SUS316 Standard (Possible to make by the ASTM A471 SUS316L also)
SUH660 available also

Please refer to the material list of each valve equipment for parts.

99.9 MPa
Filters

UJUN Type
Coned-and-threaded
connection
High Pressure Type

99.9 MPa Stop Valves
(Cylinder Diameter 160mm Type)

99.9 MPa Compact
Manual Valves

95 MPa
Manual Valves
with UPG® Fittings

45MPa
Automatic Valves
with UPG® Fittings

99.9 MPa Check Valves

Union Elbows

Union Tees

99.9 MPa Flow Control Valves

99.9 MPa

UPG® Fittings

We welcome customer feedback for all of our products and services.
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<tr>
<td>95 MPa Type</td>
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</tr>
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# Valves

## 99.9 MPa Flow Control Valves (Compact Type) 60,000 psi Type

### Features
1. Precise flow control for ultra high-pressure hydrogen gas.
2. Flow coefficient (Cv Value) can be selected and replaced from a large variety of disc & sheets.
3. Compact
4. Smart positioner with communications function can be available.
5. ATEX Explosion proof compliant products (self-declaration)

### Specifications
- **Design Pressure**: 99.9 MPa
- **Design Temperature**: 85 °C
- **Usage Fluid**: SUS316+Co base alloy
- **Gland Packing**: PVDF+PFA
- **Materials**: SUS316+Co base alloy
- **Valve Body Diameter**: φ146
- **Valve Body Length**: 170 mm
- **Nut Threads**: 1/4-28UNF (Left) 9/16-18UNF
- **Collar Threads**: 1 1/8-12UNF (Left) 9/16-18UNF
- **Diameter**: φ11.1
- **Diameter**: φ9.7
- **Threads**: 4×M5×0.8
- **Ordering No.**: C160-UH-7100-14.2-40-N28.5-CN

### Materials

<table>
<thead>
<tr>
<th>Parts</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>SUS316+Co base alloy</td>
</tr>
<tr>
<td>Seat</td>
<td>SUS316+Co base alloy</td>
</tr>
<tr>
<td>Stem</td>
<td>SUS316+Co base alloy</td>
</tr>
<tr>
<td>Gland Packing</td>
<td>PVDF+PFA</td>
</tr>
<tr>
<td>Packing</td>
<td>SUS304</td>
</tr>
</tbody>
</table>

### Dimensions, Ordering No.

<table>
<thead>
<tr>
<th>Nominal Diameter</th>
<th>Nut Threads (valve body side)</th>
<th>Collar Threads (valve side)</th>
<th>HEX.B</th>
<th>Cv Value MAX.</th>
<th>Ordering No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.2</td>
<td>1/4-28UNF</td>
<td>1 1/8-12UNF (Left) 9/16-18UNF</td>
<td>1</td>
<td>0.5</td>
<td>C160-UH-7100-14.2-40-N28.5-CN</td>
</tr>
</tbody>
</table>

### Other
- Stop Valves without positioner also available.

## 99.9 MPa Flow Control Valves (High Cv Value Type) 40,000 psi Type

### Features
1. Precise flow control for ultra high-pressure hydrogen.
2. Flow coefficient (Cv Value) can be selected and replaced from a large variety of disc & sheets.
3. Smart positioner with communications function can be available.

### Specifications
- **Design Pressure**: 99.9 MPa
- **Design Temperature**: 85 °C
- **Usage Fluid**: SUS316+Co base alloy
- **Gland Packing**: PVDF+PFA
- **Materials**: SUS316+Co base alloy
- **Valve Body Diameter**: φ146
- **Valve Body Length**: 170 mm
- **Nut Threads**: 1/4-28UNF (Left) 9/16-18UNF
- **Collar Threads**: 1 1/8-12UNF (Left) 9/16-18UNF
- **Diameter**: φ11.1
- **Diameter**: φ9.7
- **Threads**: 4×M8×1.25
- **Ordering No.**: C160-UH-7100-9.52-MG-N28.5-CN

### Materials

<table>
<thead>
<tr>
<th>Parts</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>SUS316+Co base alloy</td>
</tr>
<tr>
<td>Seat</td>
<td>SUS316+Co base alloy</td>
</tr>
<tr>
<td>Disc</td>
<td>SUS316+Co base alloy</td>
</tr>
<tr>
<td>Stem</td>
<td>SUH660</td>
</tr>
<tr>
<td>Gland Packing</td>
<td>PVDF+PFA</td>
</tr>
</tbody>
</table>

### Dimensions, Ordering No.

<table>
<thead>
<tr>
<th>Nominal Diameter</th>
<th>Nut Threads (valve body side)</th>
<th>Collar Threads (valve side)</th>
<th>HEX.B</th>
<th>Cv Value MAX.</th>
<th>Ordering No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.2</td>
<td>1/4-28UNF</td>
<td>1 1/8-12UNF (Left) 9/16-18UNF</td>
<td>1</td>
<td>0.5</td>
<td>C160-UH-7100-9.52-MG-N28.5-CN</td>
</tr>
</tbody>
</table>

### Other
- Stop Valves without positioner also available.

## 99.9 MPa Stop Valves (Cylinder Diameter 160mm Type) 40,000 psi Type

### Features
1. Full-bore type [accommodates port diameter equal to or greater than the inner diameter of 14.2 (40,000psi) size (e6.35)]
2. No usage restrictions on flow direction and differential pressure.

### Specifications
- **Design Pressure**: 99.9 MPa
- **Design Temperature**: 85 °C
- **Usage Fluid**: SUS316+Co base alloy
- **Gland Packing**: PVDF+PFA
- **Materials**: SUS316+Co base alloy
- **Valve Body Diameter**: φ146
- **Valve Body Length**: 170 mm
- **Nut Threads**: 1/4-28UNF (Left) 9/16-18UNF
- **Collar Threads**: 1 1/8-12UNF (Left) 9/16-18UNF
- **Diameter**: φ11.1
- **Diameter**: φ9.7
- **Threads**: 4×M8×1.25
- **Ordering No.**: C160-UH-7100-14.2-40-N28.5-CN

### Materials

<table>
<thead>
<tr>
<th>Parts</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>SUS316+Co base alloy</td>
</tr>
<tr>
<td>Disc</td>
<td>SUS316+Co base alloy</td>
</tr>
<tr>
<td>Gland Packing</td>
<td>PVDF+PFA</td>
</tr>
<tr>
<td>Actuator</td>
<td>A5056 (amongst others)</td>
</tr>
</tbody>
</table>

### Dimensions, Ordering No.

<table>
<thead>
<tr>
<th>Nominal Diameter</th>
<th>Nut Threads (valve body side)</th>
<th>Collar Threads (valve side)</th>
<th>HEX.B</th>
<th>Cv Value MAX.</th>
<th>Ordering No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.2</td>
<td>1/4-28UNF</td>
<td>1 1/8-12UNF (Left) 9/16-18UNF</td>
<td>1</td>
<td>0.5</td>
<td>C160-UH-7100-14.2-40-N28.5-CN</td>
</tr>
</tbody>
</table>

### Other
- Stop Valves without positioner also available.

## Caution
1. All wetted parts of Valves, Unions and Fittings in this catalog should be with non-corrosive gases only.
2. Please use each valve after confirming the instruction manual and daily inspection manual.

Download the latest catalog from "http://www.fujikin.co.jp/go/c10003".

1
99.9 MPa Stop Valves (For Low Temperature)  
60,000 psi Type

**Features**
1. No usage restrictions on flow direction and differential pressure
2. ATEX Explosion proof compliant products (self-declaration)

**Specifications**
- **Design Pressure**: 99.9 MPa
- **Design Temperature**: 50°C
- **Usage Fluid Temperature Range**: -40 to +50°C
- **Operating Pressure**: 0.4 MPa
- **Cv Value**: 0.25

**Materials**
- **Body**: SUS316+Co base alloy
- **Lid**: SUS316+Co base alloy
- **Seat**: SUS316+Co base alloy
- **Stem**: PVDF+PFA
- **Gland Packing**: SUS304

**Dimensions, Ordering No.**

<table>
<thead>
<tr>
<th>Normal Diameter</th>
<th>Nut Threads (valve body side)</th>
<th>Nut Threads (tube side)</th>
<th>Color Threads (valve body side)</th>
<th>Color Threads (tube side)</th>
<th>HEX.B</th>
<th>Cv Value</th>
<th>Ordering No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.35</td>
<td>9/16-18UNF</td>
<td>9/16-18UNF</td>
<td>9/16-18UNF</td>
<td>9/16-18UNF</td>
<td>99.9</td>
<td>0.25</td>
<td>60P4-71009-0.25-MG-N28.5-CN</td>
</tr>
<tr>
<td>9.52</td>
<td>13/16-16UNF</td>
<td>13/16-16UNF</td>
<td>13/16-16UNF</td>
<td>13/16-16UNF</td>
<td>99.9</td>
<td>0.15</td>
<td>60P4-71009-0.25-MG-N28.5-CN</td>
</tr>
<tr>
<td>14.2</td>
<td>27.5</td>
<td>27.5</td>
<td>27.5</td>
<td>27.5</td>
<td>99.9</td>
<td>0.15</td>
<td>60P4-71009-0.25-MG-N28.5-CN</td>
</tr>
</tbody>
</table>

---

99.9 MPa Stop Valves (For Low Temperature, Cylinder Diameter 160mm Medium Shaft Type)  
40,000 psi Type

**Features**
1. Full-bore type [accommodates port diameter equal to or greater than the inner diameter of 14.2 (40,000psi) size (p6.35)]
2. No usage restrictions on flow direction and differential pressure

**Specifications**
- **Design Pressure**: 99.9 MPa
- **Design Temperature**: 85°C
- **Usage Fluid Temperature Range**: -40 to +85°C
- **Operating Pressure**: 0.5~0.7MPa
- **Cv Value**: 1

**Materials**
- **Body**: SUS316+Co base alloy
- **Disc**: SUH660
- **Gland Packing**: PVDF+PFA
- **Actuator**: A5065, other

**Ordering No.**
C160-UH-7100C-14.2-40-N28.5-CN

---

Caution
1. All wetted parts of Valves, Unions and Fittings in this catalog should be with non-corrosive gases only.
2. Please use each valve after confirming the instruction manual and daily inspection manual.
50 MPa Flow Control Valves (Compact Type)

**Specifications**
- **Design Pressure**: 50 MPa
- **Design Temperature**: 85 °C
- **Fluid Temperature Range**: -40 to +85 °C

**Materials**
- **Body**: SUS316+Co base alloy
- **Seat**: SUS316+Co base alloy
- **Disc**: SUS316+Co base alloy
- **Stem**: SUS316
- **Gland Packing**: PVDF+PFA
- **O-ring**: HNBR

**Features**
1. Precise flow control for ultra high-pressure hydrogen gas.
2. Flow coefficient (Cv Value) can be selected and replaced from a large variety of disc sheets.
3. Compact
4. Smart positioner with communications function can be available.

50 MPa Stop Valves

**Specifications**
- **Design Pressure**: 50 MPa
- **Design Temperature**: 85 °C
- **Fluid Temperature Range**: -40 to +85 °C

**Materials**
- **Body**: SUS316+Co base alloy
- **Seat**: SUS316+Co base alloy
- **Disc**: SUS316+Co base alloy
- **Stem**: SUS316
- **Gland Packing**: PVDF+PFA
- **O-ring**: HNBR

**Features**
1. Compact

45 MPa Auto Matic (Coned-and-Threaded Connection Type)

**Specifications**
- **Design Pressure**: 45 MPa
- **Design Temperature**: 80 °C
- **Fluid Temperature Range**: -10 to +60 °C

**Materials**
- **Body**: SUS316+Co base alloy
- **Disc Packing**: PEEK
- **Fitting**: SUS316 (Au Plating)
- **O-ring**: PTFE
- **Gland Packing**: PVDF+PFA

**Features**
1. Light Weight, Compact
2. Soft Seal Construction

---

**Caution**
1. All wetted parts of Valves, Unions and Fittings in this catalog should be with non-corrosive gases only.
2. Please use each valve after confirming the instruction manual and daily inspection manual.

Download the latest catalog from "http://www.fujikin.co.jp/go/c10003".
Regulators with Filter

Features
Regulating required air supply pressure for Flow Control Valves.

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Manufacturer, Model No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Samson K.K.</td>
</tr>
<tr>
<td>Supply Pressure</td>
<td></td>
</tr>
<tr>
<td>Max. 240 kPa</td>
<td>4708-53</td>
</tr>
<tr>
<td>400 kPa</td>
<td></td>
</tr>
<tr>
<td>Ambient Temp. *1</td>
<td>-25 to +80 °C</td>
</tr>
<tr>
<td>Air Connecting Port</td>
<td>1/4NPT</td>
</tr>
<tr>
<td>Filter Element</td>
<td>Polyprene bonded material Element: 20 μm</td>
</tr>
<tr>
<td>Max Supply Pressure</td>
<td>1.2 MPa</td>
</tr>
<tr>
<td>Weight</td>
<td>0.48 Kg</td>
</tr>
</tbody>
</table>

*1: Indicates usage temperature of Regulators. Ambient Temperature when affixed to valve may vary between -10 and 60 °C.

Solenoid Valves

Features
1. Compact, in-line type
2. Little pressure drop due to optimal flow pass
3. Filter size from 2, 5 and 10 μm

Specifications
- Diameter: 6.35 9/16-
- Diameter: 14.2 1 1/8
- Diameter: 9.52 1 1/4-
- Diameter: 12 1 1/2-
- Nominal diameter 14.2 disc shape
- Design Temperature: 253℃, Liquid Hydrogen temperature)
- Design Pressure
  - 30,000 psi Type (28,000 psi Type can also be manufactured.)
  - 60,000 psi Type (40000 psi Type can also be manufactured.)
- Cv Value
  - 0.95
  - 0.85
- Parts:
  - Body A
  - Body B
  - Spring
  - Disc
- Materials:
  - SUS316
  - SUS316+Co base alloy
  - ADC12
  - PEEK
  - PVDF+PFA
- Pressure-resistant & Explosion Proof Type
- Outdoor Prevention & Explosion Proof Type
- Outdoor Prevention & Explosion Proof Type
- Hydrogen Explosion Proof Type
- Instrinsically Safe Explosion Proof Type
- Outdoor Prevention & Explosion Proof Type
- Outdoor Prevention & Explosion Proof Type
- Applicable to Manifold Type
- Outdoor Prevention & Explosion Proof Type
- Certain operation by spring return Type

Proximity Switch, Controller

Features
1. Output electrical signals indicating open or close status of valves.
2. Uses a two-wire DC system to allow for long-distance wiring highly resistant to noise.

Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Model No.</th>
<th>I Dec Corporation</th>
<th>Explosion-proof Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proximity switch</td>
<td>BZ2-G12-Y1</td>
<td></td>
<td>Ex ia IIC T4</td>
</tr>
<tr>
<td>Controller</td>
<td>IM1-13EX-R</td>
<td>IDEC Corporation</td>
<td>[Exia] IIC</td>
</tr>
</tbody>
</table>

Note: When ordering, please specify explosion-proof construction and power supply specification.
Accessories for Automatic Valves

Proximity Switch, Controller

Regulators with Filter

Ex e mb Ⅱ C

Proximity switch

IDEC Corporation

SSS Co., Ltd.

Ex ia Ⅱ C T4

*: may vary between -10 and 60 °C.

*1: Indicates usage temperature of Regulators. Ambient Temperature when affixed to valve

2. Uses a two

1. Output electrical signals indicating open or close status of valves.

Ex ia Ⅱ C T4

Exd Ⅱ CT6

When ordering, please specify explosion-proof construction and power supply specification.

Explosion

Supply Pressure

resistant to noise.

Features

Controller [Exia]

CFSCISG551C505MO

Specifications

WBLPG551A001MS

WBLPG551A017MS

Item

Max Supply Pressure

Air Connecting Port

Weight

Model No.

IDEC Corporation

3,4-Way

4-Way

3-Way

4-Way

Direct Mount Type

Direct Mount Type

Polyprene bonded material

Element: 20 μm

1.2 MPa

0.9 MPa

Rc1/4 (Pressure gauge: Rc1/8)

Manufacturer, Model No.

SANGYO

CO., LTD

JAPAN

ASCO

Features

1. Compact and with Durable Manual Valves

2. With Lock Nut

Features

1. Compact, in-line type

2. Little pressure drop due to optimal flow pass

Specifications

Design Pressure

99.9 MPa

Design Temperature

85 °C

Fluid

Temperature Range

~40 to +85 °C

*1: Please consult usage (extreme temperature such as ~25°C, Liquid Hydrogen temperature)

Materials

Part

Body A

Body B

Disc

Spring

Materials

SUS316+Co base alloy

SUS316+Co base alloy

PEEK

SUS316

Features

1. Compact, in-line type

2. Little pressure drop due to optimal flow pass

3. Filter size from 2, 5 and 10 μm

Specifications

Design Pressure

99.9 MPa

Design Temperature

85 °C

Fluid

Temperature Range

~40 to +85 °C

Note: When using in a pre cool line, please consult usage (extreme temperature such as ~25°C, Liquid Hydrogen temperature)

Materials

Part

Body A

Body B

End A

Element

Packing

Materials

SUS316+Co base alloy

SUS316+Co base alloy

SUS316

PTFE

Features

1. All wetted parts of Valves, Unions and Fittings in this catalog should be with non-corrosive gases only.

2. Please use each valve after confirming the instruction manual and daily inspection manual.

Download the latest catalog from "http://www.fujikin.co.jp/go/c10003".
50 MPa Line Check Valves

**Features**
1. Compact, in-line type
2. Little pressure drop due to optimal flow pass

**Specifications**
- Design Pressure: 50 MPa
- Design Temperature: 85 °C
- Fluid Temperature Range: −40 to +85 °C

**Materials**
<table>
<thead>
<tr>
<th>Part</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body A</td>
<td>SUS316+Co base alloy</td>
</tr>
<tr>
<td>Body B</td>
<td>SUS316+Co base alloy</td>
</tr>
<tr>
<td>Disc</td>
<td>SUS316</td>
</tr>
<tr>
<td>Spring</td>
<td>SUS316</td>
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</tbody>
</table>

**Dimensions, Ordering No.**

<table>
<thead>
<tr>
<th>Nominal Diameter D</th>
<th>Nut Threads (tube side)</th>
<th>Nut Threads (filter body side)</th>
<th>Collar Threads (tube side)</th>
<th>Collar Threads (filter body side)</th>
<th>Interfacial Distance</th>
<th>Mass (approx.) (kg)</th>
<th>Ordering No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.35</td>
<td>7/16-20UNF</td>
<td>Left14-28UNF</td>
<td>A1</td>
<td>14</td>
<td>L1</td>
<td>0.9</td>
<td>UCL-750-6.35-N28.5-CN</td>
</tr>
<tr>
<td>9.52</td>
<td>9/16-18UNF</td>
<td>Left24-36UNF</td>
<td>A1</td>
<td>14</td>
<td>L1</td>
<td>1.1</td>
<td>UCL-750-9.52-N28.5-CN</td>
</tr>
<tr>
<td>14.2</td>
<td>13/16-16UN</td>
<td>Left28-40UN</td>
<td>A1</td>
<td>14</td>
<td>L1</td>
<td>1.0</td>
<td>UCL-750-14.2-N28.5-CN</td>
</tr>
</tbody>
</table>

**50 MPa Filters**

**Features**
1. Compact, in-line type
2. Little pressure drop due to optimal flow pass
3. Filter size from 2, 5 and 10 μm

**Specifications**
- Design Pressure: 50 MPa
- Design Temperature: 85 °C
- Fluid Temperature Range: −40 to +85 °C

**Materials**
<table>
<thead>
<tr>
<th>Part</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body A</td>
<td>SUS316+Co base alloy</td>
</tr>
<tr>
<td>Body B</td>
<td>SUS316+Co base alloy</td>
</tr>
<tr>
<td>Disc</td>
<td>SUS316</td>
</tr>
<tr>
<td>End A</td>
<td>SUS316</td>
</tr>
<tr>
<td>End B</td>
<td>SUS316</td>
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<tr>
<td>Packing</td>
<td>PTFE</td>
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**Dimensions, Ordering No.**

<table>
<thead>
<tr>
<th>Nominal Diameter D</th>
<th>Nut Threads (tube side)</th>
<th>Nut Threads (filter body side)</th>
<th>Collar Threads (tube side)</th>
<th>Collar Threads (filter body side)</th>
<th>Interfacial Distance</th>
<th>Mass (approx.) (kg)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>6.35</td>
<td>7/16-20UNF</td>
<td>Left14-28UNF</td>
<td>A1</td>
<td>14</td>
<td>L1</td>
<td>1.1</td>
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<tr>
<td>9.52</td>
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<td>Left24-36UNF</td>
<td>A1</td>
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<td>L1</td>
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<td>UFL-750-9.52-1-N28.5-CN</td>
</tr>
<tr>
<td>14.2</td>
<td>13/16-16UN</td>
<td>Left28-40UN</td>
<td>A1</td>
<td>14</td>
<td>L1</td>
<td>1.2</td>
<td>UFL-750-14.2-1-N28.5-CN</td>
</tr>
</tbody>
</table>

**Pressure Relief Device (PRD)**

**Specifications (example)**
- Design Pressure: 95 MPa
- Design Temperature: 85 °C

**Materials (example)**
<table>
<thead>
<tr>
<th>Parts</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body A</td>
<td>SUS316L</td>
</tr>
<tr>
<td>Disc</td>
<td>SUS316L</td>
</tr>
</tbody>
</table>

This safety valves can be produced by any materials conforming to applicable standards.

**Ordering No.** URF-795-6.35-DSH (example)

---

**Caution**
1. All wetted parts of Valves, Unions and Fittings in this catalog should be with non-corrosive gases only.
2. Please use each valve after confirming the instruction manual and daily inspection manual.
1. All wetted parts of Valves, Unions and Fittings in this catalog should be with non-corrosive gases only.
2. Please use each valve after confirming the instruction manual and daily inspection manual.
3. Filter size from 2, 5 and 10 μm
4. Little pressure drop due to optimal flow pass
5. Compact, in-line type

Features
1. Allows control of ultra high-pressure hydrogen
2. Also compatible with smart positioner (communications capable) equipped types

Specifications
- Design Pressure: 99.9 MPa
- Design Temperature: 85 °C
- Fluid Temperature Range: -253 to +85 °C
- Cv: 0.85

Materials
- Body: SUS316+Co base alloy
- Disc: SUH660
- Stem: SUS316
- Gland Packing: PVDF+PPA
- Gland Nut: SUS316
- Handle: ADC12

Dimensions, Ordering No.

Ordering No. UH-8100-14.2-40-N28.5-** *(example)
Fittings

**Features**

1. Metal seal construction, extremely airtight.
2. No need to weld due to screwed to tube end.

Note: Please refer to No.5 on page 10-11 for dimensions and precision of tube threading and cone machining.

**Specifications**

Maximum operating pressure and temperature are changeable according to the materials and thickness of the tubes. Please contact Fujikin before ordering.

### UJUN Type (Max. Working Pressure 99.9 MPa Over)

#### Coned-and-threaded Connection High-Pressure (HP) Type

**Body**

- **Straight Union**
- **Union Elbows**
- **Union Tees**
- **Cross Union**

**Collar & Nut**

**Materials**

- **Parts**
  - Body: SUS316+Co base alloy
  - Nut: ASTM A276 316
  - Collar: ASTM A276 316

*: for Nominal diameter 14.2, we use JIS-compliant materials.

---

**Caution**

All wetted parts of Valves, Unions and Fittings in this catalog should be with non-corrosive gases only.
**UJU Type (Max. Working Pressure 50 MPa)**

**Coned-and-threaded Connection Medium Pressure (MP) Type**

**Body**

- **Diameter**
  - 6.35
  - 9.52
  - 14.2

- **Nut Thread**
  - 1/4-28UNF
  - 3/8-24UNF
  - 1/2-13UNS

- **Tube Thread**
  - 1/4-28UNF
  - 3/8-24UNF
  - 1/2-13UNS

- **Collar & Nut**

- **Materials**
  - **Parts**
    - Body: SUS316+Co base alloy
    - Nut: SUS316
    - Collar: ASTM A276 316

**Caution**

All wetted parts of Valves, Unions and Fittings in this catalog should be with non-corrosive gases only.

Download the latest catalog from "http://www.fujikin.co.jp/go/c10003".
Piping Installation Guidelines

1. Introduction
1-1. Our stainless steel high pressure and medium pressure fittings are carefully designed and manufactured, and subjected to strict quality control, down to the smallest detail utilizing the technical expertise we have built up over many years as precision fittings manufacturers, and we therefore ask that care be taken when installing and utilizing those products.
1-2. Any installation of piping utilizing stainless steel high pressure and medium pressure fittings should be carried out by a person or persons thoroughly familiar and experienced with those fittings.
1-3. Stainless steel high pressure and medium pressure fittings should not be used in locations subject to excessively repetitive conditions, vibrations, impacts, pulsations, etc.
1-4. Customers who will be repeatedly using the same product should inform Fujikin when there is a change in usage condition or method in order to avoid any problems before they arise.

2. Basic Structural Overview
2-1. The fittings have concentrically conical-shaped body and tube seal sections as well as a precisely finished surface, making them highly airtight coned-and-threaded-type fittings which also utilize a metallic seal method.
2-2. The basic structural components are comprised of a stainless steel body, collars, nuts and connecting tubes.
2-3. The sealing principle of the fittings involves tightening the nuts using a wrench, etc., to tightly affix the cone tip-processed tube to the body.

3. Design Specifications
3-1. Maximum Operating Pressure, Temperature Range
- Medium pressure fitting (Part No.: UJJU-N28.5):
  - Max. 50 MPa, -40°C to +250°C *
- High pressure fitting (Part No.: UJU Type):
  - Max. 110 MPa, -40°C to +250°C *
  - Varies according to the materials and thickness of the tubes used. Please contact Fujikin before ordering.
3-2. Body Material
- SUS316+Co base alloy

3-3. Nominal Diameter 6.35, 9.52, 14.2
3-4. Hydrogen gas and other gases and liquids which are non-corrosive to stainless steel, and which are the primary constituent material, may be used.

4. Important Considerations for Selections
Incorrect device selection and handling can lead to system problems and accidents. It is therefore important to fully consider the compatibility of devices with the systems in which they are used, as well as the conditions under which they are used, as the authority and responsibility for device selection left up to the customer. Also, it is important to have a full understanding of the specification range of a given device before utilizing it.

5. Fitting Installation Guidelines
(Installation guidelines are the same for UJUN and UJU)
5-1. Assemble the parts of the fitting according to each step as below. Perform cone processing of the tube tip according to the figure on the next page.
5-2. Put the nut onto the tube and then affix the threaded section of the tube tip to the collar. (The tube threading is left-handed. Please remember this when affixing.)
- Apply a small amount of fluorinated grease to the tube tip.
5-3. Screw the collar with your fingers until it cannot turn any further and one or two thread ridges are visible on the tube tip side.
5-4. Screw the tube and nut together into the fitting (valve) body. Then, put a match marking * on the body and the nut. This represents the zero point for tightening.
- *: The red lines in the photograph
5-5. Using a wrench, tighten the nut by a 1/8 - 1/6 turn from the zero point. (When tightening the nut, always make sure to hold the body in place.) No further tightening is needed.

<table>
<thead>
<tr>
<th>Nominal Diameter</th>
<th>Tightening Torque (N•m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>UJUN Type High Pressure (HP) Type</td>
</tr>
<tr>
<td>6.35</td>
<td>21</td>
</tr>
<tr>
<td>9.52</td>
<td>43</td>
</tr>
<tr>
<td>14.2</td>
<td>90</td>
</tr>
</tbody>
</table>

Caution: All wetted parts of Valves, Unions and Fittings in this catalog should be with non-corrosive gases only.
Piping Installation Guidelines

2. Basic Structural Overview

1. Introduction

2. Body Material

- The basic structural components are comprised of a stainless steel body,
- Stainless steel high pressure and medium pressure fittings should not be

3. Stainless steel high pressure and medium pressure fittings should be carried out by a person or persons

- Our stainless steel high pressure and medium pressure fittings are

- coned-and-threaded-type fittings which also utilize a metallic seal method.

- max. 110 MPa, -40°C - +250°C *

- max. 50 MPa, -40°C to +250°C *

- High pressure fitting (Part No.: UJUN-N28.5):

- collars, nuts and connecting tubes.

- impacts, pulsations, etc.

- thoroughly familiar and experienced with those fittings.

- products.

- have built up over many years as precision fittings manufacturers, and we

- *: Varies according to the materials and thickness of the tubes used.

5. Fitting Installation Guidelines

1. Assemble the parts of the fitting according

2. Put the nut onto the tube and then affix

3. (When tightening the nut, always make

4. Grease to the tube tip.

5. If a scratch is discovered, please replace the part, because it will

6. When re-tightening, the guidelines are exactly the same as those given in Item 5.

- Note 1: If you accidentally drop the fitting part, please check the body and tube seal section for scratches or any adhering material before using.

- If a scratch is discovered, please replace the part, as this will cause leakage.

- If adhering material is discovered, lightly wipe the part with a clean cloth until the material is completely removed.

- Do not use an organic solvent when cleaning, as this will also remove the lubricant from the seal section.

- Note 2: Please make sure to use a suitable wrench to a hexagonal nut.

- Note 3: When disassembling, please protect the sealing part of fittings to avoid scratch.

8. Caution After Piping

1. After piping, check all sections again to ensure that joined sections are

2. After the stainless steel high-pressure/medium-pressure fittings and tube

3. If you change tube orientation after all joining has been completed, only

- Adjusting the tube's orientation without first loosening the nut can scratch the fitting seal's surface.

4. When purging gas, ensure beforehand that the nut is not loose.

- Loosening the nut when the system is under high pressure can result in a sudden and dangerous venting of the liquid inside the system from the spaces between the body leak port and the nut and sleeve.

9. Troubleshooting Here

- Proper installation of this fitting will ensure no leakage occurs; however, performing installation in locations where it is difficult to assemble and joins parts or which are at an extreme angle can, on rare occasions, result in leakage.

In such cases, first release the pressure and then perform a 1/16th turn tightening. If this does not resolve the problem, release the pressure again, disassemble the fitting, check the body and tube tip seal surfaces for scratches or adhering material, and then re-tightening the fitting according to the guidelines.

If a scratch is discovered, please replace the part, as not doing so could result in leakage.

If adhering foreign matter is discovered, lightly wipe the part with a clean cloth until it is completely removed. Do not use an organic solvent or other agent when cleaning, as this will also remove the lubricant from the seal section.

Caution

All wetted parts of Valves, Unions and Fittings in this catalog should be non-corrosive gases only.

Download the latest catalog from "http://www.fujikin.co.jp/go/c10003".
Adapters

Features

1. Metal seal construction makes it extremely airtight
2. No need to weld due to screwed to tube end.

Note: Please refer to No.5 on page 10-No.6 on page 11 for dimensions and precision of tube threading and cone machining.

Specifications

Maximum operating pressure and temperature are changeable according to the materials and thickness of the tubes. Please contact Fujikin before ordering.

Materials

<table>
<thead>
<tr>
<th>Part</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>SUS316+Co base alloy</td>
</tr>
<tr>
<td>Nut</td>
<td>ASTM A276 316</td>
</tr>
<tr>
<td>Collar</td>
<td>ASTM A276 316</td>
</tr>
</tbody>
</table>

*: JIS-compliant materials are used for nominal diameter 14.2.

Male (HP) × Female (HP)

<table>
<thead>
<tr>
<th>Nominal Diameter</th>
<th>Thread A</th>
<th>Nominal Diameter 2</th>
<th>Body Thread A1</th>
<th>Tube Thread A2</th>
<th>L</th>
<th>L1</th>
<th>L2</th>
<th>D1</th>
<th>D2</th>
<th>B</th>
<th>B1</th>
<th>Ordering No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.2</td>
<td>1/18-12UNF 6.35</td>
<td>9/16-18UNF</td>
<td>Left1/4-28UNF</td>
<td>52</td>
<td>40</td>
<td>7.9</td>
<td>9.3</td>
<td>17</td>
<td>20</td>
<td>30</td>
<td>UJB-14.2HPX6.35HP-N28.5-CN</td>
<td></td>
</tr>
<tr>
<td>14.2</td>
<td>1/18-12UNF 9.52</td>
<td>3/4-16UNF</td>
<td>Left38-24UNF</td>
<td>61</td>
<td>45</td>
<td>7.9</td>
<td>6.3</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Male (HP) × Female (MP)

<table>
<thead>
<tr>
<th>Nominal Diameter</th>
<th>Thread A</th>
<th>Nominal Diameter 2</th>
<th>Body Thread A1</th>
<th>Tube Thread A2</th>
<th>L</th>
<th>L1</th>
<th>L2</th>
<th>D1</th>
<th>D2</th>
<th>B</th>
<th>B1</th>
<th>Ordering No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.35</td>
<td>9/16-18UNF 6.35</td>
<td>7/16-20UNF</td>
<td>Left1/4-28UNF</td>
<td>45</td>
<td>36</td>
<td>3.2</td>
<td>2.1</td>
<td>14</td>
<td>21</td>
<td>UJB-6.35HPX6.35MP-N28.5-CN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.52</td>
<td>3/4-16UNF 9.52</td>
<td>9/16-18UNF</td>
<td>Left38-24UNF</td>
<td>49</td>
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<td>5.6</td>
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<td>1/18-12UNF 14.2</td>
<td>13/16-18UNF</td>
<td>Left9/16-18UNF</td>
<td>55</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Male (HP) × Male (HP) (Different Diameter)

| Ordering No.       | UJN-14.2HPX6.35HP-N28.5 |

Note: Please consult Fujikin about different connections.

Caution All wetted parts of Valves, Unions and Fittings in this catalog should be with non-corrosive gases only.
Features

1. Excellent Air Tightness
   - The unique seal structure realizes excellent airtightness.
   - Metal gasket type with small load on pressure-resistant parts even when detaching is repeated.

2. Excellent Installation and Operability
   - No need for an axial space for detaching the device when detaching / removing.
   - Construction instructions include rotation control and overtightening prevention mechanism.
   - Compared to coned-and-threaded joint, construction with low torque can be done.

3. Excellent Scalability
   - Excellent vibration proof is achieved by separating the part to be sealed and the part receiving the external force.
   - Two pressure series of 95 MPa, 50 Mpa.

Construction

Comparison with Coned-and-threaded connection

Removability

Caution All wetted parts of Valves, Unions and Fittings in this catalog should be with non-corrosive gases only.

Download the latest catalog from "http://www.fujikin.co.jp/go/c10003".
## 95 MPa Type
### Specifications and Materials

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Nominal Diameter</th>
<th>Ordering No.</th>
<th>Temperature Range</th>
<th>Pressure Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.35</td>
<td>6.5</td>
<td>7/16-20UNF</td>
<td>45 to +250 °C</td>
<td>95 MPa (planned expansion up to 99.9 MPa)</td>
</tr>
<tr>
<td>9.52</td>
<td>9.7</td>
<td>9/16-20UNF</td>
<td>45 to +250 °C</td>
<td>95 MPa (planned expansion up to 99.9 MPa)</td>
</tr>
<tr>
<td>12.7</td>
<td>12.9</td>
<td>3/4-20UN</td>
<td>45 to +250 °C</td>
<td>95 MPa (planned expansion up to 99.9 MPa)</td>
</tr>
</tbody>
</table>

### Dimensional Drawings

- **Sleeve**
- **Nut**
- **Gasket**

### 95 MPa Long Nut for Coupling Body

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Nominal Diameter</th>
<th>Ordering No.</th>
<th>Temperature Range</th>
<th>Pressure Range</th>
</tr>
</thead>
<tbody>
<tr>
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<tr>
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<td>12.9</td>
<td>3/4-20UN</td>
<td>45 to +250 °C</td>
<td>95 MPa (planned expansion up to 99.9 MPa)</td>
</tr>
</tbody>
</table>

## 50 MPa Type
### Specifications and Materials

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Nominal Diameter</th>
<th>Ordering No.</th>
<th>Temperature Range</th>
<th>Pressure Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.35</td>
<td>6.5</td>
<td>7/16-20UNF</td>
<td>45 to +250 °C</td>
<td>50 MPa</td>
</tr>
<tr>
<td>9.52</td>
<td>9.7</td>
<td>9/16-20UNF</td>
<td>45 to +250 °C</td>
<td>50 MPa</td>
</tr>
<tr>
<td>12.7</td>
<td>12.9</td>
<td>3/4-20UN</td>
<td>45 to +250 °C</td>
<td>50 MPa</td>
</tr>
</tbody>
</table>

### Dimensional Drawings

- **Nut**
- **Gasket**
- **50 MPa Coupling Body**

### 50 MPa Long Nut for Coupling Body

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Nominal Diameter</th>
<th>Ordering No.</th>
<th>Temperature Range</th>
<th>Pressure Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.35</td>
<td>6.5</td>
<td>7/16-20UNF</td>
<td>45 to +250 °C</td>
<td>50 MPa</td>
</tr>
<tr>
<td>9.52</td>
<td>9.7</td>
<td>9/16-20UNF</td>
<td>45 to +250 °C</td>
<td>50 MPa</td>
</tr>
<tr>
<td>12.7</td>
<td>12.9</td>
<td>3/4-20UN</td>
<td>45 to +250 °C</td>
<td>50 MPa</td>
</tr>
</tbody>
</table>

### Caution
1. All wetted parts of Valves, Unions and Fittings in this catalog should be with non-corrosive gases only.
2. Please use each valve after confirming the instruction manual and daily inspection manual.
Automatic Valves with UPG® Fittings

**Features**

1. Fittings are installed without load for surrounding piping by adopting unique metal gasket-type.

## 95 MPa Type

### Specifications

<table>
<thead>
<tr>
<th>Design Pressure</th>
<th>95 MPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Temperature</td>
<td>85 °C</td>
</tr>
<tr>
<td>Fluid Temperature Range</td>
<td>–40 to +85 °C</td>
</tr>
</tbody>
</table>

### Materials

<table>
<thead>
<tr>
<th>Parts</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>SUS316+Co base alloy</td>
</tr>
<tr>
<td>Seat</td>
<td>SUS316+Co base alloy</td>
</tr>
<tr>
<td>Disc</td>
<td>SUS316+Co base alloy</td>
</tr>
<tr>
<td>Stem</td>
<td>SUS316+Co base alloy</td>
</tr>
<tr>
<td>Gland Packing</td>
<td>PFA+PVD</td>
</tr>
<tr>
<td>O-ring</td>
<td>HNBR</td>
</tr>
</tbody>
</table>

### Dimensions, Ordering No.

<table>
<thead>
<tr>
<th>Nominal Diameter</th>
<th>Connection</th>
<th>Thread</th>
<th>Interfacial Distance</th>
<th>H1</th>
<th>H2</th>
<th>Cv Value MAX.</th>
<th>Mass approx. (kg)</th>
<th>Ordering No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.35</td>
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<td>10</td>
<td>7/16-20UNF</td>
<td>95</td>
<td>57</td>
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</tr>
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<td>0.7</td>
<td>11</td>
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<td>97</td>
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<td>0.25</td>
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## 50 MPa Type

### Specifications

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<tbody>
<tr>
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<tr>
<td>Fluid Temperature Range</td>
<td>–40 to +85 °C</td>
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</tbody>
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### Materials

<table>
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<th>Materials</th>
</tr>
</thead>
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<tr>
<td>Body</td>
<td>SUS316+Co base alloy</td>
</tr>
<tr>
<td>Seat</td>
<td>SUS316+Co base alloy</td>
</tr>
<tr>
<td>Disc</td>
<td>SUS316+Co base alloy</td>
</tr>
<tr>
<td>Stem</td>
<td>SUS316+Co base alloy</td>
</tr>
<tr>
<td>Gland Packing</td>
<td>PFA+PVD</td>
</tr>
<tr>
<td>O-ring</td>
<td>HNBR</td>
</tr>
</tbody>
</table>

### Dimensions, Ordering No.

<table>
<thead>
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<th>Nominal Diameter</th>
<th>Connection</th>
<th>Thread</th>
<th>Interfacial Distance</th>
<th>H1</th>
<th>H2</th>
<th>Cv Value MAX.</th>
<th>Mass approx. (kg)</th>
<th>Ordering No.</th>
</tr>
</thead>
<tbody>
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<td>10</td>
<td>7/16-20UNF</td>
<td>85</td>
<td>36</td>
<td>0.15</td>
<td>4</td>
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<tr>
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<td>11</td>
<td>9/16-20UN</td>
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<td>36</td>
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<td>4</td>
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<td>0.83</td>
<td>12.8</td>
<td>3/4-20UNEF</td>
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## 45 MPa Type

### Specifications

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<tbody>
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<tr>
<td>Fluid Temperature Range</td>
<td>–10 to +80 °C</td>
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</table>

### Materials

<table>
<thead>
<tr>
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<th>Materials</th>
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</thead>
<tbody>
<tr>
<td>Body</td>
<td>SUS316+Co base alloy</td>
</tr>
<tr>
<td>Disc Packing</td>
<td>PEEK</td>
</tr>
<tr>
<td>Stem</td>
<td>SUS316 (Au Plating)</td>
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<tr>
<td>Gland Packing</td>
<td>TFE</td>
</tr>
<tr>
<td>O-ring</td>
<td>H R</td>
</tr>
</tbody>
</table>

### Dimensions, Ordering No.

<table>
<thead>
<tr>
<th>Nominal Diameter</th>
<th>Connection</th>
<th>Thread</th>
<th>Interfacial Distance</th>
<th>H1</th>
<th>H2</th>
<th>Cv Value MAX.</th>
<th>Mass approx. (kg)</th>
<th>Ordering No.</th>
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<td>0.9</td>
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<td>9.52</td>
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<td>APR-UM-745-9.5UPG-N28.5</td>
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<td>0.2</td>
<td>0.9</td>
<td>APR-UM-745-12.7UPG-N28.5</td>
</tr>
</tbody>
</table>

**Caution**

1. All wetted parts of Valves, Unions and Fittings in this catalog should be with non-corrosive gases only.
2. Please use each valve after confirming the instruction manual and daily inspection manual.
1. All wetted parts of Valves, Unions and Fittings in this catalog should be with non-corrosive gases only.

2. Please use each valve after confirming the instruction manual and daily inspection manual.
Line Check Valves with UPG® Fittings

**95 MPa Type**

### Features
1. Compact, in-line type
2. Little pressure drop to optimal flow pass

### Specifications
- **Design Pressure**: 95 MPa
- **Design Temperature**: 85 °C
- **Fluid Temperature Range**: −40 to +85 °C

### Materials
- **Body A**: SUS316+Co base alloy
- **Body B**: SUS316+Co base alloy
- **Disc**: PEEK
- **Spring**: SUS316

### Dimensions, Ordering No.

<table>
<thead>
<tr>
<th>Nominal Diameter</th>
<th>Nut connection</th>
<th>Thread</th>
<th>Interfacial Distance</th>
<th>Mass (approx.) (kg)</th>
<th>Ordering No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>L1</td>
<td>L2</td>
<td>A L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.35</td>
<td>3.2</td>
<td>0.7</td>
<td>10</td>
<td>0.25</td>
<td>1.3</td>
</tr>
<tr>
<td>9.52</td>
<td>4.35</td>
<td>0.7</td>
<td>11</td>
<td>0.25</td>
<td>1.3</td>
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<td>6</td>
<td>0.7</td>
<td>12.8</td>
<td>0.83</td>
<td>2.2</td>
</tr>
</tbody>
</table>

**50 MPa Type**

### Features
1. Compact, in-line type
2. Little pressure drop to optimal flow pass

### Specifications
- **Design Pressure**: 50 MPa
- **Design Temperature**: 85 °C
- **Fluid Temperature Range**: −40 to +85 °C

### Materials
- **Body A**: SUS316+Co base alloy
- **Body B**: SUS316+Co base alloy
- **Disc**: SUS316+Co base alloy
- **Spring**: SUS316

### Dimensions, Ordering No.

<table>
<thead>
<tr>
<th>Nominal Diameter</th>
<th>Nut connection</th>
<th>Thread</th>
<th>Interfacial Distance</th>
<th>Mass (approx.) (kg)</th>
<th>Ordering No.</th>
</tr>
</thead>
<tbody>
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<td>L3</td>
<td>A L L1</td>
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<td></td>
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<td>12.8</td>
<td>0.7</td>
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<td>UCL-750-12.7UPG-N28.5</td>
</tr>
</tbody>
</table>

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Download the latest catalog from [http://www.fujikin.co.jp/go/c10003](http://www.fujikin.co.jp/go/c10003).
**Filters with UPG® Fittings**

### 95 MPa Type

**Features**
1. Compact, in-line type
2. Little pressure drop to optimal flow pass
3. Filter size from 2, 5 and 10 μm

**Specifications**

<table>
<thead>
<tr>
<th>Design Pressure</th>
<th>95 MPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Temperature</td>
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</tr>
<tr>
<td>Fluid Temperature Range</td>
<td>−40 to +85 °C</td>
</tr>
</tbody>
</table>

**Materials**

<table>
<thead>
<tr>
<th>Parts</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body A</td>
<td>SUS316+Co base alloy</td>
</tr>
<tr>
<td>Body B</td>
<td>SUS316+Co base alloy</td>
</tr>
<tr>
<td>End A</td>
<td>SUS316</td>
</tr>
<tr>
<td>End B</td>
<td>SUS316</td>
</tr>
<tr>
<td>Element</td>
<td>SUS316</td>
</tr>
<tr>
<td>Packing</td>
<td>PTFE</td>
</tr>
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</table>

**Dimensions, Ordering No.**

<table>
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<th>Nut connection</th>
<th>Thread</th>
<th>Interfacial Distance</th>
<th>Mass (approx.)</th>
<th>Ordering No.</th>
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<td>L1</td>
<td>L2</td>
<td>A</td>
<td>L</td>
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<td>0.7</td>
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<td>2.0</td>
</tr>
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<td>0.7</td>
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<tr>
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<td>0.7</td>
<td>0.7</td>
<td>12.8</td>
<td>2.0</td>
</tr>
</tbody>
</table>

**50 MPa Type**

**Features**
1. Compact, in-line type
2. Little pressure drop to optimal flow pass
3. Filter size from 2, 5 and 10 μm

**Specifications**

<table>
<thead>
<tr>
<th>Design Pressure</th>
<th>50 MPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Temperature</td>
<td>85 °C</td>
</tr>
<tr>
<td>Fluid Temperature Range</td>
<td>−40 to +85 °C</td>
</tr>
</tbody>
</table>

**Materials**

<table>
<thead>
<tr>
<th>Parts</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body A</td>
<td>SUS316+Co base alloy</td>
</tr>
<tr>
<td>Body B</td>
<td>SUS316+Co base alloy</td>
</tr>
<tr>
<td>End A</td>
<td>SUS316</td>
</tr>
<tr>
<td>End B</td>
<td>SUS316</td>
</tr>
<tr>
<td>Element</td>
<td>SUS316</td>
</tr>
<tr>
<td>Packing</td>
<td>PTFE</td>
</tr>
</tbody>
</table>

**Dimensions, Ordering No.**

<table>
<thead>
<tr>
<th>Nominal Diameter</th>
<th>Nut connection</th>
<th>Thread</th>
<th>Interfacial Distance</th>
<th>Mass (approx.)</th>
<th>Ordering No.</th>
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<tbody>
<tr>
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<td>L3</td>
<td>A</td>
<td>L1</td>
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<td>0.7</td>
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<td>9.52</td>
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<td>11</td>
<td>0.7</td>
<td>0.7</td>
<td>1.2</td>
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<td>12.7</td>
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<td>12.8</td>
<td>0.7</td>
<td>0.7</td>
<td>1.2</td>
</tr>
</tbody>
</table>

*: Filter particle size (in microns) goes here

---

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Download the latest catalog from "http://www.fujikin.co.jp/go/c10003".
Specifications

Maximum operating pressure and temperature are changeable according to the materials and thickness of the tubes. Please contact Fujikin before ordering.

95 MPa Type  UPG® x Coned-and-Threaded Connection (HP) Male Type

UPG-H-9.52X6.35HP-95M-N28.5

UPG-H-9.52X9.52HP-95M-N28.5

UPG-H-9.52X14.2HP-95M-N28.5

UPG-H-12.7X14.2HP-95M-N28.5

50 MPa Type  UPG® x Coned-and-Threaded Connection (HP) Male Type

UPG-H-9.52X6.35HP-50M-N28.5

UPG-H-9.52X9.52HP-50M-N28.5

UPG-H-9.52X14.2HP-50M-N28.5

UPG-H-12.7X14.2HP-50M-N28.5

Materials

SUS316+Co base alloy

Note: Please consult Fujikin about different connections.

Caution

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Download the latest catalog from "http://www.fujikin.co.jp/go/c10003".
Weld Fittings

95 MPa Type

Specifications and Materials

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<th>Design Pressure</th>
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<tbody>
<tr>
<td>Fluid Temperature Range</td>
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<tr>
<td>Materials</td>
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Elbow

Dimensions, Ordering No.

<table>
<thead>
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<th>Nominal Diameter (D)</th>
<th>D1</th>
<th>L</th>
<th>L1</th>
<th>L2</th>
<th>A</th>
<th>Ordering No.</th>
</tr>
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<td>5.12</td>
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<td>45</td>
<td>35</td>
<td>17</td>
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</tr>
<tr>
<td>12.7</td>
<td>7.3</td>
<td>55</td>
<td>45</td>
<td>20</td>
<td>17</td>
<td>UJL-12.7-95M-HRX19</td>
</tr>
</tbody>
</table>

Tee

Dimensions, Ordering No.

<table>
<thead>
<tr>
<th>Nominal Diameter (D)</th>
<th>D1</th>
<th>L</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>A</th>
<th>B</th>
<th>Ordering No.</th>
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<tbody>
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<td>10</td>
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</tr>
<tr>
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<td>20</td>
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</tr>
</tbody>
</table>

*HRX 19® is a registered trademark of Nippon Steel Sumikin Co., Ltd.

Caution: All wetted parts of Valves, Unions and Fittings in this catalog should be with non-corrosive gases only.
50 MPa Type

Specifications and Materials

<table>
<thead>
<tr>
<th>Design Pressure</th>
<th>50MPa</th>
</tr>
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<tbody>
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<td>Fluid Temperature Range</td>
<td>-40 to +85℃</td>
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<tr>
<td>Materials</td>
<td>SUS316+Co base alloy</td>
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Elbow

<table>
<thead>
<tr>
<th>Nominal Diameter (D)</th>
<th>D1</th>
<th>L</th>
<th>L1</th>
<th>L2</th>
<th>A</th>
<th>Ordering No.</th>
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</thead>
<tbody>
<tr>
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<td>19.1</td>
<td>17</td>
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</tr>
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<td>21</td>
<td>17</td>
<td>UJL-9.52-L21-50M-N28.5</td>
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<td>17</td>
<td>UJL-12.7-50M-N28.5</td>
</tr>
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<td>8</td>
<td>38</td>
<td>29</td>
<td>21</td>
<td>17</td>
<td>UJL-12.7-L21-50M-N28.5</td>
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</tbody>
</table>

Tee

<table>
<thead>
<tr>
<th>Nominal Diameter (D)</th>
<th>D1</th>
<th>L</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>A</th>
<th>B</th>
<th>Ordering No.</th>
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<tbody>
<tr>
<td>6.35</td>
<td>3.9</td>
<td>50</td>
<td>25</td>
<td>19.1</td>
<td>31</td>
<td>11</td>
<td>11.8</td>
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<td>29</td>
<td>19.1</td>
<td>38</td>
<td>17</td>
<td>19.8</td>
<td>UJT-9.52-95M-HRX19</td>
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<tr>
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<td>5.1</td>
<td>58</td>
<td>29</td>
<td>21</td>
<td>38</td>
<td>17</td>
<td>16</td>
<td>UJT-9.52-L21-95M-HRX19</td>
</tr>
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<td>29</td>
<td>19.1</td>
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<td>17</td>
<td>19.8</td>
<td>UJT-12.7-95M-HRX19</td>
</tr>
<tr>
<td>12.7</td>
<td>8</td>
<td>58</td>
<td>29</td>
<td>21</td>
<td>38</td>
<td>17</td>
<td>16</td>
<td>UJT-12.7-L21-95M-HRX19</td>
</tr>
</tbody>
</table>

Note: Please consult Fujikin about different connections.

Fujikin will also proactively work overseas standard and certifications.

Caution: All wetted parts of Valves, Unions and Fittings in this catalog should be with non-corrosive gases only.

Download the latest catalog from "http://www.fujikin.co.jp/go/c10003".
To contribute to preservation of law and order, safety and stable driving of hydrogen related equipment, also works on substantiality of customer service aggressively.

**WHAT is PROVIDER?**

- 0.7MPa Operating Air pressure which is available in any plant move the PISTON.

- Discharge high pressure continuously
  - 150MPa (N2 GAS)
  - 500MPa (Liquid)

  3 series(Model: JHP, MG, ML)

  JHP series: Small body, compact (for Intermittent drive)
  MG, ML series: For continuous drive

**Specifications**

<table>
<thead>
<tr>
<th>Max. Discharge Pressure(MPa)</th>
<th>Operating Temperature(℃)</th>
</tr>
</thead>
<tbody>
<tr>
<td>500 (Liquid)</td>
<td>5 - 40</td>
</tr>
<tr>
<td>150 (N2 Gas)</td>
<td>*</td>
</tr>
</tbody>
</table>

*: Even more hotness is sometimes practicable by the gas kind, so please consult.

Please use in the room of temperature 5 - 40℃

**Features**

- **Pressure Set:**
  Once you set operation pressure between 0.1 – 0.7 MPa, automatically max. pressure is available.

- **Explosion Proof:**
  as only air is use.

- **Wetted parts:**
  Suitable materials & oil free type is available.

- **Double action cylinder:** discharge big volume outlet.

- **Stable Action:**
  Balancing of inlet & outlet pressure keeps set pressure. No trouble against over load

- **Low Noise Drive:**
  This system uses only air and uses no motor. Silencer reduce the air vent noise.

- **Low Price:**
  because of no motor like compressor type.

**Products Line Up**

PROVIDER series kept responding to the customer’s needs, and the rich product line-up is made even.

**JHP Series:** Small, Compact, for intermittent drive.

**MG, ML Series:** For continuous drive, (Oil free, for liquid, etc.)
Flow Control Problem Solutions

ESUSOC
(abbreviations: Engineering Services Unit Solutions Company)

Fujikin can provide customer support in all aspects from design to production, launching, modification and maintenance, utilizing No.1 capability and experience of flow control technology and high pressure gas certification.

Engineering services, equipment/piping design and production

Outsource order

Unit
- Layout design
- Piping drawing
- Procurement of processed parts, materials and purchased items.
- Assembly
- Cleaning and inspection

Control system, system design and manufacture also

Prefabricating
- Piping drawing
- Procurement of materials and purchased items
- Manufacture
- Flush and inspection
- Qualification

Prefabricated Piping Production

Maintenance Local Construction

Moisture Generator System

Gases:
- Air, N2, He, H2, O2, others

Liquids:
- Water, Oil, Organic Solvent, (MNP, Methanol), etc.

When it’s for gases besides Air and N2, it’ll be the different specification, so please consult.

Download the latest catalog from "http://www.fujikin.co.jp/go/c10003".
If you have trouble with unit or piping, please contact Fujikin, local office by all means!

Other unit system available example by ESUSOC

Gas valve stands
System that provides high pressure gas during the production in large furnace process

This can control gas supply by using Fujikin control valve called Minucon, which has been approved Ministry Certificate in Japan. High pressure gas piping shall be designed based on Ministry Certificate in Japan.

Rich manufacturing experience and cutting edge technology
Fujikin can respond to customers’ request in various system including Integrated Gas System, Moisture Generator System, static mixer-dispensing unit, prefabricated piping and etc., utilizing our extensive manufacturing experiences and flow control technology in each industry that we’ve cultivated so far.

Please be free to contact Fujikin for production or sales of systems utilizing some elements based on customer’s technology.

Flow Control Problem Solutions Company
ESUSOC
(abbreviations: Engineering Services Unit Solutions Company)
Integrated Solutions

We can propose packaged products of instrumentation piping for Hydrogen station and etc..

Fujikin and NAGANO KEIKI co., LTD. joint proposal.

Advantage

- Compactness
- Reduced number of parts
- Connect Point reduction
- Reduced number of works

Fujikin contributes to security and safety and security of the instruments.

Piping example ①

- Manual valve: 2 sets → 0 pce
- Hi-press. fitting: 2 pcs → 2 pcs adapter
- Hi-press. piping: 5 pcs → 0 pce
- Connection part: 10 → 4
- Fitting construction part: 10 → 4
- Tightness test: 10 → 4

Piping example ②

- Hi-press. piping: 1 → 0
- Fitting construction: 2 → 1
- Tightness test: 2 → 1

Download the latest catalog from "http://www.fujikin.co.jp/go/c10003".
Cv Value Calculation

Please confirm the necessary Cv Value suited to the intended use (process valves, meter master valves, etc.) before selecting an appropriate valves. Also, if there is a large difference between the flow channel diameter and piping diameter, please multiply the Cv value for the valve unit by revising coefficient Fp to determine the revised Cv Value (CvR).

What is Cv Value?

Cv Value is a capacity coefficient for valves and other devices. It is defined in the Japanese Industrial Standards (JIS) as “the flow volume expressed in US gal/min of clear water at 60°F (15°C) through a valve within a particular operating range with a pressure differential of 1 lb/inch² (= 1 psi).”

Cv Value Calculation

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Differential Pressure Conditions</th>
<th>( P_1 &gt; \frac{P_2}{2} )</th>
<th>( P_2 = \frac{P_1}{2} )</th>
<th>Explanation of Symbols</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Liquid</td>
<td>( Cv = 0.366Q_L \sqrt{\frac{P_1}{P_2}} )</td>
<td>Same as left</td>
<td>Qₗ [m³/h]: Liquid flow volume</td>
<td></td>
</tr>
<tr>
<td>High Viscosity</td>
<td>( Cv = 0.366Q_LK_v \sqrt{\frac{P_1}{P_2}} )</td>
<td>Same as left</td>
<td>Qₗ [m³/h(normal)]: Gas flow volume in normal state (15°C, 0.1013 MPa abs)</td>
<td></td>
</tr>
<tr>
<td>Gas</td>
<td>( Cv = \frac{Q_G}{4145 \sqrt{(P_1-P_2)P_2}} )</td>
<td>( Cv = \frac{Q_G}{2070P_1\sqrt{(273+t)}} )</td>
<td>Qᵢ [kg/h]: Steam flow volume</td>
<td></td>
</tr>
<tr>
<td>Saturated Water Vapor</td>
<td>( Cv = \frac{Q_S}{197.8(P_1-P_2)P_2} )</td>
<td>( Cv = \frac{Q_S}{98.91P_1} )</td>
<td>P₁ [MPa abs]: Primary side absolute pressure *2</td>
<td></td>
</tr>
<tr>
<td>Heated Water Vapor</td>
<td>( Cv = \frac{Q_S}{197.8(P_1-P_2)P_2} (1+0.0013S) )</td>
<td>( Cv = \frac{Q_S}{98.91P_1} (1+0.0013S) )</td>
<td>P₂ [MPa abs]: Secondary side absolute pressure *2</td>
<td></td>
</tr>
<tr>
<td>Wet Steam</td>
<td>( Cv = \frac{Q_X}{197.8(P_1-P_2)P_2} )</td>
<td>( Cv = \frac{Q_X}{98.91P_1} )</td>
<td>Kᵥ: Viscosity correction factor *1</td>
<td></td>
</tr>
</tbody>
</table>

*1: For liquids, if kinematic viscosity is 20 mPa·s or more and calculated Cv value is 0.01 or less, viscosity correction calculation is required. Please contact Fujikin if fluid specifications are needed for viscosity correction.

*2: Please use pressure in the immediate proximity of the valve. Calculations using pressure from a point distant from the valve can produce significant errors due to the effects of piping pressure loss, etc.

Piping Revising Calculation

\[
F_p = \left[ 1 + \frac{1.5 \left( 1 - \left( \frac{d}{D} \right)^2 \right)^2 \times \left( \frac{Cv}{d^2} \right)^2}{0.00214} \right]^{-\frac{1}{2}}
\]

Fp: Piping revising coefficient
Cv: Valve capacity coefficient for normal piping
D: Valve inner diameter (mm)
D: Pipe inner diameter (mm)

Revising Cv Value (CvR) Calculation

\[
CvR = F_p \cdot Cv
\]

Important Note

Cv Value calculation provides the standard used in valve selection; so, please use as a reference value. It is possible that fixed piping conditions, usage conditions or other factors can cause actual values to differ from calculated values.
Cv Value Calculation

Fp: Piping revising coefficient
Cv: Valve capacity coefficient for normal piping

\[ CvR = Fp \cdot Cv \]

Revising Cv Value (CvR) Calculation

Piping Revising Calculation

Cv Value calculation provides the standard used in valve selection; so, please use as a reference value.

It is possible that fixed piping conditions, usage conditions or other factors can cause actual values to differ from calculated values.

What is Cv Value?

Please confirm the necessary Cv Value suited to the intended use (process valves, meter master valves, etc.) before selecting an appropriate valves. Also, if there is a large difference between the flow channel diameter and piping diameter, please multiply the Cv value for the valve unit by revising coefficient Fp to determine the revised Cv Value (CvR).

Cv Value is a capacity coefficient for valves and other devices. It is defined in the Japanese Industrial Standards (JIS) as "the flow volume expressed in US gal/min of clear water at 60°F (15°C) through a valve within a particular operating range with a pressure differential of 1 lb/inch² (= 1 psi)."

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** Fluid

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquid</td>
<td>General Same as left</td>
</tr>
<tr>
<td>Gas</td>
<td>General Same as left</td>
</tr>
<tr>
<td>Steam</td>
<td>Saturated Water Vapour</td>
</tr>
</tbody>
</table>

** Explanation of Symbols**

- QL [m³/h]: Liquid flow volume
- QG [m³/h(normal)]: Gas flow volume in normal state (15°C, 0.1013 MPa abs)
- QS [kg/h]: Steam flow volume
- P1 [MPa abs]: Primary side absolute pressure
- P2 [MPa abs]: Secondary side absolute pressure
- KV: Viscosity correction factor
- t [°C]: Fluid temperature
- GL: Fluid specific gravity (water = 1)
- GG: Gas specific gravity (air = 1)
- S [°C]: Steam superheated temp.
- X: Dry steam temp. (dry saturated vapor X = 1)

** Important Note**

MEMO

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