



Rectangular Slit

Rectangular Slit Valves
50000 Series

Introduction

Page 170

Specifications

Page 171

46x236-mm 2x9-inch

Page 172

50x336-mm 2x13-inch

Page 173





Product Features

- No links, rollers or other internal parts used for actuation
- Only the O-ring contacts the valve body
- No gate adjustment required
- Welded bellows shaft seal

Description

The 50000 Series Slit Valves feature an innovative actuator mechanism that eliminates any moving contact with the valve body. The only body contact is when the gate O-ring is sealed. This construction minimizes particulate generation and vibration. In addition, the valve may be installed in any orientation.

In the open position, the seal plate O-ring is completely out of sight preventing any particulate or media flow to accumulate on the sealing surface. In the closed position the one piece solid block design prevents any material buildup on the back side of the valve mechanism dramatically reducing service and maintenance requirements.

The valves incorporate a welded bellows seal on the actuator mechanism. This eliminates the elastomer shaft seal that is subject to constant wear and degradation. The result is a high cycle-life valve with minimal loss of process gases.

The valve body and serviceable parts are made of vacuum compatible aluminum to minimize weight and to tolerate high corrosion clean-up gases. Currently available in two standard MESC compatible sizes of 300mm and 200mm nominal width, or with custom made sizes. Prices available on request.

Applications

This valve design is especially engineered to meet the mechanical interface and vacuum containment requirements of the industry. The 50000 Series Valve/Interface incorporates a Direct Drive Gate. Direct Drive eliminates mechanical linkages and greatly reduces internal valve components. Significant improvements in the gate valve design have resulted in exceptional uptime cycles and extremely low particulate generation even well past one million cycles. Valves have been tested for 1,000,000+ cycles with no failures.

In operation, the HVA 50000 Series Valves are quiet and reliable. Because they seal with lower pressure, they last longer, and there is less stress to make a perfect seal. To meet the specific needs of modular integrated processing systems, the HVA valves are designed to isolate vacuum pressure on either side of the gate.

They can be used singly or in pairs to provide appropriate pass through or seal for any part of the system. A narrow profile design, including both actuator and controller, allows tight mounting between central, load-lock, handling and process chambers.



Rectangular Slit Valve Specifications

Standard Specifications

Materials

Valve body and mechanism	6061-T6 Aluminum
Welded bellows shaft seal	AM-350
Gate and bonnet seals	Viton® elastomer

Vacuum

Pressure range	1 x 10 ⁻⁹ mbar to 1 bar
Leak rate	< 1 x 10 ⁻¹⁰ mbar l/sec
Differential pressure on gate	1 atmosphere
Maximum pressure before opening	≤ 27 mbar

Temperature

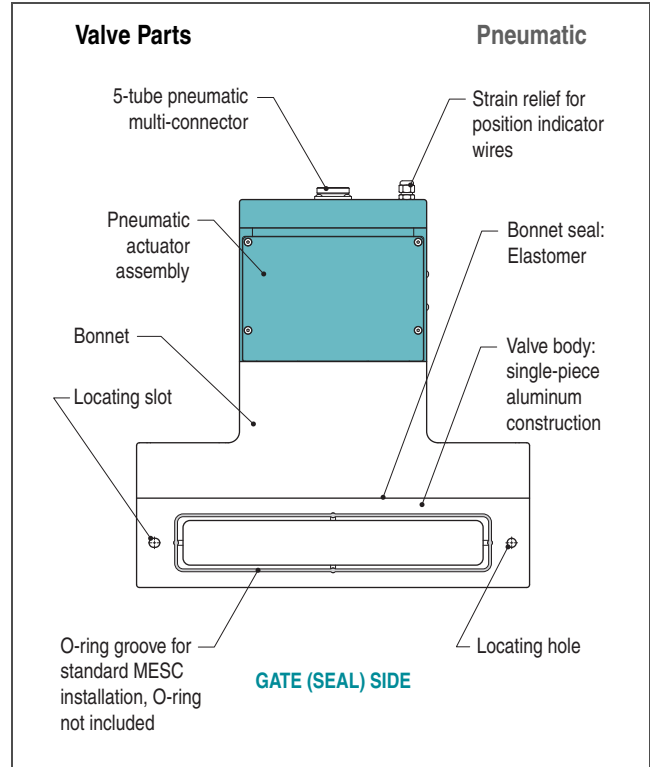
Operating range	0° to 100°C
Bakeout, standard maximum	150°C
Optional bakeout, maximum	250°C

Mechanism

Air service	80 psig
Solenoid, latching type	120 VAC 50/60 Hz or 24 VDC
Position indicator, maximum	115 VAC or 28 VDC, 20 milliamps
Open/close time, minimum	1.5 seconds
Rapid closing time available, consult factory	
Cycles until service, application dependent	1,000,000

Weight

Nominal 300mm size	31 lbs
Nominal 200mm size	27 lbs



Notes

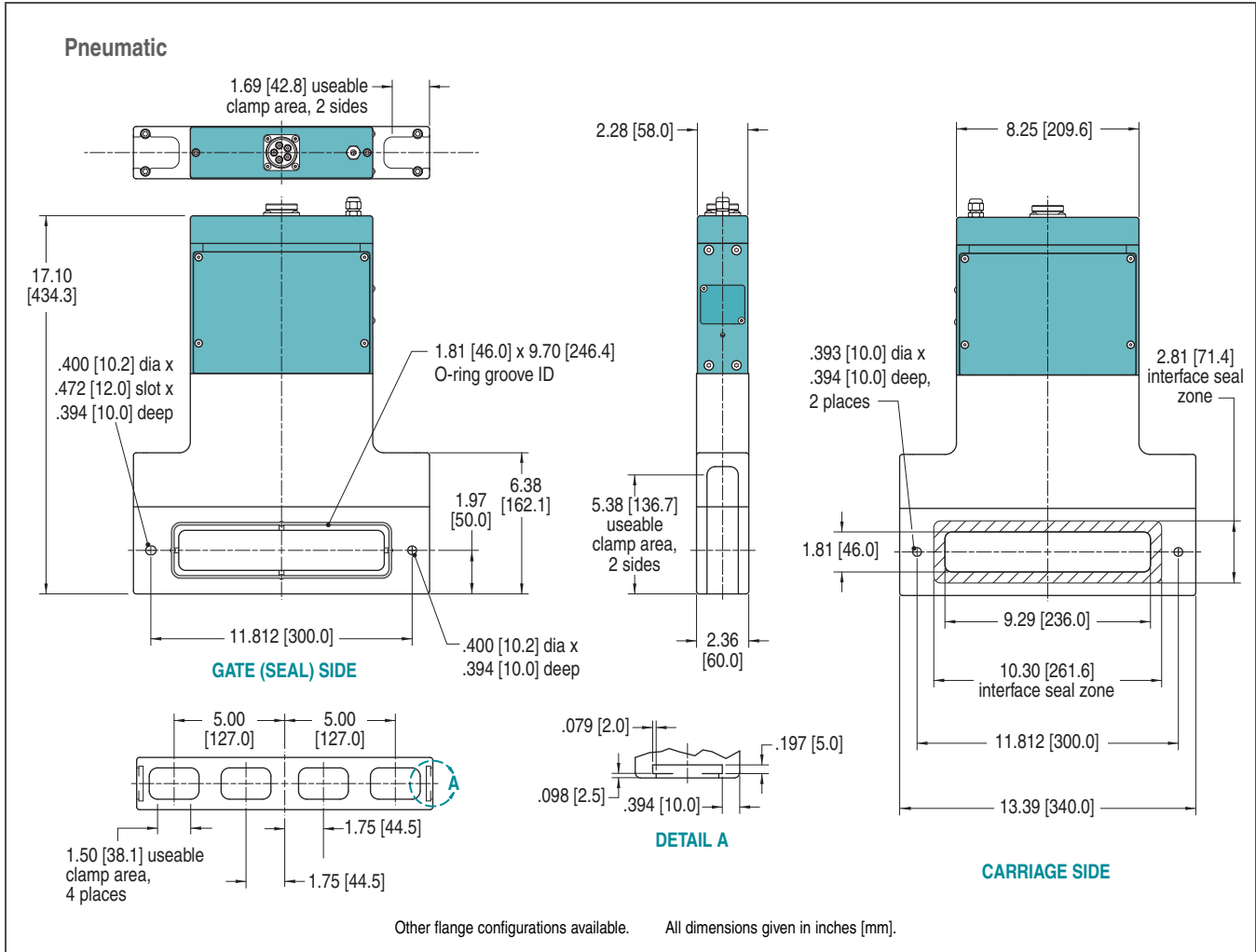
- Dimensions given in U.S. System and [metric]
- Due to ongoing product development, prices, dimensions and specifications subject to change without notice

Options

All 50000 Series Valves may be equipped with alternative flanges, solenoids and seals. Contact HVA to discuss your requirements.

- Alternate voltage controls
- Alternate bellows materials
- Custom flanges
- Gauge ports
- Microswitches for position indicators
- Stepper motor actuator
- Roughing ports
- High temperature components, including O-rings, microswitches and actuator
- Stainless steel construction

Rectangular Slit Valves 46x236-mm 2x9-inch



Rectangular Slit

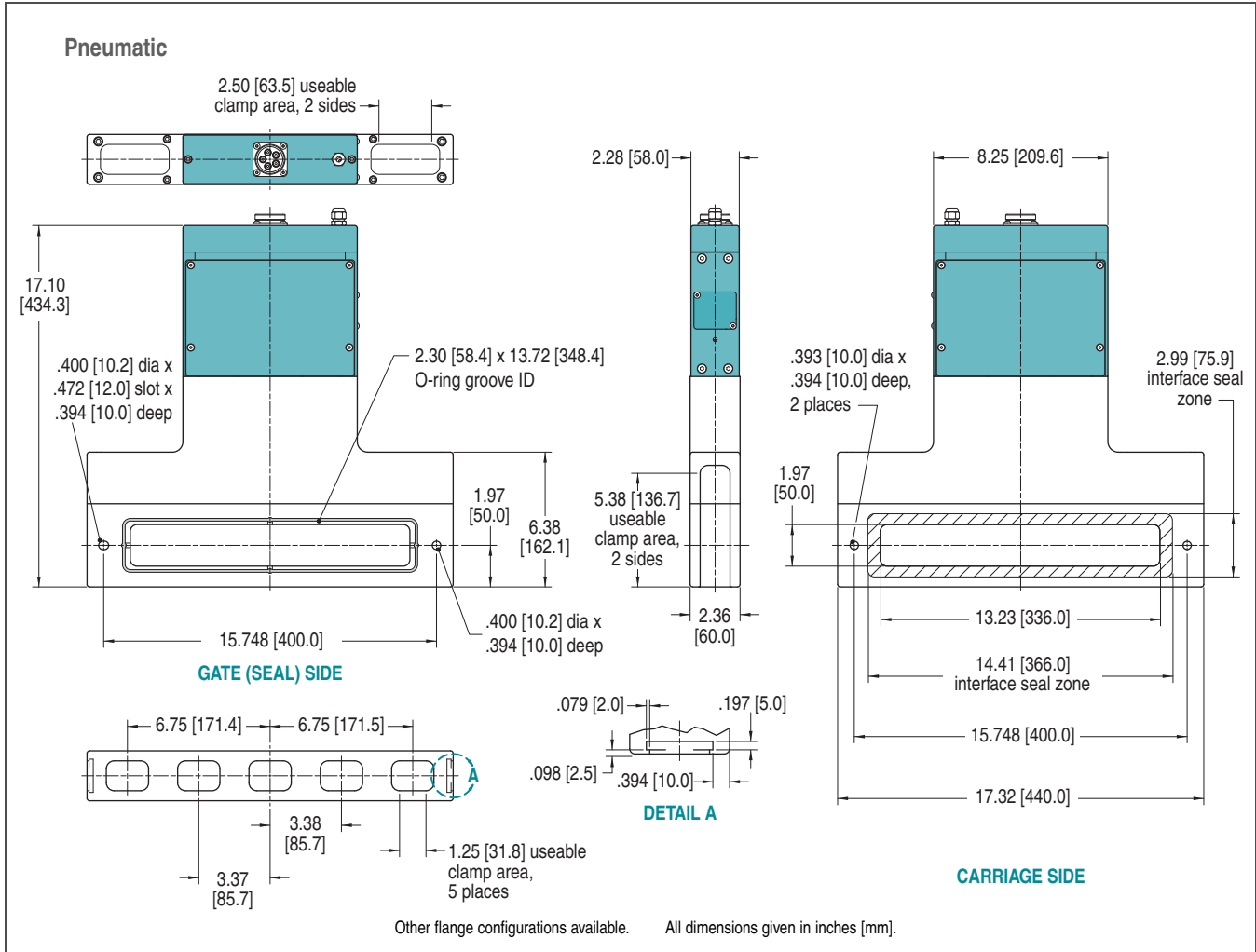
Specifications are listed on page 171.

MESIC Flanges		46x236-mm 2x9-inch	
Bonnet-Gate	Flange Type	Ship Wt lbs [kg]	Model Number *
Pneumatic			
Viton-Viton	Clamp	85 [39]	52212-0209RXX

* R = Reed switch
M = Microswitch (optional)



Rectangular Slit Valves 50x336-mm 2x13-inch



Specifications are listed on page 171.

MESIC Flanges		50x336-mm 2x13-inch	
Bonnet-Gate	Flange Type	Ship Wt lbs [kg]	Model Number *
Pneumatic			
Viton-Viton	Clamp	88 [40]	52212-0213RXK

* R = Reed switch
M = Microswitch (optional)



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5000 Series

End of Section

