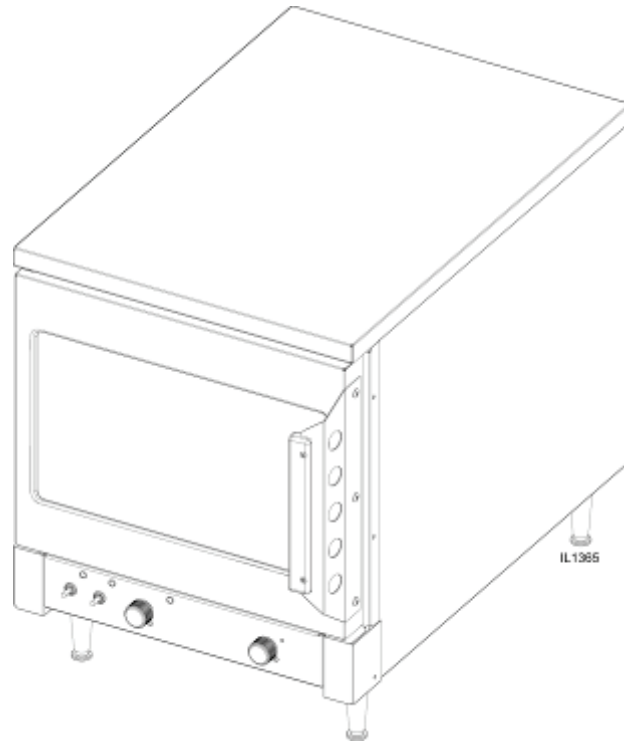


Lang[®]



Installation, Operation, and Maintenance Instructions

Electric Convection Oven Quarter Size

**Model:
ECOQ-AP**

THIS MANUAL MUST BE RETAINED FOR FUTURE REFERENCE. READ, UNDERSTAND AND FOLLOW THE INSTRUCTIONS AND WARNINGS CONTAINED IN THIS MANUAL.

FOR YOUR SAFETY
DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS AND LIQUIDS IN THE VICINITY OF THIS OR ANY OTHER APPLIANCE.

POST IN A PROMINENT LOCATION
INSTRUCTIONS TO BE FOLLOWED IN THE EVENT USER SMELLS GAS. THIS INFORMATION SHALL BE OBTAINED BY CONSULTING YOUR LOCAL GAS SUPPLIER. AS A MINIMUM, TURN OFF THE GAS AND CALL YOUR GAS COMPANY AND YOUR AUTHORIZED SERVICE AGENT. EVACUATE ALL PERSONNEL FROM THE AREA.

WARNING: IMPROPER INSTALLATION, ADJUSTMENT, ALTERATION, SERVICE OR MAINTENANCE CAN CAUSE PROPERTY DAMAGE, INJURY OR DEATH. READ THE INSTALLATION, OPERATING AND MAINTENANCE INSTRUCTIONS THOROUGHLY BEFORE INSTALLING OR SERVICING THIS EQUIPMENT.

Model #:	Purchased From:
Serial #:	Location:
Date Purchased:	Date Installed:
Purchase Order #:	For Service, Call:

Table of Contents

Chapter	Page
1. Table Of Contents	3
2. Read First	4
3. Equipment Description	5
4. Unpacking.....	6
5. Installation.....	7
6. Initial Start-Up	8
7. Operation	9
8. Maintenance & Cleaning Procedures.....	10
9. Troubleshooting.....	11
10. Parts Lists	13
11. Wiring Diagram	15

CAUTION: THE OVEN WEIGHS 158 LBS. (71.8 KILOGRAMS). 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 (158 LBS.).

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 located behind the oven in the bottom right corner. 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 off 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: Service on this or any other Lang appliance must be performed by qualified personnel only. Consult your Lang Authorized Service Agent Directory. You can call our toll free number 314-678-6315 or visit our website www.langworld.com for the service agent 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.

CAUTION: USE OF ANY REPLACEMENT PARTS OTHER THAN THOSE SUPPLIED BY STAR OR THEIR AUTHORIZED DISTRIBUTORS CAN CAUSE BODILY INJURY TO THE OPERATOR AND DAMAGE TO THE EQUIPMENT AND WILL VOID ALL WARRANTIES.



Equipment Description

Model: ECOQ-AP

Electric Quarter-Size Convention Oven

Exterior Construction

The oven exterior dimensions are 19" (48.26cm) Wide, 24" (60.96cm) High, 28" (71.12cm) deep (with legs) and a 1-3/8" (3.49cm) handle extension on the door.

The Front, Top, and Sides are constructed of stainless steel with an aluminized back and bottom.

The oven door comes standard with a window and is reversible for either left or right directional opening.

The door handle is constructed of Stainless Steel and Polymer.

The oven cavity is insulated with high temperature insulation for efficiency and reduced heat loss.

Interior

The dimensions of the oven cavity are 15-5/8" (39.68cm) Wide, 13" (33cm) High, 14-1/2" (36.83)(cm) Deep.

The oven is designed for three shelves and comes with three Chrome Plated Racks.

The interior air deflection baffle is constructed of stainless steel.

Operation

The ECOQ is a forced air convention oven with a vented oven cavity.

The air is driven by a 1/6 HP fan motor.

Controls

The ECOQ comes with the Star "Accu-Plus" controls which include:

- Easy to use manual control knobs.

- Pulse and two speed fan.

- Solid State temperature sensing and controls.

Technical

Oven operates as shipped on either 208 or 240 Volt Single Phase on a 20 Amp. Circuit. It is shipped with a Power Cord and Plug attached.

Floor space required is 19" (48.26cm) Wide, 28" (71.12cm) Deep.

The oven weighs 158 lb. (71.8 Kilograms).

Each oven is shipped with a stacking kit to stack multiple ovens.

Unpacking

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 Star Manufacturing Company. File your claim with the carrier.

Location

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.

Un-crating

The oven will arrive completely assembled inside a wood frame covered by cardboard box and strapped to a skid. **Remove the cardboard cover, cut the straps and remove the wood frame.**

CAUTION: OVEN WEIGHS 158 LBS (71.8 kilograms). 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 (225 LBS.).



CAUTION: SHIPPING STRAPS ARE UNDER TENSION AND CAN SNAP BACK WHEN CUT.



Remove oven from skid and place in intended location.

Installation

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 located above the control panel behind the screen mesh. 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.



Electrical Connection

The oven is supplied with a cord and plug connected. The plug provided is a NEMA-L6-20P. The receptacle is not provided with the oven. The installer should install a **NEMA-L6-20R** close enough to the oven for the plug to reach the outlet.

Follow the receptacle manufacturer's instructions when connecting the receptacle to the power supply.

Oven Voltage

The Star Model ECOQ oven can be operated on 208 Volts or 240 Volt source. The Amp draw and KW rating at both voltages are listed in the table below.

MODEL	VOLT	AMPERAGE	
ECOQ-AP	208	3.0	14.0
ECOQ-AP	240	3.9	16.0

Initial Start Up

PRE-POWER ON

After the oven is installed and connected to power, prior to turning on, verify the following:

- The door opens and closes freely.
- All three racks are in the oven correctly.
- All packing materials have been removed from the inside of the oven.

POWER ON

When the oven is first turned on the motor will start to run and the indicator lights will light.

NOTICE: During the first few hours of operation, you may notice a small amount of smoke coming off 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.



Operation

GENERAL

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.



Convection ovens constantly circulate air over and around the product. This strips away the thin layer of moisture and cool air from around the product allowing heat to penetrate more quickly.

Cooking times can be shortened and cooking temperatures can be reduced.

To convert standard deck oven recipes, reduce the temperature 50 degrees and the time by 25%. Make minor adjustments as necessary.

The lower the oven temperature the more even the bake.

Check the product near the end of the initial cooking cycle by turning on the oven light and looking through the oven door windows.

Do not open the oven doors during baking, as this will change the baking characteristics of the oven and make it difficult to determine a final program.

If the product is overdone on the outside and underdone on the inside, reduce the baking temperature.

If the product is pulling away from the edge of the pan, the temperature is too high or the cooking time too long.

Load each shelf evenly. Spaces should be maintained equally between the pan and oven walls, front and back.

For best baking results, load the oven from the top to the bottom during random loading.

Setting the Temperature

Turn the temperature dial until the line on the knob points at the desired temperature.

Allow the oven to preheat before placing product into the oven cavity.

The oven may emit a small amount of smoke the first time it is brought up to temperature. This is caused by the oils associated with the manufacture of the appliance and is a normal condition. The smoke will stop after the oven reaches 350 degrees.

Setting the Time

Turn the timer dial until the line on the knob points at the desired time.

The timer will countdown once the time is set. When the timer has reached zero, a buzzer will sound continuously. Turn the timer dial to "Off" to stop the buzzer.

Maintenance & Cleaning

Door Reversal

Remove the three Phillips screws located at the back of the oven securing the top to the oven.

Remove the top of the oven.

Open door and remove 5/8 bolt in the lower right-hand corner of the opening.

Remove the 5/8-door pin in the upper left hand corner holding the door to the oven.

Lift door off lower door pin and set to side.

Remove the lower left-hand door pin and re-install into the lower right-hand corner.

Place door on lower door pin and re-install the upper 5/8-door pin into the top of the oven securing door to oven.

Place 5/8 bolt into vacant hole at the lower left of oven.

Re-install top of oven.

Re-install the three Phillip screws at the back securing top to the oven.

Cleaning

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.



Always start with a cold oven.

The stainless interiors can easily be cleaned using most domestic or commercial oven cleaners.

Always follow the cleaner manufacturer's instructions when using any cleaner.

Care should be taken to prevent caustic cleaning compounds from coming in contact with the blower wheel.

The oven racks and rack slides may be cleaned by removing them from the oven and soaking them in a solution of ammonia and water.

The stainless steel door liners and oven front should normally be cleaned with a soap and water solution.

Discoloration or heat tint may be removed with any of the following cleaners: Penny Brite, Copper Brite, Du-Bois Temp, or Past Nu-Steel.

Always apply these cleaners when the oven is cold and rub in the direction of the metal's grain.

Troubleshooting

Symptoms

What follows is a chart of Symptoms and Possible Causes to aid in diagnosing faults with the oven.

Refer to the Symptoms column to locate the type of failure then to the Possible Cause for the items to be checked.

To test for a possible cause refer to the TEST section and locate the Possible Cause then refer to test to identify test procedures.

Symptom	Possible Cause
Power indicator is not lit.	No power to cord outlet Oven unplugged from outlet Failed power cord or plug Failed power switch Failed pilot light
Oven will not heat	Failed element Power switch is not ON Failed circuit board Failed temperature sensor Failed temperature selector
Product burning	Product is cooked too long Failed temperature sensor Failed circuit board Failed temperature selector Open wire between selector and Circuit Board
Product under done	Failed temperature sensor Failed circuit board Failed temperature selector

Troubleshooting cont'd

TESTS

NOTICE:

Service on this or any other Lang appliance must be performed by qualified personnel only. Consult your Lang Authorized Service Agent Directory. You can call our toll free number 314-678-6315 or visit our website www.langworld.com for the service agent 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.



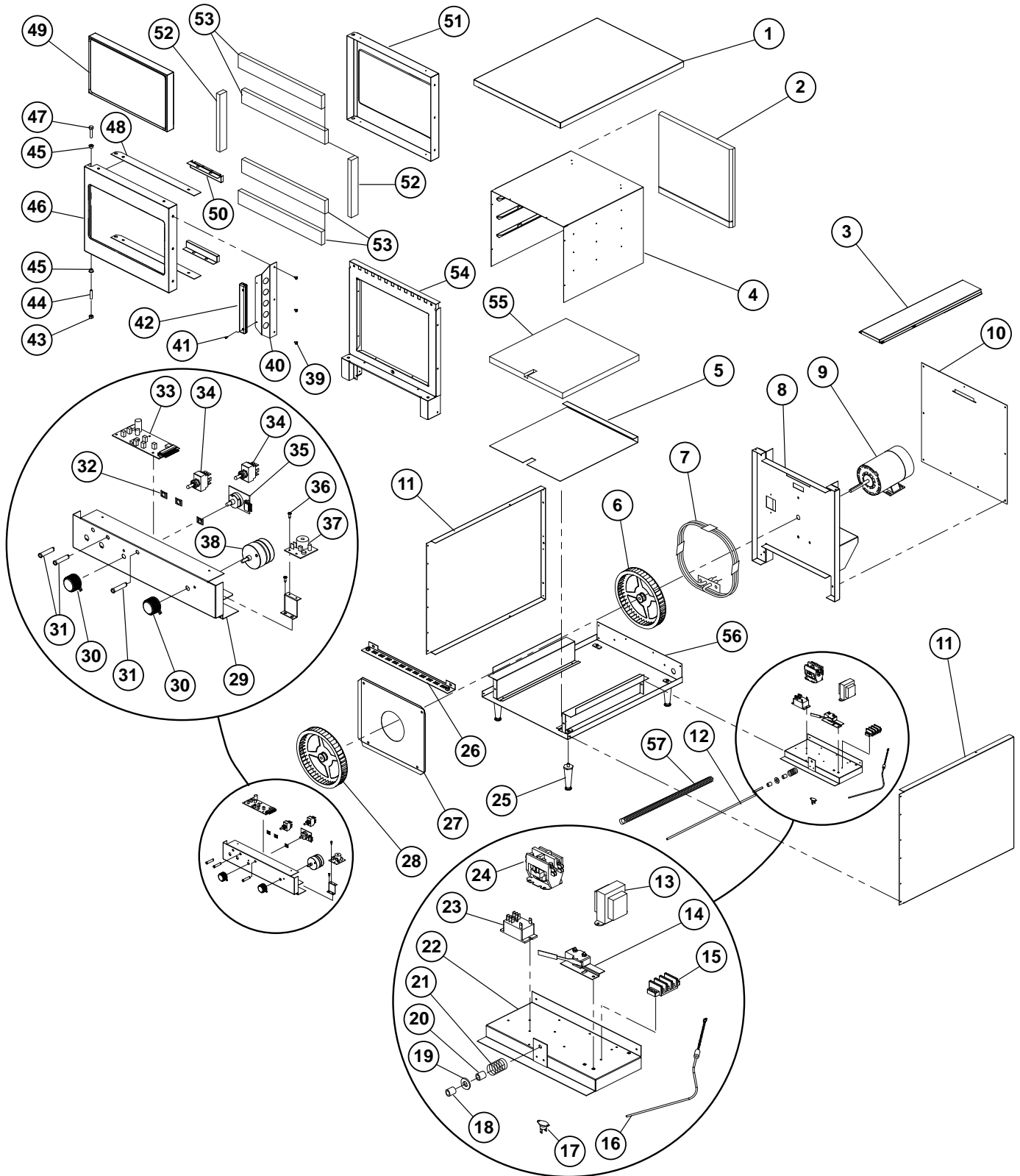
If an item on the list is followed by an asterisk (*), the work should be done by a factory authorized service representative.

Possible Cause	TEST
Product is cooked too long	No test available, operational condition
Failed temperature sensor	Unplug the sensor from the control panel circuit board and check for continuity
Failed element	Remove the wires and check for continuity across the element
Failed temperature selector	Remove the wires and check the resistance on all the settings Call the factory for switch resistance values
Failed heat contactor	Remove the wires from the contactor coil and check for continuity across the contactor coil connection Ensure the contactor moveable points move freely up and down Check for 24 volts at the contactor coil when the computer is running*
Failed or disconnected safety thermostat	Check across the thermostat connectors for continuity

CAUTION:

USE OF ANY REPLACEMENT PARTS OTHER THAN THOSE SUPPLIED BY STAR OR THEIR AUTHORIZED DISTRIBUTORS CAN CAUSE BODILY INJURY TO THE OPERATOR AND DAMAGE TO THE EQUIPMENT AND WILL VOID ALL WARRANTIES.





Model
 ECOQ-AP Quarter Size Convection Oven
 EQS-AP-C Quarter Size Convection Oven

Lang[®]

SK2296

Rev. - 8/06/07

PARTS LIST

November 29, 2011, Rev B

Model No: ECOQ-AP Quarter Size Electric Convection Oven

Key Number	Part Number	Qty Per	Description	
1	Q9-25-271	1	TOP	ALL
2	2H-25-264	1	BACK INSULATION	ALL
3	Q9-25-250	1	VENT ASSEMBLY	ALL
4	Q9-25-242	1	OVEN CAN	ALL
5	Q9-25-266	1	BOTTOM INSULATION SUPPORT	ALL
6	2U-71500-09	1	BLOWER WHEEL EQS - OVEN	ALL
7	2N-11090-32	1	ELMNT EQS 208V 2.7KW	ALL
8	Q9-25-210	1	FIREWALL ASSY	ALL
9	2U-30200-41	1	MTR 1/6HP208/240V1PH1SPD	ALL
10	Q9-25-276	1	BACK	ALL
11	Q9-25-273	2	SIDES	ALL
12	Q9-25-300	1	SWITCH ROD ASSY	ALL
13	2E-31400-07	1	XFORMR120-208-240/24V40VA	ALL
14	Q9-25-W1254	1	SWITCH ARM ASSY	ALL
15	2E-30501-02	1	TRM STRP 3 POLE W/PUSH ON	ALL
16	2E-41100-12	1	SENSOR EHS OVEN 450 DEG	ALL
17	2T-30401-09	1	STAT FXD 500 DEG OPEN	ALL
18	Q9-25-304	1	SPRING SPACER	ALL
19	Q9-25-305	1	SPRING STOP WASHER	ALL
20	2K-70300-09	1	PIPE 1/4 SCH 40 BLACK	ALL
21	2P-51001-12	1	SPRNGCOMPRSN.665IDX1.4LNG	ALL
22	Q9-25-320	1	COMPONENT MOUNT ASSY	ALL
23	2E-30701-05	1	CONTC 2POLE 30A 24VAC P &	ALL
24	2E-30701-04	1	CONTC 2POLE 30A 24VAC	ALL
25	2A-72500-02	4	LEG 4 SS MM, GRID, FRYER	ALL
26	Q9-25-290	1	TOP HINGE ASSY	ALL
27	Q9-25-256	1	BAFFLE	ALL
28	2U-71500-10	1	BLOWER WHEEL EQS -	ALL
29	Q9-25-414	1	PANEL SPOTWELD - AP	ALL
30	2R-70701-53	2	KNOB SPECIAL #2-SET SCREW	ALL
31	2J-31601-07	3	PILOT LT 28V 6 LEAD WHT	ALL
32	2C-20602-03	3	TINNERMAN 3SCLIP 5/16	ALL
33	2E-40101-W19	1	CIRBD SI TEMP CNTRL NO	ALL
34	2E-30303-06	2	SWT TOG ON-ON DPDT BLK	ALL
35	2E-30304-16	1	CIR.BD.SWITCH 140'-450'F	ALL
36	2C-31004-02	2	TERM FEM 1/4 18/22GA INS	ALL
37	2J-30802-04	1	BUZZER ELEC 24V AC PIEZIO	ALL
38	PS-60101-W4	1	ELEC. TIMER KIT, 1HR-24VAC	ALL UNITS MFG BEFORE 11-2010
	2J-30800-W05	1	MECH. - ELEC TIMER 1HR-24	ALL UNITS MFG AFTER 11-2010
39	2C-20101-24	AR	SCRW MS PLT 10-32 X .375	ALL
40	Q9-25-287	1	DOOR HANDLE - WINDOW DOOR	ALL
41	2C-20102-08	2	SCRW PHD ST 8-32X.375	ALL
42	2R-50800-91	1	DOOR HANDLE	ALL
43	2C-20303-07	1	NUT HX SS 5/16-18	ALL
44	Q9-25-293	2	BOTTOM DOOR PIVOT	ALL
45	2P-70201-05	2	BRNZBRFLN5/16IDX1/2ODX3/8	ALL
46	Q9-25-282-1	1	DOOR OUTSIDE - WINDOW	ALL
47	Q9-50800-90	1	MACHINE TOP PIVOT PIN	ALL
48	Q9-25-284	2	DOOR BAND	ALL
49	2Q-71301-04	1	WINDOW ASSY 9-5/8X16-5/8	ALL
50	Q9-25-286	2	MAGNET HOLDER	ALL
51	Q9-25-283-1	1	DOOR INSIDE - WINDOW DOOR	ALL
52	2H-25-265-2	2	DOOR INSULATION W/WINDOW	ALL

**IMPORTANT: WHEN ORDERING, SPECIFY VOLTAGE OR TYPE GAS DESIRED
INCLUDE MODEL AND SERIAL NUMBER**

PAGE 1 _____
OF 2 _____

Some items are included for illustrative purposes only and in certain instances may not be available.



PARTS LIST

November 29, 2011, Rev B

Model No: ECOQ-AP Quarter Size Electric Convection Oven

Key Number	Part Number	Qty Per	Description
53	2H-25-265-1	4	DOOR INSULATION W/WINDOW
54	Q9-25-230	1	FRONT ASSEMBLY
55	2H-25-261	1	BOTTOM INSULATION
56	Q9-25-200	1	BOTTOM ASSY
57	P9-50309-106	1	SLEEVING 5/8ID NAT
58	2K-70801-07	3	SPACER, SUPPORT 1/2 lg

**IMPORTANT: WHEN ORDERING, SPECIFY VOLTAGE OR TYPE GAS DESIRED
INCLUDE MODEL AND SERIAL NUMBER**

PAGE 2
OF 2

Some items are included for illustrative purposes only and in certain instances may not be available.

