



GRAND RAPIDS, MICHIGAN, U.S.A. 49504-5298

USERS OPERATING AND INSTRUCTION MANUAL

MODEL 690-M

STEAM CONVECTION
OVEN

OLIVER PRODUCTS COMPANY
MODEL 690-M STEAM CONVECTION OVEN

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OLIVER PRODUCTS COMPANY

MODEL 690-M ELECTRIC STEAM CONVECTION OVEN

SAFETY INSTRUCTIONS

Every effort has been made by Oliver Products Company to provide you with a safe oven. It is essential, however, that oven operators and maintenance personnel observe the following safety precautions.

1. Before attempting to operate your oven read this manual. Never allow an untrained person to operate this oven.
2. CAUTION! This oven must only be installed by qualified personnel. It also must be installed to the specifications of local plumbing and electrical codes. See Installation Section of this manual for additional requirements.
3. Make sure that the oven is connected to a properly grounded electrical supply source of sufficient capacity for the load which the oven will put on it.
4. Always make sure the oven has been disconnected from the power supply before cleaning or servicing.
5. Keep your hands away from the moving parts of the oven.
6. Use only proper replacement parts.
7. In addition to these general safety instructions, also follow the more specific safety instructions given in different areas of the oven operating instructions.

**OLIVER PRODUCTS COMPANY
MODEL 690-M ELECTRIC STEAM CONVECTION OVEN**

DESCRIPTION/SPECIFICATION

Description

The Oven is a stainless steel, electric, forced air, (convection), oven with steam injection capabilities. This oven offers consistent baking at all rack levels due to the careful positioning of the heating and air circulation systems, and has one of the fastest temperature recoveries on the market allowing the oven to be turned off during non-peak hours, as compared to other ovens, thus saving energy.

In addition to the above, this oven also offers many other features. It is well insulated with a high quality asbestos free insulation. It is compact, attractive, operates quietly and is easily maintained. Should electrical servicing ever be required the electrical components are readily accessible on the convenient tip-out front control panel.

The lighted, tempered glass door with its high temperature seal allows a full view of the trays in the oven during baking. The oven is also provided with a system to alert you at the end of a baking cycle.

The oven has many standard safety features such as not allowing heating of the elements when the door is open, or when the fans are off, thus preventing the elements from overheating. Other features are manual resettable thermal overloads on the motors and a thermo-magnetic circuit breaker on the motor circuit.

This manual version of the oven, combines precise temperature and time control along with steam injection and manual damper control. This provides many options for precise baking.

Physical Specifications

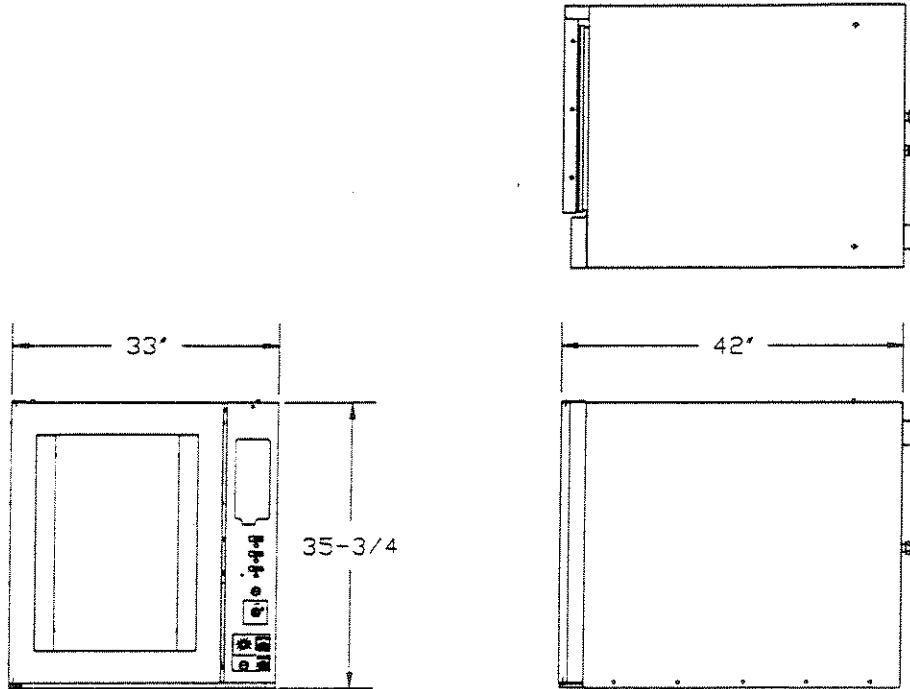
Product Capacities:

The Standard oven will hold (8) 18" X 26" pastry baking trays these trays will be approximately 3-5/16 inches apart when in the oven.

(6), (12) and (16) tray ovens are also available.

Physical Specifications (cont'd)

Space Requirements:



Size (*): 42" deep X 33" wide X 35-3/4" high

* Note: The oven should have a minimum of an additional (2) inches of clear space around its sides to insure proper ventilation of mechanical and electrical components. Also, the rear of the oven should be at least (4) inches away from walls etc., to allow for water connections and venting.

Net Weight: Approx. 500 lbs.

Shipping Weight: Approx. 675 lbs.

Electrical Specifications:

Optional Electronics Available:

3 Phase, 60 Hz, 460 VAC, 27 Amps

3 Phase, 60 Hz, 230 VAC, 53 Amps

3 Phase, 60 Hz, 208 VAC, 48 Amps

**OLIVER PRODUCTS COMPANY
MODEL 690-N ELECTRIC STEAM CONVECTION OVEN**

INSTALLATION INSTRUCTIONS

Location Selection

The first thing to do is to select a location where the oven will be used. It should have a grounded power supply of the same rating as that of the oven and the power supply must be capable of carrying the load that the oven will put on it, (see "Electrical Connections" below). The oven must also be placed near both a water supply and an area where the oven can be properly vented, (see "Water Connections" and "Venting" below).

The oven must be set on a flat, level surface, such as a counter top, (see "Sealing Oven to Mounting Surface" below). It should also be placed so that it has a minimum of two inches on each side of the oven for proper ventilation of the mechanical and electrical components, and a minimum of four inches in the rear of the oven to provide for proper venting, water and electrical connections.

CAUTION

Make sure that the mounting surface is able to support the weight of the oven, approximately 500 pounds, before placing it on the surface.

Sealing Oven to Mounting Surface

The oven must be sealed to the mounting surface to comply with local sanitation codes. For the purpose of sealing the unit a tube of an NSF/FDA approved silicone sealant has been provided with your unit. Apply, to the surface that the oven will rest on, a continuous bead of sealant approximately 1/2 inch in from each of the four sides of the oven. After the oven has been placed over this first bead apply a second, generous, continuous bead at the joint where the oven contacts the mounting surface thus totally sealing the bottom of the oven to that surface.

Electrical Connections

WARNING

The Oven MUST BE connected to a properly grounded electrical source of the same rating as the machine. All wiring of the oven or repair should be done by a qualified electrician.

Special heavy duty electrical services must be provided for safe operation of the oven. The following MINIMUM service requirements are recommended, dependent on the voltage of the unit you have purchased. For voltages other than those shown below please contact the factory.

460 Volts = 30 Amp service (min.)
230 Volts = 60 Amp service (min.)
208 Volts = 60 amp Service (min.)

The oven is shipped from the factory with a powercord which does not include a plug due to the variety of possible receptacles which may be used at the installation site. Another method of electrical connection, used on most units, is to "hard wire" the unit to a disconnect enclosure. Whatever method is used the oven should be wired in a manner which would conform to the "National Electric Code".

CAUTION

After connecting the oven to the electrical supply check the rotation of the fans. To provide proper air flow and baking they MUST rotate in the clockwise direction. If the fans are rotating in the opposite direction the two supply leads must be interchanged to provide proper rotation. Each time the oven is moved to a different power supply or has electrical work done which could alter the fan rotation, you must re-check the fan rotation for proper direction.

Venting

On the rear side of the oven near the top is a 3 inch diameter exhaust vent protruding approximately 3/4" from the oven. Vent the oven to the outside by connecting your ducting to this exhaust vent.

Water Connections

The oven must be connected to a water supply to enable the oven to produce steam for baking. As shipped from the factory the oven will have an externally mounted electrically operated solenoid valve and a flow control. The flow control will be the last component in the line and will be the starting point for the connections which you must provide. The flow control has a internal 3/8" NPT thread.

Note

All water connections must comply with the basic plumbing code of the Building Officials and Code Administrators International, Inc. (BOCA), and the Food Service Sanitation Manual of the Food and Drug Administration (FDA).

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MODEL 690-M ELECTRIC STEAM CONVECTION OVEN

CONTROL DESCRIPTIONS

A. Keyboard Description (Refer to Figure 1)

1. **START/STOP**



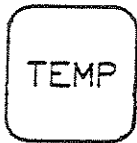
Controls the starting and stopping of displayed timer. Turns off alarm which is activated when time reaches zero.

2. **TIME**



Displays set time. Pressing causes display to toggle between last set time below one hour, and the last set time above one hour.

3. **TEMP**



Displays either actual temperature or set temperature, indicated by the corresponding LED.

* **CAUTION:** SETTING OVEN TO A TEMPERATURE OVER 480 F. WILL CAUSE OVEN TO OVERHEAT. USE SETTINGS BELOW 480 F.

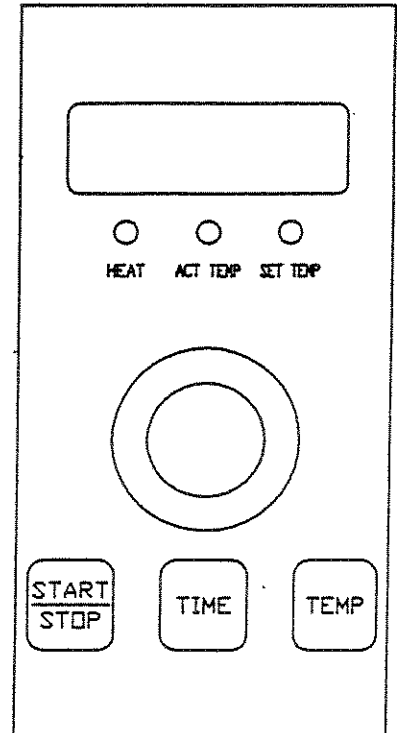


Figure 1

B. Push-button Description

1. **STEAM**

Injects water into oven at 1/2 gallon/min. while button is depressed. Pressing the button continuously is not recommended.

2. **RESET**

Resets the Time/Temp Control. Use reset when oven is first turned on or in case of overheating.

** **CAUTION:** DO NOT TURN OVEN OFF AFTER BAKING. ALLOW COOLING FANS TO COOL OVEN TO 200 F. BEFORE DISCONNECTING.

OLIVER PRODUCTS COMPANY
MODEL 690-M STEAM CONVECTION OVEN
OPERATION

A. Time/Temperature Operation

1. Turn the oven on
 - a. Set temperature is displayed
 - b. Set Temp LED is displayed

***Note:** The last temperature setting and time setting will remain in the memory and the oven will operate at these settings until changed.

****Note:** If the SET TEMP (set temperature) is more than 2 degrees F. above the ACT TEMP (actual temperature), the oven will begin heating.

2. Set Temperature
 - a. With current SET TEMP displayed, the set temperature may be changed by rotating the dial.
 - b. Presses of the TEMP key toggles the display between actual oven temperature and the set temperature.
3. Set Time
 - a. Time is displayed in either hours:minutes format or minutes:seconds format.
 - b. With current Set Time displayed, the set time may be changed by rotating the dial. Holding down the TIME key while turning the dial accelerates the rate of change.
 - c. Presses of the TIME key toggles between the last set time below 1 hour and the last set time above 1 hour.
4. Load
 - a. When the oven has reached the set temperature, "LOAD" will flash on the current display.
 - b. Open the door and place the product in the oven. Close the door to begin baking.

OPERATION cont'd

A: Time/Temperature cont'd

5. Bake

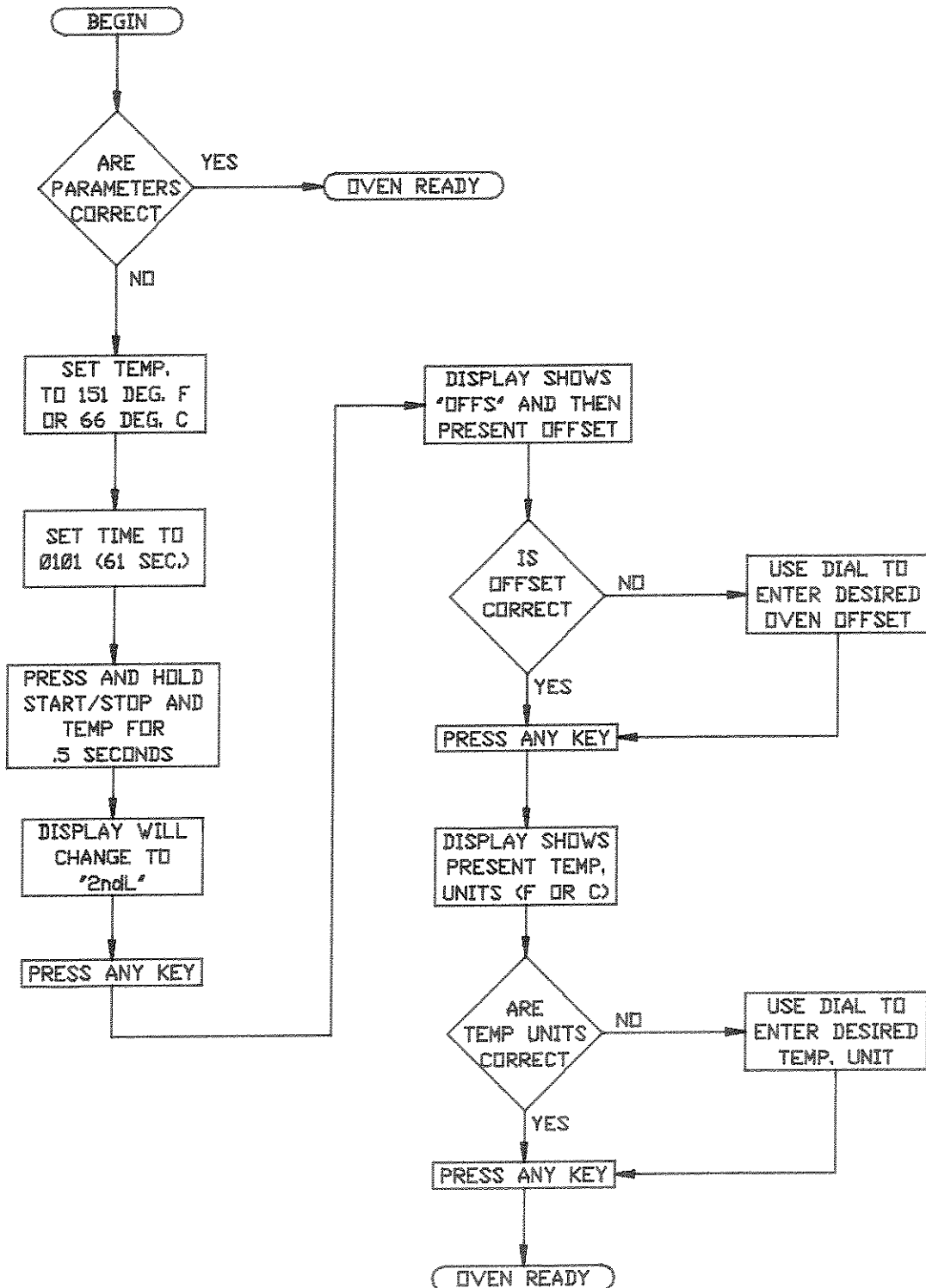
- a. Press the START/STOP key
- b. The display changes to the last set time and begins the count down.
- c. Pressing the START/STOP key resets the count down and returns the display to the set temperature.
- d. Pressing the TEMP key will switch the display to either the actual or set temperature. Pressing the TIME key will return the display to the timer.
- e. When the timer has counted down to 0, "DONE" will flash on the display and the beeper will sound.
- f. Pressing the START/STOP key clears the "DONE" message and returns the display to the last set temperature.

CAUTION: USE TEMPERATURE SETTINGS BELOW 480 DEGREES FAHRENHEIT. SETTING THE TEMPERATURE OVER 480 DEGREES FAHRENHEIT WILL CAUSE THE OVEN TO OVERHEAT.

B. CHANGING DEFAULT PARAMETERS

THE FLOW CHART BELOW SHOWS HOW TO CHANGE TEMP UNITS (FAHRENHEIT OR CENTIGRADE) AND HOW TO CHANGE THE OFFSET TEMPERATURE (BETWEEN -50 AND +50 DEG F)

- USE OFFSET WHEN OVEN READS HIGH OR LOW.



OLIVER PRODUCTS COMPANY
MODEL 690-M ELECTRIC STEAM CONVECTION OVEN

MAINTENANCE

WARNING

Never attempt to clean or service this oven until it has been disconnected from the power supply and is cool to the touch.

Cleaning

The outside of the oven should be cleaned daily by wiping it with a clean damp cloth or by using any suitable stainless steel cleaner. A solution made up of a mild detergent with water will normally be sufficient for routine cleaning of the interior of the oven. When finished dry the surfaces with a clean cloth.

The glass door should be cleaned daily using normal glass cleaners.

For more difficult cleaning jobs such as where there are burned on or greasy deposits, or heat tint, you should use an abrasive stainless steel cleaner applied with steel wool or abrasive pad. Remember for best results always keep the stainless steel shiny.

To simplify major cleanings the inner liner may be removed by first removing the nozzle assembly in the back of the oven with a open end wrench, and then by removing the eight slotted head screws which secure the liner. Six of these screws are in the front of the oven while two additional screws are on the rear panel adjacent to the nozzle assembly.

The heating elements themselves normally do not require cleaning.

Lubrication

Occasionally put a few drops of oil on the pivot points of the door and on the hinge on the front control panel. Outside of those items nothing else on the oven requires lubrication.

CAUTION

Never oil or lubricate the motors.

Removal and Replacement Guide

WARNING

Never attempt to clean or service this oven until it has been disconnected from the power supply and is cool to the touch.

Removing the Inner Liner:

- First remove the nozzle assembly in the back of the oven.
- Remove the eight slotted head screws which secure the liner. Six of these screws are in the front of the oven while two additional screws are on the rear panel adjacent to the nozzle assembly.
- The liner can now be removed from the oven.
- Re-install the liner by reversing the disassembly procedure.

Replacing a Fan:

- First remove the inner liner as described above.
- After the liner has been removed, use a wrench to remove the hex head bolt in the end of the motor shaft which secures the fan.
- Loosen the two set screws in the hub of the fan.
- Always use a puller to remove the fan from the motor shaft to protect the bearings in the motor.
- Re-install the fans by reversing the disassembly procedures.

Changing a Bank of Heating Elements:

- Remove the inner liner as described above.
- Remove the fan or fans as described above.
- Remove the rear access plate, (small one), by removing the seven slotted head screws which secure it.
- Then remove the wires from the ends of the affected bank of heating elements. Make sure they are marked so that they can be returned to the new bank of elements easily.
- From the inside of the oven remove the four hex head screws which secure the bank to the housing and remove the bank of elements.
- The interior surface where the bank of elements were previously attached should be cleaned completely of any remaining sealant.
- The new bank of elements must be sealed to the housing using a NSF/FDA approved silicone sealant.
- Finish installing the new elements by reversing the above disassembly procedures.

Removal and Replacement Guide (cont'd.)

Replacing a Motor:

- Remove the inner liner as described above.
- Remove the fan or fans as described above.
- Remove the rear access plate, (large one), by disconnecting the water supply line, (at the union), and then by removing the thirteen slotted head screws which secure it.
- Disconnect the electrical wires from the motor or motors making sure to mark them for easy re-assembly.
- Remove the four hex nuts securing the motor. The motor may now be removed from the oven.
- Re-install the motor or motors by reversing the removal procedures.

Replacing the Door Gasket:

- Remove 14 screws securing the panel (with the glass insert) to the door.
- Lay panel down, rounded part of gasket should be facing up.
- To remove the old gasket, pull the gasket away from the metal frame, releasing the frame from the channel in the gasket.
- Lift the metal frame off and set aside.
- Remove the gasket from the glass by pulling the gasket away from the glass to release the glass from the channel.
- Place new gasket on glass making sure the rounded part of the gasket is facing up. Placing gasket over glass, starting at a corner and working around the glass, making sure glass is fully engaged in channel of gasket.
- Lay metal frame over the top of the glass, pulling the corners of the gasket up through the frame; fit the frame into the corners of the gasket. Work from the middle of the sides to the corners until metal frame is fully engaged in gasket channel.
- re-install the component by reversing the removal procedure.

Changing an Electrical Component:

WARNING

Never attempt to service this oven until it has been disconnected from the power supply. All electrical work must be done by a qualified electrician.

- Remove the five slotted head screws securing the front control panel to the oven and tip out the control panel for easy servicing.
- After identifying the component which needs to be replaced remove its wires after marking them for ease of replacement.
- Remove the component.
- Re-install the component by reversing the removal procedures.

**OLIVER PRODUCTS COMPANY
MODEL 690-M STEAM CONVECTION OVEN**

TROUBLESHOOTING

WARNING!

Troubleshooting of electrical equipment should be performed by qualified personnel only. Electrical potential is great enough to cause injury or death.

This troubleshooting section will help identify problems which do not require extensive electrical knowledge. However, problems beyond the scope of this manual will require an electrician.

A. PROBLEM: Oven, display, and indicator lamps do not turn on.

Possible Causes:

1. Machine is not plugged in.
2. There is no power available at the outlet.
3. The power switch has malfunctioned.
4. Circuit breaker has tripped. (Reset breaker.)
5. Fuse has blown.
6. Transformer has burned out.

B. PROBLEM: Both motors not running, but display is functioning.

Possible Causes:

1. Motors are disabled if the door is open.
2. Motors are protected by a motor starter with a manual reset.
 - a. Turn oven disconnect off. Remove screws and tilt electrical panel out. Push reset/start button located on the manual motor starter to reset motors.
 - b. If motor starter trips again, check the current setting on the manual starter for correct amp setting (2-1/2 Amps for 460 VAC, 4 Amps for 208/230 VAC). If setting is correct, have qualified person check motor running amperage.

C. PROBLEM: Only one blower runs.

Possible Causes:

1. Motor windings are burned out.
2. Loss of one of the windings (Motor hums, but there is no rotation of the shaft, and possible overload trip of motor starter occurs.)

D. PROBLEM: Oven stops functioning and the Fault/High Limit lamp turns on.

Possible Causes:

1. Oven temperature is too high. (Your oven comes with a high temperature limit switch set at appx. 500 deg. F. This switch will disconnect the controls. Press RESET when oven has cooled.)
2. Motor has overheated. (The blower motors are equipped with an internal thermal switch. Press RESET when oven has cooled.)

Possible causes:

- i. Could be caused by holes on back panel or along the bottom of control panel being obstructed.
- ii. Something may be binding up the motors or blowers.
- iii. Motor Bearing(s) has/have failed.

NOTE Open the door so oven can begin to cool. Exposing motors and sensitive electrics to excessive heat will decrease their life expectancy.

E. PROBLEM: Oven doesn't heat up but oven appears to be functioning normally.

Possible Causes:

1. Heater bank(s) may be burned out.

**OLIVER PRODUCTS COMPANY
MODEL 690-M STEAM CONVECTION OVEN**

RECOMMENDED SPARE PARTS LIST

PART NUMBER	PART	DESCRIPTION	NO. REQ'D.
5709-3022		MANUAL STARTER (208/230V)	1
5709-3021		MANUAL STARTER (480V)	1
5725-9626		FUSE-FRN 8 (208/230V)	2
5725-9442		FUSE-FNQR-4 (480V)	2
5725-9634		FUSE-FRN 30 (208/230V)	6
5725-9066		FUSE-KTKR 15 (480V)	6
5725-9639		FUSE-FRN 60 (208/230V)	3
5725-9069		FUSE-KTKR 30 (480V)	3
5749-8274		CONTACTOR-DEF PURPOSE (208/230V)	1
		" " " (480V)	3
5749-8273		CONTACTOR-DEF PURPOSE (208/230V)	2
5757-4155		BREAKER-CIRCUIT 3 AMP	1
5757-8819		SWITCH-MAGNETIC PROXIMITY	1
5737-1222		LAMP-25 WATT	3
5911-9018		LATCH-DOOR	1
6542-0003		GLASS-DOOR	1
6904-6062		GASKET-DOOR INTERNAL	8FT
6516-0009		GASKET-DOOR EXTERNAL	1
0690-0004		MOTOR-BLOWER	2
5712-0566		SENSOR-RTD 1000 OHM	1
5712-3252		CONTROLLER-TIME/TEMP.	1
5730-2655		HEATER-10KW	2
5757-9710		SWITCH-TERMAL SURFACE MOUNT	1
6310-5027		FAN-AXIAL 3000 RPM	2

MECHANICAL PARTS LIST

ITEM NO.	PART DESCRIPTION	PART NUMBER
001	HOUSING-MAIN	0690-0029
002	BASE	0690-0037
003	WHEEL-BLOWER	0690-0045
004	SPACER-LONG MOTOR	0690-0058
005	SPACER-SHORT MOTOR	0690-0059
006	STRIP-UPPER INSULATION	0690-0060
007	STRIP-LOWER INSULATION	0690-0061
008	STRIP-SIDE INSULATION	0690-0062
009	PLATE-UPPER SPLICE	0690-0063
010	PLATE-LOWER SPLICE	0690-0064
011	PLATE-SIDE SPLICE	0690-0065
012	SPACER-DOOR INSULATION	0690-0066
013	PLATE-MOTOR BAFFLE	0690-0067-101
101	COVER-TOP	0690-0001
102	COVER-HINGE SIDE	0690-0002
103	COVER-ELECTRICAL SIDE	0690-0003
104	PANEL-OUTSIDE REAR	0690-0018-101
105	COVER-ASS'Y RECESS	0690-0074
106	GUARD-VALVE	0690-0080
201	MANIFOLD-ASSEMBLED	0690-0011
202	PIPE-3/8 X 7" LONG	0690-0012
205	ELBOW-STREET 3/8"NPT	5115-2211
206	UNION-PIPE 3/8" NPT	5115-2212
208	VALVE-SOLENOID 2WAY	5148-6718
209	VALVE-WATER FLOWCONTROL	5148-7408
213	NIPPLE-1/4 NPT x 1-1/2	5115-8250
214	BUSHING-RDC'G 3/8x1/4 NPT	5115-8300
215	BRACKET-VALVE	0690-0091
216	NUTBAR	0690-0092
301	HOUSING-EMPTY	0690-0021
302	HOUSING-LIGHT ASSEMBLY	0690-0022
303	BRACKET-BARRIER STRIP	0690-0023
304	TUBE-SPACER	0690-0024
307	BRACKET-TOP DOOR HOLD	0690-0027
308	BRACKET-BOTTOM DOOR HOLD	0690-0028-1
309	SPACER-DOOR	0690-0030
310	COVER-WIRE	0690-0031

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MECHANICAL PARTS LIST

<u>ITEM NO.</u>	<u>PART DESCRIPTION</u>	<u>PART NUMBER</u>
314	BASE-LAMP	5724-4011
315	LAMP-25 WATT	5737-1222
316	BLOCK-TERMINAL 3/CIRCUIT	5770-7169
318	GLASS-DOOR	6542-0003
321	RETAINER-TOP	0690-0097
322	RETAINER-BOTTOM	0690-0096
323	RETAINER-SIDE	0690-0098
324	GASKET-INTERNAL	6904-6062
325	GASKET-EXTERNAL	6516-0009
329	LATCH-DOOR	5911-9018
330	DOOR-OUTSIDE	0690-0087-2
331	DOOR-OUTER BACK	0690-0088-2
332	DOOR-INSIDE ASSEMBLY	0690-0089-0013
333	NUTBAR-DOOR LATCH	0690-0110-2
401	INNER CHAMBER-8 SHELF	0690-0020
402	BAFFLE-UPPER	0690-0056
403	BAFFLE-LOWER	0690-0057
506	CHIMNEY	0690-0051
508	PLATE-DAMPER	0690-0055-001
520	KNOB	5911-7140

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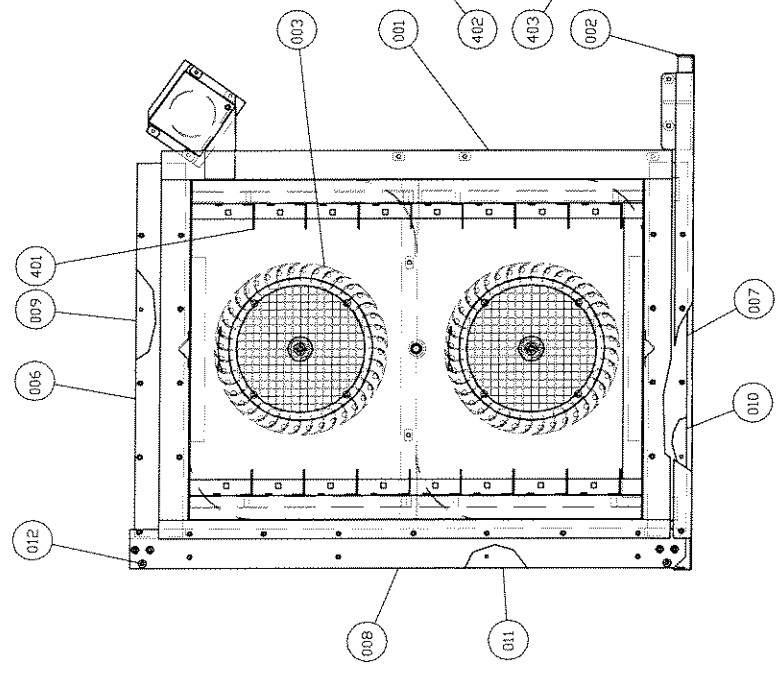
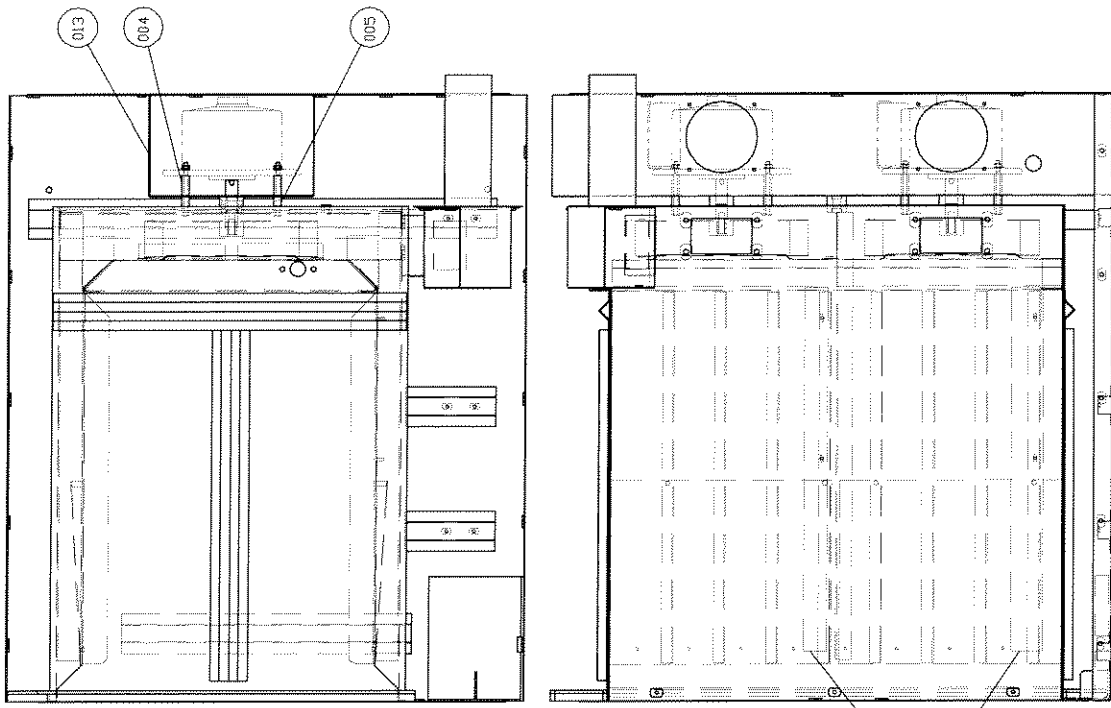
ELECTRICAL PARTS LIST 208/230VAC

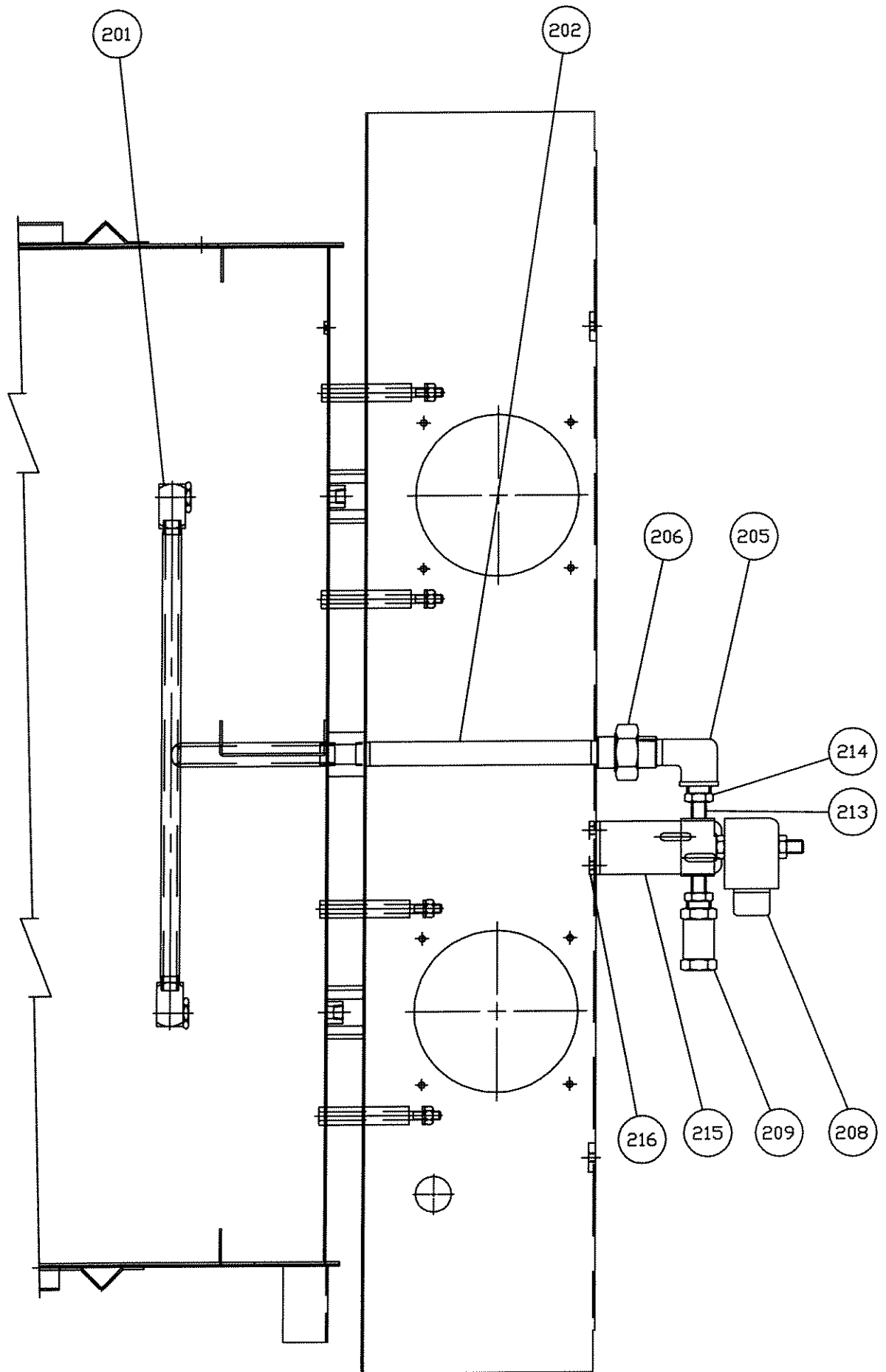
ITEM NO.	PART DESCRIPTION	PART NUMBER
601	CONTROLLER-TIME/TEMP	5712-3252
602	PANEL-FRONT CONTROL	0690-0078
604	OPERATOR PB-RED "RESET"	5708-7802
605	LIGHT-RED INDICATOR	5709-0017
606	OPERATOR PB-BLACK "STEAM"	5708-7801
607	BREAKER-CIRCUIT	5757-4155
608	BRACKET-PROX. SWITCH	0690-0042
609	SWITCH-MAGNETIC PROX.	5757-8819
610	SWITCH-DISCONNECT	5757-5191
611	RELAY	5749-5621
612	SOCKET-8 PIN	5757-2830
613	CONTACTOR-DEF PURPOSE	5749-8274
614	CONTACTOR-DEF PURPOSE	5749-8273
615	STARTER-MANUAL	5709-3020
616	FUSE-FRN 8 (TRANSFORMER)	5725-9626
617	FUSE-FRN 30 (HEATERS)	5725-9634
618	BLOCK-FUSE CLASS CC	5726-1080
620	ROD-SUPPORT	0690-0040
621	SUBPANEL	0690-0039-003
622	BLOCK-TERMINAL	5770-7182
623	BRACKET-SUBPANEL	0690-0019
624	FUSE-FRN 60 (MAIN)	5725-9639
625	BLOCK-FUSE 3P	5726-1087

ELECTRICAL PARTS LIST 460VAC

ITEM NO.	PART DESCRIPTION	PART NUMBER
701	CONTROLLER-TIME/TEMP	5712-3252
702	PANEL-FRONT CONTROL	0690-0078-001
704	OPERATOR PB-RED "RESET"	5708-7802
705	LIGHT-RED INDICATOR	5709-0017
706	OPERATOR PB-BLACK "STEAM"	5708-7801
707	BREAKER-CIRCUIT	5757-4155
708	BRACKET-PROX. SWITCH	0690-0042
709	SWITCH-MAGNETIC PROX.	5757-8819
710	SWITCH-DISCONNECT	5757-5190
711	RELAY	5749-5621
712	SOCKET-8 PIN	5757-2830
713	CONTACTOR-DEF PURPOSE	5749-8274
715	STARTER-MANUAL	5709-3021
716	FUSE-FNQR 4 (TRANSFORMER)	5725-9442
717	FUSE-KTKR 1 (HEATERS)	5725-9066
718	BLOCK-FUSE CLASS CC	5726-1006
720	ROD-SUPPORT	0690-0040
721	SUBPANEL	0690-0039-002
722	BLOCK-TERMINAL	5770-7182
723	BRACKET-SUBPANEL	0690-0019
724	FUSE-KTKR 30 (MAIN)	5725-9069

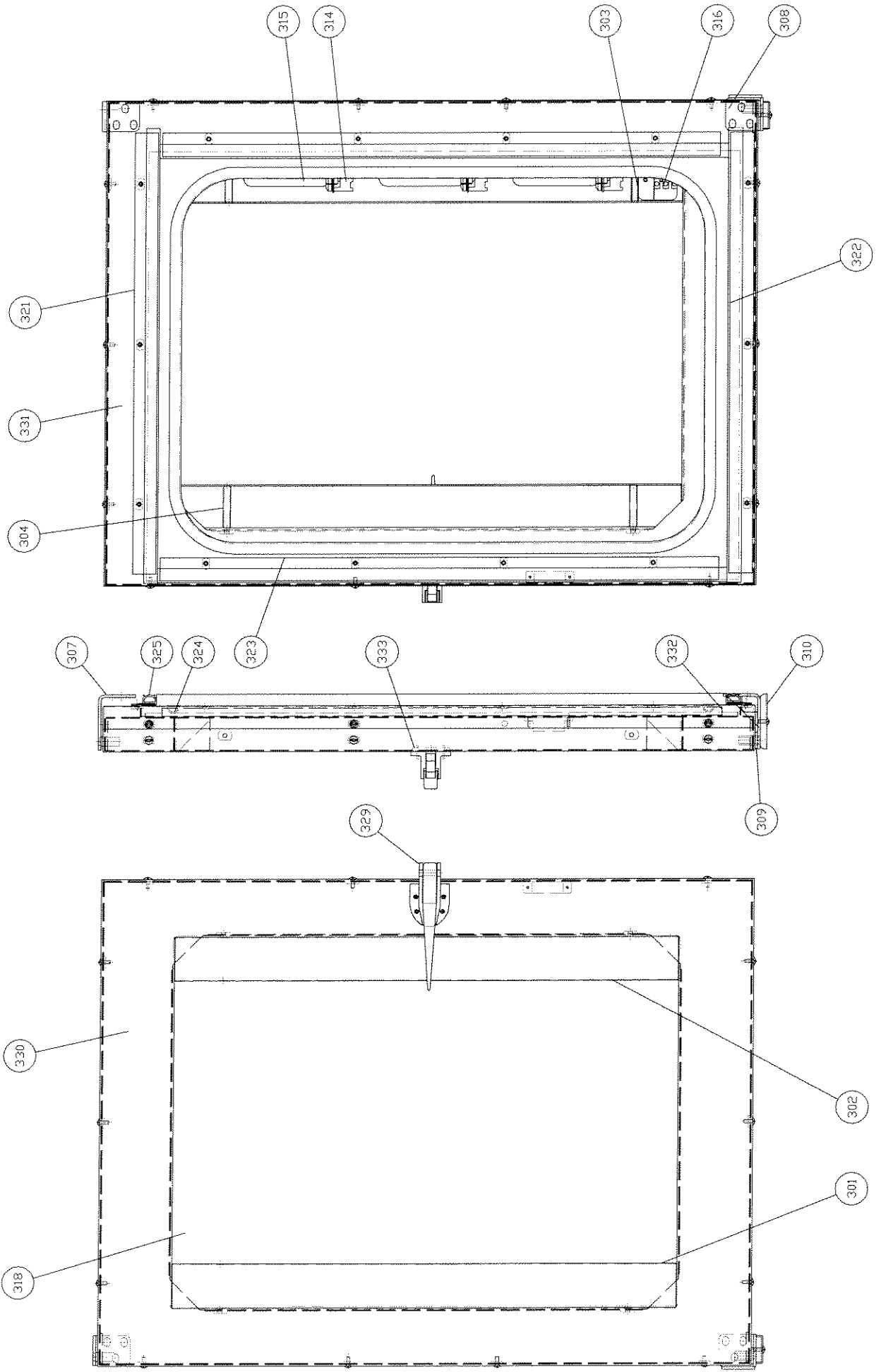
REVISED 4-24-95





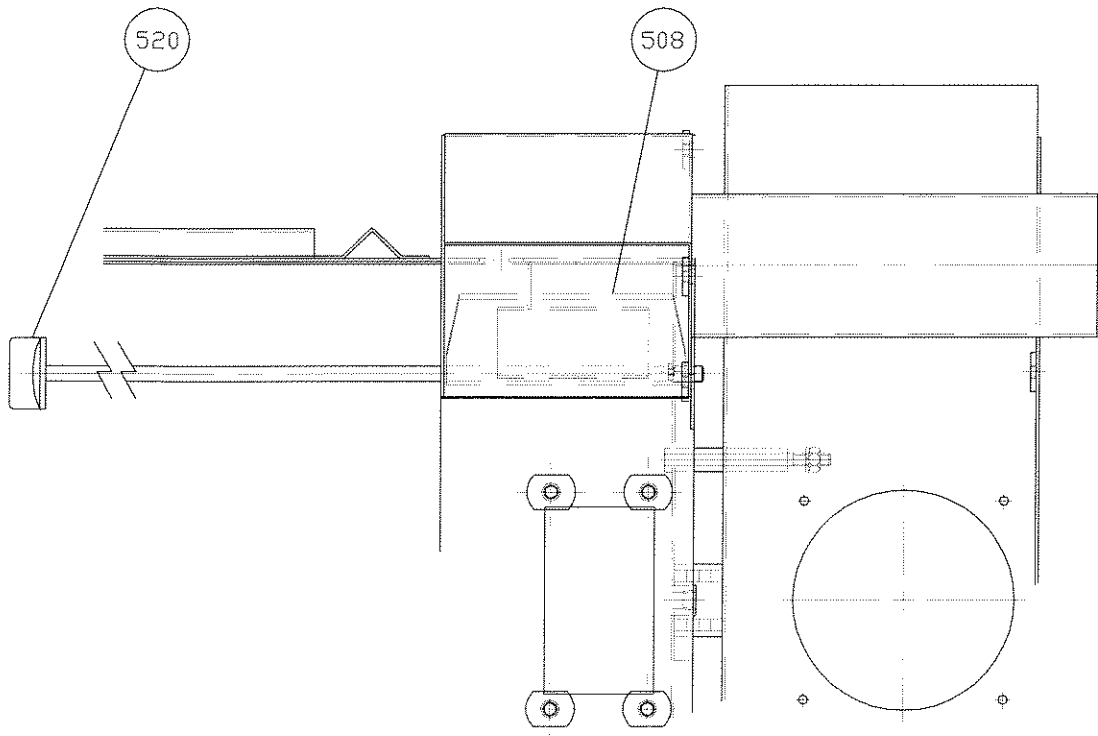
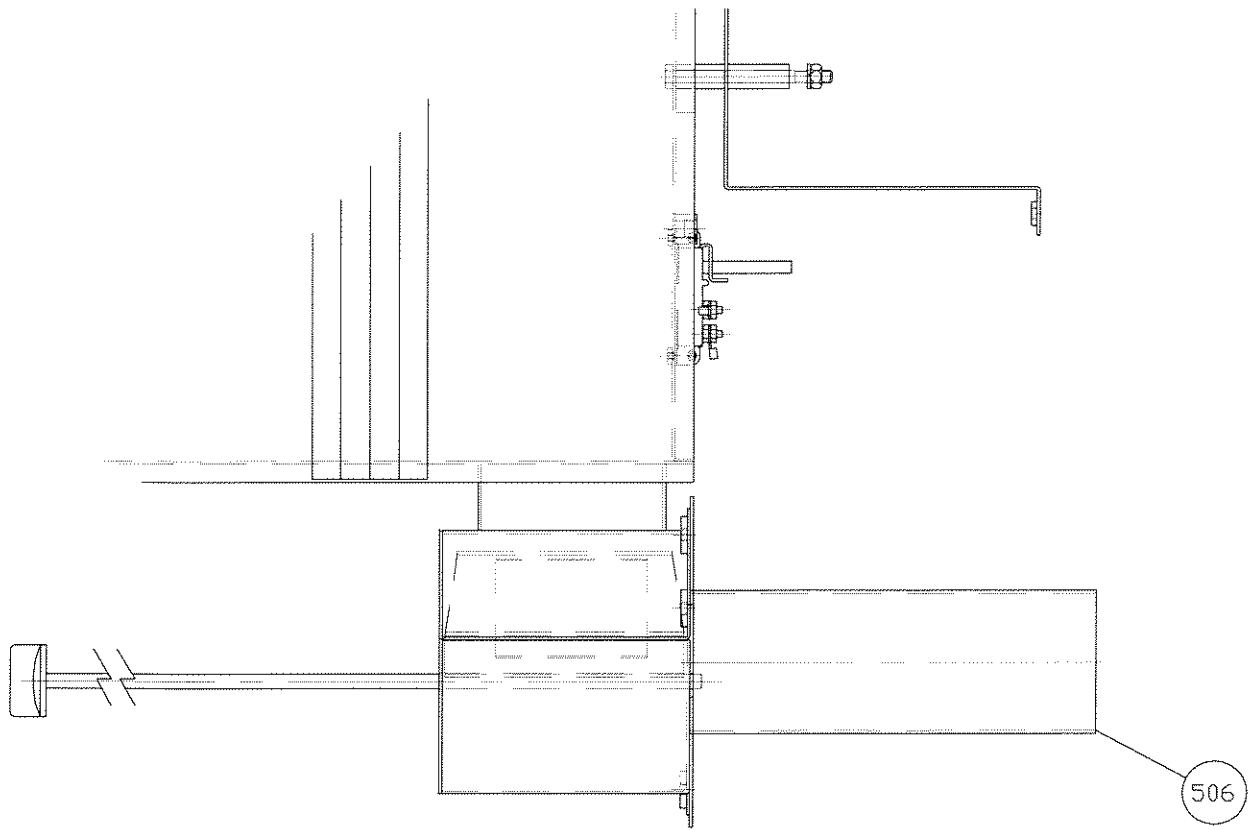
REVISED 1-25-94

WATER SYSTEM ASS'Y
0690S20030



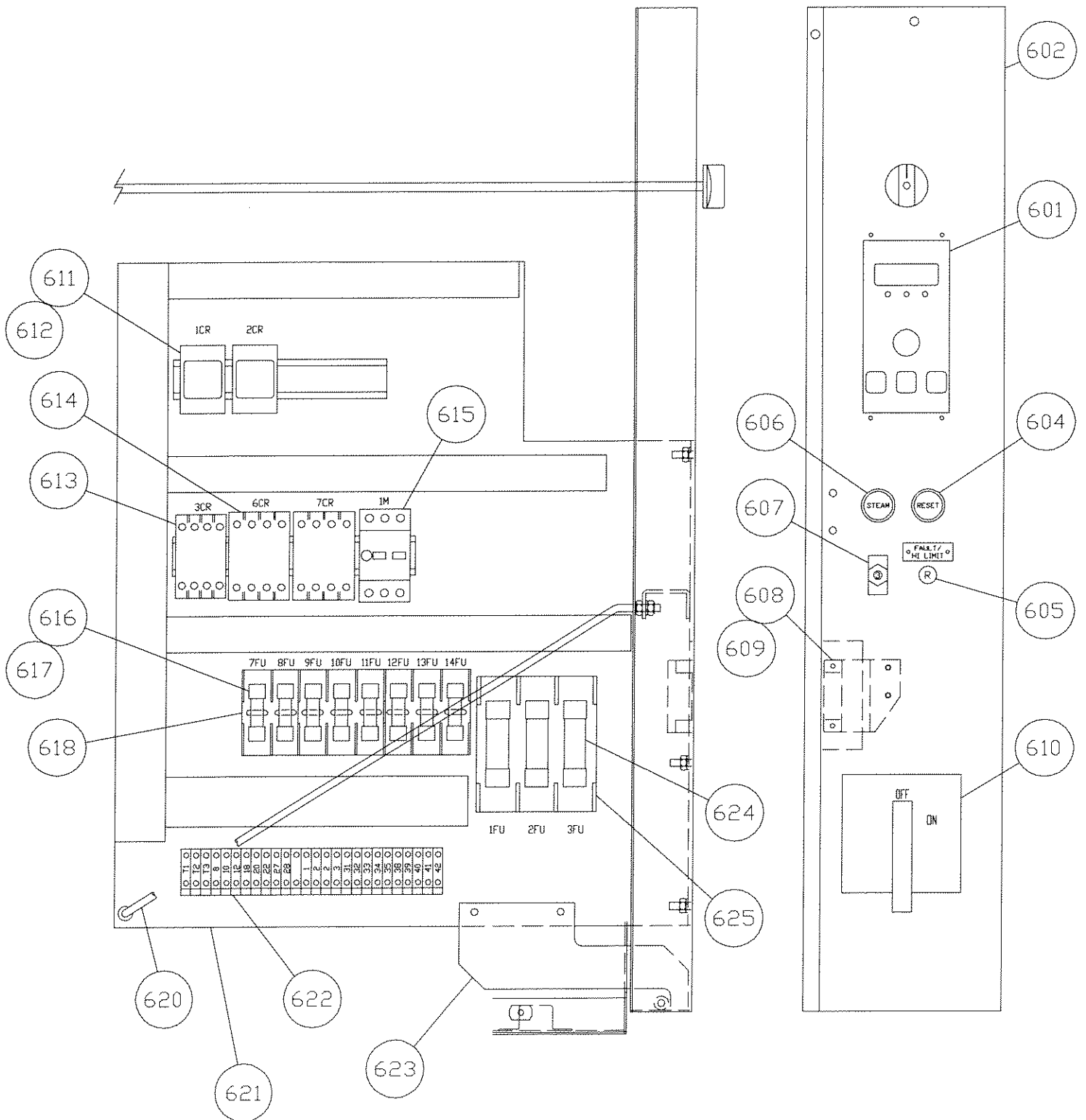
DOOR ASS'Y
0690S20031

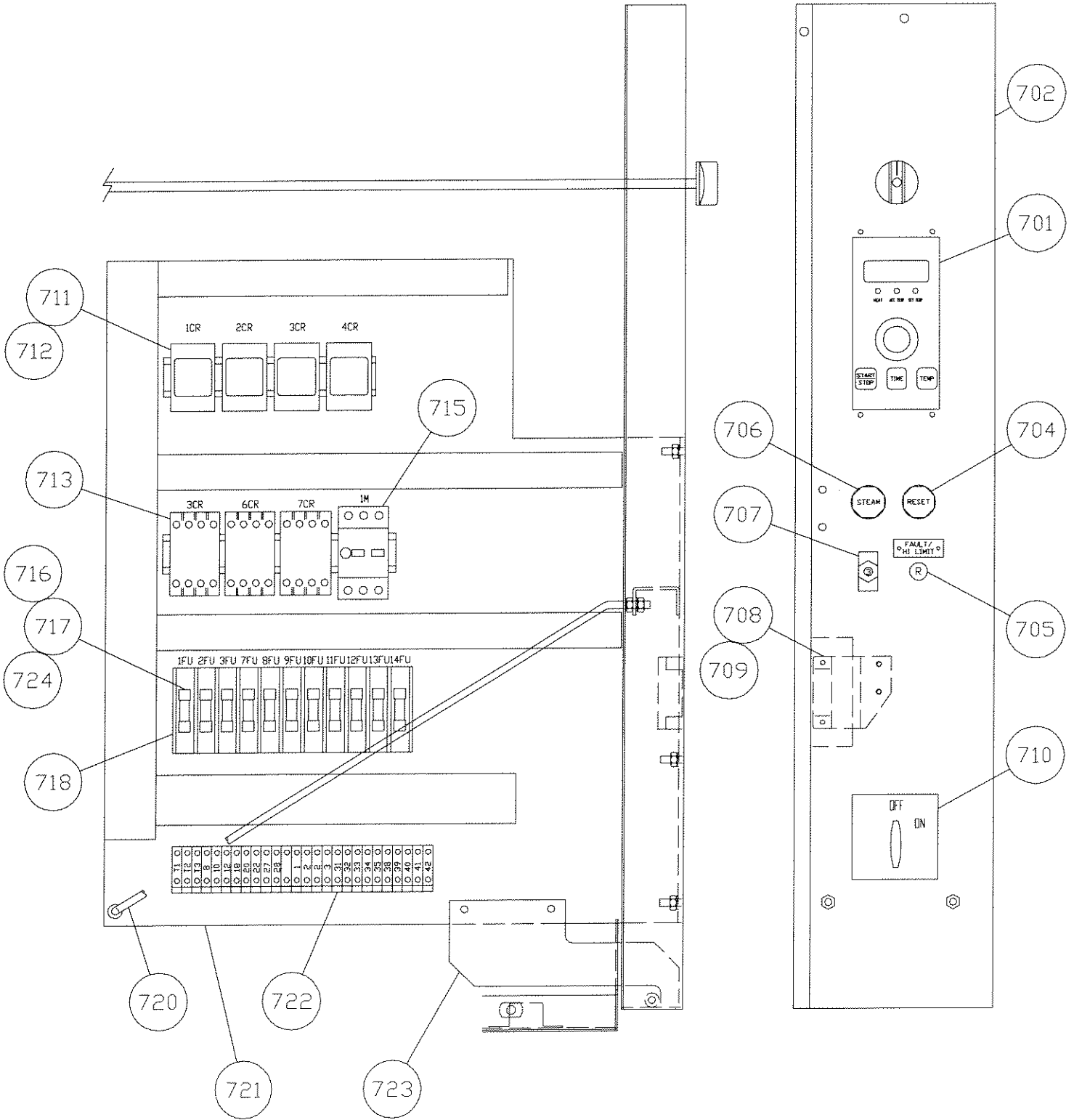
REVISED 02-05-96



REVISED 5-9-96

DAMPER CONTROL ASS'Y
0690S20032





RETURNED PARTS POLICY

This policy applies to all parts returned to the factory whether for warranted credit, replacement, repair or re-stocking.

OLIVER PRODUCTS COMPANY requires that you obtain a Return Material Authorization (RMA) number before returning parts. All parts are to be returned prepaid and marked; "ATTENTION REPAIR PARTS MANAGER". Following this procedure will result in prompt handling of your returned parts with an "RMA" number. This number should appear on the shipping label as well as inside the shipping container.

To obtain an "RMA" number, contact the Repair Parts Department toll free -- 800/253-3893, Ext. 148 or Ext. 150.

Parts returned for re-stocking are subject to a RE-STOCKING CHARGE.

Thank you for your cooperation,

Repair Parts Manager
Oliver Products Company

GEN 860501

WARRANTY

PARTS

Oliver Products warrants that if any part of the equipment (other than a part not manufactured by Oliver) proves to be defective (as defined below) within one year after shipment, and if Buyer returns the defective part to Oliver within one year, Freight Prepaid to Oliver's plant in Grand Rapids, MI, then Oliver, shall, at Oliver's option, either repair or replace the defective part, at Oliver's expense.

LABOR

Oliver Products further warrants that equipment properly installed in accordance with our special instructions, which proves to be defective in material or workmanship under normal use within ninety (90) days from installation or six (6) months from actual shipment date, whichever date comes first, will be repaired by Oliver Products Company or an Oliver Authorized Service Dealer, in accordance with Oliver's published Service Schedule.

For purposes of this warranty, a defective part or defective equipment is a part or equipment which is found by Oliver to have been defective in materials workmanship, if the defect materially impairs the value of the equipment to Buyer. Oliver has no obligation as to parts or components not manufactured by Oliver, but Oliver assigns to Buyer any warranties made to Oliver by the manufacturer thereof.

This warranty **does not** apply to:

1. Damage caused by shipping or accident.
2. Damage resulting from improper installation or alteration.
3. Equipment misused, abused, altered, not maintained on a regular basis, operated carelessly, or used in abnormal conditions.
4. Equipment used in conjunction with products of other manufacturers unless such use is approved by Oliver Products in writing.
5. Periodic maintenance of equipment, including but not limited to lubrication, blade replacement, worn blades and other adjustments required due to installation, set up, or normal wear.
6. Losses or damage resulting from malfunction.

THIS WARRANTY IS NOT EFFECTIVE UNLESS THE INSTALLATION / WARRANTY REGISTRATION HAS BEEN COMPLETED, SIGNED AND RETURNED TO OLIVER PRODUCTS COMPANY WITHIN 15 DAYS FROM DATE OF INSTALLATION.

The foregoing warranty is in lieu of all other warranties expressed or implied AND OLIVER PRODUCTS MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR PURPOSE REGARDING THE EQUIPMENT COVERED BY THIS WARRANTY. Oliver Products neither assumes nor authorizes any person to assume for it any other obligations or liability in connection with said equipment. OLIVER PRODUCTS SHALL NOT BE LIABLE FOR LOSS OF TIME, INCONVENIENCE, COMMERCIAL LOSS, INCIDENTAL OR CONSEQUENTIAL DAMAGES.