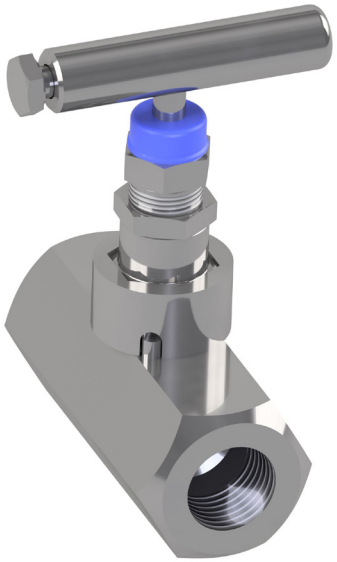
Anderson Greenwood Instrumentation Hand Valves

3/16" (4.8 mm) orifice hard seated hand valve to ASME B31.1 or B31.3 that meets MSS-SP-105



General Application

The H7HP is a globe pattern instrument hand valve used in severe service isolation, drain and test applications providing bubble-tight instrument service

TECHNICAL DATA

Materials
CS, 316 SS, Hastelloy®

Seats:
Metal

Connections
1/4", 1/2", 3/4" NPT, pipe or tube stub. 1/2" AGCO tube

Presuure (max):
6170 psig (426 barg)

Temperature (min/max):
-70°F to 1000°F
(-56°C to 538°C)

Features

- Graphite stem packing for high-temperature service.
- Free-swivelling SS ball stem prevents seating surface damage, ensures perfect alignment and bubble-tight shutoff.
- One-piece handle assembly prevents loss due to vibration or maintenance.
- Rolled stem threads prevent galling and extend valve life. Stem is polished to a mirror finish to minimize packing wear.
- Back seat design provides secondary stem seal and prevents accidental stem blowout under pressure.
- Full pressure and temperature range up to ASME Class 2500.
- Patented bonnet lock prevents accidental loosening of the bonnet-to-body seal and allows panel mounting without additional parts.
- Metal-to-metal bonnet-to-body seal in constant compression prevents bonnet thread corrosion, eliminates possible tensile breakage and provides a reliable seal point.
- Repairable metal seat can be resurfaced, when not under pressure, without removing the valve from the line.
- Materials of construction designed to meet ASME B31.1 or B31.3.
- Range of optional end connections

H7HP SERIES

Anderson Greenwood Instrumentation Hand Valves

ASME B31.1 or B31.3

3/16 inch (4.8 mm) ASME B31.1 or B31.3 - meets MSS-SP-105

Valve design criteria is described in Section 107. Important considerations from this section are:

1. Valves require specific pressure and temperature ratings such as those found in ASME B16.34.
2. Material requirements must conform to listed ASTM specifications.
3. As a minimum, the valve body should be marked or tagged in accordance with specification MSS-SP-25.
4. Valve design may include screwed, union or OS&Y bonnets.

The requirements for instrument, control and sampling systems are found in Section 122. It defines instrument piping as including that from the instrument root valve (or first valve off the main piping line) up to but not including the instrument, transmitter or any other measuring and sensing device.

The instrument valve or manifold must be designed to withstand full system design pressure at the design temperature or the corresponding saturation temperature, for steam service. Even though the instrument will never be subjected to the system temperature, manifold design requires this protection should the root valve fail under operating conditions. If blowdown valves are used between the root valve and the manifold, the manifold design temperature rating need only be 100°F (38°C). However, the pressure rating must be the lesser of 1.5 times the mainline design pressure or the rating of the blowdown valve. The use of commercial grade manifolds (without the manufacturer's certification to ASME B31.1 or B31.3 or if stamped WOG) which meet only the pressure ratings are prohibited unless all other code requirements have been met (such as Table 126.1 in ASME B31.1 or B31.3 for materials, compliance to testing requirements, etc).

Section I, 137 of the Code specifies the criteria for testing. All instrument manifold valves are required to be hydrostatically tested by the manufacturer to certify compliance. As a minimum, hydrostatic testing is performed to MSS-SP-61. This includes the body cavity hydrostatic test at 1.5 times the design pressure rating and seat leakage test(s) at 1.1 times the maximum pressure rating.

Pressure and Temperature Ratings

Body material	Pressure and temperature ratings
316 SS, A479-316	6000 psig at 100°F (414 barg at 38°C) 3030 psig at 1000°F (209 barg at 538°C)
CS, A105	6170 psig at 100°F (426 barg at 38°C) 3430 psig at 800°F (237 barg at 426°C)
Hastelloy®	6250 psig at 100°F (431 barg at 38°C) 4230 psig at 800°F (292 barg at 426°C)

NOTES

1. All B31.1 or B31.3 products are ASME Class 2500.
2. Approximate valve weight: 1.3 lb (0.6 kg). Orifice size 0.187 inch (4.8 mm). Valve Cv 0.52 maximum.

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Bonnet Assemblies

The H7HP features a metal-seated bonnet assembly which has a rotating stem with free swivel ball-type seat for long service life. The stem threads are rolled and lubricated to prevent galling and reduce operating torque. The high-temperature bonnet assembly uses a strengthened stem and bonnet, incorporating adjustable graphite rings and back-up pressure rings to ensure a leak-free stem seal and a larger size T-bar handle. The specially hardened ball seat is ideal for both steam and liquid service. All bonnets are assembled with a bonnet locking device to prevent accidental removal while in service.

All H7HP model valves are hydrostatic tested to MSS-SP-105 requirements.

Selection Guide - Power Industry Applications[1]

Hard seated valves - H7 ASME B31.1 or B31.3
$^{3}/_{16}$ inch (4.8 mm) ASME B31.1 or B31.3

H7HP S -4Q -XP CL00

BASIC SERIES	BODY MATERIAL	CONNECTIONS (INLET/OUTLET)		OPTIONS	
H7HP	C CS, A105	2	¼ inch FNPT x ¼ inch FNPT	XP	Meets the requirements of B31.1, hydro and ANSI marking 2500Lb Class
	S SS, A479-316	2B	¼ inch pipe S.W. x ¼ inch pipe S.W.[2]	OC00	Oxygen clean (Gaseous)
	J Hastelloy®	4Q	½ inch FNPT x ½ inch FNPT	OC01	Oxygen clean (Liquid)
		4QB	½ inch pipe S.W. x ½ inch pipe S.W.	PM	Panel mount - Graphite bonnet only
		4AT	½ inch AGCO tube. x ½ inch AGCO tube[2, 5]	PMI00	PMI body only
		4TB	½ inch tube S.W. x ½ inch tube S.W.[2, 3]	SG	Sour Gas meets the requirements of NACE MR0175/ISO 15156 (for chloride conditions > 50 mg/l (ppm))
		4TC	½ inch tube stub x ½ inch tube stub[2, 4]	SG3	SG3 (Sour Gas) meets the requirements of NACE MR0175/ISO 15156 (for chloride conditions > 50 mg/l [ppm]).
		44Q	½ inch MNPT x ½ inch FNP		
		4QB4	½ inch pipe S.W. x ½ inch FNPT[2]		
		46Q	¾ inch MNPT x ½ inch FNPT		
		6Q	¾ inch FNPT x ¾ inch FNPT[2]		
		6TB	¾ inch tube S.W. x ¾ inch tube S.W.[2, 3]		
		6QB	¾ inch pipe S.W. x ¾ inch pipe S.W.[2]		

NOTES

1. All H7 ASME B31.1 or B31.3 valves come standard with Graphite packing, integral seats, bonnet locks, and are subjected to hydrostatic testing.
2. Only available with the 'S' body material option.
3. Available in O.D. tube sizes only.
4. Tube stubs (both ends) are 6 inches long x 0.095 inch wall (152 mm long x 2.41 mm wall) (ASME 2500 Class).
5. Single ferrule is standard. For double ferrule add 'D' (i.e. H7HPS - '4ATD').