

# Instrumentation Hand Valves

Catalog 4190-HV

aerospace
climate control
electromechnical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



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#### Introduction

With years of valve design and development experience Parker Hannifin are able to offer the most comprehensive range of instrument hand valves available to users for a wide variety of markets, industries and applications. Now consolidated into one catalogue Parker is able to offer a simplified system of selection and choice for all Instrument applications and installations.

In addition to producing valves and manifolds Parker also makes twin and single ferrule compression fittings A-LOK® and CPI™ and the innovative Phastite® ferrule - less, push - fit connector which are used extensively in

the oil, gas, petro-chem, power, processing and many other industries. Combining these as an integral part of the valve body users can eliminate pipe threaded connections reducing leak paths and avoiding the use of thread sealant, a frequent menace to instrument and system performance.

For higher pressure ratings up to 20,000 psig Parker can now offer their new Phastite® range of compression fittings.

All the valves offered in this catalogue are available with integral compression ends improving system performance, safety factors, size and weight reduction, simplifying installation and ultimately reducing customer costs.

Continuous product development may from time to time necessitate changes in the details contained in this catalogue. Parker Hannifin reserve the right to make such changes at their discretion and without prior notification.

All dimensions shown in this catalogue are approximate and subject to change.



### ⚠ WARNING

FAILURE, IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

#### Offer of Sale

The items described in this document are hereby offered for sale by Parker Hannifin Corporation, its subsidiaries or its authorized distributors. Any Order accepted by Parker Hannifin will be subject to our terms and conditions of sale, copy available on request.

### Globe style bonnet design for HNV, HGV and HVG series

1. Positive handle retention design featuring broached square engagement positioned by thread locked grub screw.

2. "T" bar

Ergonomically designed for ease of operation. Anti-tamper and lockable devices can be supplied for on site retro-fit.

4. Gland packing adjuster
For maximum packing stability and performance, simple and easily adjustable for gland wear \_\_\_\_\_
compensation.

6. Valve Bonnet

Standard construction for maximum pressure rating with replaceable bonnet sealing washer arrangement.

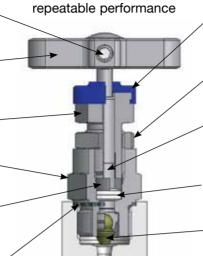
8. Thrust Bush

Anti rotational adjustor bush ensures uniform packing compression, maximising pressure tight sealing and limiting cold flow passages.

10. Bonnet/body washer Annealed sealing washer to ensure complete atmospheric leakage and allowing on site retr

atmospheric leakage and allowing on site retro-fit of bonnets with 100% re-sealing assurance.

For safe reliable and



3. Dust Cap

gland sealing.

This has a dual purpose, preventing air born debris from contaminating the operating spindle thread and providing colour coded functional identification. Isolate (BLUE).

5. Gland adjuster lock nut A secure anti vibration locking mechanism to prevent inadvertent gland adjuster loosening.

7. Anti blowout spindle
Designed for low torque operation with high
quality micro mirror stem finish for positive

9. Gland packing (adjustable) Chevron effect dual piece gland packing to provide maximum sealing area contact with

minimum gland adjustment.

11. Spindle tip
Self centering, non-rotational tip gives
successive positive bubble tight shut off
assuring the user of leakage free performance

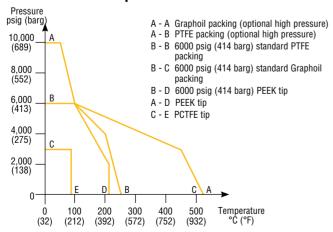
and downstream functional safety.

All metallic standard parts are produced in stainless steel, for alternative materials please refer to page 21. Manifolds produced in other specified materials will be provided with non-wetted parts as standard in stainless steel, this applies to items 1, 2, 4, 5 & 8.

#### **Specification**

- Height closed (standard and HP) = 47mm (1.85").
   Height open (standard and HP) = 50.3mm (2.00").
- Number of turns open/close 3.5.
- Stainless steel construction.
- Maximum standard pressure up to 6,000 psig (414 barg).
- Maximum optional pressure up to 10,000 psig (689 barg). See page 8/9.
- Temperature rating -54C to +538C (-65F to +1000F).
- PTFE standard gland packing (Graphoil optional).
- Maximum temperature PTFE 260C (500F).
- Maximum temperature Graphoil 538C (1000F).

#### Pressure vs temperature



#### **Features**

- Standard unit throughout hand valve range.
- Operating threads outside washout area.
- Externally adjustable gland.
- Low operating torque.
- Alternative 10,000 psig (689 barg) range available.
- Retro-fit kit for:-

Anti-tamper spindle.

Panel mounting.

Lockable T bar.

Handwheel with lockable option.

- Bonnet locking pin to prevent accidental removal fitted as standard.
- Alternative graphoil packing for high temperature performance available.
- Alternative self centering tip materials available for gaseous and aggressive fluids.
- Safety back seated spindle prevents stem blowout and provides secondary back up stem seal.
- Packing below threads to prevent lubricant washout.
- All valves 100% factory tested.
- NACE compliant wetted parts available.
- Optional cleaned and lubricated suitable for Oxygen service.
- Heat code traceable body and bonnet.

When selecting products for specific applications users should refer to our notice at the bottom of page 3.

# Optional globe style bonnet design for HNV, HGV and HVG series

#### For on-site assembly

The design options below can be simply retrofit to any NV, GV and VG series standard valves. Retrofit kit part numbers are listed next to the illustrated option and all parts will be supplied in stainless steel regardless of the parent body material.

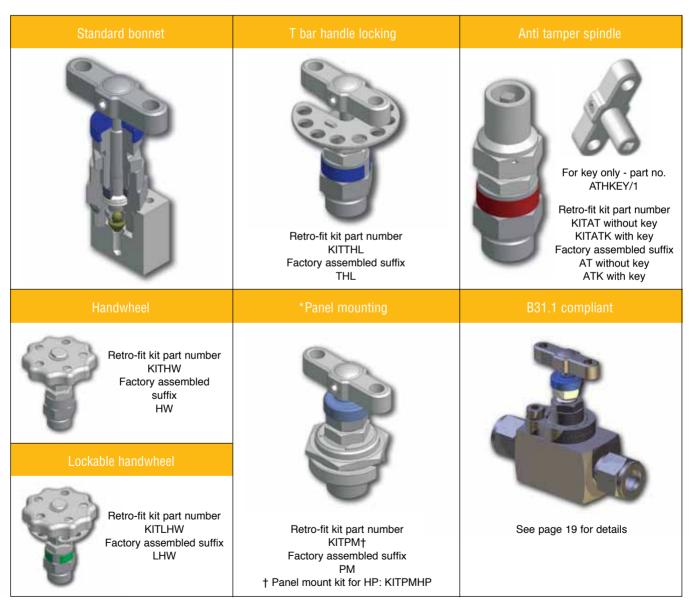
#### For factory fitted assembly

To obtain factory assembled options the valve part number must be suffixed with the option and function designator. Options can be combined:-

Example HNV\*8FFAT – NV series valve, factory fitted with anti-tamper (AT) operating mechanism.

Example HGV\*8THL – GV series valve, factory fitted with "T" bar locking plate (THL).

Note: Padlocks for lockable handwheels and "T" bars are not supplied (hole size 6mm/0.24").



<sup>\*</sup>Panel mounting hole diameter = 26mm (1.02"). Panel thickness = Max 5mm (0.20") Min 2.3mm (.09").

†Panel mounting hole diameter = 31mm/1.22"

# Globe style bar stock needle valves HNV series (6,000 psig/414 barg)

#### **Purpose**

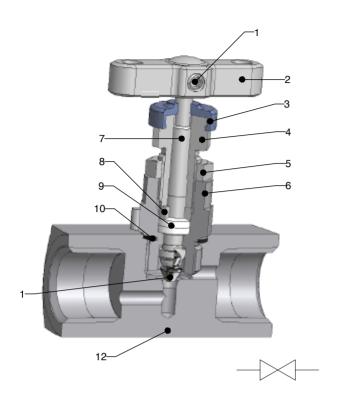
Bar stock needle valves are purpose designed valves for operation with any fluid up to 6,000 psig (414 barg) rating. Complete with standard PTFE gland packing and self centering non rotational tip, gives the user assurance of total in service sealing security. For gaseous application soft tipped optional seating is available. A wide variety of end connectors are offered for all types of installation. NACE compliant materials and oxygen clean are also available along with an extensive list of materials of construction.



#### **Specification**

- Standard seat diameter 4mm.
- Optional seat diameter 6mm.
- Cv: 0.35 standard.
- Maximum standard pressure up to 6,000 psig (414 barg).
- Temperature rating -54C to +538C (-65F to +1000F).
- Port sizes up to 1/2" pipe thread and 1/2"/12mm tube compression ends as standard.
  - Optional sizes up to 1" pipe, tube and combination ends can be considered.

- Rolled spindle operating threads.
- Stainless steel construction as standard.
- PTFE packing standard, optional graphite.
- Alternative tip and materials of construction available.
- Self centering non rotating spindle tip for bubble tight shut off.
- Colour coded functional identification.
- Back stop spindle for blowout prevention, and minimal atmospheric leakage.
- Low torque operating T bar handle.
- Externally adjustable gland.
- Panel and base mount option.
- Variety of end connections including integral compression one piece bodies.
- Angled versions available.
- Firesafe option available to API 607 BS 6755 Part 2.
- Dust cap to prevent ingress of contamination to operating thread.
- Bonnet locking pin fitted as standard.
- Angled flow path (option).



Standard product specification: metal/metal seated, PTFE packed, stainless steel, T bar operation, globe pattern, 6000 psig (414 barg).

#### Standard range part numbers

5 .	Inlet	Outlet		Dimension	
Part no.	Female	Female	A mm (inch)	B mm (inch)	C mm (inch)
HNV*4FF	1/4 NPT	1/4 NPT	54.0 (2.13")	28.6 (1.13")	79.4 (3.13")
HNV*6FF	3/8 NPT	3/8 NPT	54.0 (2.13")	28.6 (1.13")	79.4 (3.13")
HNV*8FF	1/2 NPT	1/2 NPT	63.5 (2.50")	28.6 (1.13")	79.4 (3.13")
	Male	Female			
HNV*4M4F	1/4 NPT	1/4 NPT	57.8 (2.27")	28.6 (1.13")	79.4 (3.13")
HNV*8M8F	1/2 NPT	1/2 NPT	73.0 (2.87")	28.6 (1.13")	79.4 (3.13")
	A-LOK®	A-LOK°			
HNV*4A	1/4	1/4	67.5 (2.66")	25.4 (1.00")	76.2 (3.00")
HNV*8A	1/2	1/2	76.2 (3.00")	25.4 (1.00")	76.2 (3.00")
HNV*M6A	6mm	6mm	67.5 (2.66")	25.4 (1.00")	76.2 (3.00")
HNV*M12A	12mm	12mm	76.2 (3.00")	25.4 (1.00")	76.2 (3.00")

\*Insert material code

Notes for compression ended valves:-

- 1. For CPI™ change A to Z.
- 2. "A" dimension given for finger tight nuts and ferrules.
- Can be offered to comply with latest issue of NACE subject to para. 8.4.1.1.
- 4. For compression ended valve pressure ratings consult tube ratings table.

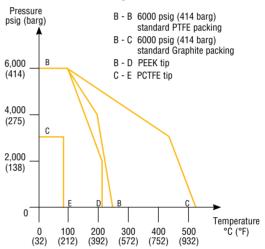
Dimension "C" in open position.

# **Hand Valves**

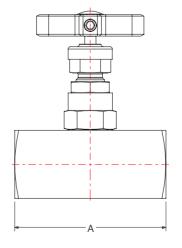
#### Part description

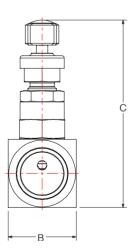
Item	Description	
1	Locked grub screw	
2	T bar handle assembly	
3	Dust cap/function label	
4	Gland adjuster	
5	Gland locknut	
6	Valve bonnet	
7	Anti blowout spindle	
8	Thrust bush	
9	Gland packing (2)	
10	Sealing washer	
11	Self centering spindle tip	
12	Body	

#### Pressure vs temperature



When selecting products for specific applications users should refer to our notice at the bottom of page 3.





Designed to meet pressure/temperature ratings of ANSI Class 2500 where applicable. For a full list of options and suffix's, see page 20. For a full list of materials and specifications, see page 21.

# Globe style bar stock needle valves HNV series (10,000 psig/689 barg)

Bar stock needle valves are purpose designed valves for operation with any fluid up to 10,000 psig (689 barg) rating. Complete with standard PTFE gland packing and self centering non rotational tip, gives the user assurance of total in service sealing security. For gaseous application soft tipped optional seating is available. A wide variety of end connectors are offered for all types of installation. NACE compliance and oxygen clean are also available along with an extensive list of materials of construction.

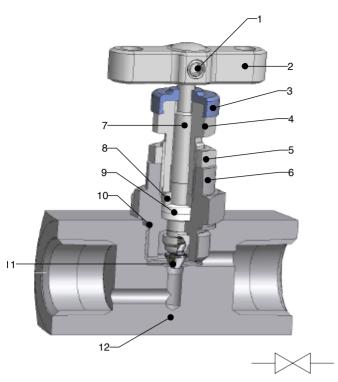


#### **Specification**

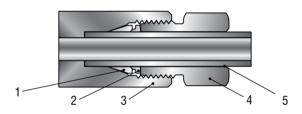
- Standard seat diameter 4mm.
- Optional seat diameter 6mm.
- Cv: 0.35 standard.
- Maximum standard pressure up to 10,000 psig (689 barg).
- Temperature rating -54C to +538C (-65F to +1000F).
- Port sizes up to 1/2" pipe thread and 1/2" MPI™ tube compression ends as standard.

Optional sizes up to 1" pipe, tube and combination ends can be considered.

- Rolled spindle operating threads.
- Stainless steel construction as standard.
- PTFE packing standard, optional graphite.
- Alternative tip and materials of construction available.
- Self centering non rotating spindle tip for bubble tight shut off.
- Colour coded functional identification.
- Back stop spindle for blowout prevention, and minimal atmospheric leakage.
- Low torque operating T bar handle.
- Externally adjustable gland.
- Panel and base mount option.
- Variety of end connections including integral compression one piece bodies.
- Angled versions available.
- Dust cap to prevent ingress of contamination to operating thread.
- Bonnet locking pin fitted as standard.



#### MPI™ Advanced Features



- Front ferrule with corrosion-resistant Parker SUPARCASE® forms a tight pressure seal between the body and ferrule in a second strong mechanical hold on the tube.
- 2. Rear ferrule with corrosion-resistant Parker SUPARCASE® provides a strong mechanical hold on the tube.
- Longer thread area for improved resistance to pressure and load on the ferrules.
- 4. Molybdenum disulfide-coated inverted nut helps prevent galling, provides easier assembly, and permits multiple remakes.
- 5. Long tube-support area improves resistance to vibration and line loads.

Standard product specification: metal/metal seated, PTFE packed, stainless steel, T bar operation, globe pattern, 10,000 psig (689 barg).

#### Standard range part numbers

	Inlet	Outlet	Dimension		
Part no.	Female	Female	A mm (inch)	B mm (inch)	C mm (inch)
HNV*4FFHP	1/4 NPT	1/4 NPT	60.5 (2.38")	31.8 (1.25")	82.6 (3.25")
HNV*8FFHP	1/2 NPT	1/2 NPT	-69.9 (2.75")	31.8 (1.25")	82.6 (3.25")
	MPI™	MPI™			
HNV*4MPI	1/4	1/4	101.6 (4.00")	31.8 (1.25")	82.6 (3.25")
HNV*6MPI	3/8	3/8	113.6 (4.48")	31.8 (1.25")	82.6 (3.25")

#### \*Insert material code

For MPI™ compression ended valve pressure ratings consult tube catalogue CAT 4234 for wall thickness and assembly instructions. MPI™ only available in stainless steel.

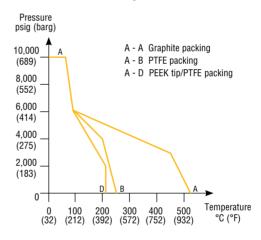
Dimension "C" in open position.

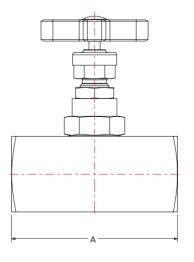
# Hand Valves

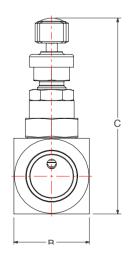
#### Part description

Item	Description			
1	Locked grub screw			
2	T bar handle assembly			
3	Dust cap/function label			
4	Gland adjuster			
5	Gland locknut			
6	Valve bonnet			
7	Anti blowout spindle			
8	Thrust bush			
9	Gland packing (2)			
10	Sealing washer			
11	Self centering spindle tip			
12	Body			

#### Pressure vs temperature







Designed to meet pressure/temperature ratings of ANSI Class 4500 where applicable.

For a full list of options and suffix's, see page 20. For a full list of materials and specifications, see page 21.

# H Series rising plug valves (HRPV series)\* Purpose

These unique, high quality, high performance, low torque rising plug soft-seated valves have been specifically designed to perform with fluids containing high levels of contamination frequently found in oil and gas processing facilities. With a straight through flow pattern and giving 100% repeatable bubble tight shut off, the valves as standard when specified with PEEK seat will perform up to 10,000 psig (689 barg) with low spindle operating torques. A variety of end connections are offered for all types of installation. NACE compliance is also available along with an extensive list of materials of construction.



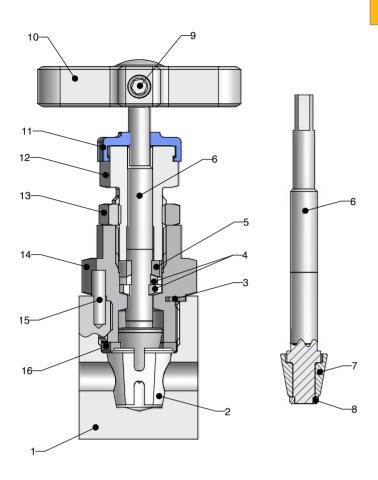


#### **Specification**

- Standard Orifice size 1/4" (6.4mm)
- Cv = 1.8.
- Maximum standard pressure up to 10,000 psig (689 barg) - PEEK seat.
- Temperature rating PEEK seat maximum 200C.
- Port sizes up to 1/2" pipe thread as standard.

- Rolled spindle operating threads.
- 316 Stainless steel construction as standard.
- PTFE packing standard.
- PEEK seat standard.
- Alternative body materials available.
- Straight through flow path.
- Standard multi port gauge style available.
- Bi-directional flow.
- Replaceable soft seat.
- Colour coded functional identification.
- Backstop spindle for blowout prevention and minimal atmospheric leakage.
- Low torque operating T bar handle.
- Externally adjustable gland.
- Full range of head options available.
- Dust cap to prevent ingress of contamination to operating thread.
- Bonnet locking pin fitted as standard.
- Patent(s) pending.
- Other seating materials could be considered for special applications.

<sup>\*</sup> Patent(s) pending



Standard product specification: supplied in 316 stainless steel with PEEK soft seat, PTFE packed, T bar operation, 10,000 psig (689 barg) maximum pressure rating, 200C maximum temperature rating.

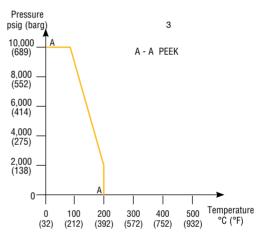
#### Standard range part numbers

_	Conne	ections	Dimension		
Part no.	Female	Female	A mm (inch)	B mm (inch)	C mm (inch)
HRPV4S4FF	1/4 NPT	1/4 NPT	60.5 (2.38")	31.8 (1.25")	88.0 (3.46")
HRPV4S8FF	1/2 NPT 1/2 NPT		69.8 (2.75")	31.8 (1.25")	88.0 (3.46")
	Male Female				
HRPV4S8M8F	1/2 NPT	1/2 NPT	72.9 (2.87")	31.8 (1.25")	88.0 (3.46")
HRPVG4S8M8F	1/2 NPT	1/2 NPT x 3	96.5 (3.80")	31.8 (1.25")	88.0 (3.46")

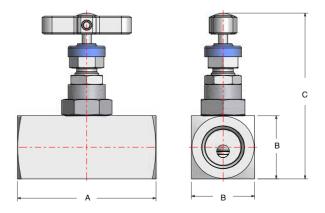
#### **Part description**

Item	Description
1	Body
2	Seat
3	Joint seal
4	Packing
5	Thrust bush
6	Stem
7	Tip
8	Stem cap
9	Grub screw
10	Handle
11	Dust cap
12	Gland Adjuster
13	Lock nut
14	Bonnet
15	Pin 3
16	Seat retainer

#### Pressure vs temperature



When selecting products for specific applications users should refer to our notice at the bottom of page 3.



For a full list of options and suffix's, see page 20. For a full list of materials and specifications, see page 21.

# Multi-port gauge valves (HGV series)

#### **Purpose**

Parker's Multi-port gauge valves are purpose designed valves for operation up to 6,000 psig (414 barg) and 10,000 psig (689 barg). Complete with standard PTFE gland packing and self centering none rotational tip gives the user assurance of bubble tight seat shut off. For gaseous application soft tipped optional seating is available. A wide variety of connector ends are offered for all types of installations. NACE compliance and oxygen clean are also available along with an extensive list of materials. Each valve has 3 female outlets giving the user optimum selection for instrument positioning and location.









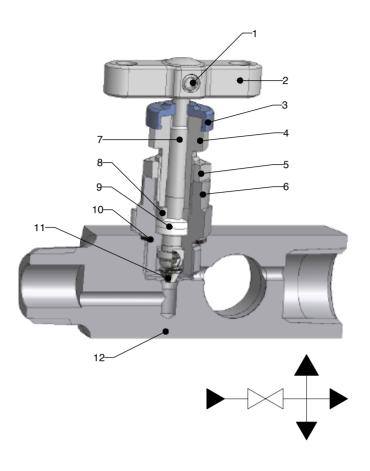
Bleed Valve

Plug

#### **Specification**

- Standard seat diameter 4mm (0.16").
- Cv: 0.35 standard.
- Maximum standard pressure up to 6,000 psig (414 barg).
- Maximum optional (HP) up to 10,000 psig (689 barg).
- Temperature rating -54C to +538C (-65F to +1000F).
- Port sizes up to 3/4" pipe thread as standard.

- Rolled spindle operating threads.
- Stainless steel construction as standard.
- PTFE packing standard, optional graphite.
- Alternative tip and materials of construction available.
- Self centering non rotating spindle tip for bubble tight shut off.
- Colour coded functional identification.
- Back stop spindle for blowout prevention and minimal atmospheric leakage.
- Low torque operating T bar handle.
- Externally adjustable gland.
- Base mount option.
- Variety of end connections including integral compression one piece bodies.
- Dust cap to prevent ingress of contamination to operating thread.
- Bonnet locking pin fitted as standard.



Standard product specification: metal/metal seated, PTFE packed, stainless steel, T bar operation, globe pattern, 6000 psig (414 barg).

For complete supply of bleed valve and plug with the valve, add suffix's (see page 20).

#### Standard range part numbers

D. L.	Inlet	Outlet	Dimension			Pressure rating
Part no.	Male	Female x 3	A mm (inch)	B mm (inch)	C mm (inch)	
HGV*8	1/2 NPT	3 X 1/2" NPT	92.0 (3.62")	28.6 (1.13")	79.4 (3.13")	6,000 psi (414 bar)
HGV*12	3/4 NPT	3 X 1/2" NPT	95.0 (3.74")	28.6 (1.13")	79.4 (3.13")	6,000 psi (414 bar)
HGV*8HP	1/2 NPT	3 X 1/2" NPT	92.0 (3.62")	31.8 (1.25")	82.6 (3.25")	10,000 psi (689 bar)

\*Insert material code - select from material matrix on page 21 Dimension "C" in open position.

# To order individual bleed valves (captive spindle) & plugs

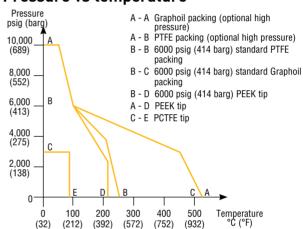
	Description	Connection
Part no.		Male
HBV*4M	Bleed valve	1/4" NPT
HBV*8M	Bleed valve	1/2" NPT
4PHSS	Hexagon plug	1/4" NPT
8PHSS	Hexagon plug	1/2" NPT
4PHHSS	Hollow hexagon plug	1/4" NPT
8PHHSS	Hollow hexagon plug	1/2" NPT

Plug part numbers are from IPD's pipe fitting range.

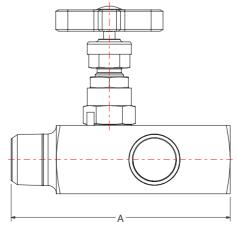
#### Part description

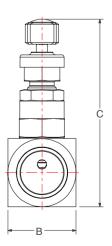
Item	Description	
1	Locked grub screw	
2	T bar handle assembly	
3	Dust cap/function label	
4	Gland adjuster	
5	Gland locknut	
6	Valve bonnet	
7	Anti blowout spindle	
8	Thrust bush	
9	Gland packing (2)	
10	Sealing washer	
11	Self centering spindle tip	
12	Body	

#### Pressure vs temperature



When selecting products for specific applications users should refer to our notice at the bottom of page 3.





Designed to meet pressure/temperature ratings of ANSI Class 2500/4500 where applicable.

For a full list of options and suffix's, see page 20. For a full list of materials and specifications, see page 21.

# Single port gauge valves with vent (HVG series)

#### **Purpose**

Parker's Single port gauge valves with vent are purpose designed valves for operation with any fluid up to 6,000 psig (414 barg) rating. Valves are provided with a single 1/4" NPT port for the optional fitting of captive bleed/vent valve or blank plug. Complete with standard PTFE gland packing and self centering none rotational tip gives the user assurance of total in service sealing security. For gaseous application soft tipped optional seating is available. A wide variety of end connectors are offered for all types of installations. NACE compliance and oxygen clean are also available along with an extensive list of materials of construction.







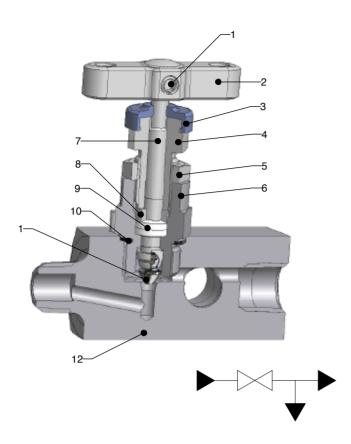
Bleed Valve

Plug

#### **Specification**

- Standard seat diameter 4mm (0.16").
- Cv: 0.35 standard.
- Maximum std. pressure up to 6,000 psig (414 barg).
- Temperature rating -54C to +538C (-65F to +1000F).
- Port sizes up to 1/2" pipe thread and 1/2"/12mm tube compression ends.

- Rolled spindle operating threads.
- Stainless steel construction standard.
- PTFE packing standard, optional graphite.
- Alternative tip and materials of construction available.
- Self centering non rotating spindle tip for bubble tight shut off.
- Colour coded functional identification.
- Back stop spindle for blowout prevention and minimal atmospheric leakage.
- Low torque operating T bar handle.
- Externally adjustable gland.
- Base mount option.
- Variety of end connections including integral compression one piece bodies.
- Firesafe option available to API 607 BS 6755 Part 2.
- Dust cap to prevent ingress of contamination to operating thread.
- Bonnet locking pin fitted as standard.



Standard product specification: metal/metal seated, PTFE packed, stainless steel, T bar operation, globe pattern, 1/4" NPT vent/bleed port, 6,000 psig (414 barg). Add suffix's to obtain bleed valve or plug.

#### Standard range part numbers

	Inlet	Outlet	Dimension		
Part no.	Female	Female	A mm (inch)	B mm (inch)	C mm (inch)
HNV*4FFV	1/4 NPT	1/4 NPT	63.5 (2.50")	28.6 (1.13")	79.4 (3.13")
HNV*6FFV	3/8 NPT	3/8 NPT	67.0 (2.64")	28.6 (1.13")	79.4 (3.13")
HNV*8FFV	1/2 NPT	1/2 NPT	75.0 (3.00")	28.6 (1.13")	79.4 (3.13")
	Male	Female			
HNV*4M4FV	1/4 NPT	1/4 NPT	72.5 (2.85")	28.6 (1.13")	79.4 (3.13")
HNV*8M8FV	1/2 NPT	1/2 NPT	85.8 (3.38")	28.6 (1.13")	79.4 (3.13")

<sup>\*</sup>Insert material code - select from material matrix on page 21. Dimension "C" in open position.

# To order individual bleed valves (captive spindle) & plugs

	Description	Connection
Part no.		Male
HBV*4M	Bleed valve	1/4" NPT
4PHSS	Hexagon plug	1/4" NPT
4PHHSS	Hollow hexagon plug	1/4" NPT

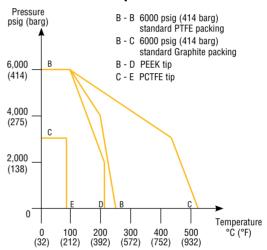
Plug part numbers are from IPD's pipe fitting range.

# **Hand Valves**

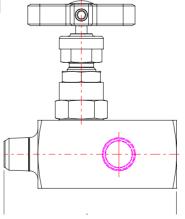
#### Part description

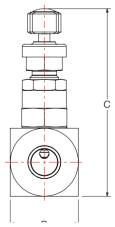
Item	Description					
1	Locked grub screw					
2	T bar handle assembly					
3	Dust cap/function label					
4	Gland adjuster					
5	Gland locknut					
6	Valve bonnet					
7	Anti blowout spindle					
8	Thrust bush					
9	Gland packing (2)					
10	Sealing washer					
11	Self centering spindle tip					
12	Body					

#### Pressure vs temperature



When selecting products for specific applications users should refer to our notice at the bottom of page 3.



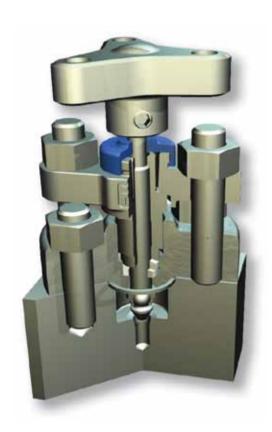


Designed to meet pressure/temperature ratings of ANSI Class 2500 where applicable. For a full list of options and suffix's, see page 20. For a full list of materials and specifications, see page 21.

# Outside screw and yoke globe pattern needle valves (HYNV series)

#### **Purpose**

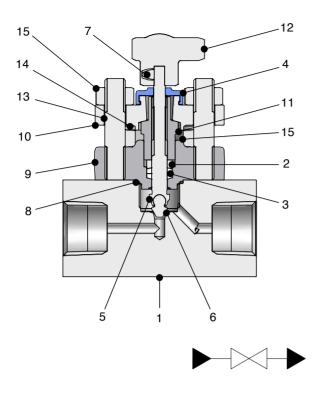
Outside screw and yoke valves are designed for primary isolating applications operating up to 6,000 psig (414 barg) with optional 10,000 psig (689 barg) rating. The valve is supplied complete with standard graphite gland packing and the self centering none rotational tip gives bubble tight sealing. For gaseous application soft tipped optional seating is available. A wide variety of connector ends are offered for all types of installations including multi-ported root/primary isolate service. NACE compliance and oxygen clean are also available along with an extensive list of materials. Firesafe to BS 6755 Part 2 and API 607 standard with graphite packing.



#### **Specification**

- Standard seat diameter 4mm (0.16").
- Cv: 0.35 standard.
- Maximum standard pressure up to 6,000 psig (414 barg).
- Maximum optional pressure up to 10,000 psig (689 barg).
- Temperature rating -54C to +538C (-65F to +1000F).
- Port sizes up to 1/2" pipe thread and 1/2"/12mm tube compression ends as standard.

- Rolled spindle operating threads.
- Stainless steel construction standard.
- Graphite packing standard, PTFE optional.
- Alternative tip and materials of construction available.
- Self centering non rotating spindle tip for bubble tight shut off.
- Colour coded functional identification.
- Back stop spindle for blowout prevention.
- Externally adjustable gland independent of spindle thread.
- Base mount option.
- Variety of end connections including integral compression one piece bodies.
- Angled versions available.
- Firesafe design and verified by testing to BS 6755 Part 2 and API 607.



Standard product specification: metal/metal seated, Graphite packed, stainless steel, T bar operation, inline pattern, 6000 psig (414 barg).

#### Standard range part numbers

	Inlet	Outlet		Dimension		
Part no.	Female	Female	A mm (inch)	B mm (inch)	C mm (inch)	
HYNV*4FF	1/4 NPT	1/4 NPT	68.2 (2.685")	38.1 (1.50")	98.9 (3.894")	
HYNV*6FF	3/8 NPT	3/8 NPT	69.2 (2.724")	38.1 (1.50")	98.9 (3.894")	
HYNV*8FF	1/2 NPT	1/2 NPT	76.2 (3.000")	38.1 (1.50")	98.9 (3.894")	
	Male	Female				
HYNV*4M4F	1/4 NPT	1/4 NPT	75.0 (2.953")	38.1 (1.50")	98.9 (3.894")	
HYNV*8M8F	1/2 NPT	1/2 NPT	82.0 (3.268")	38.1 (1.50")	98.9 (3.894")	
HYGV*8	1/2 NPT	3 x 1/2 NPT	108.0 (4.252") 38.1 (1.50"		98.9 (3.894")	
	Socket weld	Socket weld				
HYNV*SW8N	B 1/2 pipe	1/2 pipe	76.2 (3.000")	38.1 (1.50")	98.9 (3.894")	
	Butt weld	Butt weld				
HYNV*BW8N	B 1/2 pipe	1/2 pipe	89.8 (3.535")	38.1 (1.50")	98.9 (3.894")	
	A-LOK <sup>®</sup>	A-LOK®				
HYNV*4A	1/4	1/4	87.4 (3.441")	38.1 (1.50")	98.9 (3.894")	
HYNV*8A	1/2	1/2	96.0 (3.780")	38.1 (1.50")	98.9 (3.894")	
HYNV*M6A	6mm	6mm	87.4 (3.441")	38.1 (1.50")	98.9 (3.894")	
HYNV*M12A	12mm	12mm	96.0 (3.780")	38.1 (1.50")	98.9 (3.894")	

\*Insert material code - select from material matrix on page 21.

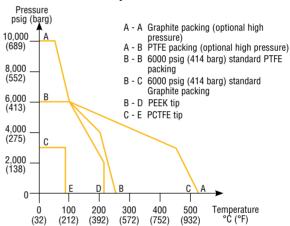
Notes for compression ended valves:-

- 1. For CPI™ change A to Z.
- 2. "A" dimension given for finger tight nuts and ferrules.
- 3. Cannot be offered for NACE.
- 4. For compression ended valve pressure ratings consult tube ratings table. Dimension "C" in open position.

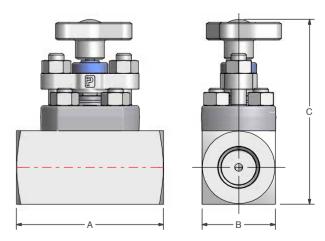
#### Part description

Item	Description					
1	Body					
2	Thrust bush					
3	Stem packing					
4	Dust cap					
5	Stem					
6	Tip					
7	Grub screw					
8	Joint seal					
9	OS&Y bonnet					
10	Gland bridge					
11	Gland adjuster					
12	Tri-lobal handle					
13	Bonnet - gland stud					
14	Body - bonnet stud					
15	Nuts					

#### Pressure vs temperature



When selecting products for specific applications users should refer to our notice at the bottom of page 3.

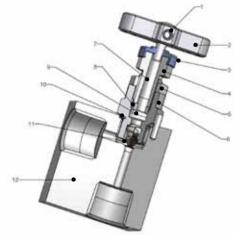


For a full list of options and suffix's, see page 20. For a full list of materials and specifications, see page 21.

Angled versions available for the following:

- Globe style bar stock needle valves HNV series (6,000 psig/414 barg) (10,000 psig/689 barg)
- Single port gauge valves with vent (HVG series)
- Outside screw and yoke globe pattern needle valves (HYNV series)

Below is example of Globe style bar stock needle valves HNV series (6,000 psig/414 barg). Please consult factory for other options.



Standard product specification: metal/metal seated, PTFE packed, stainless steel, T bar operation, globe pattern, 6000 psig (414 barg).

#### Standard range part numbers

Part no.	Inlet	Outlet		Dimension					
	Female	Female	A mm (inch)	B mm (inch)	C mm (inch)	D mm (inch)	E mm (inch)	F mm (inch)	
HNV*4FFANG	1/4 NPT	1/4 NPT	25.4 (1.00")	25.4 (1.00")	88.9 (3.50")	38.1 (1.50")	39.7 (1.56")	12.7 (0.50")	
HNV*8FFANG	1/2 NPT	1/2 NPT	28.6 (1.13")	31.8 (1.25")	96.9 (3.81")	46.1 (1.81")	46.1 (1.81")	14.3 (0.56")	
HNV*12FFANG	3/4 NPT	3/4 NPT	38.1 (1.50")	34.9 (1.37")	104.8 (4.13")	54.0 (2.13")	54.0 (2.13")	19.1 (0.75")	
HNV*16FFANG	1 NPT	1 NPT	50.8 (2.00")	41.3 (1.63")	117.5 (4.63")	54.0 (2.13")	54.0 (2.13")	19.1 (0.75")	

Dort no	Inlet	Outlet	Dimension						
Part no.	Female	Female	A mm (inch)	B mm (inch)	C mm (inch)	D mm (inch)	E mm (inch)	F mm (inch)	
HNV*4M4FANG	1/4 NPT	1/4 NPT	25.4 (1.00")	28.2 (1.11")	76.2 (3.00")	40.9 (1.61")	39.7 (1.56")	12.7 (0.50")	
HNV*8M8FANG	1/2 NPT	1/2 NPT	28.6 (1.13")	33.3 (1.31")	79.4 (3.13")	47.6 (1.87")	46.1 (1.81")	14.3 (0.56")	
HNV*12M12FANG	3/4 NPT	3/4 NPT	38.1 (1.50")	41.1 (1.62")	88.9 (3.50")	60.1 (2.37")	54.0 (2.13")	19.1 (0.75")	
HNV*16M16FANG	1 NPT	1 NPT	50.8 (2.00")	50.8 (2.00")	101.6 (4.00")	76.2 (3.00")	66.7 (2.63")	25.4 (1.00")	

Dort no	Inlet	Outlet			Dime	nsion		
Part no.	Female	Female	A mm (inch)	B mm (inch)	C mm (inch)	D mm (inch)	E mm (inch)	F mm (inch)
HNV*4AANG	1/4"0.D.	1/4"0.D.	25.4 (1.00")	23.0 (0.91")	76.2 (3.00")	35.7 (1.41")	39.0 (1.54")	12.7 (0.50")
HNV*8AANG	1/2"0.D.	1/2"0.D.	28.6 (1.13")	24.6 (0.97")	76.2 (3.00")	37.3 (1.47")	40.7 (1.60")	12.7 (0.50")
HNV*12AANG	3/4"0.D.	3/4"0.D.	38.1 (1.50")	27.8 (1.09")	82.6 (3.25")	43.7 (1.72")	47.7 (1.88")	15.9 (0.63")
HNV*16AANG	1"0.D.	1"0.D.	50.8 (2.00")	33.3 (1.31")	88.9 (3.50")	52.4 (2.06")	57.2 (2.25")	19.1 (0.75")

\*Insert material code - select from material matrix on page 21.

Notes for compression ended valves:-

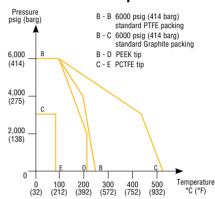
- 1. For CPI™ change A to Z.
- 2. "A" dimension given for finger tight nuts and ferrules.
- 3. Cannot be offered for NACE.
- 4. For compression ended valve pressure ratings consult tube ratings table. Dimension "C" in open position.

Designed to meet pressure/temperature ratings of ANSI Class 2500 where applicable. For a full list of options and suffix's, see page 20. For a full list of materials and specifications, see page 21.

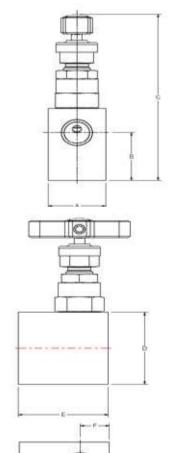
#### Part description

Item	Description				
1	Locked grub screw				
2	T bar handle assembly				
3	Dust cap/function label				
4	Gland adjuster				
5	Gland locknut				
6	Valve bonnet				
7	7 Anti blowout spindle				
8	Thrust bush				
9	Gland packing (2)				
10	Sealing washer				
11	Self centering spindle tip				
12	Body				

#### Pressure vs temperature



When selecting products for specific applications users should refer to our notice at the bottom of page 3.

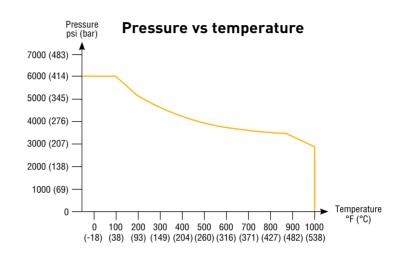


### Power plant products - compliant with ANSI B31.1

#### H Series Hand valves & manifolds

Designed and developed from our highly successful H series valves. These products meet the requirements of both ANSI B31.1 (Power plants) and B31.3 (Petrochemical plants), including the materials of construction.





#### **Features**

- All valves are graphite packed for high temperature service.
- Non rotating, hard stem tip with metal to metal seating for bubble tight shut-off.
- Back seat design.
- Blow-out proof stem.
- Pressures & temperatures in accordance with ASME class 2500.
- Patented Tru-Lok® safety bonnet locking device prevents accidental removal.
- Standard orifice 4mm (Cv 0.35), optional orifice for needle valves 6mm (Cv 0.47).

Specific pressure / temperature performance

316 SS 6000 psig @ 100°F (414 bar @ 38°C) 2915 psig @ 1000°F (201 bar @ 538°C)

#### Plus a range of manifolds:







#### Part numbering & Product range offered:

For H series valves and manifolds use CAT4190HV; CAT4190PM; CAT4190FM then replace the prefix 'H' with 'HPP'.Eg: HNVS8FF becomes HPPNVS8FF3

Product range:

HPPNVS; HPPGV; HPPBSNVS2; HPPLS2V; HPPLS2HVSDLH; HPPALS2V; HPPLS3M; HPPLS5M; HPPDS2HLH; HPPDS3M; HPPEFS2/3/5

Consult factory or come and see us about other options.

# Instrumentation hand valves

			Valve types								
Ava	nilable optic	ons		(merly)	FOR	Sect B	1		國	Ser.	
Suffix adding sequence	Function	Option Detail	Part no. suffix	Needle (HNV series) page 6 & 7	Needle (HNV series) page 8 & 9	Rising plug (HRPV series) page 10 & 11	Multi- port (HGV series) page 12 & 13	Single port (HVG series) page 14 & 15	Outside Screw & yoke (HYNV series) page 14 & 15	B31.1 com- pliant Power Plant	
1	Gland packing	Graphite	3	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>		STD	
2	Seating	PCTFE (207 bar/3000 psi)	9	<b>✓</b>			<b>✓</b>	<b>√</b>	<b>✓</b>		
		PEEK	PK	<b>√</b>	<b>√</b>	✓	<b>√</b>	<b>√</b>	<b>√</b>		
		Stellite Tip	ST	<b>√</b>	<b>√</b>		<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	
		Regulating tip (4mm seat only)	RT	<b>√</b>	<b>√</b>						
		6mm seat	6S	<b>√</b>	<b>√</b>						
3	Plug/Bleed valve	Blank plug	Р			✓	<b>√</b>				
	(supplied loose	Bleed valve	BV			<b>√</b>	<b>√</b>				
	in box)	Plug & bleed valve	PBV			<b>√</b>	<b>✓</b>				
4	Connection style	Socket weld (* insert pipe size)	SW*NB	<b>√</b>	<b>√</b>		<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	
		Male socket weld (*insert pipe size)	MSW*NB	<b>✓</b>	<b>√</b>		<b>✓</b>	<b>√</b>	<b>✓</b>	<b>✓</b>	
		Butt weld (* insert pipe size) (# insert schedule)	BW*NBSCH#	<b>✓</b>	<b>√</b>		<b>✓</b>	<b>√</b>	<b>✓</b>	<b>✓</b>	
		Stub pipe extension (insert length in *mm)	SP*MM	<b>✓</b>	<b>√</b>		<b>✓</b>	<b>√</b>	<b>✓</b>	<b>✓</b>	
		Male inlet extension (* insert length in mm)	EX*MM	<b>✓</b>	<b>√</b>	<b>√</b>	<b>✓</b>	<b>√</b>	<b>✓</b>	<b>✓</b>	
		BSPT (* insert pipe size (e.g. 8K = 1/2")	*K	<b>√</b>	<b>√</b>	✓	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	
		BSPP (* insert pipe size (e.g. 4R = 1/4")	*R	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	
		Flange (specify separately)	FL	<b>√</b>	<b>√</b>		<b>√</b>	<b>√</b>	<b>√</b>		
5	Connection sizing	See below†		<b>✓</b>	<b>√</b>	<b>√</b>	<b>✓</b>	<b>√</b>			
6	Flow pattern	Angled	ANG	<b>✓</b>	<b>✓</b>			<b>✓</b>	<b>✓</b>	<b>✓</b>	
	Operating	Lockable T bar	THL	<b>✓</b>	<b>✓</b>	<b>√</b>	<b>✓</b>	<b>✓</b>	<b>✓</b>	<b>✓</b>	
	mechanism	Anti tamper T bar	AT	<b>√</b>	<b>√</b>		<b>√</b>	<b>√</b>		<b>√</b>	
		Anti tamper + key	ATK	<b>√</b>	<b>√</b>		<b>√</b>	<b>√</b>		<b>√</b>	
		Handwheel	HW	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	
		Lockable handwheel	LHW	<b>√</b>	✓	✓	<b>√</b>	✓	1	<b>√</b>	
7	Mounting	Panel mount	PM	<b>√</b>				<b>√</b>		<b>√</b>	
		Base mount	BM	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	1	<b>√</b>	
8	Condition	NACE compliant materials**	NC	<b>√</b>	<b>✓</b>	<b>√</b>	<b>√</b>	<b>✓</b>	<b>√</b>	<b>✓</b>	
		Cleaned and lubricated for oxygen use	0XY	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>		
		Firesafe	FS	<b>√</b>			<b>√</b>	<b>√</b>			
		Test certificates	TC	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	1		
		Air Testing	PT	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>		

<sup>†</sup>For tube socket or tube butt weld use 1/16 inch denominations and change NB to TB.

<sup>†</sup>For metric tube size use actual metric (mm) dimensions e.g. SW12MMTB.

Note: Heat code traceable certificates for body and bonnet stud available on application.

<sup>\*\*</sup>Does not apply for A-lok/CPI ended valves in 316 stainless steel.

### Instrumentation hand valves

					Val	ve types		
Available option	ons	4			8	A I		
Material	*Insert code for selected material in part number	Needle (HNV series) page 6 & 7	Needle (HNV series) page 8 & 9	Rising plug (HRPV series) page 10 & 11	Multi-port (HGV series) page 12 & 13	Single port (HVG series) page 14 & 15	Outside Screw & yoke (HYNV series) page 14 & 15	B31.1 compliant Power Plant
Stainless steel std.	S	<b>√</b>	<b>√</b>	* 🗸	<b>√</b>	✓	<b>√</b>	✓
Monel	M	<b>√</b>	<b>√</b>	✓	<b>√</b>	✓	<b>√</b>	
Duplex	D1	<b>√</b>	✓	✓	✓	<b>√</b>	<b>√</b>	
Super Duplex	D2	<b>√</b>	✓	✓	✓	✓	<b>√</b>	
Hasteloy	HC	<b>√</b>	<b>√</b>	✓	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>
Carbon Steel	С	<b>√</b>	<b>√</b>		<b>√</b>	<b>√</b>	<b>√</b>	✓
6Mo	6MO	<b>✓</b>	<b>✓</b>	<b>✓</b>	<b>√</b>	<b>√</b>	<b>√</b>	
Titanium	T	<b>√</b>	<b>√</b>	<b>✓</b>	<b>√</b>	<b>√</b>	<b>✓</b>	
Incoloy 825	825	<b>√</b>	<b>√</b>	<b>√</b>	<b>√</b>	✓	<b>✓</b>	
Incoloy 825	625	<b>√</b>	<b>√</b>	<b>✓</b>	<b>√</b>	✓	<b>√</b>	

All non-wetted parts ie those not in contact with the process medium will be supplied in stainless steel for all materials shown above.

# The widest range of precision Instrumentation products



Cat 4190-FP Flanged products



**Cat 4190-PM**Two valve manifolds



Cat 4190-FM
Three and five valve manifolds

Notes

# Notes

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