

2. maintain steady gas flow to the burner by adjusting to pressure changes

The regulator accomplishes these functions through sensing and adjusting pressure on the two sides of flexible diaphragms. Increasing pressure on one side of the diaphragm while reducing it on the other moves the position of a shutoff disc and adjusts or stops gas flow to the main burner.

1.5.1.5 PILOT ADJUSTMENT SCREW (INTERMITTENT PILOT ONLY)

Intermittent pilot gas control valves (only) have a screw for pilot flame adjustment.

2. ELECTRONIC GAS CONTROL VALVE OPERATIONAL SEQUENCE

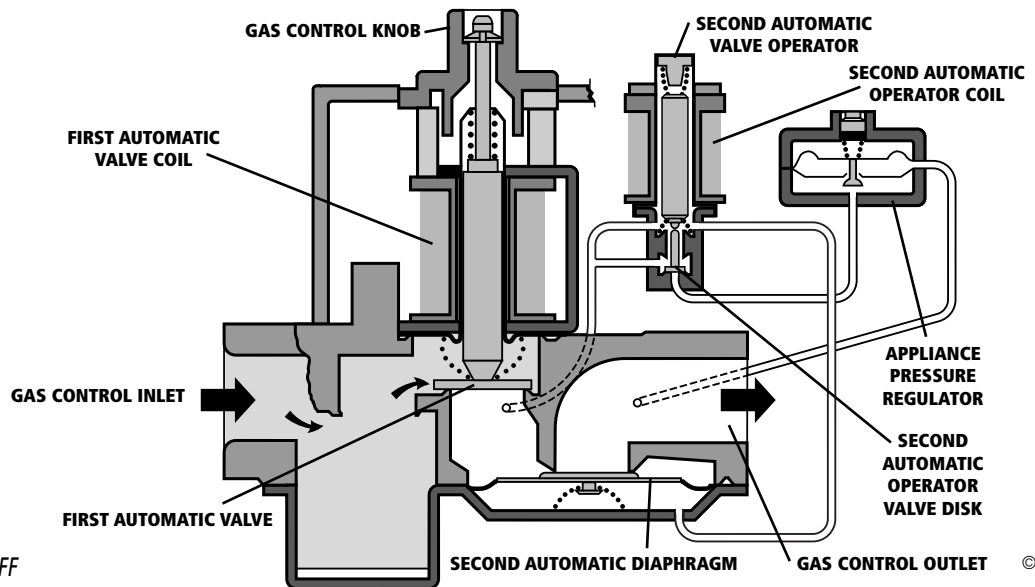
We organize operational sequence by direct ignition control valves and intermittent pilot ignition control valves.

2.1 DIRECT IGNITION CONTROL VALVES

First, we look at a generalized overview of direct ignition valve operation, then we follow the sequence in more detail with the two types of direct ignition electronic gas control valves, hot surface and direct spark. We start the operational sequence with the remote switch, control, or thermostat turned off (not set for heat demand) and the electronic gas control in the OFF position. Illustrations are broadly representational and intended as an aid to understanding operation sequence. Components are not shown in their actual positions.

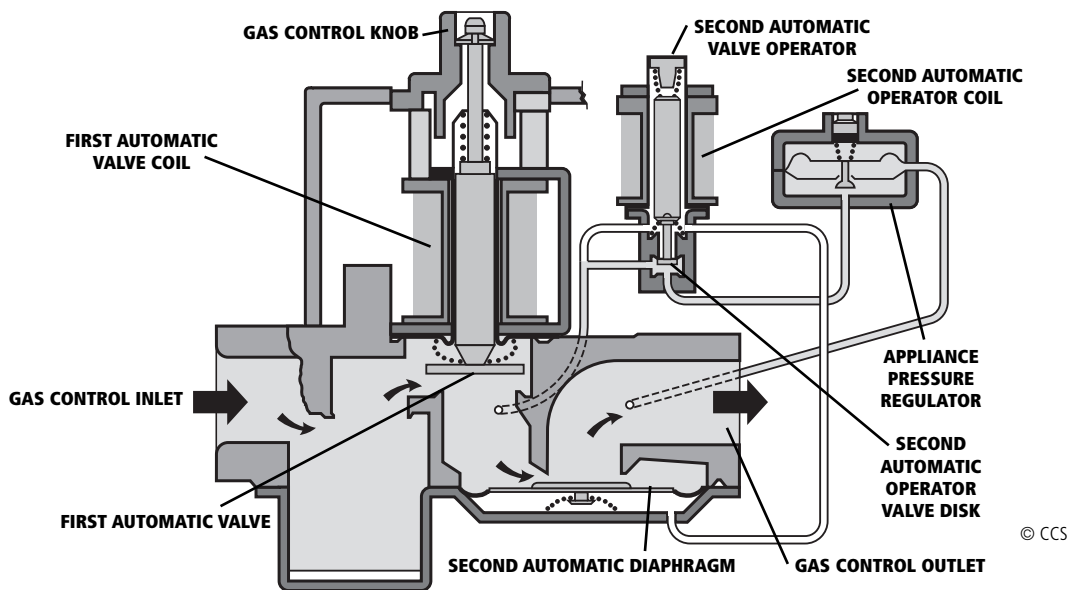
Electronic Valve Operation Overview

1. With the control knob in the OFF position, gas cannot flow to burner(s).



Control Knob Position: OFF
Heat Demand: None

2. When the control knob is turned to the ON position, the control module sends 24 VAC to the first operator coil to allow gas flow to the pressure regulator, but not to the main burner.



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*Control Knob Position: ON
Heat Demand: Yes*

3. When the remote switch, remote control, or thermostat signals heat demand, the control module sends 24 VAC or 110 VAC to the igniter (hot surface or direct spark). At the appropriate time the module sends 24 VAC to the second operator coil to allow gas to flow to the main burner (or to the pilot and main burner with intermittent pilot systems) for ignition. If the control module senses DC microamps from the flame, it continues to supply the power to keep the valve open. When the heat demand is met or the remote switch or control is turned off, the control module stops gas flow to the main burner by ceasing to supply power to the second operator.

If the flame is lost during operation and while there is still heat demand, the control module fails to detect the DC signal and shuts down gas flow.

2.1.1 DIRECT SPARK IGNITION OPERATION SEQUENCE DETAILS

- Turning the valve control knob to ON allows gas to flow to the first operator, but no further.
- Operating the wall switch, remote control, or thermostat to demand heat allows the control module to send power to the spark generator.
- The spark generator repeatedly sparks and the control module sends power to open the portal to allow gas flow to the main burner for about 4-7 seconds.