

BLODGETT® **BLODGETT**® **BLODGETT**® **BLODGETT**®

BLODGETT® **BLODGETT**® **BLODGETT**®

BLODGETT® **BLODGETT**® **BLODGETT**® **BLODGETT**®

BLODGETT®

**MARK V SERIES
CONVECTION OVEN
SERVICE AND REPAIR MANUAL**

BLODGETT OVEN COMPANY

www.blodgett.com

44 Lakeside Avenue, Burlington, Vermont 05401 USA Telephone (802) 658-6600 Fax: (802)864-0183

PN 33144 Rev F (7/02)

© 2002 – G.S. Blodgett Corporation All rights reserved.

Duplication of the information in this manual is prohibited without the consent of the Blodgett Service Department.

TABLE OF CONTENTS

1. INTRODUCTION	
Oven Specifications	1-1
2. OPERATION	
Sequence of Operations	2-1
Cook Only – 18459 Rev D	2-1
CE Approved Cook Only – 33339 Rev C	2-3
Cook and Hold – 18791	2-5
Solid State Digital – 30070 Rev B	2-8
CE Approved Solid State Digital – 33345 Rev C	2-10
Fan Delay with Pulse Plus – 18466 Rev D	2-12
Humidaire – 1846 Rev M	2-14
Intellihold and Intelliplus – 22027 Rev A	2-17
Intellitouch – 19361 Rev A	2-19
Blodgett IQ Control – 33078 Rev A	2-21
3. CALIBRATION AND ADJUSTMENT	
Doors	3-1
Door Blower Switch	3-2
Thermostat	3-2
Solid State Manual	3-4
Solid State Digital Control	3-6
Intellihold and Intelliplus Controls	3-7
Intellitouch Control	3-8
Intellitouch II Control	3-9
Blodgett IQ Control	3-10
Blodgett IQ2™ Control Factory Level Programming	3-12
IQ VVC-208 Control	3-13
Probe Resistance vs Heating Elements	3-18
Probe Resistance vs Temperature	3-18
4. TROUBLESHOOTING	
Heat System	4-1
Display Error Codes	4-3
Intellitouch	4-3
Intellihold and Intelliplus	4-3
Blodgett IQ Control	4-3

TABLE OF CONTENTS

5. PARTS REPLACEMENT

Door Assembly	5-1
Door	5-1
Door Arm Support Assembly	5-1
Window Assembly	5-2
Compartment Liner Bottom	5-2
Motor and Blower Assembly	5-3
Blower Wheel	5-3
Motor	5-3
Electrical Components	5-4
Bulb and Capillary Thermostat	5-4
Electrical Components Located in the Control Module	5-4
Door Switch	5-4

CHAPTER 1

INTRODUCTION

OVEN SPECIFICATIONS

ELECTRICAL SPECIFICATIONS

Installations within the U.S. and Canada

Single phase models require a 60 Hz, 208/240VAC, 3 wire service consisting of L1, L2 and ground. Three phase models require a 60 Hz, 208/240/440/480, 4 wire service consisting of L1, L2, L3 and ground. Wiring from the power source to any of the single phase units must be a minimum of #6 AWG copper stranded wire. Wiring from the power source to the 208/240 three phase units must be a minimum of #8 AWG copper stranded wire. Wiring from the power source to the 440/480 three phase units must be a minimum of #12 AWG copper stranded wire.

General Export Installations

Single phase models require a 50 Hz, 220/240VAC, 3 wire service consisting of L1, L2 and ground. Three phase models require a 50 Hz, 415/240 or 380/220 VAC, 5 wire service consisting of L1, L2, L3, neutral and ground. Use 90°C wire and size according to local codes.

CE approved installations

Single phase models require a 50 Hz, 230VAC 3 wire service consisting of L1, neutral and ground. Three phase models require a 50 Hz, 400/230VAC, 5 wire service consisting of L1, L2, L3, neutral and ground. Use 90°C wire and size according to local codes.

ELECTRICAL SPECIFICATIONS (per section)								
KW	Hz	Volts	Phase	Amps				Electrical Connection (minimum size)
				L1	L2	L3	N	
U.S. and Canadian installations								
11.0	60	208	1	51	—	51	—	6 AWG
11.0	60	208	3	31	29	29	—	8 AWG
11.0	60	220-240	1	44	—	44	—	6 AWG
11.0	60	220-240	3	26	24	24	—	8 AWG
11.0	60	440	3	15	14	14	—	12 AWG
11.0	60	480	3	14	13	13	—	12 AWG
General Export installations								
11.0	50	208	3	18	18	18	4	Size per local code
11.0	50	220-240	1	48	—	—	48	Size per local code
11.0	50	220/380	3	18	16	16	2	Size per local code
11.0	50	240/415	3	18	14	14	4	Size per local code
11.0	50	230/400	3	18	15	15	3	Size per local code
CE installations								
11.0	50	400	3N	18	15	15	3	Size per local code

CHAPTER 2

OPERATION

MARK V

SEQUENCE OF OPERATIONS

NOTE: The following instructions represent the most common controllers. For questions regarding other options call the Blodgett Service Department at (800)331-5842.

COOK ONLY – 18459 REV D

Component Reference

NOTE: Refer to FIGURE 1 page 2–2 for component locations.

1. MODE SELECTOR SWITCH
2. COOK TIMER
3. DOOR SWITCH
4. TEMPERATURE CONTROL BOARD
5. AXIAL FAN
6. CONVECTION FAN MOTOR
7. TEMPERATURE PROBE
8. SOLID STATE POTENTIOMETER
9. CENTRIFUGAL SWITCH
10. COOK LIGHT
11. ELEMENT CONTACTOR
12. HEATING ELEMENTS
13. 50 WATT LAMPS
14. LIGHT SWITCH
15. TIMER MOTOR
16. BUZZER

Operation

1. Turn the mode selector switch (1) to the cook position. Power goes to terminal #1 of the cook timer (2), one side of the door switch (3), terminal #8 of the temperature control board (4) and the axial fan (5).
2. If the doors are closed the door switch (3) should also be closed sending power to terminal #6 of the temperature control board (4) and to the convection fan motor (6).

NOTE: This motor has a built in centrifugal switch (9) that closes when the motor reaches full speed. If found faulty do not bypass, the whole motor should be replaced.

3. On a call for heat from the temperature control circuit, a circuit is completed between terminals #6 and #7 of the temperature control board (4).

NOTE: The temperature control circuit consists of the temperature probe (7), the

temperature control board (4) and the solid state potentiometer (8).

Power is sent out of terminal #7 to one side of the centrifugal switch (9). If the convection fan motor (6) is at full speed the centrifugal switch (9) closes sending power to the cook light (10) and one side of the element contactor (11). When the contactor closes the heating elements (12) power up.

4. The 50 watt lamps (13) only receive power when the light switch (14) is activated. These lamps are 115 volt and are wired in series parallel.
5. When the cook timer (2) is set for a time a circuit is made between terminals #1 and #2 powering up the timer motor (15). At the expiration of the set time the switch in the cook timer (2) toggles from 1–2 to 1–4 powering up the buzzer (16).

NOTE: Put the timer in the home position to silence the buzzer.

NOTE: Turn the mode selector switch to cool down to bypass the door microswitch. This allows the convection fan motor to operate even when the doors are open.

NOTE: This oven may be converted from single to three phase, however, contactors must be changed due to the difference in amp draw. Reference detail inset in FIGURE 1.

NOTE: The resistive values for the probes used in this oven have descending temperature coefficients. As the temperature increases the resistive values decrease.

NOTE: Reference page 4–2 of the Troubleshooting section for the resistive values of the heating elements. The reading should be taken in a cold state.

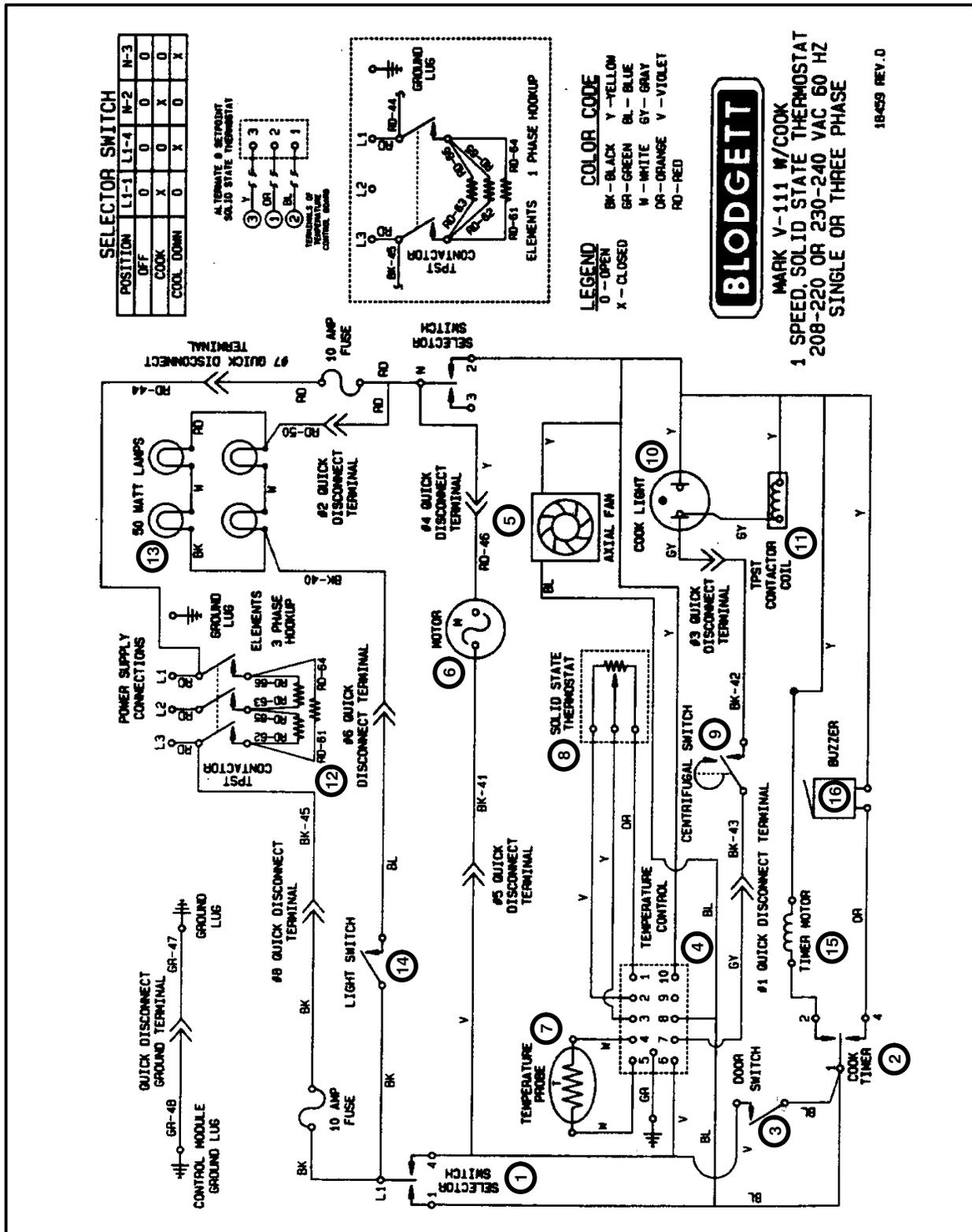


FIGURE 1

MARK V

CE APPROVED COOK ONLY – 33339 REV C

Component Reference

NOTE: Refer to FIGURE 2 page 2–4 for component locations.

1. MODE SELECTOR SWITCH
2. COOK TIMER
3. DOOR SWITCH
4. TEMPERATURE CONTROL BOARD
5. AXIAL FAN
6. CONVECTION FAN MOTOR
7. TEMPERATURE PROBE
8. SOLID STATE POTENTIOMETER
9. CENTRIFUGAL SWITCH
10. HIGH LIMIT SWITCH
11. ELEMENT CONTACTOR
12. COOK LIGHT
13. HEATING ELEMENTS
14. 50 WATT LAMPS
15. LIGHT SWITCH
16. TIMER MOTOR
17. BUZZER

Operation

1. Turn the mode selector switch (1) to the cook position. Power goes to terminal #1 of the cook timer (2), one side of the door switch (3), terminal #8 of the temperature control board (4) and the axial fan (5).
2. If the doors are closed the door switch (3) should also be closed sending power to terminal #6 of the temperature control board (4) and to the convection fan motor (6).

NOTE: This motor has a built in centrifugal switch (9) that closes when the motor reaches full speed. If found faulty do not bypass, the whole motor should be replaced.

3. On a call for heat from the temperature control circuit, a circuit is completed between terminals #6 and #7 of the temperature control board (4).

NOTE: The temperature control circuit consists of the temperature probe (7), the temperature control board (4) and the solid state potentiometer (8).

Power is sent out of terminal #7 to one side of the centrifugal switch (9). If the convection fan motor (6) is at full speed the centrifugal switch (9) closes sending power to one side of a high limit switch (10), if the high limit is closed then power will be sent to one side of the contactor (11) and an indicator light (12). When the contactor closes the heating elements (12) power up.

4. The 50 watt lamps (13) only receive power when the light switch (14) is activated.
5. When the cook timer (2) is set for a time a circuit is made between terminals #1 and #2 powering up the timer motor (15). At the expiration of the set time the switch in the cook timer (2) toggles from 1–2 to 1–4 powering up the buzzer (16).

NOTE: Put the timer in the home position to silence the buzzer.

NOTE: Turn the mode selector switch to cool down to bypass the door microswitch. This allows the convection fan motor to operate even when the doors are open.

NOTE: This oven may be converted from single to three phase, however, contactors must be changed due to the difference in amp draw. Reference detail inset in FIGURE 2.

NOTE: Reference page 4–2 of the Troubleshooting section for the resistive values of the heating elements. The reading should be taken in a cold state.

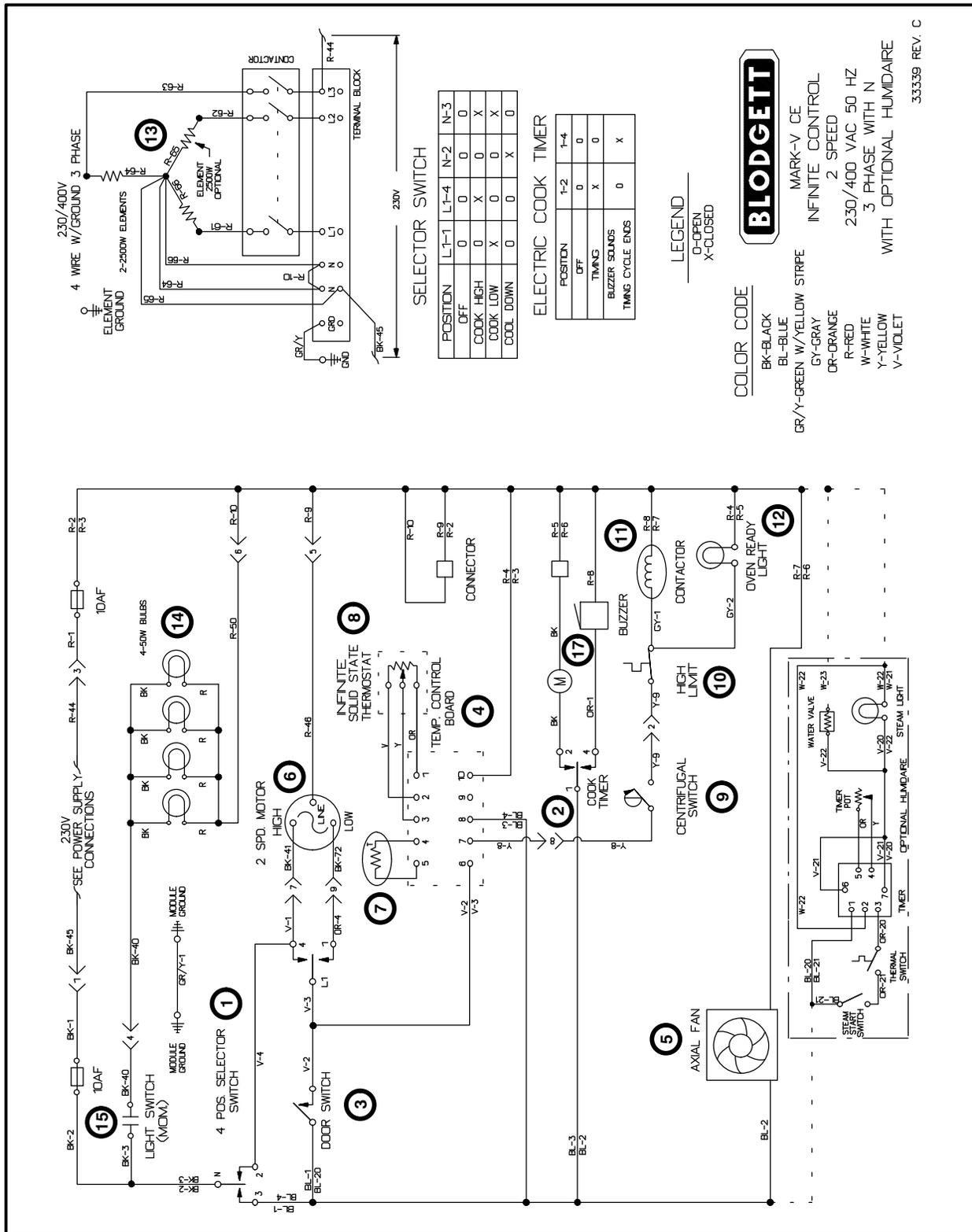


FIGURE 2

MARK V

COOK AND HOLD — 18791

Component Reference

NOTE: Refer to FIGURE 3 page 2–7 for component locations.

1. MODE SELECTOR SWITCH
2. COOK TIMER
3. COOK TEMPERATURE CONTROL BOARD
4. HOLD TEMPERATURE CONTROL BOARD
5. AXIAL FAN
6. DPDT RELAY COIL
7. DOOR SWITCH
8. CONVECTION FAN MOTOR
9. TEMPERATURE PROBE
10. SOLID STATE POTENTIOMETER
11. CENTRIFUGAL SWITCH
12. COOK LIGHT
13. ELEMENT CONTACTOR
14. HEATING ELEMENTS
15. TIMER MOTOR
16. BUZZER
17. COOK AND HOLD TIMER
18. COOK AND HOLD LIGHT
19. TEMPERATURE PROBE
20. SOLID STATE POTENTIOMETER
21. 50 WATT LAMPS
22. LIGHT SWITCH

Cook Operation

1. Turn the mode selector switch (1) to the cook position. Power goes to terminal #1 of the cook timer (2), terminals #6 and #8 of the cook temperature control board (3), terminal #8 of the hold temperature control board (4) and the axial fan (5). Power is also applied to the N.C. set of contacts in a DPDT relay (6).

NOTE: The coil of this relay will only be activated when the hold timer is set.

2. If the doors are closed the door switch (7) should also be closed sending power to terminal #3 of the mode selector switch (1). The mode selector switch should already be made between terminals #3 and N completing the circuit to the convection fan motor (8).

NOTE: This motor has a built in centrifugal switch (11) that closes when the motor

reaches full speed. If found faulty do not bypass, the whole motor should be replaced.

3. On a call for heat from the cook temperature control system a circuit is completed between terminals #6 and #7 of the temperature control board (3).

NOTE: The temperature control system consists of the temperature probe (9), the temperature control board (3) and the solid state potentiometer (10)

Power is sent out of terminal #7 to the N.C. terminal of the DPDT relay (6). This relay should be made between the N.C. terminal and the common terminal sending power to one side of the centrifugal switch (11). If the convection fan motor (8) is at full speed the centrifugal switch (11) closes sending power to the cook light (12) and one side of the element contactor (13). When the contactor closes the heating elements (14) power up.

4. When the cook timer (2) is set for a time a circuit is made between terminals #1 and #2 powering up the timer motor (15). At the expiration of the set time the switch in the cook timer (15) toggles from 1–2 to 1–4 powering up the buzzer (16).

NOTE: Put the timer in the home position to silence the buzzer.

5. The 50 watt lamps (21) only receive power when the light switch (22) is activated. These lamps are 115 volt and are wired in series parallel.

Cook and Hold Operation

1. Turn the mode selector switch (1) to the cook and hold position. Power goes to terminal #1 of the cook and hold timer (17). When the cook and hold timer is set power goes to terminal #6 of the hold temperature controller (4), the coil of the DPDT relay (6) and the cook and hold light (18). When the DPDT relay powers up the switches in the relay toggle from the N.C. to the N.O. position.
2. On a call for heat from the hold temperature control system, a circuit is completed between terminals #6 and #7 of the hold temperature control board (4).

OPERATION

NOTE: The hold temperature control system consists of the temperature probe (19), the hold temperature control board (4) and the solid state potentiometer (20).

Power goes to the N.O. terminals of the DPDT relay (6). Circuits should be made between the N.O. and common terminals of the DPDT relay (6) allowing power to run to the convection fan motor (8) and one side of the centrifugal switch (11). If the convection fan motor (8) is at full speed the centrifugal switch (11) closes sending power to the cook light (12) and one side of the element contactor (13). When the contactor closes the heating elements (14) power up.

NOTE: In cook and hold mode only, the convection fan cycles on and off with the hold thermostat system.

3. The 50 watt lamps (21) only receive power when the light switch (22) is activated. These lamps are 115 volt and are wired in series parallel.

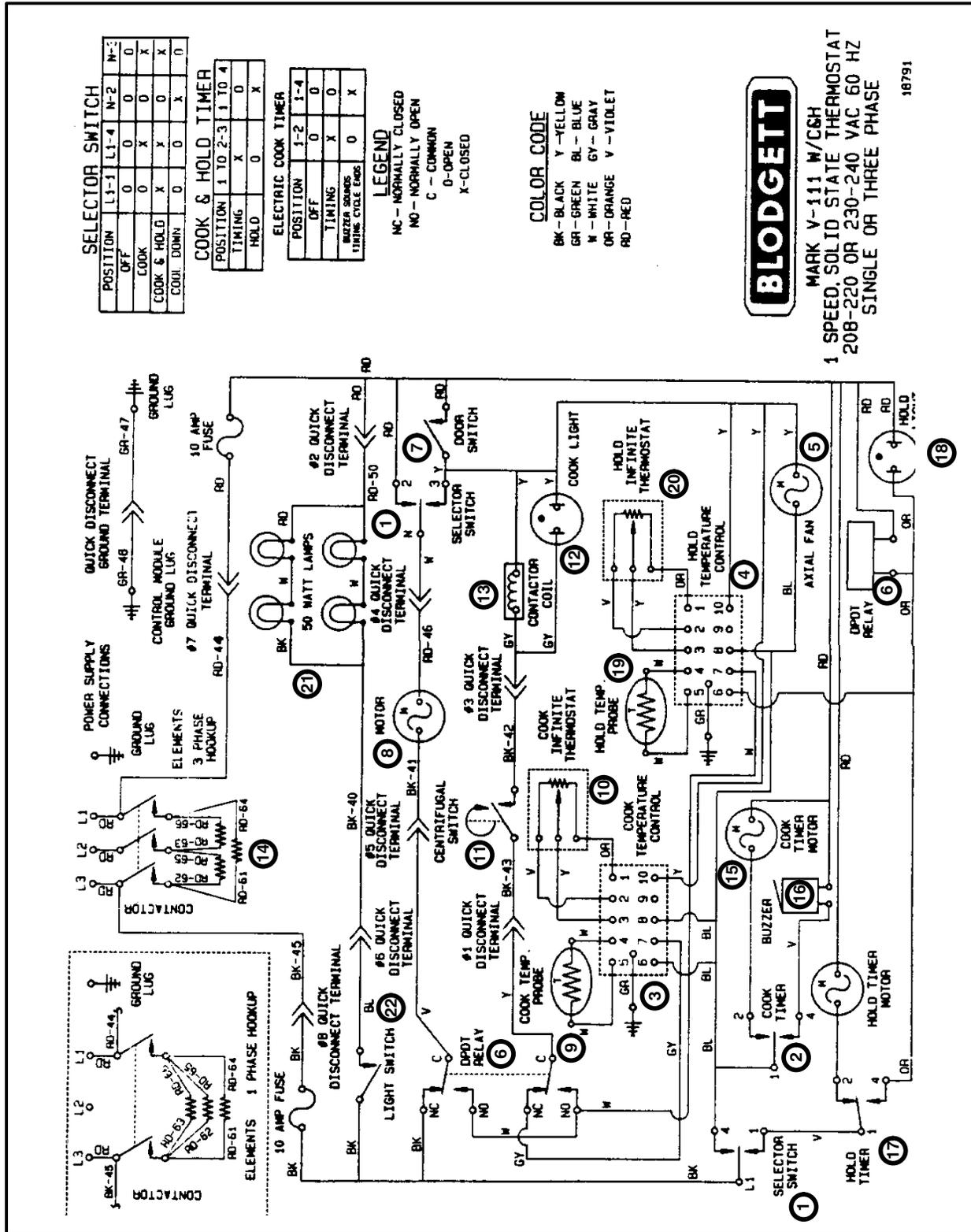
NOTE: The potentiometer and probes for cook and cook & hold are identical. The cook and cook & hold temperature boards are NOT interchangeable.

NOTE: Turn the mode selector switch to cool down to bypass the door microswitch. This allows the convection fan motor to operate even when the doors are open.

NOTE: This oven may be converted from single to three phase, however, contactors must be changed due to the difference in amp draw. Reference detail inset in FIGURE 3.

NOTE: The resistive values for the probes used in this oven have descending temperature coefficients. As the temperature increases the resistive values decrease.

NOTE: Reference page 4–2 of the Troubleshooting section for the resistive values of the heating elements. The reading should be taken in a cold state.



SELECTOR SWITCH

POSITION	L1-3	L1-4	N-2	N-3
OFF	0	0	0	0
COOK	0	X	0	X
COOK & HOLD	X	X	0	X
COIL DOWN	0	0	X	0

COOK & HOLD TIMER

POSITION	1 TO 2-3	1 TO 4
TIMING	X	0
HOLD	0	X

ELECTRIC COOK TIMER

POSITION	1-2	1-4
OFF	0	0
TIMING	X	0
Buzzer Sounds Timing Cycle Ends	0	X

LEGEND
 NC - NORMALLY CLOSED
 NO - NORMALLY OPEN
 C - COMMON
 O - OPEN
 X - CLOSED

COLOR CODE
 BK - BLACK Y - YELLOW
 GR - GREEN BL - BLUE
 W - WHITE GY - GRAY
 OR - ORANGE V - VIOLET
 RD - RED

BLODGETT

MARK V-111 W/CSH
 1 SPEED, SOLID STATE THERMOSTAT
 208-220 OR 230-240 VAC 60 HZ
 SINGLE OR THREE PHASE

18791

FIGURE 3

SOLID STATE DIGITAL – 30070 REV B

Component Reference

NOTE: Refer to FIGURE 4 page 2–9 for component locations.

1. MODE SELECTOR SWITCH
2. DOOR SWITCH
3. TIME AND TEMPERATURE CONTROLLER
4. AXIAL FAN
5. CENTRIFUGAL SWITCH
6. CONVECTION FAN MOTOR
7. HOT AIR ELEMENT CONTACTOR
8. HEATING ELEMENTS
9. TRANSFORMER
10. 50 WATT LAMPS
11. LIGHT SWITCH

Operation

1. Turn the mode selector switch (1) to the cook position. Power goes to one terminal of the door switch (2), terminal J8 of the temperature controller (3), and the axial fan (4). The main blower fan starts. If a temperature is programmed into the controller, the power goes from J9 to the centrifugal switch (5) in the convection fan motor (6).
2. If the doors are closed, the door switch (2) should also be closed, sending power to the common terminal of the time and temperature controller (3). The relay on this controller should be closed since a temperature has been programmed into the controller. A circuit is made between common and N.O. sending

power to, and starting the convection fan motor (6).

NOTE: The relay in the time and temperature controller is not field repairable. If diagnosed as defective, the entire board must be replaced.

3. When the convection fan motor (6) reaches full speed the centrifugal switch (5) closes sending power to the coil of the hot air element contactor (7). When the contactor closes power is sent to the heating elements (8).
4. The 50 watt lamps (10) only receive power when the light switch (11) is activated. These lamps are 115 volt and are wired in series parallel.

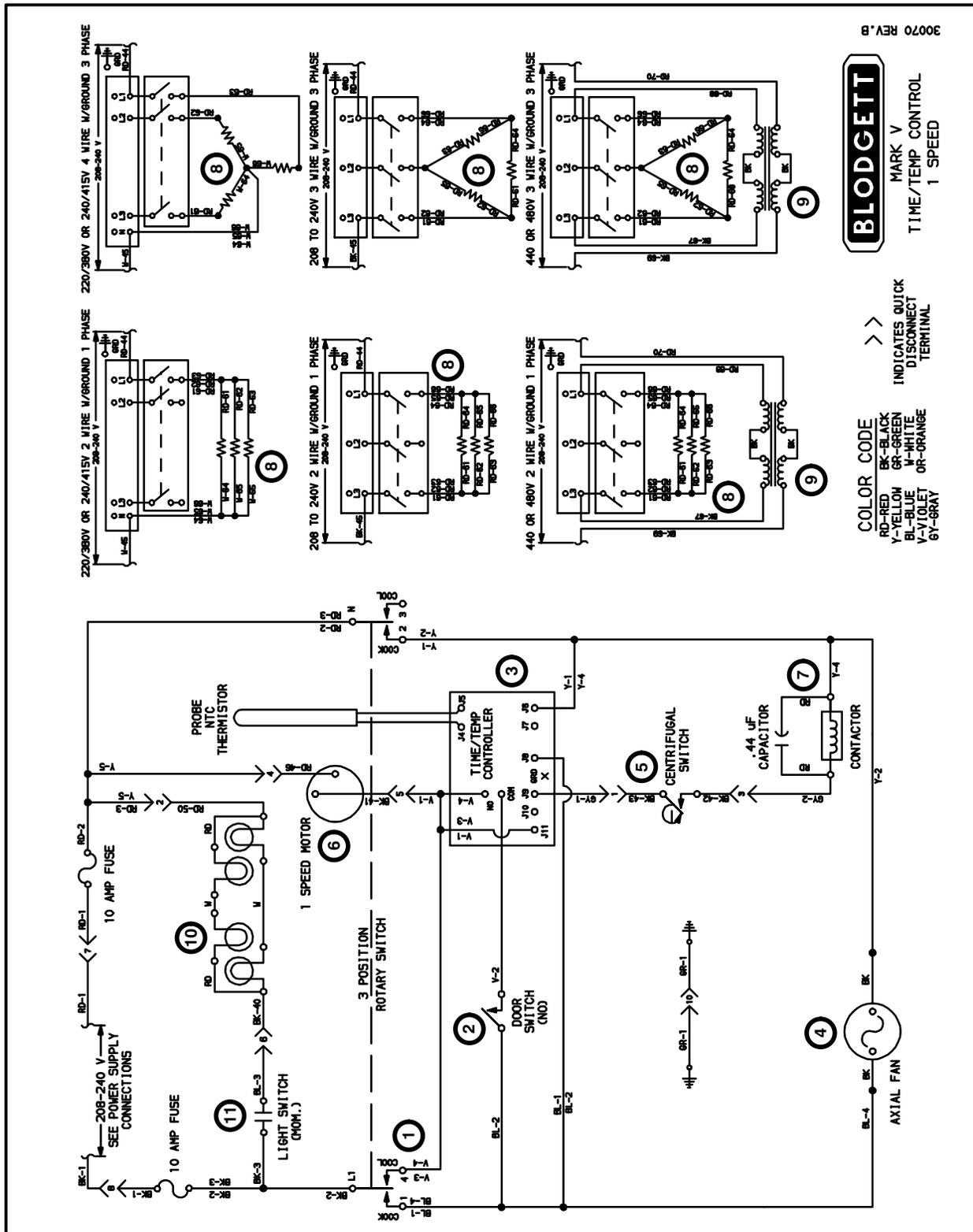
NOTE: Turn the mode selector switch to cool down to bypass the door microswitch. This allows the convection fan motor to operate even when the doors are open.

NOTE: This oven may be converted from single to three phase, however, contactors must be changed due to the difference in amp draw. Reference detail inset in FIGURE 4.

NOTE: The resistive values for the probes used in this oven have descending temperature coefficients. As the temperature increases the resistive values decrease.

NOTE: Reference page 4–2 of the Troubleshooting section for the resistive values of the heating elements. The reading should be taken in a cold state.

MARK V



CE APPROVED SOLID STATE DIGITAL – 33345 REV C

Component Reference

NOTE: Refer to FIGURE 5 page 2–11 for component locations.

1. MODE SELECTOR SWITCH
2. DOOR SWITCH
3. TIME AND TEMPERATURE CONTROLLER
4. AXIAL FAN
5. CENTRIFUGAL SWITCH
6. CONVECTION FAN MOTOR
7. HIGH LIMIT SWITCH
8. HOT AIR ELEMENT CONTACTOR
9. HEATING ELEMENTS
10. 50 WATT LAMPS
11. LIGHT SWITCH

Operation

1. Turn the mode selector switch (1) to the cook position. Power goes to one terminal of the door switch (2), terminal J8 of the temperature controller (3), and the axial fan (4). The main blower fan starts. If a temperature is programmed into the controller, the power goes from J9 to the centrifugal switch (5) in the convection fan motor (6).

2. If the doors are closed, the door switch (2) should also be closed, sending power to the common terminal of the time and temperature controller (3). The relay on this controller should be closed since a temperature has been programmed into the controller. A circuit is made between common and N.O. sending power to, and starting the convection fan motor (6).

NOTE: The relay in the time and temperature controller is not field repairable. If diagnosed as defective, the entire board must be replaced.

3. When the convection fan motor (6) reaches full speed the centrifugal switch (5) closes sending power to the high limit (7). If the high limit is closed, power goes to the coil of the hot air element contactor (8). When the contactor closes power is sent to the heating elements (9).

4. The 50 watt lamps (10) only receive power when the light switch (11) is activated.

NOTE: Turn the mode selector switch to cool down to bypass the door microswitch. This allows the convection fan motor to operate even when the doors are open.

NOTE: The resistive values for the probes used in this oven have descending temperature coefficients. As the temperature increases the resistive values decrease.

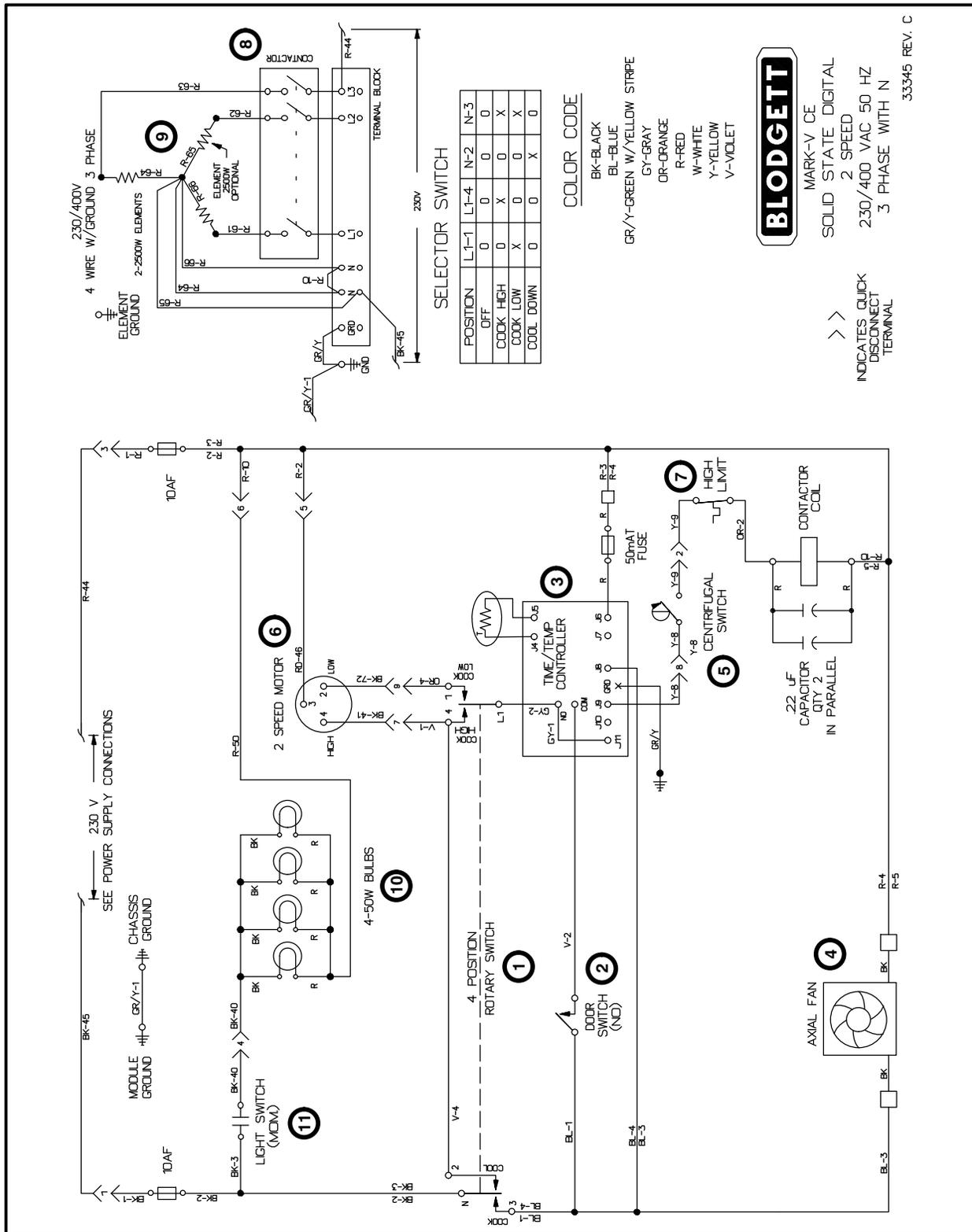


FIGURE 5

FAN DELAY WITH PULSE PLUS – 18466 REV D

Component Reference

NOTE: Refer to FIGURE 6 page 2–13 for component locations.

1. MODE SELECTOR SWITCH
2. COOLING FAN
3. TEMPERATURE CONTROLLER
4. 10 MINUTE FAN DELAY TIMER
5. 30 MINUTE COOK TIMER
6. DOOR SWITCH
7. SPDT BLOWER SWITCH
8. CONVECTION FAN MOTOR
9. TEMPERATURE PROBE
10. POTENTIOMETER
11. HOT AIR ELEMENT CONTACTOR
12. COOK LIGHT
13. HOT AIR ELEMENTS
14. REPEAT SHOT PULSE TIMER
15. TPDT RELAY
16. FAN ON LIGHT
17. FAN OFF LIGHT
18. 50 WATT LAMPS
19. LIGHT SWITCH

Operation

1. Turn the mode selector switch (1) to the cook position. Power goes to the cooling fan (2), terminal #8 of the temperature controller (3), and terminal #1 of the ten minute fan delay timer (4).
2. If the ten minute fan delay timer is in the timed out position a switch is made between terminals #1 and #4 sending power to terminal #1 of the thirty minute cook timer (5). Power is also sent to one side of the door switch (6). If the doors are closed the door switch should also be closed sending power to terminal #6 of the temperature control board (3) and the common terminal of a SPDT blower switch (7). The speed of the convection fan motor (8) is dependant on the position of the SPDT blower switch.
3. On a call for heat from the cook temperature control system a circuit is completed between terminals #6 and #7 of the temperature control board (3).

NOTE: The temperature control system consists of the temperature probe (9), the

temperature control board (3) and the solid state potentiometer (10)

Power is sent out of terminal #7 to one coil of the hot air element contactor (11) and the cook light (12). When the contactor is energized the hot air element (13) powers up.

4. To enable the pulse plus feature, the ten minute fan delay timer (4) must be set to a time. A switch is then made between terminals #1 and #2 sending power to terminal #2 of a repeat shot pulse timer (14).

NOTE: By setting the ten minute fan delay timer (4) power is interrupted to the thirty minute cook timer (5) making it inoperative.

The repeat shot pulse timer cycles a TPDT relay (15) interrupting the circuit to the convection fan motor (8). The convection fan motor cycles on and off for approximately thirty second intervals for the duration of the time set on the ten minute fan delay timer (4). The fan on light (16) illuminates whenever the TPDT relay closes. The fan off light (17) illuminates whenever the ten minute fan delay timer is set for a time.

5. The 50 watt lamps (18) only receive power when the light switch (19) is activated. These lamps are 115 volt and are wired in series parallel.

NOTE: Turn the mode selector switch to cool down to bypass the door microswitch. This allows the convection fan motor to operate even when the doors are open.

NOTE: This oven may be converted from single to three phase, however, contactors must be changed due to the difference in amp draw. Reference detail inset in FIGURE 6.

NOTE: The resistive values for the probes used in this oven have descending temperature coefficients. As the temperature increases the resistive values decrease.

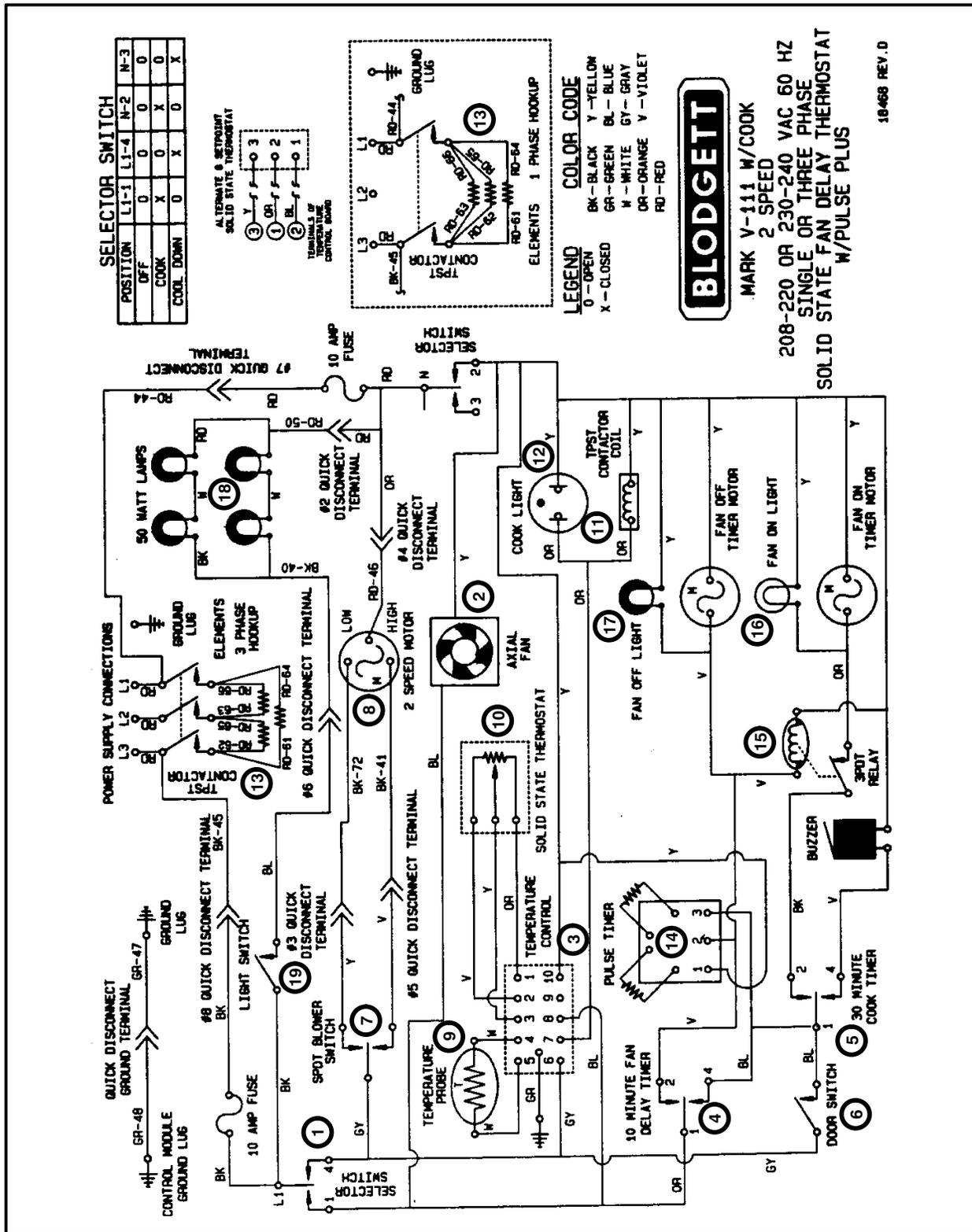


FIGURE 6

HUMIDAIRE – 1846 REV M

Component Reference

NOTE: Refer to FIGURE 7 page 2–16 for component locations.

1. MODE SELECTOR SWITCH
2. COOK TIMER
3. DOOR SWITCH
4. TEMPERATURE CONTROL BOARD
5. SPDT BLOWER SWITCH
6. SINGLE SHOT TIMER
7. SPST THERMAL SWITCH
8. TEMPERATURE PROBE
9. POTENTIOMETER
10. COOK LIGHT
11. ELEMENT CONTACTOR
12. HEATING ELEMENTS
13. 50 WATT LAMPS
14. LIGHT SWITCH
15. TIMER MOTOR
16. BUZZER
17. STEAM DURATION POTENTIOMETER
18. STEAM CYCLE START SWITCH
19. WATER SOLENOID VALVE
20. STEAM LIGHT
21. CONVECTION FAN
22. AXIAL COOLING FAN

Operation

1. Turn the mode selector switch (1) to the cook position. Power goes to terminal #1 of the cook timer (2), one side of the door switch (3), terminal #8 of the temperature control board (4) and the axial cooling fan (22)
2. If the doors are closed the door switch (3) should also be closed sending power to terminal #6 of the temperature control board (4), the SPDT blower switch (5), terminal #1 of a single shot timer (6), and one side of a SPST thermal switch (7).
3. On a call for heat from the temperature control circuit a circuit is completed between terminals #6 and #7 of the temperature control board (4).

NOTE: The temperature control circuit consists of the temperature probe (8), the temperature control board (4) and the solid state potentiometer (9).

Power is sent out of terminal #7 sending power to the cook light (10) and one side of the element contactor (11). When the contactor closes the heating elements (12) power up.

4. The 50 watt lamps (13) only receive power when the light switch (14) is activated. These lamps are 115 volt and are wired in series parallel.
5. When the cook timer (2) is set for a time a circuit is made between terminals #1 and #2 powering up the timer motor (15). At the expiration of the set time the switch in the cook timer (2) toggles from 1–2 to 1–4 powering up the buzzer (16).

NOTE: Put the timer in the home position to silence the buzzer.

6. If the oven is above 212°F (100°C) as sensed by the thermal switch (7) the switch closes sending power to the steam cycle start switch (18).

NOTE: The thermal switch is located in the rear of the oven. The face of the thermal switch is in contact with the oven liner. The switch toggles closed if the oven temperature exceeds 212°F (100°C).

NOTE: The steam cycle start switch is a momentary switch located on the front control panel.

When the steam duration potentiometer (17) is set and the steam cycle start switch (18) is pressed the single shot timer (6) is activated for the duration of time on the steam duration potentiometer. This allows the water solenoid valve (19) to open spraying atomized water onto the blower wheel. The steam light (20) is illuminated during the humidaire cycle.

7. The convection fan (21) receives power from the SPDT blower switch (5). This switch determines hi and lo speed.

NOTE: Turn the mode selector switch to cool down to bypass the door microswitch. This allows the convection fan motor to operate even when the doors are open.

NOTE: This oven may be converted from single to three phase, however, contactors must be changed due to the difference in amp draw. Reference detail inset in FIGURE 7.

MARK V

NOTE: The resistive values for the probes used in this oven have descending temperature coefficients. As the temperature increases the resistive values decrease.

NOTE: Reference page 4–2 of the Troubleshooting section for the resistive values of the heating elements. The reading should be taken in a cold state.

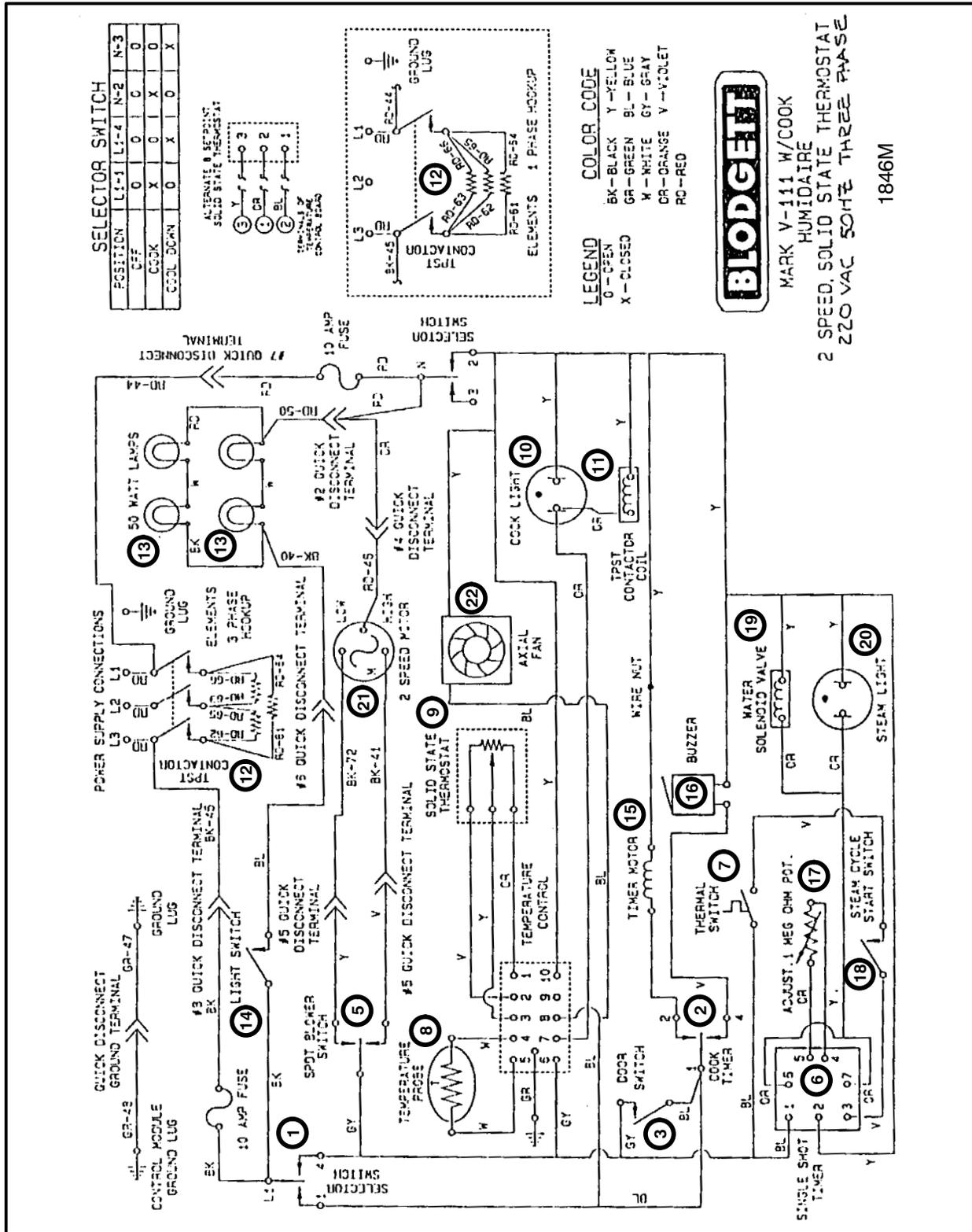


FIGURE 7

MARK V

INTELLIHOLD AND INTELLIPLUS – 22027 REV A

Component Reference

NOTE: Refer to FIGURE 8 page 2–18 for component locations.

1. MODE SELECTOR SWITCH
2. DOOR SWITCH
3. AXIAL FAN
4. TEMPERATURE CONTROL BOARD
5. CONVECTION FAN
6. OVEN READY LIGHT
7. HEATING ELEMENT CONTACTOR
8. HEATING ELEMENTS
9. 50 WATT LAMPS
10. LIGHT SWITCH
11. PROBE

Operation

1. Turn the mode selector switch (1) to the cook position. Power goes to one side of the door switch (2), the axial fan (3) and to either E1 or E2 of the temperature control board (4).

NOTE: This control is multi-voltage. It may be used on 240, 208 and 120. FIGURE 8 shows connections to E1 and E2 indicating a 240 or 208 volt application.

2. If the doors are closed the door switch (2) should also be closed sending power to terminal E10 of K2, E8 of K3 and E6 of K1. If a time and temperature is programmed into the controller either K2 or K3 close sending power to the convection fan (5).

NOTE: K2 is for high fan, K3 is for low fan.

3. On a call for heat the contacts in K1 close, sending power to the oven ready light (6) and one side of the heating element contactor (7). When the contactor closes the heating elements (8) power up.
4. The 50 watt lamps (9) only receive power when the light switch (10) is activated. These lamps are 115 volt and are wired in series parallel.

NOTE: Turn the mode selector switch to cool down to bypass the door microswitch. This allows the convection fan motor to operate even when the doors are open.

NOTE: This oven may be converted from single to three phase, however, contactors must be

changed due to the difference in amp draw. Reference detail inset in FIGURE 8.

NOTE: The resistive values for the probe (11) used in this oven have ascending temperature coefficients. As the temperature increases the resistive values also increase.

NOTE: Reference page 4–2 of the Troubleshooting section for the resistive values of the heating elements. The reading should be taken in a cold state.

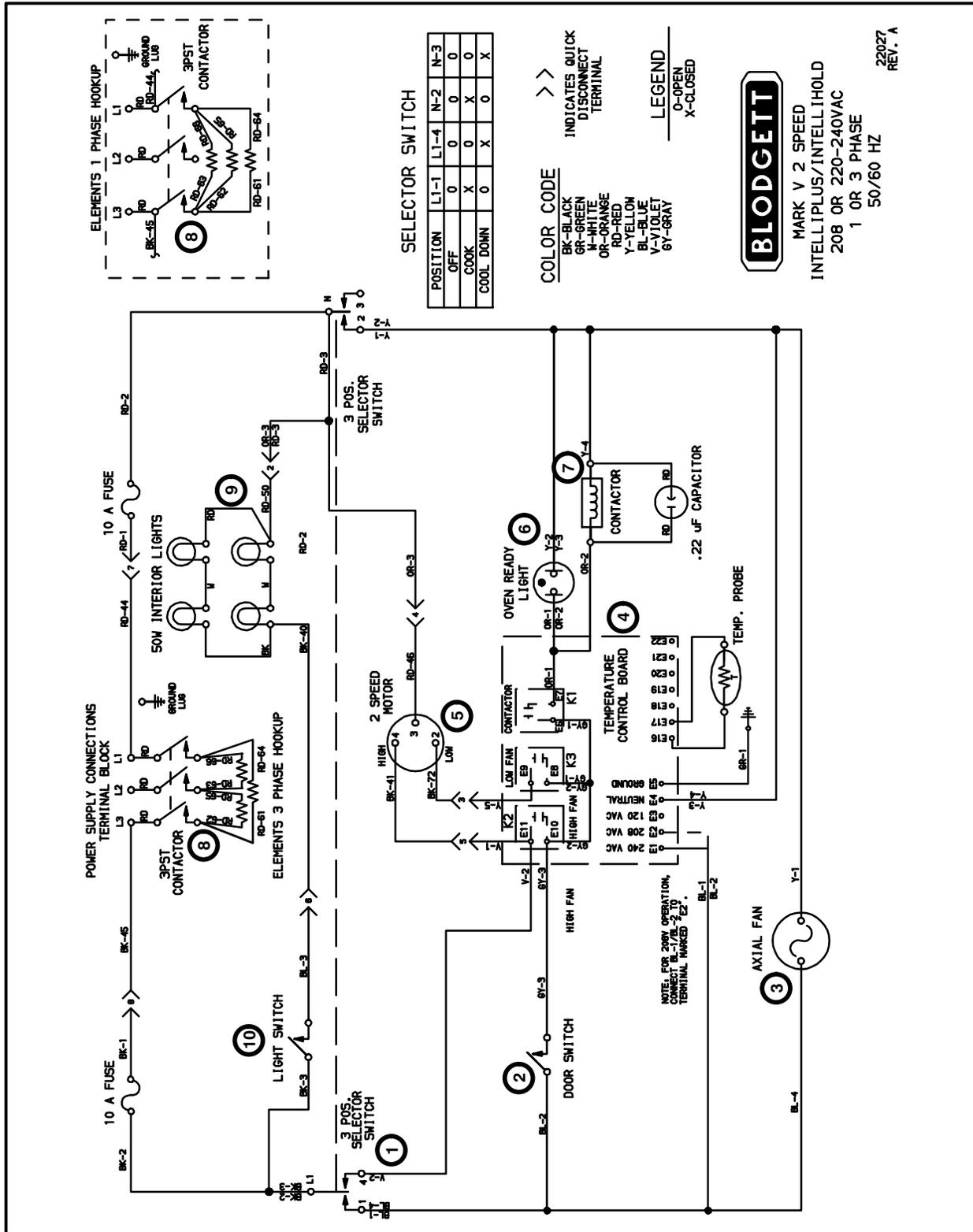


FIGURE 8

MARK V

INTELLITOUCH – 19361 REV A

Component Reference

NOTE: Refer to FIGURE 9 page 2–20 for component locations.

1. MODE SELECTOR SWITCH
2. COOLING FAN
3. DOOR SWITCH
4. STEP DOWN TRANSFORMER
5. INTELLITOUCH CONTROL
6. CONVECTION FAN
7. TEMPERATURE PROBE
8. CENTRIFUGAL SWITCH
9. ELEMENT CONTACTOR
10. HOT AIR ELEMENTS
11. 50 WATT LAMPS
12. LIGHT SWITCH

Operation

1. Turn the mode selector switch (1) to the cook position. Power goes to the cooling fan (2), one side of the door switch (3) and terminal #5 of a 208/24 volt step down transformer (4). 24 volts are applied to terminal #T2 of the intelli-touch controller (5).
2. If the doors are closed the door switch should also be closed sending power to the convection fan (6).
3. On a call for heat, as sensed by the temperature probe (7), a set of contacts close between terminals T2 and T5 sending 24 volts to one side of the centrifugal switch (8).

NOTE: The centrifugal switch is a non-repairable item. It is located in the convection fan motor. This switch closes when the convection fan reaches full speed. It is considered a safety switch and should not be bypassed.

If the centrifugal switch is closed, 24 volts are applied to the coil of the hot air element contactor (9). When the contactor is energized, the hot air elements (10) power up.

4. The 50 watt lamps (11) only receive power when the light switch (12) is activated. These lamps are 115 volt and are wired in series parallel.

NOTE: Turn the mode selector switch to cool down to bypass the door microswitch. This

allows the convection fan motor to operate even when the doors are open.

NOTE: This oven may be converted from single to three phase, however, contactors must be changed due to the difference in amp draw. Reference detail inset in FIGURE 9.

NOTE: The resistive values for the probes used in this oven have descending temperature coefficients. As the temperature increases the resistive values decrease.

NOTE: Reference page 4–2 of the Troubleshooting section for the resistive values of the heating elements. The reading should be taken in a cold state.

NOTE: To calibrate the oven operation performance characteristics see page 3–8 of the Calibration and Adjustment section.

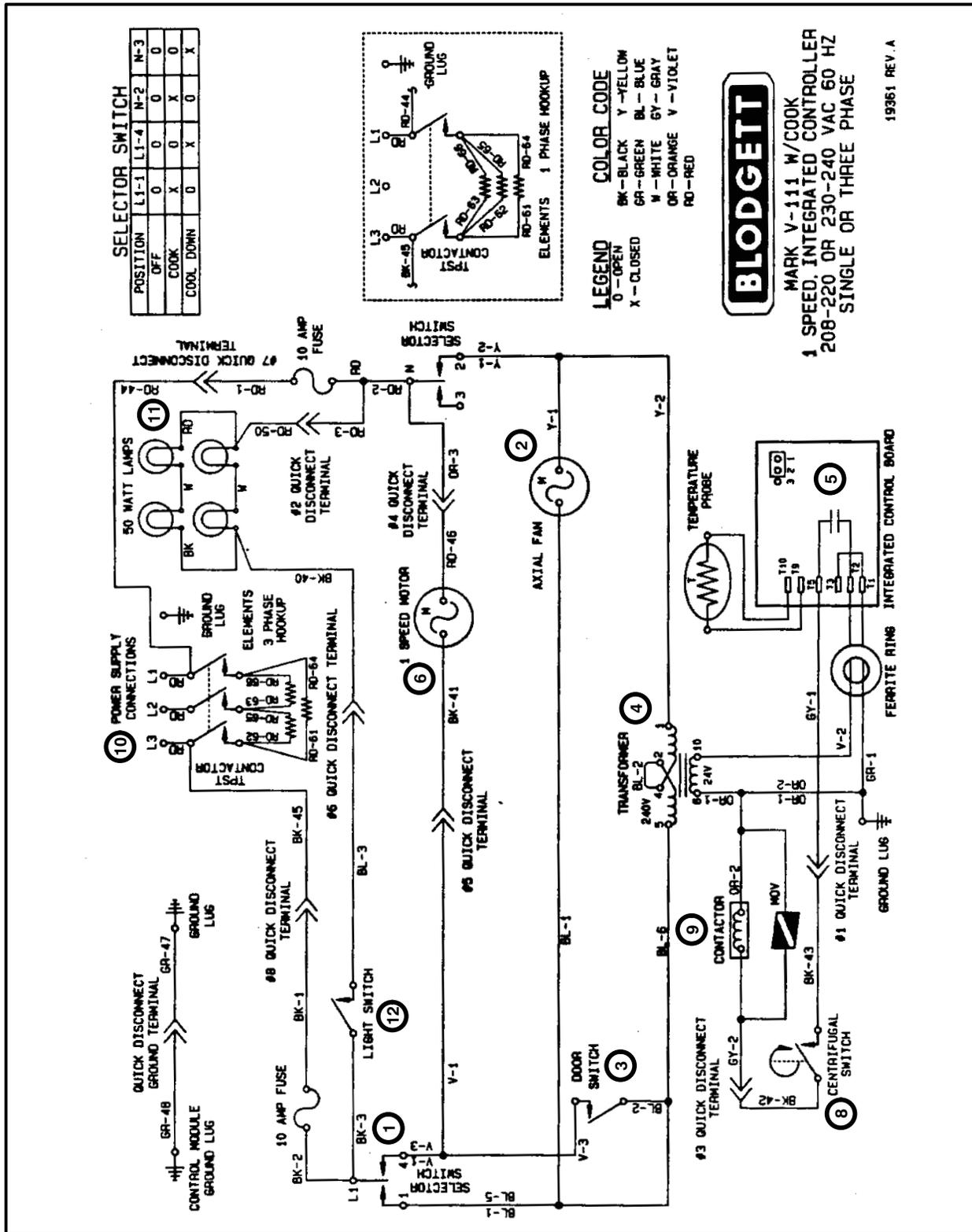


FIGURE 9

MARK V

BLODGETT IQ CONTROL – 33078 REV A

Component Reference

NOTE: Refer to FIGURE 10 page 2–22 for component locations.

1. POWER SWITCH
2. STEP DOWN TRANSFORMER
3. RELAY BOARD
4. AXIAL FAN
5. COMPUTER
6. TEMPERATURE PROBE
7. ELEMENT CONTACTOR
8. HEATING ELEMENTS
9. CONVECTION FAN MOTOR
10. DOOR SWITCH

Operation

1. Toggle the power switch (1) to the on position. Power goes to the primary side of a 208/24 volt step down transformer (2), terminal #2 of K1 of the relay board (3), terminal #4 of K2 of the relay board, terminal #7 of K3 of the relay board and the axial fan (4).
2. On a call for heat from the computer (5) as sensed by the temperature probe (6), the coil of K1 powers up closing the contacts between terminals #2 and #1 of K1 on the relay board (3). The coil of the element contactor (7) powers up. When the contactor closes the heating elements (8) power up.
3. The speed of the convection fan motor (9) is determined by the program in the computer (5). The computer either closes K2 for high speed or K3 for low speed.
4. When the doors are closed the door switch (10) is activated. The computer closes relays K1, K2 and K3. If the doors are open or the switch is broken these relays drop out and the LED displays door.

NOTE: This oven may be converted from single to three phase, however, contactors must be changed due to the difference in amp draw. Reference detail inset in FIGURE 10.

NOTE: The resistive values for the probes used in this oven have descending temperature coefficients. As the temperature increases the resistive values decrease

NOTE: Reference page 4–2 of the Troubleshooting section for the resistive values of the heating elements. The reading should be taken in a cold state.

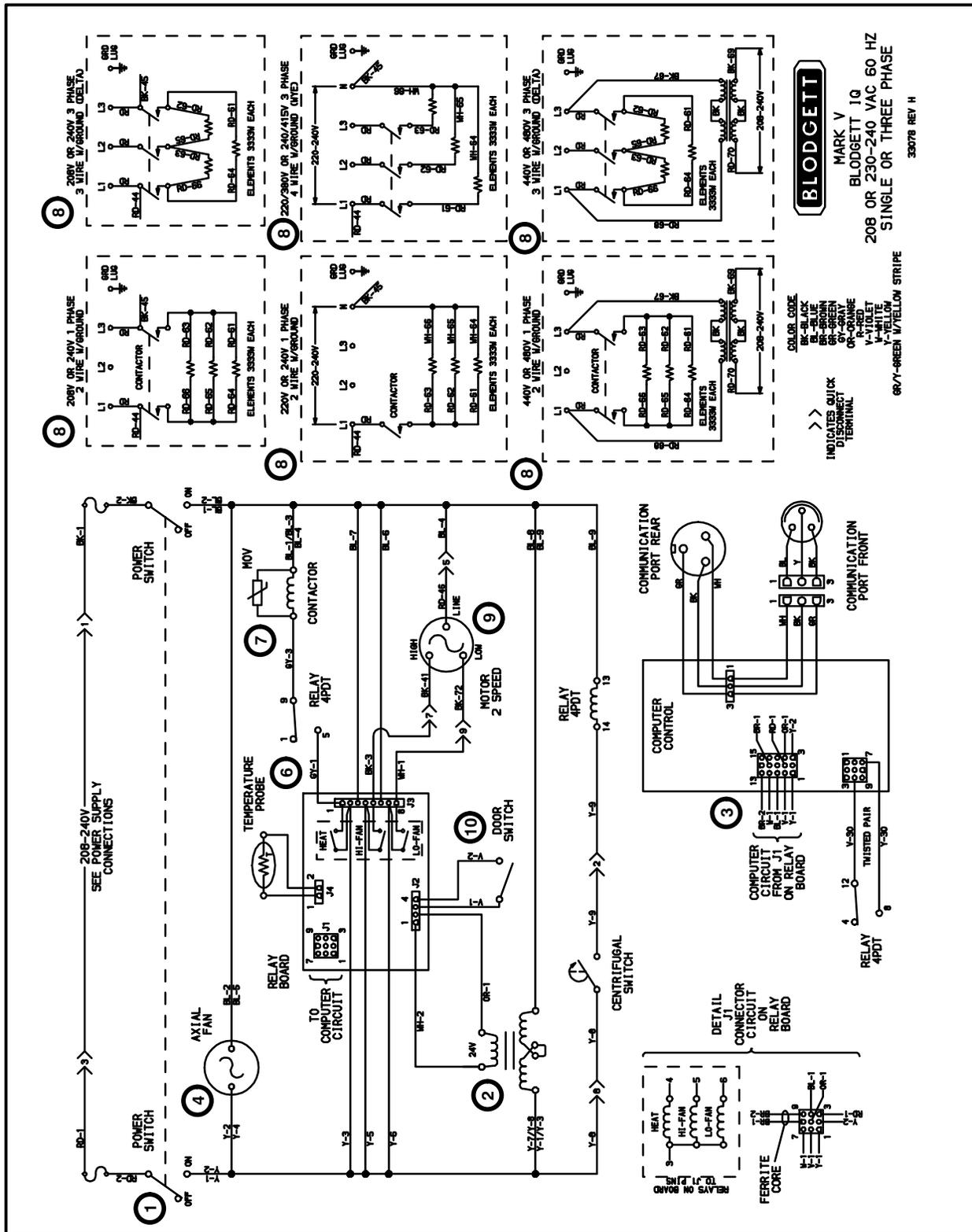


FIGURE 10

MARK V

This page intentionally left blank.

CHAPTER 3

***CALIBRATION AND
ADJUSTMENT***

MARK V

DOORS

The Mark V ovens feature double side mounted doors which operate simultaneously by means of a chain and turnbuckle linkage assembly. Should field adjustment be necessary, the two turnbuckles are located immediately behind the combustion compartment cover.

For units manufactured prior to August 1984.

1. Adjust one turnbuckle, then the other until the doors are properly synchronized.

NOTE: The doors are properly adjusted if the right door is fully closed when the left door (the door with the handle) has 1/2"-1" of travel remaining.

Both turnbuckles must be adjusted to prevent strain on the door operating mechanism.

2. Tighten the turnbuckle lock nuts.

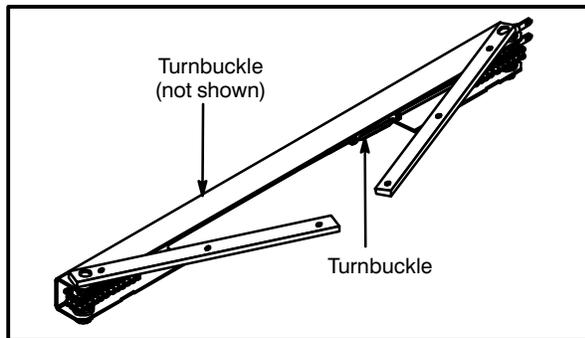


FIGURE 1

To adjust the ball plunger catch:

1. Insert a spanner key in the notches on both sides of the ball plunger. Loosen the lock nut with a wrench.
2. Adjust the ball plunger by turning left or right with the spanner key until the plunger engages in the striker plate on the door.
3. With the spanner key still inserted in the ball plunger notches, tighten the lock nut.

For units manufactured after August 1984

Be sure the doors are in line with each other when viewed from the top and front. If the doors are misaligned adjust as follows:

1. Remove the bottom trim.
2. Loosen the five (5) bolts in the U-shaped lower door hinge and sprocket assembly.
3. Slide the assembly until the doors are aligned.
4. Tighten the bolts.
5. Replace the bottom trim.

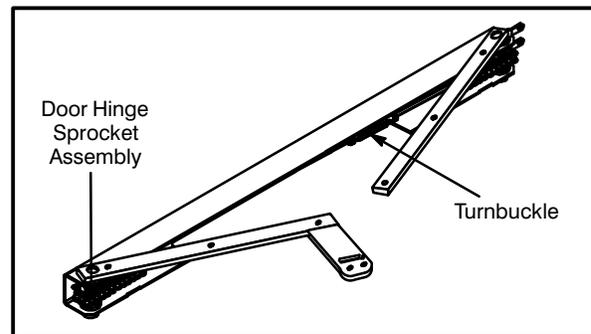


FIGURE 2

To adjust the doors for proper operation, open the doors until the right hand door back flange is even with the front line of the oven as viewed from above. The left hand door should be positioned so the door pressure lock touches the right hand door. If the doors need adjustment proceed as follows:

1. Loosen the chain drive.
2. Adjust for proper location.
3. Tighten the chain drive.

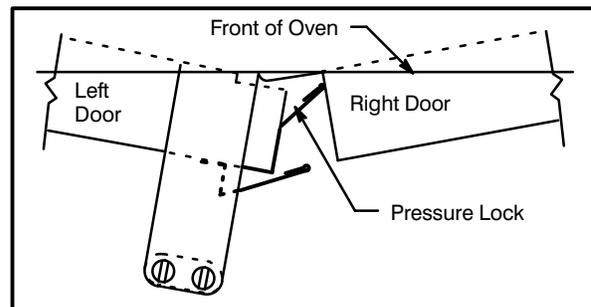


FIGURE 3

CALIBRATION AND ADJUSTMENT

DOOR BLOWER SWITCH

The door activated blower switch should be adjusted so the doors are about 1-1/2" (4 cm) from the liner when the switch shuts the blower off. If field adjustment is necessary, the switch can be reached by removing the combustion compartment cover.

1. Open the right hand door until it is approximately 2" (5 cm) from the liner.
2. Place the arm of the cam assembly, located on the door sprocket, against the push button.
3. Tighten the set screw.

When the doors are fully closed, the cam arm depresses the push button enough to allow blower operation. An audible click will determine if the switches are operating correctly.

The switch may be moved forward or backward in the mounting bracket as necessary for alignment.

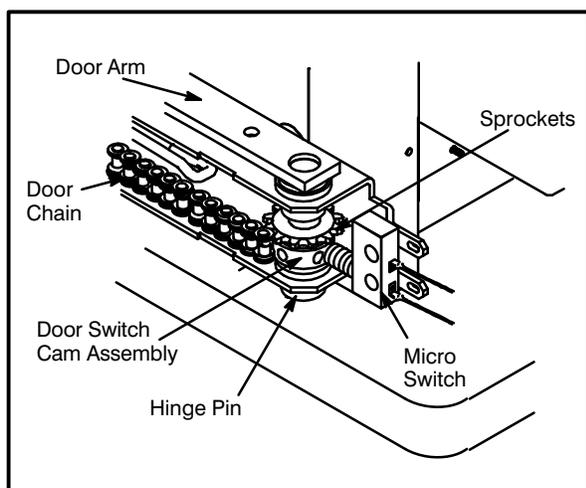


FIGURE 4

THERMOSTAT

BULB AND CAPILLARY THERMOSTAT

For units manufactured prior to August 1984

1. Turn the mode selector/power switch to COOK ONLY.
2. Toggle the blower switch to ON.
3. Toggle the cool down switch to MANUAL.
4. Place a pyrometer thermocouple at the center of the thermostat bulb or reliable mercury thermometer on the middle shelf 6" from the front edge and in the center of the shelf.
5. Turn the thermostat dial to 350°F (177°C)..
6. When the red indicator light on the control panel goes out, check the thermometer or pyrometer to determine oven temperature.

If this reading is within 10°F (6°C) of the thermostat setting, do not change the thermostat.

If this reading differs more than 10°F (6°C) from the thermostat setting recalibrate the thermostat.

For units manufactured after August 1984.

1. Turn the selector switch to COOK.
2. Place a pyrometer thermocouple at the center of the thermostat bulb or reliable mercury thermometer on the middle shelf 6" (15 cm) from the front edge and in the center of the shelf.
3. Turn the thermostat dial to 350°F (177°C). Let the oven heat for at least 1/2 hour.
4. When the red indicator light on the control panel goes out, check the thermometer or pyrometer to determine oven temperature. If this reading is within 10°F (6°C) of the thermostat setting, do not change the thermostat. If this reading differs more than 10°F (6°C) from the thermostat setting recalibrate the thermostat as follows. See FIGURE 6 page 3-3.
 - A.) Loosen the set screws in the thermostat knob. Pull the knob forward.
 - B.) With a screwdriver, turn the calibration screw in the center of the thermostat stem either clockwise to lower the temperature or counter-clockwise to raise the temperature.

MARK V

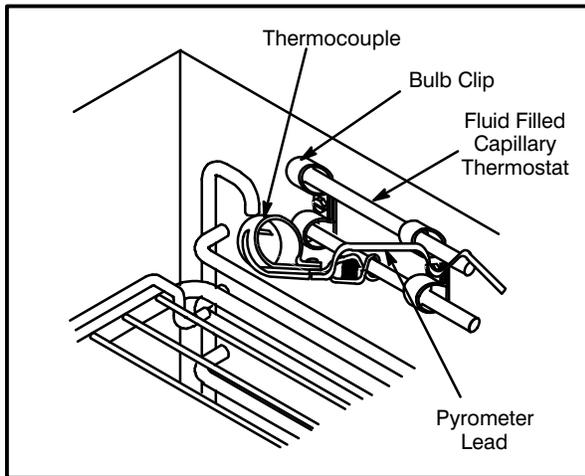


FIGURE 5

For units manufactured prior to December 1987.

1. Loosen the set screws in the thermostat knob. Pull the knob forward.
2. With a screwdriver, turn the calibration screw in the center of the thermostat stem either clockwise to lower the temperature or counterclockwise to raise the temperature.

NOTE: Do not allow the main stem of the thermostat to turn when adjusting the calibration screw.

3. Open the doors.
4. Turn the selector switch to COOL DOWN. The blower will continue to operate. Let the temperature of the oven decrease 100-150°F (56-83°C).
5. Turn the selector switch to COOK.
6. Repeat the steps above until the oven temperature is within 10°F (6°C) of the thermostat setting.

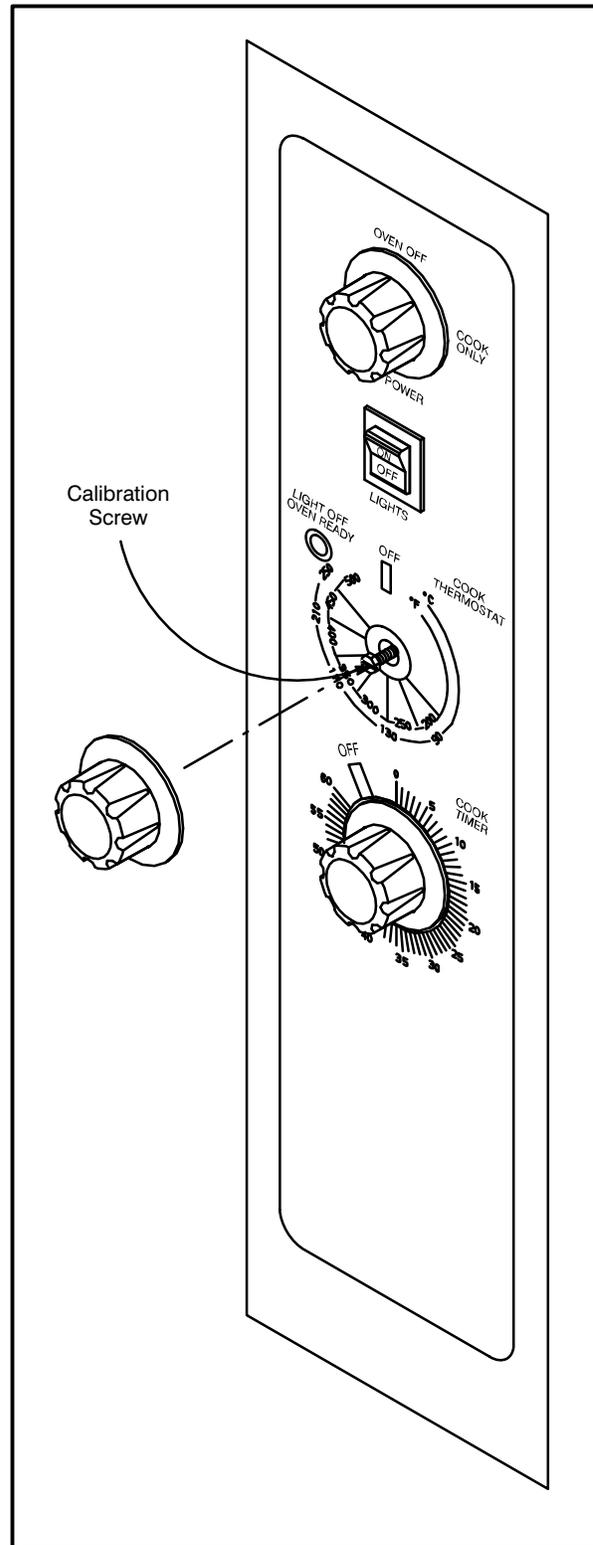


FIGURE 6

SOLID STATE MANUAL

1. Place a pyrometer in the center of the oven.
2. Turn the mode selector switch to cook.
3. Turn the thermostat to 350°F (177°C).
4. When the red indicator light goes out, check the pyrometer to determine oven temperature.
5. If this reading is within 10° (6°C) of the thermostat setting no adjustment is needed.

If the reading is greater than 10° (6°C) adjust as follows:

- A.) Locate the trim pot on the solid state temperature board.
- B.) Turn the adjustment screw to raise or lower the setting.

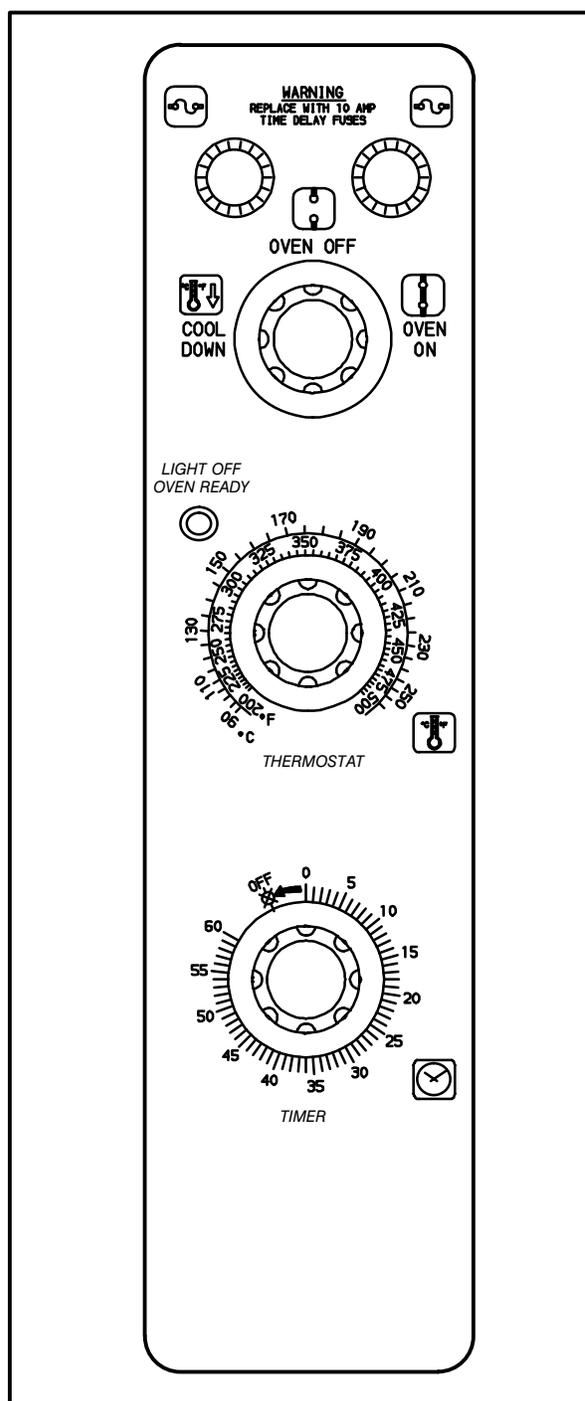


FIGURE 7

MARK V

SELECTOR SWITCH CALIBRATION

1. Place a pyrometer in the center of the oven.
2. Turn the mode selector switch to cook.
3. Set 8 position selector switch to one of the eight positions.

NOTE: The 8 individual positions are each set for a temperature of the customer's choosing. For example, if position 1 is set for 350 °F (177 °C) the red indicator light should go out when it gets to within 10 degrees of setpoint.

4. If the light goes out within 10 degrees, no adjustment is required. If the light does not go out within 10 degrees of setpoint calibrate the switch as follows:
 - A.) Locate the potentiometer on the 8 position selector switch labeled R1.

NOTE: There are 8 trim pots on this device. They are labeled R1, R2, R3, etc.

- B.) Turn the brass screw on top of the potentiometer clockwise to increase the temperature. Turn the brass screw on top of the potentiometer counter-clockwise to decrease the temperature.

5. Repeat steps 3–4 for all 8 positions.

NOTE: It is possible for all 8 positions to be out of calibration but highly unlikely.

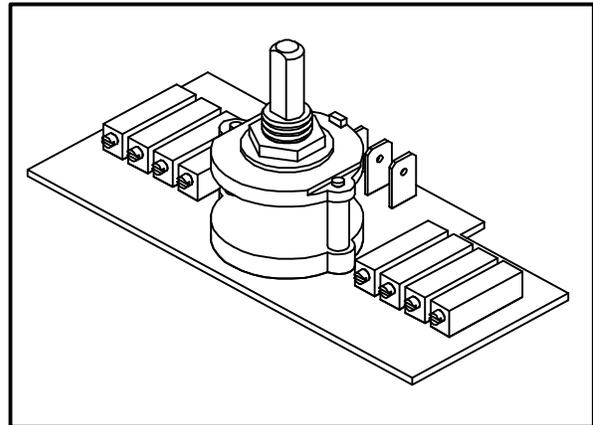


FIGURE 8

SOLID STATE DIGITAL CONTROL

To Initiate Programming

1. Set the time to 1 minute.
2. Set the temperature to 151°F (66°C).

To Access Second Level Programming

1. Press and hold the temperature key and the start/stop key simultaneously.
2. The control beeps and displays the software version for a few seconds.
3. The control then displays 2NdL. The control has entered the second level program.

To Change the Temperature Offset

1. Press the temperature key.
2. The control displays OFFS or offset for a few seconds. It then displays the current offset which should be 0°F.
3. Rotate the dial to enter a $\pm 50^\circ\text{F}$ (28°C) offset. Use this to calibrate the oven if necessary.

To Set the Display Scales

1. Press the temperature key.
2. The control displays the current setting from the following menu. See FIGURE 9. This menu controls 3 separate parameters:
 - A.) First Digit – the desired time display (ie hrs/min or min/sec)
 - B.) Second Digit – Electric or Gas oven
 - C.) Third and Fourth Digit – the desired temperature scale (ie °F or °C)
3. To adjust the setting turn the dial 1 click at a time.

NOTE: If the control is set for minutes and seconds the first digit will be blank. If the control is set for a gas oven the second digit will be blank.

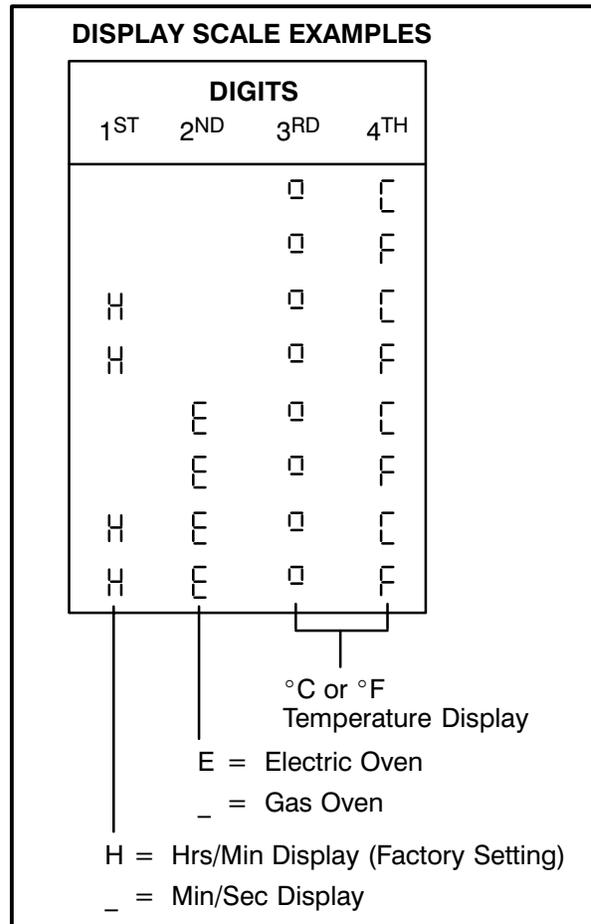


FIGURE 9

To Return to Normal Operating Mode

1. Press the temperature key.
2. The control goes through self check then displays the set temperature 151°F (66°C).
3. The oven can now be controlled as normal.

INTELLIHOLD AND INTELLIPLUS CONTROLS

NOTE: For error code display information see page 4–3 of the Troubleshooting section.

Temperature Calibration

1. Turn the temperature control knob until the temperature in the display reads X10 (any number followed by 10).
2. Turn the time control knob until the time in the display is 00:00.
3. Press and hold the start/timer key. The display reads UPO.
4. Place a pyrometer in the center of the oven to measure the actual oven temperature.

NOTE: During operation, the temperature control is based on the measured temperature and the temperature offset which is programmed into the control. If the temperature measured in the center of the oven is below the oven setpoint a positive offset is needed. If the temperature measured in the center of the oven is above the oven setpoint a negative offset is needed.

5. Turn the temperature control knob to set the offset, either positive or negative.
6. Press the act temp key to store the new offset and exit temperature calibration.

Temperature Display Scales

1. Turn the temperature control knob until the temperature in the display reads X20 (any number followed by 20).
2. Turn the time control knob until the time in the display is 00:00.
3. Press and hold the start/timer key. The display reads either CCC or FFF.
4. Press and hold the start/timer key to toggle from °C to °F.
5. Press the act temp key to store the new scale and exit temperature display.

Time Display Scales

1. Turn the temperature control knob until the temperature in the display reads X30 (any number followed by 30).
2. Turn the time control knob until the time in the display is 00:00.
3. Press and hold the start/timer key. The display reads either HRS or MIN.
4. Press and hold the start/timer key to toggle from hours to minutes.
5. Press the act temp key to store the time scale and exit time display.

INTELLITOUCH CONTROL

NOTE: For error code display information see page 4–3 of the Troubleshooting section.

To access 2nd level programming

1. Turn the oven off.
2. Locate the 3 pin header on the bottom right side of the control. Move the jumper from the middle and bottom pins to the middle and top pins exposing the bottom pin.
3. Turn the oven on. The program LED (1) lights.

Programming the 2nd level parameters

1. The #1 LED illuminates.

NOTE: The LED's (3) are located next to the product and load keys. The LED identification numbers (2) are located to the left of the product and load keys. See FIGURE 10.

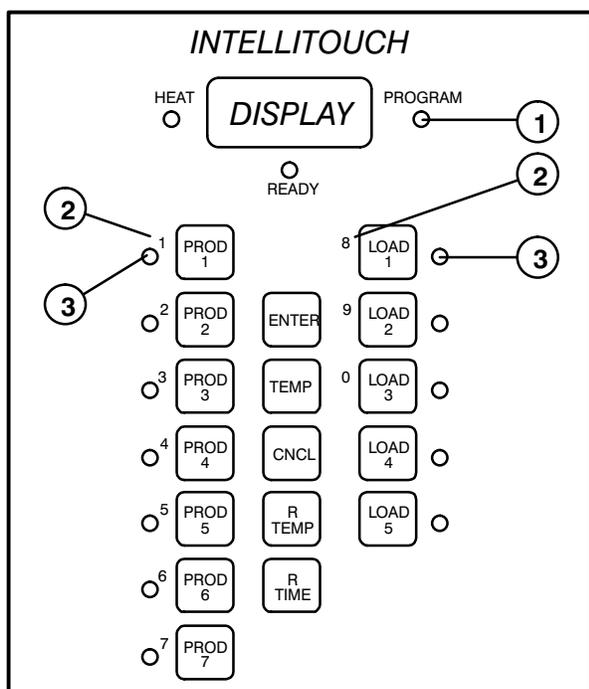


FIGURE 10

2. Use the product and load keys to enter numerical data. See TABLE 1 for correct parameter settings.

NOTE: Use product keys 1-7 for numerals 1-7. Use load keys 1-3 for numerals 8,9 and 0 respectively.

3. Press the enter key to save the parameter setting.
4. The #2 LED illuminates
5. Repeat steps 1-3 for each parameter. When the final parameter setting is entered and saved the #1 LED illuminates.

LED(s)	Parameter	Setting
1	Offset	0
2	Hrs/Min timer	0F
1,2	Fahrenheit (0=°F, <1=°C)	0F
3	Proportional	0F
1,3	Integration	1F
2,3	Dead band	3F
1,2,3	Cycle time	12F
4	Minimum on time	3F
1,4	Hi temp alarm	550F
2,4	Ready temp differential	15F
1,2,4	Minimum setpoint	150F
3,4	Maximum setpoint cook	500F
1,3,4	Minimum setpoint hold	0F
2,3,4	Maximum setpoint hold	0F
1,2,3,4	Fan 2 speed	0F
5	Fan rev.	0F

TABLE 1

To exit the 2nd level programming

1. Turn the oven off.
2. Move the jumper from the middle and top pins to the middle and bottom pins exposing the top pin.
3. Turn the oven on.

INTELLITOUCH II CONTROL

To access 2nd level programming and diagnostics

1. The display reads *SELECT*. Press CLEAR 1, 2, 3, 4, 5, 6, ENTER.
2. The display reads *CODE—?* Press 1, 2, 3, 4, 5, 6 ENTER.
3. The display reads *ACCESS*.

To run LED diagnostics

1. Press CLEAR 1, 1, 1 ENTER.
2. The control runs self-diagnostics on each LED individually. When all of the LED's light together press the CLEAR key.
3. The display flashes *EXIT* then *ACCESS*.

To check the software configuration

1. Press CLEAR 1, 2, 3 ENTER.
2. The display lists the software configuration information.
3. The display flashes *EXIT* then *ACCESS*.

OVEN CALIBRATION

1. Press CLEAR, TEMP, TEMP, TEMP, ENTER.

Temperature display scale

2. The display flashes °F/°C then *MODE—?*
3. Press any key to toggle the scale from °F to °C.
4. Press the PROG/ENTER key to lock in new scale.
5. The display flashes $T \blacktriangleright ^\circ F$ (or $T \blacktriangleright ^\circ C$).

Temperature offset

1. Once the temperature scale has been programmed, the display flashes either *POS * OFFSET* or *NEG * OFFSET*

NOTE: POS OFFSET is displayed if a value has been programmed in for a positive offset. NEG OFFSET is displayed if a value has been programmed for a negative offset. The only time both will be displayed is if a value of 0 has been entered for both.

2. Enter a value for the desired offset. The display flashes *DISPLAY * INTEG?*.
3. Press the PROG/ENTER key. The default value of 30 will be displayed.
4. Press the PROG/ENTER key. The display will flash *T-CTRL * INTEG?*.
5. Press the PROG/ENTER key. The default value of 10 will be displayed.
6. Press the PROG/ENTER key.

Ready Band

1. The display flashes *READY, BAND* and *POS*.
2. Use the numeric keys to enter a value between 1 and 25. Press the PROG/ENTER key.
3. The display flashes *READY, BAND* and *NEG*.
4. Use the numeric keys to enter a value between 1 and 25. Press the PROG/ENTER key.

To exit oven calibration

1. The display flashes *ACCESS, DONE* and *EXIT*.
2. Press CLEAR, CLEAR, CLEAR.
3. The display flashes *REBOOT* and *SELECT*.

BLODGETT IQ CONTROL

NOTE: For error code display information see page 4–3 of the Troubleshooting section.

2ND LEVEL PROGRAMMING

Entering the programming mode

1. Press the prog key. The top display reads *Code*.
2. Use the product keys to enter the programming access code: 4 5 1 2. Press the enter key. The top display reads *SYS*.

Programming hold

1. Press the scan key. The top display reads *Hold*. Press the toggle/clear key to toggle between *YES* and *no*. Press the scan key.

If no is chosen:

- A.) The controller advances to programming the setback mode.

If yes is chosen:

- A.) The top display reads *AUTO*. Press the toggle/clear key to toggle between *YES* and *no*. Press the scan key to enter the desired hold mode.
- B.) The top display reads *HOLD*. The bottom display flashes the current hold time. Use the product keys to enter the desired hold time. Press the scan key to enter the new hold time.
- C.) The top display reads *HOLD*. The bottom display flashes the current hold temperature. Use the product keys to enter the desired hold time. Press the scan key to enter the new hold temperature.
- D.) The top display reads *FAn*. The bottom display gives the current fan mode. To change the fan mode press the toggle/clear key. The bottom display toggles between *Hi* and *Lo*. Press the scan key to enter the new fan mode and continue with programming the setback mode.

Programming the setback mode

1. The top display reads *SEtb*. The bottom display gives the setback mode. To change the setback press the toggle/clear key. The bottom display toggles between *YES* and *no*. Press the scan key.

If no is chosen:

- A.) The controller advances to programming the temperature mode.

If yes is chosen:

- A.) The bottom display gives the current setback time. Use the product keys to enter the desired setback time. Press the scan key to enter the new setback time.
- B.) The bottom display gives the current setback temperature. Use the product keys to enter the desired setback temperature. Press the scan key to enter the new setback and continue with programming the temperature mode.

Programming the temperature mode (°F or °C)

1. The top display reads *dEg*. The bottom display gives the units. To change the units press the toggle/clear key. The bottom display toggles between *F* and *C*.
2. Press the scan key to enter the new temperature units and continue programming the oven size.

Programming the oven size

1. The top display reads *APPL*. The bottom display reads either *FULL* or *HALF*. Press the toggle/clear key until the bottom display reads *FULL* for the Mark V.
2. Press the scan key to enter the oven size and continue with exiting the programming mode.

Exiting the programming mode

1. The top display reads *SYS*. Press the prog key. The control returns to the operating standby mode.

MARK V

PROGRAMMING THE OFFSET

Entering the offset programming mode

1. Press the prog key. The top display reads *CodE*.
2. Use the product keys to enter the offset programming access code: 4 5 2 3. Press the enter key. The top display reads *oFF*. The bottom display reads *SEt*.

Programming the temperature offset

1. Press the scan key. The top display reads *oFST*. The bottom display reads either *xxF* or *-xxF*.

2. Press the toggle/clear key to toggle between positive and negative. Use the product keys to enter the desired temperature offset.
3. Press the scan key to enter the new temperature offset.

Exiting the offset programming mode

1. Press the prog key. The control returns to the operating standby mode.

CALIBRATION AND ADJUSTMENT

BLODGETT IQ2™ CONTROL FACTORY LEVEL PROGRAMMING

Entering the programming mode

1. Press the program key. The top display reads *CodE*.
2. Use the product keys to enter the factory programming access code: 4 5 2 3. Press the enter key. The top display reads *Fact*.

Programming the oven configuration

1. Press the SCAN KEY. The display reads *Appl*.
2. Press the TOGGLE/CLEAR KEY to toggle between electric oven and gas oven. Set the choice for the oven type. Press the SCAN KEY to enter the choice.
3. Press the TOGGLE/CLEAR KEY to toggle between half sized or full sized oven. Set the choice for the oven type. Press the SCAN KEY to enter the choice.

NOTE: Mark V and DFG-100 are full sized ovens. CTB and DFG-50 are half sized ovens.

Programming the temperature offset

1. The top display reads *oFF*. The bottom display reads *SEt*.
2. Press the SCAN KEY. The top display reads *oFST*. The bottom display reads either *xxF* or *-xxF*.
3. Press the TOGGLE/CLEAR KEY to toggle between positive and negative. Use the product keys to enter the desired temperature offset.
4. Press the SCAN KEY to enter the new temperature offset.

Enabling/Disabling the fan error detection circuit

1. The top display reads *FanC*. The bottom display reads *YES* or *NO*.
2. Press the TOGGLE/CLEAR KEY to toggle between choices.
3. Press scan to move to next operating parameter.

Programming fan speed option

1. The top display reads *FanS*. The bottom display reads *1* or *2*.
2. Press the TOGGLE/CLEAR KEY to toggle between choices: 1 for a single speed motor or 2 for a two speed motor.
3. Press SCAN to move to the next operating parameter.

Programming the maximum temperature setpoint

1. The top display reads *tELt* (temperature limit) and the bottom display reads either 500 or 550.
2. Press the TOGGLE/CLEAR key to toggle between choices 500°F or 550°F maximum temperature setting.
3. Press scan to enter the maximum setpoint temperature.

NOTE: Use 500 °F for the DFG-100, DFG-200, Mark V, CTB and DFG-50. Use 550 °F for the DFG-100 XCEL and Mark V XCEL.

Exiting the factory programming mode

1. The top display reads *Fact*. Press the PROG KEY. The control returns to the operating mode.

MARK V

IQ VVC-208 CONTROL

COMPONENT DESCRIPTION

1. Indicator Lights	<ul style="list-style-type: none"> Light up when product key is activated.
2. Programming Buttons	<ul style="list-style-type: none"> Used to access programming mode and change parameters.
3. VFD (Vacuum Fluorescent Display)	<ul style="list-style-type: none"> Bright blue for easy viewing. Displays programming and cook cycle information.
4. Slide-In Menu Strips	<ul style="list-style-type: none"> Menu items are printed directly on easy-to-change menu strip.
5. Product Buttons	<ul style="list-style-type: none"> Used to activate cook cycles and for certain programming functions.
6. SCAN key	<ul style="list-style-type: none"> Used for recipe review during idle. Used to review time remaining during multiple cooks (press & hold)
7. COOL DOWN key	<ul style="list-style-type: none"> Used to enter or exit cool down mode.
8. TEMP/ TOGGLE CLEAR key	<ul style="list-style-type: none"> Used to check actual temperature; also used to clear value when in programming mode.
9. HOLD key	<ul style="list-style-type: none"> <i>Holds are not used for KFC applications.</i> Used to toggle between upper and lower case letters when programming libraries.
10. SETBACK key	<ul style="list-style-type: none"> Used to enter or exit Setback mode.
11. SCK LINK logo	<ul style="list-style-type: none"> Signifies your control is communications-capable.

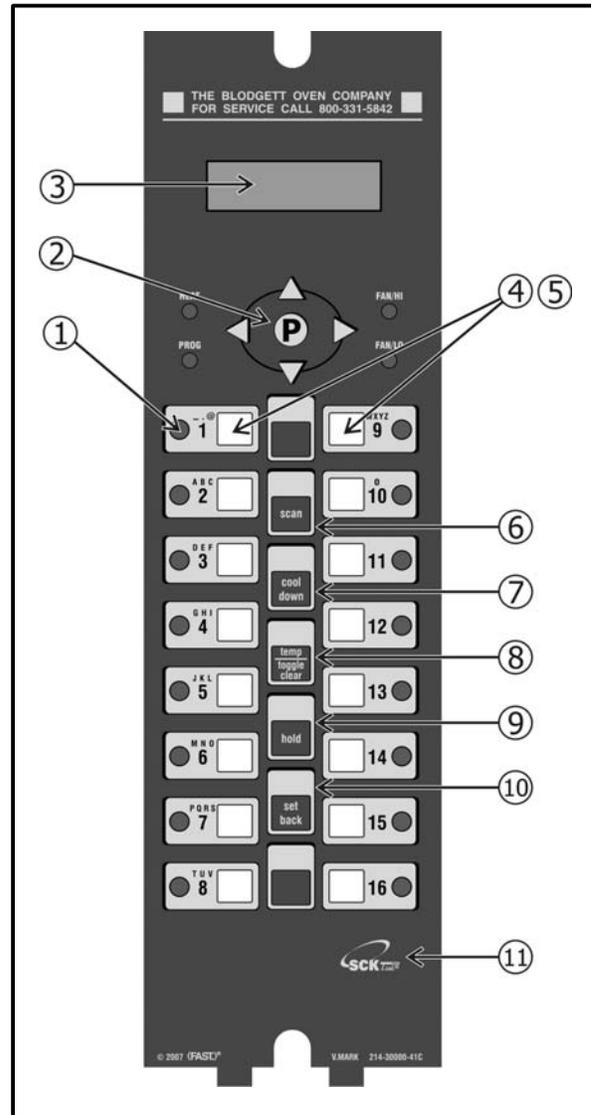


FIGURE 11

CALIBRATION AND ADJUSTMENT

OPERATIONAL TEST PROCEDURE

1	Plug oven into electrical source
2	Turn the oven power switch on. <i>NOTE: AP and Mark V computer is unpowered if off. The XCEL is powered if plugged in.</i>
3	<i>NOTE: This scrolling can be bypassed by pressing SCAN.</i> The controller will scroll through the following: A.) Appliance Type B.) Software # C.) Download # D.) SCK Address E.) "PREHEAT"
4	The oven will enter "PREHEAT" mode and begin to warm up. When the set temperature (default 325°F) is reached, the Preheat timer will count down from 45 minutes to zero. When "LOAD" is displayed, the oven is ready for use.
5	Press any illuminated product key.
6	The cook cycle will count down in the display.

RECIPE REVIEW – Quickly see what is programmed for each product key.

1. Press the SCAN key.
2. Select any product key previously programmed-LED will be lit above the key.
3. Press the DOWN arrow key to scroll through the list.
4. Press SCAN to exit.

VIEW TEMPERATURE SETTING

1. Press the TEMP key 'once' to view Actual Temperature, or
2. Press the TEMP key 'twice' to view Set Temperature.
3. Press the TEMP key 'three' times to view Fan Speed
4. Press the TEMP key 'four' times to view Fan Direction

COOL DOWN

1. To enter Cool Down, press the COOL DOWN key while the oven door is closed. When the display reads "COOL," the door can then be opened.



WARNING!!

THE FAN IS STILL MOVING. DO NOT REACH INTO THE OVEN. The fan will automatically shut off when the actual temperature reaches 105°F.

2. To exit Cool Down, press the COOL DOWN key again. The oven will come back up to set temperature.

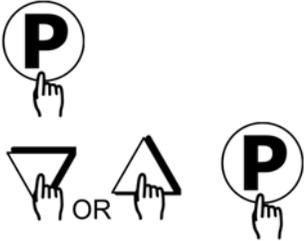
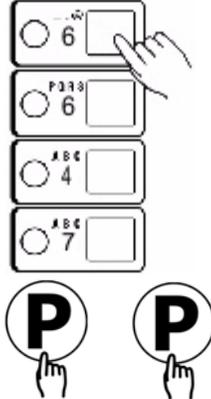


WARNING!!

ALWAYS TURN OFF MAIN POWER BEFORE REMOVING BAFFLE OR PLACING HANDS NEAR FAN.

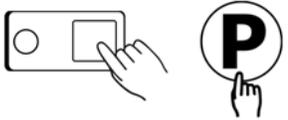
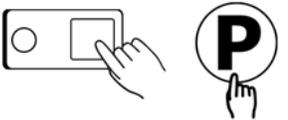
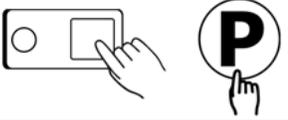
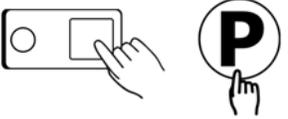
MARK V

SYSTEM PROGRAMMING (6647)

	KEY PRESS	DISPLAY	ACTION
1	<p>Enter Program mode</p> 		<ul style="list-style-type: none"> To enter programming mode, press and hold the “P” key for 3 seconds. Scroll Down to Programming. Press the “P” key to lock in your entry. The display will prompt user to enter a pass code.
2	<p>Enter pass code</p> 	<p>ENTER CODE ****</p>	<ul style="list-style-type: none"> Enter pass code 6 6 4 7. Press the “P” key when “System” is displayed. Press the “P” key again to enter System Programming.
3	<p>Confirm or Select Appliance Type</p> 	<p>APPLIANCE TYPE (ELECTRIC HALF, ELECTRIC FULL)</p> <p>HALF = AP FULL = MARK V</p>	<ul style="list-style-type: none"> Press the LEFT or RIGHT arrow keys to select from a pre-programmed list of appliances. <p>NOTE: Changing appliance type clears all current recipe programs.</p> <ul style="list-style-type: none"> Press the “P” key to lock in your entry
4	<p>Select Language</p> 	<p>SELECT LANGUAGE (English, Other)</p>	<ul style="list-style-type: none"> Press the LEFT or RIGHT arrow key to select language Press the “P” key to lock in your entry <p>NOTE: 'Other' is downloadable.</p>

CALIBRATION AND ADJUSTMENT

SYSTEM PROGRAMMING (continued)

	KEY PRESS	DISPLAY	ACTION
5	Set Tone Level 	TONE LEVEL (None, 1, 2, 3, 4)	<ul style="list-style-type: none"> • Press the LEFT or RIGHT arrow keys to select a tone level. At each level the controller will continuously sound the selected tone. • Press the “P” key to lock in your entry
6	Set Temperature Mode 	TEMPERATURE F = FAHRENHEIT or C = CELSIUS	<ul style="list-style-type: none"> • Press the LEFT or RIGHT arrow keys to select the method that all temperatures will be displayed in. • Press the “P” key to lock in your entry
7	Program Setback Time 	SETBACK TIME HH:MM	<ul style="list-style-type: none"> • Press the numbered product keys to select the time in HH:MM format for activating Setback mode. <i>NOTE: 0:00 is default to disable Setback.</i> • Press the “P” key to lock in your entry
8	Program Setback Temperature 	SETBACK TEMP XXX	<ul style="list-style-type: none"> • Press the numbered product keys to select the Setback temperature in the range of 140-300°F. • Press the “P” key to lock in your entry
9	Set Hold Time 	HOLD TIME HH:MM	<ul style="list-style-type: none"> • Type in the length of hold time required. The value is in the range of 00:00 to 99:59. • Press the “P” key to advance to the next stage or parameter.
10	Set Hold Temperature 	HOLD TEMP XXX	<ul style="list-style-type: none"> • Type in the desired Hold temperature. Hold Temperature Range is 140-210°F • Press the “P” key to advance to the next stage or parameter.

MARK V

SYSTEM PROGRAMMING (continued)

	KEY PRESS	DISPLAY	ACTION
11	Set Hold Done 	HOLD DONE (AUTOMATIC, MANUAL)	<ul style="list-style-type: none"> • Press the LEFT or RIGHT arrow keys to select Hold Done. • Press the “P” key to advance to the next stage or parameter.
12	Set Hold Fan Speed 	HOLD FAN SPEED (HIGH, LOW)	<ul style="list-style-type: none"> • Press the LEFT or RIGHT arrow keys to select Hold Fan Speed. • Press the “P” key to advance to the next stage or parameter.
13	Set Preheat Time 	PREHEAT TIME MM:SS	<ul style="list-style-type: none"> • Type in the desired Preheat Time. • Press the “P” key to advance to the next stage or parameter.
14	Exit Program Mode 	EXIT	<ul style="list-style-type: none"> • Press the UP or DOWN arrow keys to scroll to “Exit.”
15			<ul style="list-style-type: none"> • Press the “P” key to return to idle mode.

CALIBRATION AND ADJUSTMENT

PROBE RESISTANCE VS HEATING ELEMENTS

Element	Resistance
208 volt	12.3–13.6 Ω
220 volt	13.8–15.2 Ω
240 volt	16.4–18.1 Ω
440 volt	58.0–61.0 Ω
480 volt	65.6–72.6 Ω

TABLE 2

PROBE RESISTANCE VS TEMPERATURE

Solid State Manual and Digital Controllers (probe P/N 18588)					
°F	°C	Ohms	°F	°C	Ohms
100	38	53029	310	155	1519
125	52	30785	320	160	1340
150	66	18591	330	166	1186
175	80	11633	340	171	1052
200	93	7528	350	177	936
210	99	6391	360	182	835
220	105	5471	370	188	747
230	110	4705	380	193	669
240	116	4030	390	199	601
250	121	3441	400	205	542
260	127	2967	425	219	421
270	132	2583	450	232	333
280	138	2255	475	246	265
290	143	1970	500	260	216
300	149	1728			

TABLE 3

Intellitouch II Controller (probe P/N 32289)					
°F	°C	Ohms	°F	°C	Ohms
32	0	500	212	100	693
68	20	539	250	120	730
75	24	545	300	150	787
86	30	558	356	180	842
125	50	597	392	200	879
140	60	616	450	230	934
175	80	655	500	260	989
200	93	680	554	260	1042

TABLE 4

MARK V

Intellitouch (probe P/N 20360) and Blodgett IQ Controllers (probe P/N 33074)						Intellitouch (probe P/N 20360) and Blodgett IQ Controllers (probe P/N 33074)					
°F	°C	Ohms	°F	°C	Ohms	°F	°C	Ohms	°F	°C	Ohms
60	16	1059	235	113	1422	410	210	1774	460	238	1872
65	18	1067	240	116	1432	415	213	1783	465	241	1882
70	21	1080	245	118	1442	420	216	1793	470	244	1892
75	24	1090	250	121	1453	425	219	1803	475	246	1901
80	27	1099	255	124	1463	430	221	1813	480	249	1911
85	29	1112	260	127	1473	435	224	1823	485	252	1921
90	32	1122	265	130	1483	440	227	1833	490	254	1931
95	35	1133	270	132	1493	445	230	1843	495	255	1940
100	38	1143	275	135	1503	450	232	1852	500	260	1950
105	41	1153	280	138	1514	455	235	1862			
110	43	1164	290	143	1534						
115	46	1174	295	146	1544						
120	49	1185	300	149	1554						
125	52	1195	305	152	1564						
130	55	1206	310	155	1574						
135	57	1216	315	157	1584						
140	60	1226	320	160	1594						
145	63	1237	325	163	1604						
150	66	1247	330	166	1614						
155	68	1258	335	169	1624						
160	71	1268	340	171	1634						
165	74	1278	345	174	1644						
170	77	1289	350	177	1654						
175	80	1299	355	180	1664						
180	82	1309	360	182	1674						
185	85	1320	365	185	1684						
190	88	1330	370	188	1694						
200	93	1350	375	191	1704						
205	96	1361	380	193	1714						
210	99	1371	385	196	1724						
215	102	1381	390	199	1734						
220	105	1391	395	202	1744						
225	107	1402	400	205	1754						
230	110	1412	405	207	1764						

TABLE 5

CALIBRATION AND ADJUSTMENT

Intellihold and Intelliplus Controllers (probe P/N 23392)											
°F	Ohms	°F	Ohms	°F	Ohms	°F	Ohms	°F	Ohms	°F	Ohms
70	1080	108	1160	146	1239	184	1318	222	1395	260	1473
71	1082	109	1162	147	1241	185	1320	223	1398	261	1475
72	1084	110	1164	148	1243	186	1322	224	1400	262	1477
73	1086	111	1166	149	1245	187	1324	225	1402	263	1479
74	1089	112	1168	150	1247	188	1326	226	1404	264	1481
75	1091	113	1170	151	1249	189	1328	227	1406	265	1483
76	1093	114	1172	152	1251	190	1330	228	1408	266	1485
77	1095	115	1174	153	1253	191	1332	229	1410	267	1487
78	1097	116	1176	154	1255	192	1334	230	1412	268	1489
79	1099	117	1178	155	1258	193	1336	231	1414	269	1491
80	1101	118	1181	156	1260	194	1338	232	1416	270	1493
81	1103	119	1183	157	1262	195	1340	233	1418	271	1495
82	1105	120	1185	158	1264	196	1342	234	1420	272	1497
83	1108	121	1187	159	1266	197	1344	235	1422	273	1499
84	1110	122	1189	160	1268	198	1346	236	1424	274	1501
85	1112	123	1191	161	1270	199	1348	237	1426	275	1503
86	1114	124	1193	162	1272	200	1350	238	1428	276	1505
87	1116	125	1195	163	1274	201	1352	239	1430	277	1507
88	1118	126	1197	164	1276	202	1354	240	1432	278	1509
89	1120	127	1199	165	1278	203	1357	241	1434	279	1512
90	1122	128	1201	166	1280	204	1359	242	1436	280	1514
91	1124	129	1203	167	1282	205	1361	243	1438	281	1516
92	1126	130	1206	168	1284	206	1363	244	1440	282	1518
93	1128	131	1208	169	1287	207	1365	245	1442	283	1520
94	1131	132	1210	170	1289	208	1367	246	1444	284	1522
95	1133	133	1212	171	1291	209	1369	247	1447	285	1524
96	1135	134	1214	172	1293	210	1371	248	1449	286	1526
97	1137	135	1216	173	1295	211	1373	249	1451	287	1528
98	1139	136	1218	174	1297	212	1375	250	1453	288	1530
99	1141	137	1220	175	1299	213	1377	251	1455	289	1532
100	1143	138	1222	176	1301	214	1379	252	1457	290	1534
101	1145	139	1224	177	1303	215	1381	253	1459	291	1536
102	1147	140	1226	178	1305	216	1383	254	1461	292	1538
103	1149	141	1229	179	1307	217	1385	255	1463	293	1540
104	1151	142	1231	180	1309	218	1387	256	1465	294	1542
105	1153	143	1233	181	1311	219	1389	257	1467	295	1544
106	1156	144	1235	182	1313	220	1391	258	1469	296	1546
107	1158	145	1237	183	1315	221	1393	259	1471	297	1548

MARK V

Intellihold and Intelliplus Controllers (probe P/N 23392)											
°F	Ohms	°F	Ohms	°F	Ohms	°F	Ohms	°F	Ohms	°F	Ohms
298	1550	335	1624	372	1698	409	1772	446	1845	483	1917
299	1552	336	1626	373	1700	410	1774	447	1846	484	1919
300	1554	337	1628	374	1702	411	1776	448	1848	485	1921
301	1556	338	1630	375	1704	412	1778	449	1850	486	1923
302	1558	339	1632	376	1706	413	1780	450	1852	487	1925
303	1560	340	1634	377	1708	414	1782	451	1854	488	1927
304	1562	341	1636	378	1710	415	1783	452	1856	489	1929
305	1564	342	1638	379	1712	416	1785	453	1858	490	1931
306	1566	343	1640	380	1714	417	1787	454	1860	491	1932
307	1568	344	1642	381	1716	418	1789	455	1862	492	1934
308	1570	345	1644	382	1718	419	1791	456	1864	493	1936
309	1572	346	1646	383	1720	420	1793	457	1866	494	1938
310	1574	347	1648	384	1722	421	1795	458	1868	495	1940
311	1576	348	1650	385	1724	422	1797	459	1870	496	1942
312	1578	349	1652	386	1726	423	1799	460	1872	497	1944
313	1580	350	1654	387	1728	424	1801	461	1874	498	1946
314	1582	351	1656	388	1730	425	1803	462	1876	499	1948
315	1584	352	1658	389	1732	426	1805	463	1878	500	1950
316	1586	353	1660	390	1734	427	1807	464	1880	501	1952
317	1588	354	1662	391	1736	428	1809	465	1882	502	1954
318	1590	355	1664	392	1738	429	1811	466	1884	503	1956
319	1592	356	1666	393	1740	430	1813	467	1886	504	1958
320	1594	357	1668	394	1742	431	1815	468	1888	505	1960
321	1596	358	1670	395	1744	432	1817	469	1890	506	1962
322	1598	359	1672	396	1746	433	1819	470	1892	507	1964
323	1600	360	1674	397	1748	434	1821	471	1893	508	1966
324	1602	361	1676	398	1750	435	1823	472	1895	509	1967
325	1604	362	1678	399	1752	436	1825	473	1897		
326	1606	363	1680	400	1754	437	1827	474	1899		
327	1608	364	1682	401	1756	438	1829	475	1901		
328	1610	365	1684	402	1758	439	1831	476	1903		
329	1612	366	1685	403	1760	440	1833	477	1905		
330	1614	367	1688	404	1762	441	1835	478	1907		
331	1616	368	1690	405	1764	442	1837	479	1909		
332	1618	369	1692	406	1766	443	1839	480	1911		
333	1620	370	1694	407	1769	444	1841	481	1913		
334	1622	371	1696	408	1770	445	1843	482	1915		

TABLE 6

This page intentionally left blank.

CHAPTER 4

TROUBLESHOOTING

MARK V

HEAT SYSTEM

POSSIBLE CAUSE(S)	SUGGESTED REMEDY
Symptom #1 – Oven heaters and motor do not run	
<ul style="list-style-type: none"> • Oven not plugged in. • Circuit breaker tripped. • Doors not closed tightly. • 10 amp fuse on control panel may be blown. • Door switch inoperative. • Mode selector switch inoperative. • If control configuration has fan delay pulse plus feature, this feature may be activated. • If control configuration has a cycle feature this feature may be activated. • Convection motor out due to thermal overload. 	<ul style="list-style-type: none"> • Plug in oven. • Reset breaker, check amp draw. Reference electrical specifications on page NO TAG of the Introduction. • Close doors tightly. • Replace the fuse and check for shorts. • Replace door switch. • Replace mode switch. • Deactivate fan delay pulse plus. • Deactivate the cycle feature. • Check for external heat against the motor. (such as improper flue connectors on double stack unit. • Check for motor overamping. Replace the motor.
Symptom #2 – Convection fan motor does not operate	
<ul style="list-style-type: none"> • Oven is not plugged in • Oven not set to cook mode. • Circuit breaker tripped. • Door switch inoperative. • Motor off due to thermal overload. • If control configuration has standard fan delay pulse plus feature, this feature may be activated. • If control configuration has solid state digital controls with pulse or cycle feature, this feature may be activated. 	<ul style="list-style-type: none"> • Plug in oven. • Turn oven mode switch to on. • Reset circuit breaker and check the amp draw. Reference electrical specifications on page NO TAG of the Introduction. • Replace door switch. • Check for external heat on the motor. • On double stacked units check that the flue connector is properly installed. • Check the amp draw. If too high, replace the motor. • Deactivate fan delay pulse plus feature. • Deactivate the pulse or cycle feature.

TROUBLESHOOTING

POSSIBLE CAUSE(S)	SUGGESTED REMEDY
Symptom #3 – Heat system does not recover quickly	
<ul style="list-style-type: none"> • One, two or all three of the elements are bad. 208 volt = 12.3–13.6 Ω 220 volt = 13.8–15.2 Ω 240 volt = 16.4–18.1 Ω 440 volt = 58.0–61.0 Ω 480 volt = 65.6–72.6 Ω • Dropped a phase from circuit breaker at electrical panel. • Dropped phase at contactor. • The oven is out of calibration. • Inadequate voltage supplied for oven configuration. (ie. 240 volt oven in a 208 volt environment) 	<ul style="list-style-type: none"> • Replace bank of elements. Reference electrical specifications on page NO TAG of the Introduction for amp draw. • Check for voltage at the terminal block in the oven across L1–L2, L2–L3, and L1–L3. The voltage should match the supply to the building. • If voltage is not present across any phase call the electrician. Check for voltage at the contactor on terminals T1–T2, T2–T3 and T1–T3. Make sure the appliance is calling for heat. If voltage is not present across any phase, replace the contactor. • Reference the calibration procedures for the controller configuration on your appliance. See pages 3–2 through 3–11 of the Calibration and Adjustment section. • Change the element configuration to match the incoming voltage. Transformers may also need to be added for some applications.
Symptom #4 – Heat system does not heat, but motor operates	
<ul style="list-style-type: none"> • Temperature controller set point below actual. • Probe shorted or open. 	<ul style="list-style-type: none"> • Raise set point. • Take the resistance reading. Reference pages 3–18 through 3–21 of the Calibration and Adjustment section for probe resistance information. Refer to page 2–2 for wiring diagram P/N 18459. For solid state manual controls, remove the wires on terminals #6 and #7 on the solid state board. Touch the wires together to allow the contactor to power up. If the contactor closes, the problem is in the temperature control circuit (consisting of the board, probe and potentiometer). This is only a test. DO NOT leave the oven during this test. If the contactor closes place an ohm meter across the probe wire. Note the resistance reading of the probe as the temperature in the oven increases. At no time should the probe go infinite or open before the oven reaches 500°F (260°C). If it does the probe is bad and should be replaced.

MARK V

POSSIBLE CAUSE(S)	SUGGESTED REMEDY
<ul style="list-style-type: none"> • Potentiometer is bad. • Temperature control board is bad. 	<ul style="list-style-type: none"> • The potentiometer is approximately 900Ω and can also be tested with an ohm meter. Connect the test leads to the two outside wires of the potentiometer to get the value of the pot. Leave one lead connected to the outer wire of the potentiometer. Move the other lead to the middle wire of the potentiometer. To check the variable resistance, turn the stem clockwise or counter clockwise. The reading should change from 0Ω to the full value of the potentiometer. Move the test lead from the outer wire to the other outer wire of the potentiometer. Leave the middle lead connected to your meter. Turn the stem again to see the reverse effect. • If both the probe and the pot are good and the the heating system does not work the temperature control board must be bad. Replace the board.

TABLE 1

DISPLAY ERROR CODES

INTELLITOUCH

HELP the temperature setting exceeds the maximum setting of 550°F. This will be shown as an alternating *HELP* and *PROB* display.

PROB

1. Defective temperature probe.
2. Stripped insulation on probe wires.
3. Poor connection of probe terminals.
4. Probe sensing temperatures above or below the probe sensing range.

8888 an Intellitouch computer failure.

INTELLIHOLD AND INTELLIPLUS

F2 Actual oven temperature is greater than the maximum temperature setpoint

F3 Open temperature sensor

F4 Shorted temperature sensor while the control is in the cook mode.

F6 The 50/60 Hz input does not change states.

F7 Total chain timer over 24 hours

F8 The calculated EEPROM check sum is not the same as the expected check sum retrieved from the EEPROM.

BLODGETT IQ CONTROL

NOTE: The error codes will appear in the top display. All error codes are accompanied by an audible alarm.

Hi Oven temperature is more than 40°F above the highest setpoint.

Prob Probe failure at greater than 693°F.

Probe (with alarm) – shorted temperature probe.

HEAT ERR From a cool start (below 140°F), the oven takes more than 10 minutes to climb from 150-300°F.

FAN ERR Control thinks motor is not operating

FAN C ERR usually occurs when dirt or grease collects on the veins of the blower wheel causing centrifugal switch to remain closed too long.

DOOR OPEN Occurs when a timer is activated and the door is open. This fault self clears once the door is closed.

CHAPTER 5

PARTS REPLACEMENT

MARK V

DOOR ASSEMBLY

DOOR

1. Open the door. Remove the handle from the left hand door.
2. Remove the three (3) machine screws located along the bottom edge of the door.
3. Lift the door slightly. Pull forward until it clears the support.
4. To remove from the oven, pull the door down until the hinge pin is clear.
5. Reverse steps 1–4 to replace.

DOOR ARM SUPPORT ASSEMBLY

Replacement

1. Remove the trim cover.
2. Remove the doors as described.
3. Remove the five bolts holding the door arm support to the oven frame.
4. Remove and replace the door arm assembly.

Rebuilding

The door arm support assembly contains five replaceable parts.

- Chain and Turnbuckle
- Left Hand Door Arm
- Right Hand Door Arm
- Sprockets
- Door Switch Cam

Use the following steps to rebuild a door arm support assembly.

1. Remove the assembly from the oven as described.
2. Remove the spiral pins from the left hand door arm support and sprocket assembly. Remove the left hand door arm support from the sprocket assembly.

Repeat for the right hand door.

3. Install the new parts as needed.
4. Reverse this procedure to install the assembly.

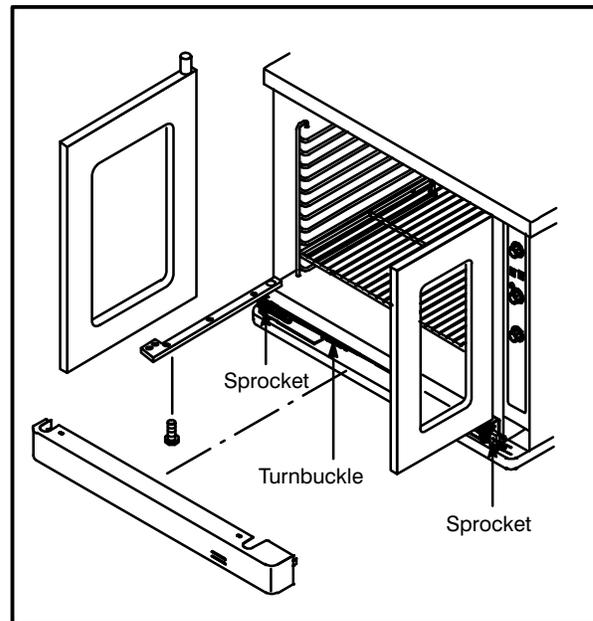


FIGURE 1

PARTS REPLACEMENT

WINDOW ASSEMBLY

1. Remove the door as described. Place the door on a flat surface with the front facing up.
2. Remove the outer door skin. Turn the door onto its back.
3. Use the window insertion tool to pry up the corners of the window assembly in the following order:
 - A.) Bottom right (farthest from the hinge pin)
 - B.) Bottom left
 - C.) Top right
 - D.) Top left (closest to the hinge pin)

NOTE: The window insertion tool is provided with the window assembly.

4. Use the window insertion tool to pry up the corners of the window assembly.
5. Reverse steps 1–4 to replace.

NOTE: To install the door front start at the corner closest to the hinge pin.

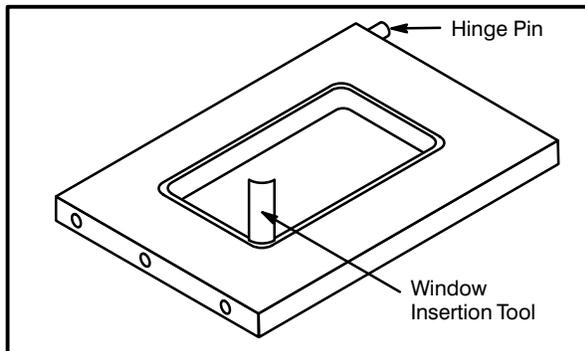


FIGURE 1

COMPARTMENT LINER BOTTOM

1. Remove the racks, rack supports and blower wheel cover.
2. Remove the bottom perimeter door gasket.
3. Remove the screws securing the front, back and sides of the liner bottom.
4. Pull the compartment liner bottom forward.
5. Reverse steps 1–4 to replace.

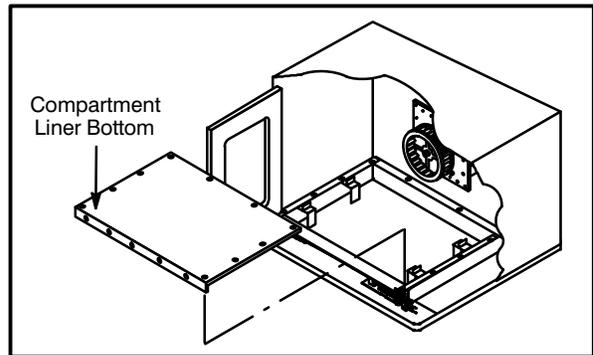


FIGURE 2

MOTOR AND BLOWER ASSEMBLY

BLOWER WHEEL

For units with built in wheel puller:

1. Remove the racks and rack supports.
2. Remove the blower wheel cover.
3. Loosen the set screws in the blower wheel hub. See FIGURE 3.
4. Screw a 3/8"-16 bolt into the threaded hole of the blower wheel. Draw the wheel forward from the shaft. See FIGURE 3.
5. Lubricate the motor shaft with graphite. Maintain a 1/8" gap between the back of the blower wheel and the back wall of the oven liner.
6. Reverse steps 1–5 to replace.

For wheels with slot on hub:

1. Use a wheel puller.

MOTOR

If access to the rear of the oven is available:

1. Remove the blower wheel.
2. Loosen the motor attachment bolts.
3. Remove the motor conduit.
4. Lift the motor from the mounting bracket.
5. Reverse steps 1–4 to replace.

If access to the rear of the oven is not available:

1. Remove the blower wheel.
2. Pull the lower heat collector forward and down.
3. Remove the eight (8) 1/4" nuts from the motor panel.
4. Pull the motor panel forward into the oven. Disconnect the motor wiring conduit.
5. Reverse steps 1–4 to replace.

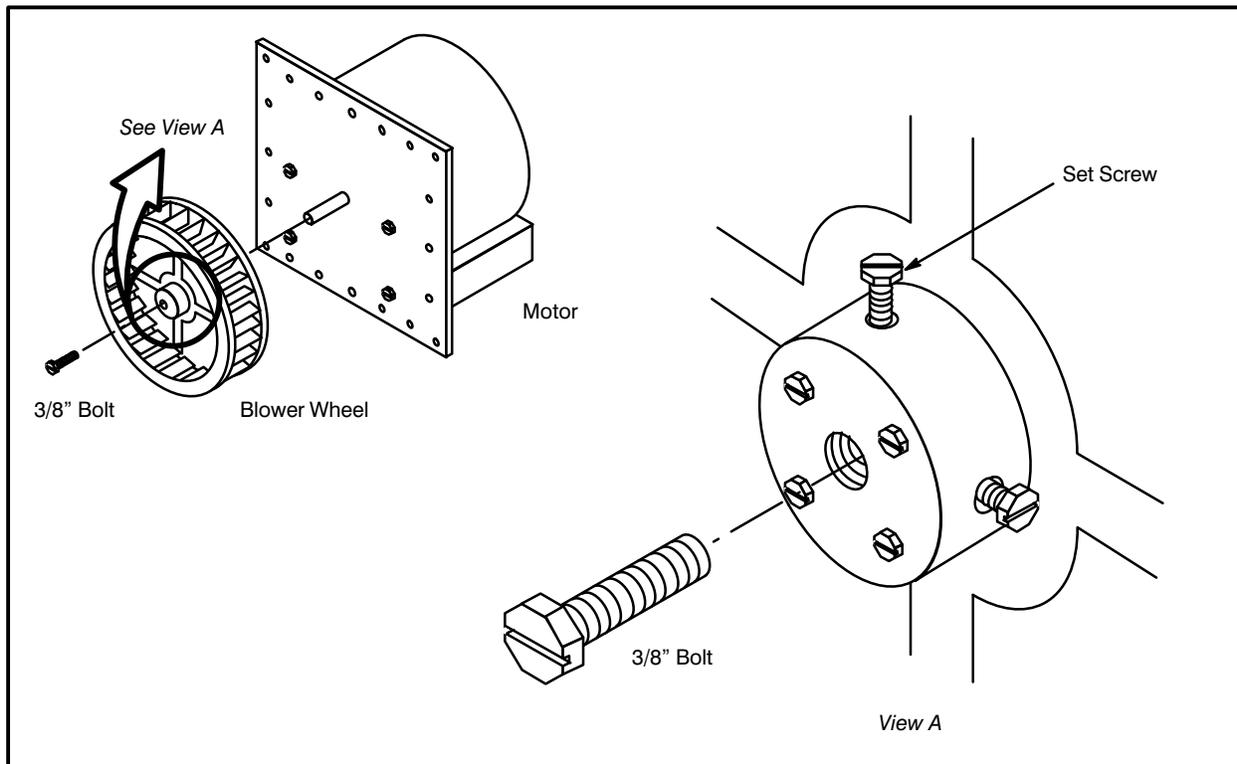


FIGURE 3

ELECTRICAL COMPONENTS

NOTE: A test cord is available to allow removal of the control module from the oven while retaining electrical connections.

BULB AND CAPILLARY THERMOSTAT

1. Remove the chain and turnbuckle compartment cover.
2. Remove the control compartment cover.
3. Remove the racks.
4. Remove the thermostat capillary bulb clips.
5. Swing the capillary bulb forward until it is at a 90° angle with the liner side.
6. Close the doors. Pull the control module forward.
7. Remove the wires from the thermostat.
8. Loosen the set screw at the bottom of the thermostat knob. Remove the knob.
9. Remove the two (2) screws securing the thermostat to the front panel.
10. Feed the capillaries through the oven wall and the side of the control module.
11. Remove the thermostat.
12. Reverse steps 1–11 to replace.

NOTE: Be careful not to kink the fine tubing of the thermostat capillary.

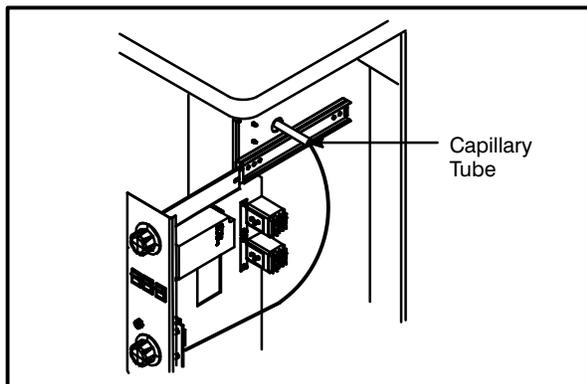


FIGURE 4

ELECTRICAL COMPONENTS LOCATED IN THE CONTROL MODULE

1. Remove the chain and turnbuckle compartment cover.
2. Remove the control compartment cover.
3. Close the doors. Pull the control module forward.
4. Remove the wires from the defective component.
5. Loosen the screws attaching the component to the control module.

Switches may be removed by depressing the spring loaded clips.

The one hour timer is removed by loosening the locknut.

6. Reverse steps 1–5 to replace.

NOTE: Refer to the wiring diagram to ensure correct connection of the wires.

DOOR SWITCH

1. Remove the lower trim cover.
2. Loosen the cam assembly set screw on the right door sprocket assembly.
3. Remove the wires from the door switch.
4. Loosen the lock nut securing the door switch to the bracket and remove.
5. Reverse steps 1–4 to replace.

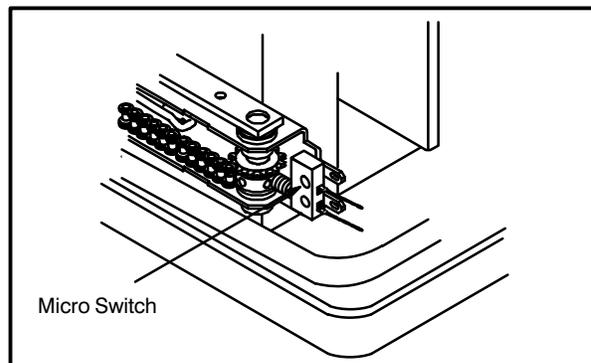


FIGURE 5

MARK V

This page intentionally left blank.