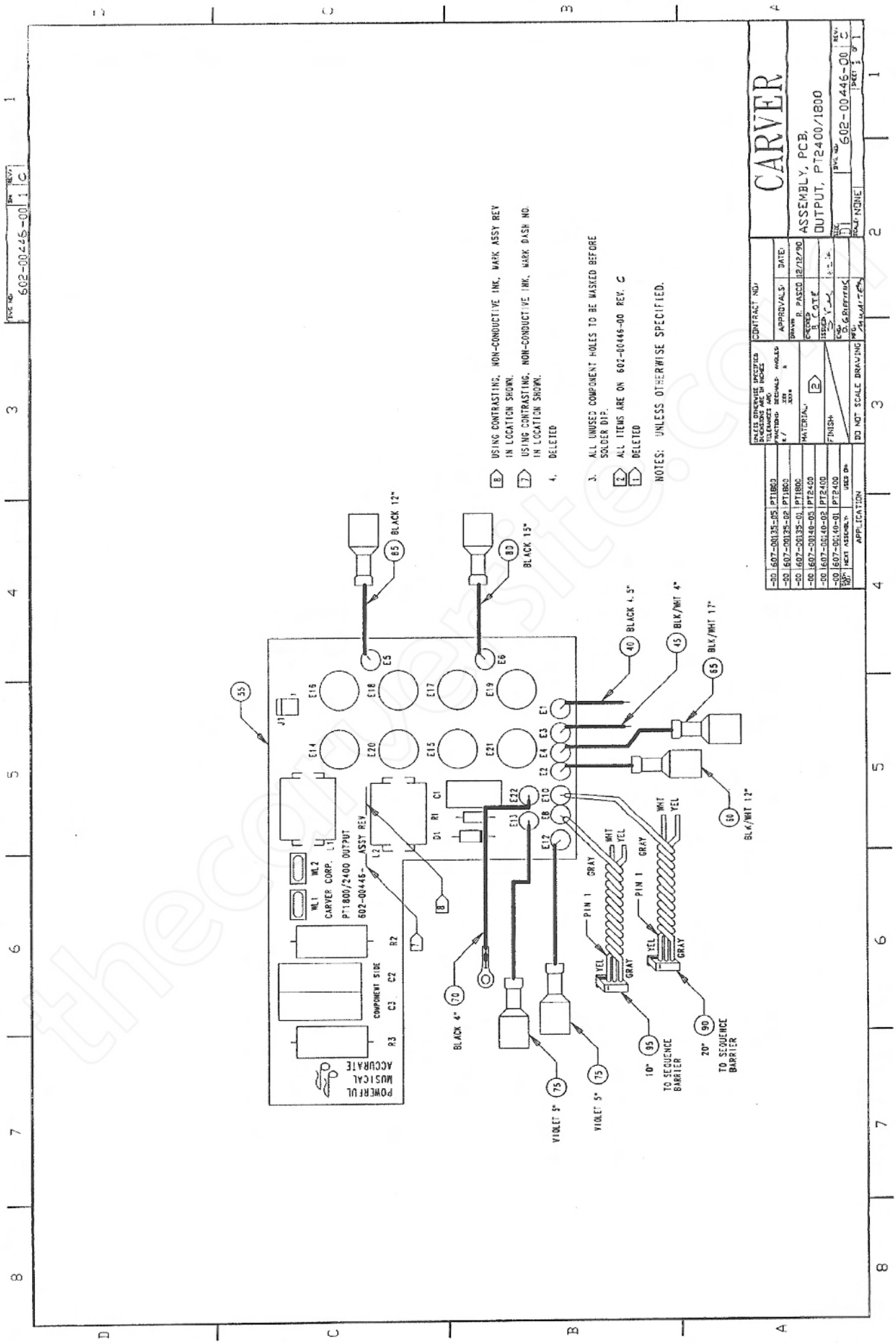
APPROVALS:	DATE:
DRAWN R. PASCO	1/17/91
CHECKED	2/5/91
ISSUED	2/21/91
ENG	2/5/91
MFG	2/21/91

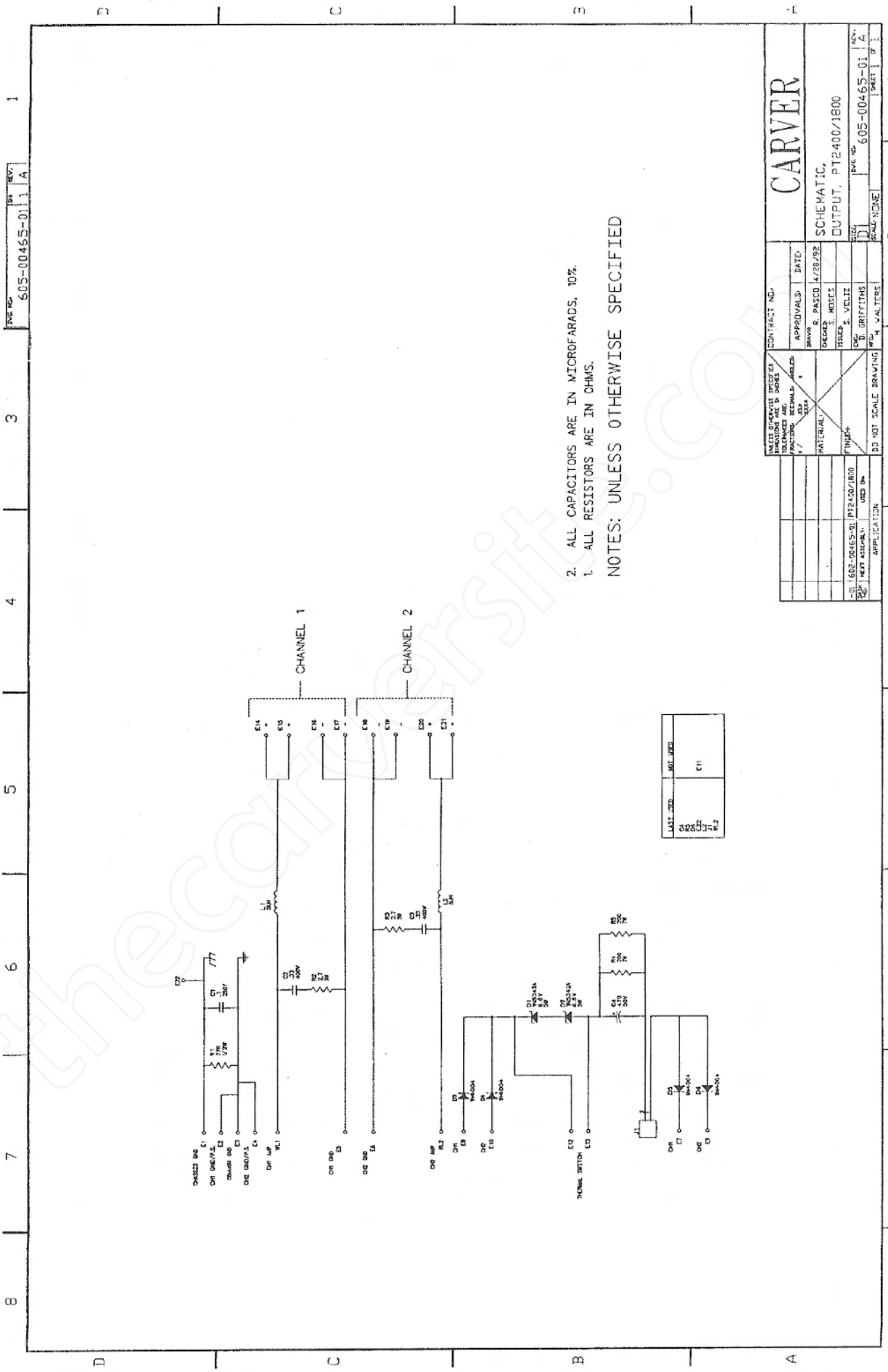
CARVER

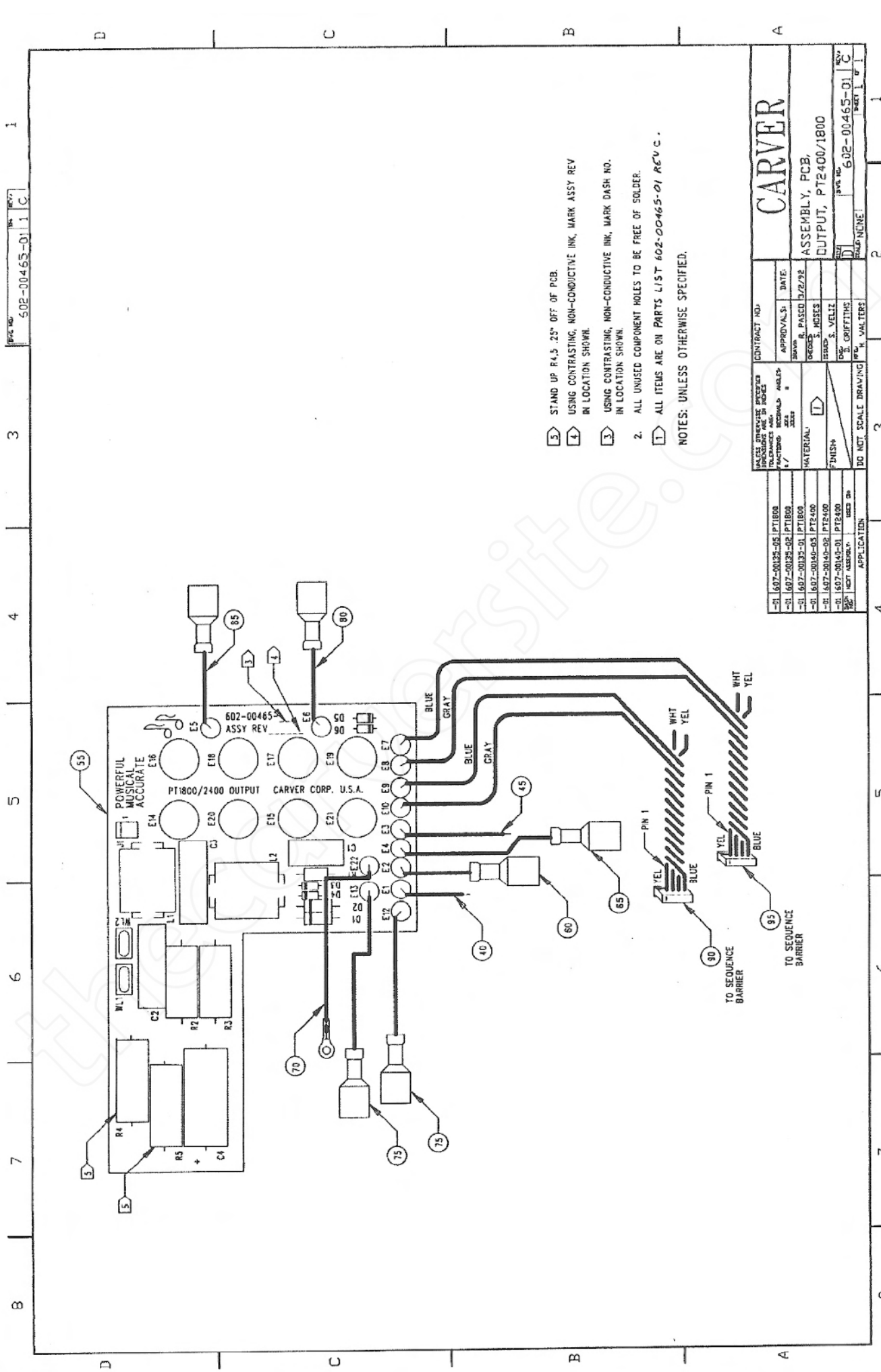
SCHEMATIC, OUTPUT, PT2400/1800

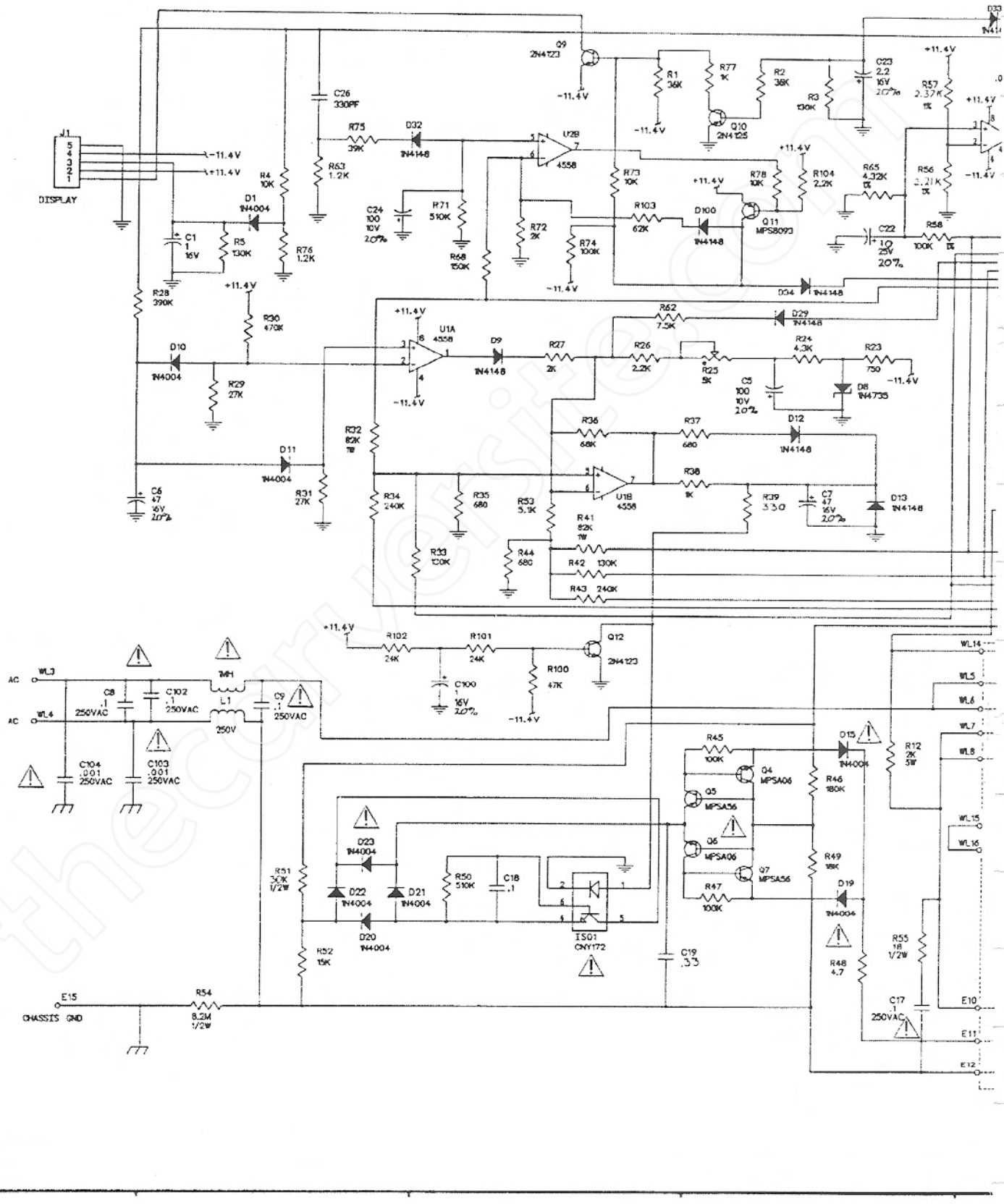
SIZE D | DWG NO 605-00446-00 | REV A

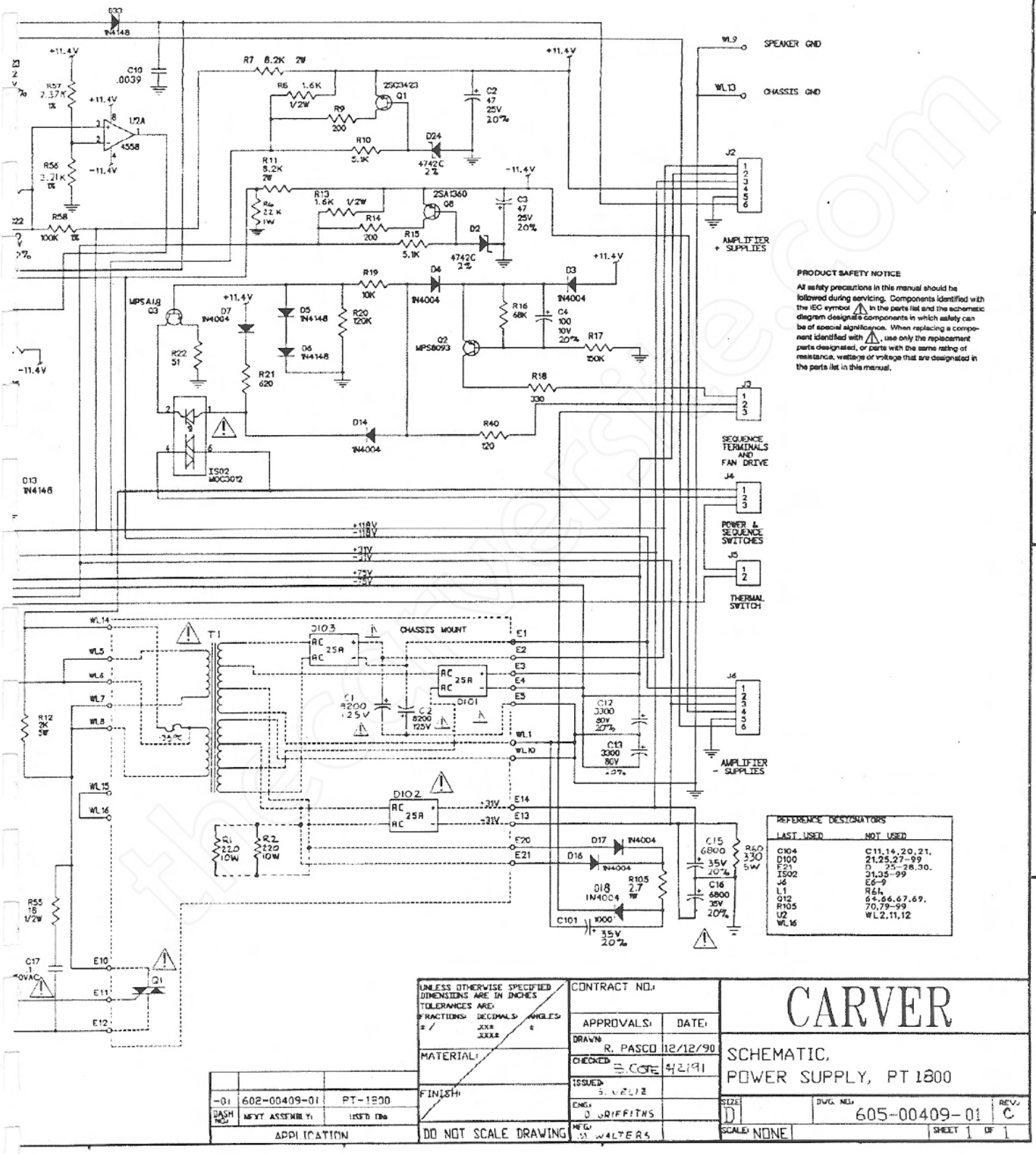
SCALE NONE | SHEET 1 OF 1

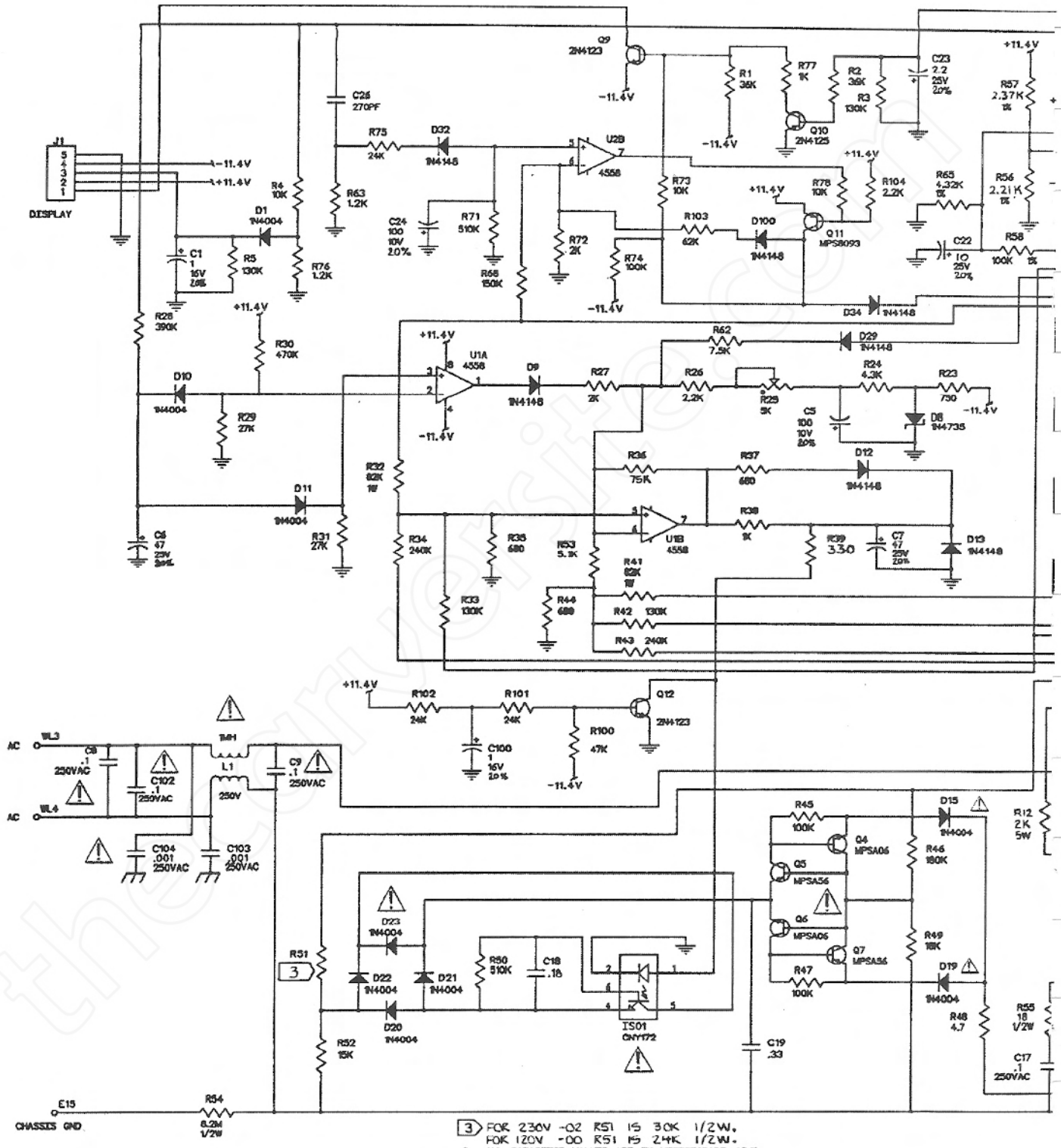

CARVER
ASSEMBLY, PCB,
OUTPUT, PT2400/1800
602-00446-00
NOTES: UNLESS OTHERWISE SPECIFIED.
3. ALL UNUSED COMPONENT HOLES TO BE WASHED BEFORE SOLDER DIP.
2 ALL ITEMS ARE ON 602-00446-00 REV. C
1 DELETED
8 USING CONTRASTING, NON-CONDUCTIVE INK, MARK ASSY REV IN LOCATION SHOWN.
7 USING CONTRASTING, NON-CONDUCTIVE INK, MARK DASH NO IN LOCATION SHOWN.
4. DELETED
BLACK 12"
BLACK 15"
BLACK 4.5"
BLK/WHT 4"
BLK/WHT 17"
BLK/WHT 12"
BLACK 4"
VIOLET 9"
VIOLET 5"
10" TO SEQUENCE BARRIER
20" TO SEQUENCE BARRIER
POWERFUL MUSICAL ACCURATE
CARVER CORP.
PT1800/2400 OUTPUT
602-00446- ASSY REV
COMPONENT SIDE
PIN 1
GRAY
YEL
WHT


NOTES: UNLESS OTHERWISE SPECIFIED
1. ALL RESISTORS ARE IN OHMS.
2. ALL CAPACITORS ARE IN MICROFARADS, 10%.
CHANNEL 1
CHANNEL 2
CARVER
SCHEMATIC,
OUTPUT, PT2400/1800
605-00465-01
DO NOT SCALE DRAWING


602-00465-01 1 C
NOTES: UNLESS OTHERWISE SPECIFIED.
1. ALL ITEMS ARE ON PARTS LIST 602-00465-01 REV C.
2. ALL UNUSED COMPONENT HOLES TO BE FREE OF SOLDER.
3 USING CONTRASTING, NON-CONDUCTIVE INK, MARK DASH NO. IN LOCATION SHOWN.
4 USING CONTRASTING, NON-CONDUCTIVE INK, MARK ASSY REV IN LOCATION SHOWN.
5 STAND UP R4,5 .25" OFF OF PCB.
CARVER
ASSEMBLY, PCB, OUTPUT, PT2400/1800
602-00465-01 C
602-00465- ASSY REV
POWERFUL MUSICAL ACCURATE
PT1800/2400 OUTPUT CARVER CORP. U.S.A.
BLUE
GRAY
WHT YEL
PIN 1
YEL
TO SEQUENCE BARRIER
DO NOT SCALE DRAWING




DWG. NO. 605-00409-01 SH 1 REV. C
SPEAKER GND
CHASSIS GND
AMPLIFIER + SUPPLIES
AMPLIFIER - SUPPLIES
SEQUENCE TERMINALS AND FAN DRIVE
POWER & SEQUENCE SWITCHES
THERMAL SWITCH
CHASSIS MOUNT
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
F51
D 25-28,30,
IS02
31,35-99
J6
E6-9
L1
R64,
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 .XX± .XXX±
ANGLES ±
MATERIAL:
FINISH:
DO NOT SCALE DRAWING
CONTRACT NO.:
APPROVALS:
DATE:
DRAWN: R. PASCO 12/12/90
CHECKED: J. COE 4/2/91
ISSUED:
ENG: D. GRIFFITHS
MFG: M. WALTERS
CARVER
SCHEMATIC, POWER SUPPLY, PT 1800
SIZE D
DWG. NO. 605-00409-01
REV. C
SCALE NONE
SHEET 1 OF 1
-01 602-00409-01 PT-1800
DASH NO. NEXT ASSEMBLY USED ON
APPLICATION

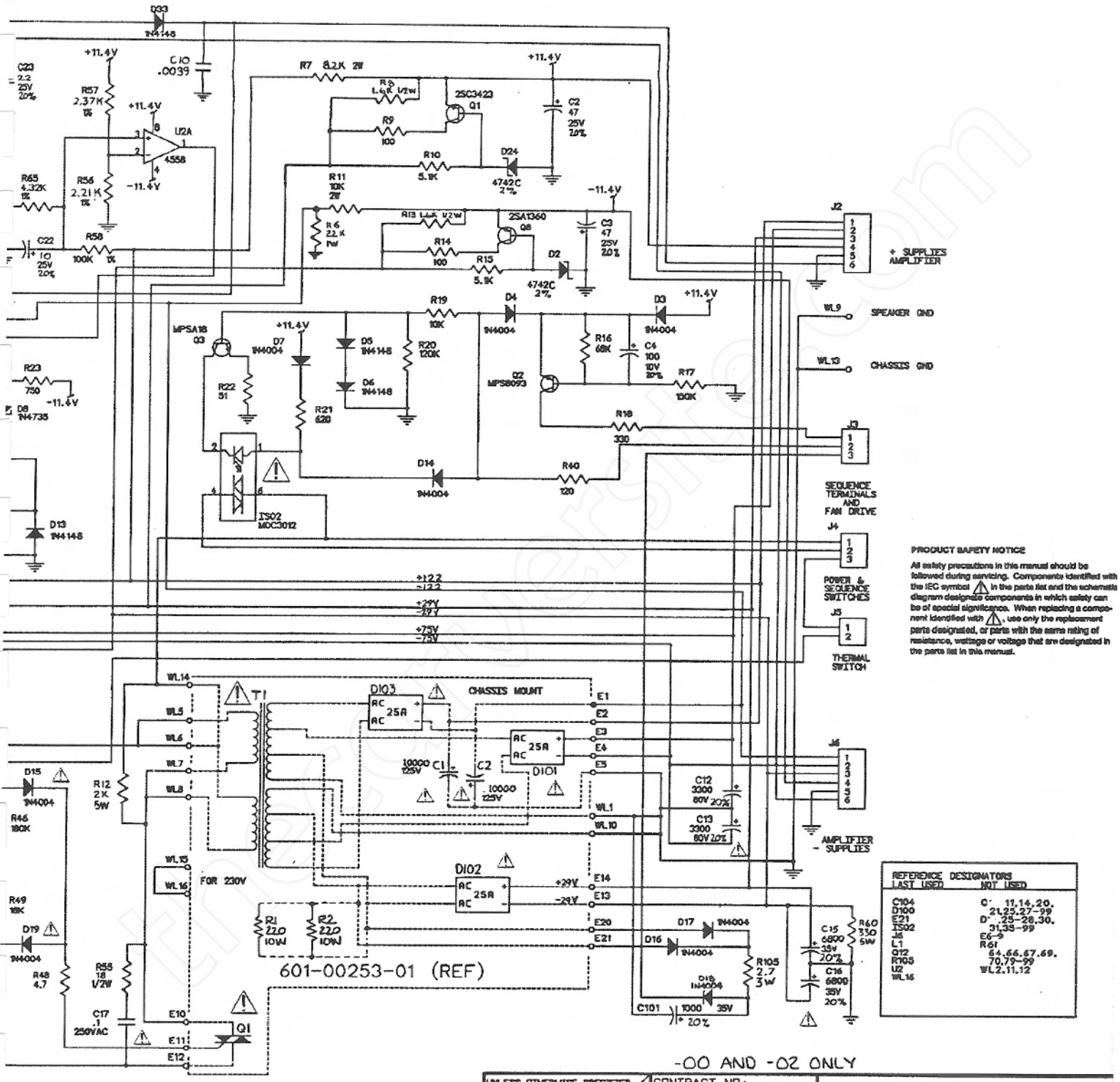


3 FOR 230V -02 RS1 IS 30K 1/2W.
FOR 120V -00 RS1 IS 24K 1/2W.

2. ALL CAPACITOR VALUES ARE IN MICROFARADS, 10%.

1. ALL RESISTOR VALUES ARE IN OHMS, 1/4W, 5%.

NOTES: UNLESS OTHERWISE SPECIFIED



REFERENCE DESIGNATORS LAST USED	NOT USED
C104	C 11,14,20, 21,25,27-99
D100	D 25-28,30, 31,38-99
E21	E6-9
IS02	L1
J6	R61
Q12	64,66,67,69, 70,79-99
R105	WL2,11,12
U2	
WL16	

-00 AND -02 ONLY

DASH NO.	NEXT ASSEMBLY	USED ON
-02	602-00409-02	PT-2400 (230V)
-00	602-00409-00	PT-2400

APPLICATION

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

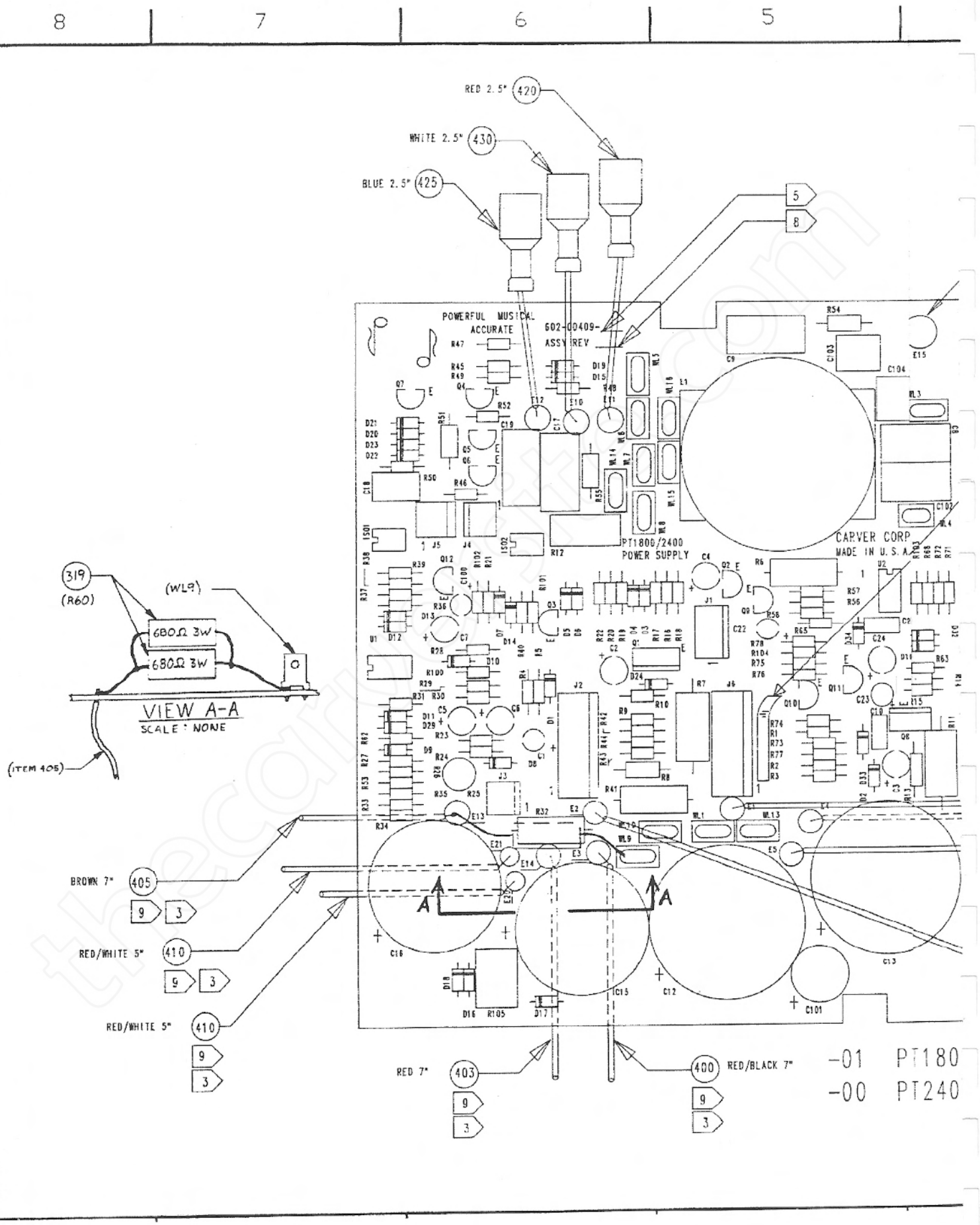
CONTRACT NO.:

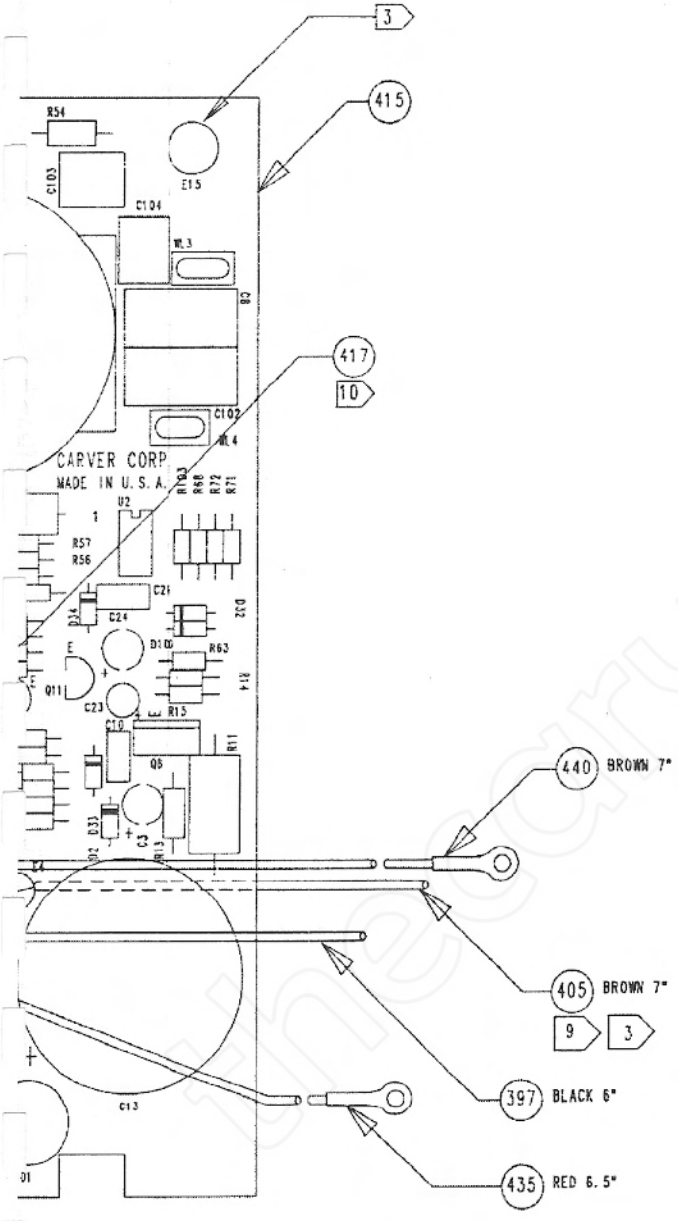
APPROVALS:	DATE:
DRAWN: R. PASCO	12/12/90
CHECKED:	2/5/91
ISSUED:	5/21/91
ENG: D. GRIFFITHS	2/5/91
MFG:	2/11/91

CARVER

SCHEMATIC,
POWER SUPPLY, PT2400

SIZE: D | DWG. NO. 605-00409-XX
SCALE: NONE | SHEET 1


8
7
6
5
D
C
B
A
RED 2.5" 420
WHITE 2.5" 430
BLUE 2.5" 425
5
8
POWERFUL MUSICAL
ACCURATE
602-00409-
ASSY REV
PT1800/2400
POWER SUPPLY
CARVER CORP
MADE IN U.S.A.
319
(R60)
(WL9)
680Ω 3W
680Ω 3W
VIEW A-A
SCALE : NONE
(ITEM 405)
BROWN 7" 405
9
3
RED/WHITE 5" 410
9
3
RED/WHITE 5" 410
9
3
RED 7" 403
9
3
400 RED/BLACK 7"
9
3
-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.

2 PARTS LIST TABULATION BLOCK

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

-01 PT1800
-00 PT2400

DASH NO.	NEXT ASSEMBLY	USED ON
-02	601-00253-03	PT 2400 230V
-01	601-00253-02	PT1800
-00	601-00253-01	PT2400

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE: FRACTIONS ± / DECIMALS .XX± .XXX± ANGLES ±

MATERIAL: 2

FINISH:

DO NOT SCALE DRAWING

CONTRACT NO.:

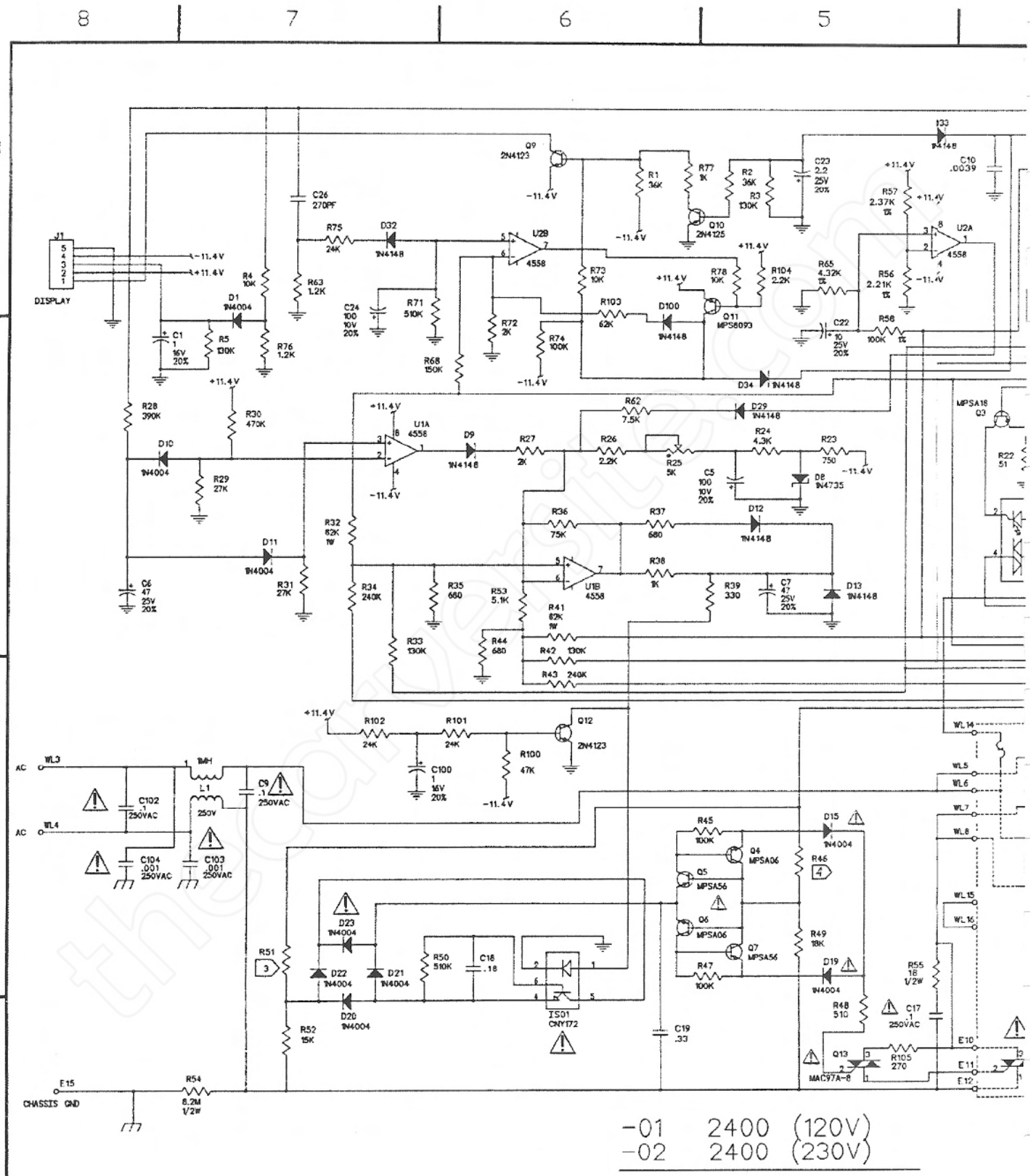
APPROVALS	DATE
DRAWN R. PASCO	12/12/90
CHECKED B. COTE	
ISSUED	5/14/91
ENG D. GRIFFITHS	
MFG M. WALTERS	

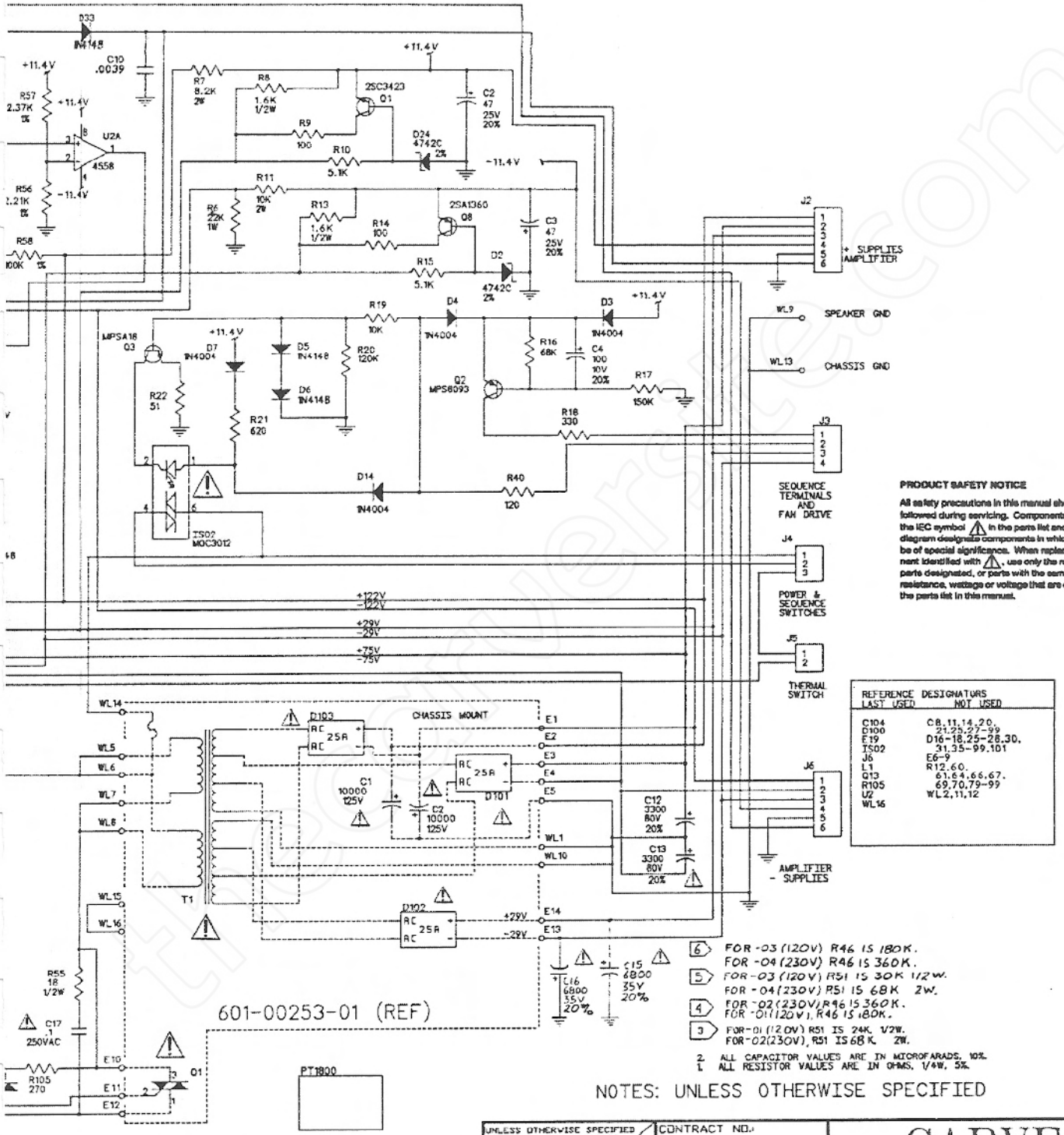
CARVER

ASSEMBLY, PCB, POWER SUPPLY, PT2400/1800

SIZE D | DWG. NO. 602-00409-XX | REV. J

SCALE: NONE | SHEET 1 OF 1


8
7
6
5
D
C
B
A
J1
DISPLAY
-11.4V
+11.4V
C26 270PF
R75 24K
D32 1N4148
R4 10K
R63 1.2K
D1 1N4004
C1 1 16V 20%
R5 130K
R76 1.2K
C24 100 10V 20%
R71 510K
R68 150K
U2B 4558
Q9 2N4123
R1 36K
R77 1K
Q10 2N4125
R2 36K
R3 130K
C23 2.2 25V 20%
D33 1N4148
C10 .0039
R57 2.37K 1%
U2A 4558
R56 2.21K 1%
R65 4.32K 1%
R104 2.2K
R73 10K
R78 10K
R103 62K
D100 1N4148
Q11 MPS6093
R72 2K
R74 100K
C22 10 25V 20%
R58 100K 1%
D34 1N4148
R28 390K
R30 470K
D10 1N4004
R29 27K
U1A 4558
D9 1N4148
R27 2K
R62 7.5K
D29 1N4148
R26 2.2K
R25 5K
R24 4.3K
R23 750
C5 100 10V 20%
D8 1N4735
MPSA18 Q3
R22 51
R36 75K
R37 680
D12 1N4148
D11 1N4004
R32 62K 1W
R31 27K
C6 47 25V 20%
R34 240K
R35 680
R53 5.1K
U1B 4558
R38 1K
R39 330
C7 47 25V 20%
D13 1N4148
R41 62K 1W
R33 130K
R44 680
R42 130K
R43 240K
R102 24K
R101 24K
Q12 2N4123
C100 1 16V 20%
R100 47K
WL14
WL5
WL6
WL7
WL8
WL15
WL16
AC WL3
AC WL4
1 BAH
L1 250V
C9 .1 250VAC
C102 .1 250VAC
C104 .001 250VAC
C103 .001 250VAC
R45 100K
Q4 MPSA06
Q5 MPSA56
Q6 MPSA06
Q7 MPSA56
D15 1N4004
R46 4
R49 18K
R47 100K
D19 1N4004
R55 18 1/2W
R48 510
C17 .1 250VAC
Q13 MAC97A-8
R105 270
E10
E11
E12
D23 1N4004
D22 1N4004
D21 1N4004
D20 1N4004
R50 510K
C18 .18
ISO1 CNY172
R51 3
R52 15K
C19 .33
F15 CHASSIS GND
R54 8.2M 1/2W
-01 2400 (120V)
-02 2400 (230V)



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	C8,11,14,20, 21,25,27-99
D100	D16-18,25-28,30, 31,35-99,101
E19	E6-9
J6	R12,60,
L1	61,64,66,67,
Q13	69,70,79-99
R105	WL2,11,12
U2	
WL16	

6 FOR -03 (120V) R46 IS 180K.
FOR -04 (230V) R46 IS 360K.
5 FOR -03 (120V) R51 IS 30K 1/2 W.
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.	NEXT ASSEMBLY	USED ON
-04	602-00464-04	PT1800 230V
-03	602-00464-03	PT1800
-02	602-00464-02	PT2400 230V
-01	602-00464-01	PT2400

APPLICATION

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

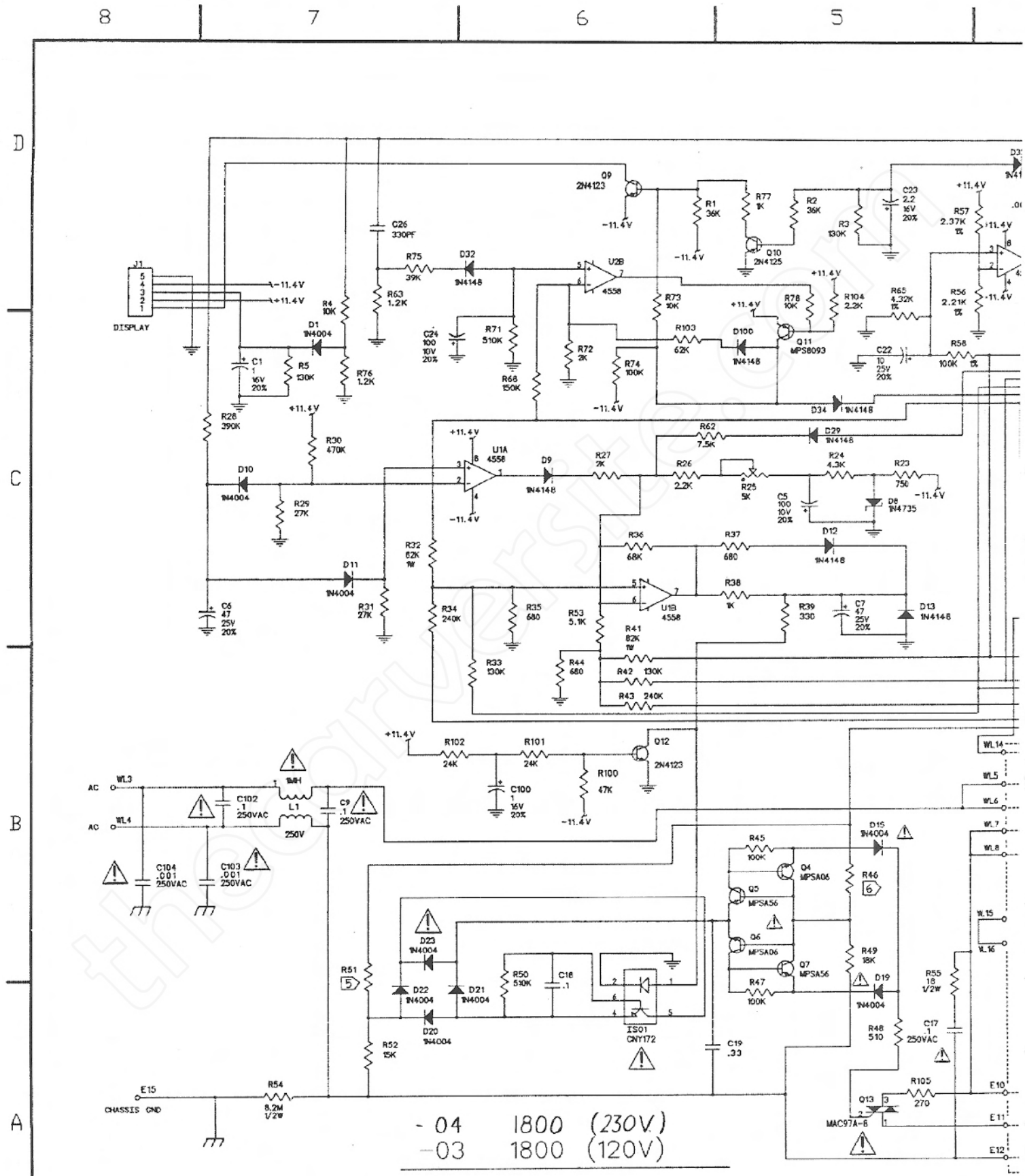
CONTRACT NO.:

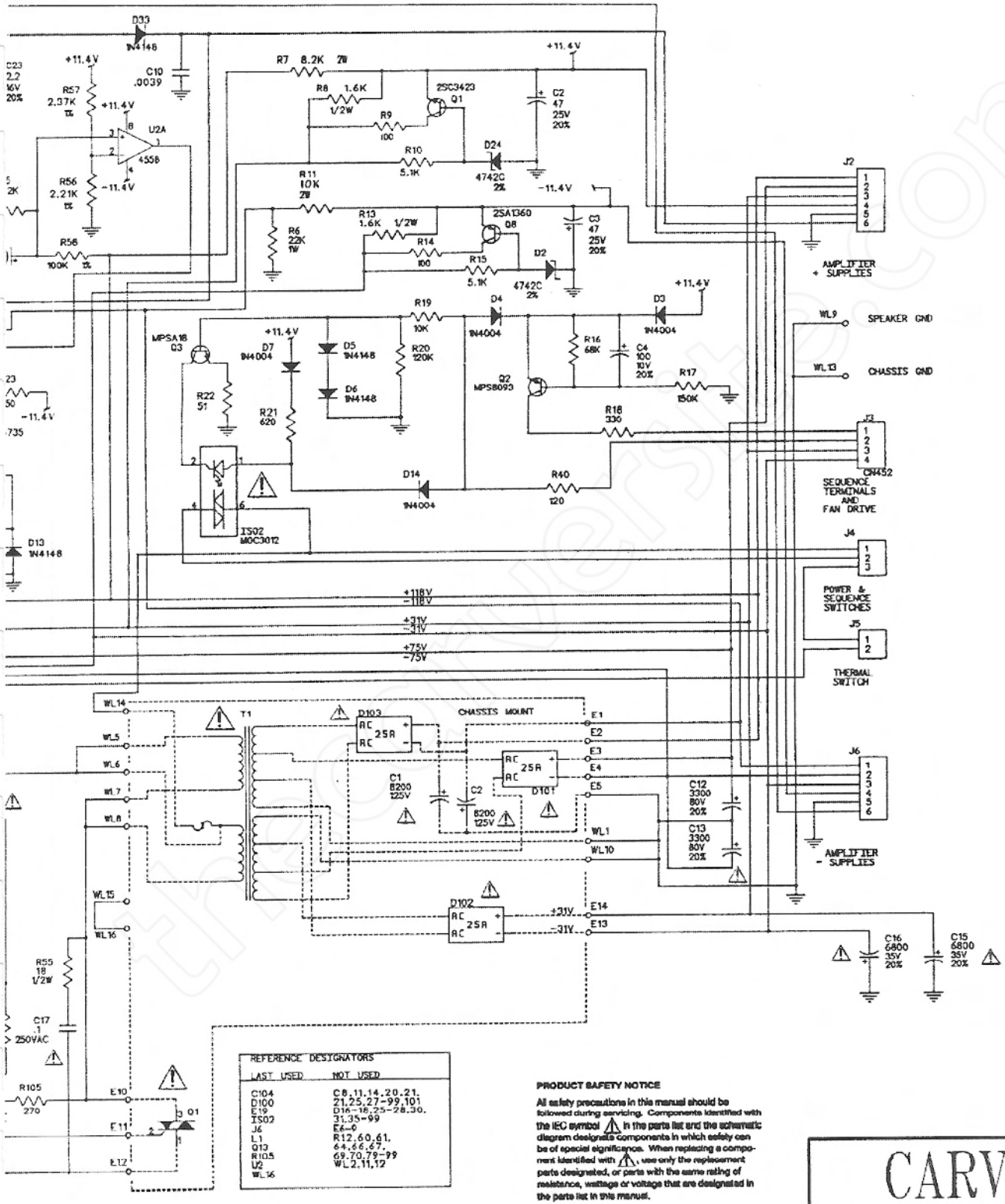
APPROVALS:	DATE:
DRAWN: R. PASCO	4/27/92
CHECKED: S. MOSES	5/92
ISSUED: S. VELIZ	5/92
ENG: D. GRIFFITHS	5/92
MFG: M. WALTERS	5/92

CARVER

SCHEMATIC, POWER SUPPLY, PT2400/1800

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


8
7
6
5
D
C
B
A
J1
DISPLAY
-11.4V
+11.4V
Q9
2N4123
Q10
2N4125
Q11
MPS8093
U1A
4558
U1B
4558
U2B
4558
D1
1N4004
D8
1N4735
D9
1N4148
D10
1N4004
D11
1N4004
D12
1N4148
D13
1N4148
D15
1N4004
D19
1N4004
D20
1N4004
D21
1N4004
D22
1N4004
D23
1N4004
D29
1N4148
D32
1N4148
D34
1N4148
D100
1N4148
Q4
MPSA06
Q5
MPSA56
Q6
MPSA06
Q7
MPSA56
Q12
2N4123
Q13
MAC97A-8
ISO1
CNY172
L1
1MH
250V
C1
1
16V
20%
C5
100
10V
20%
C6
47
25V
20%
C7
47
25V
20%
C9
.1
250VAC
C10
.1
16V
20%
C17
.1
250VAC
C18
.1
C19
.33
C22
10
25V
20%
C23
2.2
16V
20%
C24
100
10V
20%
C26
330PF
C100
1
16V
20%
C102
.1
250VAC
C103
.001
250VAC
C104
.001
250VAC
R1
36K
R2
36K
R3
130K
R4
10K
R5
130K
R23
750
R24
4.3K
R25
5K
R26
2.2K
R27
2K
R29
27K
R30
470K
R31
27K
R32
62K
1W
R33
130K
R34
240K
R35
680
R36
68K
R37
680
R38
1K
R39
330
R41
82K
1W
R42
130K
R43
240K
R44
680
R45
100K
R46
6
R47
100K
R48
510
R49
18K
R50
510K
R51
5
R52
15K
R53
5.1K
R54
8.2M
1/2W
R55
18
1/2W
R56
2.21K
1%
R57
2.37K
1%
R58
100K
1%
R62
7.5K
R63
1.2K
R65
4.32K
1%
R68
150K
R71
510K
R72
2K
R73
10K
R74
100K
R75
39K
R76
1.2K
R77
1K
R78
10K
R100
47K
R101
24K
R102
24K
R103
62K
R104
2.2K
R105
270
E10
E11
E12
E15
CHASSIS GND
WL3
WL4
WL5
WL6
WL7
WL8
WL14
WL15
WL16
AC
AC
-04 1800 (230V)
-03 1800 (120V)



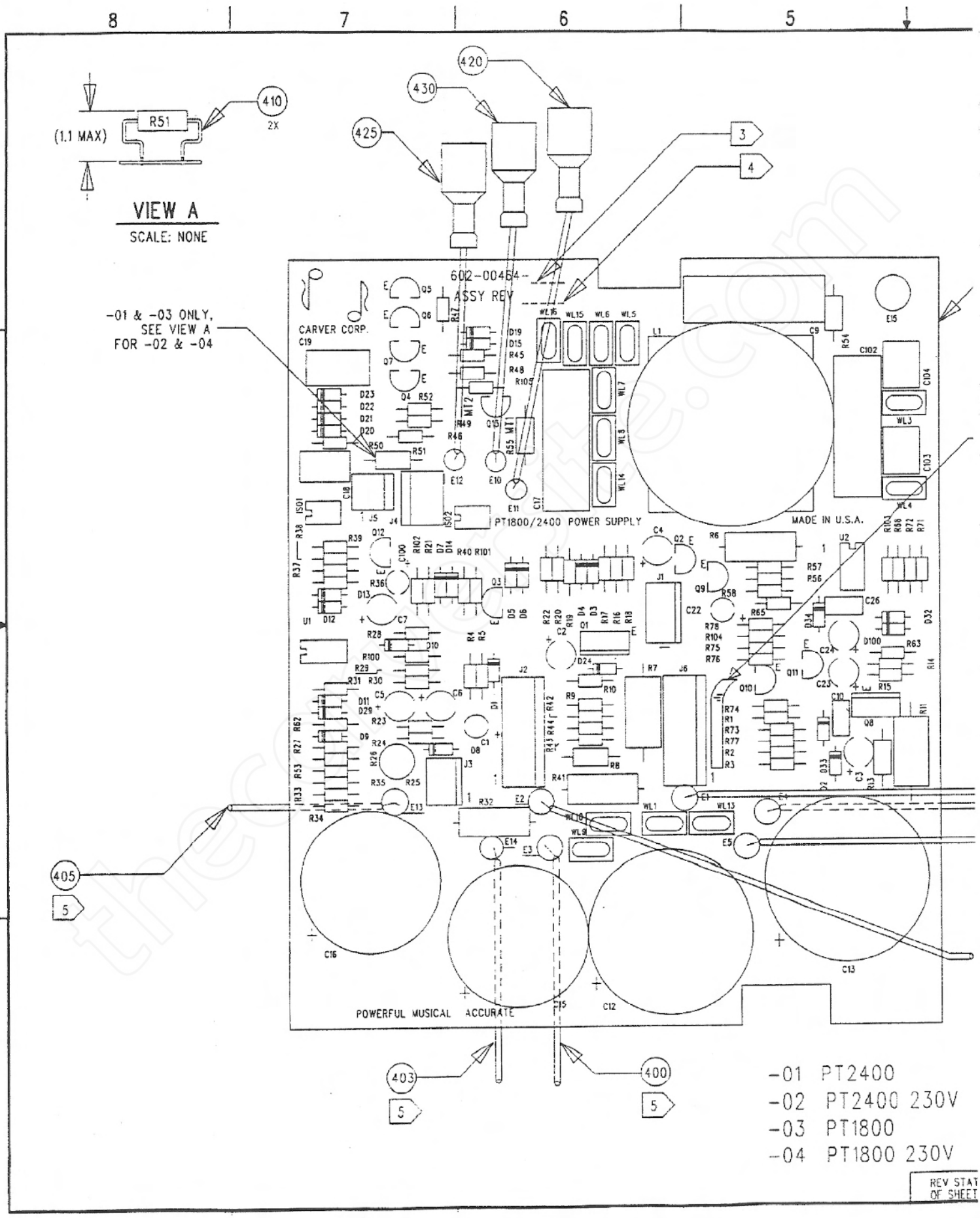
REFERENCE DESIGNATORS	
LAST USED	NOT USED
C104	C8,11,14,20,21,
D100	21,25,27-99,101
E19	D16-18,25-28,30,
IS02	31,35-99
J6	E6-9
L1	R12,60,61,
Q13	64,66,67,
R105	69,70,79-99
U2	WL2,11,12
WL16	

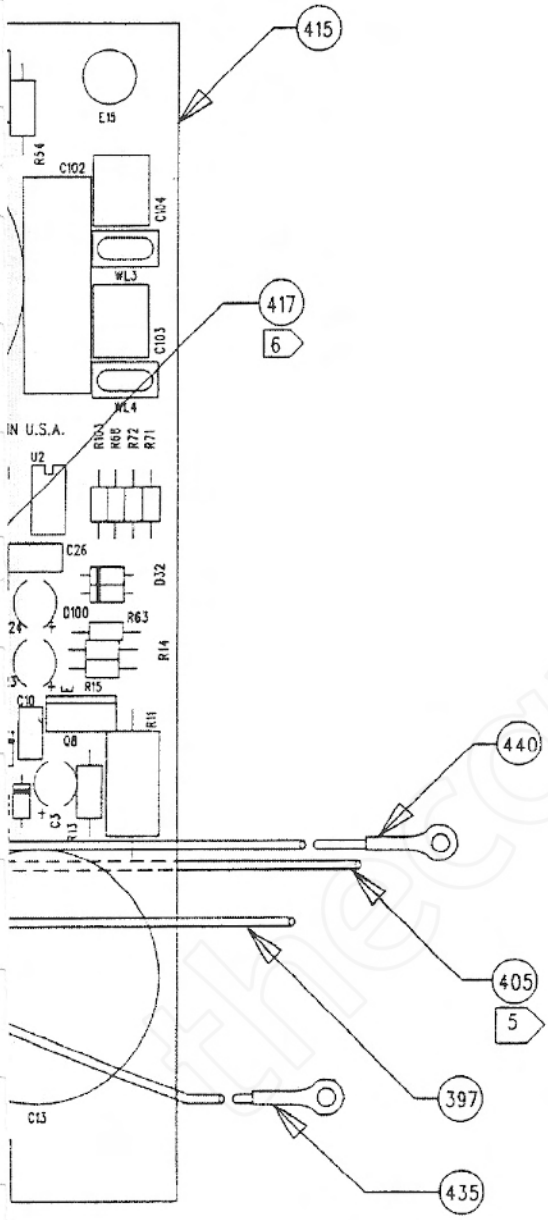
PRODUCT SAFETY NOTICE

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 especial 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.	REV
D	605-00464-XX	C
SCALE: NONE	SHEET 2	


8
7
6
5
D
C
B
A
(1.1 MAX)
R51
410
2X
VIEW A
SCALE: NONE
420
430
425
3
4
-01 & -03 ONLY,
SEE VIEW A
FOR -02 & -04
602-00464-
ASSY REV
CARVER CORP.
PT1800/2400 POWER SUPPLY
MADE IN U.S.A.
POWERFUL MUSICAL ACCURATE
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.

T2400
T2400 230V
T1800
T1800 230V

REV STATUS OF SHEETS	SH	1	2	3	4
	REV	F	-	-	-

PT1800 230V	
PT1800	
PT2400 230V	
PT2400	

UNLESS OTHERWISE SPECIFIED
INTERPRET DWG PER ANSI Y14.5M-1982
DIMENSIONS ARE IN INCHES.
TOLERANCES
FRACTIONS: DECIMALS: XX ± XXX ± ANGLES: ±
MATERIAL: 1
FINISH:
DO NOT SCALE DRAWING

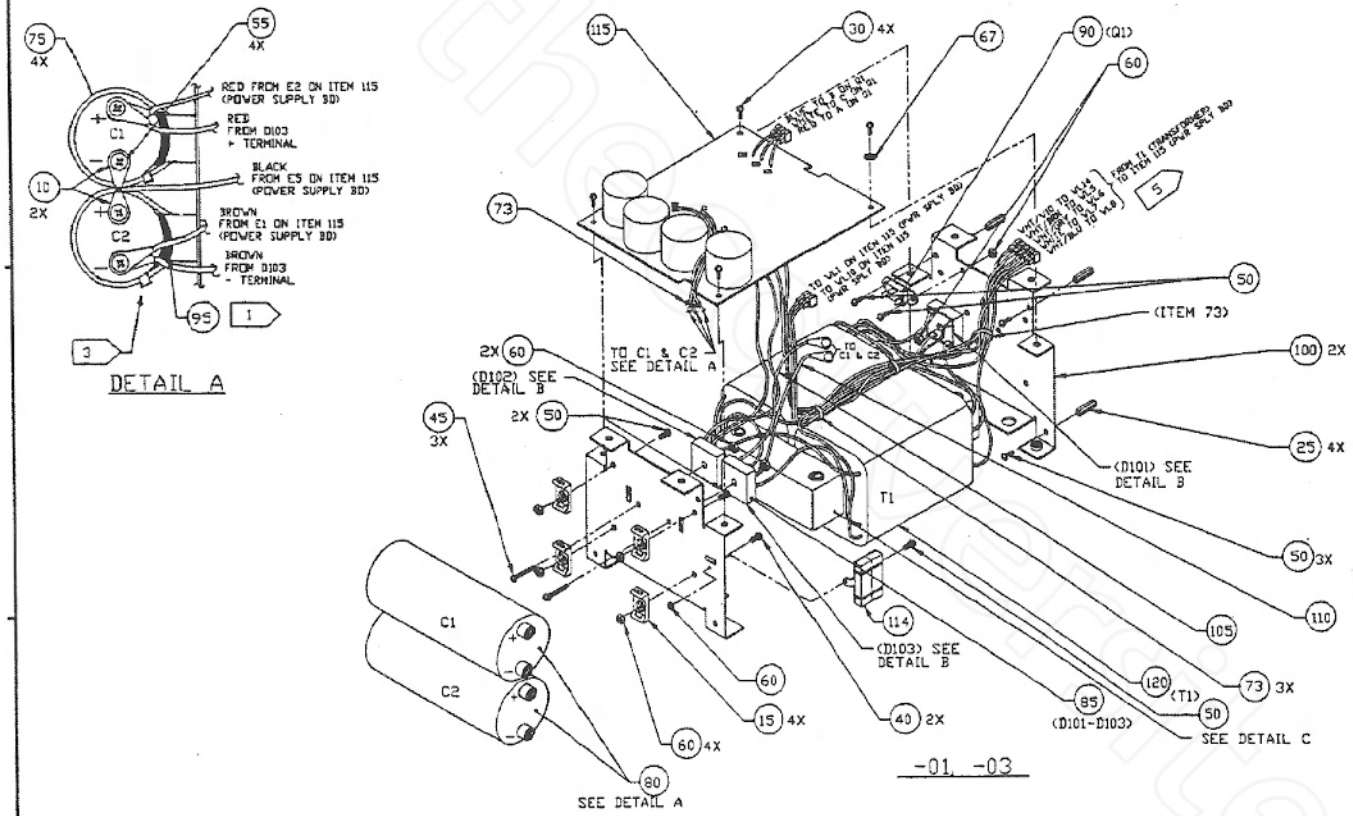
APPROVALS		DATE
DRAWN:	R. PASCO	03/02/92
CHECKED:	S. MOSES	5/92
ENG:	D. GRIFFITHS	5/92
MFG:	M. WALTERS	5/92
ISSUED:	S. VELIZ	5/92

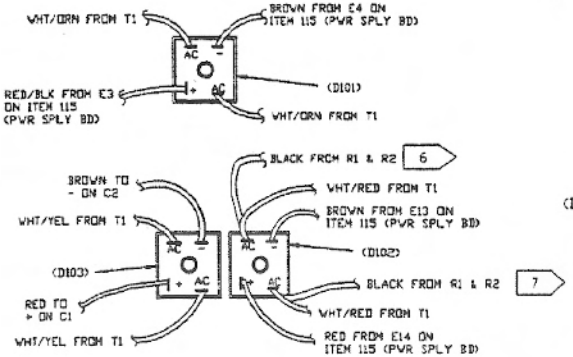
CARVER

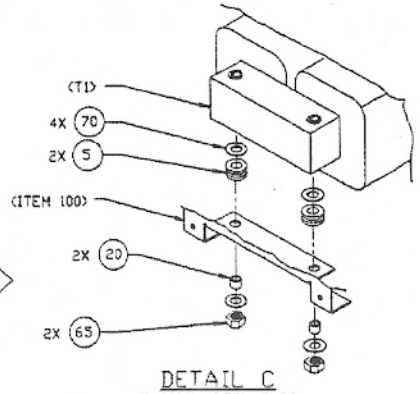
TITLE: ASSEMBLY, PCB, POWER SUPPLY, PT2400/1800

SIZE D | DWG NO. 602-00464-XX | REV F

SCALE: | SHEET 1 OF 1







7. IF ASSY USES PCB ASSY 602-00409-XX WIRE WILL BE RED/WHT FROM E21 ON ITEM 115.
6. IF ASSY USES PCB ASSY 602-00409-XX WIRE WILL BE RED/WHT FROM E20 ON ITEM 115.
5. FOR -03 AND -04, WHT WIRE GOES TO WL16, GRY WIRE TO WL15.
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

-04	607-00135-05	PT1800 230V
-04	607-00135-02	PT1800 230V
-02	607-00135-01	PT1800
-03	607-00140-05	PT2400 230V
-03	607-00140-02	PT2400 230V
-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 ± .XX ± MATERIAL: 2 FINISH: DO NOT SCALE DRAWING

CONTRACT NO.:

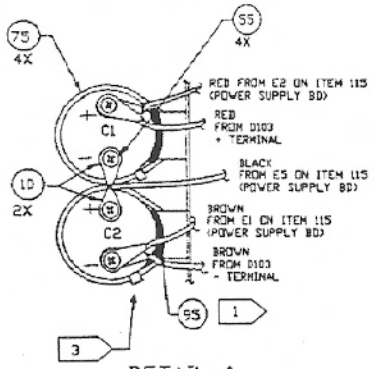
APPROVALS	DATE
DRAWN LEIGH	11/90
CHECKED B COTE	4/2/91
ISSUED	
ENG D. GRIFFITHS	4/3/91
MFG M. WALTERS	4/4/91

CARVER

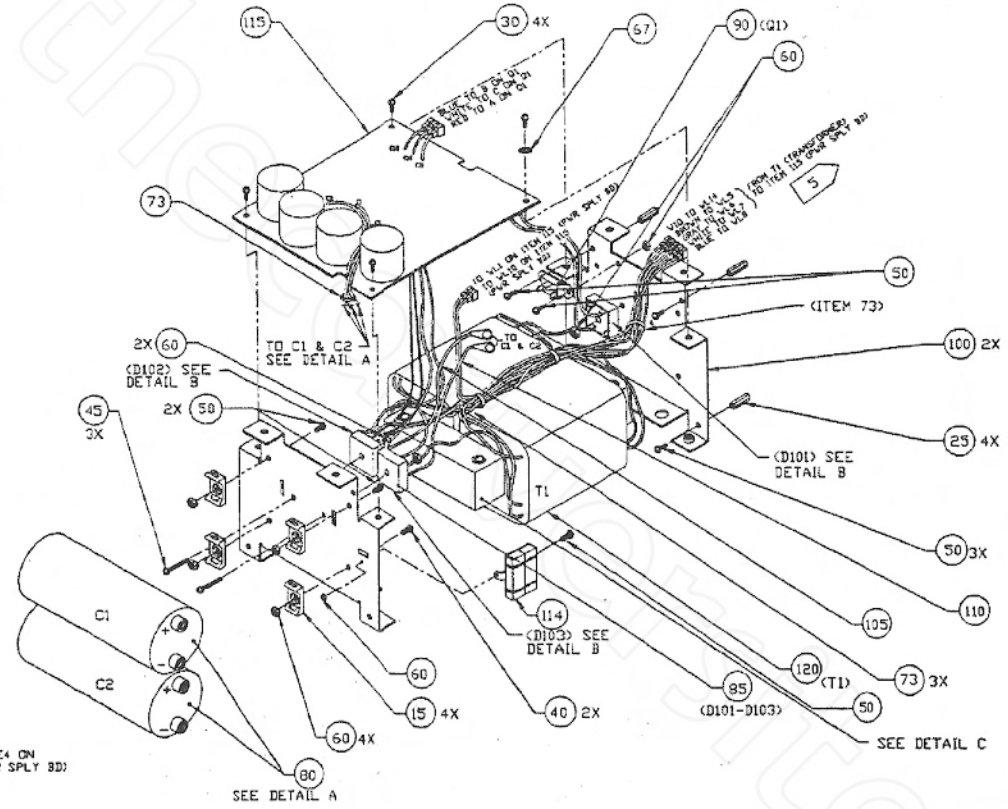
ASSEMBLY, PREP POWER SUPPLY

SIZE D | SA4-1 | SVG. NO. 601-00253-XX | REV. K

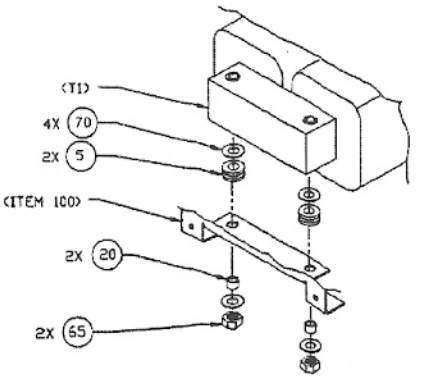
SCALE NONE | SHEET 1 OF 2



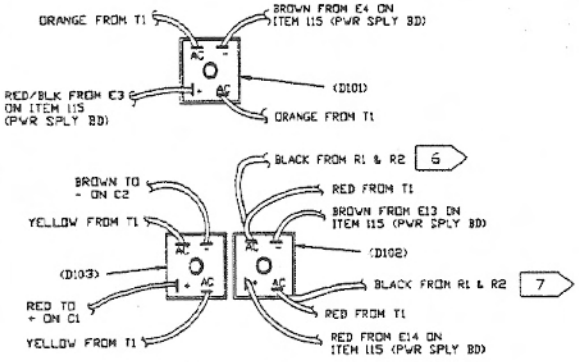
DETAIL A



-02, -04



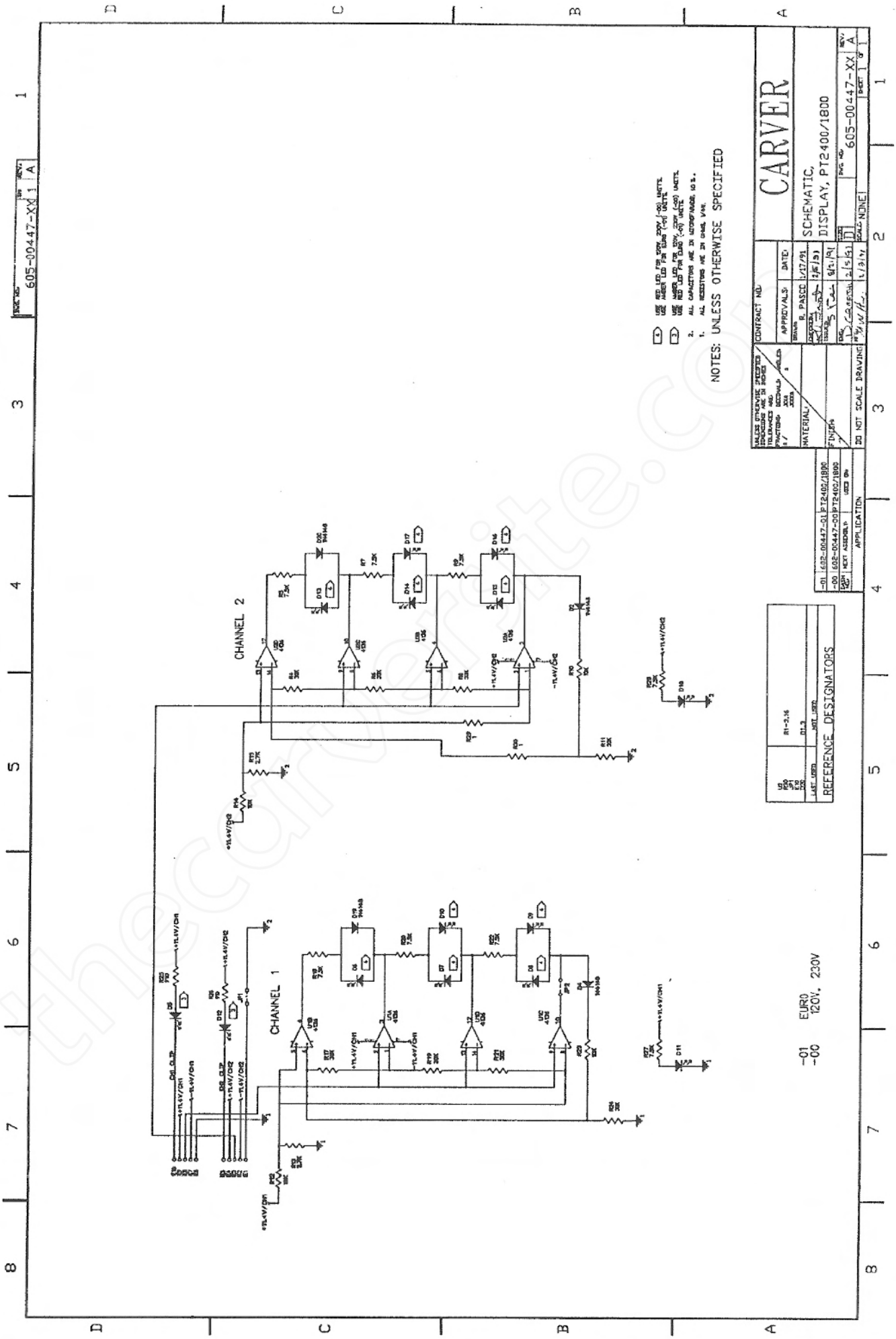
DETAIL C
TYPICAL BOTH ENDS OF T1 (ITEM 120)

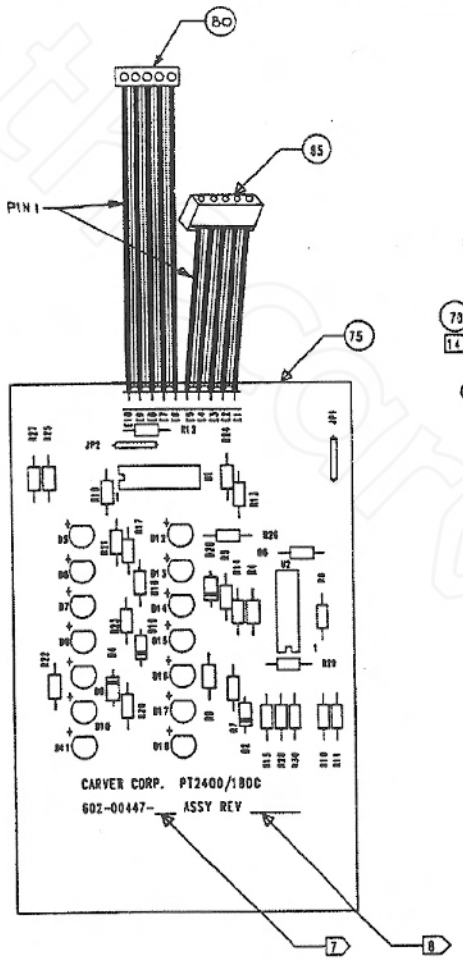


DETAIL B

CARVER

D | SA4-2 | DWG NO 601-00253-XX | REV K | SCALE NONE | SHEET 2


CARVER
SCHEMATIC,
DISPLAY, PT2400/1800
605-00447-XX
NOTES: UNLESS OTHERWISE SPECIFIED
CHANNEL 1
CHANNEL 2
REFERENCE DESIGNATORS
-01 EURO 120V, 230V
-00



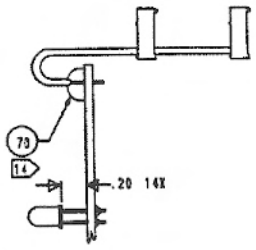


FIG. A

14 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)

8 USING CONTRASTING NON-CONDUCTING EPOXY INK, MARK ASSY. REV.

7 USING CONTRASTING NON-CONDUCTING EPOXY INK, MARK DASH NO.

4. DELETED

MORE TO BE MOUNTED OFF PCB BY 1/4 INCH.

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

2 ALL ITEMS ARE ON PARTS LIST 602-00447-__ SEE TAB BLOCK.

1. DELETED

NOTES: UNLESS OTHERWISE SPECIFIED.

-01 PT2400/1800 EURO
-00 PT2400/1800

2 PARTS LIST TABULATION BLOCK

DASH NO.	MODEL	REV. NO.
-01	PT2400/1800 EURO	A
-00	PT2400/1800	A

DASH NO.	NEXT ASSEMBLY	USED ON
-01	607-00135-05	PT1800
-00	607-00135-02	PT1800
-00	607-00135-01	PT1800
-01	607-00140-05	PT2400
-00	607-00140-02	PT2400
-00	607-00140-01	PT2400

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS DECIMALS ANGLES
.X ± .1 .XX ± .01 ±°
.XXX ± .005
MATERIAL: 2
FINISH:
DO NOT SCALE DRAWING

CONTRACT NO.

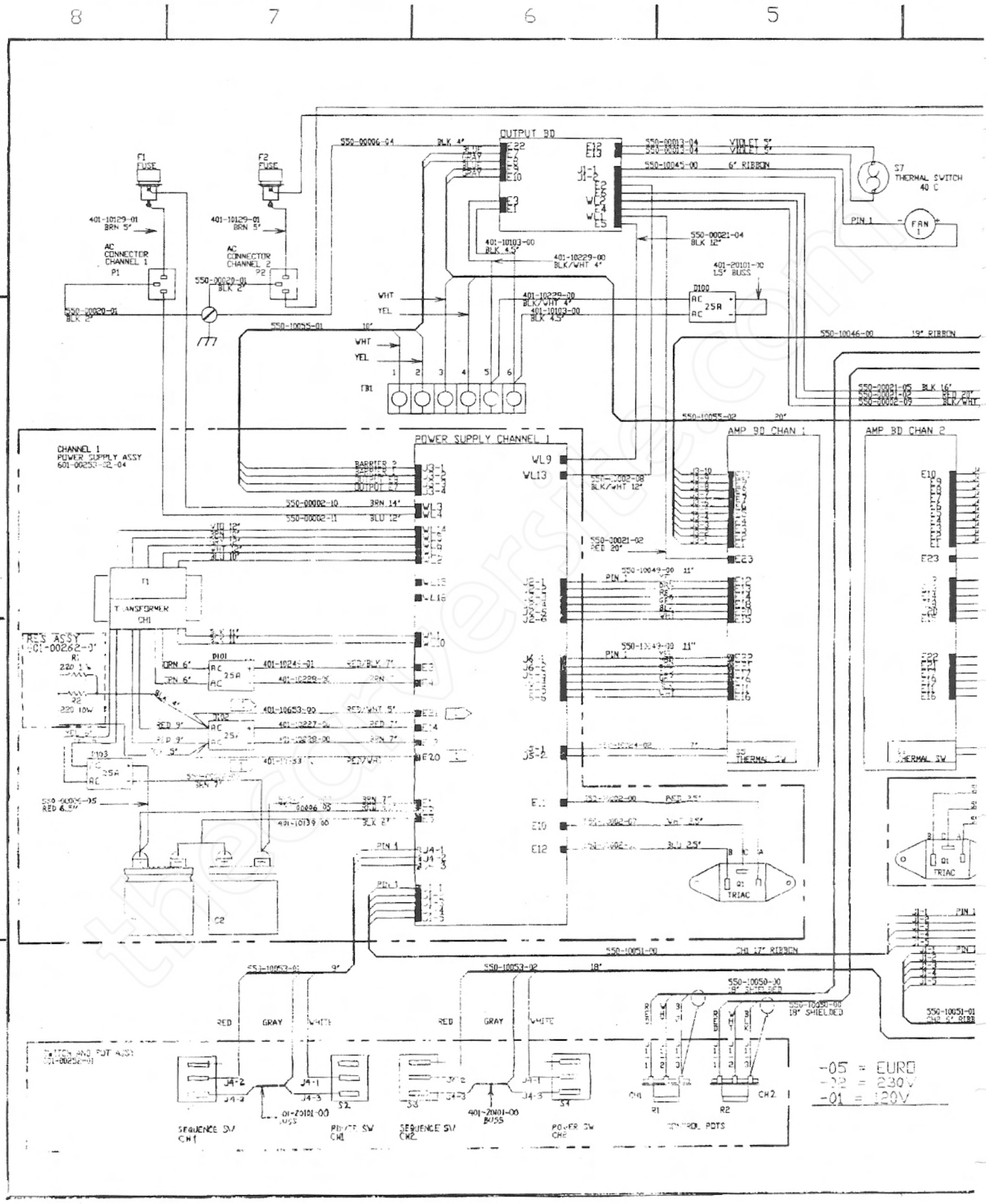
APPROVALS:	DATE:
DRAWN R. PASCO	1/17/91
CHECKED LM	2-12-91
ISSUED	4/21/91
ENG.	2/11/91
MFG.	

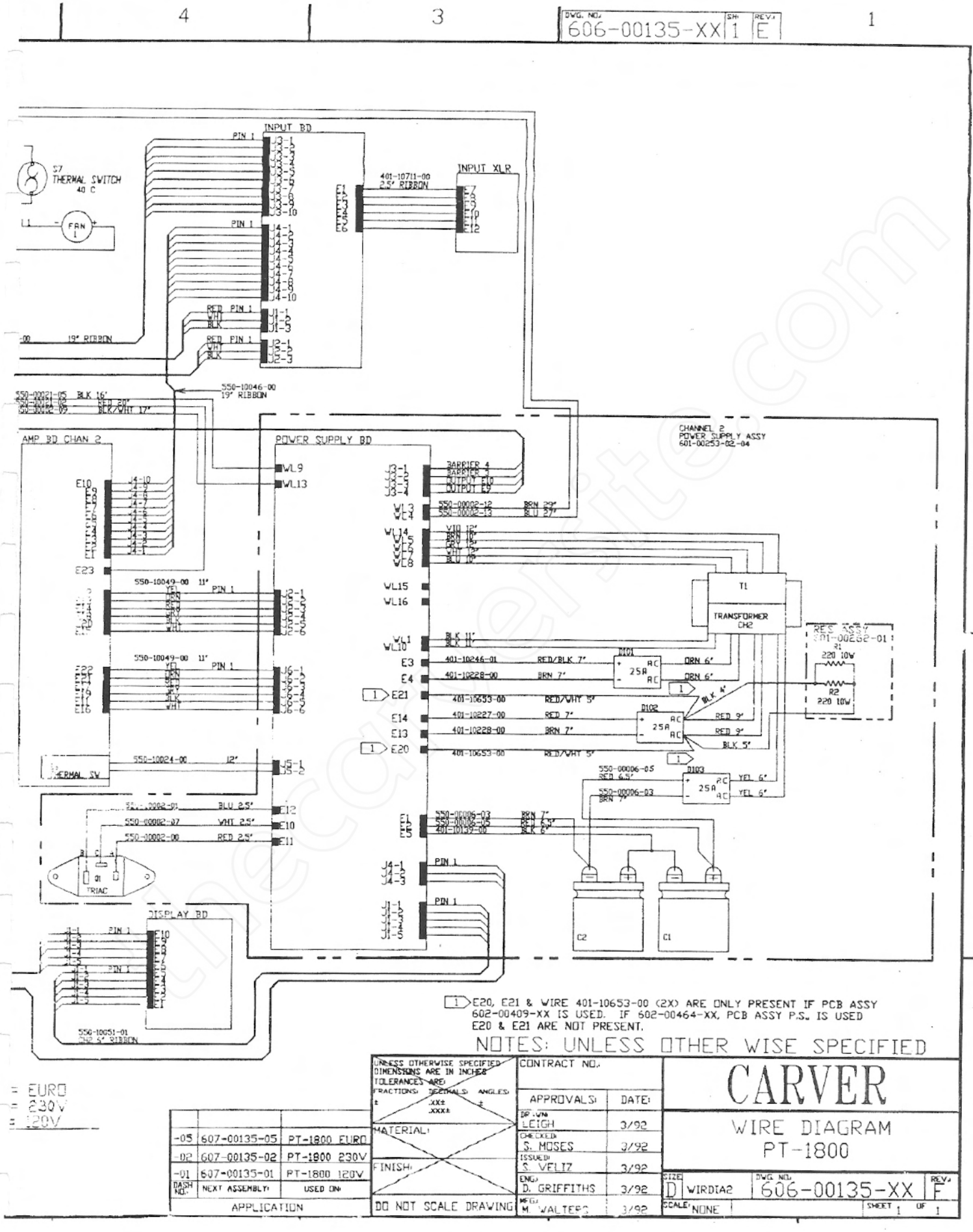
CARVER

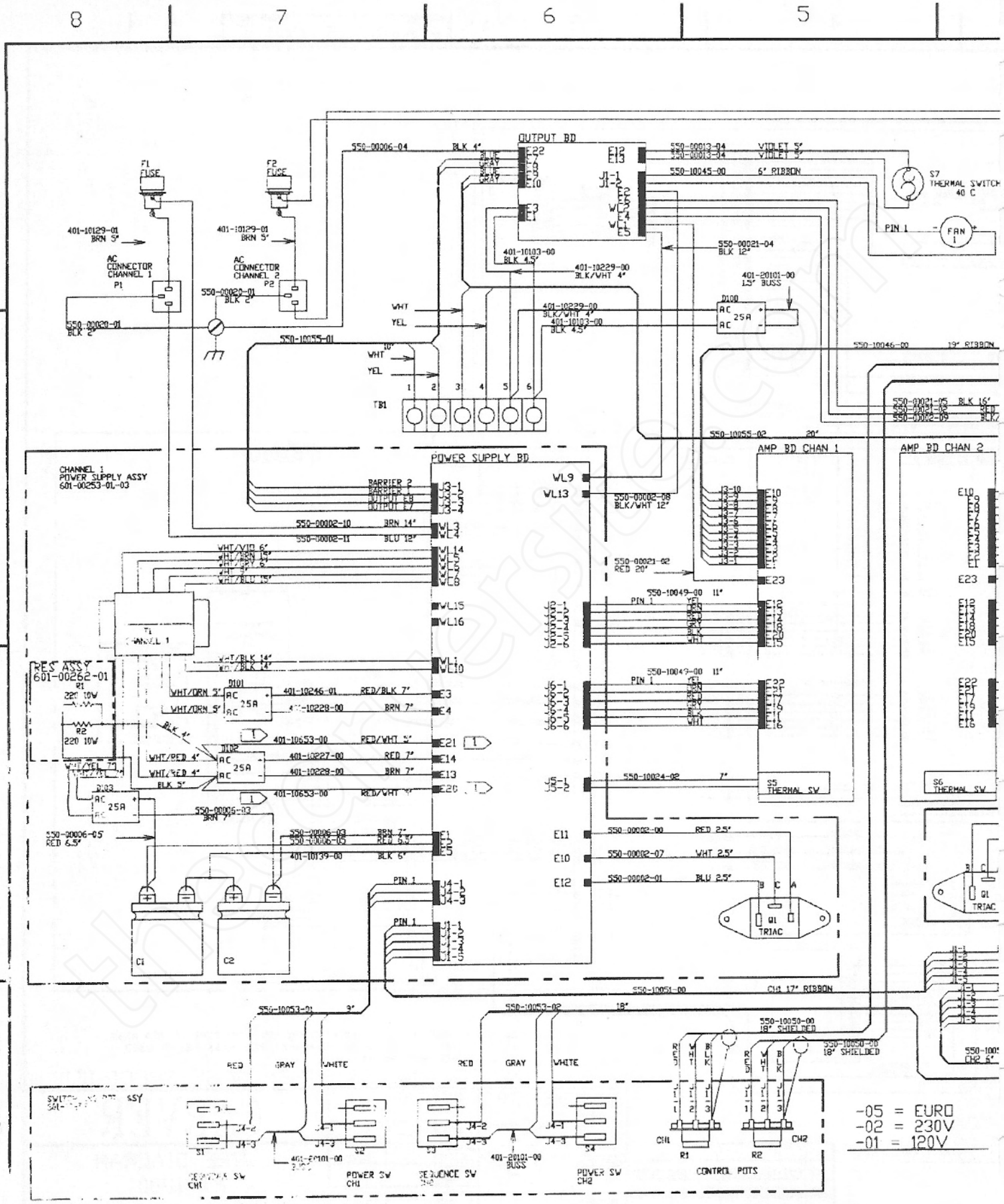
ASSEMBLY, PCB, DISPLAY, PT2400/1800

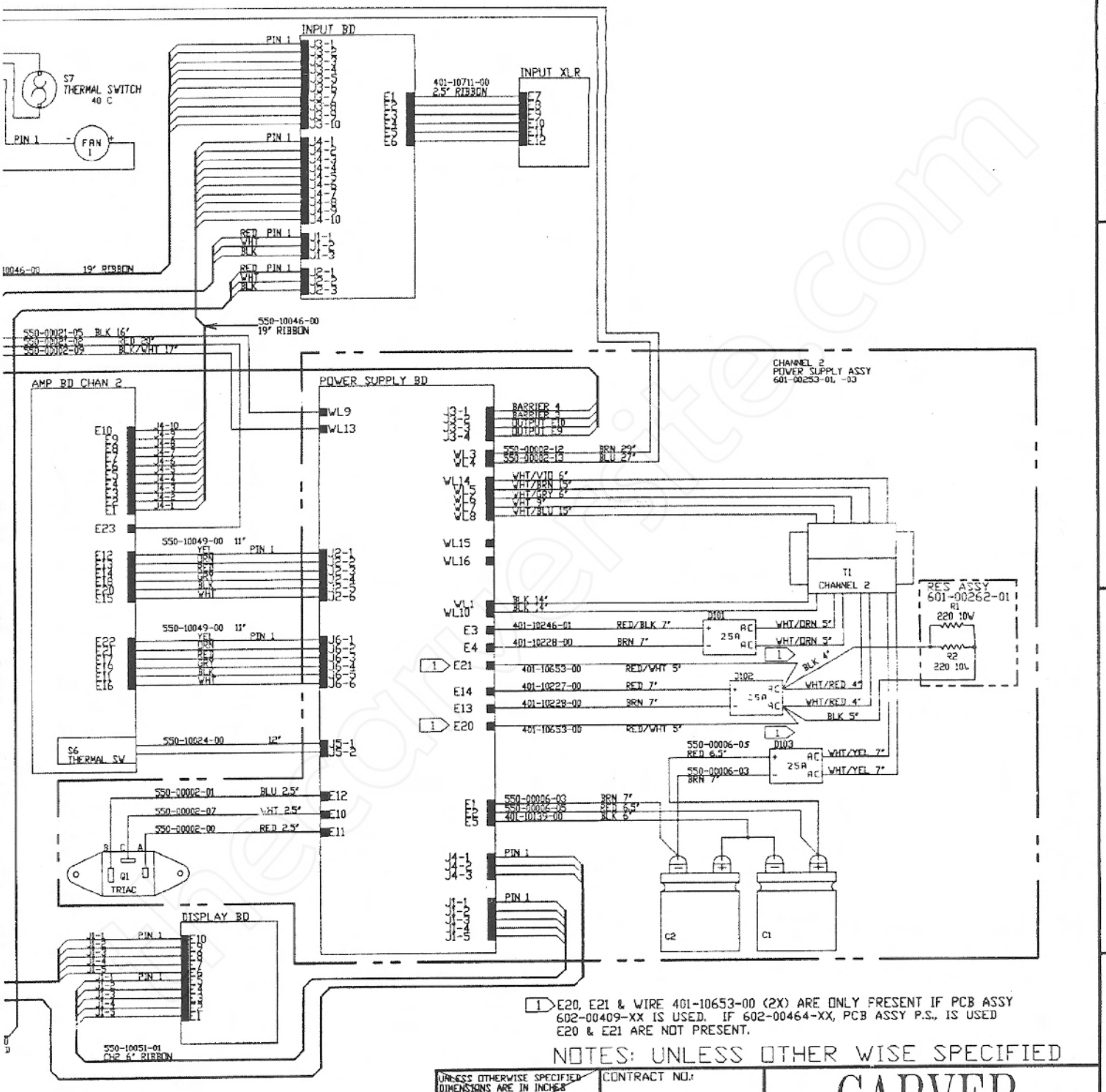
CODE D | DWG. NO. 602-00447-XX | REV. A

SCALE NONE | SHEET 1 OF 1




DWG. NO. 606-00135-XX SH 1 REV. E
INPUT BD
INPUT XLR
401-10711-00 2.5" RIBBON
S7 THERMAL SWITCH 40 C
FAN
19" RIBBON
550-10046-00 19" RIBBON
AMP BD CHAN 2
POWER SUPPLY BD
CHANNEL 2 POWER SUPPLY ASSY 601-00253-02-04
TRANSFORMER CH2
T1
D101
D102
D103
25A
R1 220 10W
R2 220 10W
550-10049-00 11"
550-10024-00 12"
THERMAL SW
TRIAC
DISPLAY BD
550-10051-01 CH2 5" RIBBON
C2
C1
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 OTHER WISE SPECIFIED
= EURO
= 230V
= 120V
-05 607-00135-05 PT-1800 EURO
-02 607-00135-02 PT-1800 230V
-01 607-00135-01 PT-1800 120V
DASH NO. NEXT ASSEMBLY USED ON
APPLICATION
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES ± .XX± .XXX± ±
MATERIAL
FINISH
DO NOT SCALE DRAWING
CONTRACT NO.
APPROVALS DATE
DRAWN LEIGH 3/92
CHECKED S. MOSES 3/92
ISSUED S. VELIZ 3/92
ENG. D. GRIFFITHS 3/92
MFG. M. WALTERS 3/92
CARVER
WIRE DIAGRAM PT-1800
SIZE D WIRDIA2 DWG. NO. 606-00135-XX REV. F
SCALE NONE SHEET 1 OF 1


8
7
6
5
D
C
A
OUTPUT BD
POWER SUPPLY BD
AMP BD CHAN 1
AMP BD CHAN 2
CHANNEL 1
POWER SUPPLY ASSY
601-00253-01-03
RES ASSY
601-00262-01
F1
FUSE
F2
FUSE
AC
CONNECTOR
CHANNEL 1
AC
CONNECTOR
CHANNEL 2
S7
THERMAL SWITCH
40 C
FAN
TB1
TRIAC
S5
THERMAL SW
S6
THERMAL SW
C1
C2
CONTROL POTS
POWER SW
CH1
POWER SW
CH2
-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 OTHER WISE SPECIFIED

5 = EURO
2 = 230V
1 = 120V

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

APPLICATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± DECIMALS XX± XXX± ANGLES ±

MATERIAL:

FINISH:

DO NOT SCALE DRAWING

CONTRACT NO.:

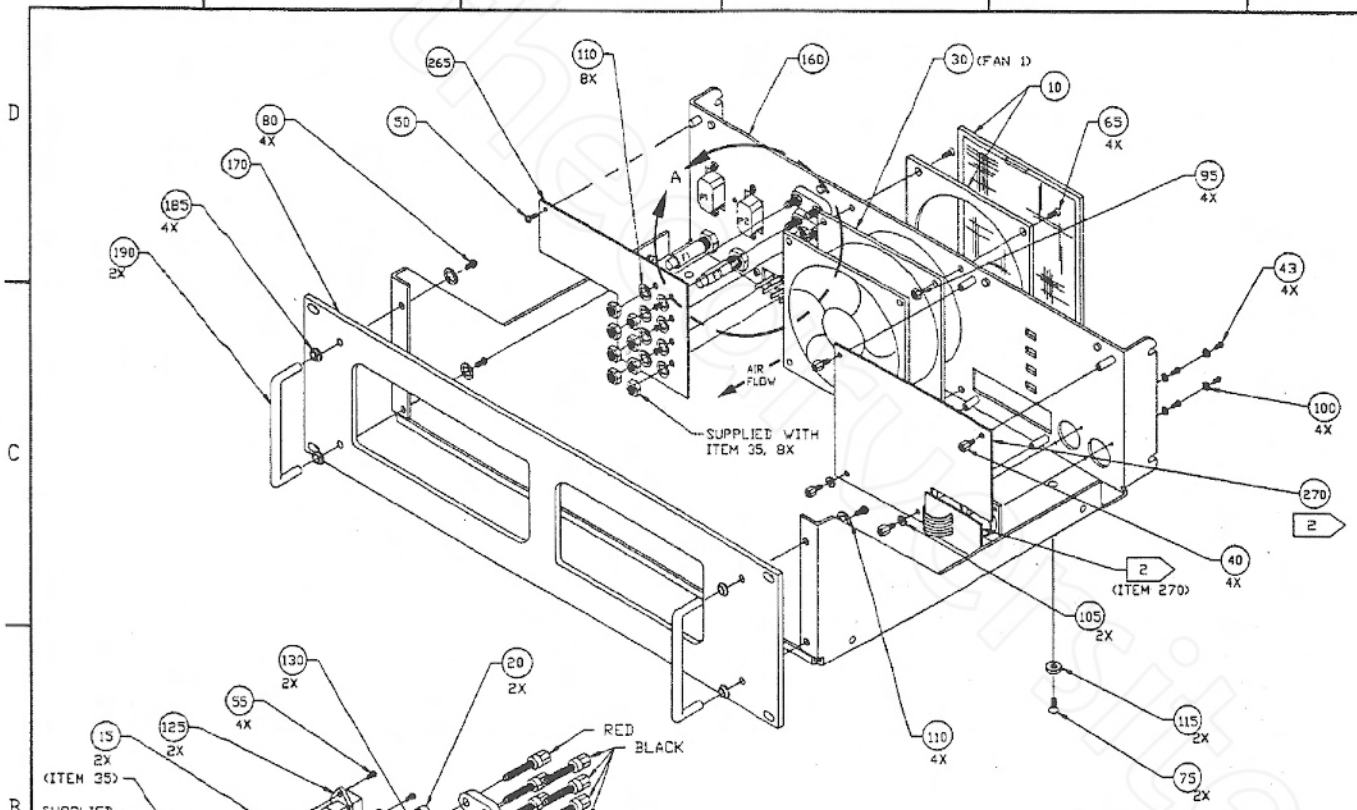
APPROVALS:	DATE:
DRAWN: LEIGH	11/90
CHECKED: L. MCCLESKEY	2/12/91
ISSUED:	
ENG: D. GRIFFITHS	2/12/91
MFG: T. CONRAD	2/11/91

CARVER

WIRE DIAGRAM
PT-2400

SIZE D | WIRDIA1 | DWG. NO. 606-00140-XX | REV. J

SCALE: NONE | SHEET 1 OF 1



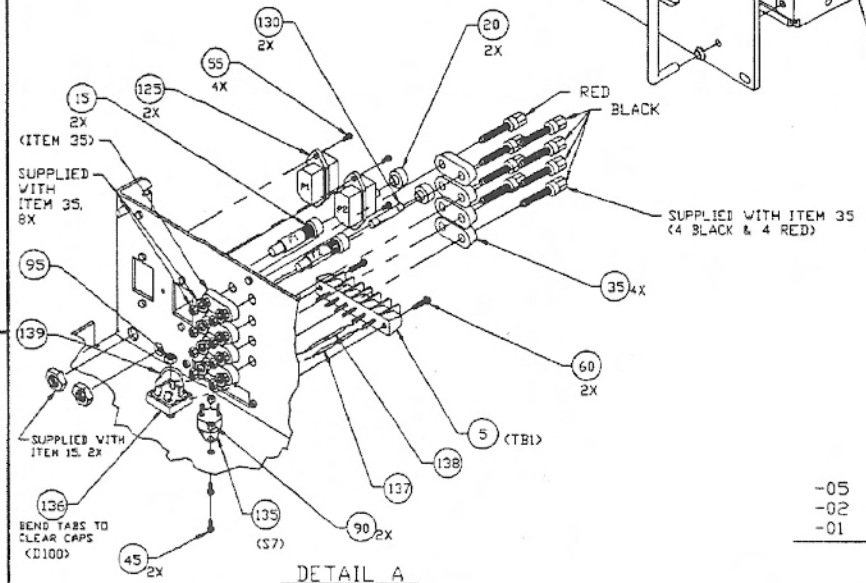


TABLE 1	
DASH NO	REV.
-01	G
-02	H
-05	H

-05 EURO
-02 230V
-01 110V

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 606-00135-XX.

2 SEPARATE PCB BEFORE BEING ASSEMBLED.

1 ALL ITEMS ARE FOUND IN PARTS LIST 607-00135-XX, REV ____ SEE TABLE 1.

NOTES: UNLESS OTHERWISE SPECIFIED

-05	608-00135-05	PT1800
-02	608-00135-02	PT1800
-01	608-00135-01	PT1800

NEXT ASSEMBLY: USED ON
APPLICATION

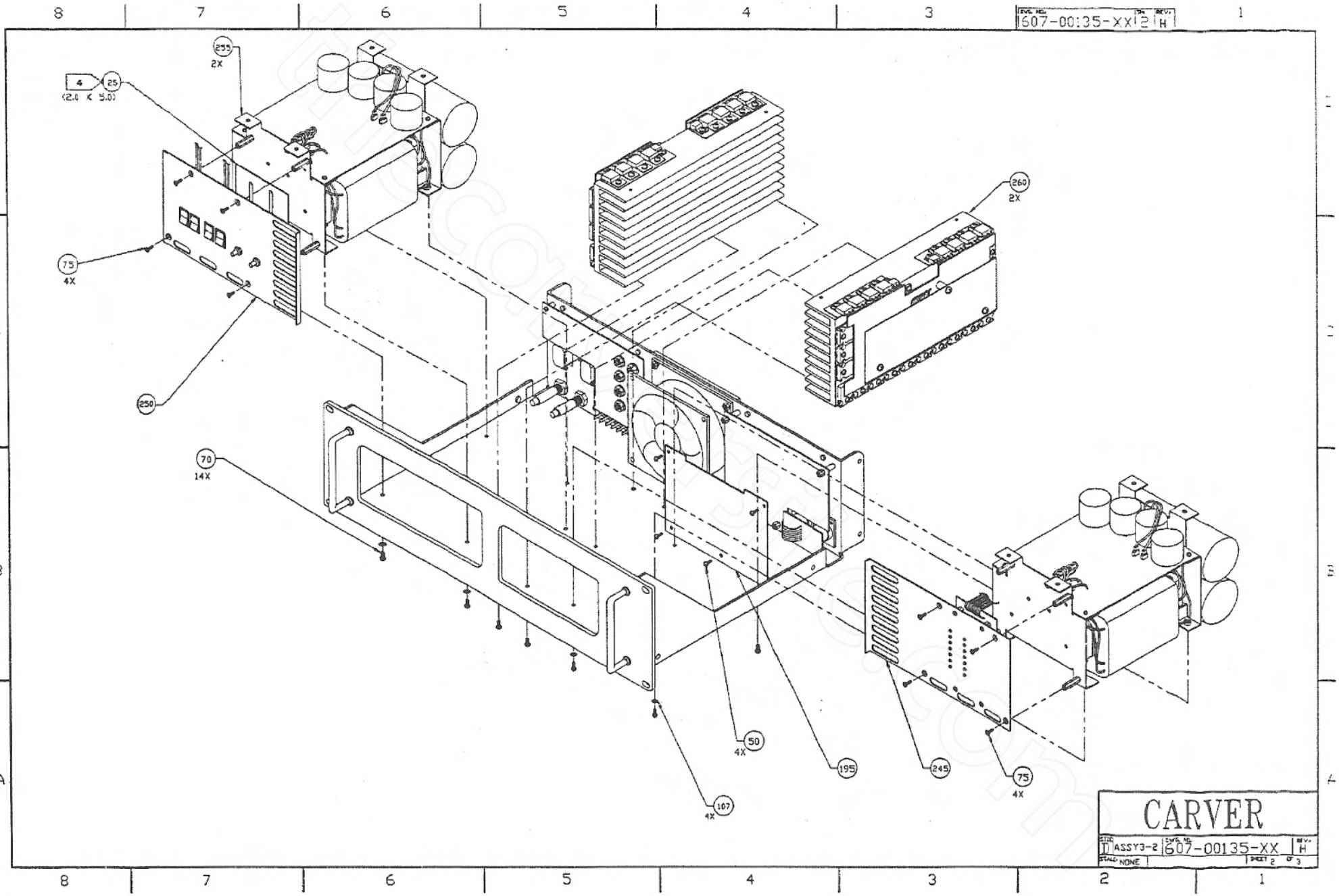
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS .XX±.01 .XXX± ANGLES ±
MATERIAL: 1
FINISH
DO NOT SCALE DRAWING

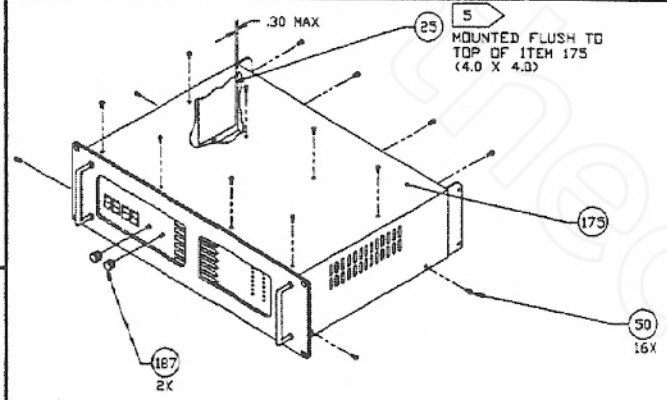
CONTRACT NO:

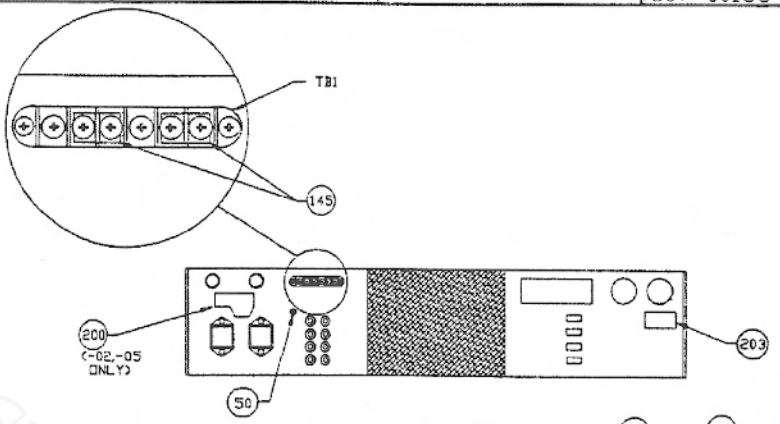
APPROVALS:	DATE:
DRAWN: LEIGH	2/25/92
CHECKED: S.MOSES	2/28/92
ISSUED: S.VELIZ	3/92
ENG: V.RICHARDSON	2/28/92
MFG: M.VALTERS	2/28/92

CARVER
FINAL ASSEMBLY
PT-1800

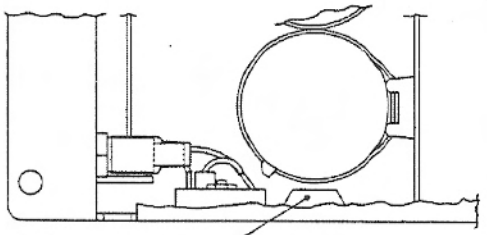
SIZE D | ASSY3-1 | SVC NO: 607-00135-XX | REV: H
SCALE: NONE | SHEET 1 OF 3


607-00135-XX2 H
4
25
(2.0 K 5.0)
255
2X
75
4X
250
70
14X
260
2X
50
4X
195
245
75
4X
107
4X
CARVER
D ASSY3-2
607-00135-XX
H
SCALE: NONE
SHEET 2 OF 3

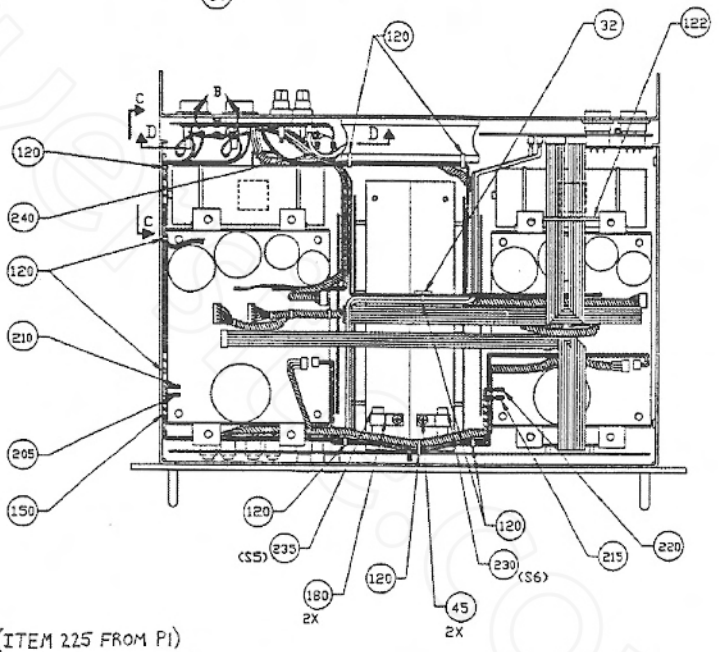


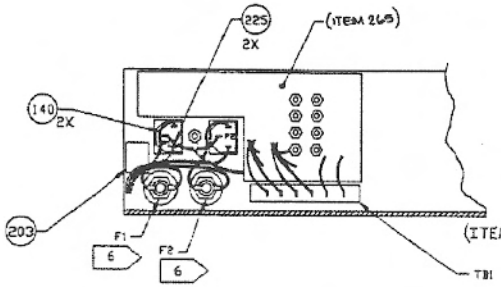


FINAL INSTALLATION

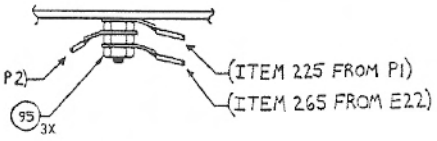


VIEW C-C
SCALE: NONE





SECTION D-D
SCALE: NONE

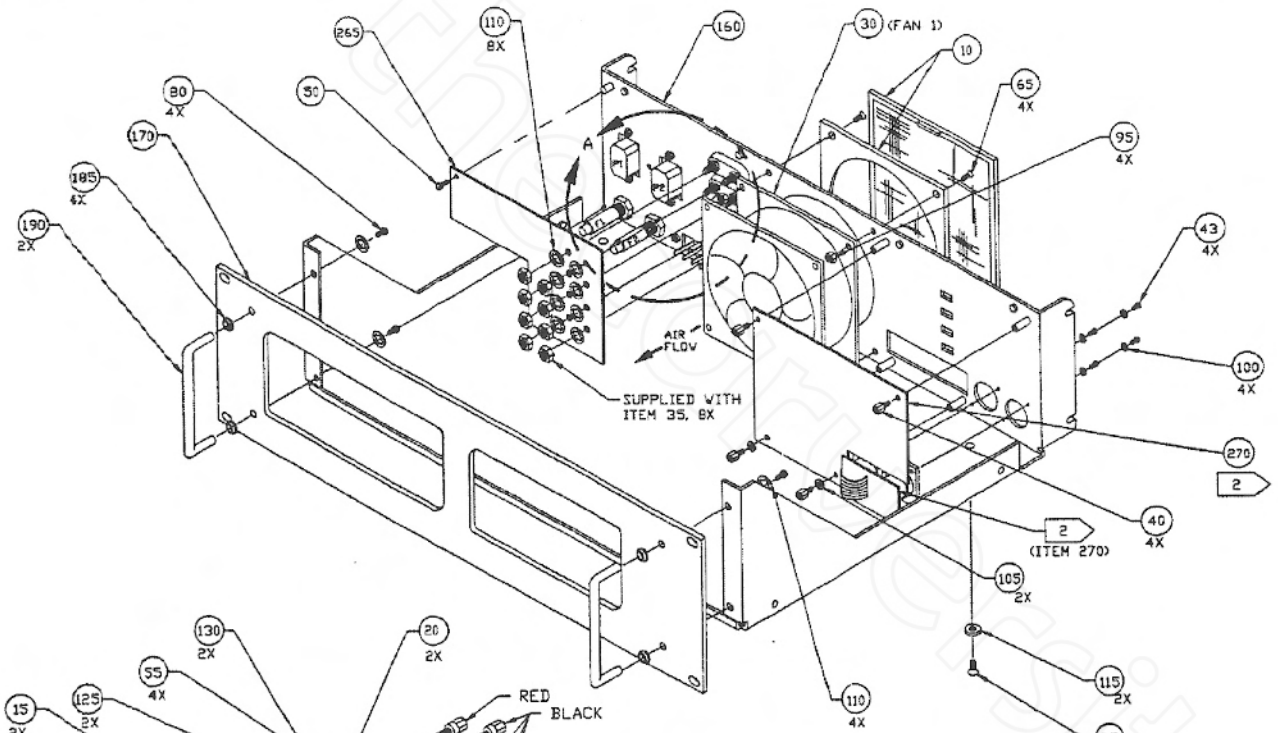


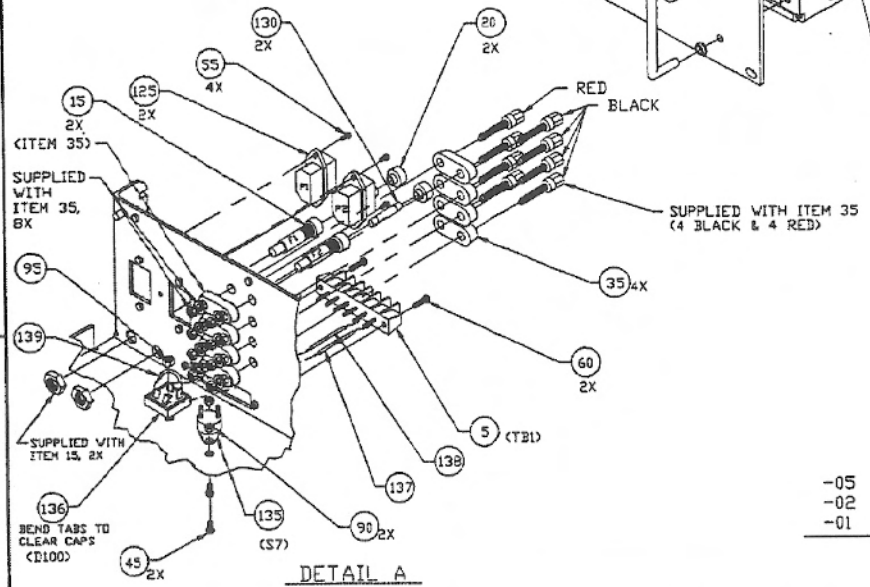
VIEW B
SCALE: NONE

CARVER

SIZE	ASSY#	DWG NO	REV
D	ASSY3-3	607-00135-XX	H

SCALE: NONE SHEET 3 OF 3





DETAIL A

TABLE 1	
DASH NO.	REV.
-01	H
-02	K
-05	K

-05 EURO
-02 230V
-01 110V

-05	608-00140-05	PT2400
-02	608-00140-02	PT2400
-01	608-00140-01	PT2400
NEXT ASSEMBLY		USED ON

APPLICATION

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 ___ SEE TABLE 1.

NOTES: UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE FRACTIONS ± DECIMALS ± ANGLES ± .XX ±.005 .XXX ±

MATERIAL 1

FINISH

DO NOT SCALE DRAWING

CONTRACT NO.

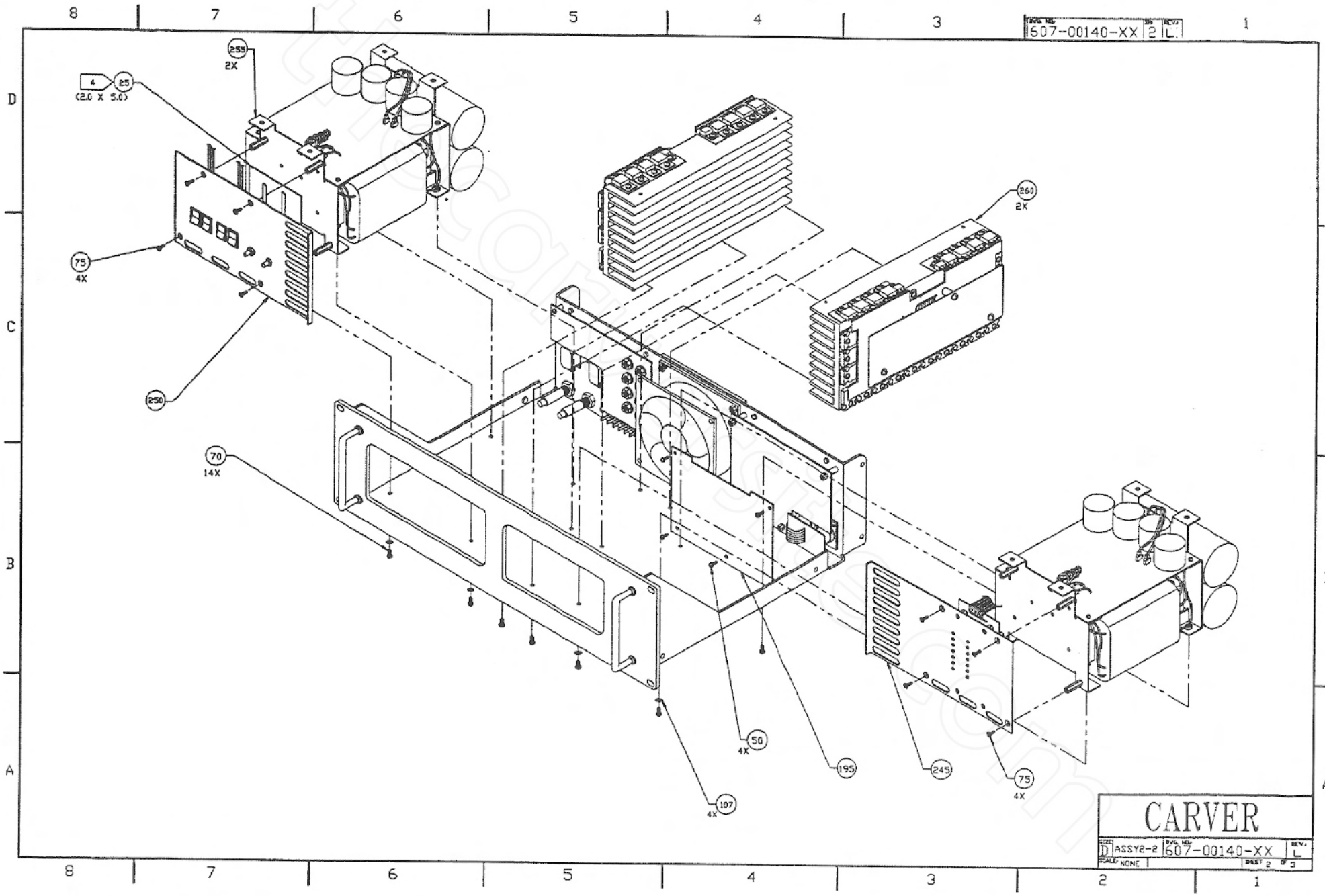
APPROVALS	DATE
DRAWN LM	3/20/91
CHECKED B. COTE	4/3/91
ENG. D. GRIFFITHS	4/3/91
MFG. M. WALTERS	4/3/91

CARVER

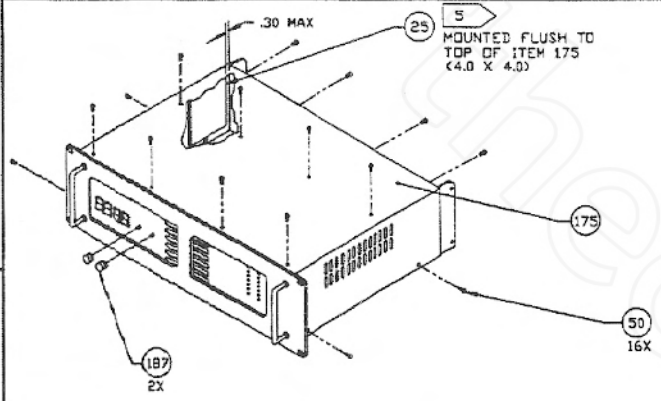
FINAL ASSEMBLY PT-2400

SIZE D | ASSY2-1 | DWG NO. 607-00140-XX | REV. L

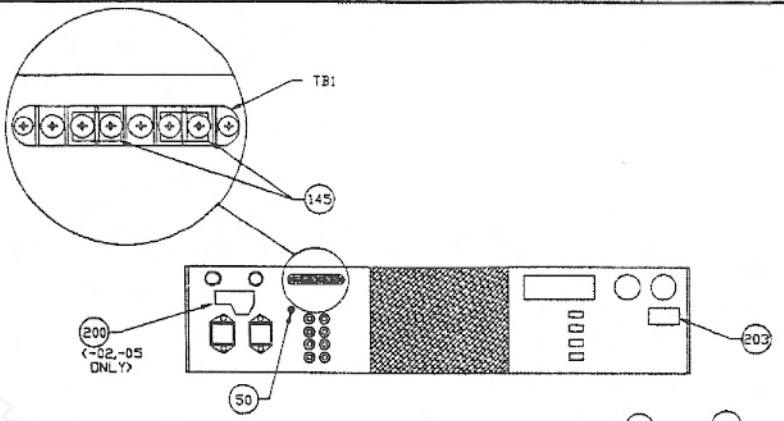
SCALE NONE | SHEET 1 OF 3

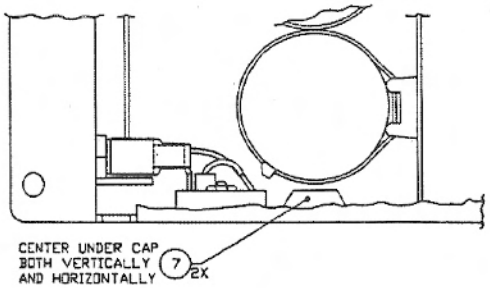


PT-2400 FINAL ASSEMBLY

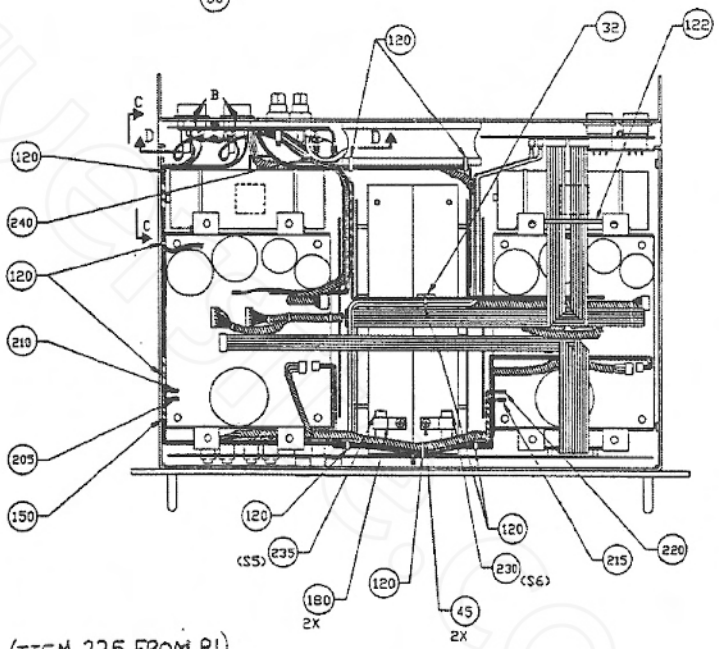


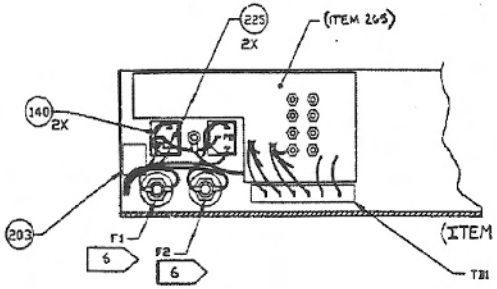
FINAL INSTALLATION



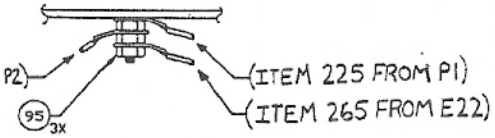


VIEW C-C
SCALE: NONE





SECTION D-D
SCALE: NONE



VIEW B
SCALE: NONE

CARVER

SIZE	DWG NO	REV
D	ASSY2-3 607-00140-XX	L

SCALE: NONE SHEET 3 OF 3

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.
201-00009-00	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	
205-00019-00	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	R16,40,47,48,49,55,56,60	
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	
260-50822-04D	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	R76,80,81,94,102	
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	
262-39090-04D	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	
109-10017-01	JACK, XLR FEMALE PC MNT VERT	J6,7	
118-80016-09	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	R44	
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	R19,73	
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	R36,37,38,40,41,42,45,46,48,49,50,51	
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 WIV HIGH SPEED PREP .4	D1	

TRANSISTORS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
321-30013-00	XISTOR TO3P(L) NPN PWR 2SC3281-0	Q13,14,15,17,18,19,20	
321-30014-00	XISTOR TO3P(L) PNP PWR 2SA1302-0	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	Q9,32,37	
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	
321-60006-01	XISTOR TO218AA NPN TIP 35C	Q1,2,3,6	
321-60007-01	XISTOR TO218AA PNP TIP 36C	Q30,33,34,35	
321-90001-00	XISTOR B100 NPN PWR 2SC3423-Y	Q12	

INTEGRATED CIRCUITS

CARVER P/N	DESCRIPTION		REF DESIGNATORS	NOTES
330-30009-00	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 .33µF/400V 10% RD	C2,3	
207-10010-01	CAP MPLY .1µF/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
115-60000-00	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/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"	E6	Was 15".
550-00021-04	CBL, .250 16 AWG TEW BLK 12"	E5	
550-10064-02	HARN CONN TW 3PIN #22 20"	E10	
550-10064-01	HARN CONN TW 3PIN #22 10"	E8	
616-00016-00	CHOKE, 5µH 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 .33µF/400V 10% RD	C2,3	
205-00037-00	CAP LYTIC 470µF/50V 20% AXIAL	C4	
207-10010-01	CAP MPLY .1µF/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/WHT 4"	E3	
501-00465-01	PCB OUTPUT PT2400/1800		
550-00002-08	CBL .250" 18 AWG TEW BLK/WHT 12"	E2	
550-00002-09	CBL .250" 18 AWG TEW BLK/WHT 17"	E4	
550-00006-04	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"	E6	
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, 5µH 20A .006 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 .001µF/250V 10%UL	C103,104	⚠
204-00010-00	CAP PLYFLM .0039µF/100V 10% RD	C10	
204-00027-00	CAP PLYFLM .1µF/100V 10% RAD	C18	PT-1800
204-00038-00	CAP PLYFLM .18µF/100V 10% RAD	C18	PT-2400
204-00031-00	CAP PLYFLM .33µF/100V 10% RAD	C19	Was .068µF/100V PLYFLM.
205-00093-02	CAP LYTIC 2.2µF/50V 20% RAD .2	C23	
205-00013-02	CAP LYTIC 47µF/25V 20% RAD .2	C2,3,6,7	
205-00015-02	CAP LYTIC 100µF/10V 20% RAD .2	C4,5,24	
205-00001-02	CAP LYTIC 1µF/50V 20% RAD .2	C1,100	
205-00094-02	CAP LYTIC 10µF/25V 20% RAD .2	C22	
205-00138-00	CAP LYTIC 3300µF/80V SNAP MT	C12,13	⚠
205-00139-00	CAP LYTIC 6800µF/35V SNAP MT	C15,16	⚠
205-00147-01	CAP LYTIC 1000µF/35V RADIAL	C101	
207-10010-01	CAP MPOLY .1µF/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	R35,37,44	
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	
260-50393-04D	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	R46	
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	R58	
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	R105	
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	D5,6,9,12,13,28,32,33,34,100	
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 1N4735 6.2V .4	D8	

TRANSISTORS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
321-40013-01	XISTOR TO92 NPN SM SG MPSA18	Q3	Was MPS6097.
321-40003-00	XISTOR TO92 MPS6093 (SUB FPN4)	Q2,11	
321-40009-00	XISTOR TO92 PNP SM SG 2N4125	Q10	
321-40010-00	XISTOR TO92 NPN SM SG 2N4123	Q9,12	
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 2SA1360-Y	Q8	
321-90001-00	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	IS01	⚠
330-40007-00	OPTOISOLATOR,TRIAC DRIVER 250V	IS02	⚠

MISCELLANEOUS ITEMS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
115-60000-00	CONNECTOR,QD TAB .250 PCB	WL1,3-10,13-16	
160-30019-00	HEADER 2 PIN .156 LOCK ST POST	J5	
160-30022-00	HEADER 6 PIN .156 LOCK ST POST	J2,6	
160-30038-01	HEADER, 3-PIN .10 LOCK ST POST	J3,4	
160-30039-01	HEADER, 5-PIN .10 LOCK ST POST	J1	
401-10139-00	WIRE 18 AWG TR-64 BLK 6"	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	
401-10853-00	WIRE 22 AWG TR-64 RED/WHT 5"	E20,21	
501-00409-00	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,#10LUG,TR64,#18, 7" BRN	E1	
616-00017-00	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 .001µF 250V 10%UL	C103,104	⚠
204-00010-00	CAP PLYFLM .0039µF 100V 10% RD	C10	
204-00027-00	CAP PLYFLM .1 µF 100V 10% RAD	C18	PT-1800 Only
204-00038-00	CAP PLYFLM .18 µF 100V 10% RAD	C18	PT-2400 Only
204-00031-00	CAP PLYFLM .33 µF 100V 10% RAD	C19	
205-00093-02	CAP LYTIC 2.2µF 50V 20% RAD .2	C23	
205-00013-02	CAP LYTIC 47 µF 25V 20% RAD .2	C2,3,6,7	
205-00015-02	CAP LYTIC 100µF 10V 20% RAD .2	C4,5,24	
205-00001-02	CAP LYTIC 1 µF 50V 20% RAD .2	C1,100	
205-00094-02	CAP LYTIC 10µF 25V 20% RAD .2	C22	
205-00138-00	CAP LYTIC 3300 µF 80V SNAP MT	C12,13	
205-00139-00	CAP LYTIC 6800 µF 35V SNAP MT	C15,16	
207-10015-01	CAP, MET POLY .1µF 250V CSA	C9,17,102	⚠

RESISTORS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
260-55100-04D	RES CF 510 OHM 1/4W .5	R48	
260-50510-04D	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	
260-57500-04D	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	
260-50162-05E	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	
260-50752-04D	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
260-50183-04D	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	
260-50393-04D	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	
260-53903-04D	RES CF	390K 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
260-50303-05E	RES CF	30K 1/2W .6	R51	PT-1800 120V Only
260-50683-08A	RES CF	68K 2W .6	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 .6	R9	
260-50825-05E	RES CF	8.2M 1/2W .6	R54	
262-32371-04D	RES MF	2.37K 1/4W .5	R57	
262-32211-04D	RES MF	2.21K 1/4W .5	R58	
262-34321-04D	RES MF	4.32K 1/4W .5	R65	
262-31003-04D	RES MF	100K 1/4W .5	R58	
263-50823-07G	RES MO	82K 1W .6	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	D5,6,9,12,13,29,32,33,34,100	
320-20004-00	DIODE	1N4004 400V PREP .4X.25	D1,3,4,7,10,11,14,15,19,20,21,22,23	⚠
320-30026-00	DIODE, ZENER	4742C 12V 2% .4	D2,24	
320-30006-00	DIODE, ZENER	1N4735 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	Q9,12	
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 2SA1360-Y	Q8	
321-90001-00	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	IS01	⚠
330-40007-00	OPTOISOLATOR,TRIAC DRIVER 250V	IS02	⚠

MISCELLANEOUS ITEMS

CARVER P/N	DESCRIPTION	REF DESIGNATORS	NOTES
115-60000-00	CONNECTOR,QD TAB .250 PCB	WL1,3-10,13-16	
160-30019-00	HEADER 2 PIN .156 LOCK ST POST	J5	
160-30022-00	HEADER 6 PIN .156 LOCK ST POST	J2,6	
160-30020-00	HEADER 3 PIN .156 LOCK ST POST	J4	
160-30042-01	HEADER, 4PIN .100 LOCK ST POST	J3	
160-30039-01	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 (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	
550-00006-03	CBL,#10LUG,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 PT-2400 230V
601-00253-04 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 6-32X5/16		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 6-32X5/16 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
319-00035-01	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		
550-00006-02	105	CBL,#10LUG,TR64,#18, 5.5" RED		Bridge "B" + To Cap
550-00006-05	105	CBL,#10LUG,TR64,#18, 6.5" RED		D103 + To Cap
550-00006-03	110	CBL,#10LUG,TR64,#18, 7" BRN		Bridge "B" - To Cap
550-00006-03	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 602-00409-00
602-00464-02	115	ASSY, PCB PWR SUPPLY PT2400 230V		Was 602-00409-02
602-00464-03	115	ASSY, PCB PWR SUPPLY PT1800		Was 602-00409-01
602-00464-04	115	ASSY, PCB PWR SUPPLY PT1800 230V		Was 602-00409-01
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	
401-10556-00	WIRE 22AWG TR-64 BLACK 5"		
401-10537-00	WIRE 22AWG TR-64 BLACK 4"		
507-00068-00	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 & Brkt 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
505-20030-01	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
550-10053-02	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	
260-50752-04D	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	BUMPONS, 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"		Linecord Jack Mtg
151-20054-00	60	SCREW MACH PP BLK 6-32x3/4"		Barrier Mtg
151-20071-08	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 10-32x9/16"		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 Brkt 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 90 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
601-00251-02	245	ASSY, PREP DISPLAY PT-1800 EURO		PT-1800 230V Verson.
601-00252-01	250	ASSY, PREP SW PNL PT2400/1800		
601-00253-01	250	ASSY, PREP PWR SUPPLY PT-2400		PT-2400 115V Version.
601-00253-02	255	ASSY, PREP PWR SUPPLY PT-1800		PT-1800 115V Version
601-00253-03	255	ASSY, PREP PWR SUPPLY PT-2400		PT-2400 230V Version
601-00253-04	255	ASSY, PREP PWR SUPPLY PT-1800 230V		PT-1800 230V Version
601-00255-01	260	ASSY, PREP AMPLIFIER PT-2400		PT-2400
601-00255-02	260	ASSY, PREP AMPLIFIER PT-1800		PT-1800
602-00465-01	265	ASSY, PCB OUTPUT PT2400/1800		Was P/N 602-00446-00 before S/N 92033000001
602-00448-00	270	ASSY, PCB INPUT PT-2400		PT-2400
602-00448-01	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	BUMPONS, 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		
503-00089-00	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, Bumpons
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, Bumpons, Manual
532-20069-01	25	BOX, PT-2400/PT-1800		
532-30059-01	42	FOAM, END CAPS PT2400/1800		
607-00135-01	45	ASSY, FINAL PT-1800		
607-00140-01	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, 180kΩ, 1/4W
2	260-53603-04D	Res, CFilm, 360kΩ, 1/4W
2	260-50303-05E	Res, CFilm, 30kΩ, 1/2W
2	260-50683-05E	Res, CFilm, 68kΩ, 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, 180kΩ, 1/4W
2	260-53603-04D	Res, CFilm, 360kΩ, 1/4W
2	260-50243-05E	Res, CFilm, 24kΩ, 1/2W
2	260-50683-05E	Res, CFilm, 68kΩ, 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
REASON: To prevent fuse from blowing prematurely when driving a 2 ohm load (230V configuration only).		Date: 6/18/92

DELETE		ADD	
Qty 2	Fuse, 5A Time Lag P/N 315-16003-01	Qty 2	Fuse, 6.3A Time Lag P/N 315-16001-00
Qty 2	Label, Fuse 5A 250V SLO-BLO P/N 530-10194-01	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
	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		ADD	
Qty 2	9.1kΩ 1/4W CF Resistor (R9, R50) 260-50912-04D	Qty 2	8.2kΩ 1/4W CF Resistor (R9, R50) 260-50822-04D

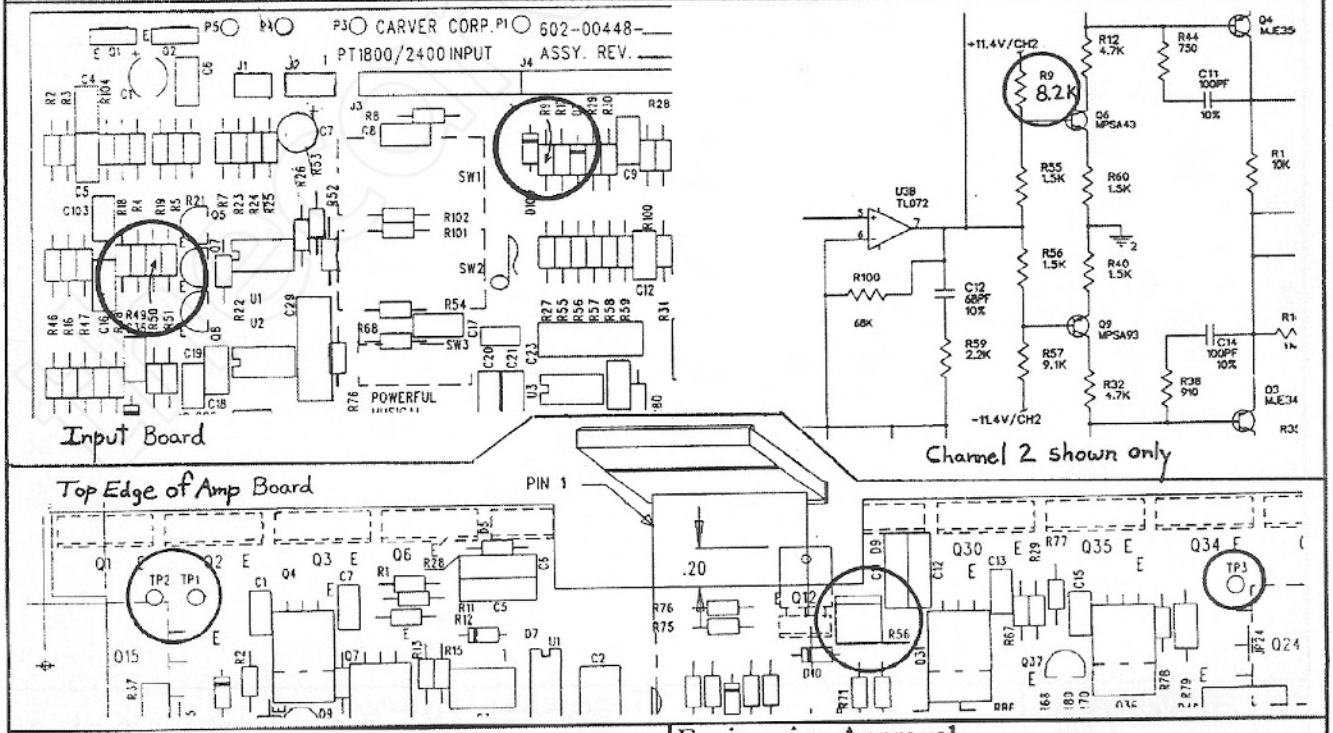
PROCEDURE

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
B. Carter	Vic Richardson 1-29-92

CARVER CORPORATION
SERVICE BULLETIN

Service Bulletin # PT-2400-2	Model: PT-2400 230V/ Euro	Serial Nos. Below #92633100001
REASON: To prevent fuse from blowing prematurely when driving a 2 ohm load (230V configuration only).		Date: 6/18/92

DELETE		ADD	
Qty 2	Fuse, 6.3A Time Lag P/N 315-16001-00	Qty 2	Fuse, 8A Time Lag P/N 315-16005-01
Qty 2	Label, Fuse 6.3A 250V SLO-BLO P/N 530-10176-01	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
[signature]	[signature] 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
REASON: To prevent triac latching and fuse blowing with low line voltage.		Date: 8/20/92

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.

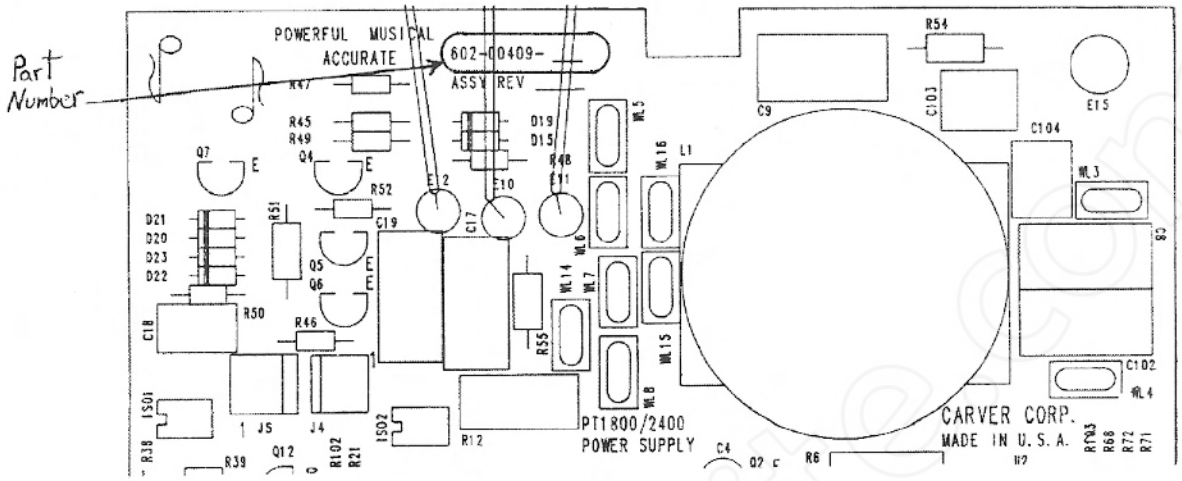
This procedure places a 110 ohm loading resistance across the low-rail secondary AC voltage to provide a holding current through the primary circuit, thus keeping the triac operating at all AC line voltage levels.

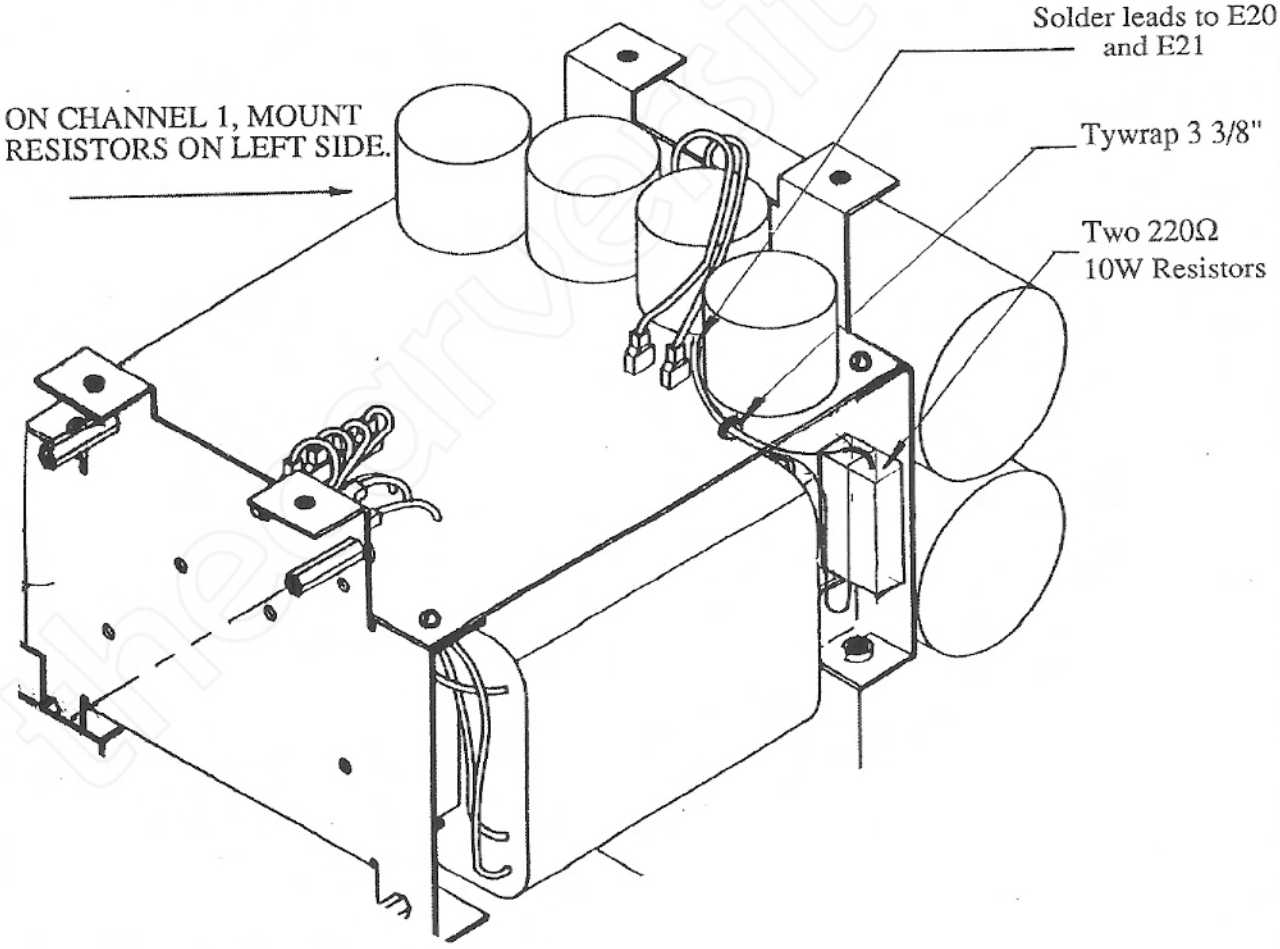
This procedure only needs to be performed on boards marked with part number 602-00409-__. If the board is marked with part number 602-00464-__, then this modification should not be performed.

Service Approval	Engineering Approval
8/21/92	

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

Page 2 of 2

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, 0.22µF/100V P/N 204-00030-00	C105
Qty 2	Resistor, 1/4W CF, 330Ω 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: ± 118V (± 0.5V)
   PT-2400: ± 122V (± 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 0.22µF/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 0.22µF/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	Engineering Approval
6/2/94	

CARVER CORPORATION
SERVICE BULLETIN

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

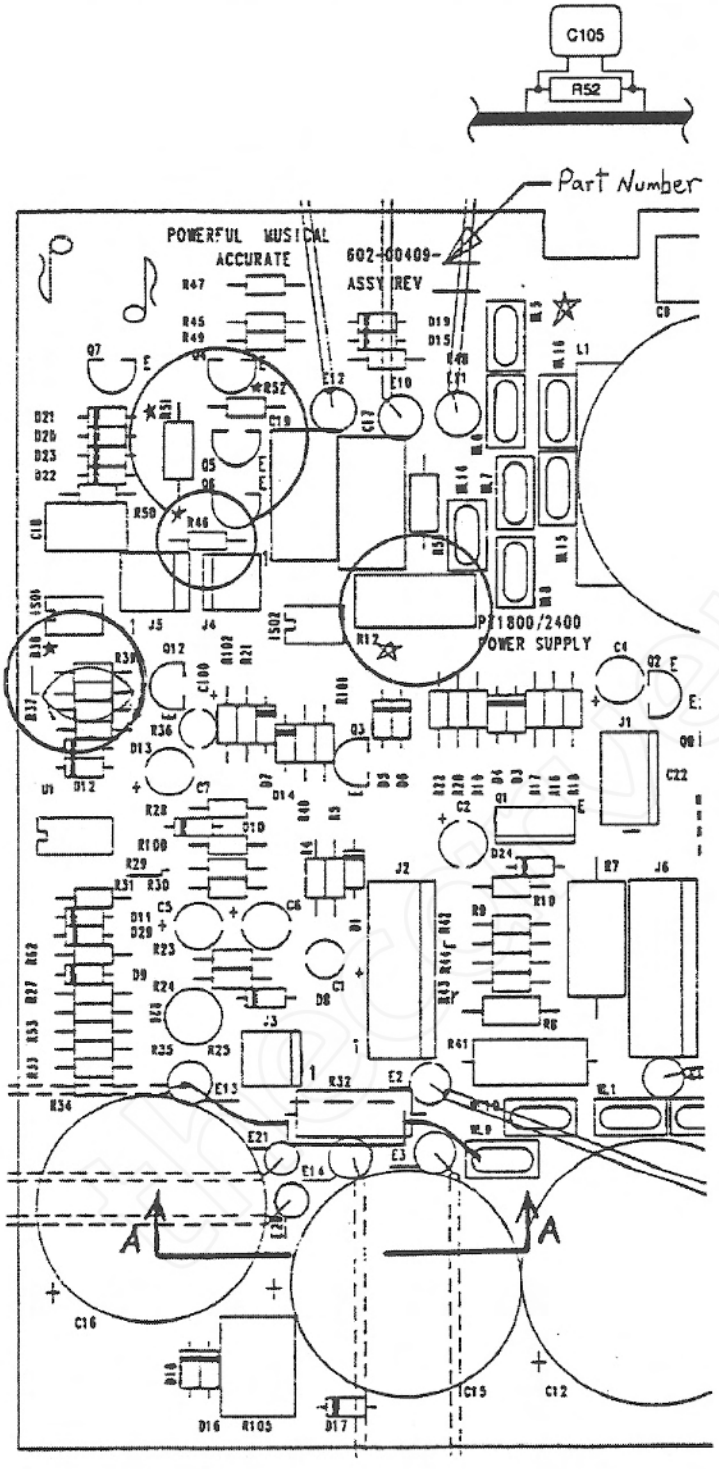


Figure 1. 602-00409-___ Power Supply Board

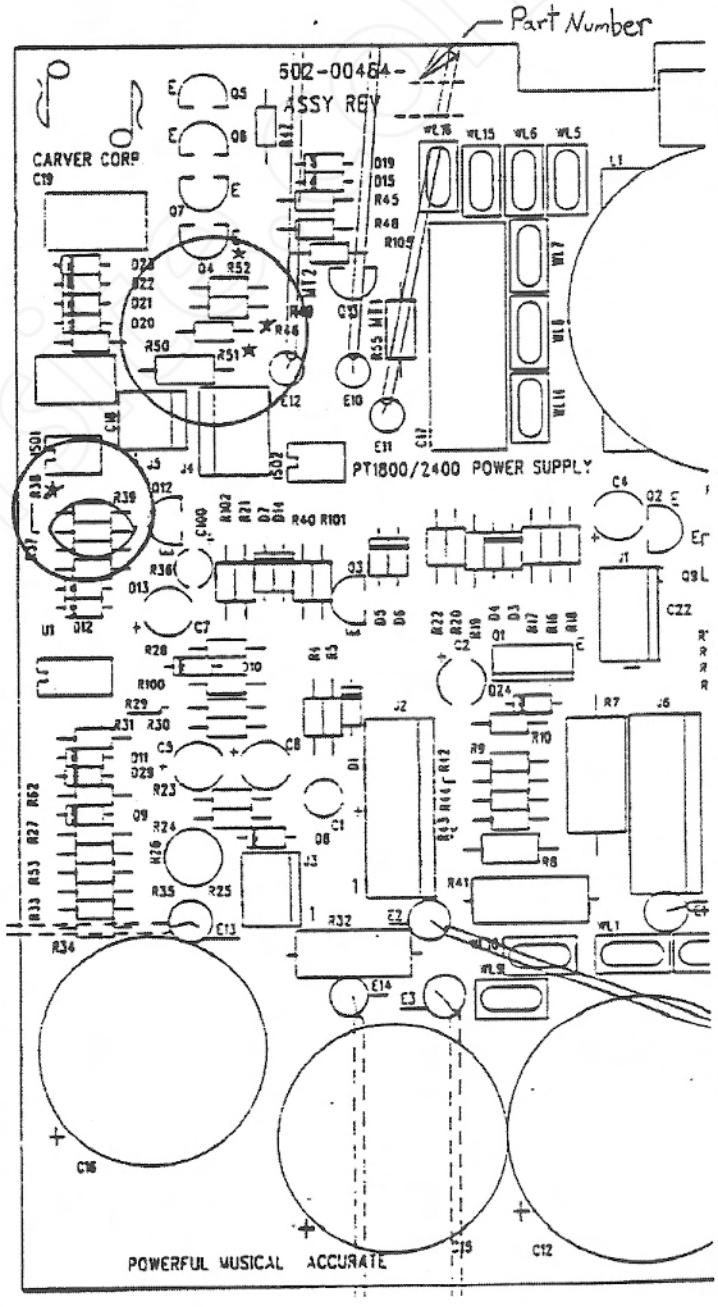


Figure 2. 602-00464-___ Power Supply Board

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P/N 990-20108-01
Rev. A