

Model 001, 002 & 003A

Mass Flow Control Valves

The Porter Instrument Models 001, 002, and 003A Mass Flow Control Valves are normally closed, proportional solenoid control valves. When coupled with a Porter Instrument Mass Flowmeter, a closed-loop control system is achieved which permits separate component (flowmeter and control valve) configuration. Models 001 and 002 consist of a valve body, valve sleeve, D.C. coil, internal valve assembly complete with an elastomeric valve seat and an orifice. Flow is regulated by varying the valve drive voltage to the D.C. coil, which creates a magnetic field lifting the internal valve assembly from the orifice to allow gas flow control. While similar to Models 001 and 002, additionally the Model 003A Mass Flow Control Valve, designed for high flows, incorporates a pilot-operated valve design. The pilot valve, consisting of a spring-loaded diaphragm assembly and orifice system, controls the pressure differential across the diaphragm assembly, which lifts the main plunger off the orifice permitting gas flow.



SPECIFICATIONS:

Flow Capacity:

Model 001: 0-5 SCCM to 0-10 SLPM
Model 002: 0-10 SLPM to 0-100 SLPM
Model 003A: 0-100 SLPM to 0-500 SLPM

Ambient and Operating Temperature Range:

-10 to 70 °C (±14 to 158 °F)

Maximum Operating Pressure:

Model 001 & 002: 1000 PSIG
Model 003A: 200 PSIG

Mounting Orientation:

Attitude Insensitive

Dimensions:

Refer to Dimensional Data Section

Weight (Approx):

Model 001: 0.6 lbs
Model 002: 2.1 lbs
Model 003A: 3.4 lbs

Valve Coil:

Model 001 & Model 003A: 80 (±) Ohms
Model 002: 63 (± 3) Ohms

Operating Voltage (nominal):

4-11 Vdc (24 Vdc maximum)

Operating Current (nominal):

150 mAdc (275 mAdc maximum)

MATERIALS OF CONSTRUCTION

Body: 316 Stainless Steel

Orifice: 316 Stainless Steel

Valve Components (Wetted): 302 Stainless Steel, 316 Stainless Steel, 430F Stainless Steel and Sandvik® 1802

Elastomers (O-rings and Valve Seat): Buna N, EPDM, Kalrez®, Neoprene or Viton®

Process Connections: 316 Stainless Steel

Sandvik® - AB Sandvik Materials Technology

Kalrez®, Viton® - DuPont Dow Elastomers L.L.C.

Specifications subject to change

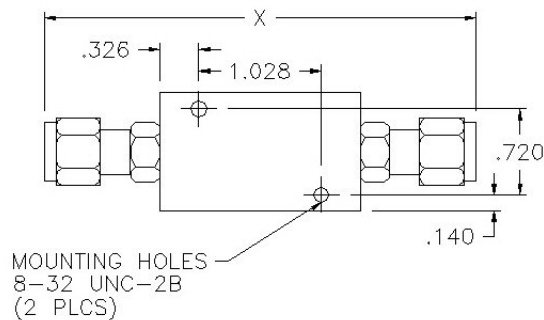
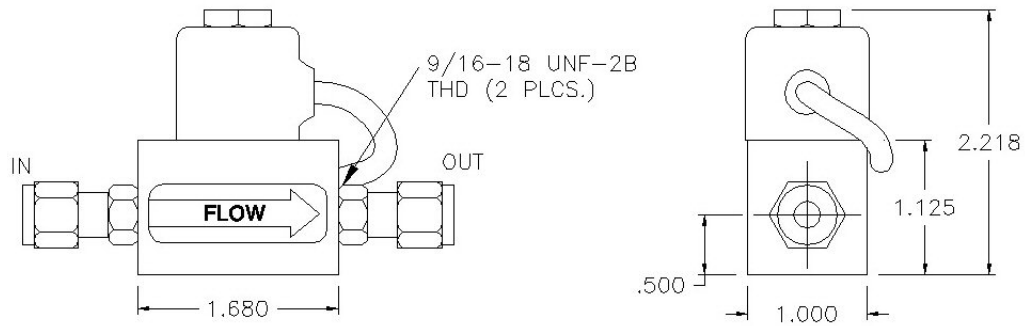
ORDERING INFORMATION

To order, please specify:

- Model number
- Elastomer material
- Process connection size and type
- Flow capacity
- Gas type
- Operating temperature
- Inlet (supply) pressure
- Outlet pressure
- Additional accessories required

DIMENSIONAL DATA

MODEL 001

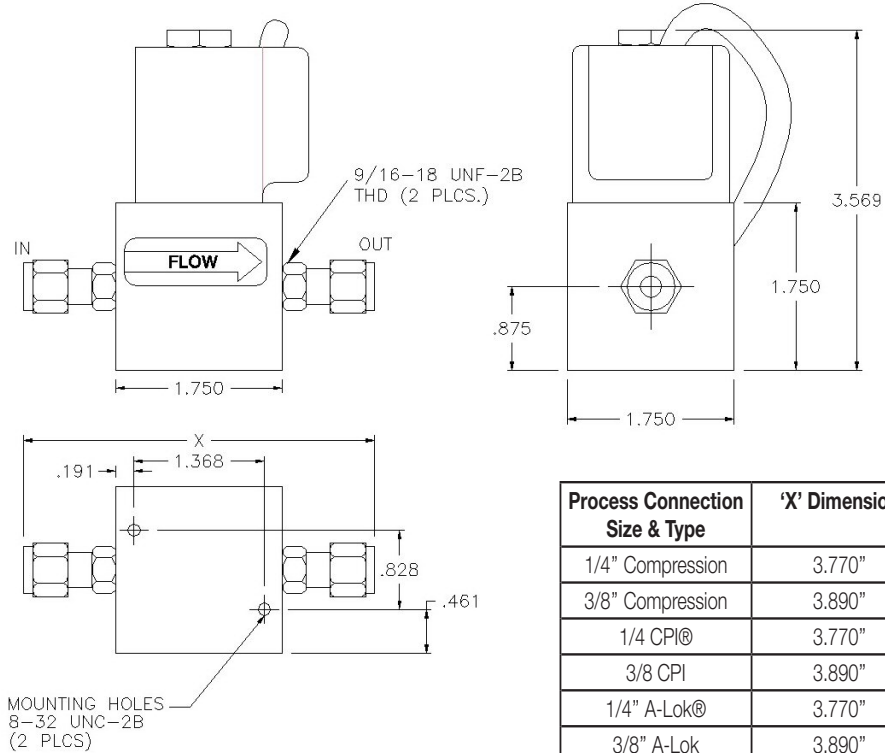


Process Connection Size & Type	'X' Dimension
1/4" Compression	3.770"
3/8" Compression	3.890"
1/4" CPI®	3.770"
3/8" CPI	3.890"
1/4" A-Lok®	3.770"
3/8" A-Lok	3.890"
1/4" MMGFS	3.560"

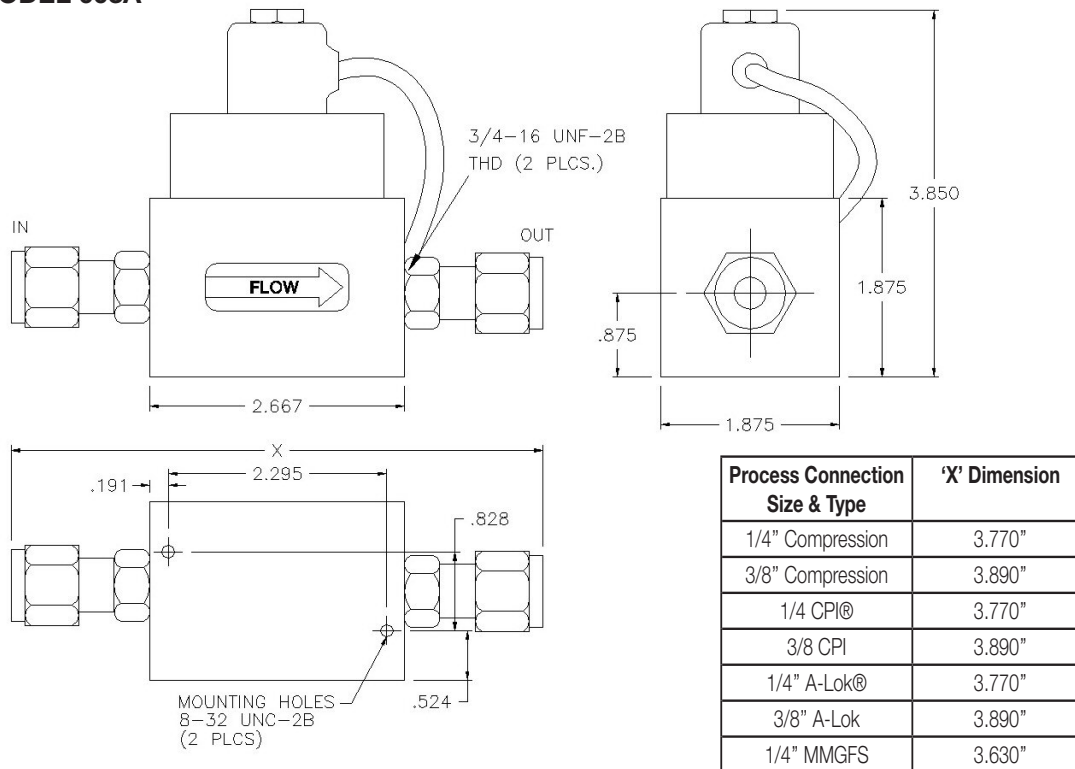
Dimensions shown in inches

DIMENSIONAL DATA (Continued)

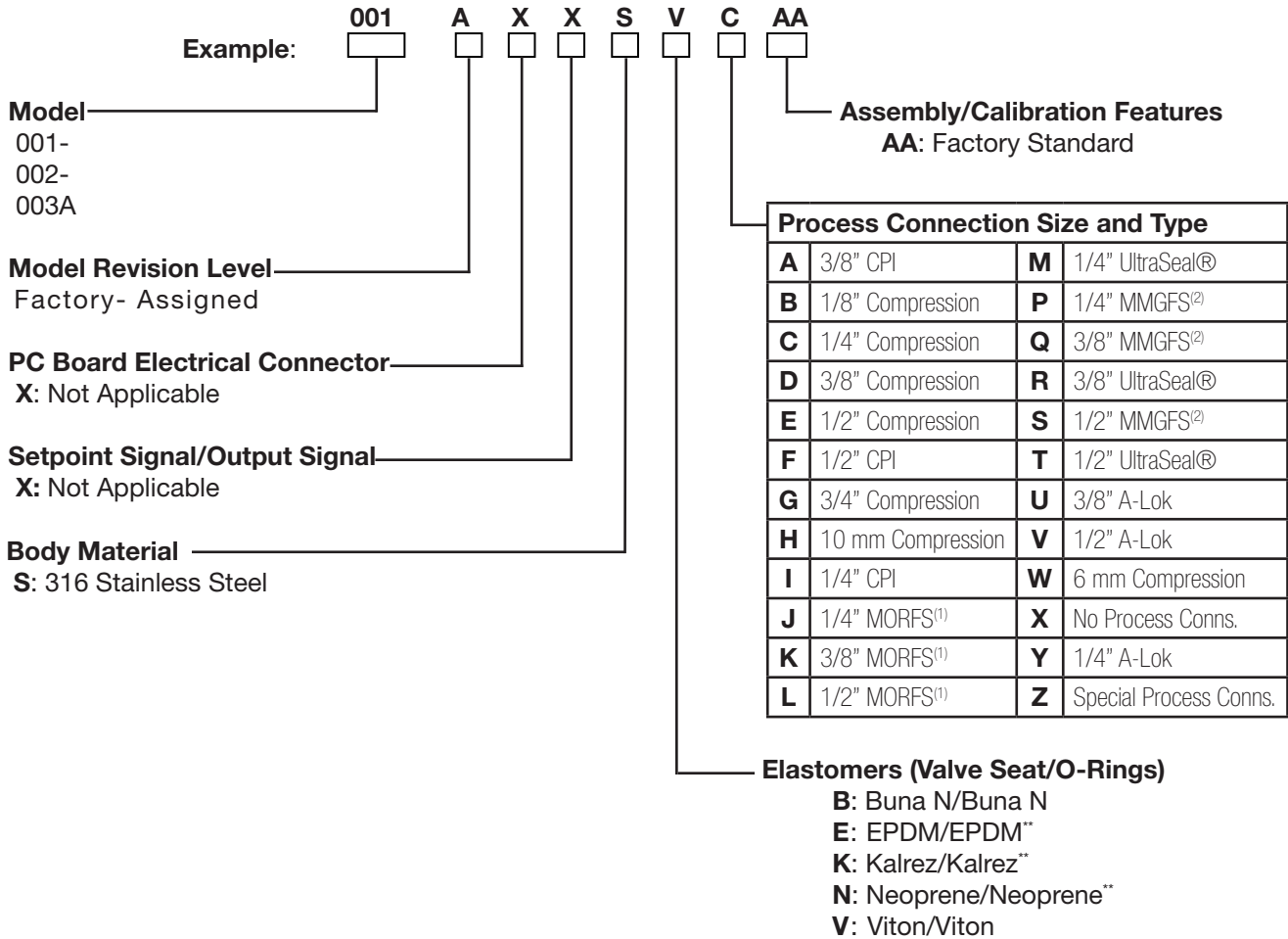
MODEL 002



MODEL 003A



MODEL NUMBER AND DESCRIPTION



A-LOK®, CPI™, UltraSeal™, VacuSeal™ - Parker Hannifin Corp.

(1)MORFS = Male O-Ring Face Seal

(2)MMGFS = Male Metal Gasket Face Seal

****Available on Models 001 and 002 only.**

Note: The flow ranges listed are the minimum and maximum nitrogen (N₂) flow ranges available for each given model. Intermediate flow ranges are available. For correct sizing when operating parameters are questionable, please consult the factory.

 **WARNING – USER RESPONSIBILITY**

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

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The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.

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