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Parker

Process Control Manifolds

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

Process Control Manifolds

Parker

ENGINEERING YOUR SUCCESS.

⚠WARNING USER RESPONSIBILITY

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS 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 or system options for further investigation by users having technical expertise.

The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.

To the extent that Parker or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.

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.

Index

Instrument Manifolds Flanged Products, Ball Valves and Hand Valve Directory

Catalog 4190-PD
February 2007



Introduction

From its ISO9001:2000 facility, Parker Hannifin's Instrumentation Products Division designs and manufactures one of the most comprehensive ranges of precision instrumentation manifolds for the varied oil, gas and process industries across the world.

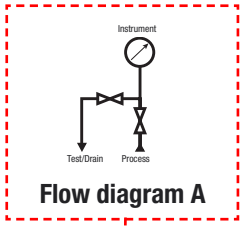
With many years of manifold development Parker Hannifin offers a range to suit all types of instrumentation installations, specifications and applications.

In addition to manifolds, Parker Hannifin offer the broadest range of tube fittings, instrumentation valves, complimentary products and accessories in the market, providing all the components to take the instrument engineer from the process connection to the instrument.

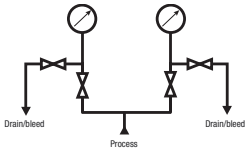
This directory is intended as an overview to the range of manifolds available. For detailed product specifications please refer to the relevant product catalogue as indicated on the following pages.

The complete range of Manifold catalogues are available in a binder. Order Code 'Manifold/Bin'

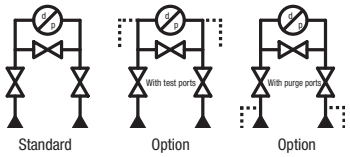
Key to Flow diagrams



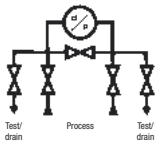
Flow diagram A



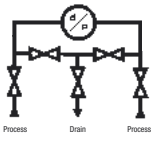
Flow diagram B



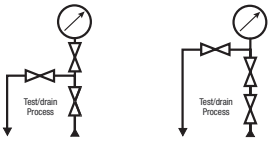
Flow diagram C



Flow diagram D



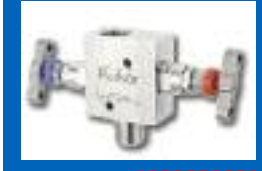
Flow diagram E



Flow diagram F

Example

Remote Mount

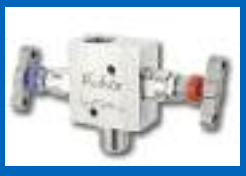


See Cat4190-PM Flow Diagram **A**

H Series 2 Valve Manifolds

Designed for use with pressure measurement transmitters for up to 10,000psig, (689 barg)

Remote Mount



See Cat4190-PM — Flow Diagram **A**

Remote Mount

See Cat4190-PM — Flow Diagram **A**

Remote

See Cat4190-PM — Flow Diagram **A**

Remote Mount

See Cat4190-PM — Flow Diagram **A**

Remote Mount

See Cat4190-PM — Flow Diagram **A**

Remote Mount

See Cat4190-PM — Flow Diagram **A**

Remote Mount

See Cat4190-PM — Flow Diagram **A**

High Pressure

See Cat4190-PM — Flow Diagram **A**

Double Block & Bleed

See Cat4190-PM — Flow Diagram **F**

High Pressure DBB

See Cat4190-PM — Flow Diagram **A**

Direct Mount

See Cat4190-PM — Flow Diagram **A**

Direct Mount

See Cat4190-PM — Flow Diagram **A**

Direct Mount

See Cat4190-PM — Flow Diagram **A**

Direct Mount

See Cat4190-PM — Flow Diagram **A**

Direct Mount

See Cat4190-PM — Flow Diagram **A**

Flanged Connected

See Cat4190-PM — Flow Diagram **A**

Flanged Connected

See Cat4190-PM — Flow Diagram **B**

Mini Static Pressure

See Cat4190-PM — Flow Diagram **A**

2 Valve Carbon Steel Manifold Mounting Brackets

See Cat4190-PM

For detailed product information refer to Cat 4190-PM

3051 Transmitter manifolds

Designed for mounting to the 3051 series of differential pressure transmitters

2 Valve 3051

See Cat4190-PM — Flow Diagram **A**

3 Valve 3051

See Cat4190-FM — Flow Diagram **C**

5 Valve 3051

See Cat4190-FM — Flow Diagram **D**

H Series 3 Valve Manifolds

Designed for use with pressure measurement transmitters for up to 10,000psig, (689 barg)

Direct Mount

See Cat4190-FM — Flow Diagram C

Direct Mount

See Cat4190-FM — Flow Diagram C

Direct Mount

See Cat4190-FM — Flow Diagram C

Direct Mount

See Cat4190-FM — Flow Diagram C

Cast Body

See Cat4190-FM — Flow Diagram C

Cast Body

See Cat4190-FM — Flow Diagram C

Extruded body direct mount

See Cat4190-FM — Flow Diagram C

Extruded body direct mount

See Cat4190-FM — Flow Diagram C

Remote Mount

See Cat4190-FM — Flow Diagram C

Remote Mount

See Cat4190-FM — Flow Diagram C

H Series 5 Valve Manifolds

Designed for flow measurement transmitters (6000psig, 413 barg)

Direct Mount

See Cat4190-FM — Flow Diagram D

Direct Mount

See Cat4190-FM — Flow Diagram D

Direct Mount

See Cat4190-FM — Flow Diagram D

Custody Transfer/Fiscal metering

See Cat4190-FM — Flow Diagram E

Bottom Entry

See Cat4190-FM — Flow Diagram D

Cast Body

See Cat4190-FM — Flow Diagram D

Cast Body

See Cat4190-FM — Flow Diagram D

Custody Transfer/Fiscal metering

See Cat4190-FM — Flow Diagram D/E

Custody Transfer/Fiscal metering

See Cat4190-FM — Flow Diagram D/E

Remote Mount

See Cat4190-FM — Flow Diagram D/E

High Pressure

See Cat4190-FM — Flow Diagram D

For detailed product information refer to Cat 4190-FM

3 & 5 Valve Carbon Steel Manifold Mounting Brackets See Cat4190-FM

Needle and Rising Plug Valves

Designed for use with any fluid up to 10,000 psig (689 barg)

Bar Stock Needle

See Cat4190-HV

Bar Stock Needle

See Cat4190-HV

Rising Plug

See Cat4190-HV

Multi-port Gauge

See Cat4190-HV

Single port Gauge

See Cat4190-HV

Outside Screw & Yoke

See Cat4190-HV

Miniature Needle

See Cat4190-HV

For detailed product information refer to Cat 4190-HV

Distribution Manifolds

Designed for use with any fluid up to 10,000 psig (689 barg)

Distribution Manifold

Distribution Manifold

Swivel Gauge Adaptors

For flexible and secure positions of gauges

Swivel Gauge Adapter

See Cat4190-PM

Miniature Manifolds

Are ideal for installation inside control panels and other size limited installations

Pressure Measurement

See Cat4190-PM — Flow Diagram **A**

Flow Measurement

See Cat4190-FM — Flow Diagram **F**

Hi-Pro Ball Valve

For high performance process isolation

Hi-Pro Ball Valve

See Cat4190-HBV

For detailed product information refer to Cat 4190-HBV

PTFree connect™

2 Valve PTFree connect™

See Cat4190-PM

3 Valve PTFree connect™

See Cat4190-FM

The PTFree™ connect system enables users to assemble tube lines to any of the manifold ports without the need for PTFE tape or other liquid sealants.

PTFree™ connection can be applied to any 2, 3 or 5 valve manifold featured in this directory.

Double Block and Bleed Manifolds and Flanged Products

Designed to reduce leakage path by combining primary and secondary values into one compact unit.

Flange to compression connectors

See Cat4190-FP

Kidney flanges to compression connectors

See Cat4190-FP

Pro-Valve DBB manifolds

See Cat4190-FP

Pro-Bloc® DBB manifold

See Cat4190-FP

Monoflange DBB manifolds

See Cat4190-FP

For detailed product information refer to Cat 4190-FP

Manifold and Enclosure Sub-Assemblies

Enclosure Sub-Assembly

Enclosure Sub-Assembly

Parker offer the world's most complete range of instrumentation products. They provide the basis for all Parker sub-assemblies, allowing our engineers to capitalise on the innovation, quality and reliability inherent in all our products. A wide range of fully fitted enclosure assemblies are available.

Product Directory

Manifold and Hand Valve Options

Gland packing	Graphite
	PTFE
	H. F. Fluorocarbon (RPV)
	EPR (RPV)
	Nitrile (RPV)
	Silicone (RPV)
Seating	PCTFE
	PEEK
	Stellite tip
	6mm
Plug/Bleed valve	Blank plug 1/2" NPT
(supplied loose in box)	Bleed valve 1/2" NPT
	Plug & bleed valve
Connections	Purge ports 1/4"
	Test ports 1/4"
	Socket weld
	Butt weld
	in *mm
	DIN 19213 Seal
	Swivel gauge outlet
	Flange
	BSPT
	BSPP

Bolting	St. St. Mounting bolts	SSB
	M10 x 1.5 CS Mounting bolts	CSB10
	M10 x 1.5 SS Mounting bolts	SSB10
	Bolts for 3051 inclusive flange	CSBCP
Flow pattern	Angled	ANG
Operating mechanism	Lockable T bar	HL
	Anti tamper T bar	AT
	Anti tamper + key	ATK
	Handwheel	HW
	Lockable handwheel	LHW
Mounting	Panel mount	PM
	Base mount	BM
	56mm centres	56
	57mm centres	57
Condition	NACE (latest issue)	NACE
	Oxygen use	OXY
	Firesafe	FS
	Heat code certificates	HCT
	Test certificates	TC
	Air testing	PT

Check main catalogues for appropriate options

Bonnet Options

Retro-fit kit part number
KITTHL
Factory assembled suffix
THL

For key only - part no.
ATHKEY/1

Retro-fit kit part number
KITAT without key
KITATK with key

Factory assembled suffix
AT without key
ATK with key

Retro-fit kit part number
KITHW
Factory assembled suffix
HW

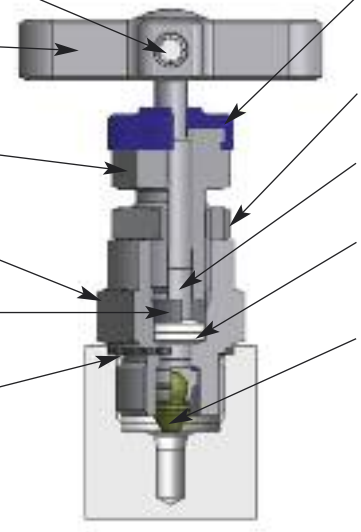
Retro-fit kit part number
KITLHW
Factory assembled suffix
LHW

Retro-fit kit part number
KITPM
Factory assembled suffix
PM

*Panel mounting hole diameter = 26mm (1.02"). Panel thickness = Max 5mm (0.20") Min 2.3mm (0.09").

Standard manifold globe style bonnet design

For safe reliable and repeatable performance



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 retro-fit of bonnets with 100% re-sealing assurance

3. Dust Cap
This has a dual purpose, preventing air born debris from contaminating the operating spindle thread and providing colour coded functional identification. Isolate (BLUE) Bleed/test (RED).

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 gland sealing.

9. Gland packing (adjustable)
Chevron style 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.

Material	
Stainless steel std	Carbon steel
Monel	6Mo
Duplex	Titanium
Super Duplex	Incoloy 825
Hasteloy	Inconel 625

Other material available on request

Double Block and Bleed Flanged Products with Fugitive Emission options

Catalog 4190-FP
July 2007

Flanged Products

Introduction

Parker Hannifin's response to the demand for reduction in leakage paths has been the combination of primary and secondary valves into one compact unit. The combining of piping and instrument valves into a single unit has benefitted various markets. Products can be offered which meet class 'A' or class 'B' levels of ISO 15848 standard for fugitive emissions, as required.
Parker Hannifin can offer the unique combination of double block and bleed valve systems together with integral fittings, both being designed and produced by one company. Selection of this combination results in the elimination of taper thread connections and the need for thread sealant. For more information on leak path reductions and how to combine connections and valves into one unit, please contact us.

Contents

Primary, secondary and vent valve applications and installations

Solutions

Parker Hannifin offers the unique solution by incorporating primary and secondary valve systems into one complete block. In addition traditional instrument taper thread connections can be totally eliminated resulting in systems being free of thread sealant contamination.

Conventional Installation [1]

- A welded flange, connected to a primary ANSI class isolating valve .The primary valve will be connected to a secondary instrument valve. A pressure gauge or transmitter will then be installed downstream of the instrument valve.

Parker Pro-Bloc ® [2]

- A one-piece integral forging incorporating up to 3 ball valves or mixture of ball and needle design.
- Improved safety: leak paths reduced by up to 60%
- Reduced costs: installation and component costs reduced by up to 70%
- Reduced weight: by up to 80%
- Reduced susceptibility to problems caused by vibration.

See pages 29-38 for standard and fugitive Emission products.

Parker Monoflange [3]

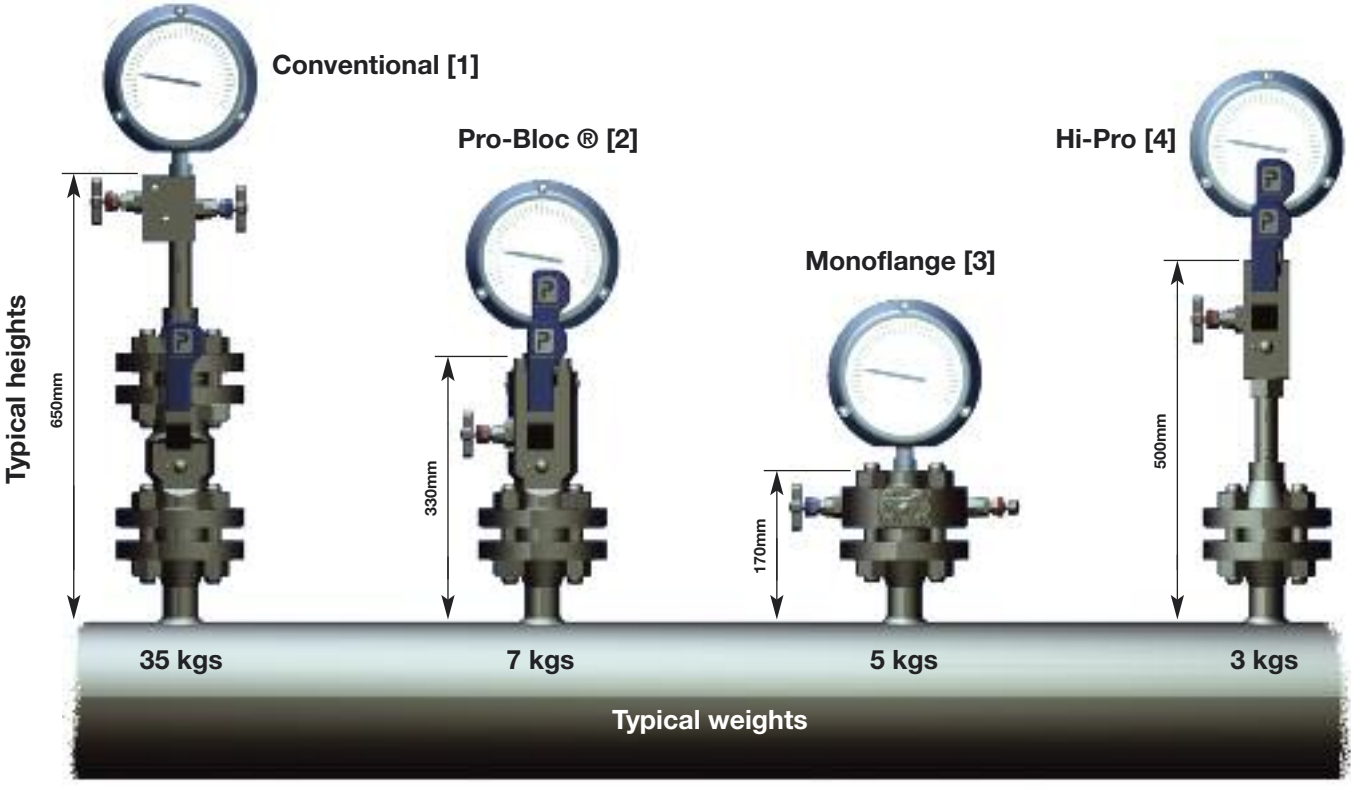
- More compact than Pro-Bloc®, adding further space and weight saving possibilities.
- Improved safety: leak paths reduced by up to 60%, less susceptibility to vibration
- Reduced costs: installation and component costs reduced by up to 80%
- Reduced weight: by up to 85%

See pages 23-28 for standard and fugitive Emission products.

Parker Hi-Pro Manifolds [4]

- Enables the user to continue to use traditional NPT threaded connections and at the same time utilise the double block and bleed principals Available in several combinations of ball and needle valves.

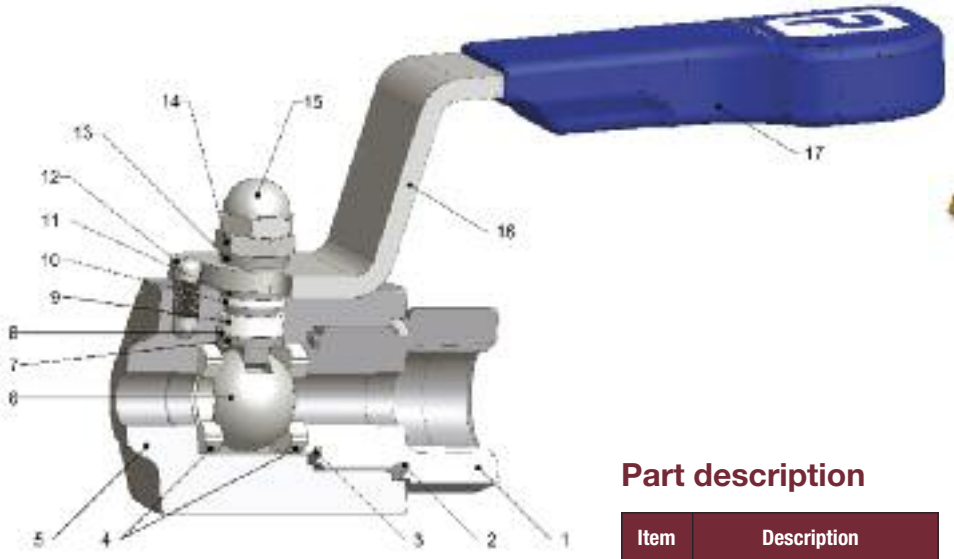
Full details can be found in CAT 4190 HBM.



Design codes

- All Parker Hannifin Double block and bleed designs comply with the following codes.
- ANSI/ASME B16.34 (Designed to meet the pressure and temperature requirements)
- ANSI/ASME B1.20.1 (Threads)
- ANSI/ASME B16.5 (Dimensions)
- BS6755 PART 2/API 607 (Fire safe designed to meet the requirements and verified by internal testing)
- ISO 15848 for fugitive emissions.

Ball valve specification



Handle locking

Specifications

- 316 Stainless steel construction.
- Maximum cold working pressure rating 6,000 psig (414 barg) with P.T.F.E. seats.*
- Temperature rating PTFE seats -29˚C to +204˚C (-20˚F to +400˚F).*
- Maximum cold working pressure rating 10,000 psig (689 barg) with PEEK seats.*
- Temperature rating PEEK seats -29˚C to +232˚C (-20˚F to +450˚F).*

*always refer to P/T graph

Part description

Item	Description
1	End Connector
2	E-seal™
3	Sealing washer
4	Seats
5	Body
6	Ball
7	Anti blowout stem
8	Thrust Seal
9	Gland packing
10	Upper gland packing
11	Thrust bush
12	Stop pin
13	Thrust bush
14	Lock nut
15	Locking dome nut
16	Handle
17	Handle grip

Optional bolted end connector

Spanner actuation

Features

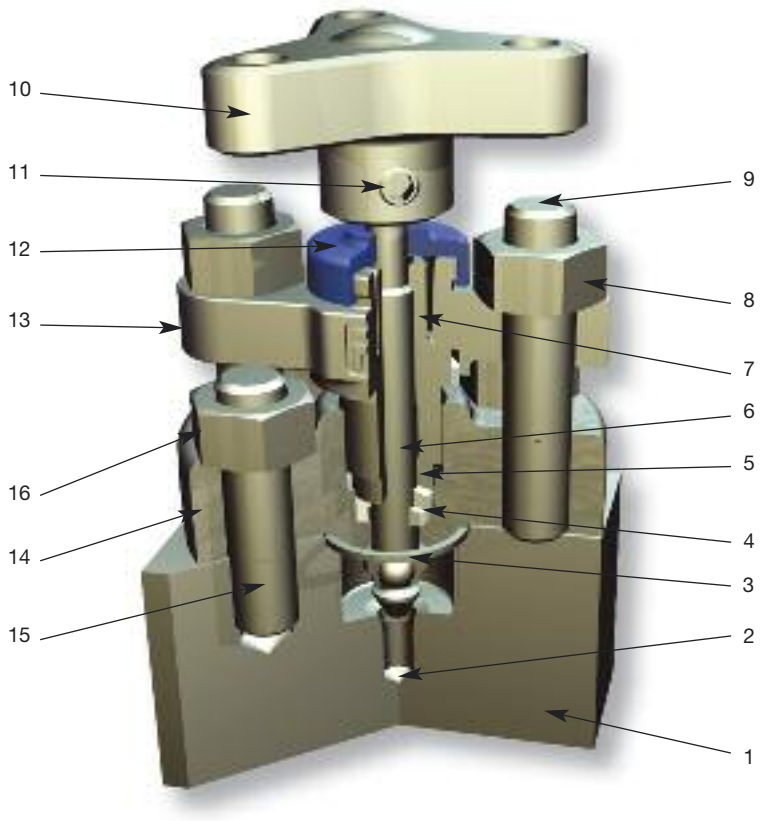
- Two piece body design - minimal leakage paths.
- 4:1 Pressure boundary designed safety factor.
- Designed to comply with requirements of ANSI/ASME B16.34 where applicable.
- Bi-directional.
- PEEK and PTFE standard ball seat materials.
- PTFE and Graphoil gland packings.
- Bubble tight shutoff.
- Floating ball principal with dynamic response seats featuring inherent self relief.
- Anti blowout stem.
- Integral compression ends available eliminating taper threads and thread sealants.
- Low torque operation.
- Quarter turn positive stop handle with ergonomically designed protective sleeve.
- Full hydrostatic and low pressure air tested.
- Connector thread environmentally sealed.
- Anti static.
- Firesafe designed to meet BS6755 Part 2/ API 607, (optional).

Performance Data Pressure vs temperature

* See catalogue 4190-HBV Hi-Pro Ball Valve for High Performance Process Isolation.

⚠ When selecting products for specific applications users should refer to our notice at the bottom of page 2.

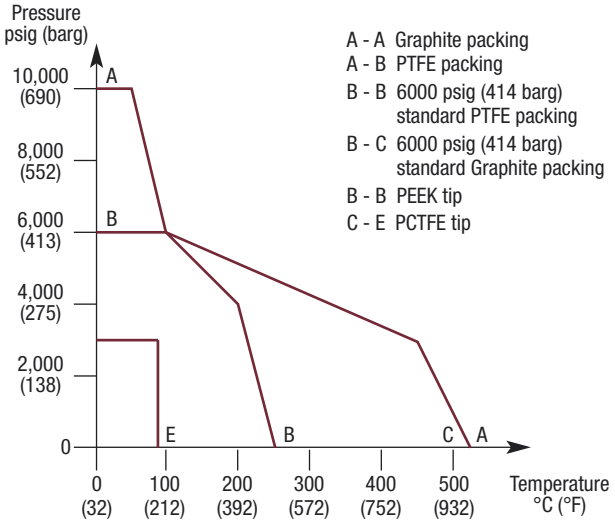
Outside screw and yoke (O.S.&Y.) needle valve



Features

- Externally adjustable gland.
- P.T.F.E. or Graphite packing for bubble tight sealing.
- Self centering crimped needle tip for bubble tight shut off and repeatability.
- Available in 316, Monel, Duplex, Super Duplex, Hasteloy, Inconel, Incoloy, 6Mo, Carbon Steel, other materials on application.
- Stainless steel as standard.
- Optional wetted parts in a variety of exotic materials.
- Firesafe certified to BS6755 part 2/ API 607.
- Pressure rating up to 10,000 psig (690 barg).
- Temperature -54°C to 538°C (-65°F to 1000°F).
- Body to bonnet flange gasket for 100% atmospheric seal.
- Back stopped spindle for blow out prevention, and minimum atmospheric leakage.
- Rolled spindle operating threads.
- Independent spindle thread bush with maximum female thread interface.
- Colour coded close contact dust cap and function label for easy identification.
- Optional: NACE compliance, heat code trace certification, oxygen clean.

Pressure vs temperature



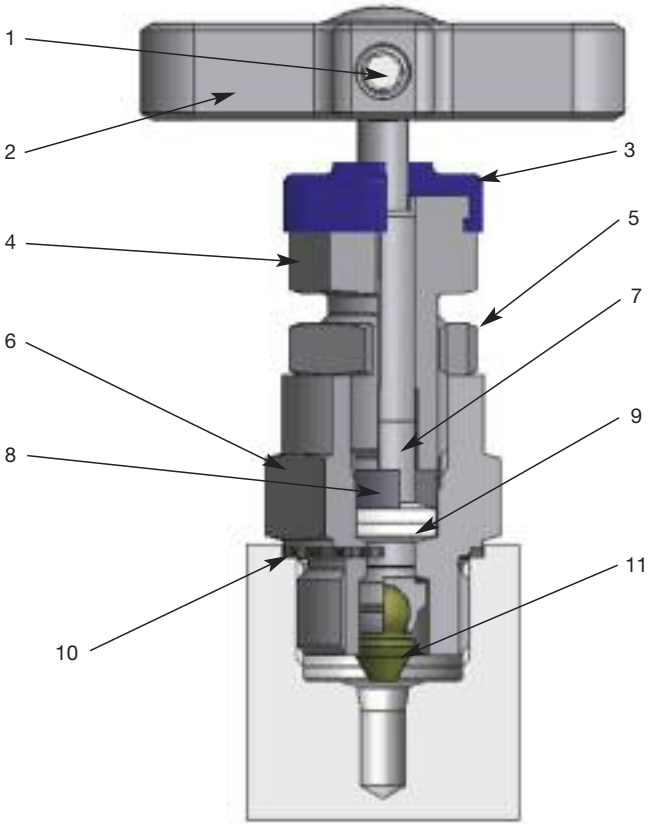
Part description

Item	Description
1	Body
2	Tip
3	Joint seal
4	Packing
5	Thrust bush
6	Stem
7	Gland adjuster
8	Bridge nuts
9	Bonnet-bridge studding
10	Handle
11	Grub screw
12	Dust cap
13	Bridge
14	Bonnet
15	Body-bonnet studding
16	Stud nuts

⚠ When selecting products for specific applications users should refer to our notice at the bottom of page 2.

Flanged Products

“H” Series globe style needle valve

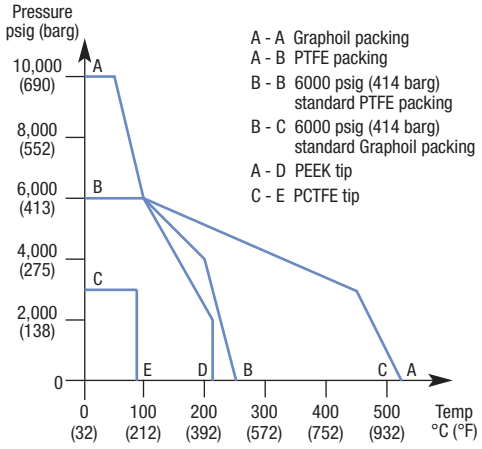


For safe, reliable and repeatable performance

Part description

Item	Description
1	Positive handle retention
2	“T” bar
3	Dust Cap
4	Gland packing adjuster
5	Gland adjuster lock nut
6	Valve Bonnet
7	Anti blowout spindle
8	Thrust Bush
9	Gland packing (adjustable)
10	Bonnet/body washer
11	Spindle tip

Pressure vs temperature



Features

- Rolled spindle operating threads for low torque operation.
- Gland packing in PTFE or Graphite for bubble tight sealing.
- Colour coded close contact dust cap and function label for easy identification.
- Available in 316L, Monel, Duplex, Super Duplex, Hasteloy, Inconel, Incoloy, 6Mo, Titanium, other materials on application.
- T-bar operating handle for low torque function.
- Self centering crimped needle tip for bubble tight seat sealing.
- Close contact dust cap for operating thread protection.
- Back seated spindle for blow out prevention and minimum atmospheric leakage.
- Adjustable gland with easy access.
- Gland lock nut for vibration protection.
- Pressure rating up to 10,000 psig (690 barg).
- Temperature rating -54°C to -538°C (-65°F to 1000°F)
- Optional bolted bonnet design available, firesafe certified.
- Optional: NACE compliance, heat code trace certification, oxygen clean.

⚠ When selecting products for specific applications users should refer to our notice at the bottom of page 2.

Anti-tamper spindle

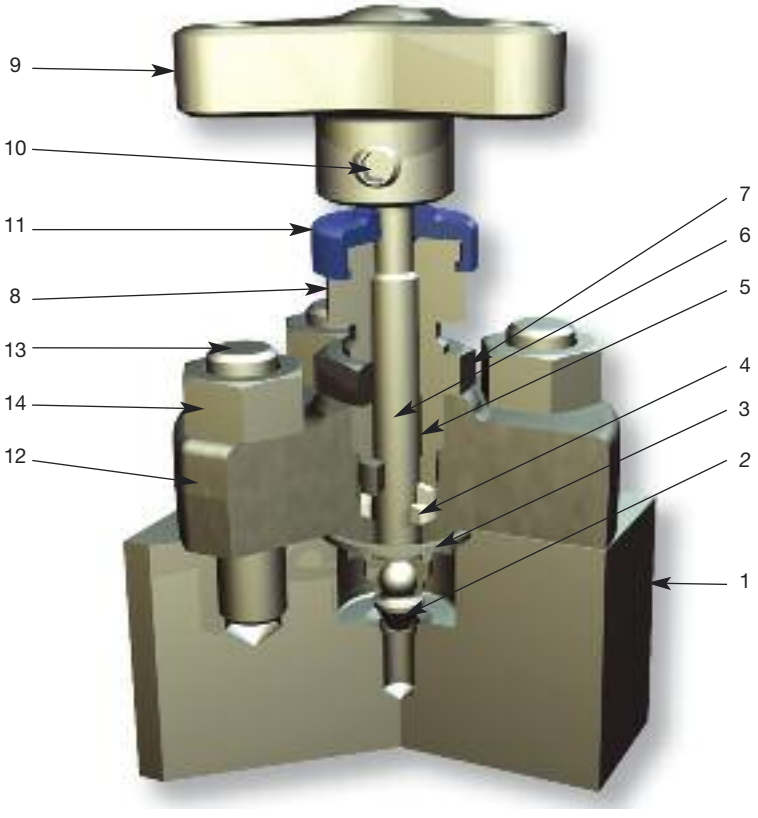
For key only - part no. **ATHKEY/1**

Retro-fit kit part number
KITAT without key
KITATK with key

T bar handle locking

Retro-fit kit part number **KITTHL**

Bolted bonnet inside screw



Not available on Low Emission valves

Part description

Item	Description
1	Body
2	Tip
3	Joint seal
4	Packing
5	Thrust bush
6	Stem
7	Nut
8	Gland adjuster
9	Handle
10	Grub screw
11	Dust cap
12	Bonnet
13	Body-bonnet studding
14	Stud nuts

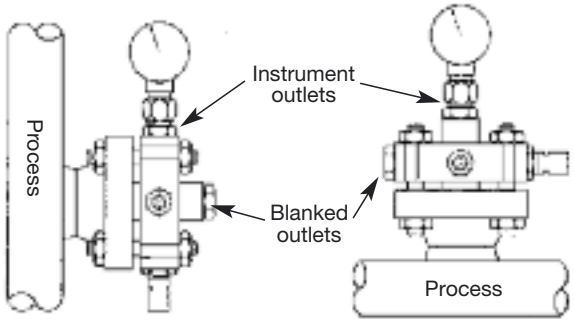
Monoflange (MF) manifolds

Purpose

This manifold range is designed to replace conventional multiple-valve installations currently in use for interface with pressure measuring systems. By combining customer specified valves into a single manifold, the number of leak paths is considerably reduced and the mass of the system is lowered reducing the stresses from loading and vibration. The result of which substantially improves installation and operational safety factors. Reduction in leakage path connections together with a one-piece solution also provides positive installation cost savings.
Suitable for Fugitive Emission requirements.

Key advantages of Parker Monoflanges

- Strong construction produced from one piece grain flow controlled forged body.
- Various flow and valve configurations available allowing true flexibility to meet all customer requirements.
- Variety of flange sizes and outlet connections.
- Standard materials of Carbon Steel A105,
  Low Temperature Carbon Steel A350 LF2,
  Stainless Steel A182-F316 and
  Duplex Stainless Steel A182-F51.
- Optional materials include Super Duplex, Monel, Hastelloy, 6Mo, Incoloy 625.
- Incorporation of standard “H” series needle valve technology and state of the art O.S.&Y. design.
- 4mm Needle valve orifice.
- Ergonomically designed operating handles with low torque function.
- Full range of customer retro fit handle options.
- User friendly part number and specification construction system.
- Customised designs welcome.
- Available to meet ISO 15848, Class A.



Instrument outlet connections

One of the unique features Parker can offer users which can further enhance safety factors is the incorporation of single or twin ferrule compression fittings as an integral part of the outlet connection.
Installation of the instrument which require remote positioning will be interconnected using conventional tube and fittings, whilst NPT taper threads are accepted as a standard their use involves some form of thread sealant which adds to the complication of instrument performance through contamination within the system.
Avoiding these taper thread connections wherever possible reduces this contaminant risk and Parker, being a leading manufacturer of compression type of fittings (which requires no sealant mediums), can incorporate them in the outlet connection, totally eliminating the contamination risk.

MFY100
MFY110

MFY140

MFH100
MFH110

Monoflange features

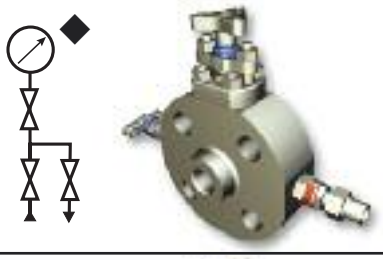
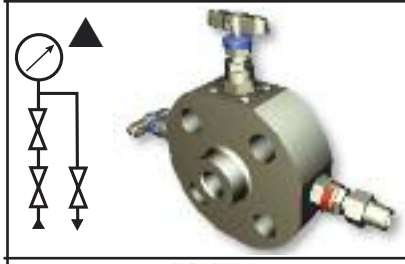
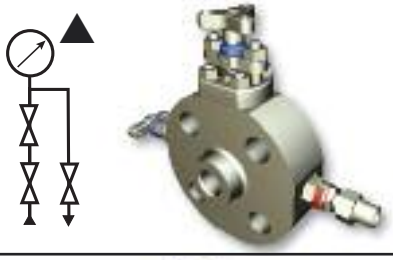
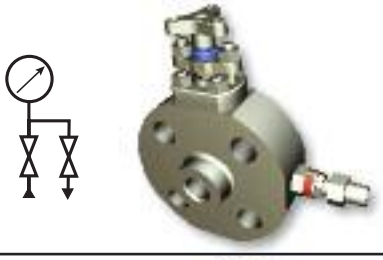
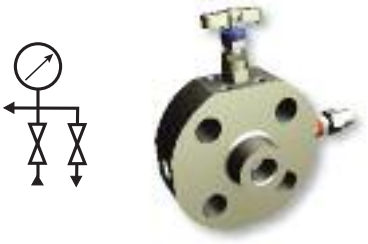
- 1/2” to 2” N.B. Flanges (15 to 50 DN).
- ANSI B16.5 150 to 2500 flange class and API 10,000.
- 1/2-14 NPT (female) standard outlet.
- 1/4-18 NPT (female) standard vent.
- Variety of optional end connection sizes and thread forms including tube connections 1/2”/12mm diameter.
- Standard materials of construction: Stainless steel ASTM A182 F316/F316L, Carbon steel ASTM A350 LF2/A105, Duplex ASTM A182 F51.
- Optional materials include Super Duplex, Monel, Hastelloy, 6Mo, Incoloy.
- Combined needle and O.S.&Y. valves available.
- Instrument connections A-LOK® inverted available.
- Raised face and ring type joint flange face styles.
- One-piece forged construction flange as standard.
- H needle design with retro fit handle options.
- Optional fire safe designed (and tested) to meet BS6755 part 2/API 607.
- Pressure boundary designs calculated to ASME VIII Div. 1 and verified by testing.
- 4:1 Factor of Safety.
- Heat code traceable material to EN10204.3.1.
- Bubble tight shut off valve seats 17-4 PH tips standard.
- Optional PEEK tips available.
- Colour coded functional valves.
- Optional locking and anti tamper devices for all valve types available.
- NACE MR 0175/ISO 15156 compliant material available on request.
- Permanent marked body with full order and specification details.
- Available with various non-threaded connections, please contact us.

Standard specification:
Outlet - 1/2” FNPT
Vent - plugged 1/4” FNPT
Seat - metal to metal
Packing - PTFE

Flanged Products

Monoflange (MF) manifold selection and part number construction - made easy

Select the style of Monoflange from the choice of arrangements below noting the complete **MF reference**.
If the style or arrangement is not shown below please provide full description and specification.

 **Block bleed block** 1st Isolate: Needle 2nd Isolate: Needle Vent: Needle **MFH100**	 **Block bleed block** 1st Isolate: O.S.&Y. 2nd Isolate: Needle Vent: Needle **MFY100**
 **Block block bleed** 1st Isolate: Needle 2nd Isolate: Needle Vent: Needle **MFH110**	 **Block block bleed** 1st Isolate: O.S.&Y. 2nd Isolate: Needle Vent: Needle **MFY110**
 **Block & bleed** 1st Isolate: Needle Vent: Needle **MFH120**	 **Block & bleed** 1st Isolate: O.S.&Y. Vent: Needle **MFY120**
 **Block & bleed** 1st Isolate: Needle Vent: Needle **MFH130**	 **Block & bleed** 1st Isolate: O.S.&Y. Vent: Needle **MFY130**
 **Double block** 1st Isolate: Needle 2nd Isolate: Needle **MFH140**	 **Double block** 1st Isolate: O.S.&Y. 2nd Isolate: Needle. **MFY140**
 **Single block** 1st Isolate: Needle **MFH150**	 **Single block** 1st Isolate: O.S.&Y. **MFY150**

◆ For dual outlets specify MF*105. ▲ For dual outlets specify MF*115.
For flange to flange variants replace MF*1** with MF*2**.
For bleed port only specify MF*160.
For OS&Y valves on primary and secondary isolates specify MFY102. Please note vent valve is not anti-tamper as standard.

Example **MFY100** **B** **32T2500** **A3** **F**

1. Monoflange part number
Insert from page 22

2. Material

A	Carbon Steel ASTM A105
B	Stainless Steel ASTM A182-F316
D	Monel M400
E	Duplex ASTM A182-F51
F	Super Duplex ASTM A182-F53/F55
G	Hastelloy C-276
H	Low Temp. C. St. ASTM A350 LF2
K	6Mo
M	Inconel 625

3. Flange details

Flange Size	Flange Face Style	Flange Class
8 = 1/2”	**F** = Raised Face Spiral	**150** = 150
12 = 3/4”	**T** = Ring Type Joint	**300** = 300
16 = 1”		**600** = 600
24 = 1 1/2”		**900** = 900
32 = 2”		**1500** = 1500
API } specify separately		**2500** = 2500
DIN } see page 28		***136** = 150/300/600
*1/2” flange size only		

4. Outlet style (1/2” FNPT is standard NO part designator needed)

Size	Connection Style
4 = 1/4”	**F** = Female NPT Thread
6 = 3/8”	**M** = Male NPT Thread
8 = 1/2”	**A** = A-LOK® (inverted only)
M6 = 6mm	**G** = Swivel gauge adaptor 1/2” NPTF (fitted)
M10 = 10mm	
M12 = 12mm	

5. Plugged vent (1/4” FNPT is standard NO part designator needed)

Size
V6 = 3/8” FNPT
V8 = 1/2” FNPT

6. Valve packing and seat materials

*	PTFE Packing
*	Needle tip 17-4PH St. St.
3	Graphoil (fitted as standard when fire safe design is specified)
PN	PEEK Needle tip all valves (non fire safe only)

* fitted as standard no part NO designator required.

7. Valve handle operating options

A*	Anti tamper
L*	Padlock handle locking
R*	Regulating tip (“H” series needle valve only)

* Insert valve number 1 = primary, 2 = secondary, 3 = vent, 4 = all. Padlocks not supplied

8. Condition

F	Firesafe design (primary only - O.S.&Y. needle valve)
N	NACE

Combine designators as required

Please Note:
Certification requirements and customer specifications MUST be provided at enquiry and order stage.

⚠ When selecting products for specific applications users should refer to our notice at the bottom of page 2.

IMPORTANT NOTES

All non wetted parts will be supplied in standard stainless steel for exotic materials. For carbon steel construction trim materials will be supplied in stainless steel.

Ring type joints (T) CANNOT be supplied for 1/2” & 3/4” class 150 flanges.

St. St. grades 302 and 304 are NOT used in the construction of any of these products.

For customer specific options not covered here engineering will allocate a part number at quotation stage.

Certification requirements and customer specifications MUST be provided at enquiry and order stage.

For API flange requirements full details must be specified separately.

Part number example MFY100B32T2500A3F Monoflange - Double Block and Bleed - Block (O.S.&Y.) Bleed (Needle) Block (Needle) (MFY100) - 316 St. St. construction (B) - 2” Pipe flange, Ring type joint, class 2500 (32T2500) - 1/2” female NPT outlet - 1/4” Female NPT vent - Anti-tamper vent (A3) - Firesafe design and certified (F), valves fitted with PTFE packing, metal seated 17-4PH st.st. tips.

Pro-Bloc® (PB) Manifolds

Purpose

This manifold range is designed to replace conventional multiple-valve installations currently in use for interface with pressure measuring systems. By combining customer specified valves into a single manifold, the number of leak paths is considerably reduced and the mass of the system is lowered reducing the stresses from loading and vibration. The result of which substantially improves installation and operational safety factors. Reduction in leakage path connections together with a one-piece solution also provides positive installation cost savings.

Key advantages of Parker Pro-Bloc®

- Strong construction produced from one piece grain flow controlled forged body.
- Various flow and valve configurations available allowing true flexibility to meet all customer requirements.
- Single flange, double flange or triple flange configurations available.
- Standard materials of Carbon Steel A105,
  Low Temperature Carbon Steel A350 LF2,
  Stainless Steel A182-F316 and
  Duplex Stainless Steel A182-F51.
- Optional materials include Super Duplex, Monel, Hastelloy, 6Mo, Incoloy 625.
- Incorporation of standard Hi-Pro ball valve and “H” series needle valve technology.
- 10mm/15mm/20mm/25mm full bore valve design.
- Ergonomically designed operating handles with low torque function.
- User friendly part number and specification construction system.
- Optional integral A-LOK®/CPI™ outlet connection.
- **Parker Tru-loc™ (patent pending) safety system.**

Tru-Loc
Mechanical Sealed End Connection
Designed specifically for Pro-Bloc end connection security. Extensive tests have proved that end connections locked with the Tru-Loc (PP) end connector locking mechanism give 100% security and prevent end connector movement when disconnecting instruments or connectors. This ensures that the Ball Seat is securely positioned at all times.

Instrument outlet connections

One of the unique features Parker can offer users which can further enhance safety factors is the incorporation of single or twin ferrule compression fittings as an integral part of the outlet connection.
Installation of the instrument which require remote positioning will be interconnected using conventional tube and compression fittings, whilst NPT taper threads are accepted as a standard their use involves some form of thread sealant which adds to the complication of instrument performance through contamination within the system.
Avoiding these taper thread connections wherever possible reduces this contaminant risk and Parker, being a leading manufacturer of compression type of fittings (which requires no sealant mediums), can incorporate them in the outlet connection, totally eliminating the contamination risk.

PB*100

PB*120

PB*160

PB*220

Pro-Bloc® features

- 1/2” to 3” N.B. Flanges (15 to 50 DN).
- ANSI B16.5 150 to 2500 flange class and API 10,000.
- 10mm/15mm/20mm/25mm full bore valve design.
- 1/2”-14 to 1”-11.5 NPT (female) standard outlet (depending on bore size).
- 1/2” NPT (female) standard vent.
- Variety of optional end connection sizes and thread forms including tube connections up to 1”/25mm diameter (depending on bore size).
- Standard materials of construction: Stainless steel ASTM A182 F316/F316L, Carbon steel ASTM A350 LF2/A105, Duplex ASTM A182 F51.
- Optional materials on request.
- Instrument connections A-LOK®/CPI™ available.
- Raised face and ring type joint flange face styles.
- One-piece forged construction flange as standard.
- Optional fire safe designed (and tested) to meet BS 6755 Part 2/API 607.
- 316 stainless steel handles and trim as standard to reduce the risk of corrosion.
- Designed to meet the pressure and temperature requirements of ASME/ANSI B16.34/B16.5.
- Pressure boundary designs calculated to ASME VIII Div 1 and verified by testing.
- 4:1 Factor of Safety.
- Heat code traceable material to EN10204.3.1.
- Bubble tight shut off.
- Colour coded functional valves.
- Optional locking and anti tamper devices for all valve types available.
- Positive lever stop.
- NACE MR 0175/ISO 15156 compliance available on request.
- Large user friendly handles.
- Permanent affixed reference label.
- O.S.&Y. and “H” series needle valves can be combined with ball valves.

* Select bore size
Y - 10mm, X - 15mm, W - 20mm, V - 25mm

Standard specification flange x screw:
Outlet - FNPT; Vent - 1/2” FNPT plugged;
Ball seats. P.T.F.E.; Needle seats, metal/metal 17-4 PH St. St.; P.T.F.E. packing all valves.

Flanged Products

Pro-Bloc® (PB) manifold selection and part number construction - made easy

Select the style of Pro-Bloc from the choice of arrangements below noting the complete **PB reference**.
* Select ball bore size, Y = 10mm, X = 15mm, W = 20mm, V = 25mm. e.g. PWB100 = 20mm ball bore.

● Only available with 10mm bore ball valve.

	**Block bleed block** **Flange x screw** 1st Isolate: Ball 2nd Isolate: Ball Vent: Needle **PB*100**		**Block bleed block** **Flange x flange** 1st Isolate: Ball 2nd Isolate: Ball Vent: Needle **PB*200**
● 	**Block bleed block** **Flange x screw** 1st Isolate: Ball 2nd Isolate: Needle Vent: Needle **PBY110**	● 	**Block bleed block** **Flange x flange** 1st Isolate: Ball 2nd Isolate: Needle Vent: Needle **PBY210**
	**Block bleed block** **Flange x screw** 1st Isolate: Ball 2nd Isolate: Ball Vent: Ball **PB*120**		**Block bleed block** **Flange x flange** 1st Isolate: Ball 2nd Isolate: Ball Vent: Ball **PB*220**
	**Block & bleed** **Flange x screw** 1st Isolate: Ball Vent: Needle **PB*130**		**Block & bleed** **Flange x flange** 1st Isolate: Ball Vent: Needle **PB*230**
	**Block & bleed** **Flange x screw** 1st Isolate: Ball Vent: Ball **PB*140**		**Block & bleed** **Flange x flange** 1st Isolate: Ball Vent: Ball **PB*240**
● 	**Double block** **Flange x screw** 1st Isolate: Ball 2nd Isolate: Needle **PBY150**	● 	**Double block** **Flange x flange** 1st Isolate: Ball 2nd Isolate: Needle **PBY250**
	**Double block** **Flange x screw** 1st Isolate: Ball 2nd Isolate: Ball **PB*160**		**Double block** **Flange x flange** 1st Isolate: Ball 2nd Isolate: Ball **PB*260**

Single isolate. —◍— specify PB*165, PB*265.

Example **PB*100** **B** **32T2500** **F**

1. Pro-Bloc part number
Insert from page 26

2. Material

A	Carbon Steel ASTM A105
B	Stainless Steel ASTM A182-F316
D	Monel M400
E	Duplex ASTM A182-F51
F	Super Duplex ASTM A182-F53/F55
G	Hastelloy C-276
H	Low Temp. C. St. ASTM A350 LF2
K	6Mo
L	825
M	Inconel 625

3. Flange details

Flange Size	Flange Face Style	Flange Class
‡**8** = 1/2”	**F** = Raised Face Spiral	**150** = 150
‡**12** = 3/4”	**T** = Ring Type Joint	**300** = 300
‡**16** = 1”		**600** = 600
24 = 1 1/2”		**900** = 900
32 = 2”		**1500** = 1500
48 = 3” (25mm bore only)		**2500** = 2500
API } specify separately		
DIN } See page 28		

‡ Certain flange/bore size combinations not available - consult factory

4. Outlet style (each bore size has its own standard size female NPT outlet - the standard does not require this field to be completed)

Standard outlets (female NPT)

10mm bore = 1/2”
15mm bore = 1/2”
20mm bore = 3/4”
25mm bore = 1”
For optional outlets see page 28

5. Plugged vent (1/2” NPTF as standard NO part designator needed)

6. Packing, seat and construction options

*	PTFE Packing
*	PTFE Ball seats
*	Needle tip 17-4PH St. St.
PK	PEEK Ball and needle seating
PB	PEEK Ball seats
PN	PEEK Needle tip (non firesafe only)
BC	Bolted construction connection

* fitted as standard no part NO designator required.

7. Valve handle operating options

A*	Anti tamper (Needle Valve only)
L*	Padlock handle locking
R*	Regulating tip (“H” series Needle Valve only)
S*	Spanner actuated (Ball Valve only)
Y*	O.S.&Y. Needle Valve

* Insert valve number 1 = primary, 2 = secondary, 3 = vent, 4 = all. Padlocks not supplied
Note: Firesafe needle valve with locking device NOT available

8. Condition

F	Firesafe design
N	NACE

Combine designators as required

Please Note:
Certification requirements and customer specifications MUST be provided at enquiry and order stage.

Modular designs are available upon application

Flange x screw PB*500 series
Flange x flange PB*600 series

Flanged Products

Other flange detail options (reference Box 3 flange details pages 23, 27, 37, 39)

3. Flange details API 6A / ISO 10423* (Dimensionally compliant only)

Flange Size	Flange Rating
29 = 1 13/16”	**2K** = 2000 psig
33 = 2 1/16”	**3K** = 3000 psig
41 = 2 9/16”	**5K** = 5000 psig
	10K = 10000 psig (not available for fugitive emission products).

* Only available with 10mm bore (PBY) and Monoflange products.

3. Flange details DIN

Flange Size	Flange Class
DN10	PN6
DN15	PN10
DN20	PN16
DN25	PN40
DN32	PN100
DN40	
DN50	

Other outlet options (reference Box 4 outlet style pages 23, 27, 37, 39)

4. Optional outlets

Size	Connection Style
4 = 1/4”	**F** = Female NPT
6 = 3/8”	**M** = Male NPT
8 = 1/2”	**A** = A-LOK®
10 = 5/8”	**Z** = CPI™
12 = 3/4”	**G** = Swivel gauge adaptor
14 = 7/8”	**1/2”** Female NPT (fitted)
16 = 1”	
M6 = 6mm	
M10 = 10mm	
M12 = 12mm	
M14 = 14mm	
M15 = 15mm	
M16 = 16mm	
M18 = 18mm	
M20 = 20mm	
M22 = 22mm	
M25 = 25mm	

Note: Contact factory for bore size/outlet connection combinations

⚠ When selecting products for specific applications users should refer to our notice at the bottom of page 2.

IMPORTANT NOTES

All non wetted parts will be supplied in standard stainless steel for exotic materials. For carbon steel construction trim materials will be supplied in stainless steel.

For flange to flange construction when the required flanges are different sizes then specify both sizes in section 3 example: 1st flange 1” pipe (16), raised face (F), class 900 (900), 2nd flange 1/2” (8), raised face (F), class 900 (900) insert: 16F9008F900. Consult factory for available combinations.

Ring type joints (T) CANNOT be supplied for 1/2” & 3/4” class 150 flanges.

St. St. grades 302 and 304 are NOT used in the construction of any of these products.

For customer specific options not covered here engineering will allocate a part number at quotation stage.

Certification requirements and customer specifications MUST be provided at enquiry and order stage.

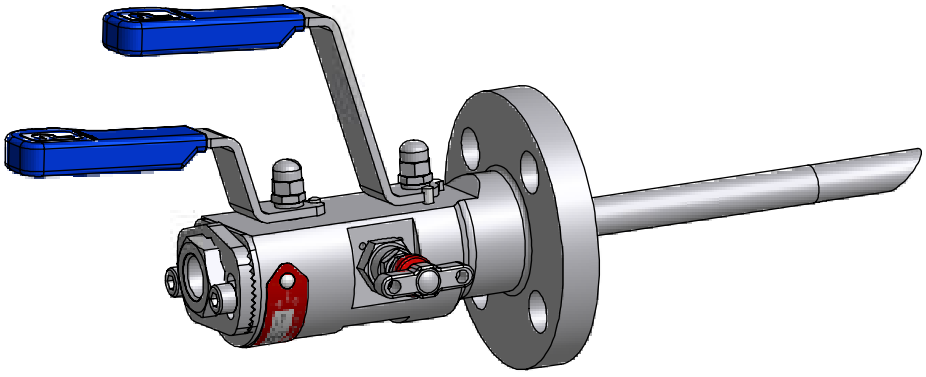
For API flange requirements full details must be specified separately.

Part number example FEPBY100B32T2500F Fugitive Emission Pro-Bloc - Flange by screw - Double Block and Bleed - Block (Ball) Bleed (Needle) Block (Ball) (FEPBY100) - 316 St. St. construction (B) - 2” Pipe flange, Ring type joint, class 2500 (32T2500) - 1/2” female NPT outlet - 1/2” Female NPT vent - Firesafe design and certified (F), all valves PTFE packed, ball seats PTFE, needle valve metal seated 17-4PH st.st. tips.

Pro-Bloc® (PB) Manifolds

Pro-Bloc® for sampling applications (10mm + 15mm bore only)

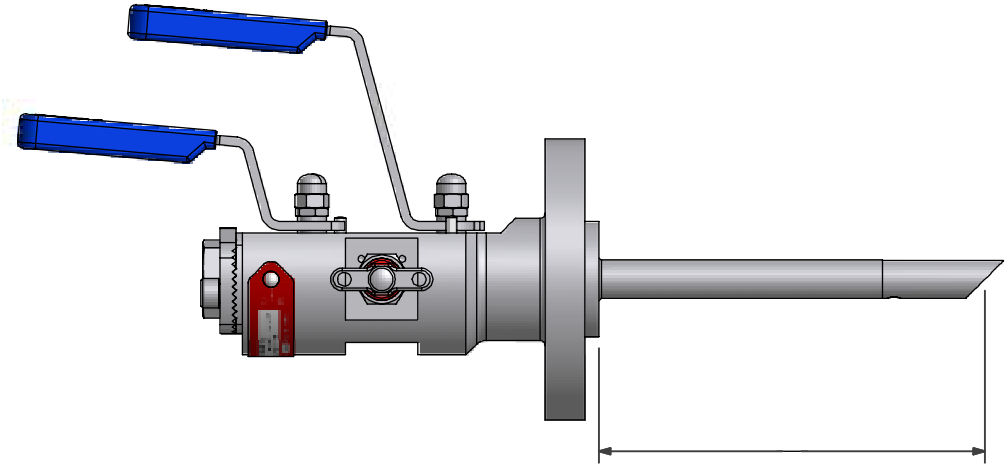
This manifold range is designed to replace conventional multiple-valve installations where sampling of the process stream is required. This design has been developed to remove a sample directly from the process stream at full system pressure. All of the options and configurations shown within the standard Pro-Bloc range can be offered for sampling service by the addition of a customised sampling probe which extends from the pipe flange into the process stream. Also available to suit ISO15848 Class 'A' fugitive emission standard.



Pro-Bloc® for sampling applications - part numbering

In order to specify the addition of a sampling probe to your Pro-Bloc simply add an "S" to the beginning of the part number i.e. SPB or FESPB… The probe length in "mm" must be added to the end of the part number, see below. Due to the internal bore size of standard ASME flanges probes can only be installed on a range of flanges - please see the attached table.

Bore	Flange range
10mm	Size 1" and above, ASME flanges up to class 2500.
15mm	Size 1 1/2" and above, ASME flanges up to class 2500.
20mm	Not available
25mm	Not available

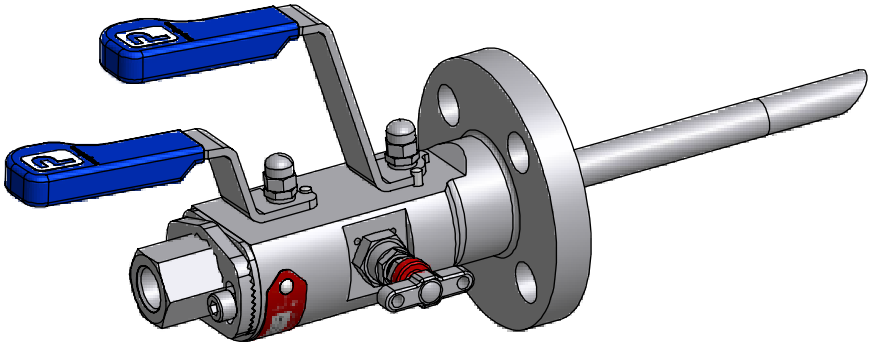


The probe length must be specified from the raised face to the end of the probe in mm, to the nearest mm.
Probes are supplied to suit the insertion length required by the pipeline and thus must be specified by the customer.
A wide variety of end preparations and support collars are available on request.
Probe strength wake frequency calculations can be carried out against pipeline flow rates on request.
In the event of the required valve configuration not be shown please do not hesitate to contact the factory as Parker Hannifin IPD offer bespoke customer solutions.

Pro-Bloc® (PB) Manifolds

Pro-Bloc® for injection applications (10mm + 15mm bore only)

This manifold range is designed to replace conventional multiple-valve installations where injection into the process stream is required. This design has been developed to inject directly into the process stream at full system pressure. All of the options and configurations shown within the standard Pro-Bloc range can be offered for injection service by the addition of a customised injection probe which extends from the pipe flange into the process stream. Pro-Bloc's for injection applications include an injection probe which enables the fluid to be injected directly into the process stream and a high integrity full bore non-return valve to eliminate the risk of back flow out of the process stream. Also available to meet ISO15848 Class 'A' fugitive emission standard.



Pro-Bloc® for injection applications - part numbering

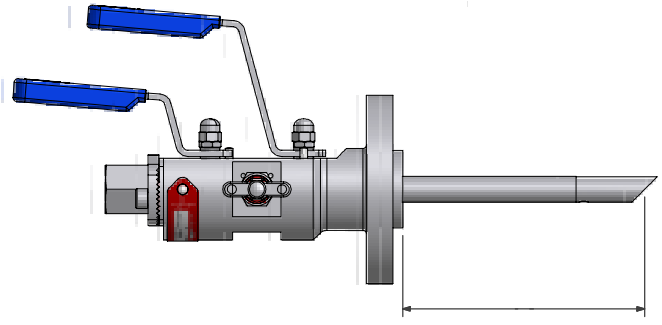
In order to specify the addition of an injection probe and non-return valve to your Pro-Bloc simply add a "J" to the beginning of the part number i.e. JPB or FEJPB… The probe length in "mm" must be added to the end of the part number, see below. Due to the internal bore size of standard ASME flanges probes can only be installed on a range of flanges - please see the table in the sampling Pro-Bloc section (previous page).

The probe length must be specified from the raised face to the end of the probe in mm, to the nearest mm.

Probes are supplied to suit the insertion length required by the pipeline and thus must be specified by the customer.

A wide variety of end preparations and support collars are available on request.

Probe strength wake frequency calculations can be carried out against pipeline flow rates on request.



Hi-Check non-return valve

This high integrity full bore non-return valve eliminates the risk of back flow out of the process stream. The design utilises a spring loaded poppet to ensure leak proof performance. The Hi-Check Non Return Valve is designed for higher flow and low pressure drop across the valve - having a larger through bore than most other manufacturers equivalent product.

As standard a viton seal will be supplied with a "crack" pressure of 10 psig. A wide variety of seat materials and crack pressures are available on request.

In the event of the required valve configuration not being shown please do not hesitate to contact the factory as Parker Hannifin IPD offer bespoke customer solutions. See Catalogue 4190-CV for more details.

Meeting the ISO Standard

From October 2007 all UK processing plants and power stations will have to comply with the EU's IPPC directive 96/61/EC. In essence, the IPPC Directive is about minimising pollution from various industrial sources throughout the European Union. An important part of this legislation is reducing fugitive emissions, which will have significant consequences for all processes. According to the IPPS all plants and factories which fail to comply with the standards set by the directive may be closed from this point.

To put the scale of the challenge into perspective, a typical European refinery loses between 600 and 10,000 tonnes of emissions per annum. Around 70% of these losses are estimated to be caused by plant equipment such as pipe flanges, pumps, valves and vessels. Leakage from valves is often the biggest culprit, reportedly accounting for around 50% of the fugitive emissions within the chemical and petrochemical industries.

Irrespective of the environmental impact, there is a tremendous financial burden on industry because it represents a huge loss of product, and cause of plant inefficiency. However, the true costs to industry are not always appreciated, as many of the costs associated with fugitive emissions are hidden. Such as labour and materials to repair leaks, wasted energy, environmental fines and clean up costs, lost sales due to a poor green image, claims for personal injury and more. In this way, reducing fugitive emissions not only protects the environment, but can save companies time and money.

With the above in mind, the legislation introduces a concept of Best Available Technique (BAT), urging plants to find the best available solution for reducing fugitive emissions throughout the process, from areas such as design, product selection, fitting and fitter training, to maintenance, site monitoring, and so on.

With regard to the design and site monitoring of fugitive emissions ISO 15848 parts 1 and 2 have been developed respectively.

Part 1 covers the classification system and qualification procedure for type testing of valves. The standard specifies three tightness classes of leakage with respect to stem sealing diameter. These classes are class A, B and C. Class A having the smallest environmental leakage. Each class level is one hundred fold lower than the class above i.e. a class B product may have a leakage of 100 times that of a class A product. The standard also specifies the duty that the valve has been tested to.

Parker Hannifin is now able to offer our full range of flanged products with a class A approval to ISO 15848-1. These products are identified as the Fugitive Emissions [Fe] range and are certified as ISO FE AH-C01-SSA1-t(RT,180°C)-ANSI2500-ISO 15848-1. This states that the product has been classified as meeting the ISO 15848-1 standard with the following criteria;

- Class A tested with Helium
- Endurance class C01 – a mechanical valve which has been tested throughout 500 mechanical actuations with two thermal cycles
- Temperature class RT-180°C – Fully thermal cycled and tested from -29°C to +180°C Pressure class ANSI 2500 – 6000 psi in 316 st.st.

Part 2 of the international standard covers production acceptance testing of valves. This production testing can only be carried out to product which has already been approved to part 1 of the standard. Production testing can be carried out to and sampling percentage specified by the purchaser with a minimum of one per lot. The production testing is a simpler helium sniffer test which is carried out at room temperature with no mechanical actuations.

Meeting the ISO Standard

Parker is now able to offer it's range of Pro-Bloc Double Block and bleed valves and Monoflanges to meet the new ISO 15848 standard for Fugitive Emissions. The new designs provide process instrument interfaces of outstanding integrity to help processing organisations dramatically enhance their LDAR (leak detection and repair) programmes.

ISO 15848 standard

ISO 15848 parts 1&2 (defining a classification system and qualification procedures, and production acceptance test of industrial valves, respectively) specify new ultralow standards for emissions. This standard is becoming the requirement for oil and gas and petrochemical organisations worldwide. The standard was originally created for process valves and control valves but is now being applied to Instrumentation valves which include primary isolation valves, especially on environmentally sensitive projects.

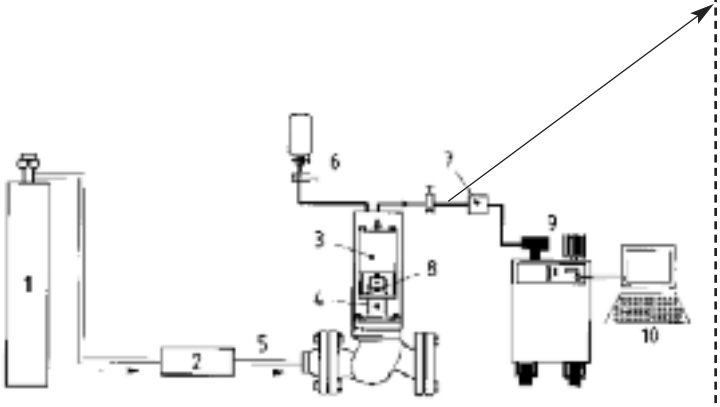
Meeting these low levels is a challenge, which Parker Instrumentation has solved with the new ball and needle valve designs used in these Double Block and Bleed valves and monoflanges. These designs meet the highest class 'A' level over the temperature range -29°C to +180°C celsius, alongside the standard instrumentation manifold pressure ranges.

Production testing and certification is available upon request. Please specify sample quantity required for production testing with your order.

O-ring material grade is a fluoroelastomer FKM tetrapolymer, specially formulated for explosive decompression (ED) resistance. The seals are qualified to the stringent Norsok M-170 standard that covers both ED resistance and sour gas (H_2S) ageing tests.

Features

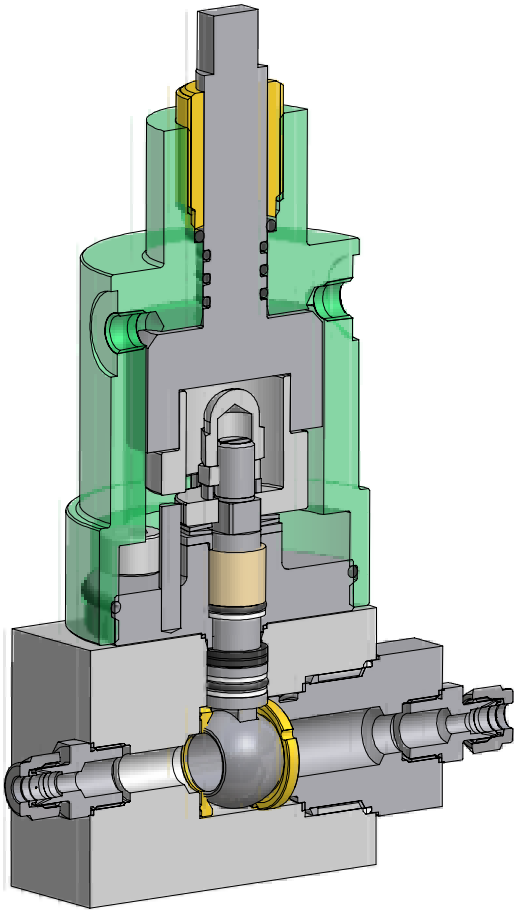
- Class 'A' leakage rates achieved.
- Bolted ball valve bonnet assembly.
- All threads sealed from the media
- All ball valves are bi-directional.
- Firesafe design available.



Key

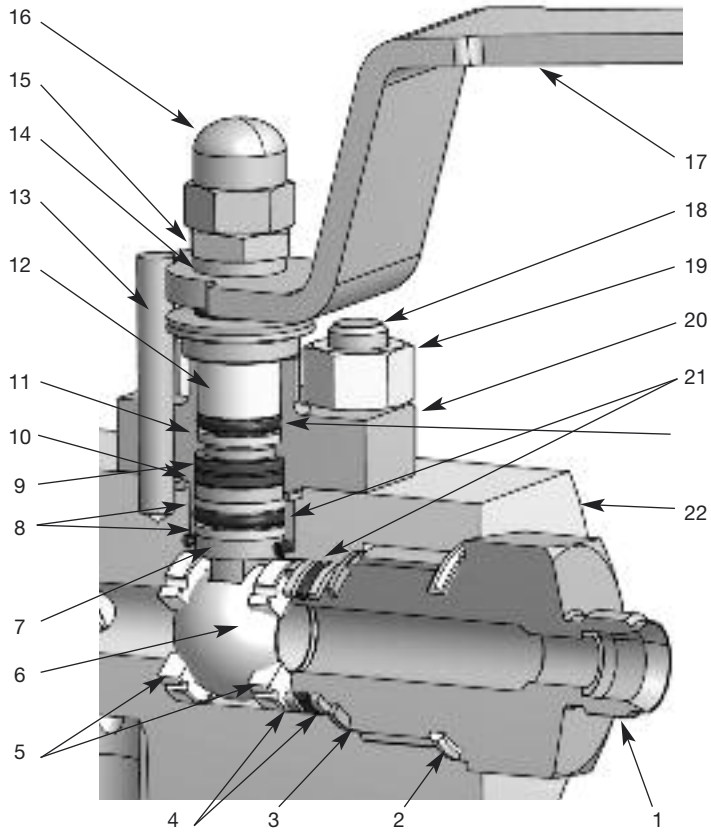
1	helium at 97% purity	6	standard calibrated leak
2	pressure control	7	vacuum safety
3	actuator	8	tested stem sealing
4	vacuum	9	helium mass spectrometer
5	helium	10	data acquisition

Prototype testing schematic
as per ISO 15848-1



Ball valve ISO 15848-1
Prototype testing assembly

Fugitive Emissions flange product ball valve specification



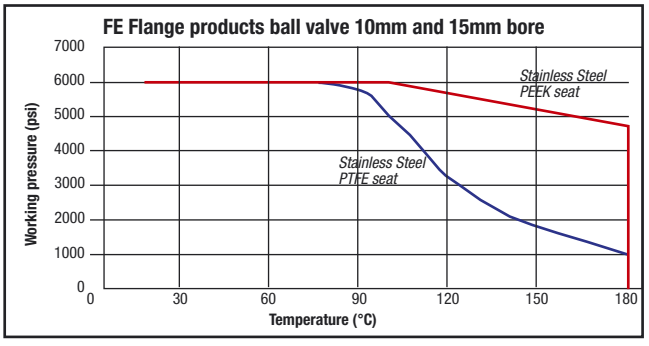
Handle options on page 16

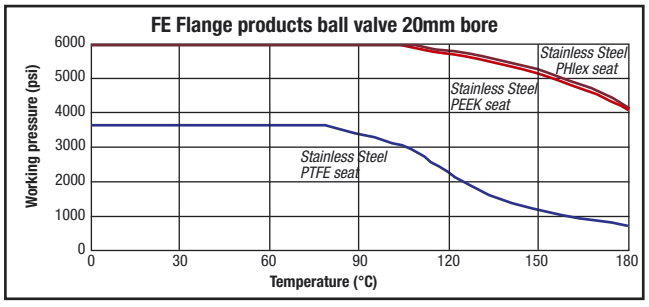
Part description

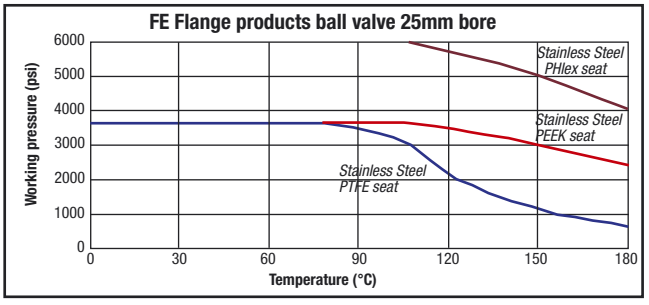
Item	Description
1	End Connector
2	E-seal™
3	Sealing washer
4	Antiextrution rings
5	Seats
6	Ball
7	Anti blowout stem
8	Antiextrution rings
9	Gland packing
10	Sealing washer
11	Antiextrution rings
12	Peek thrust bush
13	Stop pin
14	Thrust bush
15	Locknut
16	Locking dome nut
17	Handle
18	Bonnet strud
19	Lock nut
20	Bolted bonnet
21	Elastomeric o-ring
22	Body

Specifications

- Tightness class A ⩾1 x 10^{-6} mg.s^{-1}.m^{-1}.
- Maximum cold working pressure rating 6,000 psig.
- Temperature rating -29˚C to 180˚C (-20˚F to 356˚F).
- ISO15848-1 prototype tested using global helium vacuum method.
- Performance class – ISO FE AH-C01-SSA1-t(RT,180°C)-ANSI2500-ISO 15848-1
- Production testing and certification available on request.
- Other specifications as per standard Hi-Pro, see page 16.

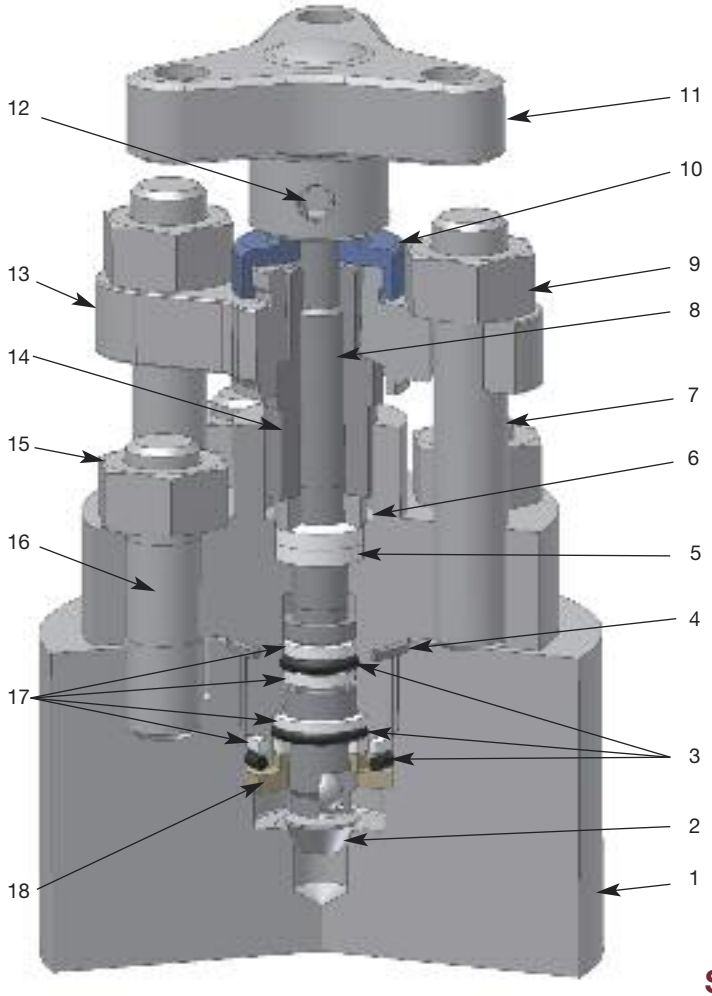






⚠ When selecting products for specific applications users should refer to our notice at the bottom of page 2.

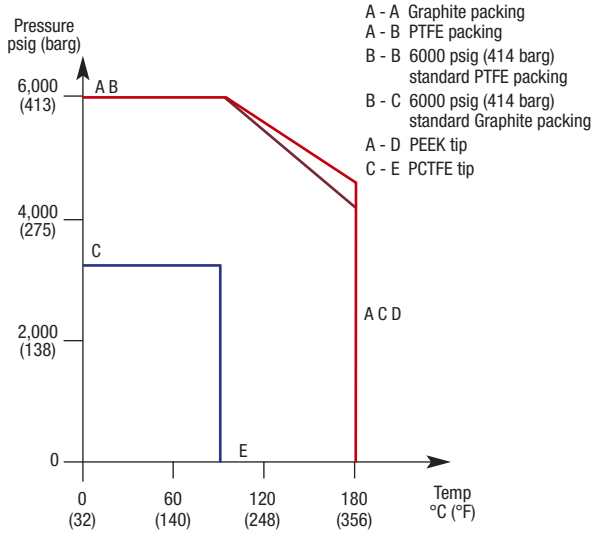
Fugitive Emission outside screw and yoke (OS&Y) needle valve



Part description

Item	Description
1	Body
2	Spindle Tip
3	Elastomeric o-ring (body seal)
4	Body joint seal
5	Gland packing (adjustable)
6	Thrust bush
7	Bonnet bridge studding
8	Anti blow-out spindle
9	Bridge nuts
10	Dust cap
11	Handle
12	Positive handle retention
13	Bridge
14	Gland adjuster
15	Stud nuts
16	Body bonnet studding
17	Anti extrusion rings
18	Bonnet end cap

Pressure vs temperature

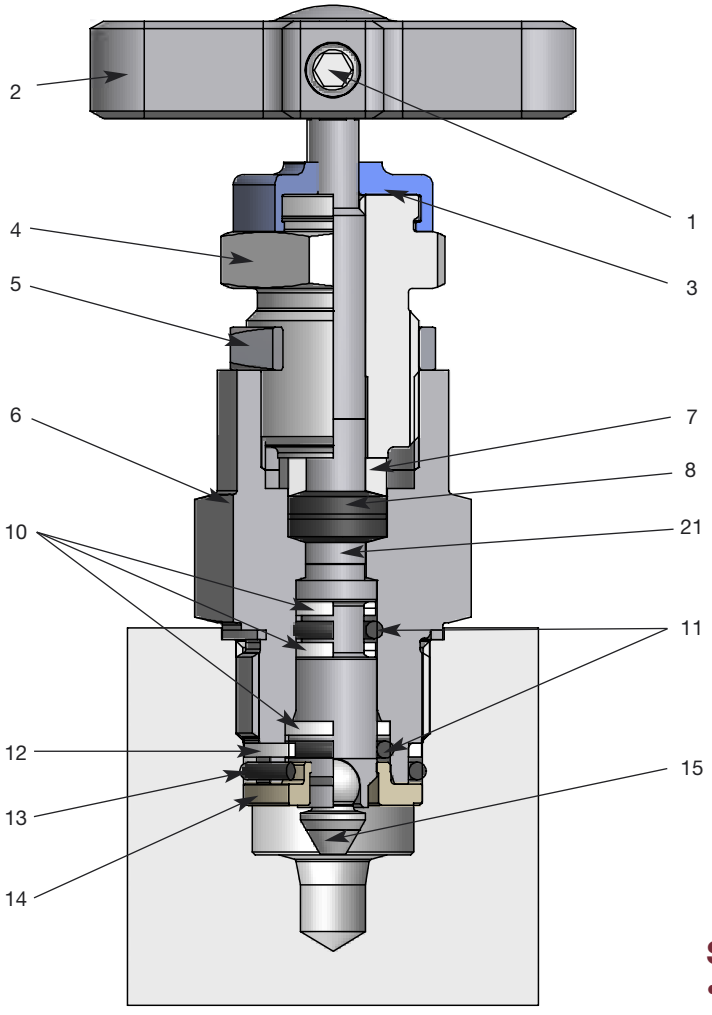


Specifications

- Tightness class A ⩾1 x 10^{-6} mg.s^{-1}.m^{-1}.
- Maximum cold working pressure rating 6,000 psig (414barg).
- Temperature rating -29˚C to 180˚C (-20˚F to 356˚F).
- ISO15848-1 prototype tested using global helium vacuum method.
- Performance class – ISO FE AH-C01-SSA1-t(RT,180°C)-ANSI2500-ISO 15848-1
- Production testing and certification available on request.
- Other specifications as per standard OS&Y, see page 17.

⚠ When selecting products for specific applications users should refer to our notice at the bottom of page 2.

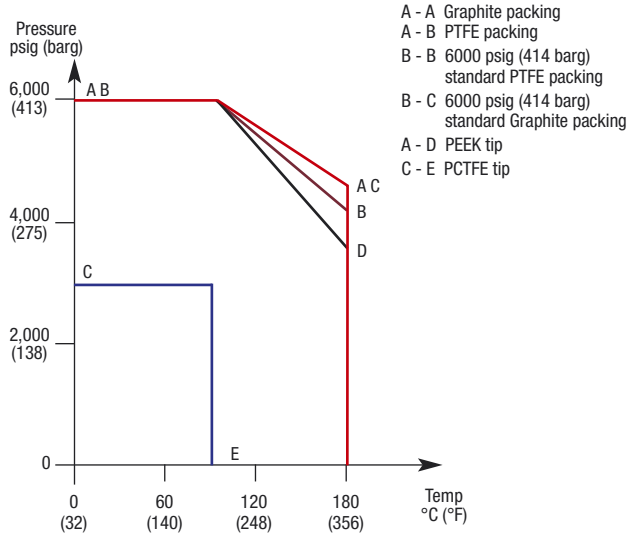
Fugitive Emissions “H” Series globe style needle valve



Part description

Item	Description
1	Positive handle retention
2	“T” bar
3	Dust cap
4	Gland packing adjuster
5	Gland adjuster lock nut
6	Valve bonnet
7	Thrust bush
8	Gland packing (adjustable)
9	Anti blow-out spindle
10	Anti extrusion ring
11	Elastomeric o-ring (stem seal)
12	Anti extrusion ring
13	Elastomeric o-ring (body seal)
14	Bonnet end cap
15	Spindle tip

Pressure vs temperature



Specifications

- Tightness class A = ⩾1 x 10^{-6} mg.s^{-1}.m^{-1}.
- Maximum cold working pressure rating 6,000 psig (414barg).
- Temperature rating -29˚C to 180˚C (-20˚F to 356˚F).
- ISO15848-1 prototype tested using global helium vacuum method.
- Performance class – ISO FE AH-C01-SSA1-t(RT,180°C)-ANSI2500-ISO 15848-1
- Production testing and certification available on request.
- Other specifications as per standard needle valve, see page 18.

⚠ When selecting products for specific applications users should refer to our notice at the bottom of page 2.

Flanged Products

ISO15848 Class 'A' Fugitive Emission monoflanges - made easy

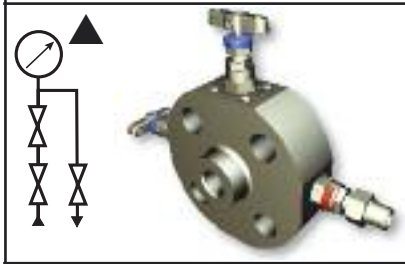
Select the style of Monoflange from the choice of arrangements below noting the complete **FEMF reference**.
If the style or arrangement is not shown below please provide full description and specification.

Block bleed block
1st Isolate: Needle
2nd Isolate: Needle
Vent: Needle

FEMFH100

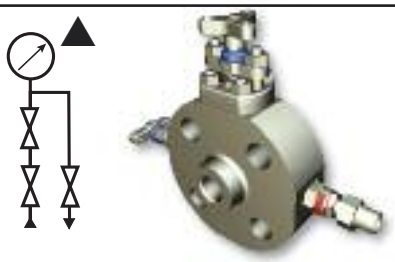
Block bleed block
1st Isolate: O.S.&Y.
2nd Isolate: Needle
Vent: Needle

FEMFY100



Block block bleed
1st Isolate: Needle
2nd Isolate: Needle
Vent: Needle

FEMFH110



Block block bleed
1st Isolate: O.S.&Y.
2nd Isolate: Needle
Vent: Needle

FEMFY110

Block & bleed
1st Isolate: Needle
Vent: Needle

FEMFH120

Block & bleed
1st Isolate: O.S.&Y.
Vent: Needle

FEMFY120

Block & bleed
1st Isolate: Needle
Vent: Needle

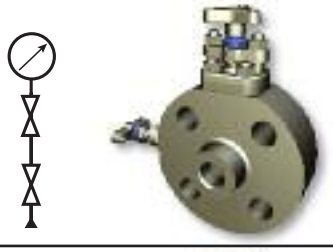
FEMFH130

Block & bleed
1st Isolate: O.S.&Y.
Vent: Needle

FEMFY130

Double block
1st Isolate: Needle
2nd Isolate: Needle

FEMFH140



Double block
1st Isolate: O.S.&Y.
2nd Isolate: Needle.

FEMFY140

Single block
1st Isolate: Needle

FEMFH150

Single block
1st Isolate: O.S.&Y.

FEMFY150

◆ For dual outlets specify FEMF*105. ▲ For dual outlets specify FEMF*115.
For flange to flange variants replace FEMF*1** with FEMF*2**.
For bleed port only specify FEMF*160.
For OS&Y valves on primary and secondary isolates specify FEMFY102. Please note vent valve is not anti-tamper as standard.

ISO15848 Class 'A' Fugitive Emission Monoflanges

Example FEMFY100 B 32T2500 A3 F

1. Monoflange part number
Insert from page 36

2. Material

A	Carbon Steel ASTM A105
B	Stainless Steel ASTM A182-F316
D	Monel M400
E	Duplex ASTM A182-F51
F	Super Duplex ASTM A182-F53/F55
G	Hastelloy C-276
H	Low Temp. C. St. ASTM A350 LF2
K	6Mo
M	Inconel 625

3. Flange details

Flange Size	Flange Face Style	Flange Class
8 = 1/2"	**F** = Raised Face Spiral	**150** = 150
12 = 3/4"	**T** = Ring Type Joint	**300** = 300
16 = 1"		**600** = 600
24 = 1 1/2"		**900** = 900
32 = 2"		**1500** = 1500
API } specify separately		**2500** = 2500
DIN } see page 28		***136** = 150/300/600
*1/2" flange size only		

4. Outlet style (1/2" FNPT is standard NO part designator needed)

Size	Connection Style
4 = 1/4"	**F** = Female NPT Thread
6 = 3/8"	**M** = Male NPT Thread
8 = 1/2"	**A** = A-LOK® (inverted only)
M6 = 6mm	**G** = Swivel gauge adaptor 1/2" NPTF (fitted)
M10 = 10mm	
M12 = 12mm	

5. Plugged vent (1/4" FNPT is standard NO part designator needed)

Size
V6 = 3/8" FNPT
V8 = 1/2" FNPT

6. Valve packing and seat materials

*	PTFE Packing
*	Needle tip 17-4PH St. St.
3	Graphoil (fitted as standard when fire safe design is specified)
PN	PEEK Needle tip all valves (non fire safe only)

* fitted as standard no part NO designator required.

7. Valve handle operating options

A*	Anti tamper
L*	Padlock handle locking
R*	Regulating tip ("H" series needle valve only)

* Insert valve number 1 = primary, 2 = secondary, 3 = vent, 4 = all.
Padlocks not supplied

8. Condition

F	Firesafe design (primary only - O.S.&Y. needle valve)
N	NACE

Combine designators as required
Fugitive Emission production testing available on request

Please Note:
Certification requirements and customer specifications MUST be provided at enquiry and order stage.

⚠ When selecting products for specific applications users should refer to our notice at the bottom of page 2.

IMPORTANT NOTES

All non wetted parts will be supplied in standard stainless steel for exotic materials. For carbon steel construction trim materials will be supplied in stainless steel.
Ring type joints (T) CANNOT be supplied for 1/2" & 3/4" class 150 flanges.
St. St. grades 302 and 304 are NOT used in the construction of any of these products.
For customer specific options not covered here engineering will allocate a part number at quotation stage.
Certification requirements and customer specifications MUST be provided at enquiry and order stage.
For API flange requirements full details must be specified separately.
Part number example FEMFY100B32T2500A3F Monoflange - Double Block and Bleed - Block (O.S.&Y.) Bleed (Needle) Block (Needle) (FEMFY100) - 316 St. St. construction (B) - 2" Pipe flange, Ring type joint, class 2500 (32T2500) - 1/2" female NPT outlet - 1/4" Female NPT vent - Anti-tamper vent (A3) - Firesafe design and certified (F), valves fitted with PTFE packing, metal seated 17-4PH st.st. tips.

Flanged Products

ISO15848 Class 'A' Fugitive Emission Pro-Blocs

Select the style of Pro-Bloc from the choice of arrangements below noting the complete **FEPB reference**.

* Select ball bore size, Y = 10mm, X = 15mm, W = 20mm, V = 25mm. e.g. FEPWB100 = 20mm ball bore.

● Only available with 10mm bore ball valve.

Block bleed block
Flange x screw
1st Isolate: Ball
2nd Isolate: Ball
Vent: Needle

FEPB*100

Block bleed block
Flange x flange
1st Isolate: Ball
2nd Isolate: Ball
Vent: Needle

FEPB*200

● 

Block bleed block
Flange x screw
1st Isolate: Ball
2nd Isolate: Needle
Vent: Needle

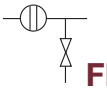
FEPBY110

● 

Block bleed block
Flange x flange
1st Isolate: Ball
2nd Isolate: Needle
Vent: Needle

FEPBY210

Block & bleed
Flange x screw
1st Isolate: Ball
Vent: Needle



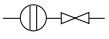
FEPB*130

Block & bleed
Flange x flange
1st Isolate: Ball
Vent: Needle

FEPB*230

● 

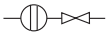
Double block
Flange x screw
1st Isolate: Ball
2nd Isolate: Needle



FEPBY150

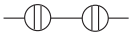
● 

Double block
Flange x flange
1st Isolate: Ball
2nd Isolate: Needle



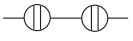
FEPBY250

Double block
Flange x screw
1st Isolate: Ball
2nd Isolate: Ball



FEPB*160

Double block
Flange x flange
1st Isolate: Ball
2nd Isolate: Ball



FEPB*260

Single isolate. specify FEPB*165, FEPB*265.

ISO15848 Class 'A' Fugitive Emission Pro-Blocs

Example FEPB*100 B 32T2500 F

1. Pro-Bloc part number
Insert from page 38

2. Material

A	Carbon Steel ASTM A105
B	Stainless Steel ASTM A182-F316
D	Monel M400
E	Duplex ASTM A182-F51
F	Super Duplex ASTM A182-F53/F55
G	Hastelloy C-276
H	Low Temp. C. St. ASTM A350 LF2
K	6Mo
L	825
M	Inconel 625

3. Flange details

Flange Size	Flange Face Style	Flange Class
‡**8** = 1/2"	**F** = Raised Face Spiral	**150** = 150
‡**12** = 3/4"	**T** = Ring Type Joint	**300** = 300
‡**16** = 1"		**600** = 600
24 = 1 1/2"		**900** = 900
32 = 2"		**1500** = 1500
48 = 3" (25mm bore only)		**2500** = 2500
API } specify separately		
DIN } See page 28		

‡ Certain flange/bore size combinations not available - consult factory

4. Outlet style (each bore size has its own standard size female NPT outlet - the standard does not require this field to be completed)

Standard outlets (female NPT)

10mm bore = 1/2"
15mm bore = 1/2"
20mm bore = 3/4"
25mm bore = 1"
For optional outlets see page 28

5. Plugged vent (1/2" NPTF is standard NO part designator needed)

6. Packing, seat and construction options

*	PTFE Packing
*	PTFE Ball seats
*	Needle tip 17-4PH St. St.
PK	PEEK Ball and needle seating
PB	PEEK Ball seats
PN	PEEK Needle tip (non firesafe only)
BC	Bolted construction connection

* fitted as standard no part NO designator required.

7. Valve handle operating options

A*	Anti tamper (Needle Valve only)
L*	Padlock handle locking
R*	Regulating tip ("H" series Needle Valve only)
S*	Spanner actuated (Ball Valve only)
Y*	O.S.&Y. Needle Valve

* Insert valve number 1 = primary, 2 = secondary, 3 = vent, 4 = all.
Padlocks not supplied
Note: Firesafe needle valve with locking device NOT available

8. Certification & condition

F	Firesafe design and certified
H	Heat code certificates to EN10204.3.1.B
N	NACE

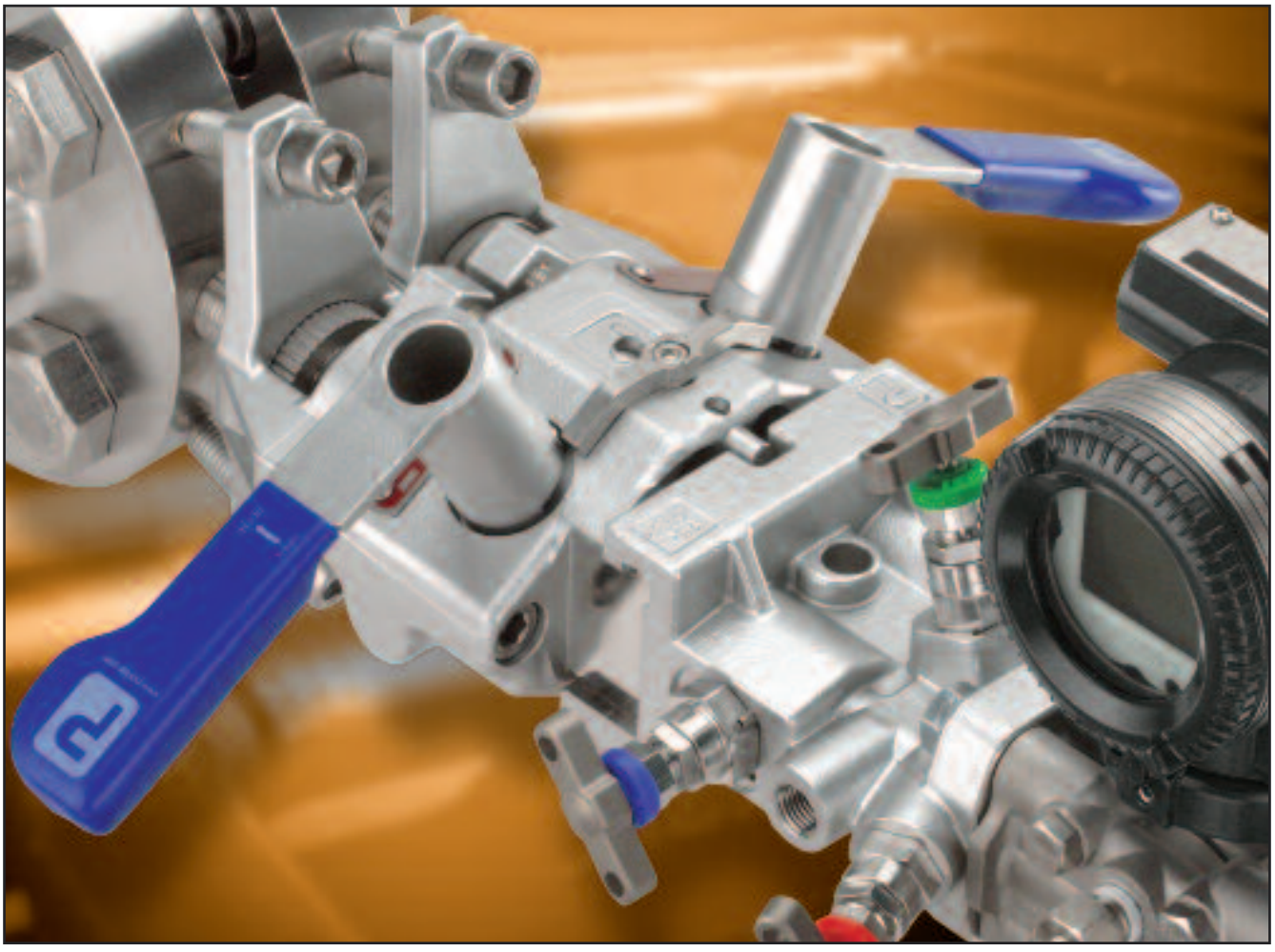
Combine designators as required
Fugitive Emission production testing available on request

Parker
anything possible

CCIMS

Close Coupled Instrument Mounting System

Catalogue 4190-CCIMS
May 2006



Introduction

Parker Hannifin's response to the constant demand for higher performance in flow measurement is the introduction of a breakthrough in process control: CCIMS – Close Coupled Instrument Mounting System; A radical and standardised solution for direct-mounting differential pressure transmitters to piping flanges.

Contents

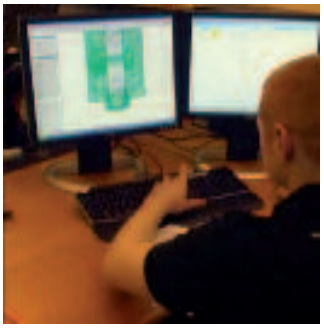
CCIMS : The Concept

CCIMS supports the direct or 'close coupled' connection of one of the most common types of process instruments – differential pressure (DP) transmitters – to process pipework.

CCIMS combines an instrument manifold and a pipe interface (including isolation valves) and provides a standard means of connecting instruments with huge cost, performance and safety advantages.

Design

CCIMS has been designed using tried and tested standard components from our current ball, needle and rising plug valves ranges. All the designs meet the relevant industry standard design codes.



Manufacturing

A state of the art manufacturing cell has been established within our UK manufacturing facility to support CCIMS.

Testing

CCIMS meets all relevant industry design codes.
All components and complete assemblies meet a 4:1 pressure test requirement and have been rigorously tested.

CCIMS : The Benefits

Installation

The use of CCIMS will bring significant cost savings to plant operators and installers.

Instrument 'Hook-ups' can vary widely but they typically necessitate an assembly time of at least 12 hours (other estimates put this time to nearer 29 hours).

Mounting a CCIMS solution takes only half an hour, saving at least 75% of the installation time.

Safety

A traditional 'hook-up' for flow measurement can involve up to 40 connections, each of which is a potential leak path.

A CCIMS solution reduces this to just 5 – a massive leap in integrity that helps to avoid the human and environmental safety issues caused by leakages or emissions.

Potential leak paths can be reduced by 75%.

Maintenance

With the elimination of impulse lines, when using CCIMS removes the potential problem of lines blocking, plugging or freezing.

Should the instrument need to be removed for calibration, maintenance or replacement this is able to be done literally in seconds because of the unique 'Phastfit' interlocked connection interface, which also significantly reduces the plant downtime.

System Accuracy

Users now require high levels of reliability and integrity and the performance advantages are a major attraction.

With traditional impulse line arrangements, the length of the flow path, the volume of the system, the bends, elbows, tees and valves etc. can all introduce pressure drops and turbulence/flow variations (hydrostatic errors) that lead to measurement inaccuracies, or 'gauge line error', which can give inaccuracies of up to 15%.

The straight through flow path of CCIMS removes these problems.

Cost of Ownership

CCIMS benefits plant operators by reducing maintenance requirements and by enhancing the integrity and performance of the instrument system.

The 5 fold decrease in instrument changeover time, the easy specification, the reduced number of purchase orders needed, the reduced spares inventory and the reduced emissions monitoring costs all contribute to the significant reduction in the total cost of ownership.

Value Proposition

Reduced Installation Costs

- CCIMS offers end users and contractors significant opportunity to reduce installations costs.
- Installation time can be reduced from a typical hook up requiring at least 12 hours, to less than 1 hour.
- The number of components required for a hook up is significantly reduced – no need for tubing, fittings, brackets, instrument stands.
- The procurement costs of dealing with multiple vendors are eliminated.

Reduced Cost of Ownership

- CCIMS delivers significant reductions in cost of ownership.
- Instrument change out time is minutes rather than hours reducing labour time and costs.
- Quick change out reduces any associated process downtime.
- By reducing the number of components, and being more compact that traditional hook ups. Emissions monitoring costs are reduced.
- By being closer to the process and by utilising direct flow paths gauge line errors are reduced.

Increased Safety

- CCIMS provides end users with a safer alternative to traditional hook up practice.
- Potential leak path and connections are reduced from more that 30 to 5.
- The unique mounting system to the orifice carrier removes any load from the process tapings removing the possibility of vibration induced fatigue failure.
- The interlocked isolation device ensures that the isolation valves cannot be opened accidentally.

Please consult your local Parker Sales Engineer or Distributor for a free evaluation of your current hook up practice together with the quantified savings that CCIMS can deliver for you.

Design & Test Data

1. Vibration

CCIMS has been tested in accordance with the standards used by the leading transmitter manufacturers for vibration requirements. CCIMS units have been subjected to a 50 hour swept sine endurance test in three axes whilst pressurised to 3,000psi (207bar). The test being carried out at an independent UKAS accredited testing facility.

2. Salt Spray

All components and assemblies have been subjected to a corrosive environment test in accordance with ASTM B11703 for a period of 100 hours.

3. Piping & Pressure Codes

CCIMS has been designed to, and is in accordance with the following codes:

- ASME VIII Div 1 (Design/Factor of Safety)
- ANSI/ASME B16.34 (Design/Material)
- ANSI/ASME B1.20.1 (NPT Threads)
- BS 3643 pt2 (Metric Threads)
- ANSI/ASME B16.36 (Orifice Flange connection)
- API 607/BS 6755 pt2 (Fire safety)
- IEC 61518 (Instrument connection)
- MSS-SP-25 (Product Marking)
- MSS-SP-99 (Instrument Valves)
- ASME B36.10 (MSW Pipe)

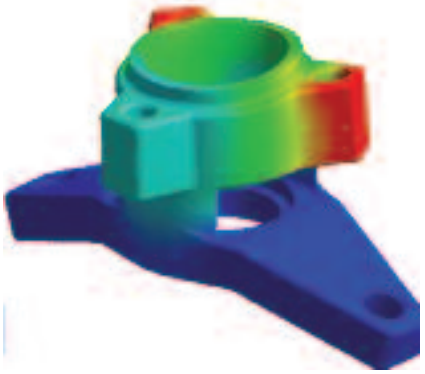
4. Environmental Testing

CCIMS units can be used with operating temperatures from –20 up to 232°C depending upon the seat material used.

Extensive thermal cycling has been conducted on the complete unit. The unit is pressurised to the maximum operating pressure for the relevant seat material, placed into a climatic chamber and thermally cycled through the full temperature range, with the pressure monitored to ensure there is no thermal fatigue failure.

5. Finite Element Analysis (FEA)

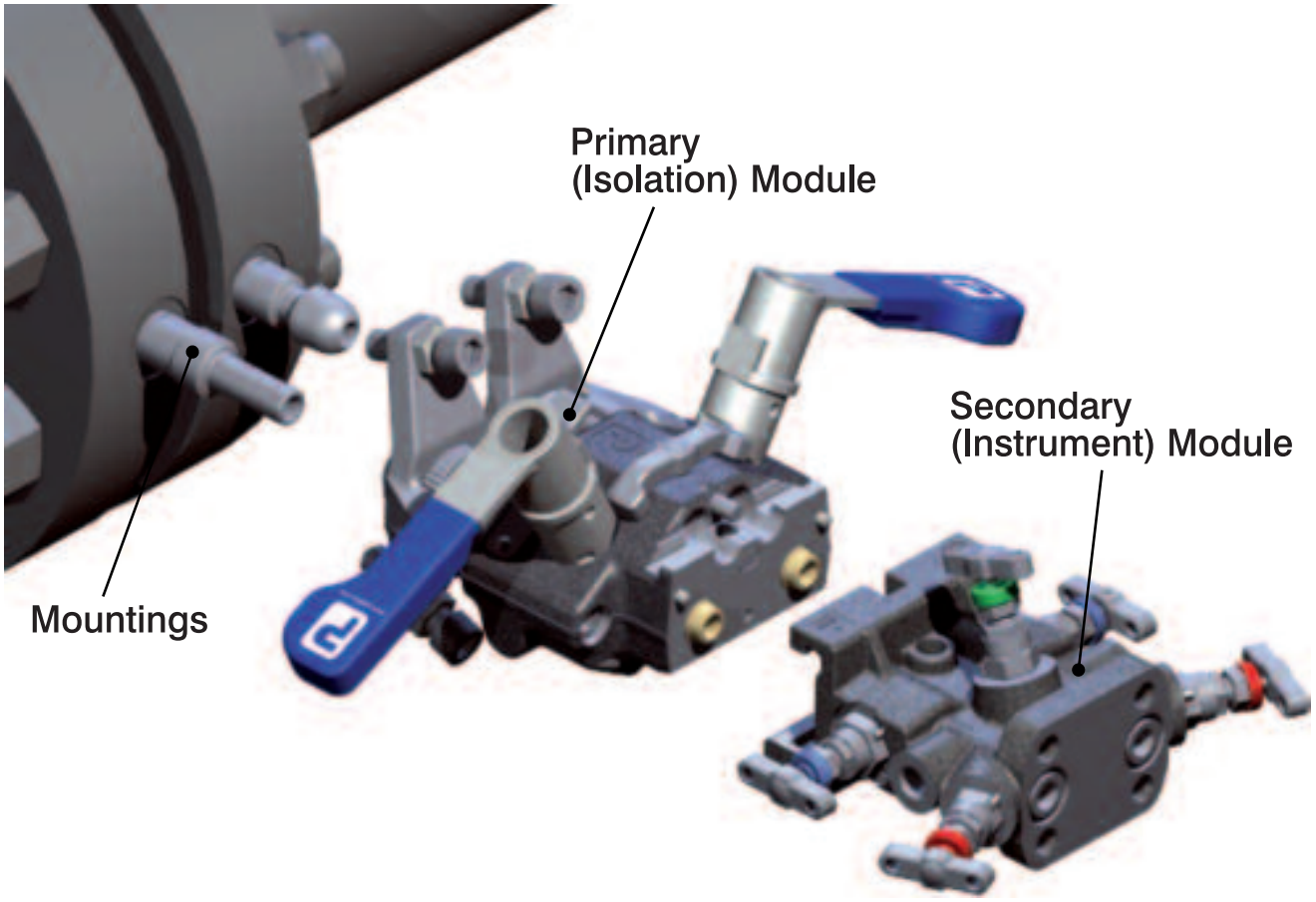
Finite Element Analysis was used throughout the design and development process to arrive at the final design.



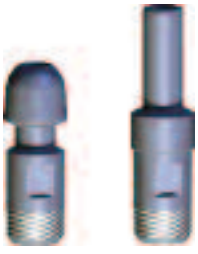
PED/CE Marking

In accordance with Article 3 paragraph 3, of the Pressure Equipment Directive 97/23/EC, valves having a nominal size of DN25 (1") or less are manufactured in accordance with "Sound Engineering Practice" and it is not permitted to CE mark items which fall into this category.

Solution Configurations



Orifice Tap Mountings



½ -14 NPT (Male)

Part No.
A

¾ - 14 NPT (Male)

Part No.
B

½ N.B. Male Socket Weld

Part No.
C

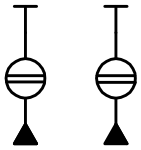
¾ N.B. Male Socket weld

Part No.
D

Primary (Isolation) Module Options

Single Block

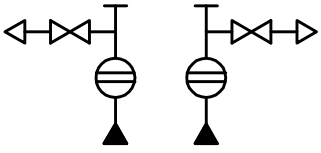
10mm Through Bore • 1st Isolate - Ball Pattern



Part No.
P1

Single Block & Bleed

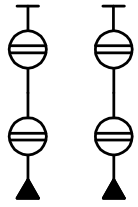
10mm Through Bore • 1st Isolate - Ball Pattern, Bleed Valve - Needle Pattern



Part No.
P2

Double Block

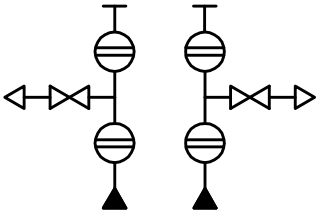
10mm Through Bore • 1st Isolate - Ball Pattern • 2nd Isolate - Ball Pattern



Part No.
P3

Double Block & Bleed

10mm Through Bore • 1st Isolate - Ball Pattern
2nd Isolate - Ball Pattern, Bleed Valve - Needle Pattern



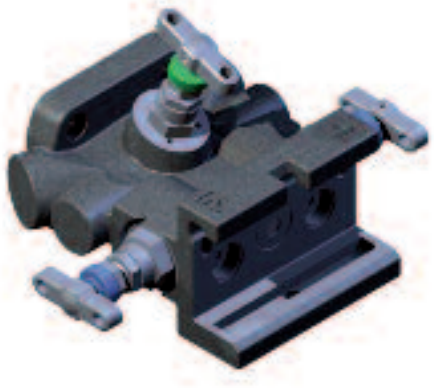
Part No.
P4

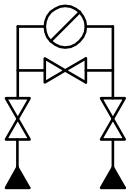
Ball Valve details - p16; Needle Valve details - p17.

Secondary (Instrument) Module Options : 3 Valve

3 Valve with Rising Plug Valve (RPV) Isolate

Direct mounting to differential pressure transmitters with 54mm/2.125” mounting centres.
Designed in accordance with IEC 61518 type A (without spigot).

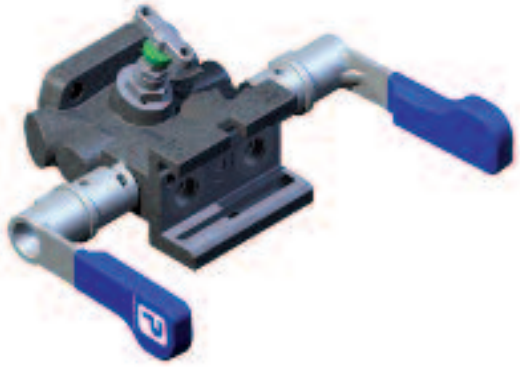


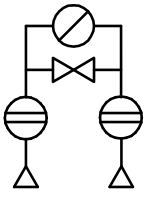


Part No.
S3R

3 Valve with Ball Valve Isolate

Direct mounting to differential pressure transmitters with 54mm/2.125” mounting centres.
Designed in accordance with IEC 61518 type A (without spigot).

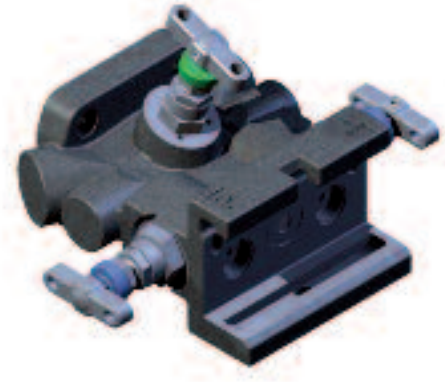


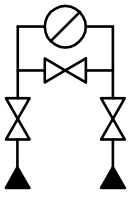


Part No.
S3B

3 Valve with Needle Valve Isolate

Direct mounting to differential pressure transmitters with 54mm/2.125” mounting centres.
Designed in accordance with IEC 61518 type A (without spigot).



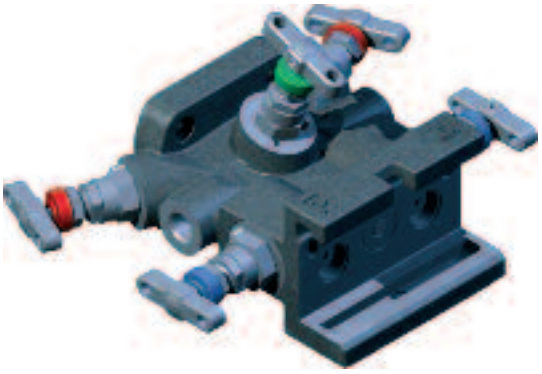


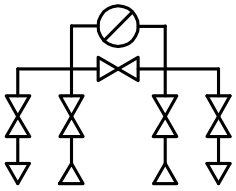
Part No.
S3N

Secondary (Instrument) Module Options : 5 Valve

5 Valve with RPV (6mm) Isolate

Direct mounting to differential pressure transmitters with 54mm/2.125” mounting centres.
Designed in accordance with IEC 61518 type A (without spigot).

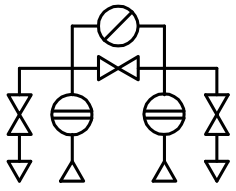




Part No.
S5R

5 Valve with Ball Valve Isolate

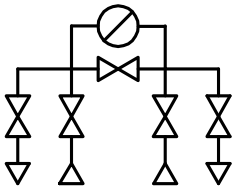
Direct mounting to differential pressure transmitters with 54mm/2.125” mounting centres.
Designed in accordance with IEC 61518 type A (without spigot).



Part No.
S5B

5 Valve with Needle Valve Isolate

Direct mounting to differential pressure transmitters with 54mm/2.125” mounting centres.
Designed in accordance with IEC 61518 type A (without spigot).

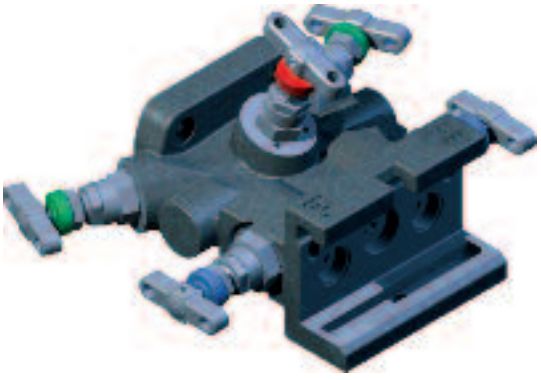


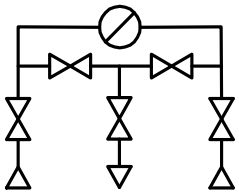
Part No.
S5N

5 Valve Custody Transfer / Fiscal Metering Module

RPV (6mm) Isolates

Direct mounting to differential pressure transmitters with 54mm/2.125” mounting centres.
Designed in accordance with IEC 61518 type A (without spigot).

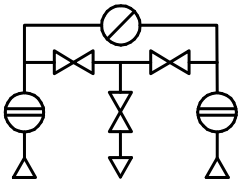




Part No.
S5R3

Ball Valve Isolates

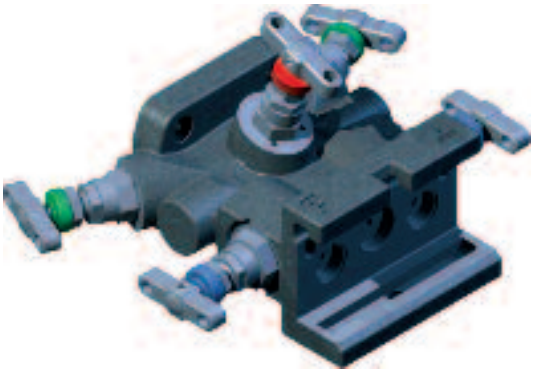
Direct mounting to differential pressure transmitters with 54mm/2.125” mounting centres.
Designed in accordance with IEC 61518 type A (without spigot).

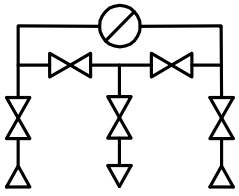


Part No.
S5B3

Needle Valve Isolates

Direct mounting to differential pressure transmitters with 54mm/2.125” mounting centres.
Designed in accordance with IEC 61518 type A (without spigot).





Part No.
S5N3

Auxiliary Modules & Options

Secondary Blanking Plate Module

Provides protection when instrument module is removed.

Part No.
AB

Secondary ½ (Female) NPT Port Connection Module

Allows use in remote mounting applications.

Part No.
AR

90 Degree Twist Module

Used in vertical mounting installations.

Part No.
AV

Valve Options

Lockable Primary Isolates

Part No.
L

Anti Tamper Valves

Part No.
A

Lockable Handwheel

Part No.
LHW

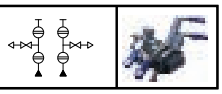
Handwheel

Part No.
HW

Spanner Actuator

Part No.
SA

How to Order

CC	-	Material		Primary Modules (P)			Oriface Tap Mountings		
		B	Stainless Steel 316	P1	Single Block		A	1/2-14 NPT (Male)	
		D	Monel M400	P2	Single Block & Bleed		B	3/4-14 NPT (Male)	
		E	Duplex UNS 31803	P3	Double Block		C	1/2 N.B. (Male) SOCKET WELD	
		F	Super Duplex UNS S32750	P4	Double Block & Bleed		D	3/4 N.B. (Male) SOCKET WELD	
		G	Hastelloy C 276						
		K	6Mo						
		M	625						
		L	825						

Example Part Number: CC B - P 1

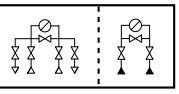
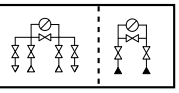
Part Number Description: Stainless Steel 316 – Single B Primary 1/2 - 14 Oriface Mountin

Auxiliary Secondary Modules

AV	90° Twist Module for vertical installations	
AB	Blanking Plate	
AR	1/2 NPT (Female) Port Connection Module	

Secondary Modules (S)

S5R	5 valve with RPV (6mm) isolate valves.	
S5B	5 valve with ball (10mm) isolate valves.	
S5N	5 valve with needle (6mm) isolate valves.	
S3R	3 valve with RPV (6mm) isolate valves.	
S3B	3 valve with ball (10mm) isolate valves.	
S3N	3 valve with needle (6mm) isolate valves.	

1	Std. Flow Std. Instrument Mounting	
2	Std. Flow Coplanar Instrument Mounting	
3	Custody Transfer Flow Std. Instrument Mounting	
4	Custody Transfer Flow Coplanar Instrument Mounting	

-

Options

F	Firesafe	A	Anti Tamper Valves
H	HCT	HW	Handwheel
N	Nace	HWL	Locking Handwheel
P	Peek Seated Ball Valves	B	Blank Plug
L	Lockable Primary Isolates	9	Soft Tip
SA	Spanner Actuation Primary Isolates	3	Graphite Packing

Note 1: Anti tamper and locking handle options will be fitted to vents only, unless specified otherwise.

A - S5B1 - NP

lock Module NPT (Male) Tap gs

–

5 Valve Secondary Module with Ball Valve Isolates. Std Flow Std Instrument mounting *

* if not required enter XXXX

–

NACE compliant. PEEK seated ball valves **

** if not required enter XX

Seals & Tooling

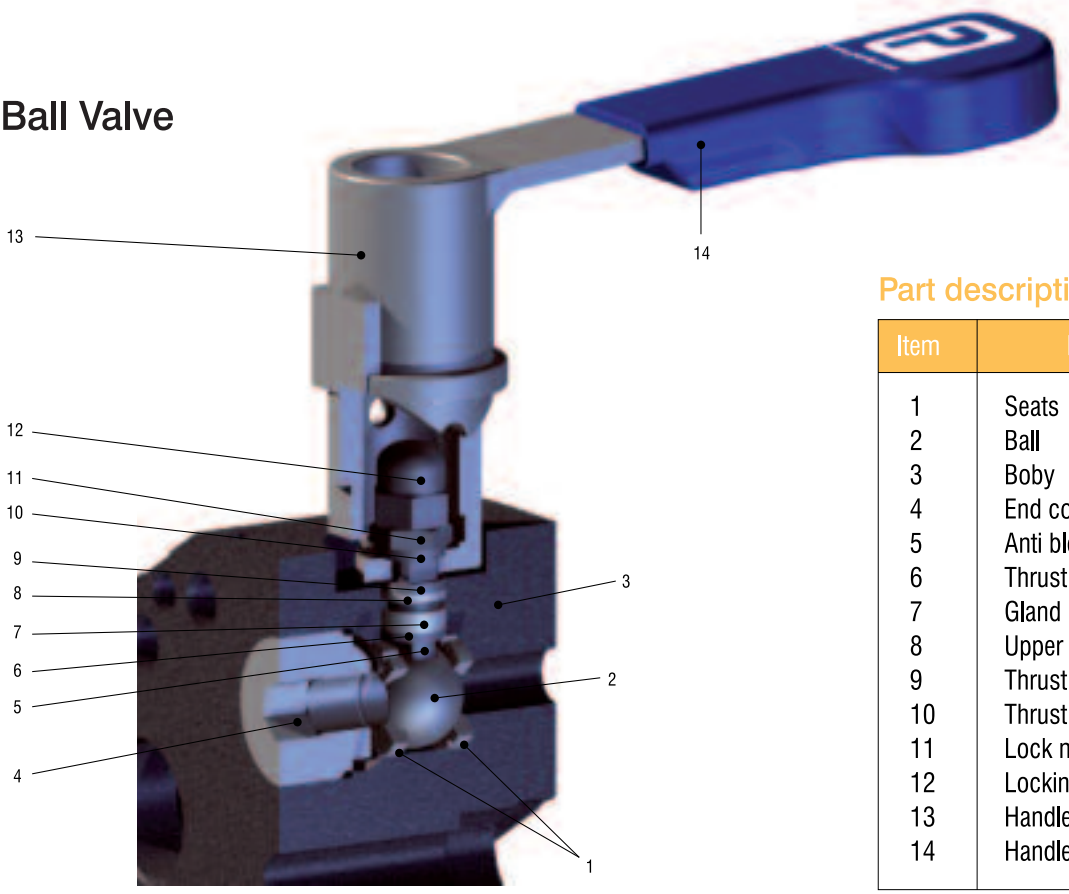
CCIMS-ASSY-TOOL	CCIMS assembly tool. One tool supplied with every complete unit.	
PFS-INSERT-TOOL	PhastFit seal insert tool.	
PFS-SET-PEEK	PhastFit seal set. 450G PEEK material. Replace seals every time secondary module is assembled. Pack of 2.	

Valve Design & Performance Properties

CCIMS incorporates valves from our standard range of Ball, Needle and Rising Plug designs. Full details can be found in the following catalogues:

Ball Valves	4190-HBV
Needle Valves	4190-HV
Rising Plug Valves	4190-HV

Ball Valve

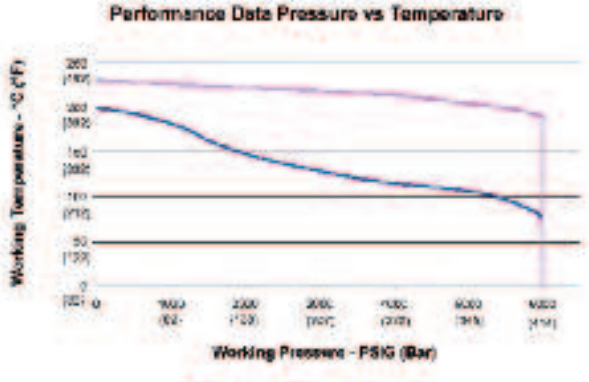


Part description

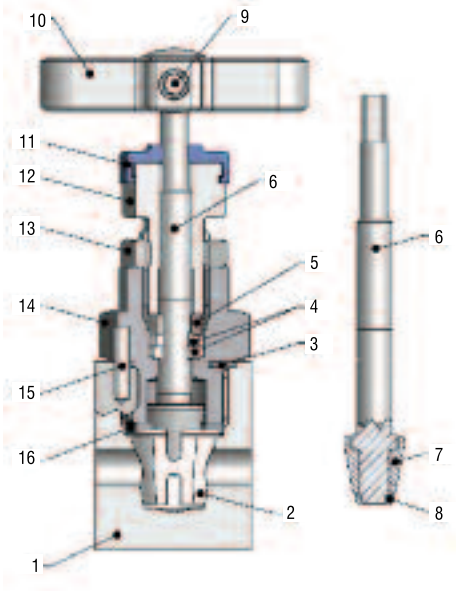
Item	Description
1	Seats
2	Ball
3	Boby
4	End connector
5	Anti blowout stem
6	Thrust seal
7	Gland packing
8	Upper glang packing
9	Thrust bush
10	Thrust bush
11	Lock nut
12	Locking dome nut
13	Handle (sectioned)
14	Handle grip

Standard Product Specification

Supplied with PTFE seats, 6000psi (414 bar) 200°C, Peek Seats 10000psi (689 bar) 232°C.



Rising Plug Valve (RPV)



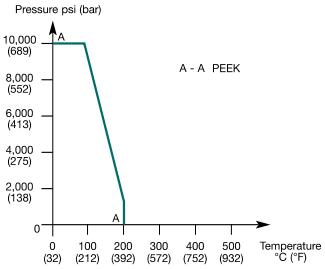
Standard Product Specification

Supplied with PEEK soft seat, PTFE packed, T bar operation 10000psig (689 barg) max. pressure rating, 200°C max. temperature rating.

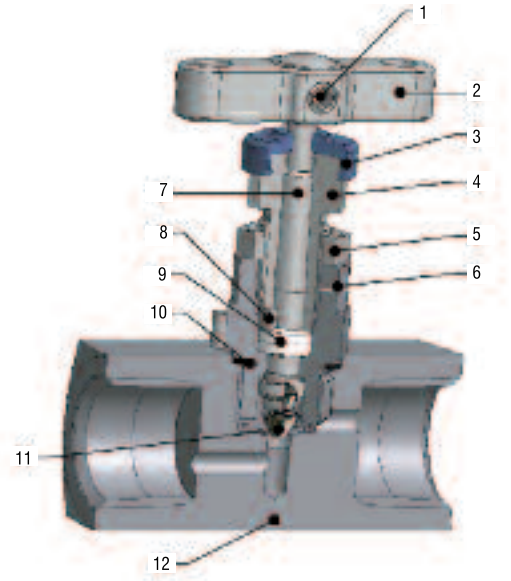
Part description

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
16	Seat retainer

Pressure vs temperature



Needle Valve



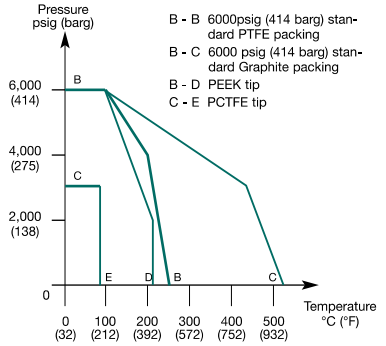
Standard Product Specification

Metal/metal seated, PTFE packed, stainless steel, T bar operation, globe pattern, 6000psig (414 barg), 538°C max. temperature rating.

Part description

Item	Description
1	Positive handle retention
2	'T' bar
3	Dust cap
4	Gland packing adjuster
5	Gland adjuster lock nut
6	Valve ? nut
7	Anti blowout spindle
8	Thrust bush
9	Gland packing (adjustable)
10	Excess body washer
11	Spindle tip

Pressure vs temperature

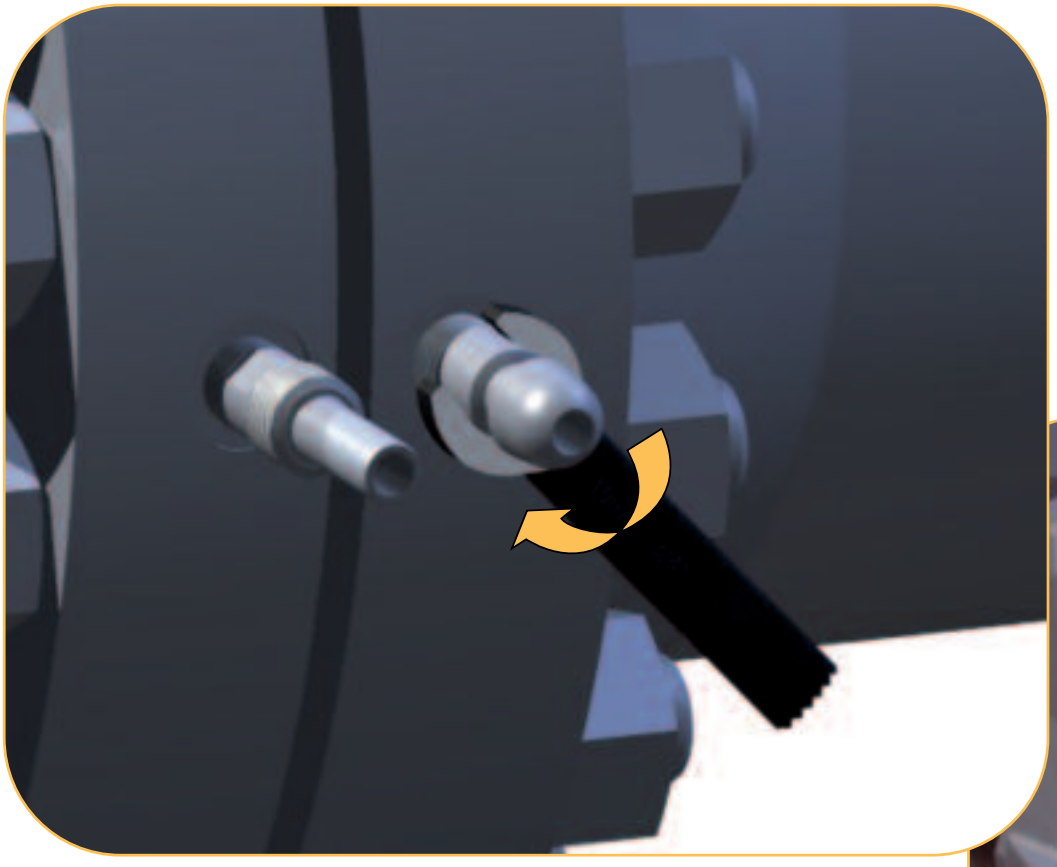


Basic Installation Guide

CCIMS – The simplest way to complete close coupled instrumentation

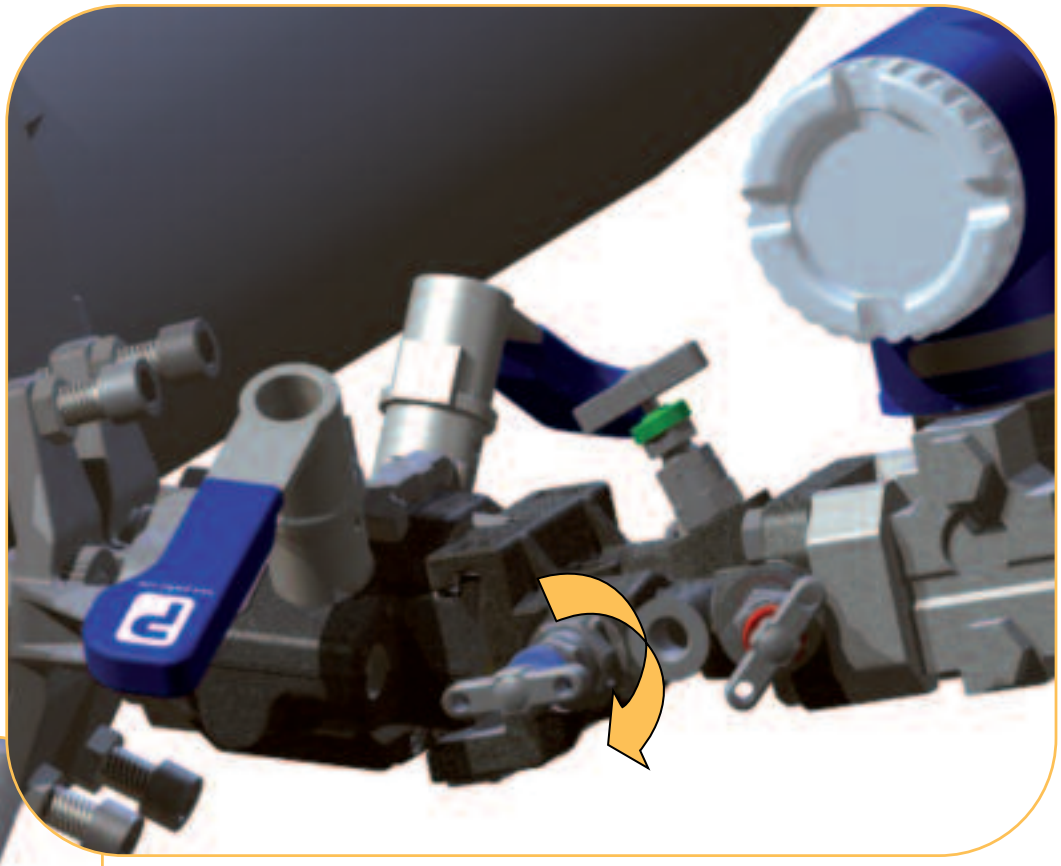
1.

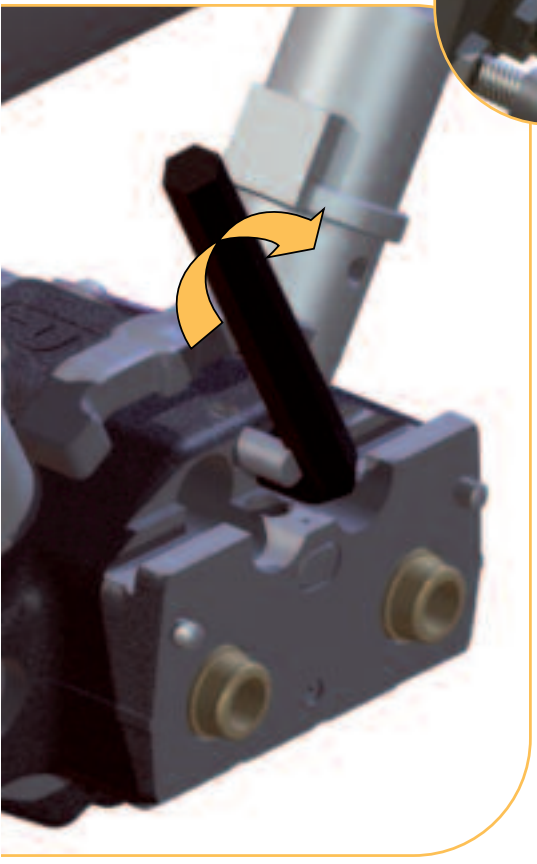
Attach orifice tap mountings to flanges



2.

Assemble primary module to orifice tap mountings





3.

Assemble secondary module with attached instrument using innovative Phastfit design

Detailed installation instructions are supplied with every CCIMS unit.

Instrumentation Hand Valves

Catalog 4190-HV
January 2007

Contents

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™ 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 15,000 psig Parker can now offer their new MPI™ range of compression fittings.

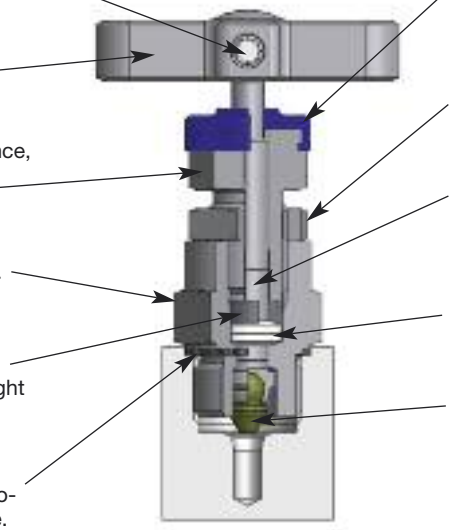
All the valves offered in this catalogue are available with integral compression ends improving system performance, safety factors, size and weight reduction, simplifying installation and ultimately reducing customer costs.

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.

Globe style bonnet design for HNV, HGV and HVG series

For safe reliable and repeatable performance



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 retro-fit of bonnets with 100% re-sealing assurance.

3. Dust Cap
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 gland sealing.

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

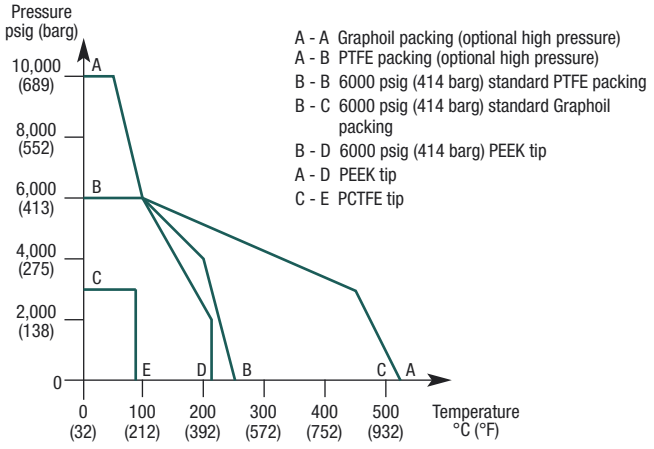
11. Spindle tip
Self centering, non-rotational tip gives successive positive bubble tight shut off assuring the user of leakage free performance and downstream functional safety.

All metallic standard parts are produced in stainless steel, for alternative materials please refer to page 79. 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 68/69.
- 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 2.

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").

Standard bonnet	T bar handle locking	Anti tamper spindle
	 Retro-fit kit part number **KITTHL** Factory assembled suffix **THL**	  For key only - part no. **ATHKEY/1** Retro-fit kit part number **KITAT** without key **KITATK** with key Factory assembled suffix **AT** without key **ATK** with key
Handwheel	**Lockable handwheel**	***Panel mounting**
 Retro-fit kit part number **KITHW** Factory assembled suffix **HW**	 Retro-fit kit part number **KITLHW** Factory assembled suffix **LHW**	 Retro-fit kit part number **KITPM†** Factory assembled suffix **PM** † Panel mount kit for HP: KITPMHP

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

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

Purpose

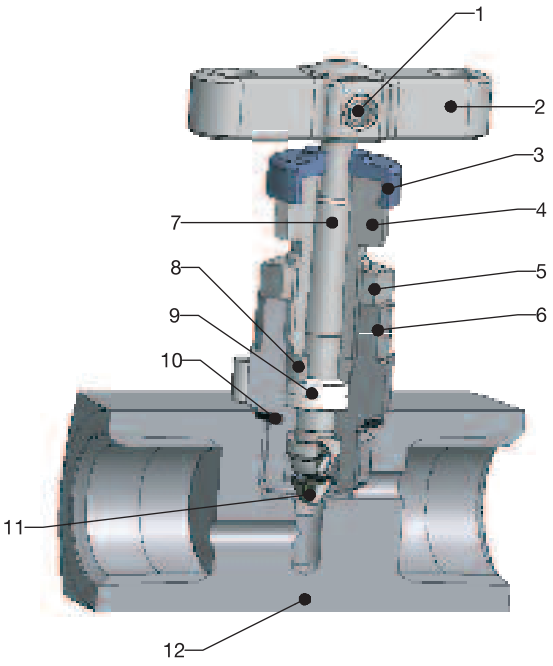
Bar stock needle valves are purpose designed valves for operation with any fluid up to 6,000 psig (414 barg) rating. Complete with standard PTFE gland packing and self centering non rotational tip, gives the user assurance of total in service sealing security. For gaseous application soft tipped optional 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.

Features

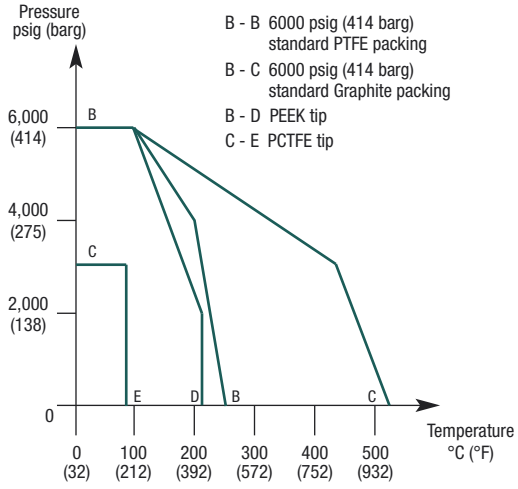
- Rolled spindle operating threads.
- Stainless steel construction as standard.
- PTFE packing standard, optional graphite.
- Alternative tip and materials of construction available.
- Self centering non rotating spindle tip for bubble tight shut off.
- Colour coded functional identification.
- Back 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).



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



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

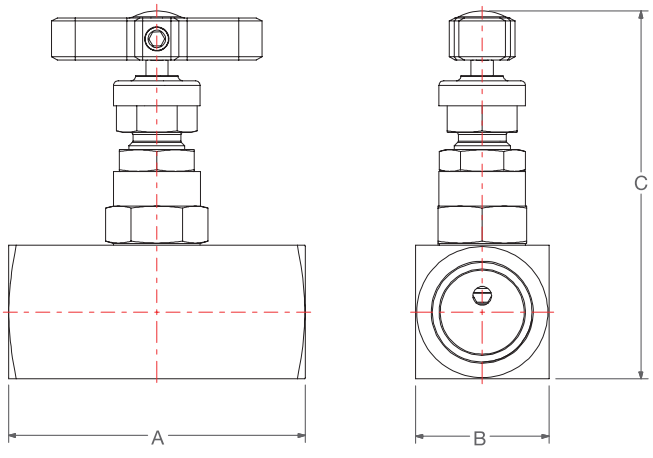
Standard range part numbers

Part no.	Inlet	Outlet	Dimension		
	Female	Female	A mm (inch)	B mm (inch)	C mm (inch)
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.
3. 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.

⚠ When selecting products for specific applications users should refer to our notice at the bottom of page 2.



Designed to meet pressure/temperature ratings of ANSI Class 2500 where applicable.
For a full list of options and suffix's, see page 78. For a full list of materials and specifications, see page 79.

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

Purpose

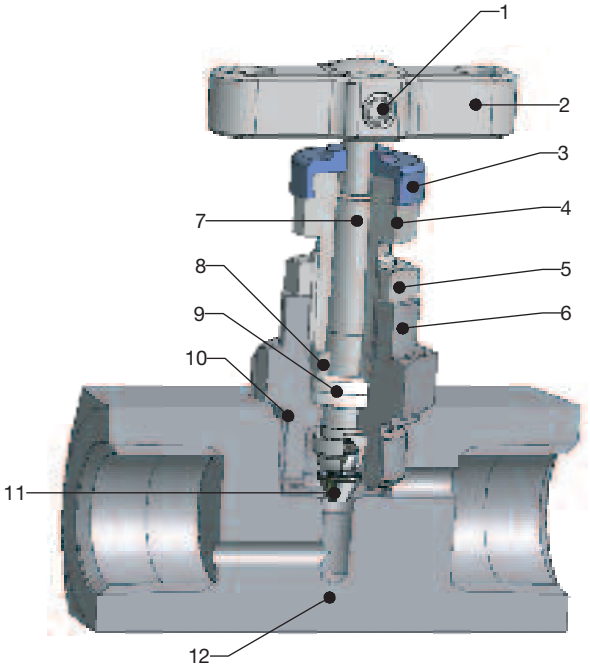
Bar stock needle valves are purpose designed valves for operation with any fluid up to 10,000 psig (689 barg) rating. Complete with standard PTFE gland packing and self centering non rotational tip, gives the user assurance of total in service sealing security. For gaseous application soft tipped optional 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.

Features

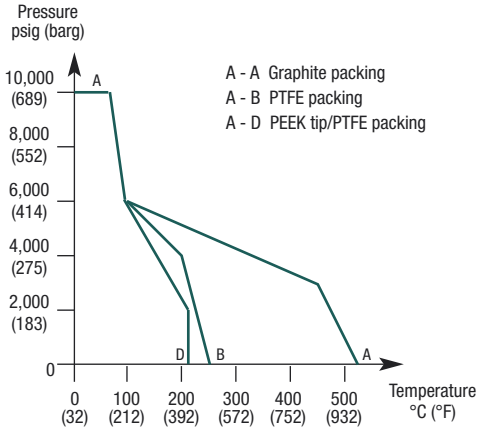
- Rolled spindle operating threads.
- Stainless steel construction as standard.
- PTFE packing standard, optional graphite.
- Alternative tip and materials of construction available.
- Self centering non rotating spindle tip for bubble tight shut off.
- Colour coded functional identification.
- Back 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.



Part description

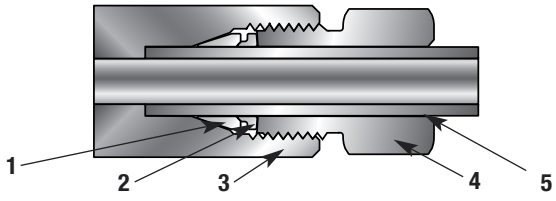
Item	Description
1	Locked grub screw
2	T bar handle assembly
3	Dust cap/function label
4	Gland adjuster
5	Gland locknut
6	Valve bonnet
7	Anti blowout spindle
8	Thrust bush
9	Gland packing (2)
10	Sealing washer
11	Self centering spindle tip
12	Body

Pressure vs temperature



⚠ When selecting products for specific applications users should refer to our notice at the bottom of page 2.

MPI™ Advanced Features



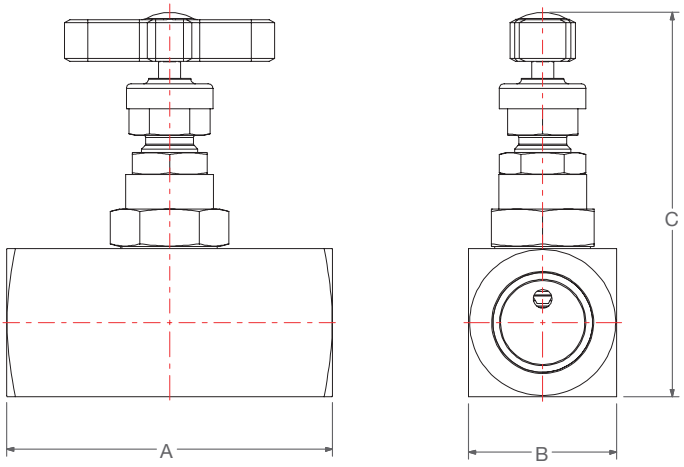
1. Front ferrule with corrosion-resistant Parker SUPARCASE® forms a tight pressure seal between the body and ferrule in a *second* strong mechanical hold on the tube.
2. Rear ferrule with corrosion-resistant Parker SUPARCASE® provides a strong mechanical hold on the tube.
3. Longer thread area for improved 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

Part no.	Inlet	Outlet	Dimension		
	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.



Designed to meet pressure/temperature ratings of ANSI Class 4500 where applicable.
For a full list of options and suffix's, see page 78. For a full list of materials and specifications, see page 79.

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.

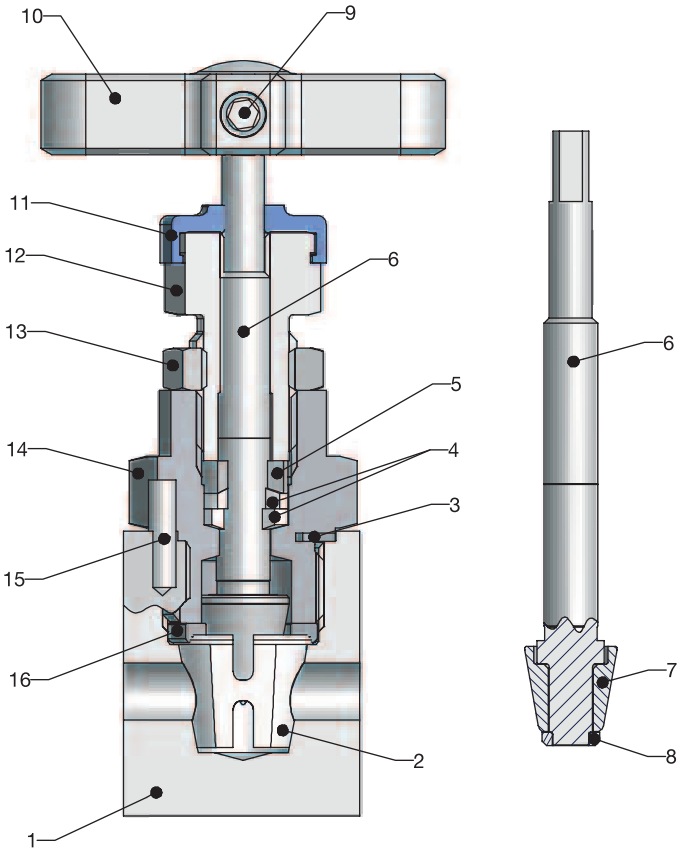
Specification

- 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.

Features

- 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.

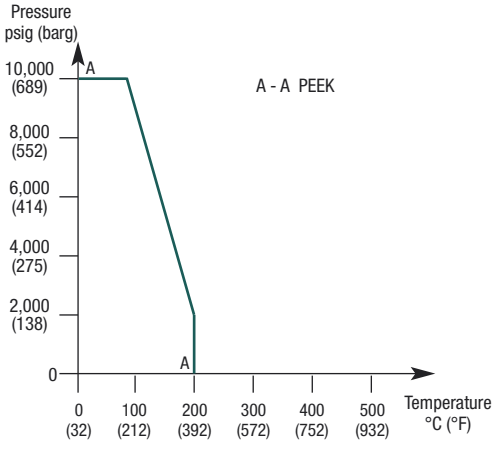
* Patent(s) pending



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
16	Seat retainer

Pressure vs temperature

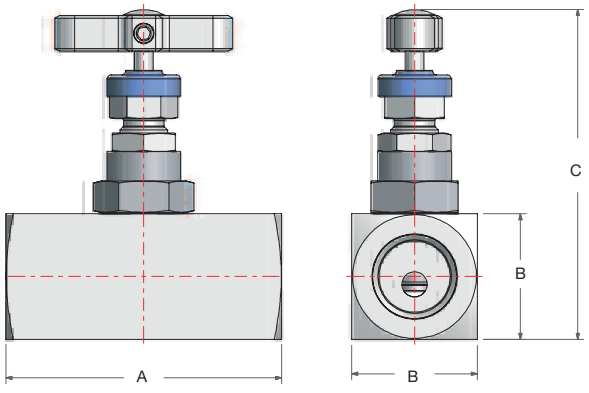


Standard product specification: supplied in 316 stainless steel with PEEK soft seat, PTFE packed, T bar operation, 10,000 psig (689 barg) maximum pressure rating, 200C maximum temperature rating.

Standard range part numbers

Part no.	Connections		Dimension		
	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")

⚠ When selecting products for specific applications users should refer to our notice at the bottom of page 2.



For a full list of options and suffix's, see page 78. For a full list of materials and specifications, see page 79.

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

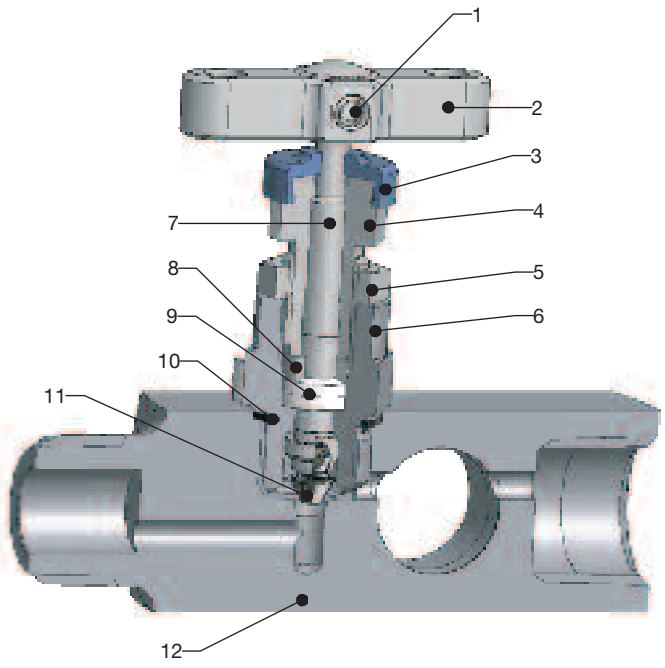
Plug

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.

Features

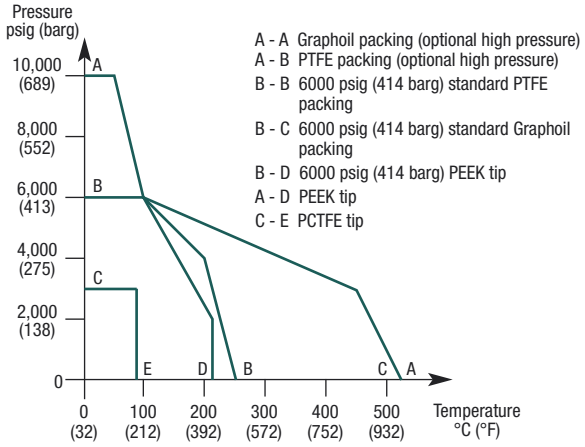
- Rolled spindle operating threads.
- Stainless steel construction as standard.
- PTFE packing standard, optional graphite.
- Alternative tip and materials of construction available.
- Self centering non rotating spindle tip for bubble tight shut off.
- Colour coded functional identification.
- Back 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.



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



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 78).

⚠ When selecting products for specific applications users should refer to our notice at the bottom of page 2.

Standard range part numbers

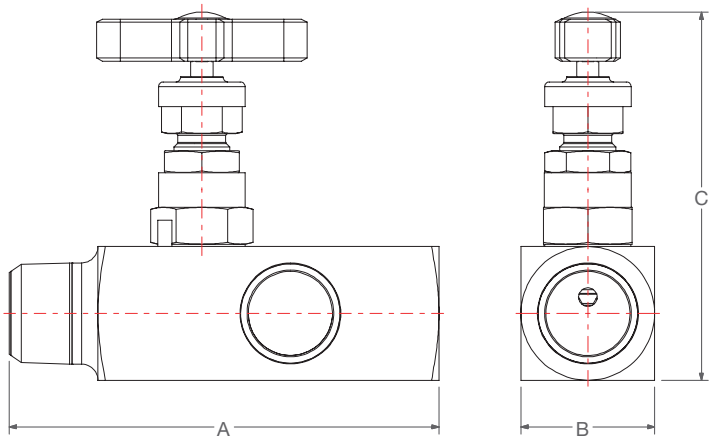
Part no.	Inlet	Outlet	Dimension			Pressure rating
	Male	Female x 3	A mm (inch)	B mm (inch)	C mm (inch)	
HGV*8	1/2 NPT	3 X 1/2" NPT	92.0 (3.62")	28.6 (1.13")	79.4 (3.13")	6,000 psi (414 bar)
HGV*12	3/4 NPT	3 X 1/2" NPT	95.0 (3.74")	28.6 (1.13")	79.4 (3.13")	6,000 psi (414 bar)
HGV*8HP	1/2 NPT	3 X 1/2" 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 79
Dimension "C" in open position.

To order individual bleed valves (captive spindle) & plugs

Part no.	Description	Connection
		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.



Designed to meet pressure/temperature ratings of ANSI Class 2500/4500 where applicable.
For a full list of options and suffix's, see page 78. For a full list of materials and specifications, see page 79.

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

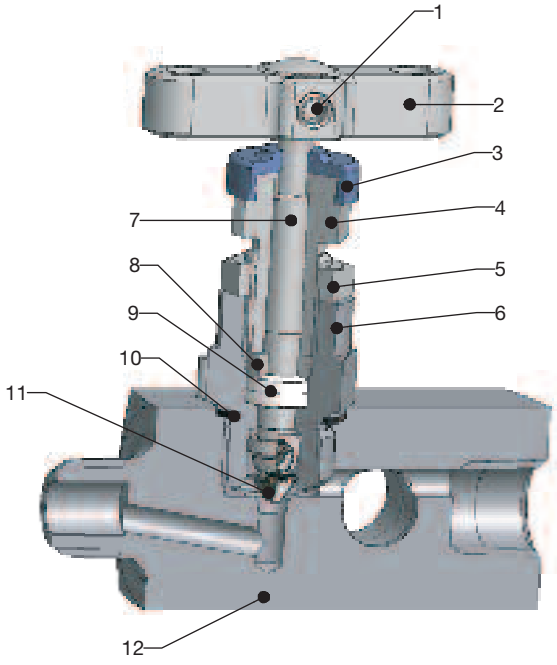
Plug

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.

Features

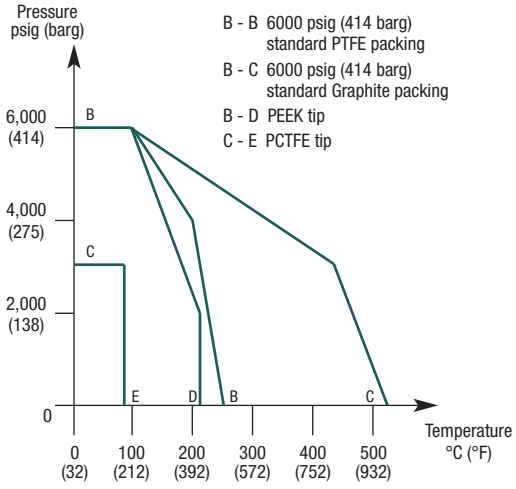
- Rolled spindle operating threads.
- Stainless steel construction standard.
- PTFE packing standard, optional graphite.
- Alternative tip and materials of construction available.
- Self centering non rotating spindle tip for bubble tight shut off.
- Colour coded functional identification.
- Back stop 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.



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



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

Part no.	Inlet	Outlet	Dimension		
	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")

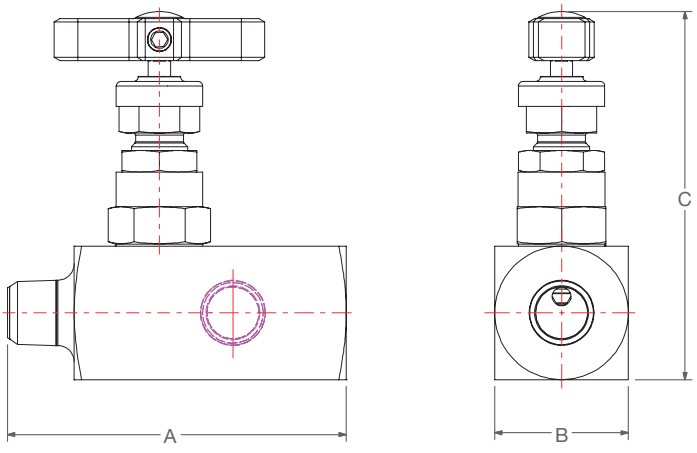
*Insert material code - select from material matrix on page 79.
Dimension "C" in open position.

To order individual bleed valves (captive spindle) & plugs

Part no.	Description	Connection
		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.

⚠ When selecting products for specific applications users should refer to our notice at the bottom of page 2.

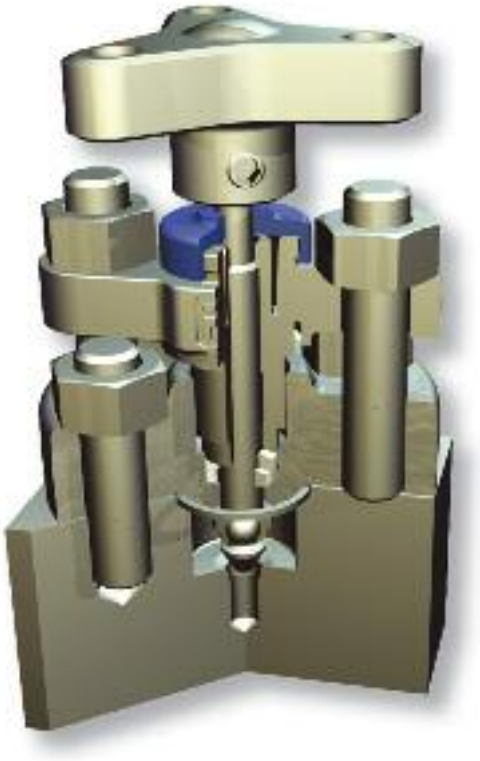


Designed to meet pressure/temperature ratings of ANSI Class 2500 where applicable.
For a full list of options and suffix's, see page 78. For a full list of materials and specifications, see page 79.

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.

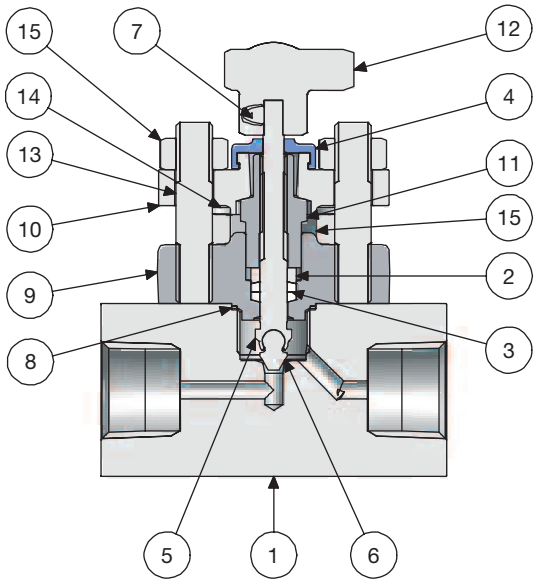


Specification

- 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.

Features

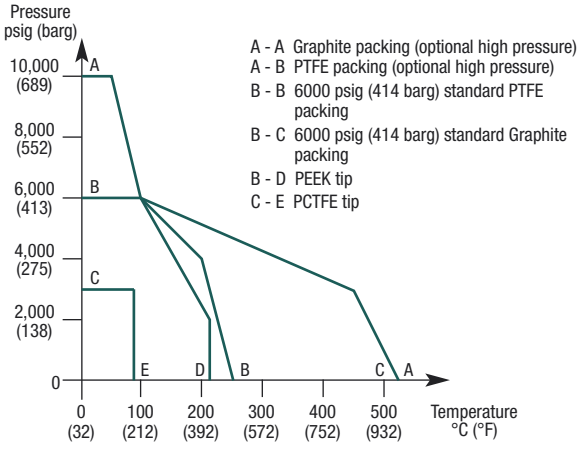
- Rolled spindle operating threads.
- Stainless steel construction standard.
- Graphite packing standard, PTFE optional.
- Alternative tip and materials of construction available.
- Self centering non rotating spindle tip for bubble tight shut off.
- Colour coded functional identification.
- Back stop 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.



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



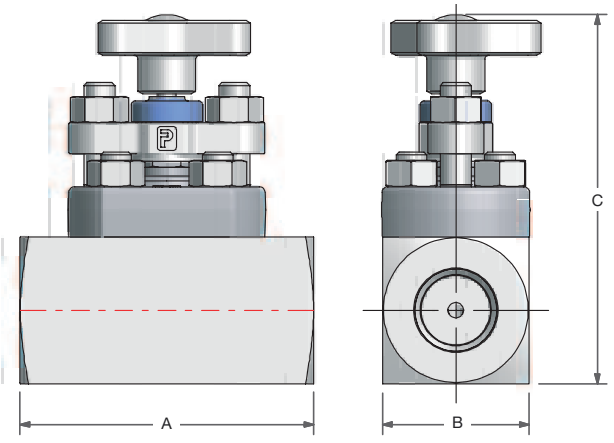
Standard product specification: metal/metal seated, Graphite packed, stainless steel, T bar operation, inline pattern, 6000 psig (414 barg).

Standard range part numbers

Part no.	Inlet	Outlet	Dimension		
	Female	Female	A mm (inch)	B mm (inch)	C mm (inch)
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*SW8NB	1/2 pipe	1/2 pipe	76.2 (3.000")	38.1 (1.50")	98.9 (3.894")
	Butt weld	Butt weld			
HYNV*BW8NB	1/2 pipe	1/2 pipe	89.8 (3.535")	38.1 (1.50")	98.9 (3.894")
	A-LOK®	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 79.
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.

⚠ When selecting products for specific applications users should refer to our notice at the bottom of page 2.



For a full list of options and suffix's, see page 78. For a full list of materials and specifications, see page 79.

Instrumentation hand valves

Available options				Valve types					
									
Suffix adding sequence	Function	Option Detail	Part no. suffix	Needle (HNV series) page 66 & 67	Needle (HNV series) page 68 & 69	Rising plug (HRPV series) page 70 & 71	Multi-port (HGV series) page 72 & 73	Single port (HVG series) page 74 & 75	Outside Screw & yoke (HYNV series) page 76 & 77
1	**Gland packing**	Graphite	3	✓	✓	✓	✓	✓	
2	**Seating**	PCTFE (207 barg/3000 psig)	9	✓			✓	✓	✓
		PEEK	PK	✓	✓	✓	✓	✓	✓
		Stellite tip	ST	✓	✓		✓	✓	✓
		Regulating tip (4mm seat only)	RT	✓	✓				
		6mm seat	6S	✓	✓				
3	**Plug/Bleed valve (supplied loose in box)**	Blank plug	P			✓	✓		
		Bleed valve	BV			✓	✓		
		Plug & bleed valve	PBV			✓	✓		
4	**Connection style**	Socket weld (* insert pipe size)	SW*NB	✓	✓		✓	✓	✓
		Male socket weld (*insert pipe size)	MSW*NB	✓	✓		✓	✓	✓
		Butt weld (* insert pipe size) (# insert schedule)	BW*NBSCH#	✓	✓		✓	✓	✓
		Stub pipe extension (insert length in *mm)	SP*MM	✓	✓		✓	✓	✓
		Male inlet extension (* insert length in mm)	EX*MM	✓	✓	✓	✓	✓	✓
		BSPT (* insert pipe size (e.g. 8K = 1/2")	*K	✓	✓	✓	✓	✓	✓
		BSPP (* insert pipe size (e.g. 4R = 1/4")	*R	✓	✓	✓	✓	✓	✓
		Flange (specify separately)	FL	✓	✓		✓	✓	✓
5	**Connection sizing**	See below†		✓	✓	✓	✓	✓	
6	**Flow pattern Operating mechanism**	Angled	ANG	✓				✓	✓
		Lockable T bar	THL	✓	✓	✓	✓	✓	✓
		Anti tamper T bar	AT	✓	✓		✓	✓	
		Anti tamper + key	ATK	✓	✓		✓	✓	
		Handwheel	HW	✓	✓	✓	✓	✓	✓
		Lockable handwheel	LHW	✓	✓	✓	✓	✓	✓
7	**Mounting**	Panel mount	PM	✓				✓	
		Base mount	BM	✓	✓	✓	✓	✓	✓
8	**Condition**	NACE compliant materials**	NC	✓	✓	✓	✓	✓	✓
		Cleaned and lubricated for oxygen use	OXY	✓	✓	✓	✓	✓	✓
		Firesafe	FS	✓			✓	✓	
		Test certificates	TC	✓	✓	✓	✓	✓	✓
		Air testing	PT	✓	✓	✓	✓	✓	✓

†For tube socket or tube butt weld use 1/16 inch denominations and change NB to TB.
†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.
**Does not apply for A-lok/CPI ended valves in 316 stainless steel.

Instrumentation hand valves

		Valve types					
							
Material	***Insert code for selected material in part number**	**Needle (HNV series) page 66 & 67**	**Needle (HNV series) page 68 & 69**	**Rising plug (HRPV series) page 70 & 71**	**Multi-port (HGV series) page 72 & 73**	**Single port (HVG series) page 74 & 75**	**Outside screw & yoke (HYNV series) page 76 & 77**
Stainless steel std.	S	✓	✓	*✓	✓	✓	✓
Monel	M	✓	✓	✓	✓	✓	✓
Duplex	D1	✓	✓	✓	✓	✓	✓
Super Duplex	D2	✓	✓	✓	✓	✓	✓
Hasteloy	HC	✓	✓	✓	✓	✓	✓
Carbon Steel	C	✓	✓		✓	✓	✓
6Mo	6MO	✓	✓	✓	✓	✓	✓
Titanium	T	✓	✓	✓	✓	✓	✓
Incoloy 825	825	✓	✓	✓	✓	✓	✓
Inconel 625	625	✓	✓	✓	✓	✓	✓

All non-wetted parts ie those not in contact with the process medium will be supplied in stainless steel for all materials shown above.
* For rising plug valve only in stainless steel use SS as material indicator.

Hi-Pro Ball Valve for High Performance Process Isolation

Catalog 4190-HBV
December 2006

Product Description

These high performance two piece bi-directional Ball Valves offer the user full cold working pressure ratings up to 10,000 psi (689 bar), giving 100% bubble tight shut off and continuous repeatable performance. The Ball Valves are suitable for the most demanding applications in the oil, gas and process control industries.

By offering a true two piece design, body leakage paths are reduced to a minimum. With the added opportunity to select integral compression ends the user can eliminate the use of taper threads and thread sealant. This avoids system contamination, reduces leakage paths, installation costs, weight and space.

Specifications

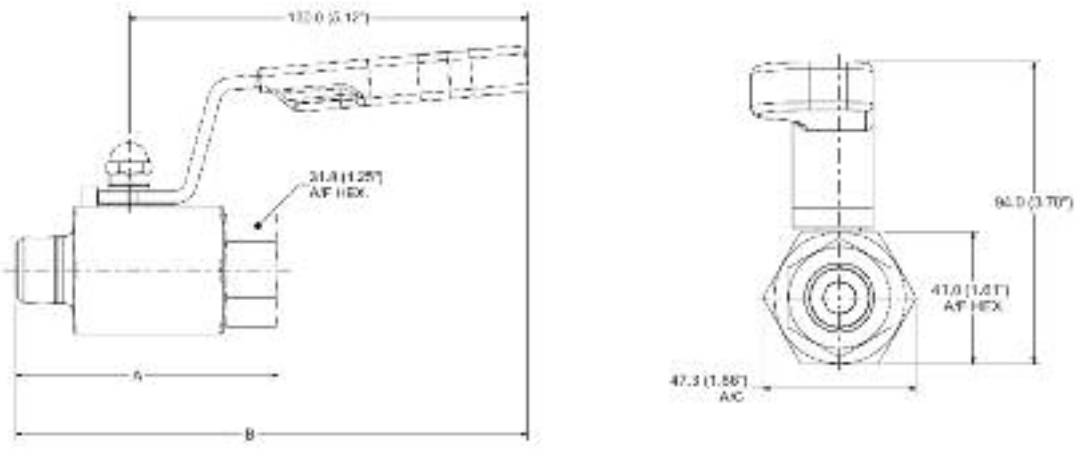
- 316 Stainless steel construction.
- Maximum cold working pressure rating 6,000 psi (414 bar) with P.T.F.E. seats.*
- Temperature rating PTFE seats -54˚C to +204˚C (-65˚F to +400˚F).*
- Maximum cold working pressure rating 10,000 psi (689 bar) with PEEK seats.*
- Temperature rating PEEK seats -54˚C to +232˚C (-65˚F to +450˚F).*

*always refer to P/T graph

Features

- Two piece body design - minimal leakage paths.
- 4:1 Pressure boundary designed safety factor.
- Designed to comply with requirements of ANSI/ASME B16.34 where applicable.
- Bi-directional.
- PEEK and PTFE standard ball seat materials.
- PHflex seats available for 25mm bore.
- PTFE and Graphoil gland packings.
- Bubble tight shutoff.
- Floating ball principal with dynamic response seats featuring inherent self relief.
- Anti blowout stem.
- Integral compression ends available eliminating taper threads and thread sealants.
- Low torque operation.
- Quarter turn positive stop handle with ergonomically designed protective sleeve.
- Full hydrostatic and low pressure air tested.
- Connector thread environmentally sealed.
- Anti static.
- Firesafe designed to meet API 607, BS6755 Pt2 (optional).

Hi-Pro Ball Valve for up to Class 4500 (10,000 psi/689 bar) operations (10mm bore)



Standard range part numbers 10mm bore

Part number	Part number	Inlet	Outlet	Dimensions	
Class 2500	Class 4500	Female	Female	A mm (inch)	B mm (inch)
HPBY*4FF	HPBY*4FFHP	1/4" Female	1/4" Female	70.0 (2.76)	161.5 (6.36)
HPBY*6FF	HPBY*6FFHP	3/8" Female	3/8" Female	71.0 (2.80)	162.0 (6.38)
HPBY*8FF	HPBY*8FFHP	1/2" Female	1/2" Female	85.0 (3.35)	166.5 (6.56)
		Male	Female		
HPBY*4M4F	HPBY*4M4FHP	1/4" Male	1/4" Female	70.0 (2.76)	161.5 (6.36)
HPBY*8M8F	HPBY*8M8FHP	1/2" Male	1/2" Female	85.0 (3.35)	166.5 (6.56)
		A-LOK®	A-LOK®		
HPBY*4A	—	1/4" A-LOK®	1/4" A-LOK®	95.0 (3.74)	165.5 (6.52)
HPBY*6A	—	3/8" A-LOK®	3/8" A-LOK®	99.1 (3.90)	167.4 (6.59)
HPBY*8A	—	1/2" A-LOK®	1/2" A-LOK®	104.7 (4.12)	170.2 (6.70)
HPBY*M6A	—	6mm A-LOK®	6mm A-LOK®	95.0 (3.74)	165.5 (6.52)
HPBY*M8A	—	8mm A-LOK®	8mm A-LOK®	96.6 (3.80)	166.3 (6.55)
HPBY*M10A	—	10mm A-LOK®	10mm A-LOK®	99.5 (3.92)	167.6 (6.60)
HPBY*M12A	—	12mm A-LOK®	12mm A-LOK®	104.7 (4.12)	170.2 (6.70)

*Insert material code - select from material matrix (B = Standard 316 Stainless Steel). For CPI™ change A to Z.
"A" dimensions given for finger tight nuts. For compression ended valve pressure ratings consult tube ratings table.
Combination ends are available.

Standard product specification: PTFE packing with PTFE seats, 10mm bore ball 6,000 psi (414 bar).
Standard product specification: PTFE packing with PEEK seats, 10mm bore ball 10,000 psi (689 bar).

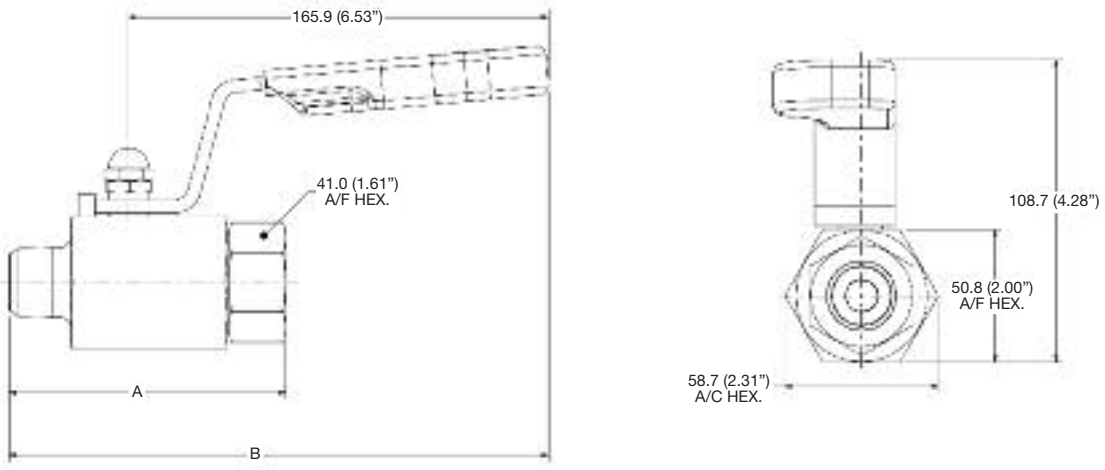
Cold working pressures (psi/bar) in accordance with ANSI/ASME B16.34

		Class Rating		
Material	*Insert	1500	2500	4500
316 Stainless steel std	B	3600/248	6000/414	10000/689
Alloy 400	D		5000/345	9000/620
Duplex	E	3600/248	6000/414	10000/689
Super Duplex	F		6000/414	10000/689
Hasteloy	G		6000/414	10000/689
6Mo	K		6000/414	10000/689
Alloy 625	M		6000/414	10000/689

Available options	Part number Suffix
Graphoil packing	3
PEEK seats	PK
Secured end connector	LC
Handle locking	HL
Spanner actuation	SA
Panel mounting	PM
Fire safe design - Graphoil packing (std)	FS
NACE compliant materials**	NC
Retro-fit handle locking kit (for site assembly)	HPHLKIT
PHlex seats	PH
Base mounting holes (consult Parker)	–

Note: Heat code Trace (HCT) material traceability certificates available on request
**Does not apply for A-lok/CPI ended valves in 316 stainless steel.

Hi-Pro Ball Valve for up to Class 4500 (10,000 psi/689 bar) operations (15mm bore)

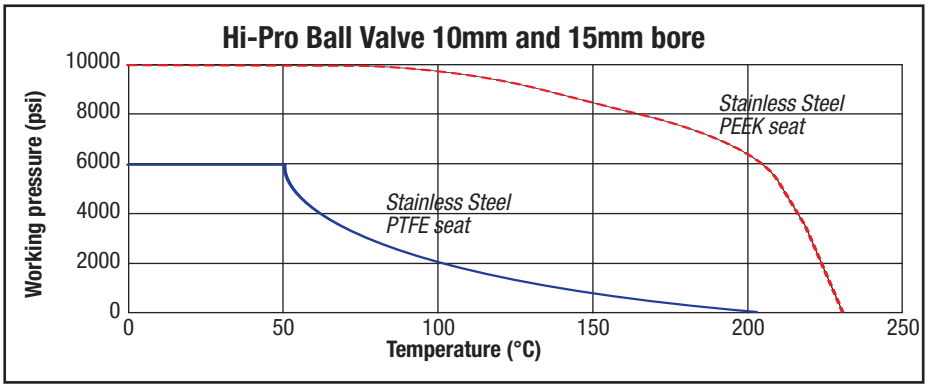


Standard range part numbers 15mm bore

Part number	Part number	Inlet	Outlet	Dimensions	
Class 2500	Class 4500	Female	Female	A mm (inch)	B mm (inch)
HPBX*8FF	HPBX*8FFHP	1/2" Female	1/2" Female	97.2 (3.83)	207.9 (8.18)
		Male	Female		
HPBX*8M8F	HPBX*8M8FHP	1/2" Male	1/2" Female	102.9 (4.05)	213.6 (8.41)
		A-LOK®	A-LOK®		
HPBX*10A	—	5/8" A-LOK®	5/8" A-LOK®	118.0 (4.65)	212.6 (8.37)
HPBX*12A	—	3/4" A-LOK®	3/4" A-LOK®	121.9 (4.80)	214.6 (8.45)
HPBX*M16A	—	16mm A-LOK®	16mm A-LOK®	120.0 (4.72)	214.2 (8.43)
HPBX*M18A	—	18mm A-LOK®	18mm A-LOK®	120.0 (4.72)	214.2 (8.43)
HPBX*M20A	—	20mm A-LOK®	20mm A-LOK®	120.0 (4.72)	214.2 (8.43)

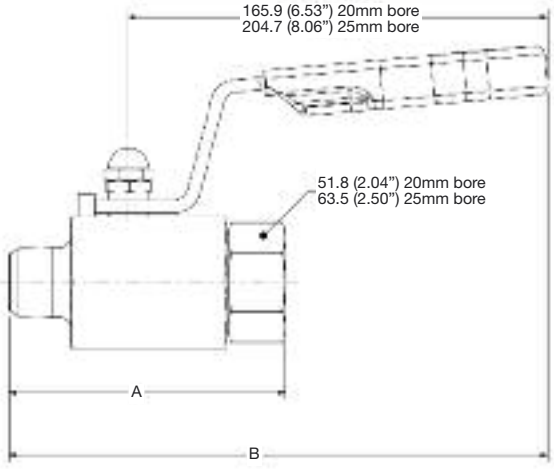
*Insert material code - select from material matrix (B = Standard 316 Stainless Steel). For CPI™ change A to Z.
"A" dimensions given for finger tight nuts. For compression ended valve pressure ratings consult tube ratings table.
Combination ends are available.

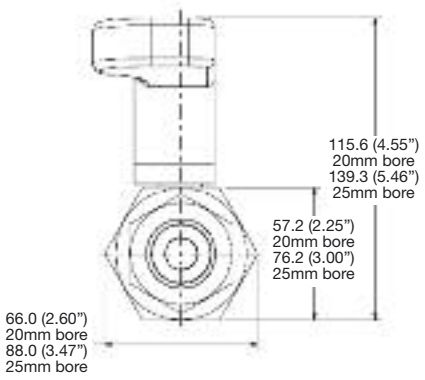
Standard product specification: PTFE packing with PTFE seats, 15mm bore ball 6,000 psi (414 bar).
Standard product specification: PTFE packing with PEEK seats, 15mm bore ball 10,000 psi (689 bar).



Materials and options as per page 83

Hi-Pro Ball Valve for up to Class 2500 (6,000 psi/414 bar) operations (20 & 25mm bore)





Standard range part numbers 20mm bore

Part number	Part number	Inlet	Outlet	Dimensions	
Class 1500	Class 2500	NPT	NPT	A mm (inch)	B mm (inch)
HPBW*12FFLP	HPBW*12FF	3/4" Female	3/4" Female	89.8 (3.54)	204.1 (8.03)
HPBW*12M12FLP	HPBW*12M12F	3/4" Male	3/4" Female	102.5 (4.04)	216.8 (8.53)
		A-LOK®	A-LOK®		
HPBW*14ALP	—	7/8" A-LOK®	7/8" A-LOK®	134.0 (5.28)	221.1 (8.71)
HPBW*16ALP	—	1" A-LOK®	1" A-LOK®	137.6 (5.42)	222.9 (8.77)
HPBW*M22ALP	—	22mm A-LOK®	22mm A-LOK®	133.3 (5.25)	220.8 (8.69)
HPBW*M25ALP	—	25mm A-LOK®	25mm A-LOK®	137.1 (5.40)	222.7 (8.77)

*Insert material code - select from material matrix (B = Standard 316 Stainless Steel). For CPI™ change A to Z.
"A" dimensions given for finger tight nuts. For compression ended valve pressure ratings consult tube ratings table.
Combination ends are available.

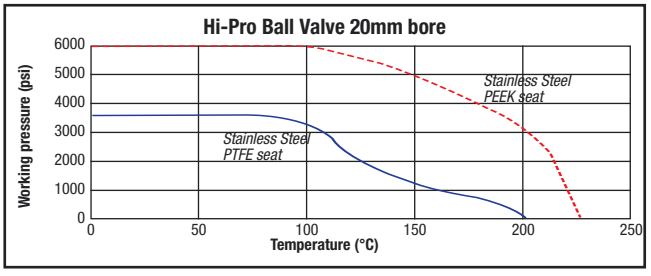
Standard product specification: PTFE packing with PTFE seats, 20mm bore ball 3,600 psi (247 bar).
Standard product specification: PTFE packing with PEEK seats, 20mm bore ball 6,000 psi (414 bar).

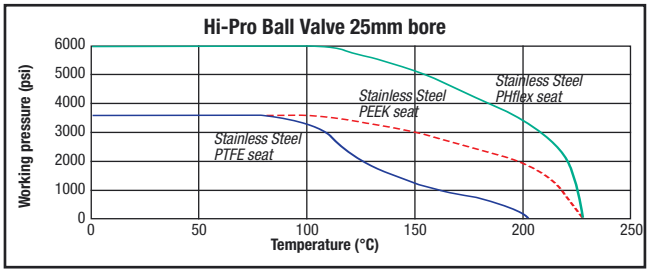
Standard range part numbers 25mm bore

Part number	Part number	Inlet	Outlet	Dimensions	
Class 1500	Class 2500	NPT	NPT	A mm (inch)	B mm (inch)
HPBV*16FFLP	HPBV*16FF	1" Female	1" Female	128.4 (5.05)	260.3 (10.23)
HPBV*16M16FLP	HPBV*16M16F	1" Male	1" Female	132.2 (5.20)	264.1 (10.40)
		A-LOK®	A-LOK®		
HPBV*16ALP	—	1" A-LOK®	1" A-LOK®	153.2 (6.03)	269.8 (10.62)
HPBV*M25ALP	—	25mm A-LOK®	25mm A-LOK®	153.2 (6.03)	269.8 (10.62)

*Insert material code - select from material matrix (B = Standard 316 Stainless Steel). For CPI™ change A to Z.
"A" dimensions given for finger tight nuts. For compression ended valve pressure ratings consult tube ratings table.
Combination ends are available.

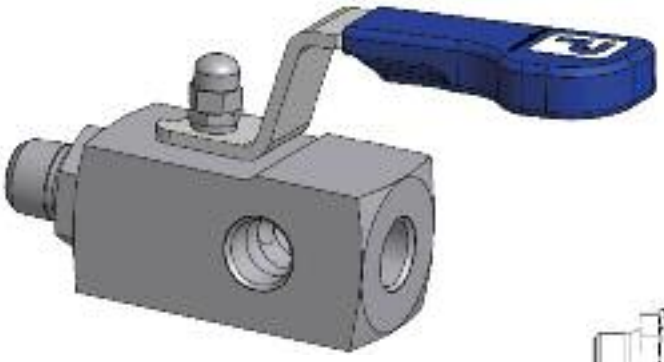
Standard product specification: PTFE packing with PTFE or PEEK seats, 25mm bore ball 3,600 psi (247 bar).
PTFE packing with PHflex seats, 25mm bore ball 6,000 psi (414 bar).

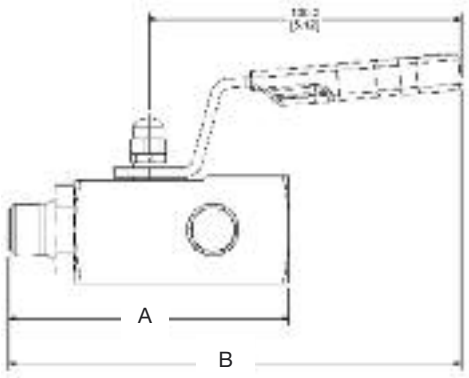


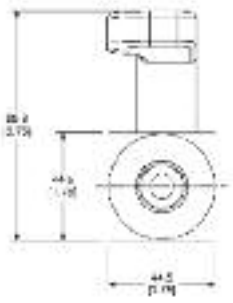


Materials and options as per page 83

Hi-Pro Multi Port Gauge Valve for up to Class 4500 (10,000 psi/689 bar) operations (10mm bore)







Standard Product Specifications

Part No. HPBYGVB8: 316 Stainless Steel construction, PTFE packing, PTFE seats, 10mm bore ball, 6,000 psi (414 bar), 1/2” NPT male inlet x 3 – 1/2” NPT female outlets.

Part No. HPBYGVB12: 316 Stainless Steel construction, PTFE packing, PTFE seats, 10mm bore ball, 6,000 psi (414 bar), 3/4” NPT male inlet x 3 – 1/2” NPT female outlets.

Part No. HPBYGVB8HP: 316 Stainless Steel construction, PTFE packing, PEEK seats, 10mm bore ball, 10,000 psi (689 bar), 1/2” NPT male inlet x 3 – 1/2” NPT female outlets.

Part No. HPBYGVB12HP: 316 Stainless Steel construction, PTFE packing, PEEK seats, 10mm bore ball, 10,000 psi (689 bar), 3/4” NPT male inlet x 3 – 1/2” NPT female outlets.

Note: To obtain optional bleed valve and/or blank plug with the gauge valve the above part number must be suffixed accordingly. If these parts are required they will be shipped loose in the box for customer assembly using their preferred thread sealant.

Part number	Part number	Inlet	Outlet	Dimensions	
6000 psi (414 bar)	10000 psi (689 bar)	Male	Female	A mm (inch)	B mm (inch)
HPBYGV*8	HPBYGV*8HP	1/2” NPT	3x1/2” NPT	116.5 (4.59)	188.1 (7.41)
HPBYGV*12	HPBYGV*12HP	3/4” NPT	3x1/2” NPT	119.5 (4.71)	191.1 (7.52)

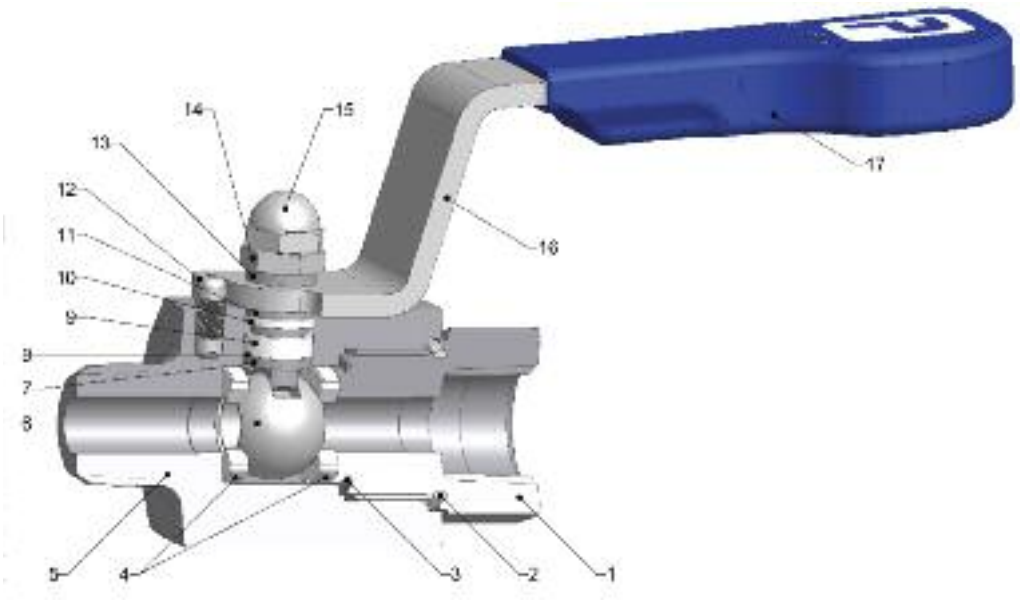
*Insert material code - select from material matrix (B = Standard 316 Stainless Steel).

Bleed valve

Plug

Materials and options as per page 83

Hi-Pro Ball Options for up to Class 4500 (10,000 psi/689 bar) operations



Part description

Item	Description
1	End Connector
2	E-seal™
3	Sealing washer
4	Seats
5	Body
6	Ball
7	Anti blowout stem
8	Thrust Seal
9	Gland packing
10	Upper gland packing
11	Thrust bush
12	Stop pin
13	Thrust bush
14	Lock nut
15	Locking dome nut
16	Handle
17	Handle grip

Handle locking (padlock not supplied)

Secured end connector (double pin)

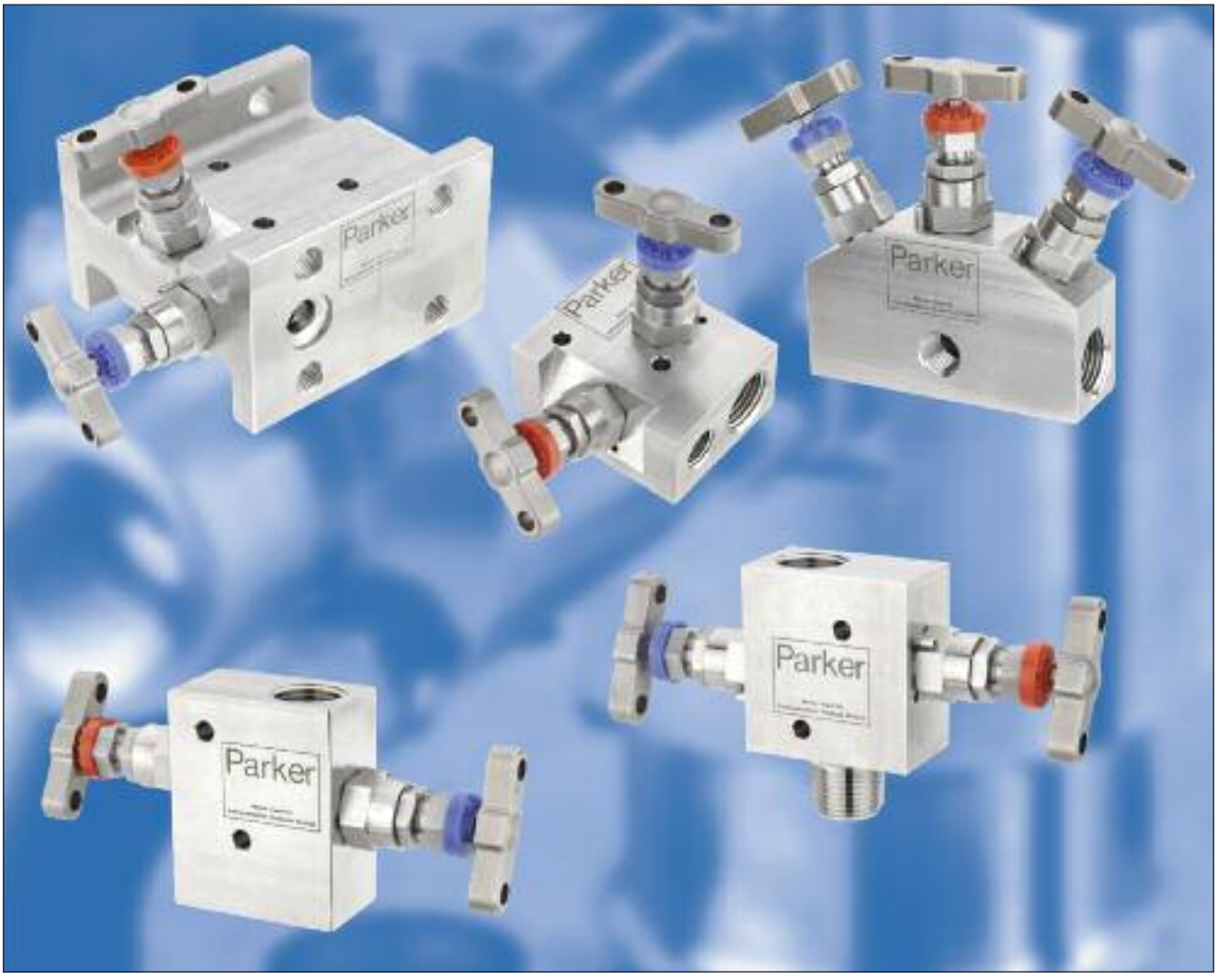
Spanner actuation

Panel mounting (c/w nuts & bolts)

Parker
anything possible

‘H’ Series Two Valve Manifolds

Catalog 4190-PM
August 2006



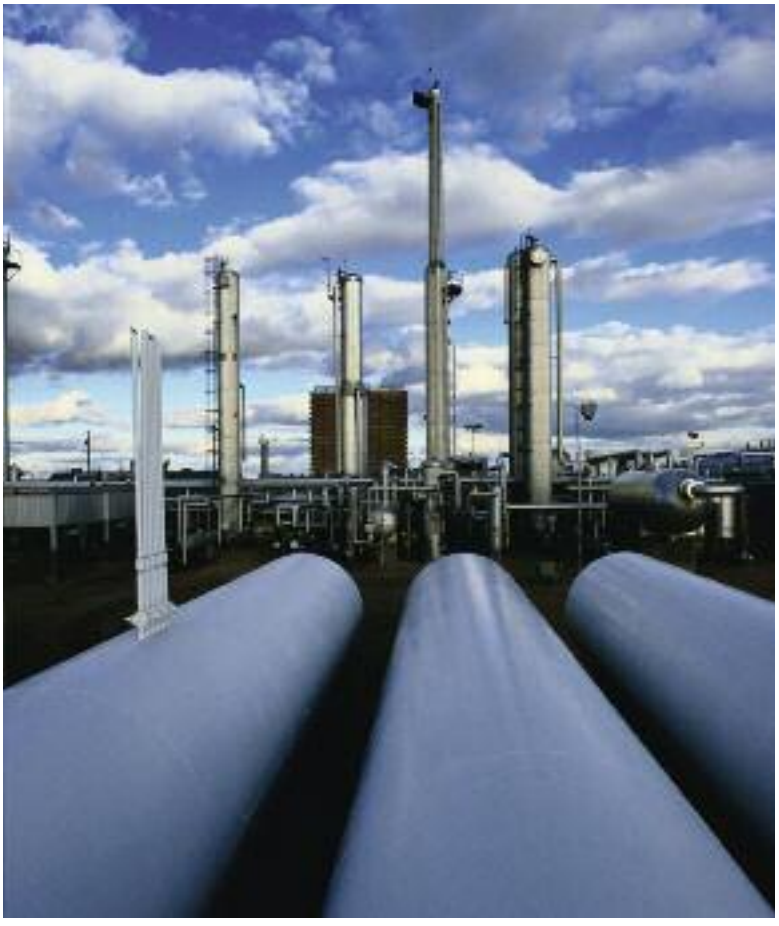
Contents

Introduction

With many years of manifold development and manufacture Parker Hannifin are able to offer the most comprehensive range of two valve block and bleed manifolds to suit all types of instrumentation installations, specifications and applications.

Now consolidated into one catalogue, selection can be made from a comprehensive range of bodies with a variety of connections and valve positions, optimising installation and access opportunities.

Designed to reduce installation costs and improve safety performance, the consolidation of valves into one unit provides you with a combination of instrument isolation together with bleed/vent and test facilities.



In addition to manufacturing manifolds Parker also produce a comprehensive range of single and twin ferrule high integrity tube fittings. Manufactured in a variety of materials these products are used extensively in the oil, gas, petro-chem, power, processing and many other markets.

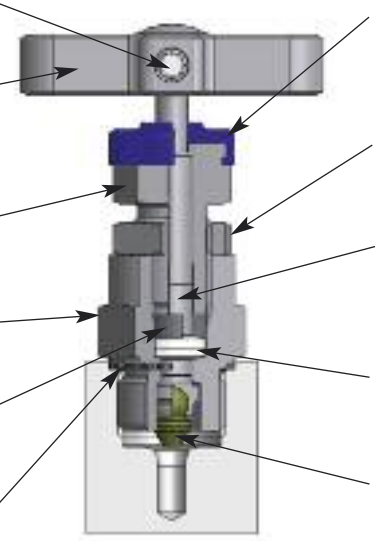
By integrating these products, instrument manifolds and tube fittings, Parker can offer unique connection combinations which are specifically designed to eliminate site assembled threaded connectors, ingress of debris and contamination from thread sealant materials which often result in instrument failure, replacement and downtime. Eliminating the use of taper threads, factory assembled and tested connections will ensure improved performance through simpler assembly and installation procedures. This system provides total flexibility of tubing position with positive leak proof connections.

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.

Standard manifold globe style bonnet design

For safe reliable and repeatable performance



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 retro-fit of bonnets with 100% re-sealing assurance

3. Dust Cap
This has a dual purpose, preventing air born debris from contaminating the operating spindle thread and providing colour coded functional identification. Isolate (BLUE) Bleed/test (RED).

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 gland sealing.

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

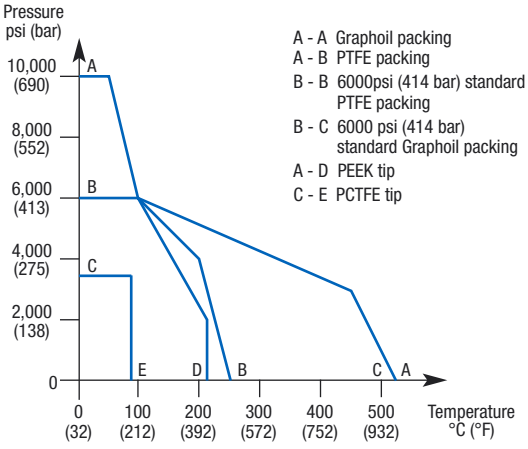
11. Spindle tip
Self centering, non-rotational tip gives successive positive bubble tight shut off assuring the user of leakage free performance and downstream functional safety.

All metallic standard parts are produced in stainless steel, for alternative materials please refer to page 106. 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 (limited to HP suffix see pages 96/97) up to 10,000 psig (689 barg).
- 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 manifold 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 certified wetted parts available.
- Optional cleaned and lubricated suitable for Oxygen service.
- Heat code traceable body and bonnet.

Optional manifold globe style bonnet design

For on-site assembly

The design options below can be simply retrofit to any "H" series standard manifold. 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 manifold part number must be suffixed with the option and function designator. This allows you to select one or both of the bonnets to be fitted with the selected option or, different options to be fitted to either of the bonnets.
Function designator IS – isolate DR-drain/test.

Example HL*2VATDR – manifold with drain/bleed valve (DR) fitted with anti-tamper (AT). Isolate valve will be standard bonnet design.

Example HL*2VHWISTHLDR – manifold with isolate valve fitted with hand-wheel and drain/bleed valve fitted with "T" bar locking mechanism.

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

Standard bonnet	T bar handle locking	Anti tamper spindle
	 Retro-fit kit part number **KITTHL** Factory assembled suffix **THL**	  For key only - part no. **ATHKEY/1** Retro-fit kit part number **KITAT** without key **KITATK** with key Factory assembled suffix **AT** without key **ATK** with key
Handwheel	**Lockable handwheel**	***Panel mounting**
 Retro-fit kit part number **KITHW** Factory assembled suffix **HW**	 Retro-fit kit part number **KITLHW** Factory assembled suffix **LHW**	 Retro-fit kit part number **KITPM** Factory assembled suffix **PM**

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

Remote mount static pressure manifolds

Purpose

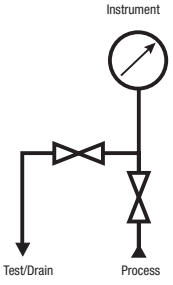
This series of two-valve manifolds combine valves into one unitised block to perform isolation, bleed and calibration of pressure transmitters, gauges and switches. Process, instrument and vent connections can be provided in a variety of sizes and thread forms including NPT, BSPTr and BSPP.

HL*2VTF

HL*2V

HL*2HVSDLH

HAL*2V

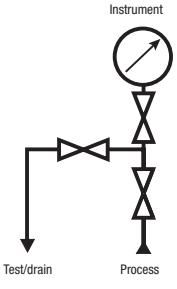


Line diagram represents this group of manifolds

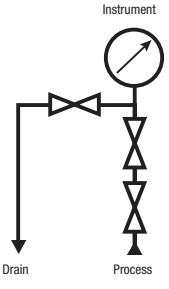
HL*28M8F4F

Instrument double block and bleed manifolds

Double block and bleed instrument manifolds for dual isolating and bleed purposes. Ideal for limited space and panel installations.



HL*3DBB

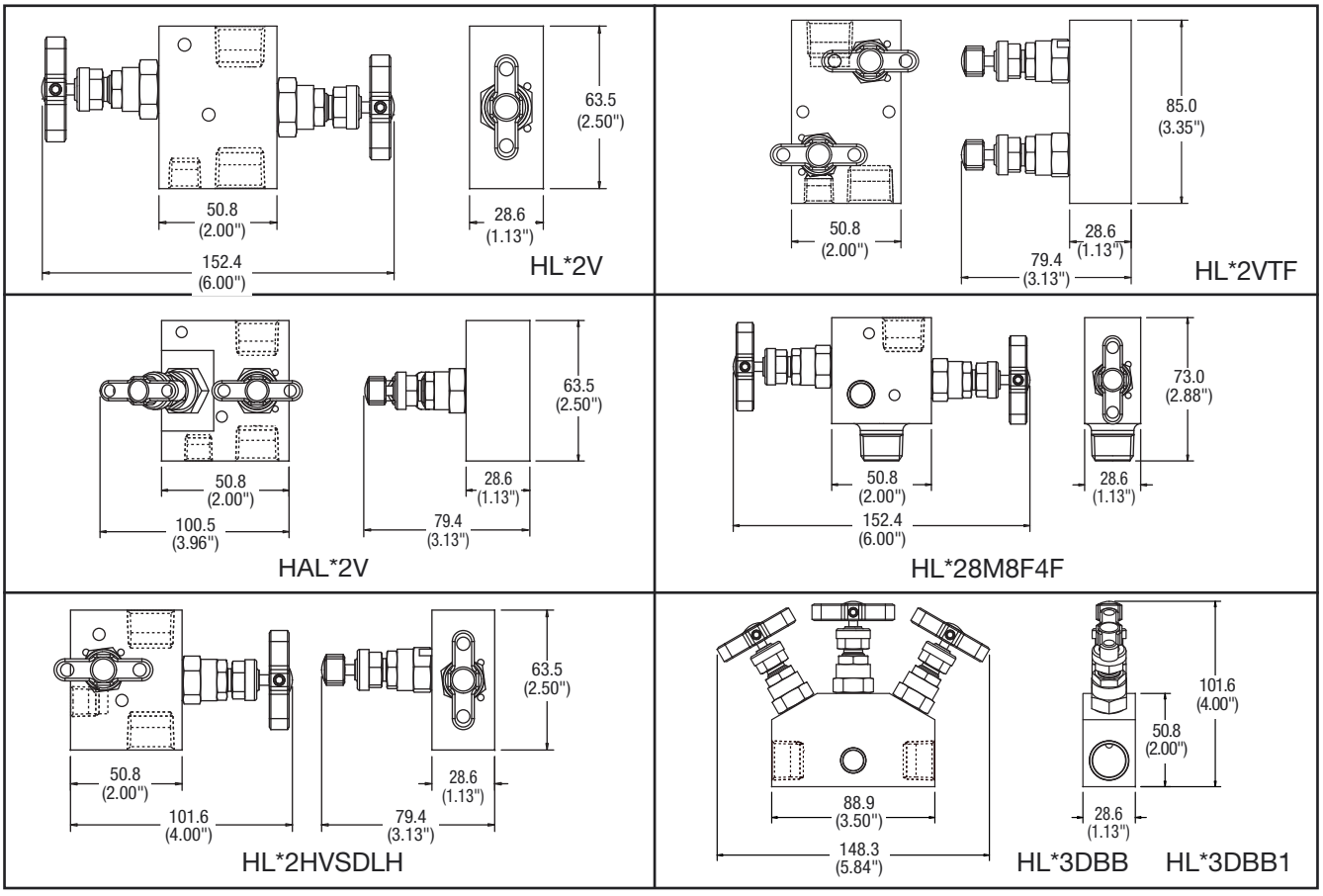


HL*3DBB1

*For material codes see pages 106/107.

For options see pages 108/109.

Remote mount static pressure manifolds



*Overall width with valves fully open

Standard product specification: self centering metal/metal seat, PTFE packed, stainless steel, T bar handle operation, 6000 psig (414 barg).

Standard range part numbers

		Standard connections	
Part No.	Inlet (NPT)	Outlet (NPT)	Bleed/test (NPT)
HL*2V	1/2" female	1/2" female	1/4" female
HAL*2V	1/2" female	1/2" female	1/4" female
HL*2HVSDLH	1/2" female	1/2" female	1/4" female
HL*2VTF	1/2" female	1/2" female	1/4" female
HL*28M8F4F	1/2" male	1/2" female	1/4" female
HL*3DBB	1/2" female	1/2" female	1/4" female
HL*3DBB1	1/2" female	1/2" female	1/4" female

*Insert material designator, see pages 106/107

Function
Blue cap – isolate,
Red Cap – drain/bleed

Specification

- Maximum standard pressure up to 6,000 psig (414 barg), to ANSI Class 2500.
- Temperature rating - see page 92.
- Standard port sizes up to 1/2" NPT.

Features

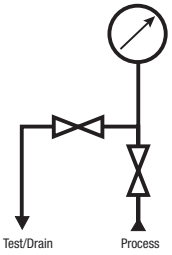
- Standard high performance bonnet design.
- Colour coded valve function identification.
- Alternative materials of construction available.
- Optional port sizes and thread forms available: BSPTr, BSPP.
- Socket and butt weld connections available.
- PTFree connections available (see page 103).
- Blank and bleed plugs available.
- NACE certified on request.
- Optional cleaned and lubricated suitable for Oxygen service.
- Heat code traceable body and bonnet.

High pressure 10,000 psig (689 barg) two valve manifolds

Purpose

This series of manifolds have been designed for more aggressive applications and for operation up to 10,000 psig (689 barg).

HL*2VHP



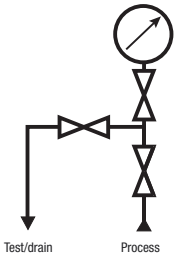
Line diagram represents this group of products

HAL*2VHP

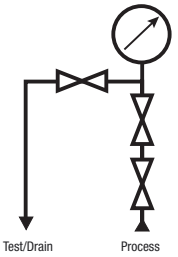
HL*28M8F4FHP

Instrument double block and bleed manifolds

Designed for dual isolating and bleed purposes, ideal for limited space and panel installations.



HL*S3DBBHP

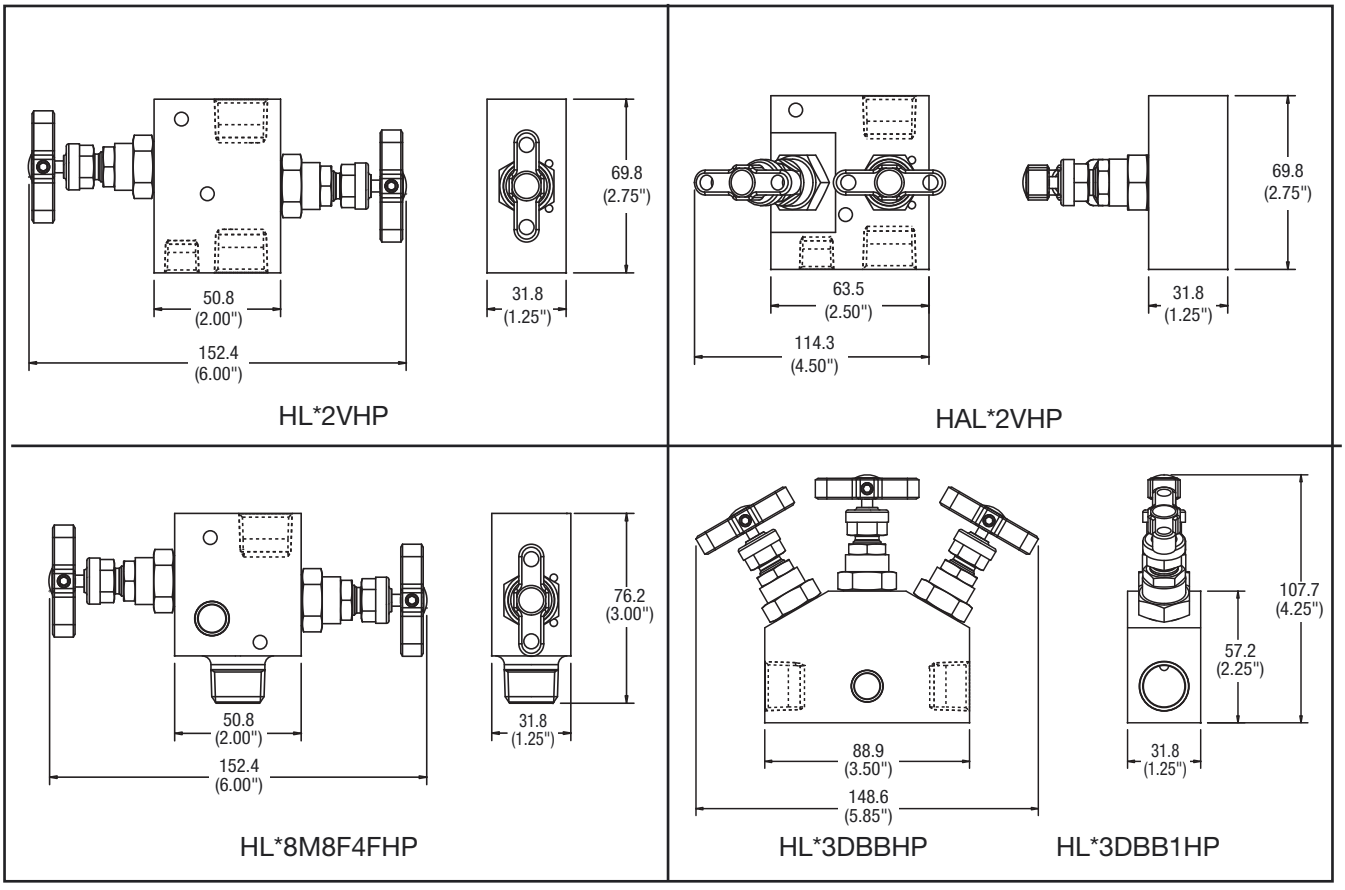


HL*3DBB1HP

*For material codes see pages106/107.

For options see pages 108/109.

High pressure 10,000 psig (689 barg) two valve manifolds



*Overall width with valves fully open

Standard product specification: self centering metal/metal seat, PTFE packed, stainless steel, T bar handle operation, 10,000 psig (689 barg).

Specification

- Maximum standard pressure up to 10,000 psig (689 barg), to ANSI Class 4500 (St. St.).
- Temperature rating - see page 92.
- Standard port sizes up to 1/2" NPT.

Standard range part numbers

		Standard connections	
Part No.	Inlet (NPT)	Outlet (NPT)	Bleed/test (NPT)
HL*2VHP	1/2" female	1/2" female	1/4" female
HAL*2VHP	1/2" female	1/2" female	1/4" female
HL*28M8F4FHP	1/2" male	1/2" female	1/4" female
HL*3DBBHP	1/2" female	1/2" female	1/4" female
HL*3DBB1HP	1/2" female	1/2" female	1/4" female

*Insert material designator, see pages 106/107

Features

- Standard high performance bonnet design.
- Colour coded valve function identification.
- Alternative materials of construction available.
- Optional port sizes and thread forms available: BSPTr, BSPP.
- Socket and butt weld connections available.
- PTFree connections available (see page 103).
- Blank and bleed plugs available.
- NACE certified on request.
- Optional cleaned and lubricated suitable for Oxygen service.
- Heat code traceable body and bonnet.

Function
Blue cap – isolate,
Red Cap – drain/bleed

Direct mount static pressure manifolds

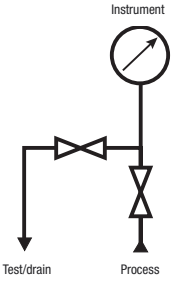
Purpose

This series of two valve manifolds is designed for direct mounting to process measurement pressure transmitters. Standard functions include isolation, test, bleed and calibration.

HD*2EXT
Base entry enclosure mountable

HD*2HLHFF
Straight through bolted flange

HEF*2LH



Line diagram represents
this group of products

HD*2HLH

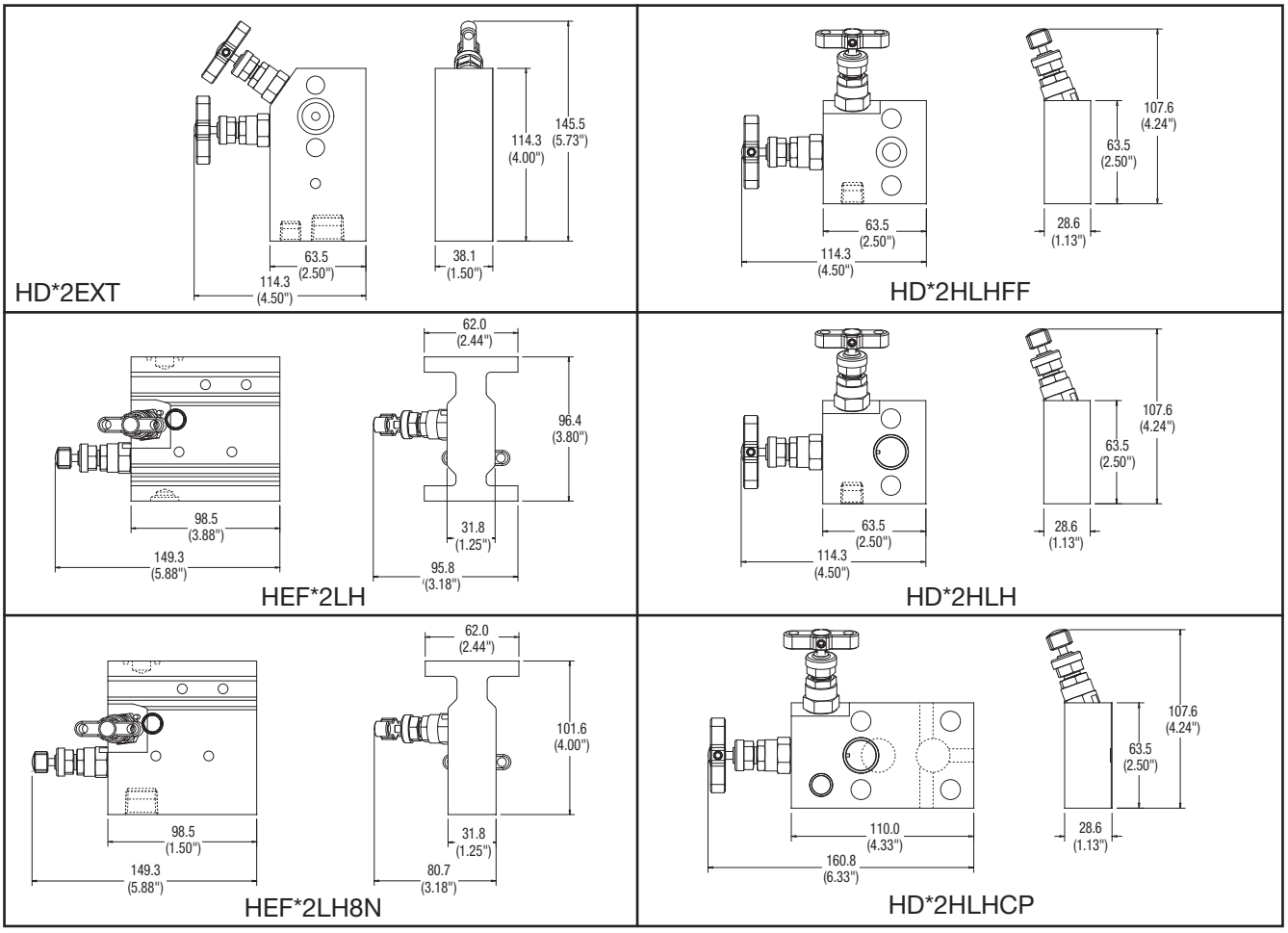
HEF*2LH8N

HD*2HLHCP
For Model 3051 transmitter

*For material codes see pages 106/107.

For options see pages 108/109.

Direct mount static pressure manifolds



Overall width with valves fully open

Standard specification: self centering metal/metal seat, PTFE packed, stainless steel, T bar handle operation, 6000 psig (414 barg). Supplied as standard with 1 off PTFE instrument seal and appropriate 7/16" UNF high tensile zinc plated carbon steel bolts.

Standard range part numbers

		Standard connections	
Part No.	Inlet (NPT)	Outlet	Drain/bleed
HD*2EXT	1/2" female	Flanged	1/4" female
HEF*2LH	Flanged	Flanged	1/4" female
HEF*2LH8N	1/2" female	Flanged	1/4" female
HD*2HLHFF	Flanged	Flanged	1/4" female
HD*2HLH	1/2" female	Flanged	1/4" female
HD*2HLHCP	1/2" female	Flanged	1/4" female

*Insert material designator

Function

Blue cap – isolate,
Red Cap – drain/bleed

All manifolds are drilled suitable for bracket mounting - standard manifold support brackets are available.

Straight through flow pattern rising plug valves are available for HEF*2LH and HEF*2LH8N.

*For material codes see pages 106/107. For options see pages 108/109.

Specification

- Maximum standard pressure up to 6,000 psig (414 barg), to ANSI Class 2500.
- Temperature rating - see page 92.
- Standard port sizes up to 1/2" NPT.

Features

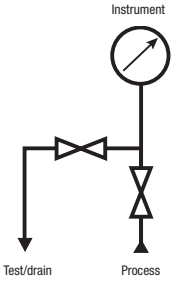
- Standard high performance bonnet design.
- Colour coded valve function identification.
- Alternative materials of construction available.
- Optional port sizes and thread forms available: BSPTr, BSPP.
- Socket and butt weld connections available.
- PTFree connections available (see page 103).
- Blank and bleed plugs available.
- NACE certified on request.
- Optional cleaned and lubricated suitable for Oxygen service.
- Heat code traceable body and bonnet.

Flanged connected static pressure manifolds

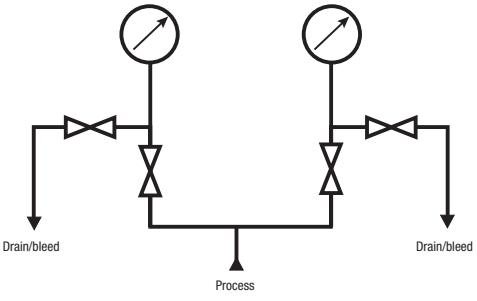
Purpose

These manifolds are designed for fast and efficient installation and removal of pressure measurement instruments. Single kidney flange arrangements are provided with optional inlet connections for total installation flexibility, the redundant connection can also be used for purge operations.
The dual flanged model enables users to mount two pressure measuring devices connected to a common inlet, redundant cross-hole connections can be used for process purging.
Kidney flange connections can also be provided with male threaded outlet, A-LOK, CPI or PTFree connections.
Closing the isolation valves and operating the bleed valve gives operators the opportunity of venting trapped pressurised fluids to an environmentally safe area. Further access through the bleed connection enables in-situ instrument calibration.

HL*2V1KFMB

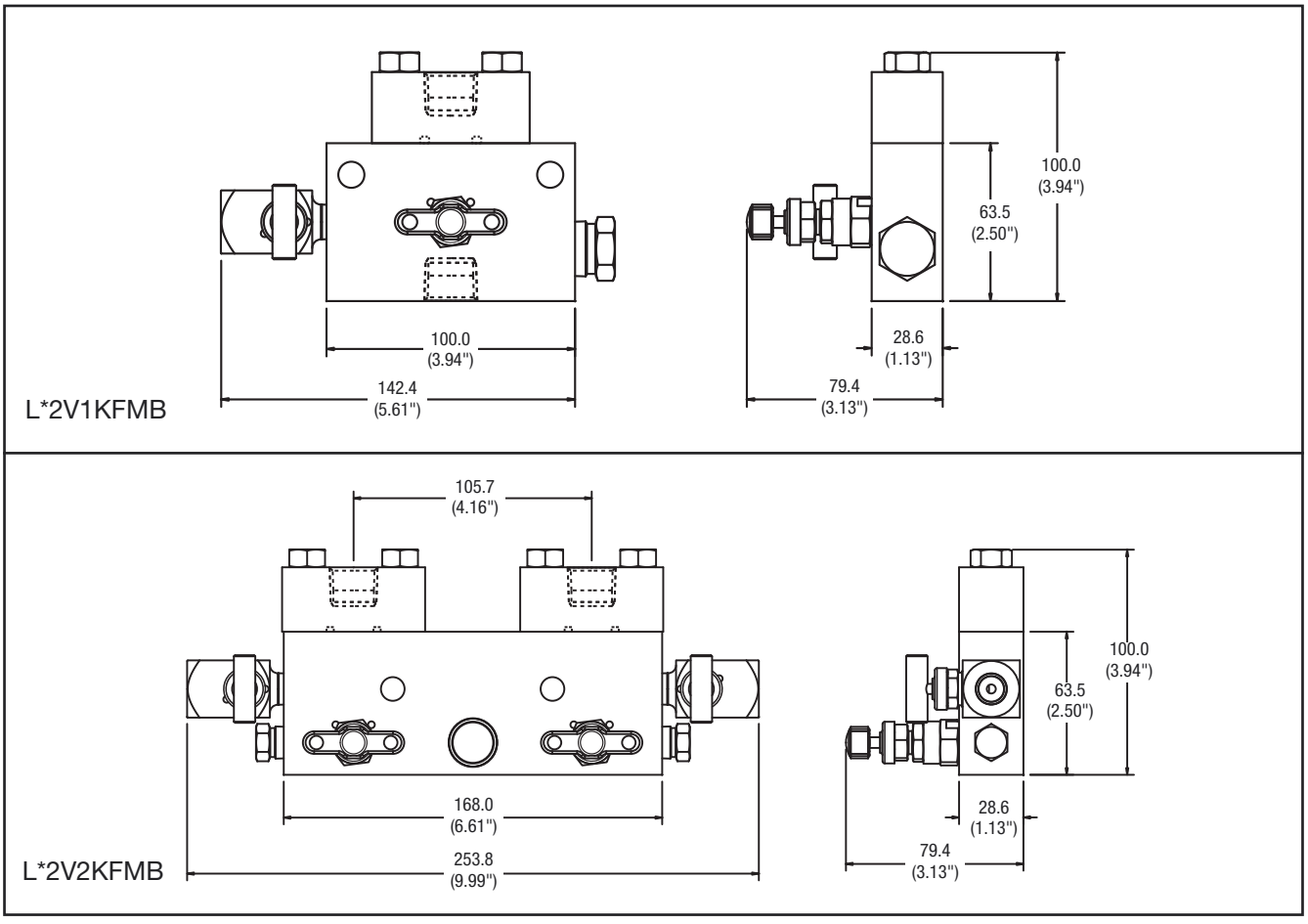


HL*2V2KFMB



All manifolds are drilled suitable for bracket mounting - standard manifold support brackets are available.
*For material codes see page 106/107. For options see pages 108/109.

Standard dimensions



Overall width with valves fully open

Standard product specification: self centering metal/metal seat, PTFE packed, stainless steel construction, T bar handle operation, 6000 psig (414 barg). Bleed valves fitted with Fluorocarbon Rubber gland seals.

Standard range part numbers

		Standard connections	
Part No.	Inlet (NPT)	Outlet (NPT)	Bleed/test (NPT)
L*2V1KFMB	2 x 1/2" female	1 x Flanged x 1/2" female	1/4" female
L*2V2KFMB	1/2" female	2 x Flanged x 1/2" female	1/4" female

*Insert material designator

Function
Blue cap – isolate,
Red Cap – drain/bleed

*For material codes see pages 106/107. For option codes see pages 108/109.

Specification

- Maximum standard pressure up to 6,000 psig (414 barg), to ANSI Class 2500.
- Temperature rating -40C to +204C (-40F to +400F)
- Standard port sizes up to 1/2" NPT.

Features

- Standard high performance bonnet design.
- Colour coded valve function identification.
- Alternative materials of construction available.
- Optional port sizes and thread forms available: BSPTr, BSPP.
- Socket and butt weld connections available.
- PTFree connections available (see page 103).
- Blank and bleed plugs available.
- NACE certified on request.
- Optional cleaned and lubricated suitable for Oxygen service.
- Heat code traceable body and bonnet.
- Mini bleed valves for compact installation.

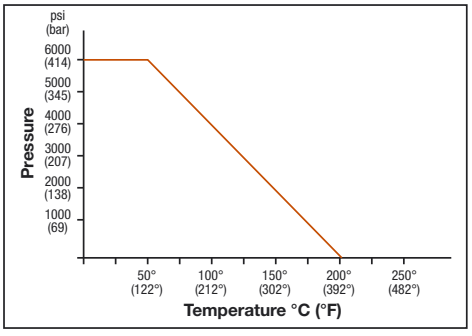
Miniature static pressure manifolds

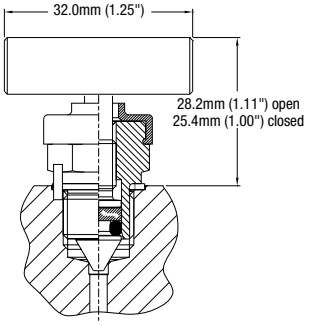
Purpose

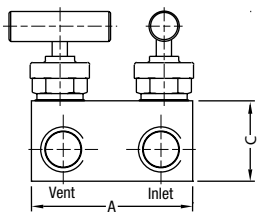
These manifolds are ideal for installation inside control panels or any size limited construction. They provide size, weight and cost savings whilst at the same time meeting industry standard pressure rating performance of 6,000psig (414 barg).

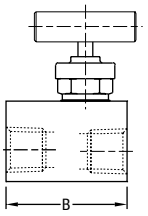
MLS2VTF4N

Technical specification, Pressure vs temperature









Specification

- Maximum pressure: 414 bar (6000 psi)
- Maximum temperature: 204° C (400° F)
- Packing seal ring: Fluorocarbon Rubber
- Back up ring: P.T.F.E.
- Material of construction: Stainless steel
- Seat construction: Metal/metal

Dimensions mm (inch)						
Part Number	Inlet	Outlet	Drain/vent	A	B	C
MLS2VTF4N	1/4" NPT female	1/4" NPT female	1/4" NPT female	50.8mm (2.0")	38.1mm (1.5")	27.0mm (1.08")
MLS2VTF	1/2" NPT female	1/2" NPT female	1/4" NPT female	50.8mm (2.0")	50.8mm (2.0")	27.0mm (1.08")

Easy to install, easy to operate and easy on the budget

Parker's range of miniature valves and manifolds are ideal for installation inside control panels and other size limited installations where **space** and **weight** are primary considerations.

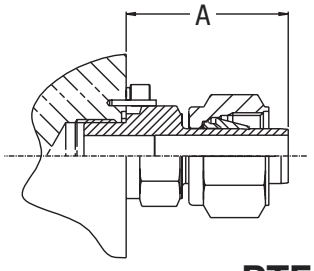
Performance

Working with any fluids this valve will provide bubble tight shut off. To avoid seat damage, applications should be provided with upstream filtering to remove any particle contamination.
The valve is designed with an anti-blow out proof stem and a metallic back seat to minimise atmospheric leakage in the event of stem seal failure. To reduce sealing ring wear, an anti extrusion P.T.F.E. back up ring is fitted as a standard.

PTFree connect™

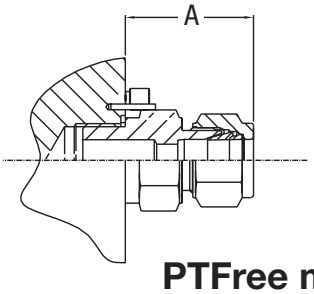
Manifold connections

Many users continually desire the elimination of taper threads and their associated sealant.
The PTFree connect system enables users to assemble tube lines to any of the manifold ports without the need for PTFE tape or other liquid sealant.
The PTFree connection can be applied to any of the manifold featured in this catalogue. these will be factory fitted, pin locked and pressure tested.
PTFree connect enables angled tube connections to be swivelled until the optimum tube alignment position has been achieved. Assembly to the tube connector is achieved by tightening the standpipe nut one-quarter turn from the finger tight position.
Manifolds can also be supplied with male connectors using the same thread form as the PTFree connect. They can be provided factory fitted, pin locked and tested before they leave our manufacturing plant.
Some size restrictions may be necessary due to the close proximity of some connections and the across flat hexagon dimensions, as a guide PTFree connect for inlet and outlet can be up to 1/2" or 12mm o/d., drain/bleed connections should be restricted to 1/4" or 6mm. For PTFree male connectors inlet and outlet should be restricted to 3/8" or 10mm and 1/4" or 6mm o/d for drain/bleed.



A = 29.70mm (1.17") 6mm/1/4" tube
A = 35.00mm (1.38") 10mm tube
A = 35.00mm (1.38") 3/8" tube

PTFree connect (Code FRC)



A = 31.50mm (1.25") 6mm/1/4" tube
A = 36.60mm (1.44") 10mm tube
A = 36.60mm (1.44") 3/8" tube

PTFree male connectors (Code FRCM)

Part Number Construction Examples

				Inlet, Outlet, Drain/vent/test, tube size/thread size & form		
Manifold Part No. + option	Connection Style FRC or FRCM	A-LOK(L) or CPI(B) L or B	Metric or inch tube M or I	Inlet (E) + size	Outlet (X) + size	Drain/vent/test
HLS2V	FRC	L	M	E12	X12	D6
Part No. HLS2VFRCLME12X12D6 = 2 valve manifold with all A-LOK PTFree connect™ Inlet 12mm, Outlet 12mm Drain/vent/test 6mm. Stainless steel standard construction						
HALS2V	FRCM	B	I	E6	X6	D4N
Part No. HALS2VFRCMBIE6X6D6N = 2 valve manifold with CPI PTFree male connector Inlet 3/8 o.d, Outlet 3/8 o/d Drain/vent/test 1/4" NPT. Stainless steel standard construction						

Manifold bracket support

Purpose

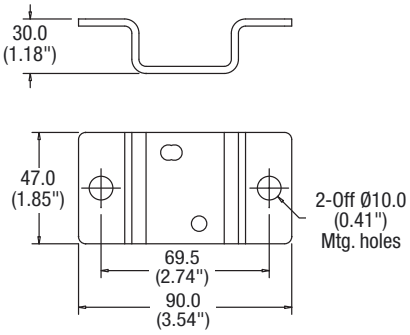
It is essential to fully support impulse/pressure measurement tubing lines, manifolds and instruments. All Parker manifolds are designed to accommodate bracket mounting and support, a full range of brackets with additional U bolts are available.
Brackets are designed for panel and wall mounting and give full clearance for ease of handle operation. They are also suitable for vertical and horizontal positioning on 2" pipe-stand.
Standard brackets are produced from 4mm thick carbon steel plate to provide maximum rigidity and support. For full corrosion protection the brackets are shot blasted and zinc sprayed.
Alternative bracket material is available upon request.

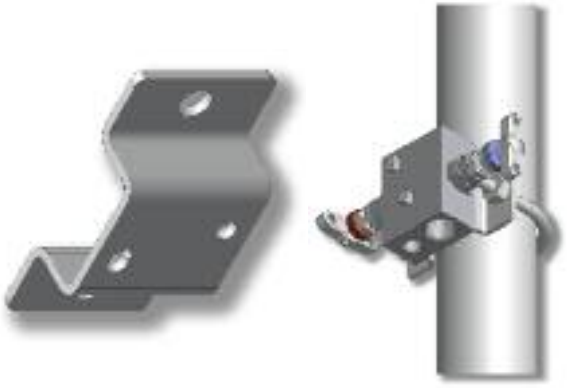
Part No. BKT1CS

Simple to install bracket for horizontal/vertical 2" stanpipe, wall, panel or base mounting, bracket stand-off prevents handle obstruction.

Suitable for: -
HL*2V
HL*28M8F4F
HAL*2V
HL*2HVSDLH
(Not suitable for HP versions)

For 'U' bolts suffix part no. with B.
Example BKT1CSB





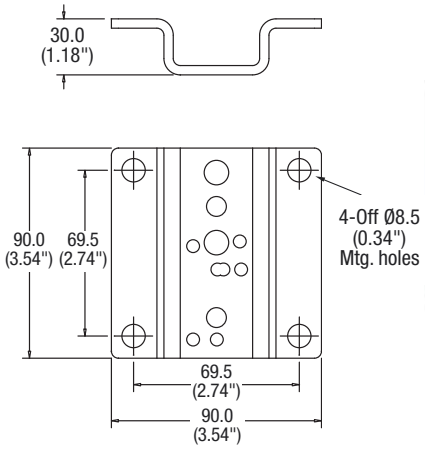
For manifold/bracket bolts add 'bolt set' suffix from matrix.
Example: Bracket, 'U' bolt and manifold/bracket bolts BKT1CSB1 (suitable for H*L2V).

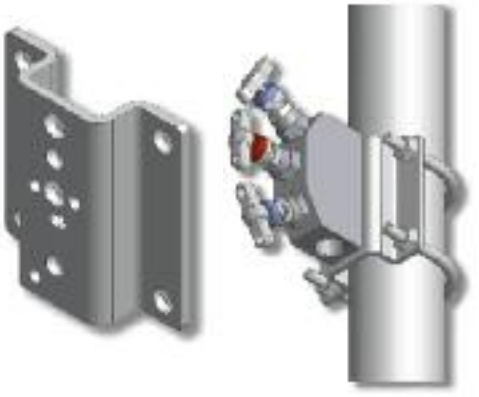
Part No. BKT2CS

Universal manifold mounting bracket suitable for all remote mount manifolds. This bracket allows 90 degree positioning enabling total installation flexibility and prevents handle obstruction

Suitable for the above manifolds and: -
HL*2VTF
HL*3DBB
HL*3DBB1
HAL*2VHP
Suitable for all HP versions

For 'U' bolts suffix part no. with B
Example BKT2CSB





For manifold/bracket bolts add bolt set suffix from matrix.
Example: Bracket, 'U' bolt and manifold/bracket bolts BKT2CSB2 (suitable for HL*3DBB).

Manifold bracket support

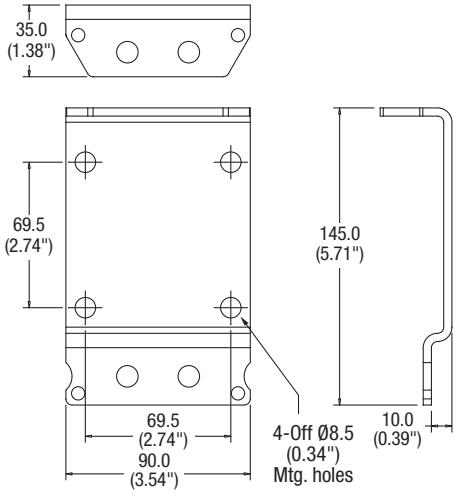
Part No. BKT3CS

Suitable for: -
HD*2HLH
HD*2HLHCP
HD*2HLHFF

For 'U' bolts suffix part no. with B
Example BKT3CSB

For manifold/bracket bolts add bolt set suffix from matrix.
Example: Bracket, 'U' bolt and manifold/bracket bolts BKT3CSB3 (suitable for HD*2HLH).

Universal manifold mounting bracket suitable for all direct mount manifolds. This bracket design enables horizontal or vertical instrument positioning.



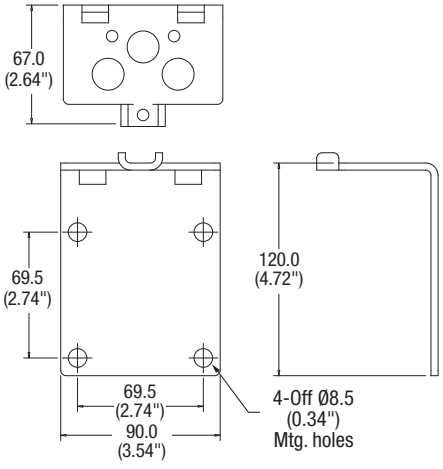
Part No. BKT4CS

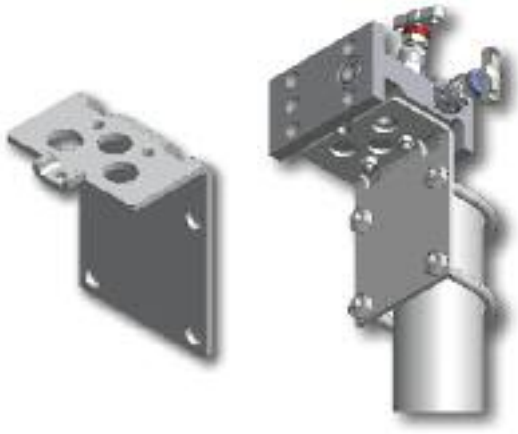
Suitable for: -
HEF*2LH8N
HEF*2LH

For 'U' bolt suffix part no. with B
Example BKT4CSB

For manifold/bracket bolts add bolt set suffix from matrix.
Example: Bracket, 'U' bolt and manifold/bracket bolts BKT4CSB4 (suitable for HEF*2LH).

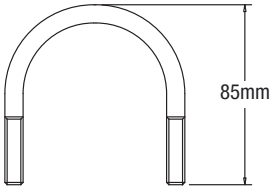
For extruded style manifold blocks providing full base support for horizontal or vertical fixing to 2" pipestand.





'U' Bolt with nuts & washers for 2" NB standpipe

Part No. UBACS



Carbon steel standard

Manifold/bracket bolts c/w nuts and washers.

Manifold Part No.	Bolt Set	Part No.	Suffix
HL*2V	M5 x 45 Bolt	BS1	1
HAL*2V	M5 x 45 Bolt	BS1	1
HL*28M8F4F	M5 x 45 Bolt	BS1	1
HL*2HVSDLH	M5 x 45 Bolt	BS1	1
HL*2VTF	M5 x 45 Bolt	BS1	1
HL*3DBB	M10 x 14 Bolt	BS2	2
HL*3DBB1	M10 x 14 Bolt	BS2	2
HD*2HLH	M6 x 14 Bolt (1-OFF) M10 x 14 Bolt (1-OFF)	BS3	3
HD*2HLHFF	M6 x 14 Bolt (1-OFF) M10 x 14 Bolt (1-OFF)	BS3	3
HD*2HLHCP	M10 x 14 Bolt (2-OFF)	BS2	2
HEFS2LH	M6 x 45 Bolt	BS4	4
HEFS2LH8N	M6 x 45 Bolt	BS4	4

All nut and bolt sets are standard in Carbon Steel

Material options

Material	*Insert code for selected material in part number	Manifold types			
		HL*2V	HL*28M8F4F	HL*2HSDLH	HD*2HLHFF
		HAL*2V	HL*2VTF	HL*3DBB	HD*2HLHCP
		page 104	page 104	page 104	page 98
Stainless steel Std	S	✓	✓	✓	✓
Monel	M	✓	✓	✓	✓
Duplex	D1	✓	✓	✓	✓
Super Duplex	D2	✓	✓	✓	✓
Hasteloy	HC	✓	✓	✓	✓
Carbon Steel	C	✓	✓	✓	✓
6Mo	6MO	✓	✓	✓	✓
Titanium	T	✓	✓	✓	✓
Incoloy 825	825	✓	✓	✓	✓
Inconel 625	625	✓	✓	✓	✓

All non-wetted parts ie those not in contact with the process medium will be supplied in stainless steel.
High pressure versions can be supplied in any of the above materials.

Material options

Material	*Insert code for selected material in part number	Manifold types			
		HEF*2LH	HD*2EXT	HL*2V1KFMB	
		HEF*2LH8N	HD*2HLH	HL*2V2KFMB	ML*2VTF4N
		page 98	page 98	page 100	page 102
Stainless steel Std	S	✓	✓	✓	✓
Monel	M		✓	✓	✓
Duplex	D1		✓	✓	✓
Super Duplex	D2		✓	✓	✓
Hasteloy	HC		✓	✓	✓
Carbon Steel	C	✓	✓	✓	
6Mo	6MO		✓	✓	✓
Titanium	T		✓	✓	✓
Incoloy 825	825		✓	✓	✓
Inconel 625	625		✓	✓	✓

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

'H' Series Two Valve manifolds

Available options			Page	94/95
				HL*2V+HP
Suffix adding sequence	Function	Option Detail	Part No. suffix	HAL*2V+HP
1	**Gland packing**	Graphoil	3	✓
2	**Seating**	PCTFE	9	✓
		PEEK	PK	✓
	Note 1	Rising plug valve style PTFE packed	RP	
		Stellite tip	ST	✓
3	**Plug/Bleed valve (supplied loose in box)**	Blank plug 1/4 NPT	P	✓
		Bleed valve 1/4 NPT	BV	✓
4	**Connection and bolting** **Note 2**	Socket weld (* insert pipe size)	SW*NB	✓
	Note 2	Butt weld (* insert pipe size)	BW*NB	✓
	Note 3	DIN 19213 sealing grooves	DIN†	
		BSPT (*insert pipe size (e.g. 8K = 1/2")	*K	✓
	Note 4	BSPP (*insert pipe size (e.g. 8R = 1/2")	*R	✓
		St. St. Mounting bolts	SSB	
		M10 x 1.5 CS Mounting bolts	CSB10	
		M10 x 1.5 St. St. Mounting bolts	SSB10	
		Front face drain 1/4" NPT	FFD	
		Bolts for 3051 inclusive flange	CSBCP	
		Swivel gauge outlet (**insert size/thread N=NPT)	**SG	✓
5	**Connection size for tubing**	See below		
6	**Operating mechanism**	Lockable T bar	THL	✓
	(See page 93 for details)	Anti tamper spindle	AT	✓
		Anti tamper spindle & key	ATK	✓
		Handwheel	HW	✓
		Lockable handwheel	LHW	✓
7	**Mounting** **Note 5**	Assembled to bracket	BRK	✓
8	**Condition**	NACE (latest issue)	NACE	✓
		Cleaned and lubricated for oxygen use	OXY	✓
		Firesafe	FS	✓
	Note 6	Heat code trace certificates	HCT	✓
		Test certificates	TC	✓
		Air testing	PT	✓

Note 1 Seat material RP=standard acetal, RP9 = PTCFE, RPPK = PEEK.
Note 2 For tube socket or tube butt weld use 1/16 inch denominations and change NB to TB.
For metric tube size use actual metric (mm) dimensions e.g. SW12MMTB.
Note 3 Insert seal type 'B1', 'B2', 'B3'.
Note 4 For BSPP connections drain/bleed will be 1/8 BSPP.
Note 5 Bracket will include 'U' bolt & manifold/bracket bolts.
Note 6 Heat code traceable certificates for body and bonnet.

94/95	94/95	98/99	98/99	98/99	100/101	102	
HL*28M8F4F+HP	HL*2HVSDLH	HEF*2LH	HD*2EXT	HD*2HLHFF	HL*2VIKFMB		
HL*2VTF	HL*3DBB/1+HP	HEF*2LH8N	HD*2HLH	HD*2HLHCP	HL*2V12KFMB	ML*2VTF4N	Option Detail
✓	✓	✓	✓	✓	✓		Graphite
✓	✓	✓	✓	✓	✓		PCTFE
✓	✓	✓	✓	✓	✓		PEEK
		✓					Rising plug valve style PTFE packed
✓	✓	✓	✓	✓	✓		Stellite tip
✓	✓	✓	✓	✓		✓	Blank plug 1/4 NPT
✓	✓	✓	✓	✓		✓	Bleed valve 1/4 NPT
✓	✓	✓	✓	✓	✓		Socket weld *insert pipe size
✓	✓	✓	✓		✓	✓	Butt weld * insert pipe size
		✓	✓				DIN 19213 sealing grooves
✓	✓	✓	✓	✓	✓		BSPT (*insert pipe size (e.g. 8K = 1/2")
✓	✓	✓	✓	✓	✓	✓	BSPP * pipe size (e.g. 8R = 1/2")
		✓	✓	✓	✓		St. St. Mounting bolts
		✓	✓	✓			M10 x 1.5 CS Mounting bolts
		✓	✓	✓			M10 x 1.5 St. St. Mounting bolts
		✓	✓	✓			Front face drain 1/4" NPT
				✓			Bolts for 3051 inclusive flange
✓	✓		✓				Swivel gauge outlet (**insert size/thread N=NPT)
							See below
✓	✓	✓	✓	✓	✓		Lockable T bar
✓	✓	✓	✓	✓	✓		Anti tamper spindle
✓	✓	✓	✓	✓	✓		Anti tamper spindle & key
✓	✓	✓	✓	✓	✓		Handwheel
✓	✓	✓	✓	✓	✓		Lockable handwheel
✓	✓	✓	✓	✓	✓		Assembled to bracket
✓	✓	✓	✓	✓	✓		NACE (latest issue)
✓	✓	✓	✓	✓	✓	✓	Cleaned and lubricated for oxygen use
✓	✓						Firesafe
✓	✓	✓	✓	✓	✓	✓	Heat code trace certificates
✓	✓	✓	✓	✓	✓	✓	Test certificates
✓	✓	✓	✓	✓	✓	✓	Air testing

Accessories and spares

Description	Part number	Box Quantity
PTFE manifold/instrument seals	HKITPTFESEALS	2
Graphoil manifold/instrument seals	HKITGRAPHOILSEALS	2
Isolate valve with PTFE gland, metal seat	HBNTS*ISPTFE/3	3
Drain/bleed valve with PTFE gland,m metal seat	HBNTS*DRPTFE/3	3
Isolate valve with graphoil gland, metal seat	HBNTSISGRAP/3	3
Drain/bleed valve with graphoil gland, metal seat	HBNTSDRGRAP/3	3

*Insert 9 for PCTFE seat
*Insert PK for PEEK

Parker
anything possible

Hi-Pro Manifolds for High Performance Instrument Control

Catalog 4190-HBM
August 2006

Contents

Introduction

With many years of manifold development and manufacture Parker Hannifin are able to offer the most comprehensive range of block and bleed and double block and bleed manifolds to suit all types of instrumentation installations, specifications and applications.

Now consolidated into one catalog, selection can be made from a comprehensive range of bodies with a variety of connections and valve positions, optimising installation and access opportunities.

Designed to reduce installation costs and improve safety performance, the consolidation of valves into one unit provides you with a combination of instrument isolation together with bleed/vent and test facilities.

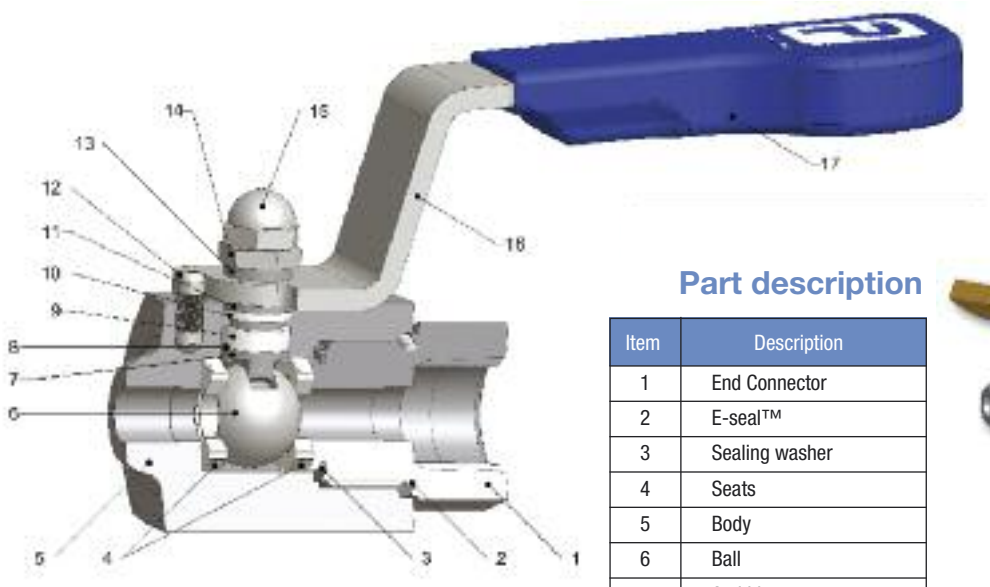
In addition to manufacturing manifolds Parker also produce a comprehensive range of single and twin ferrule high integrity tube fittings. Manufactured in a variety of materials these products are used extensively in the oil, gas, petro-chem, power, processing and many other markets.

By integrating these products, instrument manifolds and tube fittings, Parker can offer unique connection combinations which are specifically designed to eliminate site assembled threaded connectors, ingress of debris and contamination from thread sealant materials which often result in instrument failure, replacement and downtime. Eliminating the use of taper threads, factory assembled and tested connections will ensure improved performance through simpler assembly and installation procedures. This system provides total flexibility of tubing position with positive leak proof connections.

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.

Hi-Pro Manifolds for up to 10,000psig (689 barg) operation



Part description

Item	Description
1	End Connector
2	E-seal™
3	Sealing washer
4	Seats
5	Body
6	Ball
7	Anti blowout stem
8	Thrust Seal
9	Gland packing
10	Upper gland packing
11	Thrust bush
12	Stop pin
13	Thrust bush
14	Lock nut
15	Locking dome nut
16	Handle
17	Handle grip

Handle locking

Secured end connector (double pin)

Spanner actuation

Specifications

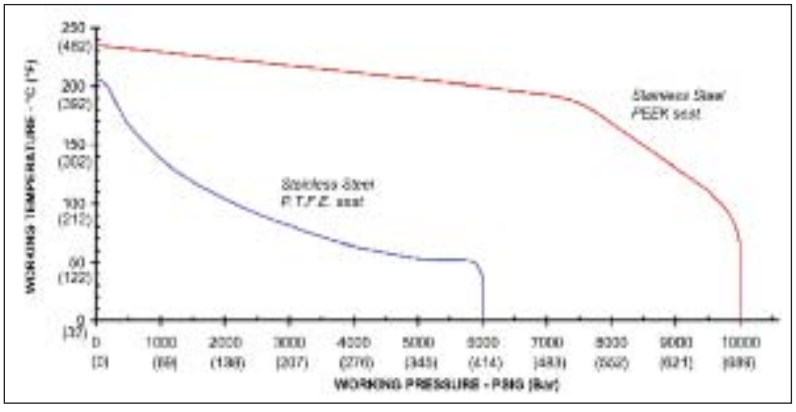
- 316 Stainless steel construction
- Maximum cold working pressure rating 6,000 psig (414 barg) with P.T.F.E. seats.*
- Temperature rating PTFE seats -54˚C to +204˚C (-65˚F to +400˚F).*
- Maximum cold working pressure rating 10,000 psig (689 barg) with PEEK seats.*
- Temperature rating PEEK seats -54˚C to +232˚C (-65˚F to +450˚F).*

*always refer to P/T graph

Features

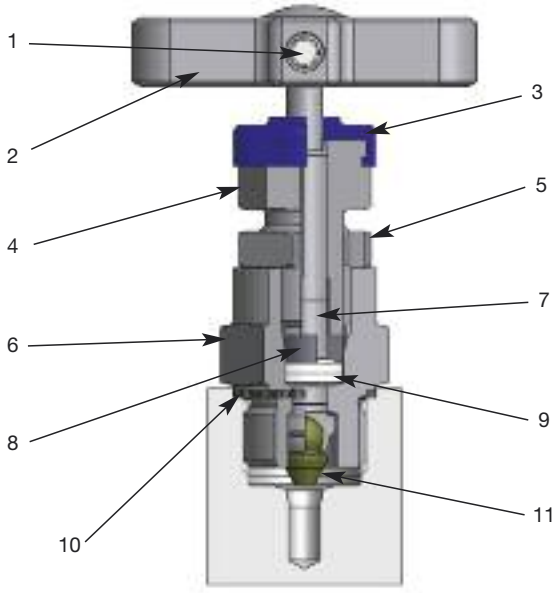
- Two piece body design - minimal leakage paths.
- 4:1 Pressure boundary designed safety factor.
- Designed to comply with requirements of ANSI/ASME B16.34 where applicable.
- Bi-directional.
- PEEK and PTFE standard ball seat materials.
- PTFE and Graphoil gland packings.
- Bubble tight shutoff.
- Floating ball principal with dynamic response seats featuring inherent self relief.
- Anti blowout stem.
- Integral compression ends available eliminating taper threads and thread sealants.
- Low torque operation.
- Quarter turn positive stop handle with ergonomically designed protective sleeve.
- Full hydrostatic and low pressure air tested.
- Connector thread environmentally sealed.
- Anti static.
- Optional firesafe designed to meet API 607, BS6755 Pt2.

Performance Data Pressure vs temperature



⚠ **When selecting products for specific applications users should refer to our notice at the bottom of page 2**

Standard manifold globe style bonnet design

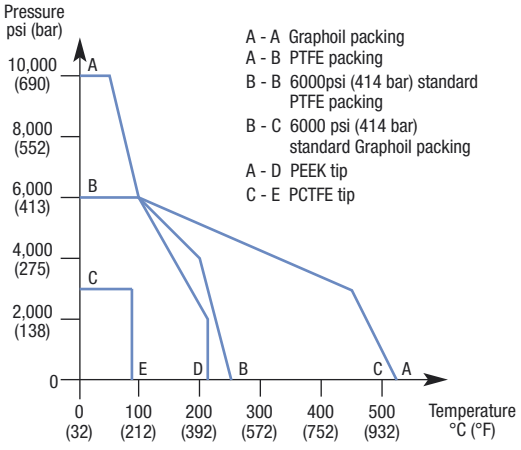


For safe reliable and repeatable performance

Part description

Item	Description
1	Positive handle retention
2	"T" bar
3	Dust Cap
4	Gland packing adjuster
5	Gland adjuster lock nut
6	Valve Bonnet
7	Anti blowout spindle
8	Thrust Bush
9	Gland packing (adjustable)
10	Bonnet/body washer
11	Spindle tip

Pressure vs temperature



Anti tamper spindle

For key only - part no.
ATHKEY/1

Retro-fit kit part number
KITAT without key
KITATK with key

Handwheel

Retro-fit kit part number
KITHW

Lockable handwheel

Retro-fit kit part number
KITLHW

T bar handle locking

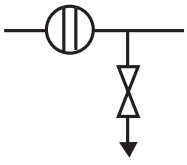
Retro-fit kit part number
KITTHL

⚠ **When selecting products for specific applications users should refer to our notice at the bottom of page 2**

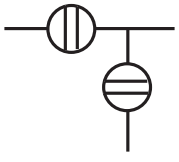
Block and bleed remote mount static pressure manifolds

Purpose

This series of manifolds combines isolate in the form of a ball valve and bleed/vent in a choice of ball or needle into one block for interface with pressure measurement transmitters, gauges and switches for applications up to 10,000psig (689 barg)
A variety of end connections can be provided including NPT as standard with optional BSPTr and BSPP. Parker can also combine single or twin ferrule integral fitting technology into the product offering the end user the benefit of leak path reduction and contaminant free connections by eliminating taper threads.



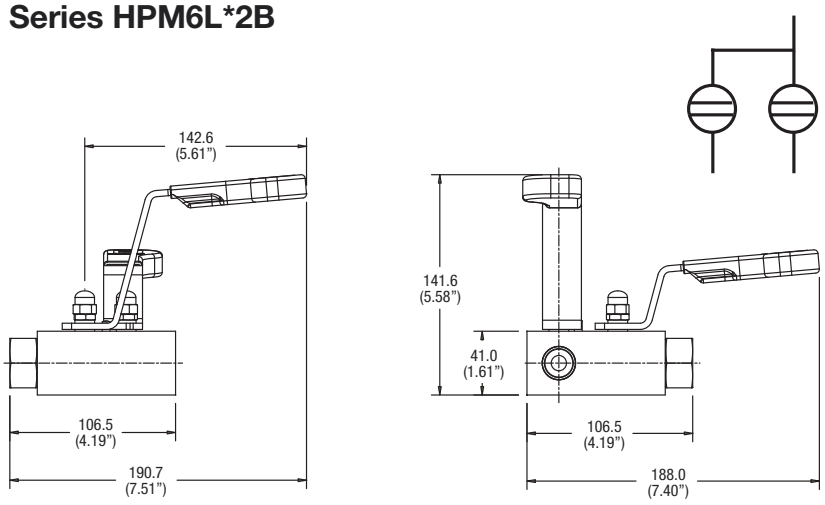
HPM6L*2



HPM6L*2B

Block and bleed remote mount static pressure manifolds

Series HPM6L*2B

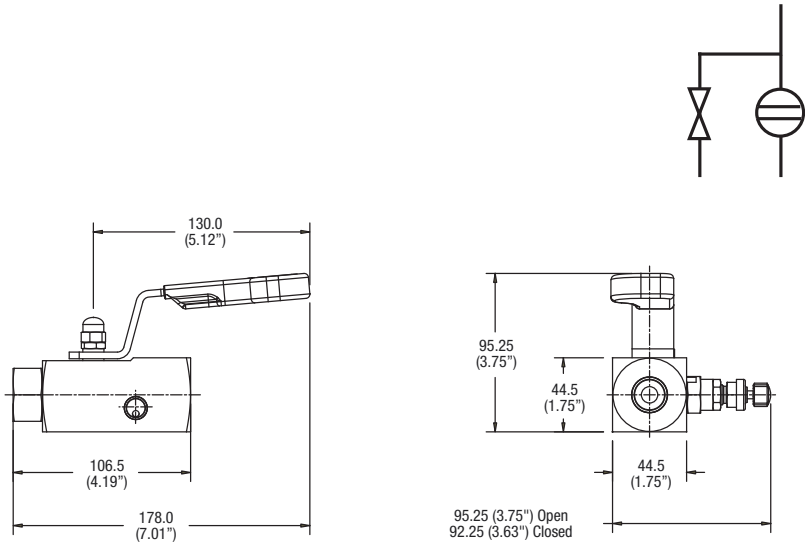


Standard Product Specifications

Part No. HPM6LS2B: 316 Stainless steel construction with single isolate and bleed/vent 10mm bore ball valves, PTFE packing, PTFE seats. Process and instrument connection 1/2" NPT female, bleed/vent 1/4" NPT female. Maximum cold working pressure 6,000 psig (414 barg).

Part No. HPM6LS2BHP: 316 Stainless steel construction with single isolate and bleed/vent 10mm bore ball valves, PTFE packing, PEEK seats. Process and instrument connection 1/2" NPT female, bleed/vent 1/4" NPT female. Maximum cold working pressure 10,000 psig (689 barg).

Series HPM6L*2



Standard Product Specifications

Part No. HPM6LS2: 316 Stainless steel construction with single isolate 10mm bore ball valve, PTFE packing, PTFE seats. Bleed/vent valve globe pattern needle, none rotating self-centering tip, T bar handle, PTFE packing and metal/metal seat. Process and instrument connection 1/2" NPT female, bleed/vent 1/4" NPT female. Maximum cold working pressure 6,000 psig (414 barg).

Part No. HPM6LS2HP: 316 Stainless steel construction with single isolate 10mm bore ball valve, PTFE packing, PEEK seats. Bleed/vent valve globe pattern needle, none rotating self-centering tip, T bar handle, PTFE packing and metal/metal seat. Process and instrument connection 1/2" NPT female inlet, bleed/vent 1/4" NPT female. Maximum cold working pressure 10,000 psig (689 barg)

Standard range part numbers

		Standard connections	
Part No.	Inlet (NPT)	Outlet (NPT)	Bleed/test (NPT)
HPM6L*2B	1/2" female	1/2" female	1/4" female
HPM6L*2BHP	1/2" female	1/2" female	1/4" female
HPM6L*2	1/2" female	1/2" female	1/4" female
HPM6L*2HP	1/2" female	1/2" female	1/4" female

*Insert material designator, see page 120

Function
Blue – isolate,
Red – drain/bleed

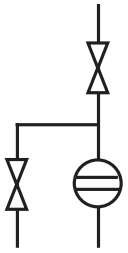
Features

- Standard high performance bonnet design.
- Colour coded valve function identification.
- Alternative materials of construction available.
- Optional port sizes and thread forms available: BSPTr, BSPP.
- Socket and butt weld connections available.
- PTFree connections available (see page 120).
- Blank and bleed plugs available.
- NACE certified on request.
- Optional cleaned and lubricated suitable for Oxygen service.
- Heat code traceable body and bonnet.
- Optional Fire safe design to meet API 607, BS6755 Pt2.

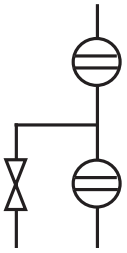
Double block and bleed remote mount static pressure manifolds

Purpose

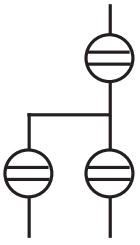
This series of manifolds combines double isolate (Primary and Secondary) and bleed/vent in a combination of ball and needle into one block, for interface with pressure measurement transmitters, gauges and switches for applications up to 10,000psig (689 barg).
A variety of end connections can be provided including NPT as standard with optional BSPTr and BSPP. Parker can also combine single or twin ferrule integral fitting technology into the product offering the end user the benefit of leak path reduction and contaminant free connections by eliminating taper threads.



HPM6L*3DBBN



HPM6L*3DBB



HPM6L*3DBBB

Standard range part numbers

		Standard connections	
Part No.	Inlet (NPT)	Outlet (NPT)	Bleed/test (NPT)
HPM6L*3DBBN	1/2" female	1/2" female	1/4" female
HPM6L*3DBBNHP	1/2" female	1/2" female	1/4" female
HPM6L*3DBB	1/2" female	1/2" female	1/4" female
HPM6L*3DBBHP	1/2" female	1/2" female	1/4" female
HPM6L*3DBBB	1/2" female	1/2" female	1/4" female
HPM6L*3DBBBHP	1/2" female	1/2" female	1/4" female

*Insert material designator, see page 120

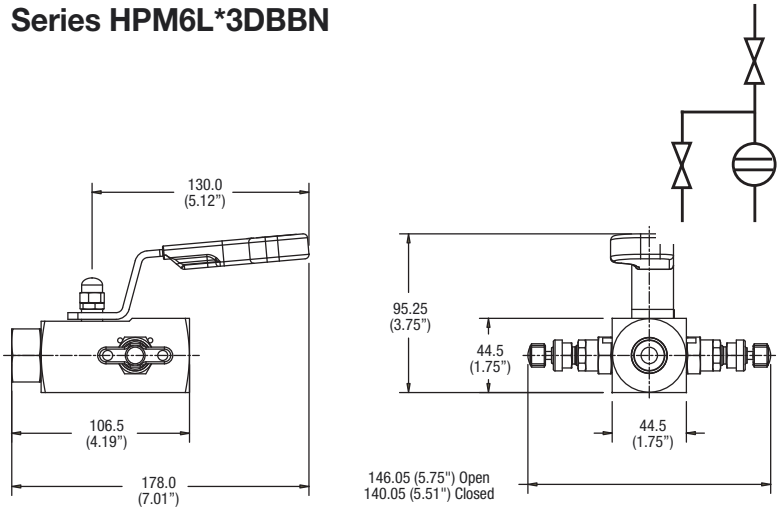
Function
Blue – isolate,
Red – drain/bleed

Features

- Standard high performance design.
- Colour coded valve function identification.
- Alternative materials of construction available.
- Optional port sizes and thread forms available: BSPTr, BSPP.
- Socket and butt weld connections available.
- PTFree connections available (see page 120).
- Blank and bleed plugs available.
- NACE certified on request.
- Optional cleaned and lubricated suitable for Oxygen service.
- Heat code traceable body and bonnet.
- Optional fire safe design to meet API 607, BS6755 Pt2.

Double block and bleed remote mount static pressure manifolds

Series HPM6L*3DBBN

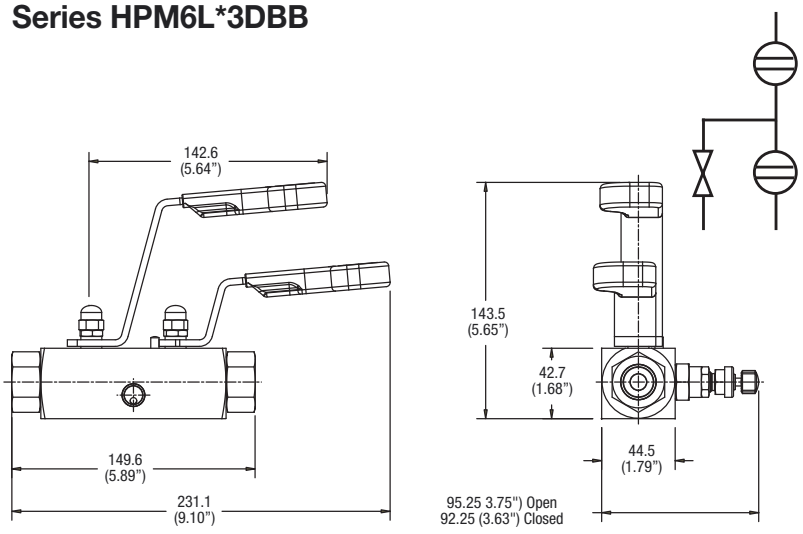


Standard Product Specifications

Part No. HPM6LS3DBBN: 316 Stainless steel construction with primary isolate 10mm bore ball valves, PTFE packing, PTFE seats. Secondary isolate and bleed/vent valve globe pattern needle, none rotating self centering tip, T bar handle, PTFE packing and metal/metal seat. Process and instrument connection 1/2" NPT female, bleed/vent 1/4" NPT female. Maximum cold working pressure 6,000 psig (414 barg).

Part No. HPM6LS3DBBNHP: 316 Stainless steel construction with primary isolate 10mm bore ball valves, PTFE packing, PEEK seats. Secondary isolate and bleed/vent valve globe pattern needle, none rotating self centering tip, T bar handle, PTFE packing and metal/metal seat. Process and instrument connection 1/2" NPT female, bleed/vent 1/4" NPT female. Maximum cold working pressure 10,000 psig (689 barg).

Series HPM6L*3DBB

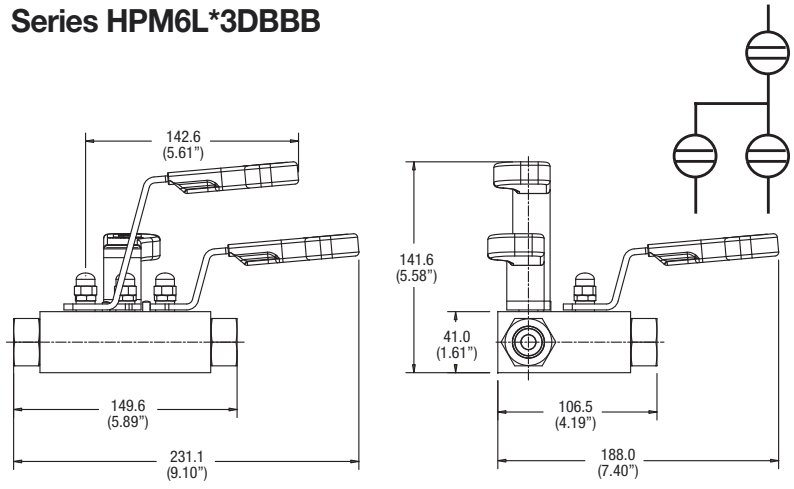


Standard Product Specifications

Part No. HPM6LS3DBB: 316 Stainless steel construction with double isolate 10mm bore ball valves, PTFE packing, PTFE seats. Single bleed/vent valve globe pattern needle, none rotating self-centering tip, T bar handle,PTFE packing and metal/metal seat. Process and instrument connection 1/2" NPT female, bleed/vent 1/4" NPT female. Maximum cold working pressure 6,000 psig (414 barg).

Part No. HPM6LS3DBBHP: 316 Stainless steel construction with double isolate 10mm bore ball valves, PTFE packing, PEEK seats. Single bleed/vent valve globe pattern needle, none rotating self-centering tip, T bar handle,PTFE packing and metal/metal seat. Process and instrument connection 1/2" NPT female, bleed/vent 1/4" NPT female. Maximum cold working pressure 10,000 psig (689 barg).

Series HPM6L*3DBBB



Standard Product Specifications

Part No. HPM6LS3DBBB: 316 Stainless steel construction with double isolate and vent/bleed 10mm bore ball valves, PTFE packing, PTFE seats. Process and instrument connection 1/2" NPT female, bleed/vent 1/4" NPT female. Maximum cold working pressure 6,000 psig (414 barg).

Part No. HPM6LS3DBBBHP: 316 Stainless steel construction with double isolate and vent/bleed 10mm bore ball valves, PTFE packing, PEEK seats. Process and instrument connection 1/2" NPT female, bleed/vent 1/4" NPT female. Maximum cold working pressure 10,000 psig (689 barg).

Available options

Suffix adding sequence	Function	Option Detail	All Valves	Ball	Needle	Body
1	**Gland packing**	Graphite (all valves)	3	–	–	–
2	**Seating**	PEEK	–	PKB	PKN	–
3	**Plug/Bleed valve**	Blank plug 1/2 NPT	P	–	–	–
	(supplied loose in box)	Bleed valve	BV	–	–	–
		Plug & bleed valve	PBV	–	–	–
4	**Connection style**	Socket weld extension	–	–	–	SW*NBM
	Note 1	Socket weld	–	–	–	SW*NB
		Butt weld	–	–	–	BW*NB
		BSPT	–	–	–	*K
		BSPP	–	–	–	*R
	Note 2	A-LOK®/CPI™	–	–	–	See note 2
		Secured end connector	–	–	–	LC
5	**Operating mechanism**	Spanner actuation	–	SA*		–
	Note 3	Anti tamper T bar	–	–	AT*	–
		Anti tamper + key	–	–	ATK*	–
		Hand wheel	–	–	HW*	–
		Lockable hand wheel	–	–	LHW*	–
		Lockable handle	–	HL*	THL*	–
6	**Mounting**	Mounting holes	–	–	–	MH
	Note 4	Assembled to bracket	–	–	–	BRK
7	**Condition**	NACE	NACE	–	–	–
	Note 5	Cleaned and lubricated for oxygen use	OXY	–	–	–
		Fire safe	FS	–	–	–
		Fire safe certified	FC	–	–	–
		Heat Code Certs.	HCT	–	–	–

Note 1: For tube or pipe sizing use denominations of 1/16" i.e. 8 = 1/2". Give actual size for metric i.e. M12. For tube socket weld change NB to TB.

Note 2: For A-LOK®/CPI™ use 1/16" denominations i.e. 1/2"=8A. For metric use actual size i.e. 12mm = M12A. For CPI™ change A to Z. To specify inlet e.g. 1/2" A-LOK® suffix part number E8A and for outlet X8A.

Note 3: *Indicate which valve requires locking feature i.e. 1 = Primary, 2 = Secondary, 3 = Vent/drain, 4 = All valves.

Note 4: Bracket will include U bolt and manifold/bracket bolts.

Note 5: Certification requirements should be clearly requested at enquiry and order stage - we are unable to provide retrospectively.

Material	*Insert
316 Stainless steel std	S
Monel	M
Duplex	D1
Hasteloy	HC
Carbon steel	C
6Mo	6MO
Inconel 625	625

Parker
anything possible

‘H’ Series 3 and 5 Valve Differential Pressure Manifolds

Catalog 4190-FM
August 2006

Contents

Introduction

With years of manifold design and development experience Parker Hannifin are able to offer the most comprehensive range of differential pressure transmitter manifolds available to users for a wide variety of applications and industries. 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 manifolds Parker also makes twin and single ferrule compression fittings A-LOK® and CPI™ which are used extensively in the oil, gas, petro-chem, power, processing and many other industries. Combining these as an integral part of manifold and valve bodies users can eliminate pipe threaded connections reducing leak paths and avoiding the use of thread sealant, a frequent menace to instrument and system performance.

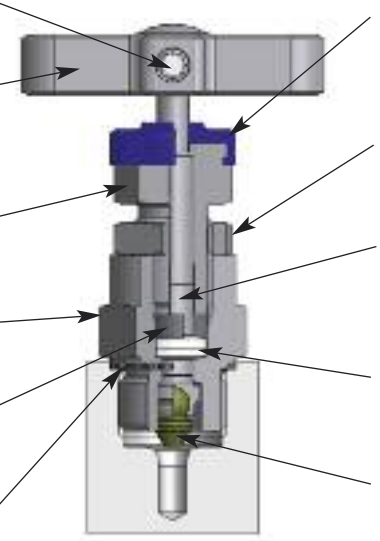
All the valves offered in this catalogue are available with PTFree connections improving system performance, safety factors and simplifying installation and ultimately reducing customer costs.

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.

Standard manifold globe style bonnet design

For safe reliable and repeatable performance



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 retro-fit of bonnets with 100% re-sealing assurance

3. Dust Cap
This has a dual purpose, preventing air born debris from contaminating the operating spindle thread and providing colour coded functional identification. Isolate (BLUE) Bleed/test (RED).

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 gland sealing.

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

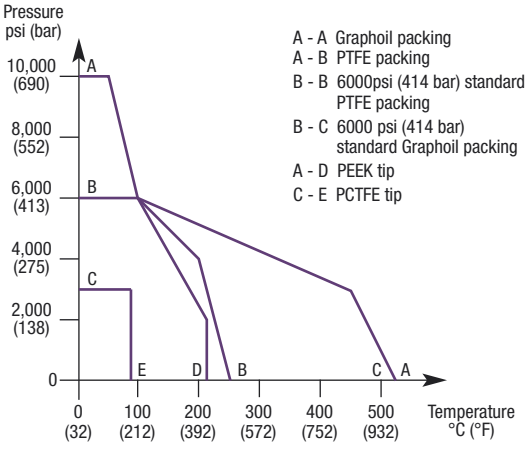
11. Spindle tip
Self centering, non-rotational tip gives successive positive bubble tight shut off assuring the user of leakage free performance and downstream functional safety.

All metallic standard parts are produced in stainless steel, for alternative materials please refer to page 143. 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 (limited to HP suffix see pages 132 & 139) up to 10,000 psig (689 barg).
- 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 manifold 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 graphite 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 certified wetted parts available.
- Optional cleaned and lubricated suitable for Oxygen service.
- Heat code traceable body and bonnet.

Optional manifold globe style bonnet design

For on-site assembly

The design options below can be simply retrofit to any "H" series standard manifold. 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.

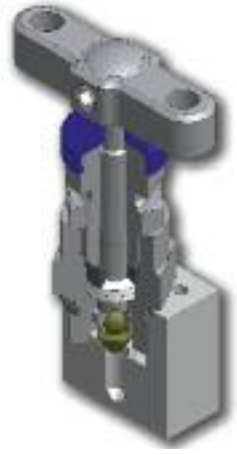
For factory fitted assembly

To obtain factory assembled options the manifold part number must be suffixed with the option and function designator. This allows you to select one or both of the bonnets to be fitted with the selected option or, different options to be fitted to either of the bonnets.
Function designator IS – isolate, DR – drain/test, EQ – equalize.

Example HD*5MATDR – manifold with drain/bleed valves (DR) fitted with anti-tamper (AT). Isolate valves will be standard bonnet design.

Example HL*5MHWISTHLDR – manifold with isolate valves fitted with hand-wheel and drain/bleed valves fitted with "T" bar locking mechanism.

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

Standard bonnet	T bar handle locking	Anti tamper spindle
	 Retro-fit kit part number **KITTHL** Factory assembled suffix **THL**	  For key only - part no. **ATHKEY/1** Retro-fit kit part number **KITAT** without key **KITATK** with key Factory assembled suffix **AT** without key **ATK** with key
Handwheel	**Lockable handwheel**	***Panel mounting**
 Retro-fit kit part number **KITHW** Factory assembled suffix **HW**	 Retro-fit kit part number **KITLHW** Factory assembled suffix **LHW**	 Retro-fit kit part number **KITPM** Factory assembled suffix **PM**

*Panel mounting hole diameter = 26mm (1.02").
Panel thickness = Max 5mm (0.20") Min 2.3mm (0.09").

Three and five valve manifolds for direct or remote mounting

Purpose

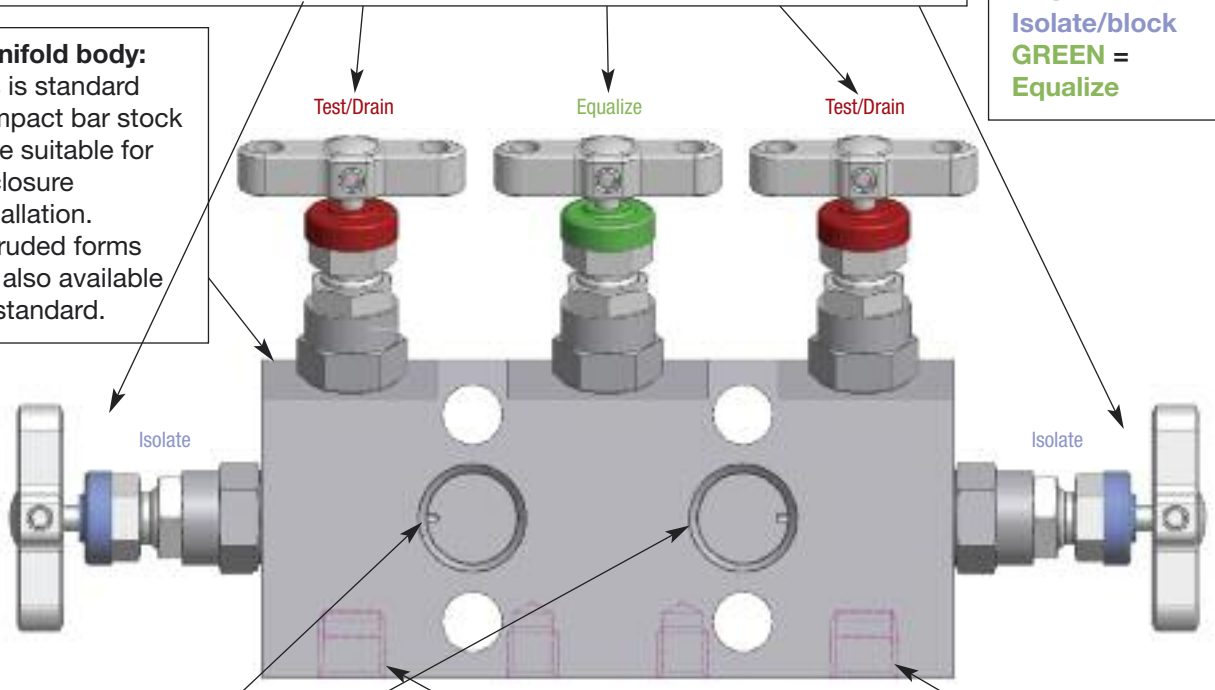
Instrument manifolds are a consolidation of single valves into a unitised block and allow engineers the flexibility to perform various tasks and functions without removing the transmitter from its installed position.

Manifold key features (example)

Bonnet assemblies: are all functionally colour coded, 3 valve manifolds are provided with 2 IS and 1 EQ. 5 valve manifolds are provided with 2 IS, 2 DR and 1 EQ (as illustrated here). Alternatively 5 valve manifolds for custody transfer/fiscal metering are fitted with 2 IS, 1DR and 2 EQ. For extruded style manifold blocks straight through flow rising plug style valves can be fitted.

Functional colour coding:
RED = Drain/vent/test
BLUE = Isolate/block
GREEN = Equalize

Manifold body: this is standard compact bar stock style suitable for enclosure installation. Extruded forms are also available as standard.



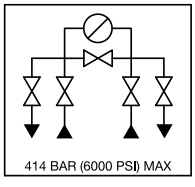
Process inlet connections positioned on front face 1/2" NPT female threads or kidney flange/oval/futbol are standard. Alternative thread forms, socket or butt weld and PTFree connections are available.
Standard connections are on 2.125"/54mm.

Drain/bleed connections the position depends upon manifold design but are generally on the bottom face of the manifold. Other optional positions are available. On 3 valve manifold systems test and purge ports are optional choices.

Manifold marking: all manifolds are permanently marked with line diagram showing manifold capability.
Example:

316SS
Part No: HDS5M
PTFE: 260 Deg C (500 F) max.
Model: A1.....1/2NPT/1/4NPT

Parker
www.parker.com



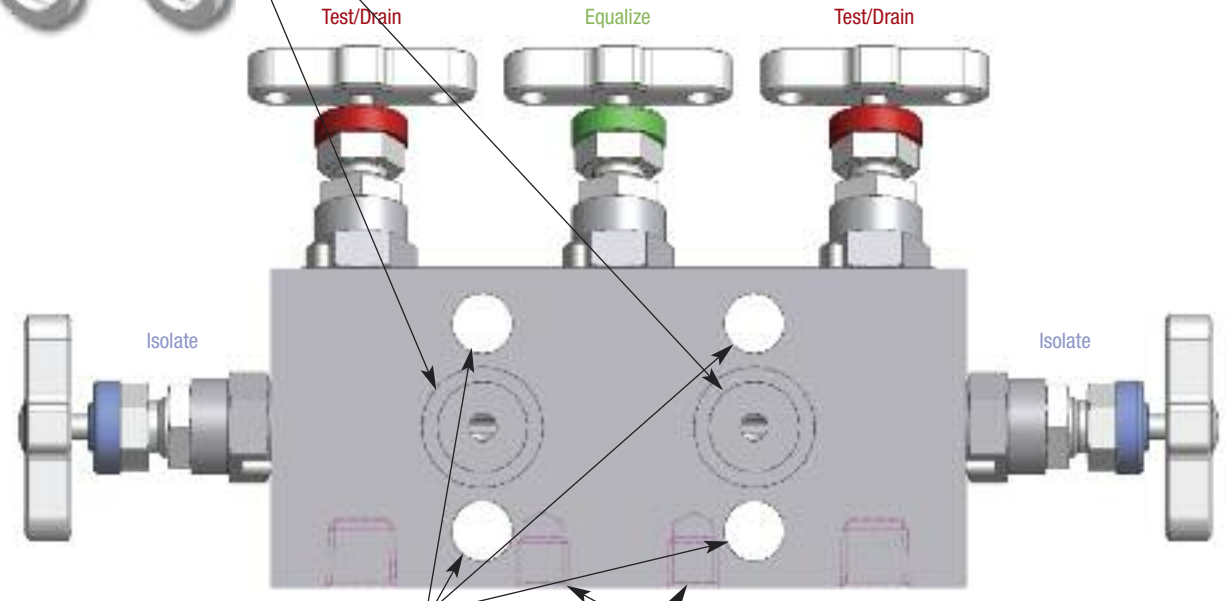
All Parker direct mount manifolds are rated up to 6000psig (414 barg).
Remote mount 10,000psig (689 barg) are available

Three and five valve manifolds for direct or remote mounting

Instrument side, outlet, flange connections: are standard for direct mount manifolds with machined grooves for PTFE seal rings. Optional DIN sealing groove arrangement is also available. Remote style manifolds are provided as standard with 1/2" NPT female outlet connections (alternative thread forms etc. are available). Flanged outlets are positioned on 54mm/2.125" centres. (56/57mm options are available). Manifolds for 3051 style transmitters are available as standard

Pressure rating: maximum standard rating 6000psig (414 barg). Remote mount 10,000psig (689 barg) are available

Seal rings:



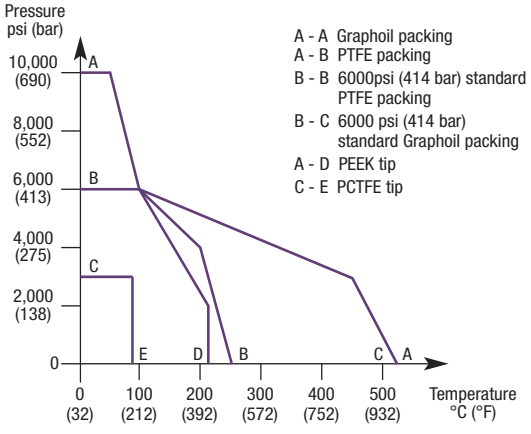
Manifold to transmitter mounting: all direct mount manifolds are provided with 4 off 7/16 UNF x 1.625" high tensile zinc plated carbon steel bolts. Bolt holes are standard on 54mm/2.125" centres. Optional St. St. bolts are available.

Manifold base/bracket mounting: all manifolds are provided with bracket mounting holes. This provides the user with the opportunity to bracket mount the instrument allowing installation to take place without the instrument and to give full mounting support in the event of Instrument removal.

Bolts:

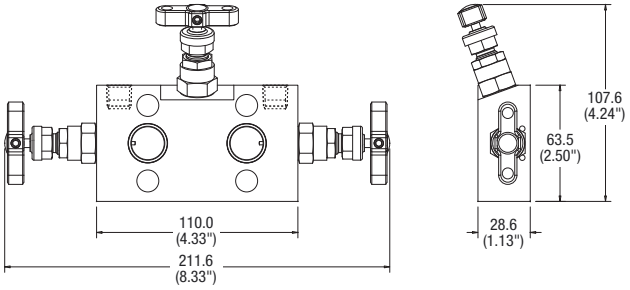
Material: Products in this catalogue are standard in stainless steel and can also be produced in many other materials as shown on page 143.
For full material specifications please refer to the technical section.

Pressure vs temperature



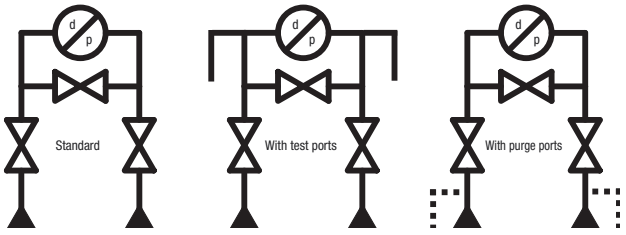
Three valve manifold

Compact design for direct mounting to differential pressure transmitters with 54mm/2.125" mounting centres, supplied with instrument mounting bolts and PTFE seals. Test ports available as standard on top face (plugs to be ordered separately - not fitted). Purge port options available.



HD*3MDTP

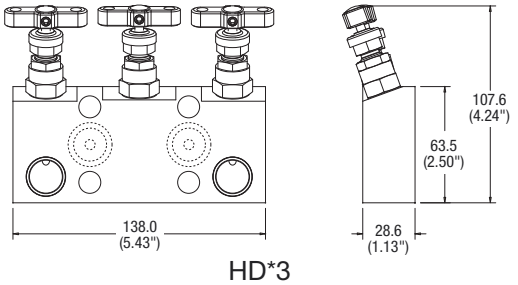
Part No.	Inlet/process	Outlet/inst.	Drain/bleed/test
HD*3M	1/2" NPT	Flanged	-
HD*3MDTP	1/2" NPT	Flanged	1/4" NPT



HD*3M HD*3MDTP

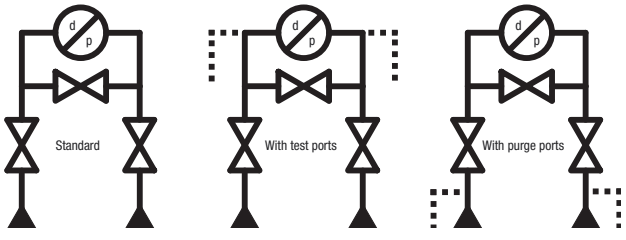
Three valve manifold

Compact design particularly suited for enclosure installation and for direct mounting to differential pressure transmitters with 54mm/2.125" mounting centres, supplied with instrument mounting bolts and PTFE seals. Additional test or purge port options are available.



HD*3

Part No.	Inlet/process	Outlet/inst.	Drain/bleed/test
HD*3	1/2" NPT	Flanged	Optional

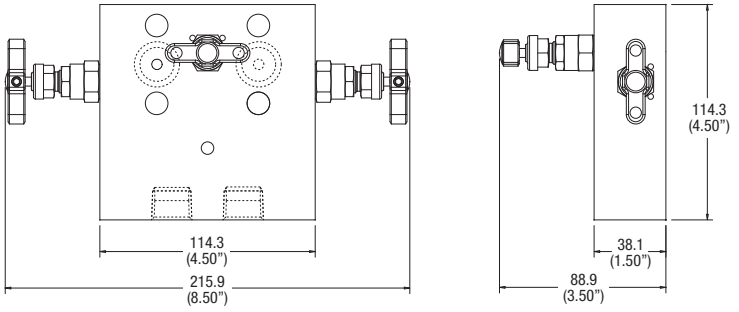


* Insert material designator see page 143

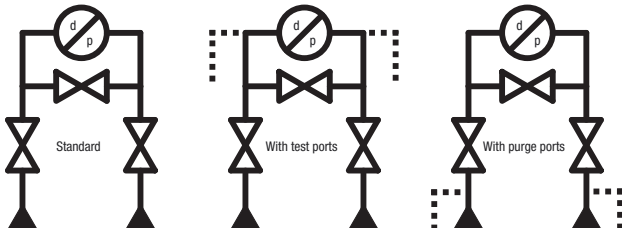
For full list of options see page 144 - 147

Three valve manifold

Specifically designed for installation inside enclosures enabling bottom entry connections to be completed outside of the enclosure. Suitable for direct mounting to differential pressure transmitters with 54mm/2.125" mounting centres, supplied with instrument mounting bolts and PTFE seals. Additional test or purge port options are available.



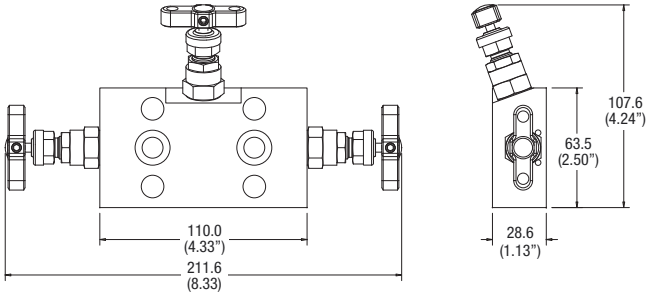
HD*3EXT



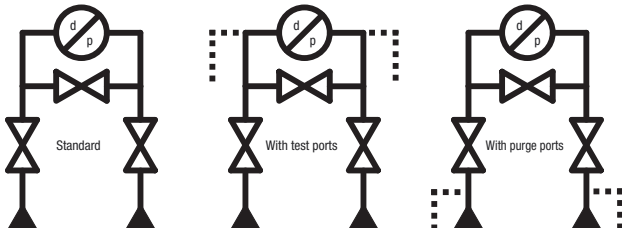
Part No.	Inlet/process	Outlet/inst.	Drain/bleed/test
HD*3EXT	1/2" NPT	Flanged	Optional

Three valve manifold

Compact design suitable for direct mounting to differential pressure transmitters with 54mm/2.125" mounting centres. Process/inlet connections are via standard kidney flange ovals/futbols. Manifold supplied with instrument mounting bolts and PTFE seals. Additional test or purge port options are available.



HD*3MFF



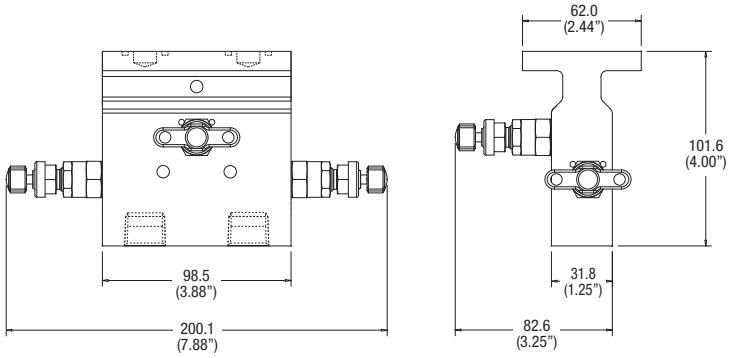
Part No.	Inlet/process	Outlet/inst.	Drain/bleed/test
HD*3MFF	Flanged	Flanged	Optional

* Insert material designator see page 143

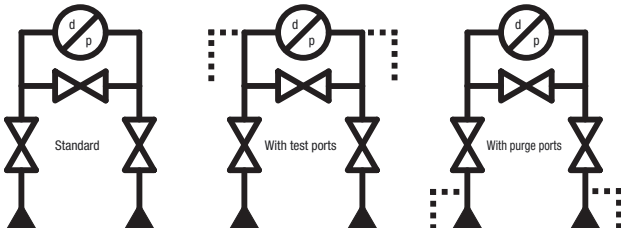
For full list of options see page 144 - 147

Three valve manifold

Extruded body design for direct mounting to differential pressure transmitters with 54mm/2.125" mounting centres, supplied with instrument mounting bolts and PTFE seals. Additional test or purge port options are available.



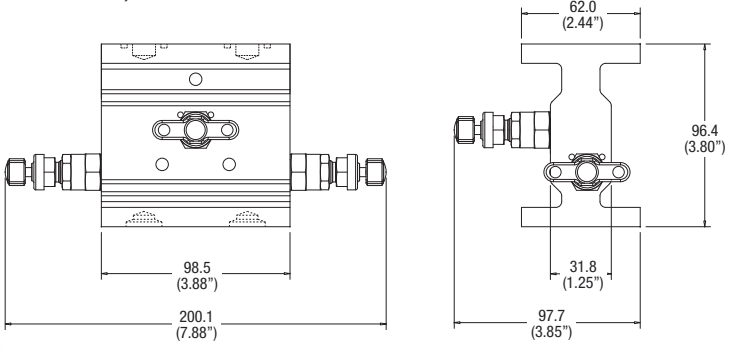
HEF*38N



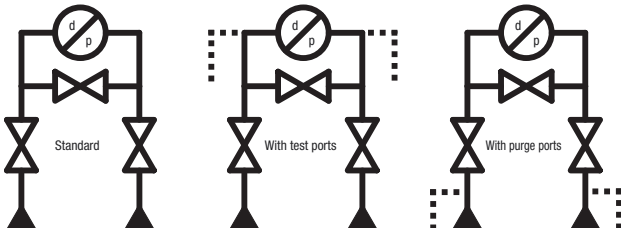
Part No.	Inlet/process	Outlet/inst.	Drain/bleed/test
HEF*38N	1/2" NPT	Flanged	Optional

Three valve manifold

Compact design suitable for direct mounting to differential pressure transmitters with 54mm/2.125" mounting centres. Process/inlet connections are via standard kidney flange ovals/futbols. Manifold supplied with instrument mounting bolts and PTFE seals. Additional test or purge port options are available. Roddable option available (see CAT4190HV page 126 & 127 for rising plug valve details).



HEF*3



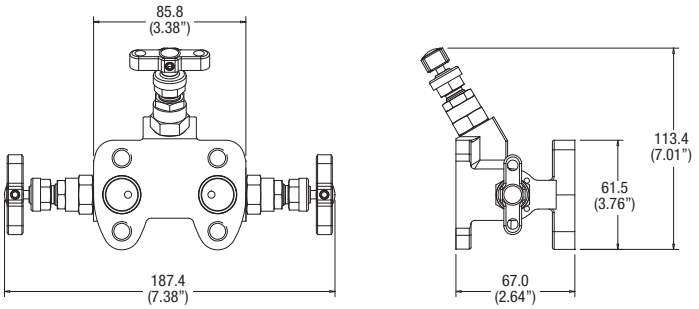
Part No.	Inlet/process	Outlet/inst.	Drain/bleed/test
HEF*3	Flanged	Flanged	Optional

* Insert material designator see page 143

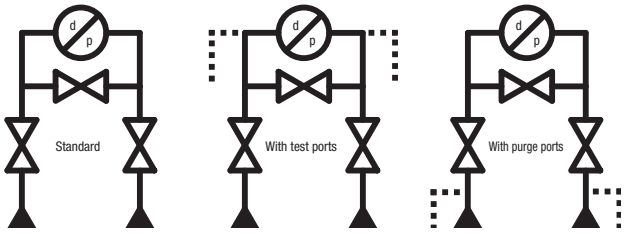
For full list of options see page 144 - 147

Three valve manifold

Compact cast body design with optimum positioning of equalize valve for easy access and operation. Manifold suitable for direct mounting to differential pressure transmitters with 54mm/2.125" mounting centres, supplied with instrument mounting bolts and PTFE seals. Additional test or purge port options are available.



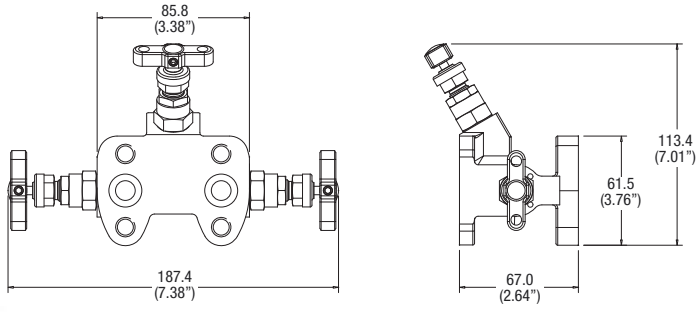
HFS38N



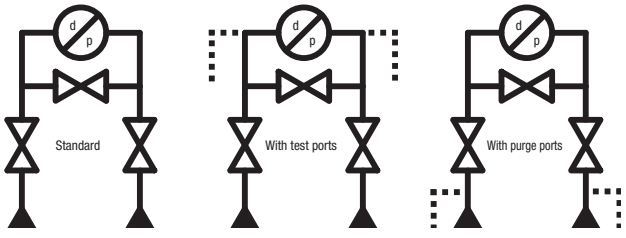
Part No.	Inlet/process	Outlet/inst.	Drain/bleed/test
HF*38N	1/2" NPT	Flanged	Optional

Three valve manifold

Compact cast body design with optimum positioning of equalize valve for easy access and operation. Manifold suitable for direct mounting to differential pressure transmitters with 54mm/2.125" mounting centres. Process/inlet connections are via standard kidney flange ovals/futbols. Manifold supplied with instrument mounting bolts and PTFE seals. Additional test or purge port options are available.



HFS3



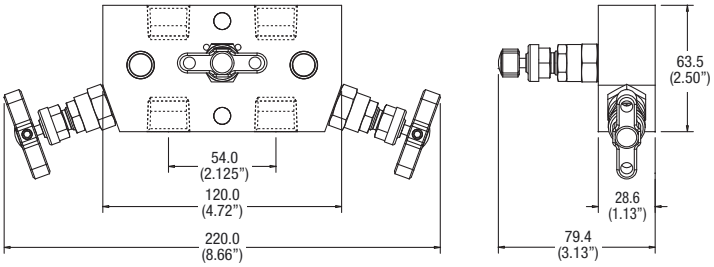
Part No.	Inlet/process	Outlet/inst.	Drain/bleed/test
HF*3	Flanged	Flanged	Optional

* Insert material designator see page 143

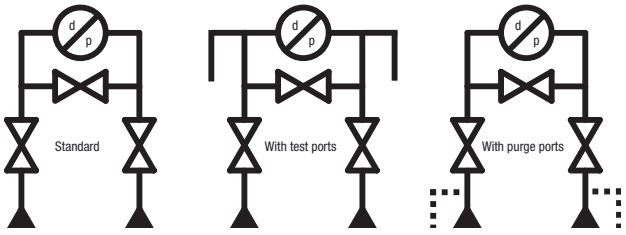
For full list of options see page 144 - 147

Three valve manifold

Compact design for remote installation from differential pressure transmitters. Test ports available as standard on top face (plugs to be ordered separately - not fitted). Purge port options available.



HL*3MDTP

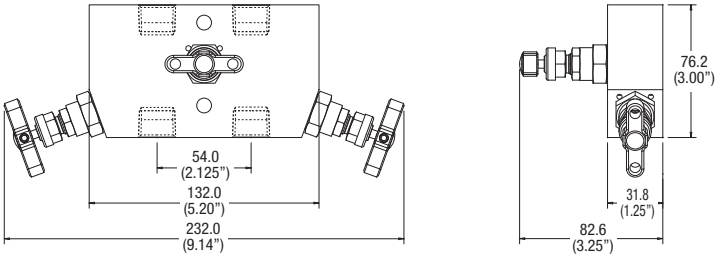


HL*3M HL*3MDTP

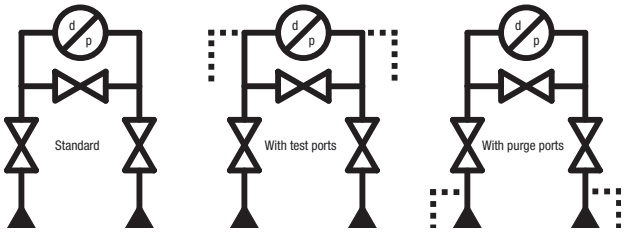
Part No.	Inlet/process	Outlet/inst.	Drain/bleed/test
HL*3M	1/2" NPT	1/2" NPT	Optional
HL*3MDTP	1/2" NPT	1/2" NPT	1/4" NPT

Three valve manifold for 10,000 psig (689 bar)

Compact design for remote installation from differential pressure transmitter. Additional test or purge port options are available.



HL*3MHP



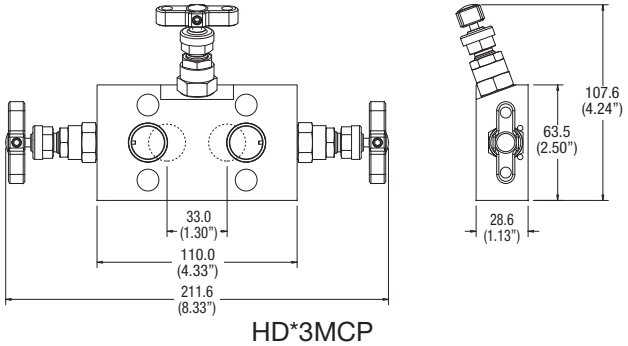
Part No.	Inlet/process	Outlet/inst.	Drain/bleed/test
HL*3MHP	1/2" NPT	1/2" NPT	Optional

* Insert material designator see page 143

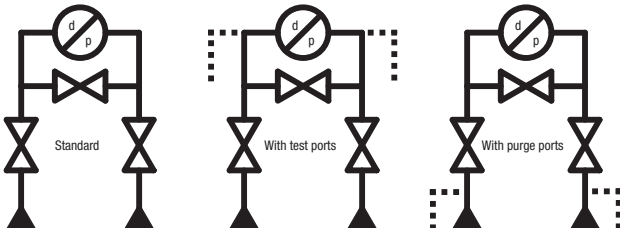
For full list of options see page 144 - 147

Three valve manifold for model 3051 transmitter

Specifically designed for mounting to the 3051 series of differential pressure transmitters with outlets positioned to avoid the use of the adaptor/convertor flange. Inlet connections are on 54mm/2.125". These manifolds are not supplied with sealing rings, bolts are provided. Additional test or purge port options are available.



HD*3MCP



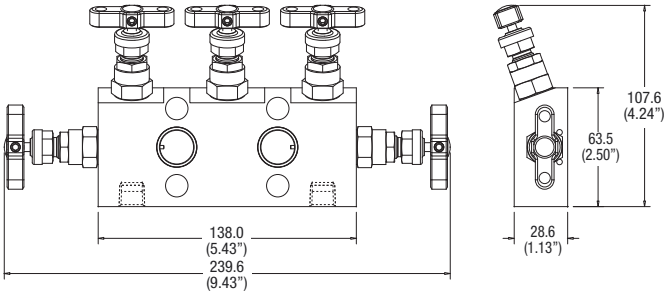
Part No.	Inlet/process	Outlet/inst.	Drain/bleed/test
HD*3MCP	1/2" NPT	For 3051	Optional

* Insert material designator see page 143

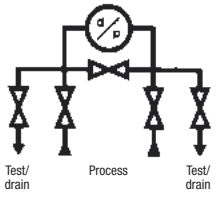
For full list of options see page 144 - 147

Five valve manifold

Compact design for direct mounting to differential pressure transmitters with 54mm/2.125" mounting centres, supplied with instrument mounting bolts and PTFE seals.



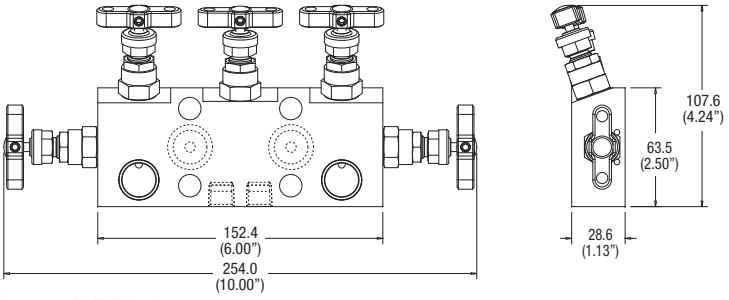
HD*5M



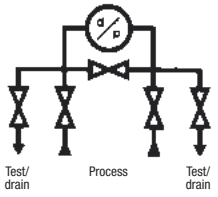
Part No.	Inlet/process	Outlet/inst.	Drain/bleed/test
HD*5M	1/2" NPT	Flanged	1/4" NPT

Five valve manifold

Compact design particularly suited for enclosure installation and for direct mounting to differential pressure transmitters with 54mm/2.125" mounting centres, supplied with instrument mounting bolts and PTFE seals.



HD*5



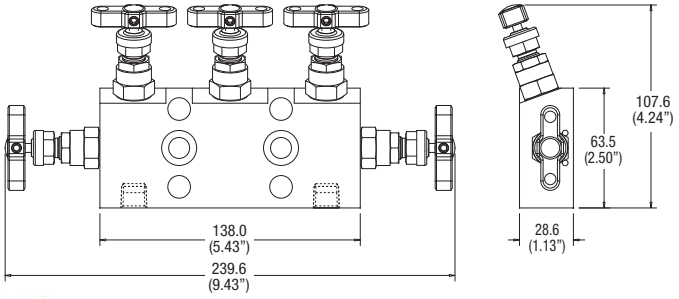
Part No.	Inlet/process	Outlet/inst.	Drain/bleed/test
HD*5	1/2" NPT	Flanged	1/4" NPT

* Insert material designator see page 143

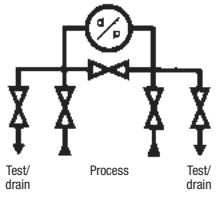
For full list of options see page 144 - 147

Five valve manifold

Compact design suitable for direct mounting to differential pressure transmitters with 54mm/2.125" mounting centres. Process/inlet connections are via standard kidney flange ovals/futbol. Manifold supplied with instrument mounting bolts and PTFE seals.



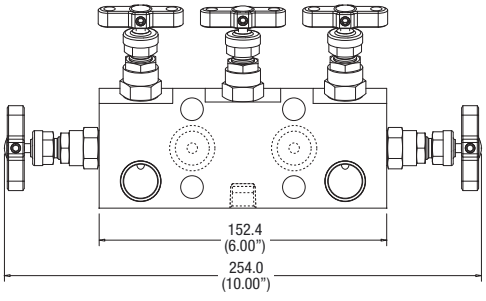
HD*5MFF



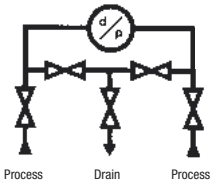
Part No.	Inlet/process	Outlet/inst.	Drain/bleed/test
HD*5MFF	Flanged	Flanged	1/4" NPT

Five valve custody transfer/fiscal metering manifold

Compact design for direct mounting to differential pressure transmitters with 54mm/2.125" mounting centres, supplied with instrument mounting bolts and PTFE seals.



HD*5CT



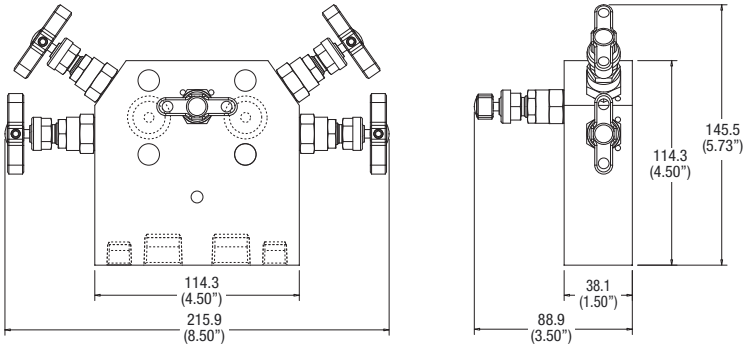
Part No.	Inlet/process	Outlet/inst.	Drain/bleed/test
HD*5CT	1/2" NPT	Flanged	1/4" NPT

* Insert material designator see page 143

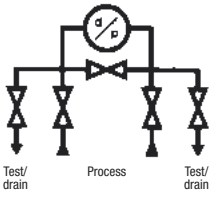
For full list of options see page 144 - 147

Five valve manifold

Specifically designed for installation inside enclosures enabling bottom entry connections to be completed outside of the enclosure. Suitable for direct mounting to differential pressure transmitters with 54mm/2.125" mounting centres, supplied with instrument mounting bolts and PTFE seals.



HD*5EXT

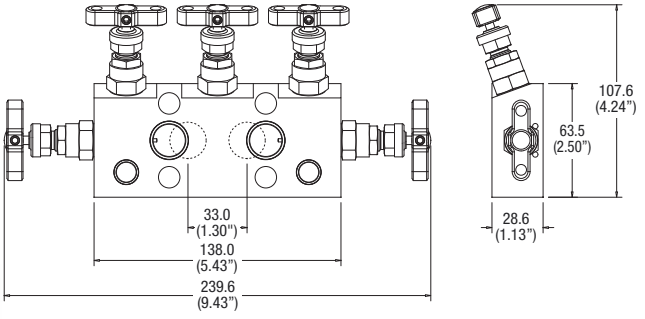


Standard

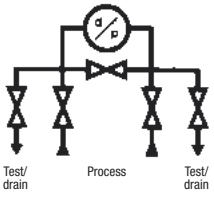
Part No.	Inlet/process	Outlet/inst.	Drain/bleed/test
HD*5EXT	1/2" NPT	Flanged	1/4" NPT

Five valve manifold for model 3051 transmitter

Specifically designed for mounting to the 3051 series of differential pressure transmitters with outlets positioned to avoid the use of the adaptor/convertor flange. Inlet connections are on 54mm/2.125". These manifolds are not supplied with sealing rings, bolts are provided.



HD*5MCP



Standard

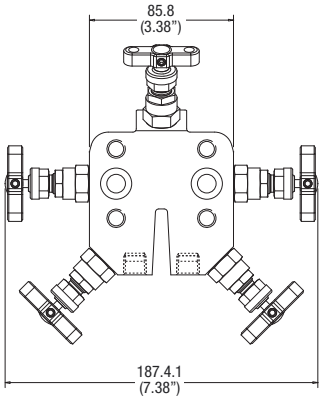
Part No.	Inlet/process	Outlet/inst.	Drain/bleed/test
HD*5MCP	1/2" NPT	Flanged	1/4" NPT

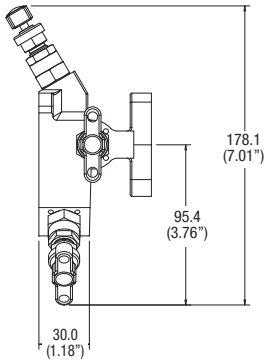
* Insert material designator see page 143

For full list of options see page 144 - 147

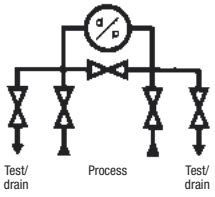
Five valve manifold

Compact cast body design with optimum positioning of equalize valve for easy access and operation. Manifold suitable for direct mounting to differential pressure transmitters with 54mm/2.125" mounting centres. Process/inlet connections are via standard kidney flange ovals/futbol. Manifold supplied with instrument mounting bolts and PTFE seals.





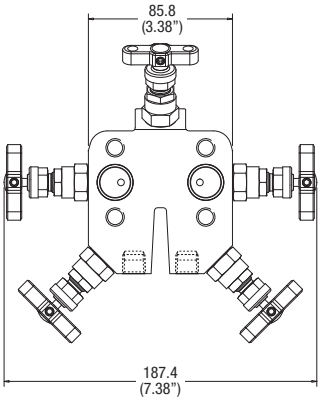
HFS5

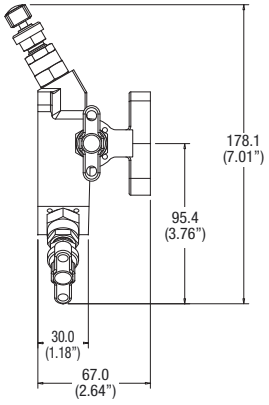


Part No.	Inlet/process	Outlet/inst.	Drain/bleed/test
HF*5	Flanged	Flanged	1/4" NPT

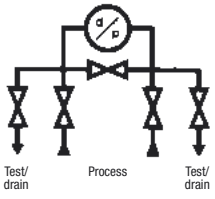
Five valve manifold

Compact cast body design suitable for direct mounting to differential pressure transmitters with 54mm/2.125" mounting centres. Manifold supplied with instrument mounting bolts and PTFE seals.





HFS58N



Standard

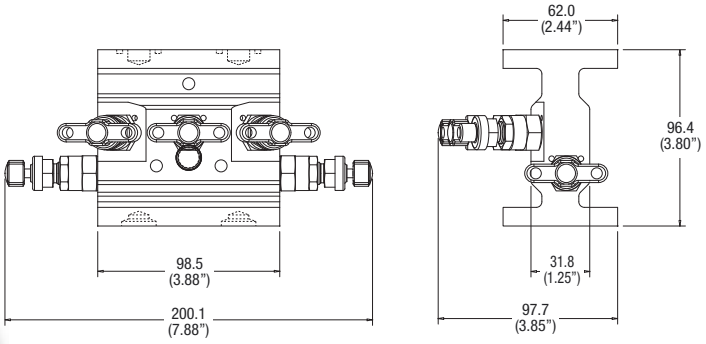
Part No.	Inlet/process	Outlet/inst.	Drain/bleed/test
HF*58N	1/2" NPT	Flanged	1/4" NPT

* Insert material designator see page 143

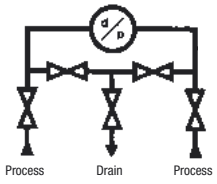
For full list of options see page 144 - 147

Five valve custody transfer/fiscal metering manifold

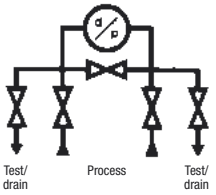
Compact design suitable for direct mounting to differential pressure transmitters with 54mm/2.125" mounting centres. Process/inlet connections are via standard kidney flange ovals/futbol. Manifold supplied with instrument mounting bolts and PTFE seals. Optional rising plug valve with 6.4mm (1/4") straight through flow pattern for isolating position available (see CAT 4190HV page 126 & 127 for full specification details).



HEF*5CT



Standard

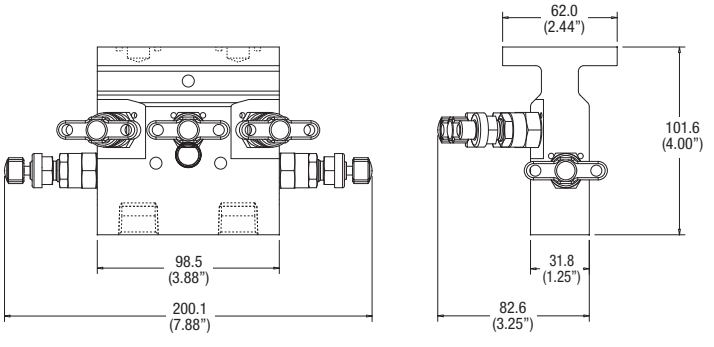


Option

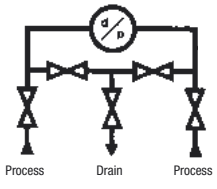
Part No.	Inlet/process	Outlet/inst.	Drain/bleed/test
HEF*5CT	Flanged	Flanged	1/4" NPT

Five valve custody transfer/fiscal metering manifold

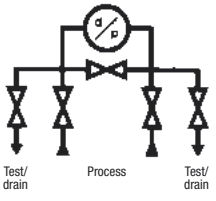
Compact design for direct mounting to differential pressure transmitters with 54mm/2.125" centres, supplied with instrument mounting bolts and PTFE seals. Optional rising plug valve with 6.4mm (1/4") straight through flow pattern for isolating position available (see CAT 4190HV page 126 & 127 for full specification details).



HEF*58NCT



Standard



Option

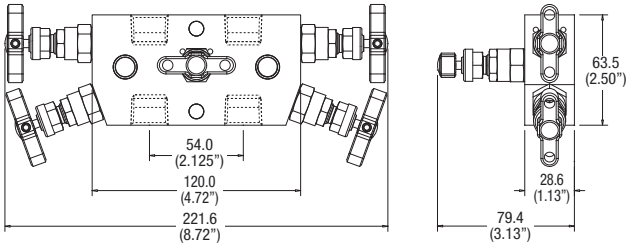
Part No.	Inlet/process	Outlet/inst.	Drain/bleed/test
HEF*58NCT	1/2" NPT	Flanged	1/4" NPT

* Insert material designator see page 143

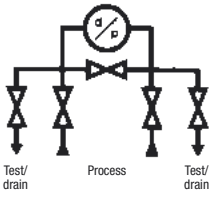
For full list of options see page 144 - 147

Five valve manifold

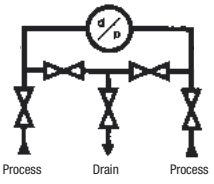
Compact design manifold for remote installation from differential pressure transmitters. Optional custody transfer/fiscal metering available.



HL*5M



Standard

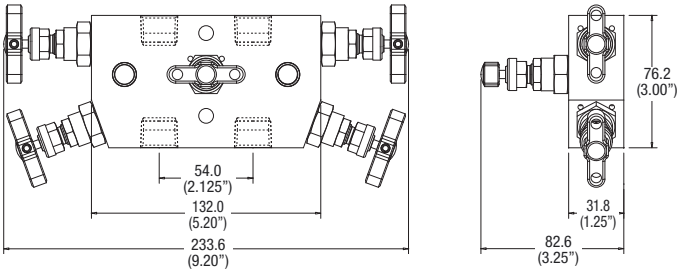


Option

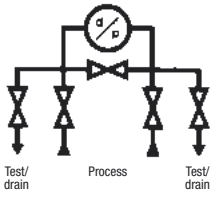
Part No.	Inlet/process	Outlet/inst.	Drain/bleed/test
HL*5M	1/2" NPT	1/2" NPT	1/4" NPT

Five valve manifold for 10,000 psig (689 barg)

Compact design manifold for remote installation from differential pressure transmitters. Standard inlet, outlet and test/bleed connections in NPT.



HL*5MHP



Part No.	Inlet/process	Outlet/inst.	Drain/bleed/test
HL*5MHP	1/2" NPT	1/2" NPT	1/4" NPT

* Insert material designator see page 143

For full list of options see page 144 - 147

Manifold bracket support

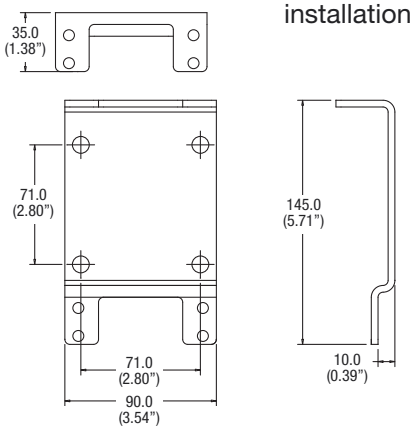
Purpose

It is essential to fully support impulse/pressure measurement tubing lines, manifolds and instruments. All Parker manifolds are designed to accommodate bracket mounting and support, a full range of brackets with additional U bolts are available.
Brackets are designed for panel and wall mounting and give full clearance for ease of handle operation. They are also suitable for vertical and horizontal positioning on 2" pipe-stand.
Standard brackets are produced from 4mm thick carbon steel plate to provide maximum rigidity and support. For full corrosion protection the brackets are shot blasted and zinc sprayed. Alternative bracket material is available upon request.

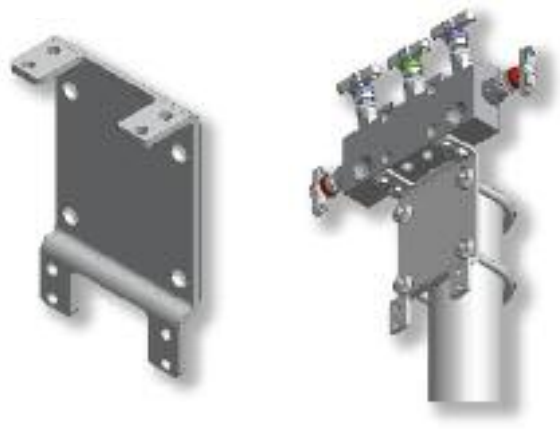
Part No. BKT5CS

Simple to install bracket on horizontal or vertical 2" standpipe. Designed for horizontal or vertical mounting of manifold giving total installation flexibility.

Sutable for:-
HD*5
HD*5CT



BKT5CS



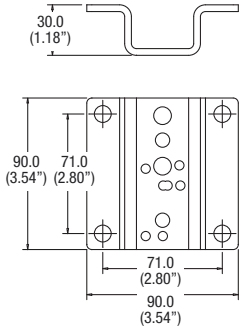
For 'U' bolts suffix part no. with B
Example BKT5CSB

For manifold/bracket bolts add 'bolt set' suffix from matrix. Example: Bracket, 'U' bolts and manifold/bracket bolts BKT5CSB6 (suitable for HD*5).

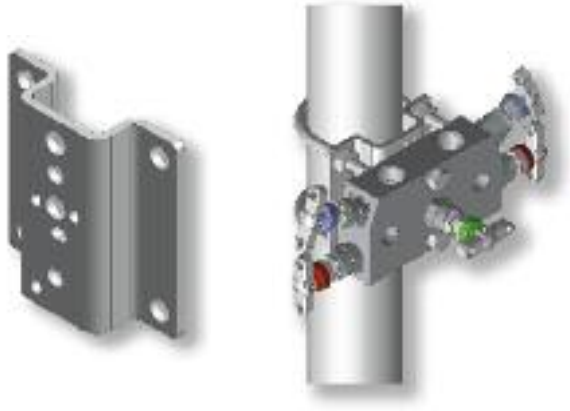
Part No. BKT2CS

Universal manifold mounting bracket suitable for all remote mount manifolds. This bracket allows 90 degree positioning enabling total installation flexibility and prevents handle obstruction. Can be wall, standpipe or base mounted.

Sutable for the above and:-
HL*3M
HL*3MHP
HL*3MDTP
HL*5M
HL*5HP



BKT2CS



For 'U' bolts suffix part no. with B
Example BKT2CSB

For manifold/bracket bolts add 'bolt set' suffix from matrix. Example: Bracket, 'U' bolts and manifold/bracket bolts BKT2CSB5 (suitable for HL*3M).

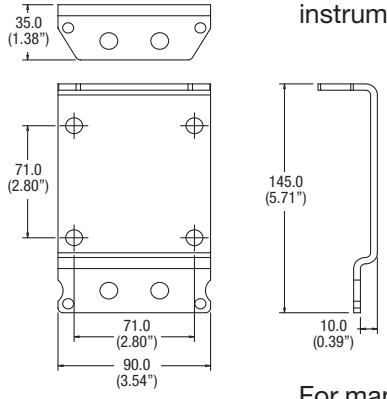
Manifold bracket support

Part No. BKT3CS

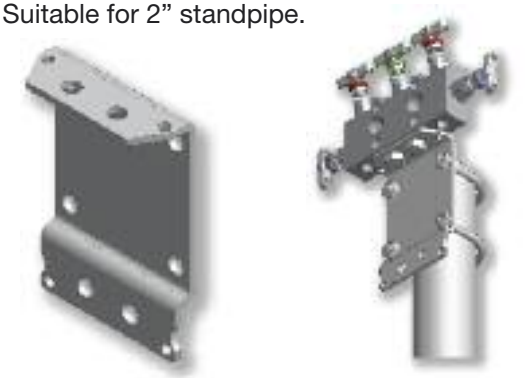
Universal manifold mounting bracket suitable for direct mount manifolds. This bracket design enables horizontal or vertical instrument positioning. Suitable for 2" standpipe.

Sutable for:-
HD*3M
HD*3MDTP
HD*3
HD*3MFF
HD*3MCP
HD*5M
HD*5MFF
HD*5MCP

For 'U' bolts suffix part no. with B
Example BKT3CSB



BKT3CS



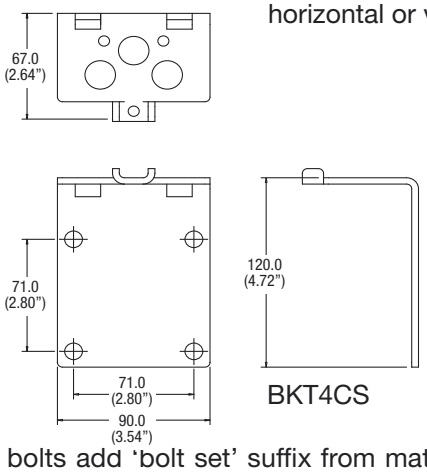
For manifold/bracket bolts add 'bolt set' suffix from matrix. Example: Bracket, 'U' bolts and manifold/bracket bolts BKT3CSB2 (suitable for HD*5M).

Part No. BKT4CS

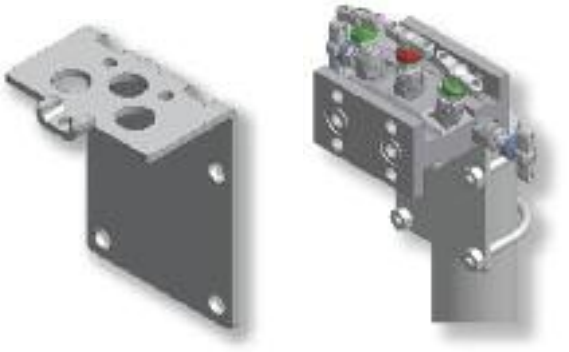
For extruded style manifold blocks providing full base support for horizontal or vertical fixing to 2" standpipe.

Sutable for:-
HEF*38N
HEF*3
HEF*58NCT
HEF*5CT

For 'U' bolts suffix part no. with B
Example BKT4CSB



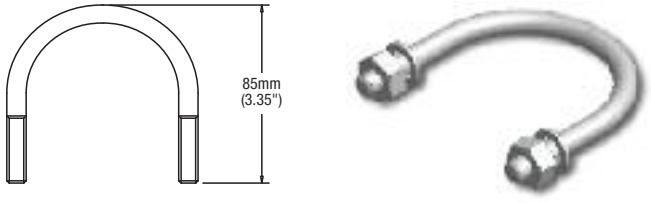
BKT4CS



For manifold/bracket bolts add 'bolt set' suffix from matrix. Example: Bracket, 'U' bolts and manifold/bracket bolts BKT4CSB4 (suitable for HEF*3).

'U' Bolt with nuts and washers for 2" NB standpipe

Part No. UBACS



Manifold/bracket bolts c/w nuts and washers

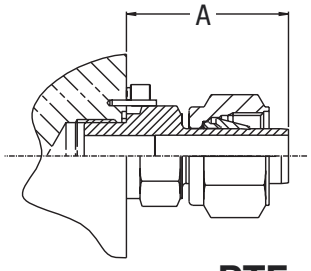
Manifold Part No.	Bolting Set	Part No.	Suffix
HL*3M	M8 x 45 Bolt + Nuts	BS5	5
HL*3MDTP	M8 x 45 Bolt + Nuts	BS5	5
HL*3MHP	M8 x 45 Bolt + Nuts	BS5	5
HL*5M	M8 x 45 Bolt + Nuts	BS5	5
HL*5MCT	M8 x 45 Bolt + Nuts	BS5	5
HL*5MHP	M8 x 45 Bolt + Nuts	BS5	5
HD*3M	M10 x 14 Bolt	BS2	2
HD*3MDTP	M10 x 14 Bolt	BS2	2
HD*3MFF	M10 x 14 Bolt	BS2	2
HD*3MCP	M10 x 14 Bolt	BS2	2
HD*3	M10 x 14 Bolt	BS2	2
HD*5M	M10 x 14 Bolt	BS2	2
HD*5MFF	M10 x 14 Bolt	BS2	2
HD*5MCP	M10 x 14 Bolt	BS2	2
HD*5CT	M6 x 14 Bolt	BS6	6
HD*5	M6 x 14 Bolt	BS6	6
HEF*38N	M6 x 45 Bolt + Nuts	BS4	4
HEF*3	M6 x 45 Bolt + Nuts	BS4	4
HEFS58NCT	M6 x 45 Bolt + Nuts	BS4	4
HEFS5CT	M6 x 45 Bolt + Nuts	BS4	4

All nut and bolt sets are standard in Carbon Steel

PTFree connect™

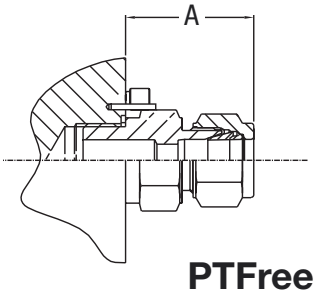
Manifold connections

Many users continually desire the elimination of taper threads and their associated sealant.
The PTFree connect system enables users to assemble tube lines to any of the manifold ports without the need for PTFE tape or other liquid sealant.
The PTFree connection can be applied to any of the manifold featured in this catalogue. These will be factory fitted, pin locked and pressure tested.
PTFree connect enables angled tube connections to be swivelled until the optimum tube alignment position has been achieved. Assembly to the tube connector is achieved by tightening the standpipe nut one-quarter turn from the finger tight position.
Manifolds can also be supplied with male connectors using the same thread form as the PTFree connect. They can be provided factory fitted, pin locked and tested before they leave our manufacturing plant.
Some size restrictions may be necessary due to the close proximity of some connections and the across flat hexagon dimensions, as a guide PTFree connect for inlet and outlet can be up to 1/2" or 12mm o/d., drain/bleed connections should be restricted to 1/4" or 6mm. For PTFree male connectors inlet and outlet should be restricted to 3/8" or 10mm and 1/4" or 6mm o/d for drain/bleed.



A = 29.70mm (1.17") 6mm/1/4" tube
A = 35.00mm (1.38") 10mm tube
A = 35.00mm (1.38") 3/8" tube

PTFree connect (Code FRC)



A = 31.50mm (1.25") 6mm/1/4" tube
A = 36.60mm (1.44") 10mm tube
A = 36.60mm (1.44") 3/8" tube

PTFree male connectors (Code FRCM)

Part Number Construction Examples

				Inlet, Outlet, Drain/vent/test, tube size/thread size & form		
Manifold Part No. + option	Connection Style FRC or FRCM	A-LOK(L) or CPI(B) L or B	Metric or inch tube M or I	Inlet (E) + size	Outlet (X) + size	Drain/vent/test
HDS5M	FRC	L	M	E12	Flanged	D6
Part No. HDS5MFRCLME12D6 = 5 valve direct mount manifold with A-LOK PTFree connect™ Inlet - 12mm o.d., Outlet Flanged, Drain/test - 6mm. Stainless steel construction						
HLS3M	**FRC**	**B**	**I**	**E6**	**X6**	**–**
Part No. HLS3MFRCBIE6X6 = 3 valve remote manifold with CPI PTFree connect™ Inlet - 3/8" o.d., Outlet 3/8 o.d. Stainless steel construction						

Material options

For full material specification see technical section

Material	*Insert code for selected material in part number	Manifold types				
		HD*3M	HL*3M	HEF*38N	HF*38N	ML*3V4N
		HD*3	HD*3MCP	HEF*3	HF*3	
		HD*3EXT	HD*3MFF			
Stainless steel Std	S	✓	✓	✓	CAST	✓
Monel	M	✓	✓			✓
Duplex	D1	✓	✓			✓
Super Duplex	D2	✓	✓			✓
Hasteloy	HC	✓	✓			✓
Carbon Steel	C	✓	✓	✓		
6Mo	6MO	✓	✓			✓
Titanium	T	✓	✓			✓
Incoloy 825	825	✓	✓			✓
Inconel 625	625	✓	✓			✓

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

Material	*Insert code for selected material in part number	Manifold types				
		HD*5	HD*5CT	HF*58N	HEF*58NCT	HD*5MFF
		HD*5M	HL*5	HF*5	HEF*5CT	HD*5MCP
		HD*5EXT	HL*5M			
Stainless steel Std	S	✓	✓	CAST	✓	✓
Monel	M	✓	✓			✓
Duplex	D1	✓	✓			✓
Super Duplex	D2	✓	✓			✓
Hasteloy	HC	✓	✓			✓
Carbon Steel	C	✓	✓		✓	✓
6Mo	6MO	✓	✓			✓
Titanium	T	✓	✓			✓
Incoloy 825	825	✓	✓			✓
Inconel 625	625	✓	✓			✓

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

Options for three valve manifolds

				Manifold part nos.		
			Page		128	128	129
							
Suffix adding sequence	Function	Read	Option Detail	Part no. suffix	HD*3M+DTP	HD*3	HD*3EXT
1	**Gland packing**		Graphoil	3	✓	✓	✓
2	**Seating**		PCTFE tip	9	✓	✓	✓
			PEEK tip	PK	✓	✓	✓
		Note 1	Roddable/rising plug, PTFE packed	RP			
			Stellite Tip	ST	✓	✓	✓
3	**Optional connections**	**Note 2**	Purge ports 1/4 NPT	UPP*	✓	✓	✓
		Note 2	Test ports 1/4 NPT	DTP*	✓	✓	✓
4	**Blank plugs**		Hexagon plugs 1/4 NPT (loose in box)	P	✓	✓	✓
5	**Connection**	**Note 3**	Socket weld (* insert pipe size)	SW*NB	✓	✓	✓
			Butt weld (* insert pipe size)	BW*NB	✓	✓	✓
			BSPT (* insert thread size e.g. 8K = 1/2")	*K	✓	✓	✓
		Note 4	BSPP (* insert thread size e.g. 8R = 1/2")	*R	✓	✓	✓
			Inverted connections A-LOK/CPI	*A/*Z			
			PTFree connect (see page 142)		✓	✓	✓
		Note 5	DIN 19213 instrument seal grooves	DIN**	✓	✓	✓
6	**Operating mechanism (see page 125 for functional definition)**		Lockable 'T' Bar	THL	✓	✓	✓
			Anti tamper spindle	AT	✓	✓	✓
			Anti tamper spindle + key	ATK	✓	✓	✓
			Handwheel	HW	✓	✓	✓
			Lockable handwheel	LHW	✓	✓	✓
7	**Mounting**	**Note 6**	Assembled to bracket	BRK	✓	✓	✓
			56mm centres	56	✓	✓	✓
			57mm centres	57	✓	✓	✓
			Stainless steel mounting bolts 7/16 UNF	SSB	✓	✓	✓
			M10 x 1.5 C.S. mounting bolts	CSB10	✓	✓	✓
			M10 x 1.5 stainless steel mounting bolts	SSB10	✓	✓	✓
8	**Condition**		NACE (latest issue)	NACE	✓	✓	✓
			Cleaned and lubricated for oxygen use	OXY	✓	✓	✓
			Firesafe design	FS			
		Note 7	Heat code trace certificates	HCT	✓	✓	✓
			Test certificates	TC	✓	✓	✓
			Air testing	PT	✓	✓	✓

Note 1 Seat material RP = standard acetal, RP9 = PTCFE, RPPK = PEEK.
Note 2 *Specify face F = front, T = top, B = base, S = side (check viability of size and position with sales).
Note 3 For tube socket use 1/16" denominations (i.e. 8 = 1/2") and change NB to TB.
For metric tube size use actual metric (mm) dimensions e.g. SW12MMTB.
Note 4 For test/purge connections in BSPP these will, due to sealing face requirements be limited to 1/8" as standard.
Note 5 **Insert seal type B1, B2, or B3.
Note 6 Bracket will include 'U' bolts and manifold/bracket bolts.
Note 7 Heat code traceable certificates for body and bonnet.

Manifold part nos.								
129	130	130	131	131	132	133	133	
								
HD*3FF	HEF*38N	HEF*3	HF*38N	HF*3	HL*3M+DTP+HP	HD*3CP	MLS3V4N	Option Detail
✓	✓	✓	✓	✓	✓	✓		Graphoil
✓	✓	✓	✓	✓	✓	✓		PCTFE tip
✓	✓	✓	✓	✓	✓	✓		PEEK tip
		✓						Roddable/rising plug, PTFE packed
✓	✓	✓	✓	✓	✓	✓		Stellite Tip
✓	✓	✓	✓	✓	✓	✓		Purge ports 1/4 NPT
✓	✓	✓	✓	✓	✓	✓		Test ports 1/4 NPT
✓	✓	✓	✓	✓	✓	✓		Hexagon plugs 1/4 NPT (loose in box)
	✓		✓		✓	✓		Socket weld (* insert pipe size)
	✓		✓		✓	✓		Butt weld (* insert pipe size)
	✓		✓		✓	✓		BSPT (* insert thread size e.g. BK = 1/2")
	✓		✓		✓	✓		BSPP (* insert thread size e.g. 8R = 1/2")
	✓	✓						Inverted connections A-LOK/CPI
	✓		✓		✓	✓		PTFree connect (see page 142)
✓			✓	✓	✓			DIN 19213 instrument seal grooves
✓	✓	✓	✓	✓	✓	✓		Lockable 'T' Bar
✓	✓	✓	✓	✓	✓	✓		Anti tamper spindle
✓	✓	✓	✓	✓	✓	✓		Anti tamper spindle + key
✓	✓	✓	✓	✓	✓	✓		Handwheel
✓	✓	✓	✓	✓	✓	✓		Lockable handwheel
✓	✓	✓	✓	✓	✓	✓		Assembled to bracket
✓	✓	✓	✓	✓		✓		56mm centres
✓	✓	✓	✓	✓		✓		57mm centres
✓	✓	✓	✓	✓		✓		Stainless steel mounting bolts 7/16 UNF
✓	✓	✓	✓	✓				M10 x 1.5 C.S. mounting bolts
✓	✓	✓	✓	✓				M10 x 1.5 stainless steel mounting bolts
✓	✓	✓	✓	✓	✓	✓	✓	NACE (latest issue)
✓	✓	✓	✓	✓	✓	✓	✓	Cleaned and lubricated for oxygen use
					✓			Firesafe design
✓	✓	✓	✓	✓	✓	✓	✓	Heat code trace certificates
✓	✓	✓	✓	✓	✓	✓	✓	Test certificates
✓	✓	✓	✓	✓	✓	✓	✓	Air testing

Accessories and spares

*Insert 9 PCTFE seat
*Insert PK PEEK seat

Description	Part number	Box quantity
PTFE manifold/instrument seals	HKITPTFESEALS	2
Graphite manifold/instrument seals	HKITGRAPHOILSEALS	2
Isolate valve with PTFE gland, metal seat	HBNTS*ISPTFE/3	3
Drain/bleed valve with PTFE gland, metal seat	HBNTS*DRPTFE/3	3
Equalize valve with PTFE gland, metal seat	HBNTS*EQPTFE/3	3
Isolate valve with graphoil gland, metal seat	HBNTSISGRAP/3	3
Drain/bleed valve with graphoil gland, metal seat	HBNTSDRGRAP/3	3
Equalize valve with graphoil gland, metal seat	HBNTSEQGRAP/3	3

Options for three valve manifolds

		Manifold part nos.		
Page		134	134	135
				

Suffix adding sequence	Function	Read	Option Detail	Part no. suffix	HD*3M+DTP	HD*3	HD*3EXT
1	**Gland packing**		Graphoil	3	✓	✓	✓
2	**Seating**		PCTFE tip	9	✓	✓	✓
			PEEK tip	PK	✓	✓	✓
		Note 1	Roddable/rising plug, PTFE packed	RP			
			Stellite Tip	ST	✓	✓	✓
3	**Optional connections**	**Note 2**	Purge ports 1/4 NPT	UPP*	✓	✓	✓
		Note 2	Test ports 1/4 NPT	DTP*	✓	✓	✓
4	**Blank plugs**		Hexagon plugs 1/4 NPT (loose in box)	P	✓	✓	✓
5	**Connection**	**Note 3**	Socket weld (* insert pipe size)	SW*NB	✓	✓	✓
			Butt weld (* insert pipe size)	BW*NB	✓	✓	✓
			BSPT (* insert thread size e.g. 8K = 1/2")	*K	✓	✓	✓
		Note 4	BSPP (* insert thread size e.g. 8R = 1/2")	*R	✓	✓	✓
			Inverted connections A-LOK/CPI	*A/*Z			
			PTFree connect (see page 142)		✓	✓	✓
		Note 5	DIN 19213 instrument seal grooves	DIN**	✓	✓	✓
6	**Operating mechanism**		Lockable 'T' Bar	THL	✓	✓	✓
	(see page 125 for		Anti tamper spindle	AT	✓	✓	✓
	functional definition)		Anti tamper spindle + key	ATK	✓	✓	✓
			Handwheel	HW	✓	✓	✓
			Lockable handwheel	LHW	✓	✓	✓
7	**Mounting**	**Note 6**	Assembled to bracket	BRK	✓	✓	✓
			56mm centres	56	✓	✓	✓
			57mm centres	57	✓	✓	✓
			Stainless steel mounting bolts 7/16 UNF	SSB	✓	✓	✓
			M10 x 1.5 C.S. mounting bolts	CSB10	✓	✓	✓
			M10 x 1.5 stainless steel mounting bolts	SSB10	✓	✓	✓
8	**Condition**		NACE (latest issue)	NACE	✓	✓	✓
			Cleaned and lubricated for oxygen use	OXY	✓	✓	✓
			Firesafe design	FS			
		Note 7	Heat code trace certificates	HCT	✓	✓	✓
			Test certificates	TC	✓	✓	✓
			Air testing	PT	✓	✓	✓

Note 1 Seat material RP = standard acetal, RP9 = PTCFE, RPPK = PEEK.
Note 2 *Specify face F = front, T = top, B = base, S = side (check viability of size and position with sales).
Note 3 For tube socket use 1/16" denominations (i.e. 8 = 1/2") and change NB to TB.
For metric tube size use actual metric (mm) dimensions e.g. SW12MMTB.
Note 4 For test/purge connections in BSPP these will, due to sealing face requirements be limited to 1/8" as standard.
Note 5 **Insert seal type B1, B2, or B3.
Note 6 Bracket will include 'U' bolts and manifold/bracket bolts.
Note 7 Heat code traceable certificates for body and bonnet.

Manifold part nos.								
135	136	136	137	137	138	138	139	
								
HD*5CT	HD*5EXT	HD*5MCP	HF*5	HF*58N	HEF*5CT	HEF*58NCT	HL*5M+HP	Option Detail
✓	✓	✓	✓	✓	✓	✓	✓	Graphoil
✓	✓	✓	✓	✓	✓	✓	✓	PCTFE tip
✓	✓	✓	✓	✓	✓	✓	✓	PEEK tip
					✓	✓		Roddable/rising plug, PTFE packed
✓	✓	✓	✓	✓	✓	✓	✓	Stellite Tip
✓	✓	✓	✓	✓	✓	✓	✓	Purge ports 1/4 NPT
✓					✓	✓		Test ports 1/4 NPT
✓	✓	✓	✓	✓	✓	✓	✓	Hexagon plugs 1/4 NPT (loose in box)
✓	✓	✓		✓		✓	✓	Socket weld (* insert pipe size)
✓	✓	✓		✓		✓	✓	Butt weld (* insert pipe size)
✓	✓	✓		✓		✓	✓	BSPT (* insert thread size e.g. BK = 1/2")
✓	✓	✓		✓		✓	✓	BSPP (* insert thread size e.g. 8R = 1/2")
			✓	✓		✓		Inverted connections A-LOK/CPI
✓	✓	✓		✓		✓	✓	PTFree connect (see page 142)
✓	✓	✓	✓	✓				DIN 19213 instrument seal grooves
✓	✓	✓	✓	✓	✓	✓	✓	Lockable 'T' Bar
✓	✓	✓	✓	✓	✓	✓	✓	Anti tamper spindle
✓	✓	✓	✓	✓	✓	✓	✓	Anti tamper spindle + key
✓	✓	✓	✓	✓	✓	✓	✓	Handwheel
✓	✓	✓	✓	✓	✓	✓	✓	Lockable handwheel
✓	✓	✓	✓	✓	✓	✓	✓	Assembled to bracket
✓	✓		✓	✓	✓	✓		56mm centres
✓	✓		✓	✓	✓	✓		57mm centres
✓	✓	✓	✓	✓	✓	✓		Stainless steel mounting bolts 7/16 UNF
✓	✓	✓	✓	✓	✓	✓		M10 x 1.5 C.S. mounting bolts
✓	✓	✓	✓	✓	✓	✓		M10 x 1.5 stainless steel mounting bolts
✓	✓	✓	✓	✓	✓	✓	✓	NACE (latest issue)
✓	✓	✓	✓	✓	✓	✓	✓	Cleaned and lubricated for oxygen use
							✓	Firesafe design
✓	✓	✓	✓	✓	✓	✓	✓	Heat code trace certificates
✓	✓	✓	✓	✓	✓	✓	✓	Test certificates
✓	✓	✓	✓	✓	✓	✓	✓	Air testing

Accessories and spares

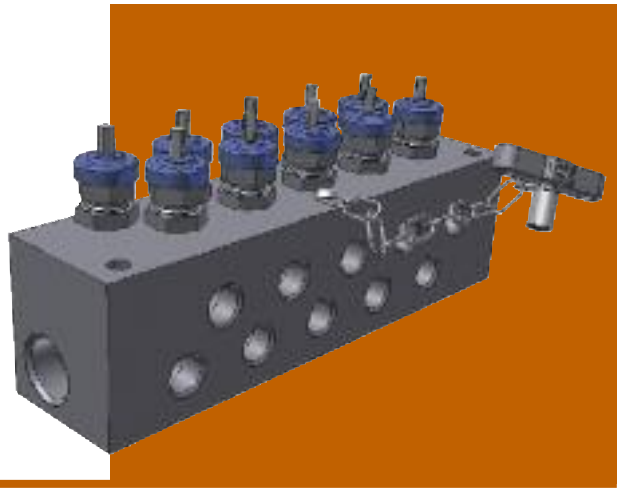
*Insert 9 PCTFE seat
*Insert PK PEEK seat

Description	Part number	Box quantity
PTFE manifold/instrument seals	HKITPTFESEALS	2
Graphite manifold/instrument seals	HKITGRAPHOILSEALS	2
Isolate valve with PTFE gland, metal seat	HBNTS*ISPTFE/3	3
Drain/bleed valve with PTFE gland, metal seat	HBNTS*DRPTFE/3	3
Equalize valve with PTFE gland, metal seat	HBNTS*EQPTFE/3	3
Isolate valve with graphoil gland, metal seat	HBNTSISGRAP/3	3
Drain/bleed valve with graphoil gland, metal seat	HBNTSDRGRAP/3	3
Equalize valve with graphoil gland, metal seat	HBNTSEQGRAP/3	3

‘H’ Series Compact Distribution Manifold

Series HCDM

Cat 4190-DM



Product Description

Compact distribution manifold unit offering choice of 5 or 10 metal seated needle valves with PTFE gland packing. ‘H’ series head assemblies for easy operation and positive bubble tight shut off.

Features

- **Number of valves:** 5 or 10 (between 5 & 10 will be supplied as 10 way - redundant outlets can be plugged by user).
- **Valve style:** Globe style needle valve metal/metal seat with retained operating key.
- **Main inlet:** 1/2” female pipe thread.
- **Main outlets:** 1/2” female pipe thread.
- **Distribution outlets:** 1/4” female pipe thread.

As standard, 2 connections (one at each end of common size) will be provided. One of these will be utilised by the user as an inlet, the other can be either blanked off or fitted with a valve to facilitate purging, should a purge valve be required then the style should be clearly stated at enquiry stage.

We can connect a single isolate valve to the inlet to act as a primary isolate valve allowing the user to totally isolate all the outlet valves from the supply point. Such a requirement must be stated separately at enquiry stage, the valve style should be clearly specified.

These additional valve requirements will be structured into the part number at quotation stage.

Specifications:

Mounting holes dia: 6.5mm (1/4”).
Temperature rating: Max. 260°C (500°F).
Lead times: Max. up to 4 weeks.
Pressure rating: Max. 6,000 psi (414 bar).
Materials: AISI 316 stainless steel.
Minimum quantity: 5 off.

Part number construction:

H C D M S 10

Material

No. of ports 5 or 10

Options

K - BSPT threads
R - BSPP threads
NC - Nace
PK - Peek tips
3 - Grafoil packing
9 - Kel-F tips (3,000 psi MWP)
AT - Supplied with anti-tamper bonnets and loose operating key

Hi-Pro Distribution Manifold

Series HPDM

Cat 4190-HPDM

Product Description

High Pressure Modular Distribution Manifold with up to 20 Parker Hi-Pro ball valve outlets.

Features

- **Maximum number of valves:** 20 (even numbers only - spare valves can be blanked off).
- **Valve style:** Hi-Pro Ball style (10mm bore).
- **Maximum size main inlet:** 1” pipe thread, 2” socket weld, 2” flange.
- **Minimum size main inlet:** 1/4” female pipe thread/tube or pipe socket weld.
- **Maximum size main outlet:** 1” pipe thread, 2” socket weld, 2” flange.
- **Minimum size main outlets:** 1/4” female pipe thread/tube or pipe socket weld.

As standard, 2 connections (one at each end) will be provided. One of these will be utilised by the user as an inlet, the other can be either blanked off or fitted with a valve to facilitate purging, should a purge valve be required then the style should be clearly stated at enquiry stage.

We can connect a single isolate valve to the inlet to act as a primary isolate valve allowing the user to totally isolate all the outlet valves from the supply point. Such a requirement must be stated separately at enquiry stage, the valve style should be clearly specified.

These additional valve requirements will be structured into the part number at quotation stage.

Specifications:

Mounting/support: Standard wall mounting (also permits mounting to a 2” NB pipe stand.
Pressure rating: Max. 6000 psig (414 barg) for valves - tube/Pipe size to be designated by customer.
Temperature rating: Refer to CAT 4190HBV for P/T graph.

Materials: AISI 316 St. St.
Options: All valve options listed in CAT 4190 HBV can be supplied.
Lead times: Max. up to 4 weeks.

Part number construction:

Series	Material	No of Valves	Main in (A) out (B)	Style (A & B)	Distribution Conns. (C)	Style Female
HPDM	316 SS-B	4-20	1/2”-8	FNPT-N	1/4”-4	NPT-N
			3/4”-12 1”-16	BSPT-K BSPP-R	3.8”-6 1/2”-8	BSPT-K BSPP-R
			1 1/2”-24	Pipe socket weld SWNB	3/4”-12	
			2”-32	Tubesocket weld SWTB	1”-16	
				Flange (see note 2)		

Example part number: HPDMB2016F1508N4N

Description: Manifold **(HPDM)** produced in 316 stainless steel **(B)** complete with 20 ball valves **(20)** with 1” **(16)** flange spiral raised face **(F)** class 150 **(150)** main inlet, 1/2” **(8)** NPT **(N)** female main outlet, 20 x 1/4” **(4)** NPT **(N)** female ball valve distribution outlets.

Note 1: When main outlet is different size to main inlet then add main outlet designator after main inlet designator.
Note 2: When flange connection required use the part no. designators in the Flange catalogue CAT 4190 FP for flange face and class.

Hi-Check 10mm Bore Non-Return Valve

(316 Stainless steel, Duplex and Monel) 6,000 psi/414 bar, 10,000 psi/689 bar

Product Description

These high performance non-return valves can offer the user a cold working pressure rating up to 10,000 psi/ 689 bar maximum, with a cracking pressure of 10 psi maximum.

By offering a true two piece design, body leakage paths are kept to a minimum.

With the added opportunity to select integral compression ends the user can eliminate the use of taper threads and thread sealant. This avoids system contamination, reduces potential leakage paths, weight, space and installation costs.

Features

- Two-piece metal seated body design - minimal leakage paths.
- 4:1 Pressure boundary designed safety factor.
- Designed to meet pressure and temperature requirements of ANSI/ASME B.16.34, as limited by the seat materials.
- Nitrile, Fluorocarbon, EPR and Highly Fluorinated Fluorocarbon Rubber seat materials available.
- Available with A-lok compression ends.
- Factory tested - all units fully hydrostatically tested to 1.5 x maximum working presure.
- Connector thread environmentally sealed.
- NACE MR 01 75/ISO 15156 compliant materials available.
- Self-centering Seal.
- Low noise.
- Rugged Design - Threads not in contact with media.
- Zero coil bounding check spring.
- Explosive decompression/extrusion resistance O-rings for high pressure applications.
- Optional secured locking connector.

Specifications:

Cold Working Pressure Ratings

- 6,000 psi (414 bar) & 10,000 psi (689 bar).

Temperature Rating:

Material Temperatures limited to working temperatures of seals below:

6,000 psi (414 bar)

- Fluorocarbon -15°F to 400°F (-26°C to 204°C).
- Nitrile -30°F to 275°F (-34°C to 135°C).
- Ethylene Propylene Rubber -70°F to 275°F (-57°C to 135°C).
- Highly Fluorinated Fluorocarbon Rubber -15°F to 200°F (-26°C to 93°C).

10,000 psi (689 bar) Option

- Fluorocarbon V1238-95 -15°F to 400°F (-26°C to 204°C).
- Highly Fluorinated Fluorocarbon Rubber -15°F to 200°F (-26°C to 93°C).

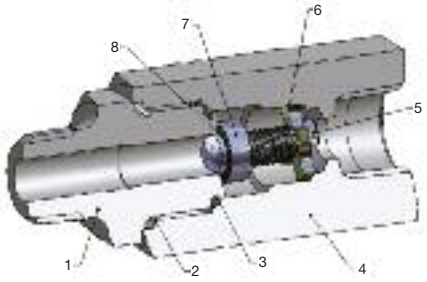
Crack and Re-seal

- Cracking Pressure: <10 psi (0.69 bar).
- Re-seal Pressure: <50 psi (3.45 bar).

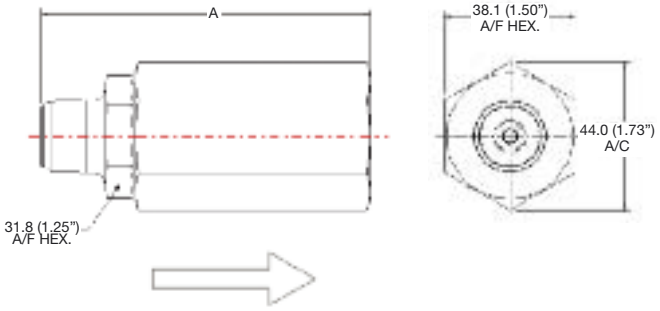
Re-seal pressure is defined as the upstream pressure at which the non-return valve closes bubble-tight.

Note: Hi-check non-return valves which are not actuated for a period of time, may initially crack at a higher pressure than the above cracking pressure listed.

Cv: **1.54**



Item	Description
1	Connector
2	E-seal™
3	Joint Seal
4	Body
5	Spring Support
6	Spring
7	Poppet
8	O-ring



Part number	Part number	Inlet	Outlet	Dimensions
6000 psig (414 barg)	10,000 psig (689 barg)	Female	Female	A mm (inch)
HCY*4FF-#	HCY*4FFHP-#	1/4" NPT	1/4" NPT	74.7 (2.94)
HCY*6FF-#	HCY*6FFHP-#	3/8" NPT	3/8" NPT	79.7 (3.14)
HCY*8FF-#	HCY*8FFHP-#	1/2" NPT	1/2" NPT	87.9 (3.46)
6000 psig (414 barg)	10,000 psig (689 barg)	Male	Female	A mm (inch)
HCY*4M4F-#	HCY*4M4FHP-#	1/4" NPT	1/4" NPT	89.7 (3.53)
HCY*8M8F-#	HCY*8M8FHP-#	1/2" NPT	1/2" NPT	97.9 (3.90)
6000 psig (414 barg)	10,000 psig (689 barg)	A-LOK®	A-LOK®	A mm (inch)
HCY*4A-#	HCY*4AHP-#	1/4" OD	1/4" OD	106.8 (4.20)
HCY*6A-#	HCY*6AHP-#	3/8" OD	3/8" OD	107.3 (4.23)
HCY*8A-#	HCY*8AHP-#	1/2" OD	1/2" OD	113.7 (4.48)
HCY*M6A-#	HCY*M6AHP-#	6mm OD	6mm OD	106.8 (4.20)
HCY*M10A-#	HCY*M10AHP-#	10mm OD	10mm OD	107.8 (4.25)
HCY*M12A-#	HCY*M12AHP-#	12mm OD	12mm OD	113.7 (4.48)

*Insert material code - select from material matrix (B = Standard 316 Stainless Steel)
O-ring code - select from O-ring compound matrix
For CPI™ change A to Z. "A" Dimensions given for A-LOK® are finger tight.
NACE only available on Pipe Thread Connections.
For Compression ended valve pressures consult tube rating table.

Material	*Insert
316 Stainless Steel	B
Duplex	E
Monel	D

O-Ring Suffix # 6000 psig (414 barg)	Compound Options
FC	Fluorocarbon Rubber FPM 75
BN	Nitrile
EP	Ethylene Propylene Rubber
ED	Fluorocarbon Rubber V1238-95
KZ	Highly Fluorinated Fluorocarbon Seal
O-Ring # Suffix # 10,000 psig (689 barg)	**Compound Options**
ED	Fluorocarbon Rubber V1238-95
KZ	Highly Fluorinated Fluorocarbon Seal

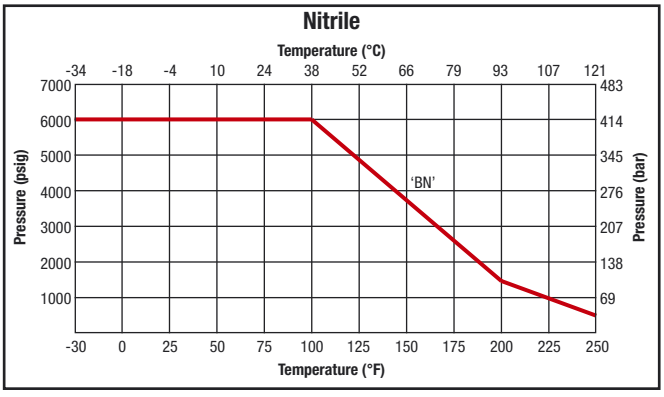
Available Options	Part number suffix
NACE	NC
Secured end connector	LC

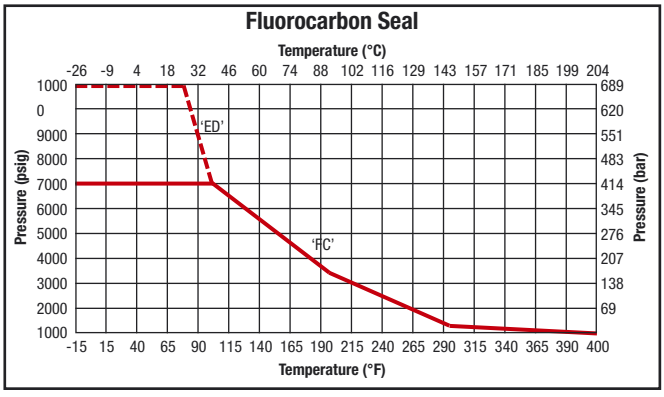
Above options to be inserted prior to O-ring suffix

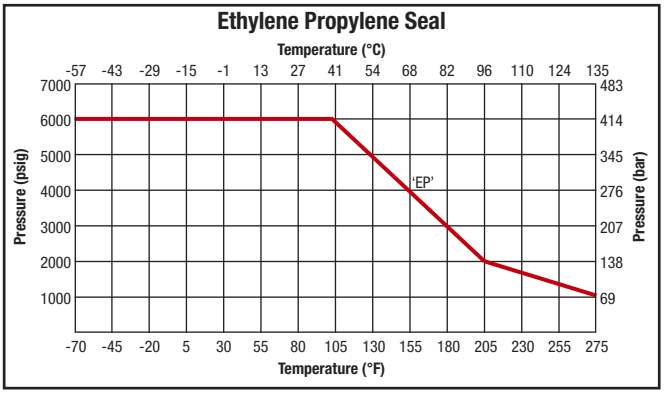
Example 'HCYB8FFHPNC-ED'

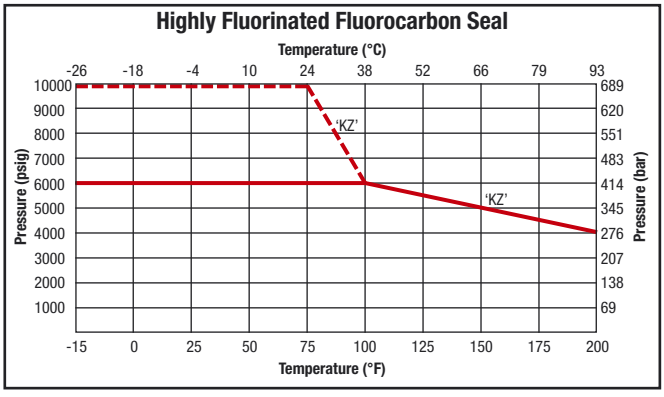
Hi-Check 10mm 316 St.Stl 1/2" NPT (FEM) 10,000 psi NACE with Fluorocarbon V1238-95 rubber

Pressure vs. Temperature







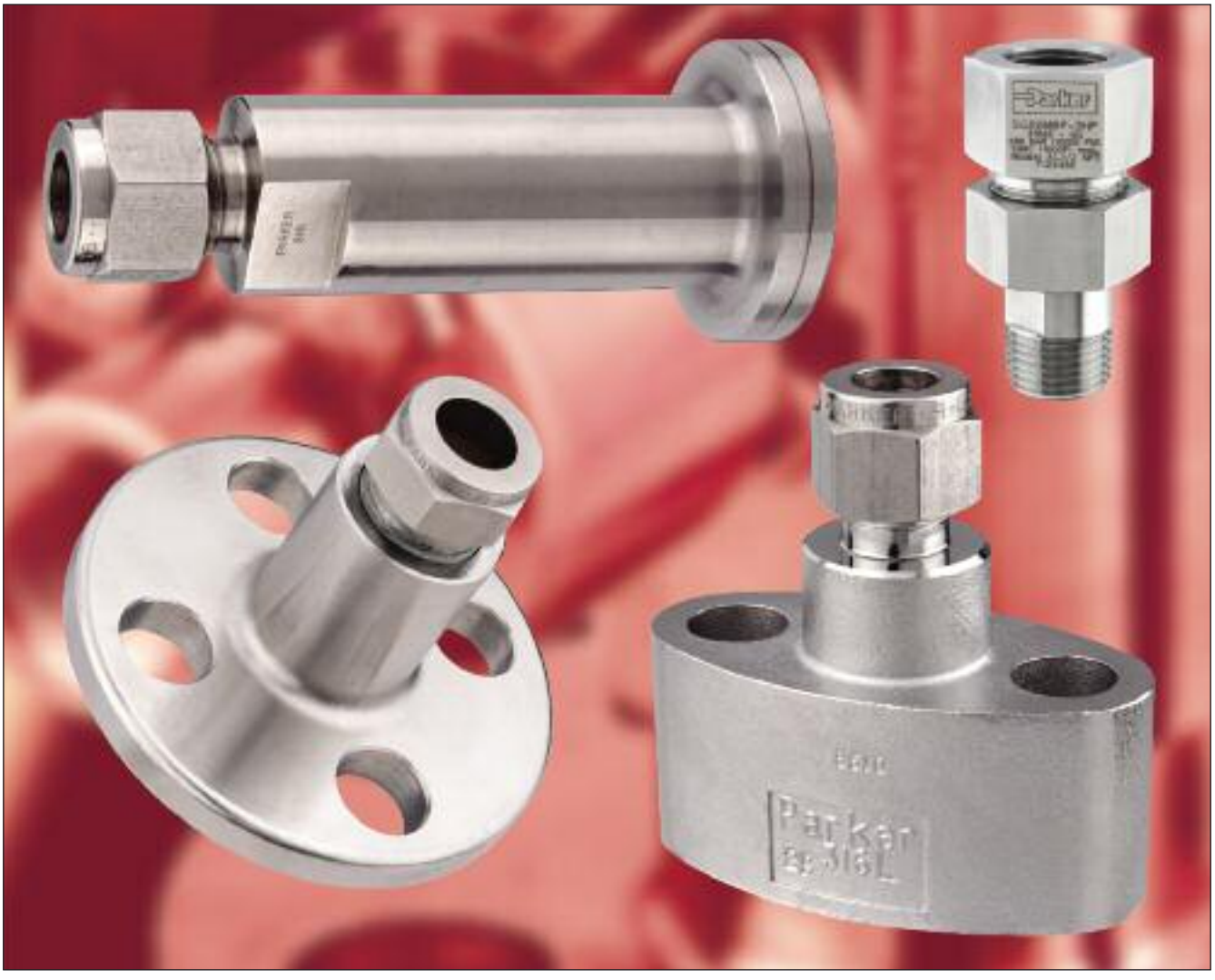


Note: To determine MPa, multiply bar by 0.1 **Key:** ——6,000 psi - - - -10,000 psi

Cat 4190 CV

Manifold Accessories

Catalog 4190-FP-ACC
May 2007



Distribution Manifolds

Contents

Lapped joint tube adaptors (LJ)

Purpose

For applications involving small flanged process valves with simple conversion to instrument lines.

Series LJ

Specification

- 1/2" to 2" N.B. flanges (15 to 50DN).
- 150 to 2500lb flange class.
- Flange sealing:-
  Raised face spiral finish.
- Standard A-LOK® arrangement
  1/4" to 1" O.D. (3mm to 25mm O.D.).
- Standard CPI™ arrangement
  1/4" to 1" O.D. (3mm to 25mm O.D.).
- Standard stainless steel body (316).
- Other materials on application.

Features

- Full heat code traceability to EN10204-3.1
- Integrally machined body, no welding.
- Eliminates additional connections.
- P.T.F.E tape or liquid thread sealants not required.
- Appropriate slipover flanges available.
- NACE MR 0175 / ISO 15156 compliance available on request.

Part number construction

	Product code	Material (refer to table below)	Connection A-LOK maximum size 1" / 25mm	Flange size	Class (to be specified when slipovers required	Optional slipover flanges (SF)
Example 1	LJF	B	8A	8	600	SF
Example 2	LJF	D	M6A	12		

For CPI™ change A to Z.
For A-LOK® size codes use the A-LOK® catalogue.
Example 1: LJFB8A8600SF - Stainless steel, 1/2" O.D. A-LOK® tube connection to 1/2" (DN15) pipe flange, supplied with Class 600 slipover flange.
Example 2: LJFDM6A12 - Monel M400, 6mm O.D. A-LOK® tube connection to 3/4" (DN20) pipe flange.

Flange class must be specified when ordering slipover flange options.

A-LOK®/CPI products in Carbon Steel and Low temp Carbon Steel will be supplied with 316 nuts and ferrules

A-LOK®/CPI products can not be offered in the following materials:
E: Duplex UNS 31803
F: Super Duplex UNS.S.32750

Material

A Carbon Steel A105
B Stainless Steel 316
D Monel M400
E Duplex UNS 31803
F Super Duplex UNS S.32750
G Hastelloy C-276
H Low Temp. C. St. A350 LF2
K 6Mo
L 825
M Inconel 625

Flange to compression connectors (FC)

Purpose

One piece integral connectors allow the user to switch from piping flange standards to instrument compression with minimum cost and added safety. This system eliminates the need for additional connections.

Series FC

Specification

- 1/2" to 2" N.B. flanges (15 to 50DN).
- 150 to 2500lb flange class.
- Flanges to ANSI B16.5. (others available on request)
- Standard or inverted A-LOK® arrangements 1/4" to 1" O.D. (3mm to 25mm O.D.).
- Standard or inverted CPI™ arrangements 1/4" to 1" O.D. (3mm to 25mm O.D.).
- Flange sealing:-
  Raised face spiral finish.
  Ring type joint.
- Standard stainless steel body (316).
- Other materials on application.

Features

- Full heat code traceability to EN10204-3.1
- Integrally machined body, no welding.
- Eliminates additional connections.
- P.T.F.E tape or liquid thread sealants not required.
- Variety of materials available.
- NACE MR 0175 / ISO 15156 compliance available on request.

Part number construction

	Product code	Material (refer to table page 155)	Connection A-LOK maximum size 1" / 25mm	Flange size	Face style	Class
Example 1	FC	B	8A	16	F	600
Example 2	FC	K	M12A	8	T	1500

For CPI™ change A to Z.
For A-LOK® size codes use the A-LOK® catalogue.
Example 1: FCB8A16F600 - Stainless steel, 1/2" O.D. A-LOK® tube connection, 1" pipe flange, raised face, class 600.
Example 2: FCKM12A8T1500 - 6Mo, 12mm O.D. A-LOK® tube connection to 1/2" pipe flange, ring type joint, class 1500.

Kidney flanges to compression connectors (KF)

Purpose

Integral A-LOK® twin ferrule connection for simple, easy and safe connection from process measurement impulse line to instrument or manifold

Series KF

Specification

- Rated to 6000psi. Max (depending on connection)
- Standard PTFE seal ring.
- Optional Graphite available.
- Standard stainless steel body (316).
- Standard A-LOK® arrangement 1/4" to 1/2" (3mm to 12mm).
- Standard CPI™ arrangement 1/4" to 1/2" (3mm to 12mm).
- Standard stainless steel body (316).
- Other materials on application.

Features

- High tensile steel bolts standard.
- Full heat code traceability to EN10204-3.1
- 1/2" NB Sch.40 to Sch XXS butt weld connections available.
- Offset threads available.
- Integrally machined body, no welding.
- Eliminates additional connections.
- P.T.F.E tape or liquid thread sealants not required.
- NACE MR 0175 / ISO 15156 compliance available on request.

Part number construction

	Product code	Material (refer to table page 155)	Connection A-LOK maximum size 1/2" / 12mm	Stainless steel bolts optional (SSB)	Graphite option (3)	NACE optional (N)
Example 1	KF	B	8A	–	3	–
Example 2	KF	B	8F	SSB		N

For CPI™ change A to Z.
For A-LOK® size codes use the A-LOK® catalogue.
Example 1: KFB8A3 - Stainless steel, 1/2" O.D. A-LOK® tube connection, graphite sealing ring, 2 carbon steel bolts.
Example 2: KFB8FSSBN - Stainless steel, 1/2" Female NPT thread, P.T.F.E. sealing ring, 2 stainless steel bolts, complies to NACE.

Swivel gauge adaptors

Purpose

Parker's range of swivel gauge adaptors have been designed to privide 360° rotational movement enabling maximum positional orientation of installed gauges and measuring instruments. A fully contained sealing mechanism ensured total system integrity and offers the user up to 10,000 psig (690 barg) working pressure. Silver plated swivel nut thread and bearing area prevent threat galling of stainless steel threads and allow trouble free repeatable re-assembly.

Specification

- 316 Stainless steel standard.
- 1/2" NPT male to 1/2" NPT female standard.
- 6,000 psig (414 barg) maximum pressure rating.
- Maximum temperatre rating 260°C (500°F).
- Fully heat code traceable.
- Height = 66mm (2.60").
- A/F1 = 19mm (3/4").
  A/F2 = 31.8mm (1 1/4").

Options

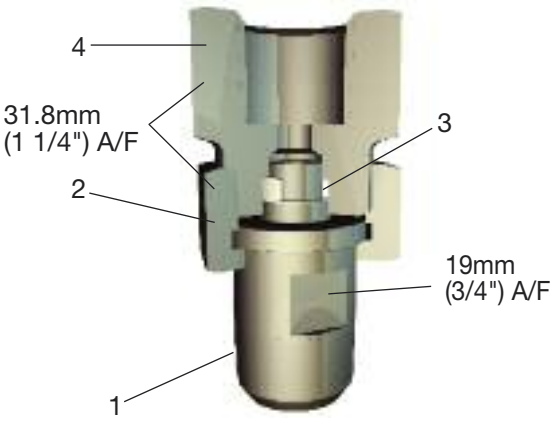
- Optional BSPP, BSPT & Metric male/female threads, BSPP female DIN 16288 spigot* seal outlet arrangement.

* Note: for washers see CAT 4233 page 72 A-LOK®.

- 10,000 psig (689 barg) optional pressure rating.
- Graphoil packing for high temperature maximum 538°C (1,000°F).
- NACE MR 0175 / ISO 15156 compliance available on request.
- Heat code traceable certification.
- Other materials on application.

Features

- Silver plated swivel thread and bearing surface to prevent thread galling and maximising re-make opportunities.
- Variety of thread options.
- Compact design.
- Fully contained and retained sealing mechanism.



Part description

Item	Description
1	Inlet connector
2	Swivel nut
3	Seal
4	Gauge outlet connector

Part number construction

	Product code	Material (refer to table page 155)	Inlet connection NPT standard	Outlet connection NPT standard	Graphoil option (3)	High pressure option (HP)	NACE optional (N)
Example 1	SG	B	8M	8F	3	HP	–
Example 2	SG	B	6M	8F			N

For male outlet change F to M.
For BSPP suffix M and/or F with R.
For BSPT suffix M and/or F with K.
For DIN 16288 spigot seal suffix F with RDIN.
Example 1: Stainless steel 1/2" NPT male inlet, 1/2" NPT female outlet, with graphoil seal and 10,000 psi (689 bar) rating.
Example 2: Stainless steel 3/8" NPT male inlet, 1/2" NPT female outlet, with P.T.F.E. (standard) and in accordance with NACE requirements.

Instrument Enclosures, Cabinets and Shelters

Catalogue 4190-ENC
January 2007

Introduction

Parker Instrumentation provide a range of rugged enclosures for field-mounted process instruments. Three sizes of enclosures are available for housing one, two or three process instruments. These enclosures are supported by an assembly service that will provide them ready for field use - with manifold and tubing connections for pressure, flow, temperature or other common process variable instruments, and any accessories required. Together, the enclosures and support service provides users with a means of simplifying instrumentation projects.

Three enclosure sizes in the new PES range are available: with widths of 49, 58 or 69cm - offering mounting space suitable for one, two or three instruments/transmitters respectively, plus a manifold and connections to the instrumentation tubing, and an electrical heating element or steam heat tubing.

The CPS enclosures are fabricated from tough GRP (glass reinforced polyester). Each size variant employs the same basic design with hinges that allow the top to open extensively, providing complete access from the front right down to the floorline, as well as excellent access from both sides and above - for easy commissioning and maintenance. Process connections may be routed either through the base or the rear of the enclosure - for application flexibility. The front of the instrument includes a large window made from polycarbonate or laminated glass.

Parker Instrumentation will supply enclosures fully assembled: pre-fitted with a manifold which allows user to simply bolt the instrument into place, or as a finished unit complete with the instrument (free issued by the customer) and/or other equipment assembled to the customer's specifications. All commonly required manifold types are available off-the-shelf, including two-, three- and five way designs.

A wide choice of accessories is available to customise the enclosure for individual applications, including insulation and a range of explosion-proof heaters - approved to international standards including IP68, NEMA 4X and EEx e ll.

Contents

Specification

Enclosures
Parker instrument enclosures are made of long glass fibre reinforced polyester (GRP) in sheet moulded compound design.
This high-tech material has many advantages:
- strength that almost matches stainless steel (non-reinforced plastic material has approx. 100 times less stability)

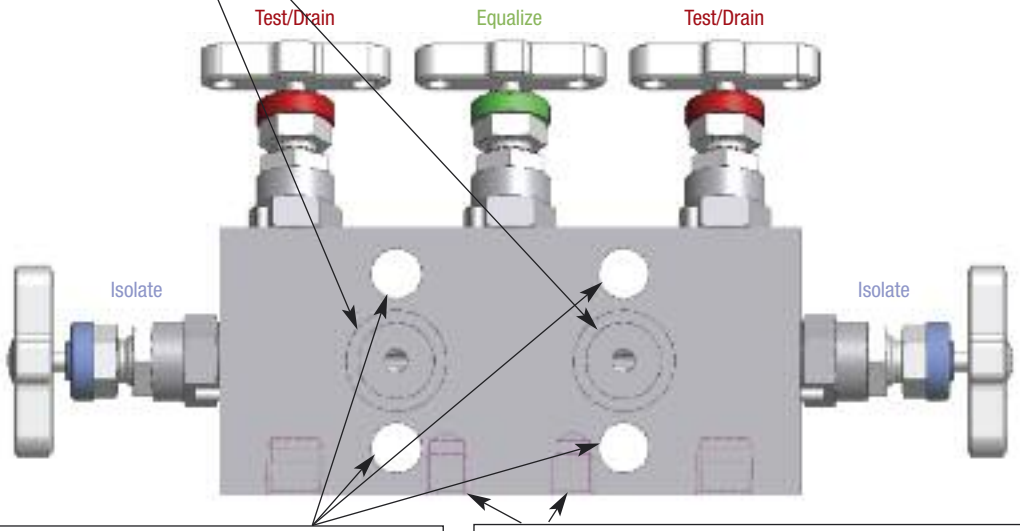
- the weight of stainless steel is 4 times greater
- by increasing wall thickness and optimum fibre alignment the enclosure can be made with extra reinforcing at the edge

- Corrosion-free
- Excellent chemical resistance

Heaters
Parker offers the widest selection of explosion-proof heaters worldwide.
- ATEX/CENELEC approvals for Europe
- CSA/NRTL approvals for America
- GOST approvals for the Russian Federation and many other national certificates, e.g. Japan, Czech Republic etc.
- Providing freeze protection
- Installation in a horizontal or vertical position
- Choice of many different wattages
- Self-limiting or with thermostat in the connection cable allowing for quick and easy installation
- Fully sealed with silicone, protection to IP 68, reliable even in the harshest conditions
- Low thermal stress for long life
- Optional failure alarm

Instrument side, outlet, flange connections: are standard for direct mount manifolds with machined grooves for PTFE seal rings. Optional DIN sealing groove arrangement are also available. Remote style manifolds are provided as standard with 1/2" NPT female outlet connections (alternative thread forms etc. are available). Flanged outlets are positioned on 54mm/2.125" centres. (56/57mm options are available). Manifolds for 3051 style transmitters are available as standard

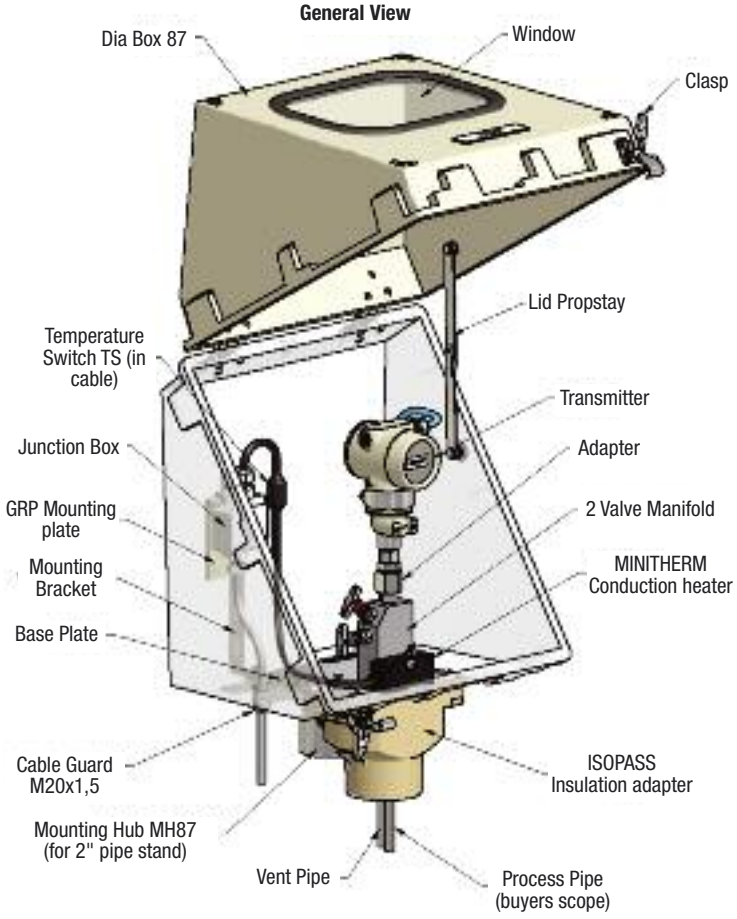
Functional colour coding:
RED = Drain/vent/test
BLUE = Isolate/block
GREEN = Equalize

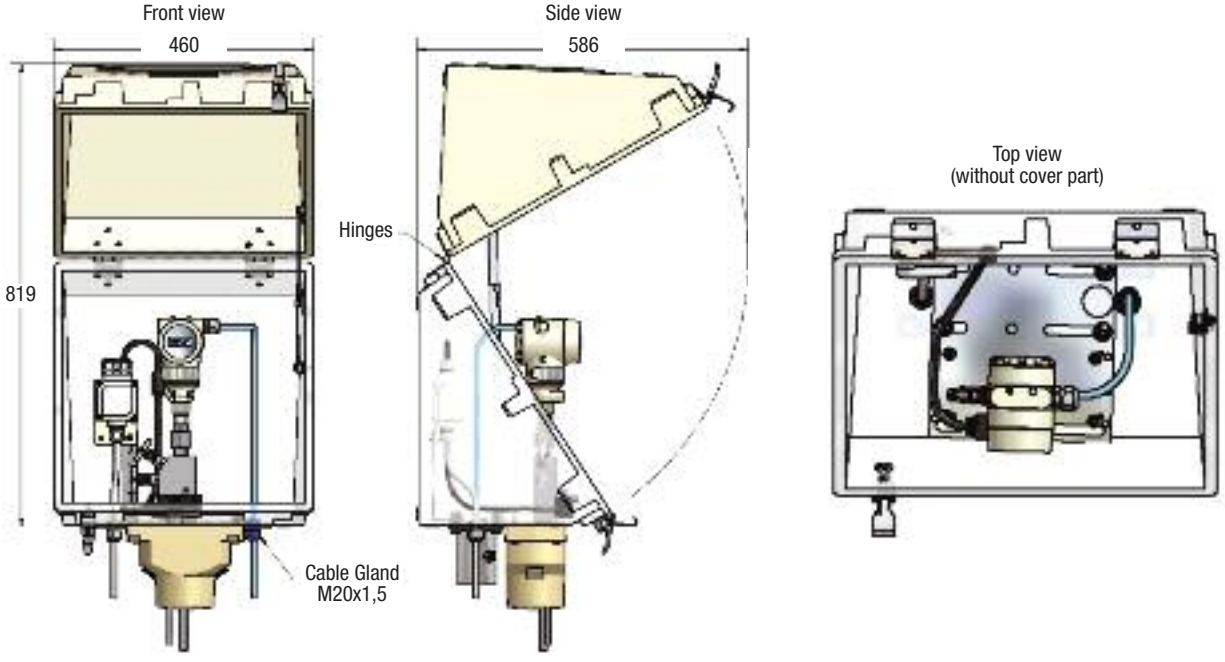


Manifold to transmitter mounting: all direct mount manifolds are provided with 4 off 7/16 UNF x 1.625" high tensile zinc plated carbon steel bolts. Bolt holes are standard on 54mm/2.125" centres. Optional St. St. bolts are available.

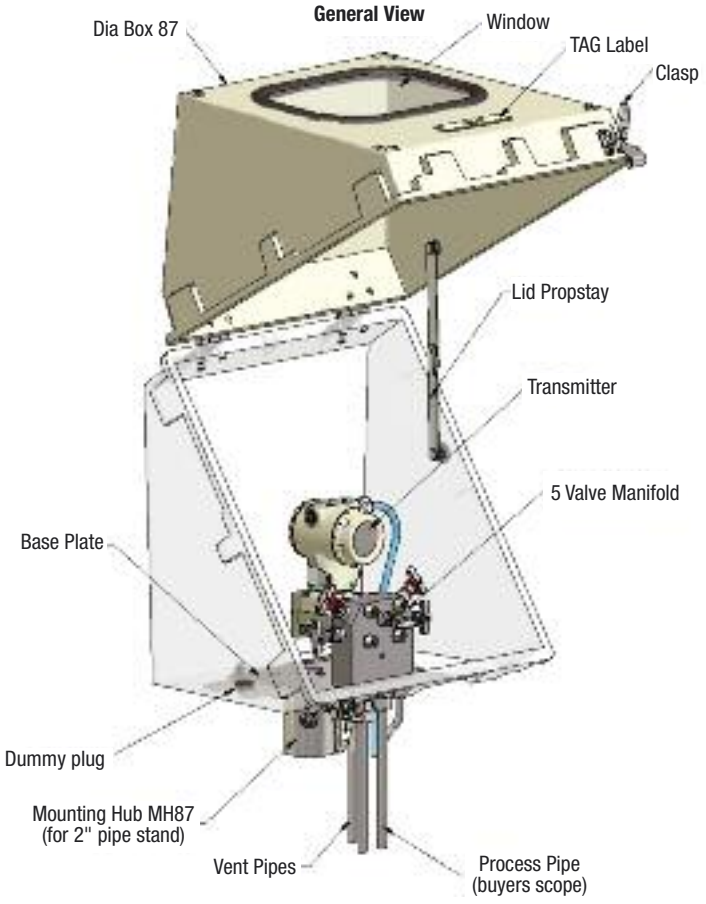
Manifold base/bracket mounting: all manifolds are provided with bracket mounting holes. This provides the user with the opportunity to bracket mount the instrument allowing installation to take place without the instrument and to give full mounting support in the event of Instrument removal.

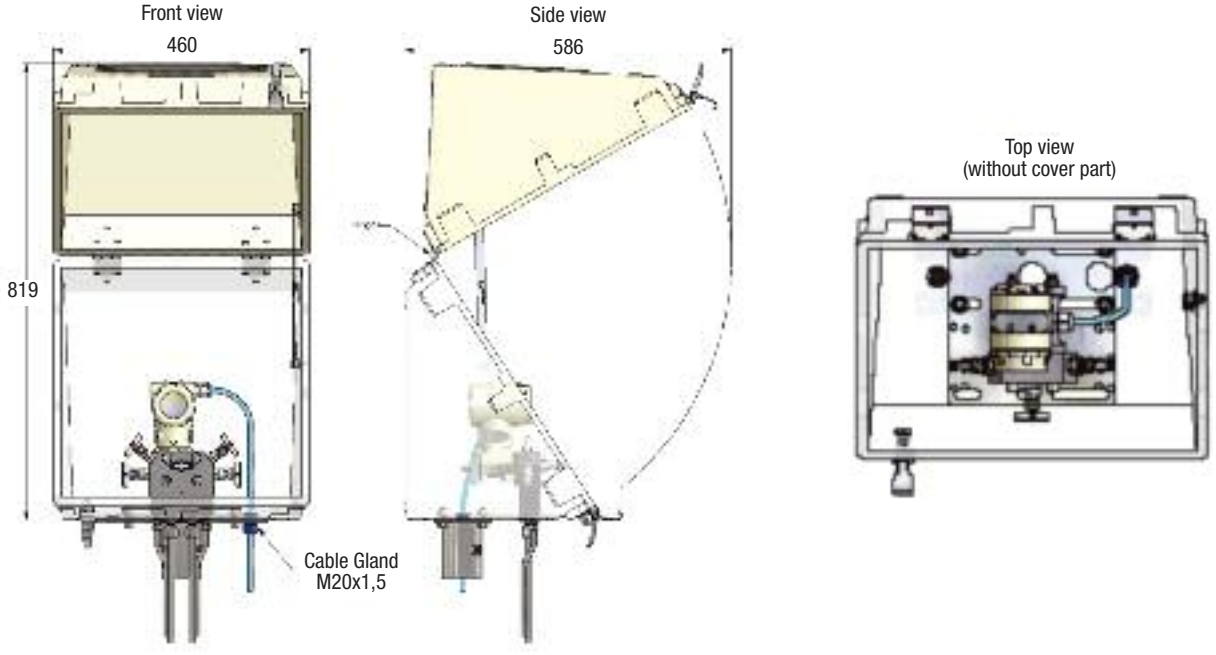
Static Gauge and Absolute systems





Differential Pressure Systems

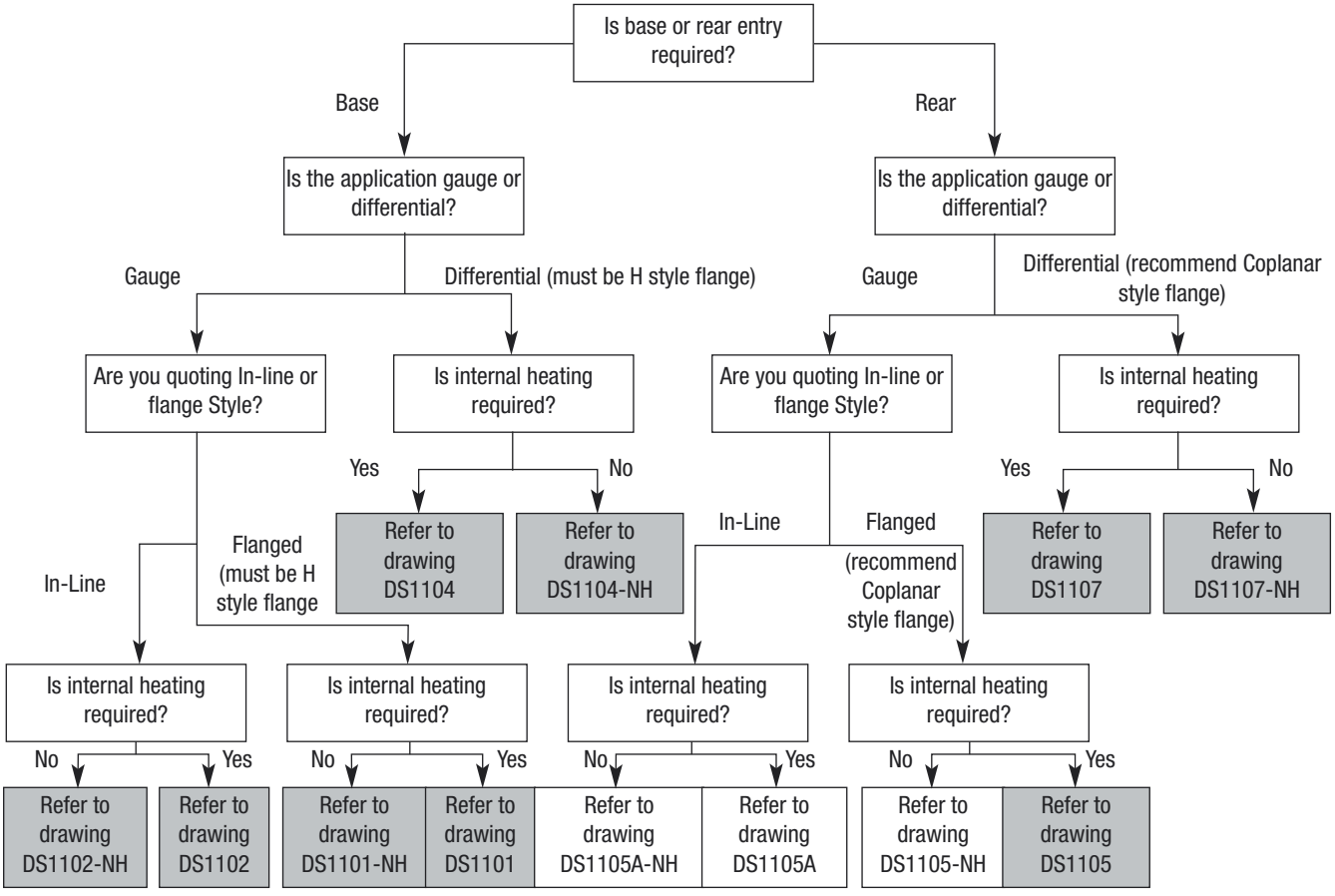




Specials

Parkers full range of Enclosures are complimented with a range of specials that can be requested in addition to the standard offering such features as multiple installations, different box design, customer specified tube diameters, exotic materials, customised heater design (up to 160°C electrical and steam), customised temperature controllers and tube bundles. For any of these options please contact your local Parker Instrumentation sales office or distributor.

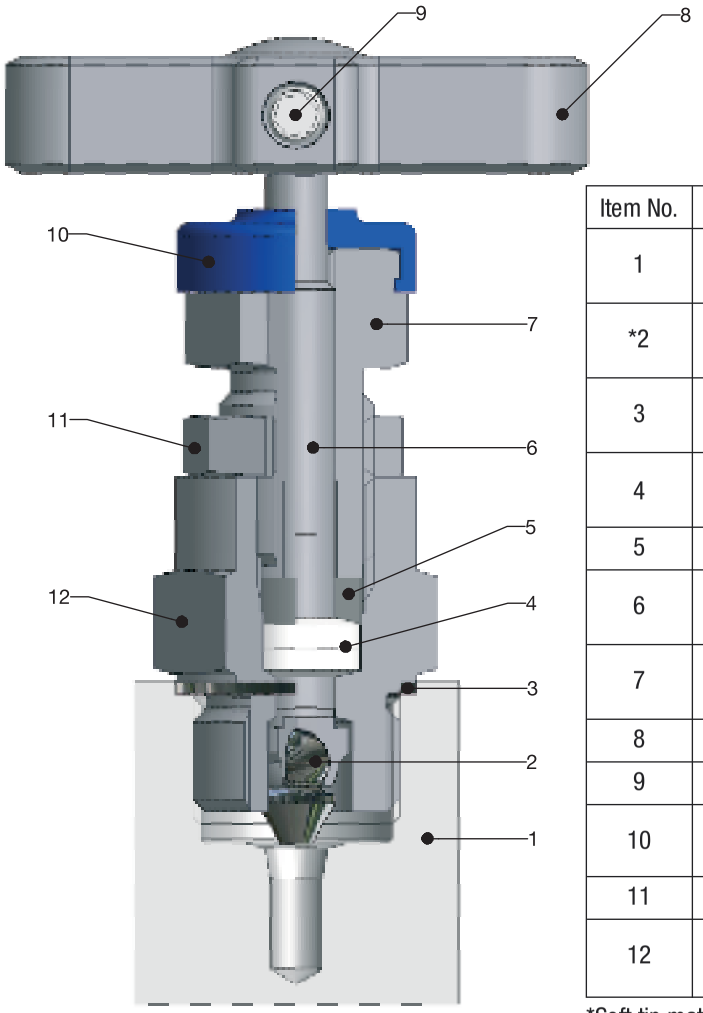
Selection Guide



Material specification data sheet

Bul 4190 MS
June 2002

Maximum working pressure 6000psig (414 barg)
High pressure range 10,000psig (689 barg)
P.T.F.E. Packing: 260°C (500°F) Max.
Graphoil packing: 538°C (1000°F) Max.



		Material							
Item No.	Description	St.St.	Monel	Duplex	Hastelloy	Titanium	6Mo	Incoloy	Inconel
1	Body	316 St.St. ASTM A479	Monel M400	Duplex UNS 31803	Hastelloy C-276	Titanium GR-2	6Mo	Incoloy 825	Inconel 625
*2	Tip	17-4PH St.St.	Monel K500	Duplex UNS S.32750/32760	Hastelloy B2	Titanium GR-5	Duplex UNS S.32750/32760	Inconel 625	Inconel 718
3	Joint Seal	316 St.St. ASTM A479	Monel M400	Duplex UNS 31803	Hastelloy C-276	Titanium GR-2	6Mo	Incoloy 825	Inconel 625
4	Packing	P.T.F.E. / Graphoil	P.T.F.E. / Graphoil	P.T.F.E. / Graphoil	P.T.F.E. / Graphoil	P.T.F.E. / Graphoil	P.T.F.E. / Graphoil	P.T.F.E. / Graphoil	P.T.F.E. / Graphoil
5	Thrust Bush	316 St.St.	316 St.St.	316 St.St.	316 St.St.	316 St.St.	316 St.St.	316 St.St.	316 St.St.
6	Stem	316 St.St. ASTM A479	Monel M400	Duplex UNS 31803	Hastelloy C-276	Titanium GR-2	6Mo	Incoloy 825	Inconel 625
7	Gland Adjuster	316 St.St. ASTM A479	316 St.St. ASTM A479	316 St.St. ASTM A479	316 St.St. ASTM A479	316 St.St. ASTM A479	316 St.St. ASTM A479	316 St.St. ASTM A479	316 St.St. ASTM A479
8	Handle	316 St.St.	316 St.St.	316 St.St.	316 St.St.	316 St.St.	316 St.St.	316 St.St.	316 St.St.
9	Grub Screw	A4-80 St.St.	A4-80 St.St.	A4-80 St.St.	A4-80 St.St.	A4-80 St.St.	A4-80 St.St.	A4-80 St.St.	A4-80 St.St.
10	Dust Cap	LDPE - Coloured	LDPE - Coloured	LDPE - Coloured	LDPE - Coloured	LDPE - Coloured	LDPE - Coloured	LDPE - Coloured	LDPE - Coloured
11	Lock Nut	316 St.St.	316 St.St.	316 St.St.	316 St.St.	316 St.St.	316 St.St.	316 St.St.	316 St.St.
12	Bonnet	316 St.St. ASTM A479	Monel M400	Duplex UNS 31803	Hastelloy C-276	Titanium GR-2	6Mo	Incoloy 825	Inconel 625

*Soft tip materials PEEK and PCTFE available for gaseous applications

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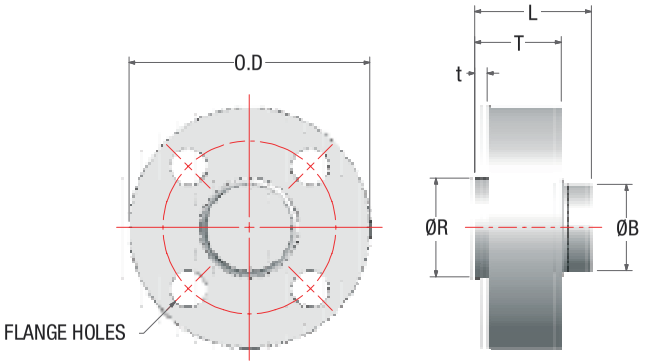
Technical Section

Monoflange - Table of dimensons

Size	Class	O.D. +0.6 / -0.0	T +0.5 / -0.0	No. of Holes	Hole Dia. +0.5 / -0.0	P.C.D. +0.3 / -0.3	t +0.3 / -0.3	R +0.3 / -0.3	L +0.5 / -0.0	B +0.5 / -0.0
1/2" N.B.	150 LB	88.90 (3.50")	39.69 (1.56")	4	15.75 (0.62")	60.45 (2.38")	1.59 (0.06")	35.05 (1.38")	60.00 (2.36")	28.58 (1.13")
3/4" N.B.	150 LB	98.55 (3.88")	39.69 (1.56")	4	15.75 (0.62")	69.85 (2.75")	1.59 (0.06")	42.93 (1.69")	60.00 (2.36")	31.75 (1.25")
1" N.B.	150 LB	107.95 (4.25")	39.69 (1.56")	4	15.75 (0.62")	79.25 (3.12")	1.59 (0.06")	50.80 (2.00")	60.00 (2.36")	31.75 (1.25")
1 1/2" N.B.	150 LB	127.00 (5.00")	39.69 (1.56")	4	15.75 (0.62")	98.55 (3.88")	1.59 (0.06")	73.15 (2.88")	67.00 (2.64")	50.80 (2.00")
2" N.B.	150 LB	152.40 (6.00")	39.69 (1.56")	4	19.05 (0.75")	120.65 (4.75")	1.59 (0.06")	91.95 (3.62")	60.00 (2.36")	50.80 (2.00")
1/2" N.B.	300 LB	95.25 (3.75")	39.69 (1.56")	4	15.75 (0.62")	66.55 (2.62")	1.59 (0.06")	35.05 (1.38")	60.00 (2.36")	31.75 (1.25")
3/4" N.B.	300 LB	117.35 (4.62")	39.69 (1.56")	4	19.05 (0.75")	82.55 (3.25")	1.59 (0.06")	42.93 (1.69")	60.00 (2.36")	38.10 (1.50")
1" N.B.	300 LB	123.95 (4.88")	39.69 (1.56")	4	19.05 (0.75")	88.90 (3.50")	1.59 (0.06")	50.80 (2.00")	60.00 (2.36")	38.10 (1.50")
1 1/2" N.B.	300 LB	155.45 (6.12")	39.69 (1.56")	4	22.35 (0.88")	114.30 (4.50")	1.59 (0.06")	73.15 (2.88")	67.00 (2.64")	50.80 (2.00")
2" N.B.	300 LB	165.10 (6.50")	39.69 (1.56")	8	19.05 (0.75")	127.00 (5.00")	1.59 (0.06")	91.95 (3.62")	60.00 (2.36")	50.80 (2.00")
1/2" N.B.	600 LB	95.25 (3.75")	44.45 (1.75")	4	15.75 (0.62")	66.55 (2.62")	6.35 (0.25")	35.05 (1.38")	60.00 (2.36")	31.75 (1.25")
3/4" N.B.	600 LB	117.35 (4.62")	44.45 (1.75")	4	19.05 (0.75")	82.55 (3.25")	6.35 (0.25")	42.93 (1.69")	60.00 (2.36")	38.10 (1.50")
1" N.B.	600 LB	123.95 (4.88")	44.45 (1.75")	4	19.05 (0.75")	88.90 (3.50")	6.35 (0.25")	50.80 (2.00")	60.00 (2.36")	38.10 (1.50")
1 1/2" N.B.	600 LB	155.45 (6.12")	44.45 (1.75")	4	22.35 (0.88")	114.30 (4.50")	6.35 (0.25")	73.15 (2.88")	67.00 (2.64")	50.80 (2.00")
2" N.B.	600 LB	165.10 (6.50")	47.63 (1.88")	8	19.05 (0.75")	127.00 (5.00")	6.35 (0.25")	91.95 (3.62")	60.00 (2.36")	50.80 (2.00")
1/2" N.B.	900/1500 LB	120.65 (4.75")	44.45 (1.75")	4	22.35 (0.88")	82.55 (3.25")	6.35 (0.25")	35.05 (1.38")	60.00 (2.36")	31.75 (1.25")
3/4" N.B.	900/1500 LB	130.05 (5.12")	47.63 (1.88")	4	22.35 (0.88")	88.90 (3.50")	6.35 (0.25")	42.93 (1.69")	60.00 (2.36")	38.10 (1.50")
1" N.B.	900/1500 LB	149.35 (5.88")	50.80 (2.00")	4	25.40 (1.00")	101.60 (4.00")	6.35 (0.25")	50.80 (2.00")	67.00 (2.64")	38.10 (1.50")
1 1/2" N.B.	900/1500 LB	177.80 (7.00")	53.98 (2.13")	4	28.45 (1.12")	123.95 (4.88")	6.35 (0.25")	73.15 (2.88")	74.00 (2.91")	38.10 (1.50")
2" N.B.	900/1500 LB	215.90 (8.50")	60.33 (2.38")	8	25.40 (1.00")	165.10 (6.50")	6.35 (0.25")	91.95 (3.62")	67.00 (2.64")	50.80 (2.00")
1/2" N.B.	2500 LB	133.35 (5.25")	53.98 (2.13")	4	22.35 (0.88")	88.90 (3.50")	6.35 (0.25")	35.05 (1.38")	60.00 (2.36")	31.75 (1.25")
3/4" N.B.	2500 LB	139.70 (5.50")	53.98 (2.13")	4	22.35 (0.88")	95.25 (3.75")	6.35 (0.25")	42.93 (1.69")	60.00 (2.36")	38.10 (1.50")
1" N.B.	2500 LB	158.75 (6.25")	57.15 (2.25")	4	25.40 (1.00")	107.95 (4.25")	6.35 (0.25")	50.80 (2.00")	67.00 (2.64")	38.10 (1.50")
1 1/2" N.B.	2500 LB	203.20 (8.00")	66.68 (2.63")	4	31.75 (1.25")	146.05 (5.75")	6.35 (0.25")	73.15 (2.88")	80.00 (3.15")	50.80 (2.00")
2" N.B.	2500 LB	234.95 (9.25")	73.03 (2.88")	8	28.45 (1.12")	171.45 (6.75")	6.35 (0.25")	91.95 (3.62")	80.00 (3.15")	50.80 (2.00")



Height of installed O.S. & Y: 96.2mm (3.79")
Height of 'H' Series installed Needle Valve: 50.3mm (2.00")
Height of 'H' Series Anti Tamper Valve: 48.8mm (1.92")
All the above in fully open position
Note: t dimension is for raised face joint seal only.

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Instrumentation Process Control

Product Selection Guide

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

Parker

ENGINEERING YOUR SUCCESS.

Instrumentation Directory

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Instrumentation Group of Parker Hannifin

The Instrumentation Group of Parker Hannifin is dedicated to being the global leader in the design, manufacture and distribution of high quality, critical flow and ultra high purity components for the Petrochemical, Chemical Processing, Oil and Gas, Power Generation, Water Analysis, Biopharmaceutical, Semiconductor Manufacturing and Analytical Equipment industries.

With 11 manufacturing plants and over 300 authorized distributors worldwide we can provide local inventory and technical support to our customers anywhere in the world.

Parker Hannifin Corp.

Parker Hannifin is the world's leading diversified manufacturer of motion and control technologies and systems, providing precision-engineered solutions for a wide variety of commercial, mobile, industrial and aerospace markets.

- 263 manufacturing sites around the world
- 8,200 distributors
- 400,000 customers
- 3,200 product lines
- Listed as PH on the NYSE

Premier Customer Service

The Instrumentation Group is driven to provide our customers with premier customer service through on time delivery of quality products and value added services such as the Veriflo Division Express Service Program, custom assemblies and selection safety and installation training.

Engineering Excellence

By remaining focused on our customers we have been able to introduce products that not only solve our customer's business challenges but address specific industry needs and issues.

Using the latest in virtual engineering tools, Parker Instrumentation engineers have reduced the time to develop, test and manufacture our latest product innovations.

To assist our customers with their designs, our 2D and 3D CAD drawings are available online.

New Innovations

The result of innovative processes and techniques that run throughout the Instrumentation Group has been the manufacture of truly innovative product solutions. Recently, we have launched a series of breakthrough products that deliver a huge increase in safety, whilst also dramatically reducing installation and maintenance time. Other developments have included the production of a wide range of products aimed at eliminating fugitive emissions into the environment.

Some recent innovations include:

- CCIMS
- PHASTITE
- Pro-Bloc® (Fe)
- Monoflange (Fe)

Heat Code Traceability

Parker Hannifin's Instrumentation Group offers Heat Code Traceability (HCT) to meet or exceed all applicable specifications to assure our customers that they are working with a high quality product. It acts as an assurance for today and for tomorrow.

These specifications ensure high quality instrumentation components for use in fossil fuel power plants, chemical refineries, general instrumentation and processing plants. Requirements are now emerging in the semiconductor and pharmaceutical industries.

Not only are the materials continuously monitored, but Parker adheres to a formal, documented Quality Assurance Program that controls manufacturing, marking, testing and examination procedures, cleaning and packaging.

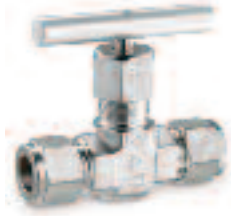
HCT is offered on the following quality stainless steel components:

- CPI™ and A-LOK® Tube Fittings
- UltraSeal™ and VacuSeal™ Fittings
- Ball, Needle and Check Valves
- Instrumentation Pipe Fittings
- Orbital Tube Weld Fittings
- MiniButtweld™ Fittings
- Filters

Together, We Are Innovators

With such a strong global team, including a diverse customer base, we are proud to nurture an innovative environment. Together, we are producing solutions that make us **Faster, Smarter, Safer and Cleaner.** If you would like to find out more about how we can work together to this end, please contact us today.

Needle Valves



V Series (Catalog 4110- V)

- For positive leak tight shut-off and regulation of fluids
- Choice of three stem types
- Wide variety of size and end connections

SN6 Series (Catalog 4110-SN)

- Provides shut-off and coarse regulation of liquids and gases
- Choice of two stem types
- In-line and angle patterns
- Ideal cylinder valve

VQ Series (Catalog 4110-VQ)

- In-line and angle patterns
- Panel mountable
- Color-coded handles
- Quick actuation for low pressure applications

NP6 Series (Catalog 4110-NP)

- Choice of two non-rotating stem types
- Packing below power threads
- Panel mountable
- Fracture resistant nylon handle

PV Series (Catalog 4110-PV)

- Roddable, straight through flow path
- Gauge port option
- Bonnet lock plate resists accidental bonnet disengagement
- PEEK™, Acetal, PFA seat materials available

U Series (Catalog 4110-U)

- Stem packing below the threads isolates the thread lubricant from the flow
- Severe service applications
- Panel mountable
- Ideal for steam blowdown

HNV Series (Catalog 4190-HV)

- Compact needle valves
- For applications up to 10,000 psi (690 bar)
- Available with integral A-LOK® or CPI™ connections, reducing leak paths and reducing installation costs
- Soft tipped optional seating available for gaseous applications

RPV Series (Catalog 4190-HV)

- For fluids containing high levels of contamination frequently found in oil and gas processing facilities
- Straight through flow pattern, roddable design
- 100% repeatable bubble tight shut off

HGV Series (Catalog 4190-HV)

- Up to 10,000 psig (690 barg)
- Compact single and multi port gauge valves
- Soft tipped optional seating available for gaseous applications

Valve Groups	Model Series	Maximum Operating Pressure	Temperature		Cv	Body Material		Actuation		Seat/Seal Material							End Connections		Catalog
			Min	Max	Max	Stainless Steel	Alloy	Manual	Pneumatic	PTFE	Buna-N Rubber	Ethylene Propylene Rubber	Highly Fluorinated Fluorocarbon	Fluorocarbon Rubber	Silicon Rubber	GRAFOIL®	Min	Max	
Needle Valves	V	6000 psi 414 bar	-65 F -54 C	450 F 232 C	1.30	x	x	x		x	x	x		x			1/8 in 3mm	3/4 in 12	4110-V
	SN6	6000 psi 414 bar	-65 F -54 C	450 F 232 C	0.30	x		x		x						x	1/4 in	1/4 in	4110-SN
	VQ	300 psi 21 bar	-20 F -29 C	200 F 93 C	0.80	x		x	x	x	x	x	x	x			1/8 in 3mm	1/2 in 10mm	4110-VQ
	NP6	6000 psi 414 bar	-70 F -57 C	700 F 371 C	0.60	x		x		x	x	x	x	x		x	1/4 in 6mm	3/8 in 8mm	4110-NP
	PV	6000 psi 414 bar	-20 F -29 C	400 F 204 C	2.00	x		x			x	x	x	x	x		1/4 in	3/4 in	4110-PV
	U	6000 psi 414 bar	-65 F -54 C	1200 F 649 C	2.70	x		x		x					x		1/8 in 6mm	1 in 25mm	4110-U
	MPN	20000 psi 1379 bar	-65 F -54 C	800 F 427 C		x		x	x	x					x		1/4 in	1 in	4234
	MPGV	30000 psi 2068 bar	-10 F -23C	400 F 204 C		x		x			x	x	x	x			9/16 in	9/16 in	4234
	HNV	10000 psi 690 bar	-65 F -54 C	1000 F 538 C	0.35	x	x	x		x						x	1/4 in 6mm	1/2 in 12mm	4190-HV
	HRPV	10000 psi 690 bar	-65 F -54 C	1000 F 538 C	1.80	x	x	x		x						x	1/4 in 6mm	1/2 in 12mm	4190-HV
	HGV	10000 psi 690 bar	-65 F -54 C	1000 F 538 C	0.35	x	x	x		x						x	1/4 in 6mm	1/2 in 12mm	4190-HV
	HVG	6000 psi 414 bar	-65 F -54 C	1000 F 538 C	0.35	x	x	x		x						x	1/4 in 6mm	1/2 in 12mm	4190-HV
	HYNV	10000 psi 690 bar	-65 F -54 C	1000 F 538 C	0.35	x				x						x	1/4 in 6mm	1/2 in 12mm	4190-HV

Manifold Valves

CCIMS® (Catalog 4190-CCIMS)

- Close coupled solution for flow measurement applications
- Reductions in installation time of up to 75%
- Reductions in connections and leak paths of up to 85%
- Features phastfit® for rapid transmitter removal and connection

Monoflange (Catalog 4190-FP)

- Compact double block and bleed valves, featuring needle valves
- Reducing installations cost while improving safety through a reduction in leak paths
- Configurable options include single block, double block and double block and bleed
- Available in a range of materials including carbon steel, stainless steel, duplex, alloy 625

Pro-Bloc® (Catalog 4190-FP)

- Compact double block and bleed valves, featuring needle or ball valve options
- Reducing installations cost while improving safety through a reduction in leak paths
- Configurable options include single block, double block and double block and bleed
- Available in a range of materials including carbon steel, stainless steel, duplex, alloy 625
- Manufactured from forgings to give high tensile strength through improved grain structure.

Monoflange(Fe) & Pro-Bloc®(Fe) (Catalog 4190-FP)

- ISO 15848 approved
- Highest possible 'A' class leakage rates achieved
- All threads sealed from the media
- All ball valves are bi-directional
- Firesafe design available

H-Series (Catalog 4190-PM/4190-FM)

- A comprehensive range of 2, 3 and 5 valve manifolds for flow applications
- Available with integral PTFree® connections, reducing leakpaths and installation cost
- Available in stainless steel and many exotic alloys, including Hastalloy, 6Mo, MONEL®, and alloy 625

Hi-Pro Series (Catalog 4190-HBM)

- A complete range of ball valves 10mm ball and needle valve manifolds
- Including block and bleed, and double block and bleed manifold options
- Working pressures up to 10,000 psi (690 bar)
- Available with integral A-LOK® or CPI™ connections, reducing leak paths and installation costs

Valve Groups	Model Series	Product Description	Maximum Operating Pressure	Temperature		Cv	Body Material			Packing		Seat/Tip				End Connection Size Range		Catalog
				Min	Max		Carbon Steel	Stainless Steel	Alloy	GRAFOIL®	PTFE	316SS	PEEK™	PCTFE	PTFE	Min	Max	
Manifolds	MF	double block and bleed	ANSI 2500 API 10,000	-65 F -54 C	1000 F 538 C		x	x	x	x	x	x	x	x		1/4 in 6mm	1/2 in 12mm	4190-FP
	PB	double block and bleed	ANSI 2500 API 10,000	-65 F -54 C	450 F 232 C		x	x	x	x	x		x		x	1/4 in 6mm	1 in 25mm	4190-FP
	H2	2 valve manifolds - needle style	10,000 psi 689 bar	-65 F -54 C	1000 F 538 C	0.35		x	x	x	x	x	x	x		1/4 in 6mm	1/2 in 12mm	4190-PM
	H3	3 valve manifolds - needle style	10,000 psi 689 bar	-65 F -54 C	1000 F 538 C	1.80		x	x	x	x	x	x	x		1/4 in 6mm	1/2 in 12mm	4190-FM
	H5	5 valve manifolds - needle style	10,000 psi 689 bar	-65 F -54 C	1000 F 538 C	0.35		x	x	x	x	x	x	x		1/4 in 6mm	1/2 in 12mm	4190-FM
	HBM	2 & 3 valve manifolds ball style	6000 psi 414 bar	-65 F -54 C	450 F 232 C			x	x	x	x		x		x	1/4 in 6mm	1/2 in 12mm	4190-HBM

Valves

Ball/Plug Valves

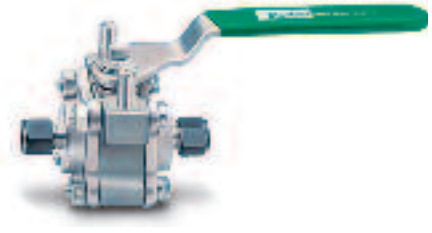
Parker ball and plug valves, with excellent temperature and pressure characteristics, are well established for power, process and instrumentation applications as on/off/diverter or selector valves. Options include lockout devices and round, stainless steel or T-bar handles. Cleaning options include O_2, high purity and grade A. Available with CPI™, A-LOK®, male and female NPT, UltraSeal™ and VacuSeal™ end connections.

MB Series (Catalog 4121-MB)

- One piece compact barstock design
- Center off position for 3-way
- 2-way, inline, angle; 3-way, 4-way and 5-way
- Patented seat design
- Standard drop-in replacement

B Series (Catalog 4121-B)

- 2-way, 3-way diverting or spring loaded 3-way selector designs
- Wide temperature application range -65°F (18°C) to +450°F (232°C)
- Rated for up to 6000 psi (413.7 bar)
- Widest variety of seats, seals and port connections
- Connections include CPI™, A-LOK®, male and female NPT, UltraSeal™ and VacuSeal™



SWB Series (Catalog 4125-SWB)

- Zero clearance body allows repairs in field
- Spring loaded seats and stem seals
- Fully enclosed body bolts
- ISO-type actuator mounting design
- Available up to 1" full flow design

HB Series (Catalog 4121-HB)

- Compact FNPT version for tight work areas
- Full operating pressure in any port
- PEEK trunnion bearings provide high cycle life
- 10,000 psi (689 bar) rating with PEEK™ seats
- Excellent for CNG

MPB Series Ball Valve (Catalog 4234)

- 2-way and 3-way ball valve for severe service applications
- Designed for 1/4 and 1/2 turn media shutoff or switching applications

PR Series (Catalog 4126-PR)

- Low operating torque
- Optional locking device, downstream vent and metal tee handles
- Typically used in laboratories
- Most compact 90° actuated valve

Pneumatic/Electric Actuators (Catalog 4123)

- 60 Series pneumatic actuators provide 90° and 180° rotation in both double acting and spring return models
- 70 and 80 Series electric actuators provide 90° and 180° actuation for our B, MB, HB, SWB series ball valves.

HBV Series (Catalog 4190-HV)

- Suitable for the most demanding applications in the oil, gas and process control industries
- Integral compression ends available, eliminating taper threads and thread sealants
- True two piece design reduces body leakage paths
- Complies with ANSI/ASME B16.34 requirements where applicable

Valve Groups	Model Series	Product Description	Maximum Operating Pressure	Temperature		Cv	Body Material			Actuation			Seat/Seal Material									End Connection Size Range		Catalog
				Min	Max	Max	Brass	Stainless Steel	Alloy	Manual	Pneumatic	Electric	PCTFE	Buna-N Rubber	Ethylene Propylene Rubber	Highly Fluorinated Fluorocarbon	Fluorocarbon Rubber	PFA	GRAFOIL®	PEEK	PTFE	Min	Max	
Ball/Plug Valves	MB	Mini Barstock Ball Valve	3000 psi 207 bar	-65 F -54 C	300 F 149 C	11.00	x	x		x	x	x						x				1/16 in 3mm	3/4 in 12mm	4121-MB
	B	Ball Valve	6000 psi 414 bar	-65 F -54 C	400 F 204 C	6.40	x	x	x	x	x	x	x	x	x	x	x			x	x	1/16 in 3mm	3/4 in 12mm	4121-B
	SWB	Swing Out Ball Valve	2500 psi 172 bar	-65 F -54 C	600 F 316 C	35.00		x		x	x	x		x	x		x		x	x	x	1/4 in n/a mm	1 in n/a mm	4125-SWB
	HB	Ball Valve	10000 psi 690 bar	-65 F -54 C	400 F 204 C	1.00		x		x	x	x	x	x	x		x			x		1/4 in 6mm	1/2 in 12mm	4121-HB
	MPB	Med. Pressure Ball Valve	20000 psi 1379 bar	-10 F -23C	400 F 204 C	8.80		x		x	x	x		x	x	x	x			x		1/8 in n/a mm	1 in n/a mm	4234
	PR	Plug Valve	3000 psi 207 bar	-10 F -23C	400 F 204 C	3.20	x	x						x	x	x	x					1/8 in 3mm	1/2 in 12mm	4126-PR
	HBV	Ball Valve	6000 psi 414 bar	-65 F -54 C	450 F 232 C			x	x	x		x								x	x	1/8 in 6mm	1 in 25mm	4190-HBV

Check Valves

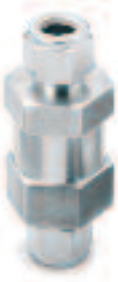
Parker check valves are designed for uni-directional flow control of fluids and gases in industries such as chemical processing, oil and gas production and transmission, pharmaceutical, pulp and paper, power and utilities.

C Series (Catalog 4130-C)

- Resilient, custom molded, seat design
- Back stopped poppet to minimize spring stress
- Cracking Pressures: 1/3, 1, 5, 10, 25, 50, 75 and 100 psi (.023, .069, .345, .69, 1.72, 3.45, 5.17, 6.9 bar)
- Port connections include male and female NPT, CPI™, A-LOK®, UltraSeal™, VacuSeal™, BSP, SAE and Seal-Lok®

CO Series (Catalog 4130-CO)

- Suitable for applications requiring high integrity leak rates and re-sealing capabilities
- Seal integrity to 4 x 10^{-9} std. atm-cc/sec
- Back stopped poppet to minimize spring stress
- Cracking Pressures: 1/3, 1, 5, 10, 25, 50, 75 and 100 psi (.023, .069, .345, .69, 1.72, 3.45, 5.17, 6.9 bar)
- Available with highly fluorinated fluorocarbon rubber
- Only check valve with published helium leak rate



CB Series (Catalog 4130-CB)

- Reduces maintenance while improving performance requirements on dual fuel turbines
- Cracking Pressures: 1, 5, 10, 25, 50, 75, 100 and 120 psi (.023, .069, .345, .69, 1.72, 3.45, 5.17, 6.9, 8.27 bar)
- Rugged ball design for demanding applications
- For high temperatures with highly viscous media

MPC Series (Catalog 4234)

- Variety of elastomeric poppet seals
- 5 psi (.345 bar) cracking pressure
- MPI™, cone & thread and female NPT connections available
- For pressures up to 20,000 psi (1379 bar)

MPCB Series (Catalog 4234)

- Metal to metal seat for use in applications that cannot accept fluorocarbon rubber
- 5 psi (.345 bar) cracking pressure
- MPI™, cone & thread and female NPT connections available
- For pressures up to 20,000 psi (1379 bar)

LC Series (Bulletin 4130-LC)

- For extreme temperature applications
- The gravity assisted poppet uses reverse flow to achieve a seal to within 99.9% of forward flow

Valve Groups	Model Series	Maximum Operating Pressure	Temperature		Cv	Cracking Pressure	Body Material		Seal Material								End Connections		Catalog
			Min	Max	Max	Max	Brass	Stainless Steel	Parkerfill/ Parkercarbon	Buna-N Rubber	Ethylene Propylene Rubber	Highly Fluorinated Fluorocarbon	Fluorocarbon Rubber	Neoprene Rubber	Metal	PTFE	Min	Max	
Check Valves	C	6000 psi 414 bar	-65 F -54 C	400 F 204 C	6.70	100 psi 6.9 bar	x	x		x	x	x	x	x		x	1/8 in 3 mm	1 in 25 mm	4130-C
	CO	6000 psi 414 bar	-15 F -26 C	400 F 204 C	2.70	100 psi 6.9 bar		x		x	x	x	x				1/4 in 6mm	1/2 in 12mm	4130-CO
	CB	3000 psi 207 bar	-65 F -54 C	450 F 232 C	6.00	120 psi 8.27 bar		x	x								3/8 in	3/4 in	4130-CB
	MPC	20000 psi 1379 bar	-10 F -23C	400 F 204 C		5 psi .345 bar		x		x	x	x	x				1/4 in	1 in	4234
	MPCB	20000 psi 1379 bar	-100 F -73 C	600 F 316 C		5 psi .345 bar		x							x		1/4 in	1 in	4234
	LC	6000 psi 414 bar	-100 F -73 C	900 F 482 C	2.30			x							x		1/8 in	1/2 in	4130-LC

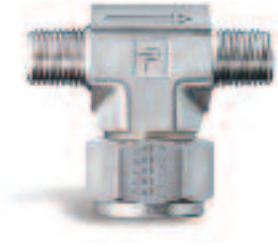
Valves

Filters

For protection of instrumentation systems from undesirable materials such as dirt, chips, scale and other foreign particles. Options include Oxygen and special cleaning, bypass and integral compression ported bypass.

F Series (Catalog 4130-F)

- Replaceable sintered 316 stainless steel filter element
- Optional 250 and 450 micron wire cloth filter elements



FT Series (Catalog 4130-FT)

- Filter elements are easily replaced without disconnecting the tube lines
- Fast Loop bypass option enables a continuous self cleaning flow
- Replaceable sintered 316 stainless steel filter element
- Optional 250 and 450 micron wire cloth filter elements

MPF Series (Catalog 4234)

- High pressure applications up to 20,000 psi (1379 bar)
- Sintered 316 stainless steel filter disc
- Inline filters help protect valuable equipment in the process system
- MPI™, cone & thread and female NPT connections available

Valve Groups	Model Series	Product Description	Maximum Operating Pressure	Temperature		Cv	Micron Range	Body Material		Seal Material							End Connections		Catalog
				Min	Max	Max		Brass	Stainless Steel	Fluorocarbon Rubber	Buna-N Rubber	Ethylene Propylene Rubber	Highly Fluorinated Fluorocarbon	Neoprene Rubber	PTFE	Silver Plated Nickel Alloy	Min	Max	
Filters	F	Inline Filter	6000 psi 414 bar	-65 F -54 C	400 F 204 C	3.40	.5 to 500	x	x	x	x	x		x	x		1/8 in 3mm	1 in 25mm	4130-F
	FT	Tee Filter	6000 psi 414 bar	-100 F -73 C	900 F 482 C	2.50	.5 to 500	x	x	x	x	x	x	x	x	x	1/8 in 6mm	1/2 in 12mm	4130-FT
	MPF	Medium Pressure Filter	20000 psi 1379 bar	-10 F -23C	400 F 204 C	0.59	.5 to 100		x						x		1/4 in	9/16 in	4234

Relief Valves

RL4 Series (Catalog 4131-RL)

- Handle for field maintenance
- Externally adjustable pressure settings while valve is in operation
- Seven different springs
- Manual override option with positive stem retraction is available for the full working pressure range
- Color coded springs and labels indicate spring cracking range

RH4 Series (Catalog 4131-RH)

- Eight springs
- Manual override option with positive stem retraction is available for pressures up to 1500 psi (103 bar)
- Preset from factory and comes with standard springs

Valve Groups	Model Series	Maximum Operating Pressure	Temperature		Cv	Body Material	Seal Material					End Connections		Catalog
			Min	Max	Max	Stainless Steel	Buna-N Rubber	Ethylene Propylene Rubber	Highly Fluorinated Fluorocarbon	Fluorocarbon Rubber	Neoprene Rubber	Min	Max	
Relief Valves	RL	400 psi 28 bar	-70 F -57C	400 F 204 C	0.8	x	x	x	x	x	x	1/4 in 6mm	1/4 in 8mm	4131-RL
	RH	6000 psi 414 bar	-70 F -57C	400 F 204 C	0.4	x	x	x	x	x	x	1/4 in 6mm	1/4 in 8mm	4131-RH
	MPRA	20999 psi 1448 bar	-10 F -23C	400 F 204 C	0.7	x	x	x	x	x		1/2 in n/a	9/16 in n/a	4234

Bleed and Purge Valves

BV Series (Catalog 4133-BP)

- Recommended for use in bleeding hydraulic systems
- Valve vents line pressure to atmosphere or to containment
- Multi-valve manifolds or gauge/root valves

PG Series (Catalog 4133-BP)

- Vent hole in the cap bleeds, drains or purges system pressure
- Optional PTFE ball requires only finger-tight torque to achieve a leak-tight seal
- Crimped cap ensures safe relief of system pressures

Valve Groups	Model Series	Maximum Operating Pressure	Temperature		Cv	Body Material			End Connections		Catalog
			Min	Max	0.1	Brass	Stainless Steel	Alloy	Min	Max	
Bleed and Purge Valves	BV	10000 psi 690 bar	-65 F -54 C	850 F 454 C	x		x	x	1/4"	1/2"	4131-BP
	PG	4000 psi 276 bar	-65 F -54 C	400 F 204 C		x	x	x	1/8"	1/2"	4131-BP
	MPBV	30000 psi 2068 bar	-10 F -23C	400 F 204 C			x		9/16"	9/16"	4234

Metering Valves

N Series (Catalog 4170-N)

- Panel or in-line mounting
- Angle or in-line patterns
- Valve stem threads not in contact with process fluid

HR Series (Catalog 4170-HR)

- Bubble tight shut-off capability
- High resolution metering valve with limited hysteresis
- Seven optional valve stem tapers

Valve Groups	Model Series	Maximum Operating Pressure	Temperature		Cv	Body Material		Seat Material					End Connections		Catalog
			Min	Max	Max	Brass	Stainless Steel	Buna-N Rubber	Ethylene Propylene Rubber	Highly Fluorinated Fluorocarbon	Fluorocarbon Rubber	Neoprene Rubber	Min	Max	
Metering Valves	NS	2000 psi 138 bar	-50 F -46 C	400 F 204 C	0.040	x	x	x	x	x	x	x	1/16 in 3mm	1/4 in 6mm	4170-N
	NM	1000 psi 69 bar	-50 F -46 C	400 F 204 C	0.100	x	x	x	x	x	x	x	1/8 in 3mm	1/4 in 6mm	4170-N
	NL	1000 psi 69 bar	-50 F -46 C	400 F 204 C	0.200	x	x	x	x	x	x	x	1/8 in 6mm	3/8 in	4170-N
	HR	250 psi 17 bar	-50 F -46 C	400 F 204 C	0.100	x	x	x	x	x	x	x	1/16 in 3mm	1/4 in 6mm	4170-HR

Diaphragm Valves

VERIFLO
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NOVA Series (Catalog 4515)

- General purpose, high cycle, compact valve
- For regulator outlet valve, gas control panels and analyzer sampling system applications
- Handwheel, lever, and indicating handwheel options

NOVAAOP (Catalog 4515)

- General purpose, high cycle, compact valve
- For gas control panels and analyzer sampling system applications
- Normally open and normally closed
- Various actuation pressures available

NV55 (Catalog 4515)

- General purpose, high flow compact valve
- For flowing large volumes of corrosive and non-corrosive fluids

944AOPHPNCSP (Catalog 4515)

- High pressure air operated valve
- Reliable, accurate performance
- Opening function incorporates hydraulics

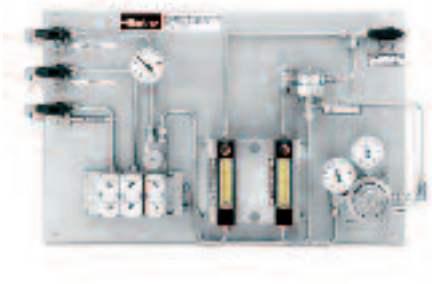
16 Series (Catalog 4515)

- High pressure valve for gas manifold/box systems
- 316L SST machined body design
- Metal-to-metal diaphragm seal
- Packless valve design

Valve Groups	Model Series	Product Description	Maximum Operating Pressure	Temperature		Cv			Body Material			Actuation		Catalog
				Min	Max	0.1	0.3	0.6	Brass	Stainless Steel	Alloy	Manual	Pneumatic	
Diaphragm Valves	NOVA Series	Diaphragm Springless	250 psig 17 barg	-15 F -26 C	150 F 66 C	x			x	x	x	x		4515
	NOVAAOP	Diaphragm Springless	125 psig 9 barg	-15 F -26 C	150 F 66 C	x			x	x	x		x	4515
	NV55	Diaphragm Springless	250 psig 17 barg	-15 F -26 C	150 F 66 C			x		x		x	x	4515
	944AOPHPNCSP	Diaphragm Springless	3500 psig 241 barg	-40 F -40 C	150 F 66 C		x			x			x	4515
	16 Series	Diaphragm Spring	3000 psig 207 barg				x			x		x	x	4515

Analytical Systems

Our chemical/petrochemical process analytical systems provide a sound model for both North American and European markets, adapting with minor modifications to environmental segments, as well as laboratory and pilot plant markets. They also serve as a basis for power and pharmaceutical analytical segments. No other single supplier can offer a more complete, advanced, or adaptable sample analysis system.

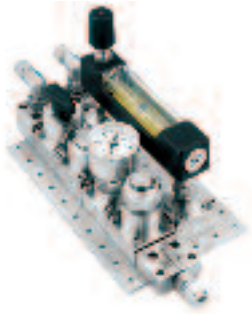


Vent Recovery Panel (Bulletin 4141-VR)

- Pre-engineered compact instrument panel that includes fittings, valves, stream switching valve, regulators, and gauges
- System adjusts for variations in gas supply pressures and flows

Vent Master™ (Catalog 4142-VM)

- Pre-engineered compact instrument panel that includes regulators, gauges, rotometer, an eductor and a separate pressure controller
- Creates a stable pressure within the analyzer shelter vent header system
- Provide analysis accuracy with .06% over a vent header flow of 0-18SLPM



IntraFlow™ (Catalog 4250)

- Modular instrument system
- ISA/ANSI SP 76.00.02 compliant
- Every component is upgradeable to Gen 2 & 3 NeSSI Technologies
- Vacuum to 500 psig (34 barg)
- System design software available

R-max™ (Catalog 4140-R)

- Surface mount technology for stream switching valves
- Low internal volume to reduce system purge time
- Low pressure actuation of valves-40 psig (-2.76)
- Rated from vacuum to 500 psig (34 barg)

ChangeOver System (Catalog 4511)

- Compact turnkey module designed for continuous gas management
- Optional outlet regulator to control application specific outlet pressure
- Aluminum panel is standard
- Audio/visual alarm annunciator available
- Available in 316L stainless steel and brass
- Suitable for oxygen service

Regulators

Pressure Regulators

VERIFLO
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NPR4100 (Catalog 4511)

- Negative pressure regulation
- Internally threadless design
- Convoluted Hastelloy C-22® diaphragm
- For delivery of low pressure gases from liquid sources
- White knob indicates negative pressure

IR4000 Series (Catalog 4511)

- Internally threadless design
- Convoluted Hastelloy C-22® diaphragm
- Integral diaphragm stops prevent oil canning
- Seals available for nitrous oxide and hydrocarbon applications
- Low dead volume
- General purpose for instrument/ analyzer and semiconductor applications

IR5000 Series (Catalog 4511)

- Internally threadless design
- Large convoluted Hastelloy C-22® diaphragm
- Greater sensitivity for precise pressure control
- For analyzer system gas management and instrument calibration

HFR900 (Catalog 4511)

- High flow regulator
- Self-contained replaceable valve seat
- For corrosive and noncorrosive fluid applications

IR6000 Series (Catalog 4511)

- Dual stage regulator
- Internally threadless design
- Convoluted Hastelloy C-22® diaphragm
- Virtually eliminates supply pressure effect
- Provides cylinder gas pressure reduction in refineries, process analytical systems and specialty gases

APR66 (Catalog 4511)

- High pressure piston sensing regulator
- Low actuating torque
- Pressures up to 6000 psig (413.7 barg)

Quantum 959 (Catalog 4511)

- Tied diaphragm design to minimize regulator creep
- Internally threadless design
- Metal to metal diaphragm seal

DM3000 (Catalog 4518)

- Miniature pressure regulator for gas instrumentation applications
- ANSI/ISA SP76.00.02 modular surface mount interface
- No threads in wetted area
- Critically dampened to improve flow stability
- Faster purge times

Regulator Groups	Model Series	Type	Pressure		Cv		Body Material				Connections				Catalog
			Maximum Inlet Pressure	Maximum Outlet Pressure	Min	Max	316L SS	Brass	Hastelloy C-22®	MONEL®	Min FNPT	Max FNPT	Compression	Face Seal or Tube	
Single Stage	NPR4100	Absolute Pressure	250 psig 17 barg	-26 in Hg to 10 psig -1.8 in Hg to .7 barg	0.02	0.15	x	x	x	x	1/8"	3/8"	x		4511
	IR4000	General Purpose	4000 psig 276 barg	500 psig 34 barg	0.02	0.15	x	x	x	x	1/8"	3/8"	x		4511
	IR5000	Sensitive	3500 psig 241 barg	250 psig 17 barg	0.02	0.15	x		x		1/8"	1/2"	x		4511
	HFR900	High Flow	500 psig 34 barg	150 psig 10 barg	0.85	0.85	x	x			1/4"	1/2"	x		4511
	APR66	High Pressure	6000 psig 414 barg	6000 psig 414 barg	0.04	0.04	x	x			1/8"	1/4"			4511
	Quantum 959	Tied Diaphragm	3500 psig 241 barg	150 psig 10 barg	0.04	0.20	x		x		1/4"	1/4"		x	4511
	DM3000	Surface Mount					x								4518

Regulators

Back Pressure Regulators

VERIFLO
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ABP1 (Catalog 4510)

- Reduce contamination and accurately control back pressure
- Internally threadless design
- Convoluted Hastelloy C-22® diaphragm
- Integral diaphragm stop

ABP3 (Catalog 4510)

- Internally threadless design
- Provides sensitive pressure adjustments
- Large convoluted Hastelloy C-22® diaphragm
- Integral diaphragm stop

BPR50 (Catalog 4510)

- For use with corrosive and non-corrosive fluids
- Adjustable from 100 psi (6.7 bar) to 2000 psi (138 bar)
- Piston sensed high pressure back pressure regulator

Regulator Groups	Model Series	Type	Pressure	Cv		Body Material			Connections		Catalog
			Maximum Inlet Pressure	Min	Max	316L SS	Hastelloy C-22®	Monel®	Min FNPT	Max FNPT	
Back Pressure	ABP1	General Purpose	Up to 500 psig 34 barg	0.06	0.30	X	X	X	1/8"	1/4"	4510
	ABP3	Sensitive	Up to 60 psig 4 barg	0.06	0.30	X	X		1/8"	1/4"	4510
	BPR50	High Pressure	Up to 2500 psig 172 barg	0.45	0.45	X			1/4"	1/4"	4510

Vaporizing Regulators

VERIFLO
ISO 9001 Certified
www.parker.com/veriflo

AVR3 (Catalog 4512)

- Steam heat design
- Field serviceable heat transfer element
- Internally threadless design
- Internal liquid volume only .5cc
- Convoluted Hastelloy C-22® diaphragm

AVR4 (Catalog 4512)

- Electrical heat design
- Field serviceable heat transfer element
- CSA, Cenelec, and ATEX certified
- Internally threadless design
- 120v or 240v, 50/60 Hz
- Convoluted Hastelloy C-22® diaphragm

Regulator Groups	Model Series	Type	Pressure		Cv		Body Material		Connections		Catalog
			Maximum Inlet Pressure	Maximum Outlet Pressure	Min	Max	316L SS	MONEL®	Min FNPT	Max FNPT	
Vaporizing Regulators	AVR3	Steam Heated	4000 psig 276 barg	500 psig 34 barg	0.06	0.06	X	X	1/8"	1/8"	4512
	AVR4	Electrically Heated	4000 psig 276 barg	500 psig 34 barg	0.06	0.06	X	X	1/8"	1/8"	4512

Fittings

Parker Instrumentation Tube Fittings are designed as leak-free connections for process, power, and oil and gas instrumentation applications handling liquids, gases and chemicals.

Parker's instrument tube fittings have been engineered and manufactured to consistently provide the highest level of reliability. However, no system's integrity is complete without considering the critical link, tubing.

Proper tube selection and installation are key ingredients in building leak-free reliable tubing systems. Parker instrument fittings are designed to work on like materials therefore, stainless steel fittings should be used only with stainless steel tubing. The practice of mixing materials is strongly discouraged. The only exception is brass fittings with copper tubing.

All working pressures have been calculated using the maximum allowable stress levels in accordance with ANSI B31.3.

CPI™ Fittings (Catalog 4230/4233)

- Three piece simple design to work on all instrumentation grade tubing
- Molybdenum Disulfide coated nuts to prevent galling and provide lubrication
- Single ferrule system treated with Suparcase™ technology to insure sealing
- Superior body seat surface finish to seal gases and liquids
- Single ferrule technology to provide excellent anti-vibration performance
- Excellent in high thermo cycling applications

A-LOK® Fittings (Catalog 4230/4233)

- Industry standard design for all instrumentation grade tubing
- Silver coated threads to reduce galling
- Back ferrule is treated with Suparcase™ technology to provide a strong mechanical grip on the tube
- Industry double ferrule design for system specifications

MPI™ Fittings (Catalog 4234)

- Compression fitting for medium pressure applications up to 15,000 psi (1034 bar)
- Inverted body and nut design for added strength with thick-wall tubing
- Longer thread area for improved performance and resistance to vibration
- Molybdenum Disulfide coated nuts to prevent galling and for higher temperature applications
- Installation and rework time reduced by 50%

NEW INNOVATION

Phastite® (Catalog 4235-PH)

- Option for welded systems
- Simple assembly process provides high integrity connections, first time every time
- Installation time reduced to seconds
- No loose parts, supplied factory pre assembled
- Permanent push fit tube connector with working pressures up to 20,000 psi (1,380 bar)

Instrumentation Pipe Fittings (Catalog 4260)

- Manufactured from 316 stainless steel for superior corrosion resistance
- Available with NPT and ISO thread configurations
- All exposed threads protected to prevent damage
- All pipe threads meet ANSI B1.20.1 requirements

Welded Fittings (Catalog 4280)

- Available in socketweld, buttweld and automatic buttweld connections
- Manufactured to meet ASME Section III, and ANSI B31.1 and B31.7 codes
- Permanent, leak free connection
- For critical applications and high temperatures such as steam

Fitting	Working Pressure	Connection Type	Size Range
CPI™	Instrumentation Tubing*	Single ferrule compression	1/16" - 2" Tube Diameter
A-LOK®	Instrumentation Tubing*	Double ferrule compression	1/16" - 2" Tube Diameter
MPI™	Up to 15,000 psi (1034 bar)	Inverted compression	1/4" - 1" Tube Diameter
Phastite®	Up to 20,000 psi (1,380 bar)	Permanent crimp*	1/4" - 1/2" (6 - 12mm)
Weld-lok™	Instrument Tubing*	Tube Socket Weld	1/8" - 2" Tube Diameter
Pipe	Up to 6000 psi (414 bar)	NPT Pipe Thread	1/16" - 2" Pipe Size
Pipe Adapters	Up to 6000 psi (414 bar)	NPT, BSPT, and BSPP Pipe Threads	1/8" - 1"

*Maximum suggested working pressure as indicated in Instrument Tubing Selection Guide Bulletin 4200-TS.

Hose/Tubing/Quick Couplings

Push-Lok® Hose (Bulletin 4281-B1-US)

- Unique seal ensures reliability and durability for clean-environment use
- No clamps or special tools required for installation
- Inner liner is an extruded, synthetic rubber, resistant to petroleum-base oil, air and water

Quick Couplings (Catalog 4220)

- Spill-free designs virtually eliminate fluid loss upon disconnection and minimize air inclusion during connection
- Minimize air inclusion during connection
- Double shut-off flush mating valves suitable for seal off media in corrosive applications
- Working pressures from 300 psi (21 bar) to 5,000 psi (3445 bar)

Stainless Steel Metal Hose (Catalog 4690-MH)

- For extreme conditions where other hoses fail
- For temperatures up to 1,500°F (816°C)
- Frequently used for the conveyance of liquid nitrogen
- Provides the lowest permeation rate of any hose available

Multitube® Instrument and Heat Trace Tubing

(Catalog 4200-M-1)

- Available in a variety of configurations
- For containment, transmission and control of pneumatic signals, gases and liquids
- Materials include copper, stainless steel, metal alloys and PFA/PTFE

Flow Controllers

PORTER

www.parker.com/porterinstrument

Porter Instrument specializes in the design and manufacture of precision instruments for the measurement and control of low flow gases and liquids.

Gas Mass Flow Controllers (Catalog FM-441)

- Responds to a step change in setpoint in less than one second
- Actual flow is stabilized within 2 seconds, virtually without overshoot
- Models available with flow ranges of 0-5 sccm to 0-1000 slpm N_2
- High pressure models have operating pressures to 3000 psig (207 barg)

Digital Liquid Mass Flow Controllers (Bulletin FM-998)

- Thermal measurement system yields accurate measurement with less than a 5°C increase in fluid temperature
- Exclusive control circuitry, combined with a piezoelectric-actuated control valve, provides fast, stable control at low flow rates

Flowmeters (Catalog FM-1058)

- Variable area flowmeters include 65mm and 150mm scale length tube assemblies
- Available in either forged body or side-plate construction
- Interchangeable flow tube assemblies and valves allow configuration changes without removal from process system

Instrument Pressure Regulators (Catalog FM- 1057)

- All models are direct acting, non-relieving and are cleaned for analytical instrument service
- Designed specifically to provide high resolution control at the low flow rates typical in instrumentation applications
- Available with special port locations, manifold mount configurations, or with the regulator integrated into a larger, multi-functional package

Fluoropolymer Components

www.parker.com/partek (Catalog PSM Partek)

Durable, leak free Partek products are used in a variety of industries, including semiconductor manufacturing, chemical/food/pharmaceutical/ biomedical processing, as well as analytical instrumentation.

Partek fluoropolymer products are recommended for applications that encounter pressures below 120 psig (8.27 barg), and corrosive media at temperatures up to 400°F (204°C). Fluoropolymer valves and fittings offer corrosion protection and are used to ensure media/system purity. The wetted surfaces of all products are of chemically inert corrosion resistant PFA or PTFE. Partek products are available from 1⁄8" up to 1" in size.

Parflare PFA Tube Fittings: Parflare fittings provide low dead volume, which decreases the possibility of particle entrapment and bacterial growth.

Pargrip PFA Tube Fittings: Perfect for applications where ease of assembly is a requirement. Grooved tubing is not required.

Parbond PFA Fusible Pipe Fittings: Parbond fittings welded design eliminates threaded connections and entrapment areas and creates a leak free connection.

PFA Pipe Fittings: Available in a variety of configurations, all with standard NPT threads.

PFA Valves, Gauge Protectors, Thermocouple Fittings and Spray Guns: High cycle life, all fluoropolymer construction, with application tested and proven designs.

PTFE Valves, Regulators, and Flowmeters: Wetted areas are manufactured from fluoropolymer material which offers unmatched corrosion protection and high cycle life.

Sanitary and BioPharmaceutical

Parker Performance Stainless is a complete line of sanitary fittings, valves and related flow components for use in a variety of hygienic processing applications. These products meet the stringent standards required by processors in the food, beverage, dairy, biopharm and health & beauty industries.

Sanitary Fittings (Catalog 4270)

- Buttweld, clamp, bevel seat, I-line, and other fitting styles available
- Unpolished I.D. and unpolished O.D. Both I.D. and O.D. are mill or tumble finished
- A full line of adapters for threaded, flanged and socket weld connections also available
- Sanitary tubing and tubing hangers available to complete any project

Valves and Flow Components (Catalog 4270-VFC)

- Sanitary versions of sample, ball, butterfly and check valves available
- A complete line of pneumatic and electric actuators and control accessories. Choose from traditional rack-and pinion style or stainless steel wash down versions
- Valves are precision manufactured from heat traceable materials and designed to perform under the most exacting conditions
- Available with a variety of elastomers and other customer-specified configurations to ensure a perfect fit within any processing system

Tools and Accessories

Tube Fabrication Equipment (Catalog 4290)

- High quality hand benders, tube cutters, deburr tools and preset tools
- Tube benders from 1/8" to 1" size
- Tube cutter rated for 316 stainless steel tubing
- Par-Lok® wrenches with 360° snap-action for flexibility
- Preset installation kits for assembling tube fittings in close spaces

Sample Cylinders (Catalog 4160-SC)

- 1800 psig (124 barg) DOT rated sample cylinders
- Stainless steel construction
- ANSI/ASME B1.20.1 internal pipe threads

Brass Push-to-Connect Fittings (Bulletin 3531-QRG/USA)

- Prestolok® brass and Prestolok II® composite push-to-connect fittings are designed for use with nylon, polyethylene, polyurethane and soft metal tubing
- Ideal for pneumatic applications
- Equipped with stainless steel grab rings eliminating need for tube supports
- No tools required for installation
- Designed for side-loading