

# 88200

## Aluminum Rectangular Slit Valves

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## Introduction



Model Number 88212-0218RXB  
2" x 18" (DN50 x 457) Bolted

### Product Features

- Precision machined from aluminum 6061-T6 billet
- > 1,000,000 cycles
- Sizes: Height  $\leq$  6" ID (DN150) / Width  $\leq$  78" ID (DN2000)
- Stainless steel welded bellows
- Standard MESG bolted and clamped configurations
- Patented low profile actuator design
- Low vibration due to patented driveshaft design
- Easily customizable to work with almost any application
- Designed, manufactured and assembled in the USA

### Description

The HVA 88200 Series Direct Drive Rectangular Slit Valves offer one of the smallest interior surface areas in the vacuum valve industry. The body is machined from a single piece of aluminum. This eliminates the possibility of virtual leaks or entrapment areas and minimizes body distortion.

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.

### Application

This valve design is especially engineered to meet the mechanical interface and vacuum containment requirements of the industry. The 88200 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 88200 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.



# 88200 Series Aluminum Rectangular Slit Valves

## Specifications

### Standard Specifications

#### Materials

Valve body and mechanism	6061-T6 aluminum
Welded bellows shaft seal	AM-350
Drive shaft and pins	440C hardened stainless steel
Bonnet / gate seals	
HV	Viton® elastomer

#### Vacuum

Pressure range	
HV	$1 \times 10^{-9}$ mbar
Leak rate	$< 2 \times 10^{-9}$ mbar l/s
Differential pressure	1 bar in either direction
Maximum $\Delta$ pressure before opening	$\leq 30$ mbar

#### Temperature

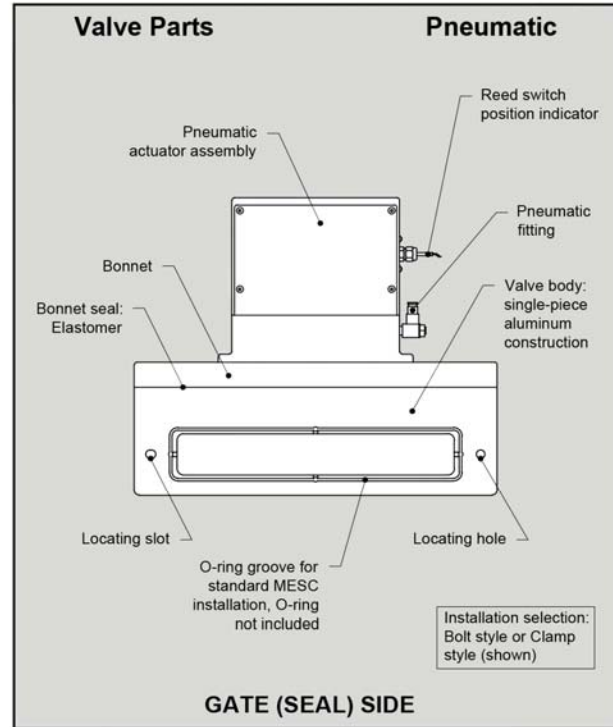
	without solenoid
Elastomer sealed bonnet	150°C
Actuator	
Pneumatic	60°C

#### Mechanism

Air service	80 psig (5.5 bar)
Solenoid	4.0 Watts
Latching-type solenoid, valve to remain in the same position upon power loss	
supplied voltage	120 VAC 50/60 Hz
optional voltage	24, 200, 240 VAC 50/60 Hz or 12, 24 VDC
Position indicator, max.	115 VAC or 28 VDC, 20 mA

#### Cycles Until Service

(Application dependent) > 1,000,000



#### Notes

- Dimensions given in U.S. System and [metric]
- Conductance ratings based on air, given in liters per second
- Due to ongoing product development, prices, dimensions and specifications are subject to change without notice

#### Options

All 88200 Series Valves may be equipped with alternative body styles and solenoids. Contact HVA to discuss your requirements.

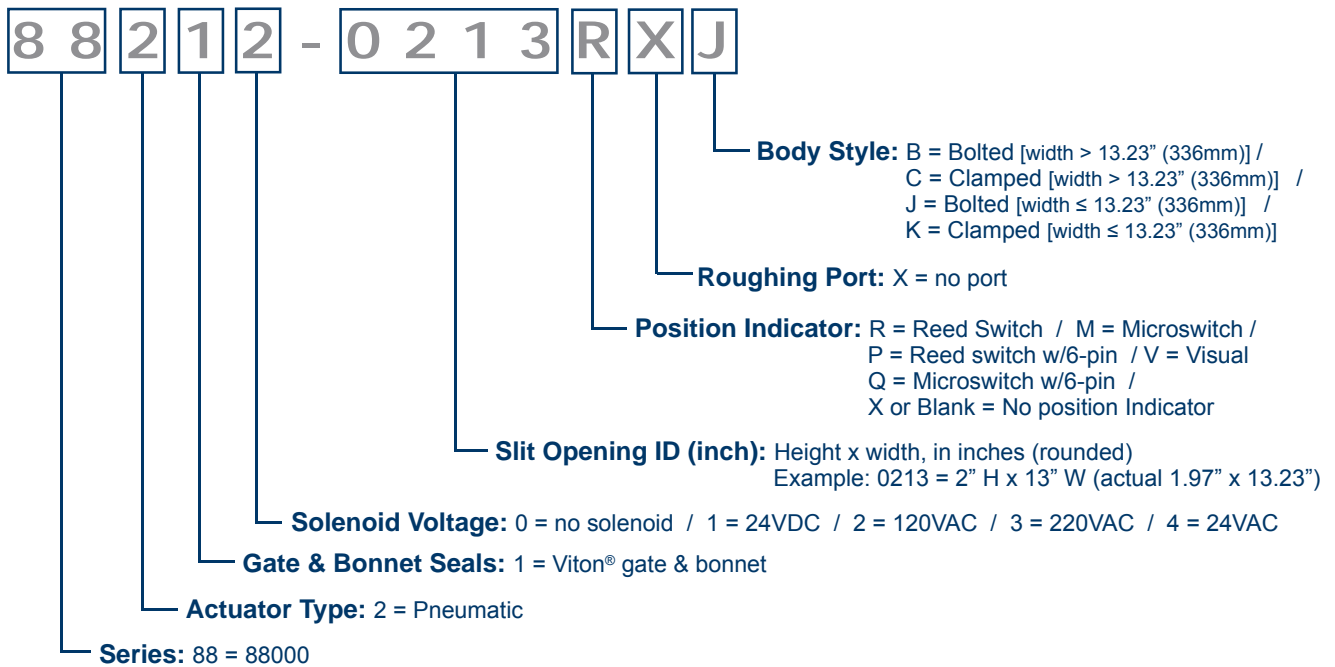
- Alternate voltages
- Custom body configurations
- Custom size openings
- Microswitches position indicators
- Hard anodizing and non-treated Aluminum
- Special solenoid or position indicator connectors

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## Model Key Guide

**Example:** 88212-0213RXJ = 88200 Series rectangular slit valve, pneumatic actuator, Viton gate & bonnet seals, 120VAC solenoid, 1.97" x 13.23" (50 x 336mm) opening with a bolted body configuration, reed switch position indicator



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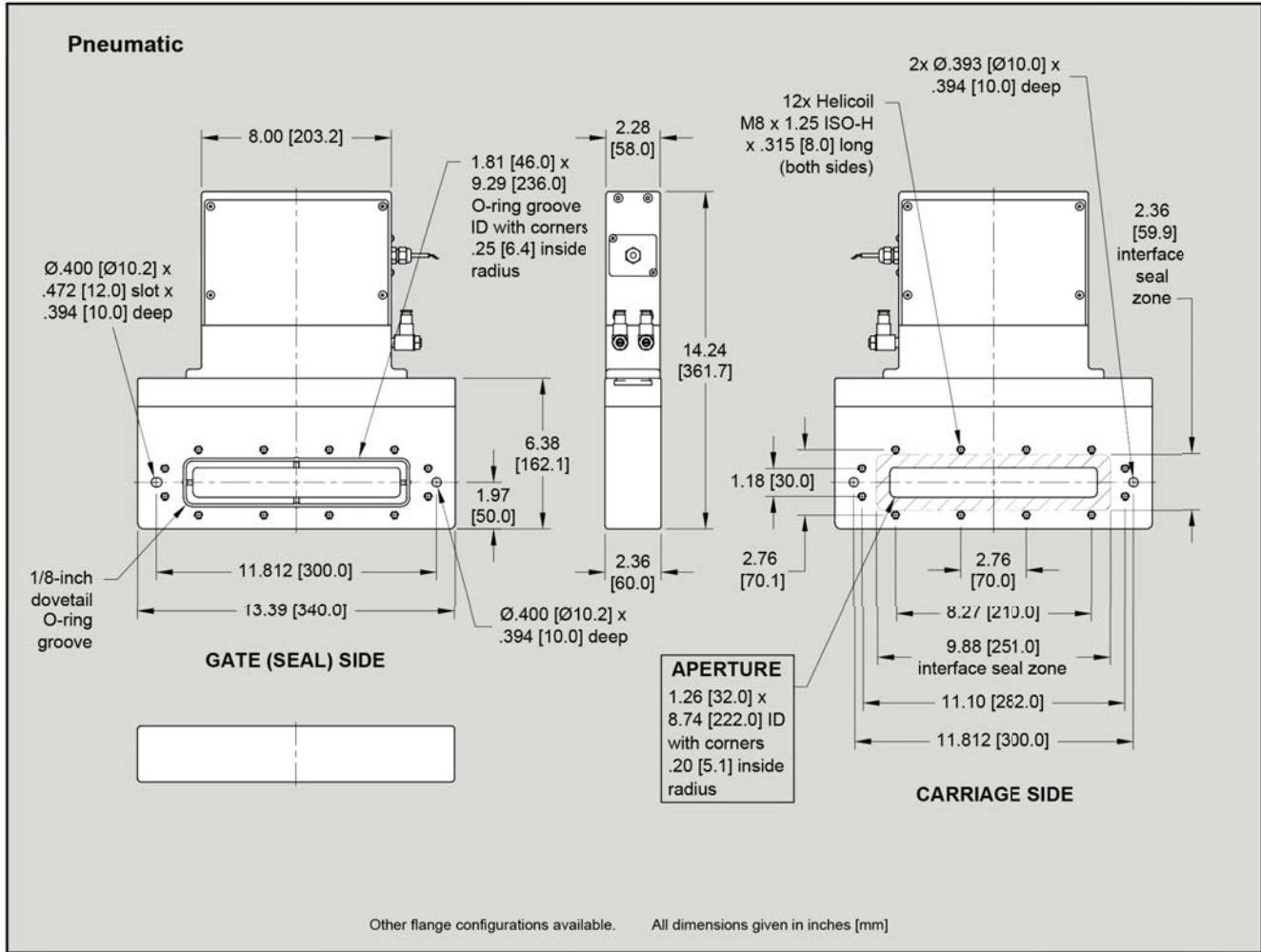
### Note

• A suffix of -001 to -999 at the end of or a '9' or 'S' within a Model Number indicates a valve with custom configuration.



# 88200 Series Aluminum Rectangular Slit Valves

32x222-mm 1.26x8.74-inch Bolt Style



**Specifications**

**HV Pressure Range:**

1 x 10<sup>-9</sup> mbar

**Helium Leak Rate: Materials:**

< 2 x 10<sup>-9</sup> mbar l/s

**Maximum Δ Pressure Before Opening:**

≤ 30 mbar

**Materials:**

- Body = 6061-T6 Aluminum
- Gate = 6061-T6 Aluminum
- Bellows = AM-350
- Actuator = 6061-T6 Aluminum

**Operating Temperature:**

- Body, Gate Open (Viton®) = 150°C
- Body, Gate Closed (Viton®) = 150°C
- Actuator w/out solenoid (Viton®) = 60°C
- Position Indicator (Viton®) = 150°C

MESC Flanges		32x222-mm 1x9-inch	
Bonnet-Gate	Flange Type	Ship Wt. lbs [Kg]	Model Number *
<b>Pneumatic</b>			
Viton-Viton (HV)	Bolt	78 [36]	88212-0109RXJ

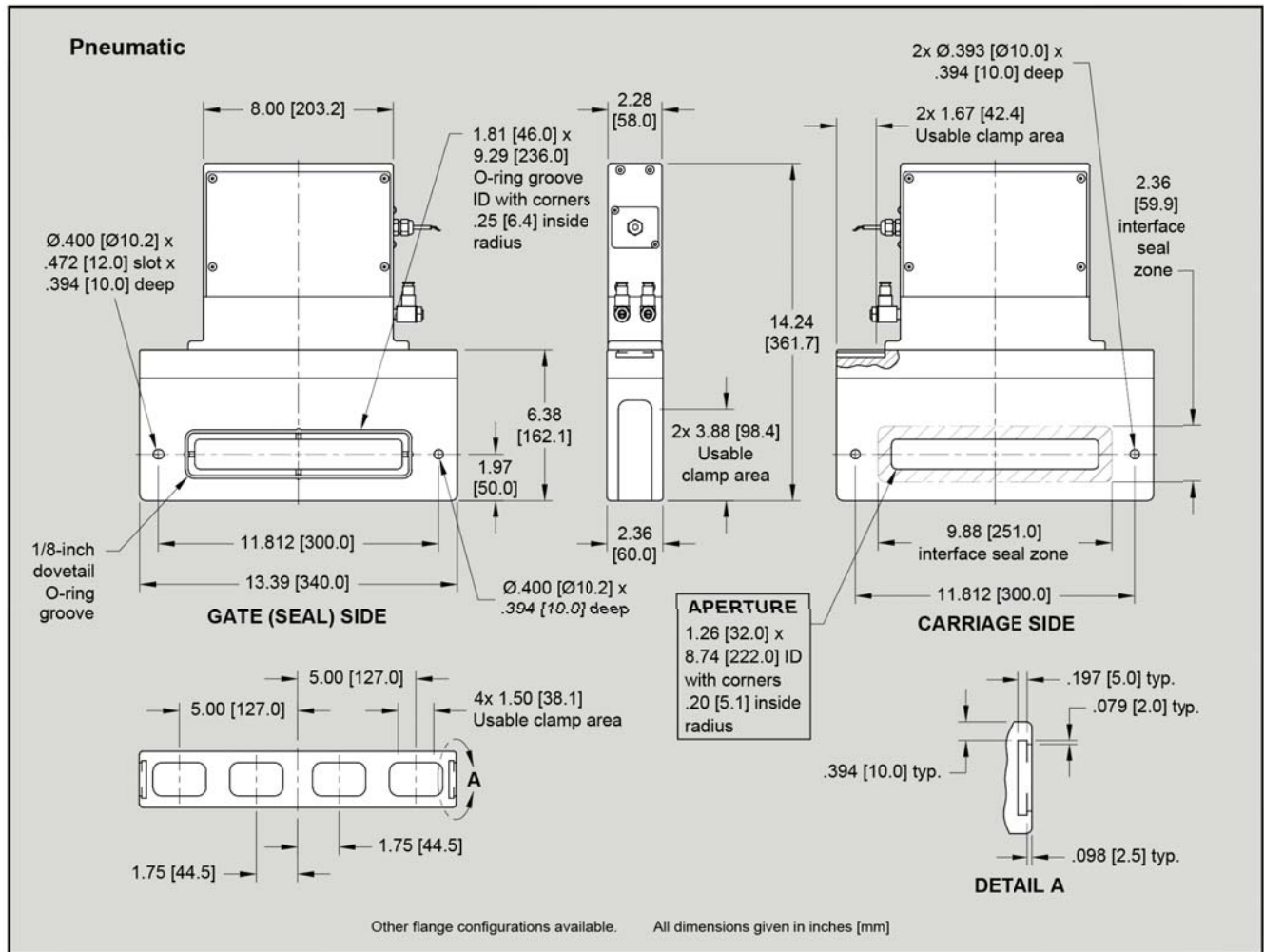
\* For pneumatic valves,  
R = Reed switch, standard  
M = Microswitch, optional

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# 88200 Series Aluminum Rectangular Slit Valves

32x222-mm 1.26x8.74-inch Clamped Style



88200

**Specifications**

**HV Pressure Range:**

1 x 10<sup>-9</sup> mbar

**Helium Leak Rate: Materials:**

< 2 x 10<sup>-9</sup> mbar l/s

**Maximum Δ Pressure Before Opening:**

≤ 30 mbar

**Materials:**

- Body = 6061-T6 Aluminum
- Gate = 6061-T6 Aluminum
- Bellows = AM-350
- Actuator = 6061-T6 Aluminum

**Operating Temperature:**

- Body, Gate Open (Viton®) = 150°C
- Body, Gate Closed (Viton®) = 150°C
- Actuator w/out solenoid (Viton®) = 60°C
- Position Indicator (Viton®) = 150°C

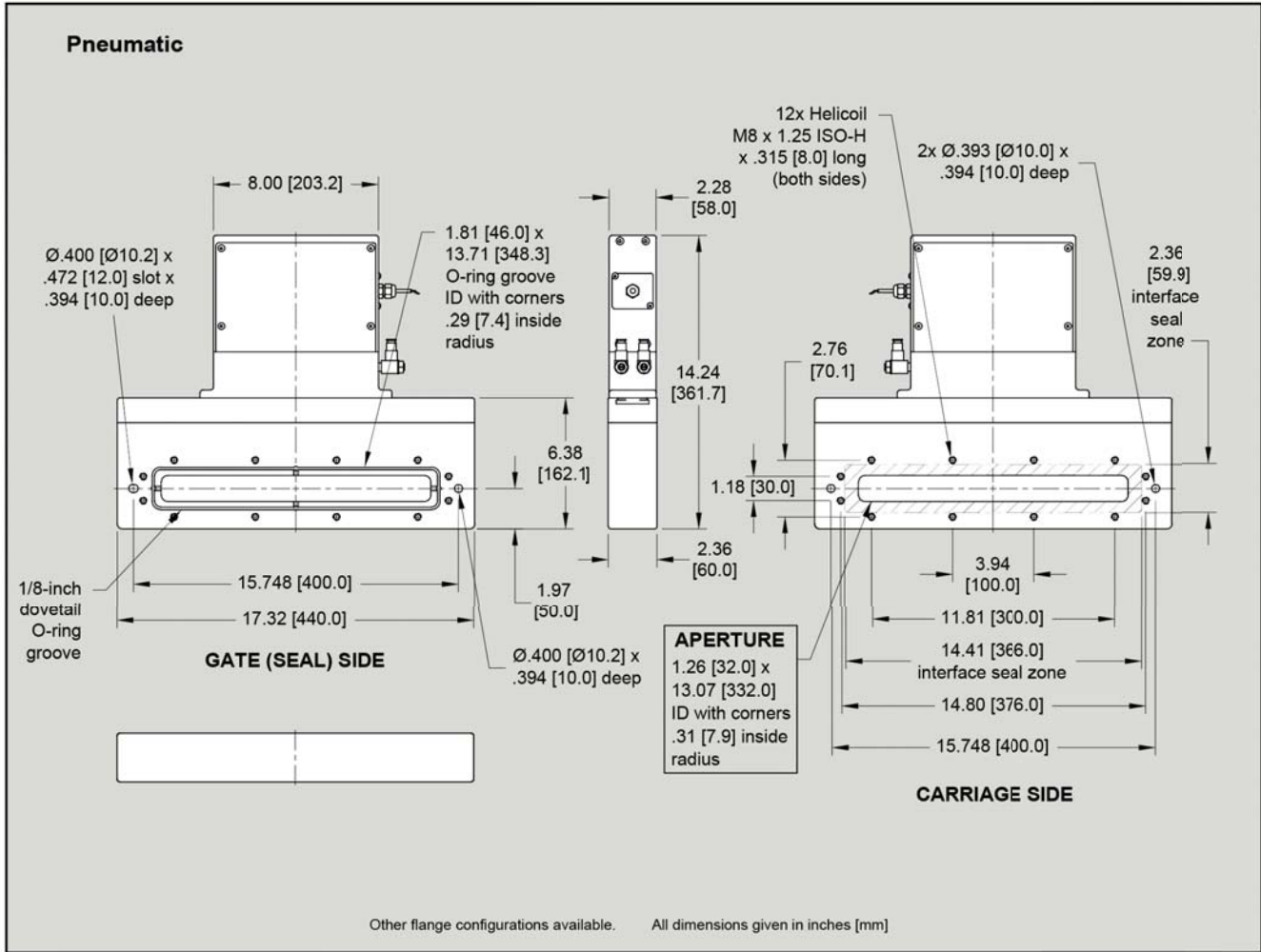
MESIC Flanges		32x222-mm 1x9-inch	
Bonnet-Gate	Flange Type	Ship Wt. lbs [Kg]	Model Number *
<b>Pneumatic</b>			
Viton-Viton (HV)	Clamp	78 [36]	88212-0109RXK

\* For pneumatic valves,  
R = Reed switch, standard  
M = Microswitch, optional



# 88200 Series Aluminum Rectangular Slit Valves

32x332-mm 1.26x13.07-inch Bolt Style



**Specifications**

**HV Pressure Range:**

1 x 10<sup>-9</sup> mbar

**Helium Leak Rate: Materials:**

< 2 x 10<sup>-9</sup> mbar l/s

**Maximum Δ Pressure Before Opening:**

≤ 30 mbar

**Materials:**

- Body = 6061-T6 Aluminum
- Gate = 6061-T6 Aluminum
- Bellows = AM-350
- Actuator = 6061-T6 Aluminum

**Operating Temperature:**

- Body, Gate Open (Viton®) = 150°C
- Body, Gate Closed (Viton®) = 150°C
- Actuator w/out solenoid (Viton®) = 60°C
- Position Indicator (Viton®) = 150°C

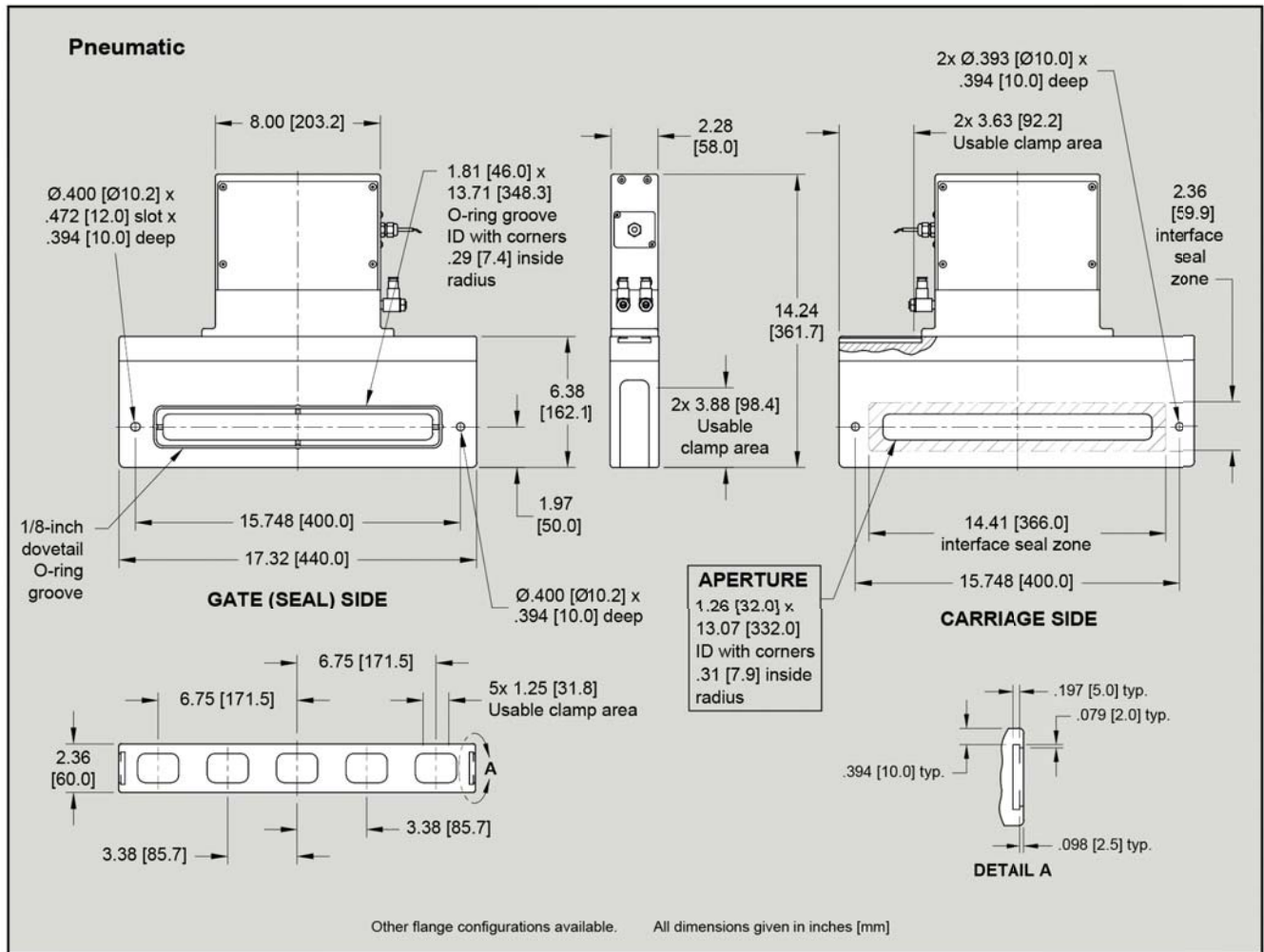
MESC Flanges		32x332-mm 1x13-inch	
Bonnet-Gate	Flange Type	Ship Wt. lbs [Kg]	Model Number *
<b>Pneumatic</b>			
Viton-Viton (HV)	Bolt	82 [38]	88212-0113RXJ

\* For pneumatic valves,  
R = Reed switch, standard  
M = Microswitch, optional

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# 88200 Series Aluminum Rectangular Slit Valves

32x332-mm 1.26x13.07-inch Clamped Style



88200

**Specifications**

**HV Pressure Range:**

1 x 10<sup>-9</sup> mbar

**Helium Leak Rate: Materials:**

< 2 x 10<sup>-9</sup> mbar l/s

**Maximum Δ Pressure Before Opening:**

≤ 30 mbar

**Materials:**

- Body = 6061-T6 Aluminum
- Gate = 6061-T6 Aluminum
- Bellows = AM-350
- Actuator = 6061-T6 Aluminum

**Operating Temperature:**

- Body, Gate Open (Viton®) = 150°C
- Body, Gate Closed (Viton®) = 150°C
- Actuator w/out solenoid (Viton®) = 60°C
- Position Indicator (Viton®) = 150°C

MESCF Flanges		32x332-mm 1x13-inch	
Bonnet-Gate	Flange Type	Ship Wt. lbs [Kg]	Model Number *
<b>Pneumatic</b>			
Viton-Viton (HV)	Clamp	82 [38]	88212-0113RXK

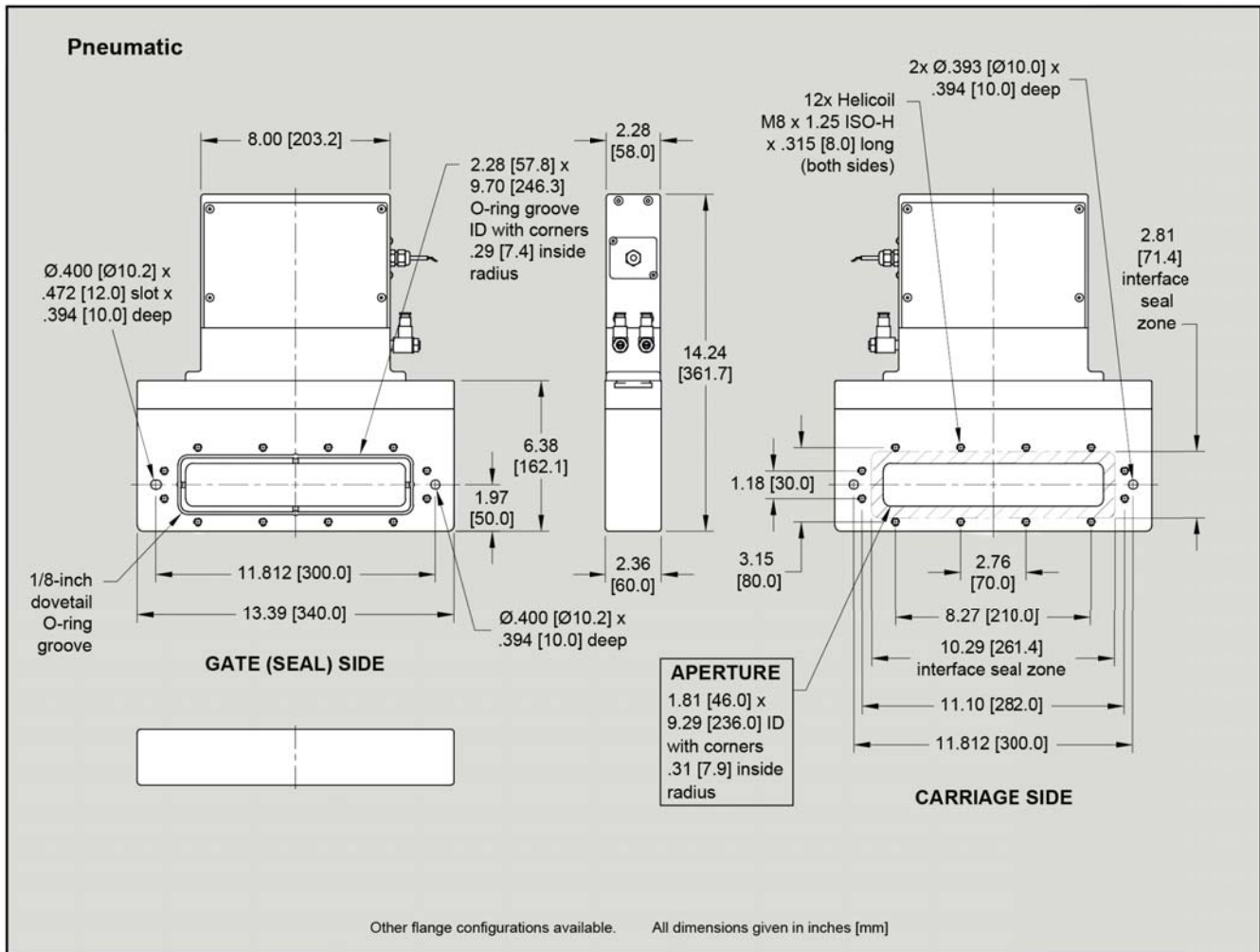
\* For pneumatic valves,  
R = Reed switch, standard  
M = Microswitch, optional





# 88200 Series Aluminum Rectangular Slit Valves

46x236-mm 1.81x9.29-inch Bolt Style



**Specifications**

**HV Pressure Range:**

1 x 10<sup>-9</sup> mbar

**Helium Leak Rate: Materials:**

< 2 x 10<sup>-9</sup> mbar l/s

**Maximum Δ Pressure Before Opening:**

≤ 30 mbar

**Materials:**

- Body = 6061-T6 Aluminum
- Gate = 6061-T6 Aluminum
- Bellows = AM-350
- Actuator = 6061-T6 Aluminum

**Operating Temperature:**

- Body, Gate Open (Viton®) = 150°C
- Body, Gate Closed (Viton®) = 150°C
- Actuator w/out solenoid (Viton®) = 60°C
- Position Indicator (Viton®) = 150°C

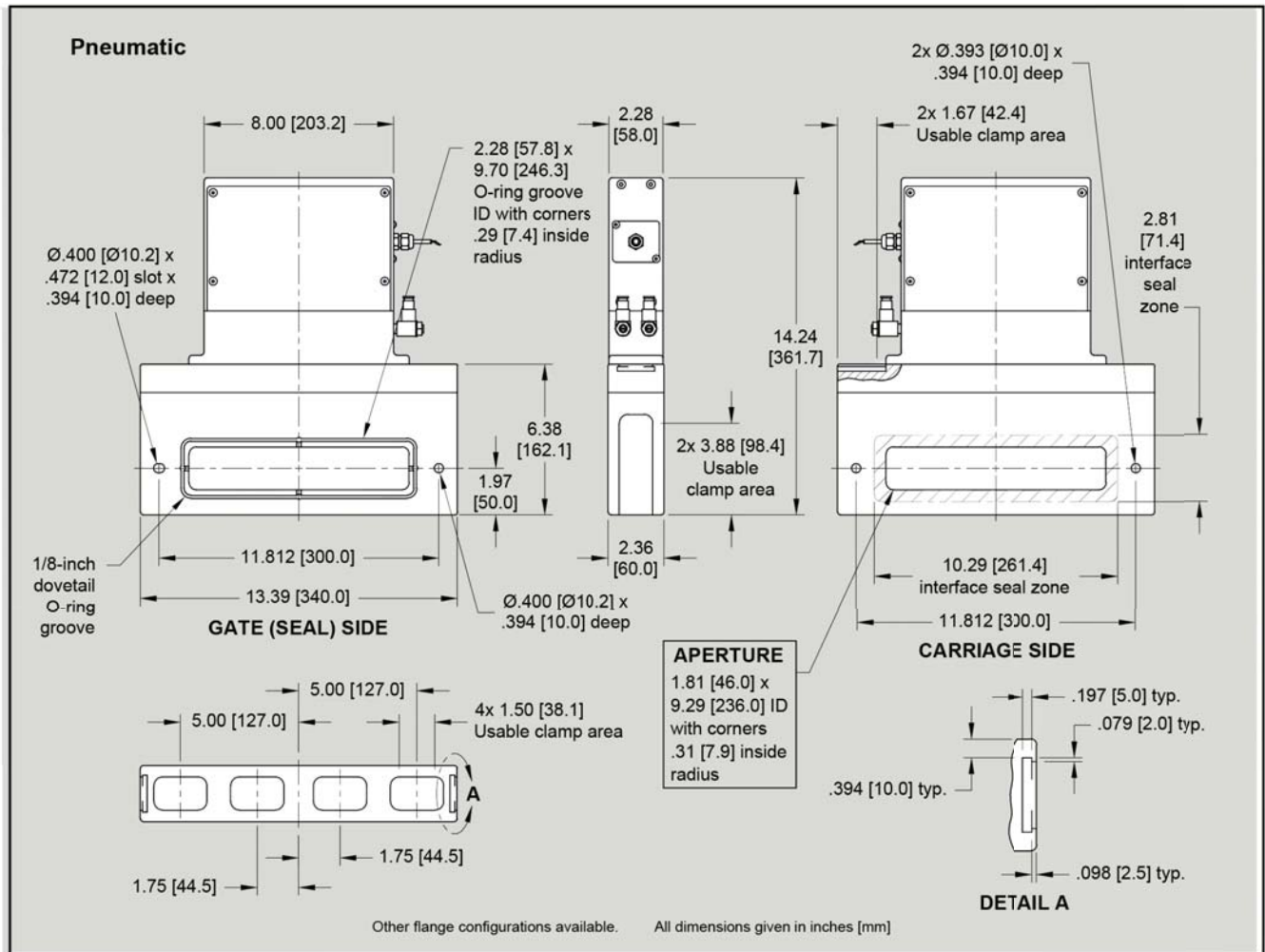
MESC Flanges		46x236-mm 2x9-inch	
Bonnet-Gate	Flange Type	Ship Wt. lbs [Kg]	Model Number *
<b>Pneumatic</b>			
Viton-Viton (HV)	Bolt	82 [38]	88212-0209RXJ

\* For pneumatic valves,  
R = Reed switch, standard  
M = Microswitch, optional

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# 88200 Series Aluminum Rectangular Slit Valves

46x236-mm 1.81x9.29-inch Clamped Style



88200

### Specifications

**HV Pressure Range:**

1 x 10<sup>-9</sup> mbar

**Helium Leak Rate: Materials:**

< 2 x 10<sup>-9</sup> mbar l/s

**Maximum Δ Pressure Before Opening:**

≤ 30 mbar

**Materials:**

Body = 6061-T6 Aluminum  
 Gate = 6061-T6 Aluminum  
 Bellows = AM-350  
 Actuator = 6061-T6 Aluminum

**Operating Temperature:**

Body, Gate Open (Viton®) = 150°C  
 Body, Gate Closed (Viton®) = 150°C  
 Actuator w/out solenoid (Viton®) = 60°C  
 Position Indicator (Viton®) = 150°C

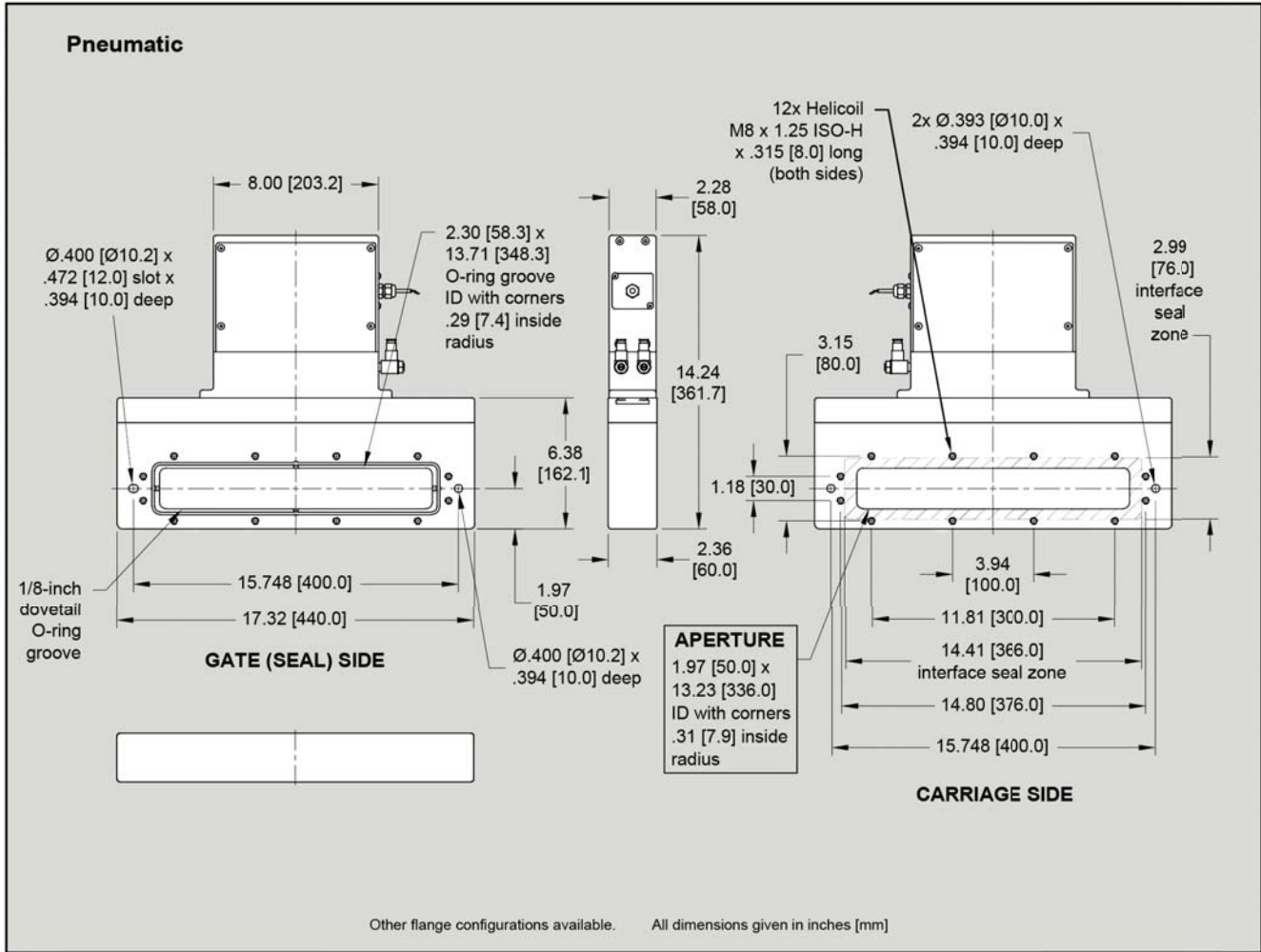
MESIC Flanges		46x236-mm 2x9-inch	
Bonnet-Gate	Flange Type	Ship Wt. lbs [Kg]	Model Number *
<b>Pneumatic</b>			
Viton-Viton (HV)	Clamp	82 [38]	88212-0209RXK

\* For pneumatic valves,  
 R = Reed switch, standard  
 M = Microswitch, optional



# 88200 Series Aluminum Rectangular Slit Valves

50x336-mm 1.97x13.23-inch Bolt Style



**Specifications**

**HV Pressure Range:**

1 x 10<sup>-9</sup> mbar

**Helium Leak Rate: Materials:**

< 2 x 10<sup>-9</sup> mbar l/s

**Maximum Δ Pressure Before Opening:**

≤ 30 mbar

**Materials:**

- Body = 6061-T6 Aluminum
- Gate = 6061-T6 Aluminum
- Bellows = AM-350
- Actuator = 6061-T6 Aluminum

**Operating Temperature:**

- Body, Gate Open (Viton®) = 150°C
- Body, Gate Closed (Viton®) = 150°C
- Actuator w/out solenoid (Viton®) = 60°C
- Position Indicator (Viton®) = 150°C

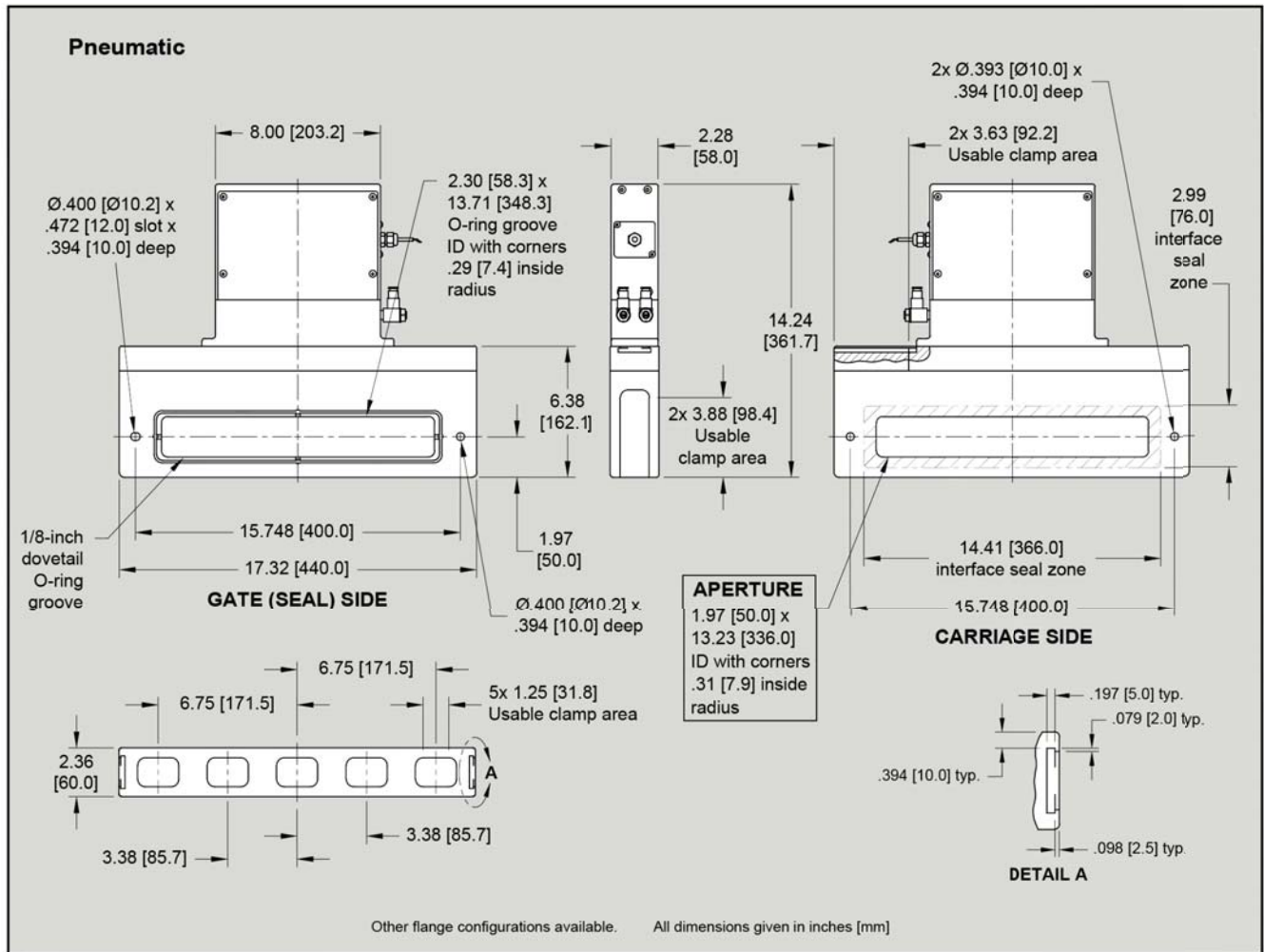
MESC Flanges		50x336-mm 2x13-inch	
Bonnet-Gate	Flange Type	Ship Wt. lbs [Kg]	Model Number *
<b>Pneumatic</b>			
Viton-Viton (HV)	Bolt	85 [39]	88212-0213RXJ

\* For pneumatic valves,  
R = Reed switch, standard  
M = Microswitch, optional

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# 88200 Series Aluminum Rectangular Slit Valves

50x336-mm 1.97x13.23-inch Clamped Style



88200

**Specifications**

**HV Pressure Range:**

1 x 10<sup>-9</sup> mbar

**Helium Leak Rate: Materials:**

< 2 x 10<sup>-9</sup> mbar l/s

**Maximum Δ Pressure Before Opening:**

≤ 30 mbar

**Materials:**

- Body = 6061-T6 Aluminum
- Gate = 6061-T6 Aluminum
- Bellows = AM-350
- Actuator = 6061-T6 Aluminum

**Operating Temperature:**

- Body, Gate Open (Viton®) = 150°C
- Body, Gate Closed (Viton®) = 150°C
- Actuator w/out solenoid (Viton®) = 60°C
- Position Indicator (Viton®) = 150°C

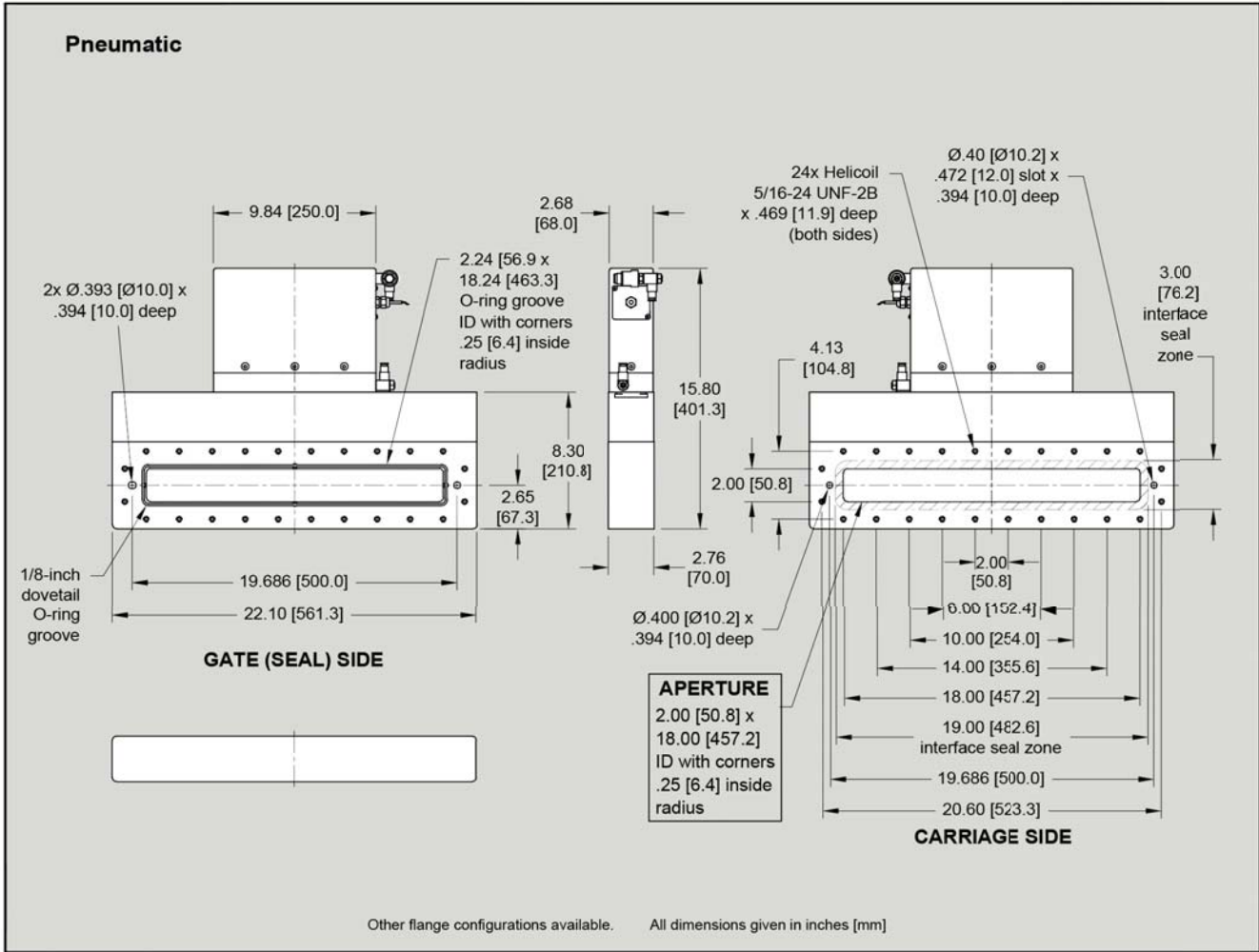
MESIC Flanges		50x336-mm 2x13-inch	
Bonnet-Gate	Flange Type	Ship Wt. lbs [Kg]	Model Number *
<b>Pneumatic</b>			
Viton-Viton (HV)	Bolt	85 [39]	88212-0213RXK

\* For pneumatic valves,  
R = Reed switch, standard  
M = Microswitch, optional



# 88200 Series Aluminum Rectangular Slit Valves

50x457-mm 2.0x18.0-inch Bolt Style



**Specifications**

**HV Pressure Range:**

1 x 10<sup>-9</sup> mbar

**Helium Leak Rate: Materials:**

< 2 x 10<sup>-9</sup> mbar l/s

**Maximum Δ Pressure Before Opening:**

≤ 30 mbar

**Materials:**

- Body = 6061-T6 Aluminum
- Gate = 6061-T6 Aluminum
- Bellows = AM-350
- Actuator = 6061-T6 Aluminum

**Operating Temperature:**

- Body, Gate Open (Viton®) = 150°C
- Body, Gate Closed (Viton®) = 150°C
- Actuator w/out solenoid (Viton®) = 60°C
- Position Indicator (Viton®) = 150°C

MESG Flanges		50x457-mm 2x18-inch	
Bonnet-Gate	Flange Type	Ship Wt. lbs [Kg]	Model Number *
<b>Pneumatic</b>			
Viton-Viton (HV)	Bolt	107 [49]	88212-0218RXB

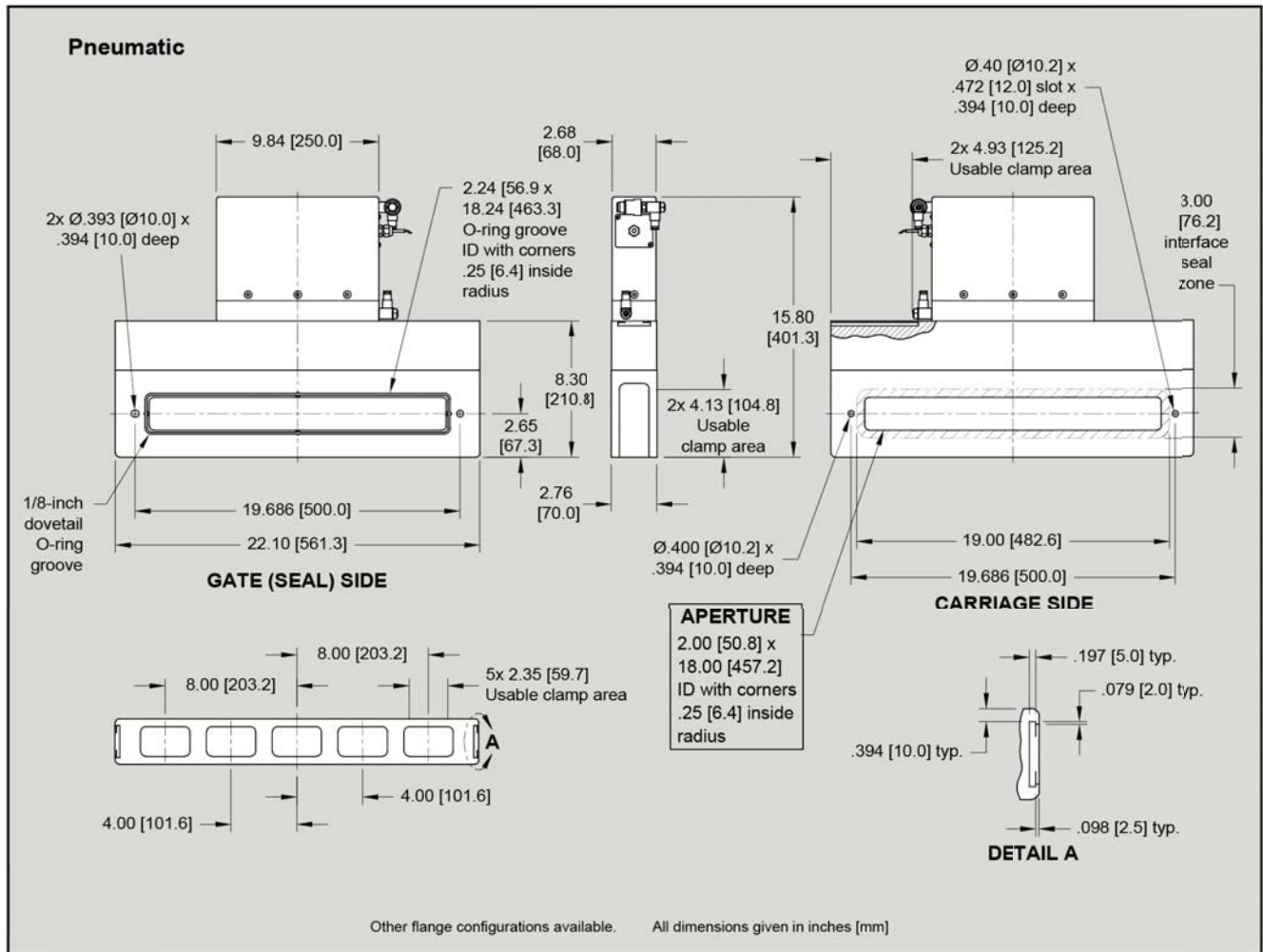
\* For pneumatic valves,  
R = Reed switch, standard  
M = Microswitch, optional

88200



# 88200 Series Aluminum Rectangular Slit Valves

50x457-mm 2.0x18.0-inch Clamped Style



88200

**Specifications**

**HV Pressure Range:**

1 x 10<sup>-9</sup> mbar

**Helium Leak Rate: Materials:**

< 2 x 10<sup>-9</sup> mbar l/s

**Maximum Δ Pressure Before Opening:**

≤ 30 mbar

**Materials:**

- Body = 6061-T6 Aluminum
- Gate = 6061-T6 Aluminum
- Bellows = AM-350
- Actuator = 6061-T6 Aluminum

**Operating Temperature:**

- Body, Gate Open (Viton®) = 150°C
- Body, Gate Closed (Viton®) = 150°C
- Actuator w/out solenoid (Viton®) = 60°C
- Position Indicator (Viton®) = 150°C

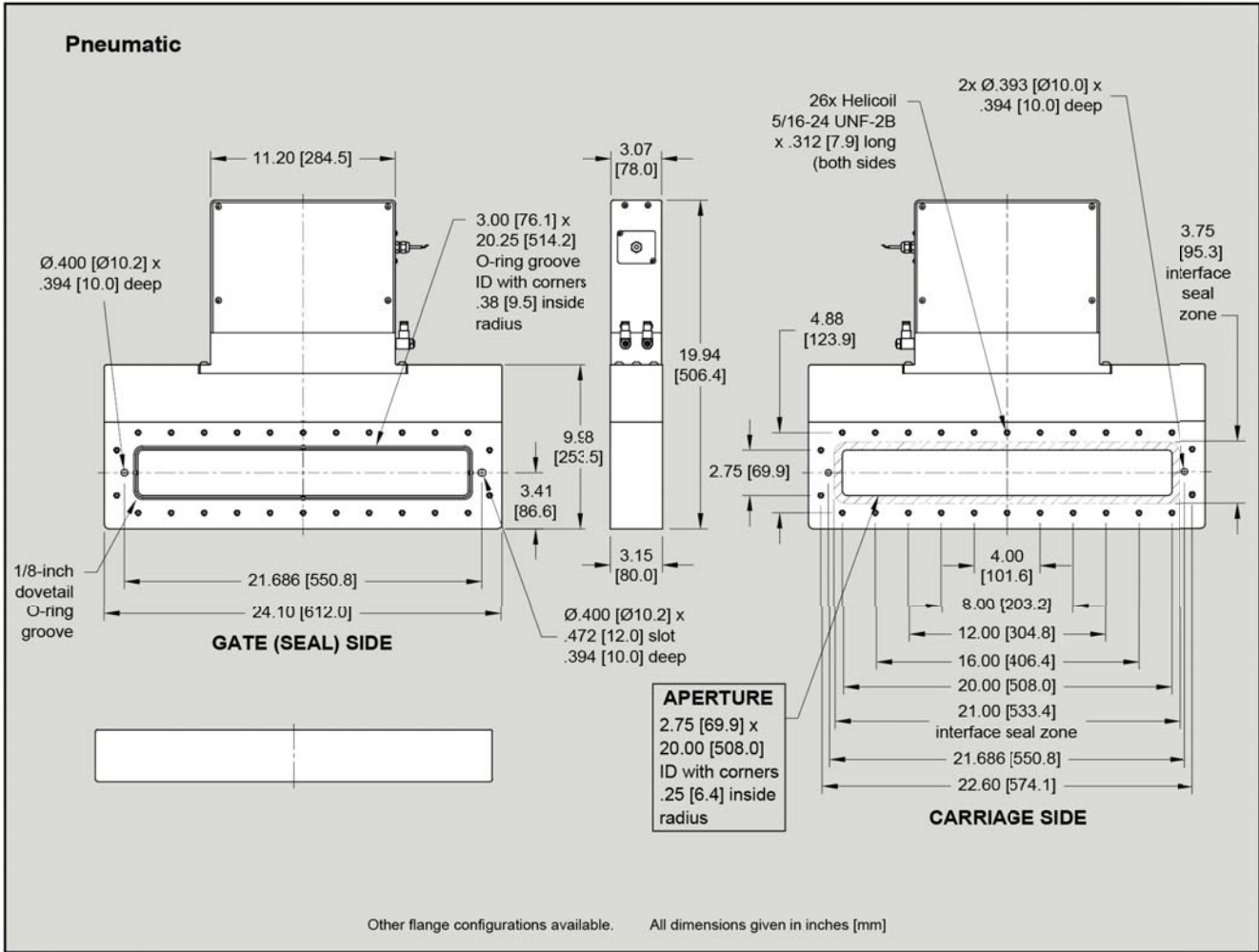
MESIC Flanges		50x457-mm 2x18-inch	
Bonnet-Gate	Flange Type	Ship Wt. lbs [Kg]	Model Number *
<b>Pneumatic</b>			
Viton-Viton (HV)	Clamp	107 [49]	88212-0218RXC

\* For pneumatic valves,  
R = Reed switch, standard  
M = Microswitch, optional



# 88200 Series Aluminum Rectangular Slit Valves

70x508-mm 2.75x20.0-inch Bolt Style



### Specifications

**HV Pressure Range:**

1 x 10<sup>-9</sup> mbar

**Helium Leak Rate: Materials:**

< 2 x 10<sup>-9</sup> mbar l/s

**Maximum Δ Pressure Before Opening:**

≤ 30 mbar

**Materials:**

- Body = 6061-T6 Aluminum
- Gate = 6061-T6 Aluminum
- Bellows = AM-350
- Actuator = 6061-T6 Aluminum

**Operating Temperature:**

- Body, Gate Open (Viton®) = 150°C
- Body, Gate Closed (Viton®) = 150°C
- Actuator w/out solenoid (Viton®) = 60°C
- Position Indicator (Viton®) = 150°C

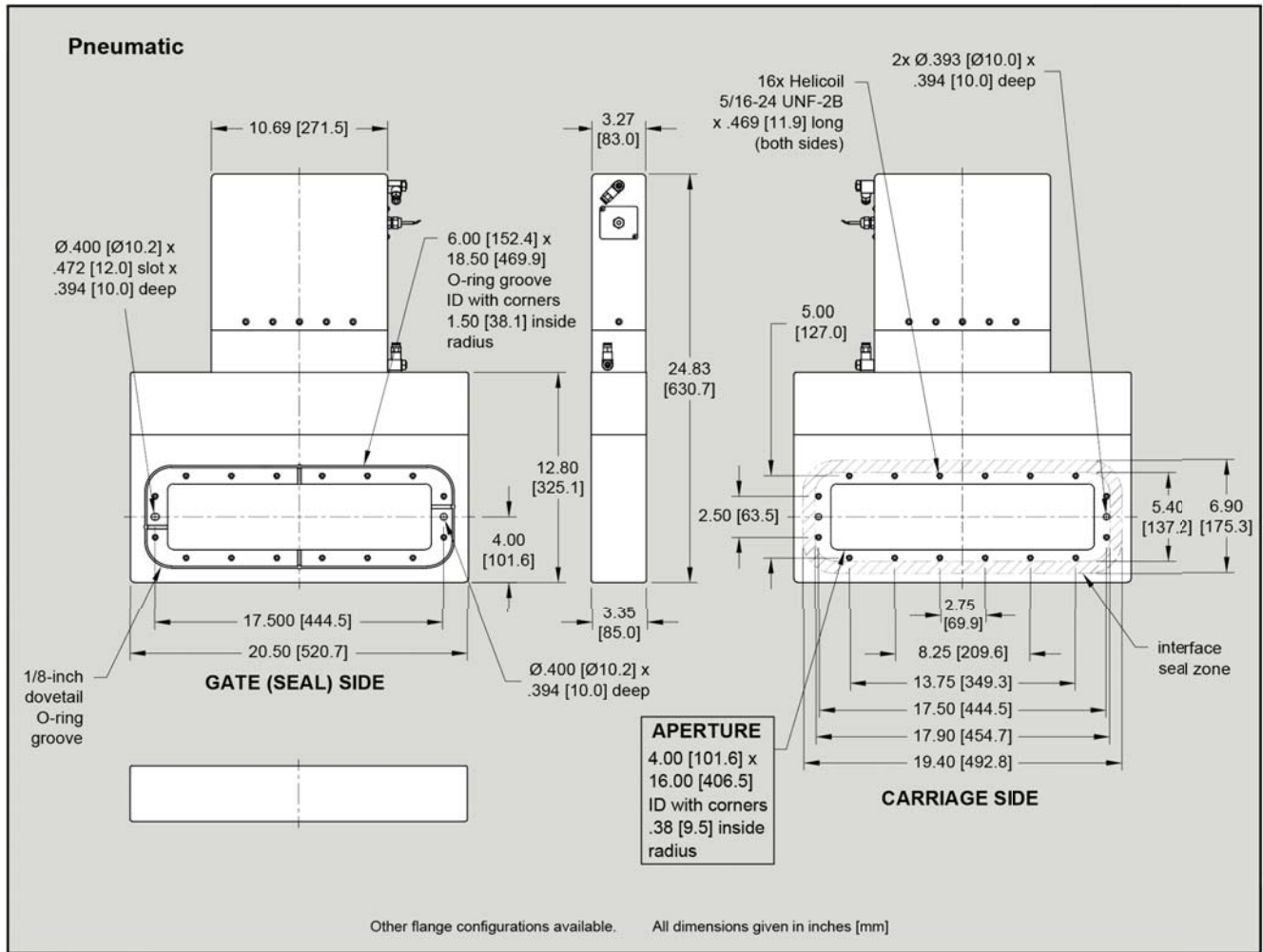
MESC Flanges		70x508-mm 2.75x20-inch	
Bonnet-Gate	Flange Type	Ship Wt. lbs [Kg]	Model Number *
<b>Pneumatic</b>			
Viton-Viton (HV)	Bolt	120 [54]	88212-0220RXB

\* For pneumatic valves,  
R = Reed switch, standard  
M = Microswitch, optional

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# 88200 Series Aluminum Rectangular Slit Valves

100x407-mm 4.0x16.0-inch Bolt Style



88200

**Specifications**

**HV Pressure Range:**

1 x 10<sup>-9</sup> mbar

**Helium Leak Rate: Materials:**

< 2 x 10<sup>-9</sup> mbar l/s

**Maximum Δ Pressure Before Opening:**

≤ 30 mbar

**Materials:**

- Body = 6061-T6 Aluminum
- Gate = 6061-T6 Aluminum
- Bellows = AM-350
- Actuator = 6061-T6 Aluminum

**Operating Temperature:**

- Body, Gate Open (Viton®) = 150°C
- Body, Gate Closed (Viton®) = 150°C
- Actuator w/out solenoid (Viton®) = 60°C
- Position Indicator (Viton®) = 150°C

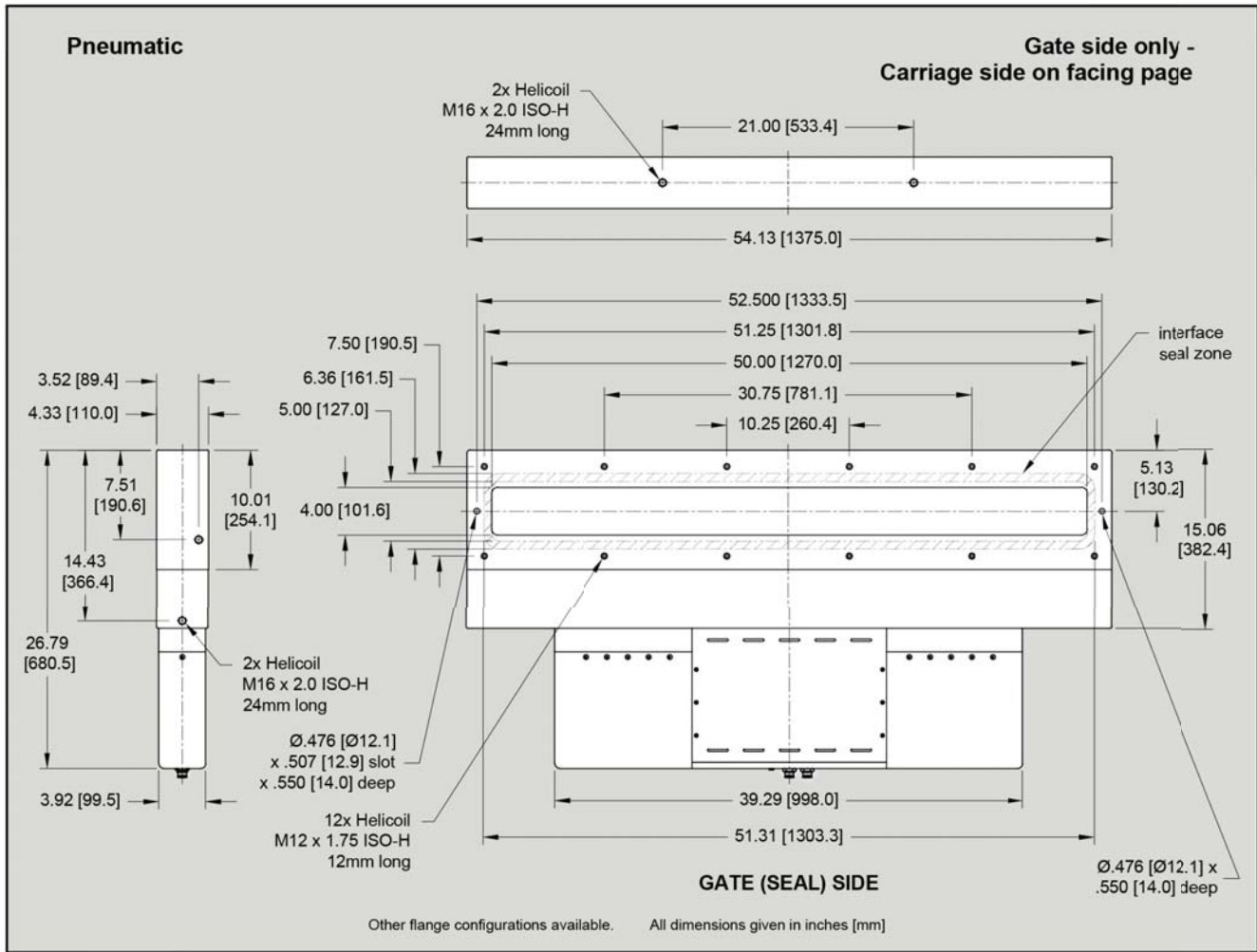
MESIC Flanges		100x406-mm 4x16-inch	
Bonnet-Gate	Flange Type	Ship Wt. lbs [Kg]	Model Number *
<b>Pneumatic</b>			
Viton-Viton (HV)	Bolt	140 [64]	88212-0416RXB

\* For pneumatic valves,  
R = Reed switch, standard  
M = Microswitch, optional



# 88200 Series Aluminum Rectangular Slit Valves

100x1270-mm 4.0x50.0-inch Bolt Style



**Specifications**

**HV Pressure Range:**

1 x 10<sup>-9</sup> mbar

**Helium Leak Rate: Materials:**

< 2 x 10<sup>-9</sup> mbar l/s

**Maximum Δ Pressure Before Opening:**

≤ 30 mbar

**Materials:**

- Body = 6061-T6 Aluminum
- Gate = 6061-T6 Aluminum
- Bellows = AM-350
- Actuator = 6061-T6 Aluminum

**Operating Temperature:**

- Body, Gate Open (Viton®) = 150°C
- Body, Gate Closed (Viton®) = 150°C
- Actuator w/out solenoid (Viton®) = 60°C
- Position Indicator (Viton®) = 150°C

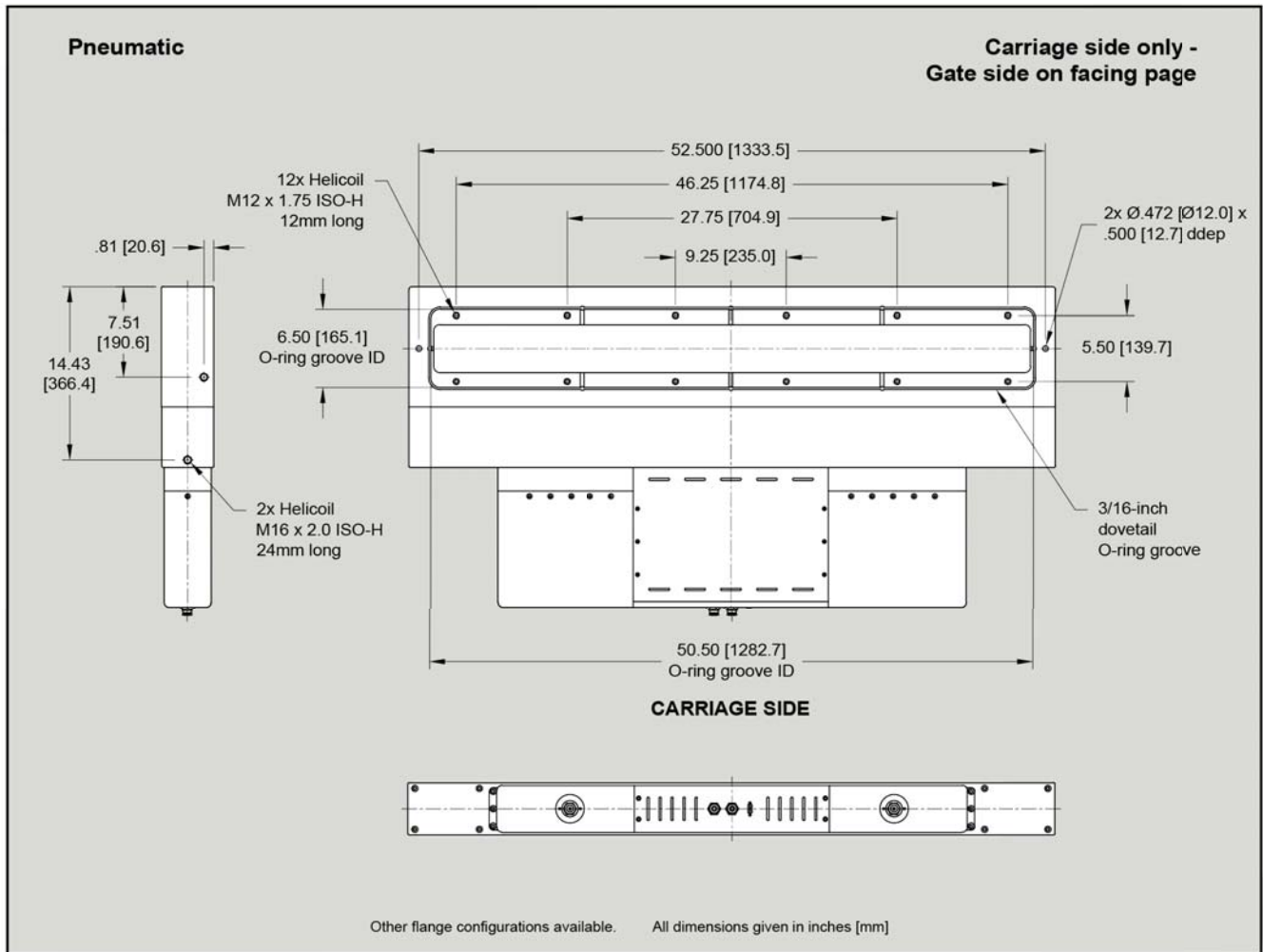
MESC Flanges		100x1270-mm 4x50-inch	
Bonnet-Gate	Flange Type	Ship Wt. lbs [Kg]	Model Number *
<b>Pneumatic</b>			
Viton-Viton (HV)	Bolt	750 [341]	88212-0450RXB

\* For pneumatic valves,  
R = Reed switch, standard  
M = Microswitch, optional

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# 88200 Series Aluminum Rectangular Slit Valves

100x1270-mm 4.0x50.0-inch Bolt Style



88200

**Specifications**

**HV Pressure Range:**

**Helium Leak Rate: Materials:**

**Maximum Δ Pressure Before Opening:**

**Materials:**

- Body = 6061-T6 Aluminum
- Gate = 6061-T6 Aluminum
- Bellows = AM-350
- Actuator = 6061-T6 Aluminum

**Operating Temperature:**

- Body, Gate Open (Viton®) = 150°C
- Body, Gate Closed (Viton®) = 150°C
- Actuator w/out solenoid (Viton®) = 60°C
- Position Indicator (Viton®) = 150°C

1 x 10<sup>-9</sup> mbar  
 < 2 x 10<sup>-9</sup> mbar l/s  
 ≤ 30 mbar

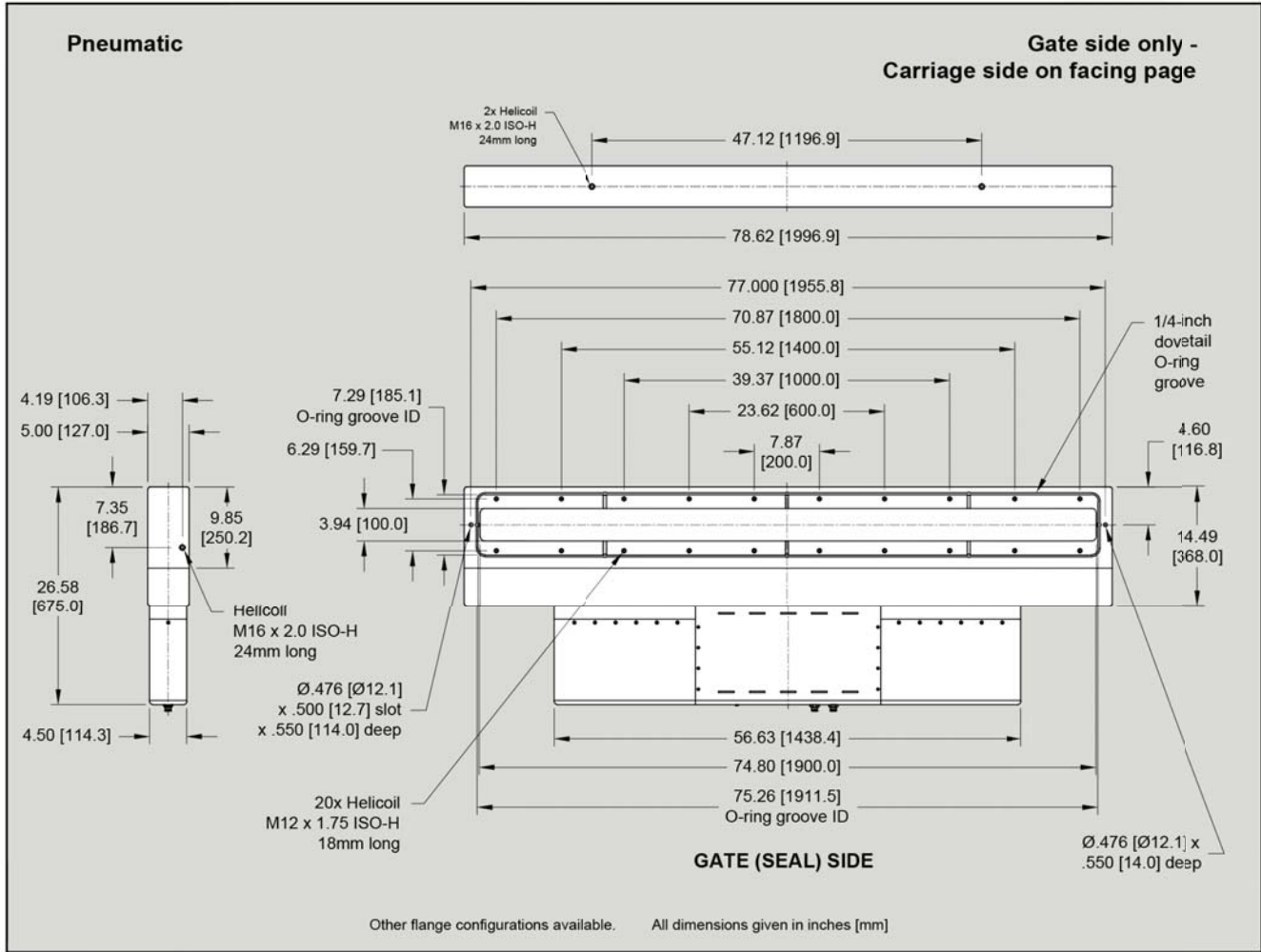
Gate side drawing and model number on page 159.





# 88200 Series Aluminum Rectangular Slit Valves

100x1900-mm 4.0x75.0-inch Bolt Style



### Specifications

**HV Pressure Range:**

1 x 10<sup>-9</sup> mbar

**Helium Leak Rate: Materials:**

< 2 x 10<sup>-9</sup> mbar l/s

**Maximum Δ Pressure Before Opening:**

≤ 30 mbar

**Materials:**

Body = 6061-T6 Aluminum  
 Gate = 6061-T6 Aluminum  
 Bellows = AM-350  
 Actuator = 6061-T6 Aluminum

**Operating Temperature:**

Body, Gate Open (Viton®) = 150°C  
 Body, Gate Closed (Viton®) = 150°C  
 Actuator w/out solenoid (Viton®) = 60°C  
 Position Indicator (Viton®) = 150°C

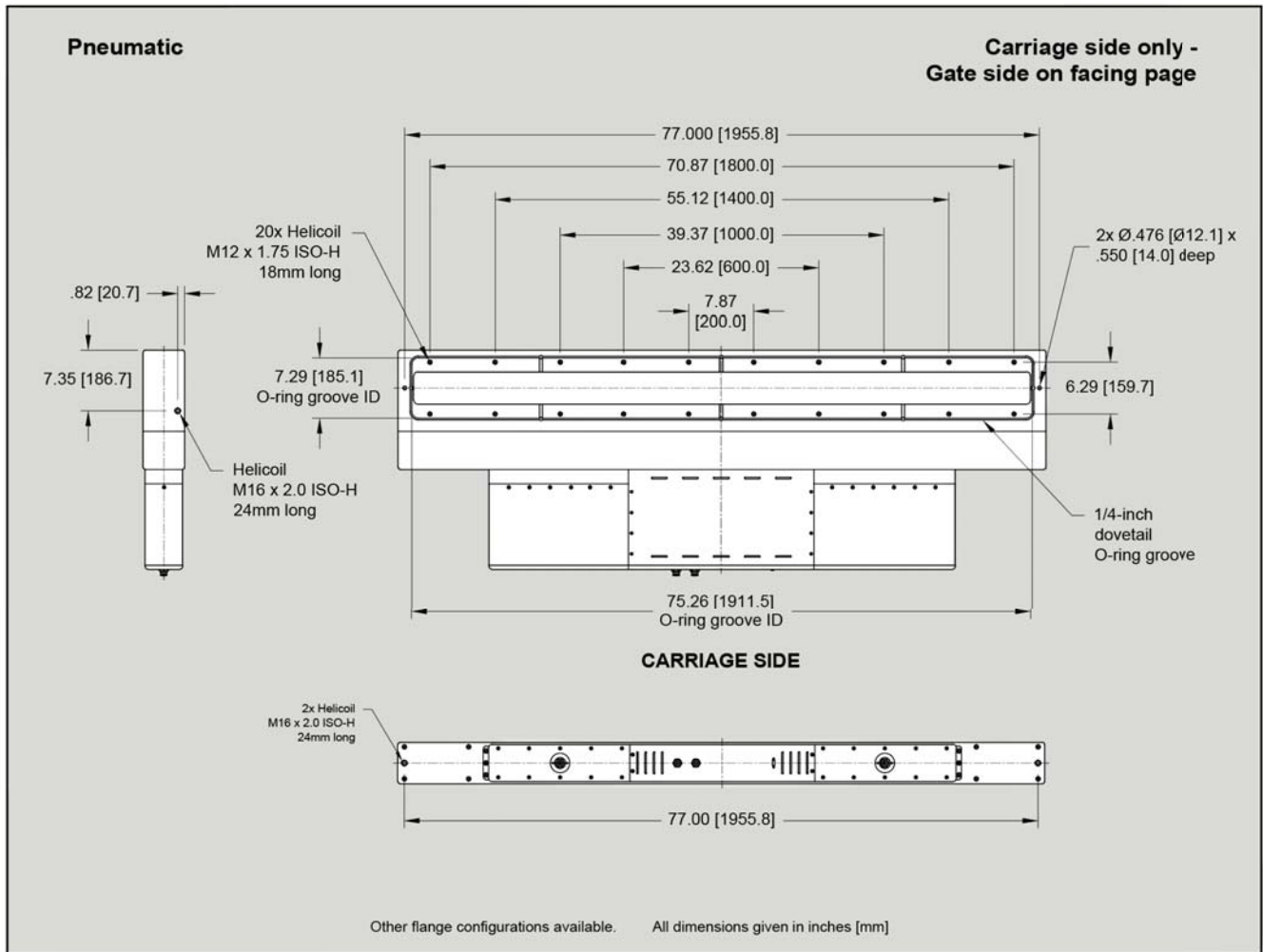
MESC Flanges		100x1900-mm 4x75-inch	
Bonnet-Gate	Flange Type	Ship Wt. lbs [Kg]	Model Number *
<b>Pneumatic</b>			
Viton-Viton (HV)	Bolt	950 [431]	88212-0475RXB

\* For pneumatic valves,  
 R = Reed switch, standard  
 M = Microswitch, optional

88200

# 88200 Series Aluminum Rectangular Slit Valves

100x1900-mm 4.0x75.0-inch Bolt Style



88200

**Specifications**

**HV Pressure Range:**

**Helium Leak Rate: Materials:**

**Maximum Δ Pressure Before Opening:**

**Materials:**

- Body = 6061-T6 Aluminum
- Gate = 6061-T6 Aluminum
- Bellows = AM-350
- Actuator = 6061-T6 Aluminum

**Operating Temperature:**

- Body, Gate Open (Viton®) = 150°C
- Body, Gate Closed (Viton®) = 150°C
- Actuator w/out solenoid (Viton®) = 60°C
- Position Indicator (Viton®) = 150°C

1 x 10<sup>-9</sup> mbar  
 < 2 x 10<sup>-9</sup> mbar l/s  
 ≤ 30 mbar

Gate side drawing and model number on page 161.