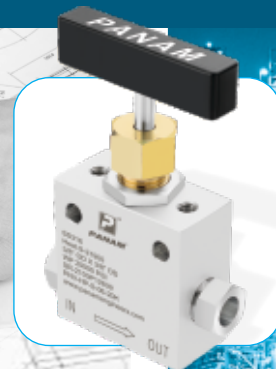




PANAM
ENGINEERING
BEYOND
LIMITS

Needle Valves (HP Series)

Maximum Working Pressure upto
20000 psi (1379 bar)



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Rev/04/2023

Introduction

PANAM[®] has emerged as renowned name in Global market for 'Instrumentation Fittings & Valves'. Since its inception in 1998 to present day, **PANAM**[®] has added new product every year and has broadened its product portfolio and its clientele base by supplying to potential customers worldwide. Key core values like Timely Delivery, Quality Consistency, Product Improvisation and after sales service has been instrumental in the phase wise evolution of company. Continuous improvement is the key to success, Customer feedback are taken with positive attitude and product are constantly groomed to a new quality and performance level to cope up with the competition. Our products are known for providing high-quality, high-reliability, low-cost options for the oil and gas industry. Over the year, the company has evolved from a product based company to a complete system solution provider. Over the coming years the entity of the company will attain state of the art operational efficiency for maintaining a competitive edge, with the advent increase in the utilization of its products in oil, gas and power sector.

PANAM[®] is having state of the art manufacturing facility span over an area of 65,000 sqft with a fleet of CNC Machines, VMC Machines, Semi-Automatic Lathe Machines, High Pressure Test Bench with SCADA control, Configuration Centre for Transmitters and dedicated R&D Team.

PANAM[®] offers a large variety of Needle Valves (HP series) from different materials like Stainless Steel, Carbon Steel, Monel 400, Hastalloy C276, Inconel 625, Inconel 825, Duplex and Superduplex as per the customer's requirements.

PANAM[®] offers Needle Valves (HP Series) with a variety of end connections including NPT Tapered, ISO (BSPT) Tapered, ISO (BSPP) Parallel, Metric Thread / **PANAM**[®] Tube Fittings and Weld Connections etc.

PANAM[®] Needle Valves (HP Series) are 100% factory tested, comply with NACE MR0175 / ISO 15156 with Heat Code Traceability. Maximum Working Pressure up to 20000 psi (1379 bar). The product meets and even exceeds the requirements of ASME and MSS series standards. All materials are supplied in compliance with ASTM Specifications and verified by NABL approved third party laboratories.

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Needle Valves (HP Series) 10,000 psi (689 bar)

PANAM® Needle valves (HP Series) are specially designed and manufactured for use in rugged, corrosive & hazardous environments up to 10,000 psi (689 bar). These valves are used in process control, instrumentation and flow control applications. **PANAM**® Needle valves (HP Series) are precision machined, designed for durability and maximum efficiency and provide high quality, low-cost alternatives used in a wide variety of fluid and gaseous control systems. Quality of Needle valves (HP Series) meets the stringent requirements of the customers.

Needle valves are manufactured from high-quality stainless steel, carbon steel, Monel, brass, Hastalloy.

Valves can be supplied to meet current revision of NACE MR0175 and NACE MR0103 (Sour Gas Service).

All Valves are 100% factory tested in accordance with MSS-SP-99.

Features

Standard body material - Stainless Steel F 316

Maximum working pressure - 10,000 psi (689 bar)

Packing material - Glass filled PTFE

Working temperature from - -54°C to 232°C (From -65°F to 450°F)

Connection sizes - 1/4", 3/8", 1/2", M20x1.5

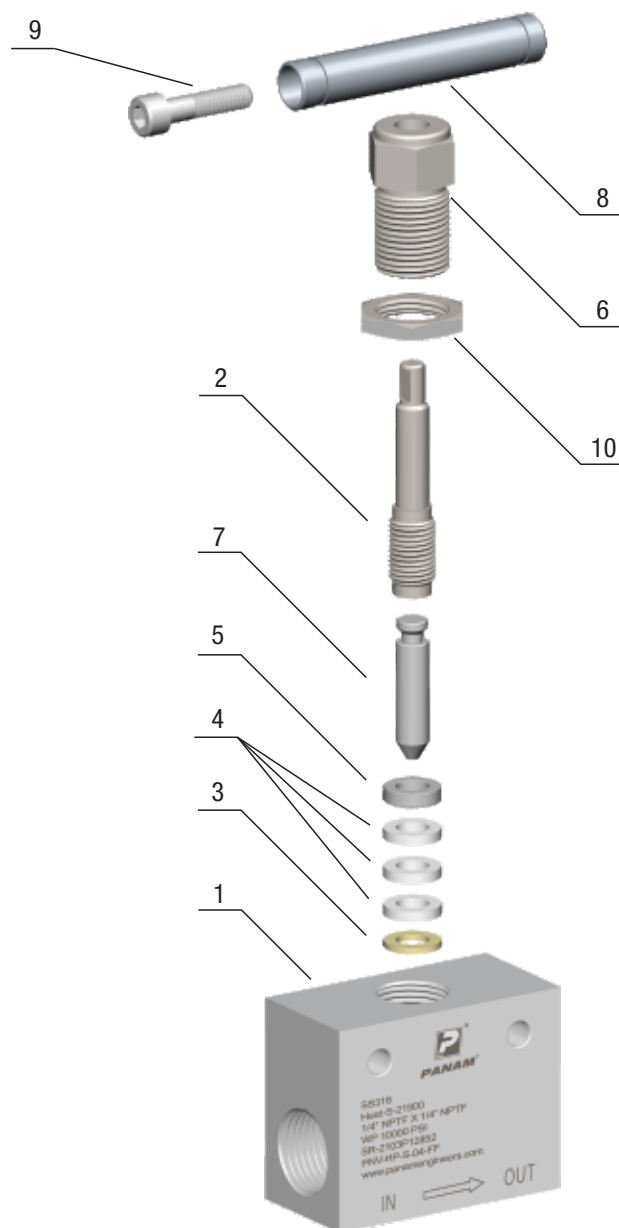
End connections - Male, Female, Male/Female thread

Types of thread - Tapered NPT, Tapered ISO (BSPT), Parallel ISO (BSPP), Metric

Benefits

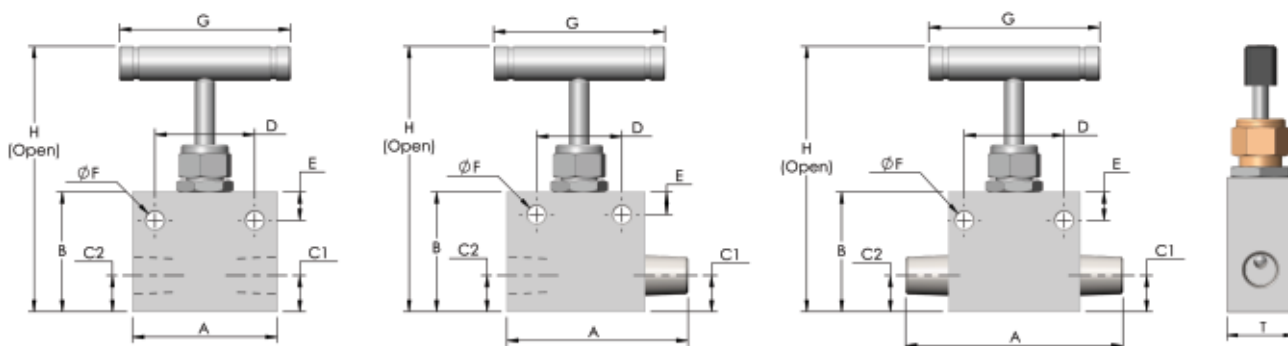
- One-piece design for better strength and safety
- Stainless steel F316 to ASTM A182 Construction - for high corrosion resistance
- Handle from SS 394
- Stem thread rolled & hard plated for additional strength & maximum service life
- Mirror finish stem, furnished to a 16RMS extends packing life and smooth stem operation
- The stem seal is located between two washers, which reduces the need for stem seal adjustments
- Non rotating Vee stem tip design which forms a bearing joint with the stem and eliminates rotation between stem & seat
- Adjustable stem seal for wide use in different processes
- Square valve body to withstand high pressure
- Dust cap prevents contamination of stem threads
- Heat code traceability

Material of Construction - Needle Valve (HP Series) 10,000 psi (689 bar)



No	Part	Qty	Material
1	Valve Body	1	A479-SS316
2	Stem	1	A479-SS316
3	Stem Packing Lower Washer	1	PEEK
4	Stem Packing	3	Glass - Filled PTFE
5	Stem Packing Upper Washer	1	A479-SS316
6	Stem Seal Retainer	1	A479-SS316
7	V - Type Non-Rotating Stem Tip	1	A564-SS174
8	Handle	1	A479-SS304
9	Locking Screw	1	A479-SS316
10	Locknut	1	A479-SS316

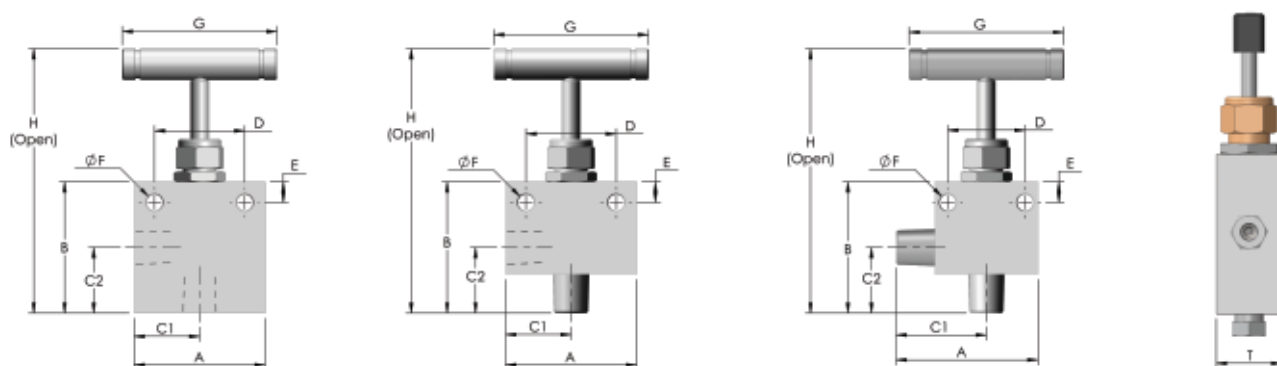
Connections and Sizes of 2-Way Straight Valves 10,000 psi (689 bar)



End Connection		Part No	Orifice	A	B	C1	C2	D	E	F	G	H	T
Type	Size		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
NPT Female/ NPT Female	1/4"	PNV-HP-S-04-FF	5.0	50.8	42.0	12.5	12.5	35.0	8.0	6.4	60.0	93.0	25.4
	3/8"	PNV-HP-S-06-FF	5.0	50.8	42.0	12.5	12.5	35.0	8.0	6.4	60.0	93.0	25.4
	1/2"	PNV-HP-S-08-FF	6.4	63.5	50.8	16.0	16.0	40.0	10.0	6.4	70.0	110.0	32.0
BSPT Female/ BSPT Female	1/4"	PNV-HP-S-04R-FF	5.0	50.8	42.0	12.5	12.5	35.0	8.0	6.4	60.0	93.0	25.4
	3/8"	PNV-HP-S-06R-FF	5.0	50.8	42.0	12.5	12.5	35.0	8.0	6.4	60.0	93.0	25.4
	1/2"	PNV-HP-S-08R-FF	6.4	63.5	50.8	16.0	16.0	40.0	10.0	6.4	70.0	110.0	32.0
BSPP Female/ BSPP Female	1/4"	PNV-HP-S-04G-FF	5.0	50.8	42.0	12.5	12.5	35.0	8.0	6.4	60.0	93.0	25.4
	3/8"	PNV-HP-S-06G-FF	5.0	50.8	42.0	12.5	12.5	35.0	8.0	6.4	60.0	93.0	25.4
	1/2"	PNV-HP-S-08G-FF	6.4	63.5	50.8	16.0	16.0	40.0	10.0	6.4	70.0	110.0	32.0
NPT Male/ NPT Female	1/4"	PNV-HP-S-04-MF	5.0	63.5	42.0	12.5	12.5	35.0	8.0	6.4	60.0	93.0	25.4
	3/8"	PNV-HP-S-06-MF	5.0	63.5	42.0	12.5	12.5	35.0	8.0	6.4	60.0	93.0	25.4
	1/2"	PNV-HP-S-08-MF	6.4	76.2	50.8	16.0	16.0	40.0	10.0	6.4	70.0	110.0	32.0
BSPT Male/ BSPT Female	1/4"	PNV-HP-S-04R-MF	5.0	63.5	42.0	12.5	12.5	35.0	8.0	6.4	60.0	93.0	25.4
	3/8"	PNV-HP-S-06R-MF	5.0	63.5	42.0	12.5	12.5	35.0	8.0	6.4	60.0	93.0	25.4
	1/2"	PNV-HP-S-08R-MF	6.4	76.2	50.8	16.0	16.0	40.0	10.0	6.4	70.0	110.0	32.0
BSPP Male/ BSPP Female	1/4"	PNV-HP-S-04G-MF	5.0	63.5	42.0	12.5	12.5	35.0	8.0	6.4	60.0	93.0	25.4
	3/8"	PNV-HP-S-06G-MF	5.0	63.5	42.0	12.5	12.5	35.0	8.0	6.4	60.0	93.0	25.4
	1/2"	PNV-HP-S-08G-MF	6.4	76.2	50.8	16.0	16.0	40.0	10.0	6.4	70.0	110.0	32.0
NPT Male/ NPT Male	1/4"	PNV-HP-S-04-MM	5.0	76.2	42.0	12.5	12.5	35.0	8.0	6.4	60.0	93.0	25.4
	3/8"	PNV-HP-S-06-MM	5.0	76.2	42.0	12.5	12.5	35.0	8.0	6.4	60.0	93.0	25.4
	1/2"	PNV-HP-S-08-MM	6.4	88.9	50.8	16.0	16.0	40.0	10.0	6.4	70.0	110.0	32.0
BSPT Male/ BSPT Male	1/4"	PNV-HP-S-04R-MM	5.0	76.2	42.0	12.5	12.5	35.0	8.0	6.4	60.0	93.0	25.4
	3/8"	PNV-HP-S-06R-MM	5.0	76.2	42.0	12.5	12.5	35.0	8.0	6.4	60.0	93.0	25.4
	1/2"	PNV-HP-S-08R-MM	6.4	88.9	50.8	16.0	16.0	40.0	10.0	6.4	70.0	110.0	32.0
BSPP Male/ BSPP Male	1/4"	PNV-HP-S-04G-MM	5.0	76.2	42.0	12.5	12.5	35.0	8.0	6.4	60.0	93.0	25.4
	3/8"	PNV-HP-S-06G-MM	5.0	76.2	42.0	12.5	12.5	35.0	8.0	6.4	60.0	93.0	25.4
	1/2"	PNV-HP-S-08G-MM	6.4	88.9	50.8	16.0	16.0	40.0	10.0	6.4	70.0	110.0	32.0

Note: Sizes are for reference only and can be changed. All sizes in mm unless specified otherwise

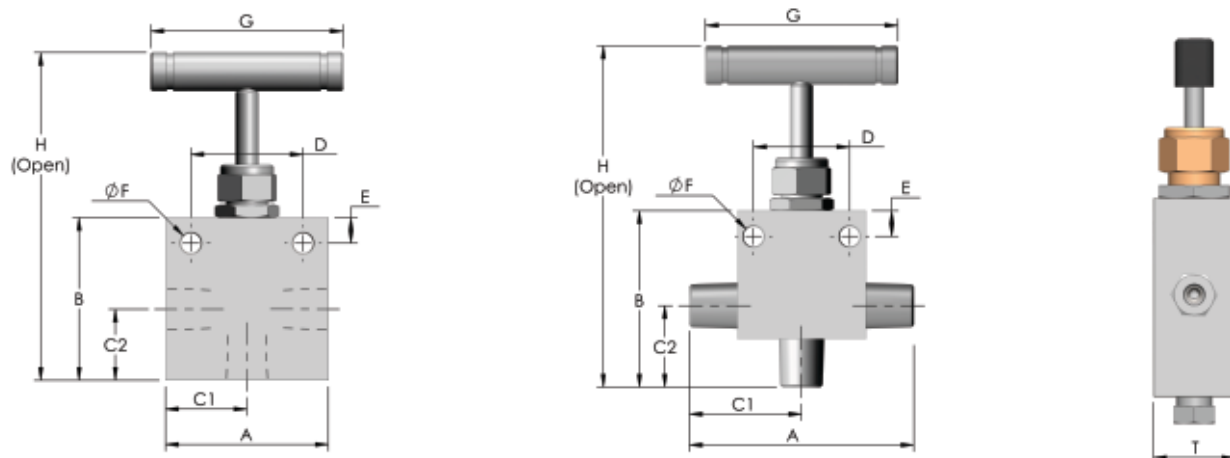
Connections and Sizes of 2-Way Angular Valves 10,000 psi (689 bar)



End Connection		Part No	Orifice	A	B	C1	C2	D	E	F	G	H	T
Type	Size		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
NPT Female/ NPT Female	1/4"	PNV-HP-S-04-FF-A	5.0	50.8	50.8	25.4	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	3/8"	PNV-HP-S-06-FF-A	5.0	50.8	50.8	25.4	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	1/2"	PNV-HP-S-08-FF-A	6.4	63.5	65.0	31.8	35.0	40.0	10.0	6.4	70.0	125.0	32.0
BSPT Female/ BSPT Female	1/4"	PNV-HP-S-04R-FF-A	5.0	50.8	50.8	25.4	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	3/8"	PNV-HP-S-06R-FF-A	5.0	50.8	50.8	25.4	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	1/2"	PNV-HP-S-08R-FF-A	6.4	63.5	65.0	31.8	16.0	40.0	10.0	6.4	70.0	125.0	32.0
BSPP Female/ BSPP Female	1/4"	PNV-HP-S-04G-FF-A	5.0	50.8	50.8	25.4	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	3/8"	PNV-HP-S-06G-FF-A	5.0	50.8	50.8	25.4	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	1/2"	PNV-HP-S-08G-FF-A	6.4	63.5	65.0	31.8	35.0	40.0	10.0	6.4	70.0	125.0	32.0
NPT Male/ NPT Female	1/4"	PNV-HP-S-04-MF-A	5.0	50.8	50.8	25.4	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	3/8"	PNV-HP-S-06-MF-A	5.0	50.8	50.8	25.4	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	1/2"	PNV-HP-S-08-MF-A	6.4	63.5	65.0	31.8	35.0	40.0	10.0	6.4	70.0	125.0	32.0
BSPT Male/ BSPT Female	1/4"	PNV-HP-S-04R-MF-A	5.0	50.8	50.8	25.4	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	3/8"	PNV-HP-S-06R-MF-A	5.0	50.8	50.8	25.4	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	1/2"	PNV-HP-S-08R-MF-A	6.4	63.5	65.0	31.8	35.0	40.0	10.0	6.4	70.0	125.0	32.0
BSPP Male/ BSPP Female	1/4"	PNV-HP-S-04G-MF-A	5.0	50.8	50.8	25.4	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	3/8"	PNV-HP-S-06G-MF-A	5.0	50.8	50.8	25.4	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	1/2"	PNV-HP-S-08G-MF-A	6.4	63.5	65.0	31.8	35.0	40.0	10.0	6.4	70.0	125.0	32.0
NPT Male/ NPT Male	1/4"	PNV-HP-S-04-MM-A	5.0	55.0	50.8	35.0	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	3/8"	PNV-HP-S-06-MM-A	5.0	55.0	50.8	35.0	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	1/2"	PNV-HP-S-08-MM-A	6.4	76.2	65.0	44.5	35.0	40.0	10.0	6.4	70.0	125.0	32.0
BSPT Male/ BSPT Male	1/4"	PNV-HP-S-04R-MM-A	5.0	55.0	50.8	35.0	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	3/8"	PNV-HP-S-06R-MM-A	5.0	55.0	50.8	35.0	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	1/2"	PNV-HP-S-08R-MM-A	6.4	76.2	65.0	44.5	35.0	40.0	10.0	6.4	70.0	125.0	32.0
BSPP Male/ BSPP Male	1/4"	PNV-HP-S-04G-MM-A	5.0	55.0	50.8	35.0	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	3/8"	PNV-HP-S-06G-MM-A	5.0	55.0	50.8	35.0	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	1/2"	PNV-HP-S-08G-MM-A	6.4	76.2	65.0	44.5	35.0	40.0	10.0	6.4	70.0	125.0	32.0

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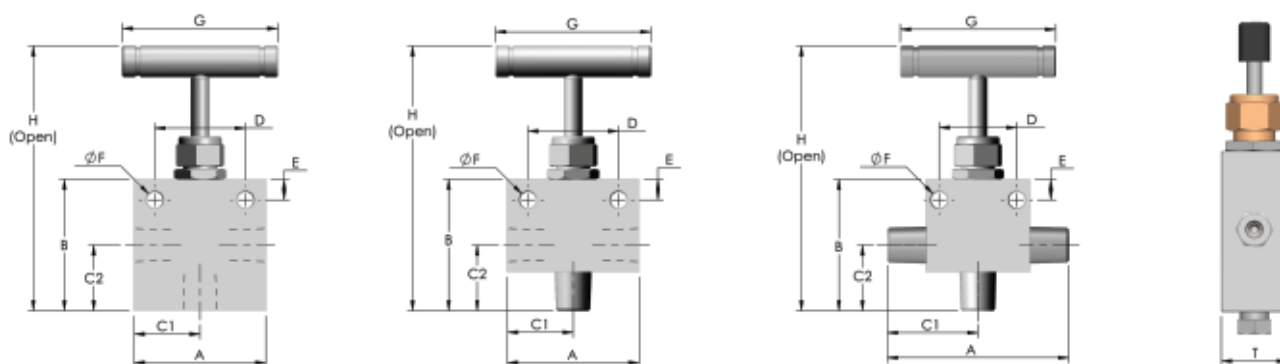
Connections and Sizes of 3-Way Straight Valves with 2 Inlets - 10,000 psi (689 bar)



End Connection		Part No	Orifice	A	B	C1	C2	D	E	F	G	H	T
Type	Size		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
NPT Female/ NPT Female	1/4"	PNV-HP-S-04-FF-M	5.0	50.8	50.8	25.4	22.2	35.0	8.0	6.4	60.0	103.0	25.4
	3/8"	PNV-HP-S-06-FF-M	5.0	50.8	50.8	25.4	22.2	35.0	8.0	6.4	60.0	103.3	25.4
	1/2"	PNV-HP-S-08-FF-M	6.4	63.5	65.0	31.8	30.0	40.0	10.0	6.4	70.0	125.0	32.0
BSPT Female/ BSPT Female	1/4"	PNV-HP-S-04R-FF-M	5.0	50.8	50.8	25.4	22.2	35.0	8.0	6.4	60.0	103.0	25.4
	3/8"	PNV-HP-S-06R-FF-M	5.0	50.8	50.8	25.4	22.2	35.0	8.0	6.4	60.0	103.3	25.4
	1/2"	PNV-HP-S-08R-FF-M	6.4	63.5	65.0	31.8	30.0	40.0	10.0	6.4	70.0	125.0	32.0
BSPP Female/ BSPP Female	1/4"	PNV-HP-S-04G-FF-M	5.0	50.8	50.8	25.4	22.2	35.0	8.0	6.4	60.0	103.0	25.4
	3/8"	PNV-HP-S-06G-FF-M	5.0	50.8	50.8	25.4	22.2	35.0	8.0	6.4	60.0	103.3	25.4
	1/2"	PNV-HP-S-08G-FF-M	6.4	63.5	65.0	31.8	30.0	40.0	10.0	6.4	70.0	125.0	32.0
NPT Male/ NPT Male	1/4"	PNV-HP-S-04-MF-M	5.0	70.0	55.0	35.0	25.4	35.0	8.0	6.4	60.0	107.0	25.4
	3/8"	PNV-HP-S-06-MF-M	5.0	70.0	55.0	35.0	25.4	35.0	8.0	6.4	60.0	107.0	25.4
	1/2"	PNV-HP-S-08-MF-M	6.4	88.9	70.0	44.5	40.0	40.0	10.0	6.4	70.0	130.0	32.0
BSPT Male/ BSPT Male	1/4"	PNV-HP-S-04R-MF-M	5.0	70.0	55.0	35.0	25.4	35.0	8.0	6.4	60.0	107.0	25.4
	3/8"	PNV-HP-S-06R-MF-M	5.0	70.0	55.0	35.0	25.4	35.0	8.0	6.4	60.0	107.0	25.4
	1/2"	PNV-HP-S-08R-MF-M	6.4	88.9	70.0	44.5	40.0	40.0	10.0	6.4	70.0	130.0	32.0
BSPP Male/ BSPP Male	1/4"	PNV-HP-S-04G-MF-M	5.0	70.0	55.0	35.0	25.4	35.0	8.0	6.4	60.0	93.0	25.4
	3/8"	PNV-HP-S-06G-MF-M	5.0	70.0	55.0	35.0	25.4	35.0	8.0	6.4	60.0	93.0	25.4
	1/2"	PNV-HP-S-08G-MF-M	6.4	88.9	70.0	44.5	40.0	40.0	10.0	6.4	70.0	110.0	32.0

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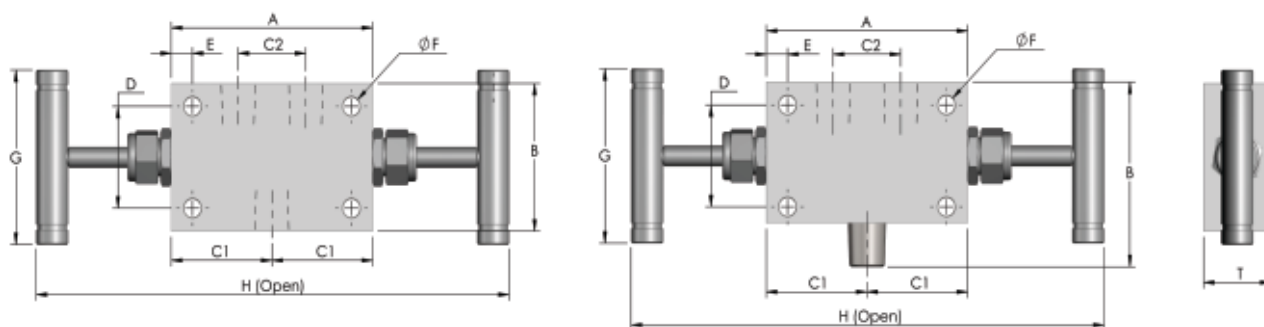
Connections and Sizes of 3-Way Straight Valves with 2 Outlets - 10,000 psi (689 bar)



End Connection		Part No	Orifice	A	B	C1	C2	D	E	F	G	H	T
Type	Size		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
NPT Female/ NPT Female	1/4"	PNV-HP-S-04-FF-D	5.0	50.8	50.8	25.4	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	3/8"	PNV-HP-S-06-FF-D	5.0	50.8	50.8	25.4	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	1/2"	PNV-HP-S-08-FF-D	6.4	63.5	65.0	31.8	35.0	40.0	10.0	6.4	70.0	125.0	32.0
BSPT Female/ BSPT Female	1/4"	PNV-HP-S-04R-FF-D	5.0	50.8	50.8	25.4	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	3/8"	PNV-HP-S-06R-FF-D	5.0	50.8	50.8	25.4	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	1/2"	PNV-HP-S-08R-FF-D	6.4	63.5	65.0	31.8	35.0	40.0	10.0	6.4	70.0	125.0	32.0
BSPP Female/ BSPP Female	1/4"	PNV-HP-S-04G-FF-D	5.0	50.8	50.8	25.4	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	3/8"	PNV-HP-S-06G-FF-D	5.0	50.8	50.8	25.4	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	1/2"	PNV-HP-S-08G-FF-D	6.4	63.5	65.0	31.8	35.0	40.0	10.0	6.4	70.0	125.0	32.0
NPT Male/ NPT Female	1/4"	PNV-HP-S-04-MF-D	5.0	50.8	50.8	25.4	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	3/8"	PNV-HP-S-06-MF-D	5.0	50.8	50.8	25.4	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	1/2"	PNV-HP-S-08-MF-D	6.4	63.5	65.0	31.8	35.0	40.0	10.0	6.4	70.0	125.0	32.0
BSPT Male/ BSPT Female	1/4"	PNV-HP-S-04R-MF-D	5.0	50.8	50.8	25.4	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	3/8"	PNV-HP-S-06R-MF-D	5.0	50.8	50.8	25.4	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	1/2"	PNV-HP-S-08R-MF-D	6.4	63.5	65.0	31.8	35.0	40.0	10.0	6.4	70.0	125.0	32.0
BSPP Male/ BSPP Female	1/4"	PNV-HP-S-04G-MF-D	5.0	50.8	50.8	25.4	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	3/8"	PNV-HP-S-06G-MF-D	5.0	50.8	50.8	25.4	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	1/2"	PNV-HP-S-08G-MF-D	6.4	63.5	65.8	31.8	35.0	40.0	10.0	6.4	70.0	125.0	32.0
NPT Male/ NPT Male	1/4"	PNV-HP-S-04-MM-D	5.0	70.0	50.8	35.0	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	3/8"	PNV-HP-S-06-MM-D	5.0	70.0	50.8	35.0	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	1/2"	PNV-HP-S-08-MM-D	6.4	76.2	65.0	44.5	35.0	40.0	10.0	6.4	70.0	125.0	32.0
BSPT Male/ BSPT Male	1/4"	PNV-HP-S-04R-MM-D	5.0	70.0	50.8	35.0	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	3/8"	PNV-HP-S-06R-MM-D	5.0	70.0	50.8	35.0	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	1/2"	PNV-HP-S-08R-MM-D	6.4	76.2	65.0	44.5	35.0	40.0	10.0	6.4	70.0	125.0	32.0
BSPP Male/ BSPP Male	1/4"	PNV-HP-S-04G-MM-D	5.0	70.0	50.8	35.0	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	3/8"	PNV-HP-S-06G-MM-D	5.0	70.0	50.8	35.0	25.4	35.0	8.0	6.4	60.0	103.0	25.4
	1/2"	PNV-HP-S-08G-MM-D	6.4	76.2	65.0	44.5	35.0	40.0	10.0	6.4	70.0	125.0	32.0

Note: Sizes are for reference only and can be changed. All sizes in mm unless specified otherwise

Connections and Sizes of 2-Way Valves with 2 Outlets - 10,000 psi (689 bar)



End Connection		Part No	Orifice	A	B	C1	C2	D	E	F	G	H	T
Type	Size		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
NPT Female/ NPT Female	1/4"	PNV-HP-S-04-FF-D2	5.0	76.0	50.8	38.0	25.4	35.0	8.0	6.4	60.0	180.0	25.4
	3/8"	PNV-HP-S-06-FF-D2	5.0	76.0	50.8	38.0	25.4	35.0	8.0	6.4	60.0	180.0	25.4
	1/2"	PNV-HP-S-08-FF-D2	6.4	101.6	63.5	50.8	40.0	40.0	10.0	6.4	70.0	220.0	32.0
BSPT Female/ BSPT Female	1/4"	PNV-HP-S-04R-FF-D2	5.0	76.0	50.8	38.0	25.4	35.0	8.0	6.4	60.0	180.0	25.4
	3/8"	PNV-HP-S-06R-FF-D2	5.0	76.0	50.8	38.0	25.4	35.0	8.0	6.4	60.0	180.0	25.4
	1/2"	PNV-HP-S-08R-FF-D2	6.4	101.0	63.5	50.8	40.0	40.0	10.0	6.4	70.0	220.0	32.0
BSPP Female/ BSPP Female	1/4"	PNV-HP-S-04G-FF-D2	5.0	76.0	50.8	38.0	25.4	35.0	8.0	6.4	60.0	180.0	25.4
	3/8"	PNV-HP-S-06G-FF-D2	5.0	76.0	50.8	38.0	25.4	35.0	8.0	6.4	60.0	180.0	25.4
	1/2"	PNV-HP-S-08G-FF-D2	6.4	101.6	63.5	50.8	40.0	40.0	10.0	6.4	70.0	220.0	32.0
NPT Male/ NPT Male	1/4"	PNV-HP-S-04-MF-D2	5.0	76.0	50.8	38.0	25.4	35.0	8.0	6.4	60.0	180.0	25.4
	3/8"	PNV-HP-S-06-MF-D2	5.0	76.0	50.8	38.0	25.4	35.0	8.0	6.4	60.0	180.0	25.4
	1/2"	PNV-HP-S-08-MF-D2	6.4	101.6	63.5	50.8	40.0	40.0	10.0	6.4	70.0	220.0	32.0
BSPT Male/ BSPT Male	1/4"	PNV-HP-S-04R-MF-D2	5.0	76.0	50.8	38.0	25.4	35.0	8.0	6.4	60.0	180.0	25.4
	3/8"	PNV-HP-S-06R-MF-D2	5.0	76.0	50.8	38.0	25.4	35.0	8.0	6.4	60.0	180.0	25.4
	1/2"	PNV-HP-S-08R-MF-D2	6.4	101.6	63.5	50.8	40.0	40.0	10.0	6.4	70.0	220.0	32.0
BSPP Male/ BSPP Male	1/4"	PNV-HP-S-04G-MF-D2	5.0	76.0	50.8	38.0	25.4	35.0	8.0	6.4	60.0	180.0	25.4
	3/8"	PNV-HP-S-06G-MF-D2	5.0	76.0	50.8	38.0	25.4	35.0	8.0	6.4	60.0	180.0	25.4
	1/2"	PNV-HP-S-08G-MF-D2	6.4	101.6	63.5	50.8	40.0	40.0	10.0	6.4	70.0	220.0	32.0

Note: Sizes are for reference only and can be changed. All sizes in mm unless specified otherwise

Needle Valves (HP Series) 20,000 psi (1379 bar)

PANAM® Needle valves (HP Series) are specially designed and manufactured for use in rugged, corrosive & hazardous environments up to 20,000 psi (1379 bar). These valves are used in process control, instrumentation and flow control applications. **PANAM**® Needle valves (HP Series) are precision machined, designed for durability and maximum efficiency and provide high quality, low-cost alternatives used in a wide variety of fluid and gaseous control systems. Quality of Needle valves (HP Series) meets the stringent requirements of the customers.

Needle valves are manufactured from high-quality stainless steel, carbon steel, Monel, brass, Hastalloy.

Valves can be supplied to meet current revision of NACE MR0175 and NACE MR0103 (Sour Gas Service).

All Valves are 100% factory tested in accordance with MSS-SP-99.

Features

Standard body material - Stainless Steel F 316

Maximum working pressure - 20,000 psi (1379 bar)

Packing material - Glass filled PTFE

Working temperature from - -54°C to 232°C (From -65°F to 450°F)

Connection sizes - 1/4", 3/8" (From 6mm to 20mm)

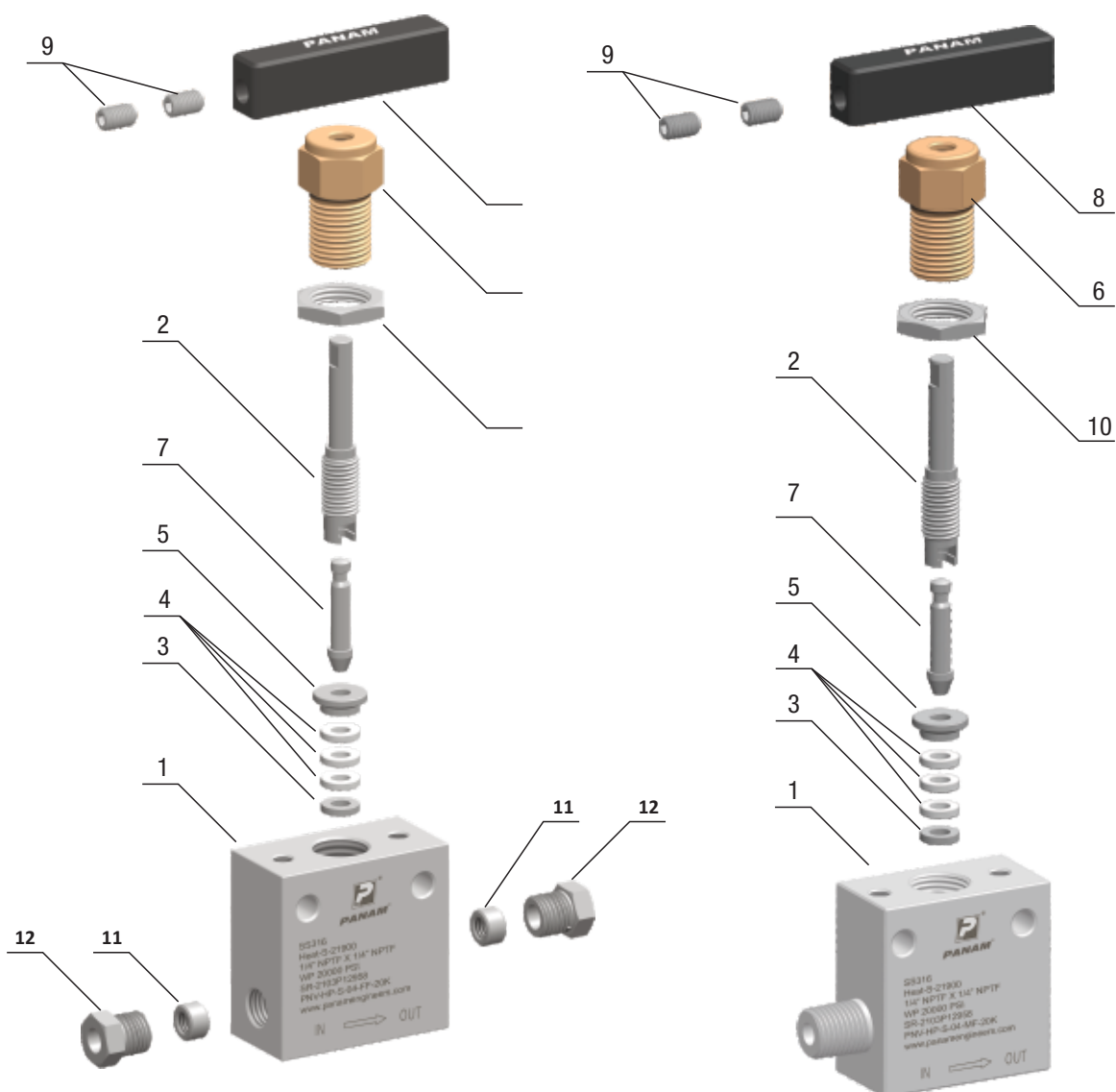
End connections - Female, Male/Female Thread

Types of thread - Tapered NPT, Tapered ISO (BSPT), Parallel ISO (BSPP), Metric

Benefits

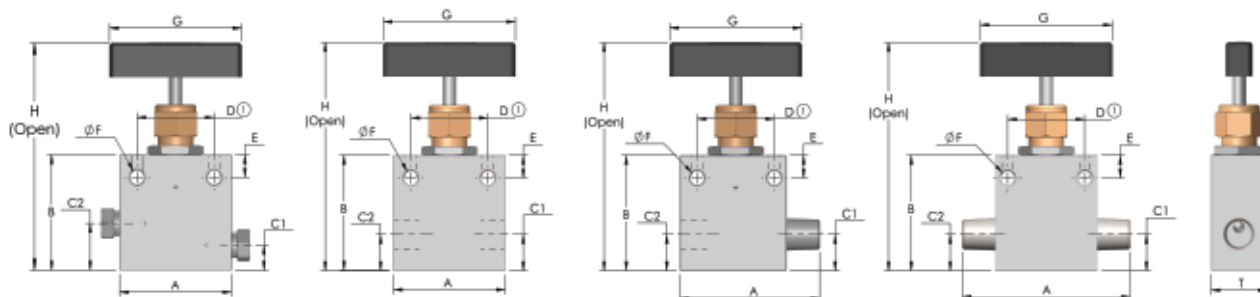
- One-piece design for better strength and safety
- Stainless steel F316 to ASTM A182 Construction - for high corrosion resistance
- Handle from SS 394
- Stem thread rolled & hard plated for additional strength & maximum service life
- Mirror finish stem, furnished to a 16RMS extends packing life and smooth stem operation
- The stem seal is located between two washers, which reduces the need for stem seal adjustments
- Non rotating Vee stem tip design which forms a bearing joint with the stem and eliminates rotation between stem & seat
- Adjustable stem seal for wide use in different processes
- Square valve body to withstand high pressure
- Dust cap prevents contamination of stem threads
- Heat code traceability

Material of Construction - Needle Valve (HP Series) 20,000 psi (1379 bar)



No	Part	Qty	Material
1	Valve Body	1	A182-F316
2	Stem	1	A479-SS316
3	Stem Packing Lower Washer	1	A479-SS316
4	Stem Packing	3	Glass Filled - PTFE
5	Stem Packing Upper Washer	1	A479-SS316
6	Stem Seal Retainer	1	Nickel-Aluminium Bonze
7	V-Type Non-Rotating Stem Tip	1	A564-SS174
8	Handle	1	A479-SS304
9	Locking Screw	2	A479-SS316
10	Locknut	1	A479-SS316
11	Locking Screw	2	A479-SS316
12	Male Bushing	2	A479-SS316

Connections and Sizes of 2-Way Straight Valves - 20,000 psi (1379 bar)

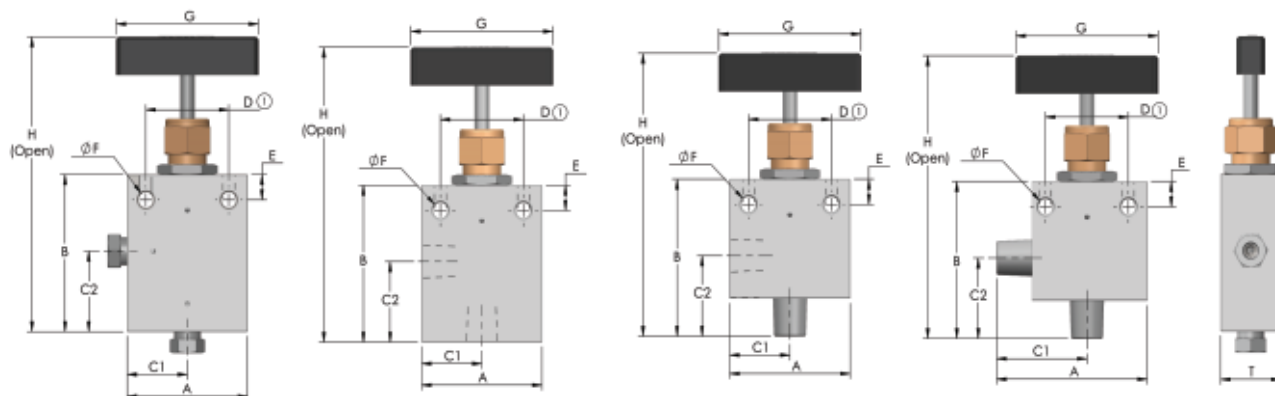


① Panel mounting is carried out with M6 x 1 bolts. Panel hole diameter - 25.4 mm (1").

End Connection		Part No	Orifice	A	B	C1	C2	D	E	F	G	H	T
Type	Size		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
NPT Female/ NPT Female	1/4"	PNV-HP-S-04-FF-20K	5.0	50.8	50.8	16.0	16.0	35.0	10.0	6.4	60.0	107.0	25.4
	3/8"	PNV-HP-S-06-FF-20K	5.0	50.8	50.8	16.0	16.0	35.0	10.0	6.4	60.0	107.0	25.4
	1/2"	PNV-HP-S-08-FF-20K	6.4	70.0	53.0	17.5	17.0	40.0	10.0	6.4	80.0	119.0	35.0
BSPT Female/ BSPT Female	1/4"	PNV-HP-S-04R-FF-20K	5.0	50.8	50.8	16.0	16.0	35.0	10.0	6.4	60.0	107.0	25.4
	3/8"	PNV-HP-S-06R-FF-20K	5.0	50.8	50.8	16.0	16.0	35.0	10.0	6.4	60.0	107.0	25.4
	1/2"	PNV-HP-S-08R-FF-20K	6.4	70.0	53.0	17.5	17.5	40.0	10.0	6.4	80.0	119.0	35.0
BSPP Female/ BSPP Female	1/4"	PNV-HP-S-04G-FF-20K	5.0	50.8	50.8	16.0	16.0	35.0	10.0	6.4	60.0	107.0	25.4
	3/8"	PNV-HP-S-06G-FF-20K	5.0	50.8	50.8	16.0	16.0	35.0	10.0	6.4	60.0	107.0	25.4
	1/2"	PNV-HP-S-08G-FF-20K	6.4	70.0	53.0	17.5	17.5	40.0	10.0	6.4	80.0	119.0	35.0
NPT Male/ NPT Female	1/4"	PNV-HP-S-04-FF-20K	5.0	63.5	50.8	16.0	16.0	35.0	10.0	6.4	60.0	107.0	25.4
	3/8"	PNV-HP-S-06-FF-20K	5.0	63.5	50.8	16.0	16.0	35.0	10.0	6.4	60.0	107.0	25.4
	1/2"	PNV-HP-S-08-FF-20K	6.4	80.0	53.0	17.5	17.5	40.0	10.0	6.4	80.0	119.0	35.0
BSPT Male/ BSPT Female	1/4"	PNV-HP-S-04R-MF-20K	5.0	63.5	50.8	16.0	16.0	35.0	10.0	6.4	60.0	107.0	25.4
	3/8"	PNV-HP-S-06R-MF-20K	5.0	63.5	50.8	16.0	16.0	35.0	10.0	6.4	60.0	107.0	25.4
	1/2"	PNV-HP-S-08R-MF-20K	6.4	80.0	53.0	17.5	17.5	40.0	10.0	6.4	80.0	119.0	35.0
BSPP Male/ BSPP Female	1/4"	PNV-HP-S-04G-MF-20K	5.0	63.5	50.8	16.0	16.0	35.0	10.0	6.4	60.0	107.0	25.4
	3/8"	PNV-HP-S-06G-MF-20K	5.0	63.5	50.8	16.0	16.0	35.0	10.0	6.4	60.0	107.0	25.4
	1/2"	PNV-HP-S-08G-MF-20K	6.4	80.0	53.0	17.5	17.5	40.0	10.0	6.4	80.0	119.0	35.0
NPT Male/ NPT Male	1/4"	PNV-HP-S-04-MM-20K	5.0	76.2	50.8	16.0	16.0	35.0	10.0	6.4	60.0	107.0	25.4
	3/8"	PNV-HP-S-06-MM-20K	5.0	76.2	50.8	16.0	16.0	35.0	10.0	6.4	60.0	107.0	25.4
	1/2"	PNV-HP-S-08-MM-20K	6.4	90.0	53.0	17.5	17.5	40.0	10.0	6.4	80.0	119.0	35.0
BSPT Male/ BSPT Male	1/4"	PNV-HP-S-04R-MM-20K	5.0	76.2	50.8	16.0	16.0	35.0	10.0	6.4	60.0	107.0	25.4
	3/8"	PNV-HP-S-06R-MM-20K	5.0	76.2	50.8	16.0	16.0	35.0	10.0	6.4	60.0	107.0	25.4
	1/2"	PNV-HP-S-08R-MM-20K	6.4	90.0	53.0	17.5	17.5	40.0	10.0	6.4	80.0	119.0	35.0
BSPP Male/ BSPP Male	1/4"	PNV-HP-S-04G-MM-20K	5.0	76.2	50.8	16.0	16.0	35.0	10.0	6.4	60.0	107.0	25.4
	3/8"	PNV-HP-S-06G-MM-20K	5.0	76.2	50.8	16.0	16.0	35.0	10.0	6.4	60.0	107.0	25.4
	1/2"	PNV-HP-S-08G-MM-20K	6.4	90.0	53.0	17.5	17.5	40.0	10.0	6.4	80.0	119.0	35.0
Metric	M20x1.5	PNV-HP-S-M20-FF-20K	6.4	90.0	53.0	17.5	17.5	40.0	10.0	6.4	80.0	119.0	35.0
	M20x1.5	PNV-HP-S-M20-FF-20K	6.4	90.0	53.0	17.5	17.5	40.0	10.0	6.4	80.0	119.0	35.0
	M20x1.5	PNV-HP-S-M20-FF-20K	6.4	90.0	53.0	17.5	17.5	40.0	10.0	6.4	80.0	119.0	35.0
PANAM® HP Fittings	1/4"	PNV-HP-S-04-OD-20K	2.8	50.8	50.8	11.0	20.6	35.0	10.0	6.4	60.0	107.0	25.4
	3/8"	PNV-HP-S-06-OD-20K	5.0	50.8	50.8	11.0	20.6	35.0	10.0	6.4	60.0	107.0	25.4
	9/16"	PNV-HP-S-09-OD-20K	6.4	63.5	57.0	13.0	25.0	40.0	10.0	6.4	80.0	123.0	32.0
	3/4"	PNV-HP-S-12-OD-20K	11.2	76.2	95.0	19.1	38.1	45.0	10.0	11.2	120.0	195.0	35.0
	1"	PNV-HP-S-16-OD-20K	14.2	105.0	121.0	25.0	49.0	63.5	12.0	14.2	150.0	225.0	45.0

Note: Sizes are for reference only and can be changed. All sizes in mm unless specified otherwise

Connections and Sizes of 2-Way Angular Valves - 20,000 psi (1379 bar)

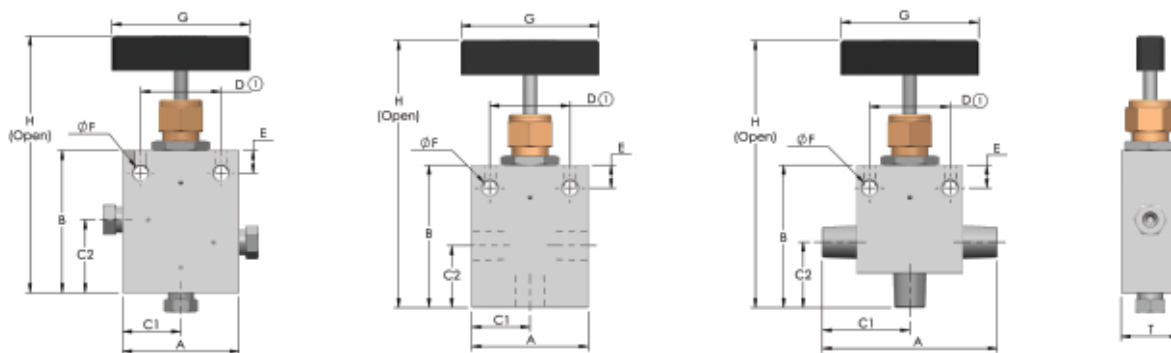


① Panel mounting is carried out with M6 x 1 bolts. Panel hole diameter - 25.4 mm (1").

End Connection		Part No	Orifice	A	B	C1	C2	D	E	F	G	H	T
Type	Size		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
NPT Female/ NPT Female	1/4"	PNV-HP-S-04-FF-A-20K	5.0	50.8	62.0	25.4	31.8	35.0	10.0	6.4	60.0	117.0	25.4
	3/8"	PNV-HP-S-06-FF-A-20K	5.0	50.8	62.0	25.4	31.8	35.0	10.0	6.4	60.0	117.0	25.4
	1/2"	PNV-HP-S-08-FF-A-20K	6.4	63.5	63.5	31.8	31.8	40.0	10.0	6.4	80.0	130.0	35.0
BSPT Female/ BSPT Female	1/4"	PNV-HP-S-04R-FF-A-20K	5.0	50.8	62.0	25.4	31.8	35.0	10.0	6.4	60.0	117.0	25.4
	3/8"	PNV-HP-S-06R-FF-A-20K	5.0	50.8	62.0	25.4	31.8	35.0	10.0	6.4	60.0	117.0	25.4
	1/2"	PNV-HP-S-08R-FF-A-20K	6.4	63.5	63.5	31.8	31.8	40.0	10.0	6.4	80.0	130.0	35.0
BSPP Female/ BSPP Female	1/4"	PNV-HP-S-04G-FF-A-20K	5.0	50.8	62.0	25.4	31.8	35.0	10.0	6.4	60.0	117.0	25.4
	3/8"	PNV-HP-S-06G-FF-A-20K	5.0	50.8	62.0	25.4	31.8	35.0	10.0	6.4	60.0	117.0	25.4
	1/2"	PNV-HP-S-08G-FF-A-20K	6.4	63.5	63.5	31.8	31.8	40.0	10.0	6.4	80.0	130.0	35.0
NPT Male/ NPT Female	1/4"	PNV-HP-S-04-MF-A-20K	5.0	50.8	62.0	25.4	31.8	35.0	10.0	6.4	60.0	117.0	25.4
	3/8"	PNV-HP-S-06-MF-A-20K	5.0	50.8	62.0	25.4	31.8	35.0	10.0	6.4	60.0	117.0	25.4
	1/2"	PNV-HP-S-08-MF-A-20K	6.4	63.5	68.0	31.8	36.0	40.0	10.0	6.4	80.0	134.0	35.0
BSPT Male/ BSPT Female	1/4"	PNV-HP-S-04R-MF-A-20K	5.0	50.8	62.0	25.4	31.8	35.0	10.0	6.4	60.0	117.0	25.4
	3/8"	PNV-HP-S-06R-MF-A-20K	5.0	50.8	62.0	25.4	31.8	35.0	10.0	6.4	60.0	117.0	25.4
	1/2"	PNV-HP-S-08R-MF-A-20K	6.4	63.5	68.0	31.8	36.0	40.0	10.0	6.4	80.0	134.0	35.0
BSPP Male/ BSPP Female	1/4"	PNV-HP-S-04G-MF-A-20K	5.0	50.8	62.0	25.4	31.8	35.0	10.0	6.4	60.0	117.0	25.4
	3/8"	PNV-HP-S-06G-MF-A-20K	5.0	50.8	62.0	25.4	31.8	35.0	10.0	6.4	60.0	117.0	25.4
	1/2"	PNV-HP-S-08G-MF-A-20K	6.4	63.5	68.0	31.8	36.0	40.0	10.0	6.4	80.0	134.0	35.0
NPT Male/ NPT Male	1/4"	PNV-HP-S-04-MM-A-20K	5.0	63.5	62.0	31.8	25.4	35.0	10.0	6.4	60.0	117.0	25.4
	3/8"	PNV-HP-S-06-MM-A-20K	5.0	63.5	62.0	31.8	25.4	35.0	10.0	6.4	60.0	117.0	25.4
	1/2"	PNV-HP-S-08-MM-A-20K	6.4	76.8	68.0	45.0	36.0	40.0	10.0	6.4	80.0	134.0	35.0
BSPT Male/ BSPT Male	1/4"	PNV-HP-S-04R-MM-A-20K	5.0	63.5	62.0	31.8	25.4	35.0	10.0	6.4	60.0	117.0	25.4
	3/8"	PNV-HP-S-06R-MM-A-20K	5.0	63.5	62.0	31.8	25.4	35.0	10.0	6.4	60.0	117.0	25.4
	1/2"	PNV-HP-S-08R-MM-A-20K	6.4	76.8	68.0	45.0	36.0	40.0	10.0	6.4	80.0	134.0	35.0
BSPP Male/ BSPP Male	1/4"	PNV-HP-S-04G-MM-A-20K	5.0	63.5	62.0	31.8	25.4	35.0	10.0	6.4	60.0	117.0	25.4
	3/8"	PNV-HP-S-06G-MM-A-20K	5.0	63.5	62.0	31.8	25.4	35.0	10.0	6.4	60.0	117.0	25.4
	1/2"	PNV-HP-S-08G-MM-A-20K	6.4	76.8	68.0	45.0	36.0	40.0	10.0	6.4	80.0	134.0	35.0
Metric	M20x1.5	PNV-HP-S-M20-FF-A-20K	6.4	76.8	68.0	45.0	36.0	40.0	10.0	6.4	80.0	119.0	35.0
	M20x1.5	PNV-HP-S-M20-FF-A-20K	6.4	76.8	68.0	45.0	36.0	40.0	10.0	6.4	80.0	119.0	35.0
	M20x1.5	PNV-HP-S-M20-FF-A-20K	6.4	76.8	68.0	45.0	36.0	40.0	10.0	6.4	80.0	119.0	35.0
PANAM® HP Fittings	1/4"	PNV-HP-S-04-OD-20K	2.8	50.8	62.0	25.4	31.8	35.0	10.0	6.4	60.0	117.0	25.4
	3/8"	PNV-HP-S-06-OD-20K	5.0	50.8	62.0	25.4	31.8	35.0	10.0	6.4	60.0	117.0	25.4
	9/16"	PNV-HP-S-09-OD-20K	6.4	63.5	65.0	31.8	31.8	40.0	10.0	6.4	80.0	131.0	32.0
	3/4"	PNV-HP-S-12-OD-20K	11.2	76.2	114.0	38.1	57.0	45.0	10.0	11.2	120.0	215.0	35.0
	1"	PNV-HP-S-16-OD-20K	14.2	105.0	140.0	52.3	68.3	63.5	12.0	14.2	150.0	245.0	45.0

Note: Sizes are for reference only and can be changed. All sizes in mm unless specified otherwise

Connections and Sizes of 3-Way Valves with 2 Inlets - 20,000 psi (1379 bar)

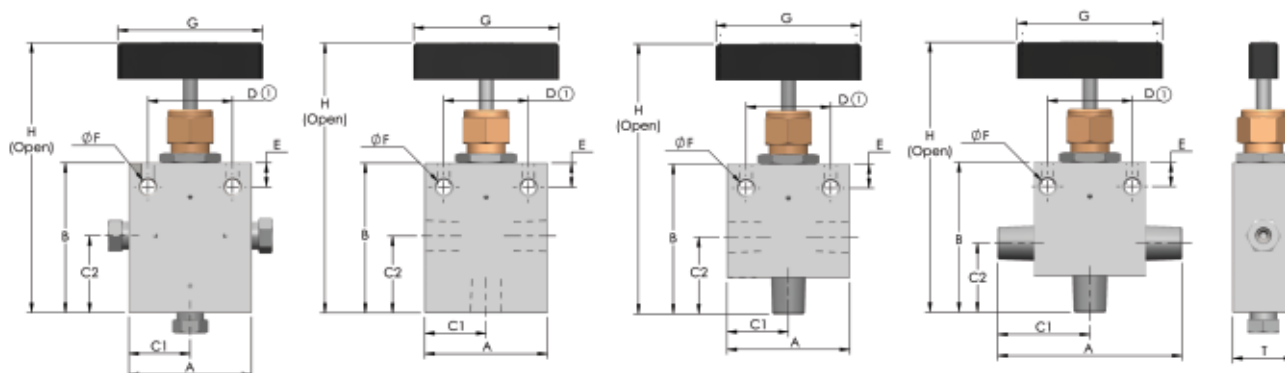


① Panel mounting is carried out with M6 x 1 bolts. Panel hole diameter - 25.4 mm (1").

End Connection		Part No	Orifice	A	B	C1	C2	D	E	F	G	H	T
Type	Size		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
NPT Female/ NPT Female	1/4"	PNV-HP-S-04-FF-M-20K	5.0	50.8	62.0	25.4	27.0	35.0	10.0	6.4	60.0	117.0	25.4
	3/8"	PNV-HP-S-06-FF-M-20K	5.0	50.8	62.0	25.4	27.0	35.0	10.0	6.4	60.0	117.0	25.4
	1/2"	PNV-HP-S-08-FF-M-20K	6.4	63.5	70.0	31.0	31.8	40.0	10.0	6.4	80.0	136.0	35.0
BSPT Female/ BSPT Female	1/4"	PNV-HP-S-04R-FF-M-20K	5.0	50.8	62.0	25.4	27.0	35.0	10.0	6.4	60.0	117.0	25.4
	3/8"	PNV-HP-S-06R-FF-M-20K	5.0	50.8	62.0	25.4	27.0	35.0	10.0	6.4	60.0	117.0	25.4
	1/2"	PNV-HP-S-08R-FF-M-20K	6.4	63.5	70.0	31.0	31.8	40.0	10.0	6.4	80.0	136.0	35.0
BSPP Female/ BSPP Female	1/4"	PNV-HP-S-04G-FF-M-20K	5.0	50.8	62.0	25.4	27.0	35.0	10.0	6.4	60.0	117.0	25.4
	3/8"	PNV-HP-S-06G-FF-M-20K	5.0	50.8	62.0	25.4	27.0	35.0	10.0	6.4	60.0	117.0	25.4
	1/2"	PNV-HP-S-08G-FF-M-20K	6.4	63.5	70.0	31.8	31.8	40.0	10.0	6.4	80.0	136.0	35.0
NPT Male/ NPT Male	1/4"	PNV-HP-S-04-MM-M20K	5.0	76.2	62.0	38.1	28.5	35.0	10.0	6.4	60.0	117.0	25.4
	3/8"	PNV-HP-S-06-MM-M20K	5.0	76.2	62.0	38.1	28.5	35.0	10.0	6.4	60.0	117.0	25.4
	1/2"	PNV-HP-S-08-MM-M20K	6.4	90.0	68.0	45.0	31.8	40.0	10.0	6.4	80.0	134.0	35.0
BSPT Male/ BSPT Male	1/4"	PNV-HP-S-04R-MM-M-20K	5.0	76.2	62.0	38.1	28.5	35.0	10.0	6.4	60.0	117.0	25.4
	3/8"	PNV-HP-S-06R-MM-M-20K	5.0	76.2	62.0	38.1	28.5	35.0	10.0	6.4	60.0	117.0	25.4
	1/2"	PNV-HP-S-08R-MM-M-20K	6.4	90.0	68.0	45.0	31.8	40.0	10.0	6.4	80.0	134.0	35.0
BSPP Male/ BSPP Male	1/4"	PNV-HP-S-04G-MM-M-20K	5.0	76.2	62.0	38.1	28.5	35.0	10.0	6.4	60.0	117.0	25.4
	3/8"	PNV-HP-S-06G-MM-M-20K	5.0	76.2	62.0	38.1	28.5	35.0	10.0	6.4	60.0	117.0	25.4
	1/2"	PNV-HP-S-08G-MM-M-20K	6.4	90.0	68.0	45.0	31.8	40.0	10.0	6.4	80.0	134.0	35.0
Metric	1/4"	PNV-HP-S-M20-FF-M-20K	6.4	90.0	68.0	45.0	31.8	40.0	10.0	6.4	80.0	134.0	35.0
	3/8"	PNV-HP-S-M20-FF-M-20K	6.4	90.0	68.0	45.0	31.8	40.0	10.0	6.4	80.0	134.0	35.0
	1/2"	PNV-HP-S-M20-FF-M-20K	6.4	90.0	68.0	45.0	31.8	40.0	10.0	6.4	80.0	134.0	35.0
PANAM® HP Fittings	1/4"	PNV-HP-S-04-OD-M20K	2.8	50.8	62.0	25.4	31.8	35.0	10.0	6.4	60.0	117.0	25.4
	3/8"	PNV-HP-S-04-OD-M20K	5.0	50.8	62.0	25.4	31.8	35.0	10.0	6.4	60.0	117.0	25.4
	9/16"	PNV-HP-S-04-OD-M20K	6.5	63.5	75.0	31.8	43.0	40.0	10.0	6.4	80.0	141.0	32.0
	3/4"	PNV-HP-S-04-OD-M20K	11.2	76.2	119.0	38.1	57.0	45.0	10.0	11.2	120.0	220.0	35.0
	1"	PNV-HP-S-04-OD-M20K	14.2	150.0	145.0	52.5	68.3	63.5	12.0	14.2	150.0	250.0	45.0

Note: Sizes are for reference only and can be changed. All sizes in mm unless specified otherwise

Connections and Sizes of 3-Way Valves with 2 Outlets - 20,000 psi (1379 bar)

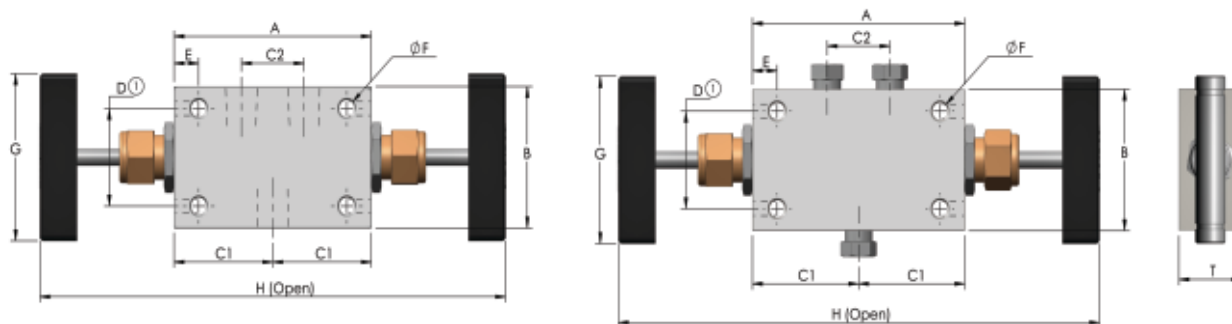


① Panel mounting is carried out with M6 x 1 bolts. Panel hole diameter - 25.4 mm (1").

End Connection		Part No	Orifice	A	B	C1	C2	D	E	F	G	H	T
Type	Size		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
NPT Female/ NPT Female	1/4"	PNV-HP-S-04-FF-D-20K	5.0	50.8	62.0	25.4	31.8	35.0	10.0	6.4	60.0	117.0	25.4
	3/8"	PNV-HP-S-06-FF-D-20K	5.0	50.8	62.0	25.4	31.8	35.0	10.0	6.4	60.0	117.0	25.4
	1/2"	PNV-HP-S-08-FF-D-20K	6.4	70.0	63.5	31.8	31.8	40.0	10.0	6.4	80.0	130.0	35.0
BSPT Female/ BSPT Female	1/4"	PNV-HP-S-04R-FF-D-20K	5.0	50.8	62.0	25.4	31.8	35.0	10.0	6.4	60.0	117.0	25.4
	3/8"	PNV-HP-S-06R-FF-D-20K	5.0	50.8	62.0	25.4	31.8	35.0	10.0	6.4	60.0	117.0	25.4
	1/2"	PNV-HP-S-08R-FF-D-20K	6.4	70.0	63.5	31.8	31.8	40.0	10.0	6.4	80.0	130.0	35.0
BSPP Female/ BSPP Female	1/4"	PNV-HP-S-04G-FF-D-20K	5.0	50.8	62.0	25.4	31.8	35.0	10.0	6.4	60.0	117.0	25.4
	3/8"	PNV-HP-S-06G-FF-D-20K	5.0	50.8	62.0	25.4	31.8	35.0	10.0	6.4	60.0	117.0	25.4
	1/2"	PNV-HP-S-08G-FF-D-20K	6.4	70.0	63.5	31.8	31.8	40.0	10.0	6.4	80.0	130.0	35.0
NPT Male/ NPT Female	1/4"	PNV-HP-S-04-MF-D-20K	5.0	63.5	62.0	25.4	31.8	35.0	10.0	6.4	60.0	117.0	25.4
	3/8"	PNV-HP-S-06-MF-D-20K	5.0	63.5	62.0	25.4	31.8	35.0	10.0	6.4	60.0	117.0	25.4
	1/2"	PNV-HP-S-08-MF-D-20K	6.4	80.0	68.0	31.8	36.0	40.0	10.0	6.4	80.0	134.0	35.0
BSPT Male/ BSPT Female	1/4"	PNV-HP-S-04R-MF-D-20K	5.0	63.5	62.0	25.4	31.8	35.0	10.0	6.4	60.0	117.0	25.4
	3/8"	PNV-HP-S-06R-MF-D-20K	5.0	63.5	62.0	25.4	31.8	35.0	10.0	6.4	60.0	117.0	25.4
	1/2"	PNV-HP-S-08R-MF-D-20K	6.4	80.0	68.0	31.8	36.0	40.0	10.0	6.4	80.0	134.0	35.0
BSPP Male/ BSPP Female	1/4"	PNV-HP-S-04G-MF-D-20K	5.0	63.5	62.0	25.4	31.8	35.0	10.0	6.4	60.0	117.0	25.4
	3/8"	PNV-HP-S-06G-MF-D-20K	5.0	63.5	62.0	25.4	31.8	35.0	10.0	6.4	60.0	117.0	25.4
	1/2"	PNV-HP-S-08G-MF-D-20K	6.4	80.0	68.0	31.8	36.0	40.0	10.0	6.4	80.0	134.0	35.0
NPT Male/ NPT Male	1/4"	PNV-HP-S-04-MM-D-20K	5.0	76.2	62.0	31.8	25.4	35.0	10.0	6.4	60.0	117.0	25.4
	3/8"	PNV-HP-S-06-MM-D-20K	5.0	76.2	62.0	31.8	25.4	35.0	10.0	6.4	60.0	117.0	25.4
	1/2"	PNV-HP-S-08-MM-D-20K	6.4	90.0	68.0	45.0	36.0	40.0	10.0	6.4	80.0	134.0	35.0
BSPT Male/ BSPT Male	1/4"	PNV-HP-S-04R-MM-D-20K	5.0	76.2	62.0	31.8	25.4	35.0	10.0	6.4	60.0	117.0	25.4
	3/8"	PNV-HP-S-06R-MM-D-20K	5.0	76.2	62.0	31.8	25.4	35.0	10.0	6.4	60.0	117.0	25.4
	1/2"	PNV-HP-S-08R-MM-D-20K	6.4	90.0	68.0	45.0	36.0	40.0	10.0	6.4	80.0	134.0	35.0
BSPP Male/ BSPP Male	1/4"	PNV-HP-S-04G-MM-D-20K	5.0	76.2	62.0	31.8	25.4	35.0	10.0	6.4	60.0	117.0	25.4
	3/8"	PNV-HP-S-06G-MM-D-20K	5.0	76.2	62.0	31.8	25.4	35.0	10.0	6.4	60.0	117.0	25.4
	1/2"	PNV-HP-S-08G-MM-D-20K	6.4	90.0	68.0	45.0	36.0	40.0	10.0	6.4	80.0	134.0	35.0
Metric	M20x1.5	PNV-HP-S-M20-FF-D-20K	6.4	90.0	68.0	45.0	36.0	40.0	10.0	6.4	80.0	134.0	35.0
	M20x1.5	PNV-HP-S-M20-FF-D-20K	6.4	90.0	68.0	45.0	36.0	40.0	10.0	6.4	80.0	134.0	35.0
	M20x1.5	PNV-HP-S-M20-FF-D-20K	6.4	90.0	68.0	45.0	36.0	40.0	10.0	6.4	80.0	134.0	35.0
PANAM® HP Fittings	1/4"	PNV-HP-S-04-OD-D-20K	2.8	50.8	62.0	25.4	31.8	35.0	10.0	6.4	60.0	117.0	25.4
	3/8"	PNV-HP-S-06-OD-D-20K	5.0	50.8	62.0	25.4	31.8	35.0	10.0	6.4	60.0	117.0	25.4
	9/16"	PNV-HP-S-09-OD-D-20K	6.5	63.5	65.0	31.8	31.8	40.0	10.0	6.4	80.0	131.0	32.0
	3/4"	PNV-HP-S-12-OD-D-20K	11.2	76.2	114.0	38.1	57.0	45.0	10.0	11.2	120.0	115.0	35.0
	1"	PNV-HP-S-16-OD-D-20K	14.2	105.0	140.0	52.3	68.3	63.5	12.0	14.2	150.0	145.0	5.0

Note: Sizes are for reference only and can be changed. All sizes in mm unless specified otherwise

Connections and Sizes of 3-Way Valves with 2 Outlets - 20,000 psi (1379 bar)



① Panel mounting is carried out with M6 x 1 bolts. Panel hole diameter - 25.4 mm (1").

End Connection		Part No	Orifice	A	B	C1	C2	D	E	F	G	H	T
Type	Size		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
NPT Female/ NPT Female	1/4"	PNV-HP-S-04-FF-D2-20K	5.0	80.0	50.8	40.0	25.4	35.0	10.0	6.4	60.0	190.0	25.4
	3/8"	PNV-HP-S-06-FF-D2-20K	5.0	80.0	50.8	40.0	25.4	35.0	10.0	6.4	60.0	190.0	25.4
	1/2"	PNV-HP-S-08-FF-D2-20K	6.4	101.6	63.5	50.8	40.0	40.0	10.0	6.4	80.0	235.0	35.0
BSPT Female/ BSPT Female	1/4"	PNV-HP-S-04R-FF-D2-20K	5.0	80.0	50.8	40.0	25.4	35.0	10.0	6.4	60.0	190.0	25.4
	3/8"	PNV-HP-S-06R-FF-D2-20K	5.0	80.0	50.8	40.0	25.4	35.0	10.0	6.4	60.0	190.0	25.4
	1/2"	PNV-HP-S-08R-FF-D2-20K	6.4	101.6	63.5	50.8	40.0	40.0	10.0	6.4	80.0	235.0	35.0
BSPP Female/ BSPP Female	1/4"	PNV-HP-S-04G-FF-D2-20K	5.0	80.0	50.8	40.0	25.4	35.0	10.0	6.4	60.0	190.0	25.4
	3/8"	PNV-HP-S-06G-FF-D2-20K	5.0	80.0	50.8	40.0	25.4	35.0	10.0	6.4	60.0	190.0	25.4
	1/2"	PNV-HP-S-08G-FF-D2-20K	6.4	101.6	63.5	50.8	40.0	40.0	10.0	6.4	80.0	235.0	35.0
NPT Male/ NPT Female	1/4"	PNV-HP-S-04-MF-D2-20K	5.0	80.0	63.5	40.0	25.4	35.0	10.0	6.4	60.0	190.0	25.4
	3/8"	PNV-HP-S-06-MF-D2-20K	5.0	80.0	63.5	40.0	25.4	35.0	10.0	6.4	60.0	190.0	25.4
	1/2"	PNV-HP-S-08-MF-D2-20K	6.4	101.6	50.0	50.8	40.0	40.0	10.0	6.4	80.0	235.0	35.0
BSPT Male/ BSPT Female	1/4"	PNV-HP-S-04R-MF-D2-20K	5.0	80.0	63.5	40.0	25.4	35.0	10.0	6.4	60.0	190.0	25.4
	3/8"	PNV-HP-S-06R-MF-D2-20K	5.0	80.0	63.5	40.0	25.4	35.0	10.0	6.4	60.0	190.0	25.4
	1/2"	PNV-HP-S-08R-MF-D2-20K	6.4	101.6	80.0	50.8	40.0	40.0	10.0	6.4	80.0	235.0	35.0
BSPP Male/ BSPP Female	1/4"	PNV-HP-S-04G-MF-D2-20K	5.0	80.0	63.5	40.0	25.4	35.0	10.0	6.4	60.0	190.0	25.4
	3/8"	PNV-HP-S-06G-MF-D2-20K	5.0	80.0	63.5	40.0	25.4	35.0	10.0	6.4	60.0	190.0	25.4
	1/2"	PNV-HP-S-08G-MF-D2-20K	6.4	101.6	80.0	50.8	40.0	40.0	10.0	6.4	80.0	235.0	35.0
Metric	1/4"	PNV-HP-S-M20-FF-D2-20K	6.4	101.6	80.0	50.8	40.0	40.0	10.0	6.4	80.0	235.0	35.0
	3/8"	PNV-HP-S-M20-FF-D2-20K	6.4	101.6	80.0	50.8	40.0	40.0	10.0	6.4	80.0	235.0	35.0
PANAM® HP Fittings	1/2"	PNV-HP-S-04-OD-D2-20K	2.8	86.0	50.8	43.0	25.4	40.0	10.0	6.4	60.0	195.0	25.4
	1/4"	PNV-HP-S-06-OD-D2-20K	5.0	86.0	50.8	43.0	25.4	35.0	10.0	6.4	60.0	195.0	25.4
	3/8"	PNV-HP-S-09-OD-D2-20K	6.5	101.6	63.5	50.8	40.0	40.0	10.0	6.4	80.0	235.0	32.0

Note: Sizes are for reference only and can be changed. All sizes in mm unless specified otherwise

Sealing Material Characteristics

Glass-filled PTFE (polytetrafluoroethylene) Glass-filled PTFE is an excellent material for applications in clean environments. It has a low coefficient of deformation, increased strength and abrasion resistance, and a low friction coefficient. It is highly resistant to the chemical effects of a large number of organic and inorganic reagents and solvents.

Seal Adjustment

Since Needle Valves (HP Series) are designed for applications in various processes, the seals may be subjected to the adjustment. Factory settings are at 69 bar (1000 psi). Refer to the appropriate Needle Valves (HP Series) Mounting and Operating Instructions for more information.

Testing

Every **PANAM**® Needle Valves (HP Series) is hydrostatically tested in accordance with MSS-SP-99. The procedure includes hydrostatic testing of the valve body and stem seal leakage check.

The hydrostatic test is carried out using pure water or other liquids with the same or lower viscosity at pressure 1.5 times higher than maximum working pressure. Pressure leakage test of the seat is carried out at pressure 1.1 times higher than maximum working pressure. The seat and stem seal of every valve is hydraulically tested in nitrogen at 6.9 MPa (1,000 psi). Upon request, additional tests can be carried out, e.g. vibration testing, temperature test, leakage test in helium.

Note. Valves that have not been used for a long time may have high handle torque.

Cleaning and Packaging

All **PANAM**® Needle Valves (HP Series) are cleaned in accordance with Standard Procedure of **Panam Engineers Ltd.** In addition, a special cleaning of the valves from lubricant for work in oxygen medium with subsequent packaging can be done according to the Special Instruction of **Panam Engineers Ltd.** for cleaning and packaging.

Ordering Information

PNV-HP-S-04-MF-20K-SG

P	NV	HP	S	04	MF	-	20K	SG
PANAM ®	Needle Valve	Series	Body Material	Connection Size	Configuration	End connection	Max. WP.	Options
			S - 316 SS	04 - 1/4"	- Straight	FF - Female In and Out	- 10,000 psi (689 bar)	SG - NACE (MR-01-75)
			C - Carbon Steel	06 - 3/8"	A - Angular	MF - Male/Female	20k - 20,000 psi (1379 bar)	OXY - Cleaning for Oxygen Application
			M - Monel	08 - 1/2"	M - 3-Way, 2 inlets	MM - Male In and Out		
			H - Hastelloy	09 - 9/16"	D - 3-Way, 2 outlets	OD - PANAM ® high-pressure fitting		
			B - Brass	12 - 3/4"	D2 - 2-Way Manifold			
				16 - 1"				
				M20 - M20 x 1.5				
* Thread Type								
- NPT								
R - ISO Tapered								
G - ISO Parallel								
M - Metric								
*Other types, sizes and materials are available upon request.								

Safety

Pressure and temperature ratings are selected in accordance with ANSI B16.34. Standard classification of valves complies with ANSI B16-Class 2500. SG is an option for use in sour gases (NACE MR 0175 and NACE MR 0103). For safe operation of PANAM needle valves of HP series they shall be adequately selected. When choosing materials operating conditions, compatibility of materials, purpose and product specifications shall be considered. Installation and maintenance of products shall be carried out by qualified personnel. Wrong selection, poor installation or incorrect operation and maintenance may result in accident, cause personal injury and result in material damage. PANAM provides a guarantee for all manufactured products, however, the company does not bear responsibility for improper selection, installation, operation and technical maintenance of the delivered products.

Other Products



2-3-5 VALVE MANIFOLDS



BELLOW SEAL VALVES



GAUGE ROOT VALVES



NEEDLE VALVES



HP NEEDLE VALVES



BALL VALVES



HP BALL VALVES



DOUBLE BLOCK & BLEED VALVES



MONO FLANGE VALVES



CHECK VALVES



RELIEF VALVES



FILTERS



TUBE FITTINGS



PIPE FITTINGS



HP PIPE FITTINGS



SWIVEL FITTINGS



JIC FITTINGS



WELD FITTINGS



HIGH PRESSURE FITTINGS



GAUGE SAVERS



PRESSURE GAUGES



TEMPERATURE GAUGES



PRESSURE TRANSMITTERS



TEMPERATURE TRANSMITTERS



PRESSURE REGULATORS



CONDENSATE POTS



AIR HEADERS



GRAB SAMPLING SYSTEM



PRE-FABRICATED HOOK UPS



FLANGE ADAPTERS



SWIVEL GAUGE ADAPTERS



THERMOWELLS



BLEED PLUGS



DIE-ELECTRIC FITTINGS



TUBING



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