

# Viking Installation Guide



## Freestanding Gas Self-Clean Ranges

Viking Range Corporation  
111 Front Street  
Greenwood, Mississippi 38930 USA

## IMPORTANT: PLEASE READ AND FOLLOW

- Before beginning, please read these instructions completely and carefully.
- Do not remove permanently affixed labels, warnings, or plates from the product. This may void the warranty.
- Please observe all local and national codes and ordinances.
- Please ensure that this product is properly grounded.
- The installer should leave these instructions with the consumer who should retain for local inspector's use and for future reference.

Installation must conform with local codes or, in the absence of codes, the National Fuel Gas Code, ANSI Z223.1 or the latest edition. **IN CANADA:** Installation must be in accordance with the current CAN/CGA B149.1 & 2 Gas Installation codes and/or local codes. Electrical installation must be in accordance with the current CSA C22.1 Canadian Electrical Codes Part 1 and/or local codes.

Installation of any gas-fired equipment should be made by a licensed plumber. A manual gas shut-off valve must be installed in the gas supply line ahead of the oven in the gas stream for safety and ease of service.

**In Massachusetts:** All gas products must be installed by a "Massachusetts" licensed plumber or gasfitter. A "T" handle type manual valve must be installed in the gas supply line to the appliance

### WARNING



- This range can tip.
- Injury to persons could result.
- Install anti-tip device packed with range.
- See Installation Instructions

### WARNING

**IF THE INFORMATION IN THIS MANUAL IS NOT FOLLOWED EXACTLY, A FIRE OR EXPLOSION MAY RESULT CAUSING PROPERTY DAMAGE, PERSONAL INJURY, OR DEATH.**

1. Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
2. **WHAT TO DO IF YOU SMELL GAS:**
  - Do not try to light any appliance.
  - Do not touch any electrical switch; do not use any phone in your building.
  - Immediately call your gas supplier from a neighbor's phone.
  - Follow the gas supplier's instructions.
  - If you cannot reach your gas supplier, call the fire department.
3. Installation and service must be performed by a qualified installer, service agency, or the gas supplier.

### WARNING

If not installed, operated and maintained in accordance with the manufacturer's instructions, this product could expose you to substances in fuel or from fuel combustion which can cause death or serious illness and which are known to cause cancer, birth defects, or other reproductive harm.

For example, benzene is a chemical which is part of the gas supplied to the cooking product. It is consumed in the flame during combustion. However exposure to a small amount of benzene is possible if a gas leak occurs. Formaldehyde and soot are by-products of incomplete combustion. Properly adjusted burners with a bluish rather than yellow flame will minimize incomplete combustion.

## GENERAL INFORMATION

- WARNING:** The use of cabinets for storage above the appliance may result in a potential burn hazard. Combustible items may ignite, metallic items may become hot and cause burns. If a cabinet storage is to be provided the risk can be reduced by installing a rangehood that projects horizontally a minimum of 5" (12.7 cm) beyond the bottom of the cabinets.
- WARNING:** This appliance shall not be used for space heating. This information is based on safety considerations.
- All openings in the wall behind the appliance and in the floor under the appliance shall be sealed.
- Keep appliance area clear and free from combustible materials, gasoline, and other flammable vapors.
- Do not obstruct the flow of combustion and ventilation air.
- Disconnect the electrical supply to the appliance before servicing. **The power disconnect for the sealed top units is located behind the lower access panel of the range. This should only be removed by a qualified service technician.**
- When removing oven for cleaning and/or service;
  - A. Shut off gas at main supply
  - B. Disconnect AC power supply
  - C. Disconnect gas line to the inlet pipe.
  - D. Carefully remove the range by pulling outward.
- Electrical Requirement  
Listed on Specification sheet. Electrical installation should comply with national and local codes.
- Gas Manifold Pressure:  
Natural gas 5.0" W.C.P.  
LP/Propane 10.0" W.C.P.
- Flexible Connections:  
If this unit is to be installed with flexible couplings and/or quick disconnect fittings, the installer must use a flexible connector of at least 1/2" ID (1.3 cm) NPT with suitable strain reliefs and comply with ANSI Z21.41 and Z21.69 standards.
- The misuse of oven doors (e.g. stepping, sitting, or leaning on them) can result in potential hazards and/or injuries.

## LEGS

- Legs are packed in styrofoam top pack.
- Legs should be installed near to where the appliance is to be used, as they are not secure for long transit. After unpacking the range, raise it about a foot to remove the bottom shipping skid. Keep the unit raised to permit the legs to be screwed into our couplings and lower it gently to keep any undue strain from the legs and internal mounting hardware. It is strongly recommended that a pallet or lift jack be used rather than tilting.

**NOTE:** If legs are removed from range and range rests on a combustible surface, warranty and AGA/CGA certification are void.

## WARNING

### ELECTRICAL GROUNDING INSTRUCTIONS

This range must be electrically grounded in accordance with local codes, or in the absence of local codes, with the National Electrical Codes, ANSI/NFPA 70-latest edition. This appliance is equipped with a three-prong plug for your protection against shock hazard and should be plugged directly into a properly grounded receptacle. Do not cut or remove the grounding prong from this plug. Do not connect product to GFI circuit. The **minimum** of 102VAC is required for proper operation of gas ignition systems. **Prior to servicing, disconnect appliance electrical supply. For sealed top units the power disconnect is located behind the lower access panel. This should only be removed by a qualified service technician.**

FOR PERSONAL SAFETY, THIS APPLIANCE MUST BE PROPERLY GROUNDED

## BACK TRIM ACCESSORIES

Assembly and installation instructions are included with all back trim accessories.

## BASIC SPECIFICATIONS

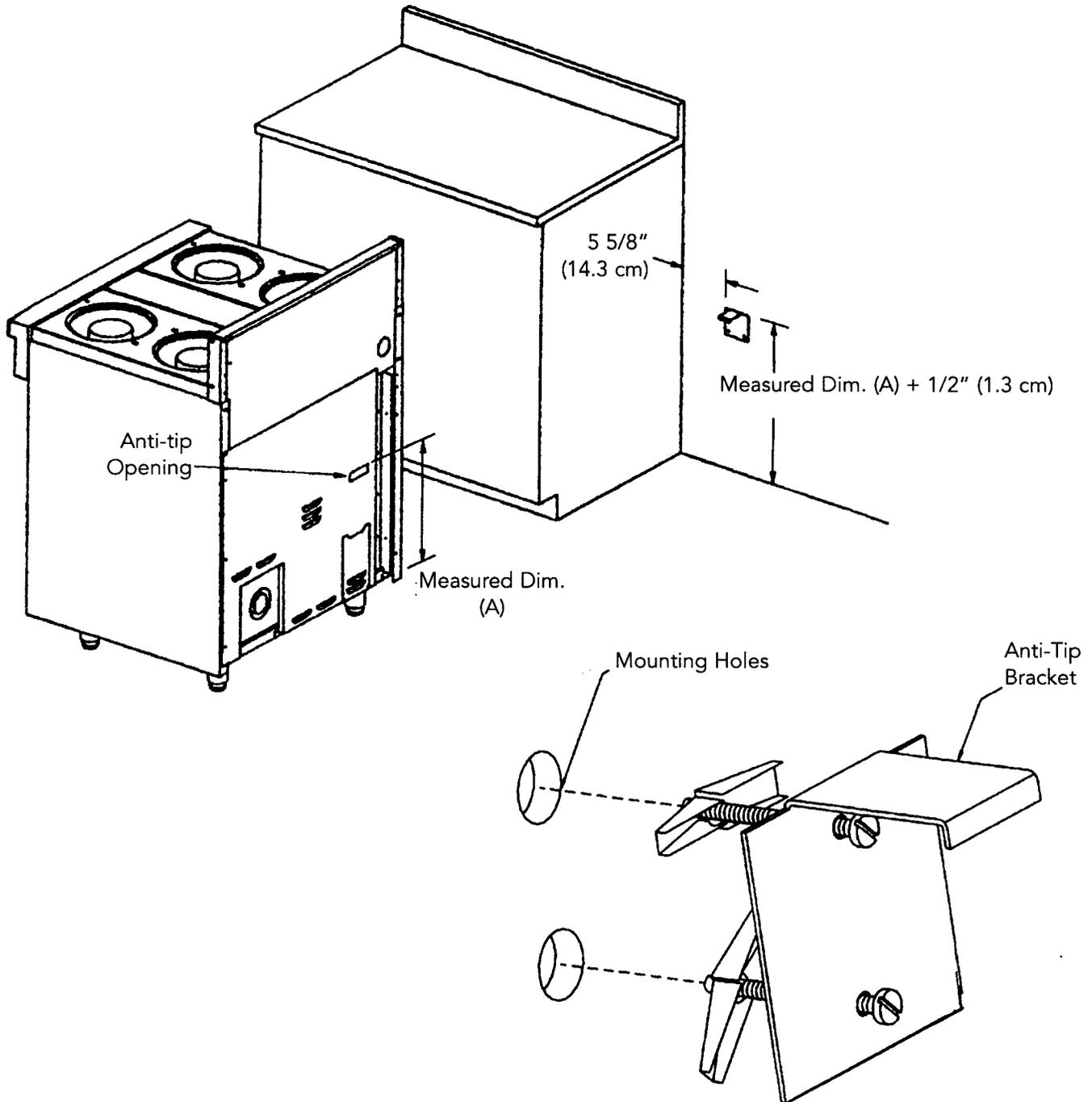
Description	30" W. Models	36" W. Models	48" W. Models
Overall width	29 7/8" (75.9 cm)	35 7/8" (91.1 cm)	47 7/8" (121.6 cm)
Overall height	<b>Open Top Burners</b> To top of: grate support - Min. 35 7/8" (91.1 cm) Max. 37 5/8" (95.6 cm) Legs adjust 1 3/4" (4.5 cm)		<b>Sealed Top Burners</b> burner grate - 37 3/8" (94.9 cm) 39 1/8" (99.4 cm) 1 3/4" (4.5 cm)
Base Height	<b>Additions to Base Height</b> To top of spider grate - add 1 1/8" (2.9 cm) To top of island trim - add 1 1/4" (3.2 cm) To top of 6" backguard - add 6" (15.2 cm)		To top of 10" backguard - add 10" (25.4 cm) To top of high shelf - add 23 1/2" (59.7 cm)
Overall depth from rear	To end of side panel -	24 15/16" (63.3 cm)	
	To end of control panel -	27 7/8" (70.8 cm)	
	To end of knobs -	28 3/8" (72.0 cm)	
Electrical requirements	120 VAC/60 Hz; 4 ft. (121.9 cm), 3-wire cord with grounded 3-prong plug attached to unit.		
Gas requirements	Shipped natural or LPL/Propane gas; field convertible with conversion kit (purchased separately); accepts standard residential 1/2" (1.3 cm) ID gas service line.		
Maximum amp usage	2.3 amps	6B - 2.3 amps 4G - 6.0 amps 4Q - 2.4 amps	6G / 4GQ / 4K - 6.4 amps 6Q / 4Q / 8B - 2.4 amps 4G - 10.0 amps
Surface burner rating	15,000 BTU Nat. / 13,500 BTU LP (4.4 kW Nat / 4.0 kW LP)		
Griddle burner rating	N/A	15,000 BTU Nat. / 13,500 BTU LP (4.4 kW Nat. / 4.0 kW LP)	
Grill burner rating	N/A	12" - 1@ 18,000 BTU Nat. (5.3 kW)/ 16,000 BTU LP (4.7 kW) 24" - 2@ 15,000 BTU Nat. (4.4 kW)/ 13,500 BTU LP (4.0 kW)	
Wok burner rating	N/A	N/A	27,500 BTU Nat. / LP (8.1 kW Nat. / LP)
Broil rating	18,000 BTU Nat./ 16,000 BTU LP (5.3 kW Nat. / 4.7 kW LP)		
Bake rating	30,000 BTU Nat./LP (9.8 kW Nat./LP)		Right 30,000 BTU Nat./LP (9.8 kW Nat./LP) Left 15,000 BTU Nat./LP (4.4 kW Nat.)
Oven Interior width	23" (58.4 cm)	29" (73.7cm)	Right - 23" (58.4 cm) Left - 12 1/8" (30.8 cm)
Oven Interior height	16 18/16" (41.0 cm)		
Oven Interior depth	15 3/8" (39.1 cm)		Right- 15 3/8" (39.1 cm) Left - 17 1/4" (43.8 cm)
Oven Interior overall size	3.3 cu. ft.	4.2 cu. ft.	Right - 3.3 cu. ft. Left - 2.1 cu. ft.
Approximate Shipping wt.	424 lbs. (190.8 kg)	6B - 465 lb. (209.3 kg) 4Q - 470 lb. (211.5 kg) 4G - 475 lb. (213.8 kg)	6G - 624 lb. (280.8 kg) 6Q - 620 lb. (279.0 kg) 4G - 634 lb. (285.3 kg) 4Q - 620 lb. (279.0 kg) 4GQ - 629 lb. (283.1 kg) 4K - 624 lb. (280.8 kg) 8B - 620 lb. (279.0 kg)

### Minimum clearances from adjacent combustible construction

- Cooking surface and below (36" [91.4 cm] and below)
  - Sides - 0"
  - Rear - 0" with backguard or high shelf; 0" with island trim and non-combustible rear wall; 6" (15.2 cm) with island trim and combustible rear wall.
  - Top grate support - 36" (91.4 cm)
- Above cooking surface (above 36" [91.4 cm])
  - Sides - 6" (15.2 cm)
  - Within 6" (15.2 cm) side clearance, wall cabinets no deeper than 13" (33.0 cm) must be minimum 18" (45.7 cm) above cooking surface.
  - Wall cabinets directly above product must be minimum 36" (91.4 cm) for open top burner units and 42" (106.7 cm) for sealed burner units above cooking surface
- Use range only with factory supplied legs.

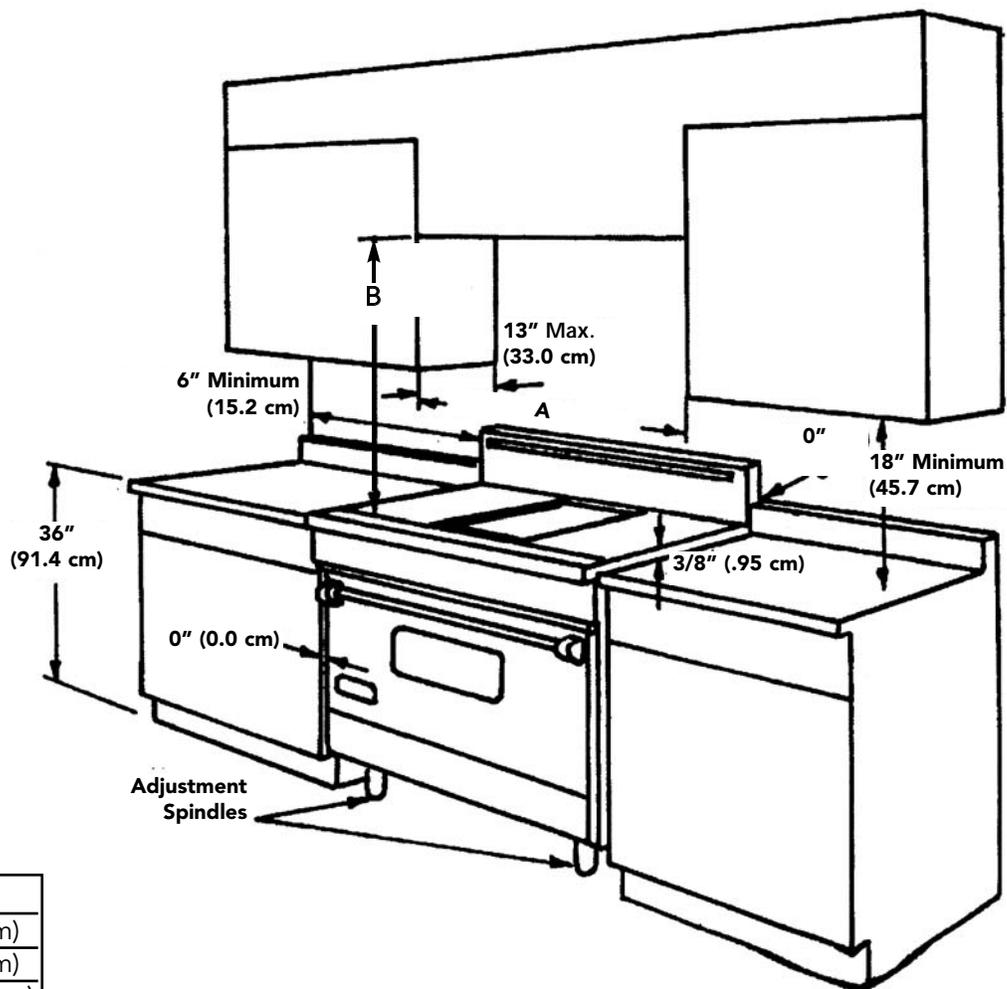
# ANTI-TIP STABILITY DEVICE INSTALLATION INSTRUCTIONS

1. The anti-tip bracket is to be attached to the rear wall as shown. The dimension for the bracket location from the floor is to be determined after the range legs have been adjusted to the proper installation height shown in the installation instructions and the range has been leveled.
2. Measure from the floor to the bottom of the anti-tip opening located on the back of the range.
3. Locate the anti-tip bracket on the wall at the measure dimension plus 1/2" (1.3 cm) from the floor and 5 5/8" (14.3 cm) from where the left side of the range (facing range) is to be located.
4. Slide range into place making sure the anti-tip bracket slides into the anti-tip opening.



## PROXIMITY TO SIDE CABINET INSTALLATION

1. This range may be installed directly adjacent to existing 36" (91.4 cm) high base cabinets. **IMPORTANT:** The top grate support **MUST** be 3/8" (.95 cm) above the adjacent base cabinet countertop. This may be accomplished by raising the unit using the adjustment spindles on the legs.
2. The range **CANNOT** be installed directly adjacent to sidewalls, tall cabinets, tall appliances, or other side vertical surfaces above 36" (91.4 cm) high. There must be a minimum of 6" (15.2 cm) side clearance from the range to such combustible surfaces above the 36" (91.4 cm) counter height.
3. Within the 6" (15.2 cm) side clearance to combustible vertical surfaces above 36" (91.4 cm), the maximum wall cabinet depth must be 13" (33.0 cm) and wall cabinets within this 6" (15.2 cm) side clearance must be 18" (45.7 cm) above the 36" (91.4 cm) high countertop.
4. Wall cabinets above the range must be a minimum of 36" (91.4 cm) for open top burner units and 42" (106.7 cm) for sealed top burner units above the range cooking surface for the full width of the range. This minimum height requirement does not apply if a rangehood is installed over the cooking surface.



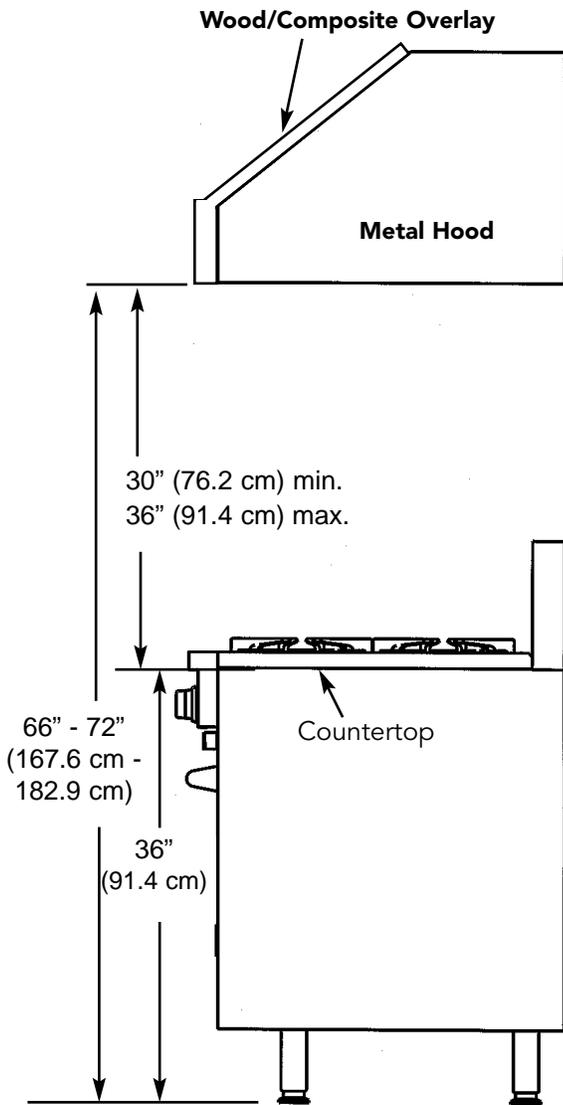
	Dim. A
30" W. Models	29 7/8" (75.9 cm)
36" W. Models	35 7/8" (91.1 cm)
48" W. Models	47 7/8" (121.6 cm)
60" W. Models	59 1/2" (151.1 cm)

	Dim. B (minimum)
Open Top Burners	36" (91.4 cm)
Sealed Burners	42" (106.7 cm)

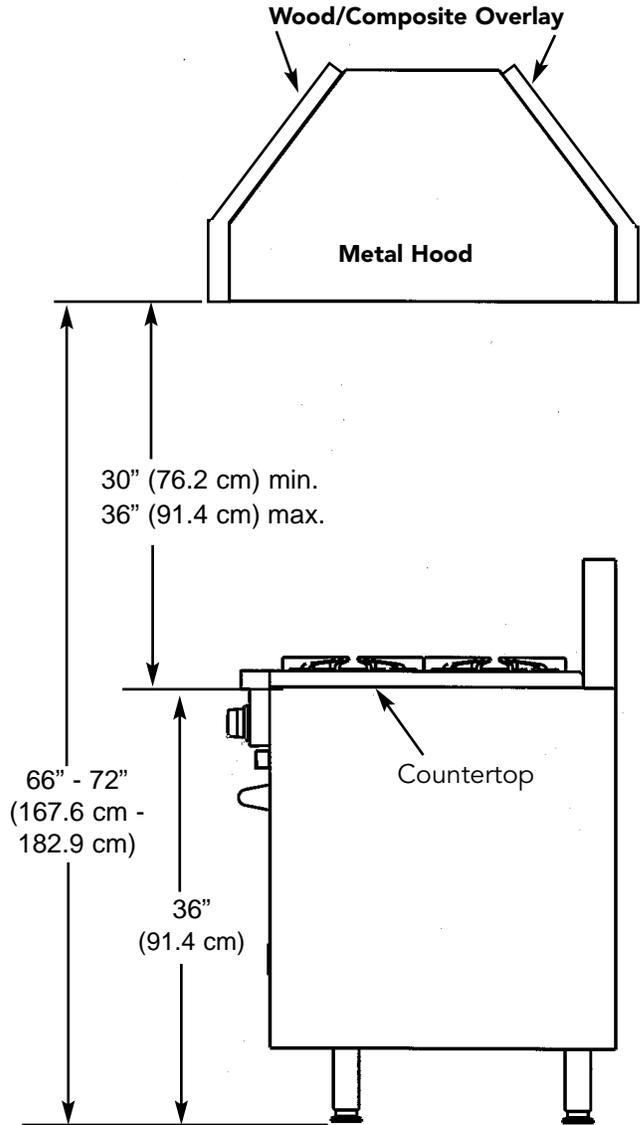
# WOOD/COMPOSITE OVERLAY INSTALLATION (Including Custom Ventilator Installation)

The bottom of a standard hood should be 30" (76.2 cm) min. to 36" (91.4 cm) max. above the countertop. This would typically result in the bottom of the hood being 66" (167.6 cm) to 72" (182.9 cm) above the floor. Refer to the rangehood installation instructions for additional information. These dimensions provide for safe and efficient operation of the hood.

## WALL INSTALLATION



## ISLAND INSTALLATION



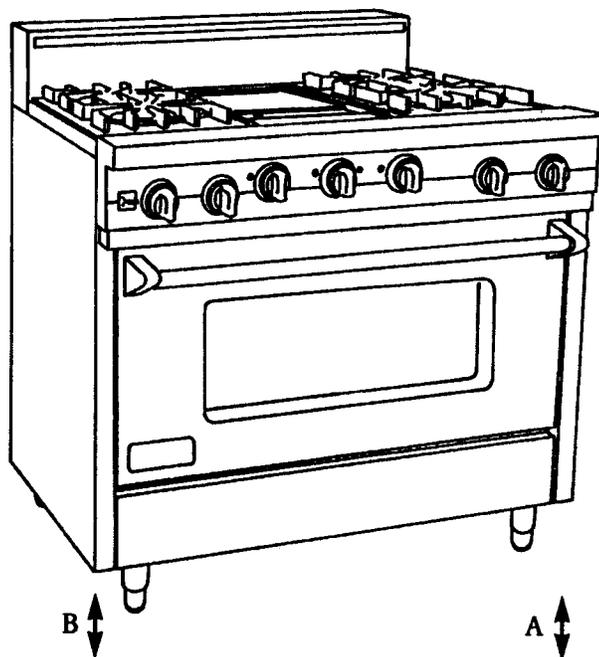
When installing or removing the range for service, a rolling lift jack should be used. Do not push against any of the edges of the range in an attempt to slide it into or out of the installation. Although all metal parts are deburred during manufacturing, accidents could occur if the range should be moved suddenly or violently. Pushing or pulling a range (rather than using a lift jack) also increases the possibility of bending the leg spindles or the internal coupling connectors.

## IMPORTANT: LEVELING/ADJUSTMENTS/ALIGNMENT

Careful leveling of the range is critical not only to performance, but also to allow the alignment of oven doors and drip tray. Closely follow the procedures below to ensure proper performance and appearance of the range. **The range being even slightly out of level will significantly contribute to misalignment of oven doors.**

1. If the floor is smooth and level, level the unit with the screw thread of the legs. Set the high corner of the range so that the top of the grate support is  $3/8"$  (.95cm) above the countertop, and level the range to the high corner.
2. If the floor is uneven or has a decided slope, level the unit with metal shims, as the adjustment required may exceed the thread available in the leg.
3. Proper and careful leveling of the range is necessary for proper alignment of the oven doors. The body of the range does not have a rigid frame to hold it into one position. This nonrigid framework allows the range to shift with unlevel floors or slanted cabinets. Moving any one of the adjustable leveling legs up or down will shift the range body. Increasing the length of the right front leveling leg will raise the right front corner of the range, moving the top of the door to the left. Lowering the right front leveling leg will cause the tip of the door to move to the right. Using the left front leveling leg will give you the opposite effect. Raising the left front corner will move the top of the door to the right. Lowering the corner will move the top of the door to the left. The rear leveling legs will also have an effect on the door alignment.
4. After the range is properly leveled, the drip tray handle may be aligned by loosening the screws and adjusting the handle horizontally within the limits provided by the slotted screw holes.
5. A level should be placed across the top of the range and the unit leveled both front-to-back and side-to-side. If it is not level, burner combustion may be erratic, liquid, or semi-liquid batters will cook at an angle, and the unit may not function efficiently.

- A. Right Side  
Front / Back  
Adjustable Legs
- B. Left Side  
Front / Back  
Adjustable Legs



## GAS CONNECTION

All gas connections must be made according to national and local codes. This gas supply (service) line must be the same size or greater than the inlet line of the appliance. This range uses an ISO7 or ISO128 inlet. The inlet depends on the end users national and local codes.

### 1. Manual Shut-off Valve:

This installer-supplied valve must be installed in the gas service line ahead of the appliance in the gas stream and in a position where it can be reached quickly in the event of an emergency. **In Massachusetts:** A "T" handle type manual valve must be installed in the gas supply line to the appliance.

### 2. Pressure Regulator

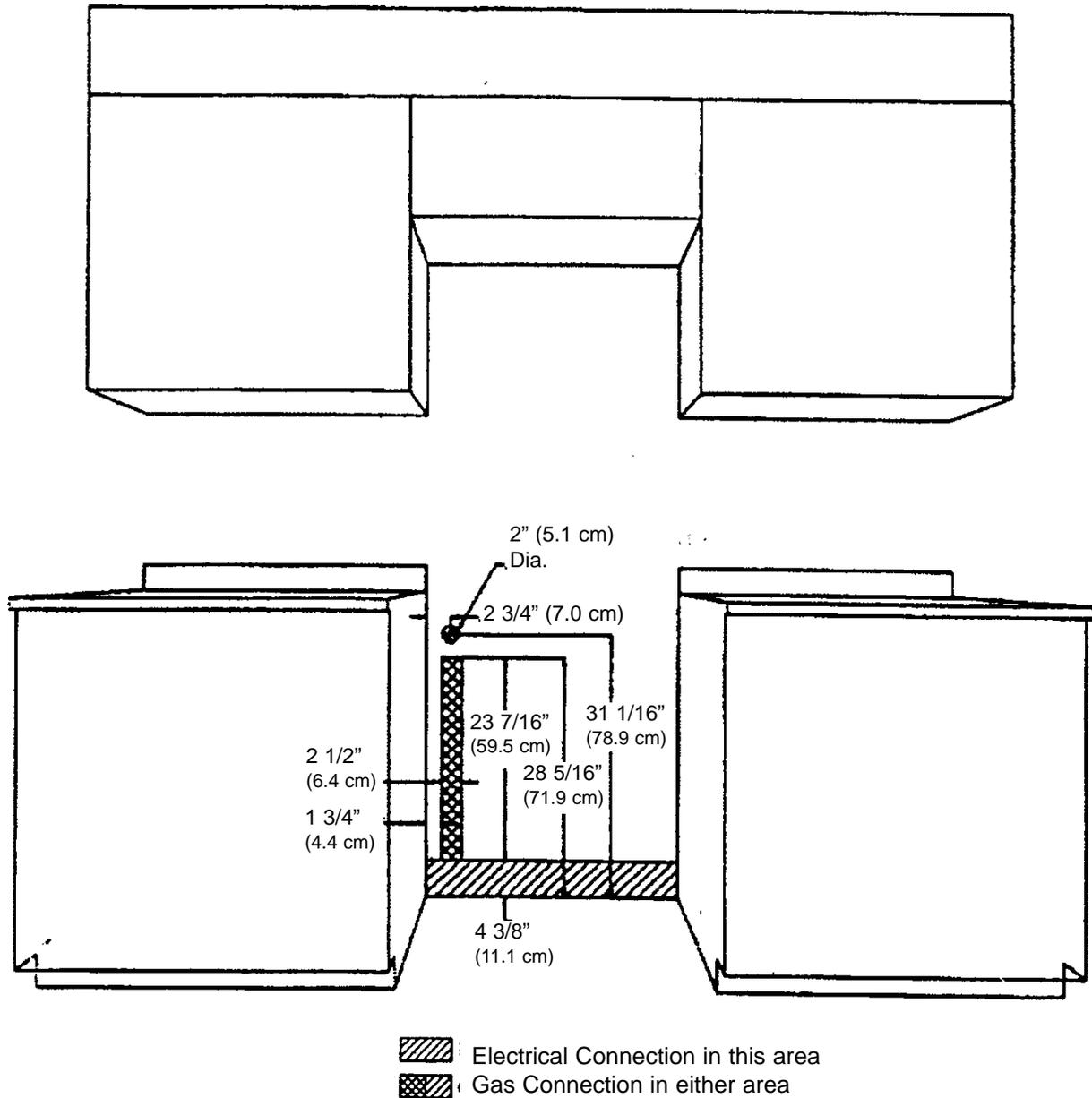
- a) All heavy duty, commercial type cooking equipment must have a pressure regulator on the incoming service line for safe and efficient operation, since service pressure may fluctuate with local demand. External regulators are not required on this range, because a regulator is built into each unit at the factory. Under no condition bypass this built-in regulator.
- b) Any conversion required must be performed by your dealer or a qualified licensed plumber or gas service company. Please provide the service person with this manual before work is started on the range. (Gas conversions are the responsibility of the dealer or end user.)
- c) This range can be used with Natural or LP/Propane gas. It is shipped from the factory adjusted for use with natural gas. The orifice hoods must be screwed snug when LP/Propane gas is used. (See LP/Propane conversion.)
- d) Manifold pressure should be checked with a manometer, natural gas requires 5.0" W.C.P. and LP/Propane requires 10.0" W.C.P. Incoming line pressure upstream from the regulator must be 1" W.C.P. higher than the manifold pressure in order to check the regulator. The regulator used on this range can withstand a maximum input pressure of 1/2 PSI (14.0" W.C.P.) If the line pressure is in excess of that amount, a step-down regulator will be required.
- e) The appliance, its individual shut-off valve, and pressure regulator must be disconnected from the gas supply piping system during any pressure testing of that system at pressures in excess of 1/2 psig (3.45 kPa).
- f) The appliance must be isolated from the gas supply piping system by closing its individual manual shut-off valve during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 psig (3.45 kPa).

### 3. Flexible Connections:

- a) If the unit is to be installed with flexible couplings and/or quick disconnect fittings, the installer must use a heavy-duty, AGA design-certified commercial flexible connector of at least 1/2" (1.3 cm) ID NPT (with suitable strain reliefs) in compliance with ANSI Z21.41 and Z21.69 standards.
- b) **In Canada:** CAN 1-6.10-88 metal connectors for gas appliances and CAN 1-6.9 M79 quick disconnect device for use with gas fuel.
- c) **In Massachusetts:** This appliance must be installed with a 36" (3-foot) long flexible gas connector

**CAUTION:** Leak testing of the appliance shall be conducted according to the manufacturer's instructions. Before placing the oven into operation, always check for leaks with a soapy water solution of other acceptable method. **DO NOT USE AN OPEN FLAME TO CHECK FOR LEAKS!**

## GAS/ELECTRICAL CONNECTION DIAGRAM



**NOTE:** If the gas supply is installed through the rear wall, the location **MUST** be 31 1/16" (78.9 cm) above the floor and 2 3/4" (7.0 cm) from the left hand side (when facing the unit) or within a maximum of 4 3/8" (11.1 cm) above the floor as specified in the drawing above.

## INFRARED BROIL BURNER

1. An electric ignitor is used to light the burner. DO NOT attempt to insert any object into the openings of the protective shield surrounding the ignitor coil. DO NOT attempt to clean this area.
2. UNIVERSAL Models (NAT. or LP) are shipped from the factory orificed for Natural Gas. IF THEY ARE TO BE USED ON LP/PROPANE GAS, the burner orifice spud must be changed. (This will be found attached to the inlet pipe). BE SURE to use the proper burner spud for the gas in use.
3. **BEFORE PLACING THE BACK TRIM DEVICE ON THE RANGE AND BEFORE PLACING THE RANGE INTO THE CABINET, THE INFRARED BURNER SPUD MUST BE PHYSICALLY CHANGED.**

## OVEN TUBULAR GAS BURNER ADJUSTMENT (See Illustration #1)

Check the gas supply, and set the regulator to proper supply of gas. A properly adjusted burner should be stable and quiet. The flame should have a sharp, well defined blue inner cone with no yellow tipping. The flame should also be stable and uniform with no flames lifting off the burner ports.

To gain access to the oven burner adjustments:

1. Remove oven bottom panel.
2. Remove U-shaped burner venturi cover.
3. Locate the air shutter and loosen the set screw that holds the air shutter in place.
4. Light the burners by rotating the thermostat to a baking temperature.
5. Using a 1/2" (1.3 cm) open-end wrench, adjust orifice hood to obtain a sharp, well defined blue inner cone approximately 1/2" (1.3 cm) long. **THE FLAME SHOULD NOT EXTEND INTO THE OVEN BOTTOM VENT SLOTS.**
6. With a proper flame height, adjust the air shutter to obtain a blue flame with no yellow tipping that contacts the burner at the burner ports.
  - a) Open the air shutter gap to eliminate yellow tipping.
  - b) Close the air shutter gap to prevent a noisy flame that lifts off the burner.
7. Recheck the orifice hood adjustment for proper gas flow.
8. Turn the thermostat off.
9. Tighten the air shutter set screw being careful not to change the adjusted shutter gap.

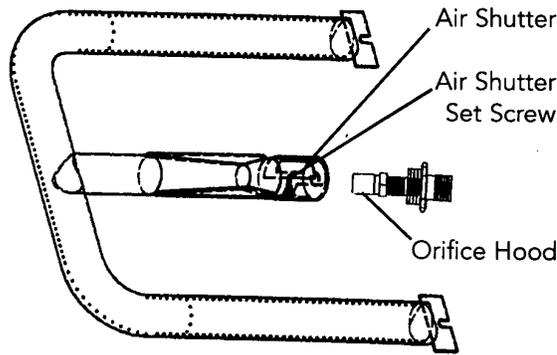
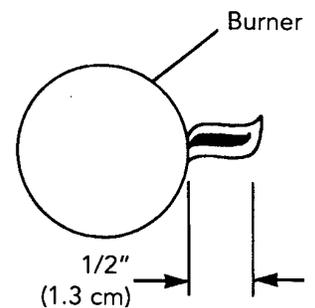


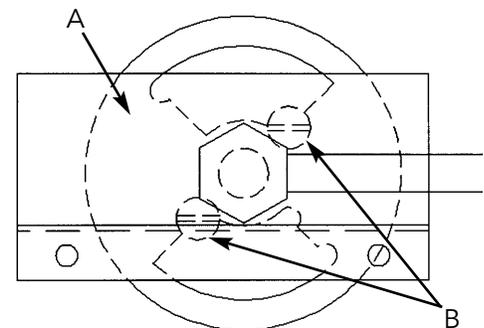
Illustration #1



## WOK BURNER ADJUSTMENTS

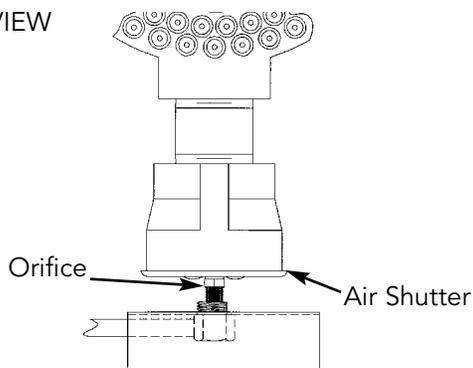
To gain access to the burner for adjustments:

1. Remove the grate and grate support.
2. Locate the air shutter "A" and loosen the two screws "B" that holds the air shutter in place.
3. Light the burner and turn the burner knob to the high position.
4. With a proper, high flame height, adjust the air shutter to obtain a blue flame with no yellow tipping that sits on the burner at the burner ports.
  - (a) open the air shutter gap to add more air and to eliminate yellow tipping.
  - (b) close the air shutter gap to reduce the air and to prevent a noisy flame that lifts off the burner.
5. Turn the surface burners off.
6. Tighten the air shutter screws.
7. Replace the grate support and grate.

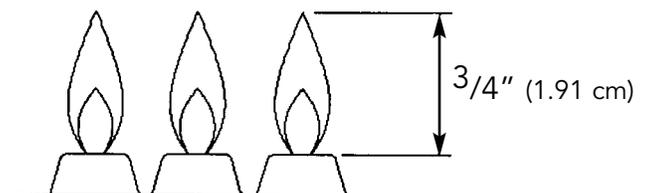


AIR SHUTTER

OVERHEAD VIEW



FLAME HEIGHT



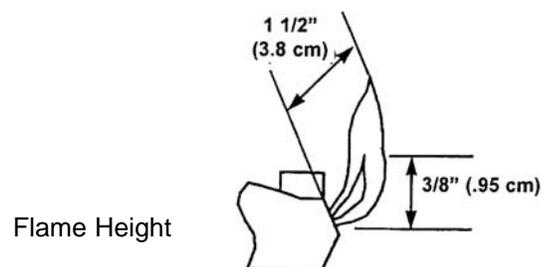
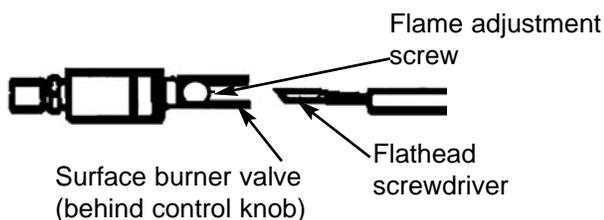
## SURFACE BURNER ADJUSTMENTS (For Open Surface Burners) (See Illustration 2)

To gain access to the surface burner adjustments:

1. Remove the grates, burner caps, bowls and grate supports.
2. Located the air shutter (A) and loosen the screw (B) that holds the air shutter in place.
3. Remove the drip tray, allowing you work space to adjust the orifice hood (C).
4. Replace grate support and burner bowls (this allows for correct air flow, as in normal use).
5. Light each burner by rotating the burner valve shaft (D) to high position.
6. With a proper flame height, adjust the air shutter (A) to obtain a blue flame with no yellow tipping that sits on the burner at the burner ports.
  - a) Open the air shutter gap to eliminate yellow tipping.
  - b) Close the air shutter gap to prevent a noisy flame that lifts off the burner.
7. Turn the surface burners off.
8. Replace the drip tray.
9. Remove grate support and burner bowls.
10. Tighten the air shutter screw (B) being careful to not change the adjusted shutter gap.
11. Replace the grate supports, burner bowls, burner caps, and grates.
12. Turn the lighted burners to the low flame setting.
13. Insert a narrow, flat-blade screwdriver into the hollow shaft of the surface burner valve, and engage the slotted low flame adjustment screw. The low flame should be a small flame that comes just to the top edge of the burner. Rotate the adjusting screw (E) clockwise to lower the flame or counter clockwise to increase the flame. Turn the burner off and relight several times, turning to the low position. The low flame should light at every port each time. Readjust as needed.

## SURFACE BURNER ADJUSTMENT (For Sealed Surface Burners) (See Illustration 2)

1. Turn the lighted burners to the low flame setting. Remove the knob.
2. Insert a narrow flat-blade screwdriver into the hollow shaft of the surface burner valve located behind the control knob and engage the slotted low flame adjustment screw. The low flame should be a small flame that comes just to the top edge of the burner. Rotate the adjusting screw clockwise to lower the flame or counter-clockwise to increase the flame. Turn the burner off and relight several times, turning to the low position. The low flame should light at every port each time. Readjust as needed.



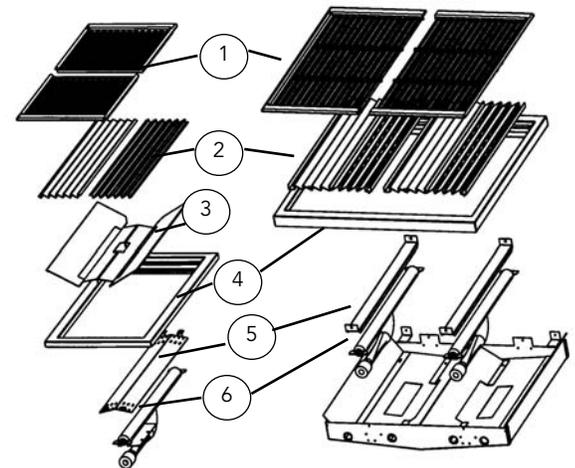
# GRILL/GRIDDLE BURNER ADJUSTMENT

## Grill (Illustration #)

1. The grill burner orifice and air shutter are located beneath the front end of the grill assembly. To gain access to the adjustments, remove the grill grate, flavor generator plates, grate support, and the burner shield.
2. Remove the screw at the front and rear of the burner.
3. Lift the tube burner off the orifice and locate the air shutter adjustment screw at the end of the burner.
4. Loosen the screw and adjust the air shutter to the desired setting. (for natural gas open shutter approximately 7/16" [1.1 cm]; for LP/Propane gas open the air shutter approximately 3/8" [0.98 cm]).
5. Tighten the screw, then replace tube burner on orifice.
6. Check flame for desired height before replacement of the above parts.
7. Use a 1/2" (1.3 cm) deep socket to adjust the orifice head on Nat. gas only (LP tightened to fixed orifice); turn clockwise to decrease the flame and counter clockwise to increase the flame. With a proper flame height, adjust the air shutter to obtain a blue flame with no yellow tipping that sits on the burner at the burner ports.
  - (a) Open the air shutter gap to eliminate yellow tipping.
  - (b) Close the air shutter gap to prevent a noisy flame that lifts off the burner.

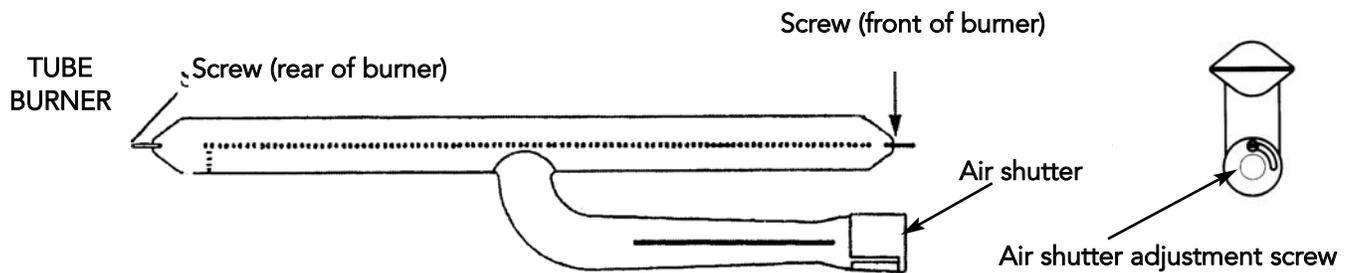
12" Grill Assembly

24" Grill Assembly



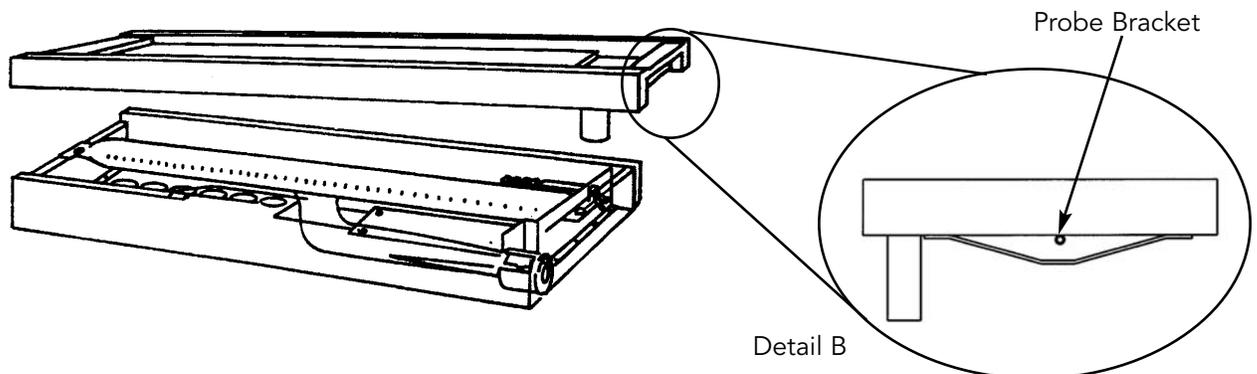
- |                            |   |
|----------------------------|---|
| 1. Grill Grates            | 5. Grill Burner Shield<br>(Do not remove from burner) |
| 2. Flavor Generator plates | 6. Burner<br>(Do not remove)                          |
| 3. Heat Deflector          |   |
| 4. Grill Frame             |   |

Illustration 3



## Griddle (Illustration 4)

1. To gain access to the burner orifice and air shutter, remove grates and grate supports located on either side of the griddle. Lift and remove griddle. **CAUTION:** Before fully removing the griddle assembly, lift the griddle assembly approximately 4" above the griddle box. Carefully remove the temperature probe from the probe bracket. (See Detail "B") **Make note of the position of the temperature probe so it can be reinstalled properly.** Failure to properly reinstall can result in damage to the temperature probe.
2. Carefully remove ignitor and put to the side.
3. Remove the metal plate located below the burner.
4. Remove the screws at the front and rear of the burner, remove the burner tube and locate the air shutter adjustment screw at the end of the burner tube.
5. Flame adjustments are the same as grill - see #4-#7 under Grill.
6. Replace all griddle parts, griddle, grate supports, and grates.



# DSI SPARK MODULE SPECIFICATIONS

## Power Requirements

Input Voltage range (L1-N) 102 to 132 VAC, 60/50 Hz 135 mA current typical

## Control Outputs

Bake or Broil Burner

Coil Pull-in pulse 54VDC  $\pm$  10% @ 250mA

Coil Hold-in 36 mA minimum

Life Requirements 2000,000 cycles

Bake and Broil Spark: 16.5 KV @ 50 PFD load @ nominal conditions  
Design Life 2,000,000 sparks  
Spark Rate 3 sparks then 1 second delay (repeated Cadence)

## Control Inputs

Flame Sense Type: Flame Rectification

Minimum Flame Sense: 1 $\mu$ A. min.

Flame Sense Model: A 25 M $\Omega$  resistor in series with a 1N4004 diode

## Control Timing

All timings are 60 Hz; timings will be 20% longer at 50 Hz. Times are +/- 0.2 seconds except for flame failure response time.

Trial for ignition period	10.0 sec	Flame failure response time:	30.0 sec max.
Lock out time:	15.0 sec	Flame establishing period:	0.5 sec
Conditional prepurge time:	30.0 sec	Recycle time:	30.0 sec
Interpurge time:	30.0 sec	Ignition attempts:	3
		Ignition recycles:	1

## Description of Operation

### **Overview**

The GDS/DSI control interfaces with a thermostat, a valve, and spark electrodes to provide a complete direct spark ignition system for gas ranges. The DSI is a 0 + 2 DSI system: 2 oven burner spark outputs with flame sense and valve enable safety supervision. Contact closure inputs from the thermostat initiates micro controlled logic, which supervises gas distribution to an oven burner and the ignition/flame sense safety circuits.

### **Oven Burner Ignition**

Closure of the thermostat output contacts (BR and/or BA) applies L1 to the Broil (J1-7) and/or Bake (J1-6) inputs. The Bake and/or Broil input is detected by the micro, which operates the gas valve and spark ignition sequence. The Logic Flow Diagram and Timing Diagram illustrates the typical valve/ignition supervision sequence provided by the micro as follows:

Power up initializes the micro ports and performs an internal self-test and a flame safety check. Failure of this test sequence aborts operation in the lockout mode, which safety inhibits gas flow and sparking to prevent ignition of any residual gas.

Verification of the safety checks initiates the Valve Trial Timer, which energizes the bake or broil solenoid. The spark output rate is coordinated to the flame sense sequence, confirmation of flame sense typically occurs after 2 sparks. If flame is detected, the spark is inhibited, and the valve will be enabled/opened as long as flame sense is normal and a call for heat is detected. If flame is not detected, the spark rate will continue for the full duration of Valve Trial Time. Combustion failure during the ignition trial period or after the flame has been established, will de-energize the solenoid for a 30-second interpurge time before initiating another trial for ignition. If the control fails to establish proof of flame after a specified number of ignition attempts, the external lockout is executed.

## Description of Operation (con't)

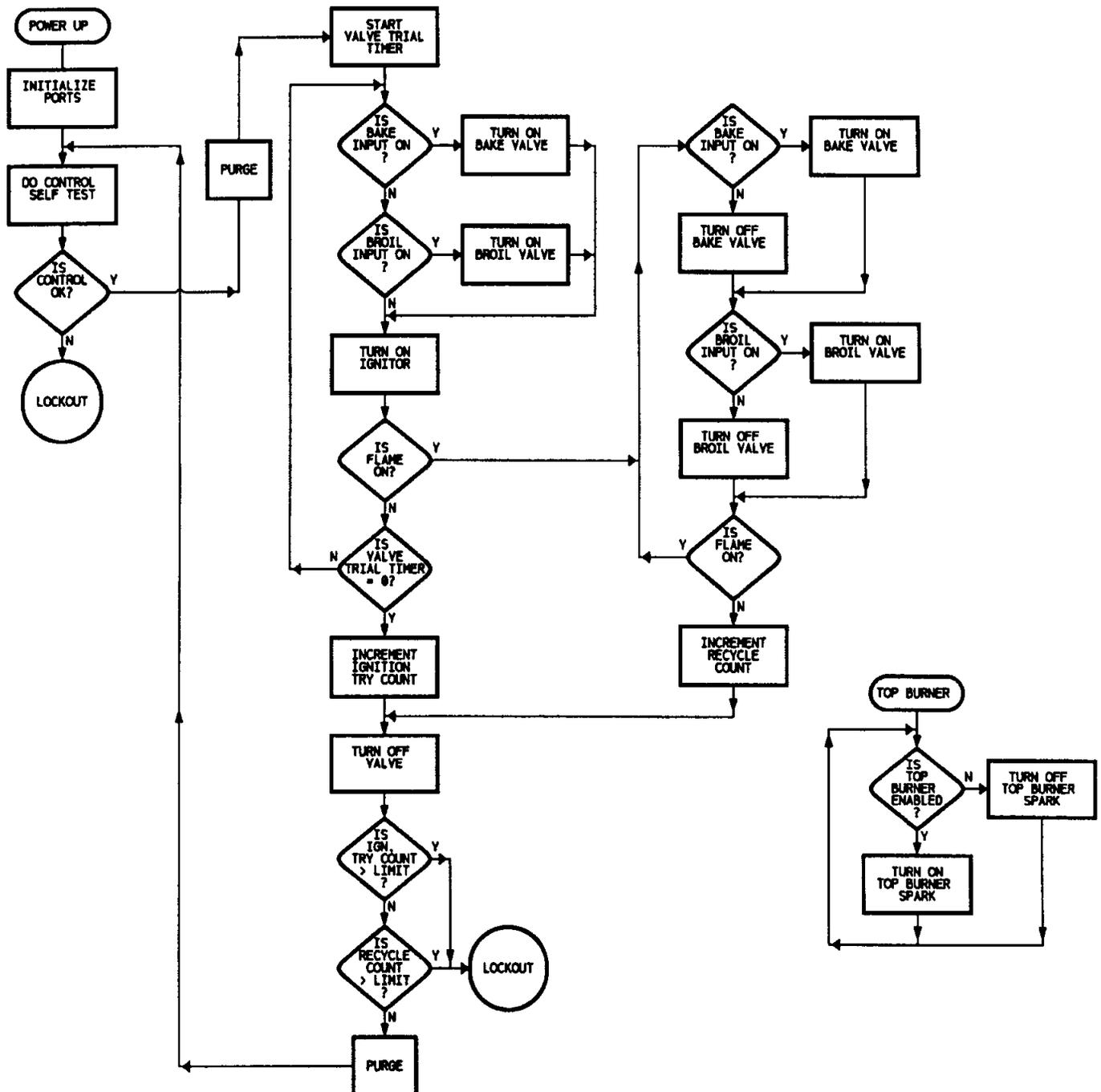
### Lockout

The control will lockout if any self-checks fail during normal operation. Also, the control will lockout if it failed to ignite gas after the selected number of ignition attempts or ignition recycles. In lockout the valve and ignition means are turned off. The control must be manually reset by cycling bake or broil off and back on.

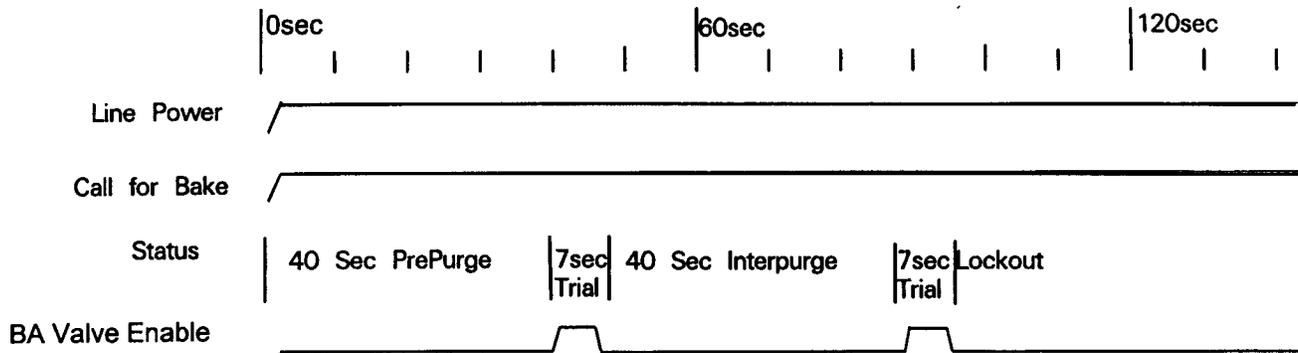
### Flame with Gas Valve Off

If there is proof of flame for ten seconds with the gas valve off, the control will go to lockout. If there is flame for less than ten seconds, the control will reset.

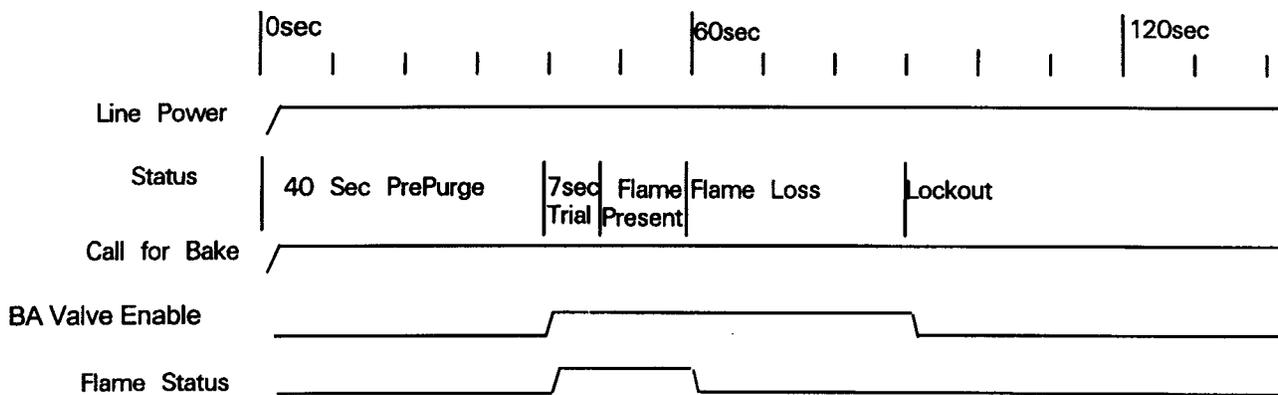
## LOGIC FLOW DIAGRAM



## TIMING DIAGRAM: NORMAL IGNITION CYCLE



## TIMING DIAGRAM: POWER UP CYCLE - IGNITION, FLAME LOSS



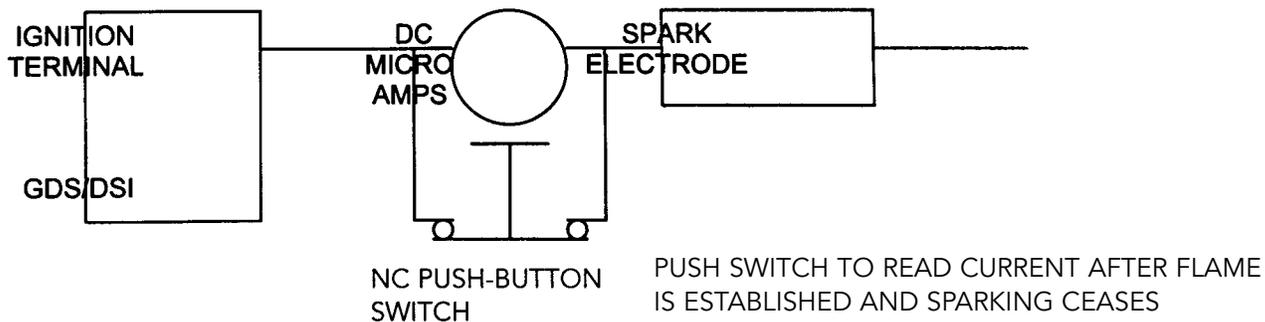
### Flame Sense Current Measurement

Local Sense:

Connect a DC Micro-amp meter in series with the high voltage lead and the spark electrode wire as shown.

Push switch to read current **after** flame is established and the spark output is de-energized.

LOCAL SENSING: CONNECT DC MICRO-AMP METER IN SERIES WITH HIGH VOLTAGE LEAD AS SHOWN



## INITIAL IGNITION OF BURNERS

All ovens are tested before leaving the factory. When the oven is connected to the gas supply and the electrical service, the installer should use the "Performance Checklist" for his final checks. **NOTE:** This model is equipped with a direct spark ignition system for both bake and boil burners. On initial power up, there will be a 30-60 second delay for the electronics to reset before ignition.

When adjustments are required, contact your dealer/installer for corrections. If assistance is not available, contact Viking Range Corporation Preferred Service for the nearest authorized service agent at (888) 845-4641. All corrections to installation are the responsibility of the dealer/installer or end user.

## REPLACEMENT PARTS

Only authorized replacement parts may be used in performing service on the oven. Replacement parts are available from factory authorized parts distributors. Contact Viking Range Corporation Preferred Service, (888) 845-4641, for the nearest parts distributor in your area.

## PERFORMANCE CHECKLIST

The installer should carry out the following performance checks. Refer to instructions below.

1. Check open top burner ignition.
2. Check air shutter adjustment - sharp blue flame, no yellow tipping. (See "Surface Burner Adjustment")
3. Check low flame adjustment - surface burner valve center stem adjustment.
4. Check griddle ignition - all burner ports.
5. Cycle griddle burner.
6. Check air shutter adjustment - sharp blue flame, no yellow tipping. (See "Grill/Griddle Burner Adjustment")
7. Check grill ignition - all burner ports.
8. Check air shutter adjustment - sharp blue flame, no yellow tipping. (See "Grill/Griddle Burner Adjustment")
9. Check low flame adjustment - grill valve center stem adjustment.
10. Visually check tubular burner reignition to be sure both sides are relighting each time.
11. Check for gas leaks (odors) at all gas connections.
12. Check oven bake and convection bake function. **NOTE:** This model is equipped with a direct spark ignition system for both bake and broil burners. On initial power up, there will be a 30-60 second delay for the electronics to reset before ignition.
13. Check self-clean function - door will lock and in approximately 30 seconds and the broil burner will ignite. If there is excess air in the gas line, the electrode will not sense flame and will shut-off gas to the burner. Wait 30 seconds and re-try ignition. **CAUTION:** Do not run self-clean cycle for more than 10 minutes with oven racks and rack supports inside oven. This could cause them to discolor due to the high temperature required for self-cleaning.

## FINAL PREPARATION

1. Some stainless steel parts may have a plastic protective wrap which must be removed. The interior of the oven should be washed thoroughly with hot, soapy water to remove film residues and any installation dust or debris before being used for food preparation, then rinsed and wiped dry. Solutions stronger than soap and water are rarely needed.
2. All stainless steel body parts should be wiped with hot, soapy water and with a liquid cleaner designed for this material. If buildup occurs, do not use steel wool, abrasive cloths, cleaners, or powders! If it is necessary to scrape stainless steel to remove encrusted materials, soak with hot, wet cloths to loosen the material, then use a wood or nylon scraper. Do not use a metal knife, spatula, or any other metal tool to scrape stainless steel! Scratches are almost impossible to remove.

**NOTE:** These installation instructions should remain with the unit for future reference. The electrical diagram is located beneath the drip tray in the rear corner of the burner box. Remove the right rear burner bowl and pull the drip tray forward approximately 6" (15.2 cm).

# WIRING DIAGRAM VGSC FREESTANDING GAS SELF-CLEAN RANGES

**SELF CLEAN TIMER/BOARD**

	LS-M	LS-L	T-T	T-T
OFF				
INITIATE CLEAN UNTIL 10 SEC. AFTER DOOR LOCK SW CLOS				
10 SEC. AFTER DOOR LOCK SW CLOS				
THRU 3 1/2 HOUR CLEAN CYCLE				
AFTER 3 1/2 HOUR CLEAN CYCLE				
2 SEC. AFTER DOOR LOCK SW CLOS				

**6 POSITION SELECTOR SWITCH**

POSITION	1-11	1-12	10	3-9	4-8	5-6	5-7
OFF	0	0	0	0	0	0	0
BAKE	0	X	0	0	0	0	0
CONV BAKE	0	X	0	0	0	0	X
BROIL	X	0	0	0	0	0	0
CONV BROIL	X	0	0	0	0	0	X
CLEAN	0	0	X	X	X	X	0

**DOOR LOCK**

UNLOCKED: SW. SW. SW.

LOCKED: SW. SW. SW.

**AUTO RESET**

1-2-1-3

BELOW 575eFR25eF

ABOVE 575eFR25eF

O = OPEN    X = CLOSED

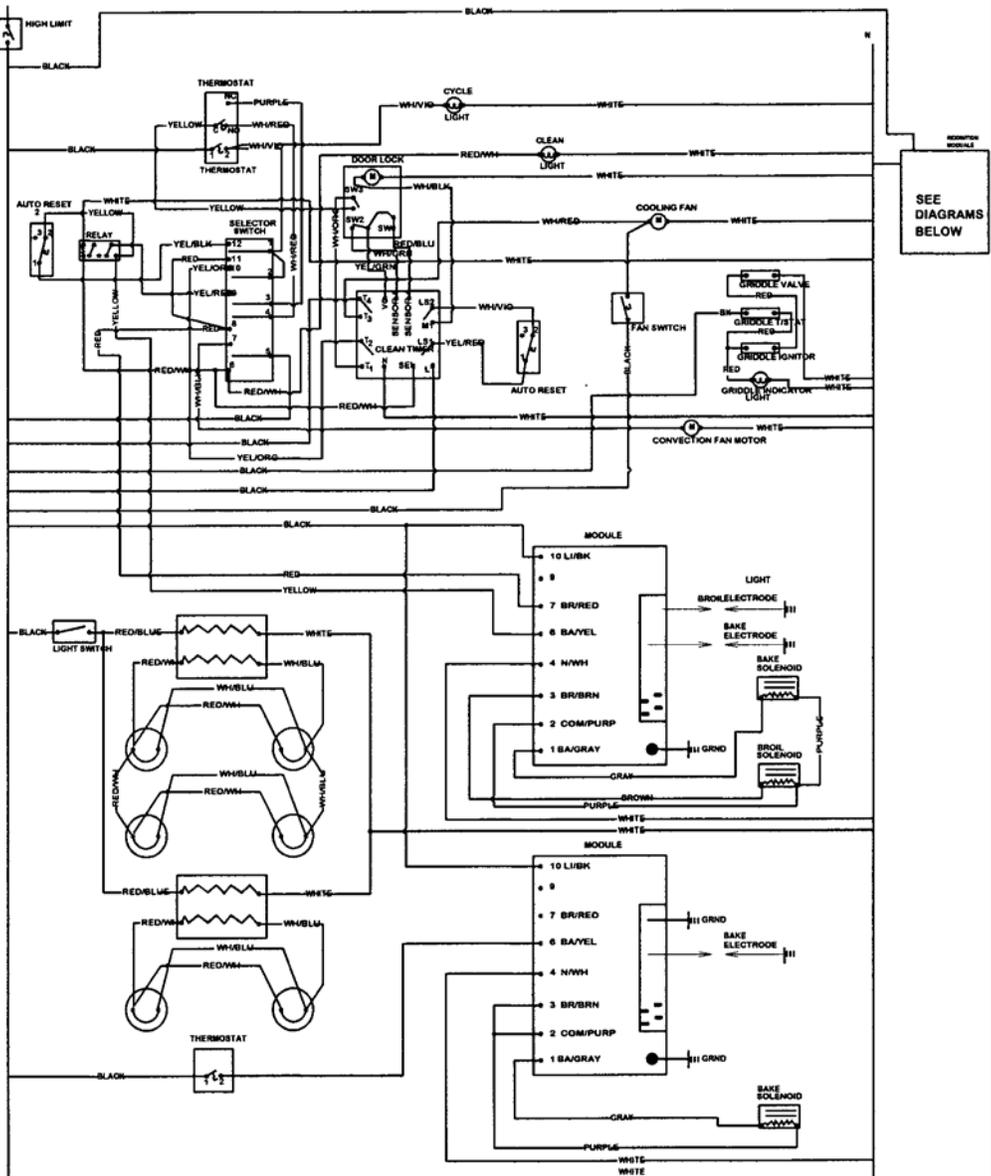
FOR CONNECTION TO THE FACTORY INSTALLED TERMINAL BLOCK USE COPPER OR ALUMINUM CONDUCTORS

**WARNING**-THIS UNIT MUST BE GROUNDED. SEE INSTALLATION INSTRUCTIONS FOR PROPER GROUNDING PROCEDURES.

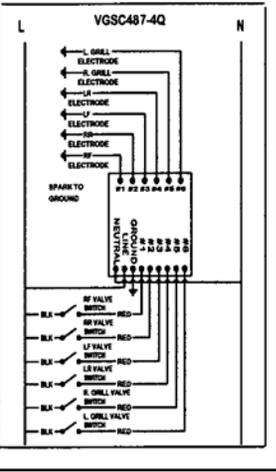
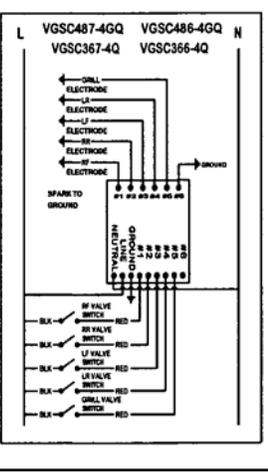
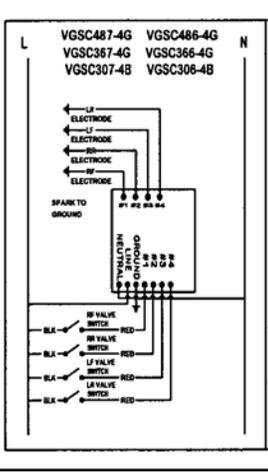
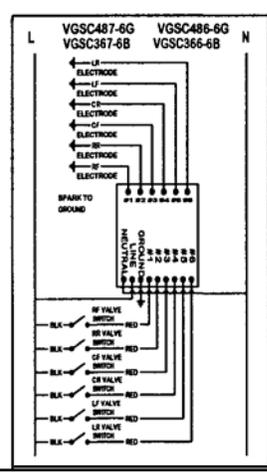
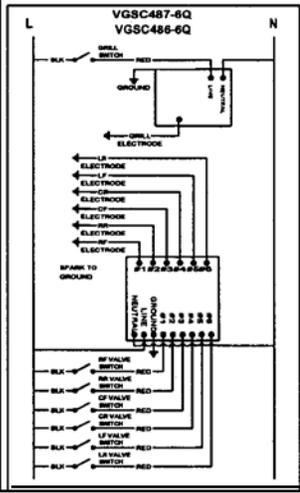
**CAUTION**- LABEL ALL WIRES PRIOR TO DISCONNECTION WHEN SERVICING CONTROLS. WIRING ERRORS CAN CAUSE IMPROPER AND DANGEROUS OPERATION. VERIFY PROPER OPERATION AFTER SERVICING.

**NOTE:** TRAILERS OR STRIPES WILL BE THE SECOND COLOR IN A COLOR COMBINATION

REFER ONLY TO FEATURES WHICH ARE EQUIPPED WITH THIS UNIT.



SEE DIAGRAMS BELOW



Specifications subject to change without notice





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For more product information,  
call 1-888-VIKING1 (845-4641)  
or visit the Viking Web site at  
[vikingrange.com](http://vikingrange.com)