FINE series PURE
High Flow Valve series

KIWAMI
The Height of Excellence

Safety & Clean Technology

Fujikin Incorporated
High Flow Valve Series Lineup

Pressure (MPa)

20.5

FPR-NDF-721-12.7-CRB#B

FPR-UDF-721-12.7

16.2

FUDDFB-721G-6.35

FUDF-721G-12.7-CRB#A

FUDF-721G-12.7

2

FPR-NDF-72-12.7-CRB#B

FUDF-72G-12.7-CRB#A

1

FPR-ND-71-9.52

FUND-71G-9.52

0.25

0.5

0.65

0.8
High-Flow IGS

Piping Valve Series
- HB Series: Bellows Valves for Ultrapure Gas Lines
- HF Series: High Flow Bellows Valves for Ultrapure Gas Lines
- SPDS Series: Diaphragm Valves for Ultrapure Gas Lines
- HBF Series: Forged Bellows Valves for Ultrapure Gas Lines

FPR-72-19.05  FUB-72-19.05
P3  FPR-BD-71-12.7  FUBD-71G-12.7
FPR-71-19.05  FUB-71-19.05
1  1.5  2.8  Maximum Cv Value (20°C)
### Low-pressure Manual Direct Diaphragm Valve

1MPa
Maximum Cv: 1.5

**Specifications**

<table>
<thead>
<tr>
<th>Nominal Diameter</th>
<th>Maximum Operating Pressure</th>
<th>Fluid Temperature Range</th>
<th>Maximum Cv* (with N₂ gas at 20°C)</th>
<th>End Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.7</td>
<td>1 MPa (145 psi)</td>
<td>-10 to + 40°C</td>
<td>1.5</td>
<td>UJR, UPG</td>
</tr>
</tbody>
</table>

- Theoretical leak rate: External leak: < 5 x 10⁻⁷ Pa·m³/sec, Seat leak: < 5 x 10⁻¹⁷ Pa·m³/sec
- Tested leak rate: External leak: < 5 x 10⁻⁶ Pa·m³/sec. Seat leak: < 5 x 10⁻¹⁶ Pa·m³/sec
- All valves are helium leak tested.
- Durability of over 20,000 cycles under test conditions.
- *Depends on the configuration of the body.

### High-pressure Manual Direct Diaphragm Valve

20.5MPa
Maximum Cv: 0.25

Valves with high-pressure gas certification available.

**Specifications**

<table>
<thead>
<tr>
<th>Nominal Diameter</th>
<th>Maximum Operating Pressure</th>
<th>Fluid Temperature Range</th>
<th>Maximum Cv* (with N₂ gas at 20°C)</th>
<th>End Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.35</td>
<td>20.5 MPa (2973 psi)</td>
<td>-10 to + 40°C</td>
<td>0.25</td>
<td>UJR, UPG</td>
</tr>
</tbody>
</table>

- Theoretical leak rate: External leak: < 5 x 10⁻⁷ Pa·m³/sec, Seat leak: < 5 x 10⁻¹⁷ Pa·m³/sec
- Tested leak rate: External leak: < 5 x 10⁻⁶ Pa·m³/sec. Seat leak: < 5 x 10⁻¹⁶ Pa·m³/sec
- All valves are helium leak tested.
- Durability of over 20,000 cycles under test conditions.
- *Depends on the configuration of the body.
# Low-/Medium-pressure Pneumatic Diaphragm Valves

**FPR-NDF-72-12.7-CRB#B**

20MPa  
Maximum Cv: 1.5

Valves with high-pressure gas certification available.

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Nominal Diameter</th>
<th>Maximum Operating Pressure</th>
<th>Fluid Temperature Range</th>
<th>Maximum Cv* (with N₂ gas at 20°C)</th>
<th>Actuation Pressure</th>
<th>Supply Air Connection</th>
<th>End Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12.7</td>
<td>2 MPa (290 psi)</td>
<td>−10 to +40°C</td>
<td>1.5</td>
<td>0.5 to 0.7 MPa (73 to 101 psi)</td>
<td>M5×0.8</td>
<td>UJR, UPG*</td>
</tr>
</tbody>
</table>

- Theoretical leak rate: External leak: < 5 x 10⁻¹⁰ Pa·m³/sec, Seat leak: < 5 x 10⁻¹² Pa·m³/sec
- Tested leak rate: External leak: < 5 x 10⁻⁸ Pa·m³/sec, Seat leak: < 5 x 10⁻⁶ Pa·m³/sec
- All valves are helium leak tested.
- Durability of over 100,000 cycles under test conditions.
- * Depends on the configuration of the body.

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# Low-/Medium-pressure Manual Diaphragm Valves

**FUDF-72G-12.7-CRB#A**

20MPa  
Maximum Cv: 1.5

Valves with high-pressure gas certification available.

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Nominal Diameter</th>
<th>Maximum Operating Pressure</th>
<th>Fluid Temperature Range</th>
<th>Maximum Cv* (with N₂ gas at 20°C)</th>
<th>End Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12.7</td>
<td>2 MPa (290 psi)</td>
<td>−10 to +40°C</td>
<td>1.5</td>
<td>UJR, UPG*</td>
</tr>
</tbody>
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- Theoretical leak rate: External leak: < 5 x 10⁻¹⁰ Pa·m³/sec, Seat leak: < 5 x 10⁻¹² Pa·m³/sec
- Tested leak rate: External leak: < 5 x 10⁻⁸ Pa·m³/sec, Seat leak: < 5 x 10⁻⁶ Pa·m³/sec
- All valves are helium leak tested.
- Durability of over 20,000 cycles under test conditions.
- * Depends on the configuration of the body.
High-pressure Pneumatic Diaphragm Valves  

**FPR-NDF-721-12.7-CRB#B**

20.5MPa  
Maximum Cv: 0.5

Valves with high-pressure gas certification available.

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<td>12.7</td>
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<td>−10 to + 40°C</td>
<td>0.5</td>
<td>0.5 to 0.7 MPa (73 to 101 psi)</td>
<td>M5×0.8</td>
<td>UJR, UPG</td>
<td></td>
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- Theoretical leak rate: External leak: < 5 × 10⁻¹⁰ Pa·m³/sec, Seat leak: < 5 × 10⁻¹³ Pa·m³/sec
- Tested leak rate: External leak: < 5 × 10⁻¹⁰ Pa·m³/sec, Seat leak: < 5 × 10⁻¹⁹ Pa·m³/sec
- All valves are helium leak tested.
- Durability of over 10,000 cycles under test conditions.
- * Depends on the configuration of the body.

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High-pressure Manual Diaphragm Valves  

**FUDF-721G-12.7-CRB#A**

20.5MPa  
Maximum Cv: 0.5

Valves with high-pressure gas certification available.

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- Theoretical leak rate: External leak: < 5 × 10⁻¹⁰ Pa·m³/sec, Seat leak: < 5 × 10⁻¹³ Pa·m³/sec
- Tested leak rate: External leak: < 5 × 10⁻¹⁰ Pa·m³/sec, Seat leak: < 5 × 10⁻¹⁹ Pa·m³/sec
- All valves are helium leak tested.
- Durability of over 10,000 cycles under test conditions.
- * Depends on the configuration of the body.
High-pressure Pneumatic Diaphragm Valves

20.5MPa
Maximum Cv: 1

Valves with high-pressure gas certification available.

Specifications

<table>
<thead>
<tr>
<th>Nominal Diameter</th>
<th>Maximum Operating Pressure</th>
<th>Fluid Temperature Range</th>
<th>Maximum Cv* (with N2 gas at 20°C)</th>
<th>Actuation Pressure</th>
<th>Supply Air Connection</th>
<th>End Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.7 mm</td>
<td>20.5 MPa (2973 psi)</td>
<td>-10 to +40°C</td>
<td>1</td>
<td>0.55 to 0.75 MPa (80 to 108 psi)</td>
<td>Rc1/8</td>
<td>UJR, UPGe</td>
</tr>
</tbody>
</table>

- Theoretical leak rate: External leak: < 5 x 10^-11 Pa·m³/sec, Seat leak: < 5 x 10^-12 Pa·m³/sec
- Tested leak rate: External leak: < 5 x 10^-8 Pa·m³/sec, Seat leak: < 5 x 10^-9 Pa·m³/sec
- All valves are helium leak tested.
- Durability of over 20,000 cycles under test conditions.
- * Depends on the configuration of the body.

High-pressure Manual Diaphragm Valves

20.5MPa
Maximum Cv: 1

Valves with high-pressure gas certification available.

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- Theoretical leak rate: External leak: < 5 x 10^-11 Pa·m³/sec, Seat leak: < 5 x 10^-12 Pa·m³/sec
- Tested leak rate: External leak: < 5 x 10^-8 Pa·m³/sec, Seat leak: < 5 x 10^-9 Pa·m³/sec
- All valves are helium leak tested.
- Durability of over 3,000 cycles under test conditions.
- * Depends on the configuration of the body.
Valves with High-pressure Gas Certification Specifications

<table>
<thead>
<tr>
<th>Allocation No.</th>
<th>Serial No.</th>
<th>Attached Documents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Customer Code No.

End User Code No.

Target System Name *N: Valves, N-II: Fittings, O: Other F: Reciprocating compressor, Z: Combined equipment, M: Tubing, E: Other pressure vessel

Delivery Date

Product Number

Drawing No. Quantity

Additions to Product Number

End Connection Size

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Normal Operating Pressure</th>
<th>Design Pressure</th>
<th>MPA</th>
<th>MPA</th>
<th>Will this be used in vacuum conditions *3</th>
<th>No Pa</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIN.</td>
<td>MAX.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>°C to °C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Normal</td>
<td>Normal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>°C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State of High-pressure Gas *3</td>
<td>Gaseous, Liquefied, Dissolved</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Type of Gas *3: Toxic, Flammable, Toxic and Flammable, Special High-pressure, Other

Non-toxic: Air, Nitrogen, Helium, Oxygen, Hydrogen, Carbon dioxide, Argon Other ( )

Special: Monosilane, Phosphine, Arsine, Diborane, Hydrogen selenide, Monogermene, Disilane

Toxic: Ammonia, Carbon monoxide, Other ( )

Hydrogen chloride, Chlorine, Hydrogen bromide, Other ( )

Material *3: SUS316 or SUS304 or SUS316L or SUS304L or SUS316L Other ( ) C3604B C3771B

Other Special Specifications: Target system has leak detector? *3 Yes / No Valve used for toxic gas (special high-pressure gas) has a leak port? *3 Yes / No

Order No.

Comments from Factory Personnel:

Documents Submitted *3 Destination (Products & Documents)

(1) Test Report (Authorized Tester) 1 copy Sales Office

(2) Test Certificate (N-II excluded) Copies Send directly to:

(3) Instruction Manual (N-II only) Copies

(4) Other Copies

- Delivery Specifications Copies

- Mill Certificate Copies

- Calculations of Wall Thickness Strength Copies

- Fujikin Design Specification (standard) Copies

- Design Specifications Copies

- Inspection Procedures Copies

Seal of Approval Sales Representative C T D T D C M F D

Fujikin Incorporated