

*TECHNICIAN TESTED*

# TECHNIQUES

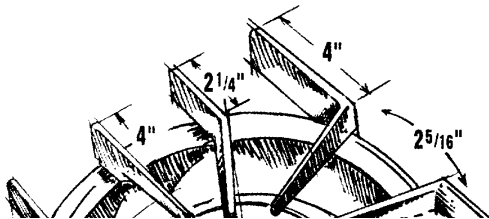
BY

Viking Preferred Service

## TECH – NOTES

VDSC DUAL FUEL  
SELF – CLEAN RANGES

(AFTER JUNE 2001)



**VIKING®**  
Preferred Service

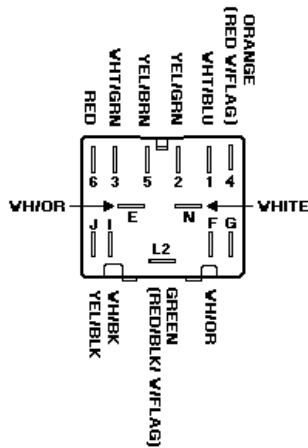
# Viking Preferred Service

## Tech - Notes

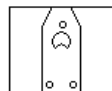
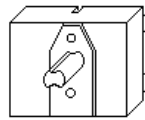
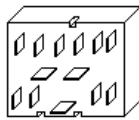
### VDSC 305 / 365 DUAL FUEL SELF-CLEAN RANGES

#### VDSC305 / 365 DUAL FUEL

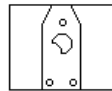
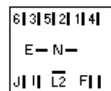
Relay location and wiring connections



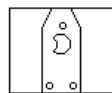
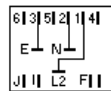
#### 8 POSITION SELECTOR



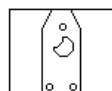
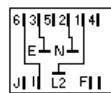
OFF



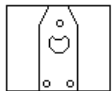
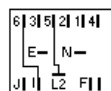
BAKE



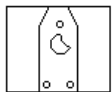
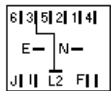
CONVECTION  
BAKE



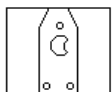
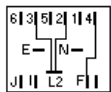
CONVECTION  
COOK



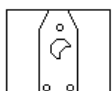
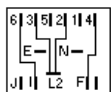
BROIL



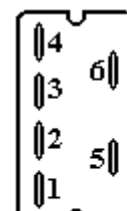
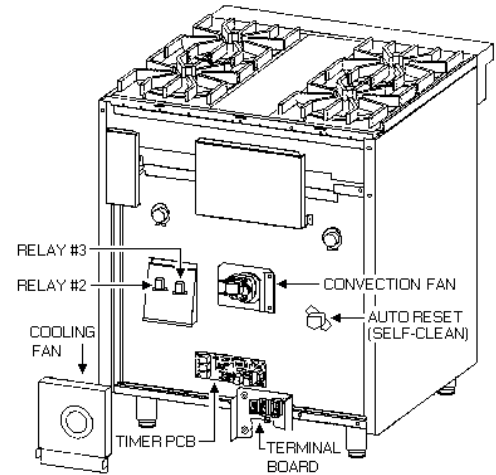
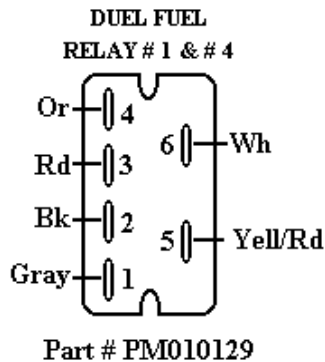
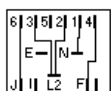
MAXI  
BROIL



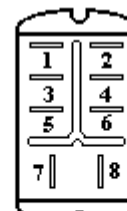
CONVECTION  
BROIL



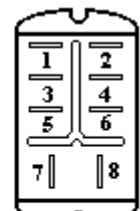
SELF  
CLEAN



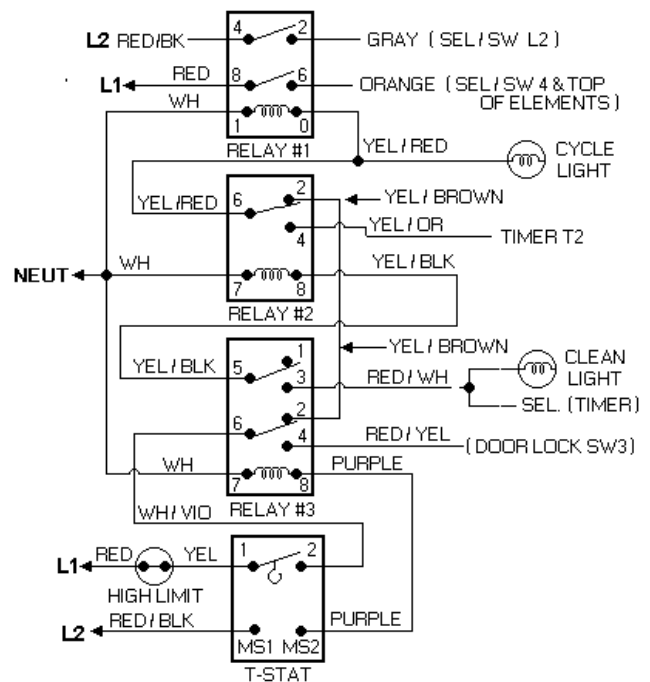
RELAY #1  
Terminal  
Layout



RELAY #2  
Terminal  
Layout

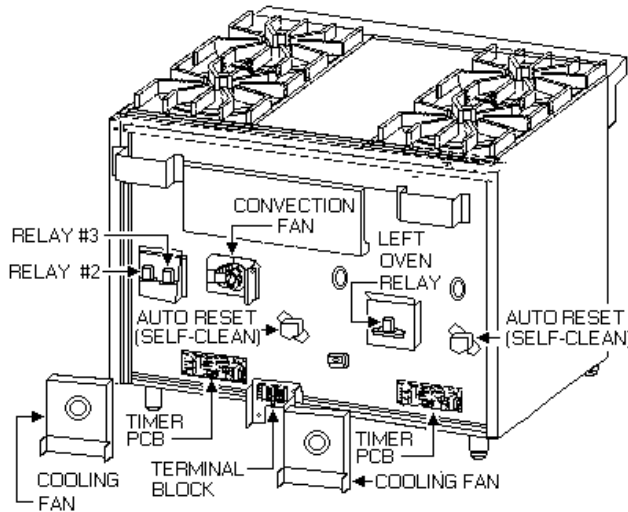


RELAY #3  
Terminal  
Layout



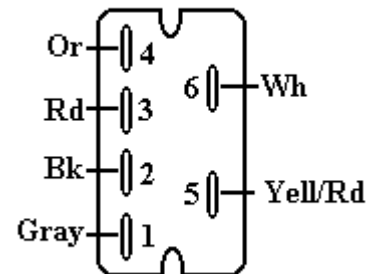
# Viking Preferred Service Tech - Notes

## VDSC 485 DUAL FUEL SELF-CLEAN RANGES



Replaces Relays  
# 1 and # 4

DUEL FUEL  
RELAY # 1 & # 4

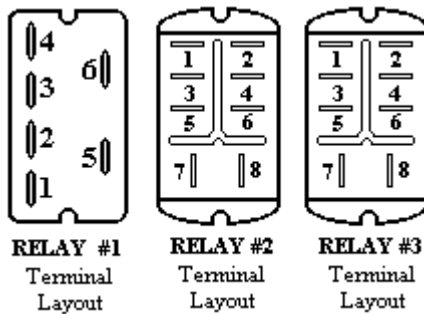


Part # PM010129

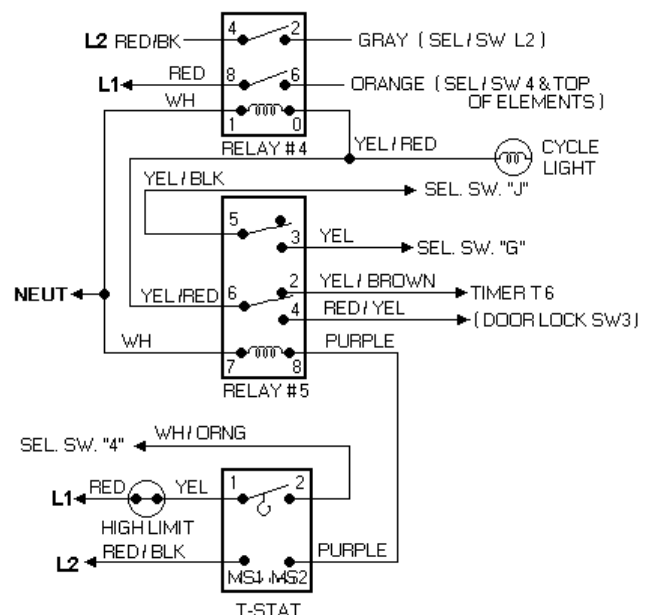
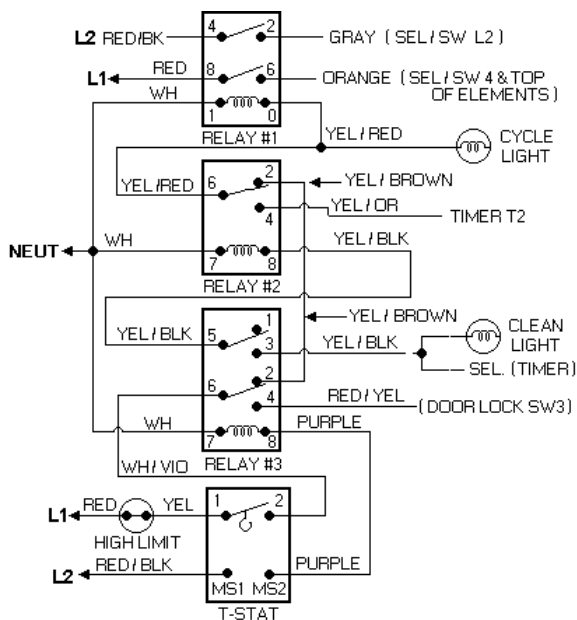
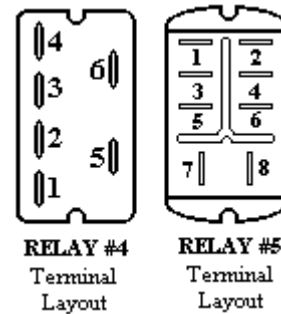
## VDSC485 DUEL FUEL

Relay location and wiring connection

### RIGHT HAND OVEN



### LEFT HAND OVEN

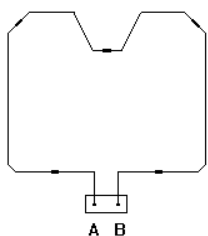


# Viking Preferred Service

## Tech - Notes

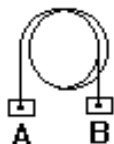
### VDSC DUAL FUEL 30" / 36" AND 48" RANGES

DESCRIPTION	VDSC305	VDSC365	VDSC485
Gas Requirements	Shipped natural gas standard; field convert to LP / Propane with standard convertible regulator. Accepts standard residential ½" (1.3 cm) ID gas service line.		
Electrical Requirements	240 - 208 / 125 VAC / 60Hz Electrical connection box on product: connect with locally supplied 3-wire, flexible cord or "pigtail" rated 40 Amp 125/250 minimum cord must be agency approved for use with household electrical ranges.		
Max Amp Usage	240V - 17.3 amps 208V - 15.0 amps	6B- 240V - 17.9 amps 208V - 15.5 amps 4G-240V - 19.5 amps 208V - 16.9 amps 4Q- 240V - 17.9 amps 208V - 15.5 amps	6G-240V - 30.2 amps 208V - 26.2 amps 6Q- 240V - 28.6 amps 208V - 24.8 amps 4GQ- 240V - 30.2 amps 208V - 26.2 amps
Surface Burner Rating	15,000 BTU NAT./ 13,500 BTU LP (4.4 KW) NAT./ 4.0 LW LP		
Griddle Burner Rating	15,000 BTU NAT./ 12,500 BTU LP (4.4 KW NAT./3.7 LP)		
Grill Burner Rating	15,000 BTU NAT./ 16,000 BTU LP (4.4 LW NAT./4.7 LP)		
Maxi Broil Rating	8 pass 240V 3000 watts	8 pass 240V 3000 watts 208V 2250 watts	8 pass 240V 3000 watts 208V 2250 watts
Mini Broil Rating	4 pass 240V 1250 watts	4 pass 240V 1250 watts 208V 940 watts	4 pass 240V 1250 watts 208V 940 watts *Left Oven 4 pass Broil Only
Convection Cook Rating	240V 2200 watts	240V 2200 watts 208V 1650 watts 208V 1650 watts	Right Oven 240V 2935 watts



BAKE ELEMENT

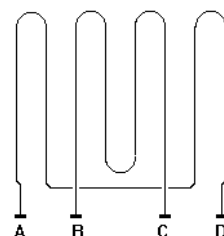
"A" to "B" 21.1 ohms  
 "A" to "B" 240 Volts during bake and convection bake.



CONVECTION ELEMENT

"A" to "B" 26 ohms  
 "A" to "B" 240 Volts during convection cook

### VOLTAGE and RESISTANCE READINGS



BROIL ELEMENT

"A" to "D" (outside element) 32.6 ohms  
 50 VAC during Bake and Convection Bake  
 240VAC during Maxi Broil  
 240VAC during Convection Broil  
 240VAC during Self-clean  
 "B" to "C" (inside element) 45.2 ohms  
 "B" to "C" 70VAC during Mini Broil Convection Bake  
 240VAC during Mini Broil  
 240VAC during Maxi Broil  
 240VAC during Convection Broil  
 240VAC during Self-clean

# Viking Preferred Service

## Tech - Notes

### DOOR LOCK CONTROL / TIMER

**Function:** The Door Lock Control / Timer is activated by the line voltage at the "SEL" contact.

#### Voltage Readings: Measured with Door Open



T4	120VAC
T3	0VAC
T2	0VAC
T1	0VAC

#### Measured with Door Locked

T4	120VAC
T3	120VAC
T2	120VAC
T1	120VAC

**VC -- 4VDC** to Chassis Ground

**Sensor 3 -- 3VDC** SW2 closed in self-clean (Locked)

**Sensor 4 --- 4VDC** SW1 closed with self-clean lock open.

**M1 -- 120VAC** lock motor supply voltage.  
( 0 VAC in locked position.)

**LS2 -- 120VAC** (unlocked) --0VAC (locked)

**L1 --120VAC**

**L2/M2--120VAC** (unlocked) 0VAC (locked)

**LS1 --120VAC – 0VAC** locked

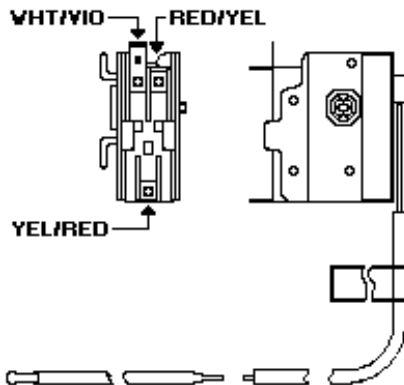
**SEL -- 120VAC** supply



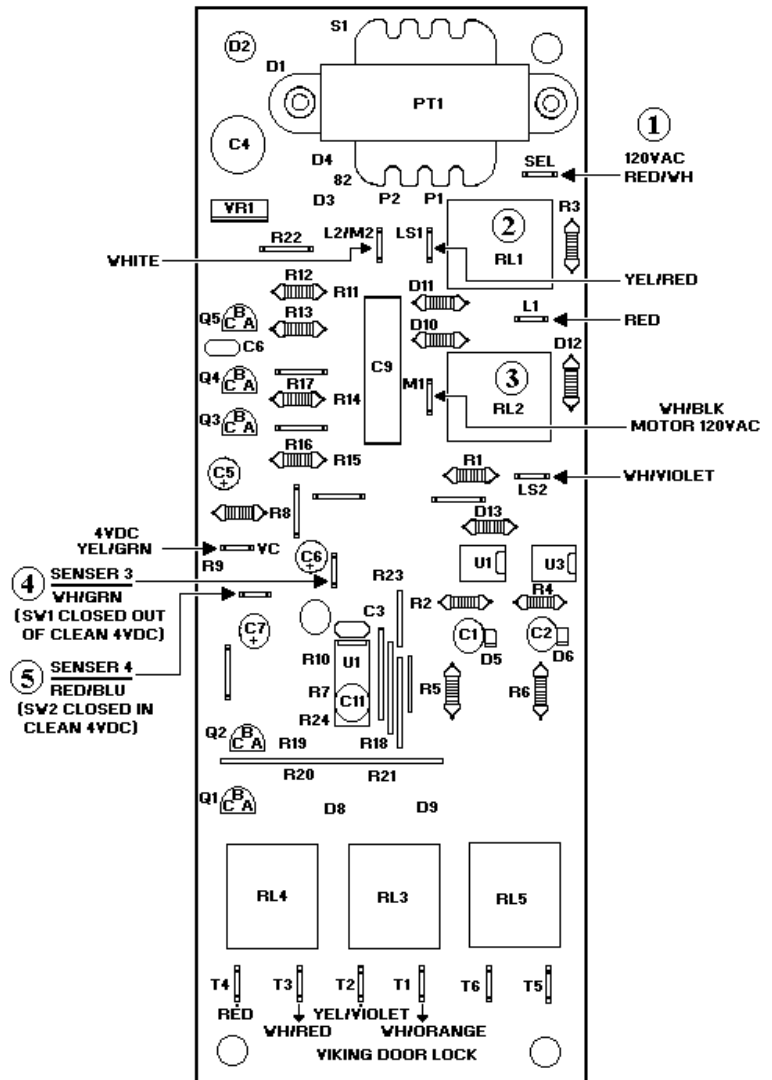
CHASSIS  
GROUND



PC BOARD  
GROUND



**AUTO RESET**

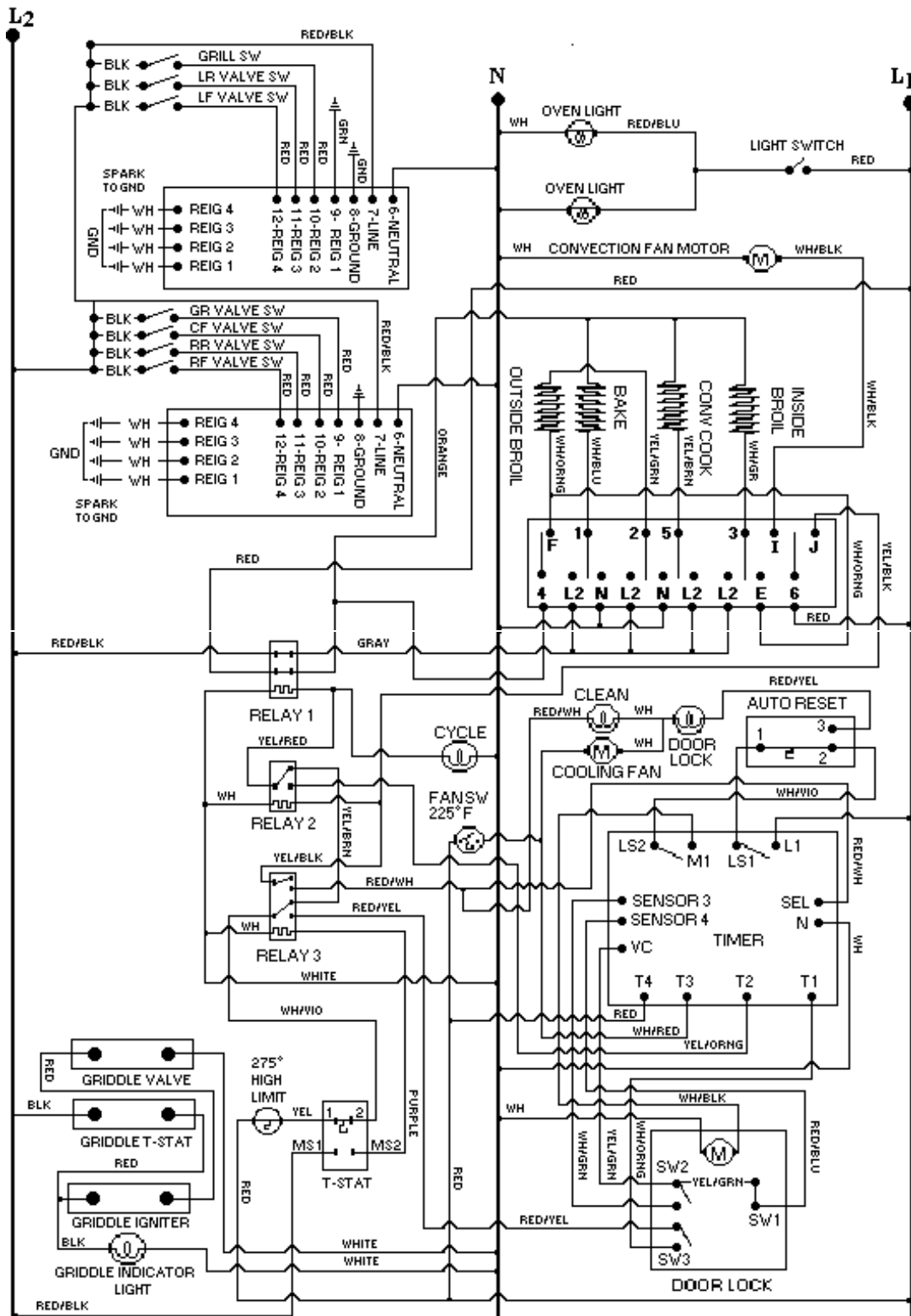


**CONTROL CIRCUIT BOARD**

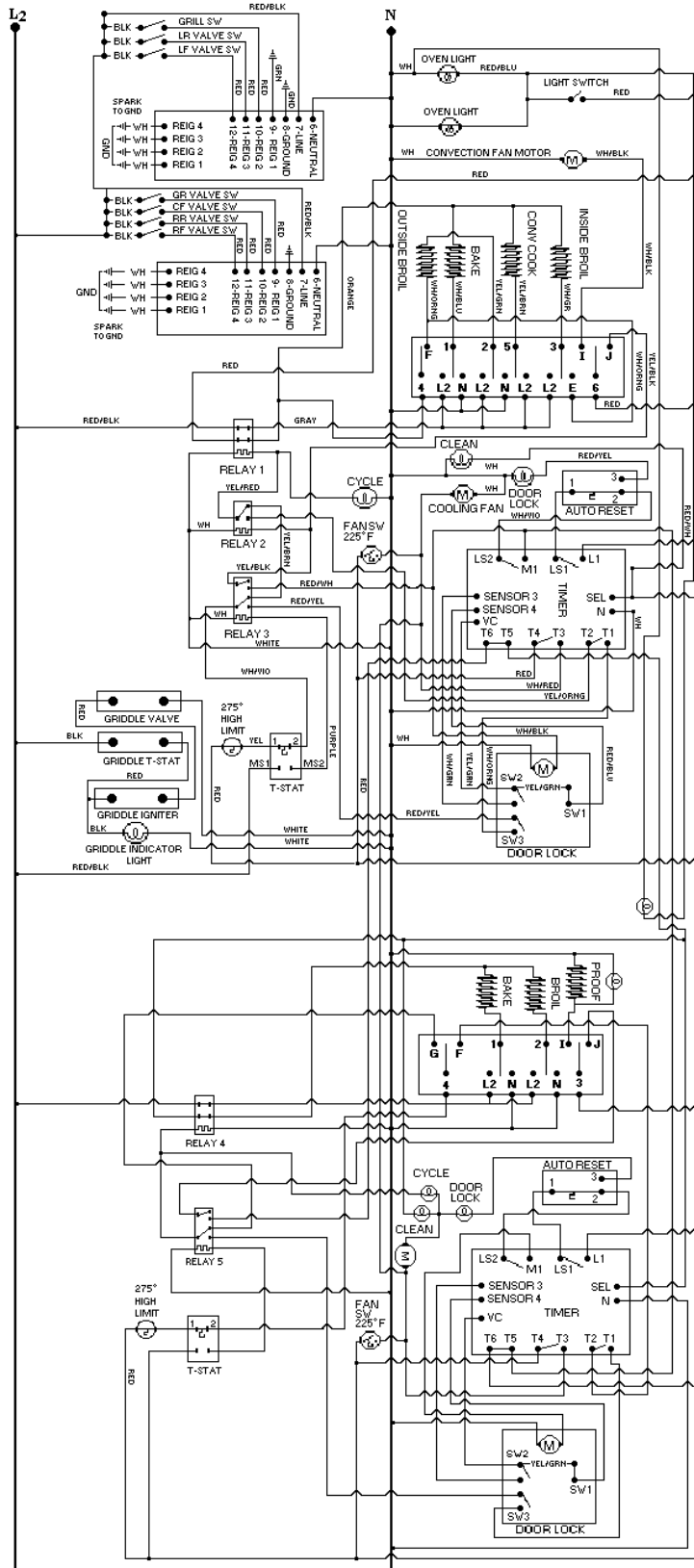
### AUTO RESET SWITCH

**Function:** The Auto Reset Switch is a single pole double throw switch (thermostat) which is activated by a thermal bulb and lever which is calibrated to **575 F +/- 25 F**. The Auto Reset Switch powers the door lock motor to lock at temperatures at or above **575 F**. Also allows the door to unlock after the temperature drops below **575 F**.

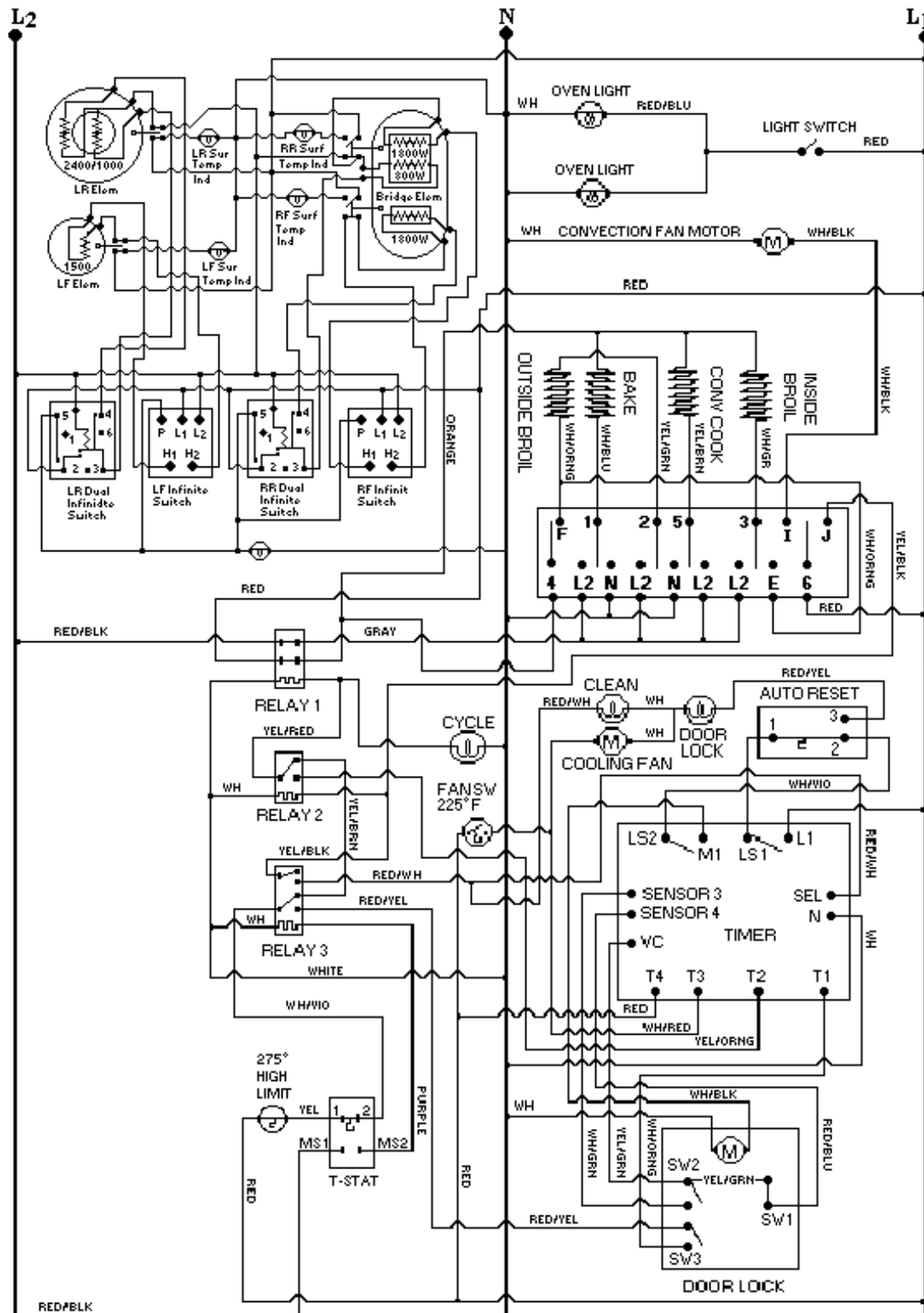
**WIRING DIAGRAM**  
**DUAL FUEL 30"W. &36" W. CONVECTION RANGES**



# WIRING DIAGRAM DUAL FUEL 48"W. CONVECTION RANGES



# WIRING DIAGRAM 30" ELECTRIC RANGE

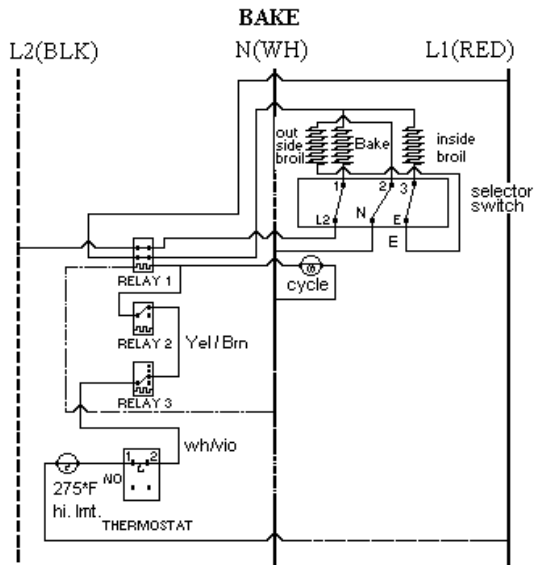




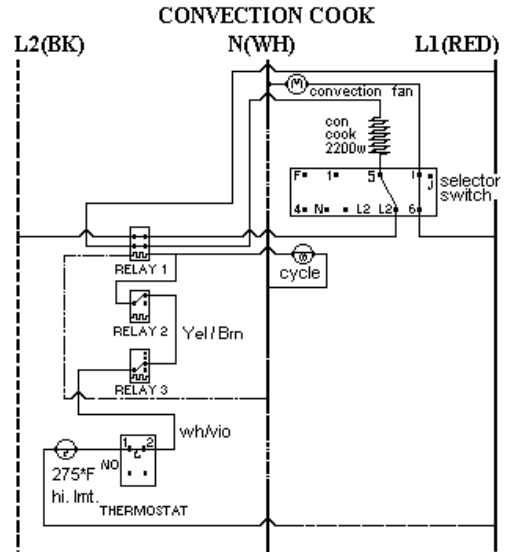
# Viking Preferred Service

## Tech - Notes

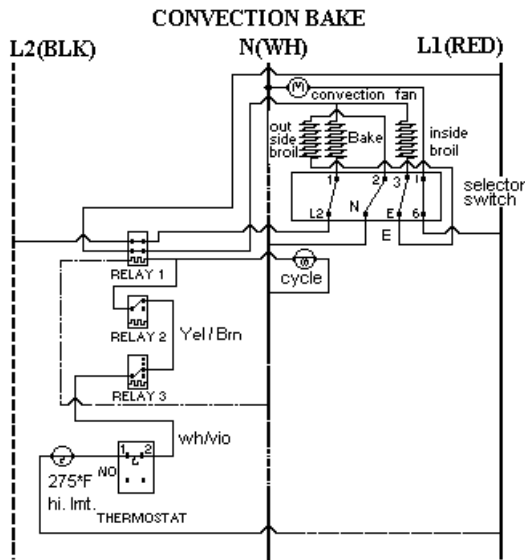
### BREAKOUT DIAGRAMS FOR EACH FUNCTION



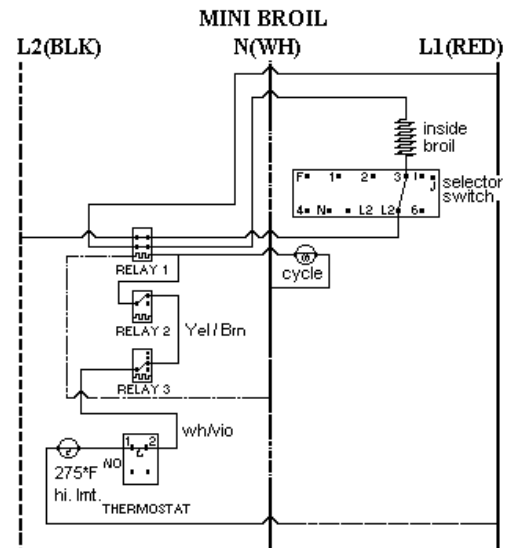
**SELECT BAKE**, position closes switches 1-L2, 2-N, and 3-E. The Thermostat closes Switches Cy1-Cy2, which cycles with oven Temperature powering Relay 1 and the Oven Cycle Light. When Relay 1 closes, it powers the Bake Element at 208/240VAC, and with the Broil Element in series across a 120VAC circuit it powers the inside Broil Element at 70VAC and the outside Broil Element at 50VAC.



**SELECT CONVECTION COOK** position closes Switches 5-L2 and 6-L1. 6-1 powers the Convection Fan through L1 at 120VAC. The thermostat closes Switch Cy1-Cy2, which cycles the Oven temperature, powering relay #1 and the Oven Cycle Light. When Relay #1 closes, it powers the Convection Element at 208/240VAC



**SELECT CONVECTION BAKE** position closes Switches 1-L2, 2-N, 3-E, and 6-I. 6-I powers the Convection Fan through L1 at 120VAC. The Thermostat closes Switches Cy1-Cy2, which cycles with oven temperature powering Relay 1 and the Oven Cycle Light. When Relay 1 closes, it powers the Bake Element at 208/240VAC, and with the Broil Element in series across a 120VAC circuit, it powers the inside Broil Element at 760VAC and the outside Broil Element at 50VAC.

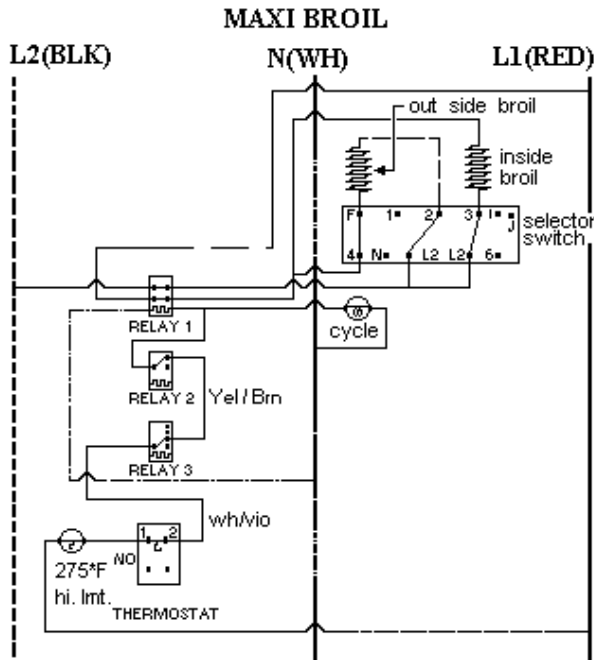


**SELECT MINI BROIL** position closes Switches 3-L2. The thermostat closes Switch Cy1-Cy2, powering Relay #1 and the Oven Cycle Light. When Relay #1 closes, it powers the inside Broil Element at 208/240VAC.

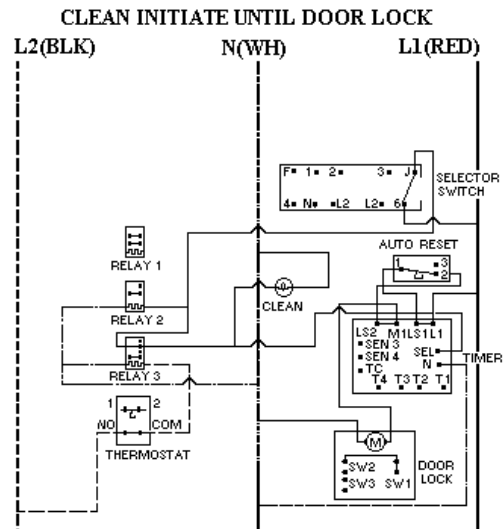
# Viking Preferred Service

## Tech - Notes

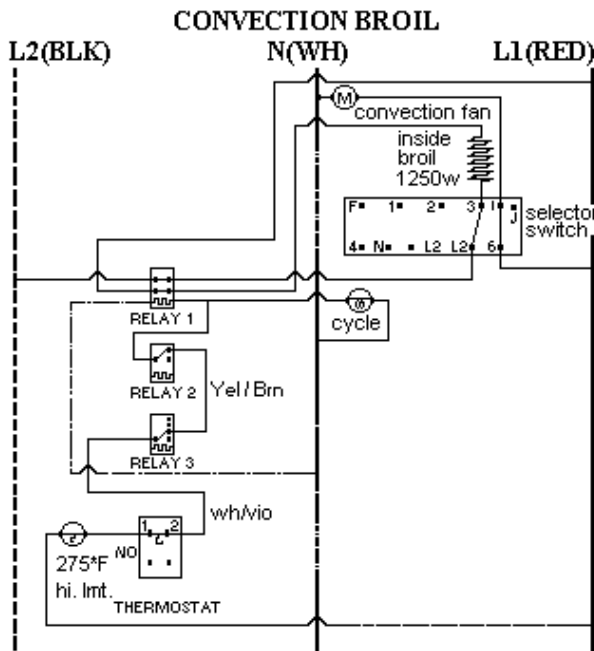
### BREAKOUT DIAGRAMS FOR EACH FUNCTION



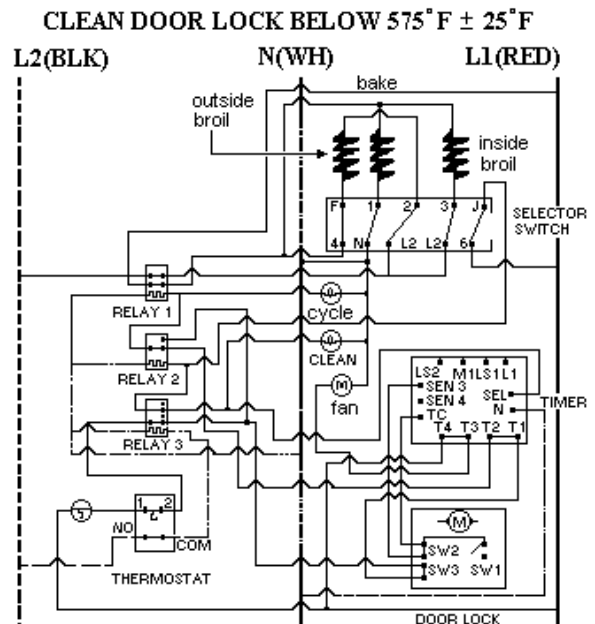
**SELECT MAXI BROIL** position closes Switches 4-F, 2-L2, and 3-L2. The thermostat closes Switch Cy1-Cy2, which cycles with the Oven temperature, powering Relay #1 and the Oven Cycle Light. When Relay #1 closes, it powers the inside Broil Element at 208/240VAC and the outside Broil Element at 208/240VAC



**SELECT CLEAN** position closes Heating Elements circuits 4-F, 1-N 2-L2, 3-L2 and Door Lock Module / Timer circuit J-6 switches Relay #2. Thermostat clean position closes the Cycle Switch and Thermostat Clean Switch, which switches Relay #3. Switching Relay #3 allows circuit J-6 to turn on the Clean Indicator Light and enable the Door Lock Module / Timer which closes Relays LS1-L1 and LS2-M1. This powers the Door Lock Motor until 10 seconds after Sensor #3 is signaled by VC that the Door Lock Switch SW2 has been closed mechanically (along with SW3) by the Door Lock Bolt.



**SELECT CONVECTION BROIL** position closes Switches 4-F, 2-L2, 3-L2, and 6-1. 6-1 powers the Convection Fan through L1 at 120VAC. The thermostat closes Switch Cy1-Cy2, which cycles the Oven temperature, powering Relay #1 and the Oven Cycle Light. When Relay #1 closes it powers the inside Broil Element at 208/240VAC and the outside Broil Element at 208/240VAC.



**10 Seconds** after the signal to Sensor #3, Switch LS2-M1 is opened, stopping the door lock motion and Switches T1-T2, and T3-T4 which switches Relay #1, powering the Cooling Fan, which closes Relay #1 powering the inside and outside Broil Elements to 208/240VAC and the Bake Element to 120VAC.



# VIKING PREFERRED SERVICE

## TECH -- NOTES

### TROUBLESHOOTING GUIDE VDCSC (DUAL FUEL RANGES)

PROBLEM	PROBABLE CAUSE	CORRECTION
A. No Bake, No Broil No Cycle Light, No Power to Relay #1	A-1 House Breaker or Fuse open	A-1 Reset Breaker or replace Fuse
B. No Bake, No Broil, No Cycle Light, Power to Relay #1 (Red – Red/Blk terminals #1 & #3) No power to Relay #1 Heater	B-1 Timed Bake/Broil function switch set to Timed function. B-2 Power Relay #1 Heater circuit open .  B-3 Open contacts Relay #2 (single/ upper oven) (wh/red wire to neutral pin #1 and #7)  B-4 Open contacts Relay #3 (single/upper oven) (red/blu contact #3 to wh/vio contact #9) or open contact Relay #6 (lower oven) (Brown contact #3 to wh/vio contact #9)  B-5 Open Thermostat Cycling contacts #1 and #2  B-6 Open High Limit Switch (contacts normally Closed)	B-1 Set Timed Bake/Broil function switch to manual. B-2 Replace Power Relay #1 (Power Relay #1 part # PM010026)  B-3 Replace Relay #2 (single/ upper oven) or #5 (lower oven) (Relay #2 and #5 part # PM010029)  B-4 Replace Relay #3 (upper oven) or Relay #9 (lower oven) (Relay part # PM010029)  B-5 Replace Thermostat  B-6 Replace High Limit Switch
C. No Bake Function Broil functions normal and the Cycle Light is on	C-1 Open Bake Element  C-2 Open Selector Switch contacts 1 to L2  C-3 Burned Wiring or Terminal connections.	C-1 Replace Bake Element  C-2 Replace Selector Switch  C-3 Replace or Repair Burned Wiring and / or Terminal (spade) connector.
D. Poor Baking Results, Broil Functions normal Cycle Light is on	D-1 Low Voltage Supply (240VAC Required).  D-2 Restricted Air Flow through the oven cavity.  D-3 No Top Heat from Broil Element. Open selector Switch contacts 3 to E.  D-4 Check Use and Care for suggested baking tips.	D-1 Inform Customer of requirements.  D-2 Clear restriction from Oven Vent.  D-3 Replace Selector Switch.
E. No Convection Bake, Bake and Broil functions normal, Cycle Light is on.	E-1 Open Selector Switch contact 6 to 1  E-2 Open Convection Motor winding  E-3 Burned Wiring or terminal connections	E-1 Replace Selector Switch  E-2 Replace Convection Motor  Replace burned wiring or terminal connectors.
F. No Convection Cook, Bake and Broil functions normal. Cycle Light is on.	F-1 Open Convection Cook Element  F-2 Open Selector Switch contacts 5 to L2	F-1 Replace Convection Cook Element.  F-2 Replace Selector Switch

VIKING PREFERRED SERVICE  
 ———TECH -- NOTES—————

TROUBLESHOOTING GUIDE VDSC (DUAL FUEL RANGES)		
PROBLEM	PROBABLE CAUSE	CORRECTION
G. Convection Cook Heats, No Air Circulation	G-1 Open Winding in Convection Fan Motor G-2 Frozen Motor Shaft G-3 Open Selector Switch contacts 1 to 6	E-1 Replace Fan Motor E-2 Replace Fan Motor E-3 Replace Selector Switch
H. No Mini-Broil, Bake functions normal, Cycle Light is on.	H-1 Open Selector Switch contacts 3 to L2 H-2 Open Inside Broil Element	H-1 Replace Selector Switch H-2 Replace Inside Broil Element
I. No Maxi-Broil, Bake and Mini-Broil functions normal, Cycle Light is on.	I-1 Open Selector Switch contacts F to 4, 2 to L2 and / or 3 to L2 I-2 Open Outside Broil Element	I-1 Replace Outside Broil Element
J. No Maxi-Broil, No Top heat in Bake Mode, Cycle Light is on.	J-1 Open Selector Switch contacts F to 4, 2 to L2 J-2 Open Inside and Outside Broil Elements.	J-1 Replace Selector Switch J-2 Replace Open Broil Elements.
K. No Convection Broil Bake and Broil are Normal, Cycle Light Is on. No Mini-Broil	K-1 Open Convection Motor winding K-2 Open Selector Switch contacts 3 to L2 K-3 Open Inside Broil Element	K-1 Replace Convection Motor. K-2 Replace Selector Switch K-3 Replace Inside Broil Element
L. No Self-Clean, Bake and Broil functions normal ■ Door won't lock. No Clean Light. No 120 VAC supply to Door Lock module/ timer (PC board)	L-1 Open Selector Switch contacts J to 6 L-2 Open contacts Relay #2 (single/upper oven) or Relay #5 (lower oven). L-3 Open contacts Relay #3 (single/upper Oven) or Relay #6 (lower oven).	L-1 Replace Selector Switch L-2 Replace Relay #2 (single/upper oven ) or #5 (lower oven). L-3 Replace Relay #3 (single/upper oven) or #6 (lower oven).
M. No Self-Clean Bake And Broil function Normal. ■ Door won't Lock 120VAC to Door Lock module / timer (PC board) is present – No Motor movement – Clean Light is on.	M-1 Open Relay contacts LS1-1 and /or LS2-M1 on Door Lock Module / timer (PC board) M-2 Open contacts 1 to 2 on Auto Reset Thermostat. M-3 Open windings in Lock Motor	M-1 Replace Door Lock Module/ Timer (PC board) M-2 Replace Auto Reset Thermostat M-3 Replace Lock Motor assembly

VIKING PREFERRED SERVICE  
 ———TECH -- NOTES—————

TROUBLESHOOTING GUIDE VDSC (DUAL FUEL RANGES)		
PROBLEM	PROBABLE CAUSE	CORRECTION
N. Door Lock Motor continues to run no signal to sensor #3 on PC board the closes T1-T2 and T3-T4. Clean Light is on.	N-1 No SW2 Switch (closed be motor Movement) on Door Lock Mechanism not closing.	N-1 Adjust SW2 Switch position or Replace faulty Switch.
O. Door Lock Motor Engaged. Signal To Sensor #3 on PC board . No Heat, Clean Light is on.	O-1 Door Lock Module / Timer Relay T1 –T2 and T3-T4 not closing.	O-1 Replace PC board.
P. Door Lock Motor Engaged. Cooling Fan Motor runs. (PC board T3 –T4 closing) No Heat.	P-1 Door Lock Module / Timer (PC board) Relay T1-T2 not closing.  P-2 Door Lock Module / Timer (PC board) Relay T1-T2 closing. Check SW3 on Door Lock Assembly.	P-1 Replace PC board  P-2 Replace SW3 switch on Door Lock Assembly .

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Title: TROUBLESHOOTING GUIDE VDSC (DUAL FUEL RANGES)  
Subject:  
Author: Viking Range Corporation  
Keywords:  
Comments:  
Creation Date: 10/13/2000 6:46 PM  
Change Number: 3  
Last Saved On: 3/28/2003 4:37 PM  
Last Saved By: Ken Sievert  
Total Editing Time: 0 Minutes  
Last Printed On: 3/28/2003 7:27 PM  
As of Last Complete Printing  
Number of Pages: 1  
Number of Words: 141 (approx.)  
Number of Characters: 804 (approx.)