

SERVICE & PARTS MANUAL

4200 ELECTRIC COMPACT CONVECTION OVEN

Models:
4200
4292



Market Forge Co.

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SECTION 1 INTRODUCTION

This service and parts manual contains general information, installation, operation, principles of operation, trouble-shooting and maintenance information for the Market Forge Model 4200 Electric Compact Convection Oven. Also included are parts lists, in which each replaceable part is identified and shown in an accompanying illustration.

1.1 DESCRIPTION

The Market Forge Model 4200 Electric Compact Convection Oven is an electrically powered convection oven designed to achieve high-volume cooking with a minimum of power consumption. The unit consists of a heavily insulated cooking compartment fitted with a two-speed convector blower and heated by electric elements. All oven controls are located on a panel on the right front of the oven as seen from the front.

1.2 OVEN COMPONENTS

The major assemblies of the model 4200 are the stainless steel and flat black painted steel cabinet enclosure, door with window, porcelain cooking compartment with nine-position shelf supports, heating element and contactor assembly, and control panel assembly. Controls and indicators include the thermostat, main power switch, blower speed switch, cool down switch, elements on indicator light, 60-minute timer, and two 15 amp fuses. The oven is available in variety of mounting configurations: 4" *102mm* high legs, 27" *686mm* legs with shelf, or stacked on top of another Model 4200 with the bottom unit on 18" *457mm* stainless steel legs with shelf.

1.3 BASIC FUNCTIONING

The Model 4200 becomes operational when the power switch is placed in the ON position, door is

closed, and thermostat set. Contactors located in the control section close the circuit to heating elements located at the right of the cooking chamber. When the chamber reaches the preset temperature, the thermostat contacts open, causing the contactors to interrupt the circuit to the heating elements. When the temperature in the chamber drops enough to close the thermostat contacts, the circuit closes again. Any number of such cycles might occur during the cooking time, indicated by the element indicator light coming on and off.

1.4 SERVICE

Required service, both preventive and corrective, is explained in section 5. Should repairs be required, a network of authorized agencies is available to assist with prompt service. A current directory of Authorized Service Agencies may be obtained by contacting:

Product Service Department
Market Forge Company
35 Garvey Street
Everett, MA 02149
(617) 387-4100

The model and serial number must be referenced when corresponding with Market Forge. The data plate with serial number is located on the right of the bottom front trim ledge.

ONE YEAR WARRANTY

We warrant that Market Forge cooking equipment will be free from defects in material and factory workmanship for a period of one year from the EFFECTIVE WARRANTY DATE, which shall be the date the equipment is placed in service or 15 months from date of shipment from our factory, whichever comes first. Providing the equipment is unaltered, has been properly installed, maintained and operated, we will repair, or replace, at our option, FOB Everett, Massachusetts, that part of any such equipment that becomes defective due to defects in material and/or factory workmanship during the applicable warranty period, subject to the following limitations

Market Forge will replace, repair, or adjust at no cost any part of all equipment other than portable equipment, which becomes defective due to material or factory workmanship within ninety (90) days of the Effective Warranty Date. Any labor required for any such repair, replacement or adjustment after ninety (90) days shall be paid by the user or dealer, unless our extended labor warranty contract has also been purchased to cover this particular equipment

With respect to PORTABLE COOKING EQUIPMENT, so designated in this price list, Market Forge will replace, repair, or adjust at no cost any part which becomes defective due to material or factory workmanship within one (1) year of the Effective Warranty Date, providing the portable equipment is taken or shipped to the closest authorized service agency, transportation charges prepaid. Proof of purchase shall be provided upon request of the service representative

With respect to STEAM BOILER SHELLS only, there is an additional four (4) year warranty limited to the replacement of such shells. Whenever we replace a steam boiler shell after one (1) year from the Effective Warranty Date, the user shall pay a pro-rata share of the then selling price thereof based on the number of months elapsed from the Effective Warranty Date

THIS WARRANTY IS LIMITED TO COOKING EQUIPMENT INSTALLED WITHIN THE 48 CONTINENTAL UNITED STATES AND CANADA IN ALASKA, HAWAII, AND ELSEWHERE OUTSIDE CONTINENTAL US AND CANADA, THIS WARRANTY IS LIMITED TO THE REPLACEMENT OF PARTS ONLY

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, MADE BY MARKET FORGE FOR ITS COOKING EQUIPMENT. EXCEPT THIS WARRANTY, WHICH IS EXPRESSLY IN LIEU OF ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND IN LIEU OF ALL OTHER OBLIGATIONS OR LIABILITY ON THE PART OF MARKET FORGE. INCLUDING LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OR FOR LOSS OF PROFITS OR GOODWILL. NO OTHER WARRANTIES ARE AUTHORIZED ON BEHALF OF MARKET FORGE. COOKING EQUIPMENT IS NOT DESIGNED FOR PERSONAL, FAMILY OR HOUSEHOLD PURPOSES AND ITS SALE FOR SUCH PURPOSES IS NOT INTENDED, BUT IN THE EVENT THAT OUR COOKING EQUIPMENT IS SO USED, THEN THIS WARRANTY SHALL NOT APPLY AND THE EQUIPMENT SHALL BE SOLD AS IS, WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

EXTENDED LABOR WARRANTY AND MECHANICAL START-UP

The very great majority of all warranty service problems become apparent within the first 90 days of use. However, some people prefer to have labor coverage as well as replacement parts coverage beyond that period. This Extended Labor Warranty is available at extra cost in Continental U S and Canada which provides an additional nine months labor coverage following the standard three month labor coverage from the effective warranty date. The cost of this Extended Labor Warranty is 2% of the cost of the equipment covered.

If the Extended Labor Warranty was purchased by your dealer to cover your equipment, then we provided the dealer with written acknowledgement of it when we delivered the equipment. He was, in turn, to give you a copy of this Extended Labor Warranty form. When service is performed, please show this to the service mechanic to avoid confusion. Extended Labor Warranty has also been recorded at our factory.

Providing the Extended Labor Warranty has been purchased, and subject to availability of the local authorized factory service agency, a mechanical start-up to insure that the equipment has been properly installed and is operating properly can be purchased for an additional 2% of the cost of the equipment

SECTION 2 INSTALLATION

2.1 RECEIVING

1. Examine shipment for external and internal damage and completeness. Transport crated oven through building, to installation area before unpacking.
2. Report any damage or shortages to carrier and Market Forge immediately.
3. DO NOT AT ANY TIME LAY THE OVEN DOWN ON ITS TOP, RIGHT SIDE, OR FRONT. TO DO SO MAY DAMAGE THE EQUIPMENT AND VOID THE WARRANTY.

2.2 ASSEMBLY

2.2.1 Vent Box Attachment

1. Remove steam vent box and packet of screws from inside oven and attach vent box to back of oven over vent opening using five #8 sheet metal screws. (Fig. 2-1 No. 1)

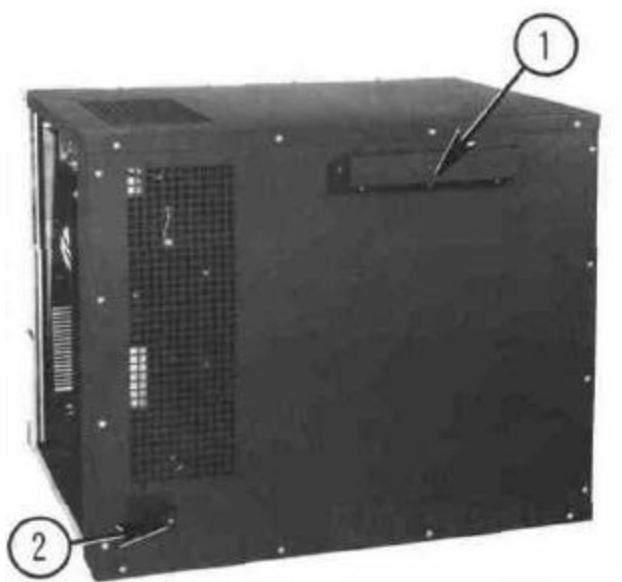


Figure 2-1

2.2.2 Single Oven on 4" (102mm) Legs

Fasten legs to the weld nuts located on bottom panel of oven. The hex foot on the leg is adjustable.

2.2.3 Single Oven on 27" (686mm) Legs with Shelf

1. Insert legs (Fig. 2-2 No. 3) through holes in shelf (Fig. 2-2 No. 1). Do not tighten set screws in corners of shelf.
2. Screw leg tops (Fig. 2-2 No. 2) onto legs (Fig. 2-2 No. 3).

3. Insert leg tops (Fig. 2-2 No. 2) through holes in angle iron frame (Fig. 2-2 No. 4) into weldnuts in bottom of oven.
4. Screw leg tops (Fig. 2-2 No. 2) into weldnuts by turning leg and top assemblies.
5. Raise shelf (Fig. 2-2 No. 1) to desired height and tighten set screws in shelf corners.

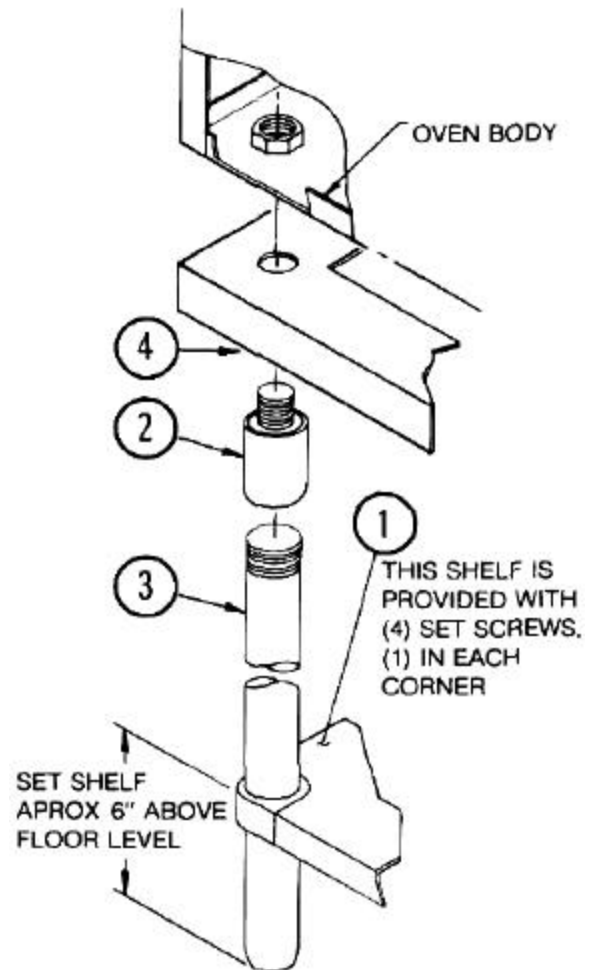


Figure 2-2

Item	Part No.	Description	Qty.
1	99-6180	Solid Shelf, ST. ST.	1
2	A10-0635	Leg Top	4
3	A10-0634	Floor Leg, 27" High	4
4	D99-6183	Shelf, 4200 Elec. Oven	1

Table 2-1

2.2.4 Stacked Ovens on 18" (457mm) Legs with Shelf

1. Insert legs (Fig. 2-3 No. 6) through holes in shelf (Fig. 2-3 No. 5). Do not tighten set screws in corners of shelf.
2. Screw leg tops (Fig. 2-3 No. 7) onto legs (Fig. 2-3 No. 6).
3. Insert leg tops (Fig. 2-3 No. 7) through holes in angle iron frame (Fig. 2-3 No. 8) into weldnuts in bottom of oven.
4. Screw leg tops (Fig. 2-3 No. 7) into weldnuts by turning leg and leg top assemblies.
5. Raise shelf (Fig. 2-3 No. 5) to desired height and tighten set screws in shelf corners.
6. Remove access panel from right side of both ovens.
7. Remove knockouts from the top of the bottom oven and from the bottom of the top oven.
8. Place upper oven on top of lower oven and line up the holes in the top of the lower oven with the holes in the bottom of the upper oven.
9. Fasten ovens together with the washer (Fig. 2-3 No. 3) and bolt (Fig. 2-3 No. 2) inserted up thru top of lower oven into bottom of upper oven using the existing weld nut to fasten the rear and the nut provided with the stacking kit (Fig. 2-3 No. 4) to fasten the front.
10. Remove the existing vent covers from each oven and replace with the vent riser (Fig. 2-3 No. 1) using the fasteners just removed.

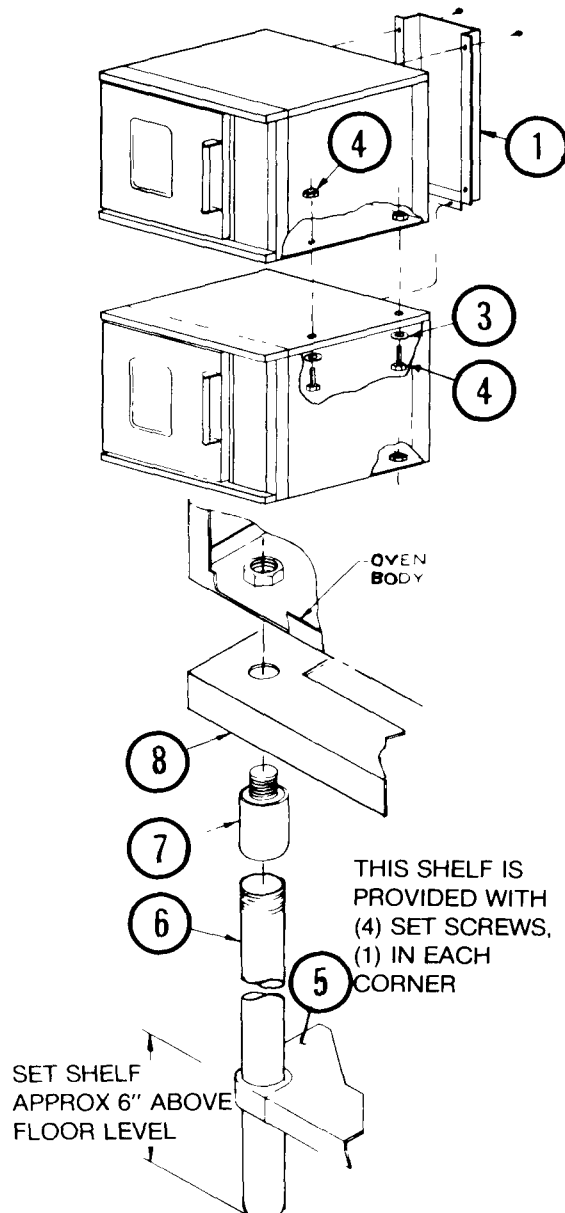


Figure 2-3

2.3 ELECTRICAL CONNECTION

1. Read data plate located on top surface of right side of bottom trim just below control panel before connecting electrical supply to oven. Make sure electrical supply is the same voltage, phase, and frequency called for on data plate.
2. All ovens are shipped 3 phase and may be converted to single phase as per alternate 1 phase wiring diagram.
3. Feed supply through opening in rear of oven (Fig. 2-1 No. 2) and connect supply wires to terminal block behind control panel.
4. Wiring diagram label is located on control bracket, accessible by opening control panel.

NOTE: Improper connection to power supply or connection to power supply other than that designated on data plate will void the warranty.

Item	Part No.	Description	Qty.
1	C99-6178	Vent Riser	1
2	10-2564	Hex Bolt, 3/4-10 x 3" Long	2
3	10-2411	Plain Washer, 3/4	2
4	10-2320	Hex Nut, 3/4-10	1
5	99-6180	Solid Shelf, ST. ST. (Ref. Dwg. C25-2624)	1
6	A09-5271	Floor Leg, 18" High	4
7	A10-0635	Leg Top	4
8	D99-6183	Shelf, 4200 Elec. Oven	1

Table 2-2

2.4 OVEN CHECKOUT AND ADJUSTMENTS

2.4.1 Door Adjustment

The door was properly adjusted at the factory, if door does not open or close properly adjust the ball plunger catch as follows:

1. Remove adjusting wrench from back of manual and insert in notches on sides of ball plunger.
2. Loosen jam nut with wrench.
3. Turn adjusting wrench left or right until ball plunger engages in door striker plate for best operation.
4. Tighten jam nut with wrench while adjusting wrench is still engaged in notches.
5. Return adjusting wrench to back of manual.

2.4.2 Thermostat Calibration

The thermostat is a device which automatically limits heat input at or below the dial setting.

Before attempting to calibrate thermostat, make sure that the thermostat is the cause of problems experienced. Check for improper electrical service, incorrect mixes over and under proofing, incorrect temperatures, and warping pans.

Thermostats are calibrated and sealed by the original manufacturer before leaving their plant. Only a qualified service person should make calibration adjustments, if they become necessary.

2.4.3 To Calibrate Electronic Thermostat

1. Set oven thermostat knob at 350° F.
2. Allow oven to preheat to 350° F.
3. Observe temperature with digital thermometer.
4. If temperature goes above 350° F turn setpot labelled HI (on circuit board) counter clockwise. 1/4 turn should be sufficient.
5. Allow time for oven temperature to drop, then recheck temperature.
6. If temperature is below 350° F turn setpot labelled HI (on circuit board) clockwise. 1/4 turn should be sufficient.
7. Repeat steps 4 to 7 until oven temperature stabilizes at 350° +5°F.
8. Apply Glyptol or Duco Cement to setpot to prevent rotation.

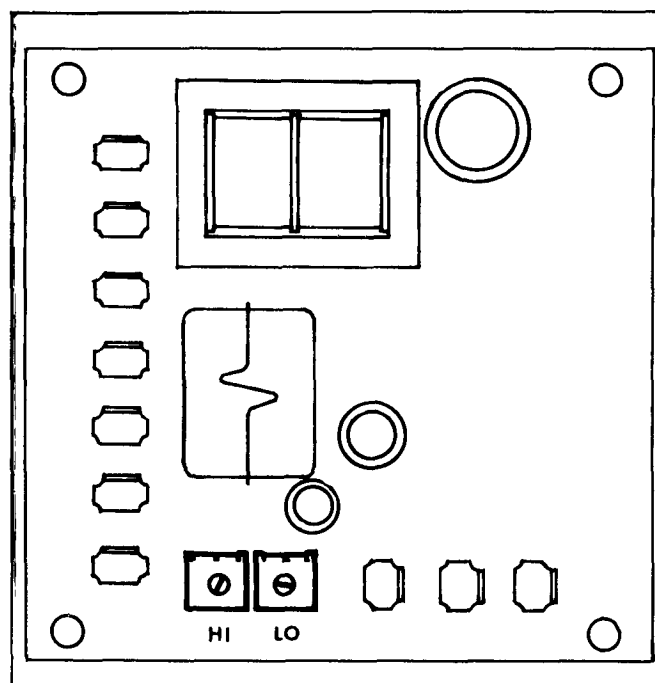
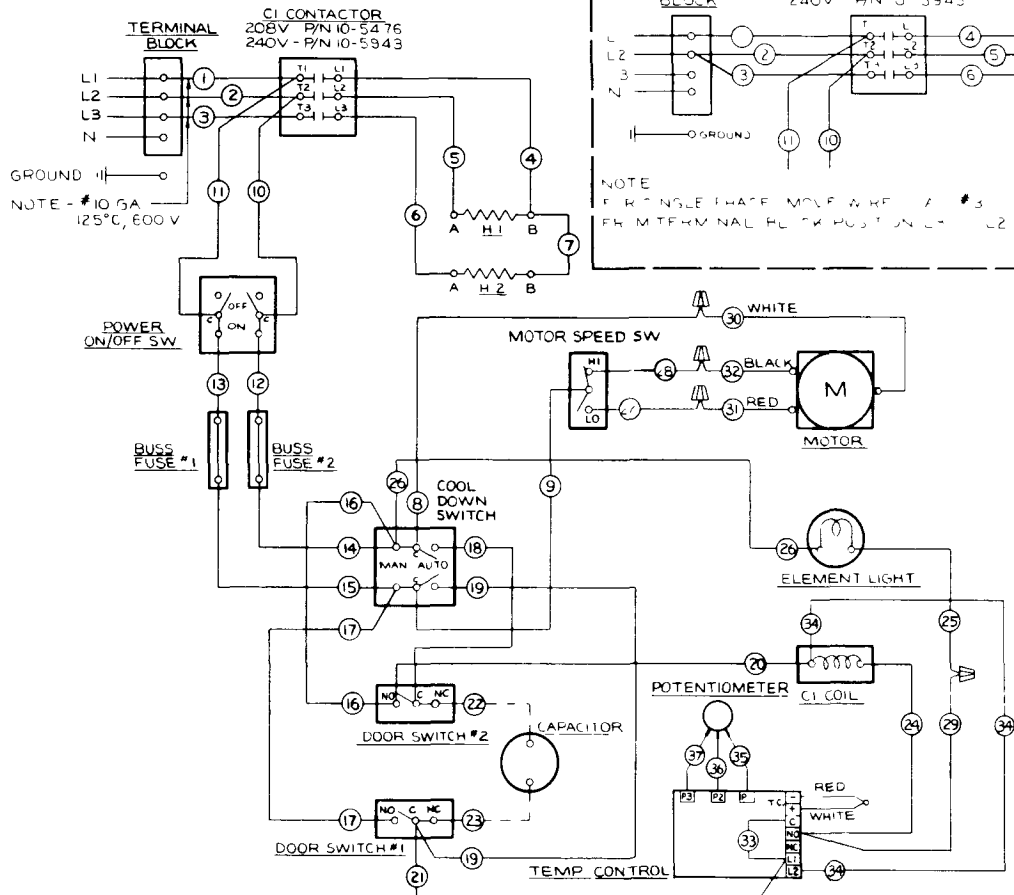


Figure 2-4

0619 66

P/N 09-6162NOTE- SUPPLY CONNECTIONS
SEE MARKING PLATE AT SUPPLY CONNECTION

NOTES -

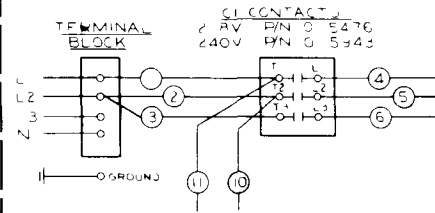
1 ALL WIRES IN HEATING CIRCUIT
TO BE #10 GA 125°C 600V EXCEPT
AS NOTED ALL WIRES IN CONTROL
CIRCUIT TO BE #18 GA 125°C 600V

2 H 1 NNEH 218 220V (H/N 9 7336
240/ 41V (H/N 9 7347)

3 H 2 11TER 2 8/220V 4VJ9 7241
230 24 1 (H/N 3 7241

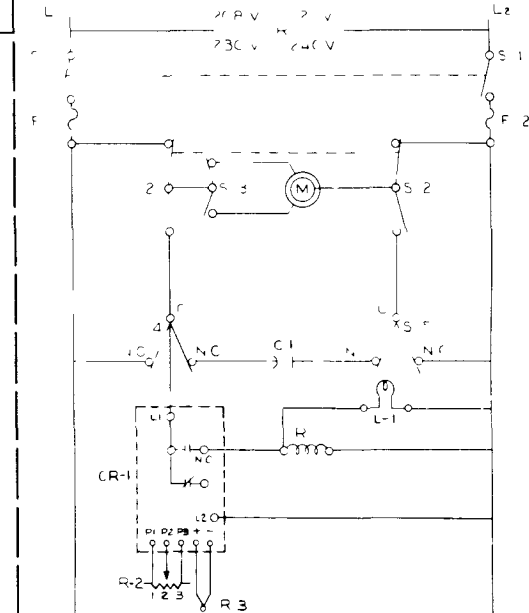
VOLTS	AMPERES			
	L1	L2	L3	PHASE
208V	24	24	—	—
240	26	26	—	1
208V	21	12	12	3
240	22	12.71	12.71	3
230V	23	23	—	1
240	24	24	—	1
230V	20	11.2	11.2	3
240	21	11.7	11.7	3

1 PH. WIRING



NOTE
1. RING LEAD WIRE #3
2. RING LEAD WIRE #3
3. RING LEAD WIRE #3

1 POWER ON/OFF SWITCH
2 MAIN AIR FLOW SWITCH
3 THERMOSTAT SWITCH
4 DOOR SWITCH #1
5 DOOR SWITCH #2
6 TEMPERATURE CONTROL
7 POTENTIOMETER
8 LINE FUSE
9 LINE FUSE
10 LINE FUSE
11 LINE FUSE
12 LINE FUSE
13 LINE FUSE
14 LINE FUSE
15 LINE FUSE
16 LINE FUSE
17 LINE FUSE
18 LINE FUSE
19 LINE FUSE
20 LINE FUSE
21 LINE FUSE
22 LINE FUSE
23 LINE FUSE
24 LINE FUSE
25 LINE FUSE
26 LINE FUSE
27 LINE FUSE
28 LINE FUSE
29 LINE FUSE
30 LINE FUSE
31 LINE FUSE
32 LINE FUSE
33 LINE FUSE
34 LINE FUSE

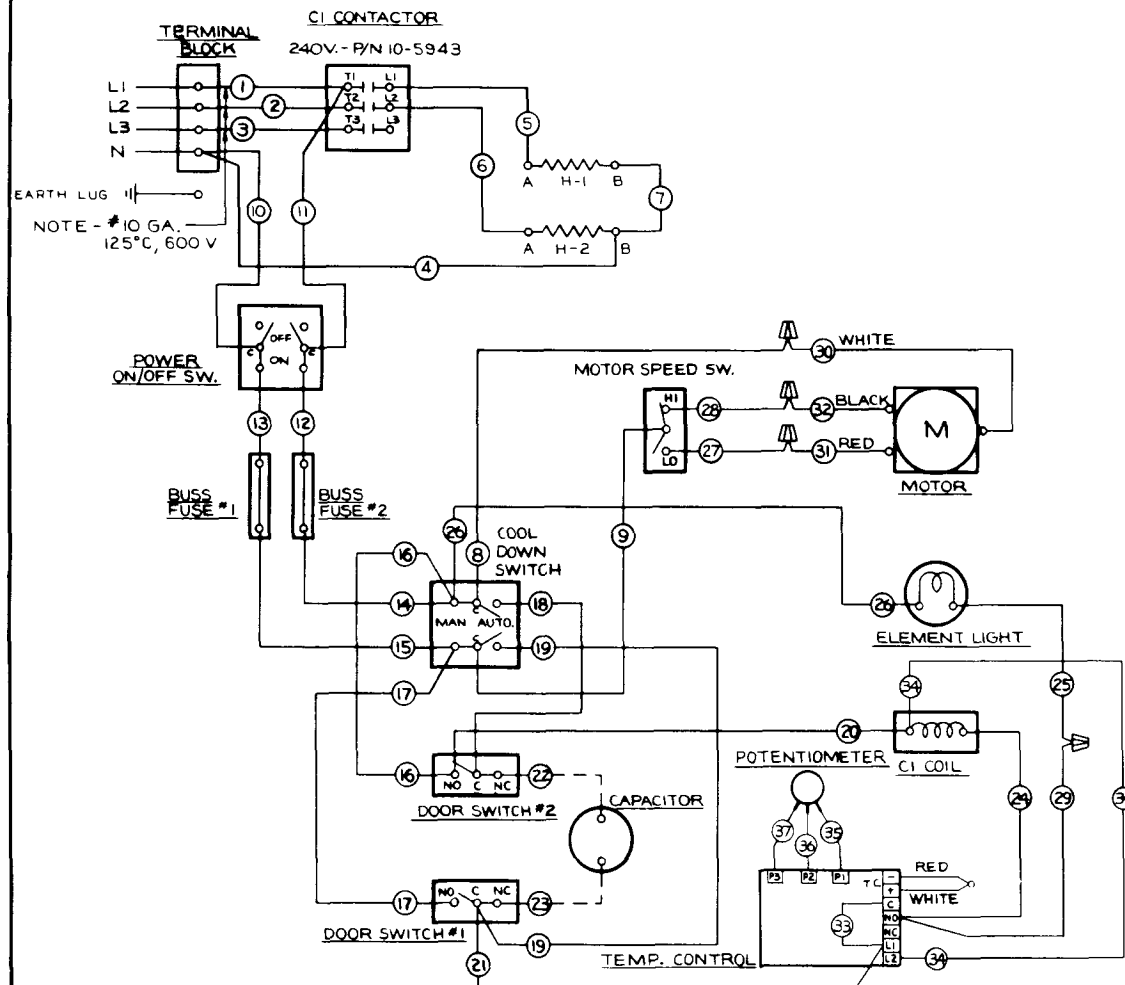


REV	DATE	BY	CHK	RELEASE	REASON
1	12/28/83	1	1	1	1
2	12/28/83	1	1	1	1
3	12/28/83	1	1	1	1
4	12/28/83	1	1	1	1
5	12/28/83	1	1	1	1
6	12/28/83	1	1	1	1
7	12/28/83	1	1	1	1
8	12/28/83	1	1	1	1
9	12/28/83	1	1	1	1
10	12/28/83	1	1	1	1
11	12/28/83	1	1	1	1
12	12/28/83	1	1	1	1
13	12/28/83	1	1	1	1
14	12/28/83	1	1	1	1
15	12/28/83	1	1	1	1
16	12/28/83	1	1	1	1
17	12/28/83	1	1	1	1
18	12/28/83	1	1	1	1
19	12/28/83	1	1	1	1
20	12/28/83	1	1	1	1
21	12/28/83	1	1	1	1
22	12/28/83	1	1	1	1
23	12/28/83	1	1	1	1
24	12/28/83	1	1	1	1
25	12/28/83	1	1	1	1
26	12/28/83	1	1	1	1
27	12/28/83	1	1	1	1
28	12/28/83	1	1	1	1
29	12/28/83	1	1	1	1
30	12/28/83	1	1	1	1
31	12/28/83	1	1	1	1
32	12/28/83	1	1	1	1
33	12/28/83	1	1	1	1
34	12/28/83	1	1	1	1

IF OUTSIDE SOURCED, CALL FOR INSPECTION UPON RECEIPT				DATE STAMP
DE BURNING	MARKET FORGE	SPE	LOCATION # 27	TOLERANCES UNLESS OTHERWISE SPECIFIED
CLASS	CLASS 1	CLASS	CLASS	FRACTIONAL DIMS + 32
USED ON				DATE
C 99-6192				DATE
P 09-6162				DATE
Market Forge Co. P/N 09-6162 2149				DATE
W H N G LACHAM AND HEMATIC 208 240V, 16 3 PH				DATE
60 HZ 5.6 KW 4000 FLEC OVEN				DATE
DRAWN D SILLARS				DATE
CHECKED D SILLARS				DATE
SCALE				DATE
MFG APP				DATE
C 99-6190				DATE

1619-66 3
- P/N 09-6163

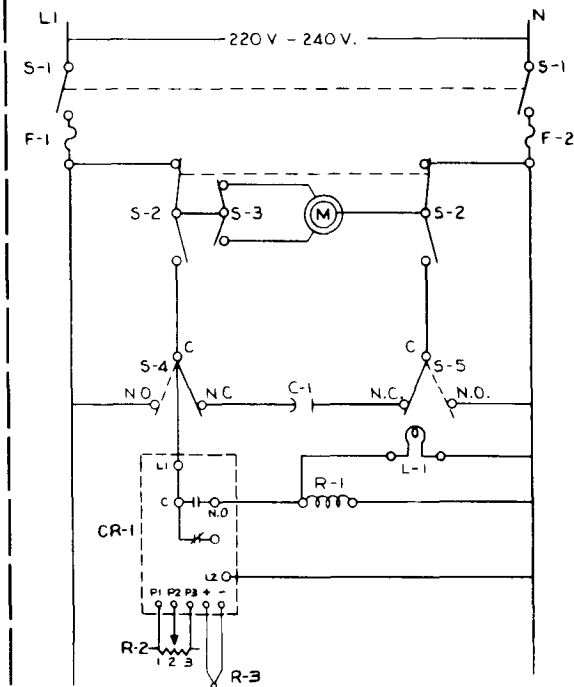
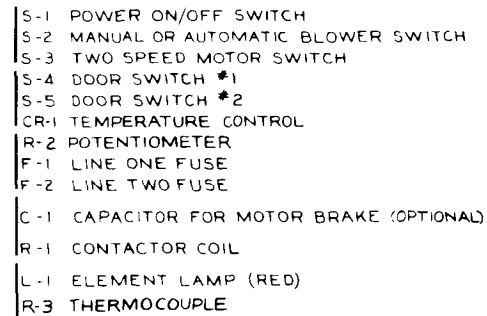
NOTE- SUPPLY CONNECTIONS:
SEE MARKING PLATE AT SUPPLY CONNECTION



NOTES -

1. ALL WIRES IN HEATING CIRCUIT TO BE #10 GA., 125°C, 600V., EXCEPT AS NOTED. ALL WIRES IN CONTROL CIRCUIT TO BE #18 GA., 125°C, 600V.
2. H-1 - INNER 208/220 V. (P/N 09-7336, 230/240 V (P/N 09-7337)
3. H-2 - OUTER 208/220 V (P/N 09-7241), 230/240 V. (P/N 09-7242)

AMPERES				
VOLTS	L1	L2	L3	N
220	12.7	12.7	—	25.4
240	11.6	11.6	—	23.2



BY	REV / EOM #	DATE	SYM
BS	REV. 6/24/83	6-23-83	A
BS	DELETE AND REFORMAT AND REFORMAT AND REFORMAT AND REFORMAT	11-23-83	B
BS	ADD OPTIONAL TO CAPCITOR EOM 723P	2-23-84	C

IF OUTSIDE SOURCED, CALL FOR INSPECTION UPON RECEIPT										DATE STAMP			
DE BURNING MARKET FORGE SPECIFICATION #127					TOLERANCES UNLESS OTHERWISE SPECIFIED								
CLASS 1		CLASS 11 C		CLASS 111 C		DECIMAL DIMS 000 ± 0.008		00 ± 0.01		FRACTIONAL DIMS ± 1/32		± 1/16	
USED ON					Market Forge Co.					P/N 09-6163 1249			
C 99-6193					WIRING DIAGRAM AND SCHEMATIC - 220/380 V. OR 240/415 V., 3 PH. 4 WIRE, 50 HZ, 5.6 KW - 4200 ELEC. OVEN								
P09-6163													
DRAWN D SILLARS				CHECKED <i>[Signature]</i>		ENG APP		C		DRAWING NO		REV	
DATE 6-20-83				SCALE		MFG APP				99-6191		C	

SK-12687

SECTION 3 OPERATION

3-1 PRINCIPLES OF OPERATION

Uniform distribution of heat within the oven is assured by continuous operation of a convector blower.

Moving air continuously strips away a thin layer of moisture and cold air from the top of the food allowing more rapid heat penetration. Lower temperatures and shorter times than those used in conventional deck ovens can be used.

In general, temperature settings can be reduced by 50° F 28° C from recipe temperatures for conventional ovens. Some products may require slightly higher or lower temperatures.

Product should be checked for doneness in about half the time it would take in a conventional oven. Time savings may be about 15% to 20%.

3.2 CONTROLS

1. All controls for the Model 4200 oven are located on the control panel on the front of the oven (Fig. 3-1). These controls are; a thermostat to control oven temperature (Fig. 3-1 No. 1), an oven ready indicator light (Fig. 3-1 No. 2), a power switch with ON and OFF positions (Fig. 3-1 No. 3), a blower switch with high and low positions (Fig. 3-1 No. 4), a cool down switch with manual and auto positions (Fig. 3-1 No. 5) and a 60-minute mechanical timer (Fig. 3-1 No. 6).

3.3 PRE-HEATING

1. Set thermostat to desired temperature, set blower switch to desired speed, and turn on power switch. Blower wheel should rotate clockwise when viewed from front of oven. Low speed is suggested for fragile products ie those leavened by beaten egg whites such as souffles, angel food cake and popovers.
2. Indicator light will go out when desired temperature is reached. Oven will pre-heat to 350° F 180° C in about 10 minutes. Large differences in time from this indicate faulty heating element, or connection to wrong electric power supply.

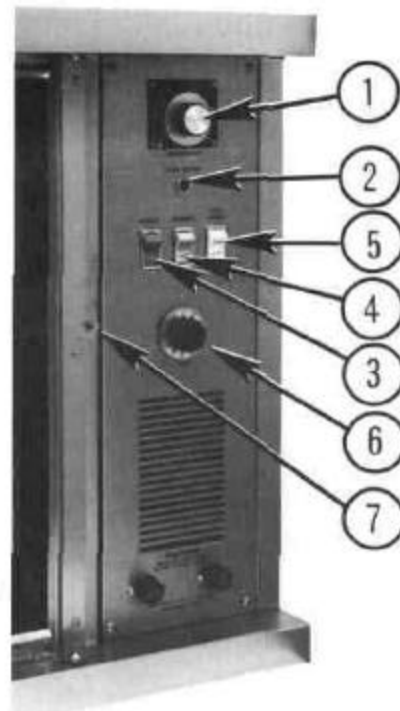


Figure 3-1

3.4 OPERATION

1. Set temperature about 50° F 28° C less than what recipe calls for when using standard oven.
2. Load pans evenly on shelves making sure pans don't touch sides of oven or other pans.
3. Check food for doneness in about half the time it would take in a conventional deck oven. Visual inspection of food can be made without opening the door by looking through tempered glass window.
4. Blower will automatically shut off by a door interlock switch when door opens (Fig. 3-1 No. 7). Closing the door will restart the blower.
5. Blower may be operated with door open by placing cool down switch in manual position. No power is supplied to heating elements with cool down switch in manual position, allowing rapid lowering of oven temperatures with door open.

SECTION 4 MAINTENANCE

4.1 CLEANING

1. Clean interior of oven with a commercially available oven cleaner suitable for use on porcelain.
2. Racks, rack supports, and blower wheel may be cleaned by soaking in ammonia and water solution after removing them from the oven.
3. Stainless steel parts may be cleaned using a commercially available stainless steel cleaner.

4.2 REMOVAL AND REPLACEMENT OF PARTS

WARNING: Disconnect oven from main power supply before working on oven.

4.2.1 Door Removal

1. Remove lower screw (Fig. 4-1 No. 1) from upper hinge assembly of door.
2. Loosen top screw (Fig. 4-1 No. 2) from upper assembly.
3. Push upper hinge pin (Fig. 4-1 No. 3) into door.
4. Rotate top of door forward to clear upper frame.
5. Pull up and out on door to remove.

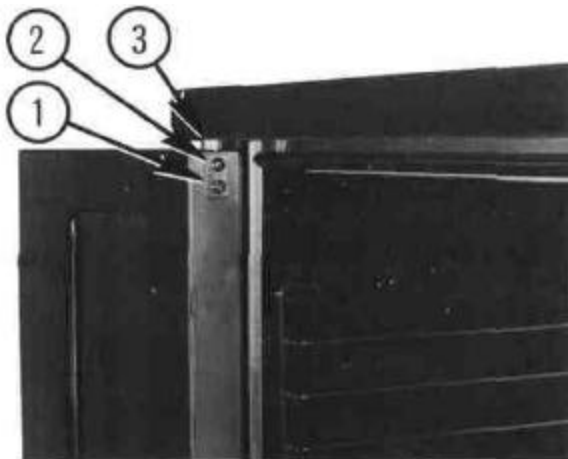


Figure 4-1

4.2.2 Door Replacement

Reverse above procedure being sure to put as many washers under as there were before removal.

4.2.3 Oven Liner Gasket Removal

1. Remove all screw from gaskets.
2. Remove all gaskets.

4.2.4 Gasket Replacement

1. Replace top and bottom metal gaskets on front of oven liner and screw in place.
2. Replace left and right side metal gaskets and screw in place.

4.2.5 Blower Wheel Remover

1. Shut off main power supply.
2. Remove baffle by placing hand under back end and rotating baffle up and out.
3. Loosen set screws (Fig. 4-2 No. 1) on the wheel hub.
4. Pull blower wheel (Fig. 4-2 No. 2) off of shaft.

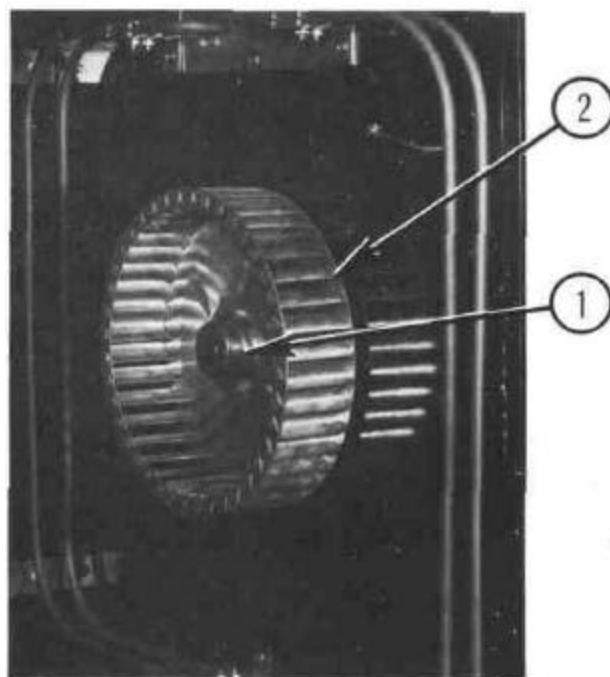


Figure 4-2

4.2.6. Blower Wheel Replacement

1. Remove metal burrs and foreign matter from motor shaft with emery cloth or sandpaper.
2. Lubricate blower wheel hub with high graphite grease. (Remove blower and lubricate at least once every six months).
3. Place blower wheel on shaft. Make sure set screws are positioned over the flats on the shaft. Make sure there is 3/16" 4.7mm clearance between blower wheel and oven wall.
4. Tighten set screws to 160 in-lbs. torque (18. N-M).

4.2.7 Motor Removal

1. Make sure main power supply is disconnected from oven.
2. Remove baffle and blower wheel.
3. Remove right side panel.
4. Open control compartment cover.
5. Remove motor bolt access plate (Fig. 4-3 No. 1).
6. Remove four nuts and bolts holding motor (Fig. 4-3 No. 2) to motor mount.
7. Remove cover from wiring box mounted on motor and disconnect wires (Fig. 4-3 No. 3).

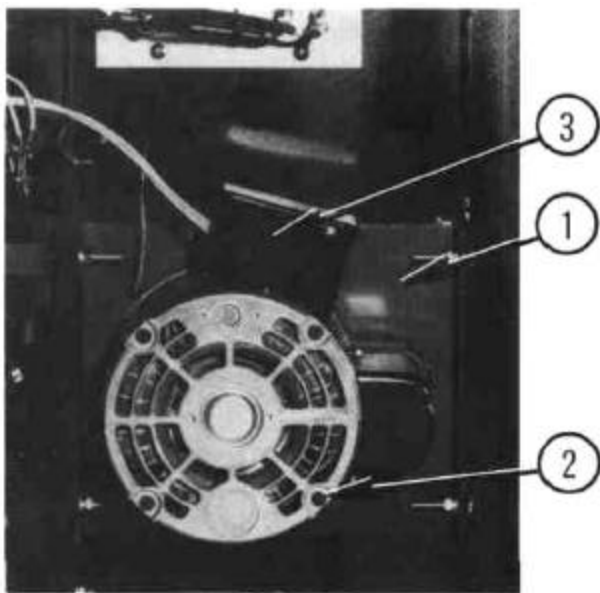


Figure 4-3

4.2.8 Motor Replacement

1. Reverse procedure above.
2. Check motor wiring to make sure blower turns clockwise when seen from front of oven.

4.2.9 Switch Removal

1. Make sure power supply to oven is off.
2. Open control compartment cover.
3. Disconnect wires to switch.
4. Depress spring clips on switch and push forward.

4.2.10 Switch Replacement

1. Push switch into proper control panel opening until spring clips catch.
2. Reconnect wires to switch.
3. Close control cover.

4.2.11 Contactor and Fuse Holder Removal

1. Make sure power supply to oven is off.
2. Open control compartment cover.
3. Disconnect wires from appropriate component.
4. Unscrew fasteners of appropriate components and remove.

4.2.12 Contactor and Fuse Holder Replacement

1. Attach components to mounting.
2. Replace and tighten fasteners.
3. Reconnect wires.

4.2.13 Thermostat Removal

1. Make sure power supply to oven is off.
2. Open control compartment cover.
3. Remove racks and rack supports from oven compartment.
4. Remove baffle.
5. Disconnect thermocouple lead wires (Fig. 4-4 No. 1) from circuit board.
6. Unscrew thermocouple from oven liner.
7. Pull thermocouple and wires through oven liner into oven compartment and remove.
8. Remove circuit board (Fig. 4-4 No. 2) from bracket.

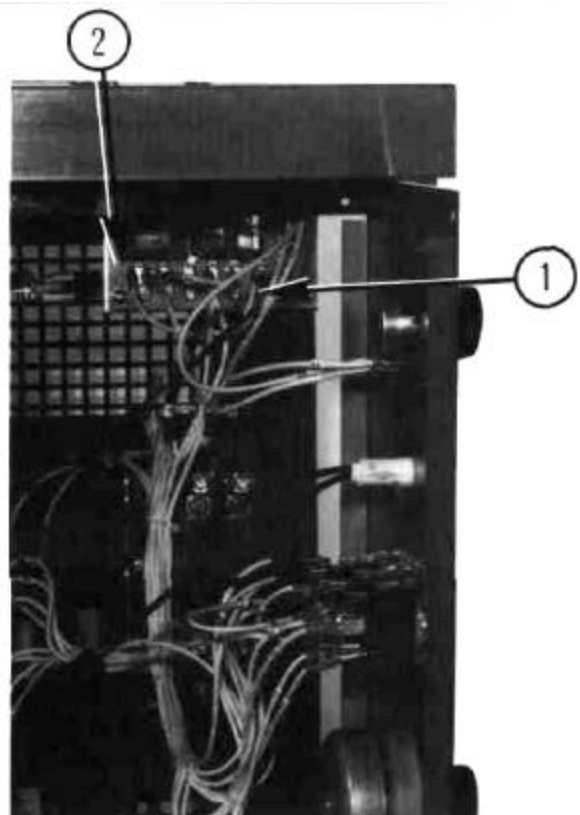


Figure 4-4

4.2.14 Thermostat Replacement

Follow 4.2.13 in reverse order.

4.2.15 Heater Element Removal

1. Make sure power supply to oven is off.
2. Remove right side panel.
3. Remove element terminal cover above motor and disconnect wires.
4. Remove element plate and insulation spacer.
5. Remove racks and rack supports from oven cavity (Fig. 4-5 No. 1).
6. Remove baffle (Fig. 4-5 No. 2)
7. Remove eight screws holding the element assembly to the oven wall.
8. Remove elements.

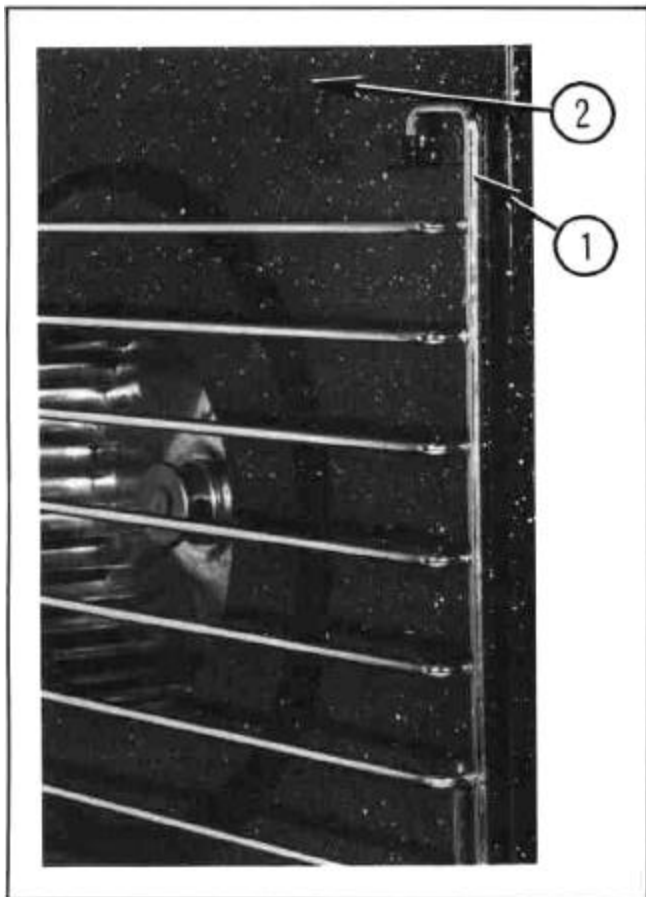


Figure 4-5

4.2.16 Element Replacement

Follow 4.2.15 in reverse order.

4.2.17 Door Interlock Switch Bracket Removal

1. Make sure power supply to oven is off.
2. Open control compartment cover.
3. Remove wires to door interlock switches.
4. Remove two bracket retaining screws (Fig. 4-6 No. 1).
5. Remove interlock switch assembly (4-6 No. 2).

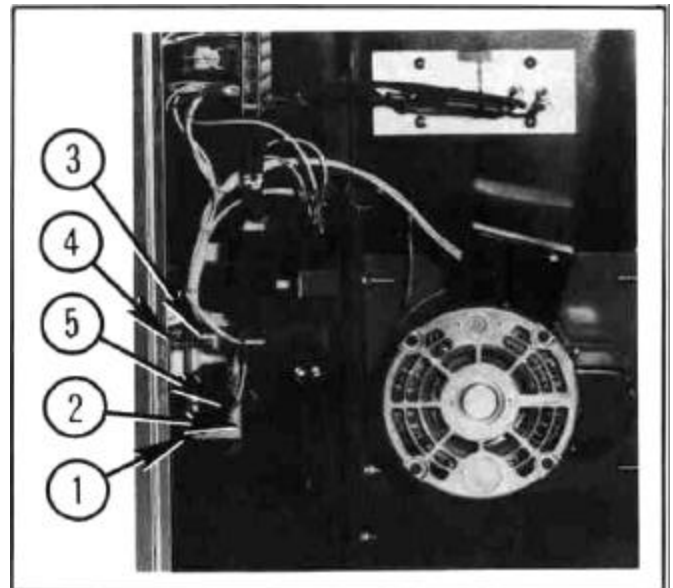


Figure 4-6

4.2.18 Door Interlock Switch Replacement

1. Insert long end of door activated plunger through hole in left front side of control compartment (Fig. 4-6 No. 3).
2. Replace spring (Fig. 4-6 No. 4) and switches (Fig. 4-6 No. 5) in bracket and secure switch assembly with 2 screws.
3. Position switches so that push buttons on switches just touch actuator plate on plunger rod.
4. Replace wires using wiring diagram as guide.
5. Replace control compartment cover.

SECTION 5 TROUBLE-SHOOTING

5.1 GENERAL

The information in this section is intended to assist both the operator and service personnel in locating the general source of problems which may occur with the Model 4200 Compact Convection Oven. Before following any of the procedures given in this section, the operator should be thoroughly familiar with the operating

instructions and the function of all controls described in Section 3. If the problem cannot be readily corrected, the operator should contact the nearest authorized Market Forge Service Agency for assistance.

5.2 TROUBLE-SHOOTING GUIDE

A general trouble-shooting guide for use by service personnel is given in Table 5-1.

TABLE 5-1 TROUBLE-SHOOTING GUIDE

PROBLEM

Probable Cause	Remedy
1. CONVECTOR FAN FAILS TO OPERATE. a) Power to oven is off. b) ON-OFF switch off. c) Oven door open. d) Faulty cool down switch ON-OFF switch, door switch, fan motor, wiring	Locate external circuit breaker for power and place in ON position Place in ON position Close door Test each component and connecting wiring Replace as required
2. OVEN WILL NOT HEAT WITH THERMOSTAT AT MAXIMUM SETTING, (FAN OPERATING). a) Faulty thermostat or wiring. b) Thermostat contacts or coil faulty.	Test thermostat and connecting wiring. Replace as required Replace thermostat.
3. INDICATOR LIGHT FAILS TO LIGHT WITH HOT.THERMOSTAT SET, FAN OPERATING, OVEN HOT a) Indicator light burned out. b) Faulty wiring.	Replace light. Check wiring and repair as needed.
4. ERRATIC OVEN TEMPERATURE. a) Faulty thermostat operation.	Recalibrate or replace as required.
5. UNEVEN HEATING. a) One or more heating elements inoperative	Check wiring to elements; check for burned-out elements. Replace as required.

TABLE 5-2 ELECTRICAL FAULT ISOLATION

FAILURE	FAULT LOCATION
1. Oven will not operate when thermostat is set.	<ul style="list-style-type: none"> a) Incoming power b) Door switch c) Thermostat control d) ON-OFF switch e) Cool down switch f) Contactor g) Wiring
2. Intermittent operation of heaters.	<ul style="list-style-type: none"> a) Thermostat control b) Contactor coil c) Wiring
3. Convector fan fails to operate.	<ul style="list-style-type: none"> a) Cool down switch b) ON-OFF switch c) Door switch d) Fan motor e) Wiring
4. Indicator light off, (heater under power).	<ul style="list-style-type: none"> a) Indicator light b) Wiring
5. Uneven heating.	<ul style="list-style-type: none"> a) Heating elements b) Wiring

5.3 Wiring

All the electrical components of the Model 4200 Compact Convection Oven (ON-OFF switch, door switch, thermostat control, contactors, fan motor, and indicator light) are connected to each other by wiring shown in wiring diagrams in Section 2 Installation. If all the electrical components are operating correctly and the incoming power has been checked, but the unit fails to operate, the fault lies in the wiring.

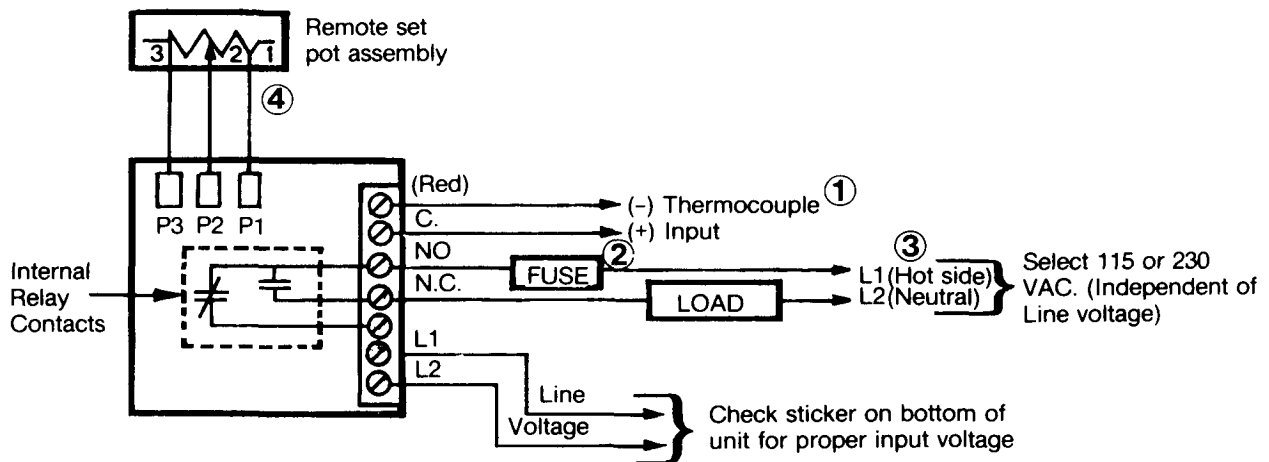
Using an ohmmeter, wiring continuity between the connections, shown on the wiring diagrams, is readily verified. This is best done in stages, removing only those wires required for each continuity check. As each lead is replaced, it should be checked for evidence of corrosion and cleaned if necessary. All leads must be tightly attached to provide a good electrical connection.

5.3 TROUBLE-SHOOTING GUIDE FOR ELECTRONIC THERMOSTAT

PROBLEM

Probable Cause	Remedy
<p>1. CONTROL WILL NOT OPERATE.</p> <p>Check for presence or proper connection of A.C. input.</p>	<p>Check fuses or circuit breakers</p> <p>Check power at control terminals</p> <p>Check power to load</p>
<p>2. RELAY WILL NOT ENERGIZE</p> <p>If sensor is connected properly, place jumper wire across thermocouple terminals. If relay switches at room temperature, controller is operating properly... If sensor is not connected properly... Sensor should read .3 to .5 OHMS at 77° F</p>	<p>Check sensor location, Connections and sensing element. Repair or replace sensor as necessary.</p> <p>Connect per Electrical Connection Diagram</p>
<p>3. CONTROLLER OUT OF CALIBRATION.</p> <p>Check if setpot and control knob is set at 350° F.</p>	<p>Turn the S.P. Hi pot located on board C.C.W. for lower temperature and C.W. for higher temperature.</p> <p>Observe temperature with customer-supplied indicator until proper set point is obtained.</p>

ELECTRICAL CONNECTIONS



SECTION 6 ILLUSTRATED PARTS LIST

6.1 GENERAL

This section contains a complete listing of all replaceable parts of the Model 4200 Compact Convection Oven. For the purpose of parts identification, the unit is broken down into functional assemblies, and each assembly is shown in a pictorial view which is keyed to the accompanying parts list. Each parts list contains the figure index number, the Market Forge part number, and an abbreviated description.

6.2 ORDERING INFORMATION

Orders for repair parts should be directed to the nearest authorized parts distributor. For a current Market Forge Authorized Parts Distributor List contact:

Customer Service Department
Market Forge Company
35 Garvey Street
Everett, MA 02149
Tel. (617) 387-4100

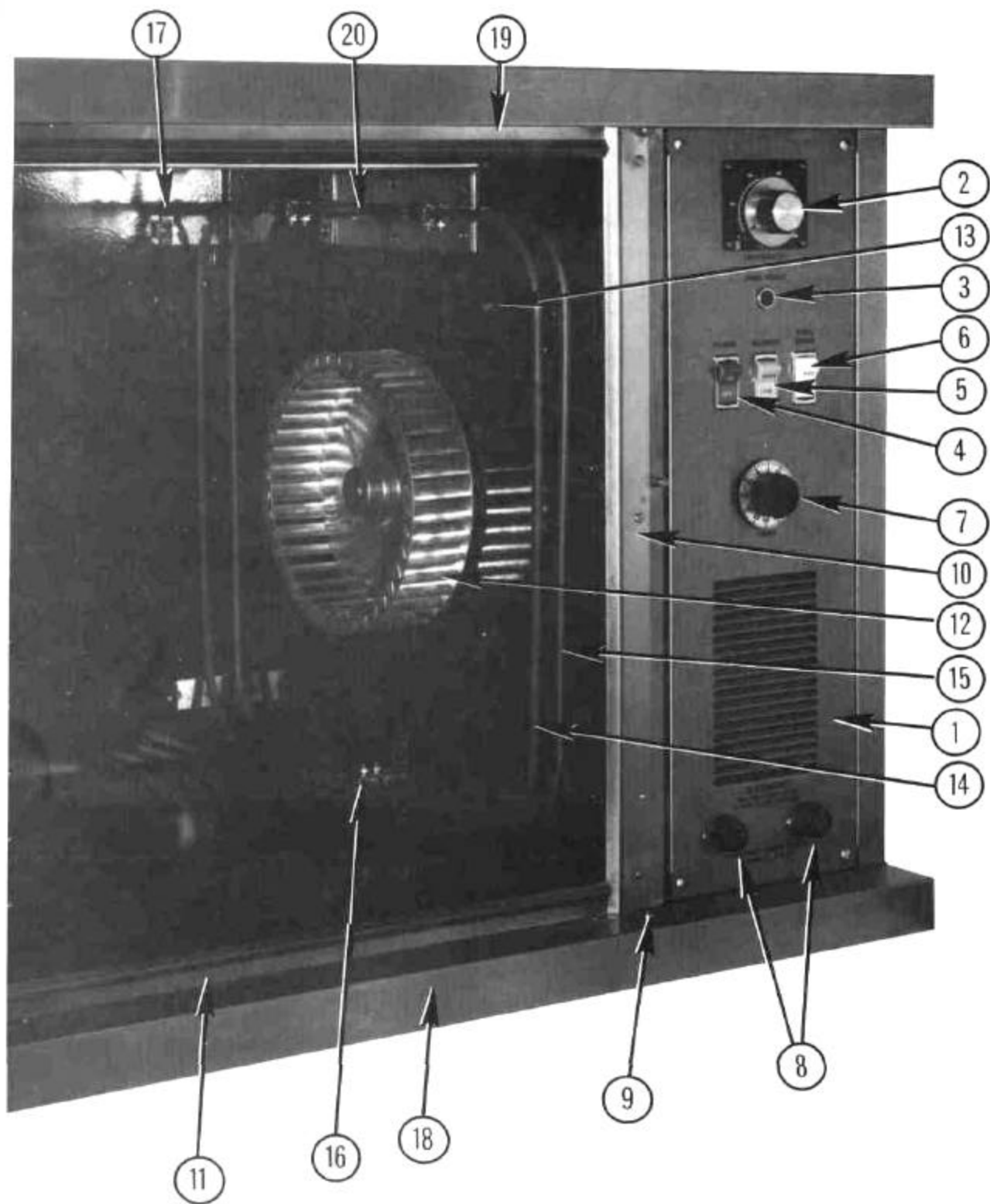


FIGURE 6-1

TABLE 6-1 ILLUSTRATED PARTS LIST

Item	Part No.	Description
1	09-5010	Control Panel
2	09-5268	Thermostat Knob
3	09-6440	Red Pilot 250V 1/3 Watt
4	09-7231	Switch DPDT 250V 10 AMP Red ON-OFF Switch
5	09-7244	Switch DPDT 250V 10 AMP Blue Blower Switch
6	09-7235	Switch DPDT 250V 10 AMP White Cool-down Switch
7	09-5267	60-Minute Timer Knob
8	09-7232	Fuse Holder 300V 15 AMP
8a	09-7233	Fuse 15 AMP
9	99-5266	Ball Plunger
9a	99-5055	Plunger Nut
10	99-6136	Side Gasket
11	99-6101	Top and Bottom Gasket
12	09-5269	Blower Wheel
13	09-7259	Thermocouple and Washer
14	09-7241	Heating Element Outer 208V-2500W 220V-2800W
14a	09-7242	Heating Element Outer 230V-2571W 240V-2800W
15	09-7336	Heating Element Inner 208V-2500W 240V-2800W
15a	09-7337	Heating Element Inner 230V-2571W 240V-2800W
16	99-6102	Heating Element Bracket
17	99-6130	Baffle Support
18	99-5054	Bottom Trim
19	99-5055	Top Trim
20	99-6107	Oven Interior Cover Plate

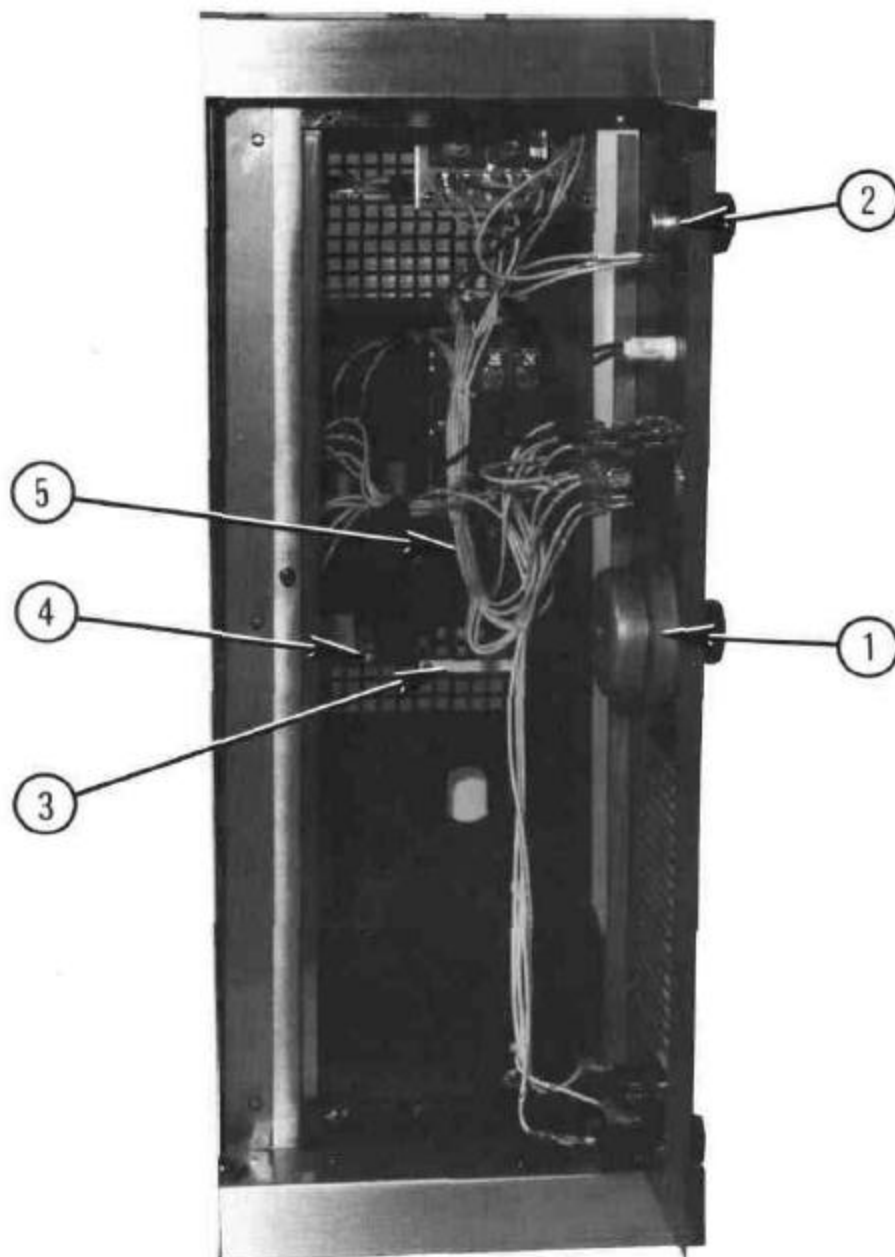


FIGURE 6-2 TABLE 6-2 ILLUSTRATED

PARTS LIST

Item	Part No.	Description
1	10-5520	60-Minute Mechanical Timer
2	09-7257	Remote Potentiometer
3	10-6649	Terminal Block
4	10-5551	Ground Lug
5	99-6194	Control Circuit Wire Harness

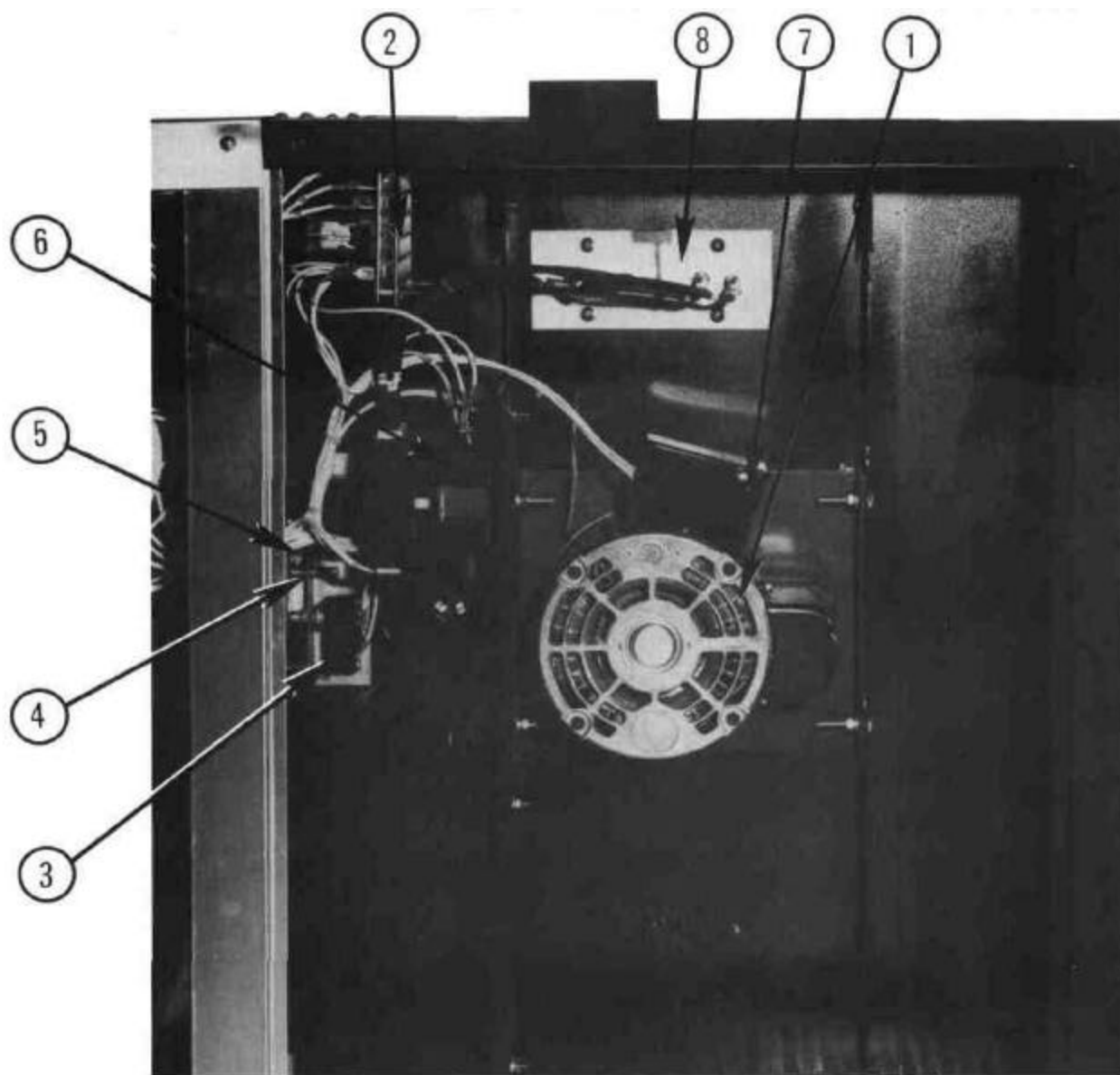


FIGURE 6-3

TABLE 6-3 ILLUSTRATED PARTS LIST

Item	Part No.	Description
1	09-7230	Blower Motor, 115V 1/4 HP 2 Speed
2	09-6486	Temperature Controller 115 Volts
3	10-6859	Microswitch (2) two required
4	99-6145	Actuator, Door Switch
5	09-4404	Compression Spring
6	10-5476	Contactator, 208V 40 A 50/60 Hz
6a	10-5943	Contactator, 240V 40 A 50/60 Hz
7	99-6140	Assembly Blower Motor and Bracket
8	99-6108	Electric Heating Element Cover Plate
8a	99-6109	Electric Heating Element Cover Gasket

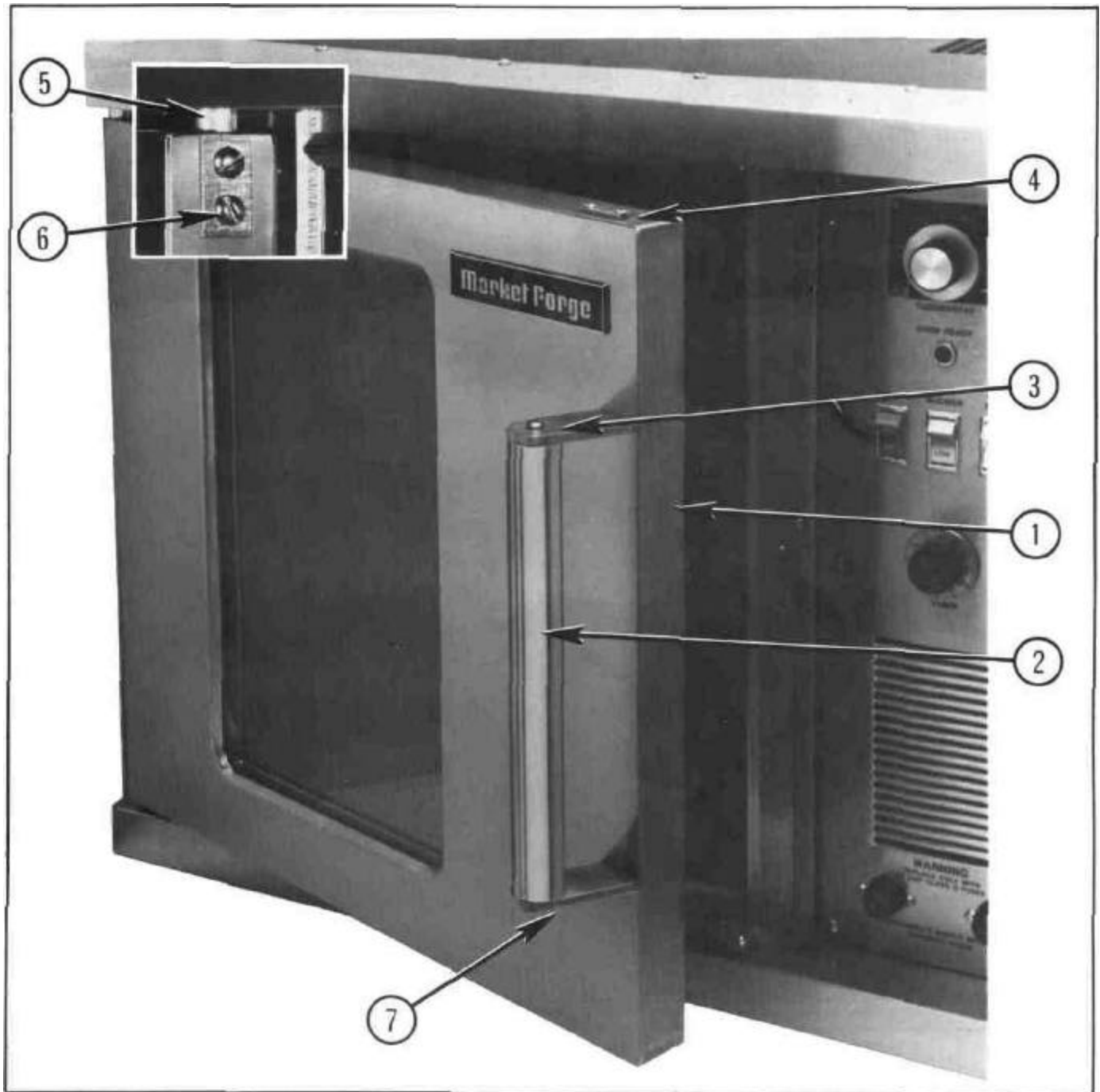


FIGURE 6-4

TABLE 6-4 ILLUSTRATED PARTS LIST

Item	Part No.	Description
1	99-6150	Door Assembly
2	99-6158	Door Handle
3	99-6157	Door Latch Striker
4	99-6153	Hinge Pin
5	99-6154	Hinge Pin Plate
6	99-6155	Door Handle Bracket, Top
7	99-6156	Door Handle Bracket, Bottom

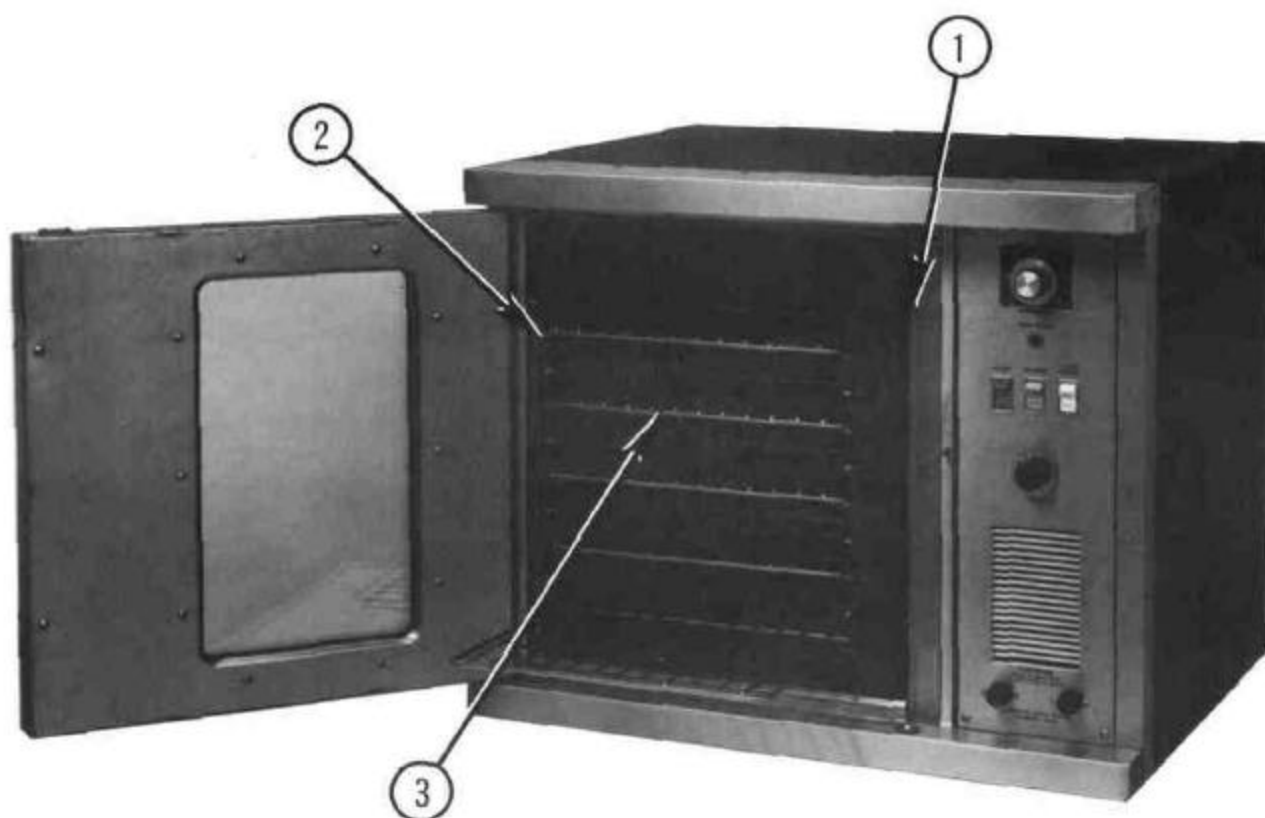


FIGURE 6-5 TABLE

6-5 ILLUSTRATED PARTS LIST

Item	Part No.	Description
1	99-5027	Baffle
2	99-5057	Rack Supports
3	99-5056	Racks

TABLE 6-6 PARTS NOT SHOWN

Item	Part No.	Description
	99-5052	Exterior Top panel
	99-5058	Exterior Rear Panel
	99-5020	Right Side Access Panel
	99-5035	Left Side Panel
	10-0633	4" Adjusting Leg
	99-5066	Door Adjusting Wrench
	09-2615	Door Adjusting Washers
	99-6176	27" High Stand Kit
	99-6177	Stacked kit with 18" High Stand