

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. We now offer a range of Ultra-Low Emission products which meet class A or class B levels of ISO 15848 standard for Ultra-Low 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

Page 2	Introduction.	
Page 3	Application illustrations.	
Page 4	Ball valve specification.	
Page 5	Outside screw and yoke (O.S.&Y.) valve specification.	
Page 6	Globe style needle valve specification.	
Page 7	Bolted bonnet.	
Page 8/11	Monoflange (MF) manifolds.	
Page 12/15	ANSI/ASME B31.1 Monoflange manifolds.	
Page 16/22	Pro-Bloc (PB) manifolds.	
Page 23/24	Meeting the ISO Standard	
Page 25/31	Ultra-Low Emission solutions	

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]

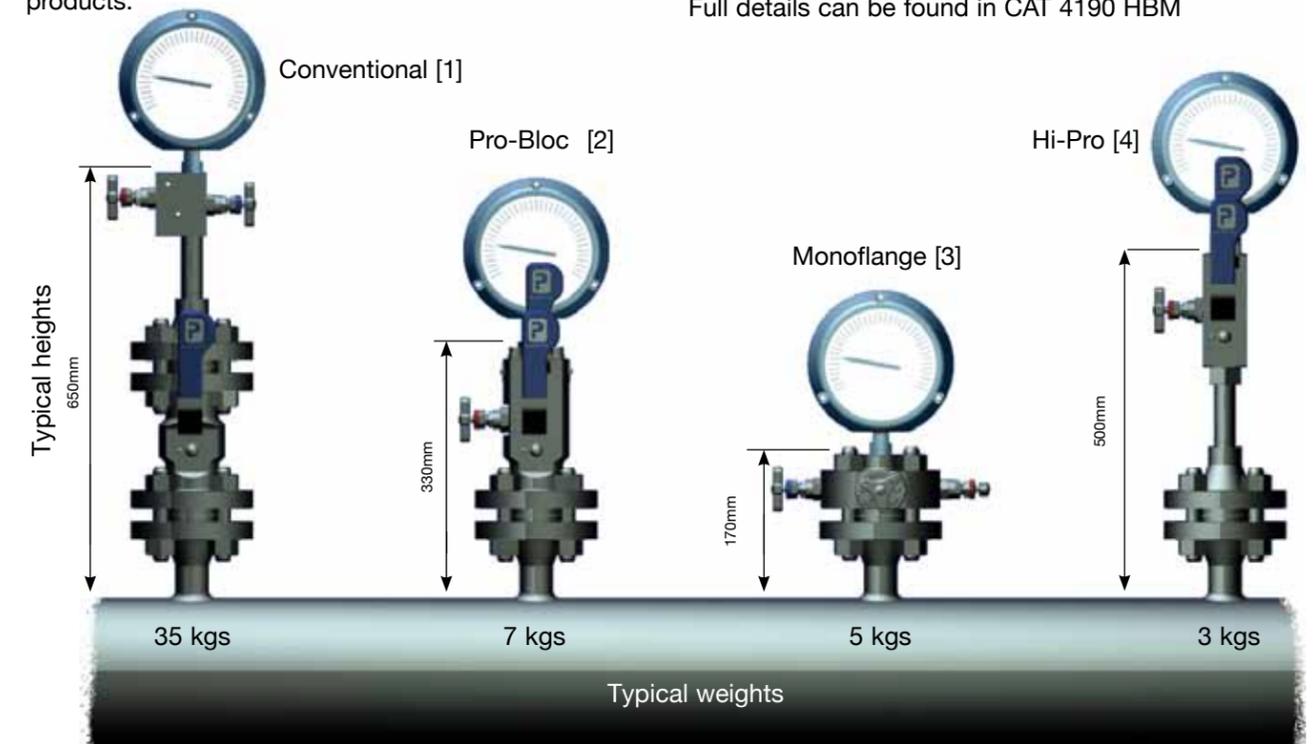
- A one-piece integral forging incorporating up to 3 ball valves or mixture of ball and needle design.
 - Improved safety: leak paths reduced by up to 60%
 - Reduced costs: installation and component costs reduced by up to 70%
 - Reduced weight: by up to 80%
 - Reduced susceptibility to problems caused by vibration.
- See pages 23-31 for standard and Ultra-Low 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 11-16 for standard and pages 23-31 for Ultra-Low 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



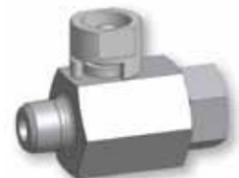
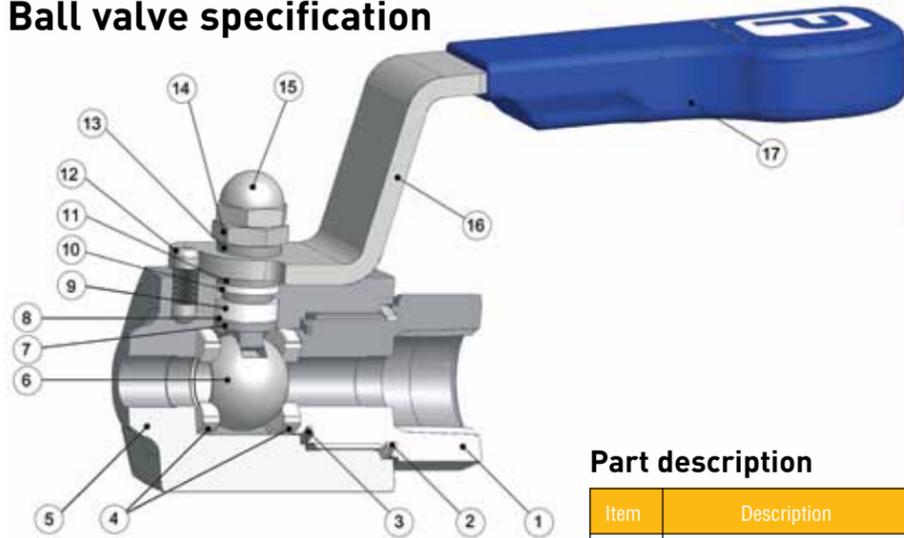
Design codes

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 Ultra-Low emissions
- B31.1

Flanged Products

Ball valve specification



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

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
- Firesafe designed to meet BS6755 Part 2/ API 607, (optional)

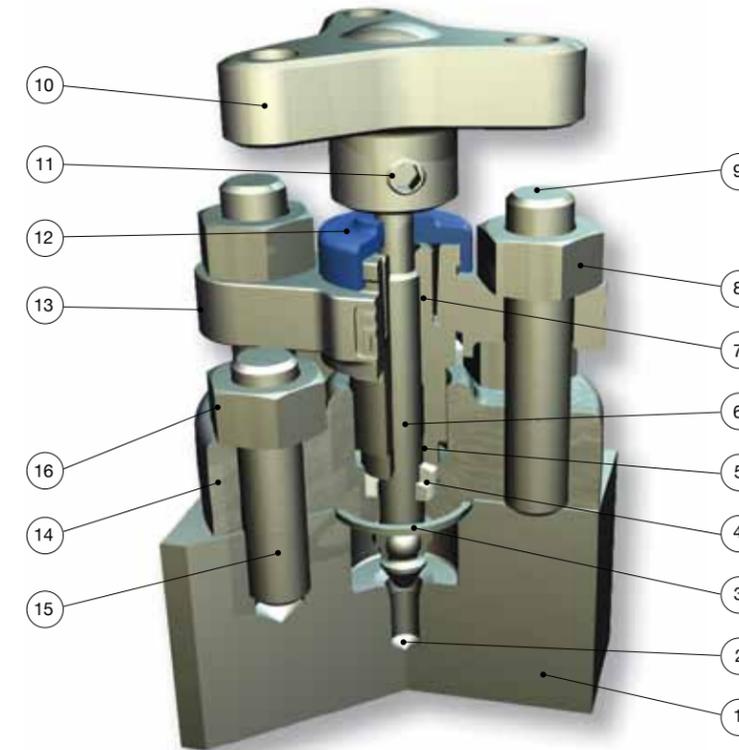
Performance Data Pressure vs temperature

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

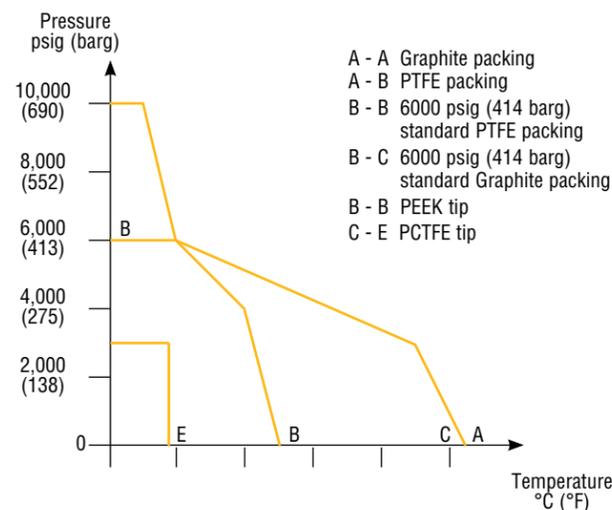
⚠ When selecting products for specific applications users should refer to our notice at the bottom of page 13.

Flanged Products

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



Pressure vs temperature



⚠ When selecting products for specific applications users should refer to our notice at the bottom of page 13.

Features

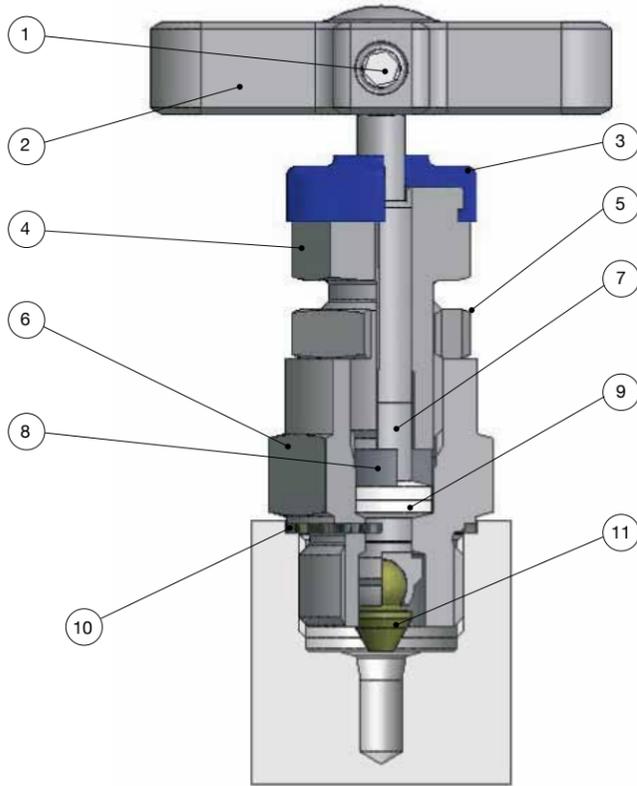
- Externally adjustable gland
- P.T.F.E. or Graphite packing for bubble tight sealing
- Self centering crimped needle tip for bubble tight shut off and repeatability
- Available in 316, Monel, Duplex, Super Duplex, Hasteloy, Inconel, Incoloy, 6Mo, Carbon Steel, other materials on application
- Stainless 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

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

Flanged Products

'H' Series globe style needle valve



For safe, reliable and repeatable performance

Part description

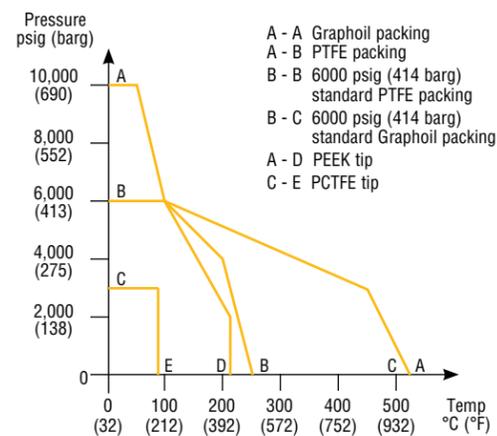
Item	Description
1	Positive handle retention
2	"T" bar
3	Dust Cap
4	Gland packing adjuster
5	Gland adjuster lock nut
6	Valve Bonnet
7	Anti blowout spindle
8	Thrust Bush
9	Gland packing (adjustable)
10	Bonnet/body washer
11	Spindle tip

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

Note: For ANSI/ASME B31.1 compliant products please see pages 12-15.

Pressure vs temperature



⚠ When selecting products for specific applications users should refer to our notice at the bottom of page 13.

Flanged Products

Anti-tamper spindle



For key only - part no. ATHKEY/1

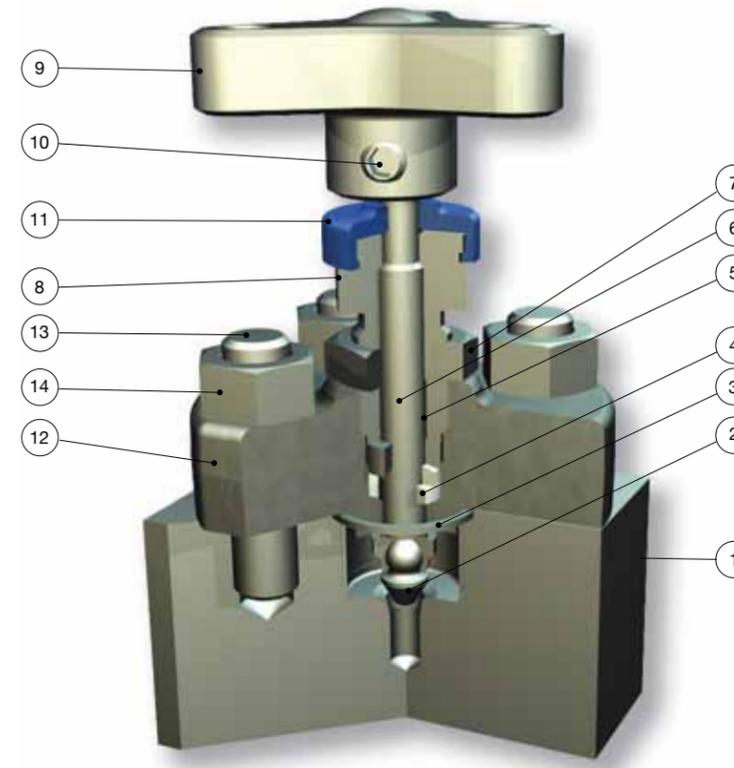
Retro-fit kit part number
KITAT without key
KITATK with key

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

Flanged Products

Monoflange (MF) manifolds

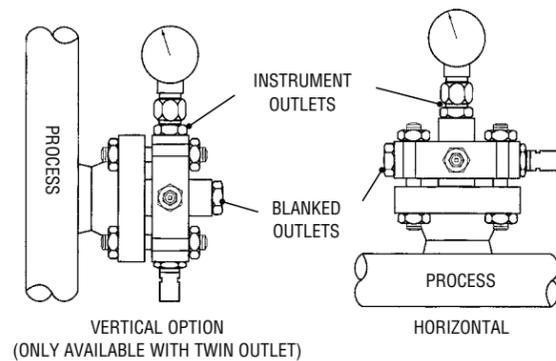
Purpose

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 Ultra-Low 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.

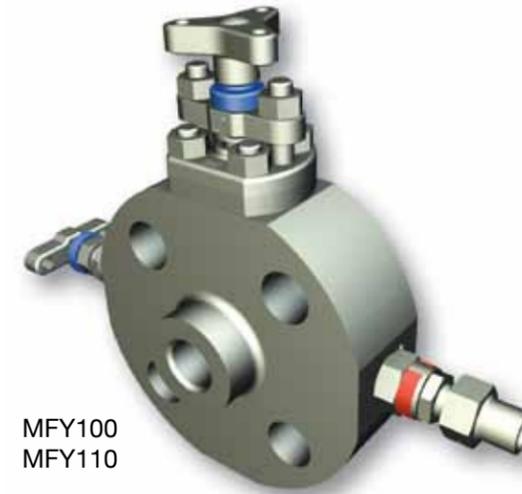
Installation of the instrument which require remote positioning will be interconnected using conventional tube and fittings, whilst NPT taper threads are accepted as a standard their use involves some form of thread sealant which adds to the complication of instrument performance through contamination 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.

Flanged Products

Monoflange features

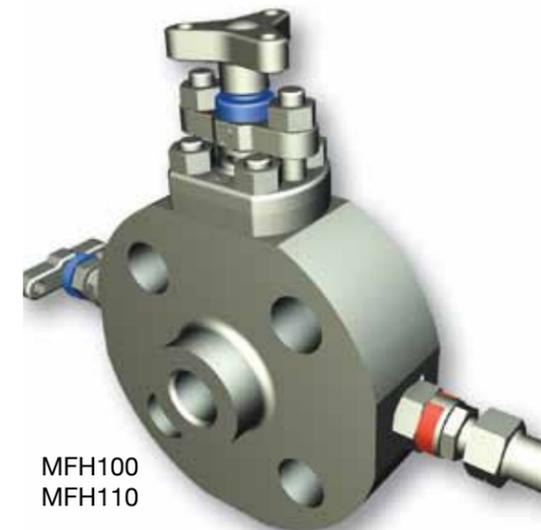
- 1/2 to 2 N.B. Flanges (15 to 50 DN)
- ANSI B16.5 150 to 2500 flange class and API 10,000
- 1/2-14 NPT (female) standard outlet
- 1/4-18 NPT (female) standard vent
- Variety of optional end connection sizes and thread forms including tube connections 1/2 /12mm diameter
- Standard materials of construction: 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



MFY100
MFY110



MFY140



MFH100
MFH110

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.
Please note vent valve is not anti-tamper as standard.

Flanged Products

Example MFY100 B 32T2500 A3 F

1. Monoflange part number
Insert from page 10

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 20		*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)
Y* O.S.&Y. valves
 * 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.

IMPORTANT NOTES
 When selecting products for specific applications users should refer to our notice at the bottom of page 27.
 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.

Monoflange manifolds compliant with ANSI B31.1

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 Monoflanges

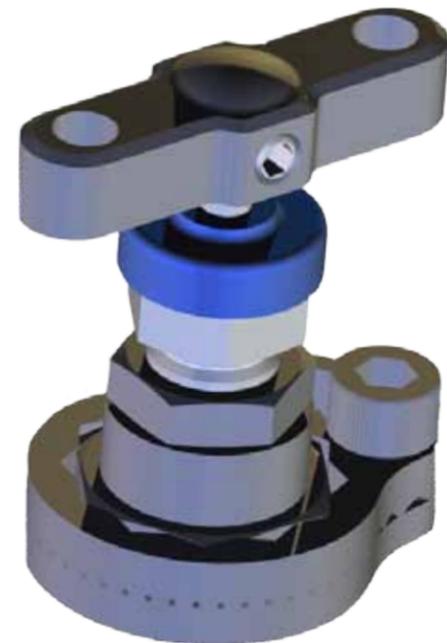
- Strong construction produced from one piece grain flow controlled forged body
- Various flow and valve configurations available allowing true flexibility to meet all customer requirements
- Variety of flange sizes and outlet connections
- Incorporation of HPP series needle valve technology
- 4mm Needle 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

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.



Monoflange features

- 1/2 to 2 N.B. Flanges (15 to 50 DN)
- ANSI B16.5 150 to 2500 flange class
- 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
- Instrument connections A-LOK inverted available
- Raised face and ring type joint flange face styles
- One-piece forged construction flange as standard
- Graphite packing to meet full pressure/temperature requirements of ANSI B31.1 materials
- Pressure boundary designs calculated to ANSI B31.1
- 4:1 Factor of Safety

- Heat code traceable material to EN10204.3.1
- Bubble tight shut off valve seats 17-4 PH tips standard
- 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:

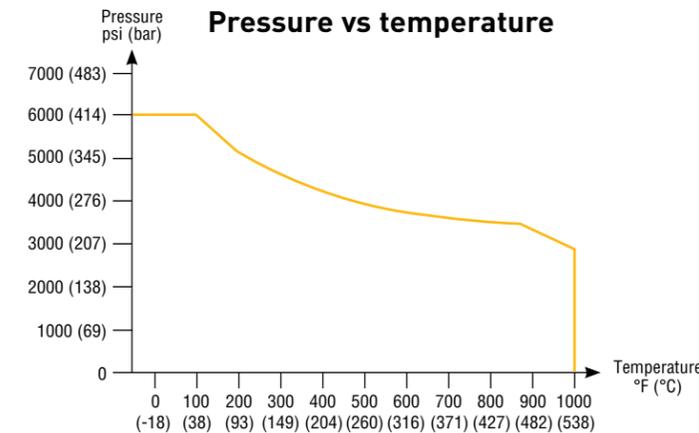
Outlet - 1/2 FNPT
Vent - plugged 1/4 FNPT
Seat - metal to metal
Packing - PTFE

Features

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

Specific pressure / temperature performance

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



⚠ When selecting products for specific applications users should refer to our notice below.

WARNING

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

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

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

Offer of Sale

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

Flanged Products

ANSI B31.1 compliant manifold selection and part number construction - made easy

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

 <p>Block bleed block 1st Isolate: Needle 2nd Isolate: Needle Vent: Needle</p> <p>PPMFH100</p>	 <p>Block & bleed 1st Isolate: Needle Vent: Needle</p> <p>PPMFH130</p>
 <p>Block block bleed 1st Isolate: Needle 2nd Isolate: Needle Vent: Needle</p> <p>PPMFH110</p>	 <p>Double block 1st Isolate: Needle 2nd Isolate: Needle</p> <p>PPMFH140</p>
 <p>Block & bleed 1st Isolate: Needle Vent: Needle</p> <p>PPMFH120</p>	 <p>Single block 1st Isolate: Needle</p> <p>PPMFH150</p>

◆ For dual outlets specify PPMFH105. ▲ For dual outlets specify PPMFH115.
For flange to flange variants replace PPMFH1** with PPMFH2**.
For bleed port only specify PPMFH160.
Please note vent valve is not anti-tamper as standard.

Flanged Products

Example PPMFH100 B 32T2500 3 A3 N

1. Monoflange part number
Insert from page 14

2. Material
A Carbon Steel ASTM A105
B Stainless Steel ASTM A182-F316
G Hastelloy C-276
H Low Temp. C. St. ASTM A350 LF2

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 20		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
M10 = 10mm	adaptor 1/2
M12 = 12mm	NPTF (fitted)

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

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

6. Valve packing
3 Graphoil (standard)

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
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 27.

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.

Part number example PPMFH100B32T2500A3 Monoflange - Double Block and Bleed - Block (Needle) Bleed (Needle) Block (Needle) (PPMFH100) - 316 St. St. construction (B) - 2 Pipe flange, Ring type joint, class 2500 (32T2500) - 1/2 female NPT outlet - 1/4 Female NPT vent - Graphite Packing (3) Anti-tamper vent (A3) metal seated 17-4PH st.st. tips.

Meeting the ISO Standard

Parker is now able to offer its range of Pro-Bloc® Double Block and bleed valves and Monoflanges to meet the new ISO 15848 standard for Ultra-low 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 Ultra-Low 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.

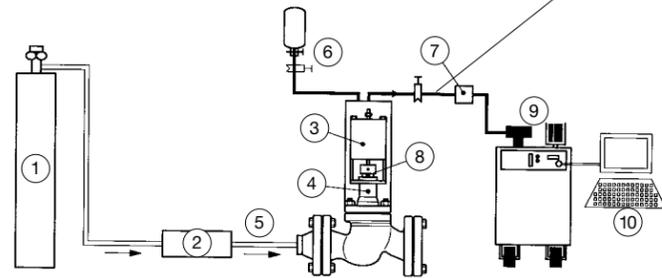
Meeting these low levels is a challenge, which Parker Instrumentation has solved with the new ball and needle valve designs used in these Double Block and Bleed valves and monoflanges. These designs meet the highest class 'A' level over the temperature range -29°C to +180°C celsius, alongside the standard 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 (H₂S) ageing tests.

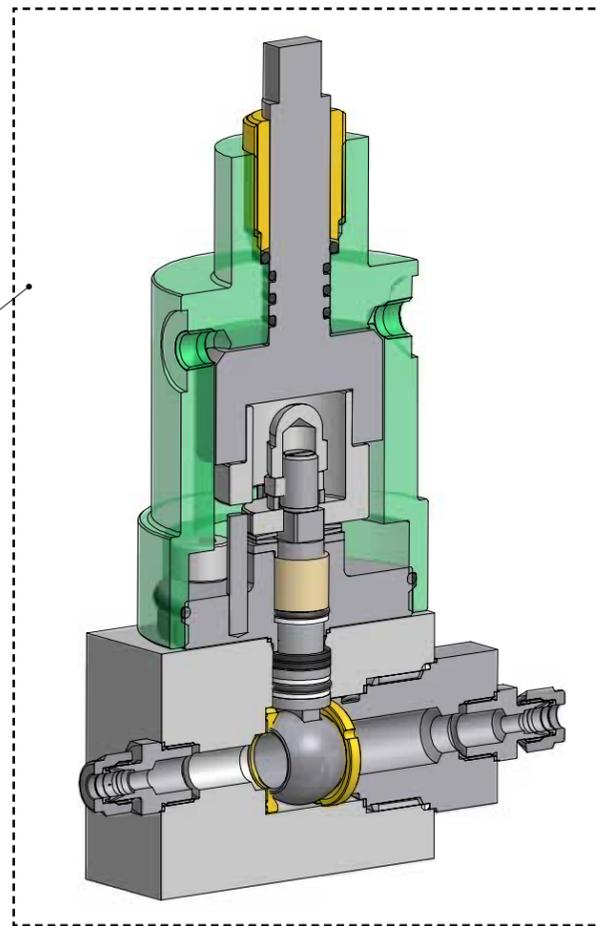
Features

- 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 |

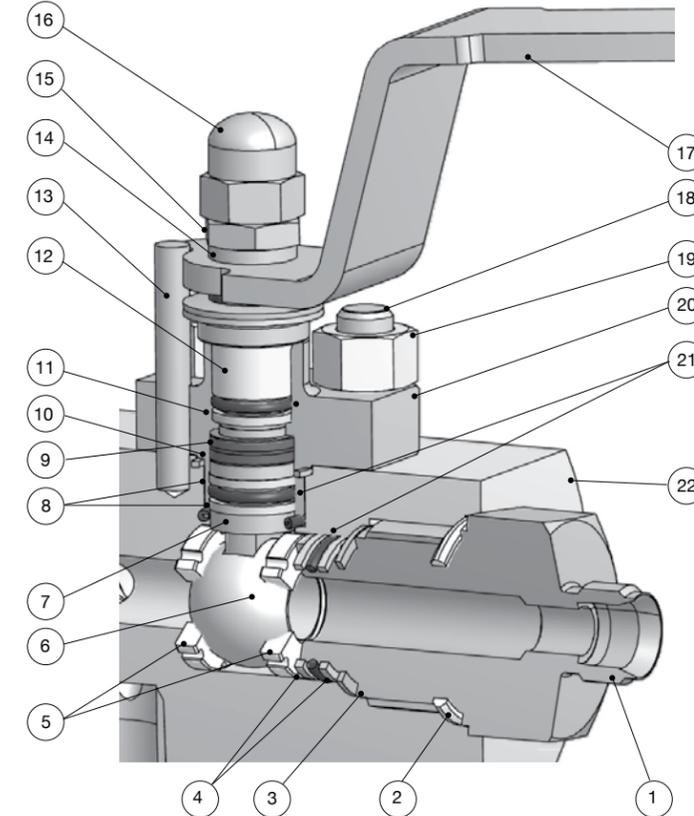
Prototype testing schematic as per ISO 15848-1



Ball valve ISO 15848-1
Prototype testing assembly

Ultra-Low Emissions flange product ball valve specification

Handle options on page 4

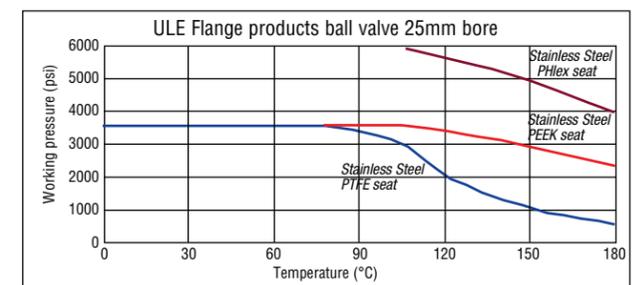
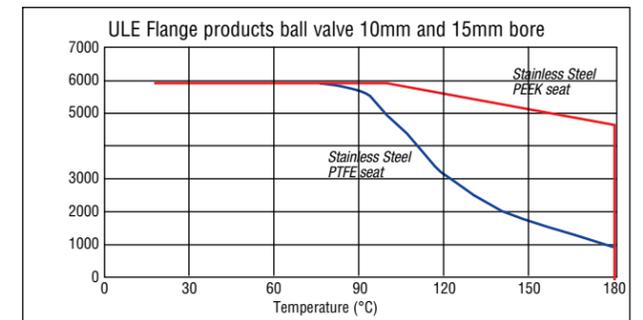
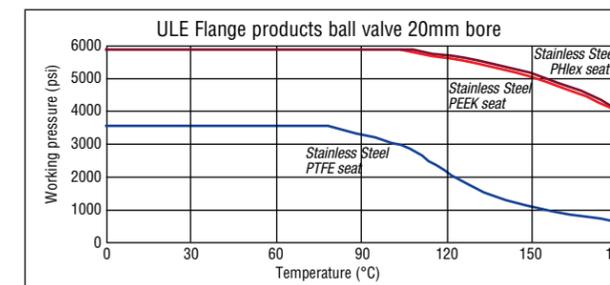


Part description

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

Specifications

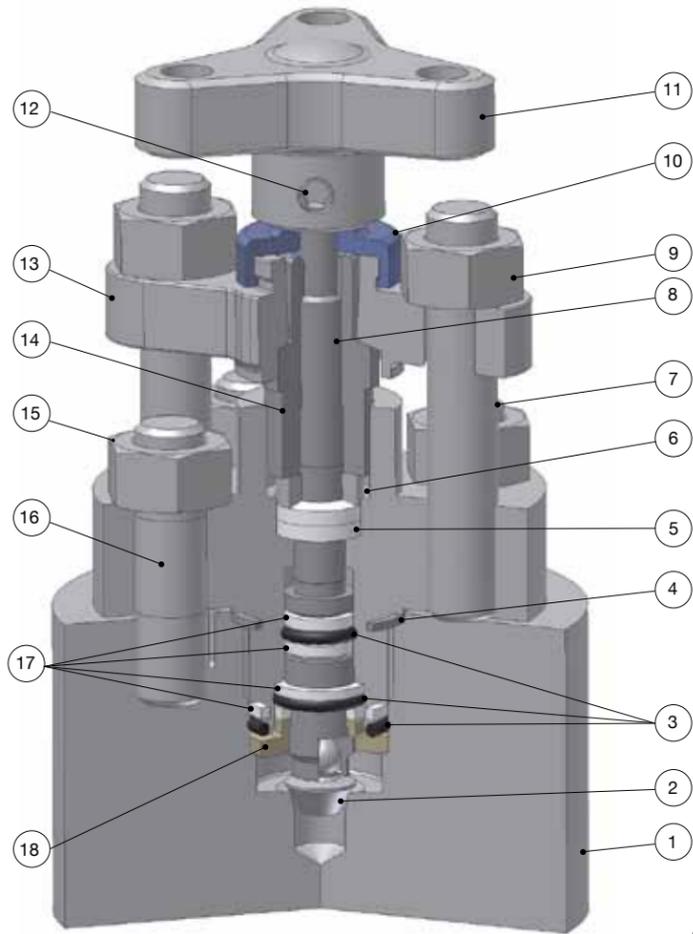
- Tightness class A $\geq 1 \times 10^{-6}$ mg.s⁻¹.m⁻¹.
- Maximum cold working pressure rating 6,000 psig
- Temperature rating -29°C to 180°C (-20°F to 356°F)
- ISO15848-1 prototype tested using global helium vacuum method
- Performance class ISO FE AH-C01-SSA1-t(RT,180 C)-ANSI2500-ISO 15848-1
- Production testing and certification available on request
- Other specifications as per standard Hi-Pro, see page 4



⚠ When selecting products for specific applications users should refer to our notice at the bottom of page 13.

Flanged Products

Ultra-Low Emission outside screw and yoke (OS&Y) needle valve



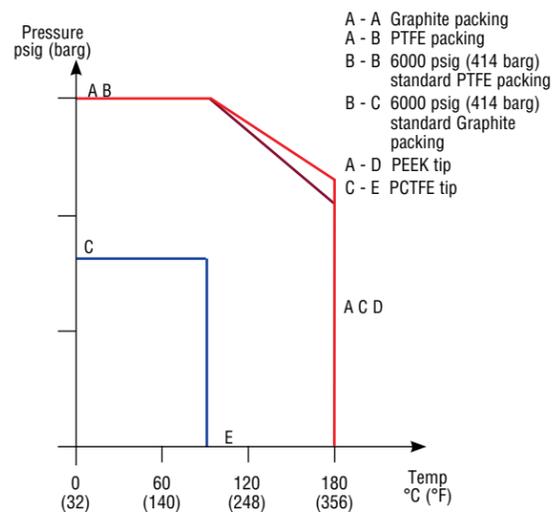
Part description

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

Specifications

- 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
- Other specifications as per standard OS&Y, see page 5

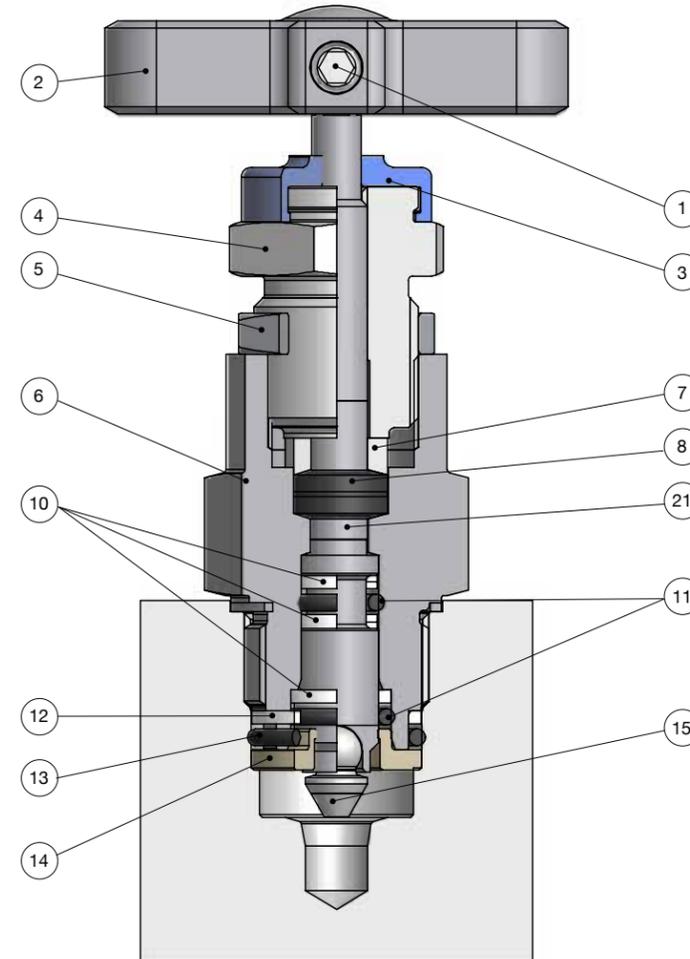
Pressure vs temperature



⚠ When selecting products for specific applications users should refer to our notice at the bottom of page 13.

Flanged Products

Ultra-Low Emissions "H" Series globe style needle valve



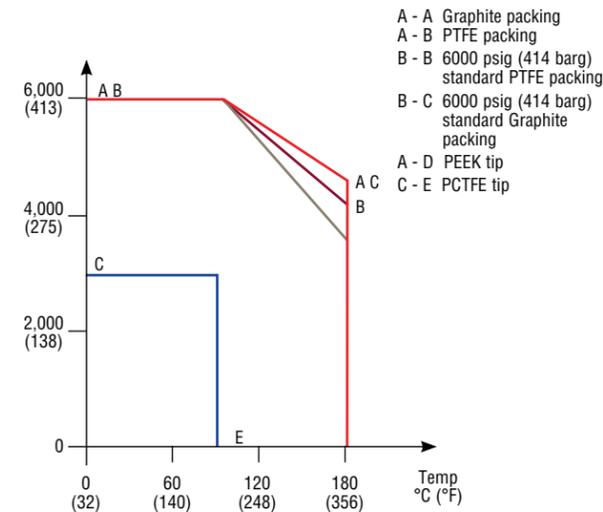
Part description

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

Specifications

- 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
- Other specifications as per standard needle valve, see page 6

Pressure vs temperature



⚠ When selecting products for specific applications users should refer to our notice at the bottom of page 13.

Flanged Products

ISO15848 Class 'A' Ultra-Low 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.
Please note vent valve is not anti-tamper as standard.

Flanged Products

ISO15848 Class 'A' Ultra-Low Emission Monoflanges

Example FEMFY100 B 32T2500

1. Monoflange part number
Insert from page 28

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 20		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

8. Condition
F Firesafe design (primary only - O.S.&Y. needle valve)
N NACE
 Combine designators as required
 Ultra-low Emission production testing available on request
 Please Note:
 Certification requirements and customer specifications MUST be provided at enquiry and order stage.

7. Valve handle operating options
A* Anti tamper
L* Padlock handle locking
R* Regulating tip (H series needle valve only)
Y* O.S.&Y. valves
 * Insert valve number 1 = primary, 2 = secondary, 3 = vent, 4 = all. Padlocks not supplied

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.

IMPORTANT NOTES
 When selecting products for specific applications users should refer to our notice at the bottom of page 19.
 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 Ultra-Low Emission 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.

Parker Worldwide

AE – UAE, Dubai
Tel: +971 4 8875600
parker.me@parker.com

AR – Argentina, Buenos Aires
Tel: +54 3327 44 4129

AT – Austria, Wiener Neustadt
Tel: +43 (0)2622 23501-0
parker.austria@parker.com

AT – Eastern Europe, Wiener Neustadt
Tel: +43 (0)2622 23501 970
parker.easteurope@parker.com

AU – Australia, Castle Hill
Tel: +61 (0)2-9634 7777

AZ – Azerbaijan, Baku
Tel: +994 50 2233 458
parker.azerbaijan@parker.com

BE/LX – Belgium, Nivelles
Tel: +32 (0)67 280 900
parker.belgium@parker.com

BR – Brazil, Cachoeirinha RS
Tel: +55 51 3470 9144

BY – Belarus, Minsk
Tel: +375 17 209 9399
parker.belarus@parker.com

CA – Canada, Grimsby, Ontario
Tel +1 905-945-2274
ipd_canada@parker.com

CH – Switzerland, Etoy
Tel: +41 (0) 21 821 02 30
parker.switzerland@parker.com

CN – China, Shanghai
Tel: +86 21 5031 2525

CZ – Czech Republic, Klecany
Tel: +420 284 083 111
parker.czechrepublic@parker.com

DE – Germany, Kaarst
Tel: +49 (0)2131 4016 0
parker.germany@parker.com

DK – Denmark, Ballerup
Tel: +45 43 56 04 00
parker.denmark@parker.com

ES – Spain, Madrid
Tel: +34 902 33 00 01
parker.spain@parker.com

FI – Finland, Vantaa
Tel: +358 (0)20 753 2500
parker.finland@parker.com

FR – France, Contamine s/Arve
Tel: +33 (0)4 50 25 80 25
parker.france@parker.com

GR – Greece, Athens
Tel: +30 210 933 6450
parker.greece@parker.com

HK – Hong Kong
Tel: +852 2428 8008

HU – Hungary, Budapest
Tel: +36 1 220 4155
parker.hungary@parker.com

IE – Ireland, Dublin
Tel: +353 (0)1 466 6370
parker.ireland@parker.com

IN – India, Mumbai
Tel: +91 22 6513 7081-85

IT – Italy, Corsico (MI)
Tel: +39 02 45 19 21
parker.italy@parker.com

JP – Japan, Fujisawa
Tel: +(81) 4 6635 3050

KR – South Korea, Seoul
Tel: +82 2 559 0400

KZ – Kazakhstan, Almaty
Tel: +7 7272 505 800
parker.easteurope@parker.com

LV – Latvia, Riga
Tel: +371 6 745 2601
parker.latvia@parker.com

MX – Mexico, Apodaca
Tel: +52 81 8156 6000

MY – Malaysia, Shah Alam
Tel: +603-78490800

NL – The Netherlands, Oldenzaal
Tel: +31 (0)541 585 000
parker.nl@parker.com

NO – Norway, Stavanger
Tel: +47 (0)51 826 300
parker.norway@parker.com

NZ – New Zealand, Mt Wellington
Tel: +64 9 574 1744

PL – Poland, Warsaw
Tel: +48 (0)22 573 24 00
parker.poland@parker.com

PT – Portugal, Leca da Palmeira
Tel: +351 22 999 7360
parker.portugal@parker.com

RO – Romania, Bucharest
Tel: +40 21 252 1382
parker.romania@parker.com

RU – Russia, Moscow
Tel: +7 495 645-2156
parker.russia@parker.com

SE – Sweden, Sp nga
Tel: +46 (0)8 59 79 50 00
parker.sweden@parker.com

SG – Singapore,
Tel: +65 6887 6300

SK – Slovakia, Bansk Bystrica
Tel: +421 484 162 252
parker.slovakia@parker.com

SL – Slovenia, Novo Mesto
Tel: +386 7 337 6650
parker.slovenia@parker.com

TH – Thailand, Bangkok
Tel: +662 717 8140

TR – Turkey, Istanbul
Tel: +90 216 4997081
parker.turkey@parker.com

TW – Taiwan, Taipei
Tel: +886 2 2298 8987

UA – Ukraine, Kiev
Tel: +380 44 494 2731
parker.ukraine@parker.com

UK – United Kingdom, Barnstaple
Tel: +44 (0)1271 313131
parker.uk@parker.com

US – USA, Cleveland
Tel: +1 216 896 3000

VE – Venezuela, Caracas
Tel: +58 212 238 5422

ZA – South Africa, Kempton Park
Tel: +27 (0)11 961 0700
parker.southafrica@parker.com

European Product Information Centre
Free phone: 00 800 27 27 5374
(from AT, BE, CH, CZ, DE, DK, EE, EI, ES, FI,
FR, IT, NL, NO, PL, RU, SE, SK, UK, ZA)

