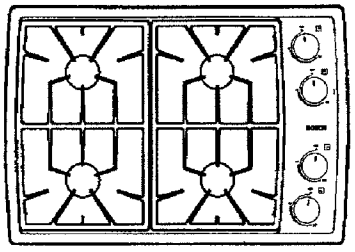
BOSCH

SERVICE MANUAL

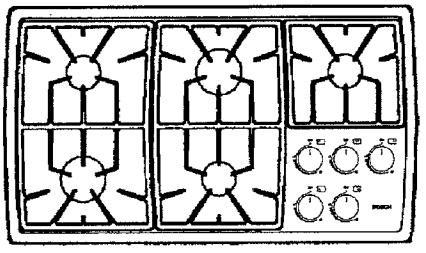
for

GAS COOKTOPS

with FULL SURFACE GRATES



30" MODELS
NGT73, NGP73



36" MODELS
NGT93, NGP93

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TITLE **PAGE**

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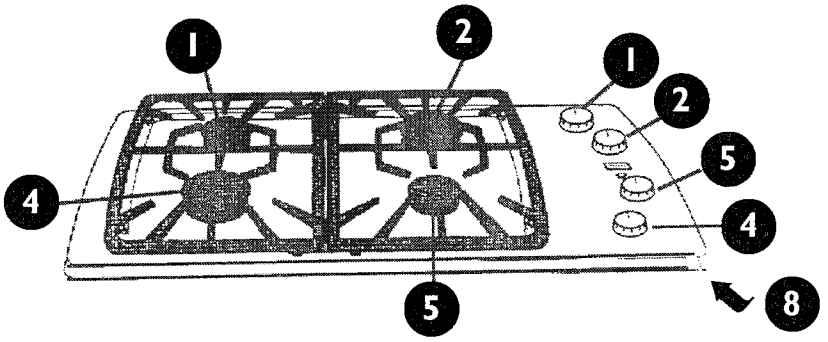
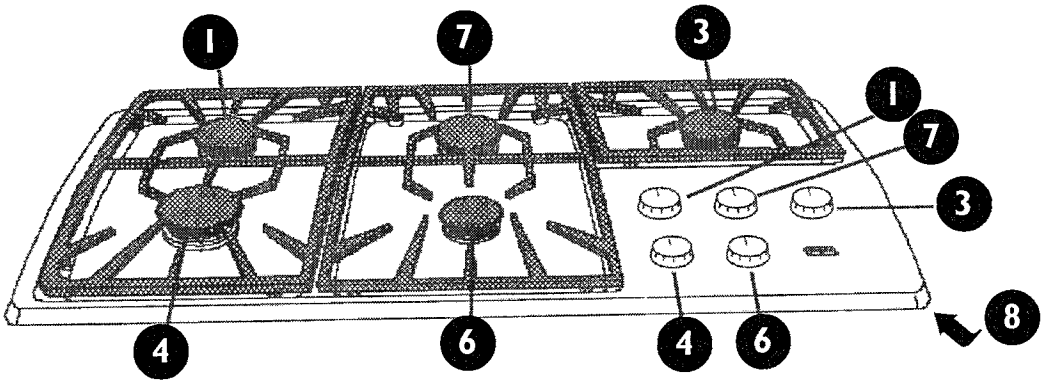
FEATURES OF COOKTOP

30" Models



36" Models



KEY NO*	LOCATION	BTU RATE
1	Left Rear	9,100
2	Right Rear-30"	11,000
3	Right Rear-36"	9,100
4	Left Front	12,500 - NGT Model 15,000 - NGP Model
5	Right Front-30", Simmer Burner	6,500/950
6	Center Front-36", Simmer Burner	6,500/950
7	Center Rear-36"	11,000
8	Serial/Number/Data Plate	

* Key numbers 1-7 also correspond to the control knob location for the burner.

COOKTOP OPERATION

The following pages explain how each feature on the gas cooktop works and how to get the best cooking results.

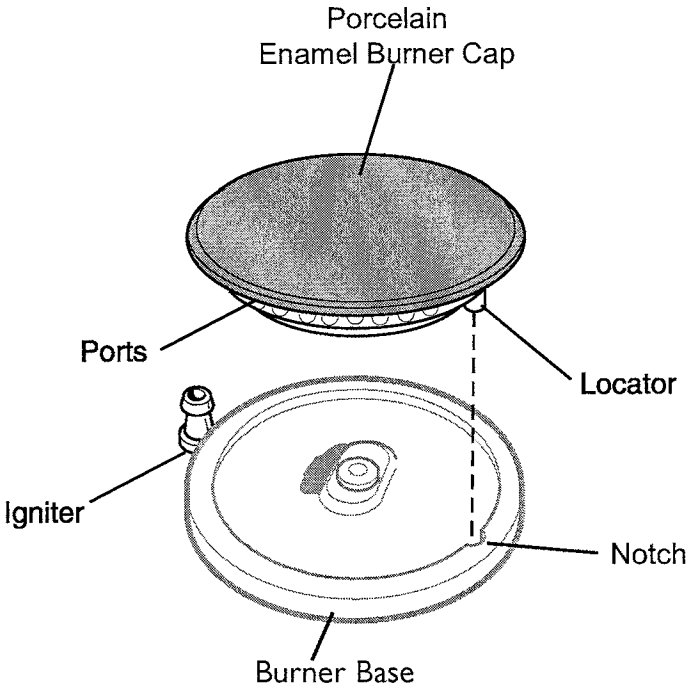
Follow these hints when cooking on the cooktop:

- Use proper cookware. (See Page 6.)
- Center the pan over the burner before turning the burner on.
- Refer to the Cooking Chart on Page 7 for suggested flame settings.

Sealed Burners

Your new cooktop has sealed gas burners. There are no burner parts under the cooktop to clean, disassemble or adjust. Your cooktop has two different burner cap sizes, large and medium. Match the pan to the size burner.

Burner Caps

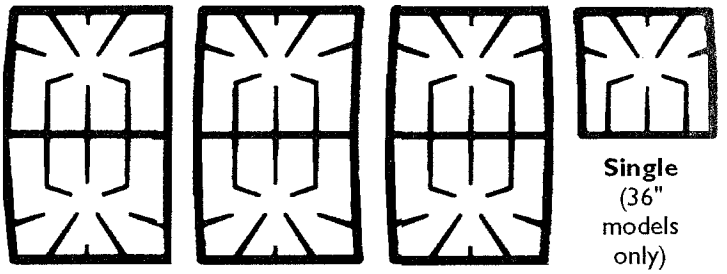


The burner cap is porcelainized steel. On the underside of the cap is one locator which must fit into the corresponding notch on the burner base. If the burner cap is not placed correctly, the burner may not light or the flame may not burn completely or correctly.

WARNING: To prevent flare-ups do not use the cooktop without all burner caps and all burner grates properly positioned.

Burner Grates

The position of each double grate is labeled on the underside edge of the grate as shown in the figure below.



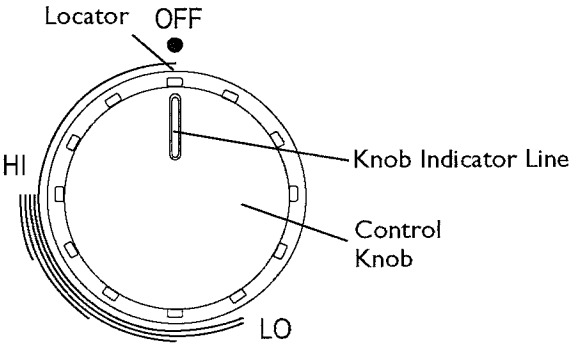
Universal (30" models only) **Side** **Center**

30" Models have two universal grates. Position the straight side in the center. They are interchangeable by rotating 180°.

36" Models have one side grate, one center grate and one single grate. Position the grates on the cooktop as illustrated above.

WARNING: To prevent flare-ups all grates must be properly positioned on the cooktop whenever the cooktop is in use. Each of the four feet must be placed into the corresponding dimples in the cooktop. See illustration on Page 8. Do not use a grate if the rubber feet are missing or damaged.

Burner Control Knobs



STANDARD BURNER CONTROL

COOKTOP OPERATION

Burner Control Knobs (continued)

The standard burner controls have an infinite number of heat settings with no fixed positions.

To operate: Select the appropriate control knob, push down and turn counterclockwise to the desired flame size. Turn OFF by turning the control knob clockwise to OFF.

A rubber grommet is located under each control knob.

To remove knob and grommet: With burner in the OFF position, gently lift knob up and off. Gently pull grommet toward center and lift out.

> **WARNING:** To avoid electric shock, do not reach through opening into rough-in box.

To replace grommet and knob: Replace grommet by placing center groove around cooktop. The rubber grommet should be firmly attached around the cooktop opening. Place the control knob indicator line at the OFF position; press down firmly.

Electronic Ignition/Reignition

The cooktop uses electronic igniters to light the burners. There is no pilot light. Each burner has its own igniter. If a burner flame blows out during use, the burner will automatically reignite.

CAUTION: All igniters spark when any single burner is turned ON or the reignition system is activated. Do not touch any of the burners when the cooktop is in use.

The ignitor should be clean and dry for proper operation.

- Avoid getting water or food on the igniter.
- If the igniter is wet or soiled, it may spark without igniting the burner, or even spark continuously when a flame is present.

Note: If the burner does not light within 4 seconds, turn the burner off. Check to see that the cap is positioned correctly on the burner base and the igniter is clean and dry. If a burner still fails to ignite, see *Before Calling for Service* on Page 10.

Typical Flame Characteristics

The burner flame should be blue in color and stable with no yellow tips, excessive noise or fluttering. It should burn completely around the burner cap.

Foreign particles in the gas line may cause an orange flame during initial use. This should disappear with use. Check burner cap to make sure port holes are not obstructed. If the ports are clogged, see *Before Calling for Service* on page 10.

Note: An audible "pop" may be heard when the burner is turned off manually. The "popping" may be louder with LP gas than with natural gas. This is normal.

Power Failure

In the event of a power failure, the burners can be ignited manually.

If the cooktop is being used when a power failure occurs, turn all the burner control knobs to the **OFF** position. The burners can then be ignited manually by holding a match at the ports and turning the control knob to the HI position. Wait until the flame is burning all the way around the burner before adjusting the flame to the desired height.

Replacing The Maintop

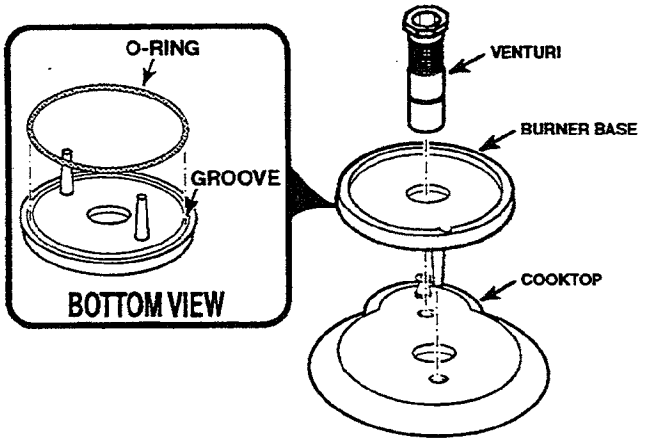
⚠ WARNING

Turn off the gas supply and the power circuit to the cooktop at the main (house) junction box before servicing this unit.

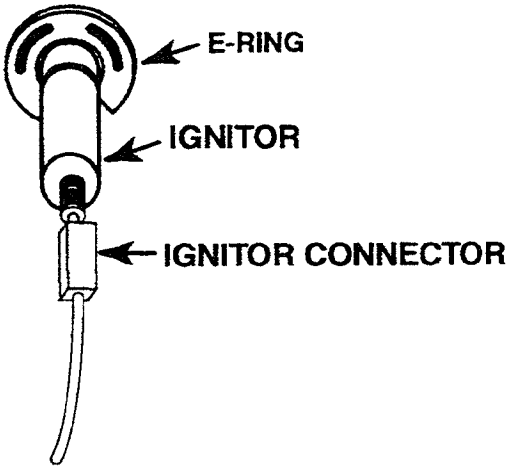
⚠ CAUTION

When you work on the cooktop, be careful when handling the sheet metal parts. There are sharp edges present and you can cut yourself if you are not careful.

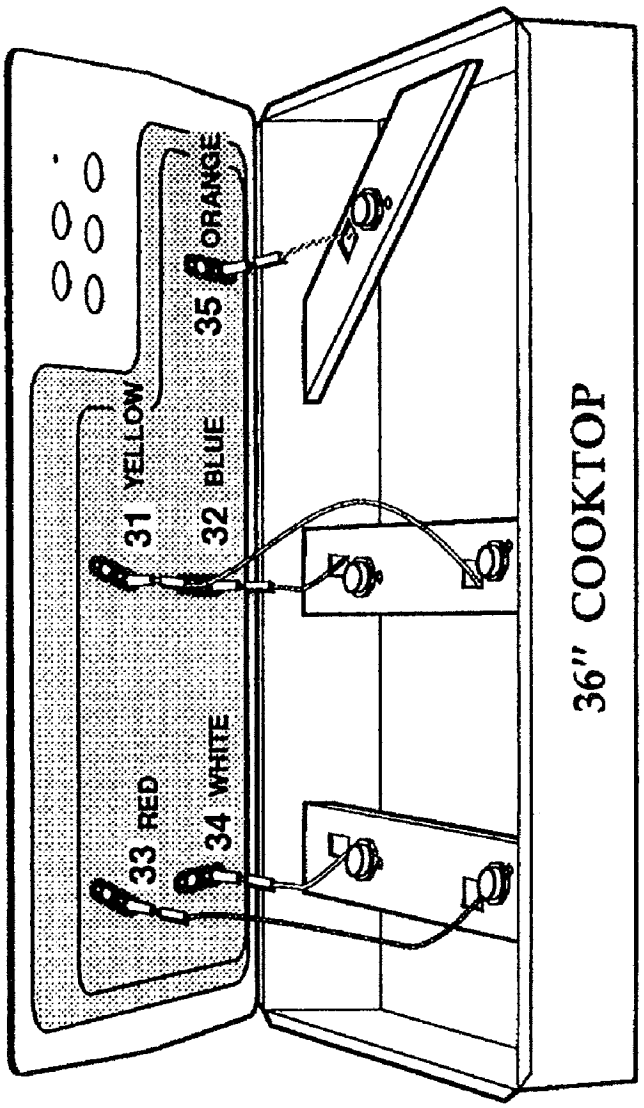
1. Turn off the gas supply and the electrical power going to the cooktop.
2. Remove the grates and burner caps from the cooktop.
3. Remove the knobs from the controls.
4. Using a $^{25}/_{32}$" (20 mm) socket, unscrew and remove the venturi from each of the burner bases, then lift the burner bases and rubber o-rings from the maintop.

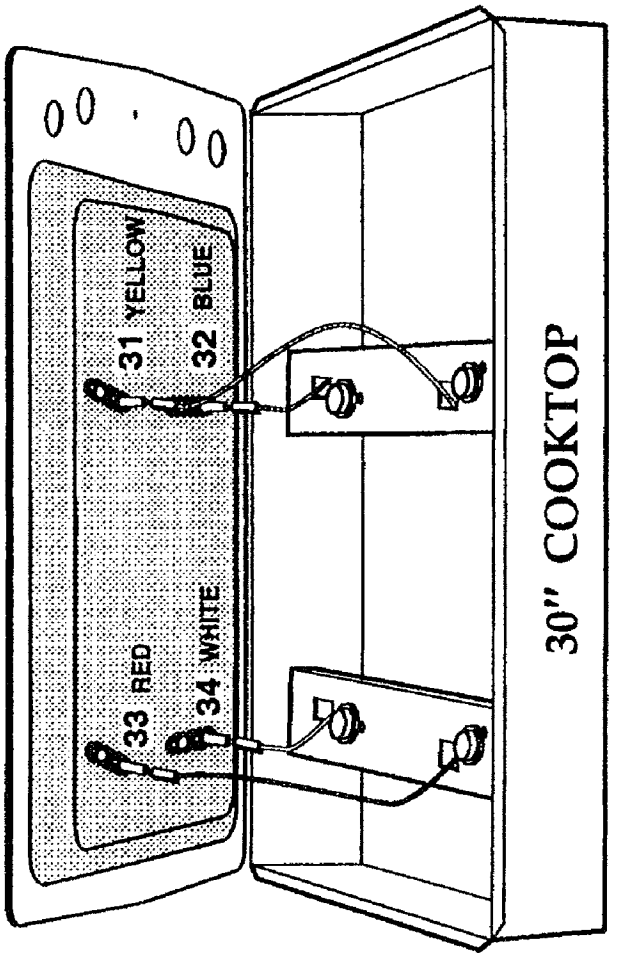


6. Unplug the ignitor wires from the ignitor pins and remove the maintop (refer to the next page for the ignitor wire connections).



7. Unsnap the e-ring from the groove in each of the ignitors, and remove the ignitors from the cooktop.
8. Unsnap and remove the bezels from the maintop.
9. Reverse the previous steps and install the new maintop.


31 YELLOW
32 BLUE
35 ORANGE
33 RED
34 WHITE
36" COOKTOP


31 YELLOW
32 BLUE
33 RED
34 WHITE
30" COOKTOP

Replacing A Burner Base & O-Ring

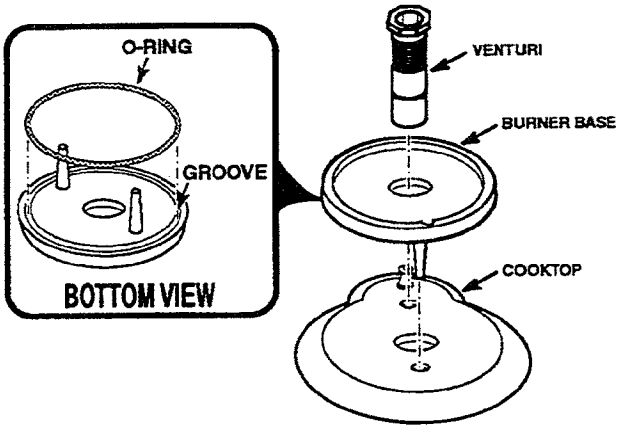
⚠ WARNING

Turn off the gas supply and the power circuit to the cooktop at the main (house) junction box before servicing this unit.

⚠ CAUTION

When you work on the cooktop, be careful when handling the sheet metal parts. There are sharp edges present and you can cut yourself if you are not careful.

1. Turn off the gas supply and the electrical power going to the cooktop.
2. Remove the grates and burner caps from the cooktop.
3. Using a $^{25}/_{32}$" (20 mm) socket, unscrew and remove the venturi from the burner base you wish to replace, then lift the burner base and rubber o-ring from the maintop.



4. Install the new o-ring in the new burner base and reassemble the cooktop.

Replacing An Ignitor

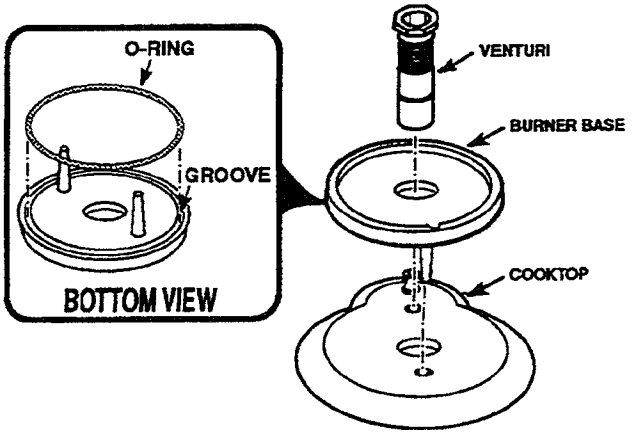
⚠ WARNING

Turn off the gas supply and the power circuit to the cooktop at the main (house) junction box before servicing this unit.

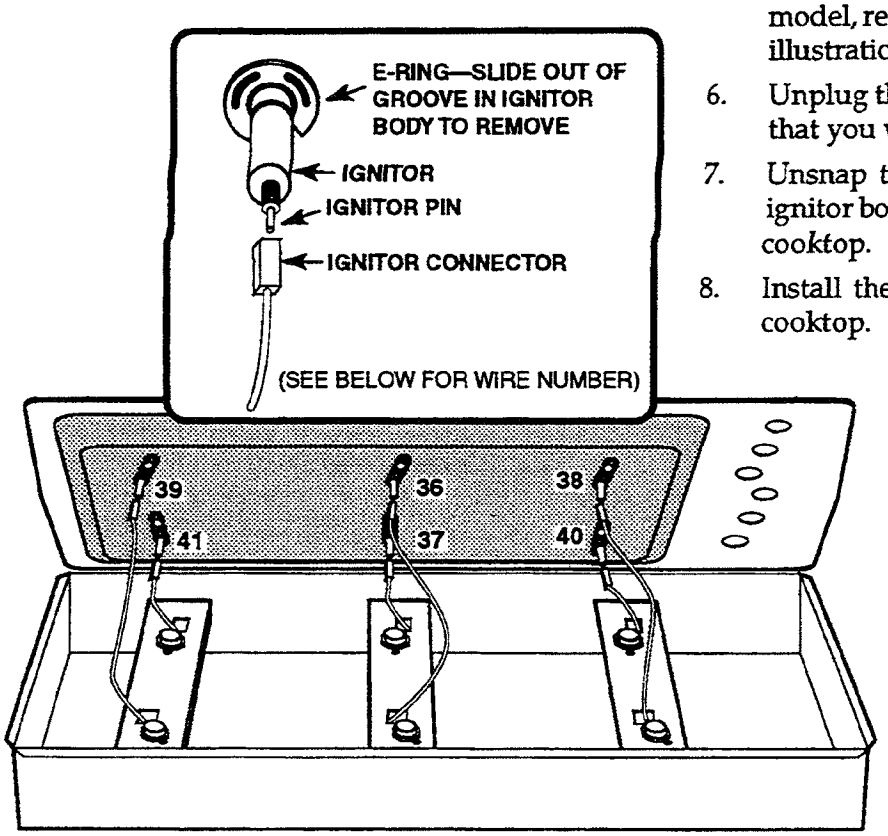
⚠ CAUTION

When you work on the cooktop, be careful when handling the sheet metal parts. There are sharp edges present and you can cut yourself if you are not careful.

1. Turn off the gas supply and the electrical power going to the cooktop.
2. Remove the grates and burner caps from the cooktop.
3. Remove the knobs from the controls.
4. Using a $^{25}/_{32}$" (20 mm) socket, unscrew and remove the venturi from each of the burner bases, then lift the burner bases and rubber o-rings from the maintop.



5. Carefully lift the front of the maintop several inches and prop it up with a board or a hammer handle. **NOTE:** The 45" cooktop is shown below. If you have a 30" or a 36" model, refer to page 2-5 for the ignitor wiring illustration of those models.
6. Unplug the ignitor wire from the ignitor pin that you wish to replace.
7. Unsnap the e-ring from the groove in the ignitor body and remove the ignitor from the cooktop.
8. Install the new ignitor and reassemble the cooktop.



Replacing A Gas Valve & Spark Switch

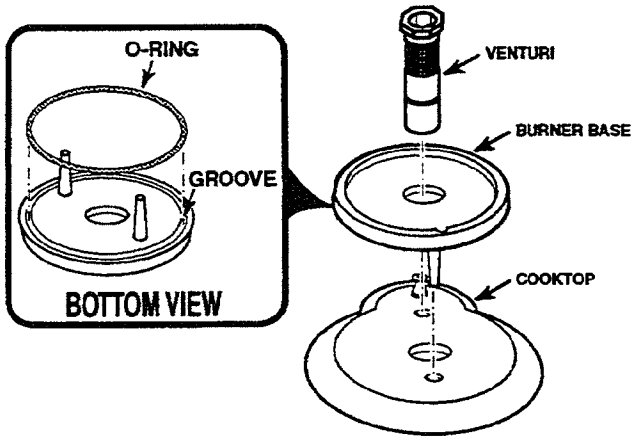
⚠ WARNING

Turn off the gas supply and the power circuit to the cooktop at the main (house) junction box before servicing this unit.

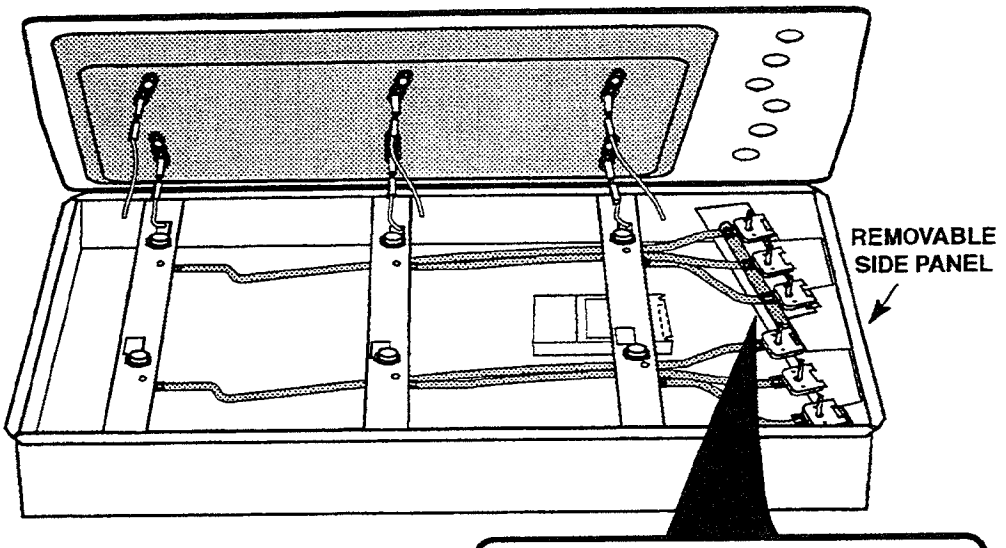
⚠ CAUTION

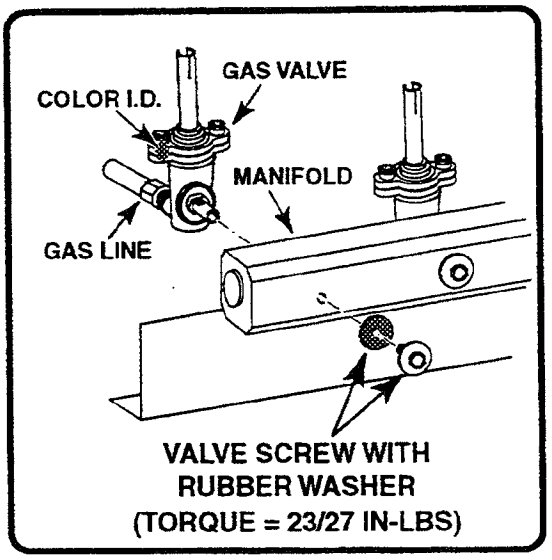
When you work on the cooktop, be careful when handling the sheet metal parts. There are sharp edges present and you can cut yourself if you are not careful.

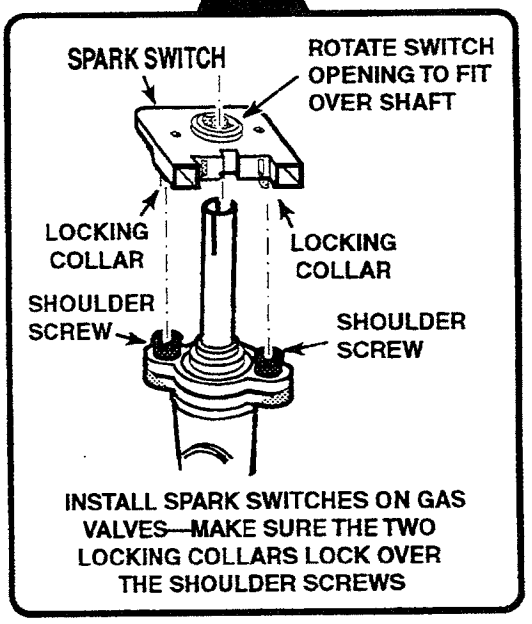
1. Turn off the gas supply and the electrical power going to the cooktop.
2. Remove the grates and burner caps from the cooktop.
3. Remove the knobs from the controls.
4. Using a 25/32" (20 mm) socket, unscrew and remove the venturi from each of the burner bases, then lift the burner bases and rubber o-rings from the maintop.

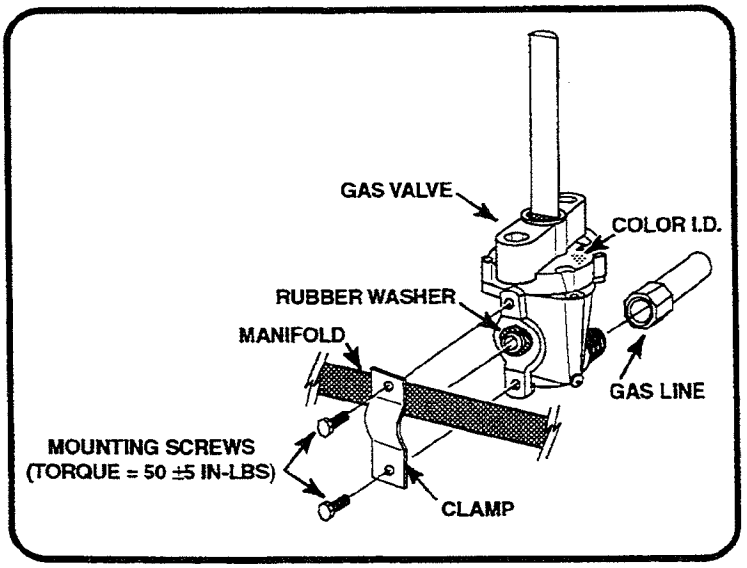


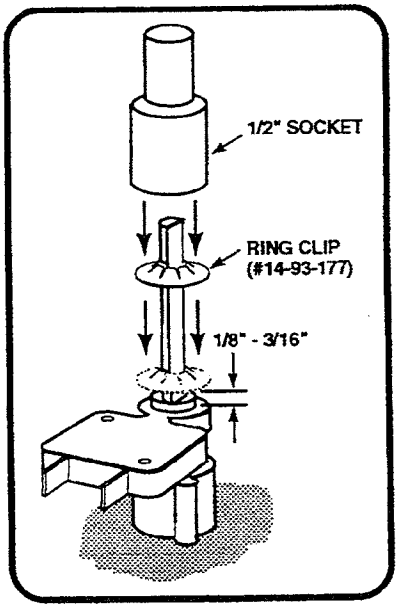
5. Carefully lift the front of the maintop several inches and prop it up with a board or a hammer handle. **NOTE:** Although a 45" cooktop is shown on the next page, all of the cooktops use one of the two types of gas valves shown.
6. Lift the spark switch and unsnap it from the gas valve that you wish to service.
7. <u>To replace a spark switch:</u>
   a) Use a small-bladed screwdriver and insert the blade into the wire removal slots of the switch, then press in on the locking tabs of the switch while you pull out on the wires, and remove them.
   b) Insert the wires into the holes of the new switch so they lock in place (pull out on the wire firmly to make sure it is locked), and install the switch on the gas valve so the locking collars snap over the screws on the valve.
8. If necessary, remove the right side panel on the rough-in box to access the gas valves for service.
9. <u>To replace a gas valve,</u> remove the gas line and mounting screw with rubber washer, (or clamp, depending on the type of valve that is installed), and remove the valve.
10. Install the new gas valve (make sure that the replacement valve has the same color I.D. marking as the old one), and reassemble the cooktop. **NOTE:** Make sure that you torque the screw with rubber washer to a value of <u>23 to 27 in-lbs</u>, or the clamp screw to a value of <u>50 ±5 in-lbs</u>, then leak-check the gas line connections before you secure the maintop. (Refer to the "Gas Valve Color ID Charts" on pages 3-28 & 3-29 for valve specifications.)


REMOVABLE
SIDE PANEL


COLOR I.D.
GAS VALVE
MANIFOLD
GAS LINE
VALVE SCREW WITH
RUBBER WASHER
(TORQUE = 23/27 IN-LBS)


SPARK SWITCH
ROTATE SWITCH
OPENING TO FIT
OVER SHAFT
LOCKING
COLLAR
LOCKING
COLLAR
SHOULDER
SCREW
SHOULDER
SCREW
INSTALL SPARK SWITCHES ON GAS
VALVES—MAKE SURE THE TWO
LOCKING COLLARS LOCK OVER
THE SHOULDER SCREWS


GAS VALVE
COLOR I.D.
RUBBER WASHER
MANIFOLD
GAS LINE
MOUNTING SCREWS
(TORQUE = 50 ±5 IN-LBS)
CLAMP


1/2" SOCKET
RING CLIP
(#14-93-177)
1/8" - 3/16"

Replacing The Spark Module

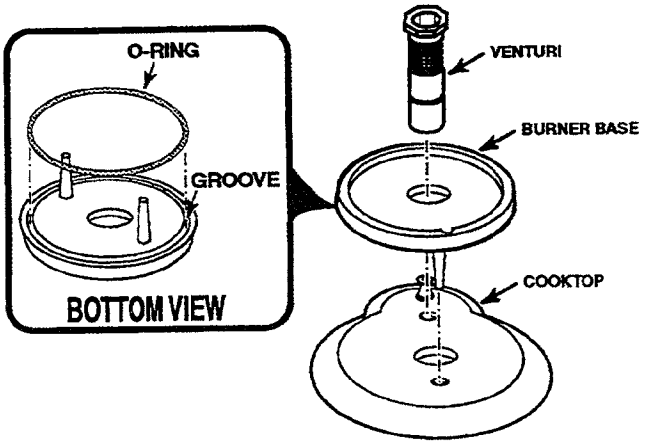
⚠ WARNING

Turn off the gas supply and the power circuit to the cooktop at the main (house) junction box before servicing this unit.

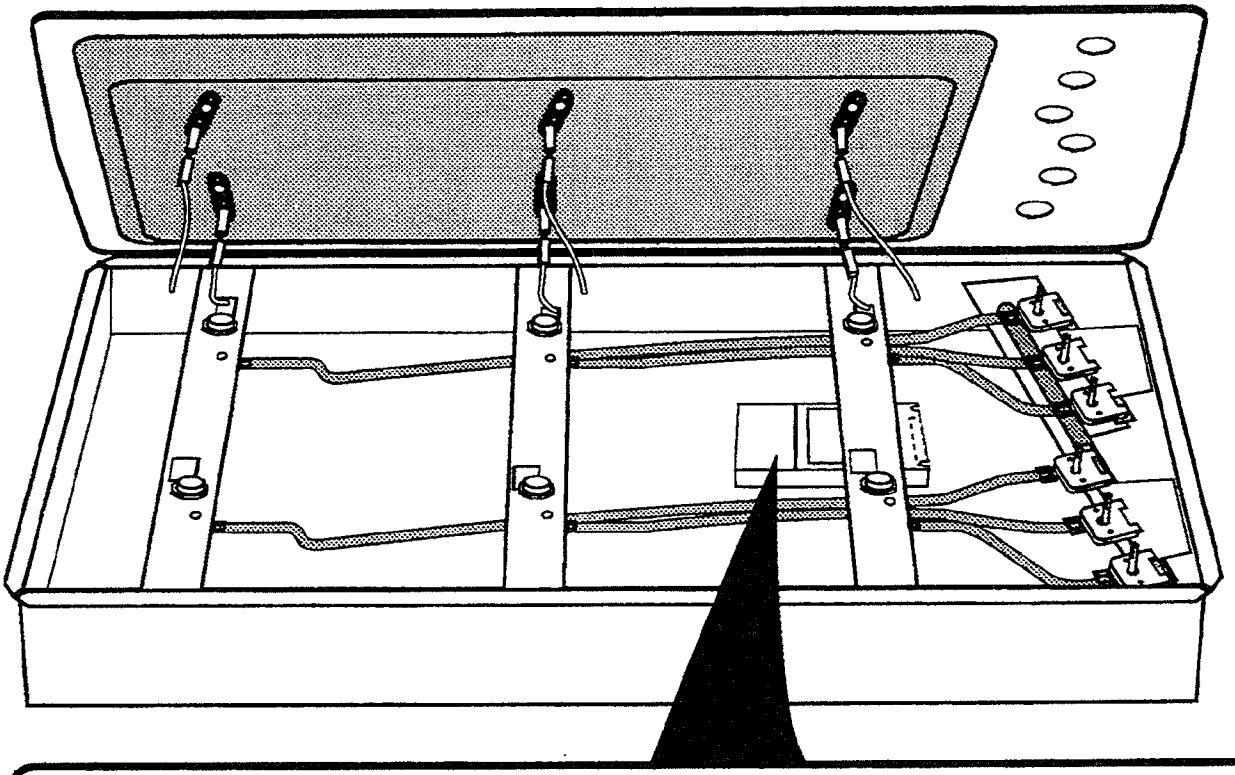
⚠ CAUTION

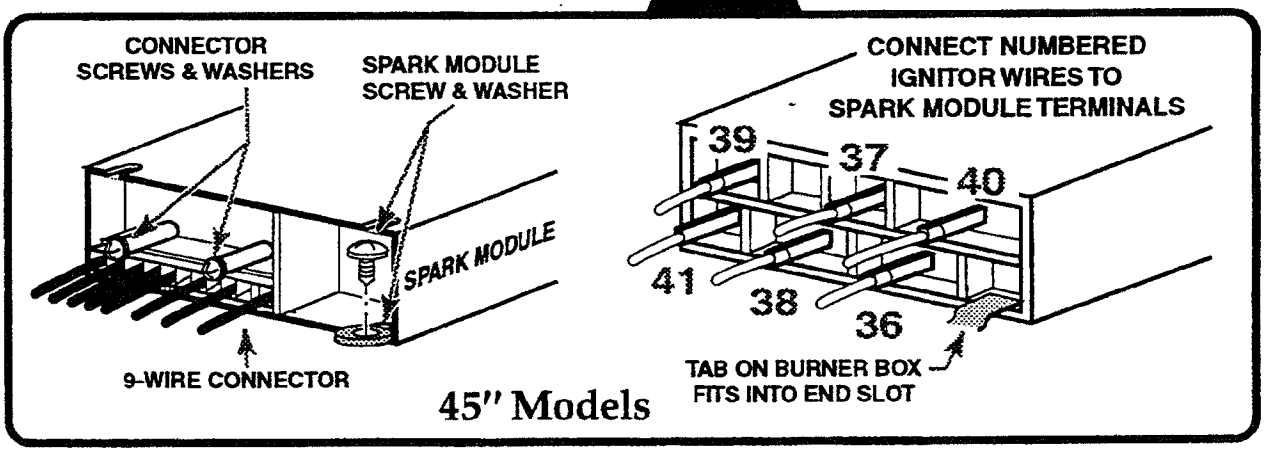
When you work on the cooktop, be careful when handling the sheet metal parts. There are sharp edges present and you can cut yourself if you are not careful.

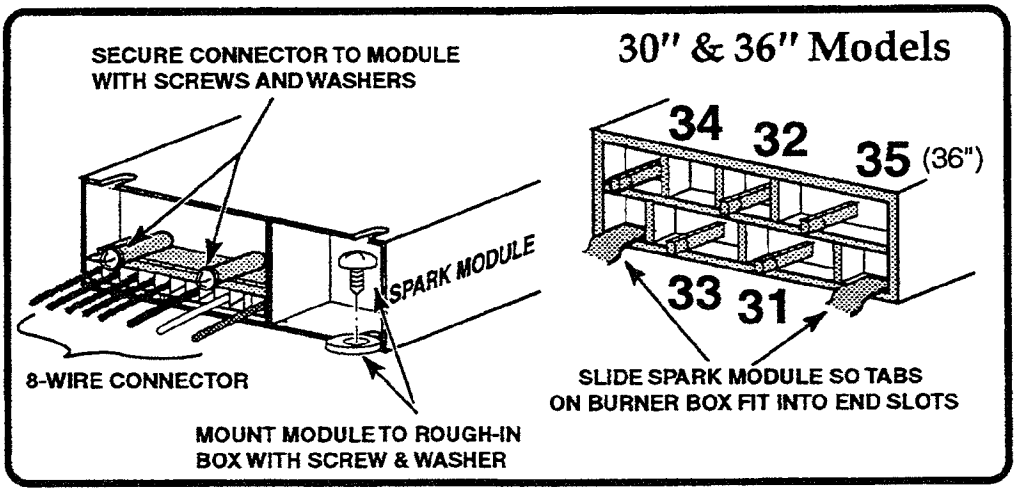
1. Turn off the gas supply and the electrical power going to the cooktop.
2. Remove the grates and burner caps from the cooktop.
3. Remove the knobs from the controls.
4. Using a $^{25}/_{32}$" (20 mm) socket, unscrew and remove the venturi from each of the burner bases, then lift the burner bases and rubber o-rings from the maintop.



5. Carefully lift the front of the maintop several inches and prop it up with a board or a hammer handle.
6. Remove the two screws and shoulder washers from the connector and unplug it from the spark module.
7. Unplug the ignitor wires from the other end of the spark module.
8. Remove the screw and flat washer from the spark module and unhook it from the tab in the burner box, then remove the module.
9. Install the new spark module, and reassemble the cooktop. **NOTE:** The illustrations show spark ignitor wire terminals for the 45" and the 36" cooktops. The 30" cooktop wires are connected to terminals 31, 32, 33, & 34, as shown in the 36" model wiring illustration.




CONNECTOR SCREWS & WASHERS
SPARK MODULE SCREW & WASHER
SPARK MODULE
9-WIRE CONNECTOR
CONNECT NUMBERED IGNITOR WIRES TO SPARK MODULE TERMINALS
39
37
40
41
38
36
TAB ON BURNER BOX FITS INTO END SLOT
45" Models


30" & 36" Models
SECURE CONNECTOR TO MODULE WITH SCREWS AND WASHERS
SPARK MODULE
8-WIRE CONNECTOR
MOUNT MODULE TO ROUGH-IN BOX WITH SCREW & WASHER
34
32
35 (36")
33
31
SLIDE SPARK MODULE SO TABS ON BURNER BOX FIT INTO END SLOTS

Replacing A Jet Holder

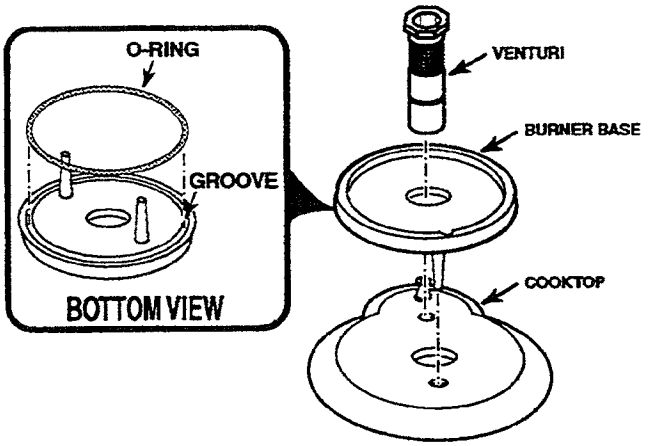
⚠ WARNING

Turn off the gas supply and the power circuit to the cooktop at the main (house) junction box before servicing this unit.

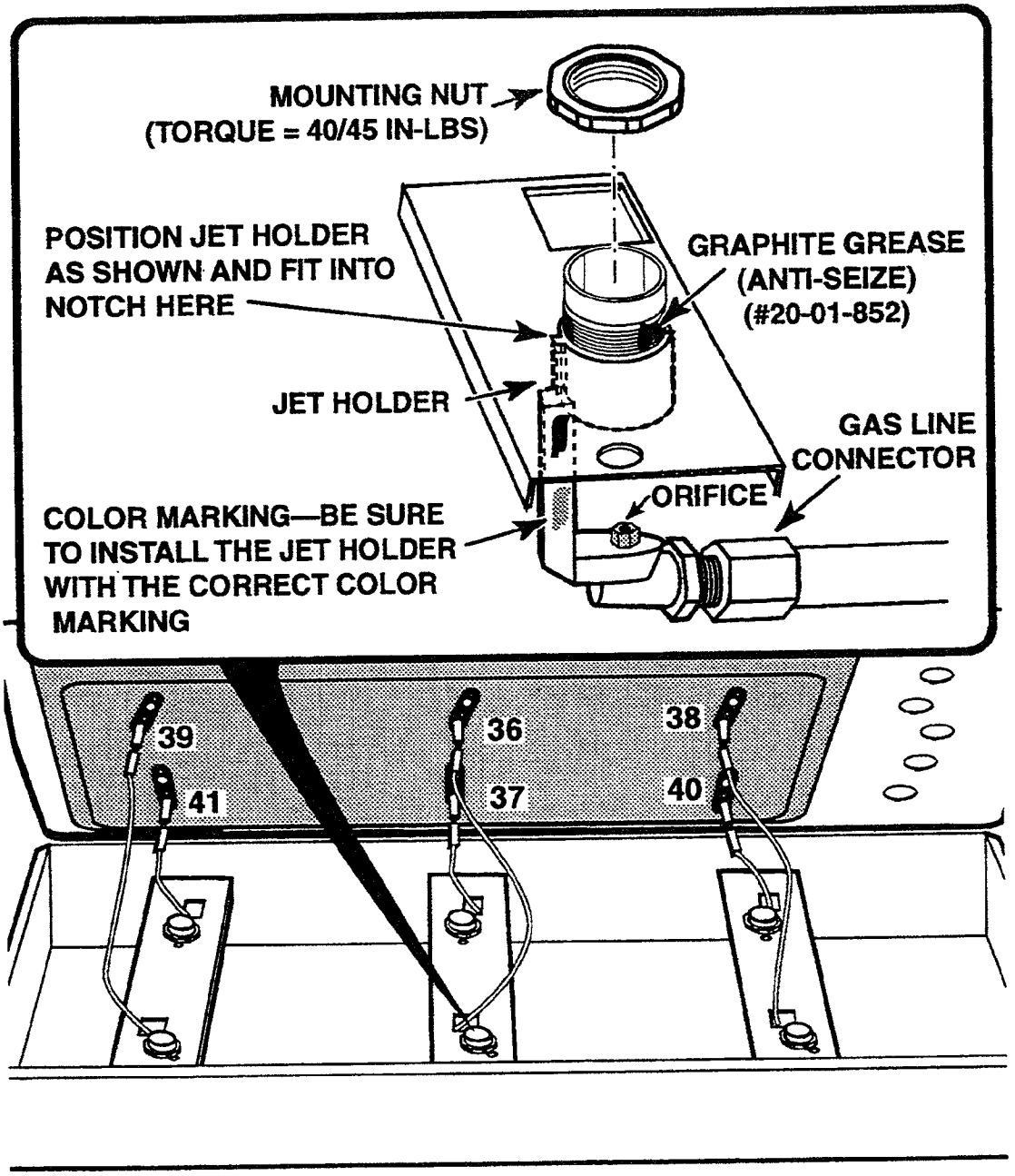
⚠ CAUTION

When you work on the cooktop, be careful when handling the sheet metal parts. There are sharp edges present and you can cut yourself if you are not careful.

1. Turn off the gas supply and the electrical power going to the cooktop.
2. Remove the grates and burner caps from the cooktop.
3. Remove the knobs from the controls.
4. Using a $^{25}/_{32}$" (20 mm) socket, unscrew and remove the venturi from each of the burner bases, then lift the burner bases and rubber o-rings from the maintop.



5. Carefully lift the front of the maintop several inches and prop it up with a board or a hammer handle. **NOTE:** Although a 45" model cooktop is shown, the jet holders are serviced the same for the 30" and 36" models.
6. Remove the gas line from the jet holder you wish to replace.
7. Remove the mounting nut from the jet holder and remove the jet holder from the support bracket.
8. Install the new jet holder (make sure that the replacement jet holder has the same color marking as the old one), and reassemble the cooktop. **NOTE:** Make sure that you leak-check the gas line connections before you secure the maintop. (Refer to "Jet Holder Color I.D. Chart" on page 3-29 for jet holder specifications.)


MOUNTING NUT
(TORQUE = 40/45 IN-LBS)
POSITION JET HOLDER
AS SHOWN AND FIT INTO
NOTCH HERE
GRAPHITE GREASE
(ANTI-SEIZE)
(#20-01-852)
JET HOLDER
GAS LINE
CONNECTOR
ORIFICE
COLOR MARKING—BE SURE
TO INSTALL THE JET HOLDER
WITH THE CORRECT COLOR
MARKING
39
41
36
37
38
40

REPLACING THE GAS PRESSURE REGULATOR

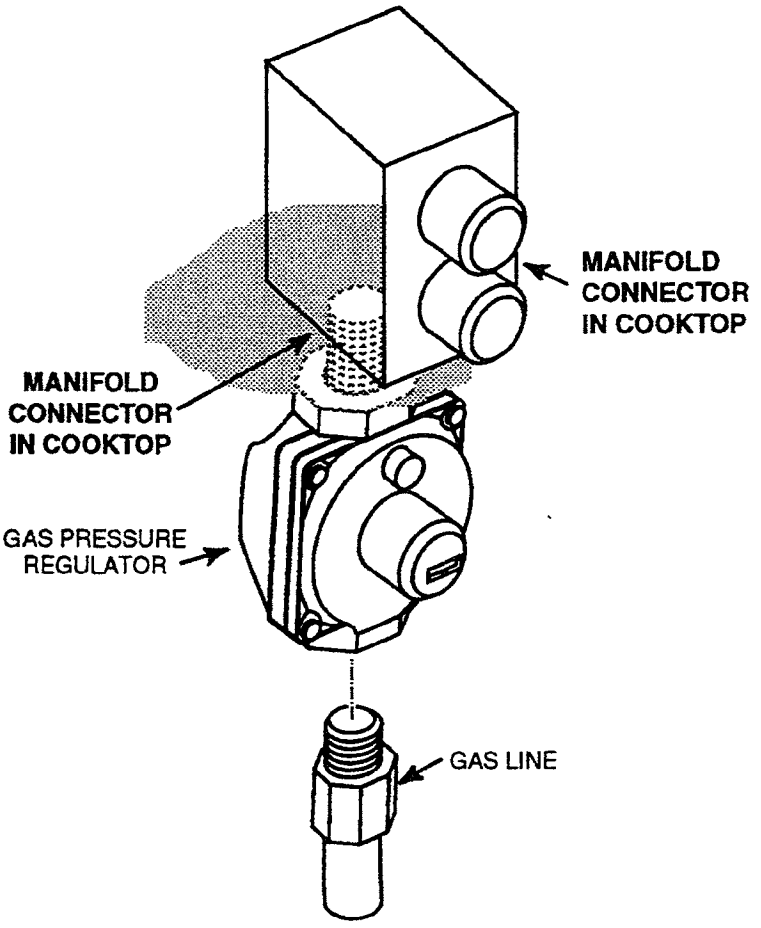
⚠ WARNING

Turn off the gas supply and the power circuit to the cooktop at the main (house) junction box before servicing this unit.

⚠ CAUTION

When you work on the cooktop, be careful when handling the sheet metal parts. There are sharp edges present and you can cut yourself if you are not careful.

1. Turn off the gas supply and the electrical power going to the cooktop.
2. From inside the cabinet, disconnect the gas line going to the gas pressure regulator.
3. Hold the gas line connector coming from the cooktop manifold with a pipe wrench so that it cannot turn, then unscrew the gas pressure regulator from the line.
4. Install the new gas pressure regulator on the cooktop connector and reconnect the gas line.
5. Turn on the gas and leak-check the regulator connections.



TROUBLESHOOTING

THEORY OF OPERATION

The following information describes the basic operating theory and the functions for all of the major components and the associated features used in the gas cooktops. It is suggested reading to help in understanding the components prior to troubleshooting them.

The Gas Distribution System

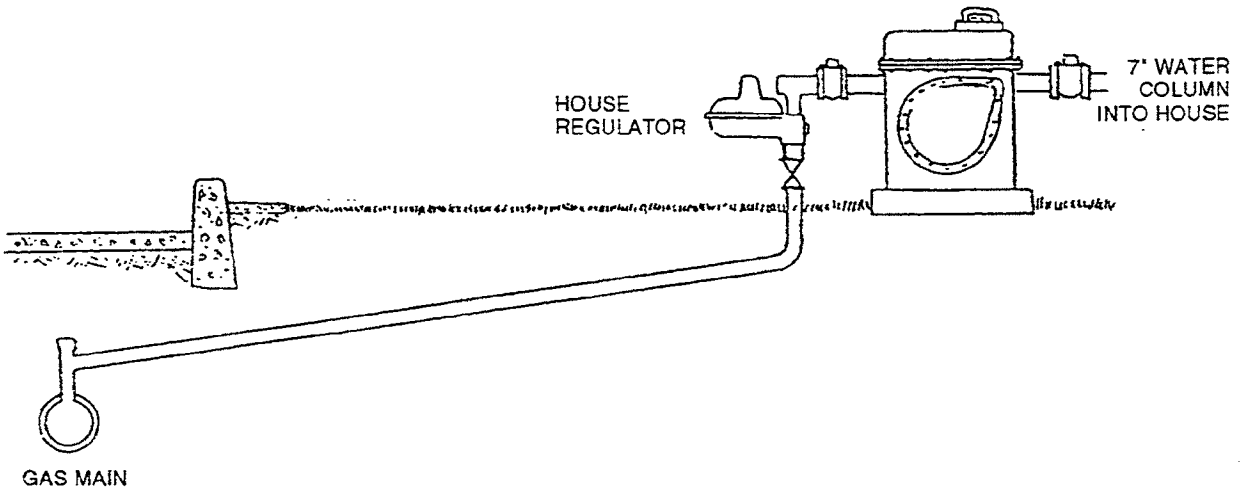
A pipe that delivers gas from the main supply to the customer s gas meter is known as a "service." Service lines can vary in size from $^1/_2$" in diameter for domestic consumers, to 8" for industrial consumers.

Gas from the supply line is piped to each of the cooktop burners where it is mixed with air and allowed to escape from a series of small holes, located in the burner cap. Gas is ignited as it flows out of the burner holes. The rate of its flow is regulated so that it burns completely and cleanly with flames that can range in size from $^1/_4$" to $^3/_4$" in length, depending on the application. Applications include: gas input, gas pressure, air mixture, and spark for lighting the burner.

Gas pressure is usually maintained at medium pressures of 10 to 55 psi (pounds-per-square-inch) to the pressure regulator ahead of the house meter.

The house regulator reduces pressures from PSI to inches water column. It is larger than the pressure regulator that comes with the cooktop. Although the principle is the same, the action is different.

To convert gas pressures in water column and PSI, remember that 27.74 inches water column is equal to one pound-per-square-inch. The house water regulator regulates the gas pressure to the house at about 7" water column. Natural gas cooktops require 4" water column to operate efficiently.



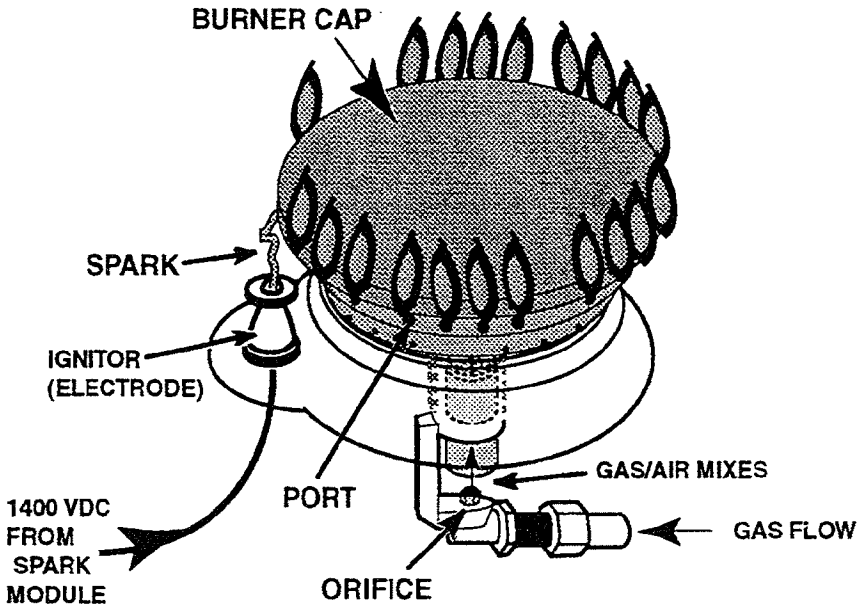
Principles Of The Isophording Gas System

Natural or liquefied petroleum gas, (propane), if burned in the proper mixture with air, provides a hot flame that is odorless and entirely free of dangerous gases. Air for this mixture is provided in two ways (see the following illustration). Air mixed with the gas as it enters the injector sleeve is called primary air. This air cannot be adjusted. There is no air shutter. The flame characteristic is determined by the distance between the bottom of the injector sleeve and the top of the orifice.

The air surrounding the burner cap is called secondary air. The design of the burner assembly provides an ample supply of secondary air for proper flame characteristics.

Gas is injected into the injector sleeve through the orifice. The orifice raises the velocity of the gas. The high velocity from the stream of gas causes a drop in pressure around the stream. Primary air enters into this area of low pressure through the gap between the injector sleeve and the orifice. The air and gas travel through the narrow injector sleeve. The injector sleeve size increases causing the volume of air and gas to increase. As the air and gas expand into the increased volume, their velocity is reduced and they become thoroughly mixed.

The gas mixture passes from the injector sleeve into the burner base. The burner base is a hollow chamber from which the gas and air mixture flows to the burner cap where it is ignited by the spark ignitor and produces a flame. The burner cap has ports which are designed with sufficient depth and correct angle to further reduce the velocity of the mixture and provide a stream of gas of the proper size to combine with the secondary air to provide combustion. The burner cap is designed to provide unrestricted secondary air to the flame.



Isophording Sealed Gas System

Flame rectification is a process of correcting the flame characteristics with the electronic module and the electrode.

When the burner is on, the flame creates a current path. The same electrode that sparks to light the burner also senses that current path. When the flame goes out, or wavers away from the electrode, the current path is broken. The electrode senses the absence of the current path and sends a message to the module. The module then sparks until the burner lights and the current path is restored.

The purpose of the module is to send 1400 volts dc to the electrode and light the burner. The electrode has a dual purpose: it sparks and lights the burner, and acts as a sensor to detect the presence or absence of a flame.

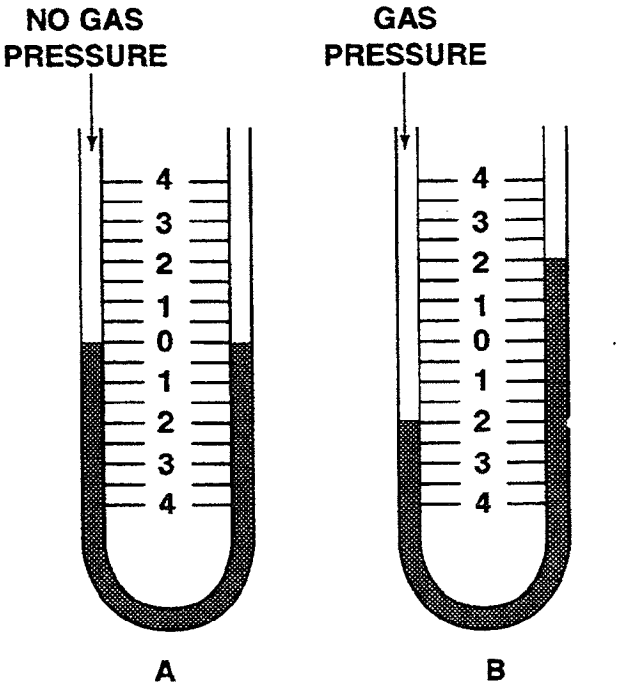
How To Measure Gas Pressure

When checking a cooktop for improper burner operation, it is often necessary to measure gas pressure beyond the gas valve. Two devices are commonly used to measure gas pressures in an appliance: a spring gauge and a U-tube manometer. We recommend using the manometer.

Gas pressure in inches water column is read directly from the manometer. A manometer is simply a U-shaped tube that is made of a transparent material. Both legs of the tube are filled about half way with tap water. The water level in the manometer with both ends of the tube open is the zero point.

To measure gas pressure in the cooktop, the rubber tubing from one end of the manometer is connected to the threaded outlet of the gas valve, the other end of the manometer is left open. Turn the gas tube to the "High" position, the water in the gas side of the tube is pushed down, while the water in the open end rises. This indicates the gas pressure. The pressure reading is obtained by adding the height of water column above the zero on one side and below the zero on the other.

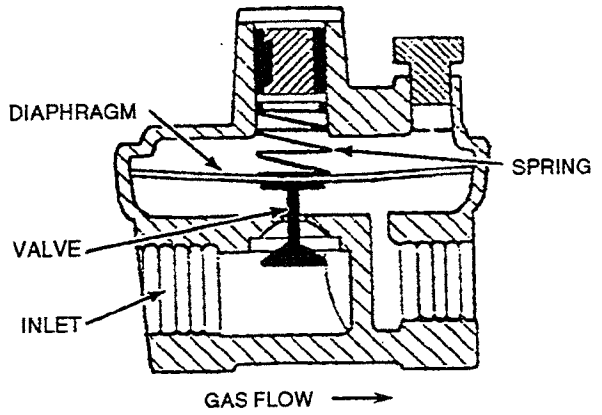
Illustration A shows the water level at zero in both legs. This indicates no gas pressure entering the manometer. Illustration B shows gas pressure applied to the manometer. The left leg of the manometer is 2" below the zero point. The right leg is 2" above the zero point. Adding the gas pressure in both legs indicates that the head pressure is 4" water column.



The Gas Pressure Regulator

A 5" water column gas pressure regulator is required for all natural gas applications (10" L.P.). The gas will enter the regulator at about 7" water column (14" L.P). The regulator will not operate effectively if the required pressure is below 5" water column, or if it exceeds 14" water column.

Gas flow should be in the direction of the arrow. If there is a surge of line pressure, the diaphragm will flex upward, reducing the valve opening to a point where the gas pressure counteracts the spring weight above the valve and diaphragm.

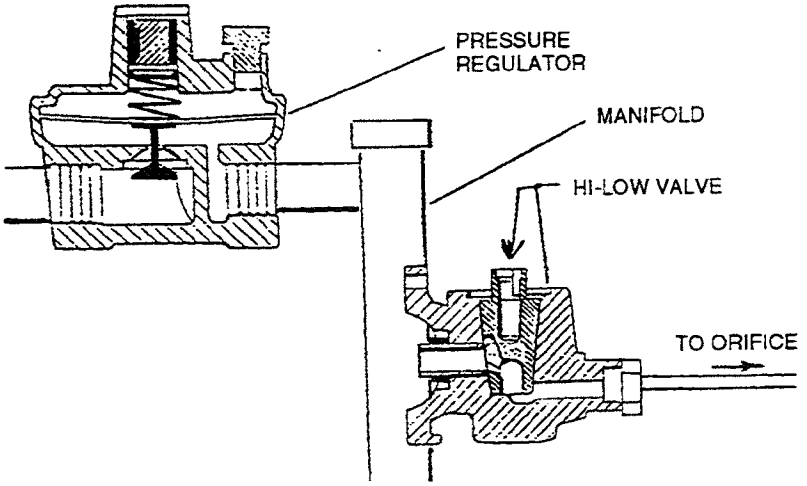


Pressure Regulator

Manifold And Gas Valves

Gas travels through the regulator at a regulated pressure. There are two types of gas valves: a regular type and an extra low (XLO) type.

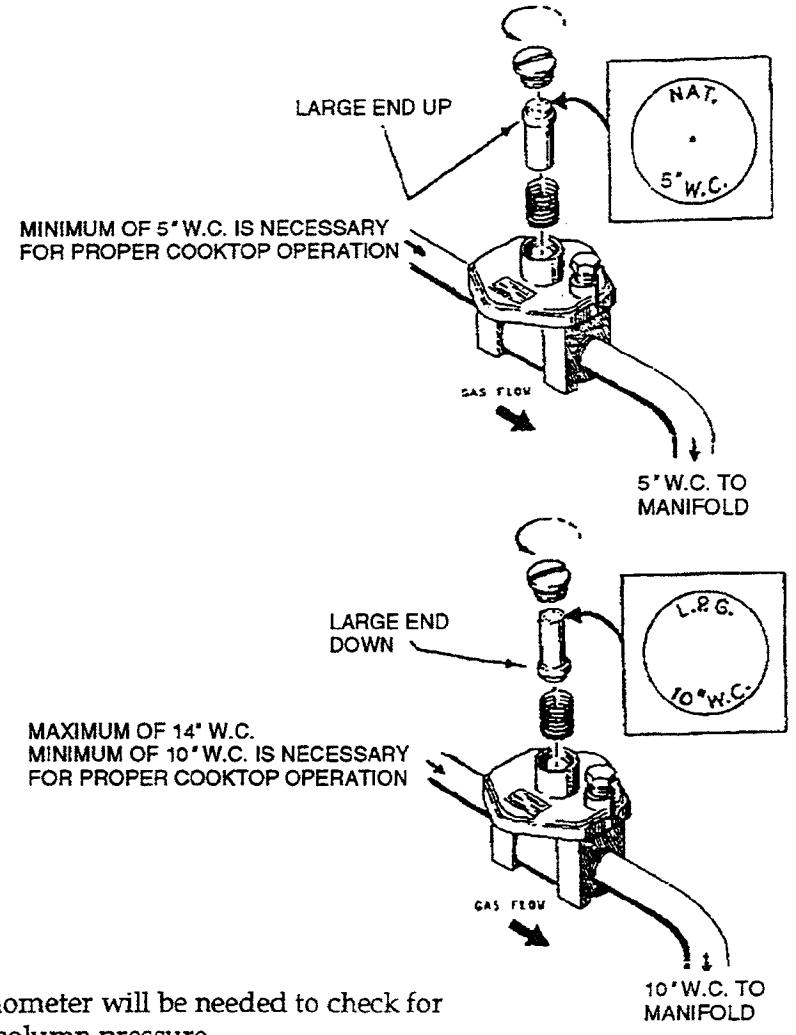
The gas valve is used to control the amount of gas that is sent to the orifice, thereby controlling the heat output. The valves consist of a housing, an internal plug, and a needle valve. The internal plug regulates the Low, Medium, and High settings. The needle valve controls the Low setting. The valve has an inversion that wraps around the manifold. This is were the gas leaves the manifold and enters the gas valve. There is a rubber seal in the inversion to seal the valve against the manifold and prevent gas leaks. The gas exits the valve at the threaded end. A gas line is attached to the threaded end to direct the gas to the orifice.



Testing A Gas Pressure Regulator

The gas pressure regulator is set to deliver 5" W.C. of natural gas and 10" W.C. of L.P. gas to the cooktop manifold. To check the gas regulator for proper operation:

1. Remove the cap from the pressure regulator.
2. Remove the plunger and reinstall it in the correct position for natural, or L.P. gas, as shown in the illustration.



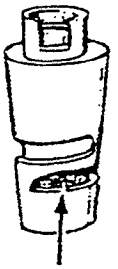
NOTE: A manometer will be needed to check for proper water column pressure.

Gas Valve Operation

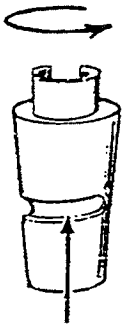
The gas valve provides two settings: one for high heat, and one for low heat, with infinite variations in between. There are two passages that feed gas from the manifold to the burner. These passages are created by slots in the valve plug. Turning the knob counterclockwise approximately 90°, allows a maximum flow of gas to the burner. As the valve is turned to a lower position, less of the opening in the plug is exposed to the opening in the valve housing.

To reach the Low setting, the valve is turned counterclockwise approximately 180° away from the Off position, which is the full extent of the valve's adjustment capacity. In this position, the gas enters an auxilary passage in the valve. The gas volume is controlled by the spacing around and through the bypass screw. This flow continues on sequencing valves for an additional 90° of rotation.

In "High," all of the opening in the plug is exposed to the opening in the valve housing.



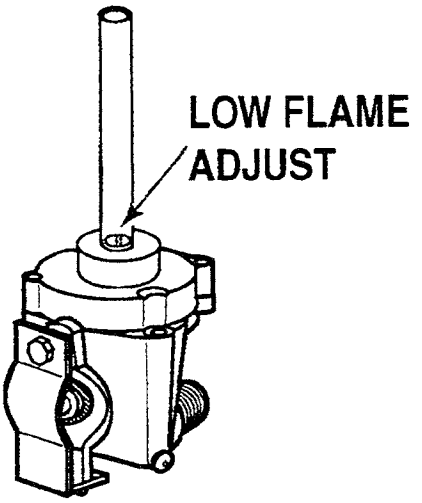
In "Medium," less of the opening in the plug is exposed to the opening in the valve housing.



In "Low," a minimum amount of the opening in the plug is exposed to the opening in the valve housing.

Gas Valve Bypass Screw

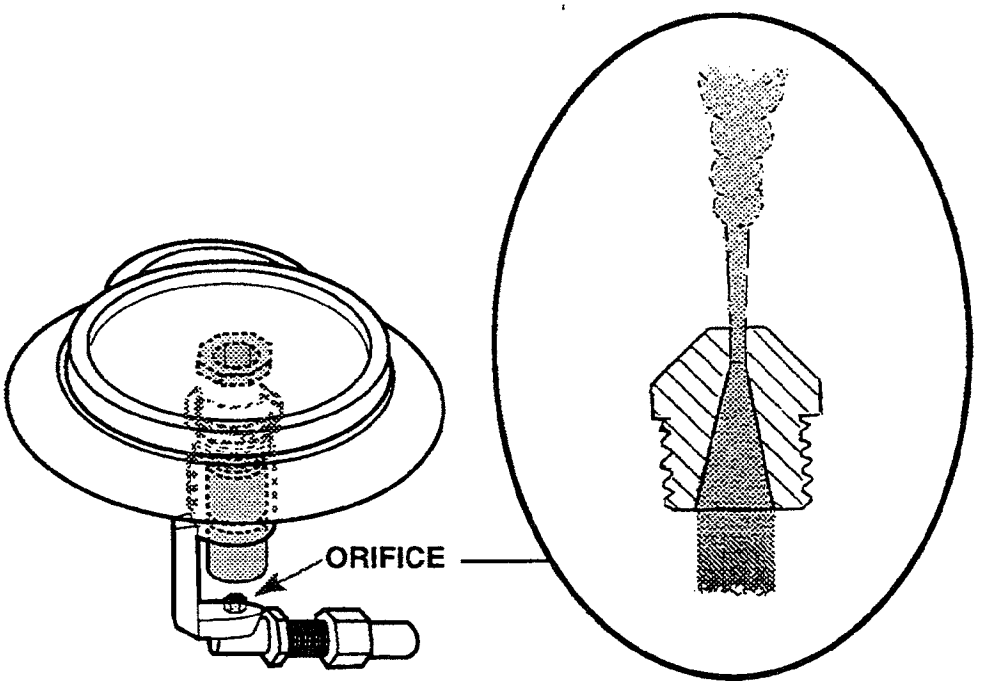
The gas valve bypass screw is located in the center of the shaft. This screw controls the flame height of the low setting. The screw position is adjusted by the manufacturer for the proper flow of natural gas. For use with L.P. gas, the screw has to be turned fully clockwise until it is fully seated. This closes the spacing around the screw, and the flow is then controlled by the hole in the screw.



Orifices

The purpose of an orifice is to control gas flow and to increase the velocity of the gas flowing so as to draw in air. When any gas is restricted and then allowed to flow freely it will spray gas that will mix with air. This can be seen when you restrict the flow from a garden hose. The water comes out of the hose and draws in air creating a water spray as opposed to just water.

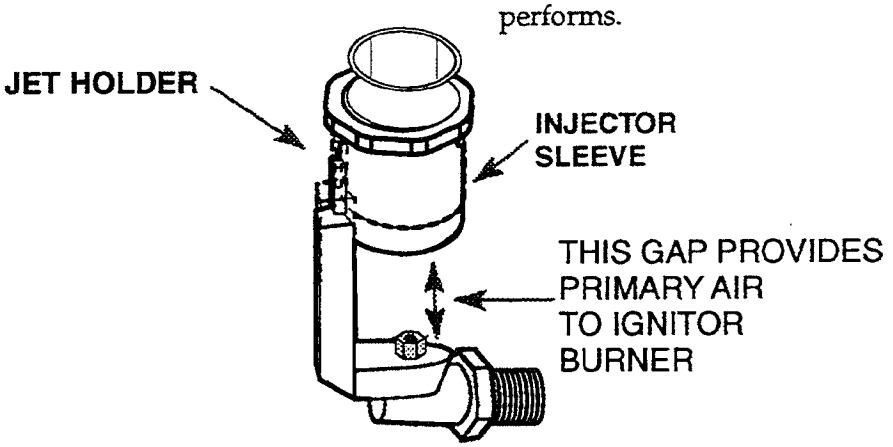
The amount of air drawn in is dependent upon the pressure of the gas and the size of the orifices, the size of the tube after the orifice, the size of the air intake hole, and any back pressure created by the burner head. The natural gas system has less pressure and needs less air for a given amount of gas, and therefore has larger orifices. The L.P. gas system has greater pressure and needs more air for a given amount of gas, and therefore has smaller orifices. On an average, with the same pressure and orifice size, two and one-half times more natural gas will flow than propane. However, propane needs more air and will produce more heat for a given volume of gas than the natural gas. The size of the orifice controls the heat output of the burner.



The Injector Sleeve

Since there is no air adjustment and all the orifices are fixed, the injector sleeve plays a crucial part in the design of the isphording system.

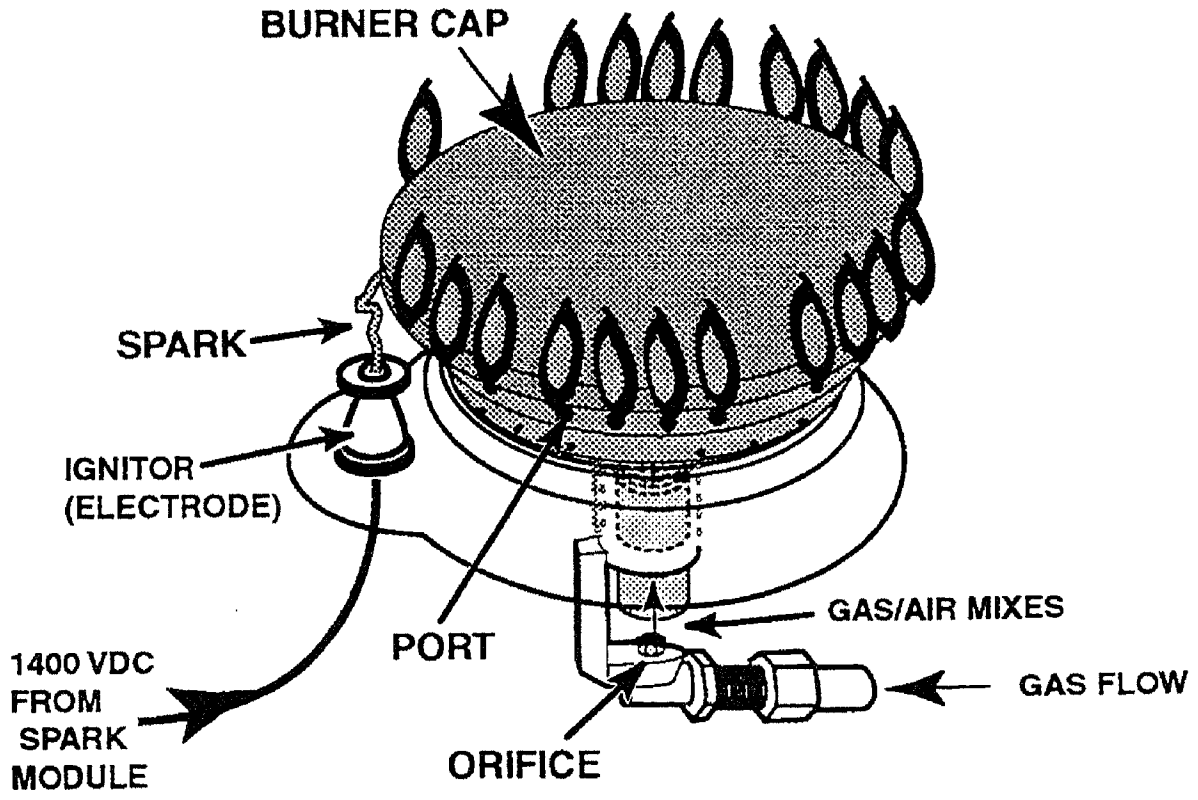
Gas is injected into the burner through the injector sleeve of the jet holder. Air from outside flows into the injector sleeve through the gap between the injector sleeve and the top of the orifice. The gas travels through the injector sleeve to the burner for ignition. There is not enough air at this point to allow the mixture to burn. The injector sleeve is also called a "venturi," since that is the function it performs.



Burner Assembly

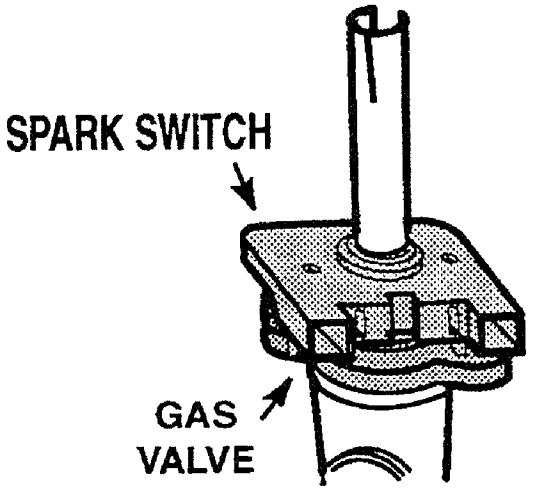
The burner assembly consists of the burner base and the burner cap. The air and gas mixture passes from the injector sleeve assembly into the burner base. The burner base is a hollow chamber from which the air and gas mixture flows to the burner cap.

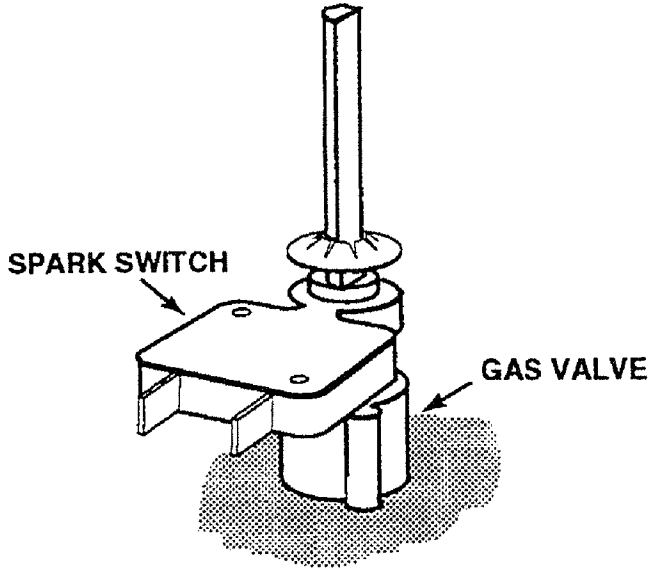
The burner cap contains small holes which are called "ports." The air and gas mixture flows from the burner base ports which distribute the flames evenly to provide good heat output. They spread the flames so that they can consume secondary air. Secondary air is the air that mixes with the gas outside the ports where the gas burns.



Spark Switch

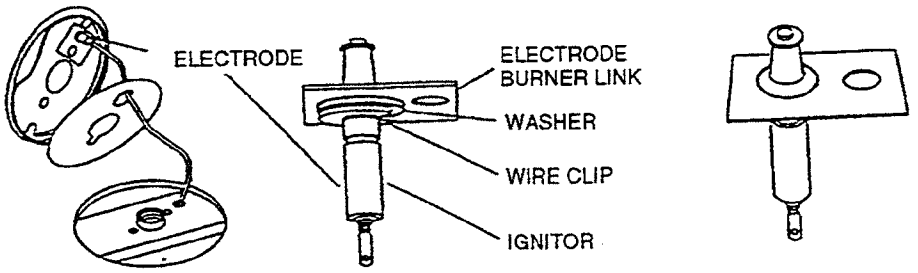
The spark switch is a valve-mounted switch that fastens to the two shoulder screws on the valves. It is a single-pole, single throw switch. The switch closes when the valve knob is turned to ON or LIGHT.





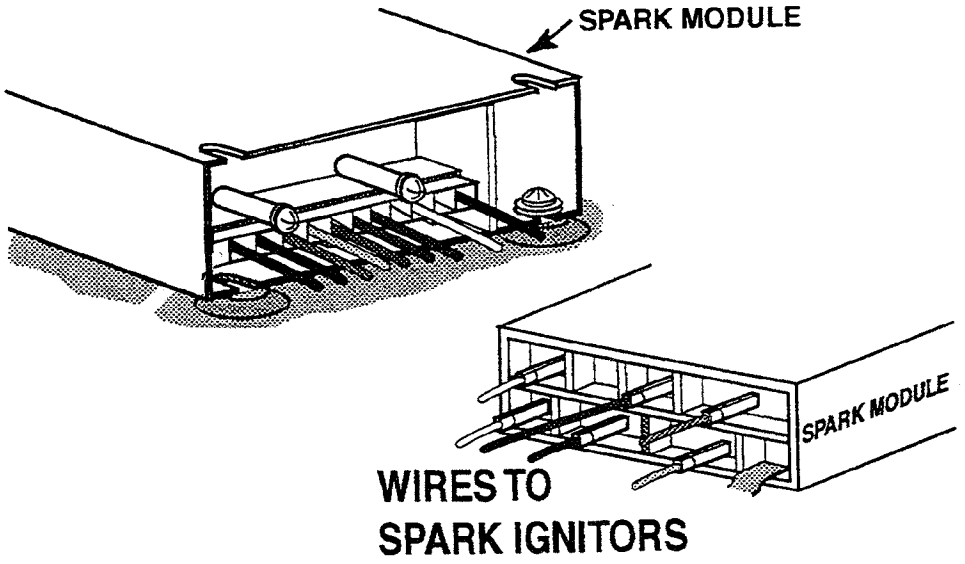
The Spark Ignitor (Electrode)

The spark ignitor (electrode) makes the spark that ignites the gas from the burner and senses the presence or absence of a flame. When a flame is missing, it detects the absence of the electrical rectification, which is present in the flame, and it sends a signal to the module to spark and regulate the flame. The ignitor does not detect heat, or millivolts. It detects a DC current path.

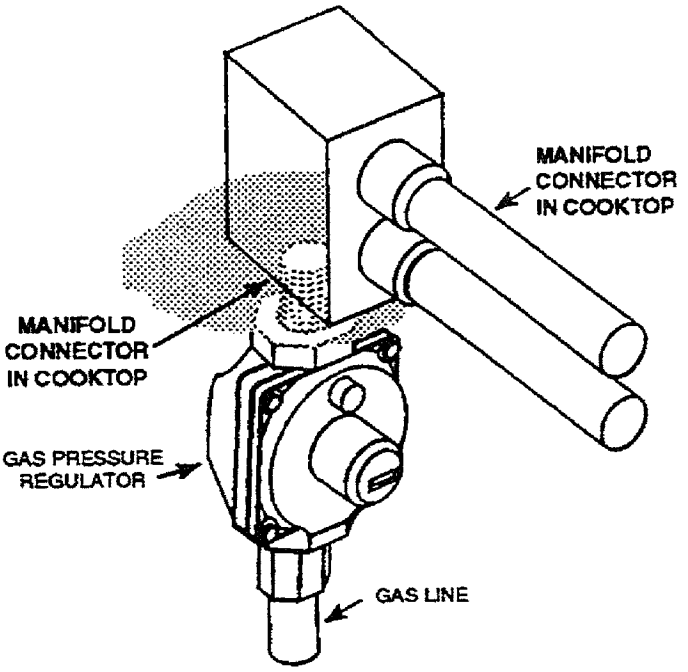


Spark Module

The spark module is an electronic module that acts as a step-up transformer. It converts the 120-volt AC line from the spark switch to 10,000-volts DC and sends it to the spark ignitor.



THE GAS PRESSURE REGULATOR



To test the regulator, perform the following steps:

1. Turn off the gas to the pressure regulator.
2. Disconnect the gas line from the output of the regulator.
3. Attach one side of a manometer to the output of the pressure regulator.
4. Turn on the gas and allow the pressure to move the water column. When the water column has stopped, the gas pressure can be determined from the scale. The reading should be as follows:

   Natural Gas

   Minimum pressure = 5 inches WCP

   L.P. Gas

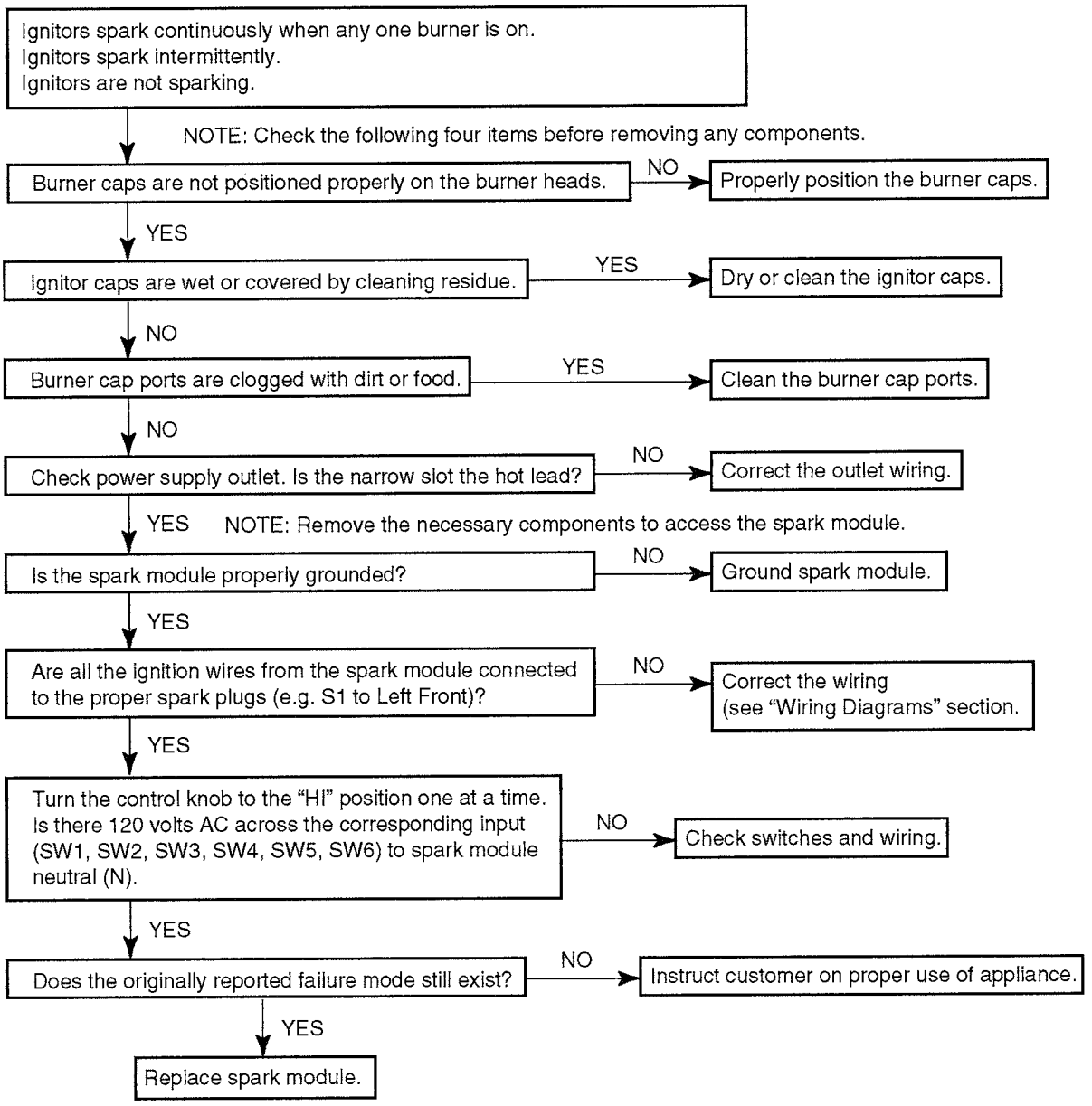
   Minimum pressure = 10 inches WCP
5. If the reading is not correct, the pressure regulator is defective and should be replaced.
6. Turn on all burners and re-read the pressure. The readings should be:

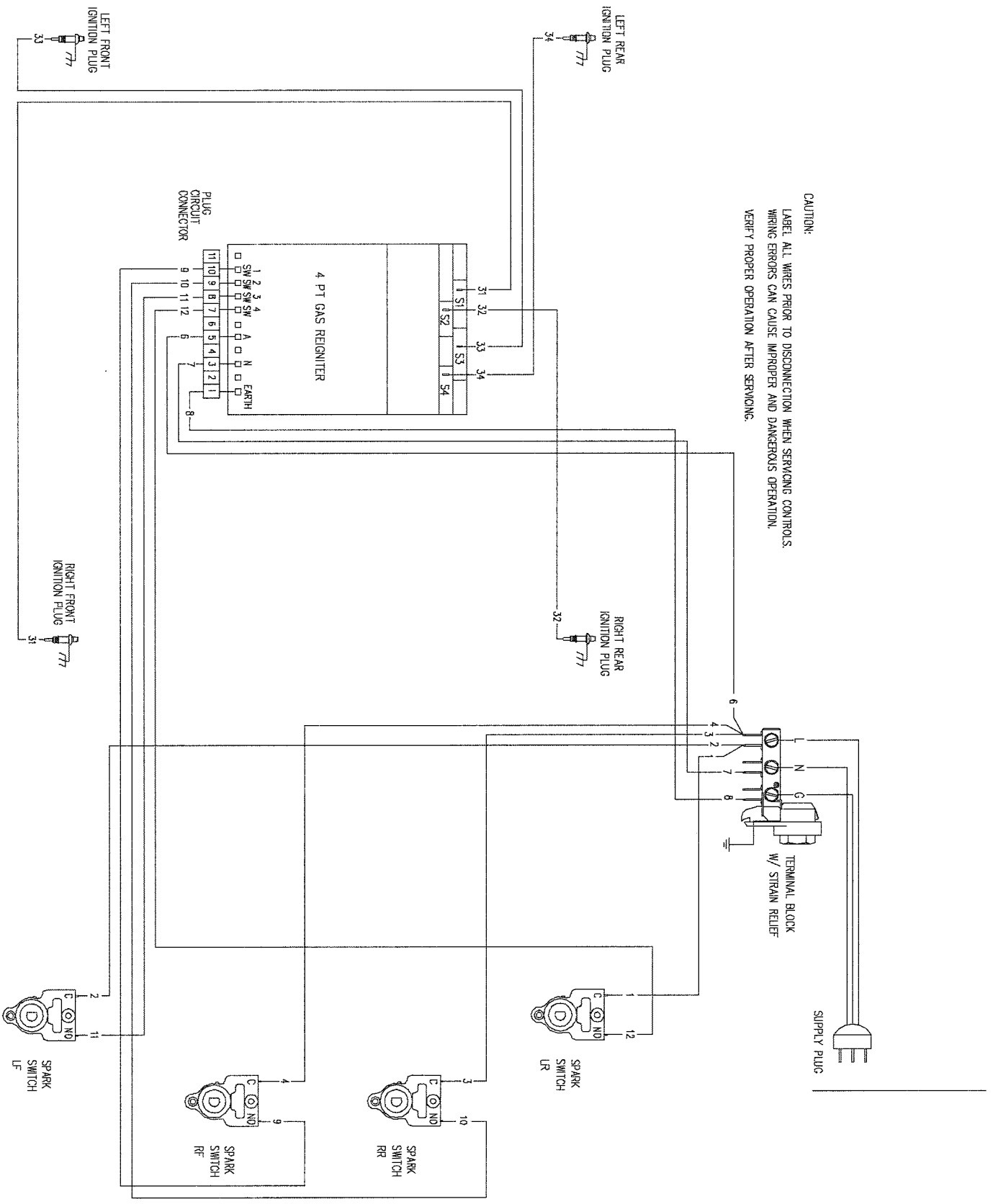
   Natural Gas = minimum 4.5" W.C.
   L.P. Gas = minimum 9" W.C.

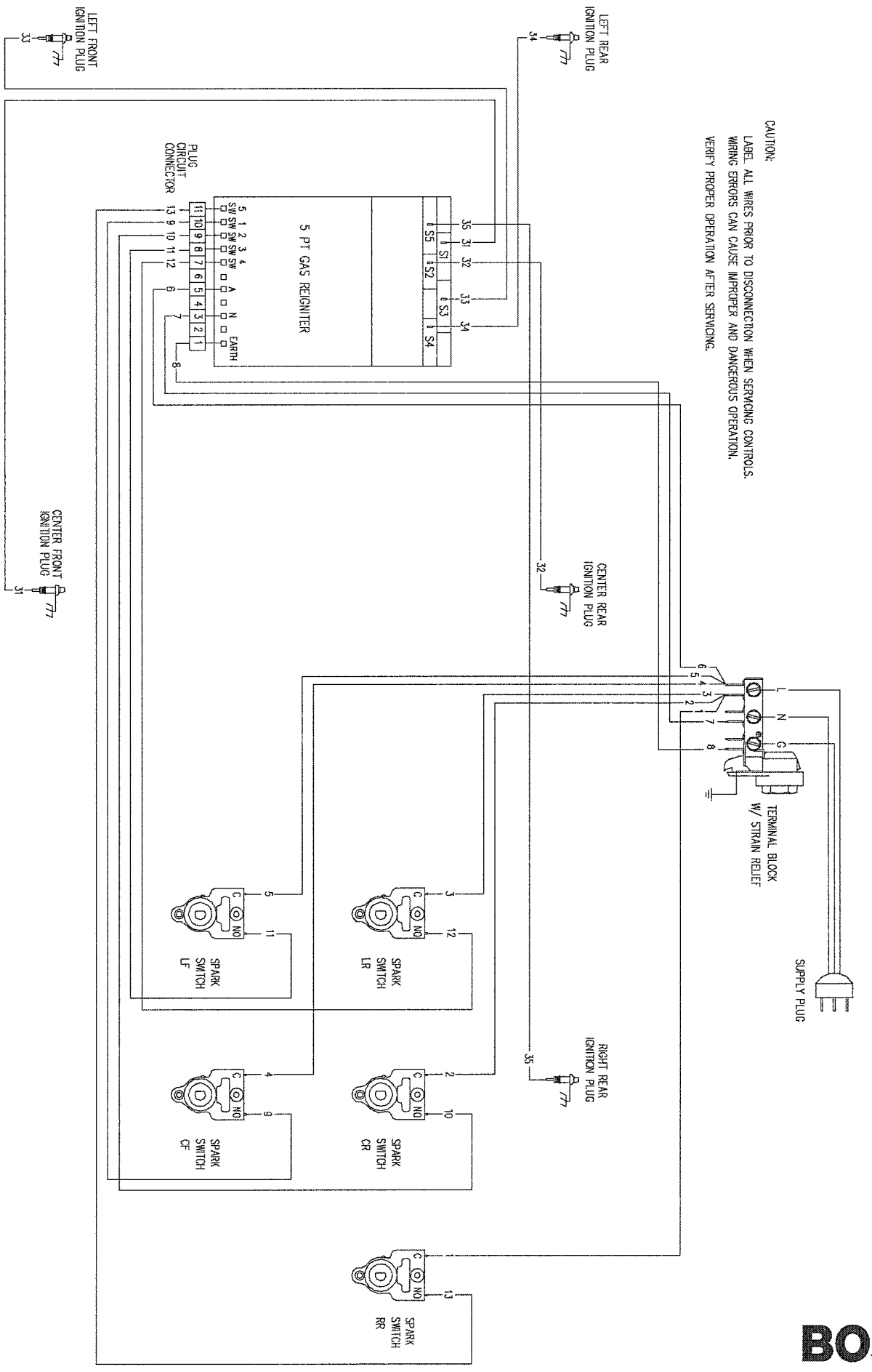
Troubleshooting Chart B

Component: Spark Module

Models Affected: All Gas Ranges and Cooktops




CAUTION:
LABEL ALL WIRES PRIOR TO DISCONNECTION WHEN SERVICING CONTROLS.
WIRING ERRORS CAN CAUSE IMPROPER AND DANGEROUS OPERATION.
VERIFY PROPER OPERATION AFTER SERVICING.
LEFT FRONT IGNITION PLUG
LEFT REAR IGNITION PLUG
RIGHT FRONT IGNITION PLUG
RIGHT REAR IGNITION PLUG
PLUG CIRCUIT CONNECTOR
4 PT GAS REIGNITER
S1
S2
S3
S4
SW 1
SW 2
SW 3
SW 4
A
N
EARTH
TERMINAL BLOCK W/ STRAIN RELIEF
L
N
G
SUPPLY PLUG
SPARK SWITCH LF
SPARK SWITCH RF
SPARK SWITCH RR
SPARK SWITCH LR
C
NO



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— NOTES —