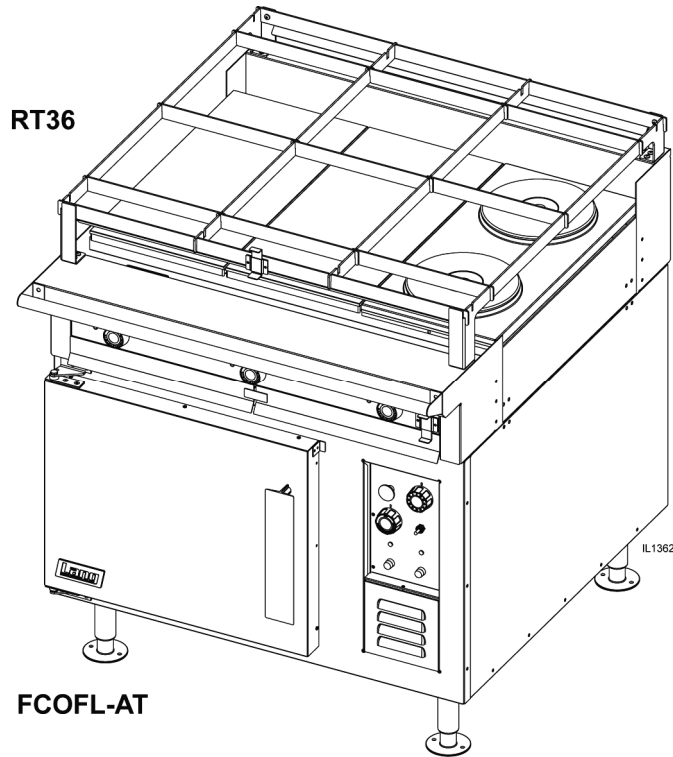


# Lang®



## Installation, Operation, and Maintenance Instructions with Troubleshooting

### Electric Full Size Economy Convection Oven

**Models:**  
FCOFL-AT (Lower)  
FCOF-AT (Upper)

**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.**

<b>Model #:</b>	<b>Purchased From:</b>
<b>Serial #:</b>	<b>Location:</b>
<b>Date Purchased:</b>	<b>Date Installed:</b>
<b>Purchase Order #:</b>	<b>For Service, Call:</b>

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**CAUTION:** EACH UNIT WEIGHS 275 LBS. 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. 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 circuit breaker door on oven. 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:** Service on this, or any other, LANG appliance must be performed by qualified personnel only. Consult your LANG authorized service agent directory or call the factory at 314-678-6315, or [www.langworld.com](http://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 LANG OR THEIR AUTHORIZED DISTRIBUTORS CAN CAUSE BODILY INJURY TO THE OPERATOR AND DAMAGE TO THE EQUIPMENT AND WILL VOID ALL WARRANTIES.



# EQUIPMENT DESCRIPTION

## Model: FCOFL-AT/FCOF-AT

### Exterior Construction

The oven exterior dimensions are 36" (91.44cm) Wide, 22" (55.88cm) High, 34" (86.36cm) Deep. The Front, Back, and Sides are constructed of stainless steel with an aluminized top and bottom.

The door handle is constructed of Polycarbonate.

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

### Interior Construction

The oven cavity dimensions are 20" (50.8cm) Wide, 17" (43.18cm) High, 29" (73.66cm) Deep.

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

The interior of the oven is constructed of aluminized steel.

### Operation

The oven is a forced air convection oven with a vented oven cavity.

The air is driven by a 1/3 HP fan motor.

### Controls

Easy to use manual control knobs.

Mechanical temperature sensing and controls.

### Technical

Oven operates as shipped on 208, 240, or 480-Volt Single, or Three Phase.

Floor space required is 42" (106.68cm) Wide, 37" (94cm) Deep.

The oven weighs 275 lb.

The ovens are stackable and can include stacking kit if requested.

# 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 Lang Manufacturing Company. File your claim with the carrier.

## Location

Prior to un-crating, move the oven as near to 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 and strapped to a skid. **Cut the straps and remove the wood frame.**

**CAUTION:** THE OVEN WEIGHS 225 LBS. 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 THE 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.



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 behind circuit breaker door on oven. 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.



## Leg Installation

Legs are available for single, double, and triple, installations. Single deck installations require a 27-inch leg, double deck installations require a 16-inch leg, and triple deck installations require a 6-inch leg.

To install the 27-inch legs, place some cardboard on the floor and gently tip the oven onto its back. Fasten two legs to the oven's front. Lift the oven onto its front legs and block the back up using one of the 27-inch legs set upside down in the center rear of the oven body. Install the last 27-inch leg onto the oven body on the control side rear. Gently lift the oven rear, remove the leg set to support the oven center and install it on the last rear corner.

To install the 16-inch legs follow the same instructions as the 27-inch legs and then proceed to "Stacking the Ovens" for the second deck installation.

To install the 6-inch legs, place some cardboard on the floor and gently tip the oven onto its back. Fasten the four 6-inch legs onto the bottom of the oven. Gently lift the oven onto the legs and proceed to the "Stacking the Ovens" for the second and third deck installation.



# INSTALLATION

## Stacking the Ovens

Stacking kits must be requested upon purchase.

Remove all the plug buttons from the top of the lower oven.

Remove the stacking kit from the oven compartment of one oven and install the 1 1/4-inch plastic bushing into the top of the lower oven.

Tip the top oven backwards and install two pins into the front leg holes of the top oven.

Route the wires 1 and 2 from the upper deck through the 1 1/4-inch knockout in the bottom of the oven through the 1 1/4-inch knockout in the top of the bottom oven to the main terminal block in the bottom oven. Refer to wiring diagram for proper phasing.

Lift the top oven and gently set on top of the lower oven so that the studs nest into the holes of the lower oven.

If placing a range top onto the oven, see the installation section of the range top for installation directions.

## 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 electrical service entrance is provided by a 1 1/4-inch knockout on the oven bottom. A three pole terminal block is provided for connection.

# INITIAL START-UP

## INITIAL PREHEAT

Prior to putting any oven into full time operation at normal cooking temperatures, it must be thoroughly dried out. Moisture absorption in the closed spaces, in the insulation, and even inside the heating elements can cause future trouble if not properly treated.

To “dry out” the oven, set the thermostat to 250°F and turn on the power switch. Allow the unit to cycle at least 15 minutes at this heat level. Reset the thermostat to 350°F allow the same time. Reset the thermostat to 450°F and allow the unit to maintain the temperature for a minimum of 4 hours. More time may be required if the unit has to operate in moist environment.

If the unit is out of use for three or more days, a one-hour preheat schedule should be used, especially when exposed to high humidity and/or cool temperatures.

**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 range and will disappear after the first few hours of use.**

# OPERATION

**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.



## General Operation

The convection oven roasts and bakes in shorter time and at lower temperatures with less shrinkage than conventional commercial ovens.

A blower in the Lang convection oven circulates air within the chamber to heat the entire space evenly and transfer heat efficiently to the product, even with stacked loading.

The airflow continuously removes the thick layer of moist, cool air that otherwise would surround the product. When properly loaded and operated, it maintains this airflow throughout the chamber to eliminate hot spots and roasts or bakes with minimum power consumption at twice the output capacity of a conventional oven.

The power switch on the lower portion of the control panel energizes the fan motor and activates the thermostatically controlled circuit for the oven heating elements. When this switch is in the on position, the red indicator light will illuminate.

Rotating the thermostat control knob from "off" position to selected temperature causes the indicator light to illuminate and closes the contactor that feeds power to the heating elements. This light will cycle "on and off" as the thermostat calls for heat in the oven. The blower, however, operates continuously while the power switch is in the "on" position.

The black control knob operates a damper in the oven vent stack. Damper is open when knob is pulled outward.

Circuit breakers behind the control panel protect the electrical components from overload.

## Typical Operation

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

# MAINTENANCE & CLEANING

## 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.**



The oven should be thoroughly cleaned at least once a week in addition to the normal daily cleaning to insure against the accumulation of foreign material.

- Always start with a cold oven.
- The stainless exterior can easily be cleaned using stainless steel cleaner
- 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, rack slides, and interior may be cleaned using oven cleaner.
- Discoloration or heat tint may be removed using a Carbon Release oven cleaner.
- The oven interior should be cleaned using a mild soap and a non metal scouring pad. **DO NOT use caustic cleaners.**

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

Electric equipment is inherently clean and sanitary, but may become unsanitary if grease is allowed to accumulate on it. Take advantage of the clean, sanitary features of electric equipment, give it the regular attention that it deserves the same as any other highly perfected machinery, to insure best results and continued high operating efficiency.

# MAINTENANCE & CLEANING

## TROUBLE SHOOTING

### Symptoms

What follows is a chart of Symptoms, Possible Causes, and Remedy's 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 and the Remedy to column for possible solutions.

<b>SYMPTOM</b>	<b>POSSIBLE CAUSE</b>
Oven will not heat	Oven circuit breaker not on Incorrect wiring Defective transformer Defective fuses Defective contactor Defective thermostat Defective element
Oven motor will not run	Incorrect wiring Defective transformer Defective fuses Defective contactor Defective motor
Product burning	Product cooked too long Oven out of calibration Defective transformer
Product under cooked	Product not cooked long enough Oven out of calibration Defective thermostat

# MAINTENANCE & CLEANING

## TESTS

### NOTICE:

Service on this, or any other, LANG appliance must be performed by qualified personnel only. Consult your LANG authorized service agent directory or call the factory at 1-800-807-9054, or WWW.STAR-MFG.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
Oven circuit breaker not on	Cycle breaker to the "ON" position.
Incorrect wiring	Confirm that oven is getting proper voltage* Confirm that oven is phased correctly*
Defective transformer	Confirm that primary coil has the correct voltage* Confirm that secondary coil has the correct voltage*
Defective fuses	Replace fuses
Defective contactor	Confirm that contactor coil has correct voltage* Confirm that contactor points move freely
Defective thermostat	Confirm that thermostat has correct voltage* Confirm that thermostat is operating properly
Defective element	Confirm that elements has correct voltage* Confirm that elements are pulling correct amps*
Defective motor	Confirm that motor has correct voltage* Confirm that motor is pulling correct amps*

### CAUTION:

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# MAINTENANCE & CLEANING

## **CALIBRATION**

### **Calibration Check**

Place thermometer or thermocouple in the center of oven cavity.

Set thermostat to 350°F.

Allow the oven to Preheat for at least half an hour.

Note cycle on temperatures and cycle off temperatures for 3 cycles. (Red indicator light indicates when oven is calling for heat)

After 3 cycles average the temperature. (Add all six temperatures and divide by 6)

### **Calibration Adjustment**

A 1/16" flat blade screwdriver with a 2" shaft is required to make adjustments on the thermostat.

Maintain the oven temperature at 350°F.

Without turning the thermostat, remove the knob.

Locate the adjustment screw at the base of the shaft and insert the screwdriver.

Grasp the shaft and turn the screw. Counter clockwise to increase and clockwise to decrease (1/8 of a turn will move the temperature 5-7 ° in either direction).

Reinstall the oven knob and recheck the oven temperature.

## **REMOVAL INSTRUCTIONS**

### **Thermostat, Contactor, Transformer, and Switch**

These parts are located behind the control panel assembly on the right hand side of the oven. To access control panel secure unit from power, remove the vent knob and the seven screws around the outside of the control panel assembly. Slowly pull the control panel toward you until the component is accessible.

#### **Thermostat**

Secure oven from power. Inside the oven, remove the fan baffle and the retaining clips holding the thermostat capillary tube to the inside of the oven. Feed the bulb through the oven wall into the control panel area. Pull out control panel as previously outlined.

Remove the wires from the old thermostat and attach to the corresponding terminal of the new thermostat. Remove knob and two screws that hold the thermostat to the oven control panel. Discard old thermostat. Reinstall the thermostat and capillary tube into oven and the control panel and restore power to the oven. Test for proper operation.

#### **Contactor and Switch**

Pull out control panel as previously outlined. Remove the wires from the contactor or switch being changed. Place those wires on the corresponding terminal of the new contactor or switch. Remove old contactor or switch and mount new contactor or switch with wires attached. Discard old contactor or switch. Reinstall the control panel and restore power to the oven. Test for proper operation.

#### **Transformer**

Pull out control panel as previously outlined. Remove the wires from the old transformer. Place the wires on the corresponding terminal of the new transformer. Remove old transformer and mount new transformer with wires attached. Discard old transformer. Reinstall the control panel and restore power to the oven. Test for proper operation.

# MAINTENANCE & CLEANING

## **Blower Wheel**

Secure oven from power. Inside the oven, remove the racks and right hand rack slide. Remove wing nut holding oven baffle. Remove oven baffle exposing the blower wheel. Loosen the two 1/4-20-set screws holding the blower wheel to the motor shaft. Using a three-fingered wheel puller, grasp the puller ring with all three fingers and tighten the puller until the blower wheel hub clears the motor shaft. Place new blower-wheel on the motor shaft and position the new blower wheel so that it is flush with front inlet ring. Tighten the set-screw over the flat spot on the motor shaft and spin the blower wheel to confirm that blower wheel is strait. Adjust if necessary and tighten second set screw. Test for proper operation.

## **Motor**

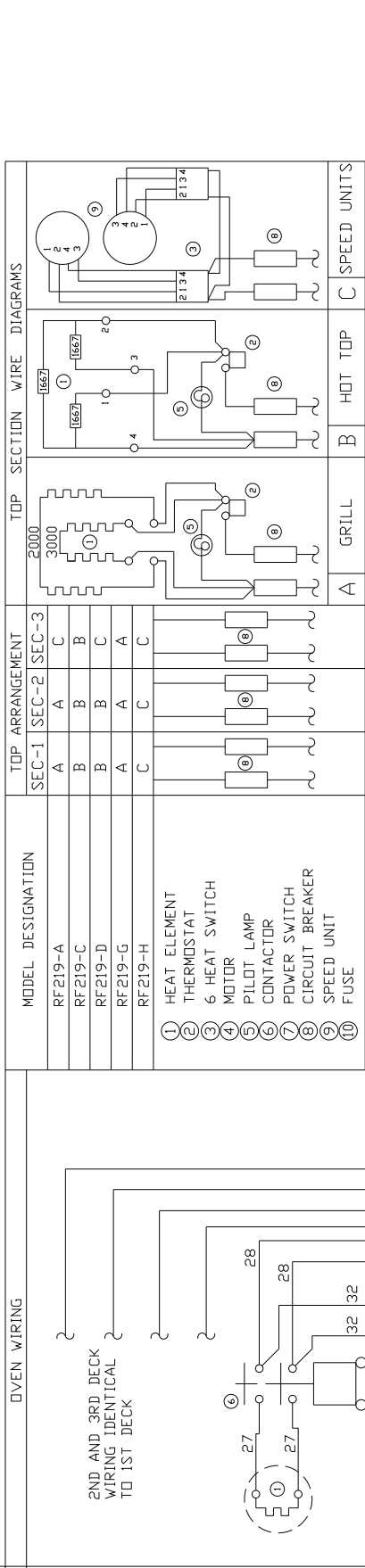
Remove the blower wheel as outlined above. Once blower wheel is removed, remove the six bolts holding the motor plate to the side wall of the oven. Gently pull the motor out and lay on the bottom of the oven cavity. Note each wire location on the motor and remove the wires. Remove motor from cavity and remove old motor from motor mounting plate. Attach new motor to motor mounting plate. Reverse removal instructions to assemble. Discard old motor and test for proper operation.

## **Elements**

Remove oven racks and right hand rack slide from oven. Remove the wing nuts holding oven baffle to right hand of oven. Remove oven baffle from oven. Remove 4 screws holding oven elements to right hand of oven. Gently pull elements away from right hand of oven. Noting wire locations disconnect wires from element. Discard old element. Reverse removal instructions to assemble.

# WIRING DIAGRAM 208/ 240

REVISION BLOCK	
REV	DESCRIPTION
ECN NO.	DR: MFG ENG DATE



MODEL DESIGNATION	TOP ARRANGEMENT			TOP SECTION WIRE DIAGRAMS		
	SEC-1	SEC-2	SEC-3	A	B	C
RF219-A	A	A	C			
RF219-C	B	B	B			
RF219-D	B	B	C			
RF219-G	A	A	A			
RF219-H	C	C	C			

MODEL NUMBER	LOADING			ELECTRICAL DATA		
	L1	L2	L3	208 VOLT	240 VOLT	SINGLE PHASE AMPS
RF-21S	6.6	10.0	5.0	48.3	69.2	62.5
1F-6S	6.6	0.0	0.0	31.7	0.0	27.5
2F-6S	6.6	0.0	6.6	55.0	31.7	47.7
3F-6S	6.6	6.6	6.6	19.8	55.0	47.7

CONNECT WIRES FROM RANGE TOP OR ADDITIONAL DECKS TO LOWER OVEN TERMINAL BLOCK AS SHOWN AT RIGHT	ELECTRICAL CONNECTIONS
	OVEN
	1st DECK 2nd DECK 3rd DECK
	1 1 1
	2 2 2
	3 1 1
	2 1 1
	2 2 2

QTY ITEM	PART NUMBER	DESCRIPTION / MATERIAL	
<b>LANG MANUFACTURING</b>			
DR: SRC DATE: 2-1-94 TITLE: CONVECTION OVEN / RANGE			
OK: DATE:			
TOLERANCES: FRACTIONS DECIMALS ANGLES DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED			
SCALE: TO FIT		SHEET	DRAWING NUMBER
USE ON ALL E SERIAL NUMBERS		208/240 VAC	61105-13
		NEXT HIGHER ASSY.	DRAWING NUMBER
		TO FIT	REV
		1 OF 1	A



# WIRING DIAGRAM 480

REV: \_\_\_\_\_ ECU NO. \_\_\_\_\_ DR: MFG ENG DATE

REVISION BLOCK DESCRIPTION

REV: \_\_\_\_\_ ECU NO. \_\_\_\_\_ DR: MFG ENG DATE

REVISION BLOCK DESCRIPTION

OVEN WIRING

2ND AND 3RD DECK WIRING IDENTICAL TO 1ST DECK

1ST DECK TERMINAL BLOCK

2ND DECK TERMINAL BLOCK

50 AMP 3 POLE CIRCUIT BREAKER

3 PHASE MOTOR

TERMINAL BLOCK (1ST DECK)

MODEL DESIGNATION	TOP ARRANGEMENT		
	SEC-1	SEC-2	SEC-3
RF21S-A	A	A	C
RF21S-C	B	B	B
RF21S-D	B	B	C
RF21S-G	A	A	A
RF21S-H	C	C	C

OVEN 3 POLE CIRCUIT BREAKER L1 L2 L3

HEAT ELEMENT THERMOSTAT 6 HEAT SWITCH MOTOR PILOT LAMP CONTACTOR POWER SWITCH SPEED UNIT FUSE TRANSFORMER

1 HEAT ELEMENT  
2 THERMOSTAT  
3 6 HEAT SWITCH  
4 MOTOR  
5 PILOT LAMP  
6 CONTACTOR  
7 POWER SWITCH  
8 SPEED UNIT  
9 FUSE  
10 TRANSFORMER

CONNECT WIRE FROM RANGE TOP TO OVEN CIRCUIT BREAKER. CONNECT WIRES FROM ADDITIONAL DECKS TO LOWER OVEN TERMINAL BLOCK

CONVECTION OVEN/RANGE ELECTRICAL DATA								
MODEL NUMBER	LOADING			TOTAL KW/PHASE	AMPS	THREE PHASE		
	L1	L2	L3			L1	L2	L3
RF-21S	6.2	10.2	5.2	21.6	20.1	29.5	27.7	
IF-6S	6.2	0.2	0.2	6.6	13.2	13.2	.66	
2F-6S	6.4	0.4	6.4	13.2	23	13.9	13.9	
3F-6S	6.6	6.6	6.6	19.8	23.6	23.6	23.6	

CAUTION: CHECK OVEN FOR PROPER DIRECTION OF FAN ROTATION

CHANGE PHASING OF POWER IF NECESSARY TO CORRECT

USE ON ALL E SERIAL NUMBERS

TOP SECTION WIRE DIAGRAMS

TO BREAKER

A GRILL

TO BREAKER

B HOT TOP

TO BREAKER

C SPEED UNITS

ELECTRICAL CONNECTIONS

RANGE TOP CONNECT TO OVEN CIRCUIT BREAKER	UPPER OVENS CONNECT TO BOTTOM DECK TERMINAL BLOCK
1st DECK 2nd DECK 3rd DECK	1 2 3
	2 3 1
	3 1 2

REV: \_\_\_\_\_ ECU NO. \_\_\_\_\_ DR: MFG ENG DATE

REVISION BLOCK DESCRIPTION

LANG MANUFACTURING

CONVECTION OVEN RANGE

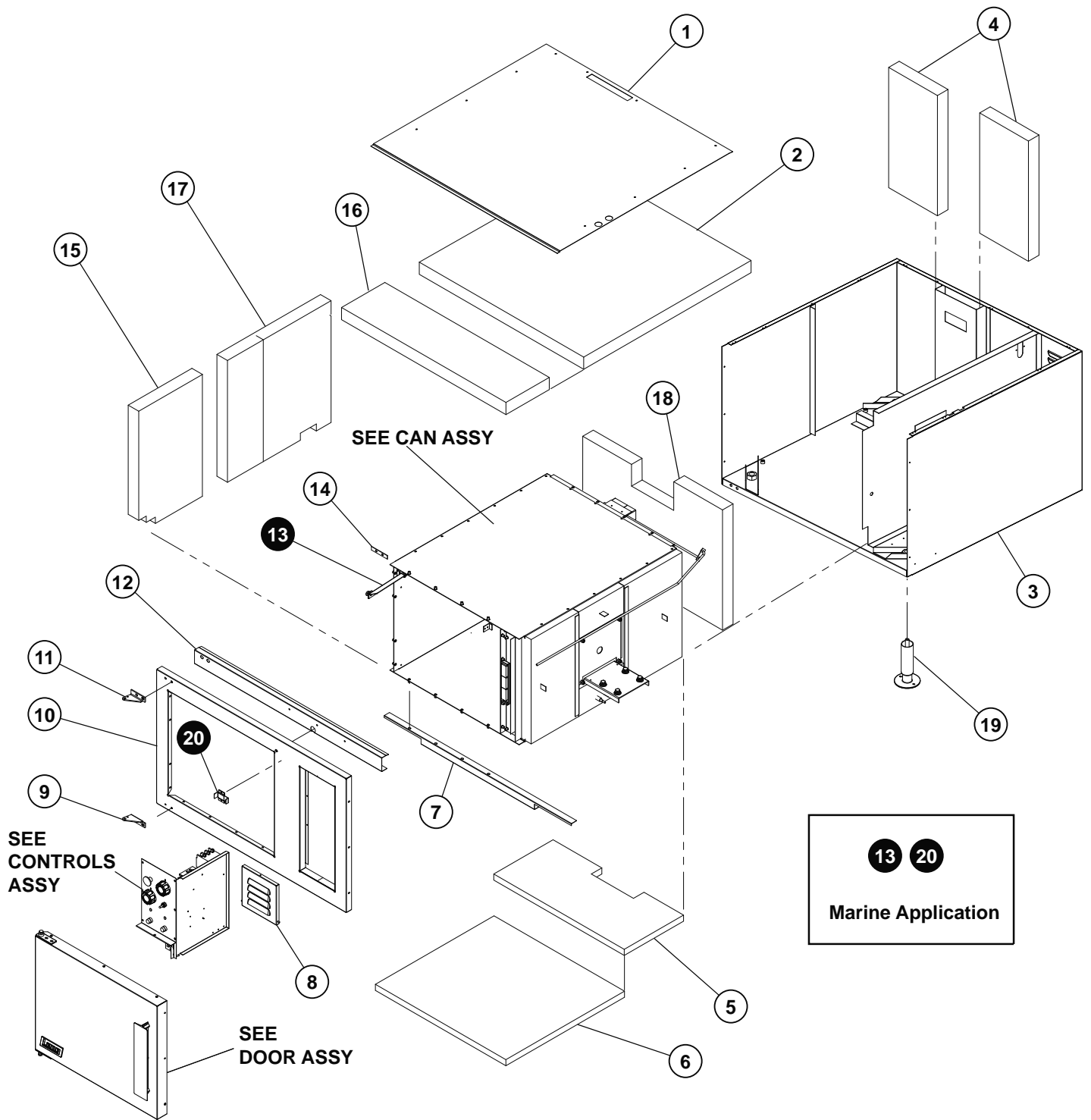
800 DATE: 2-1-94 TITLE: 480 VAC 3PH

CK: \_\_\_\_\_ DATE: \_\_\_\_\_

FRACTIONS DECIMALS 1/4 1/2 3/4 1 1 1/2 2 3/4 1 3/4 2 1/4

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

SCALE: 1 OF 1 SHEET DRAWING NUMBER 61105-10 REV A



**Model:**  
 FCOF & FCOFL MAIN ASSEMBLY  
 F6S MAIN ASSEMBLY

**Lang**<sup>®</sup>

SK2288

Rev. - 7/30/07

# PARTS LIST

November 20, 2013, Rev B

## Model No: FCOF & FCOFL Commercial & Marine Full Size Economy Convection Oven

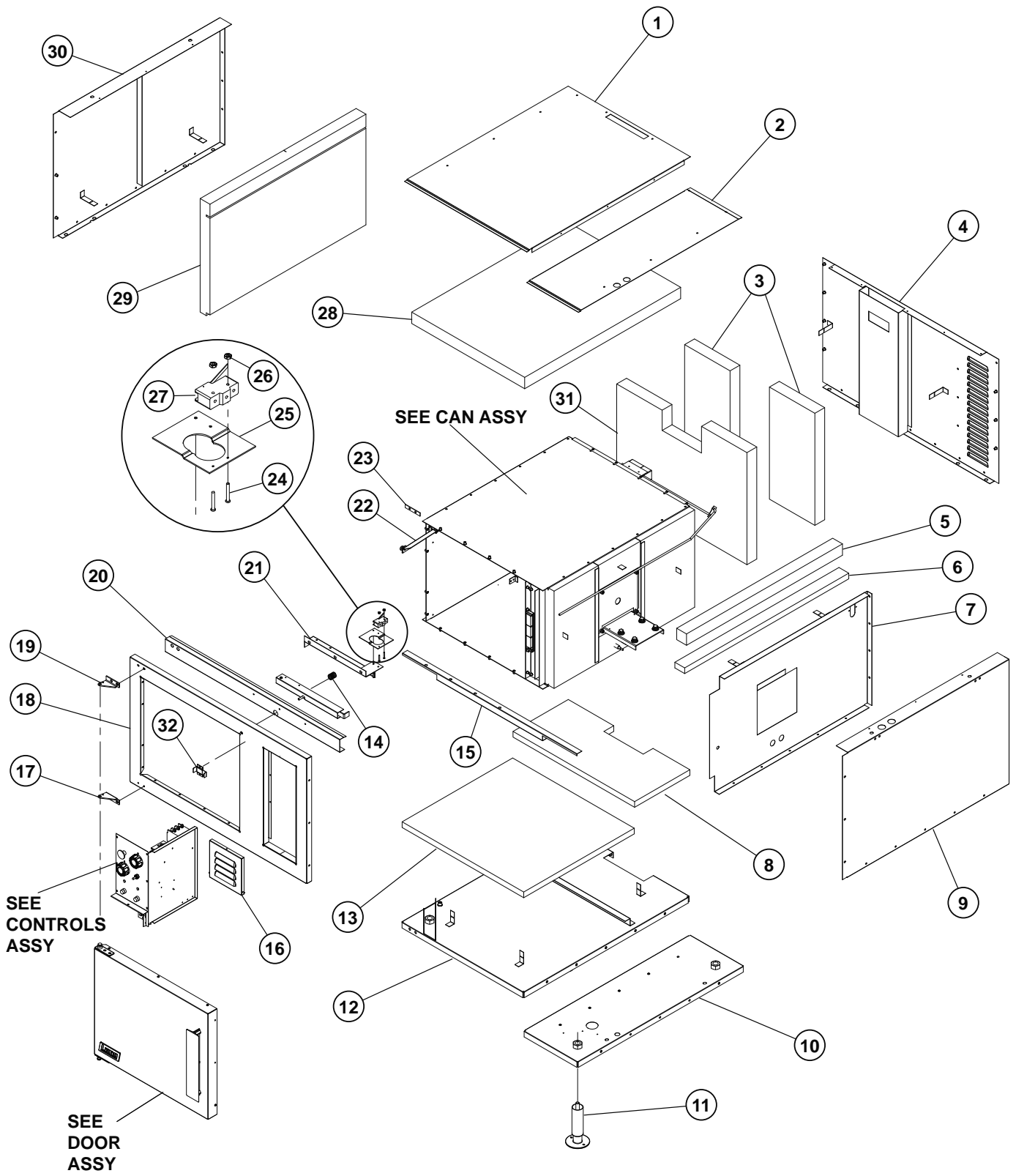
Key Number	Part Number	Qty Per	Description
1	Q9-F6-160	1	TOP A/L
	Q9-F6-160-1	1	TOP S/S
2	2H-F6-259	1	INSULATION-TOP REAR
3	Q9-F6-148	1	BODY ASSEMBLY
4	2H-F6-260	1	INSULATION-REAR FILLER
5	2H-F6-254	1	INSULATION- BOTTOM REAR
6	2H-F6-253	1	INSULATION-BOTTOM FRONT
7	Q9-F6-131	1	BOTTOM FRONT CHANNEL
8	Q9-F6-137	1	SWITCH DOOR
9	2F-70601-28	1	HINGE BRAKET LOWER LEFT
10	Q9-F6-129	1	FRONT STD
11	2F-70601-27	1	HINGE BRAKET UPPER LEFT
12	Q9-F6-130	1	TOP FRONT CHANNEL ALL
13	Q9-50301-52	1	"DOOR STOP LH ARM&BRACKET ASSY" FCOF 208M, 240M, 440G,AND 440M; FCOFL 208M, 240M, 440G, 440M, 480G, AND 480M
14	Q9-F6-132	2	HINGE NUT PLATE
15	2H-F6-257	1	INSULATION- LEFT FRONT
16	2H-F6-258	1	INSULATION-TOP FRONT
17	2H-F6-256	1	INSULATION-LEFT REAR
18	2H-F6-255	1	INSULATION-BACK
19	2A-20503-01	4	5/16IDX27/640DX5/16LG STL
20	Y9-50300-63	1	MARINE PAN LATCH ASSY
NI	2B-50200-07	2	RACK SLIDE F6 OVEN
NI	2B-50200-64	3	OVEN RACK F6 STD
NI	Q9-F6-127-1	2	RACK SLIDE CLIP B S/S
NI	Q9-F6-126-1	6	RACK SLIDE CLIP A S/S

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PAGE 1  
OF 1

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Model:  
 FCOF-SUBMARINE MAIN ASSEMBLY  
 F6S SUBMARINE MAIN ASSEMBLY

**Lang**<sup>®</sup>

SK2289 Rev. - 7/30/07

# PARTS LIST

November 20, 2013, Rev B

## Model No: FCOFAT480SUB SUBMARINE Submarine Full Size Economy Convection Oven

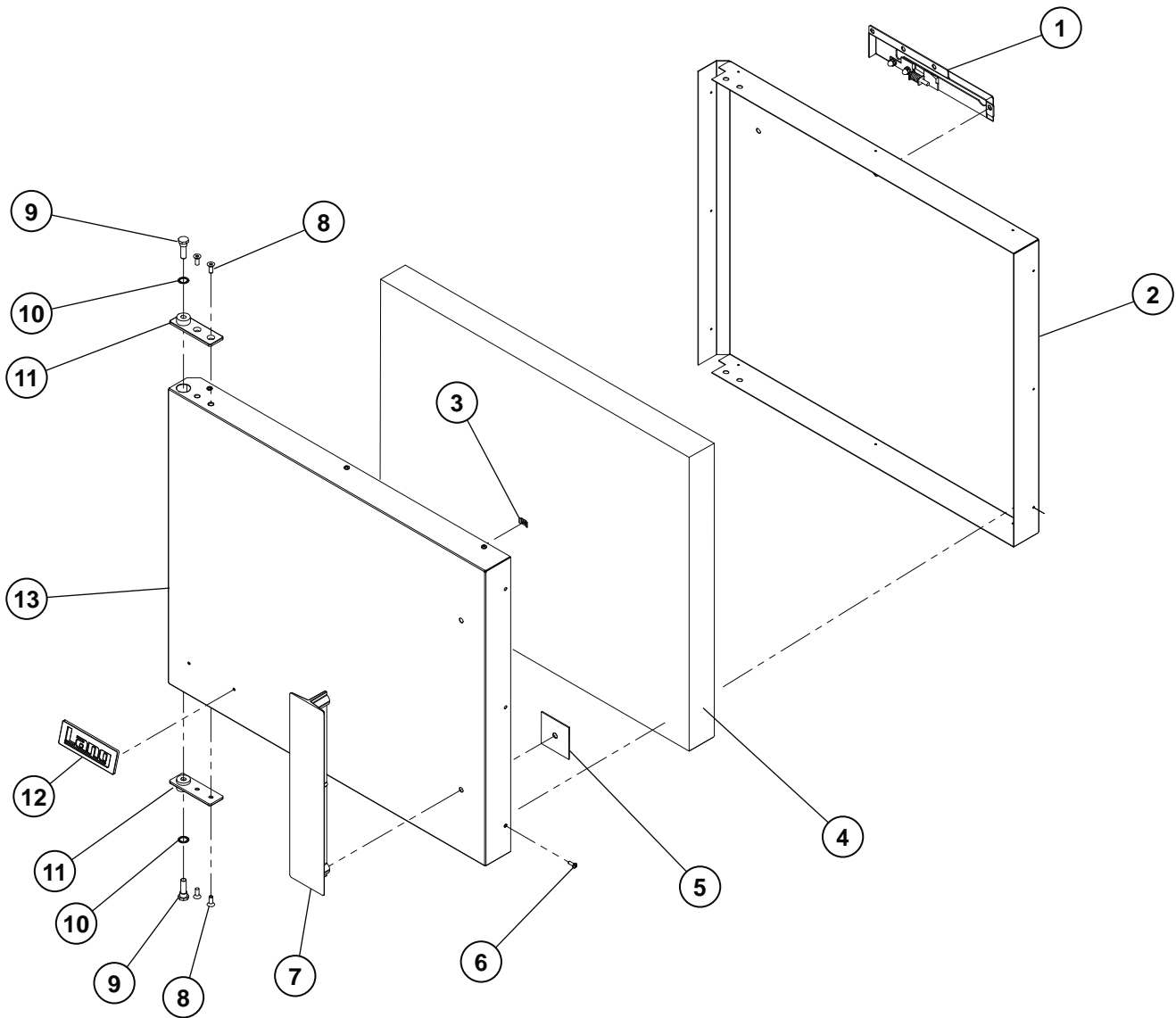
Key Number	Part Number	Qty Per	Description
1	Q9-F6-160-3	1	TOP PART A SUB
2	Q9-F6-160-4	1	TOP PART B SUB
3	Q9-F6-260-1	2	INSULATION REAR FILLERS
4	Q9-F6-148-5	1	SPOT BODY BACK SUB
5	Q9-F6-251-1	1	R/H SIDE FRONT INSULATION
6	Q9-F6-252-2	1	RIGHT BOTTOM INSULATION
7	Q9-F6-152-1	1	FIREWALL SUB
8	Q9-F6-254-1	1	BOTTOM REAR INSULATION
9	Q9-F6-155-8	1	R/H BODY SIDE 430 S/S SUB
10	Q9-F6-149-2	1	BOTTOM PART B SUB
11	2A-72500-06	4	LEG 5 1/2W/BOLT DOWN ADJ
12	Q9-F6-149-1	1	BOTTOM PART A SUB
13	Q9-F6-253-1	1	BOTTOM FRONT INSULATION
14	2P-51001-12	1	SPRNGCOMPRESN.665IDX1.4LNG
15	Q9-F6-131	1	BOTTOM FRONT CHANNEL
16	Q9-F6-137	1	SWITCH DOOR
17	2F-70601-28	1	HINGE BRAKET LOWER LEFT
18	Q9-F6-129-1	1	F6 MIL. FRONT DOOR SWITCH
19	2F-70601-27	1	HINGE BRAKET UPPER LEFT
20	Q9-F6-130	1	TOP FRONT CHANNEL ALL
21	Q9-F6-206	1	SPOT SWITCH BRACKET
22	Q9-50301-52	1	"DOOR STOP LH ARM & BRACKET ASSY"
23	Q9-F6-132	2	HINGE NUT PLATE
24	2C-20101-17	2	SCRW RND MS 6-32X1 PLTD
25	Q9-F6-211	1	MICRO SWITCH MOUNT
26	2C-20301-10	2	NUT HEX 6-32 PLTD
27	2E-30301-02	1	SWITCH, MICRO
28	Q9-F6-259-1	1	TOP INSULATION SUB
29	Q9-F6-257-1	1	L/H SIDE INSULATION SUB
30	Q9-F6-155-7	1	L/H BODY SIDE 430 S/S SUB
31	2H-F6-255	1	INSULATION-BACK
32	Y9-50300-63	1	MARINE PAN LATCH ASSY
NI	2B-50200-07	2	RACK SLIDE F6 OVEN
NI	2B-50200-64	3	OVEN RACK F6 STD
NI	Q9-F6-127-1	2	RACK SLIDE CLIP B S/S
NI	Q9-F6-126-1	6	RACK SLIDE CLIP A S/S

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PAGE 1  
OF 1

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**Model:**  
 FCOF & FCOFL DOOR ASSEMBLY  
 F6S DOOR ASSEMBLY

**Lang**<sup>®</sup>

SK2290

Rev. - 7/30/07

# PARTS LIST

December 11, 2008, Rev B

## Model No: FCOF & FCOFL Door Assembly Commercial, Marine & Submarine Full Size Economy Convection Oven

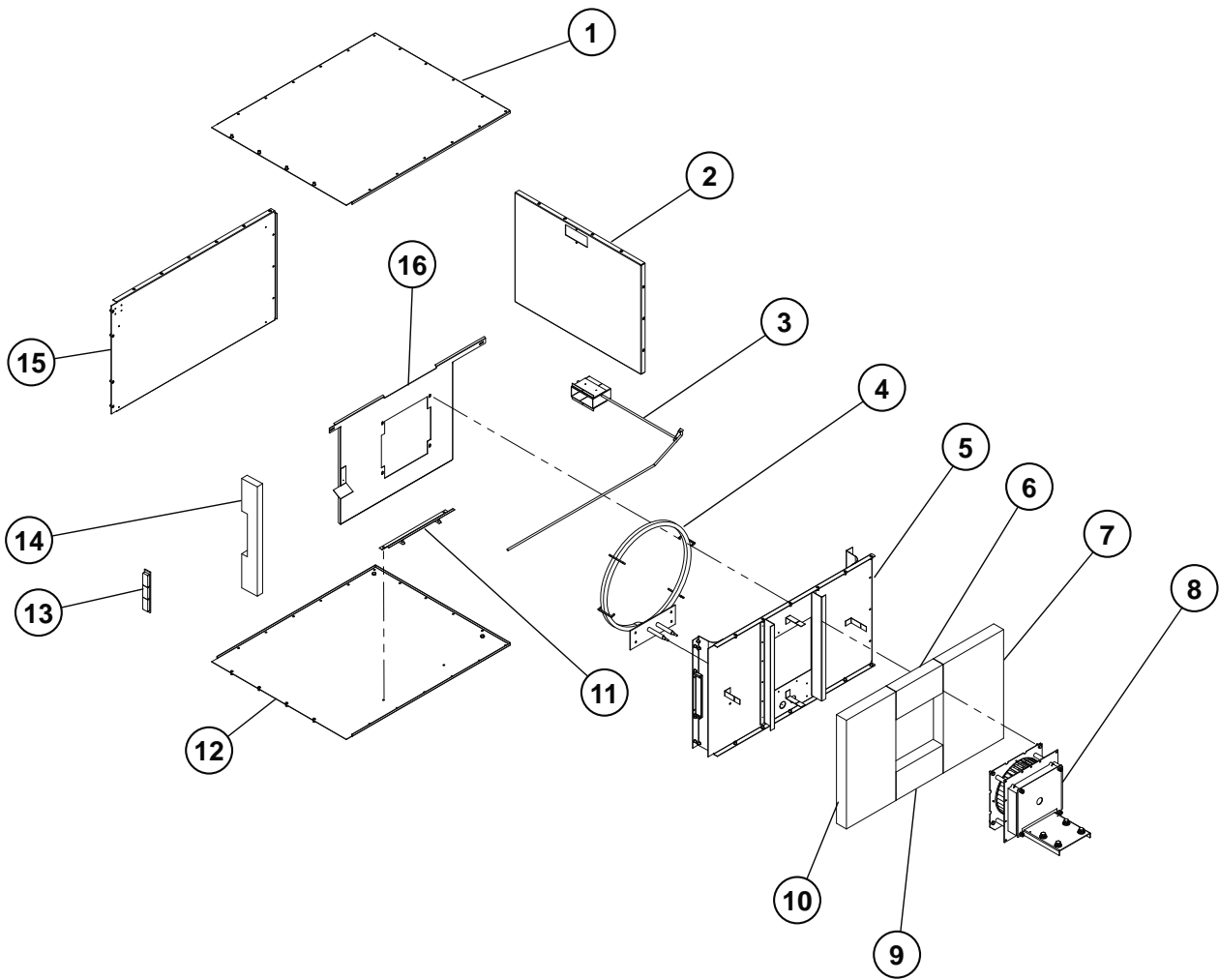
Key Number	Part Number	Qty Per	Description	
1	PS-50301-50-1	1	DOOR STOP ASSY L/H	FCOFAT480SUB; FCOF 208M, 240M, 440G,AND 440M; FCOFL 208M, 240M, 440G, 440M, 480G, AND 480M
2	Q9-F6-144-6	1	INSIDE DOOR PANEL S/S SUB	FCOFAT480SUB; FCOF 480G; FLAT 480G, FCOFLSL480VM
	Q9-F6-144	1	INSIDE DOOR PANEL A/L	FCOF 208M, 208V, 240M, 240V, 440M,480M, 480V; FCOFL 208, 240, 480, 208M, 240M, 440G, 440M, 480M
3	2C-20602-04	2	TINNERMAN SPD NUT 1/8 DIA	ALL MODELS
4	2H-F6-144-1	1	DOOR INSULATION	ALL MODELS
5	Q9-F6-146	2	STIFFENER - DOOR HANDLE	ALL MODELS
6	2C-20115-04	AR	SCRW S/S 6-32X3/8 S/T P/H	FCOFAT480SUB; FCOF 480G; FLAT 480G
	2C-20103-06	AR	SCRW SM PLT 6 X 3/8 PHL	FCOF 208M, 208V, 240M, 240V, 440M,480M, 480V; FCOFL 208, 240, 480, 208M, 240M, 440G, 440M, 480M
7	2R-50800-12	1	DOOR T HANDLE 11 1/2 LNG	ALL MODELS
8	2C-20109-13	AR	SCRW MS SS 10-32 X .5 PH	ALL MODELS
9	2F-70601-06	AR	HINGE PIN, HALF HINGE	ALL MODELS
10	2C-20202-17	AR	WSHR LOCK FOR 70601-27/28	ALL MODELS
11	2F-70601-05	AR	PLATE & BUSH HINGE HALF	ALL MODELS
12	2M-60301-43	1	DIE CAST PLT LANG SATIN	ALL MODELS
13	Q9-F6-145	1	OUTSIDE DOOR PANEL	ALL MODELS
NI	Q9-F6-423-2	1	ASSEMBLY DOOR SUB-MARINE	FCOF-AT-480G, FCOFAT480SUB, FCOFATSL480M, FCOFL-AT440G, FCOFLSL208VM, FCOFLSL240VM, FCOFLSL440VM, FCOFLSL480VM
NI	Q9-F6-423	1	ASSEMBLY DOOR	FCOF-AT-208V/M, FCOF-AT-240V/M, FCOF-AT-440M, FCOF-AT-480V/M, FCOFL-AT-208, FCOFL-AT-240, FCOFL-AT-480, FCOFL-AT208M, FCOF-AT240M, FCOFL-AT440M, FCOFL-AT480M

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PAGE 1  
OF 1

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**Model:**  
FCOF-SUB Can Assembly  
F6S Can Assembly

**Lang**<sup>®</sup>

SK2291

Rev. - 7/30/07



# PARTS LIST

April 5, 2010, Rev B

## Model No: FCOF & FCOFL Can Assembly Commercial, Marine & Submarine Full Size Economy Convection Oven

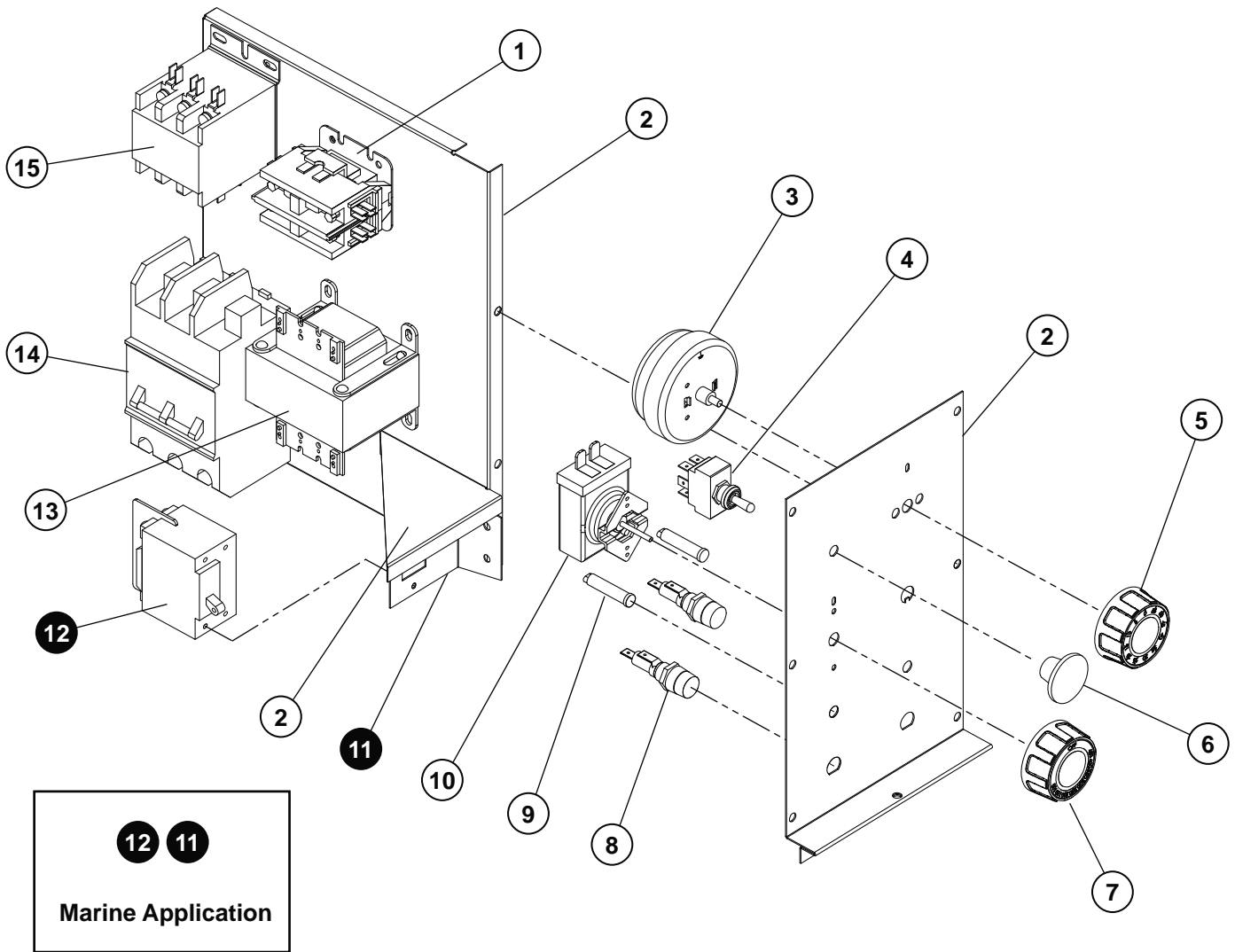
Key Number	Part Number	Qty Per	Description	
1	Q9-F6-102-5	1	SPOT CAN TOP SUB	FCOFAT480SUB
2	Q9-F6-102-7	1	SPOT CAN REAR SUB	FCOFAT480SUB
3	Q9-F6-113-1	1	VENT PIPE ASSY SUB	FCOFAT480SUB
	Q9-F6-113	1	VENT PIPE ASSEMBLY	FCOF 208M, 208V, 240M, 240V, 440G,440M,480M, 480V; FCOFL 208, 240, 480, 208M, 240M, 440G, 440M, 480G, 480M
4	2N-11090-09	1	ELMNT F6OVEN 208V 6KW	FCOF 208M, 208V; FCOFL 208, 208M
	2N-11090-10	1	ELMNT F6OVEN 240V 6KW	FCOF 240M, 240V; FCOFL 240, 240M
	2N-11090-11	1	ELMNT F6OVEN 480V 6KW	FCOFAT480SUB; FCOF 440G, 440M, 480M, 480V, 480G; FCOFL 480, 440G, 440M, 480G, 480M
	2N-11090-28	1	ELEMT F6OVEN 380V 6KW	FCOFK-AT380M
5	Q9-F6-104-5	1	SPOT R/H CAN SIDE SUB	FCOFAT480SUB
6	Q9-F6-159-2	1	CAN SIDE INSULATION SUB	FCOFAT480SUB
	2H-F6-159-1	1	INSULATION CAN SIDE UPPER	FCOF 208M, 208V, 240M, 240V, 440G,440M,480M, 480V; FCOFL 208, 240, 480, 208M, 240M, 440G, 440M, 480G, 480M
7	Q9-F6-252-1	1	R/H SIDE REAR INSULATION	FCOFAT480SUB
	2H-F6-252	1	INSULATION-SIDE R/H REAR	FCOF 208M, 208V, 240M, 240V, 440G,440M,480M, 480V; FCOFL 208, 240, 480, 208M, 240M, 440G, 440M, 480G, 480M
8	Q9-F6-188	1	MOTOR MNT ASY NO MTR SS	FCOFAT480SUB
	Q9-F6-189	1	MOTOR MOUNT ASSEMBLY NO	FCOF 208M, 208V, 240M, 240V, 440G,440M,480M, 480V; FCOFL 208, 240, 480, 208M, 240M, 440G, 440M, 480G, 480M
9	Q9-F6-159-2	1	CAN SIDE INSULATION SUB	FCOFAT480SUB
	2H-F6-159	1	INSULATION CAN SIDE LOWER	FCOF 208M, 208V, 240M, 240V, 440G,440M,480M, 480V; FCOFL 208, 240, 480, 208M, 240M, 440G, 440M, 480G, 480M
10	Q9-F6-251-1	1	R/H SIDE FRONT INSULATION	FCOFAT480SUB
	2H-F6-251	1	INSULATION-SIDE R/H FRONT	FCOF 208M, 208V, 240M, 240V, 440G,440M,480M, 480V; FCOFL 208, 240, 480, 208M, 240M, 440G, 440M, 480G, 480M
11	Q9-F6-403	1	STAT HOLDER SPOTWELD	ALL MODELS
12	Q9-F6-102-6	1	SPOT CAN BOTTOM SUB	FCOFAT480SUB
13	2R-70602-03	1	CATCH DOOR MAGNET 3 PC	ALL MODELS
14	2H-F6-158	1	CAN SIDE INSULATION	ALL MODELS
15	Q9-F6-104-7	1	SPOT L/H CAN SIDE SUB	FCOFAT480SUB
16	Q9-F6-405	1	BAFFLE SPOTWELD A/L	FCOF-AT-208V/M, FCOF-AT-240V/M, FCOF-AT-440M, FCOF-AT-480V/M, FCOFL-AT-208, FCOFL-AT-240, FCOFL-AT-480, FCOFL-AT208M, FCOF-AT240M, FCOFL-AT440M, FCOFL-AT480M
	Q9-F6-405-1	1	BAFFLE SPOTWELD S/S	FCOF-AT-480G, FCOFAT480SUB, FCOFATSL480M, FCOFL-AT440G, FCOFLSL208VM, FCOFLSL240VM, FCOFLSL440VM, FCOFLSL480VM

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OF 1

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**RF21SM Controls**

**Model:**  
 FCOF-AT & FCOFL-AT Controls Assembly  
 F6S-AT Controls Assembly

**Lang**<sup>®</sup>

SK2292

Rev. - 7/30/07

# PARTS LIST

October 4, 2012, Rev B

**Model No: FCOF & FCOFL Controls Assembly  
Commercial, Marine & Submarine Full Size Economy Convection Oven**

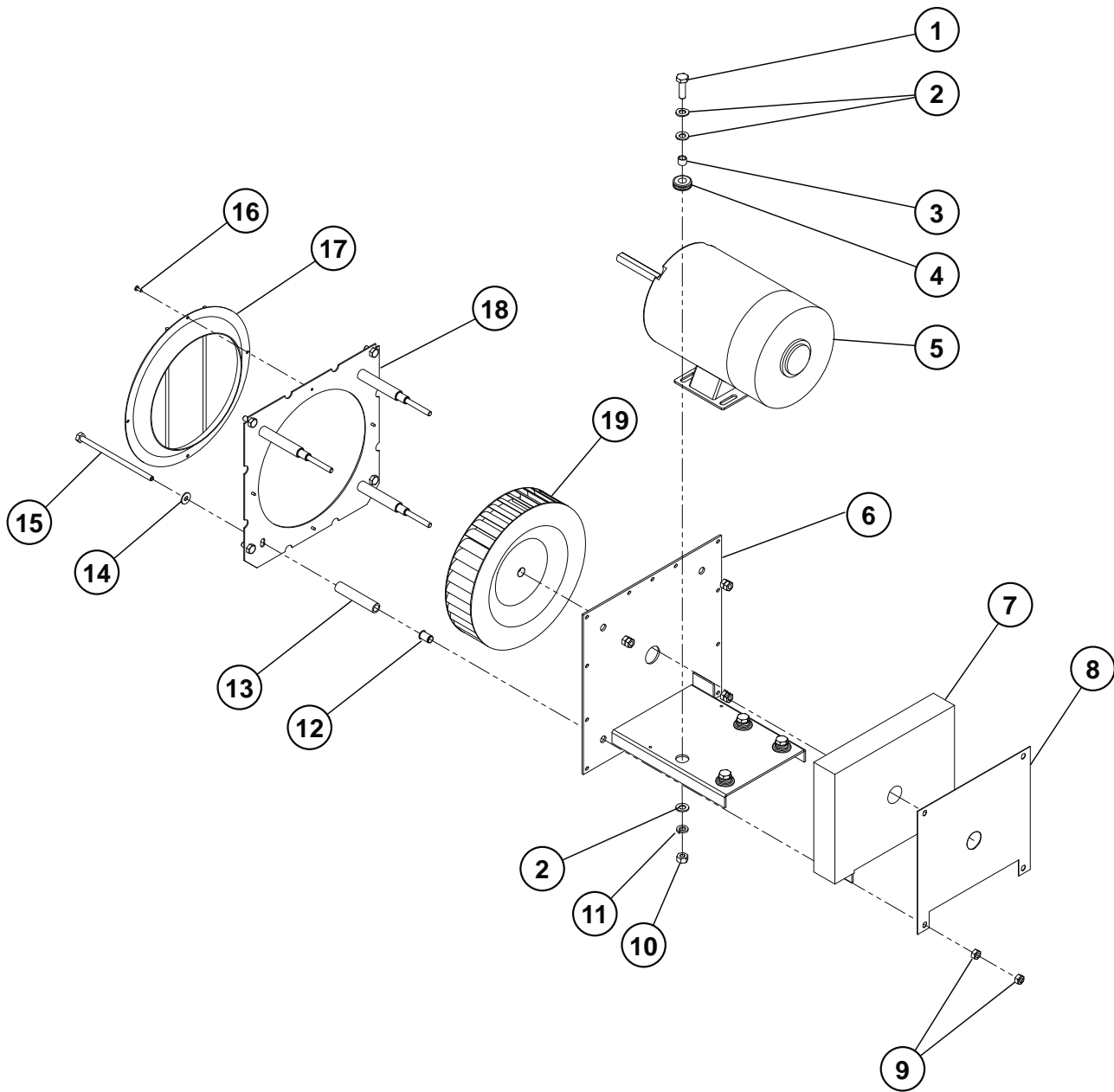
Key Number	Part Number	Qty Per	Description
1	2E-30701-03	1	CONTC2POL35A208-240V50/60
2	Q9-F6-138	1	CONTROL SLIDE SPOTWELD
3	2J-30801-01	1	TIMER MECHANICAL LONG
4	2E-30303-06	1	SWT TOG ON-ON DPDT BLK
5	Q9-70701-09	1	KNOB MANUAL TIMER, BLACK
	Q9-70701-09-2	1	KNOB MANUAL TIMER, RED
6	2R-70701-25	1	KNOB DAMPER BLACK PLAIN
7	Y9-70701-19	1	KNOB 450o D, BLACK
	Y9-70701-19-2	1	KNOB 450o D, RED
8	2E-30901-02	2	FUS HLDR FOR 15AMP FUSE
9	2J-31601-01	2	PILOT LT 250V 6LEAD BLK
10	2T-30402-27	1	STAT ADJ 450 DEG 48 PILOT
11	Q9-F6-165	1	MARINE CIRCUIT BREAKER
12	2E-31800-07	1	CB 2/10 AMP 2 POLE
12	2E-31800-01	2	CB 250V50A 1 POLE CRLNGSW
13	2E-31400-04	1	XFRMR 480/240VAC 100VA
14	2E-31800-04	1	CB 480V 50A 3 POLE
15	2E-30700-03	1	CONTC 3POLE 40A208-240VAC

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PAGE 1  
OF 1

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**Model:**  
 FCOF & FCOFL Motor Fan Assembly  
 F6S Motor Fan Assembly

**Lang**<sup>®</sup>

SK2293

Rev. - 7/30/07

# PARTS LIST

April 5, 2010, Rev B

## Model No: FCOF & FCOFL Motor Fan Assembly Commercial, Marine & Submarine Full Size Economy Convection Oven

Key Number	Part Number	Qty Per	Description
1	2C-20104-18	4	SCRW HXHDCP 5/16-18X1-1/4 ALL MODELS
2	2C-20201-09	AR	WSHR PLT 5/16 FLAT SAE ALL MODELS
3	2A-20503-01	4	5/16IDX27/640DX5/16LG STL ALL MODELS
4	2I-70801-06	4	RUBBER GROMMET 7/16 I.D. ALL MODELS
5	2U-30200-03	1	MTR 1/3HP 480V 3PH 60HZ FCOFAT480SUB; FCOF 440G, 440M, 480M, 480V; FCOFL 480, 440G, 440M, 480G, 480M
	2U-30200-60	1	MTR 1/3HP 380V 1PH 50HZ 2SP FCOFL-AT380M
5	2U-30200-12	1	MTR 1/3HP 115/208-240 1PH FCOF 208M, 208V, 240V, 240M; FCOFL 208, 208M, 240, 240M
6	Q9-F6-180	1	MOTOR MOUNT WELDMENT ALL MODELS
7	2H-F6-184	1	MOTOR INSULATION ALL MODELS
8	Q9-F6-186	1	MOTOR INSULATION RETAINER ALL MODELS
9	2C-20301-13	AR	NUT HEX 1/4-20 PLTD ALL MODELS
10	2C-20301-06	4	NUT HEX 5/16-18 PLTD ALL MODELS
11	2C-20202-08	4	WSHR PLT 5/16 LOCK SPLIT ALL MODELS
12	2C-20306-02	4	AVK CAD 1/4-20 1ST GRP ALL MODELS
13	Q9-F6-185	4	BLOWER SPACER ALL MODELS
14	2C-20203-07	4	WASHER S/S 1/4 SAE FLAT FCOFAT480SUB; FCOF 440G, 480G; FCOFL 440G, 480G
14	2C-20201-07	4	WSHR FLT 1/4 SAE PLTD FCOF 208M, 208V, 240M, 240V, 440M, 480M, 480V; FCOFL 208, 240, 480, 208M, 240M, 440M, 480M
15	2C-20104-14	4	SCRW HXHD TAPBOLT ALL MODELS
16	2C-20103-06	4	SCRW SM PLT 6 X 3/8 PHL ALL MODELS
17	Q9-F6-406	1	WELD ORIFICE RING ALL MODELS
18	Q9-F6-187-1	1	BAFFLE MOUNTING PLATE SUB FCOFAT480SUB
	Q9-F6-181	1	MOTOR MOUNT PLATE FCOF 208M, 208V, 240M, 240V, 440M, 440G, 480M, 480V, 480G; FCOFL 208, 240, 480, 208M, 240M, 440G, 440M, 480M, 480G
19	2U-71500-03	1	BLOWER WHEEL F-6 ALL MODELS

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PAGE 1  
OF 1

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