Service Manual for the Lang Models:

EQS-AP, EQS-C

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CAUTION	**THE UNIT IS EXTREMELY HEAVY. FOR SAFE HANDLING, INSTALLER SHOULD OBTAIN HELP AS NEEDED, OR EMPLOY APPROPRIATE MATERIALS HANDLING EQUIPMENT (SUCH AS A FORKLIFT, DOLLY, OR PALLET JACK) TO REMOVE THE UNIT FROM THE SKID AND MOVE IT TO THE PLACE OF INSTALLATION.**	
CAUTION	**ANY STAND, COUNTER OR OTHER DEVICE ON WHICH OVEN WILL BE LOCATED MUST BE DESIGNED TO SUPPORT THE WEIGHT OF THE OVEN.**	
CAUTION	**SHIPPING STRAPS ARE UNDER TENSION AND CAN SNAP BACK WHEN CUT.**	
DANGER	**THIS APPLIANCE MUST BE GROUNDED AT THE TERMINAL PROVIDED. FAILURE TO GROUND THE APPLIANCE COULD RESULT IN ELECTROCUTION AND DEATH.**	
WARNING	**INSTALLATION OF THE UNIT MUST BE DONE BY PERSONNEL QUALIFIED TO WORK WITH ELECTRICITY AND PLUMBING. IMPROPER INSTALLATION CAN CAUSE INJURY TO PERSONNEL AND/OR DAMAGE TO EQUIPMENT. UNIT MUST BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE CODES.**	
NOTICE	**The data plate is on the back side of the oven above the power cord. The oven voltage, wattage, serial number, wire size, and clearance specifications are on the data plate. This information should be carefully read and understood before proceeding with the installation.**	
NOTICE	**The installation of any components such as a vent hood, grease extractors, fire extinguisher systems, must conform to their applicable National, State and locally recognized installation standards.**	
NOTICE	**During the first few hours of operation you may notice a small amount of smoke coming from the oven, and a faint odor from the smoke. This is normal for a new oven and will disappear after the first few hours of use.**	
CAUTION	**ALWAYS KEEP THE AREA NEAR THE APPLIANCE FREE FROM COMBUSTIBLE MATERIALS.**	
CAUTION	**KEEP FLOOR IN FRONT OF EQUIPMENT CLEAN AND DRY. IF SPILLS OCCUR, CLEAN IMMEDIATELY, TO AVOID THE DANGER OF SLIPS OR FALLS.**	
WARNING	**KEEP WATER AND SOLUTIONS OUT OF CONTROLS. NEVER SPRAY OR HOSE CONTROL CONSOLE, ELECTRICAL CONNECTIONS, ETC.**	
CAUTION	**MOST CLEANERS ARE HARMFUL TO THE SKIN, EYES, MUCOUS MEMBRANES AND CLOTHING. PRECAUTIONS SHOULD BE TAKEN TO WEAR RUBBER GLOVES, GOGGLES OR FACE SHIELD AND PROTECTIVE CLOTHING. CAREFULLY READ THE WARNING AND FOLLOW THE DIRECTIONS ON THE LABEL OF THE CLEANER TO BE USED.**	
NOTICE	**Never leave a chlorine sanitizer in contact with stainless steel surfaces longer than 10 minutes. Longer contact can cause corrosion.**	

IMPORTANT READ FIRST IMPORTANT

NOTICE	**Service on this, or any other, LANG appliance must be performed by qualified personnel only. Consult your authorized service station directory or call the factory at 1-800-224-LANG (5264), or WWW.LANGWORLD.COM For the service station nearest you.**
WARNING	**BOTH HIGH AND LOW VOLTAGES ARE PRESENT INSIDE THIS APPLIANCE WHEN THE UNIT IS PLUGGED/WIRED INTO A LIVE RECEPTACLE. BEFORE REPLACING ANY PARTS, DISCONNECT THE UNIT FROM THE ELECTRIC POWER SUPPLY.**
NOTICE	**If an item on the list is followed by an asterisk (*), the work should be done by a factory authorized service representative.**
CAUTION	**USE OF ANY REPLACEMENT PARTS OTHER THAN THOSE SUPPLIED BY LANG OR THEIR AUTHORIZED DISTRIBUTORS CAN CAUSE BODILY INJURY TO THE OPERATOR AND DAMAGE TO THE EQUIPMENT AND WILL VOID ALL WARRANTIES.**

Lang Model: EQS

Electric Quarter Size Convention Oven

EXTERIOR

- The oven exterior dimensions are 19" (48.3 cm) Wide, 20.3" (51.5 cm) High, 27" (68.6 cm) Deep. The Top, Front, Back, and Sides are constructed of stainless steel with an aluminized bottom.
- The oven door comes standard with a window.
- The oven cavity is insulated with high temperature insulation for efficiency and reduced heat loss.

INTERIOR

- The oven cavity dimensions are 15" (38.1 cm) Wide, 13" (33 cm) High, 14.5" (36.8 cm) Deep.
- The oven is designed for a maximum of three shelves and comes with three Chrome Plated Racks.
- The interior of the oven is constructed of stainless steel.

OPERATION

- The EQS oven is a forced air convection oven with a vented oven cavity.
- The air is driven by a 1/6 HP fan motor.

CONTROLS

- The EQS is available either with the Lang Accu-Plus (EQS-AP), "Purple" Computer (EHS-C) controls which include:

- **EQS-AP**

  - Easy to use manual control knobs.
  - Pulse and two speed fan.
  - Solid State temperature sensing and controls.

- **EQS-C**

  - Complete Computerized Controls with a Manual Override system.
  - Programmable up to 10 products with four "tiers" for each program.
  - Independent Shelf Timers for each Shelf.
  - Load Control through use of Cooking Curves.
  - Shelf Compensation Timing for uniform baking.
  - Single speed fan.

RECEIVING THE OVEN

Upon receipt, check for freight damage, both visible and concealed. Visible damage should be noted on the freight bill at the time of delivery and signed by the carrier's agent. Concealed loss or damage means loss or damage, which does not become apparent until the merchandise has been unpacked.

If concealed loss or damage is discovered upon unpacking, make a written request for inspection by the carrier's agent within 15 days of delivery. All packing material should be kept for inspection.

Do not return damaged merchandise to Lang Manufacturing Company. File your claim with the carrier.

Prior to un-crating, move the oven as near its intended location as practical. The crating will help protect the unit from the physical damage normally associated with moving it through hallways and doorways.

ELECTRICAL CONNECTION

The electrical connection must be made in accordance with local codes or in the absence of local codes with NFPA No. 70 latest edition (in Canada use: CSA STD. C22.1)

The EQS is provided with a 48" cord and a NEMA #6-20 plug.

The EQS is not available in 480 Volt.

INSTALLING THE LEGS

Remove the legs from the oven cavity and screw them into the threaded holes provided on the bottom of the oven.

A torpedo level placed on an oven rack will assist in leveling the oven.

Level the unit by unscrewing the adjuster on the bottom of each of the legs until the unit is level.

PHASING

The EQS is provided with 208 or 240 VAC single phase only.

EQS-AP, EQS-C

Convection Oven Start-Up

1) Verify connections at plug and terminal block ☐

2) Incoming Volt - Single Phase L1-L2_____
Three Phase L1-L2_____ L2-L3_____ L3-L1_____

3) Amp draw L1_____
L2_____
L3_____

4) Motor amp draw _____

5) Are programs correct? Yes ☐ No ☐

6) Verify actual temperature at 350 °F _____ °F.
Note:
Install thermocouple wire in center of oven cavity.
Let oven cycle off and on 3 times before recording temperature.

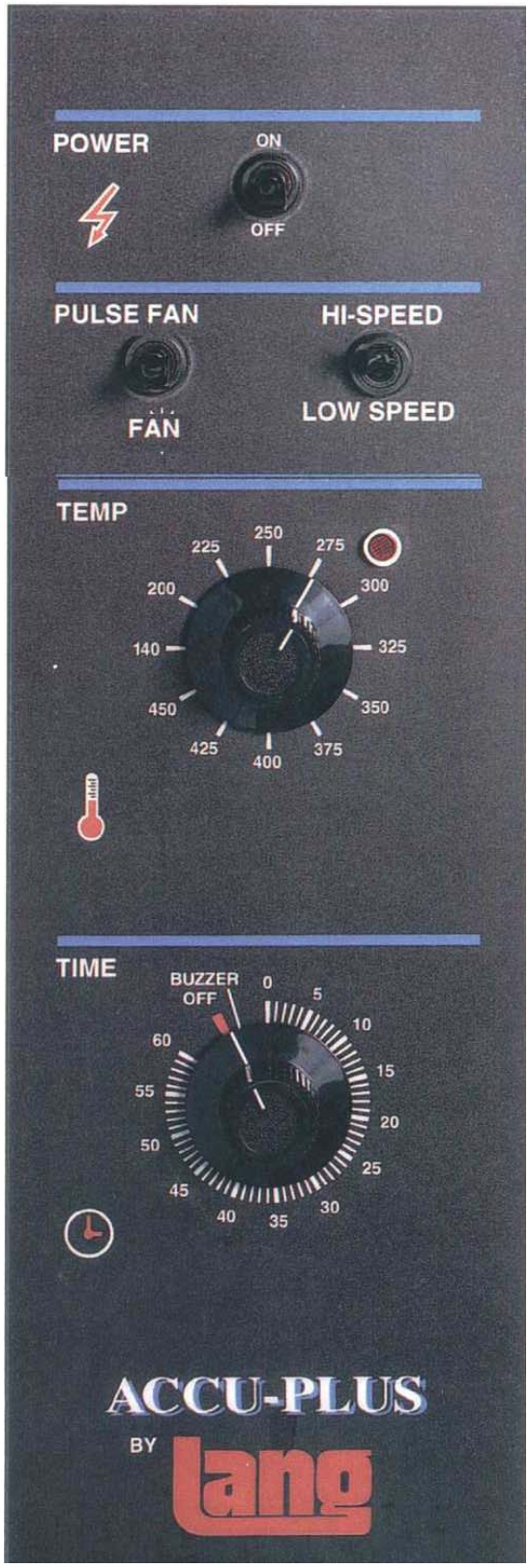
Set oven temperature for 350 °F

Model #_____ Date_____ Serial #_____

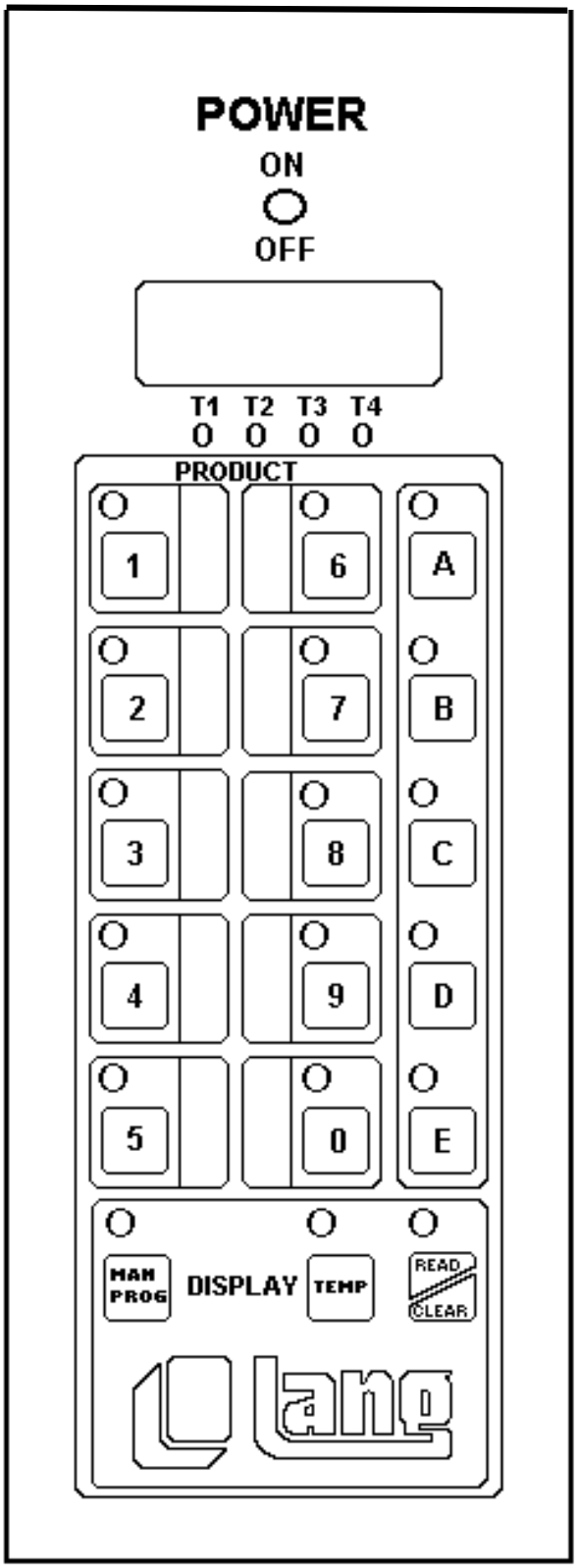
Store #_____ Tech Name_____
Contact_____ Company _____
Store Phone #_____ Service Company Phone #_____

Address_____
_____
_____

CONTROL PANEL LAYOUT EQS-AP



CONTROL PANEL LAYOUT EQS-C



Control Panel Buttons

1 -0 Product Buttons. These are the buttons where the product programs are stored. Pressing a Product Button will heat the oven to the programmed temperature.

A - C Shelf Buttons. The control is capable of timing each shelf individually. Pressing a Product Button then a Shelf Button will start the countdown timer.

Man Prog The MANUAL PROGRAM button allows the operator to enter a temporary product program without being required to input the programming code. The temporary program is erased when the oven is turned off or when a new program is entered. Time and temperature are the only parameters that can be entered in the Manual Program mode.

READ/CLEAR The READ/CLEAR button has several functions.

It is always the first button pressed when entering programming codes.

Pressing it twice then pressing a Product Button will "read-back" the program in that product button.

Pressing and holding the button down until "88888" appears in the display will cancel the current mode of the control and return the display to "EntEr".

Temp When the Temperature Recall Button is pressed, the display will indicate the internal oven temperature. When released the display will revert to the previous readout.

Programming Terms

Cooking Curve Cooking curve is a function of the computer that controls the cooking time. If the temperature of the oven is lower than the programmed temperature, the control will slow the timer down to compensate for the lower cooking temperature. Cooking Curves from 0 - no time adjustment to 7 - maximum adjustment are available. Cooking Curve 3 is the most commonly used. However, as a general rule the longer the cooking time the lower the cooking curve, the shorter the cooking time the higher the cooking curve.

FAN FUNCTION The convection fan has two programmable options. Fan On (Fan 1) runs the convection fan continuously. Fan Off (Fan 0) leaves the fan off until heat is called for by the control. In a convection oven, the fan must come On whenever the heat comes On. The convection fan can not be turned Off continuously.

TIER "Tiered" programming is the ability to change the cooking temperature or fan function during the cooking cycle. As an example, some products require the fan to be Off for the first half of the cooking cycle then turn On for the last half, Tier 1 would be programmed with the fan in the Off mode then Tier 2 would be fan On. The Tier lamps located below the display (labeled T1, T2, T3, and T4) will illuminate to indicate which Tier is being programmed or which Tier the program is in during the cooking cycle.

PROGRAMMING

ACTION	DISPLAY
Turn the power switch on. If the oven is already on, turn it off and then back on.	EntEr
Quickly enter access code **"R/C 1 6 2 7 3 8".** Do no hold the "**R/C**" button.	Prod
Select a Product number from **0-9**.	St: 00
Select amount of time that product should steam. If no steam is required press the shelf "A" button to advance to the next step. **Note:** If oven is not strapped for steam convection then this step will not be provided.	000°F
Select a Temperature from **150°F-450°F**. NOTE: Entering **"000"** will erase the existing program.	cc0-7
Select the desired cooking curve from 0-7.	FAno 12
Enter a desired Fan setting. **"0" (noFAn)** Will make the fan pulse with the heat. **" 1" (FAnonh 1)** Will make the fan run on high continuously. **"2" (FAnonLo)** Will make the fan run on low continuously.	00: 00: 00
Enter the desired cooking time (hours:minutes:seconds)	000°F
The program is now entered for a single tier program, press the **"E"** button (*located behind the "A" and "G" on the LANG logo)* to continue programming other products. If the program is a multi tiered program continue by programming the next tiers. When complete press the **"E"** button.	Prod
When the programs have been completely entered press the **"R/C"** button to save and exit the programming cycle.	EntEr

EQS-C PROGRAMMING CODES

Below are codes, which will allow you to configure the display or aid in the operation, and troubleshooting of the oven.
The readout must display **"ENTER"** before the computer will accept any programming code. If the readout displays any other word, reset the computer by pressing and holding the **"R/C"** button until display reads **"88888"** then release. Display should now read **"ENTER"**.
The control allows for a 3-second delay between each button push, if a delay of longer than 3 seconds has occurred, the programming code must be re-entered.
The instructions call for pressing exactly what is shown under "PRESS".

CODE DESCRIPTION	PRESS
• **OPERATIONAL**	
Recall time remaining on a shelf	Shelf
Cancel a shelf timer	R/C, R/C, Shelf
• **DISPLAY MODES**	
Countdown timer display	R/C,4,8,4,8,4,8
Shelf in use display	R/C,0,9,0,9,0,9
Internal oven temperature display	R/C,8,7,8,7,8,7
• **PROGRAMMING**	
Enter programming mode	R/C,1,6,2,7,3,8
Recall an existing product program	R/C, R/C, P (Product programmed)
Erase a product program	R/C,1,6,2,7,3,8 (P) (000)
Model identification	R/C, D,C,D,C,D,C
Fan Setting (HI or Both)	R/C,E,D,C,B,A,1(high),2 (both)
Program download (Contact Factory)	R/C, A, B, C, D, E, P
• **MAINTENANCE**	
Actual oven temperature	R/C,3,4,5,6,7,8
Return to ENTER	R/C
• **SHELF COMPENSATION**	
Enter shelf compensation mode	R/C, C, B, C, B, C, B
Set shelf compensations	(I.E.) A,2,3,A
Return to ENTER	R/C

OPERATIONS

Convection ovens constantly circulate air over the product. This strips away the thin layer of moisture and cool air from the top of the product. Heat penetrates more quickly. Cooking times are shortened and cooking temperatures are usually reduced.

To convert standard deck oven recipes to convection oven recipes, reduce the temperature 50 °F and the time by 25%. Make adjustments as necessary, depending upon your results.

The lower the temperature the more even the bake.

Check the product halfway through the baking cycle. Look through the door windows. Opening the oven door is not recommended.

If products are brown on the outside and not done on the inside, too high a temperature is being used. Decrease the temperature 15-25 °F.

If products are pulling to the edge of pans or spilling, the oven is not leveled or the pans are warped. Correct as necessary.

Load each shelf evenly. Spaces should be maintained equally between the pan and walls. Front and back. This will allow an even distribution of airflow.

BAKING

Most baking should be done with the vent closed. Open the vent only with high moisture products to avoid seepage around the front of the door.

Always weigh your product. This will give you a more consistent size, color and quality.

Center the pan in the oven. The better the air flow around the product, the better the bake.

The convection oven is a mechanical piece of equipment. The same control settings will always give the same results. If the results vary, problems may be because of preparation, not the oven.

LOADING

Place product as close to oven as practical. Open oven doors and load quickly but carefully.

If only one pan is required, load on center shelf. If two pans are required, load on the top and bottom shelf. If three pans are required, load on top shelf, bottom shelf, and center shelf.

UNLOADING

It is a characteristic of all convection ovens to unload the top shelf before the bottom shelves. The rising of heat and the hot oven ceiling causes the top shelf to bake quicker. This characteristic is more pronounced when baking at higher temperatures and/or for prolonged periods of time.

EQS-AP TYPICAL OPERATION SEQUENCE

ACTION	RESULT
Turn power switch to ON.	Control panel heat call light comes on.
Adjust proper temperature, between 140 & 450 degrees and allow to preheat up to 20 minutes.	Oven begins heating.
Open oven doors and insert product, set timer up to 60 minutes.	Timer begins counting down.
Timer beeps continuously when done.	Product should now be done.

EQS-C TYPICAL OPERATION SEQUENCE

ACTION	RESULT
Turn power switch to ON.	Control panel comes on, display says **"88888"** and then **"EntEr"**, motor starts.
Press a product button.	Display says **"PrEht"** (Preheat), oven begins to heat to the programmed temperature.
Beeper sounds briefly.	Display says **"rEAdy"**.
Open the oven doors and load the product. Close the door and press the product button again.	Beeper sounds briefly and display says **"ShELF"**.
Press the shelf button(s) which correspond to the shelf positions which the product is loaded (A equals the top shelf and E equals the bottom shelf).	Display shows a countdown timer and begins to count toward zero.
Beeper sounds continuously.	Display shows **"donE"**, shelf button(s) flash.
Press the **flashing** shelf button(s).	Beeper stops. Display shows "rEAdy" if no other shelves carry product or resume count down for shelves that still have product cooking.
Open oven door and remove the product, which corresponds to flashing shelf button(s).	

SEQUENCE OF OPERATION

EQS-AP

Power switch turned on.

208/240 VAC across Common terminals on power switch.
208/240 VAC to Common terminals of **Motor relay**.
208/240 VAC to Common terminals of **Heat relay**.

240/24-volt transformer energized.

24 VAC across **"C"** and **"D"** (common) of 24 pin **Terminal block**.
24 VAC across coil of **Motor relay**. (Through door switch)
24 VAC across **"D"** and of **Heat contactor**. (Through door switch and high limit thermostat)
24 VAC across **"D"** and Heat output on board.
Motor contactor closes.

Motor starts.

24 VAC across coil of **Heat contactor**.
Heat contactor closes.
208/240 volts to elements.
Oven heats.

EQS-C

Power switch turned on.

240/208 VAC across Common terminals on power switch.
240/208 VAC across both transformers (240/24, 240/12).
240/208 VAC to Common terminals of **Motor relay**.
240/208 VAC across common terminals of **Heat relay**.

240/24 volt transformer energized.

240/12 volt transformer energized.

24 VAC across ground and **TP4, TP5** and **TP6**.
12 volts to **TP1** on **microprocessor**.
24 VAC across coil of **motor contactor**.
Motor contactor closes.
240/208 VAC across NO (Normally open) contacts of **Motor relay**.

Motor starts.

24 VAC across coil of **Heat contactor**.
Heat contactor closes.
208/240 volts to elements.
Oven heats.

NO MOTOR

PROBABLE CAUSE	CORRECTIVE ACTION
Defective Fan Switch	➢ Verify that Fan switch is in "ON" position (In pulse position motor will only cycle when oven calls for heat).
Defective Transformer	➢ Check transformer for normal operation.
Defective Motor Relay	➢ Check motor relay for normal operation. (24VAC 35 Ω)
Defective Door Switch	➢ Check door switch for normal operation.
Defective Motor	➢ Check motor for normal operation. (P1-T9 low, P1-T7/T4 high)

NO HEAT

PROBABLE CAUSE	CORRECTIVE ACTION
Defective Elements	➢ Check that elements are getting power. ➢ Confirm that Elements are working correctly. (See Technical Data)
Defective Transformer	➢ Check transformer for normal operation. ➢ Replace if necessary.
Defective Probe	➢ Confirm that probe has proper resistance for the correct temp. (See Technical Data)
Defective Heat Contactor	➢ Confirm that Contactor is getting correct voltage. ➢ Confirm that Contactor is operating properly. (24VAC 6Ω)
Defective Circuit board	➢ Confirm that Heat Call light is on. **If no light is detected:** ➢ Check 12-position switch for normal operation. (See Technical Data) **If light is detected:** ➢ Check for 24VAC across heat output and "D" on 12 Pole terminal. **If voltage is not present:** ➢ Replace Circuit board. **If voltage is present:** ➢ Check over temperature thermostat for proper operation. ➢ Check door switch for normal operation.

- To help troubleshoot the oven you should perform the following "Manual Override" test:
- Open drop down door located on the lower right side, directly below front panel.
- Turn back up toggle (on/off) switch to "on" position.
- Turn main power switch to "on" position.
- Check oven for normal operation.

NO DISPLAY

PROBABLE CAUSE	CORRECTIVE ACTION
Power switch is not turned on	➢ Turn power switch on.
Defective power switch	➢ Check power switch for normal operation. Replace as necessary.
Defective back-up relay	➢ Check relay for normal operation. ➢ Check coil for 24 VAC. **If 24 VAC is measured.** Turn oven off and: ➢ Check coil for 7.2 KΩ. ➢ Replace as necessary. **If 24 VAC is not measured.** ➢ Verify that manual override switch is in "off" position. ➢ Check manual override switch for normal operation. ➢ Check wires for any shorts.
Defective control transformer (12 VAC).	➢ Check transformer for normal operation. ➢ Check primary coil for 208/240 VAC and 630 Ω. Check secondary coil for no less than 10.5 VAC and 1 Ω. **If voltage is measured on primary:** ➢ Check for voltage on secondary. ➢ Replace transformer. **If voltage is not measured on primary:** ➢ Check wires for any shorts.
Defective rectifier	➢ Check for no less than 10.5 VAC on **TP1** and 5 VDC on **TP2.** ➢ If correct voltage is present at **TP1** and present, but low at **TP2** unplug both ribbon connections from CPU and re-measure at **TP2.** ➢ If voltage remains low at **TP2** replace CPU (40102-311). ➢ If voltage at **TP2** increased to 5 VDC when ribbon was unplugged, plug ribbon back in to CPU and disconnect from Interface board. ➢ Re-measure at **TP2**. ➢ If voltage dropped to below 5 VDC replace ribbon cable (31110-01). ➢ If voltage remains at 5 VDC, plug ribbon back into Interface board and measure for 5 VDC at **TP3.** ➢ If voltage is present at **TP3** and display is still not on, press and hold the **R/C** button on board if LED's come on replace Interface board. ➢ If LED segment does not illuminate or the LED is blank, replace LED.

At this point you should have a display.

NO FAN-Manual Mode

PROBABLE CAUSE	CORRECTIVE ACTION
Defective 240/24 VAC transformer	➢ Check for 24 VAC on "C" and "D" of the terminal block. **If 24 VAC is not measured:** Turn off and: ➢ Check secondary coil for 1 Ω. ➢ Check primary coil for 77 Ω. ➢ Replace transformer. **If 24 VAC is measured:** Turn off and: ➢ Check back-up relay for normal operation.
Back-up relay not energizing	➢ Check for 240 VAC on relay coil. **If 240 VAC is measured:** Turn unit off and: ➢ Check back-up relay coil for 7.2 K Ω. ➢ Replace if defective. **If 240 VAC is not measured:** ➢ Check back-up switch (SPDT) for normal operation. ➢ Replace if defective.
Motor contactor not energized	➢ Check for 24 VAC at contactor or relay coil. **If 24 VAC is not measured:** Turn oven off and: ➢ Check door switch for normal operation. ➢ Check door switch for continuity. ➢ Replace or adjust door switch. **If 24 VAC is measured:** Turn unit off and: ➢ Check contactor coil for continuity. ➢ Replace if defective.
No voltage across contactor points	➢ Check 208/240 VAC across "**C**" terminals of contactor. **If 208/240 VAC is not measured:** ➢ Check connection to main contactor (heat contactor). ➢ Check circuit breaker. **If 208/240 VAC is measured:** ➢ Check across "**NO**" contacts. Should have 208/240 VAC. ➢ Replace if defective.

NO MOTOR COMPUTER MODE

PROBABLE CAUSE	CORRECTIVE ACTION
No 24 VAC on Interface board	➢ Check for 24 VAC at **TP4** to common (**"D"**). **If 24 VAC is not measured:** ➢ Check for 24 VAC at "**NC**" contacts on back-up relay. **If 24 VAC is measured:** ➢ Check for 24 VAC at **TP5.** ➢ Replace Interface board if defective.

NO HEAT Manual Mode

NOTE: Fan must be operating before trouble shooting No heat.

PROBABLE CAUSE	CORRECTIVE ACTION
Back-up relay not energizing	➢ Check for 240 VAC on relay coil. **If 240 VAC is measured.** Turn unit off and: ➢ Check back-up relay coil for 7.2 Ω. ➢ Check "**NO**" contacts for 24 VAC. ➢ Replace if defective. **If 240 VAC is not measured:** ➢ Check back-up switch (SPDT) for normal operation. ➢ Replace if defective.
Defective thermostat	➢ Turn unit off and check for continuity while cycling thermostat on and off. ➢ Replace if defective.
Defective contactor	➢ Check for 24 VAC at heater coil. **If 24 VAC is measured.** Turn oven off and: ➢ Check for continuity through coil. ➢ Replace if defective. **If 24 VAC is not measured.** Turn oven off and: ➢ Check for continuity through hi-temp wires going to over-temp thermostat. ➢ Replace over-temp thermostat if defective.
Defective elements	➢ Check elements for continuity. ➢ Replace if defective.
Defective over-temp thermostat	➢ Check for 24 VAC on #55 red wire to common **"D".** **If 24 VAC is not measured:** Turn oven off and: ➢ Check for continuity through over-temp thermostat. ➢ Replace if defective.

NO HEAT Computer Mode

PROBABLE CAUSE	CORRECTIVE ACTION
No 24 VAC on Interface board	➢ Check for 24 VAC at **TP4** to ground. **If 24 VAC is not measured:** ➢ Check for 24 VAC at "**NC**" contacts on back-up relay. **If 24 VAC is measured:** ➢ Check for 24 VAC at **TP6.** ➢ Replace Interface board if defective.

DISPLAY LOCKS UP

PROBABLE CAUSE	CORRECTIVE ACTION
"Help" in display	➢ Check probe for proper resistance. ➢ Check that probe connections are secure. ➢ Push "TEMP" button on control board and check to see if temperature rapidly descends. If temp does descend rapidly, replace ribbon cable. ➢ Check to see that contactors/relays are not stuck in the closed position. ➢ Replace contactor if defective. ➢ Check for foreign objects keeping contactor closed.
"88888" stuck in display	➢ Check for stuck button by pressing any button. **If computer beeps or chirps:** ➢ Check control panel transformer (12 VAC) for proper operation. ➢ Check **TP1** for at least 10.5 VAC. ➢ Check **TP2** for at least 4.99 VDC. ➢ Check **TP3** for at least 4.97 VDC. **If computer does not beep or chirp:** ➢ Check each button for movement. ➢ Check that panel label has not been damaged in any way. ➢ Replace button if defective. ➢ Replace panel label.
Display has shelf "A"	➢ Read Programming Codes.

ELEMENT RESISTANCE

➢ 208 Volt	11090-32	16 Ω	13 Amps
➢ 240 Volt	11090-33	21 Ω	11 Amps

TRANSFORMER RESISTANCE

➢ TRANSFORMER	Input	Primary	Secondary	Output
➢ 208/24 Volt	208/240 Volt	77 Ω	1Ω	24 Volt
➢ 240/12 Volt	208/240 Volt	630 Ω	1 Ω	12 Volt
➢ 208/240-24/12	208/240 Volt	208V 64 Ω / 240V 75Ω	12V .6Ω / 24V 1Ω	24/12 Volts

CONTACTOR RESISTANCE

➢ CONTACTOR	Coil
➢ 2 Pole 24 Volt coil (P & B) (PP & PT motor)	35 Ω

OVER-TEMP THERMOSTAT

➢ OVER-TEMP	
➢ Wires #4 and #19	Normally closed

DOOR SWITCH

- Check switch between “COM” (common) and “NO” (normally open) contacts, insure switch closes approximately 3 to 4 inches before door closes.

BLOWER FAN

- Blower fan will rotate clockwise and should have a 5/8“ gap between it and the back wall of the can.

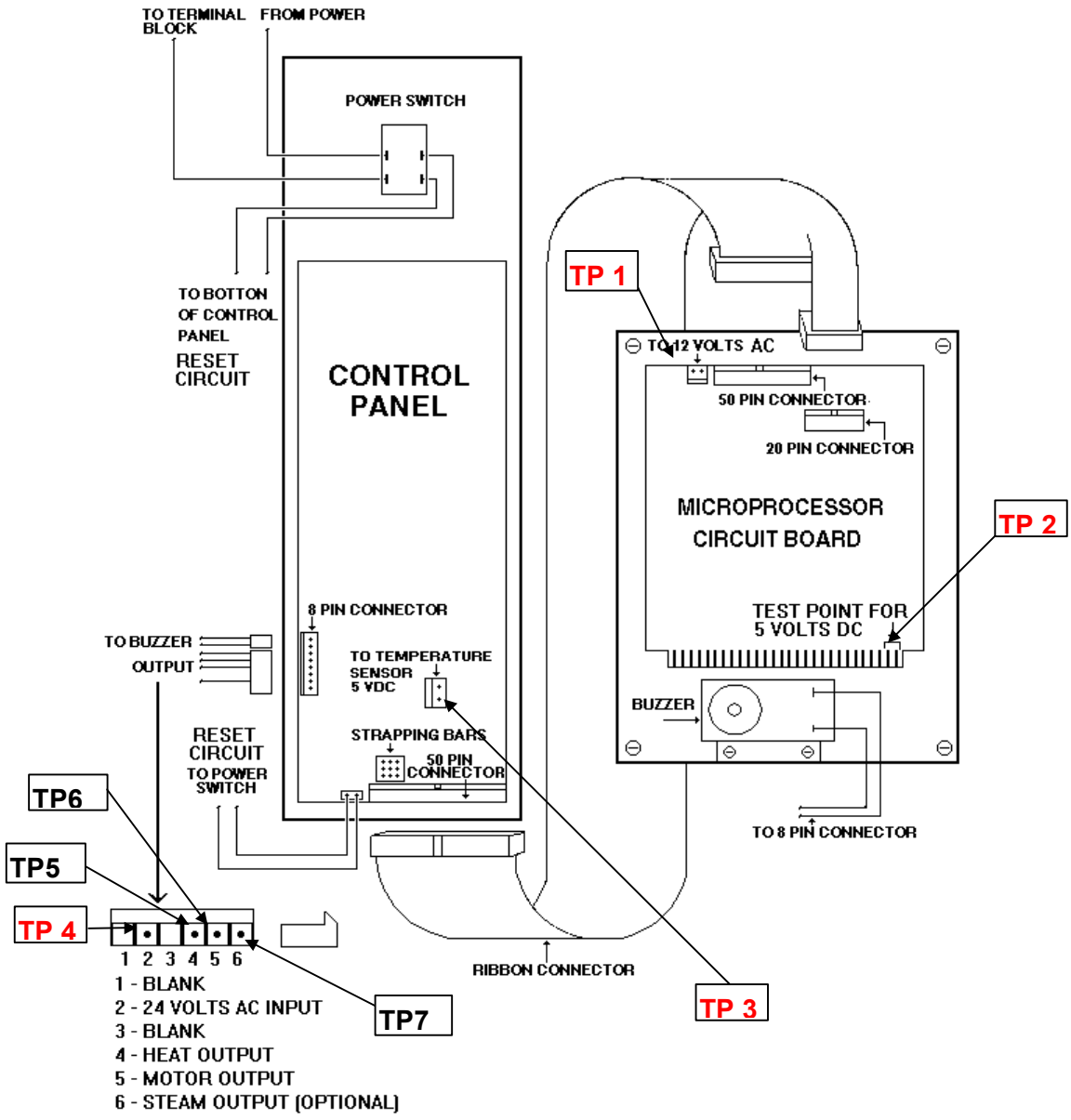
PROBE RESISTANCE

TEMP	RESISTANCE	VOLT DROP	TEMP	RESISTANCE	VOLT DROP
➢ 70	556	1.11	➢ 290	881	1.76
➢ 80	569	1.14	➢ 300	897	1.79
➢ 90	583	1.17	➢ 310	914	1.83
➢ 100	596	1.19	➢ 320	931	1.86
➢ 110	610	1.22	➢ 330	948	1.90
➢ 120	623	1.25	➢ 340	965	1.93
➢ 130	637	1.27	➢ 350	983	1.97
➢ 140	651	1.3	➢ 360	1000	2.00
➢ 150	665	1.33	➢ 370	1018	2.04
➢ 160	678	1.36	➢ 380	1036	2.07
➢ 170	694	1.39	➢ 390	1054	2.11
➢ 180	709	1.42	➢ 400	1072	2.14
➢ 190	724	1.45	➢ 410	1090	2.18
➢ 200	739	1.48	➢ 420	1109	2.22
➢ 210	754	1.51	➢ 430	1127	2.25
➢ 220	769	1.54	➢ 440	1146	2.29
➢ 230	785	1.57	➢ 450	1165	2.33
➢ 240	800	1.60	➢ 460	1184	2.37
➢ 250	816	1.63	➢ 470	1204	2.41
➢ 260	832	1.66	➢ 480	1223	2.45
➢ 270	848	1.70	➢ 490	1243	2.49
➢ 280	864	1.73	➢ 500	1263	2.53

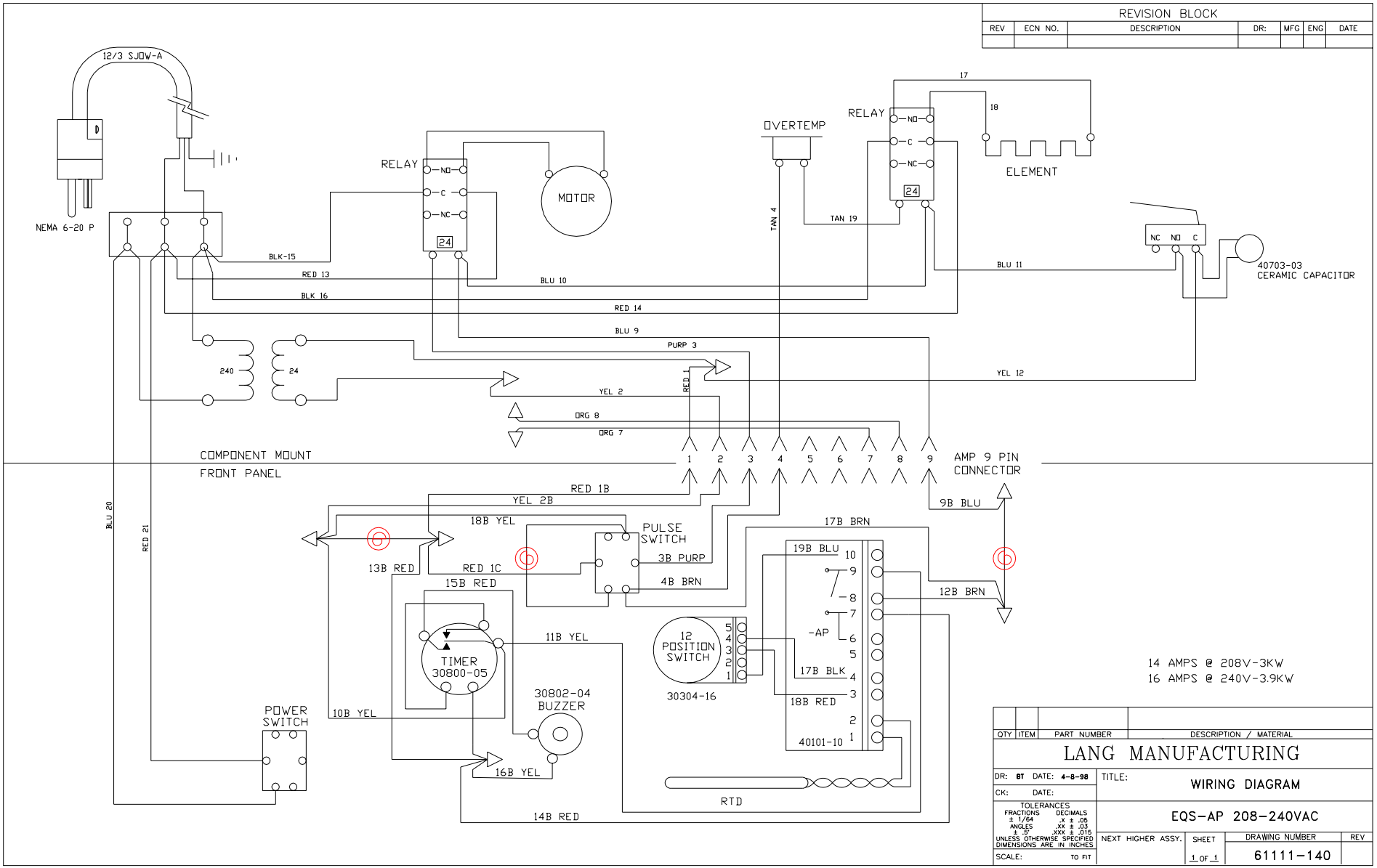
NOTE

Probe is factory checked at 350 °F. Must be completely disconnected from circuit board when measuring probe resistance. Display will read "**HELP**" if probe is open or unplugged. Any probe resistance can be multiplied by 2 milli-amps (.002) to determine voltage drop.

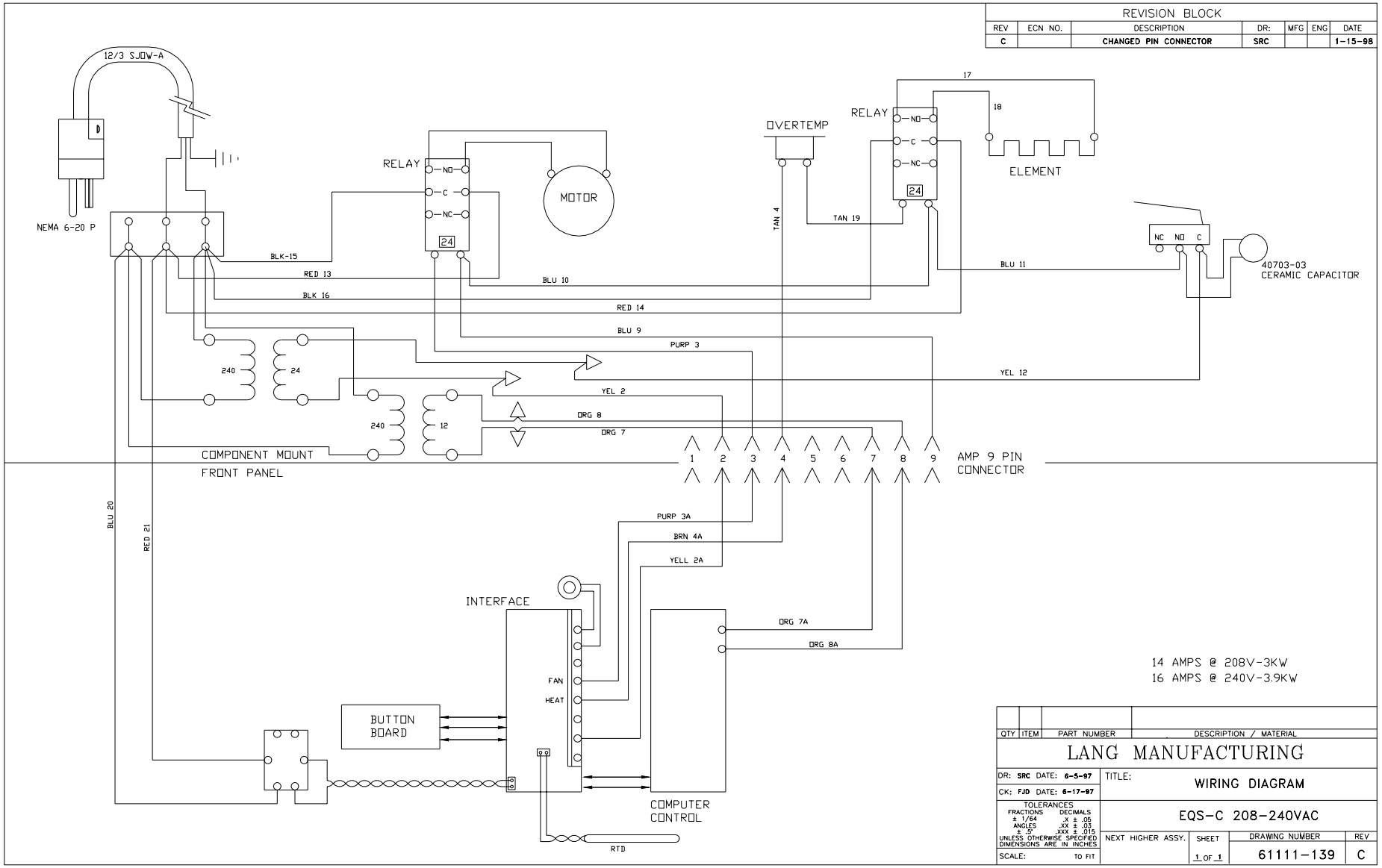
EHS-C TEST POINT LAYOUT



EQS-AP 208/240 WIRING DIAGRAM



EQS-C 208/240 WIRING DIAGRAM



PARTS LIST EQS-AP

DESCRIPTION	PART NO.
Element EQS Oven 208 Volt 2700 Watts	11090-32
Power Cord	31106-04
Power Cord Plug	31203-19
Oven Pan	25-420
Motor 1/6 HP 208/240 Volt	30200-41
Switch, Micro Oven Door	30301-02
Switch Toggle On-Off	30303-06
Switch, Temperature Control	30304-16
Safety Thermostat 490°F Open	60102-1021
Terminal Block	30501-02
Contactor 2 Pole 24 VAC, Heat	30701-04
Contactor 2 Pole 24 VAC, Motor	30701-05
Timer, Electric	30800-05
Buzzer, Electric Timer	30802-04
Transformer 240/24 VAC	31400-10
Pilot Light	31601-07
Circuit Board, Temperature Control	40101-19
Oven Temperature Sensor	41100-12
Oven Rack	50200-74
Door Handle	70603-25
Spring, EQS Door	51001-21
Panel Label	60301-126
Knob, Time/Temperature Control	70701-28
Window, Oven Door	71301-04
Fan, Convection Blower	71500-09
Fan, Convection Cooling	71500-10
Leg, 4” Stainless Steel	72500-02

PARTS LIST EQS-C

DESCRIPTION	PART NO.
Element EQS Oven 208 Volt 2700 Watts	11090-32
Power Cord	31106-04
Power Cord Plug	31203-19
Oven Pan	25-420
Oven Top	25-271
Oven Sides, Left or Right	25-273
Oven Back	25-276
Microswitch Rod	25-301
Spring Spacer	25-304
Washer 5/16” SAE	20201-09
Motor 1/6 HP 208/240 Volt	30200-41
Switch, Micro Oven Door	30301-02
Switch Toggle On-Off	30303-06
Safety Thermostat 490°F Open	60102-1021
Terminal Block	30501-02
Contactor 2 Pole 24 VAC, Heat	30701-04
Contactor 2 Pole 24 VAC, Motor	30701-05
Ribbon Cable	31110-01
Transformer 240/24 VAC	31400-10
Transformer 240/12 VAC	31400-26
Circuit Board, Buzzer	40102-10
Circuit Board, Front Panel	40102-23
Circuit Board, Microprocessor	40102-44
Oven Temperature Sensor	41100-12
Oven Rack	50200-74
Door Handle	70603-25
Spring, EQS Door	51001-21
Panel Label	60301-115
Window, Oven Door	71301-04
Fan, Convection Blower	71500-09
Fan, Convection Cooling	71500-10
Leg, 4” Stainless Steel	72500-02