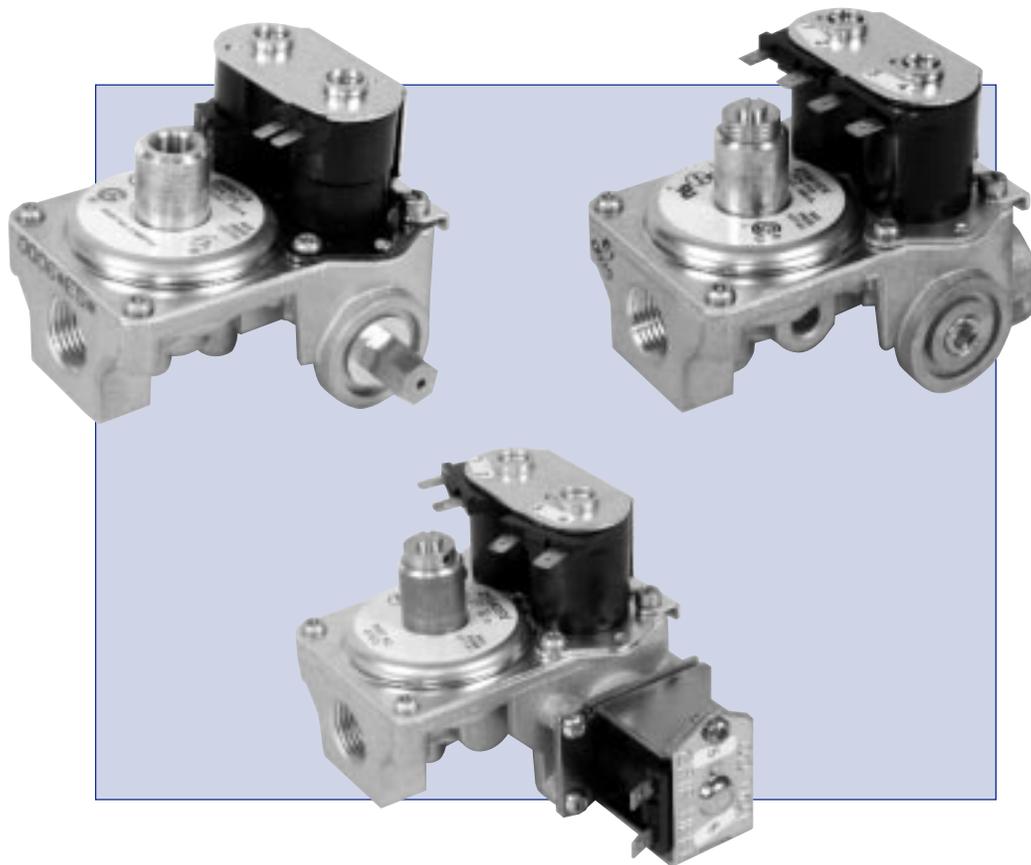




# WHITE-RODGERS



## 25M SERIES GAS CONTROLS PRODUCT INFORMATION

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The 25M series gas control is a compact, multifunctional valve, with a direct-acting regulator ideal for use in pilot valve applications, thru-the wall heaters, RV heaters, gas clothes dryers, hearth products, radiant heat systems, water heaters, cooking applications, agricultural heaters/dryers, or other high-efficiency equipment.

The 25M valve, provided with a straight-in inlet, has various outlet configurations that, when coupled with the various pipe sizes available, make for easy adaptation to a given application.

Optional features, such as the inlet pressure tap, increase the flexibility in adapting this valve.

Available configurations include:

- **Single Solenoid**  
(for pilot valve applications)
- **Dual Solenoid, Valves in Series**  
(for applications requiring redundancy)
- **Dual Solenoid, Valves Independent**  
(for dual burner applications)
- **Split-Coil** (for use with Hot Surface Ignition systems)
- **Two-Stage** (for applications requiring both high-fire and low-fire settings)

# general specifications

## Standard Features

25M Appliance	25M Manifold	
X	X	Compact Size (3-13/32" x 2-1/2" - 2-19/32")
X		Split Coil
	X	Single Solenoid
	X	Dual Solenoid
X	X	Inlet Screen (protected from pipe damage)
X	X	Outlet Screen (protected from pipe damage)
X	X	Field Adjustable Regulator
X	X	Replaceable Operating coils without interrupting gas flow
X	X	Outlet Pressure Tap
X		Ambient Temperature Rating: 32° to 155°F
	X	Ambient Temperature Rating: 32° to 175°F
X	X	Straight Through Outlet (offset)
X		.110 x .010 Male Terminals
	X	3/16" Male Tab Type Terminals

## Optional Features

25M Appliance	25M Manifold	
X		Orifice Holder Outlet
X	X	Right/Left Angle Outlets
	X	Dual Outlets (Right-Angle-Left AND Right-Angle-Right or Straight Through
	X	Inverted Flare
	X	British Threads (Rp)
	X	Inlet Pressure Tap
	X	Natural to LP Regulator Selector (convertible)
	X	European Quiet-Type Solenoids
	X	Encapsulated Leads
	X	Ground Terminal
	X	Tamper Evident Regulator Seal
	X	Low Ambient Temperature Rating (-40° to 175°F)
	X	High Capacity Model (60 KBTU Natural Gas)
	X	Two-Stage Operation (Right-Angle-Left or Right-Angle-Right Only)

## Regulator Adjustment Range

Natural Gas: 2.8" to 4.0" W.C.  
3.5" to 5.4" W.C.

LP Gas: 8.5" to 11.4" W.C.  
9.0" to 12.0" W.C.

## Range of Regulations

Natural Gas: 5,000 to 55,000 BTU/hr  
5,000 to 65,000 BTU/hr —  
Dual Solenoid Independent

LP Gas: 8,000 to 89,000 BTU/hr  
8,000 to 104,000 BTU/hr —  
Dual Solenoid Independent

## Conversion Kits

	Part Number	
From Natural Gas to Regulated LP:	F73-1493	Regulates between 9.0" to 12.0" W.C.
From LP to Natural Gas:	F73-1561	Regulates between 2.8" to 4.0" W.C.
From Natural gas to LP:	F69-2257	Blocks open the Regulator (Blocking Pin)

# general specifications

## Current Requirements

		OPERATOR(S) REQUIREMENT (AMPS)	
Voltage	Frequency	Single Coil	Dual Coil, Parallel (total draw)
12	DC	.240	.480
24	DC	.120	.240
24	50 Hz	.210	.420
24	60 Hz	.175	.350
120	50 Hz	.035	.070
120	60 Hz	.030	.060
240	50 Hz	.030	.060
240	60 Hz	.025	.050

SPLIT-COIL VERSIONS				
Model #	Rated Volts	Hertz	Operating Mode	Comments
25M01A	120	60	Start	Glo-Bar On, Sensor Closed
	120	60	Running	Glo-Bar Off, Sensor Open
25M01B	120	50	Start	Glo-Bar On, Sensor Closed
	120	50	Running	Glo-Bar Off, Sensor Open

	SPLIT-COIL	DUAL SOLENOID REDUNDANT		DUAL SOLENOID INDEPENDENT		SINGLE SOLENOID		HIGH CAPACITY
	25M01A	25M02	25M12	25M03	25M13	25M04	25M14	25M72
1" P.D. Capacity	40K	40K	40K	30K/side*	30K/side*	48K	48K	52K
2" P.D. Capacity	60K	60K	60K	35K/side+	35K/side+	70K	70K	73K
Range of Regulation	5 to 55K	5 to 55K	5 to 55K	5 to 65K	5 to 65K	5 to 65K	5 to 65K	25 to 85K
Ambient Temperature Rating	32° to 155° F	32° to 175° F	-40° to 175° F	32° to 175° F	-40° to 175° F	32° to 175° F	-40° to 175° F	-40° to 175° F
Outlet Pressure Adjustment Range	2.8" to 4.0"	2.8" to 4.0"	2.8" to 4.0"	3.5" to 5.4"	3.5" to 5.4"	2.8" to 4.0"	2.8" to 4.0"	2.8" to 4.0"

\* 60K with both solenoids energized  
+ 70K with both solenoids energized

**Maximum Pressure:** 1/2 PSI      **Agency Approvals:** CSA Int'l all models

### Pipe Sizes

**Inlet:** 3/8" or 1/4" NPT or British Threads (Rp)  
Straight In

**Outlet:** 3/8", 1/4", 1/8" NPT or British Threads (Rp)  
or Orifice Holder  
Right Angle Right (RAR), Right Angle Left (RAL), Offset Straight Through,  
or Right Angle Right and Left (Dual Outlet)

# general specifications

## Regulator Operation

The 25M series gas valve utilizes a direct acting regulator construction to maintain proper outlet gas pressure for fluctuating inlet pressures. (Refer to Fig. 1)

### 1) Calibration

The regulator is adjusted at the factory to give the outlet pressure to an orifice as required by the customer (This is referred to as the set point). The outlet pressure (B) and the orifice are selected by the customer to give the desired flow rate of gas necessary for his application. This adjustment is made at an inlet pressure (A) of 7.0" W.C. for natural gas and 14.0" for L.P. gas.

### 2) Flucuating Inlet Pressure (A)

When the inlet pressure (A) increases, the outlet pressure (B) starts to increase, but the increasing force created on the diaphragm causes the stem to move closer to the seat thereby throttling the flow and reducing the pressure onto the diaphragm. As this pressure decreases the stem moves away from the seat allowing more flow and higher outlet pressure (B). The outlet pressure, therefore, modulates (high frequency and small amplitude) with respect to the set point. This is normal operation for direct acting types of regulators.

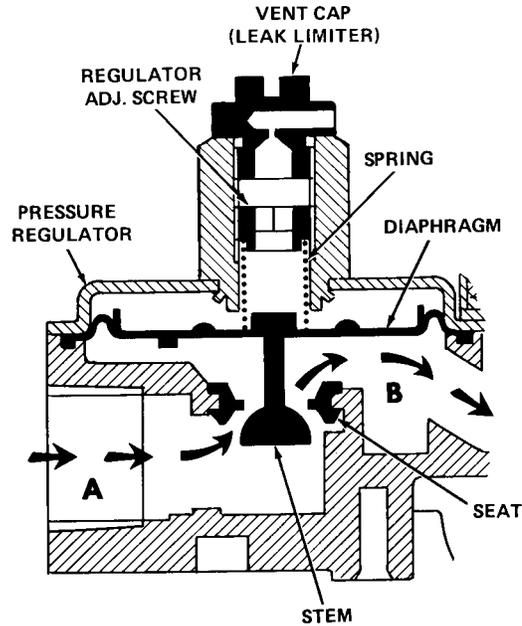
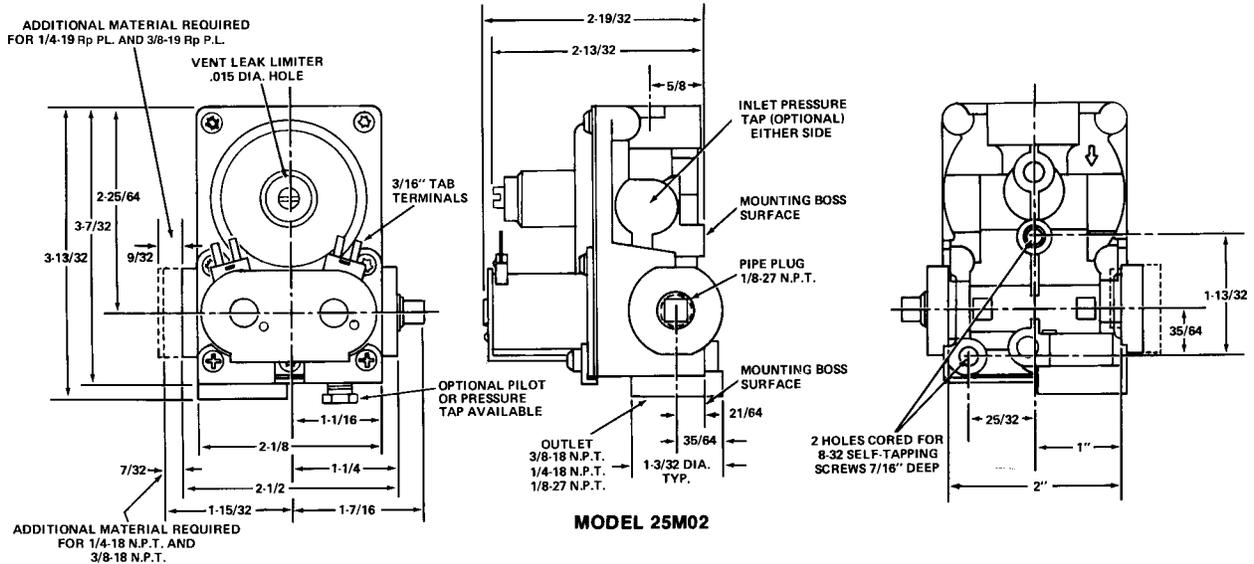


Figure 1

## Outline and Mounting Dimensions

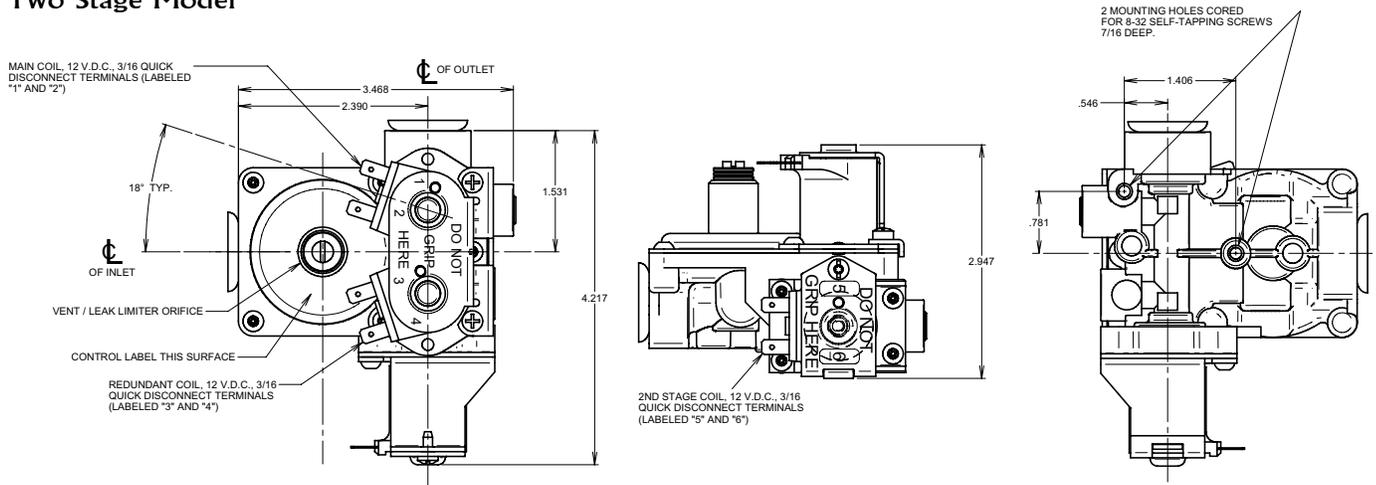
### Single Stage Model



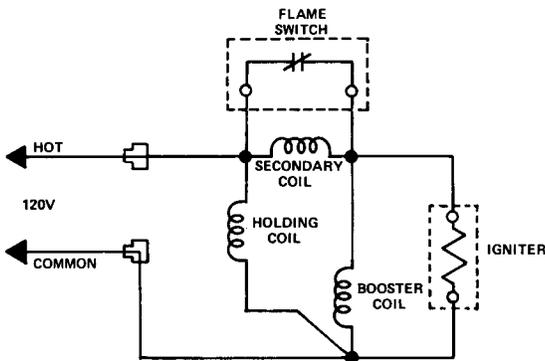
# general specifications

## Outline and Mounting Dimensions (cont.)

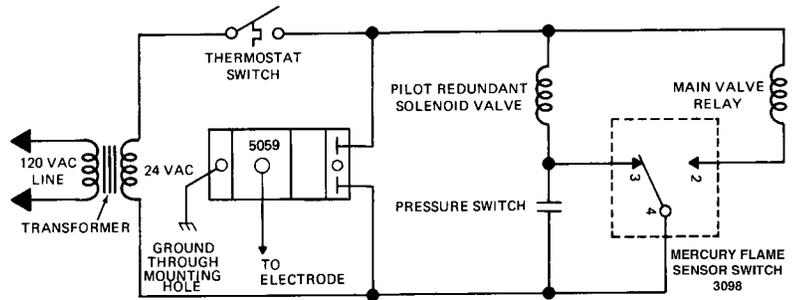
### Two Stage Model



## Typical Wiring Diagrams



TYPICAL WIRING DIAGRAM FOR MODEL 25M APPLIANCE VALVE



TYPICAL WIRING DIAGRAM FOR MODEL 25M MANIFOLD VALVE

## Cross-Sectional Views

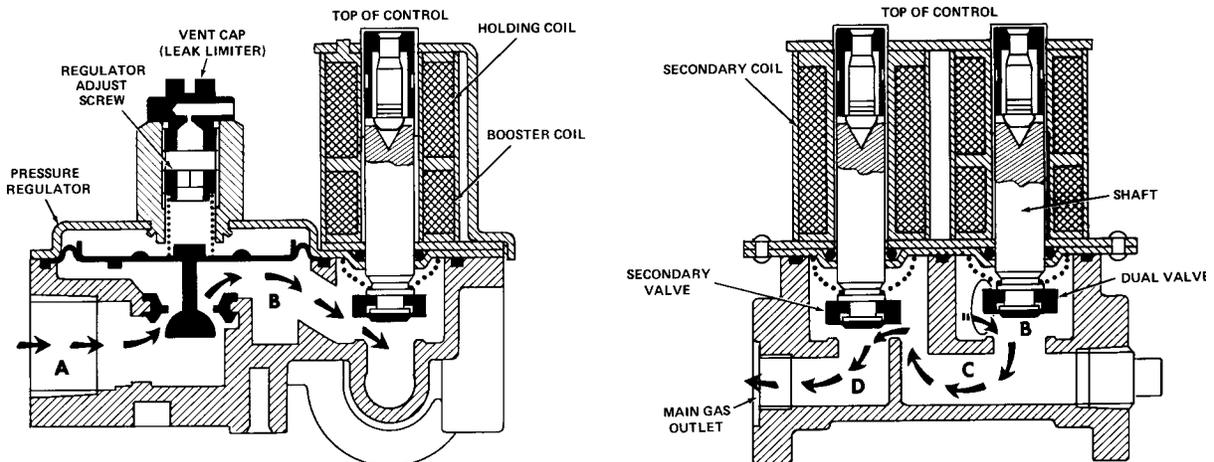


Figure 2 - CROSS-SECTIONAL VIEW OF 25M APPLIANCE VALVE

# general specifications

## Cross-Sectional Views (cont.)

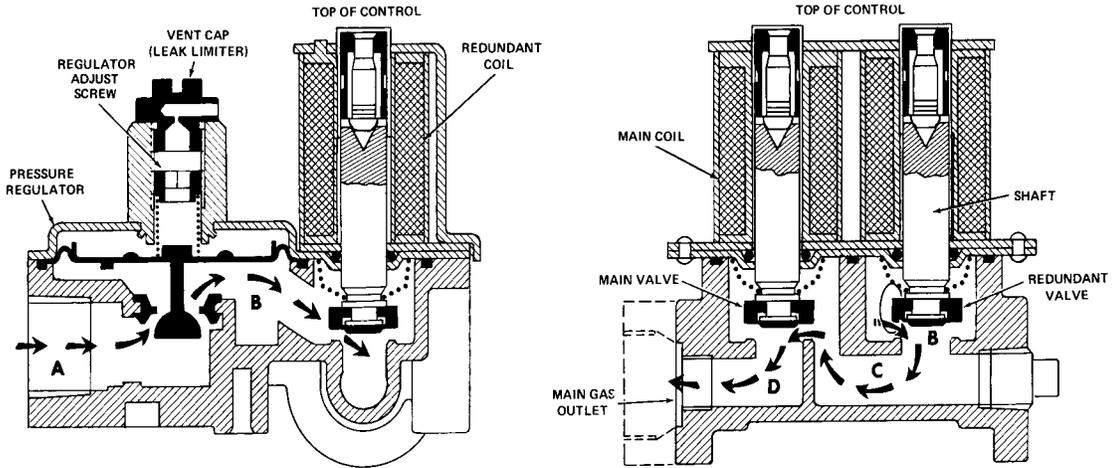
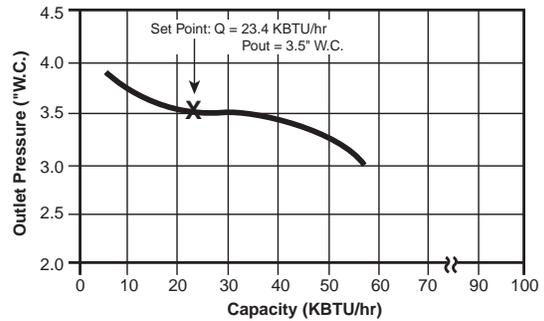
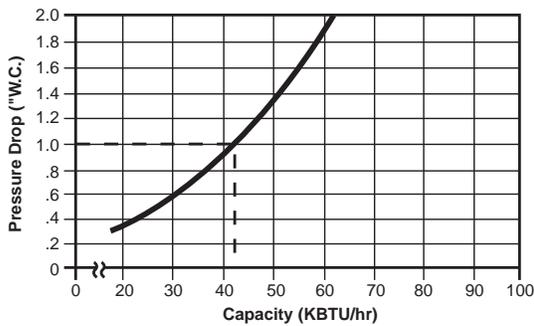


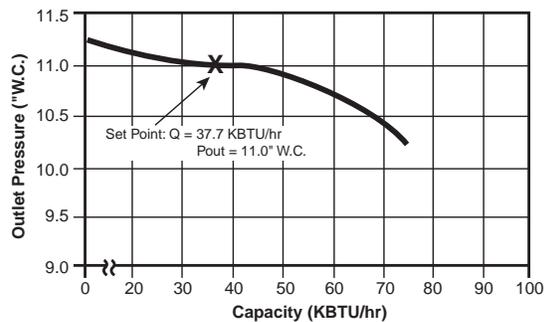
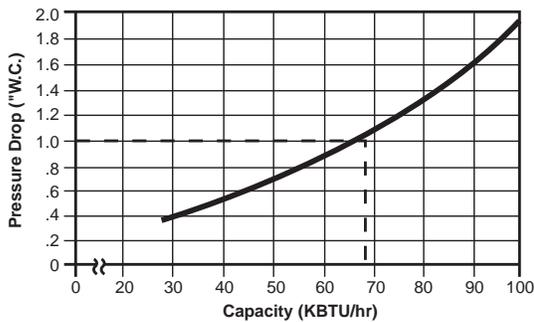
Figure 2 - CROSS-SECTIONAL VIEW OF 25M MANIFOLD VALVE

## 25M Performance Curves

### Natural Gas (1000 BTU/FT<sup>3</sup>, .64 SP. GR.)

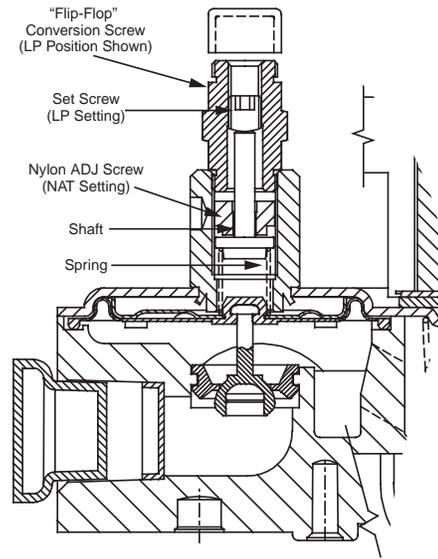


### L.P. Gas (2500 BTU/FT<sup>3</sup>, 1.53 SP. GR.)

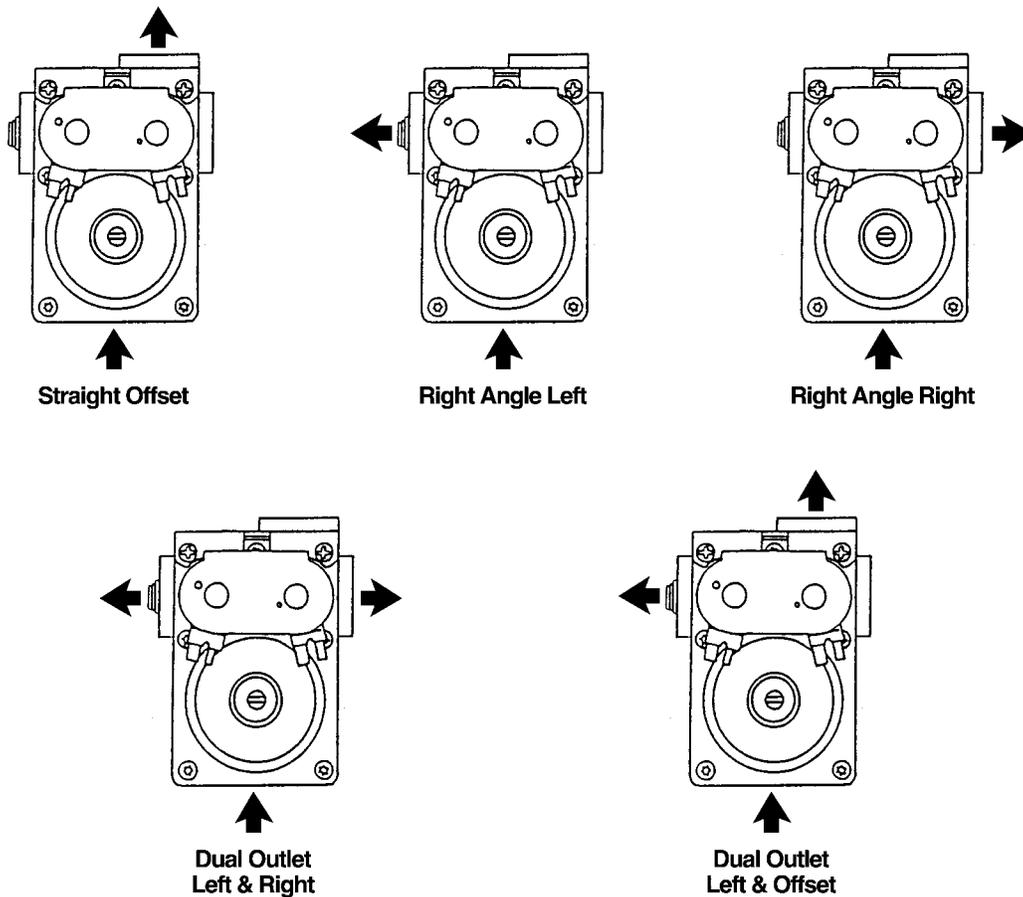


## Flip-Flop Convertible Regulator

Conversion from LP to NAT (or vice-versa) accomplished by inverting the position of the conversion screw and replacing the orifice. No further adjustment is required (convertible feature is CSA Int'l approved as a fixed-adjust convertible regulator). No provision for field adjustment as special tool is required.



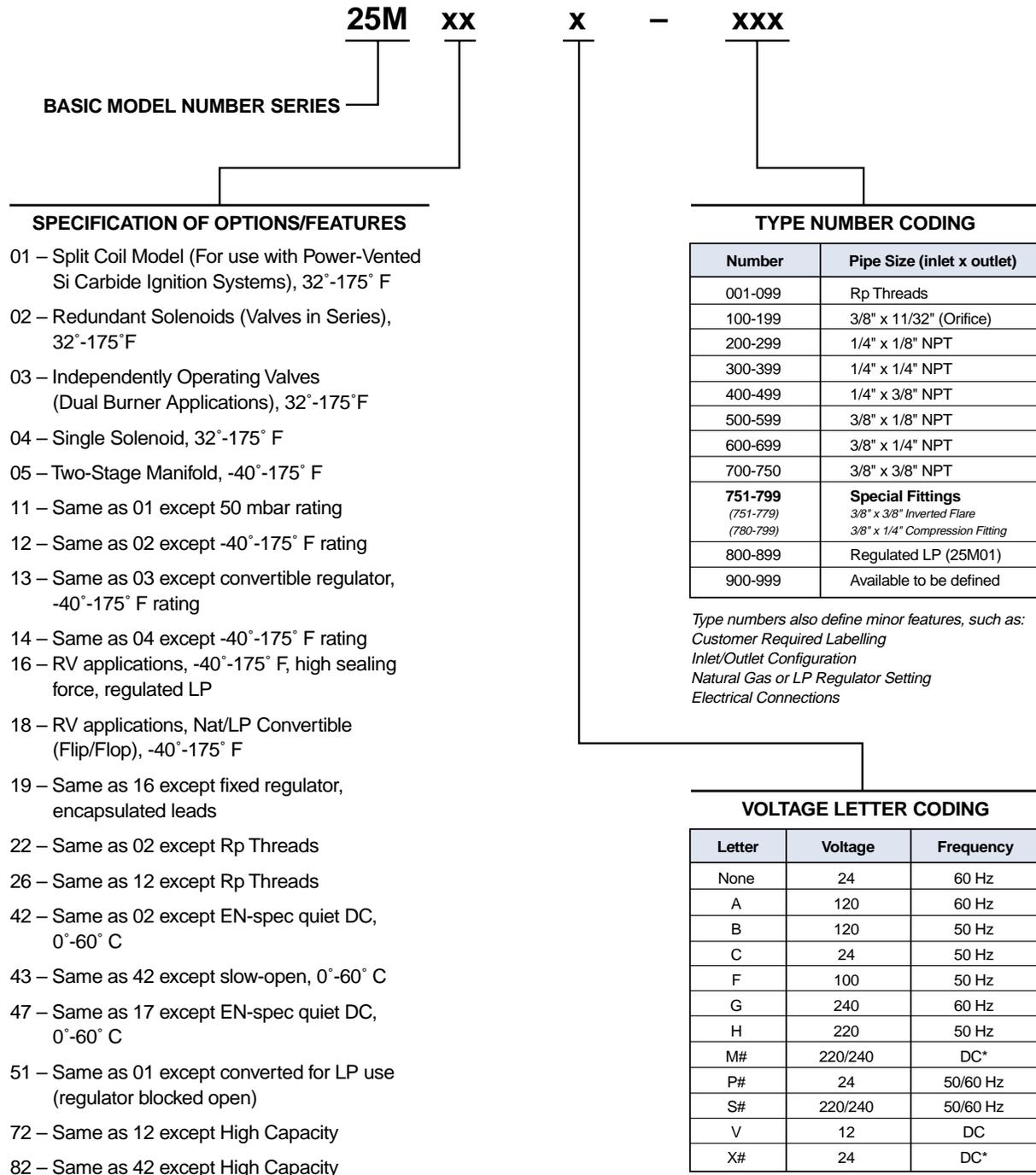
## Alternative Gas Paths



Note: Inlet & Outlet Pressure Taps available on request

# models available

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



\* Rated for Full-Wave Rectified AC  
# European Quiet-Type Solenoids



**WHITE-RODGERS**