VACCO Industries maintains a product line of titanium latching valves designed to meet industry’s demand for high reliability, tight leakage, and quick response capabilities.

The 1/4” low-pressure latch valve utilizes VACCO’s proven torque tube technology. The all titanium construction helps reduce weight while bolstering reliability; qualified to a minimum 20,000 life cycles without deteriorating performance. The valve is fully flight-qualified and holds extensive heritage.

**FEATURES**

+ 400 psi Operating Pressure
+ Flight Qualified
+ All Titanium Construction
+ Low Weight – 340g/0.75 lbm
+ Integral Microswitch
+ Bi-Directional Flow
+ 40µ Absolute Inlet Filter

**OPERATING PARAMETERS**

Operating Pressure Range ......................... 400 psig  
Proof Pressure .............................................. 900 psig  
Burst Pressure ................................................ 2400 psig  
Flow .......................................................... 0.025 lbm/sec H₂O  
Pressure Drop ............................................... <15 psid  
Internal Leakage ........................................... <5.0 scch GHe  
External Leakage .......................................... <1 X 10⁻⁶ scchs GHe  
Weight ....................................................... 0.75 lbm (340 grams)

Operating Temperature ......................... +30° to 150° F  
Response Time  
Opening ............... 50 msec @ 20 VDC  
Closing .................. 50 msec @ 20 VDC  
Back Pressure Relief ................................... 350 psid  
Inlet Filter Rating ................. 40 microns absolute  
Operating Voltage ......................... 20 – 50 VDC  
Dielectric Strength .... 500 VAC RMS @ 60 Hz – 1 min

Performance characteristics are based upon customer requirements, as such, are not representative of component capabilities or limitations.
**PERFORMANCE CHARACTERISTICS**

**Pressure Drop**

![Pressure Drop Graph](chart)

**ELECTRICAL SCHEMATIC**

![Electrical Schematic Diagram](diagram)
VACCO Industries maintains a product line of titanium latching valves designed to meet industry’s demand for high reliability, tight leakage, and quick response capabilities.

The 1/4” low-pressure latch valve utilizes VACCO’s proven torque tube technology. The all titanium construction helps reduce weight while bolstering reliability; qualified to a minimum 20,000 life cycles without deteriorating performance. The valve is fully flight-qualified and holds extensive heritage.

**FEATURES**

- 450 psi Operating Pressure
- Flight Qualified
- All Titanium Construction
- Low Weight – 340g/0.75 lbm
- Integral Microswitch
- Bi-Directional Flow

**OPERATING PARAMETERS**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
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<tbody>
<tr>
<td>Operating Pressure Range</td>
<td>450 psig</td>
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<tr>
<td>Proof Pressure</td>
<td>900 psig</td>
</tr>
<tr>
<td>Burst Pressure</td>
<td>2400 psig</td>
</tr>
<tr>
<td>Flow</td>
<td>0.025 lbm/sec H₂O</td>
</tr>
<tr>
<td>Pressure Drop</td>
<td>&lt;15 psid</td>
</tr>
<tr>
<td>Internal Leakage</td>
<td>&lt;5.0 sccm GHe</td>
</tr>
<tr>
<td>External Leakage</td>
<td>&lt;1 X 10⁻⁶ sccs GHe</td>
</tr>
<tr>
<td>Weight</td>
<td>0.75 lbm (340 grams)</td>
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<tr>
<td>Operating Temperature</td>
<td>+30° to 160° F</td>
</tr>
<tr>
<td>Opening</td>
<td>50 msec @ 21 VDC</td>
</tr>
<tr>
<td>Closing</td>
<td>50 msec @ 21 VDC</td>
</tr>
<tr>
<td>Back Pressure Relief</td>
<td>50 to 200 psid</td>
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<tr>
<td>Operating Voltage</td>
<td>21 – 50 VDC</td>
</tr>
<tr>
<td>Dielectric Strength</td>
<td>500 VAC RMS @ 60 Hz – 1 min</td>
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</tbody>
</table>

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Performance Characteristics

Pressure Drop vs Flow Rate

Flow Rate (lbm/sec H2O)

Electrical Schematic

Opening coil (inlet side)

Closing coil (outlet side)

Switch (valve closed)

Connector - pin no.
DESCRIPTION

VACCO Industries maintains a product line of titanium latching valves designed to meet industry’s demand for high reliability, tight leakage, and quick response capabilities.

The 1/4” low-pressure latch valve utilizes VACCO’s proven torque tube technology. The all titanium construction helps maintain light weight while compatibility with stainless steel systems is achieved through transition tubing. The valve is fully flight-qualified and holds extensive heritage.

FEATURES

✦ 450 psi Operating Pressure
✦ Flight Qualified
✦ All Titanium Construction With 304L Stainless Steel Interface
✦ Low Weight – 340g/0.75 lbm
✦ Integral Microswitch
✦ 40µ Absolute Inlet Filter

OPERATING PARAMETERS

<table>
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<th>Feature</th>
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<tr>
<td>Flow</td>
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<td>Pressure Drop</td>
<td>&lt;12 psid</td>
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<tr>
<td>Internal Leakage</td>
<td>&lt;10.0 scch GN₂</td>
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<tr>
<td>External Leakage</td>
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<tr>
<td>Weight</td>
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<td>Operating Temperature</td>
<td>+40°C to 120°C F</td>
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<td>Response Time</td>
<td>Opening .......... 30 msec @ 20 VDC</td>
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<tr>
<td></td>
<td>Closing ........... 20 msec @ 20 VDC</td>
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<tr>
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<td>Inlet Filter Rating</td>
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<tr>
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<tr>
<td>Dielectric Strength</td>
<td>500 VAC RMS @ 60 Hz – 1 min</td>
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</table>

Performance characteristics are based upon customer requirements, as such, are not representative of component capabilities or limitations.
Performance Characteristics

Pressure Drop

![Pressure Drop Graph]

Electrical Schematic

Opening (Inlet Side)

Closing (Outlet Side)

Switch shown with Valve Closed Position

<table>
<thead>
<tr>
<th>Color</th>
<th>Symbol</th>
<th>Description</th>
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<tbody>
<tr>
<td>GRN</td>
<td>NC</td>
<td>Normally Closed</td>
</tr>
<tr>
<td>GRN/WHT</td>
<td>C</td>
<td>Control</td>
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<tr>
<td>RED</td>
<td>NO</td>
<td>Normally Opened</td>
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<tr>
<td>RED/WHT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BLUE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WHITE</td>
<td></td>
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</tr>
<tr>
<td>ORANGE</td>
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</table>
VACCO Industries maintains a product line of titanium latching valves designed to meet industry’s demand for high reliability, tight leakage, and quick response capabilities.

The 1/4” low-pressure latch valve utilizes VACCO’s proven torque tube technology. The all titanium construction helps reduce weight while bolstering reliability; qualified to a minimum 20,000 life cycles without deteriorating performance. The valve is fully flight-qualified and holds extensive heritage.

**DESCRIPTION**

- Operating Pressure Range: 450 psig
- Flight Qualified
- All Titanium Construction
- Low Weight – 340g/0.75 lbm
- Integral Microswitch
- 20,000 Cycle Life
- 40µ Absolute Inlet Filter

**FEATURES**

- Grid

**OPERATING PARAMETERS**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Pressure Range</td>
<td>450 psig</td>
</tr>
<tr>
<td>Proof Pressure</td>
<td>900 psig</td>
</tr>
<tr>
<td>Burst Pressure</td>
<td>2400 psig</td>
</tr>
<tr>
<td>Flow</td>
<td>0.025 lbm/sec H2O</td>
</tr>
<tr>
<td>Pressure Drop</td>
<td>5 psid (at rated flow)</td>
</tr>
<tr>
<td>Internal Leakage</td>
<td>&lt;5.0 sccm GHe</td>
</tr>
<tr>
<td>External Leakage</td>
<td>&lt;$1 X 10^-6 sccs GHe</td>
</tr>
<tr>
<td>Weight</td>
<td>0.75 lbm (340 grams)</td>
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<tr>
<td>Operating Temperature</td>
<td>+10° to 170° F</td>
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<td>Response Time:</td>
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<td>Opening</td>
<td>50 msec @ 21 VDC</td>
</tr>
<tr>
<td>Closing</td>
<td>50 msec @ 21 VDC</td>
</tr>
<tr>
<td>Back Pressure Relief</td>
<td>50 to 200 psid</td>
</tr>
<tr>
<td>Inlet Filter Rating</td>
<td>40 microns absolute</td>
</tr>
<tr>
<td>Operating Voltage</td>
<td>21 – 50 VDC</td>
</tr>
<tr>
<td>Dielectric Strength</td>
<td>500 VAC RMS @ 60 Hz – 1 min.</td>
</tr>
</tbody>
</table>

Performance characteristics are based upon customer requirements, as such, are not representative of component capabilities or limitations.
Pressure Drop vs Flow Rate

Flow Rate (lbm/sec H2O)

Flow Rate (lbm/sec H2O)

Electrical Schematic
3/8” LOW PRESSURE PROPELLANT LATCH VALVE
V1E10453-01

DESCRIPTION

VACCO Industries maintains a product line of titanium latching valves designed to meet industry’s demand for high reliability, tight leakage, and quick response capabilities.

The 3/8” low-pressure latch valve utilizes VACCO’s proven torque tube technology. The all titanium construction helps maintain light weight while stainless steel systems are achieved through transition tubing. The valve is fully flight-qualified and holds extensive heritage.

FEATURES

- 300 psi Operating Pressure
- Flight Qualified
- All Titanium Construction With 304L Stainless Steel Interface
- Low Weight – 725g/1.60 lbm
- Integral Microswitch
- 150,000 Cycle Life
- 40µ Absolute Inlet Filter

OPERATING PARAMETERS

- Operating Pressure Range ......................... 300 psig
- Proof Pressure ........................................ 750 psig
- Burst Pressure ........................................... 1250 psig
- Flow ...................................................... 0.4 lbm/sec H2O
- Pressure Drop ...................................... 19 psid (at rated flow)
- Internal Leakage ..................................... 10.0 scch GHe
- External Leakage ..............................<1 X 10⁻⁶ sccs GHe
- Weight ..................................................... 1.60 lbm (725 grams)
- Operating Temperature ....................... +40° to 120° F
- Response Time:
  - Opening ..................... 40 msec @ 20 VDC
  - Closing ...................... 40 msec @ 20 VDC
- Back Pressure Relief .................. 40 to 200 psid
- Inlet Filter Rating .................. 40 microns absolute
- Operating Voltage ...................... 20 – 38.6 VDC
- Dielectric Strength..... 500 VAC RMS @ 60 Hz – 1 min

Performance characteristics are based upon customer requirements, as such, are not representative of component capabilities or limitations.
### Performance Characteristics

#### Pressure Drop

![Graph showing pressure drop vs. flow rate](image)

- **X-axis:** Flow Rate ($\text{H}_2\text{O} \ lbm/\text{sec}$)
- **Y-axis:** Pressure Drop (psid)

#### Electrical Schematic

![Electrical schematic diagram](image)
VACCO Industries maintains a product line of titanium latching valves designed to meet industry’s demand for high reliability, tight leakage, and quick response capabilities.

The ½” low pressure latch valve utilizes VACCO’s proven torque tube technology. The all titanium construction helps maintain light weight while compatibility with stainless steel systems are achieved through transition tubing. The valve is fully flight qualified and holds extensive heritage.

The V1E10689-01 is identical to the V1E10691 except for lower back pressure relief.

**FEATURES**

- 250 psi Operating Pressure
- All Titanium Construction with 304L Stainless Steel Interface
- Low Weight – 750 g / 1.65 lbm
- Two Integral Microswitches
- > 150,000 Cycle Life
- Bi-Directional Flow

**OPERATING PARAMETERS**

- Operating Pressure Range: 250 psig
- Proof Pressure: 1,950 psig
- Burst Pressure: 2,600 psig
- Back Pressure Relief: 40-100 psid
- Flow: 1.0 GPM H₂O
- Pressure Drop: 6 psid (Forward Direction)
- Pressure Drop: 5 psid (Reverse Direction)
- Internal Leakage: < 20.0 scch GHe
- External Leakage: < 5 X 10⁻⁶ sccs GHe
- Weight: 1.65 lbm (750 grams)
- Operating Temperature: 30° to 150° F
- Response Time: 80 ms @ 28 VDC @ 350 psig
- Response Time: 80 ms @ 28 VDC @ 0 psig
- Pull-In Voltage: 18VDC Max @ 250 psig & 150° F
- Power: 90 Watts Max @ 32VDC & 32° F
- Operating Voltage: 18 –32 VDC
- Dielectric Strength: 500 VAC RMS
- Inlet/Outlet Filter Rating: 100 Microns Absolute

Performance characteristics are based upon customer requirements, as such, are not representative of component capabilities or limitations.
**PERFORMANCE CHARACTERISTICS**

Forward Pressure Drop @ 250 psig, 70 F

Reverse Pressure Drop @ 250 psig, 70F

---

**SCHEMATIC**

SWITCHES SHOWN WITH VALVE IN CLOSED POSITION

OPEN POSITION INDICATOR (INLET SIDE)

CLOSED POSITION INDICATOR (OUTLET SIDE)
VACCO Industries maintains a product line of titanium latching valves designed to meet industry’s demand for high reliability, tight leakage, and quick response capabilities.

The ½” low pressure latch valve utilizes VACCO’s proven torque tube technology. The all titanium construction helps maintain light weight while compatibility with stainless steel systems are achieved through transition tubing. The valve is fully flight qualified and holds extensive heritage.

The V1E10691 is identical to the V1E10689 except for back pressure relief.

Features

- 250 psi Operating Pressure
- All Titanium Construction With 304L Stainless Steel Interface
- Low Weight – 750 g / 1.65 lbm
- Two Integral Microswitches
- > 150,000 Cycle Life
- Bi-Directional Flow

Operating Parameters

Operating Pressure Range ......................... 250 psig  
Proof Pressure ...................................... 1,950 psig  
Burst Pressure ...................................... 2,600 psig  
Back Pressure Relief ......................... 260 – 300 psid  
Flow ....................................................... 1.0 GPM H₂O  
Pressure Drop ............... 5 psid (Forward Direction)  
Pressure Drop ............... 6 psid (Reverse Direction)  
Internal Leakage ............................... < 20.0 sccs GHe  
External Leakage ............................... <5 X 10⁻⁶ sccs GHe  
Weight .............................................. 1.65 lbm (750 grams)  
Operating Temperature ...................... 30° to 150° F  
Open Response Time .. 80 ms @ 28 VDC @ 350 psig  
Close Response Time ...... 80 ms @ 28 VDC @ 0 psig  
Pull-In Voltage ...... 18VDC Max @ 250 psig & 150° F  
Power ......................... 90 Watts Max @ 32VDC & 32° F  
Operating Voltage ............................... 18 – 32 VDC  
Dielectric Strength ............................... 500 VAC RMS  
Inlet/Outlet Filter Rating ............ 100 Microns Absolute

Performance characteristics are based upon customer requirements, as such, are not representative of component capabilities or limitations.
**Performance Characteristics**

Forward Pressure Drop @ 250 psig, 70F

![Graph showing pressure drop vs. flow rate for forward direction]

Reverse Pressure Drop @ 250 psig, 70F

![Graph showing pressure drop vs. flow rate for reverse direction]

**Schematic**

(OFFERING COIL) (CLOSING COIL)

(INNER COIL) (OUTER COIL) (OUTER COIL) (INNER COIL)

(INLET SIDE) (OUTLET SIDE) (INLET SIDE) (OUTLET SIDE)

(RECEPTACLE - PIN ASSIGNMENT)

4X DIODE JAN51N5806

SWITCHES SHOWN WITH VALVE IN CLOSED POSITION

OPEN POSITION INDICATOR (OUTLET SIDE) CLOSED POSITION INDICATOR (INLET SIDE)
VACCO Industries maintains a product line of titanium latching valves designed to meet industry’s demand for high reliability, tight leakage, and quick response capabilities.

The 3/8” low-pressure latch valve utilizes VACCO’s proven torque tube technology. The all titanium construction helps maintain its light weight while the dual coils are provided for redundancy. The valve is fully flight-qualified and holds extensive heritage.

**FEATURES**

- 260 psi Operating Pressure
- Flight Qualified
- All Titanium Construction
- Low Weight – 750g/1.65 lbm
- Integral Microswitch
- 150,000 Cycle Life
- 40µ Absolute Inlet Filter

**OPERATING PARAMETERS**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Pressure Range</td>
<td>260 psig</td>
</tr>
<tr>
<td>Proof Pressure</td>
<td>600 psig</td>
</tr>
<tr>
<td>Burst Pressure</td>
<td>1600 psig</td>
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<tr>
<td>Flow</td>
<td>0.175 lbm/sec H2O</td>
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<td>Pressure Drop</td>
<td>4 psid</td>
</tr>
<tr>
<td>Internal Leakage</td>
<td>&lt;5.0 scch GHe</td>
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<tr>
<td>External Leakage</td>
<td>&lt;1 X 10⁻⁸ scccs GHe</td>
</tr>
<tr>
<td>Weight</td>
<td>1.60 lbm (725 grams)</td>
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<tr>
<td>Operating Temperature</td>
<td>14° to 150° F</td>
</tr>
<tr>
<td>Response Time</td>
<td></td>
</tr>
<tr>
<td>Opening</td>
<td>50 msec @ 43 VDC</td>
</tr>
<tr>
<td>Closing</td>
<td>50 msec @ 21.5 VDC</td>
</tr>
<tr>
<td>Back Pressure Relief</td>
<td>50 to 160 psid</td>
</tr>
<tr>
<td>Inlet Filter Rating</td>
<td>40 microns absolute</td>
</tr>
<tr>
<td>Operating Voltage</td>
<td></td>
</tr>
<tr>
<td></td>
<td>21.5 – 54 VDC</td>
</tr>
<tr>
<td>Dielectric Strength</td>
<td>500 VAC RMS @ 60 Hz – 1 min</td>
</tr>
</tbody>
</table>

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Performance Characteristics

Pressure Drop

Flow Rate (H₂O lbm/sec) vs. Pressure Drop (psid)

Electric Schematic

CONNECTOR - PIN NO.

3  4  7  8
(RED) (BLK) (RED) (BLK)
SECONDARY OPENING COIL  SECONDARY CLOSING COIL
(INLET SIDE) (OUTLET SIDE)

CONNECTOR - PIN NO.

1  2  5  6  10  9  11
(RED) (BLK) (RED) (BLK)
PRIMARY OPENING COIL  PRIMARY CLOSING COIL

SWITCH (VALVE CLOSED)

NC  C  NO
VACCO Industries maintains a product line of titanium latching valves designed to meet industry’s demand for high reliability, tight leakage, and quick response capabilities.

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**FEATURES**

- 260 psi Operating Pressure
- Flight Qualified
- All Titanium Construction
- Low Weight – 750g/1.65 lbm
- Integral Microswitch
- 150,000 Cycle Life
- 40µ Absolute Inlet Filter

**OPERATING PARAMETERS**

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<th>Value</th>
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<tr>
<td>Operating Pressure Range</td>
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<td>Proof Pressure</td>
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<tr>
<td>Burst Pressure</td>
<td>1600 psig</td>
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<tr>
<td>Flow</td>
<td>0.175 lbm/sec H2O</td>
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<tr>
<td>Pressure Drop</td>
<td>4 psid</td>
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<tr>
<td>Internal Leakage</td>
<td>&lt;5.0 scch GHe</td>
</tr>
<tr>
<td>External Leakage</td>
<td>&lt;1 X 10^-6 sccs GHe</td>
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<tr>
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<tr>
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<td>50 msec @ 21.5 VDC</td>
</tr>
<tr>
<td>Back Pressure Relief</td>
<td>50 to 160 psid</td>
</tr>
<tr>
<td>Inlet Filter Rating</td>
<td>40 microns absolute</td>
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<tr>
<td>Operating Voltage</td>
<td>21.5 – 54 VDC</td>
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<tr>
<td>Dielectric Strength</td>
<td>500 VAC RMS @ 60 Hz – 1 min</td>
</tr>
</tbody>
</table>

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PERFORMANCE CHARACTERISTICS

ELECTRIC SCHEMATIC

<table>
<thead>
<tr>
<th>CONNECTOR - PIN NO.</th>
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<td>(RED)</td>
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<td>(RED)</td>
<td>(BLK)</td>
<td></td>
</tr>
<tr>
<td>SECONDARY OPENING COIL</td>
<td>SECONDARY CLOSING COIL</td>
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<td>(INLET SIDE)</td>
<td>(OUTLET SIDE)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRIMARY OPENING COIL</td>
<td>PRIMARY CLOSING COIL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(RED)</td>
<td>(BLK)</td>
<td>(RED)</td>
<td>(BLK)</td>
<td></td>
</tr>
<tr>
<td>SWITCH (VALVE CLOSED)</td>
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<td>C</td>
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<td></td>
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<table>
<thead>
<tr>
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<th>1</th>
<th>2</th>
<th>5</th>
<th>6</th>
<th>10</th>
<th>9</th>
<th>11</th>
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</table>

A Subsidiary of ESCO Technologies, Inc

VACCO Industries • Space Products • 10350 Vacco Street • South El Monte, CA 91733
Tel: (626) 443-7121 • Fax: (626) 442-6943 • Web: www.vacco.com • E-mail: space@vacco.com

07 July, 2004
VACCO Aerospace Products produces a product line of latching valves designed to meet industry’s demand for high reliability, tight leakage, and quick response capabilities.

The ¼” Low Pressure Miniature Latch Valve is designed as a light weight and low cost alternative for propulsion systems that requires small flow capacity. This valve was qualified for a Xenon Electric Propulsion system. A derivative has been developed with modifications to the orifice and poppet which is capable of 3,000 psi MEOP.

**FEATURES**

- 73 psig Operating Pressure
- CRES Interface
- Low Weight – 0.37 lbm (168 grams)
- Integral Position Indicator
- 1,000 Open/Closing Operating Cycles
- Viton Poppet
- Fully Qualified per Flow Control Module

**OPERATING PARAMETERS**

<table>
<thead>
<tr>
<th>Parameter</th>
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<tbody>
<tr>
<td>Operating Pressure Range</td>
<td>0-73 psia</td>
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<tr>
<td>Proof Pressure</td>
<td>109 psig</td>
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<tr>
<td>Burst Pressure</td>
<td>181 psig</td>
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<tr>
<td>Flow</td>
<td>2 sccm Xe</td>
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<tr>
<td>Pressure Drop</td>
<td>0.001 psid max.</td>
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<tr>
<td>Internal Leakage</td>
<td>1.0 scc/hr GHe @ MEOP</td>
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<tr>
<td>External Leakage</td>
<td>&lt;1 X 10^-6 sccs GHe @ MEOP</td>
</tr>
<tr>
<td>Weight</td>
<td>0.37 lbm (168 grams)</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>+17° to +70° C</td>
</tr>
<tr>
<td>Non-operating Temperature</td>
<td>-40° to +70° C</td>
</tr>
<tr>
<td>Response Time:</td>
<td>Opening ..........50 msec @ 21 VDC</td>
</tr>
<tr>
<td></td>
<td>Closing..........50 msec @ 21 VDC</td>
</tr>
<tr>
<td>Operating Voltage</td>
<td>21-32 VDC</td>
</tr>
<tr>
<td>Dielectric Strength</td>
<td>500 VAC RMS @ 60 Hz – 1 min</td>
</tr>
</tbody>
</table>

*Performance characteristics are based upon customer requirements, as such, are not representative of component capabilities or limitations.*
Flow vs Pressure Drop @ 40 psia*

*Analytical Estimate

**ELECTRIC SCHEMATIC**
VACCO Aerospace Products produces a product line of latching valves designed to meet industry’s demand for high reliability, tight leakage, and quick response capabilities.

The ¼” Low Pressure Miniature Latch Valve is designed as a lightweight and low cost alternative propulsion system that requires small flow capacity. This valve was qualified for a Hydrazine propellant system. A derivative has been developed with modifications to the orifice and poppet which is capable of 3,000 psi MEOP.

**FEATURES**

- 400 psig Operating Pressure
- CRES Interface
- Low Weight – 0.37 lbm (168 grams)
- Integral Position Indicator
- 40 μ Absolute Etched Disc Inlet Filter
- 1,000 Open/Closing Operating Cycles
- Teflon Poppet
- Fully Qualified

**OPERATING PARAMETERS**

- Operating Pressure Range ......................... 0-400 psig
- Proof Pressure ........................................... 600 psig
- Burst Pressure .......................................... 1,000 psig
- Flow .................................................. 0.01 lbm/sec (0.08 gpm) H2O
- Pressure Drop ......................................... 3 psid max.
- Internal Leakage ................................. 1.0 scc/hr GHe @ MEOP
- External Leakage .............................. <1 X 10^-6 sccs GHe @ MEOP
- Weight .................................................. 0.37 lbm (168 grams)
- Operating Temperature ...................... +10° to +50° C
- Non-operating Temperature .................. -30° to +60° C
- Response Time:
  - Opening ........................................ 15 msec @ 20 VDC
  - Closing ........................................ 15 msec @ 20 VDC
- Back Pressure Relief ......................... 325 ± 200 psid
- Inlet Filter Rating ............................... 40 microns absolute
- Operating Voltage .............................. 11-17 VDC
- Dielectric Strength ......................... 500 VAC RMS @ 60 Hz – 1 min

*Performance characteristics are based upon customer requirements, as such, are not representative of component capabilities or limitations*
**Performance Characteristics**

**Pressure Drop @ 400 psig**

<table>
<thead>
<tr>
<th>Flow Rate (GPM H2O)</th>
<th>Pressure Drop (psid)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.01</td>
<td>0.1</td>
</tr>
<tr>
<td>0.10</td>
<td>1</td>
</tr>
<tr>
<td>1.00</td>
<td>10</td>
</tr>
</tbody>
</table>

**Electric Schematic**

- Switch shown with valve in opened position
- Opening coil
- Closing coil
- Blue
- Green
- Black
- Red
- BLK/WHT
- RED/WHT

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07 July, 2004