

# High-pressure needle valve

## Nominal pressure of 15,000 ... 60,000 psi [1,034 ... 4,136 bar]

### Model HPNV

WIKA data sheet AC 09.27

#### Applications

- Oil and gas, chemical industry, machine building and automation
- For injection systems, test benches, hydraulic power packs, blow-out protection
- Blasting/cutting with water, high-pressure cleaning

#### Special features

- Low-wear design due to non-rotating spindle tip in the bonnet
- Low torque and smooth operation of valve handle even at high pressure
- Leak-tested tightness in accordance with BS6755 / ISO 5208 leakage rate A
- Large selection of materials and configurations available
- Customer-specific combination of valves and measuring instruments (instrument hook-up) on request

#### Description

The model HPNV high-pressure needle valves have been developed for high-pressure applications of 15,000 ... 60,000 psi [1,034 ... 4,136 bar]. The valve is particularly suitable for control panels, where the space is restricted, or for test benches.

The non-rotating valve spindle prevents seizing and scoring, even if the valve is rarely opened or only partially closed.

With the blow-out proof design of the valve, working safety is ensured, especially in applications with high pressure loading and frequent pressure cycles.

The valve can be fully opened/closed with only 5 turns.



**Fig. left: 2-way valve, straight bore**  
**Fig. right: 2-way valve, angled bore**

The risk of unintentional loosening of the bonnet is minimised by a mechanical stop for the handle. Quick assembly and disassembly of the handle is possible thanks to the self-centring system. The valve design and high-quality sealing materials ensure long operating times and high tightness.

On request, WIKA offers the professional assembly of valves and pressure measuring instruments and also other accessories into a ready-to-install solution, also known as an instrument hook-up. To ensure the performance of the complete system, an additional leak test is carried out on the instrument hook-up.

# Specifications

Model HPNV	
<b>Standards used</b>	
Design	<ul style="list-style-type: none"> <li>■ ASME B1.20.1, pipe threads, general purpose (inch)</li> <li>■ ASME B31.3, process piping</li> </ul>
Tests	<ul style="list-style-type: none"> <li>■ MSS SP-99, valves for measuring instruments</li> <li>■ API 598, valve inspection and testing</li> <li>■ ISO 5208, pressure testing of metallic valves with leakage rate A</li> <li>■ MSS SP-61, pressure testing of valves</li> <li>■ DIN EN 12266-1, pressure tests, test procedures and acceptance criteria for industrial valves</li> </ul>
Material requirements	NACE MR0175 / ISO 15156, use in H <sub>2</sub> S-containing environments in oil and gas production
Marking	MSS SP-25, markings on valves
<b>Nominal pressure</b>	<ul style="list-style-type: none"> <li>■ 15,000 psi [1,034 bar]</li> <li>■ 20,000 psi [1,379 bar]</li> <li>■ 30,000 psi [2,068 bar]</li> <li>■ 60,000 psi [4,136 bar]</li> </ul>
<b>Permissible temperature range</b>	-55 ... +210 °C [-67 ... +410 °F]
<b>Version</b>	<ul style="list-style-type: none"> <li>■ 2-way valve, straight bore</li> <li>■ 2-way valve, angled bore</li> <li>■ 3-way valve, two pressure connections</li> <li>■ 3-way valve, one pressure connection</li> </ul>
<b>Connection type</b>	<ul style="list-style-type: none"> <li>■ Female thread/female thread per ANSI / ASME B1.20.1, code NPT</li> <li>■ Male thread/female thread per ANSI / ASME B1.20.1, code NPT</li> <li>■ Cone/threaded fitting</li> </ul>
<b>Connection size</b>	<ul style="list-style-type: none"> <li>■ ¼ NPT</li> <li>■ ⅜ NPT</li> <li>■ ½ NPT</li> <li>■ ¾ NPT <sup>1)</sup></li> <li>■ 1 NPT <sup>1)</sup></li> <li>■ ¼" cone/threaded screw connection</li> <li>■ ⅜" cone/threaded screw connection</li> <li>■ 9/16" cone/threaded screw connection</li> <li>■ ¾" cone/threaded screw connection <sup>2)</sup></li> <li>■ 1" cone/threaded screw connection <sup>2)</sup></li> </ul>
<b>Valve bore size</b>	<ul style="list-style-type: none"> <li>■ 2 mm [0.079 in]</li> <li>■ 4 mm [0.197 in]</li> <li>■ 6 mm [0.236 in]</li> <li>■ 8 mm [0.394 in]</li> </ul>
<b>Pressure-temperature limits (for diagram, see page 6)</b>	The limits for operating pressure and temperature depend on the version and the sealing material.
<b>Mounting</b>	Suitable for mounting bracket, with mounting holes
<b>Features</b>	<ul style="list-style-type: none"> <li>■ Sealing through self-centring piston</li> <li>■ Bubble-tight shut-off</li> <li>■ Flow direction marked on valve body</li> <li>■ Hydrostatically tested</li> <li>■ 100 % material traceability for wetted parts</li> </ul>
<b>Special bonnet feature</b>	<ul style="list-style-type: none"> <li>■ Without</li> <li>■ Suitable for low-temperature applications (to -196 °C [-321 °F])</li> <li>■ Mounting holes and valve stem for actuators</li> </ul>
<b>Special design feature</b>	<ul style="list-style-type: none"> <li>■ Without</li> <li>■ For oxygen, oil and grease free</li> <li>■ For sour gas applications (NACE) <sup>3)</sup></li> </ul>

1) The maximum operating pressure is limited to 10,000 psi [689 bar].

2) The maximum operating pressure is limited to 20,000 psi [1,379 bar].

3) The nominal pressure specifications must be reduced for sour gas applications. 15,000 psi [1,034 bar] and 20,000 psi [1,379 bar] are reduced to 10,000 psi [689 bar]. 30,000 psi [2,068 bar] are reduced to 20,000 psi [1,379 bar] and 60,000 psi [4,136 bar] to 30,000 psi [2,068 bar].

## Materials

### Wetted parts

Valve body	<ul style="list-style-type: none"><li>■ Stainless steel 316 (1.4401)</li><li>■ Other materials on request</li></ul>
Spindle tip	<ul style="list-style-type: none"><li>■ Stainless steel 17-4PH (1.4542) per ASTM A564</li><li>■ Duplex F51 (1.4462) per ASTM A479 <sup>1)</sup></li><li>■ Stainless steel XM-19 (S20910) <sup>1)</sup></li></ul>
Sealing	<ul style="list-style-type: none"><li>■ PTFE, glass-fibre filled</li><li>■ PTFE, carbon-fibre reinforced</li></ul>
Temperature range: -55 ... +210 °C [-65 ... +100 °F]	

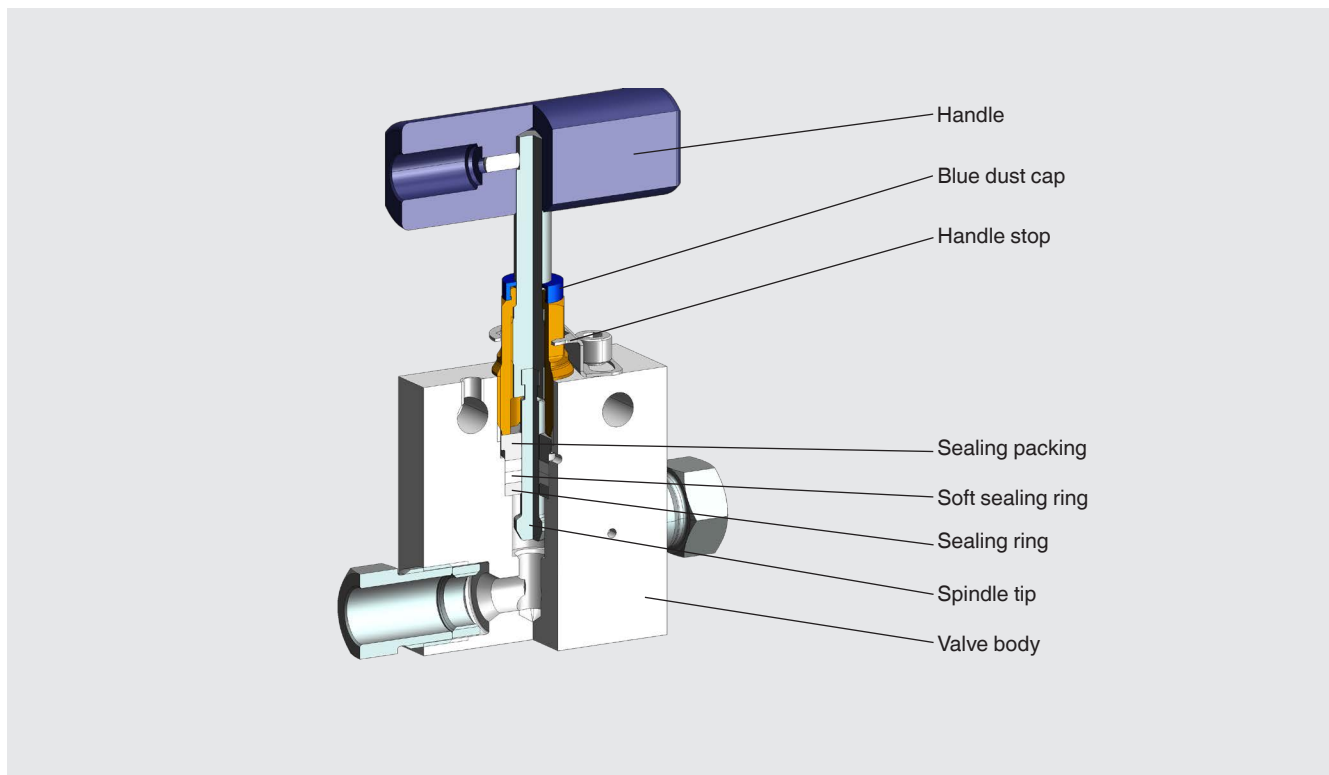
### Non-wetted parts

Handle	<ul style="list-style-type: none"><li>■ Handle from anodised aluminium (EN AW-6060-T6)</li><li>■ T-bar handle from stainless steel 316L</li><li>■ Without (suitable for actuators)</li></ul>
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1) Suitable for sour gas applications (NACE)

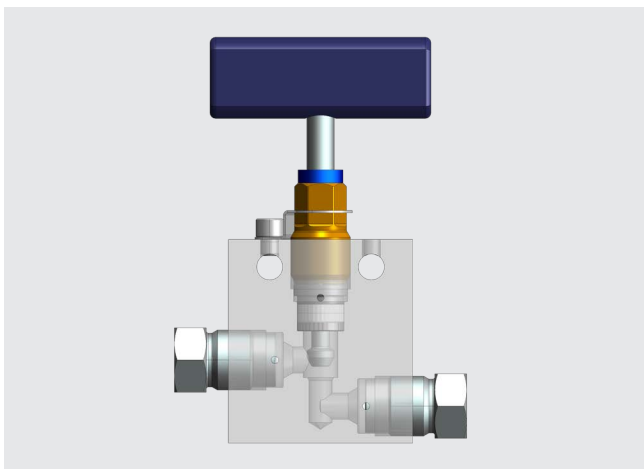
## Version

Example: 2-way valve, straight bore, cone/threaded screw connection

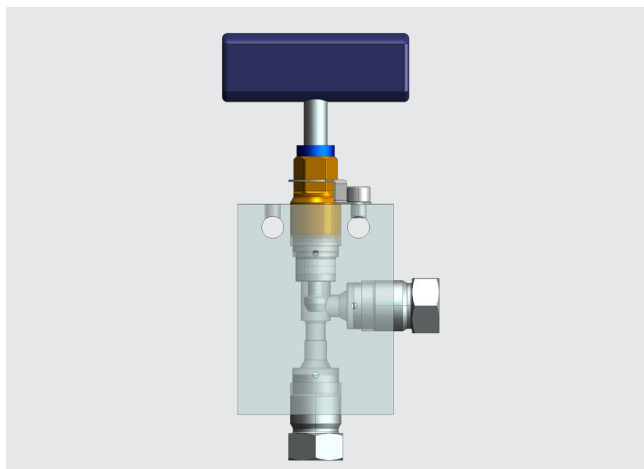


## Versions

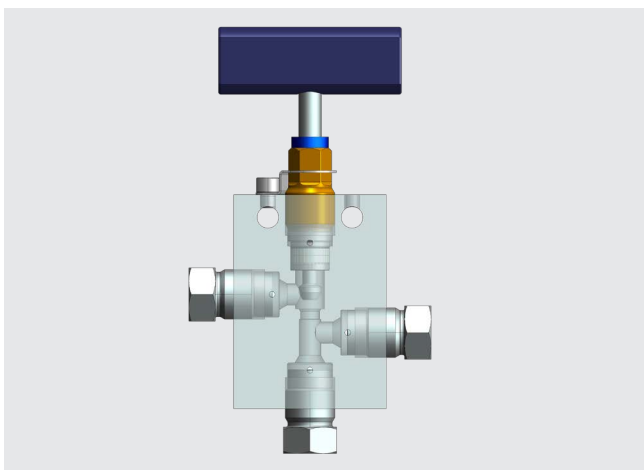
2-way valve, straight bore



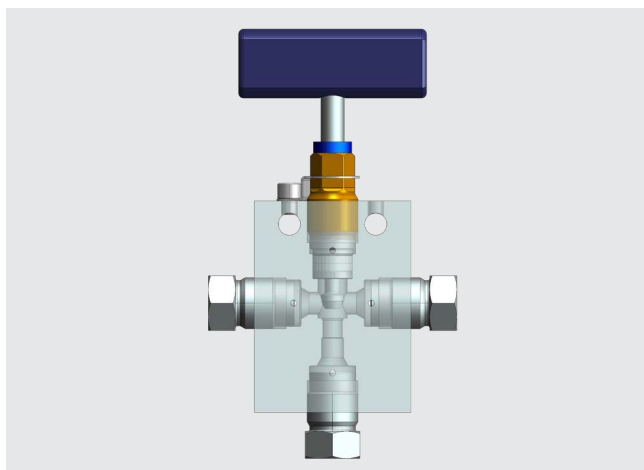
2-way valve, angled bore



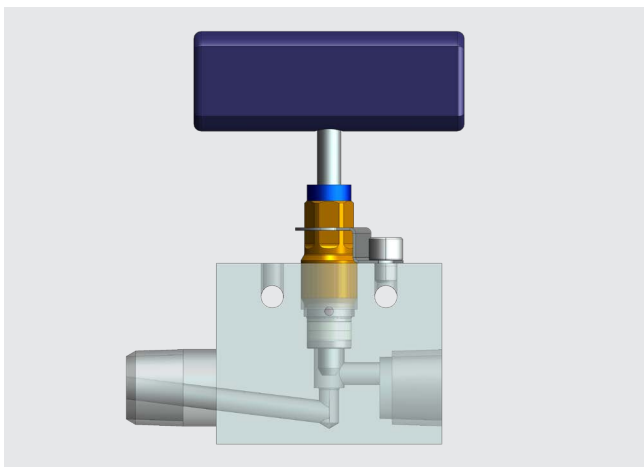
3-way valve, two pressure connections



3-way valve, one pressure connection

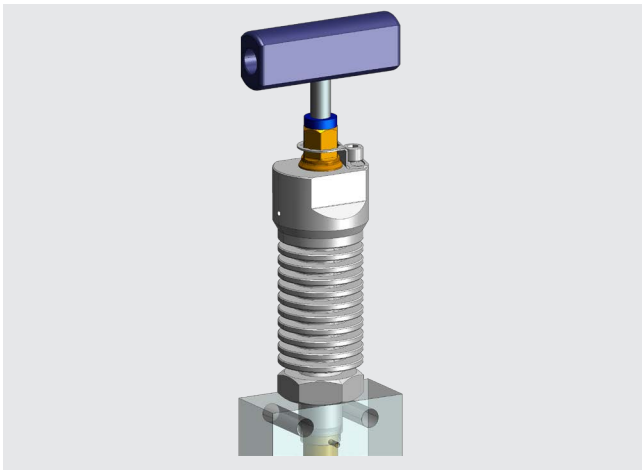


2-way valve, straight bore, male thread/female thread



## Particular features

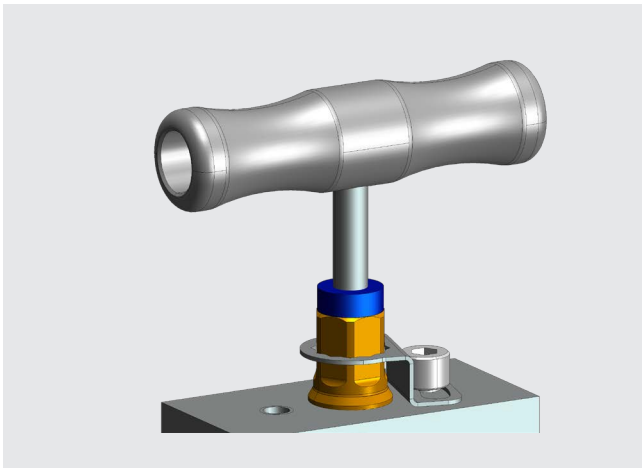
Bonnet for low-temperature applications



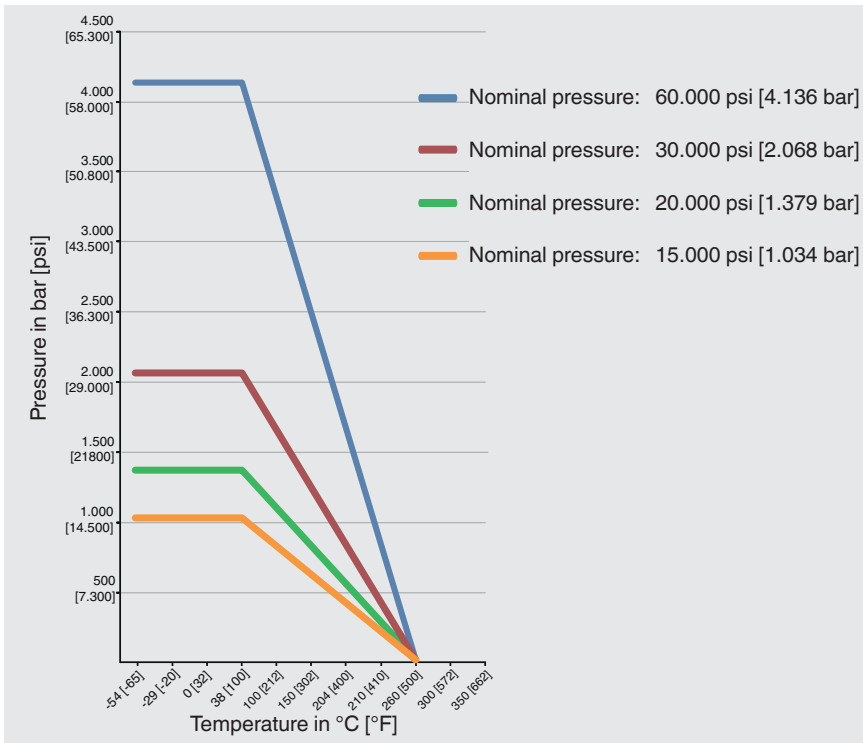
With mounted actuator



T-bar handle from stainless steel 316L



## Pressure-temperature diagram



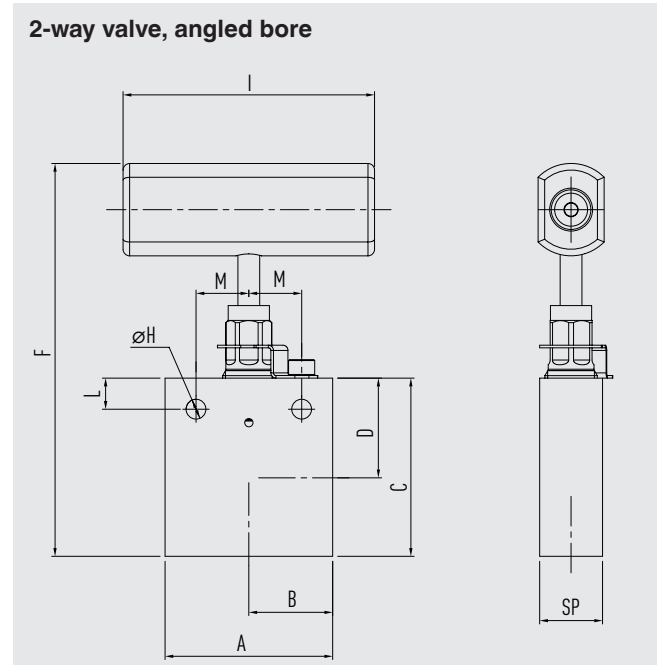
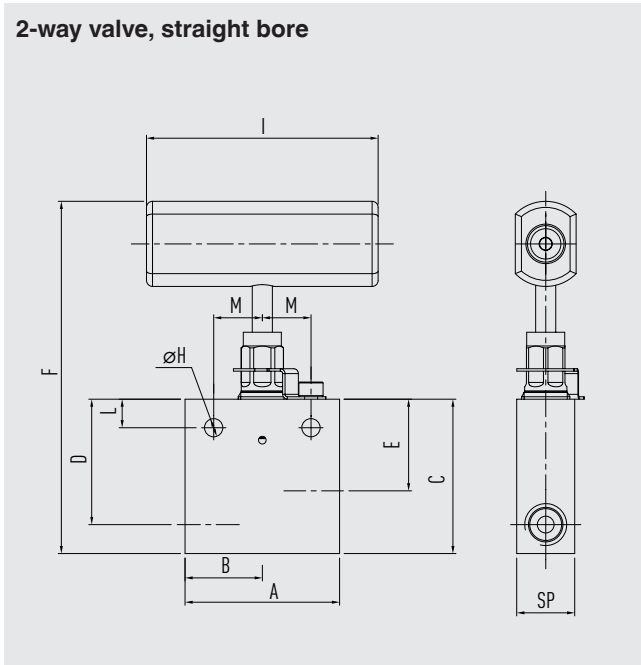
Nominal pressure	Max. permissible operating pressure in bar at temperature in °C	Max. permissible operating pressure in psi at temperature in °F
<b>15,000 psi [1,034 bar]</b>	1,034 bar at 38 °C	15,000 psi at 100 °F
<b>20,000 psi [1,379 bar]</b>	1,379 bar at 38 °C	20,000 psi at 100 °F
<b>30,000 psi [2,068 bar]</b>	2,068 bar at 38 °C	30,000 psi at 100 °F
<b>60,000 psi [4,136 bar]</b>	4,136 bar at 38 °C	60,000 psi at 100 °F

For permanently low operating temperatures of  $\leq -55$  °C [ $\leq -67$  °F] a special design is required.

## Dimensions in mm [in]

Threaded connection per ANSI / ASME B1.20.1, female thread/female thread

Nominal pressure: 15,000 psi [1,034 bar]



### 2-way valve, straight bore

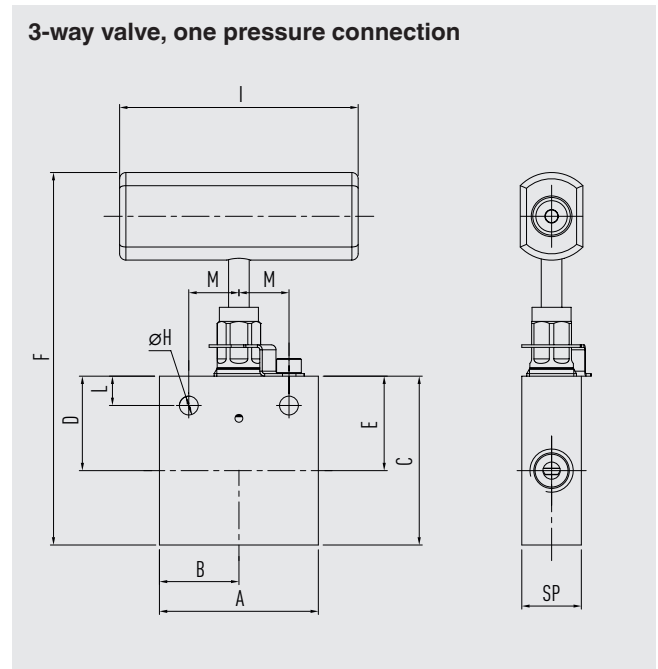
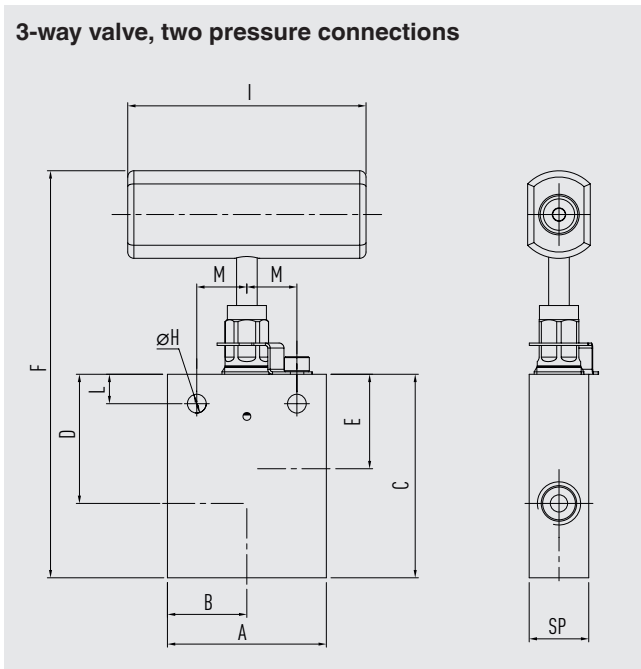
Thread	Dimensions in mm [in]											
	A	B	C	D	E	F	H	I	L	M	SP	Orifice
¼ NPT	50.8 [2.00]	25.4 [1.00]	50.8 [2.00]	41.3 [1.63]	30.2 [1.19]	115.9 [4.6]	6 [0.24]	76.2 [3]	9.4 [0.37]	16 [0.63]	19.05 [0.75]	5.5 [0.22]
⅜ NPT	50.8 [2.00]	25.4 [1.00]	53.98 [2.13]	41.3 [1.63]	30.2 [1.19]	119.1 [4.7]	6 [0.24]	76.2 [3]	9.4 [0.37]	16 [0.63]	25.4 [1.00]	5.5 [0.22]
½ NPT	63.5 [2.50]	31.75 [1.25]	70 [2.76]	54 [2.13]	38.1 [1.5]	139.7 [5.5]	9 [0.35]	76.2 [3]	9.4 [0.37]	17.5 [0.69]	31.75 [1.25]	8 [0.31]
¾ NPT <sup>1)</sup>	76.2 [3.00]	38.1 [1.50]	95.25 [3.75]	73 [2.87]	57 [2.24]	184.8 [7.3]	11.5 [0.45]	232.7 [9.2]	16 [0.63]	22.35 [0.88]	44.45 [1.75]	11.1 [0.44]
1 NPT <sup>1)</sup>	104.78 [4.13]	52.39 [2.06]	117.2 [4.61]	95 [3.74]	71.2 [2.8]	228.9 [9]	14 [0.55]	232.7 [9.2]	17.4 [0.69]	35 [1.38]	44.45 [1.75]	14.3 [0.56]

### 2-way valve, angled bore

Thread	Dimensions in mm [in]											
	A	B	C	D	E	F	H	I	L	M	SP	Orifice
¼ NPT	50.8 [2.00]	25.4 [1.00]	53.98 [2.13]	41.3 [1.63]	30.2 [1.19]	119.1 [4.7]	6 [0.24]	76.2 [3]	9.4 [0.37]	16 [0.63]	19.05 [0.75]	5.5 [0.22]
⅜ NPT	50.8 [2.00]	25.4 [1.00]	54.77 [2.16]	41.3 [1.63]	30.2 [1.19]	119.1 [4.7]	6 [0.24]	76.2 [3]	9.4 [0.37]	16 [0.63]	25.4 [1.00]	5.5 [0.22]
½ NPT	63.5 [2.50]	31.75 [1.25]	70 [2.76]	54 [2.13]	38.13 [1.5]	139.7 [5.5]	9 [0.35]	76.2 [3]	9.4 [0.37]	17.5 [0.69]	31.75 [1.25]	8 [0.31]
¾ NPT <sup>1)</sup>	76.2 [3.00]	38.1 [1.50]	95.25 [3.75]	73 [2.87]	57 [2.24]	184.8 [7.3]	11.5 [0.45]	232.7 [9.2]	16 [0.63]	22.35 [0.88]	44.45 [1.75]	11.1 [0.44]
1 NPT <sup>1)</sup>	104.78 [4.13]	52.39 [2.06]	117.2 [4.61]	95 [3.74]	71.2 [2.8]	228.9 [9]	14 [0.55]	232.7 [9.2]	17.4 [0.69]	35 [1.38]	44.45 [1.75]	14.3 [0.56]

<sup>1)</sup> The maximum operating pressure is limited to 10,000 psi [689] bar.

**Threaded connection per ANSI / ASME B1.20.1**  
**Nominal pressure: 15,000 psi [1,034 bar]**



**3-way valve, two pressure connections**

Thread	Dimensions in mm [in]											
	A	B	C	D	E	F	H	I	L	M	SP	Orifice
¼ NPT	50.8 [2.00]	25.4 [1.00]	65.09 [2.56]	41.3 [1.63]	30.2 [1.19]	30.2 [1.19]	6 [0.24]	76.2 [3]	9.4 [0.37]	16 [0.63]	19.05 [0.75]	5.5 [0.22]
⅜ NPT	50.8 [2.00]	25.4 [1.00]	65.88 [2.59]	41.3 [1.63]	30.2 [1.19]	30.2 [1.19]	6 [0.24]	76.2 [3]	9.4 [0.37]	16 [0.63]	25.4 [1.00]	5.5 [0.22]
½ NPT	63.5 [2.50]	31.75 [1.25]	85.73 [3.38]	54 [2.13]	38.1 [1.5]	38.1 [1.5]	9 [0.35]	76.2 [3]	9.4 [0.37]	17.5 [0.69]	31.75 [1.25]	8 [0.31]
¾ NPT <sup>1)</sup>	76.2 [3.00]	38.1 [1.50]	111.12 [4.37]	73 [2.87]	57 [2.24]	57 [2.24]	11.5 [0.45]	232.7 [9.2]	16 [0.63]	22.35 [0.88]	44.45 [1.75]	11.1 [0.44]
1 NPT <sup>1)</sup>	104.78 [4.13]	52.39 [2.06]	141.29 [5.56]	95 [3.74]	71.2 [2.8]	71.2 [2.8]	14 [0.55]	232.7 [9.2]	17.4 [0.69]	35 [1.38]	44.45 [1.75]	14.3 [0.56]

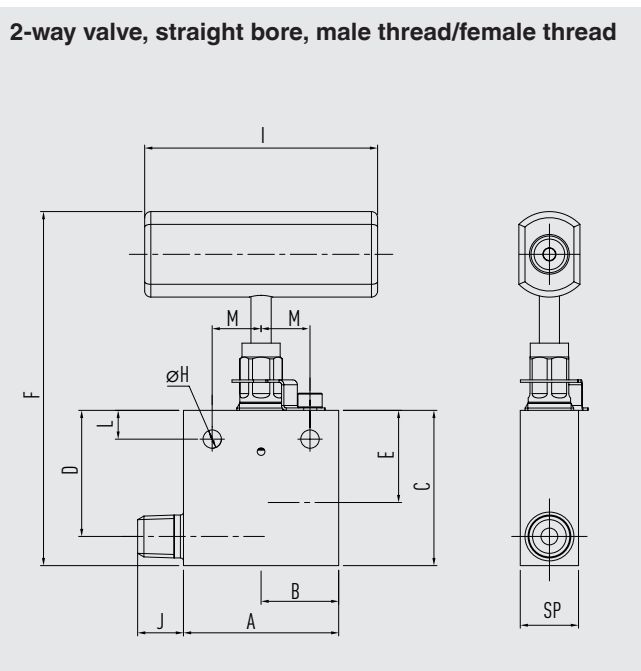
**3-way valve, one pressure connection**

Thread	Dimensions in mm [in]											
	A	B	C	D	F	H	I	L	M	SP	Orifice	
¼ NPT	50.8 [2.00]	25.4 [1.00]	53.98 [2.13]	30.2 [1.19]	119.1 [4.7]	6 [0.24]	76.2 [3]	9.4 [0.37]	16 [0.63]	19.05 [0.75]	5.5 [0.22]	
⅜ NPT	50.8 [2.00]	25.4 [1.00]	54.77 [2.16]	30.2 [1.19]	119.1 [4.7]	6 [0.24]	76.2 [3]	9.4 [0.37]	16 [0.63]	25.4 [1.00]	5.5 [0.22]	
½ NPT	63.5 [2.50]	31.75 [1.25]	70 [2.76]	38.13 [1.5]	139.7 [5.5]	9 [0.35]	76.2 [3]	9.4 [0.37]	17.5 [0.69]	31.75 [1.25]	8 [0.31]	
¾ NPT <sup>1)</sup>	76.2 [3.00]	38.1 [1.50]	95.25 [3.75]	57 [2.24]	184.8 [7.3]	11.5 [0.45]	232.7 [9.2]	16 [0.63]	22.35 [0.88]	44.45 [1.75]	11.1 [0.44]	
1 NPT <sup>1)</sup>	104.78 [4.13]	52.39 [2.06]	117.2 [4.61]	71.2 [2.8]	228.9 [9]	14 [0.55]	232.7 [9.2]	17.4 [0.69]	35 [1.38]	44.45 [1.75]	14.3 [0.56]	

<sup>1)</sup> The maximum operating pressure is limited to 10,000 psi [689] bar.



**Threaded connection per ANSI / ASME B1.20.1, male thread/female thread**  
**Nominal pressure: 15,000 psi [1,034 bar]**

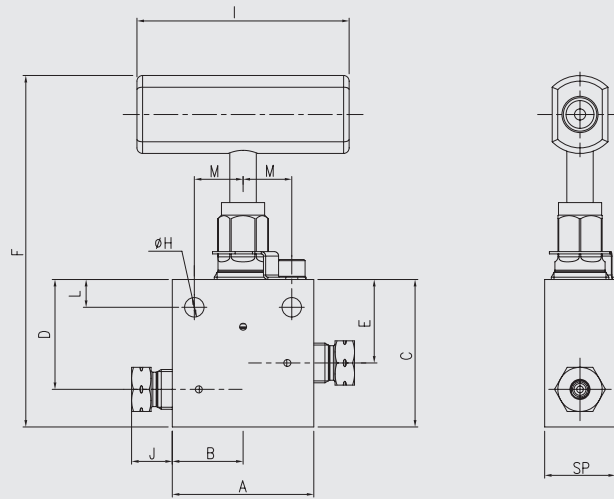


Thread	Dimensions in mm [in]												
	A	B	C	D	E	F	H	I	J	L	M	SP	Orifice
¼ NPT	50.8 [2.00]	25.4 [1.00]	50.8 [2]	41.3 [1.63]	30.2 [1.19]	115.9 [4.6]	6 [0.24]	76.2 [3]	15 [0.6]	9.4 [0.37]	16 [0.63]	19.05 [0.75]	5.5 [0.22]
⅜ NPT	50.8 [2.00]	25.4 [1.00]	53.98 [2.13]	41.3 [1.63]	30.2 [1.19]	119.1 [4.7]	6 [0.24]	76.2 [3]	19 [0.7]	9.4 [0.37]	16 [0.63]	25.4 [1.00]	5.5 [0.22]
½ NPT	63.5 [2.50]	31.75 [1.25]	69.85 [2.75]	57 [2.24]	38.1 [1.5]	139.5 [5.5]	9 [0.35]	76.2 [3]	25 [1]	9.4 [0.37]	17.5 [0.69]	31.75 [1.25]	8 [0.31]
¾ NPT <sup>1)</sup>	76.2 [3.00]	38.1 [1.50]	95.25 [3.75]	76 [2.99]	57 [2.24]	184.8 [7.3]	11.5 [0.45]	232.7 [9.2]	25 [1]	16 [0.63]	22.35 [0.88]	44.45 [1.75]	11.1 [0.44]
1 NPT <sup>1)</sup>	104.78 [4.13]	52.39 [2.06]	117.48 [4.63]	95 [3.74]	71.2 [2.8]	229.1 [9]	14 [0.55]	232.7 [9.2]	29 [1.1]	17.4 [0.69]	35 [1.38]	44.45 [1.75]	14.3 [0.56]

1) The maximum operating pressure is limited to 10,000 psi [689] bar.

## Cone/threaded fitting

### 2-way valve, straight bore



#### Nominal pressure: 20,000 psi [1,379 bar]

For outer Ø	Dimensions in mm [in]												
	A	B	C	D	E	F	H	I	J	L	M	SP	Orifice
¼"	50.8 [2.00]	25.4 [1.00]	50.8 [2.00]	41.3 [1.63]	30.2 [1.19]	115.9 [4.6]	6 [0.24]	76.2 [3]	12.2 [0.5]	9.4 [0.37]	16 [0.63]	19.05 [0.75]	5.5 [0.22]
⅜"	50.8 [2.00]	25.4 [1.00]	53.98 [2.13]	41.3 [1.63]	30.2 [1.19]	115.9 [4.6]	6 [0.24]	76.2 [3]	14.3 [0.6]	9.4 [0.37]	16 [0.63]	19.05 [0.75]	5.5 [0.22]
½"	63.5 [2.50]	31.75 [1.25]	70 [2.76]	57.3 [2.26]	41.4 [1.63]	139.7 [5.5]	9 [0.35]	76.2 [3]	18.6 [0.7]	9.4 [0.37]	17.5 [0.69]	25.4 [1]	8 [0.31]
¾"	76.2 [3.00]	38.1 [1.50]	95.25 [3.75]	76.2 [3]	57.2 [2.25]	184.8 [7.3]	11.5 [0.45]	232.7 [9.2]	18.8 [0.7]	16 [0.63]	22.35 [0.88]	34.90 [1.37]	11.1 [0.44]
1"	104.78 [4.13]	52.39 [2.06]	117.2 [2.8]	95 [3.74]	71.2 [2.8]	228.9 [9]	14 [0.55]	232.7 [9.2]	21.3 [0.8]	17.4 [0.69]	35 [1.38]	44.45 [1.75]	14.3 [0.56]

#### Nominal pressure: 30,000 psi [2,068 bar]

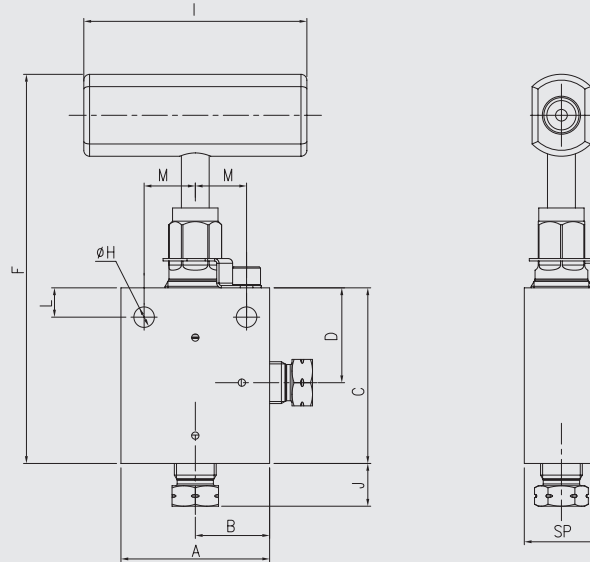
For outer Ø	Dimensions in mm [in]												
	A	B	C	D	E	F	H	I	J	L	M	SP	Orifice
¼"	50.8 [2.00]	25.4 [1.00]	53 [2.09]	39.5 [1.56]	30 [1.18]	126.3 [5.0]	7 [0.28]	76.2 [3]	14.6 [0.6]	10 [0.39]	17.5 [0.69]	25.4 [1]	3.2 [0.13]
⅜"	50.8 [2.00]	25.4 [1.00]	53 [2.09]	39.5 [1.56]	30 [1.18]	126.3 [5.0]	7 [0.28]	76.2 [3]	18.7 [0.7]	10 [0.39]	17.5 [0.69]	25.4 [1]	3.2 [0.13]
½"	66.68 [2.63]	33.34 [1.31]	60 [2.36]	40 [1.57]	29 [1.14]	133.3 [5.2]	7 [0.28]	76.2 [3]	26.9 [1.1]	10 [0.39]	17.5 [0.69]	38.1 [1.5]	3.2 [0.13]

#### Nominal pressure: 60,000 psi [4,136 bar]

For outer Ø	Dimensions in mm [in]												
	A	B	C	D	E	F	H	I	J	L	M	SP	Orifice
¼"	50.8 [2.00]	25.4 [1.00]	53 [2.09]	42 [1.65]	32.4 [1.28]	126 [5.0]	7 [0.28]	76.2 [3]	14.6 [0.6]	10 [0.39]	17.5 [0.69]	25.4 [1]	2 [0.06]
⅜"	50.8 [2.00]	25.4 [1.00]	57 [2.24]	42.9 [1.69]	33.3 [1.31]	130 [5.1]	7 [0.28]	76.2 [3]	18.7 [0.7]	10 [0.39]	17.5 [0.69]	25.4 [1]	2 [0.06]
½"	66.68 [2.63]	33.34 [1.31]	63.5 [2.50]	45.5 [1.79]	33.3 [1.31]	136.5 [5.4]	7 [0.28]	76.2 [3]	26.9 [1.1]	10 [0.39]	17.5 [0.69]	38.1 [1.5]	2 [0.06]

## Cone/threaded fitting

### 2-way valve, angled bore



#### Nominal pressure: 20,000 psi [1,379 bar]

For outer $\emptyset$	Dimensions in mm [in]											
	A	B	C	D	F	H	I	J	L	M	SP	Orifice
1/4"	50.8 [2.00]	25.4 [1.00]	61.9 [2.44]	30.2 [1.19]	127 [5]	6 [0.24]	76.2 [3]	12.2 [0.5]	9.4 [0.37]	16 [0.63]	19.05 [0.75]	5.5 [0.22]
3/8"	50.8 [2.00]	25.4 [1.00]	61.9 [2.44]	30.2 [1.19]	127 [5]	6 [0.24]	76.2 [3]	14.3 [0.6]	9.4 [0.37]	16 [0.63]	19.05 [0.75]	5.5 [0.22]
1/2"	63.5 [2.50]	31.75 [1.25]	85.73 [3.38]	41.43 [1.63]	155.4 [6.1]	9 [0.35]	76.2 [3]	18.6 [0.7]	9.4 [0.37]	17.5 [0.69]	25.4 [1]	8 [0.31]
3/4"	76.2 [3.00]	38.1 [1.50]	107.95 [4.25]	57.15 [2.25]	197.5 [7.8]	11.5 [0.45]	232.7 [9.2]	18.8 [0.7]	16 [0.63]	22.35 [0.88]	34.90 [1.37]	11.1 [0.44]
1"	104.78 [4.13]	52.39 [2.06]	130.18 [5.13]	71.19 [2.80]	241.8 [9.5]	14 [0.55]	232.7 [9.2]	21.3 [0.8]	17.4 [0.69]	35 [1.38]	44.45 [1.75]	14.3 [0.56]

#### Nominal pressure: 30,000 psi [2,068 bar]

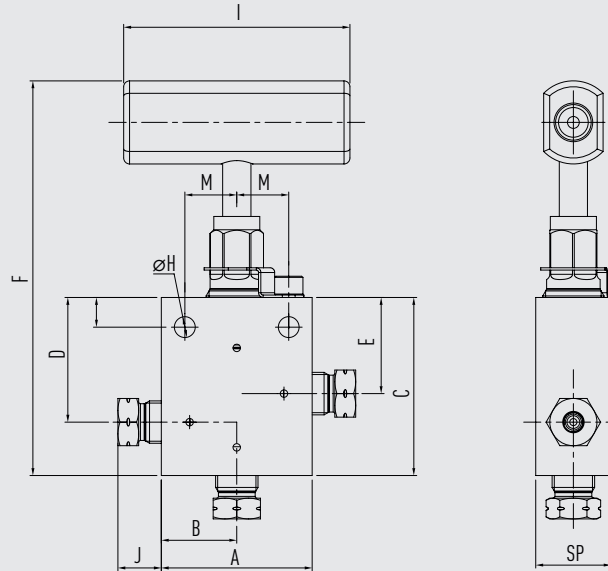
For outer $\emptyset$	Dimensions in mm [in]											
	A	B	C	D	F	H	I	J	L	M	SP	Orifice
1/4"	50.8 [2.00]	25.4 [1.00]	53 [2.09]	30 [1.18]	126.3 [5.0]	7 [0.28]	76.2 [3]	14.6 [0.6]	10 [0.39]	17.5 [0.69]	25.4 [1]	3.2 [0.13]
3/8"	50.8 [2.00]	25.4 [1.00]	57 [2.24]	30 [1.18]	130.3 [5.1]	7 [0.28]	76.2 [3]	18.7 [0.7]	10 [0.39]	17.5 [0.69]	25.4 [1]	3.2 [0.13]
1/2"	66.68 [2.63]	33.34 [1.31]	62 [2.44]	29 [1.14]	135.3 [5.3]	7 [0.28]	76.2 [3]	26.9 [1.1]	10 [0.39]	17.5 [0.69]	38.1 [1.5]	3.2 [0.13]

#### Nominal pressure: 60,000 psi [4,136 bar]

For outer $\emptyset$	Dimensions in mm [in]											
	A	B	C	D	F	H	I	J	L	M	SP	Orifice
1/4"	50.8 [2.00]	25.4 [1.00]	60 [2.36]	32.4 [1.28]	133 [5.2]	7 [0.28]	76.2 [3]	14.6 [0.6]	10 [0.39]	17.5 [0.69]	25.4 [1]	2 [0.06]
3/8"	50.8 [2.00]	25.4 [1.00]	66 [2.6]	33.3 [1.31]	139 [5.5]	7 [0.28]	76.2 [3]	18.7 [0.7]	10 [0.39]	17.5 [0.69]	25.4 [1]	2 [0.06]
1/2"	66.68 [2.63]	33.34 [1.31]	71 [2.8]	33.3 [1.31]	144 [5.7]	7 [0.28]	76.2 [3]	26.9 [1.1]	10 [0.39]	17.5 [0.69]	38.1 [1.5]	2 [0.06]

## Cone/threaded fitting

### 3-way valve, two pressure connections



#### Nominal pressure: 20,000 psi [1,379 bar]

DN	Dimensions in mm [in]											
	A	B	C	D	F	H	I	J	L	M	SP	Orifice
¼"	50.8 [2.00]	25.4 [1.00]	61.9 [2.44]	41.43 [1.63]	127 [5]	6 [0.24]	76.2 [3]	12.2 [0.5]	9.4 [0.37]	16 [0.63]	19.05 [0.75]	5.5 [0.22]
⅜"	50.8 [2.00]	25.4 [1.00]	61.9 [2.44]	41.43 [1.63]	131.8 [5.2]	6 [0.24]	76.2 [3]	14.3 [0.6]	9.4 [0.37]	16 [0.63]	19.05 [0.75]	5.5 [0.22]
½"	63.5 [2.50]	31.75 [1.25]	85.73 [3.38]	57.3 [2.26]	158.6 [6.2]	9 [0.35]	76.2 [3]	18.6 [0.7]	9.4 [0.37]	17.5 [0.69]	25.4 [1]	8 [0.31]
¾"	76.2 [3.00]	38.1 [1.50]	107.95 [4.25]	76.2 [3]	207 [8.1]	11.5 [0.45]	232.7 [9.2]	18.8 [0.7]	16 [0.63]	22.35 [0.88]	34.90 [1.37]	11.1 [0.44]
1"	104.78 [4.13]	52.39 [2.06]	130.18 [5.13]	71.2 [2.8]	264.1 [10.4]	14 [0.55]	232.7 [9.2]	21.3 [0.8]	17.4 [0.69]	35 [1.38]	44.45 [1.75]	14.3 [0.56]

#### Nominal pressure: 30,000 psi [2,068 bar]

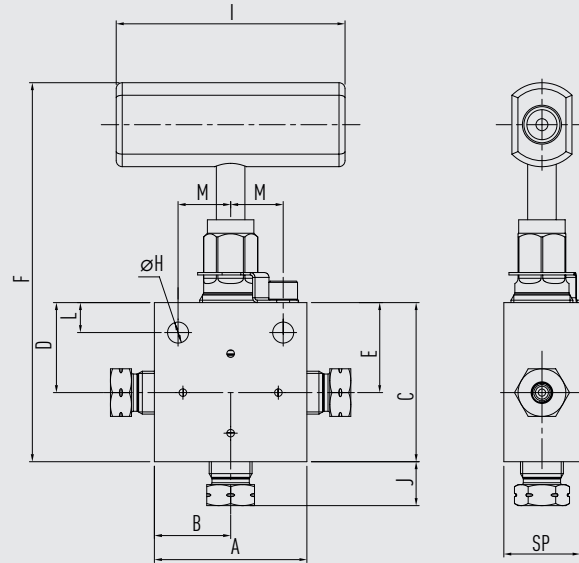
DN	Dimensions in mm [in]											
	A	B	C	D	F	H	I	J	L	M	SP	Orifice
¼"	50.8 [2.00]	25.4 [1.00]	57.5 [2.26]	39.5 [1.56]	130.8 [5.1]	7 [0.28]	76.2 [3]	14.6 [0.6]	10 [0.39]	17.5 [0.69]	25.4 [1]	3.2 [0.13]
⅜"	50.8 [2.00]	25.4 [1.00]	69.6 [2.74]	39.5 [1.56]	142.9 [5.6]	7 [0.28]	76.2 [3]	18.7 [0.7]	10 [0.39]	17.5 [0.69]	25.4 [1]	3.2 [0.13]
½"	66.68 [2.63]	33.34 [1.31]	77.5 [3.05]	40 [1.57]	150.8 [5.9]	7 [0.28]	76.2 [3]	26.9 [1.1]	10 [0.39]	17.5 [0.69]	38.1 [1.5]	3.2 [0.13]

#### Nominal pressure: 60,000 psi [4,136 bar]

DN	Dimensions in mm [in]											
	A	B	C	D	F	H	I	J	L	M	SP	Orifice
¼"	50.8 [2.00]	25.4 [1.00]	60 [2.36]	42 [1.65]	133 [5.2]	7 [0.28]	76.2 [3]	14.6 [0.6]	10 [0.39]	17.5 [0.69]	25.4 [1]	2 [0.06]
⅜"	50.8 [2.00]	25.4 [1.00]	73 [2.87]	42.9 [1.69]	146 [5.7]	7 [0.28]	76.2 [3]	18.7 [0.7]	10 [0.39]	17.5 [0.69]	25.4 [1]	2 [0.06]
½"	66.68 [2.63]	33.34 [1.31]	83 [3.27]	45.5 [1.79]	156 [6.1]	7 [0.28]	76.2 [3]	26.9 [1.1]	10 [0.39]	17.5 [0.69]	38.1 [1.5]	2 [0.06]

## Cone/threaded fitting

### 3-way valve, one pressure connection



#### Nominal pressure: 20,000 psi [1,379 bar]

For outer Ø	Dimensions in mm [in]												
	A	B	C	D	E	F	H	I	J	L	M	SP	Orifice
¼"	50.8 [2.00]	25.4 [1.00]	61.9 [2.44]	41.3 [1.63]	30.2 [1.19]	127 [5]	6 [0.24]	76.2 [3]	12.2 [0.5]	9.4 [0.37]	16 [0.63]	19.05 [0.75]	5.5 [0.22]
⅜"	50.8 [2.00]	25.4 [1.00]	61.9 [2.44]	41.3 [1.63]	30.2 [1.19]	127 [5]	6 [0.24]	76.2 [3]	14.3 [0.6]	9.4 [0.37]	16 [0.63]	19.05 [0.75]	5.5 [0.22]
½"	63.5 [2.50]	31.75 [1.25]	85.73 [3.38]	57.3 [2.26]	41.4 [1.63]	155.4 [6]	9 [0.35]	76.2 [3]	18.6 [0.7]	9.4 [0.37]	17.5 [0.69]	25.4 [1]	8 [0.31]
¾"	76.2 [3.00]	38.1 [1.50]	107.95 [4.25]	76.2 [3]	57.2 [2.25]	197.5 [7.8]	11.5 [0.45]	232.7 [9.2]	18.8 [0.7]	16 [0.63]	22.35 [0.88]	34.90 [1.37]	11.1 [0.44]
1"	104.78 [4.13]	52.39 [2.06]	130.18 [5.13]	95 [3.74]	71.2 [2.8]	241.8 [9.5]	14 [0.55]	232.7 [9.2]	21.3 [0.8]	17.4 [0.69]	35 [1.38]	44.45 [1.75]	14.3 [0.56]

#### Nominal pressure: 30,000 psi [2,068 bar]

For outer Ø	Dimensions in mm [in]												
	A	B	C	D	E	F	H	I	J	L	M	SP	Orifice
¼"	50.8 [2.00]	25.4 [1.00]	53 [2.09]	39.5 [1.56]	30 [1.18]	126.3 [5.0]	7 [0.28]	76.2 [3]	14.6 [0.6]	10 [0.39]	17.5 [0.69]	25.4 [1]	3.2 [0.13]
⅜"	50.8 [2.00]	25.4 [1.00]	57 [2.24]	39.5 [1.56]	30 [1.18]	130.3 [5.1]	7 [0.28]	76.2 [3]	18.7 [0.7]	10 [0.39]	17.5 [0.69]	25.4 [1]	3.2 [0.13]
½"	66.68 [2.63]	33.34 [1.31]	62 [2.44]	40 [1.57]	29 [1.14]	135.3 [5.3]	7 [0.28]	76.2 [3]	26.9 [1.1]	10 [0.39]	17.5 [0.69]	38.1 [1.5]	3.2 [0.13]

## Manufacturer's information and certificates

Logo	Description
-	<b>PMI <sup>1)</sup> test certificate (option)</b> All wetted parts

1) Positive material identification

## Certificates

- 3.1 inspection certificate per EN 10204 (option)
  - Material certificate for all wetted parts per NACE MR0103/MR0175
  - Confirmation of pressure tests per API 598 <sup>2)</sup>

2) Shell test: 15 s test duration with 1.5 times the permissible working air pressure

## Ordering information

Model / Nominal pressure / Connection type / Nominal width / Valve bore size / Diagram / Bonnet design/ Special design feature / Valve body / Sealing / Handle / Options

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