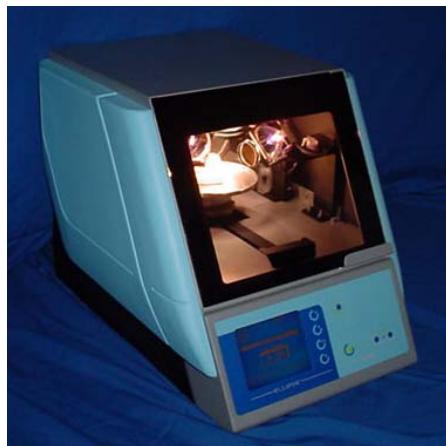


# Service Instructions

## EPU II Curing Unit



**(Serialization HQA & HQE)**



**(Serialization JJA & JJE)**

DENTSPLY Ceramco  
Yucaipa, CA

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9.1	Product Service

## 1.1 SAFETY

### FOR PROFESSIONAL USE ONLY.

Please read these operating instructions carefully before installing or operating this equipment.

Use indoors only.

Never operate the unit in close proximity to combustible materials or place materials on top of the unit. The unit must be electrically grounded to a three wire electrical outlet or receptacle. The electrical service provided must be a dedicated line of the proper size according to local electrical codes. Unit must be placed in a position that allows the power cord to be easily disconnected from the wall or inlet socket.

Do not attempt to service the unit until you have read and understand this operation manual.

Turn off the power switch and disconnect the line cord before attempting to service the unit.

Do not operate the unit controls with tongs or other tool.

Do not use solvents or liquid cleaners on the control panel.

Do not touch the bulbs when the unit door is open.

Before replacing bulbs, allow the unit to cool to room temperature to avoid burns.

Do not cover the top of the unit or obstruct the rear fans in any other way.

Do not heat water or food in the unit chamber.

Do not submerge the unit into any liquid.

Do not store flammable products or solvents inside the unit chamber.

If the unit is not operated in the manner as specified in this manual, the protection provided by the unit may be impaired.

**⚠ CAUTION: RISK OF DANGER! BURN HAZARD IS PRESENT WHEN COVER IS OPENED.  
USE CAUTION AFTER OPENING COVER, BULBS AND METAL SURFACES MAY BE HOT!  
USE HEAT RESISTANT GLOVES WHEN REMOVING BULBS!**

### SYMBOL TABLE

~	- Alternating current	Courant alternatif
	- On (Supply)	Marche (alimentation)
○	- Off (Supply)	Arrêt (alimentation)
	- Caution, Hot Surface	Attention, surface chaude
	- Protective Conductor	Terminal Borne de masse, châssis
	- Caution, Risk of Danger	Attention risque de DANGER

## 2.1 REPAIR DEVICES AND TOOLS

The following devise and tools are required to perform service work on the EPU II:

<b>Device:</b>	<b>Use:</b>
Screw drivers, nut drivers, wrenches	Disassemble / assemble
True RMS voltmeter	Lamp Voltage Calibration

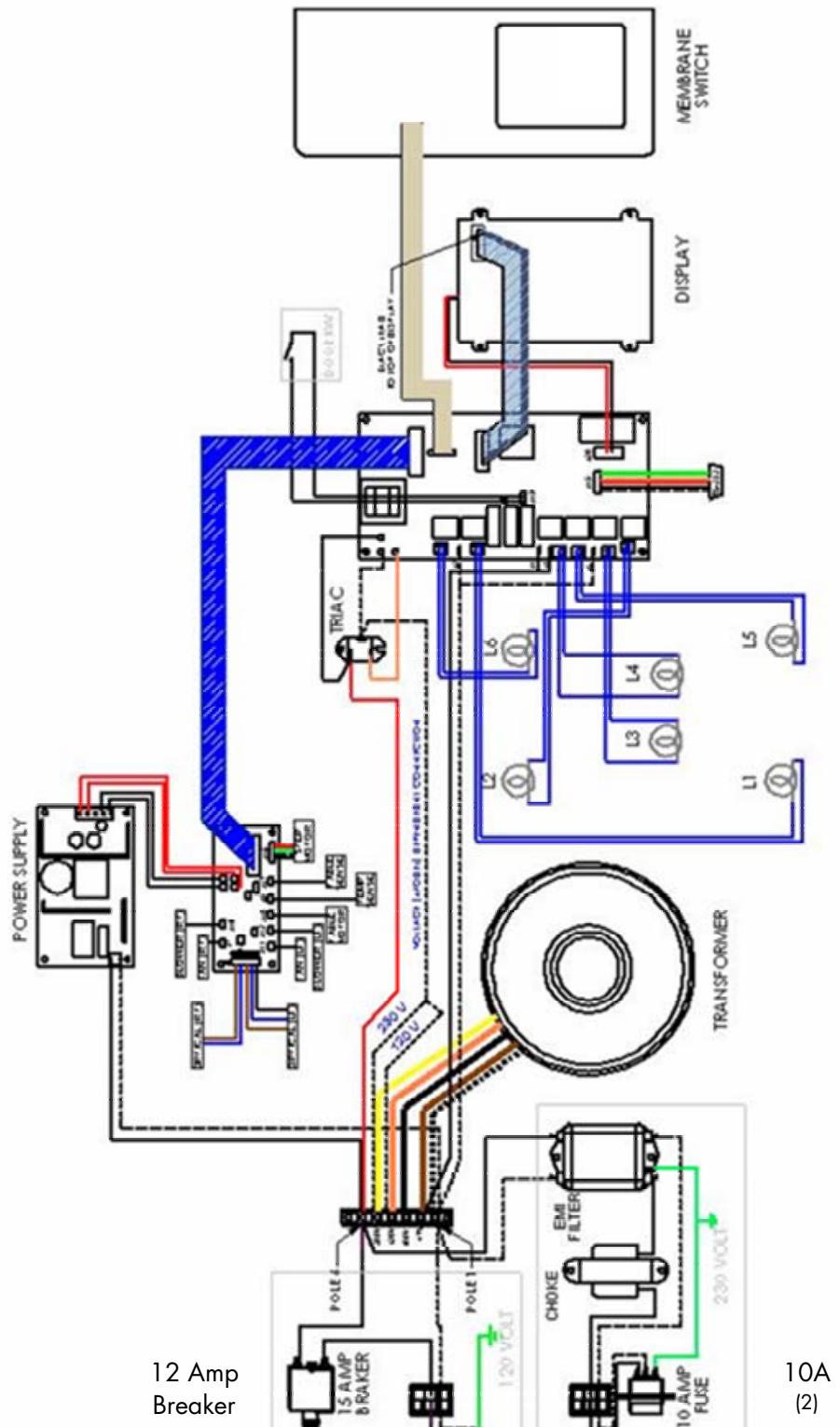
### 3.1 SPARE PARTS

<b>Item #</b>	<b>Description</b>	<b>Part Number</b>
1	Transformer	9310046
2	Power Supply PCB 45W	9320135
3	Triac, 25A	9303015
4	Peripheral PCB	R9494805
5	Feet, EPU II	9357170
6	Heatsink	9493464
7	Control PCB; 120V (HQA, HQE)	R9494907
8	Control PCB; 230V (HQA, HQE)	R9494881
9	PCB Assy; EPU II B, 120V (JJA, JJE)	R9495147
10	PCB Assy; EPU II B, 230V (JJA, JJE)	R9495148
11	Transformer Bolt	9903208
12	Transformer Mounting Plate	9494845
13	Terminal Block, 6 Pole	9309172
14	Back Panel 120V	9494839
15	Back Panel 230V	9494812
16	Power Cord 120V	9309163
17	Power Switch	9306049
18	Circuit Breaker, 12A	9320173
19	Choke, 10A	9310045
20	EMI Filter, 10A	9320128
21a	Inlet Socket Assembly, 230V	9494847
21b	Table Motor	9320130
22a	Table Motor Mount	9361118
22b	Vertical Guide Shaft	9361115
23	Table Rotation Sensor Assembly	9494840
24	Table Handle	9494823
25	Horizontal Guide Shaft	9361114
26	Horizontal Slide	9361116
27	Stepper Motor	9320129
28	Blower Duct	9361117
29	Beam Sensor Mounting Bracket	9494824
30	Fan Assy, Right	9495065
31	Fan Assy, Left	9495066
32	Lamp Base	9494807
33	Fan Guard	9320124
34	Blower Duct Mounting Bracket	9361112
35	Blower Assy, Right	9495067
36	Blower Assy, Left	9495068
37	Beam Sensor, Receiver	9307033
38	Beam Sensor, Transmitter	9307034
39	RS232 Wire Assembly	9494849

### 3.1 SPARE PARTS Cont.

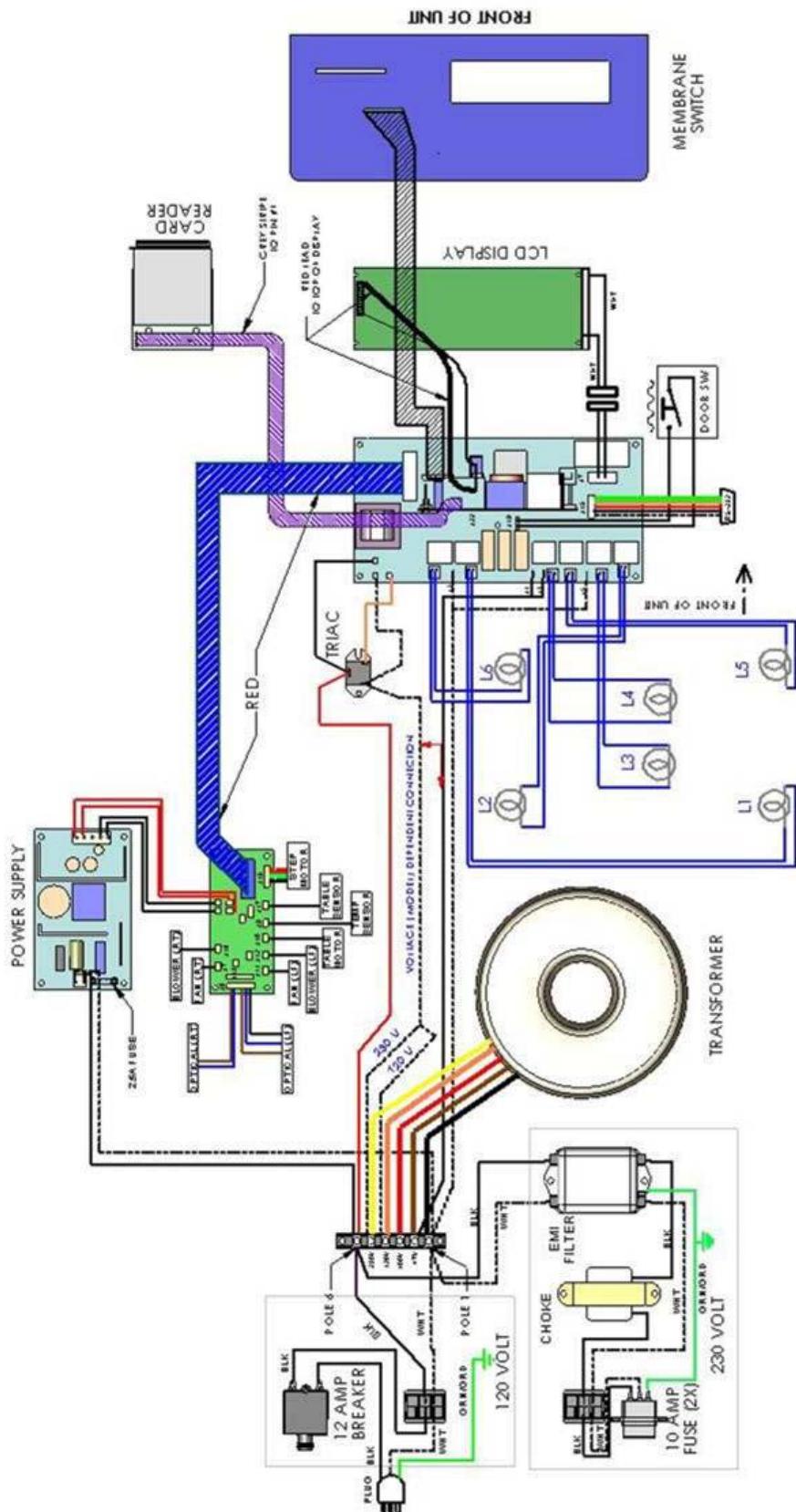
<b>Item #</b>	<b>Description</b>	<b>Part Number</b>
40	Door Frame	9494819
41	Membrane Switch; EPU II (HQA, HQE)	9354448
42	Membrane Switch; EPU IIB (JJA, JJE)	9354475
43	Front Panel (HQA, HQE)	9494813
44	Front Panel EPU IIB (JJA, JJE)	9495156
45	Serv; Display PCB Assy (HQA, HQE)	R9307035
46	Serv; LCD Display Assy (JJA, JJE)	R9495146
47	Rod End	9350040
48	Door Spring	9356019
49	Magnetic Switch	9306050
50	Magnet	9306051
51	Door Switch Shaft	9361113
52	Inner Cover	9494808
53	Top Cover	9494809
54	Heat Shield	9494842
55	Guide Rail, Top Cover	9361120
56	Side Cover, Left	9357159
57	Side Cover, Right	9357160
58	Door Glass, Tempered	9361109
59	Side Panel Mounting Bracket	9494827
60	Terminal Block, Lamp	9309173
61	Lamp Holder	9320133
62	Thermistor Wire Assembly	9494825
63	Thermistor Bracket	9494835
64	Left Rear Lamp Bracket	9494816
65	Left Front Lamp Bracket	9494815
66	Right Front Lamp Bracket	9494817
67	Right Rear Lamp Bracket	9494818
68	Center Lamp Bracket	9494838
69	Filter, EPU II	9307038
70	Door Glass Assy. (Mounted to Frame)	9494926
71	Filter Bracket, Lower	9494811
72	Filter Bracket, Upper	9494810
73	Filter Bracket Spacer	9494837
74	Box	9370087
75	Support	9370190
76	Plastic Bag	9372076
77	O-Ring; 2.0 O.D. x 3/32 Dia., Silicon	9357172
78	Serv; Table, Denture EPU II	9495260
79	Serv; PCB Assy, Card Reader EPU IIB	R9495149

## 4.1 WIRING DIAGRAM



(HQA, HQE)

## 4.1 WIRING DIAGRAM Cont.



(JJA, JJE)

## 4.1 WIRING DIAGRAM Cont.

### **REAR OF UNIT**

#### **PERIPHERAL PCB:**

Stepper Motor wires (6-pin connector) to J16 on Peripheral PCB

Optical Sensor (Right – 2 wires) to J8 terminal block – side labeled "J8" - on Peripheral PCB

Optical Sensor (Left – 3 wires) to J8 terminal block – side labeled "Optical" - on Peripheral PCB

Blower (Right – 3-pin connector) to J18 on Peripheral PCB

Blower (Left – 2-pin connector) to J12 on Peripheral PCB

Thermistor (2 pin connector) to J9 on Peripheral PCB

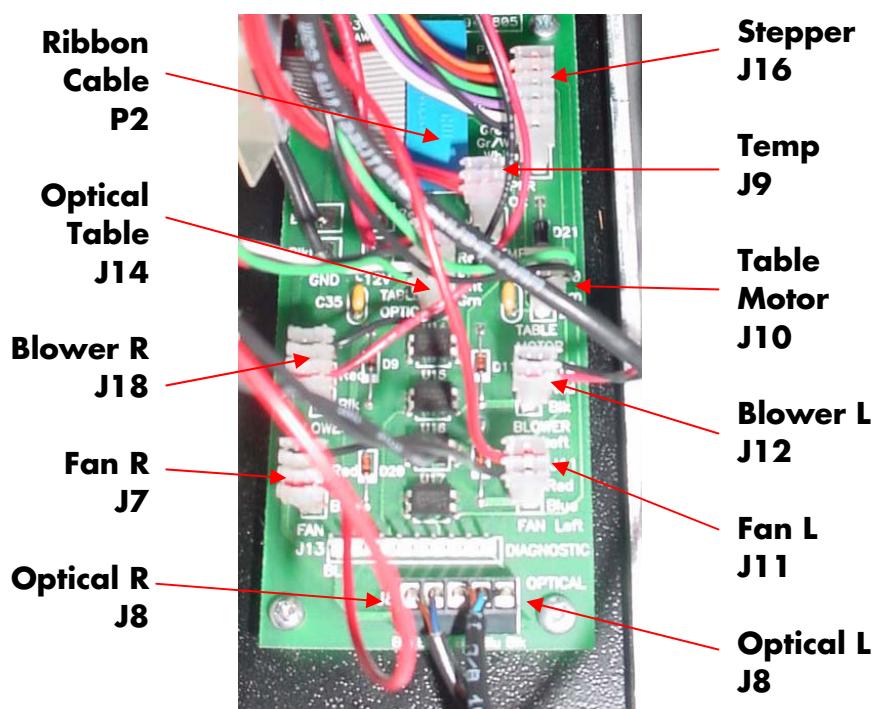
Table Motor Optical wires (4-pin connector) to J14 on Peripheral PCB

Table Motor wires (2-pin connector) to J10 on Peripheral PCB

Fan (Right – 3-pin connector) to J7 on Peripheral PCB

Fan (Left – 2-pin connector) to J11 on Peripheral PCB

Ribbon cable P2 to P1 on Control PCB

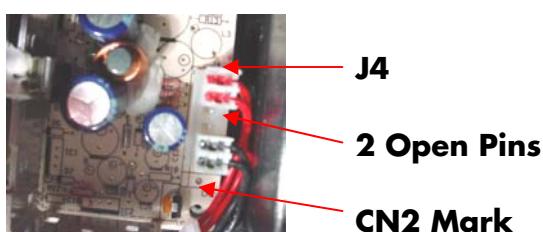


(PCB shown from back of unit.)

#### **POWER PCB:**

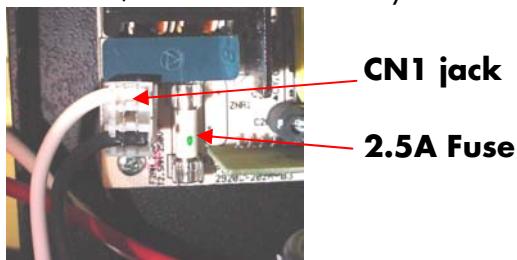
Black wire assembly from Peripheral PCB to Power PCB CN2 2 pins closest to "CN2" marking on PCB.

Red wire assembly from Peripheral PCB to Power PCB CN2 2 pins closest to J4. Make sure 2 pins in the center are open.



## 4.1 WIRING DIAGRAM Cont.

Black/White wire assembly from Terminal Block to Power PCB CN1.



### INLET POWER:

White wire from inlet socket to Power switch.

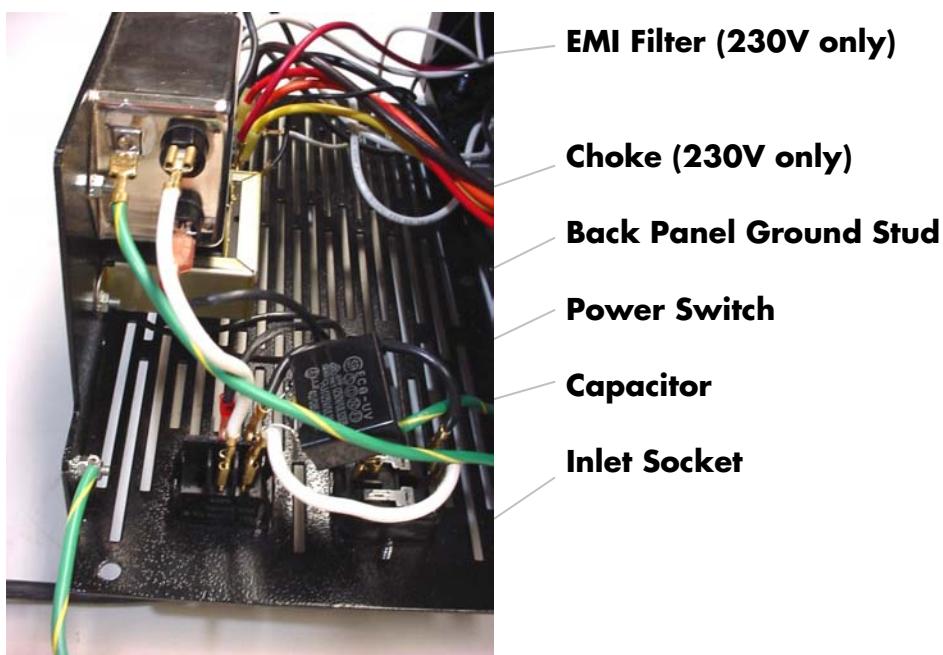
Black wire from inlet socket to Power switch.

### 230V

White wire from power switch to filter.

Black wire from choke to power switch. (No polarity – either wire may be used)

Black wire from other side of choke to filter.



### 120V

White wire from power switch to flat tab on Pole 1.

Black wire from power switch to 45° tab on Pole 6.

Ground wire from inlet socket to Ground Stud on base. (1<sup>st</sup>)

Ground wire from filter to Ground stud on base. (2<sup>nd</sup>)

Ground wire from back panel to base ground stud. (3<sup>rd</sup>)

## 4.1 WIRING DIAGRAM Cont.

### TERMINAL BLOCK:

See figure below for reference.



EMI Filter is mounted on the Pole 6 side. (230V units)

### (AC POWER IN)

White wire from power PCB to flat tab on Pole 1.

Black wire from power PCB to 45° tab on Pole 6.

### (AC POWER OUT)

See figures below for reference.

Black wire from transformer to 90° tab on Pole 1.

Brown Wire from transformer to 90° tab on Pole 2.

Red wire from transformer to 90° tab on Pole 3.

Orange wire from transformer to 90° tab on Pole 4.

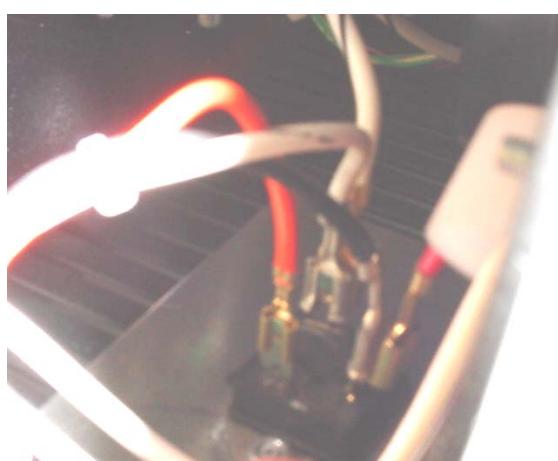
Yellow wire from transformer to 90° tab on Pole 5.

White w/Black stripe wire from PT6 on PCB to MT1 on Triac

Black wire from PT5 on PCB to MT2 on Triac.

Orange wire from PT7 on PCB to gate on Triac.

Triac Red wire from 90° tab on Pole 6 to Triac MT2 piggy back.



## 4.1 WIRING DIAGRAM Cont.

### **(230V)**

Triac White w/black stripe wire from 90° tab on Pole 5 to Triac MT1 piggy back.  
(Transformer Yellow)

### **(120V)**

Triac White w/black stripe wire from 90° tab on Pole 4 to Triac MT1 piggy back..  
(Transformer Orange)

### **(100V)**

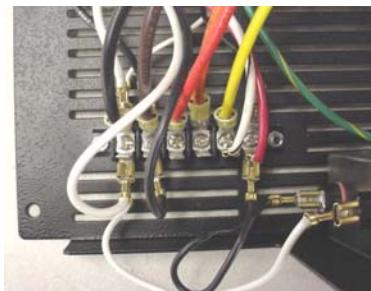
Triac White w/black stripe wire from 90° tab on Pole 3 to Triac MT1 piggy back..  
(Transformer Red)

White wire from J2 on Control PCB to 45° tab on Pole 1.

White wire from J5 on Control PCB to 45° tab on Pole 1.

Black wire from J1 on Control PCB to 45° tab on Pole 2.

Black wire from J3 on Control PCB to 45° tab on Pole 2



**(230V shown)**

### **LAMPS (HQA, HQE)**

Attach #1 lamp wire to L1 on Control PCB.

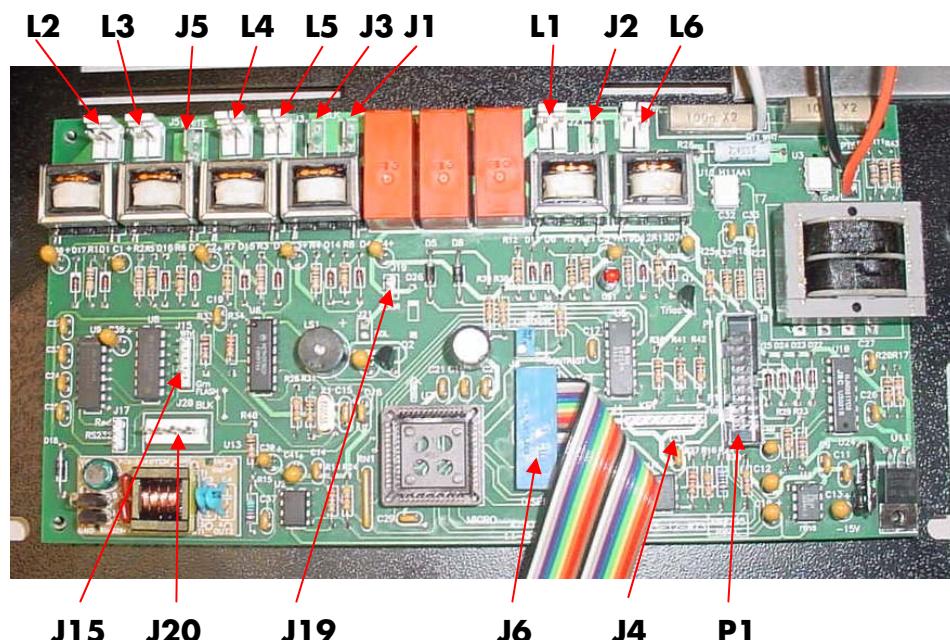
Attach #2 lamp wire to L2 on Control PCB.

Attach #3 lamp wire to L3 on Control PCB.

Attach #4 lamp wire to L4 on Control PCB.

Attach #5 lamp wire to L5 on Control PCB.

Attach #6 lamp wire to L6 on Control PCB.



## 4.1 WIRING DIAGRAM Cont.

### FRONT PANEL:

Ground wire from chassis to Front Panel.

### CONTROL / DISPLAY PCB (HQA, HQE)

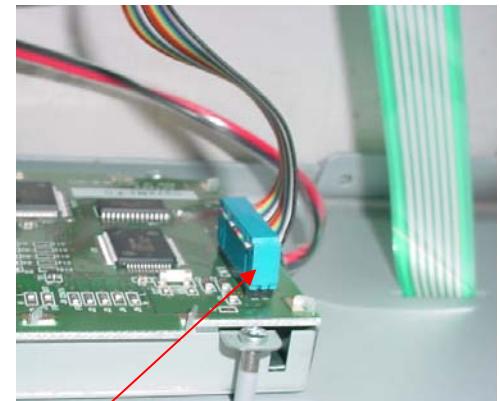
Attach Display PCB backlight power cable to J20

Attach Door switch to J19

Attach RS232 cable to J15

Attach J6 to CN1 on Display (Black wire to pin 1)

Attach membrane switch to J4.



Note: Black wire should be towards the top of the display PCB.

### CONTROL / DISPLAY PCB (JJA, JJE)

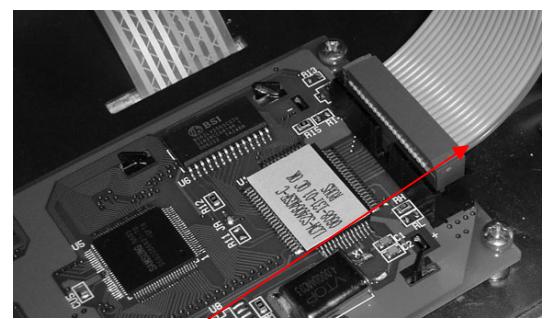
Attach Display PCB backlight power cable to wire assy, and then J7.

Attach Door switch to J19

Attach J6 to CN1 on Display (Red wire to pin 1 (top))

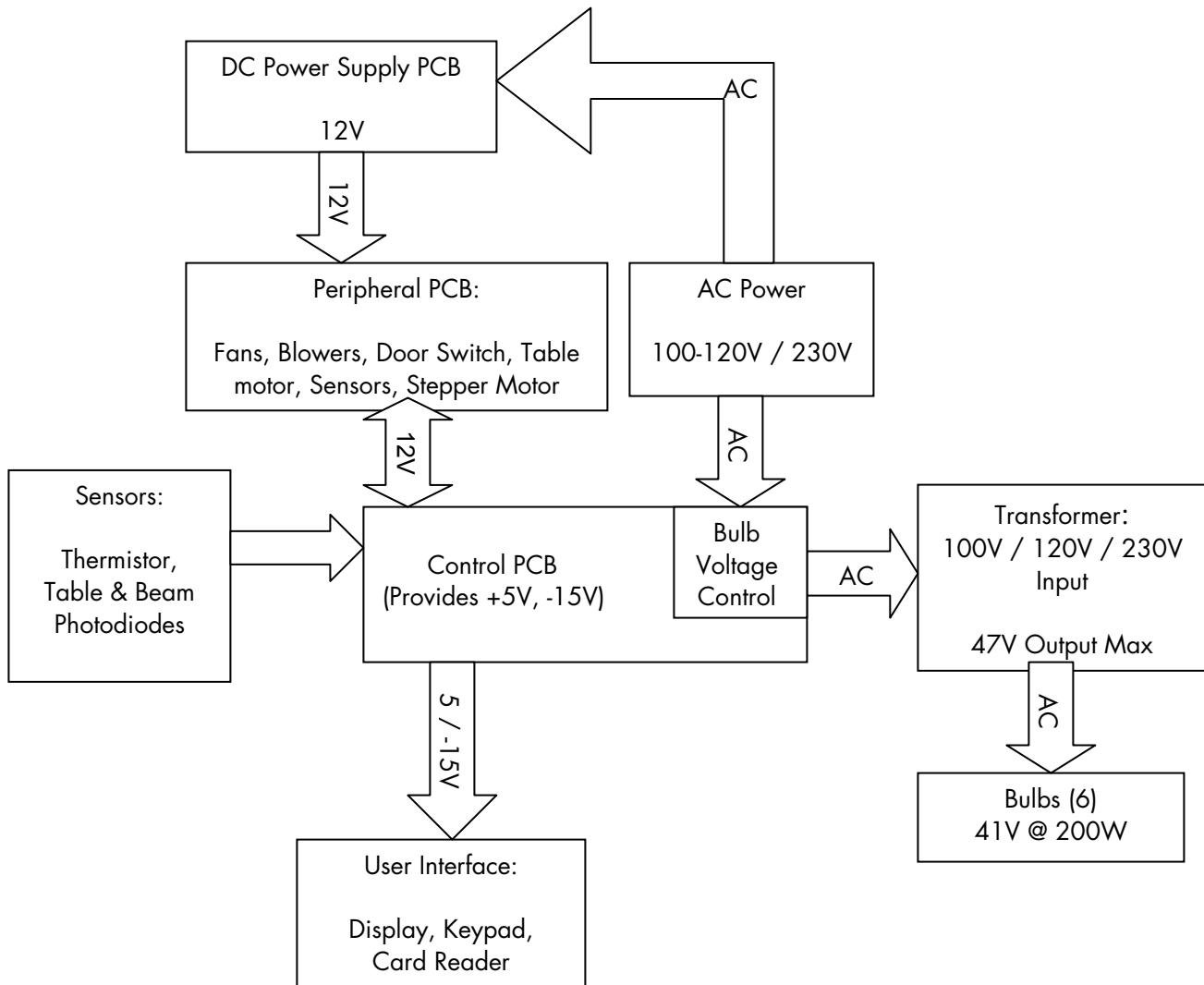
Attach membrane switch to J4.

Connect Card Reader to J22.

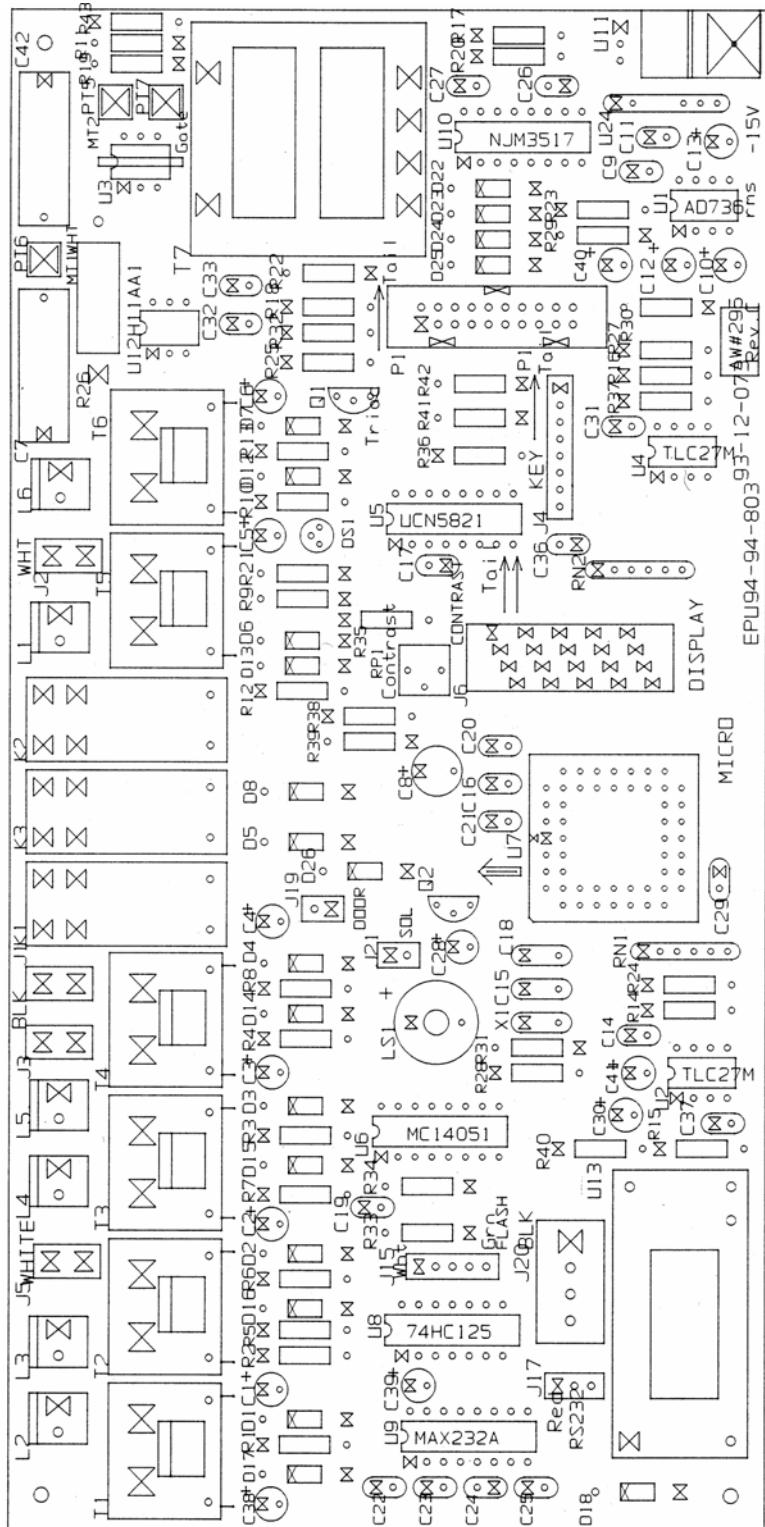


Note: Black wire should be towards the top of the display PCB.

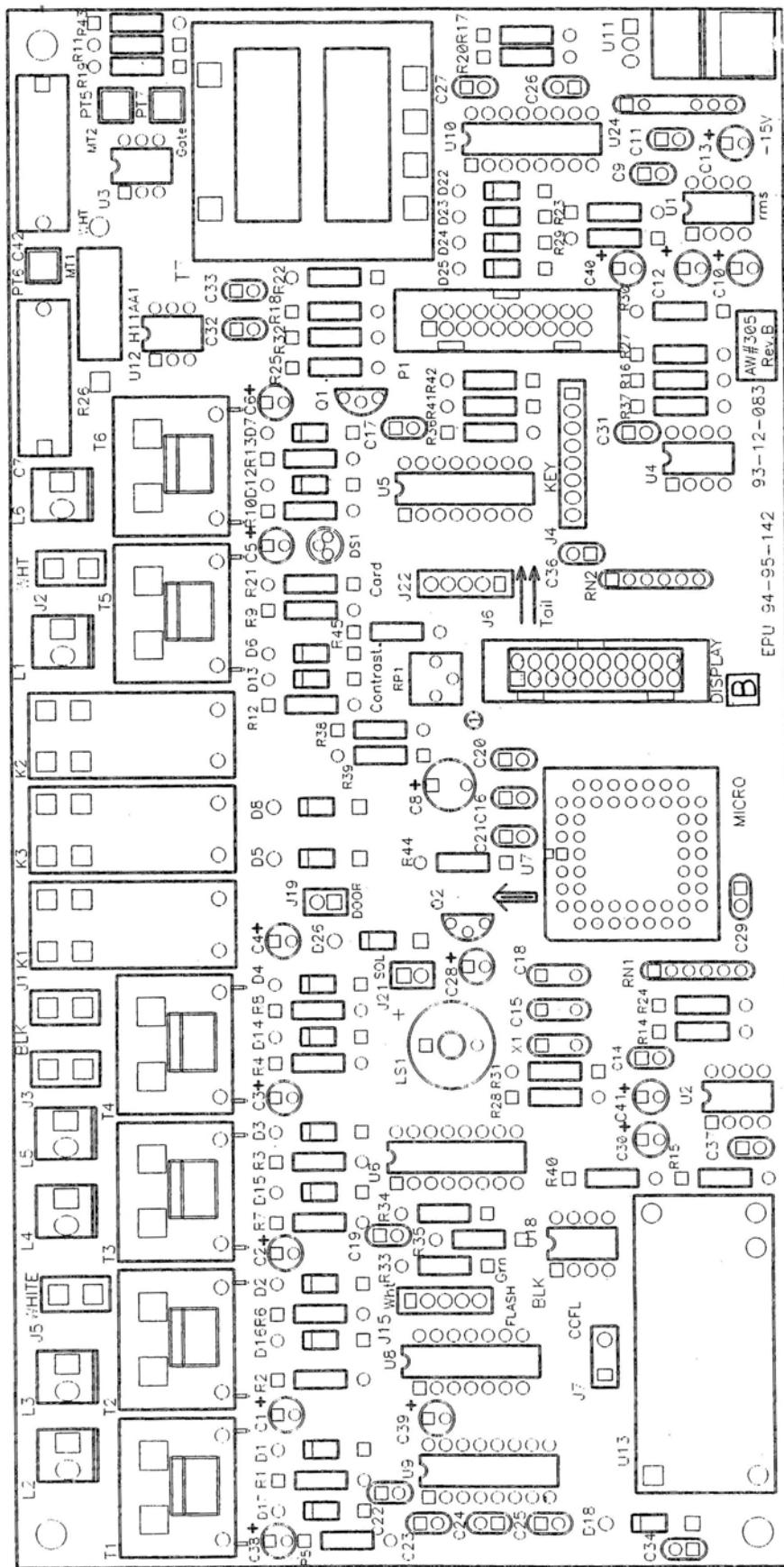
## 4.2 BLOCK DIAGRAM



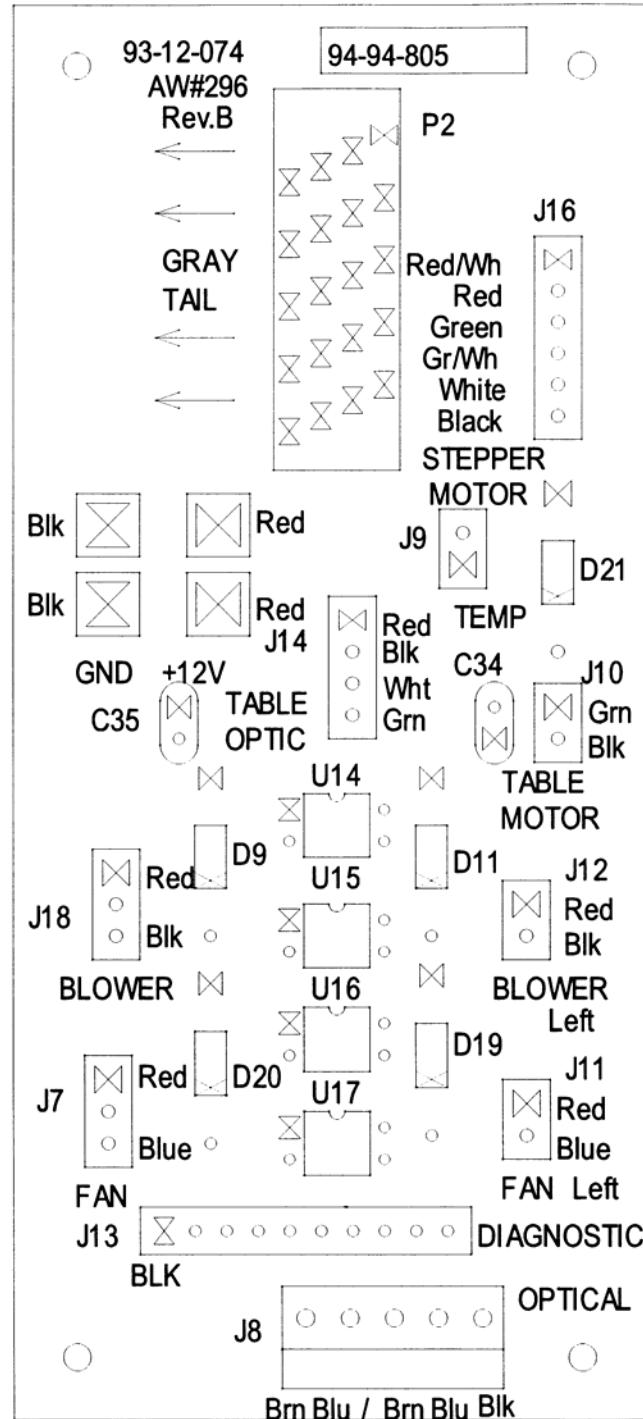
#### 4.3 COMPONENT LAYOUT OF CONTROL PCB (HQA, HQE)



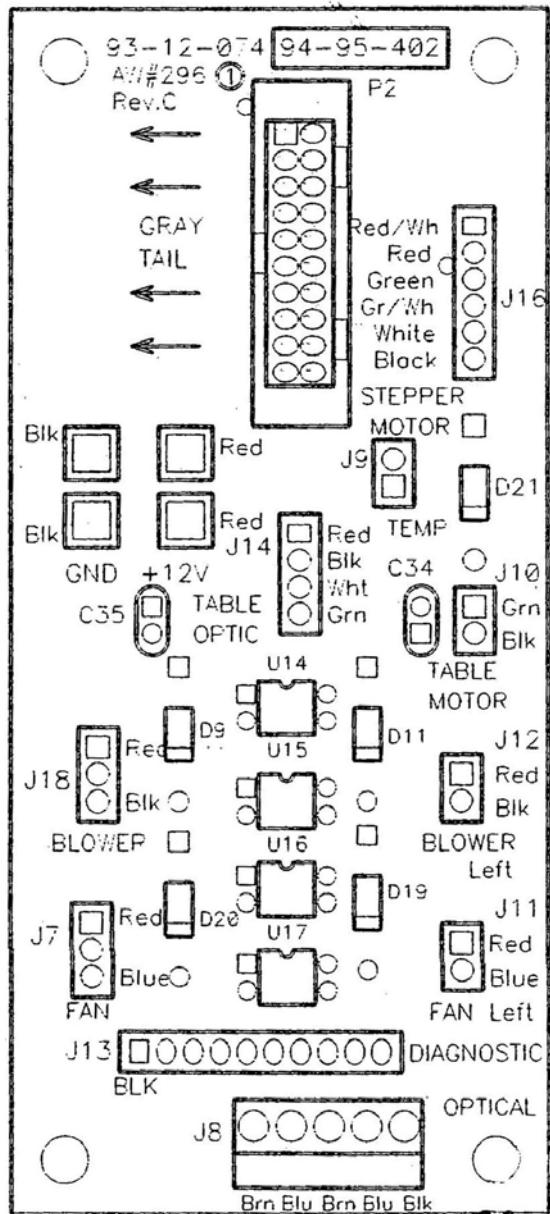
#### 4.3 COMPONENT LAYOUT OF CONTROL PCB (JJA, JJE)



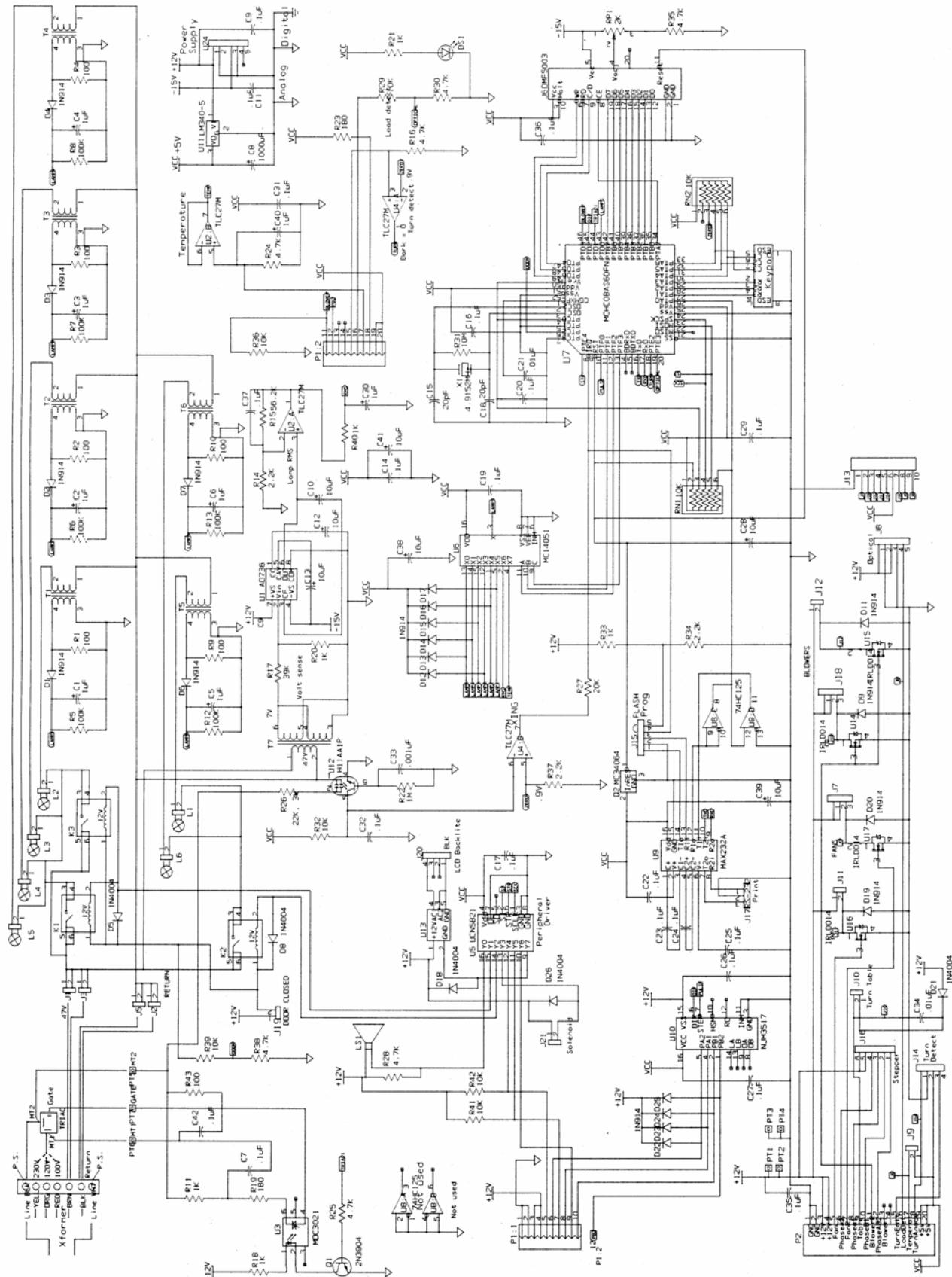
#### 4.4 COMPONENT LAYOUT OF PERIPHERAL PCB (HQA, HQE)



#### 4.4 COMPONENT LAYOUT OF PERIPHERAL PCB (JJA, JJE)

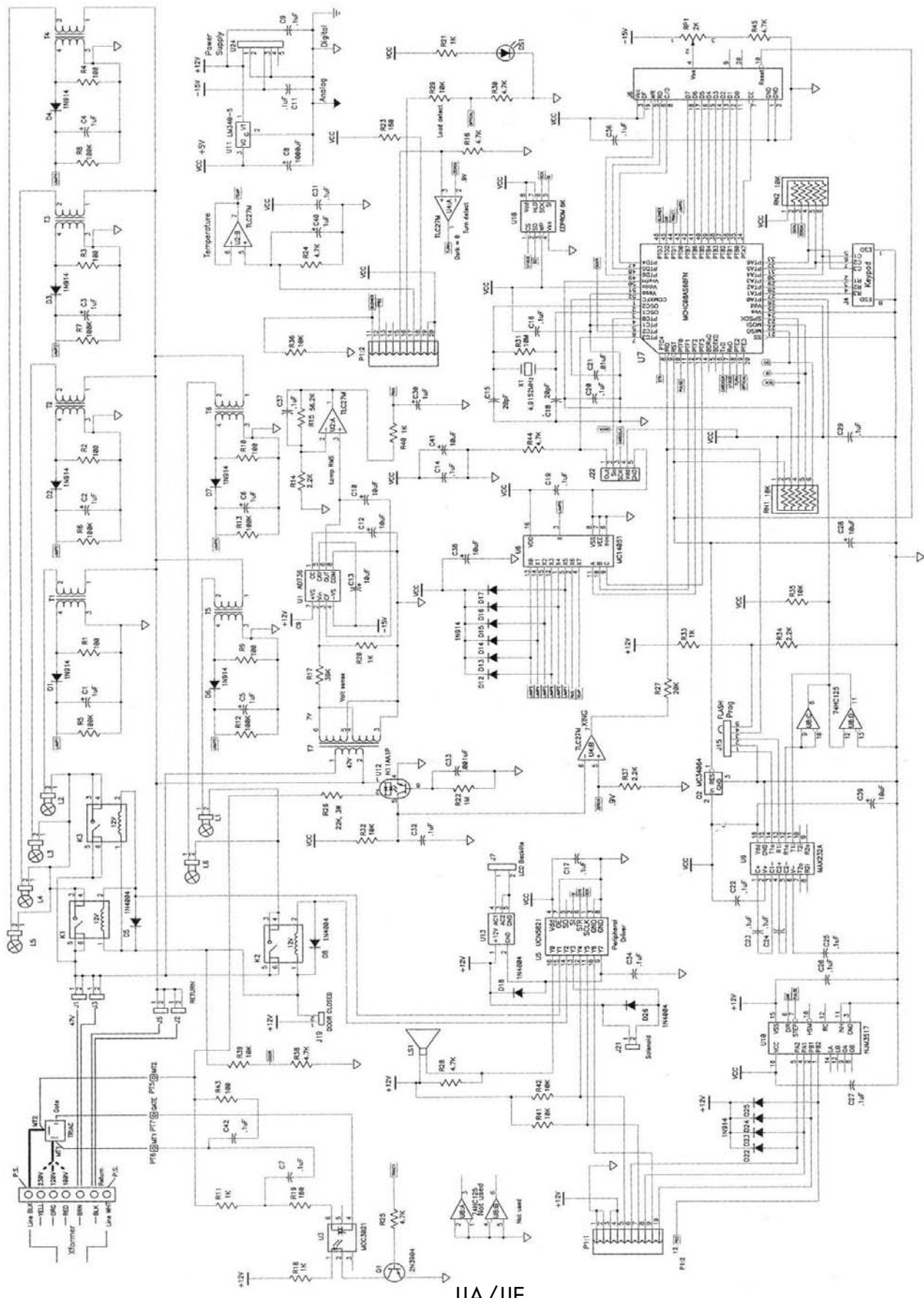


## 4.5 CONTROL AND PERIPHERAL PCB SCHEMATIC



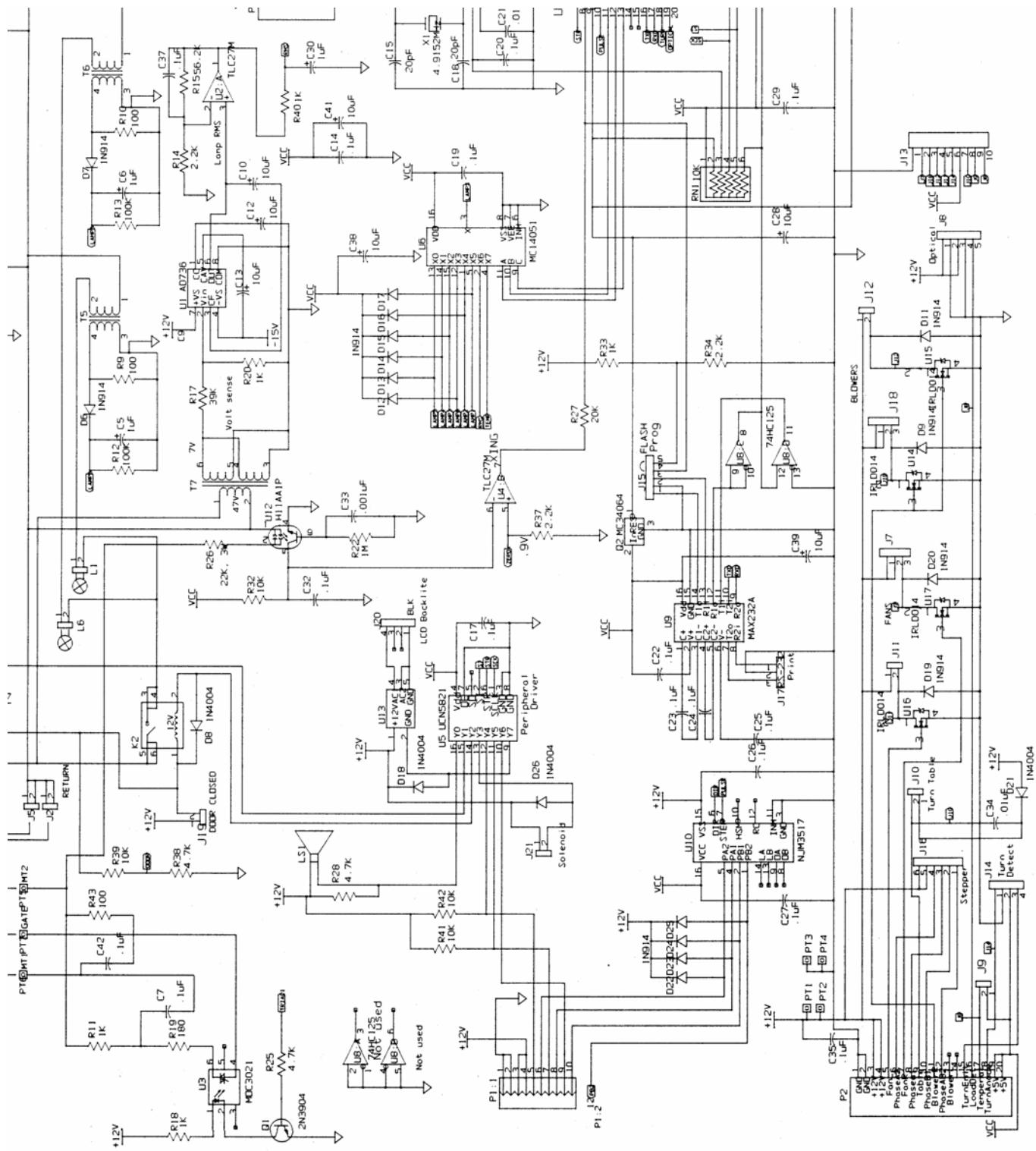
HQA/HQE

## 4.5 CONTROL AND PERIPHERAL PCB SCHEMATIC Cont.



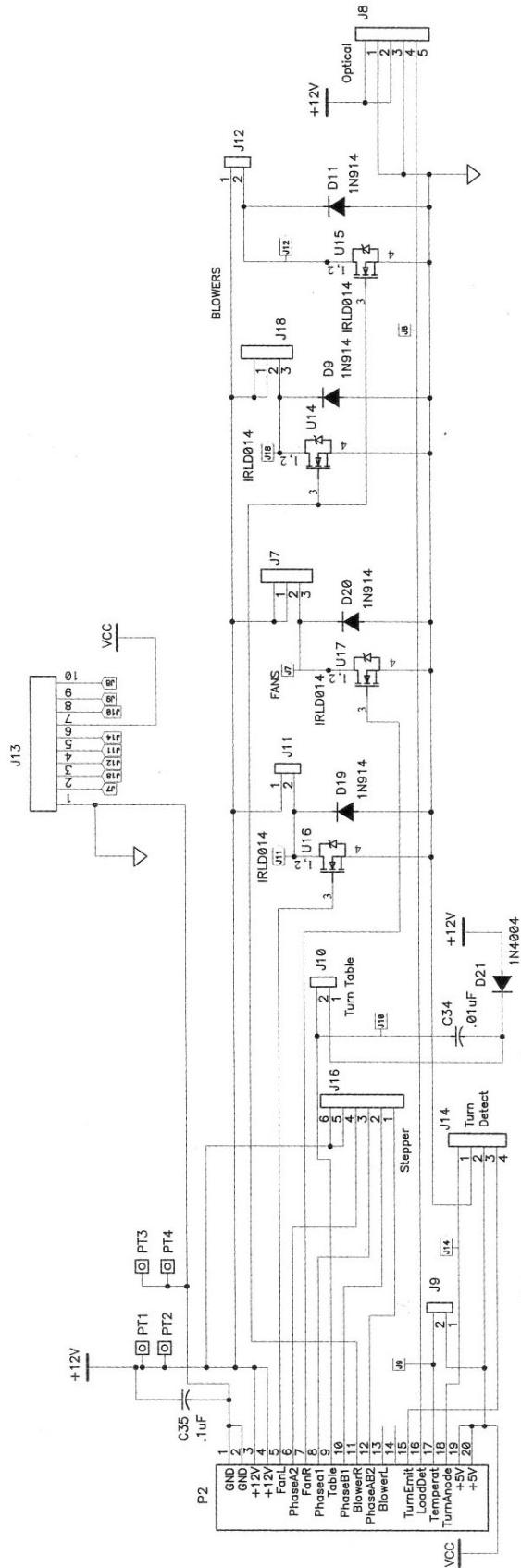
JJA/JJE

## 4.5 CONTROL AND PERIPHERAL PCB SCHEMATIC Cont.



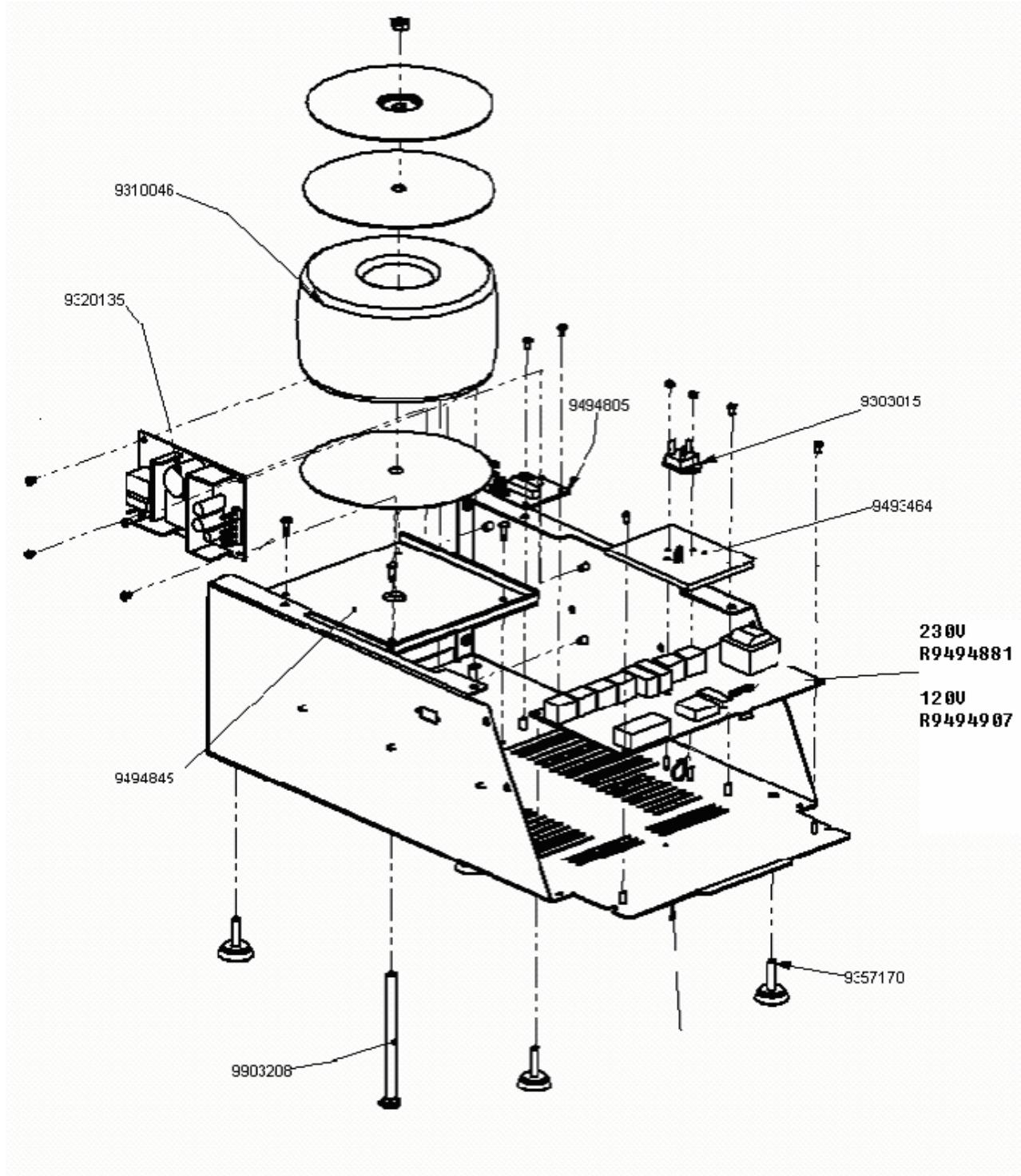
HQA/HQE

## 4.5 CONTROL AND PERIPHERAL PCB SCHEMATIC (CONT.)



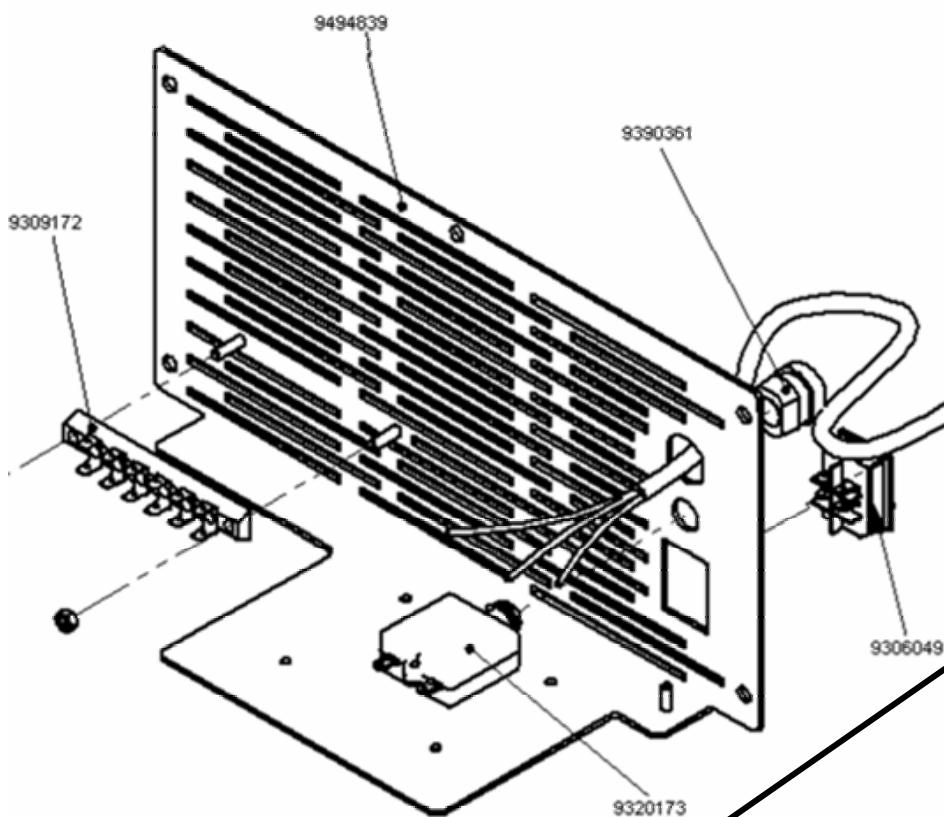
JJA/JJE

## 4.6 EXPLODED VIEWS

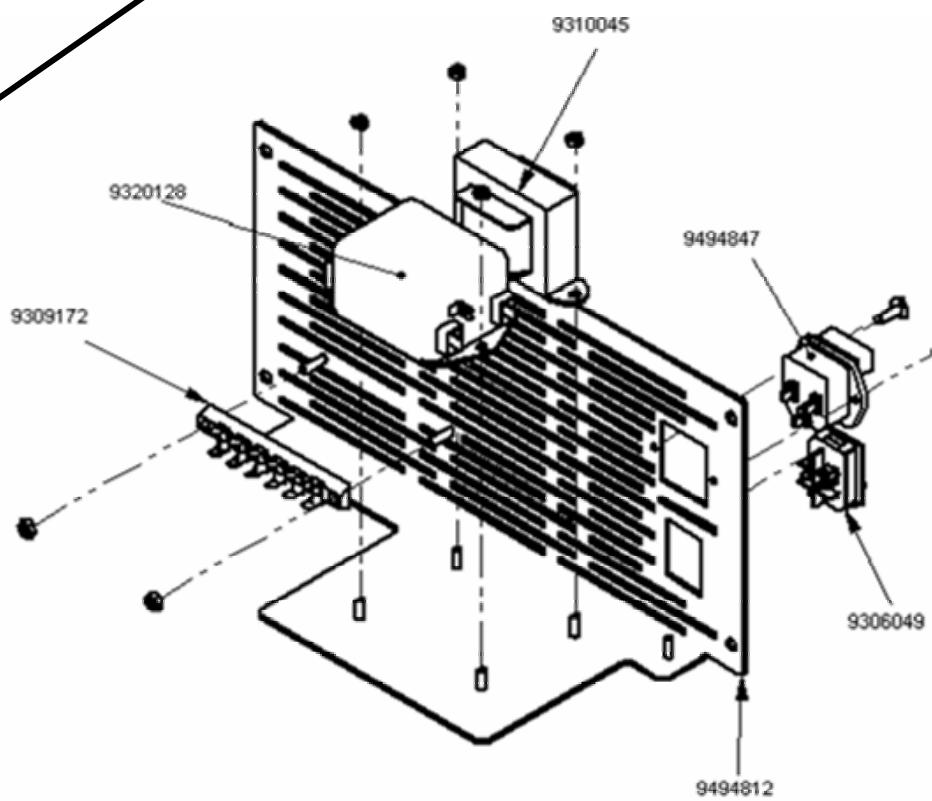


#### 4.6 EXPLODED VIEWS Cont.

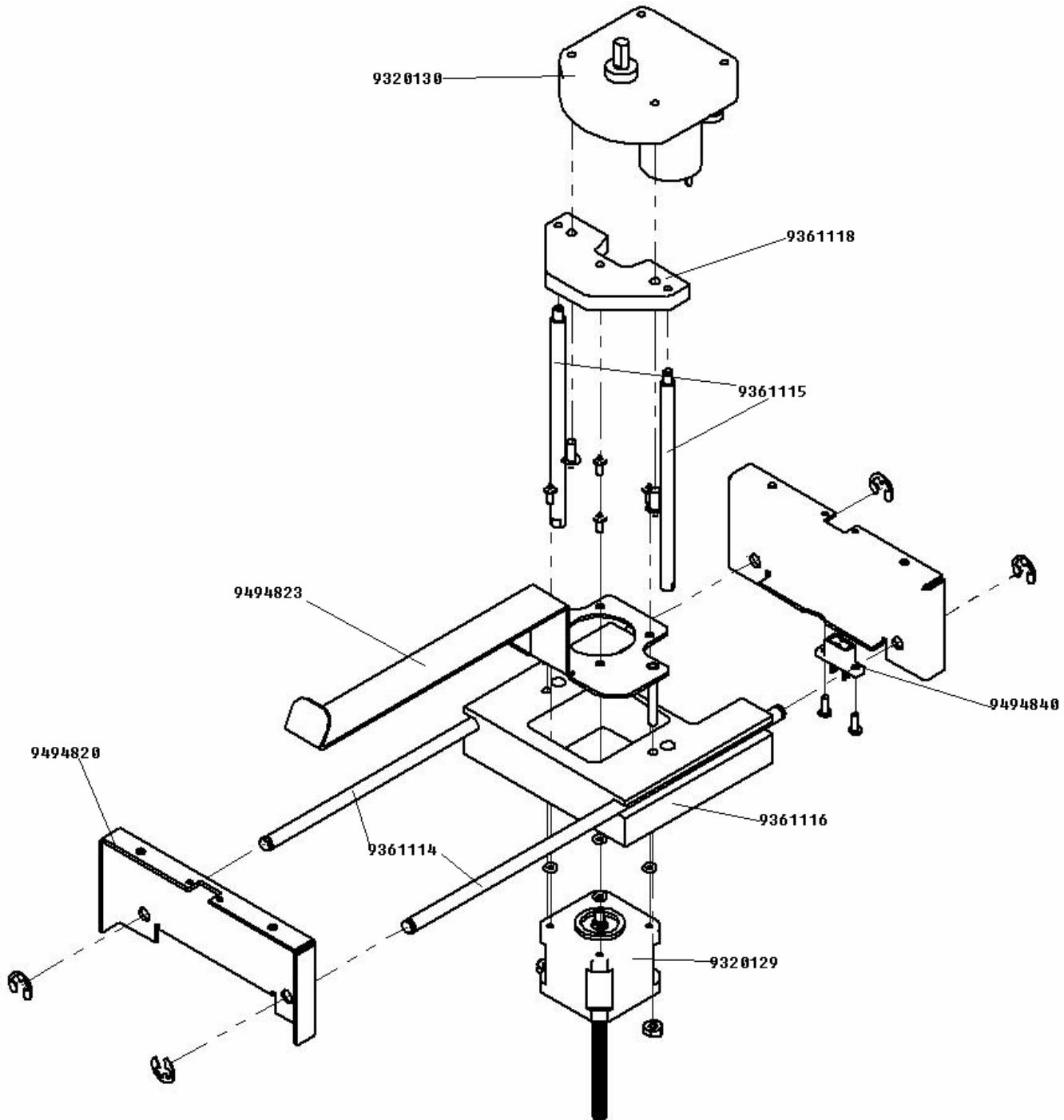
**120V**



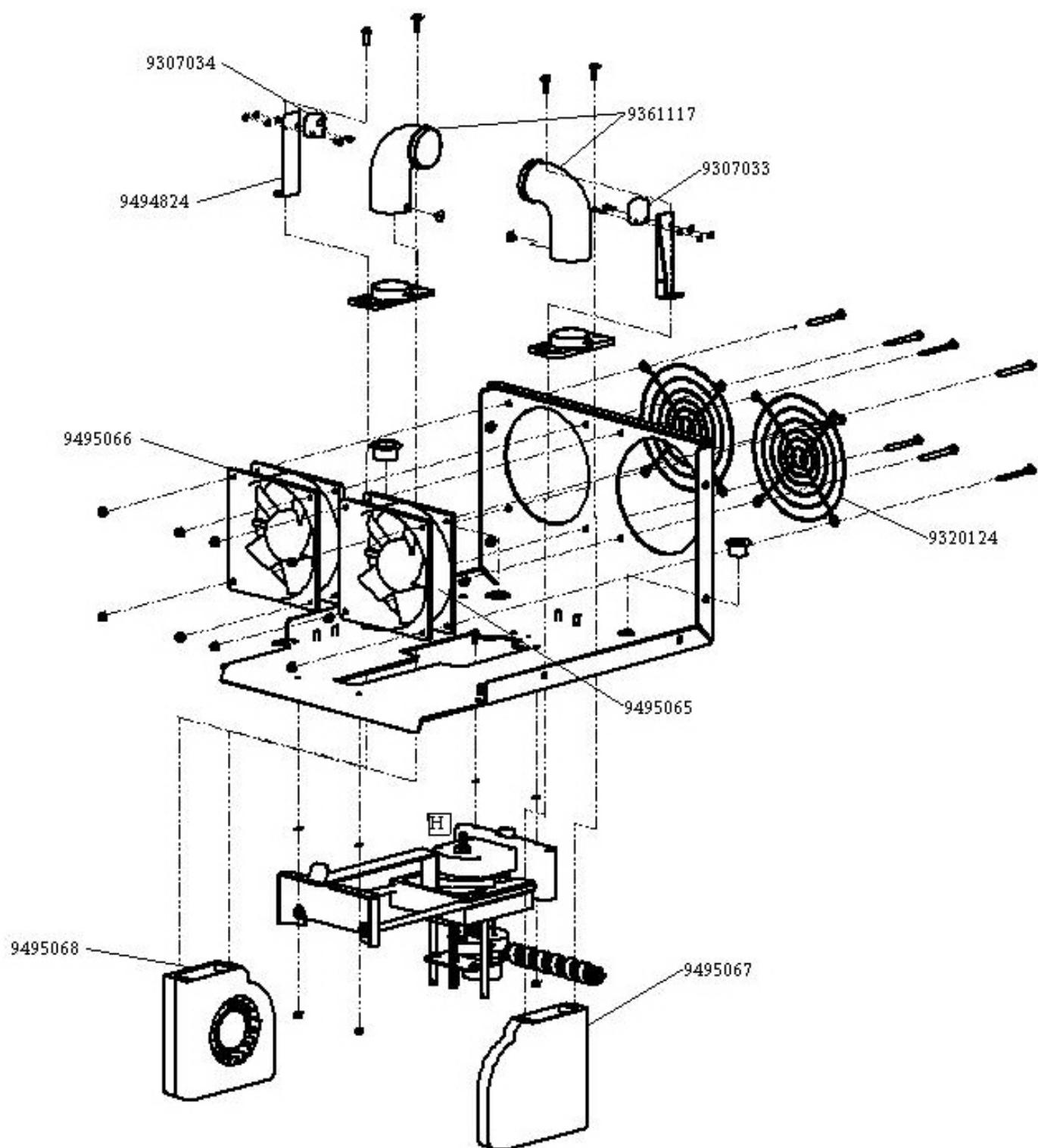
**230V**



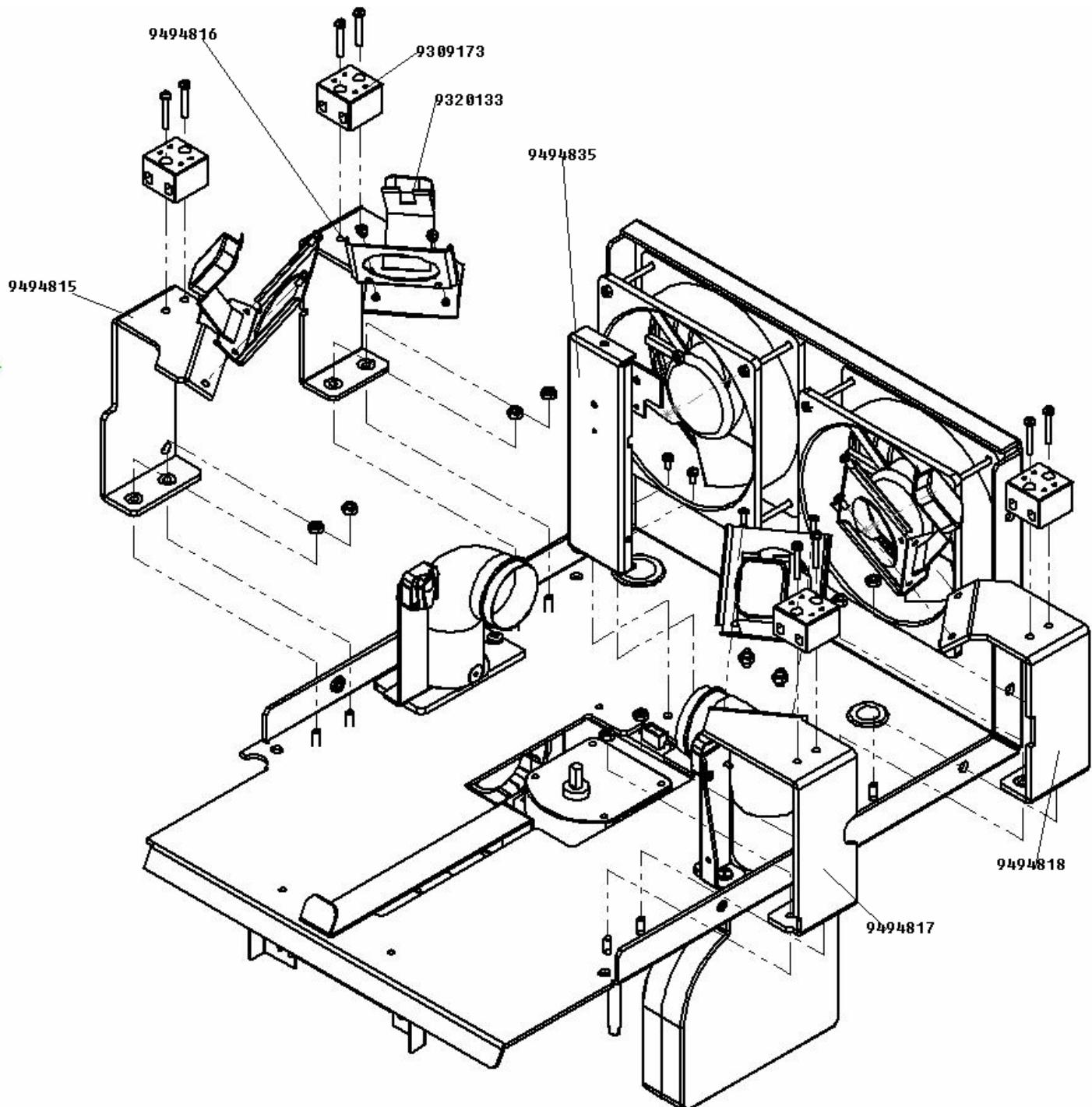
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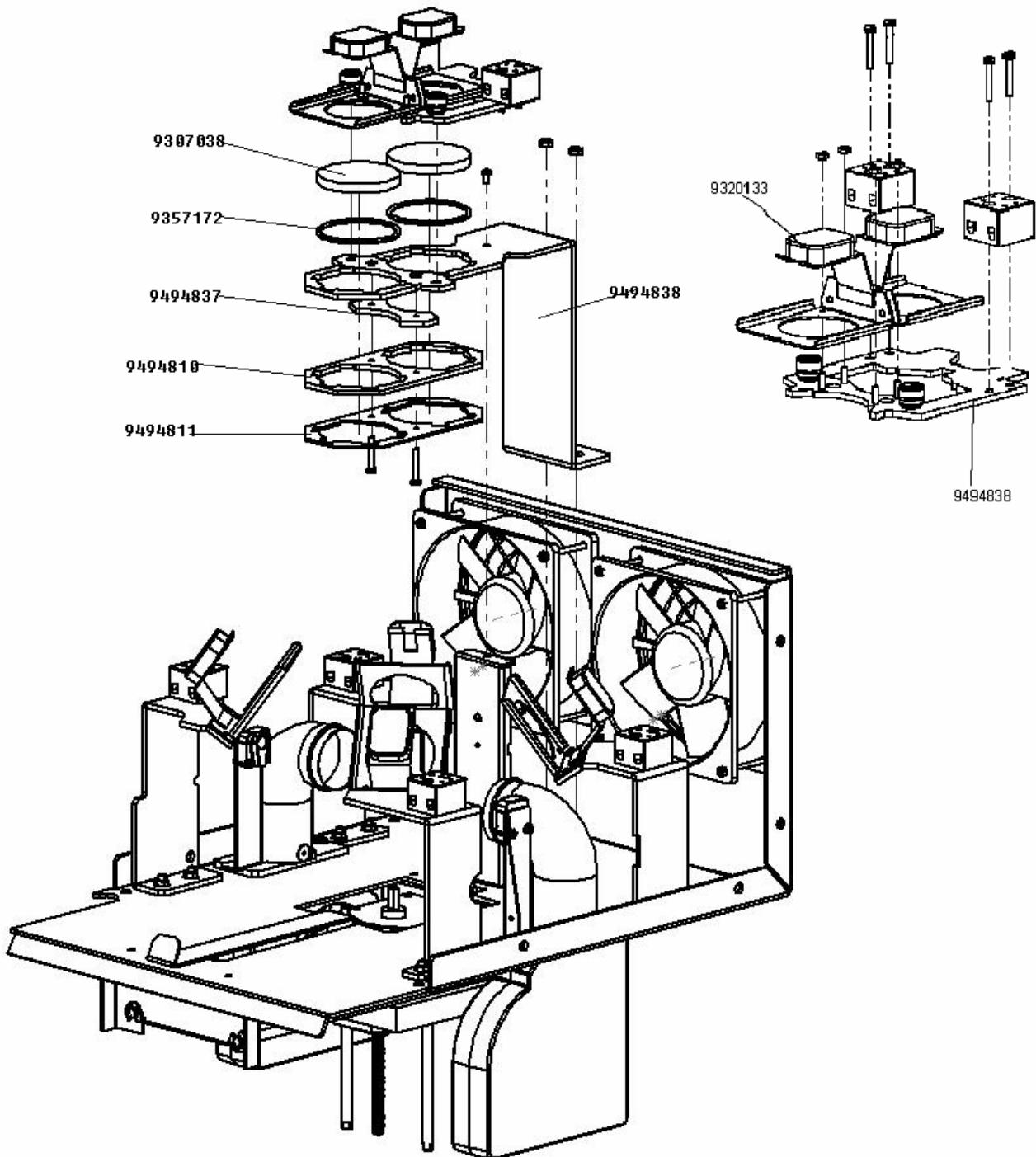
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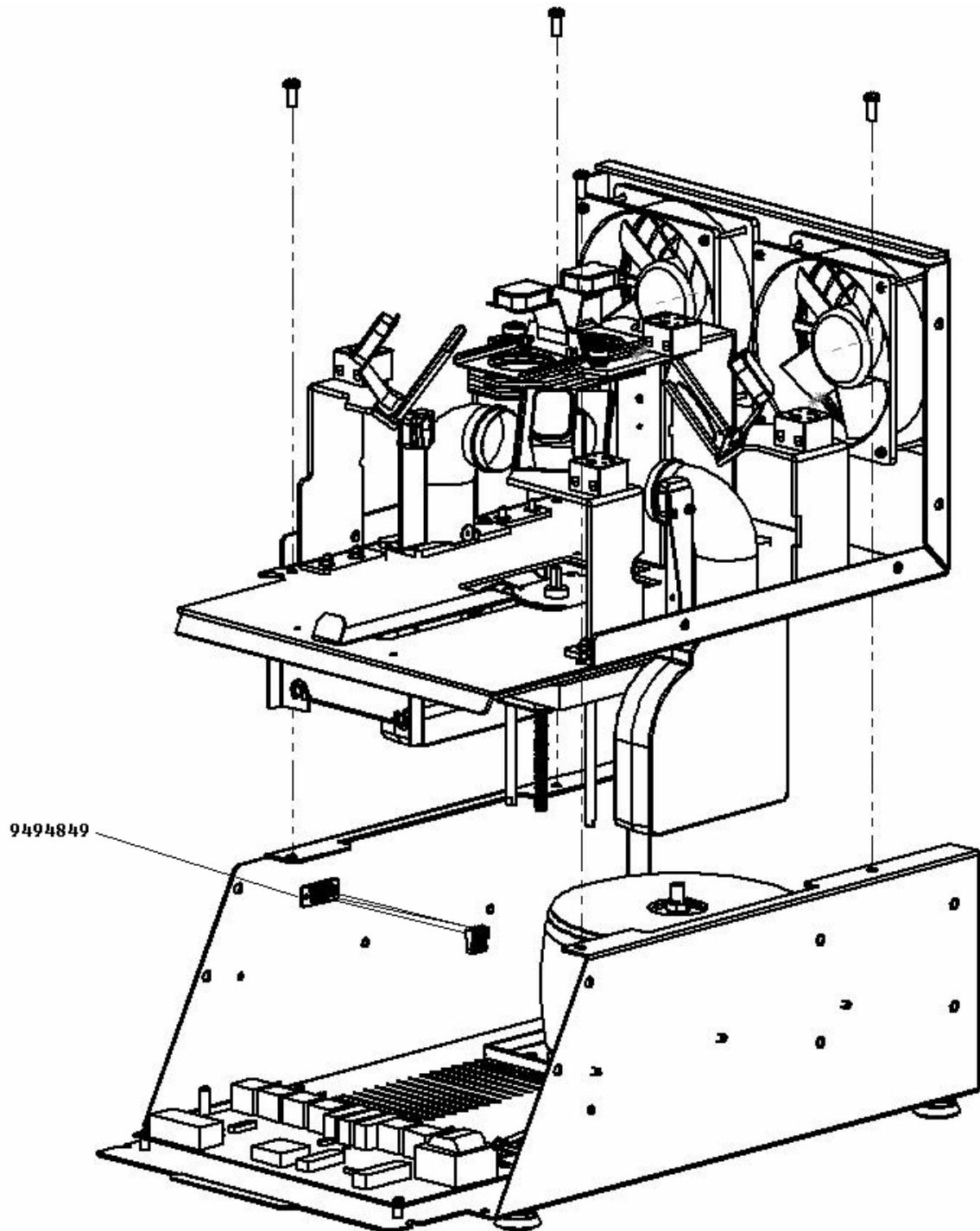
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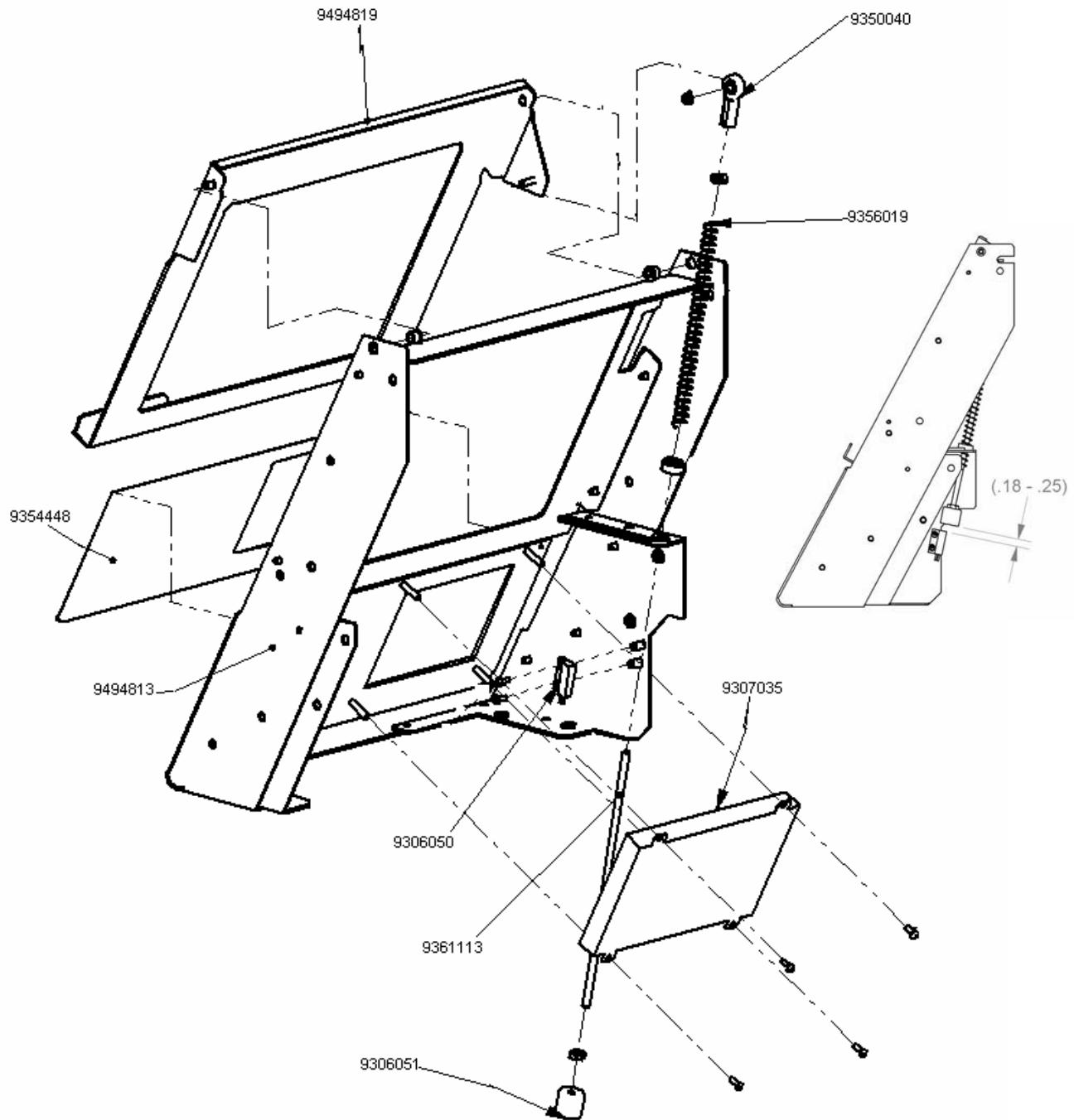
#### 4.6 EXPLODED VIEWS Cont.



#### 4.6 EXPLODED VIEWS Cont.

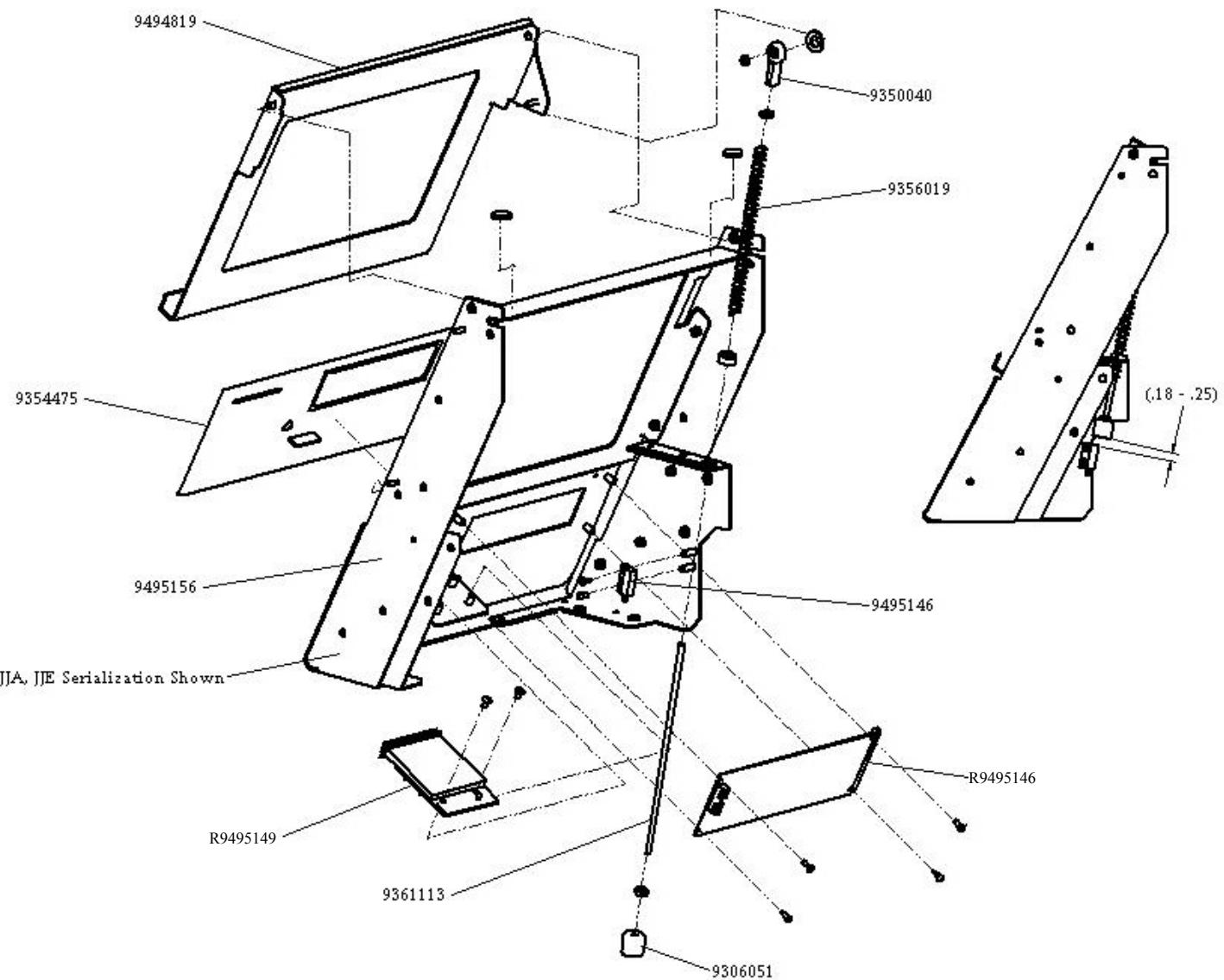


## 4.6 EXPLODED VIEWS Cont.



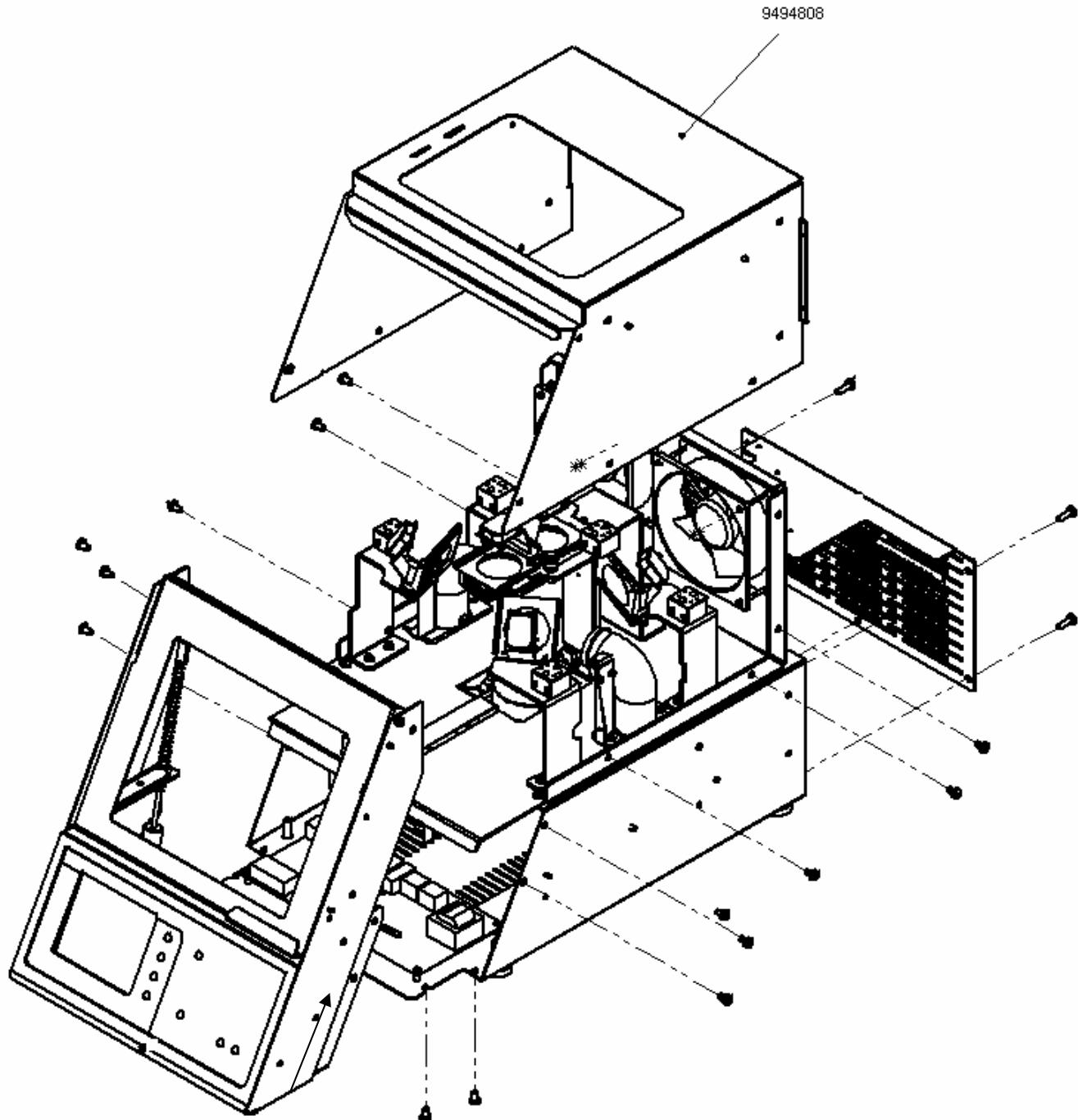
HQA, HQE Serialization Shown

## 4.6 EXPLODED VIEWS Cont.



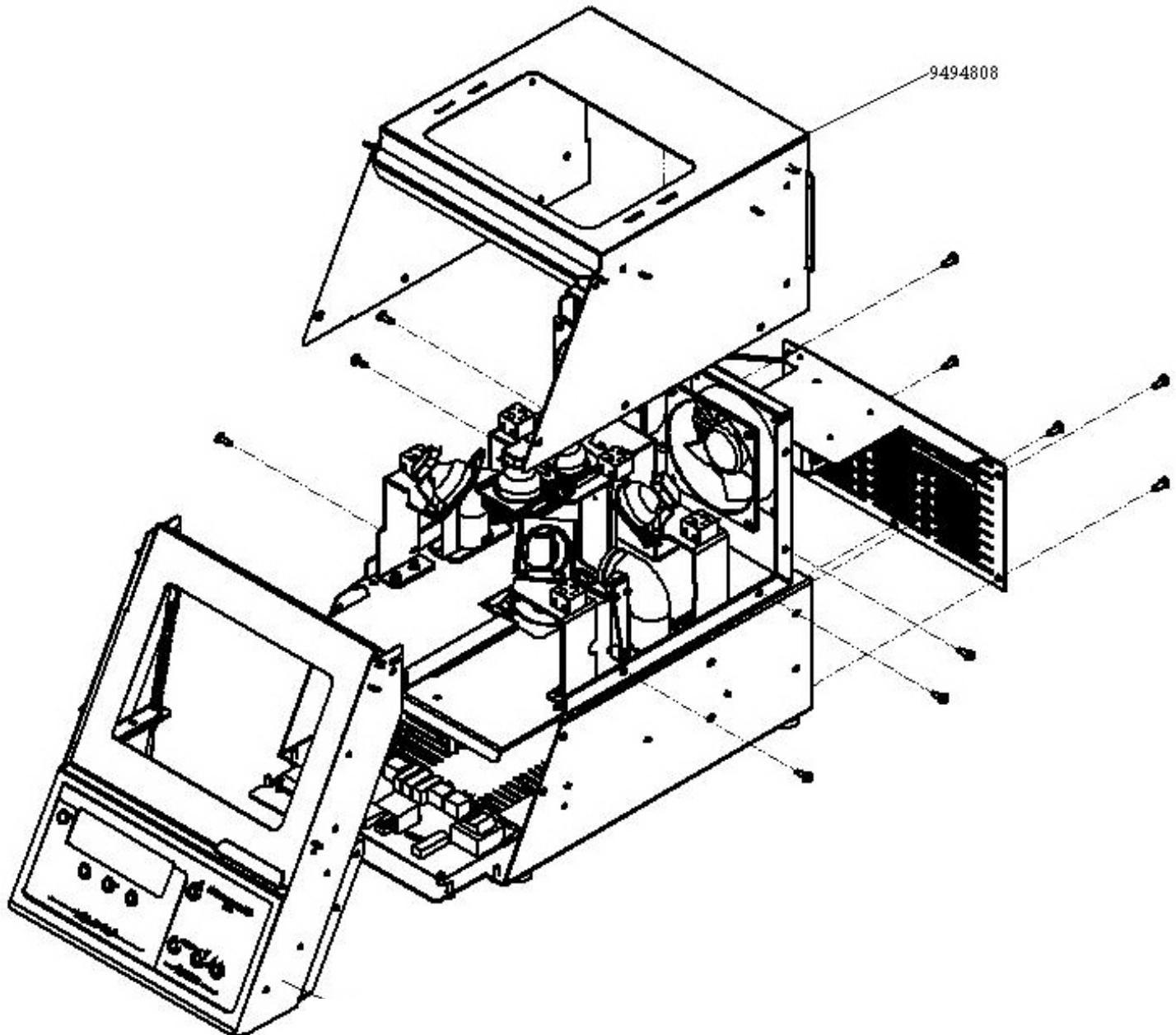
JJA, JJE Serialization Shown

#### 4.6 EXPLODED VIEWS Cont.



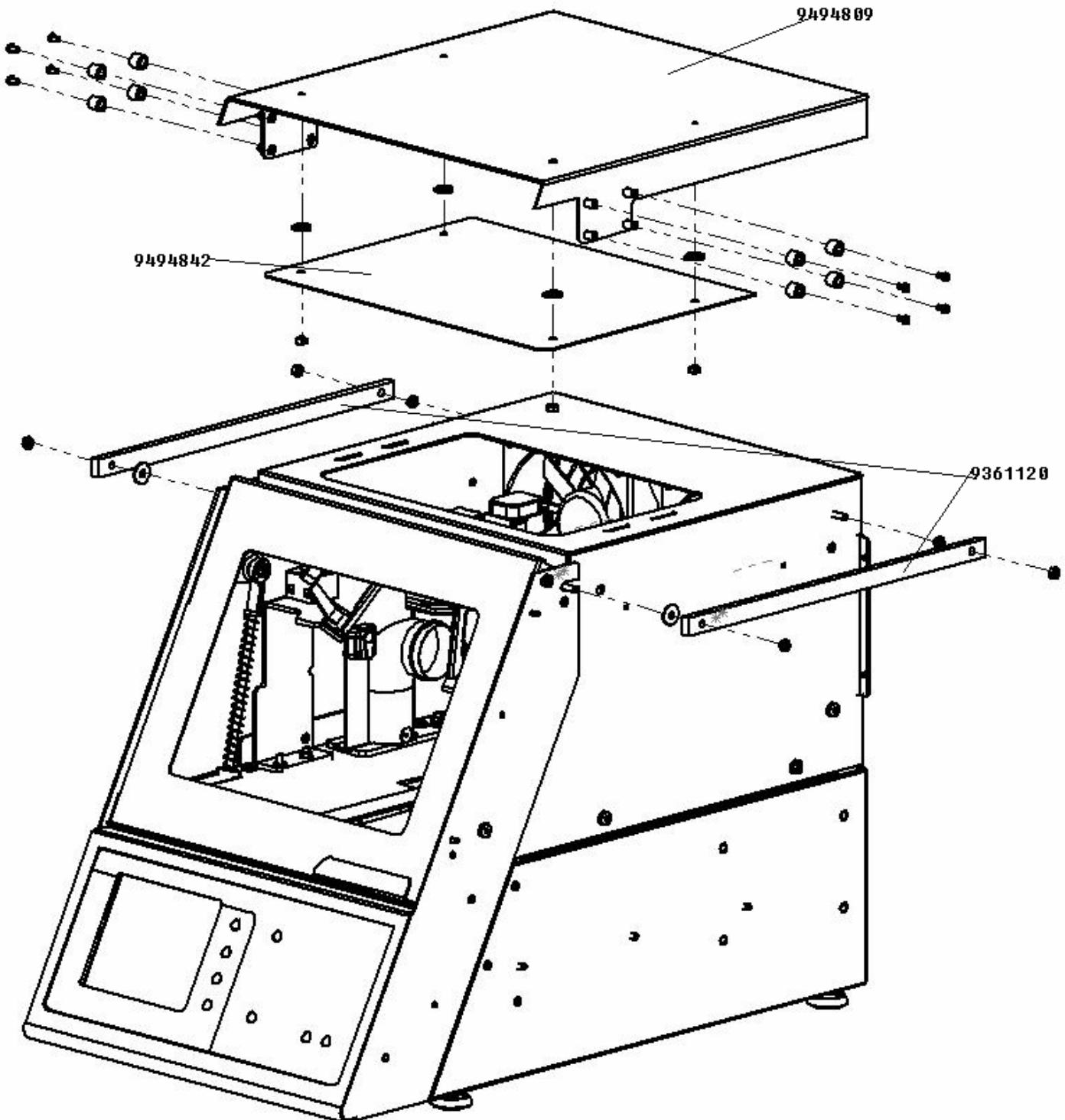
HQA, HQE Serialization Shown

#### 4.6 EXPLODED VIEWS Cont.



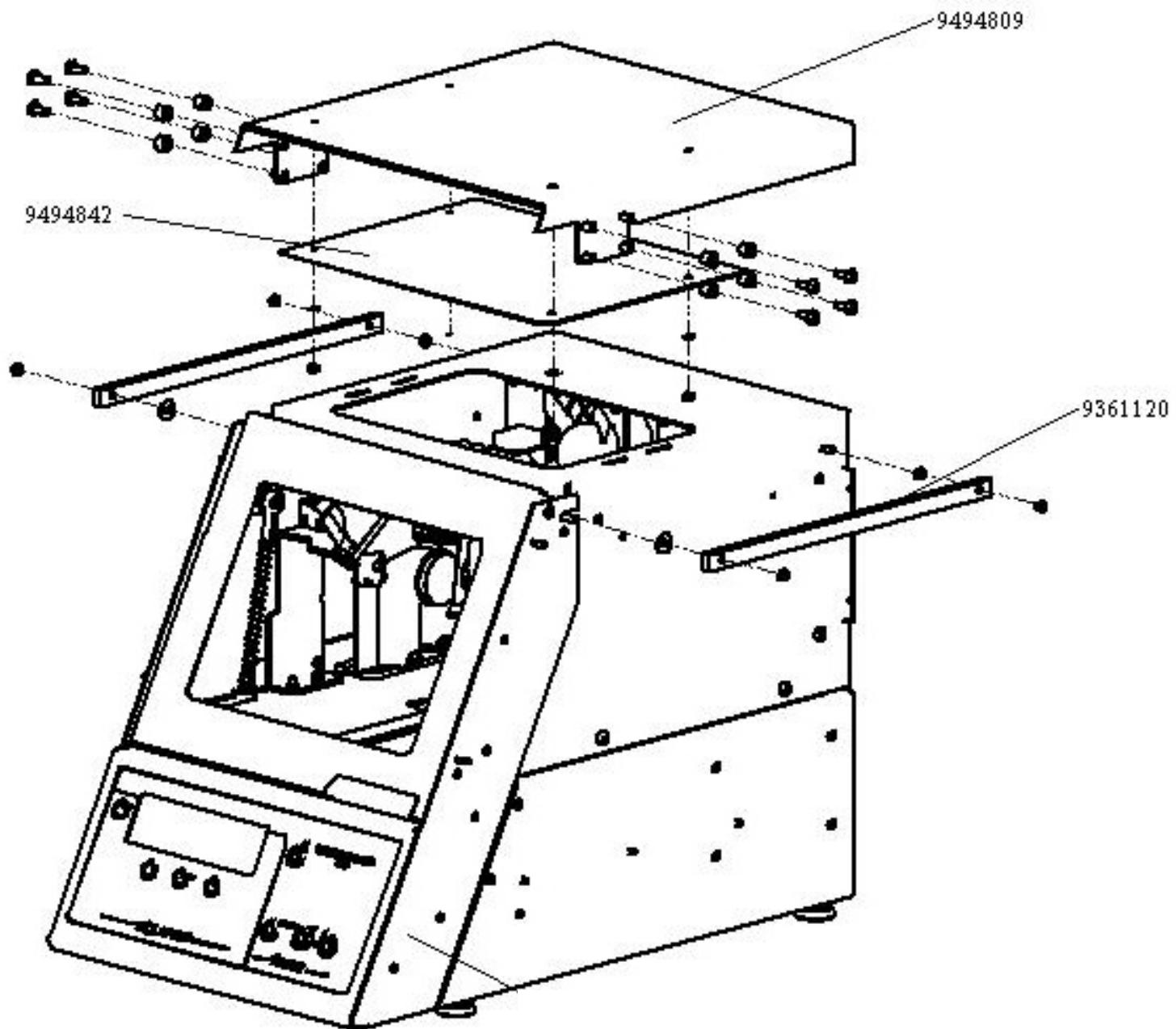
JJA, JJE Serialization Shown

#### 4.6 EXPLODED VIEWS Cont.



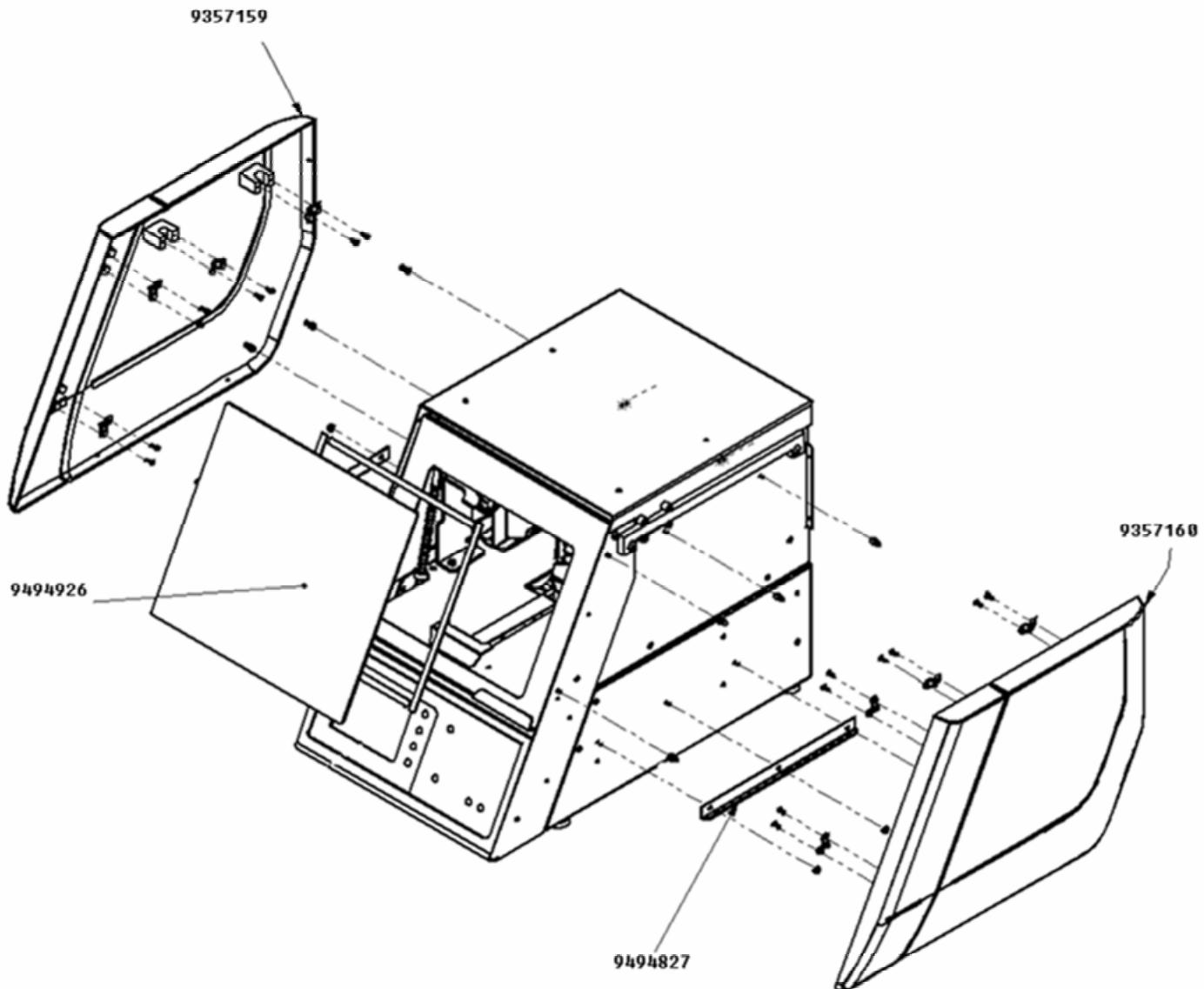
HQA, HQE Serialization Shown

#### 4.6 EXPLODED VIEWS Cont.



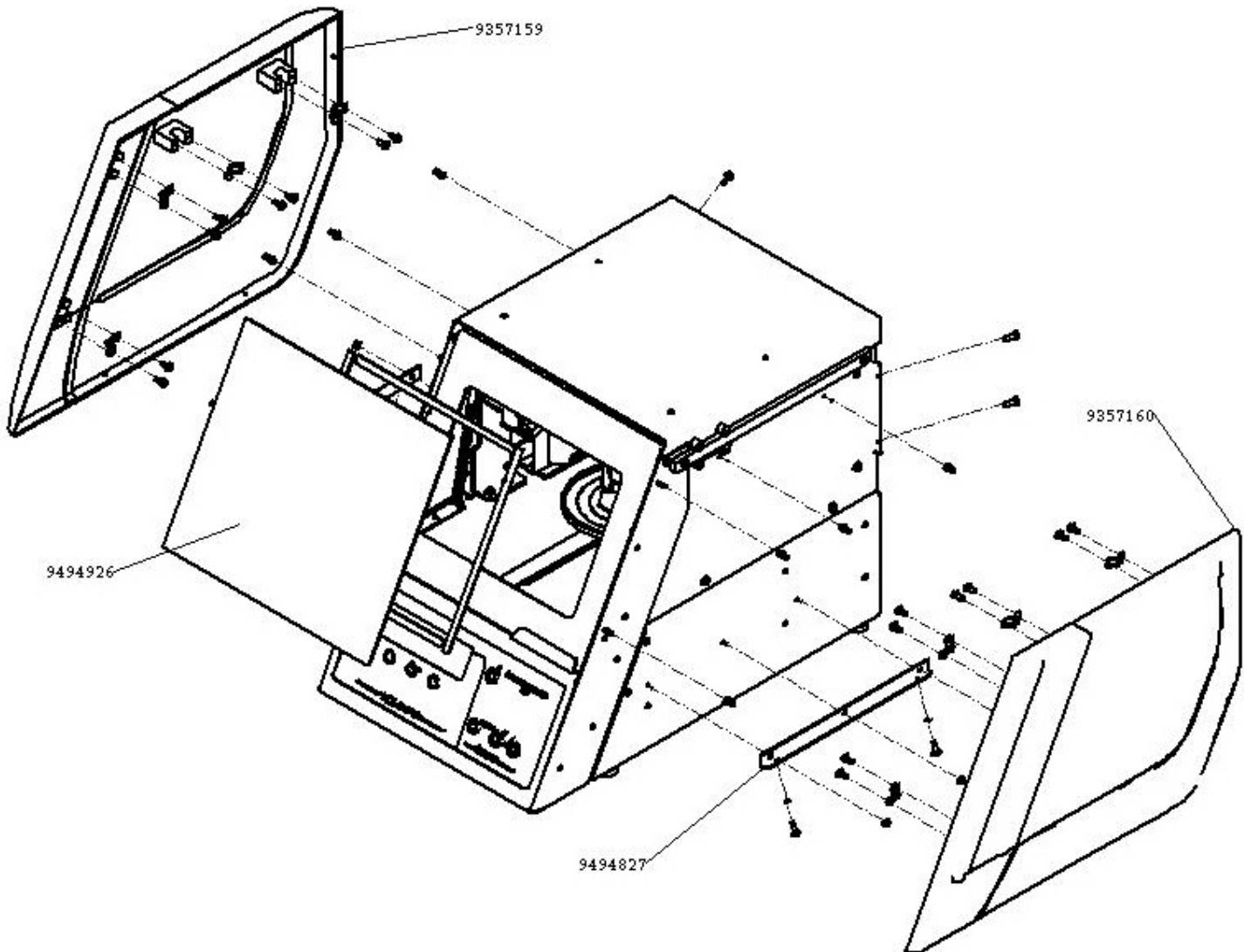
JJA, JJE Serialization Shown

## 4.6 EXPLODED VIEWS Cont.



HQA, HQE Serialization Shown

## 4.6 EXPLODED VIEWS Cont.



JJA, JJE Serialization Shown

## 5.1 ERROR MESSAGES AND TROUBLESHOOTING

Service of this equipment should be done only by qualified personnel. Failure to comply may result in personnel injury and/or property damage.

### NO TABLE ROTATION OR TABLE IS NOT IN THE DOWN POSITION AT THE START OF THE PROCESS.

Error  
#1  
Turntable  
ESC - to continue

Screen Shot:  
Serialization  
HQA & HQE

Error  
#1  
Turntable  
ESC - continue

Screen Shot:  
Serialization  
JJA & JJE

#### ERROR 1

Indicates table rotation was not detected, or table is not in the down position at start of menu.

Make sure the table handle is pushed completely forward and the lift is in the DOWN position, then push ESC. If the lift is still elevated, turn OFF the unit, open the door and gently push the table down to the stop position. Turn the unit ON.

*Call DENTSPLY service department if problem persists.*

### OVER TEMPERATURE

Error  
#2  
Temperature  
See Manual

Screen Shot:  
Serialization  
HQA & HQE

Error  
#2  
Temperature  
See Manual

Screen Shot:  
Serialization  
JJA & JJE

#### ERROR 2

The temperature of the unit has exceeded the maximum temperature allowed.

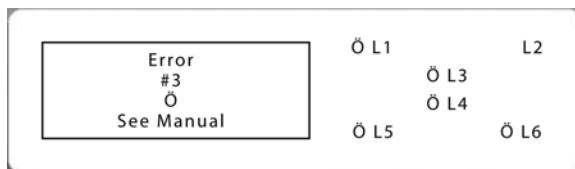
- Turn unit off then on.
- Check blower operation.
- Check fan operation.

*Call DENTSPLY service department if problem persists.*

### BULB FAILURE

Error  
#3  
See Manual

Screen Shot:  
Serialization  
HQA & HQE



Screen Shot:  
Serialization  
JJA & JJE

#### ERROR 3

One or more bulbs failed.

- The bulb layout seen on the display is the same as arranged in the unit, as viewed from the top.
- The failed bulb will blink on the display.
- Follow the bulb replacement procedure found earlier in the manual.

*Call DENTSPLY service department if problem persists.*

## 5.1 ERROR MESSAGES AND TROUBLESHOOTING Cont.

### MANUAL ABORT/DOOR OPENED DURING PROCESS (HQA & HQE Only)



Screen Shot:  
Serialization  
HQA & HQE

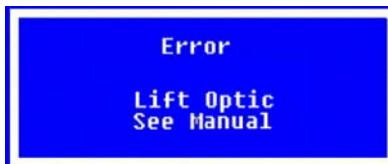
### ERROR 4 (HQA & HQE Only)

The program was manually aborted or the door was opened during a process.

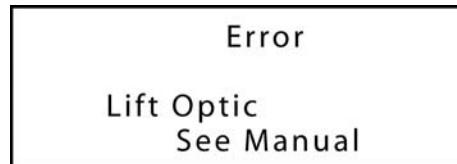
The unit will cool after the manual abort.

Cooling can be stopped by pushing the ESC key.

### LIFT OPTICS



Screen Shot:  
Serialization  
HQA & HQE



Screen Shot:  
Serialization  
JJA & JJE

The horizontal light beam was not detected to stop lift.

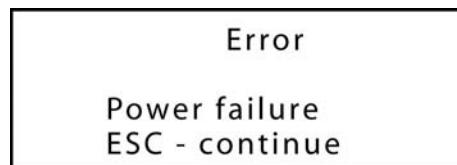
Make sure that nothing is obstructing the lift and the lift is in the down position.

*Call DENTSPLY service department if problem persists.*

### POWER FAILURE



Screen Shot:  
Serialization  
HQA & HQE



Screen Shot:  
Serialization  
JJA & JJE

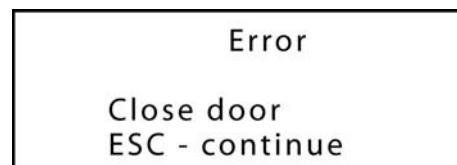
AC line power was lost during a process.

Push ESC to return to the main menu.

### CLOSE DOOR



Screen Shot:  
Serialization  
HQA & HQE



Screen Shot:  
Serialization  
JJA & JJE

START/STOP was pushed with the door open.

Once the door is closed the display will return to the process menu screen.

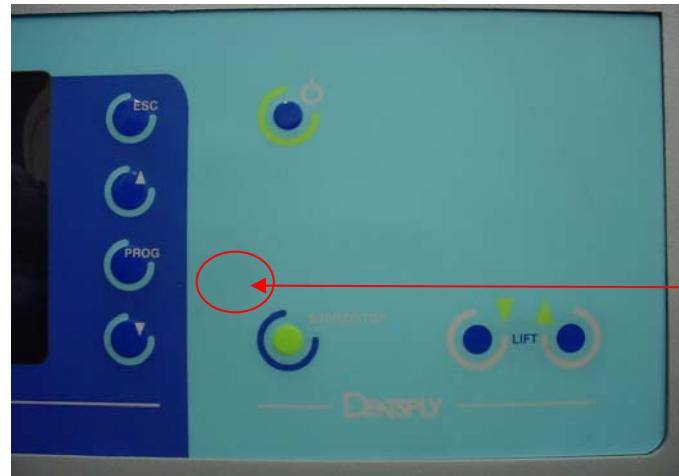
If the door is closed, the door switch may be malfunctioning,

*Call DENTSPLY service department if problem persists.*

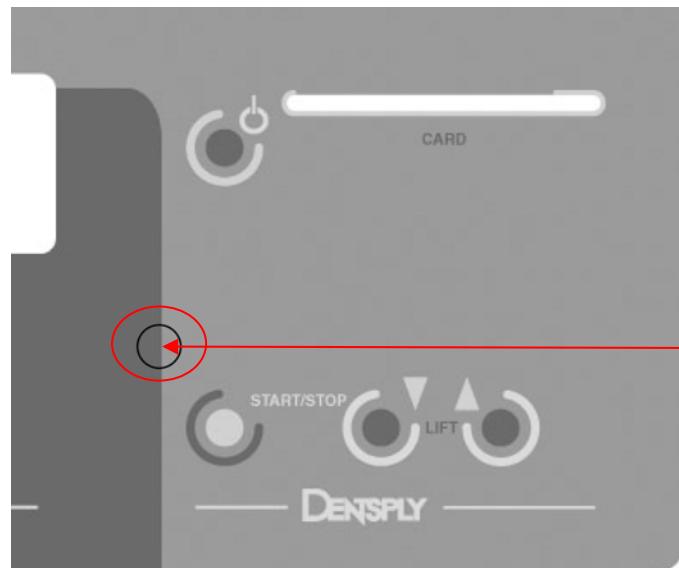
## 6.1 LAMP VOLTAGE CALIBRATION

Loosen top cover screws, slide top cover back to expose bulbs

Attach True RMS meter to Lamp 5 terminal block wires – wires should be bare on one side of terminal block



(Serialization HQA & HQE)

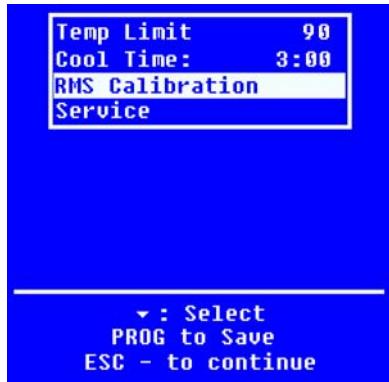


(Serialization JJA & JJE)

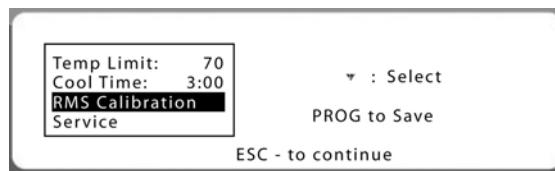
Push the Hidden key on the display

## 6.1 LAMP VOLTAGE CALIBRATION Cont.

Use Down arrow key to select RMS Calibration Function



Screen Shot:  
Serialization  
HQA & HQE



Screen Shot:  
Serialization  
JJA & JJE

Push Prog key to start the voltage calibration process.

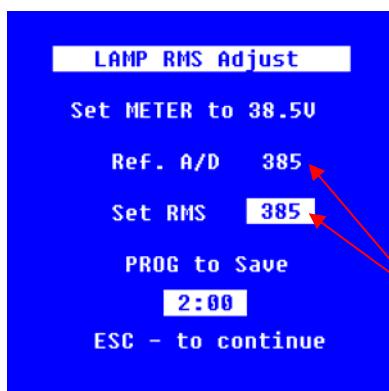
Use the arrow keys to adjust the voltage on the TURE RMS meter to 38.5V +/- 0.150 V  
REF A/D and SET RMS should be equal values.

Make another adjustment if necessary.

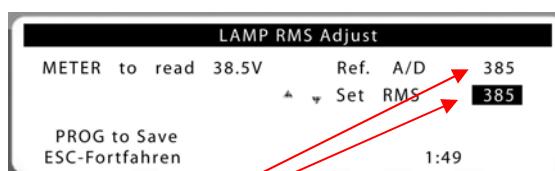
REF A/D and SET RMS should be equal values.

When the meter reads 38.5V, Let stabilize, press **PROG** key to save new value.

**NOTE: Make sure meter voltage does not exceed 41V rms.**



Screen Shot:  
Serialization  
HQA & HQE



Screen Shot:  
Serialization  
JJA & JJE

These two  
values should be  
equal before  
reading True  
RMS Meter.

## 6.2 CONTRAST ADJUSTMENT

To adjust the display contrast, the front panel screws and plastic side panels must be removed, see chapter 8.3.

Pull front panel away from base assy., use fixture H-529 to support front panel, ensuring that all cables stay connected between front panel and PCB.

Open Door.

Power unit up wait until display lights up.

Adjust contrast using RP1 for best clarity and viewing. Highlighted area should be WHITE.

Once adjusted, turn off power, check connections are fully seated.

Attach front panel to base, carefully. Make sure the front panel does not hit circuit board components while installing.

## 7.1 FUCTIONAL TEST

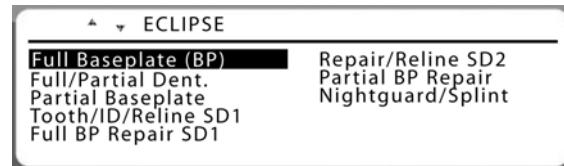
Open the door

Power unit up until display lights up. Unit should bypass self test

Close the door. Unit should display EPU II Process Menu seen below.



Screen Shot:  
Serialization  
HQA & HQE

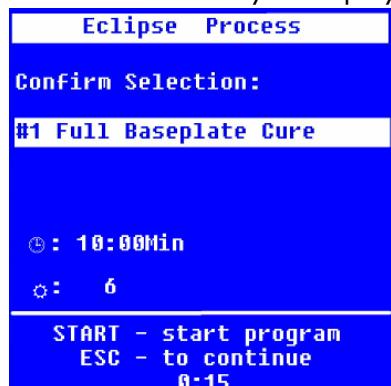


Screen Shot:  
Serialization  
JJA & JJE

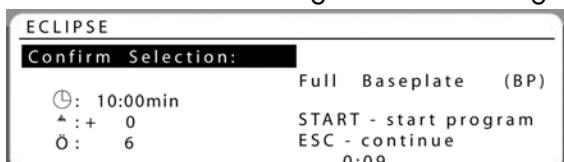
Push the Cursor **DOWN** key until the display scrolls to process #8.

Push the Cursor **UP** key until the display scrolls to process #1.

Push the **PROG** key to display process #1 screen. Screen should change to the following:



Screen Shot:  
Serialization  
HQA & HQE

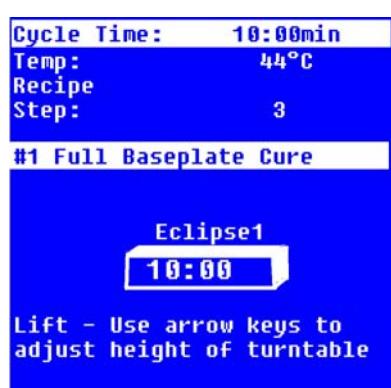


Screen Shot:  
Serialization  
JJA & JJE

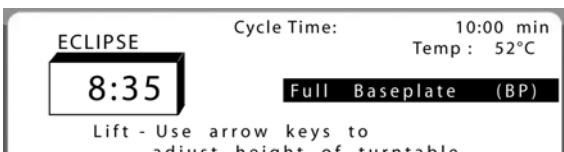
Push **ESC** key to return to the process menu.

Push the **PROG** key again to return to the process #1 screen

Push **START/STOP** Key to start the program. Screen should change to the following:



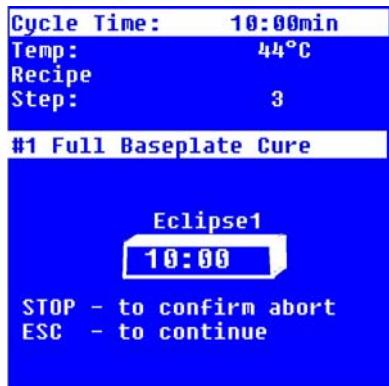
Screen Shot:  
Serialization  
HQA & HQE



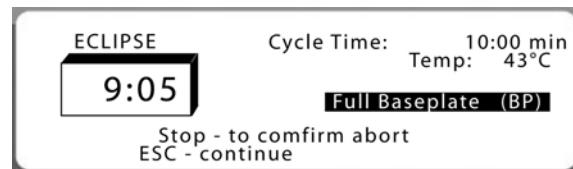
Screen Shot:  
Serialization  
JJA & JJE

Push **START/STOP** Key to abort the program. Screen should change to the following:

## 7.1 FUCTIONAL TEST Cont.



Screen Shot:  
Serialization  
HQA & HQE



Screen Shot:  
Serialization  
JJA & JJE

Push **START/STOP** Key to confirm. Screen should change to the following (HQA & HQE Only):



Screen Shot:  
Serialization  
HQA & HQE

**ESC** key to return to the EPU II process menu.

Push **ESC** key once more to display language screen. Screen should change to the following:



Screen Shot:  
Serialization  
HQA & HQE



Language:  
English  
Deutsch  
Francais  
Italiano  
Espanol

Screen Shot:  
Serialization  
JJA & JJE

Software  
version

Push the **ON/OFF** key. The display should go blank.

Wait 30 seconds. The display should flash briefly and turn back off.

Push **ON/OFF** key to turn display back on.

Open the door.

Push and hold the **LIFT UP** key. Observe the work platform, it should rise.

Push and hold the **LIFT DOWN** key. Observe the work platform, it should lower.

Continue to hold the key until the work platform stops.

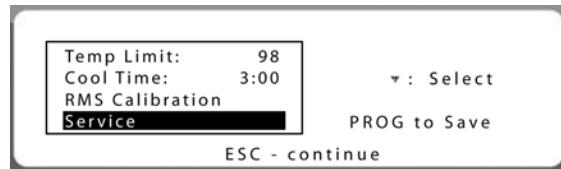
Close the door.

## 7.1 FUCTIONAL TEST Cont.

Push the "hidden" key The following screen will be shown:

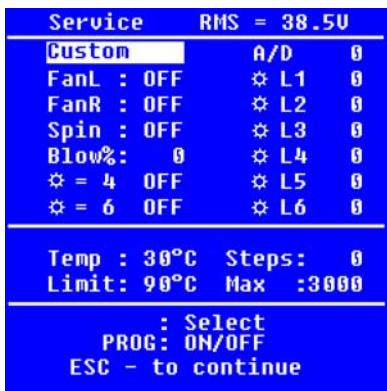


Screen Shot:  
Serialization  
HQA & HQE

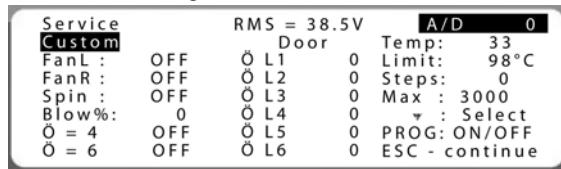


Screen Shot:  
Serialization  
JJA & JJE

Select "Service" from the hidden screen options. The following screen will be shown:



Screen Shot:  
Serialization  
HQA & HQE



Screen Shot:  
Serialization  
JJA & JJE

Scroll down, using arrows keys, to "Fan L", push PROG key. Left side fan should turn on.  
Scroll down, using arrow keys, to "Fan R", push PROG key. Both fans should be on.

Scroll down to "Blow%", Push PROG Key repeatedly to set blowers to 100% Both blowers should run at full speed.

Scroll down to Bulb = 4, (door must be closed) push PROG key to turn on lamps. Lamps should come on slowly and all 4 should be lit. L1 & L6 should not be illuminated.

Push PROG key again to turn off lamps.

Scroll down to Bulb = 6, push PROG key to turn on lamps. Lamps should come on slowly and all 6 should be lit. L1 & L6 should be illuminated.

Check lamp voltage on True RMS meter. Volts should read 38.5Vac +/- 0.5V

Push PROG key to turn off lights.

Scroll down to "Blow%", push PROG key to turn off blowers. (0 setting)

Scroll down to "Fan R", push PROG to turn off right side fan.

Scroll down to "Fan L", push PROG to turn off left side fan.

Scroll down to "Spin", push PROG key. Table should rotate, rotation is detected and displayed next to "Spin" as a flashing rectangle. Rectangle should flash once every 5 seconds +/- 2 seconds.

Push PROG key to turn off Spin.

Push "Lift" up key to raise table. Watch the "Steps" indicator on the display for an increasing number. Continue to raise table until the table breaks the table height detection beam, indicated by the "Max : 2800" being highlighted.

Once highlighted, push the "Lift" down key until the steps are at 0.

Scroll up to select the "CUSTOM" program, push PROG key to Select.

## 8.1 TOP COVER REMOVAL

The top cover can be pulled back for bulb replacement or removed for better access to replace other components.



Turn the power switch OFF.



Unplug the EPU II.



Loosen two screws at rear of panel.



Slide top cover back to access bulbs (To remove completely, continue to next step)

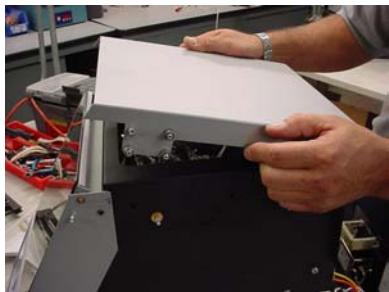
## 8.1 TOP COVER REMOVAL Cont.



Remove side covers by removing screws from rear and underside of panel, then pop panels off sides.



Remove screws holding rails in place (4 places). Keep spacing washers under rails for replacement.



Remove top cover allowing access to all interior components.  
Reinstall in reverse order.

## 8.2 REAR PANEL REMOVAL

Remove the rear panel to gain access to the transformer, terminal block, filter, choke, power switch, power PCB and peripheral PCB.



Turn the power switch OFF



Unplug the EPU II.



Remove the 5 screws on the rear panel.



Back panel can now be pulled away for access to components.

Wiring should not be disconnected unless necessary to replace a part.

Reinstall in reverse order.

### 8.3 FRONT PANEL REMOVAL

Removing the front panel gives access to the Control PCB, Triac, Display PCB and Door Switch.



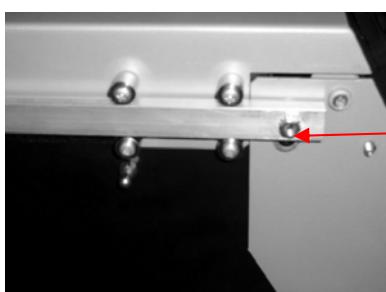
Turn the power switch OFF



Unplug the EPU II.



Remove side covers



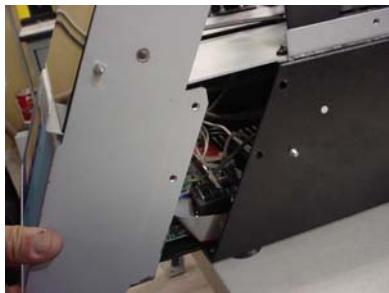
Remove this nut

Remove front screw from both top cover rails



Remove front panel screws ( 3 on each side, 4 on bottom of unit)

### 8.3 FRONT PANEL REMOVAL Cont.



Separate front panel from base, slowly.

**WARNING: WIRE DAMAGE CAN OCCUR, USE CAUTION.**



Tilt top of front panel toward you to gain better access to cables without detaching them by pulling.  
Detach cables from display, membrane switch, door switch and inverter power connector.



Disconnect ground cable.



Remove front panel  
Reinstall in reverse order.

**WARNING: Use caution when attaching the front panel, do not touch the Control PCB with the front panel. Parts can be damaged.**

## 8.4 INSIDE COVER REMOVAL

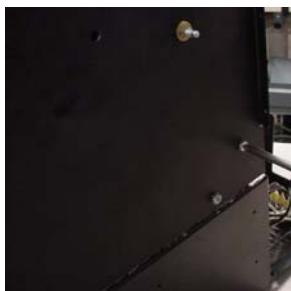
Removing the inside cover gives access to the lamp holders, lamp brackets, table motor, table motor rotation sensor, fans, beam sensors, thermistor, blower ducts and lamp terminal blocks.

To remove the inside cover assembly:

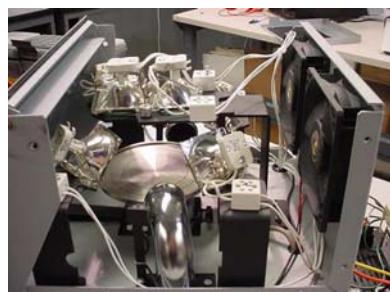
**Follow previous instructions for Top Cover Removal**



Remove screw from front panel on both sides



Remove screws from side at rear of cover.



Remove inside cover to gain access to lamp area components.  
Reinstall in reverse order.

## 8.5 LAMP BASE REMOVAL

Removing the Lamp Base allows access to Blowers, Stepper Motor, Triac, Control PCB, Peripheral PCB, Transformer and Power Supply PCB.

Follow instructions for Top Cover Removal.

Follow instructions for Rear Panel Removal.

Follow instructions for Front Panel Removal.

Follow instructions for Inner Cover Removal.



Remove 4 screws attaching lamp base to base.



Lift lamp base

Disconnect all wires from Peripheral PCB and Control PCB.

Remove lamp base.

Reinstall in reverse order, referring to wiring diagram in Chapter 4.1 for proper wiring hookup.

## 8.6 CONTROL PCB REPLACEMENT

To gain access to the control PCB:

Follow instructions for Top Cover Removal.

Follow instructions for Front Panel Removal.



Remove all lamp wires, triac wires, and lamp voltage supply wires.



Remove 4 screws from PCB.

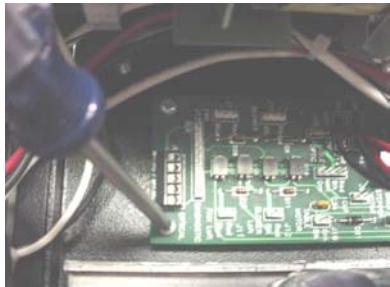
Remove PCB.

Reinstall in reverse order, referring to wiring diagram in Chapter 4.1 for proper wiring hookup.

## 8.7 PERIPHERAL PCB REPLACEMENT

There are two ways to gain access to the Peripheral PCB:

- 1) Follow instructions for Rear Panel Removal.



Remove all wires from Peripheral PCB

Remove 4 screws from PCB.

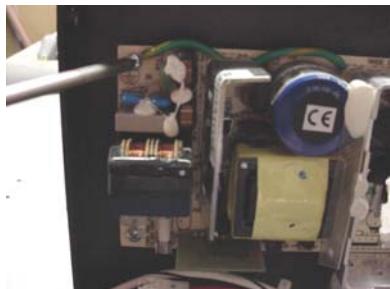
Remove PCB.

Reinstall in reverse order, referring to wiring diagram in Chapter 4.1 for proper wiring hookup.

## 8.8 POWER SUPPLY PCB REPLACEMENT

There are two ways to gain access to the Power Supply PCB:

- 1) Follow instructions for Rear Panel Removal.



Remove all wires from Power Supply PCB

Remove 4 screws from PCB.

Remove PCB.

Reinstall in reverse order, referring to wiring diagram in Chapter 4.1 for proper wiring hookup.

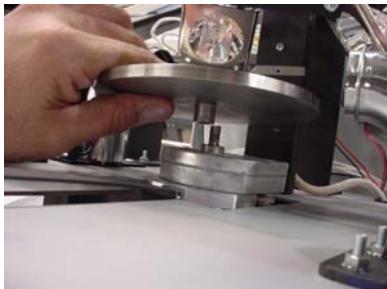
## 8.9 TABLE ROTATION SENSOR REPLACEMENT

To access the table rotation sensor it is best to remove the top and inner covers. The rear panel must be removed to remove the wire from the Peripheral PCB.

Follow instructions for Top Cover Removal.

Follow instructions for Rear Panel Removal.

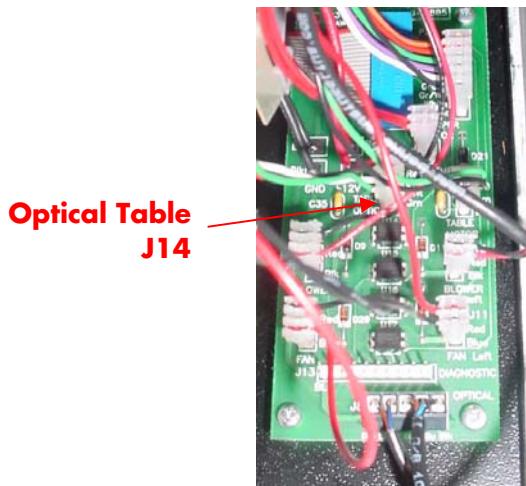
Follow instructions for Inner Cover Removal.



Remove table from motor shaft.



Remove two screws from table rotation sensor.



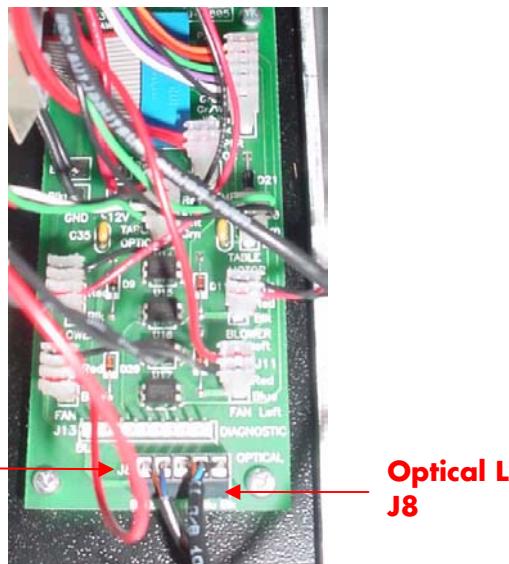
Unplug Optical Table Sensor wire from J14 of Peripheral PCB. (PCB shown from back of unit.)

Pull wires through hole of sensor mount.

Reinstall in reverse order.

## 8.10 BEAM SENSOR REPLACEMENT

Follow instructions for Rear Panel Removal.



Loosen screws and slide back top cover.

Remove screw from bracket.

Remove two screws on sensor.

Cut tie wrap.

Unscrew Optical R / L Sensor wire(s) from J8 of Peripheral PCB. (PCB shown from back of unit.)

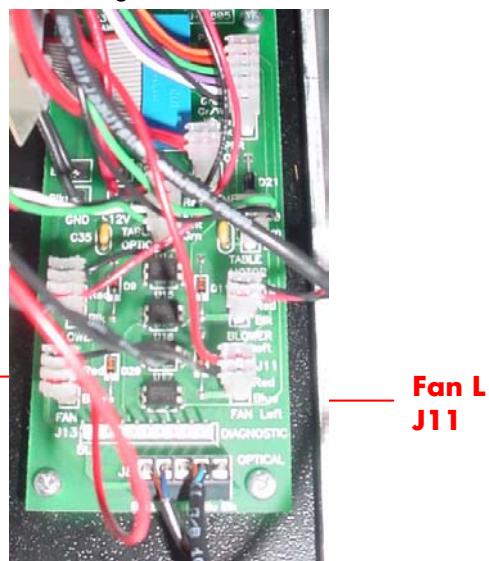
## 8.11 FAN REPLACEMENT

Both fans can be accessed by sliding back the top covers and removing the rear panel.

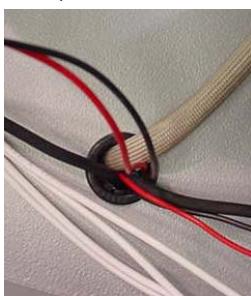
Follow instructions for Rear Panel Removal.



Remove 4 screws from fan guard.



Unplug Fan R / L wire(s) from J7 / J11 of Peripheral PCB. (PCB shown from back of unit.)



Feed wires through grommet on lamp base.

## 8.11 FAN REPLACEMENT Cont.



Remove fan.

Reinstall in reverse order. Note the direction of airflow, air must flow out of the EPU II

## 8.12 TRIAC REPLACEMENT

To access the Triac the front panel must be removed.

Follow instructions for Front Panel Removal.



Remove all wires from triac.



Remove nuts on Triac.

Remove Triac

Reinstall in reverse order, using heatsink compound between parts to dissipate heat and prevent failure.

## 8.13 LAMP TERMINAL BLOCK REPLACEMENT

Most of the Lamp Terminal Blocks can be accessed by sliding back the top cover.  
For those which cannot (Lamp #6) use the following procedure.

**Follow instructions for Top Cover Removal.**

**Follow instructions for Inner Cover Removal.**



Unscrew lamp wires from terminal block from both sides of terminal block.  
Unscrew two screws attaching terminal block to lamp bracket.  
Reinstall in reverse order.

## 8.14 TERMINAL BLOCK REPLACEMENT

Main power terminal block can be accessed by removing the rear panel.

Follow instructions for Rear Panel Removal.



Disconnect all wires from terminal block

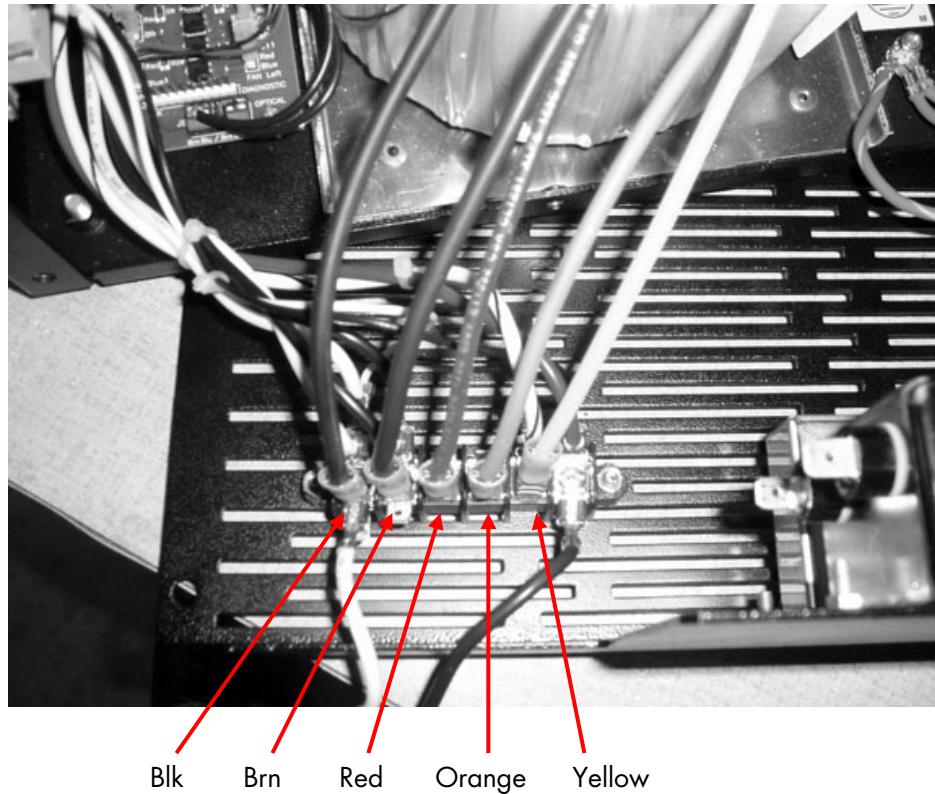
Remove nuts from both sides of terminal block

Reinstall in reverse order, referring to wiring diagram in Chapter 4.1 for proper wiring hookup.

## 8.15 TRANSFORMER REPLACEMENT

Main power transformer can be accessed by removing the rear panel.

Follow instructions for Rear Panel Removal.



Disconnect all transformer wires from terminal block

Remove retaining nut from transformer.

Remove transformer bolt, then remove transformer.

Reinstall in reverse order, referring to wiring diagram in Chapter 4.1 for proper wiring hookup.

## 8.16 DOOR SWITCH REPLACEMENT

To access the door switch the front panel must be removed.

Follow instructions for Front Panel Removal.



Remove two screws from magnetic door switch.

Reinstall in reverse order - observe the position of the switch to the magnet, orient as shown in picture.

Magnet should be 0.18" – 0.25" away from switch for proper operation.

Check operation using a multimeter to continuity check the switch.

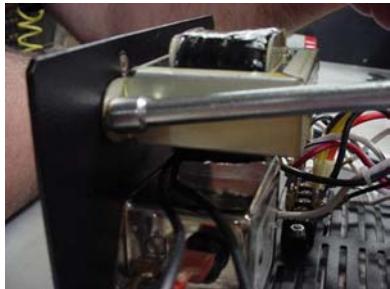
## 8.17 CHOKE/FILTER REPLACEMENT

### **230V Units ONLY!**

To obtain access to the EMI filter and the choke the rear panel must be removed.

Follow instructions for Rear Panel Removal.

#### **CHOKE:**



Disconnect choke wires from the power switch and the EMI Filter.

Remove two retaining nuts.

Reinstall in reverse order, referring to wiring diagram in Chapter 4.1 for proper wiring hookup.

#### **EMI FILTER:**



Remove wires from both sides of the EMI filter.

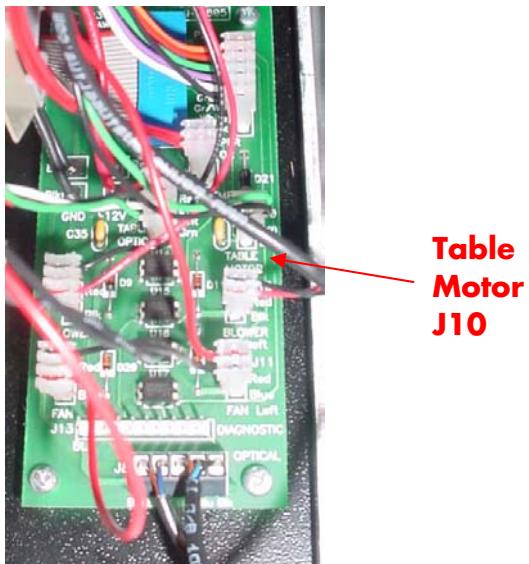
Remove two retaining nuts

Reinstall in reverse order, referring to wiring diagram in Chapter 4.1 for proper wiring hookup.

## 8.18 TABLE MOTOR REPLACEMENT

Table motor can be accessed by sliding the top cover back and removing the rear panel.

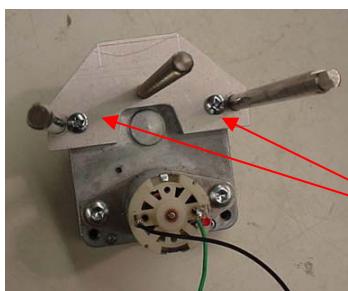
Follow instructions for Rear Panel Removal.



Cut the tie wraps that hold the stepper motor wire assy and table motor wire assy together.  
Unplug Table Motor wire J10 from Peripheral PCB. (PCB shown from back of unit.)



Lift motor up slowly by hand.  
Remove screws from motor bracket.

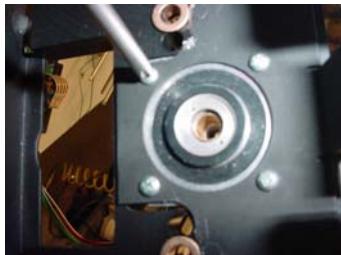


Reinstall in reverse order.

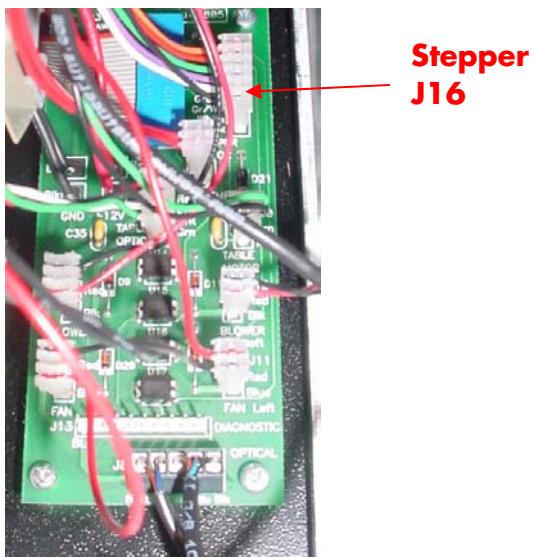
## 8.19 STEPPER MOTOR REPLACEMENT

Stepper motor can be accessed by removing the top covers and the rear panel.

Follow instructions for Table Motor Removal.



Remove 4 screws attaching motor to slide assembly.



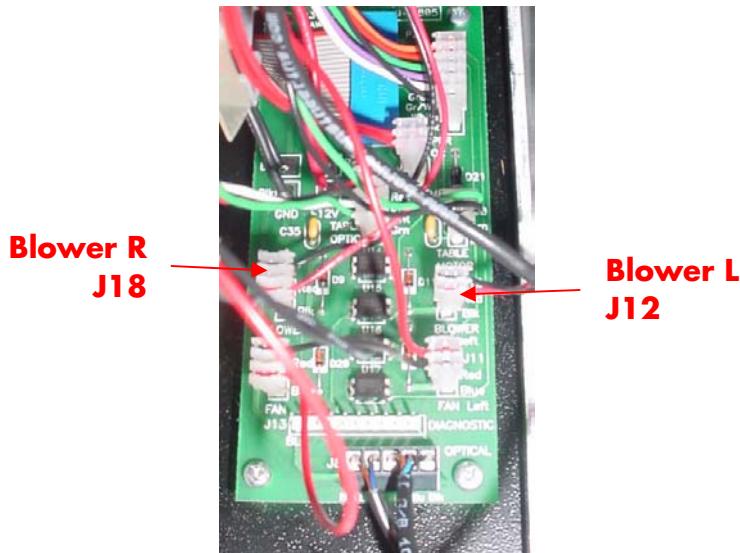
Unplug Stepper Motor wire J16 from Peripheral PCB. (PCB shown from back of unit.)

Remove motor from unit.

Reinstall in reverse order.

## 8.20 BLOWER REPLACEMENT

Follow instructions for Lamp Base removal.  
Follow instructions for Beam Sensor removal.  
Follow instructions for Back Panel removal.



Unplug Blower wire J18 or J12 from Peripheral PCB. (PCB shown from back of unit.)

Remove screw from air duct.

Remove Air duct.

Remove screw from blower bracket.

Remove blower from bottom of Lamp Base.

## 9.1 PRODUCT SERVICE

### **WARNING:**

This equipment is designed with safety features to protect the operator and must not be modified in any form. Only qualified individuals should repair this piece of equipment. Failure to observe these precautions may result in burns or electrical shock.

Three methods of product service are available:

- Telephone assistance available at the number listed below,
- Return the unit for servicing using the instructions below,
- Call DENTSPLY at the phone number below and obtain a service manual for a nominal fee

### **BEFORE RETURNING THE UNIT:**

- Call DENTSPLY for an RMA (Return Material Authorization) number. This is used to track and identify your unit. Equipment received without this number may not be identifiable.
- Equipment damaged in shipment as a result of improper packing may not be paid by the carrier.

DENTSPLY will not be responsible for damages resulting from improper packing.

Ship prepaid to:

DENTSPLY Ceramco

DENTSPLY International

RMA Number \_\_\_\_\_

13553 Calimesa Blvd.

Yucaipa, CA 92399-1203 USA

Phone: 909.795.2461

Fax: 909.795.5268

[equipmentrepair.ca@dentsply.com](mailto:equipmentrepair.ca@dentsply.com)

### **Disposing of the device:**

The device is an electronic device according to the "Act Governing the Sale, Return and Environmentally Sound Disposal of Electrical and Electronic Devices" (ElektroG).



It was identified in accordance with the existing law and provided with this symbol.

The device is not intended for private use. It is manufactured and delivered for commercial use and is to be disposed by the end user according to the specifications of the Electrical and Electronic Equipment Act – ElektroG.