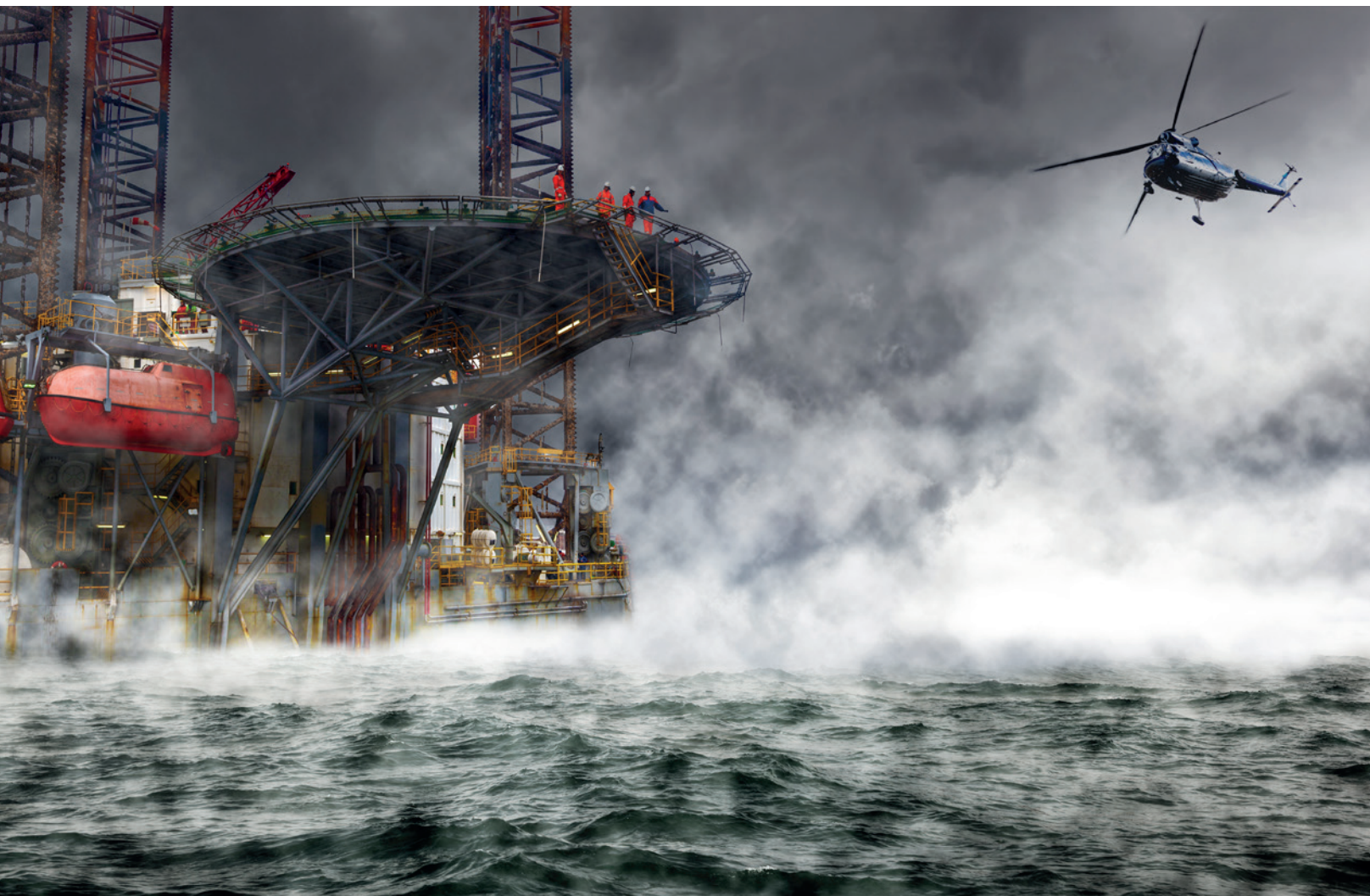
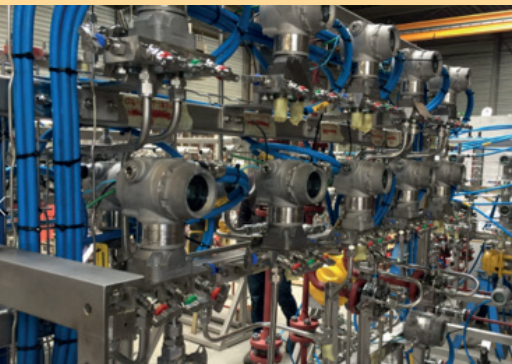


PROCESS INSTRUMENTATION VALVE AND MANIFOLD SOLUTIONS



Introduction

Welcome to the Parker Superior Advantage for your process to instrument hook ups.

Wholly designed and manufactured from decades of development, experience and knowledge from within our ISO 9000 compliant UK facility, the Parker H-series valve and manifold solutions range enjoys world leading recognition for quality, reliability and value.

Selection can be made from a comprehensive range of bonnet assemblies, body configurations and styles with a variety of connections and material options to suit all your applications, optimising your installation and improving operation.

In addition to producing these valves and manifolds with your choice of connections, all the products offered in this catalogue are available (as standard) with the superior advantage of integrated tubing connections. The specification of the world renowned and universally acceptable Parker compression type connections will improve system performance, increase safety, reduce size and weight and simplify installation which ultimately reduces overall user costs.

The top five target markets for Parker Instrumentation are shown below, but Parker manifold solutions are suitable for the widest range of process measurement and control applications in a diverse spectrum of industries.

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

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

Every effort is made to provide sufficient, clear and accurate information to allow the correct selection of product from this catalogue, but ultimately it is the system designer's or user's responsibility to ensure selected product is suitable for the intended application. Should you require further information please do not hesitate to contact your local Parker support.

With thousands of distributor outlets and stores worldwide, and hundreds of Parker personnel and locations, Parker also offers the superior advantage of supply and support in your locale.



Upstream Oil & Gas



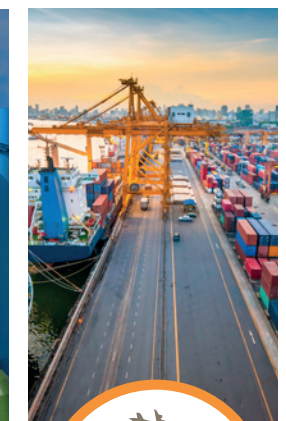
Downstream Oil & Gas



PowerGen



Industrial Gas



Transportation

Parker EHS Vision Statement:

Parker recognizes, and believes, in the importance of safeguarding natural resources and the global environment. We are committed to our employees, our communities, and our customers: their health, safety and understanding of the need for environmental stewardship.

We are committed to the concept of continuous improvement in environmental performance. Accordingly, we are committed to the following principles:

- We will seek to comply with environmental, health, and safety laws worldwide.
- We strive to minimize or eliminate the generation of waste.
- We will monitor compliance with environmental, health and safety regulations.

General Technical Information

Design

All valves and manifolds are designed to meet the pressure and temperature ratings of ANSI B16.34 Class 2500/Class 4500 as applicable, limited only by selection of gland packing materials. Conformity to the recommendations of MSS SP-99 is also assured.

Relevant codes, standards and specifications

Code/Specification	Description
DIN EN61518 / IEC 61518	Mating dimensions between differential pressure (type) measuring instruments
ASME B31.1	Power Piping Specification for Pipeline Valves
ASME B16.34	Valves - Flanged, Threaded and Welding End
ASME B16.5	Pipe Flanges and Flanged Fittings
NACE MR0175 / ISO 15156	Petroleum and Natural Gas Industries - Materials for use in H2S - containing Environments in Oil and Gas Production
API 598	Valves Inspection and Testing
ISO 5208	Industrial Valves - Pressure Testing of Metallic Valves
API 607 / ISO 10497	Fire Test of Soft-Seated Quarter Turn Valves Fire type-testing requirements
MSS SP-25	Standard Marking Systems for Valves, Fittings, Flange and Unions
MSS SP-61	Pressure Testing of Valves
MSS SP-99	Instrument Valves
ISO 15848	Industrial valves— Measurement, test and qualification procedures for fugitive emissions
TA Luft	TA-Luft 2002, Absatz 5.2.6.4 und VDI 2440 (Ausgabe Nov. 2000), Absatz 3.3.1.3

Materials of construction

All materials are purchased from long standing reputable sources, conforming not only to recognised national/international standards, but also to additional requirements imposed by Parker to assure suitability/usability across the widest spectrum of user applications. A range of techniques and processes including PMI (Positive Material Identification) are used to validate all incoming material supplies, segregation, storage and maintenance of product quality.

Body material options

Material Group	Material Designator	UNS No.	Werkst-off No.	Euronorm Equivalent	ASTM Material Grade
Carbon Steel*	A105	UNS 1.0482	19Mn5	K03504	A105
Austenitic Stainless Steel	316/316L Dual certified	UNS S31600	1.4401	X5CrNiMo17-12-2	A479 Gr 316
		UNS S31603	1.4404	X2CrNiMo17-12-2	A479 Gr 316L
Super Austenitic Stainless Steel	6Mo	UNS S31254	1.4547	X1CrNiMoCuN20-18-7	A479/A276
Austenitic-Ferritic Steel (Duplexes)	Duplex 22Cr	UNS S31803	1.4462	X2CrNiMoN22 5 3	A479/A276
		UNS S32750	1.4410	X2CrNiMoN25-7-4	A479/A276
		UNS S32760	1.4501	X2CrNiMoCuWN25-7-4	A479/A276
Copper-Nickel Alloy	Alloy M400	UNS N04400	2.436	NiCu30Fe	ASTM B164
Nickel Alloy	Alloy 825	UNS N08825	2.4858	NiCr21Mo	ASTM B425
Nickel Alloy	Alloy 625	UNS N06625	2.4856	NiCr22Mo9Nb	ASTM B446
Nickel Alloy	Alloy C276	UNS N10276	2.4819	NiMo16Cr15W	ASTM B574
Titanium	TitaniumGrade 2	UNS R50400	3.7075	Ti-II	ASTM B348

All materials will meet (as applicable) the requirements of NACE MR0103/MR0175 and ISO 15156. They are further supplied as per NORSOK M650/M630 as required.
* Carbon Steel may not be universally available, and if offered, may be restricted to body only. Other materials may be considered but any offer may also be restricted to body only. Please consult with your local Parker support.

General information - materials of construction

Item	Material								
	St.St.	CRA-NiCu	Duplex	Super Duplex	CRA-NiMoCr	Titanium	6MO	Alloy 825	Alloy 625
Body	316 St.St. ASTM A479	Alloy M400	Duplex UNS 31803	Super Duplex UNS S32750/32760	Alloy C276	Titanium GR-2	6MO	Alloy 825	Alloy 625
Tip	17-4PH St.St.	Alloy K500	Duplex UNS S.32750/32760	Alloy 625	Alloy B3	Titanium GR-5	DUPLEX UNS S.32750/32760	Alloy 625	Alloy 718
Joint Seal	316 St.St. ASTM A479	Alloy M400	6MO	Alloy 625	Alloy C276	Alloy 825	6MO	Alloy 825	Alloy 625
Packing	P.T.F.E. / Graphite	P.T.F.E. / Graphite	P.T.F.E. / Graphite	P.T.F.E. / Graphite	P.T.F.E. / Graphite	P.T.F.E. / Graphite	P.T.F.E. / Graphite	P.T.F.E. / Graphite	P.T.F.E. / Graphite
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	316 St.St
Stem	316 St.St. ASTM A479	Alloy M400	Duplex UNS 31803	Super Duplex UNS S32750/32760	Alloy C276	Titanium GR-2	6MO	Alloy 825	Alloy 625
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	316 St.St. ASTM A479
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.	316 St.St.
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.	A4-80 St.St.
Dust Cap	LDPE - Coloured	LDPE - Coloured	LDPE - Coloured	LDPE - Coloured	LDPE - Coloured	LDPE - Coloured	LDPE - Coloured	LDPE - Coloured	LDPE - Coloured
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.	316 St.St.
Bonnet	316 St.St. ASTM A479	Alloy M400	Duplex UNS 31803	Super Duplex UNS S32750/32760	Alloy C276	Titanium GR-2	6MO	Alloy 825	Alloy 625

Max. Working Pressure High Pressure Range	6,000 psig (414 barg) 10,000 psig (689 barg)	Notes: <ul style="list-style-type: none">• CRA-NiCu selection down-rates to 5,000 psig (345 barg)• Titanium selection down-rates to 3,950 psig (272 barg)• Other materials and option selections can also affect performance ratings. If in doubt, please consult your local Parker support.
Temperature Range: <ul style="list-style-type: none">• P.T.F.E. Packing• Graphite Packing	-54°C to 260°C (-65°F to 500°F) -54°C to 538°C (-65°F to 1000°F)	

Standard and optional specification details

Standard Specification Details	Optional Specification Details
Seat orifice diameter: 4mm	Seat orifice diameter: up to 6mm in some configurations/styles. See page 14
Flow co-efficient (Cv): 0.35	6mm - Flow co-efficient (Cv): 0.5
Metal to metal valve seat and stem tip	Alternative soft tip and tip materials. See page 14
100% pressure test. All valves and manifolds are subjected to hydrostatic pressure at 1.1x maximum working pressure for the seat and 1.5x maximum working pressure for the shell	Alternative pressure test regimes applied to oxygen cleaned and/or low emission products. See page 17 Your other pressure test requirements can be considered
All products supplied in a clean bur and grease free condition suitable for most liquid and gaseous applications	Cleaned suitable for oxygen service. Not every product option is suitable for oxygen service
Bodies and bonnets are fully traceable to original material source (certification with unique trace code applied to the bar stock material)	Alternative levels of traceability and certification are available. Your other requirements can be considered
Certification according to BS EN 10204 3.1 for material and pressure test is available	Certification according to BS EN 10204 3.2 can be available at additional cost, please contact your local Parker support
All products are permanently marked. Manifolds include a line diagram describing the flow paths	
Complementary to the marking, bonnet assemblies are all functionally colour coded by the dust caps	
Number of turns open to close: 3.5	6mm - Number of turns open to close: 3.3
Gauge valves and manifolds do not include plugs as standard	Various plugs are available to order. See page 61
Direct mount manifolds include applicable flange face seals and high tensile, zinc plated carbon steel mounting bolts	Stainless steel mounting bolts are available. See page 48
All manifolds include mounting holes suitable for brackets or enclosure mounting	A full range of mounting brackets and accessories are available. See pages 40, 48, 60 Mounting for selected hand valves and gauge valves is available

Connections

Introduction

Parker valve and manifold products are available with a wide array of connection types and sizes. These products are manufactured at the highest quality to applicable standards, utilising state of the art machinery and processes backed by decades of expertise.

The following pages detail the standard connections available. Other connection types can be considered. If you can't find the best connection for your application, please contact your local Parker support. Please note – not all connection types and sizes will be universally possible across the entire product range.

Integral tubing connections – A Parker Superior Advantage

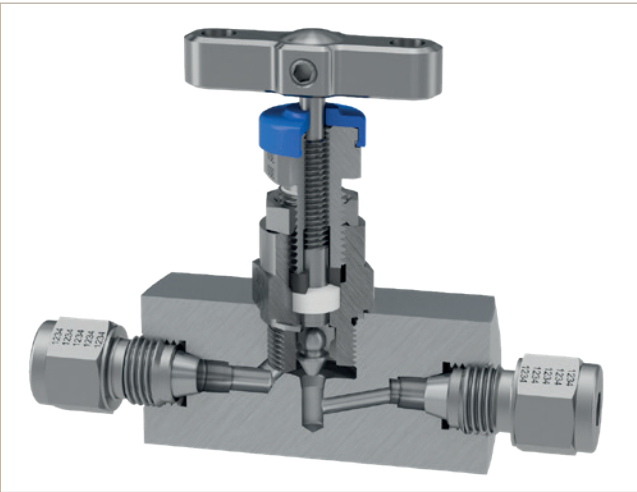
For the ultimate in safety, reliability, speed and ease of installation all valves and manifolds can be specified with solutions offering integral tube connection utilising Parker A-LOK® (Two Ferrule) or CPI™ (Single Ferrule) compression fitting technologies.

For full details of the A-LOK® and CPI™ technologies, please see Catalogue ref. 4190-FMTG.

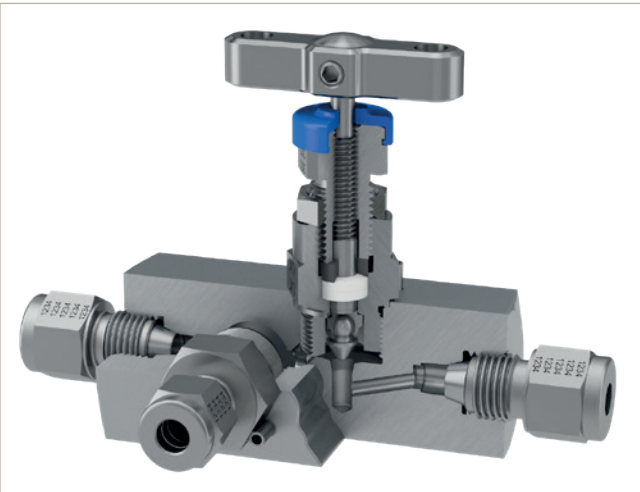
As standard, hand valves and gauge valves are offered with the traditional external thread and nut or inverted (internal thread) design to inlet and outlet connections. Other ports (such as vent) are offered with Parker unique PTFree connect™ solution (see p. 10).



HNV series hand valve with traditional type fully integrated tube fitting connection.



HNV series hand valve with the unique Parker fully integrated inverted tube fitting connection.



HNV series gauge vent hand valve with inverted tube fitting to inlet and outlet connections with Parker PTFree connect™ tube fitting connection to the vent.

As standard, manifolds are offered with PTFree connect™ style solutions to the inlet connections for direct mount types and also to the outlet connections for remote mount types. Other ports (such as vent) are also offered with Parker Instrumentation's unique PTFree connect™ solution. Some manifold types can be offered with the inverted design to inlet and outlet connections as applicable.



5-valve direct mount manifold for differential pressure applications having inlet and vent connections provided through the use of PTFree connect™ tube fittings.



5-valve direct mount manifold having the Parker superior advantage input connections provided through inverted tube fitting connections. Vent can also be specified as threaded or PTFree connect™.

Why the Superior Advantage of an integrated tube connection?

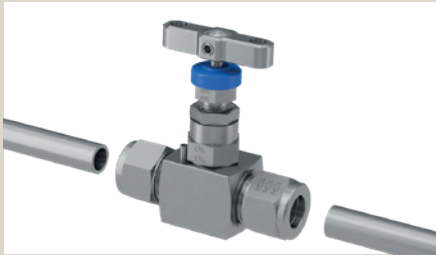
Consider the following simple example with a typical hand valve.

Example shown is the widely utilised normal specification of a valve and individual tube fittings to achieve the installation.



Component	Cost
Needle valve	1x
Fittings (2)	1.1x
Sealant/Tape	0.01x
Labour	0.15x
TOTAL	2.26x

Example shown is the Parker Superior Advantage fully integrated tube fitting connection.



Component	Cost
Needle valve	1.6x
Fittings (2)	0x
Sealant/Tape	0x
Labour	0.05x
TOTAL	1.65x

Integrated tube connections deliver:

- Average 25% saving on installed cost
- Zero rework
- Average 55% saving on installation time
- Significantly improved safety and system integrity

Connections

Tube end dimensional data

Size No.	Inches						†D Tube Ins. Depth
	Tube O.D.	Straight Thread	†C	H Hex	E Dia.		
1	1/16	10-32	.43	5/16	.052		.34
2	1/8	5/16-20	.60	7/16	.093		.50
3	3/16	3/8-20	.64	1/2	.125		.54
4	1/4	7/16-20	.70	9/16	.187		.60
5	5/16	1/2-20	.73	5/8	.250		.64
6	3/8	9/16-20	.76	11/16	.281		.67
8	1/2	3/4-20	.87	7/8	.406		.90
10	5/8	7/8-20	.87	1	.500		.96
12	3/4	1-20	.87	1-1/8	.625		.96
14	7/8	1-1/8-20	.87	1-1/4	.750		1.03
16	1	1-5/16-20	1.05	1-1/2	.875		1.24
20	1-1/4	1-5/8-20	1.52	1-7/8	1.09		1.61
24	1-1/2	1-15/16-20	1.77	2-1/4	1.34		1.96
32	2	2-5/8-20	2.47	2-3/4	1.81		2.65

Size No.	Milimeters						†D Tube Ins. Depth
	Tube O.D.	Straight Thread	†C	H Hex	E Dia.		
2	2mm	5/16-20	15,3	12,0	1,7		12,9
3	3mm	5/16-20	15,3	12,0	2,4		12,9
4	4mm	3/8-20	16,1	12,0	2,4		13,7
6	6mm	7/16-20	17,7	14,0	4,8		15,3
8	8mm	1/2-20	18,6	15,0	6,4		16,2
10	10mm	5/8-20	19,5	18,0	7,9		17,2
12	12mm	3/4-20	22,0	22,0	9,5		22,8
14	14mm	7/8-20	22,0	24,0	11,1		24,4
15	15mm	7/8-20	22,0	24,0	11,9		24,4
16	16mm	7/8-20	22,0	24,0	12,7		24,4
18	18mm	1-20	22,0	27,0	15,1		24,4
20	20mm	1-1/8-20	22,0	30,0	15,9		26,0
22	22mm	1-1/8-20	22,0	30,0	18,3		26,0
25	25mm	1-5/16-20	26,5	35,0	21,8		31,3

- Notes:
- Dimensions C and D are shown in the finger-tight position.
 - † Average value
 - Dimensions for reference only, subject to change.

PTFree connect™



Many users 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 liquid sealant.

The PTFree connect™ connection can be applied to any of the manifolds featured in this catalogue. These will be factory fitted, pin locked and pressure tested.

PTFree connect™ enables angled tube connections to be swivelled to achieve optimum tube alignment. 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 are provided factory fitted, pin locked and tested.

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 connect™ male connectors inlet and outlet should be restricted to 3/8” or 10mm and 1/4” or 6mm o/d for drain/bleed.

Tube size	Dimension (A)	
	6mm	10mm/3/8"
6mm	22.26mm	0.88"
1/4"	24.80mm	0.98"
10mm/3/8"	26.40mm	1.04"
12mm/1/2"	32.10mm	1.26"

Tube size	Dimension (A)	
	6mm	10mm/3/8"
6mm	26.90mm	0.95"
1/4"	24.10mm	0.84"
10mm/3/8"	27.70mm	1.09"
12mm/1/2"	30.30mm	1.20"

Other connections

Tapered Pipe Threads - Male and Female



NPT Tapered Thread
NPT Tapered Thread conforming to ASME B1.20.1 with enhanced manufacturing tolerance for optimal assembly and inspected by three step gauging with Parker enhanced tolerancing to ANPT requirement per ASTM SAE AS71051.



BSP Tapered Thread (Code K)
BSP Tapered Thread conforming to BS21, ISO7/1 (R ½ - Male. Rc ½ Female) with enhanced manufacturing tolerance for best optimal assembly and inspected using gauging system to BS21.

Parallel Pipe Threads - Male and Female

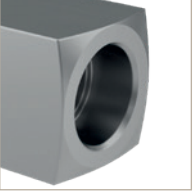


BSP Parallel Thread – Default standard (Code R)
BSP Parallel Thread conforming to BS2779, ISO 228/1+2, DIN 3852. Not available on all product/model types, please consult with your local Parker support.

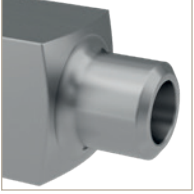


BSP Parallel Gauge connection type – Optional (Code RD)
According to DIN 16284/16288/ DIN EN 837.
Thread conforming to BS2779, ISO228/1+2, DIN 3852. Not available on all product/model types, please consult with your local Parker support.

Weld Connections



Socket Weld (Code SW/MSW)
Female or male Socket Weld connection suitable for pipe conforming to ASME B16.11, EN12760.

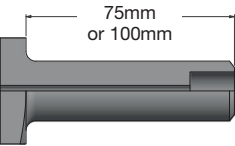


Butt Weld (Code BW)
Butt Weld connection suitable for pipe conforming to ASME B16.25, EN12627.

- Notes:
- Valves with female socket weld connections will be of the same length as per the equivalent NPT pipe threaded variants.
 - Valves with male socket weld connections will, as standard, have a stub length increase of 1/2” (13mm) when compared to the male pipe threaded equivalent variants.

Pipe size	Dimension (A)
4 (1/4" NB)	29
6 (3/8" NB)	29
8 (1/2" NB)	32
12 (3/4" NB)	35

Optional lengths:
If requested, male socket welds or butt welds can be offered with stub length of 75mm or 100mm.



Flange Connections



Process Flange
Flange connections can be considered if conforming to ANSI B16.5 and executed in various ways. Please consult your local Parker support.
Not available on all product types.



Instrument Flange (Code HK)
DIN/IEC 61518 compliant instrument (kidney/oval) flange connections.

Connections

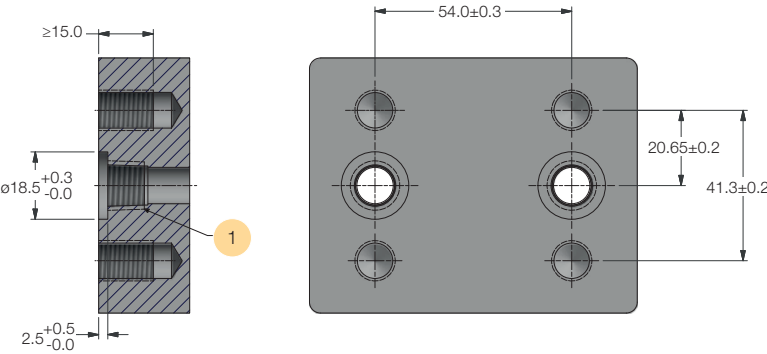
Transmitter flange connections - DIN/IEC 61518

As standard, Parker manifolds have inlet and outlet interface connections in full accordance with DIN/IEC 61518. For the Manifold to Transmitter interface, the type B connection is standard, type A is optionally available.

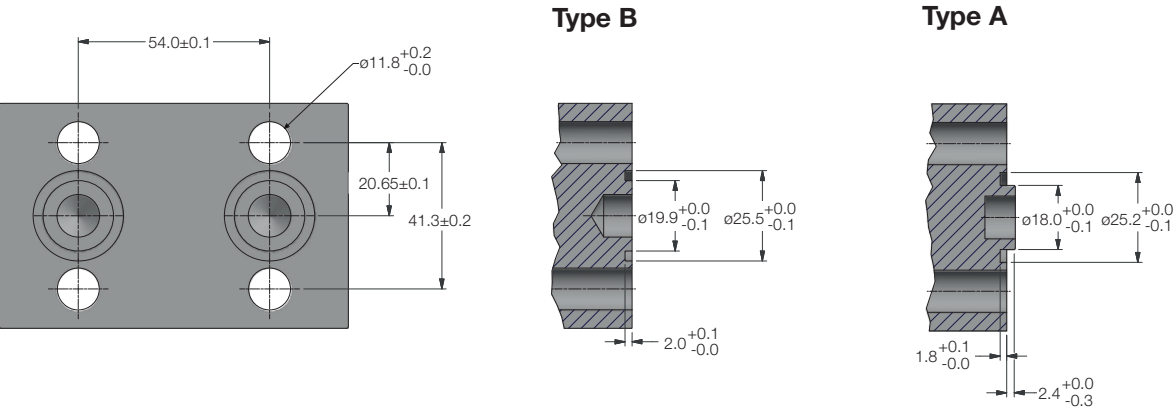
Within DIN/EN 61518 the manifold-transmitter interface is rated for maximum allowable working pressure of 413 bar (6,000 psi) and maximum allowable temperature of 120°C (248°F) for liquids,

gas or vapours. The maximum allowable temperature of 120°C (248°F) considers the requirement that manifolds and transmitters need to be protected against undue heating by hot media. This requirement should be achieved by using adequate hook-ups or by instrument impulse lines with sufficient length. However, Parker confirms that H series manifolds can be used for temperatures up to 538°C (1,000°F) with graphite gland packing and up to 260°C (500°F) with PTFE gland packing.

Process inlet to manifold / transmitter interface DIN EN 61518 / IEC 61518



Parker manifold outlet to transmitter interface DIN EN 61518 / IEC 61518
Type B and Type A



	Type B (Standard)		Type A (Optional)	
Max. Allowable Working Pressure	413 bar (6,000 PSI)		413 bar (6,000 PSI)	
Temperature range	PTFE: -10°C to +80°C (14°F to 176°F)	Graphite: -40°C to +120°C (-40°F to 248°F)	PTFE: -10°C to +80°C (14°F to 176°F)	Graphite: -15°C to +120°C (5°F to 248°F)
Seal ring	Flat Ring 25.4 x 20 x 2.7 Material: PTFE	Flat Ring 25.4 x 19.9 x 2.9 Material: Graphite	Flat Ring 24 x 17.7 x 2.7 Material: PTFE	Flat Ring 25.1 x 18.0 x 2.9 Material: Graphite
Min. Thread Engagement	9mm		9mm	
Spare/Replacement Seal part No.	HIEC001-PTFE/1	HIEC001-GRAPHITE/1	HIEC002-PTFE/1	HIEC002-GRAPHITE/1

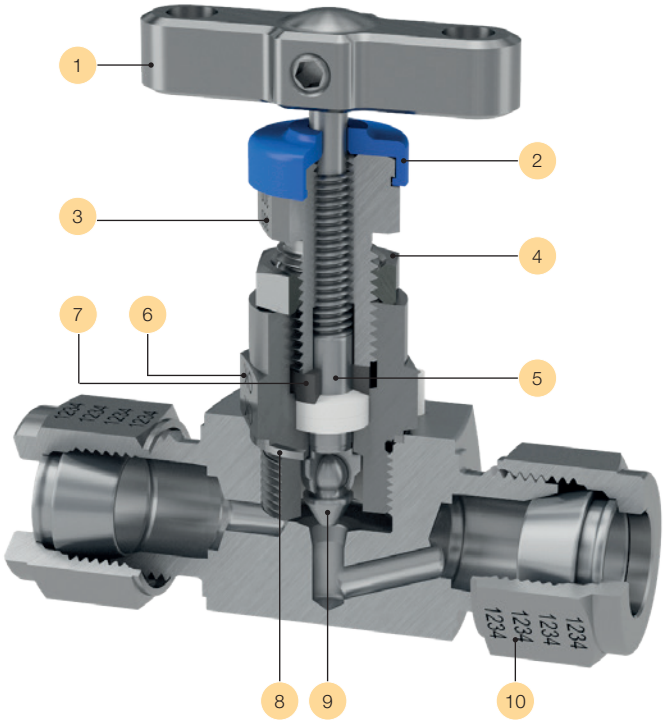
Connection at the manifold acc. to DIN/IEC 61518.

Important Note - there are some exceptions to the IEC 61518 standard:

- Emerson Coplanar™ transmitter design. Parker offers a full range of specifically suitable manifolds for this type. See pages 55-60.
- There is a limited range of other higher working pressure transmitters by some manufacturers, where the interface is proprietary by design (Example: Yokogawa EJX 440A/EJA 440E). Parker is able to provide manifold designs that are complementary to those products. Please consult your local Parker support.

Bonnet Assemblies

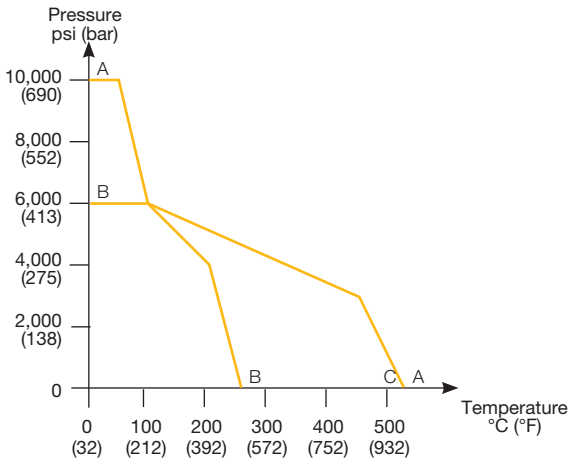
Standard bonnet design
Class 2500 (6,000 PSI) and Class 4500 (10,000 PSI)
For safe, reliable and repeatable performance



Reference	Description
1	Ergonomic 'T' bar style handle with positive retention
2	Dual purpose dust cap provides functional identification
3	Compensatory adjustable gland
4	Secure anti-vibration gland lock nut
5	Anti-blowout low torque back seating stem
6	All metal body bonnet seal
7	Gland thrust bush ensures uniform packing compression and tight sealing
8	Annealed sealing washer guarantees 100% sealing assurance
9	Self-centering, non-rotating stem tip guarantees bubble tight shut off
10	Material traceability for major pressure containing components

- Notes:
- As standard, all metallic parts are 316 Stainless Steel. Optional materials are available, please see page 6.
 - For products specified in optional materials, non-wetted parts will be 316 Stainless Steel as standard.
 - 6,000 PSI bonnet thread is M16; 10,000 PSI bonnet thread is M18.

Pressure vs temperature



Reference	Description
A - A	Graphite packing
A - B	PTFE packing
B - B	6,000 PSI (414 bar) standard PTFE packing
B - C	6,000 PSI (414 bar) standard Graphite packing

- Notes:
- Pressure and temperature ratings shown are maximum possible values. Continuous operation at the maximum ratings will reduce life expectancy.
 - Pressure and temperature ratings can be derated by certain connection types or materials of construction.

Bonnet Assemblies

Larger bore bonnet design
Class 2500 (6,000 PSI) and Class 4500 (10,000 PSI)



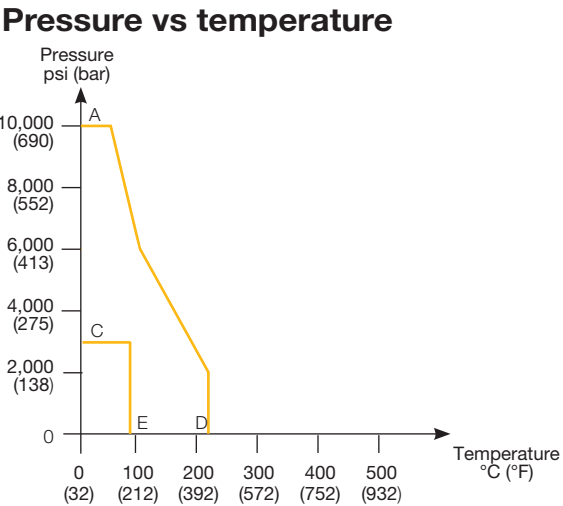
- Features**
- 6mm seat orifice size, allowing the provision of larger 5mm or 6mm flow passages
 - Ideal for applications with dirtier/denser service media and/or those prone to blocking in small bore installations
 - Can enhance other aspects of performance and measurement accuracy
 - Will result in the use of larger body material sizes
 - Not possible for all styles and types of product
 - All other technical information remains unchanged from standard

Soft seat tip bonnet design

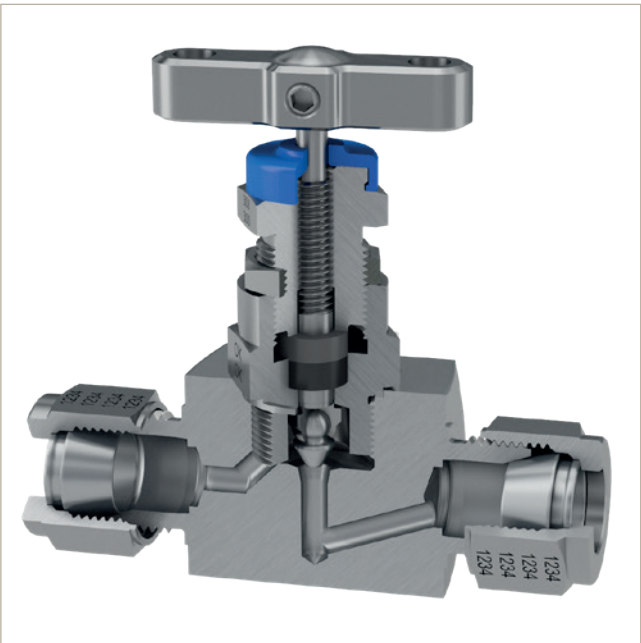


Reference	Description
A - D	PEEK tip
C - E	PCTFE tip - Temperature limit 150°C (302°F) at 3,000 psi (207 bar)

- Features**
- Available in the 4mm orifice size only, this PEEK seat tip option is available for all product styles and types
 - Ideal for clean gaseous or other services where bubble-tight shut-off with minimum effort is required
 - Suitable for temperatures up to 204°C and pressures up to 10,000 psi at reduced temperature, as per graph
 - For larger bore requirements Parker recommends Rising Plug valve

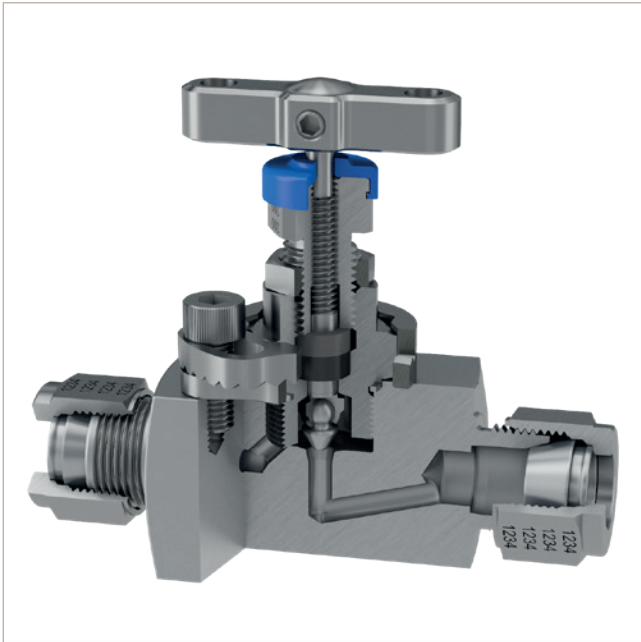


Fire safe bonnet design - Class 2500 (6,000 PSI)



- Features**
- Specifically designed and developed to meet exacting industry requirements, products incorporating this Bonnet Design conform to BS 6755 Part 2, API 6FA / API607. For further details contact your local Parker support.
 - 100% fire safe design certified, many typical actual third party test certificates are available for review
 - Available for most product styles and types
 - Some material selections are restricted

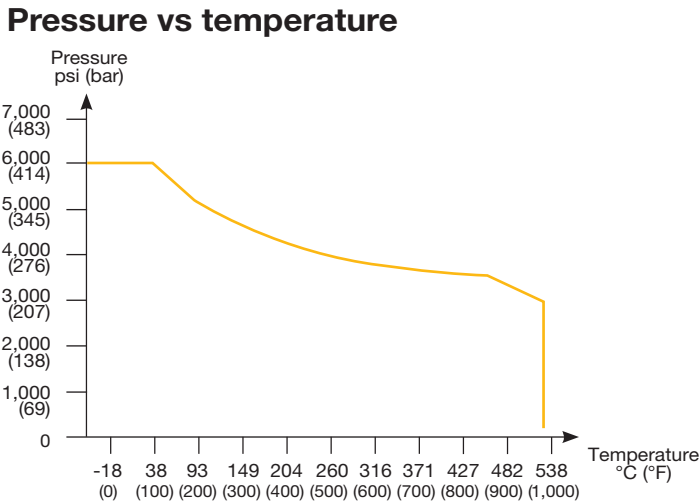
Power plant bonnet design
Compliant to ANSI B31.1 – Class 2500 (6,000 PSI)



To order valves and manifolds with power plant bonnet design, follow the part builder structures as on pages 26-27, 32-33, 46-47 and replace **H** in the series names with **HPP**. Consult your local Parker support for available options.

- Examples:
- HPPNVS8FF3** - Hand valve
 - HPPLS2V3** - 2-valve remote mount flat barstock manifold
 - HPPLS5M3** - 5-valve remote mount flat barstock manifold
 - HPPDS5M3** - 5-valve direct mount flat barstock manifold

- Features**
- Available in a select range of body styles and types. Please consult your local Parker support
 - Designed specifically to meet the requirements of ANSI B31.1 (Power Plants) and B31.3 (Petrochemical Plants) including materials of construction, these bonnet assemblies are Graphite packed for higher temperature service
 - Suitable for temperatures up to 538°C and pressures up to 6,000 psi at reduced temperature, as per graph
 - Unique patented Tru-Loc® safety bonnet lock further enhances security in application

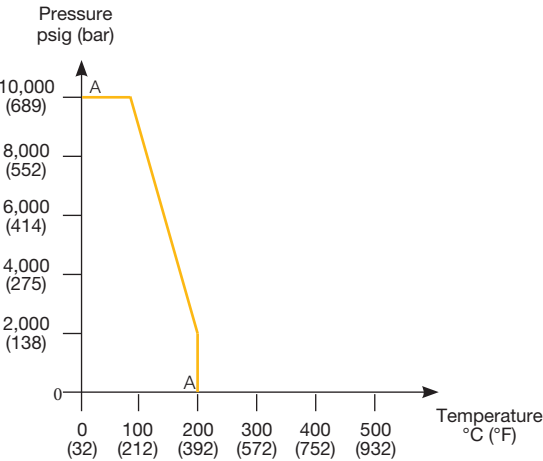


Bonnet Assemblies

Rising plug bonnet design



Pressure vs temperature



Features

- HRPV valve is unique to Parker and is patent-protected
- Non-rotating plug/tip
- Dynamic response moulded seat insert with guaranteed alignment
- Standard straight through orifice size: 1/4” (6.4mm)
- Cv: 1.8
- Rolled spindle operating threads
- Straight through flow path
- Multi-port gauge style available as standard. Other styles can be considered - please consult the factory
- Bi-directional flow
- 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
- Suitable for temperatures up to 204°C and pressures up to 10,000 psi at reduced temperature, as per graph

Reference	Description
A - A	PEEK Seat

Low emission bonnet design

TA-Luft compliant

As standard, products fitted with the Parker Instrumentation standard bonnet assembly are bubble tight in service and have been proven to meet the requirements of **TA-Luft 2002, Absatz 5.2.6.4 und VDI 2440 (Ausgabe Nov. 2000), Absatz 3.3.1.3.**

ISO 15848 compliant

From 2007 EU’s IPPC directive 96/61/EC legislates for the minimisation of pollution from industrial sources (Many other regions and countries have similar legislation). An important part of this legislation is reducing Ultra-Low emissions. According to the IPPS, all plants and factories which fail to comply with the standards set by the directive, may face closure.

The legislation introduced a concept of Best Available Technique (BAT), urging plants to find the best available solution for reducing Ultra-Low emissions throughout all processes. With respect to valves, ISO 15848 parts 1 and 2 were developed to aid companies to meet the legislation.

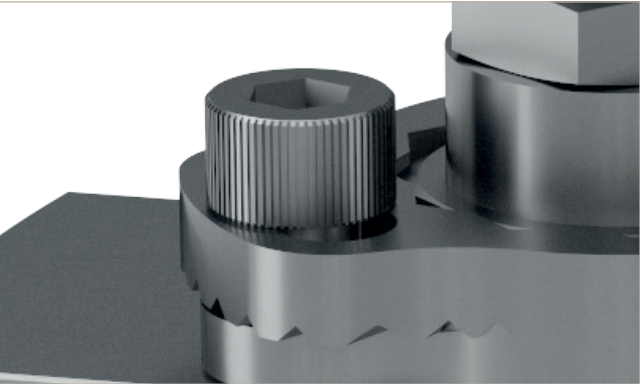
Part 1 covers the classification system and qualification procedure for type testing of valves. The standard specifies three tightness classes of leakage with respect to stem sealing diameter. These classes are class A, B and C; class A having the smallest environmental leakage. Each class level is one 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 Instrumentation specifically developed an H series Bonnet Assembly design with class A approval to ISO 15848-1. Classed ‘FE’, products specified with these bonnet assemblies are certified as **ISO FE AH-C01-SSA1-t(RT,180°C)-ANSI2500-ISO 15848-1**. These products are further 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 Stainless Steel.

Part 2 of the 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. Parker can offer production testing and certification to a sampling percentage specified by the purchaser. A third party witnesses can also be considered.

Tru-Loc® safety bonnet lock

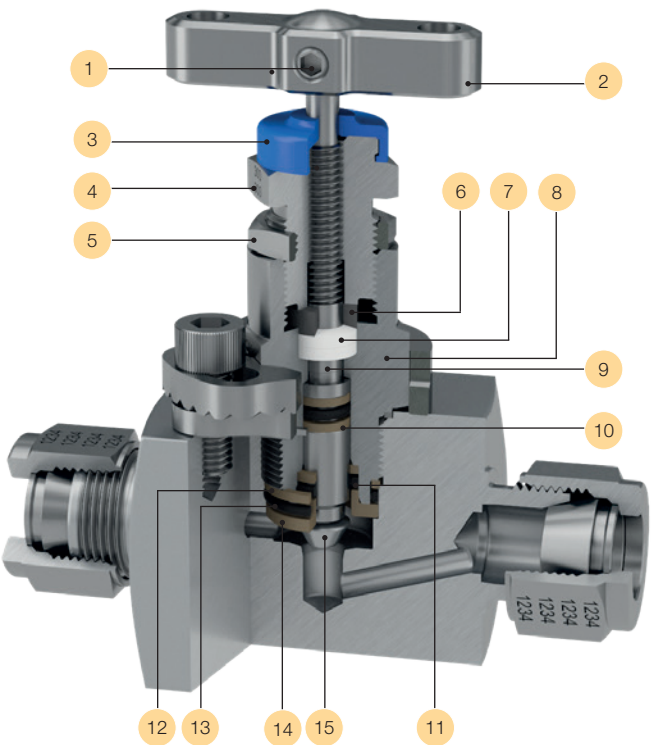


Available as standard on ANSI/ASME B31.1 manifold versions, the unique Parker Tru-Loc® security locking system is applied to the body to bonnet interface but can also be applied to many other screwed component interfaces. Extensive tests have proven that threaded connection interfaces secured with Tru-Loc® guarantee 100% security in preventing movement between connected components. In the H series manifolds it prevents loosening or removal of the bonnet assembly by any means.



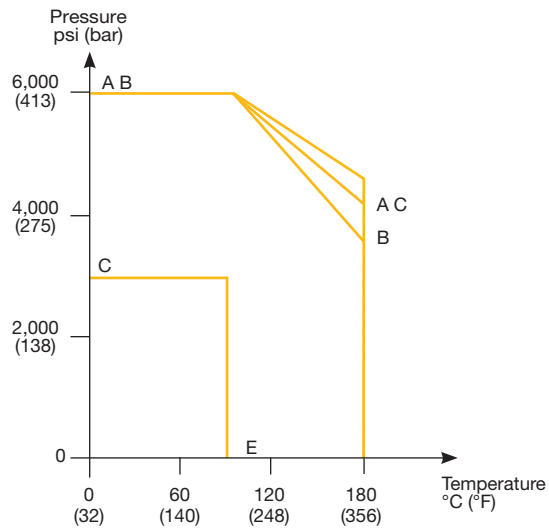
Bonnet Assemblies

Low emission bonnet design



Reference	Description
1	Positive handle retention
2	"T" bar
3	Dust cap
4	Gland packing adjuster
5	Gland adjuster lock nut
6	Thrust bush
7	Gland packing (adjustable)
8	Valve bonnet
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



Reference	Description
A - A	Graphite packing
A - B	PTFE packing
B - B	6,000 PSI (414 bar) standard PTFE packing
B - C	6,000 PSI (414 bar) standard Graphite packing
A - D	PEEK tip
C - E	PCTFE tip

Features

- Tightness class $A \geq 1 \times 10^{-6} \text{ mg.s}^{-1}.\text{m}^{-1}$
- Maximum cold working pressure rating 6,000 psig (414 barg)
- 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)
- O-ring material grade is Fluoroelastomer FKM Tetrapolymer, specially formulated for explosive decompression (ED) resistance. These seals are qualified to the stringent NORSOK M-170 standard covering both ED resistance and sour gas (H2S) ageing tests
- Available for most product styles and types
- Also meets the requirements per; TA-Luft according to VDI 2440 as tested by TUV SUD Industrie Service GMBH performing better than a leakage rate of VDI 2440 = $10^{-4} \text{ mbar.l/s.m}$

Bonnet assembly options

Available as a factory fit or as retrofit, these useful bonnet assembly options are provided in all 316 Stainless Steel material. For locking options padlocks are not provided but the hole size in all cases is 6mm (0.24”). To obtain factory fit options, your specified product part number must be suffixed with the additional option part numbers as below. Some options can be combined.



T bar handle locking

Retrofit Kit Part Number	Factory Fitted Suffix
KITTHL	HL



Handwheel

Retrofit Kit Part Number	Factory Fitted Suffix
KITTHW	HW



Anti-tamper spindle

	Retrofit Kit Part Number	Factory Fitted Suffix
With Key	KITAK	ATK
Without Key	KITAT	AT



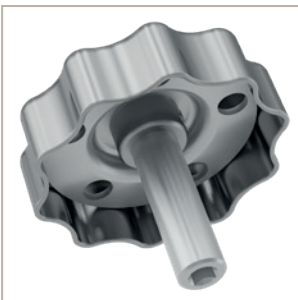
Lockable handwheel

Retrofit Kit Part Number	Factory Fitted Suffix
KITLHW	LHW



Key

Key only Part Number
ATHKEY



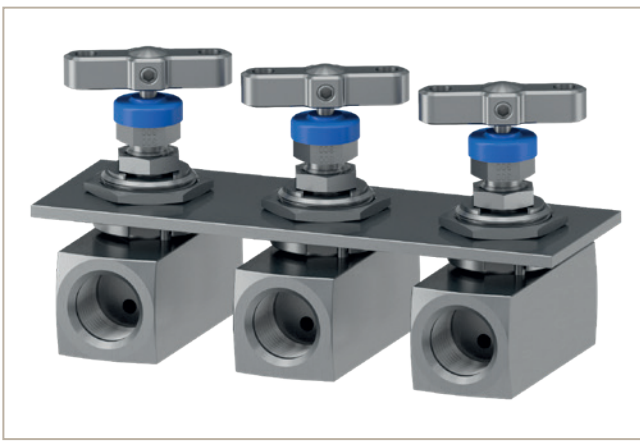
Anti-tamper handwheel

Key only Part Number
ATHWKEY



Panel mounting

Retrofit Kit Part Number	Factory Fitted Suffix
KITPM	PM
Hole Diameter	26mm (1.02")
Panel Thickness	Max. 5mm (0.20") Min. 2.3mm (0.09")
Min. distance for panel mount spacing	51mm (2.00")



Parker Worldwide

Europe, Middle East, Africa

AE – United Arab Emirates,

Dubai

Tel: +971 4 8127100

AT – Austria, St. Florian

Tel: +43 (0)7224 66201

AZ – Azerbaijan, Baku

Tel: +994 50 2233 458

BE/NL/LU – Benelux,

Hendrik Ido Ambacht

Tel: +31 (0)541 585 000

BY – Belarus, Minsk

Tel: +48 (0)22 573 24 00

CH – Switzerland, Etoy

Tel: +41 (0)21 821 87 00

CZ – Czech Republic,

Prague

Tel: +420 284 083 111

DE – Germany, Kaarst

Tel: +49 (0)2131 4016 0

DK – Denmark, Ballerup

Tel: +45 43 56 04 00

ES – Spain, Madrid

Tel: +34 902 330 001

FI – Finland, Vantaa

Tel: +358 (0)20 753 2500

FR – France, Contamine s/Arve

Tel: +33 (0)4 50 25 80 25

GR – Greece

Tel: +30 69 44 52 78 25

HU – Hungary, Budaörs

Tel: +36 23 885 470

IE – Ireland, Dublin

Tel: +353 (0)1 466 6370

IL – Israel

Tel: +39 02 45 19 21

IT – Italy, Corsico (MI)

Tel: +39 02 45 19 21

KZ – Kazakhstan, Almaty

Tel: +7 7273 561 000

NO – Norway, Asker

Tel: +47 66 75 34 00

PL – Poland, Warsaw

Tel: +48 (0)22 573 24 00

PT – Portugal

Tel: +351 22 999 7360

RO – Romania, Bucharest

Tel: +40 21 252 1382

RU – Russia, Moscow

Tel: +7 495 645-2156

SE – Sweden, Borås

Tel: +46 (0)8 59 79 50 00

SL – Slovenia, Novo Mesto

Tel: +386 7 337 6650

TR – Turkey, Istanbul

Tel: +90 216 4997081

UK – United Kingdom, Warwick

Tel: +44 (0)1926 317 878

ZA – South Africa, Kempton Park

Tel: +27 (0)11 961 0700

North America

CA – Canada, Milton, Ontario

Tel: +1 905 693 3000

US – USA, Cleveland

Tel: +1 216 896 3000

Asia Pacific

AU – Australia, Castle Hill

Tel: +61 (0)2-9634 7777

CN – China, Shanghai

Tel: +86 21 2899 5000

HK – Hong Kong

Tel: +852 2428 8008

IN – India, Mumbai

Tel: +91 22 6513 7081-85

JP – Japan, Tokyo

Tel: +81 (0)3 6408 3901

KR – South Korea, Seoul

Tel: +82 2 559 0400

MY – Malaysia, Shah Alam

Tel: +60 3 7849 0800

NZ – New Zealand, Mt Wellington

Tel: +64 9 574 1744

SG – Singapore

Tel: +65 6887 6300

TH – Thailand, Bangkok

Tel: +662 186 7000

TW – Taiwan, Taipei

Tel: +886 2 2298 8987

South America

AR – Argentina, Buenos Aires

Tel: +54 3327 44 4129

BR – Brazil, Sao Jose dos Campos

Tel: +55 080 0727 5374

CL – Chile, Santiago

Tel: +56 22 303 9640

MX – Mexico, Toluca

Tel: +52 72 2275 4200

European Product Information Centre

Free phone: 00 800 27 27 5374

(from AT, BE, CH, CZ, DE, DK, EE, ES, FI,
FR, IE, IL, IS, IT, LU, MT, NL, NO, PL, PT, RU,
SE, SK, UK, ZA)



Parker Hannifin Manufacturing Ltd.
Instrumentation Products Division, Europe
Riverside Road
Barnstaple EX31 1NP
United Kingdom

phone 0044 (0)1271 313131
www.parker.com/ipd