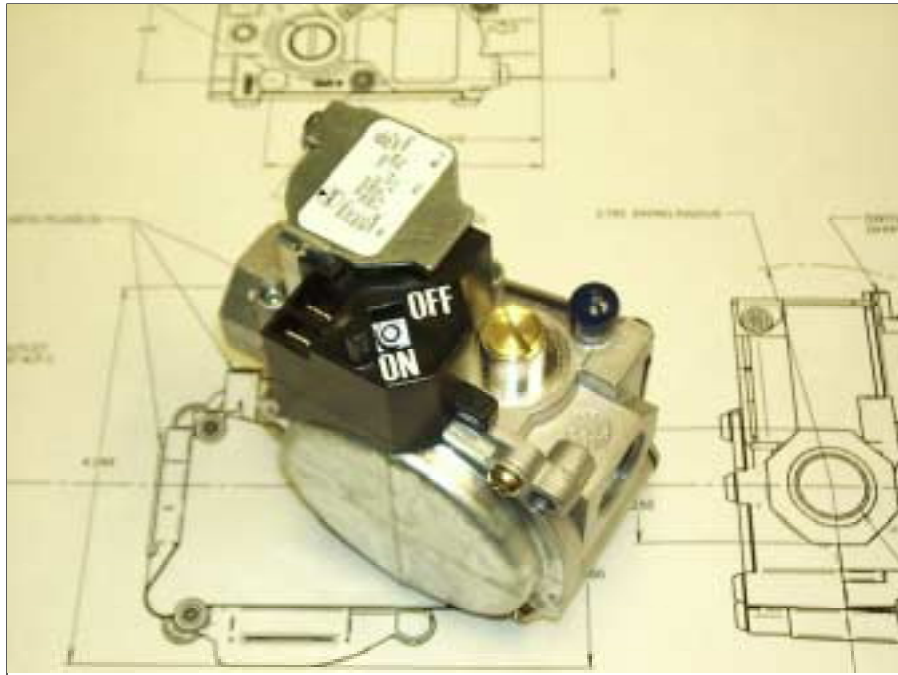




# WHITE-RODGERS



## GEMINI GAS CONTROL PRODUCT INFORMATION

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The Gemini (36G) combination gas control valve is a versatile multifunction control designed to meet the requirements for use with non-piloted intermittent ignition systems (Direct Spark Ignition, Hot Surface Ignition). Along with its reduced size, all control adjustments and features as well as the system interface-wiring panel have been designed on the top surface of the control for simplified application and easy accessibility. The Gemini (36G) gas control is designed to meet today's requirement for maximum capacity, smaller size and high efficiency gas systems.

Features include:

- Patented coaxial solenoid design.
- Inlet and outlet screens - help protect from debris.
- High sealing force direct acting valves.
- Controlled gasket clinch to withstand high inlet pressures.
- Tamper resistant screws.
- Automated/manual assembly and comprehensive testing.
- Built-in hose connections for simplified field service.
- Conveniently located electric on-off switch.
- Versatile mounting (any position).

# general specifications

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## Standard Features

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- Inlet and outlet screens
- Ambient temperature for – 40° to 175°F
- Mounting (any position)
- Quiet redundant
- Electrical shut-off
- Top mounted components
- Outlet pressure tap
- Quick-connect terminals (1/4")
- Mounting holes for 8-32 screws
- Adjustable regulator

### CURRENT REQUIREMENTS

VOLTAGE FREQUENCY	TOTAL CURRENT	FEATURE
24V, 50/60 HZ	.3A	QUIET

## Optional Features

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- Ground terminal
- Natural to LP regulator selector (convertible)
- Slow open
- Inlet pressure tap
- Right-angle outlet
- Limited maximum adjustable regulator

## Regulator Adjustment Range

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### RANGE OF REGULATION FOR 36G

PIPE SIZES AVAILABLE	CSA STD. GAS .64 SP. GR. (1000 BTU/CU. FT.)	LP GAS 1.53 SP. GR. (2500 BTU/CU. FT.)
½" x ½" NPT	40,000 – 210,000	64,000 – 340,000

**Natural Gas:**  
1.5" to 3.5" W.C.  
2.5" to 5.0" W.C.

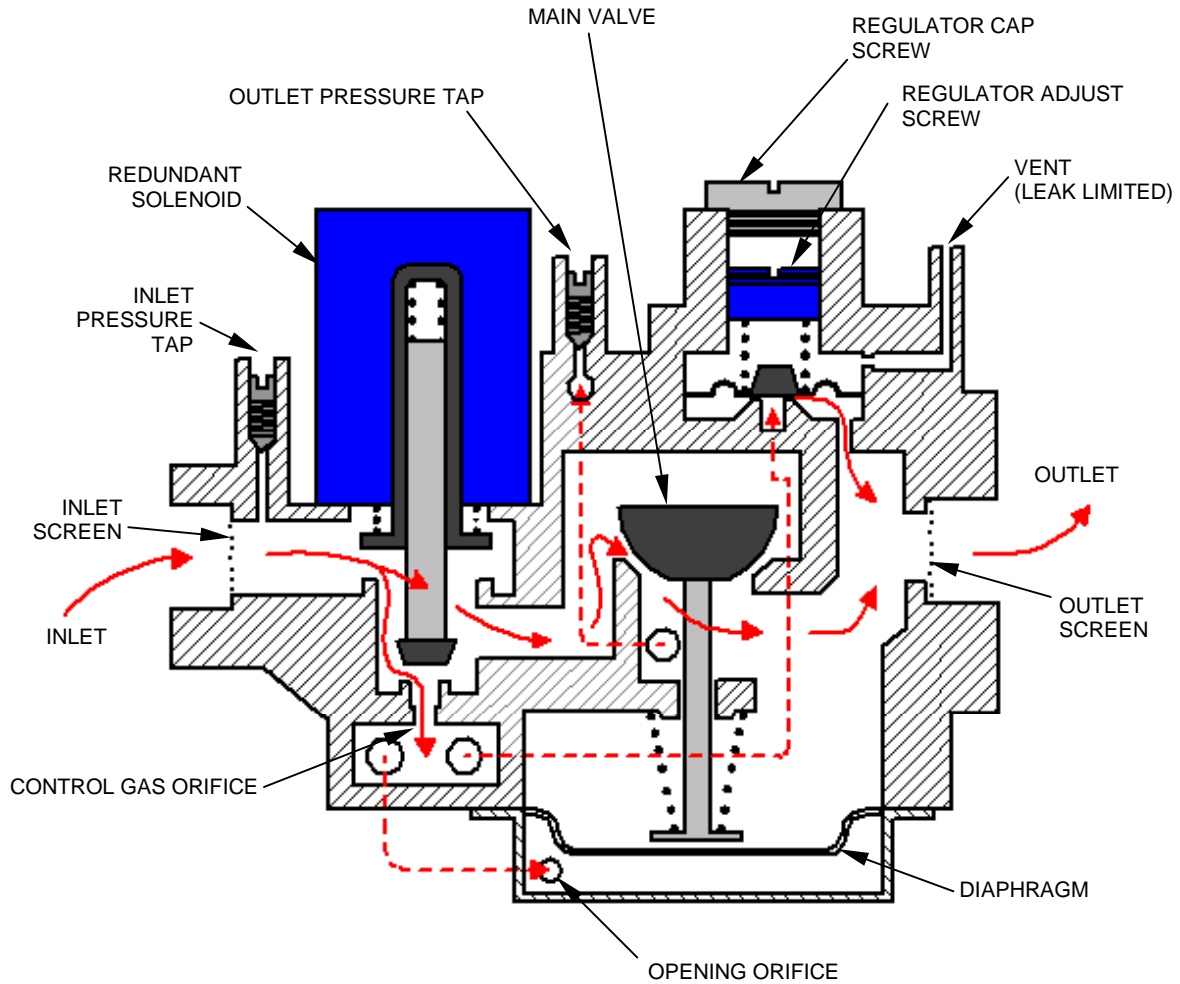
**LP Gas:**  
5.0" to 11.5" W.C.  
7.0" to 12.0" W.C.

**Maximum Pressure:** ½ PSI

**Agency Approved:** CSA all models

# general specifications

## Schematic Gas Flow Diagram

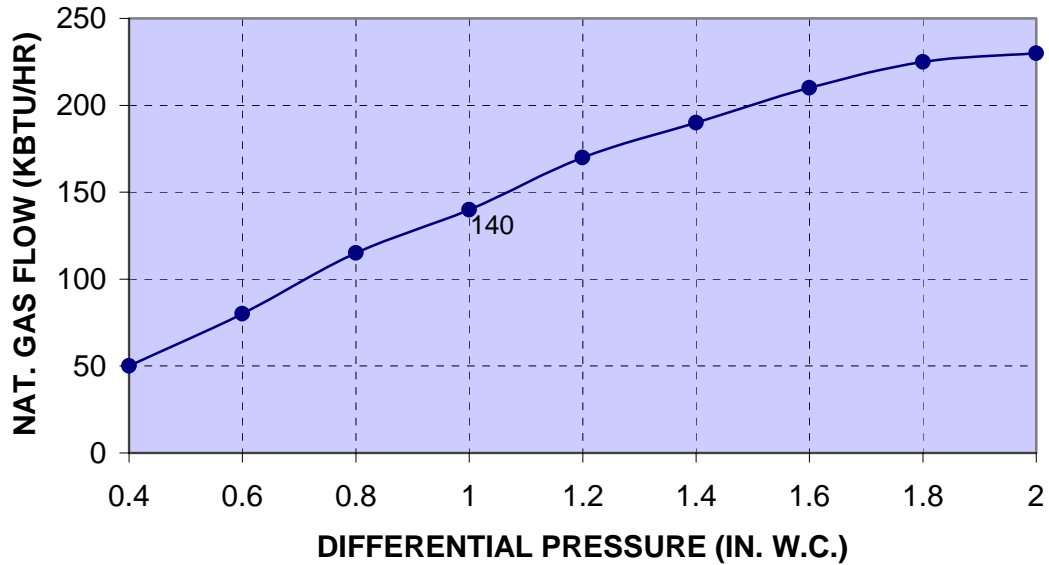


**36G DIAGRAM FOR ILLUSTRATION ONLY, NOT ALL DETAILS ARE INCLUDED**

# performance curves

## 1" Pressure Drop Capacity

### 1" PRESSURE DROP CAPACITY (1/2" x 1/2" PIPE SIZE)

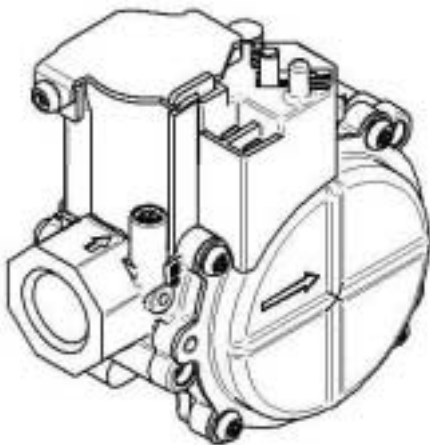


### 1.0" PRESSURE DROP CAPACITY

PIPE SIZES AVAILABLE	CSA STD. GAS .64 SP. GR. (1000 BTU/CU. FT.)	LP GAS 1.53 SP. GR. (2500 BTU/CU. FT.)
1/2" x 1/2" NPT	140,000 BTU/HR	226,800 BTU/HR

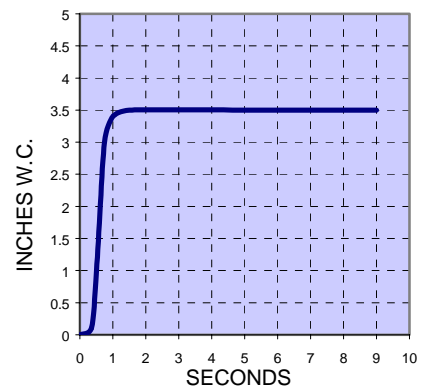
# features and options

## Standard Open Control



This control has a standard opening characteristic that is suitable for a wide range of applications. It provides a fast rise to full pressure upon energizing the solenoid. Regulator LP spring conversion kits are available for this control.

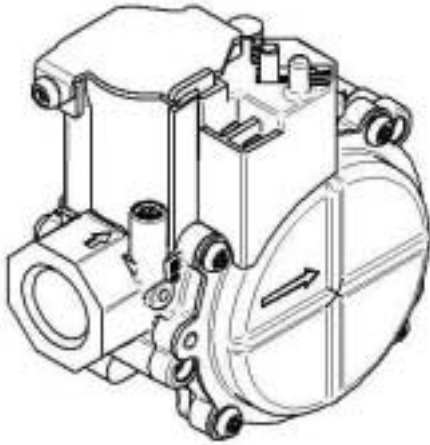
### 36G STANDARD OPEN GAS VALVE (.019 OPENING ORIFICE)



NOTE: TYPICAL OPENING CURVE NATURAL GAS  
100,000 BTU/HR. 7" W.C. INLET / 3.5" W.C. OUTLET.

# features and options

## Slow Open Control

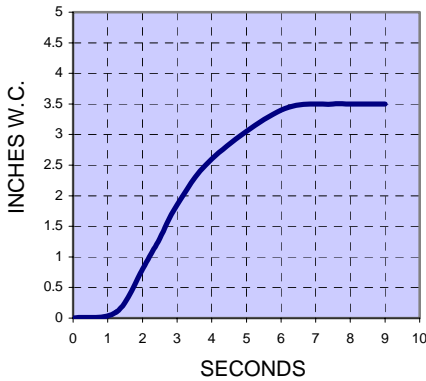


This control has a slow opening characteristic. It provides a slow increase of gas to full pressure for smoother ignition, as may be required by some applications.

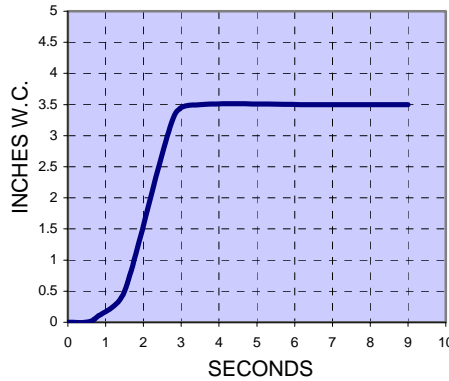
Options available:

- B. .006 Opening orifice
- C. .008 Opening orifice
- D. .012 Opening orifice

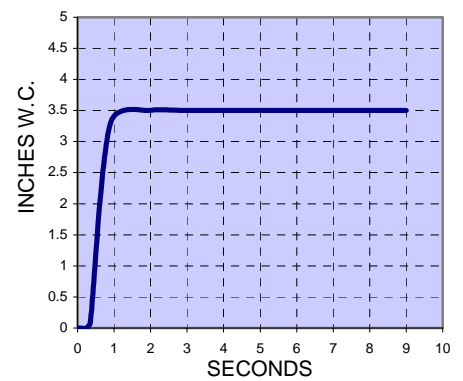
**36G SLOW OPEN B**



**36G SLOW OPEN C**

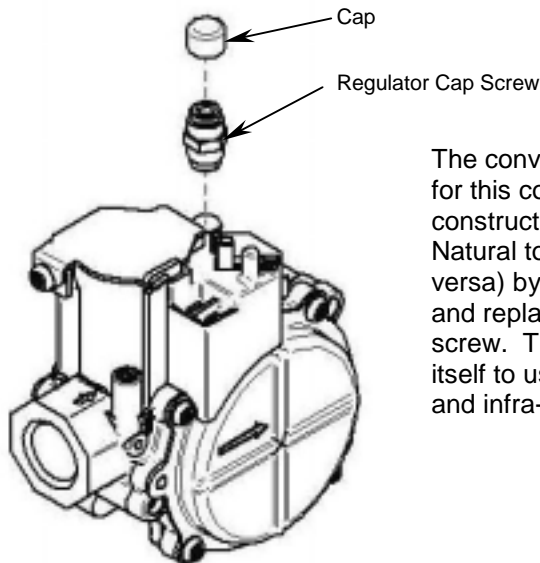


**36G SLOW OPEN D**



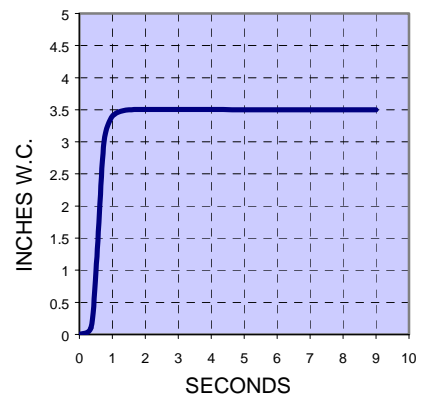
NOTE: TYPICAL OPENING CURVE NATURAL GAS 100,000 BTU/HR. 7" W.C. INLET / 3.5" W.C. OUTLET. OPENING CHARACTERISTICS WILL VARY WITH FLOW RATE AND APPLICATION.

## Convertible Regulator



The convertible regulator option for this control involves a construction that permits easy Natural to LP conversion (or vice versa) by removing, inverting and replacing the regulator cap screw. This feature easily lends itself to use in mobile homes and infra-red applications.

**36G CONVERTIBLE GAS VALVE**



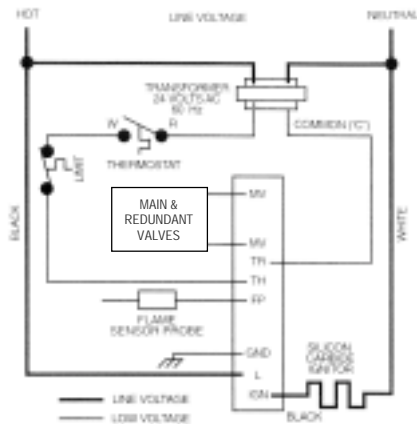
NOTE: TYPICAL OPENING CURVE NATURAL GAS 100,000 BTU/HR. 7" W.C. INLET / 3.5" W.C. OUTLET.

# system applications

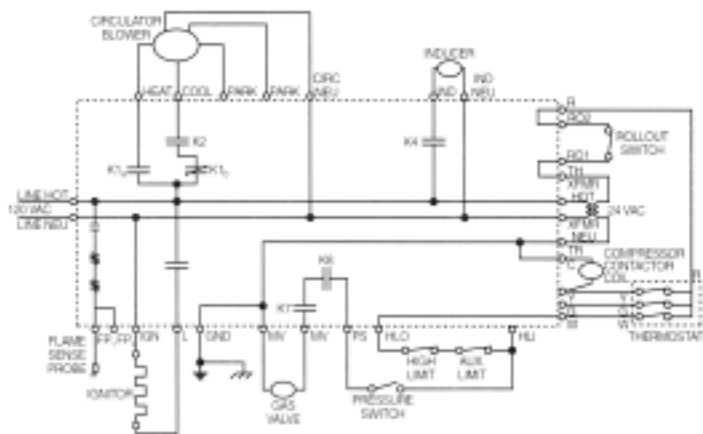
## Hot Surface Ignition Systems

**HSI CONTROL.** The thermostat calls for heat and energizes the HSI control. If system is equipped with prepurge, the purge fan is energized and power will be delayed thirty seconds before application to the silicon carbide ignitor. If prepurge is not selected, the ignitor is powered within one second. The ignitor heats up and at the end of the heating period, the redundant and main valves are opened. A flame must be detected within a fixed time period or both valves close, the ignitor is turned off and the HSI control locks out unless the system is equipped with retry. Retry indicates the ignition sequence will be repeated for a total of three tries if flame is undetected or lost within 30 seconds of ignition.

**Accessories:** HSI Control, Sense Electrode, Silicon Carbide Ignitor, Silicon Nitride Ignitor



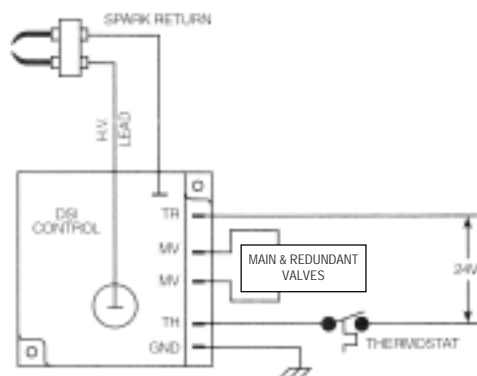
**INTEGRATED CONTROL.** The 50A55 or 50A65 Integrated Hot Surface Ignition controls employ a microprocessor to continuously monitor, analyze, and control the proper operation of the gas burner, inducer, and fan. Signals interpreted during continual surveillance of the thermostat and flame sensing element initiate automatic ignition of the burner, sensing of the flame, and system shut-off during normal operation. The control incorporates system fault analysis for quick gas flow shut-off, coupled with automatic ignition retry upon sensing a fault correction.



## Direct Spark Ignition System

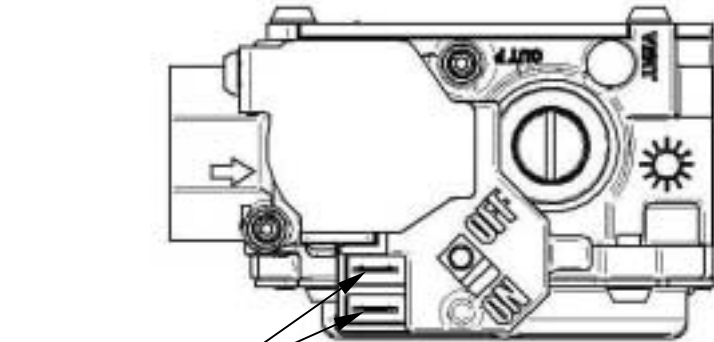
The thermostat calls for heat and simultaneously energizes the DSI control module and gas valve solenoid. Sparks at the ignition electrodes ignite the gas at the main burner. Flame is sensed through the electrodes by the flame detection circuit which shuts off the sparking. If flame is not established within a fixed time period (lock-out time) main and redundant valves close, sparking ceases and the control module locks out.

**Accessories:** DSI Control, Electrodes



# electrical connection

## Hot Surface/Direct Spark Ignition

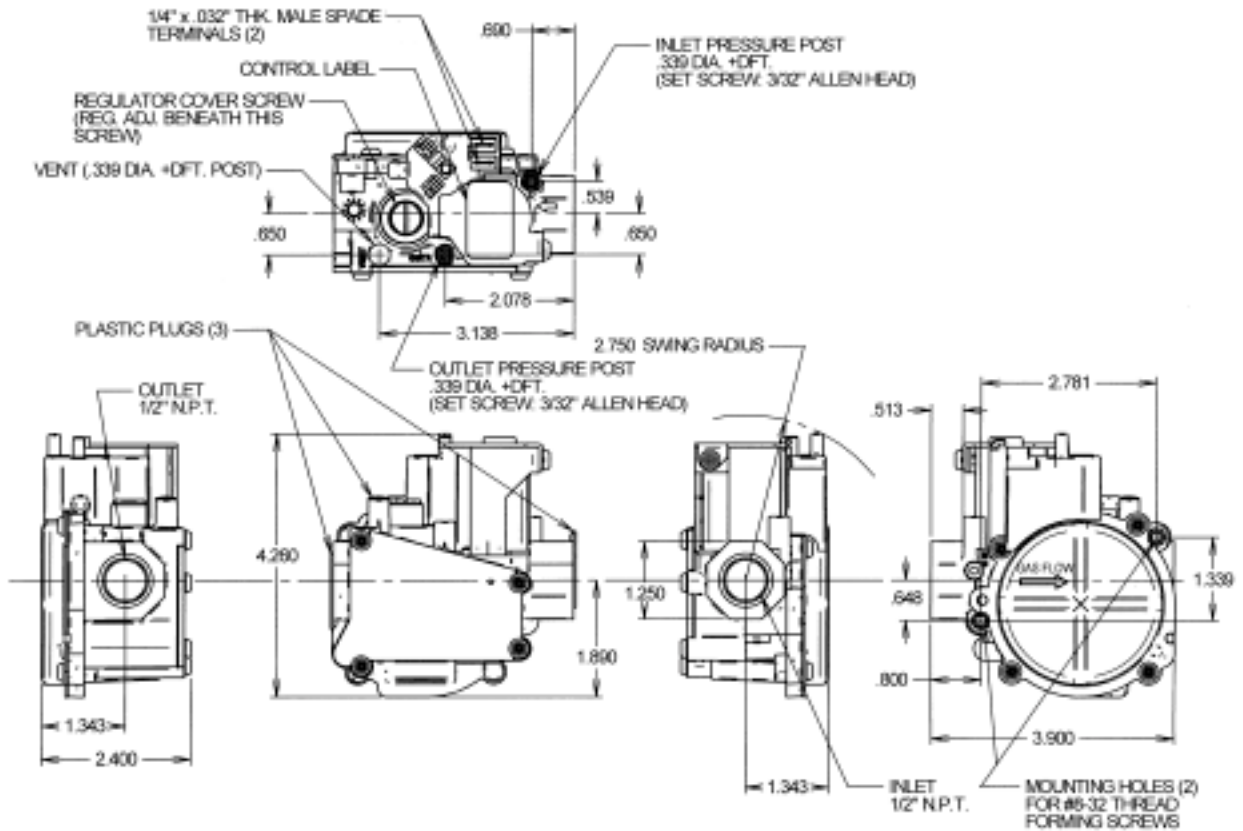


(2) 1/4" MALE QUICK CONNECT TERMINALS

**36G – Top View**

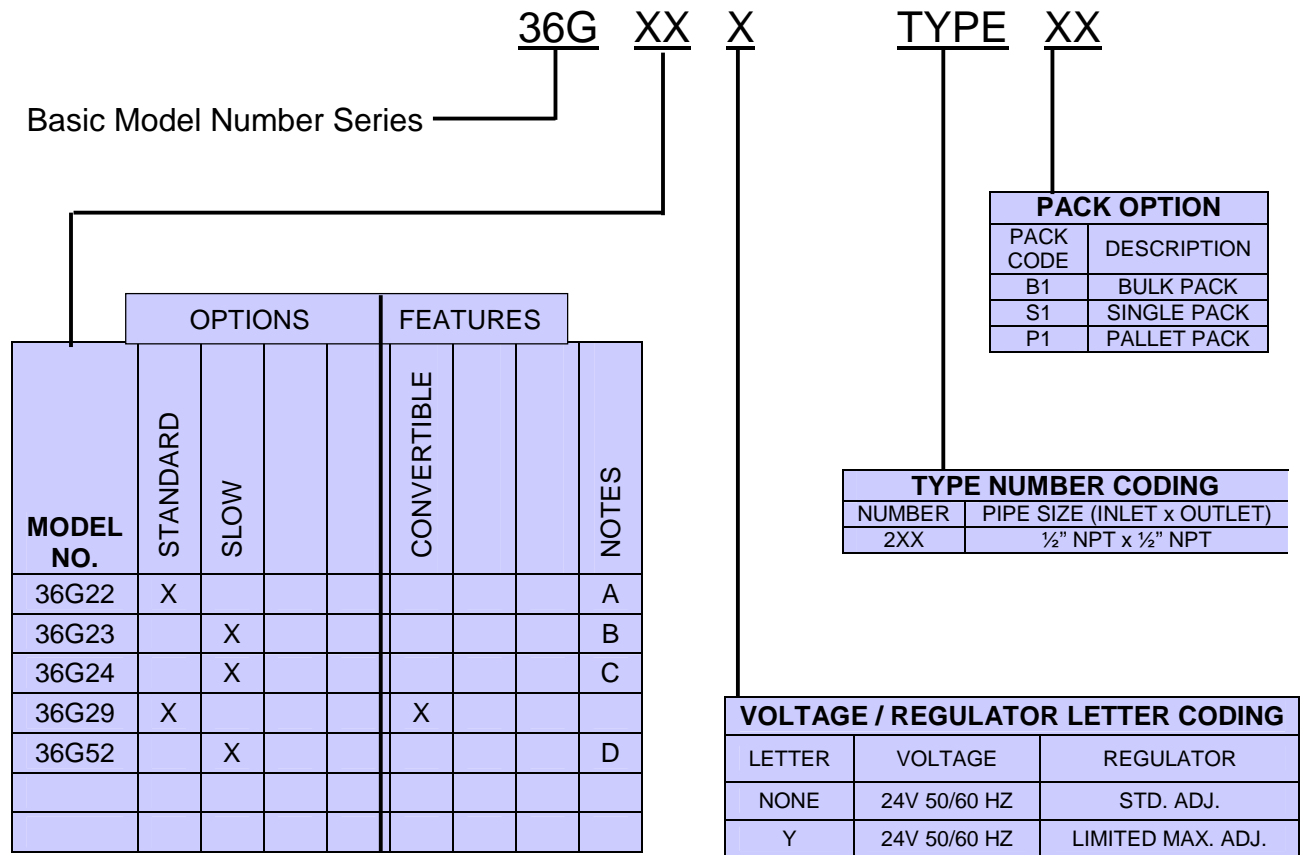
## dimensions

## 36G Standard /Slow Open Control



# models available

Each valve is uniquely defined by a model number succeeded by the type number as follows:



NOTES:  
 A - .019 OPENING ORIFICE  
 B - .006 OPENING ORIFICE  
 C - .008 OPENING ORIFICE  
 D - .012 OPENING ORIFICE



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