

ANDERSON GREENWOOD INSTRUMENTATION PRODUCTS



Anderson Greenwood Instrumentation Product's compact Keyblok and Monoflange one-piece valves are designed to overcome the problems of traditional assemblies on primary isolation duties. By combining piping and instrument valves in a single assembly, they provide weight and space savings, along with other benefits including reduced leakage and safer hook-up. This more compact and efficient arrangement reduces pipe work vibration and associated stress to offer the ideal configuration for many arduous applications.

Markets Served

- Offshore Oil and Gas Production
- Gas/Oil Terminals
- Chemical and Petrochemical
- Compressor Manufacturers
- Refining
- Fiscal Metering Skid Manufacturers
- LNG Gas Carriers
- Process/Power Industry Contractors

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Root Valves

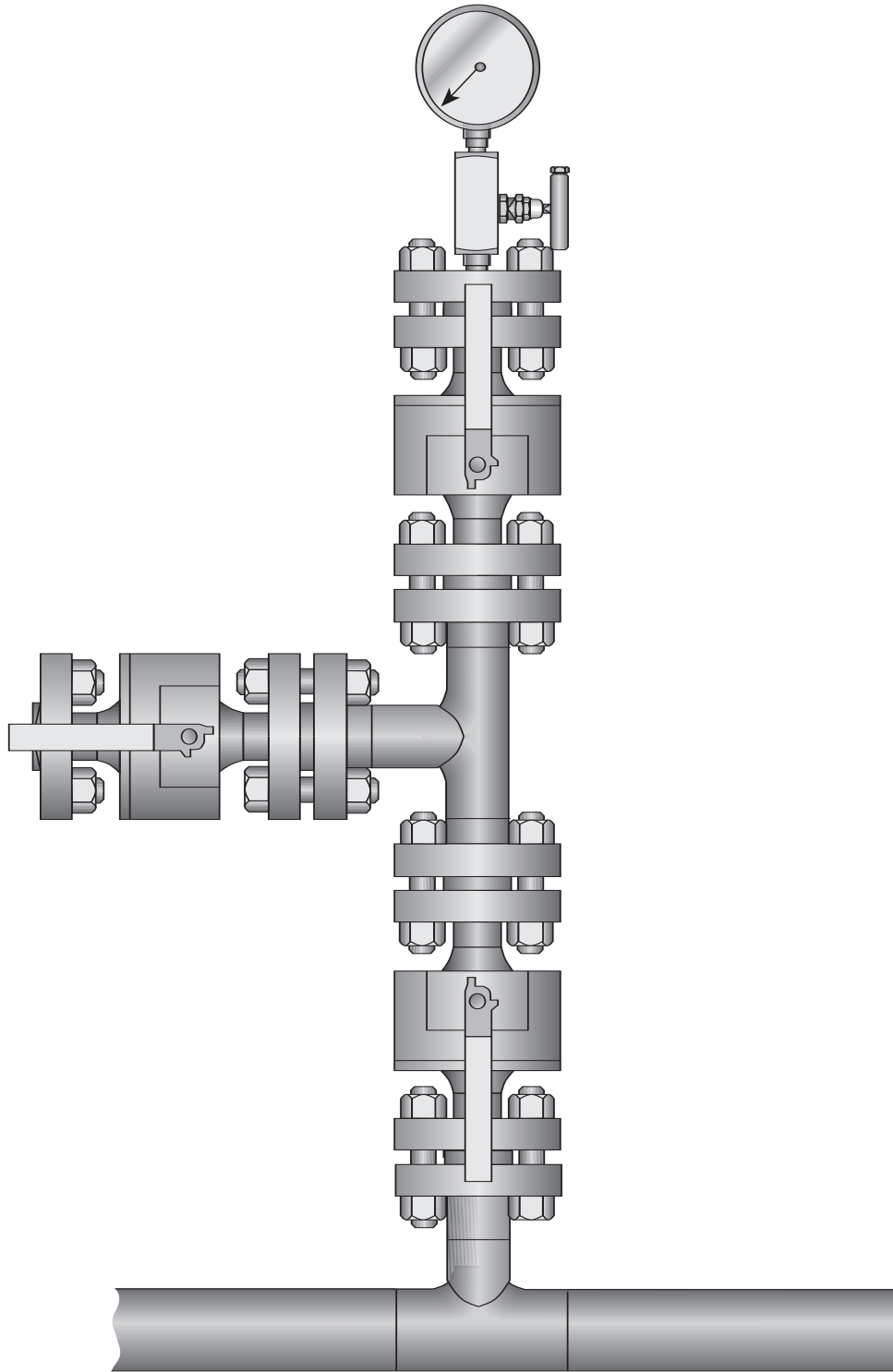
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Primary Isolation Valve Applications

Conventional – Double Block and Bleed

Disadvantages with conventional primary isolation double block and bleed pressure tapping based on a typical ANSI 1-inch [25 mm], 1500 lb multi-valve assembly:

- Weight: 100 lb [45 kg]
- Height: 5 ft [1500 mm]
- Leak points: 8
- Susceptible to vibration stress failure
- Support bracket required
- Induced bending moment acts on branch fitting weld
- On-site labor required to assemble
- Six gaskets and bolting sets required



Primary Isolation Valve Applications

The Anderson Greenwood Instrumentation Products Solutions

Anderson Greenwood Instrumentation Products has the ultimate solutions for a compact range of one-piece forged body Primary Isolation Valves, featuring a choice of end connections, body styles and valve technology.

Design

All Anderson Greenwood Instrumentation Products primary isolation valves are designed to comply with the following code requirements:

- ANSI/ASME B16.34
Material wall thickness
- ANSI/ASME B16.5
Flange dimensions
- ANSI/ASME 8
Design procedures and materials
- ANSI/ASME B1.20.1
National pipe threads
- API 607/BS6755
Fire tested

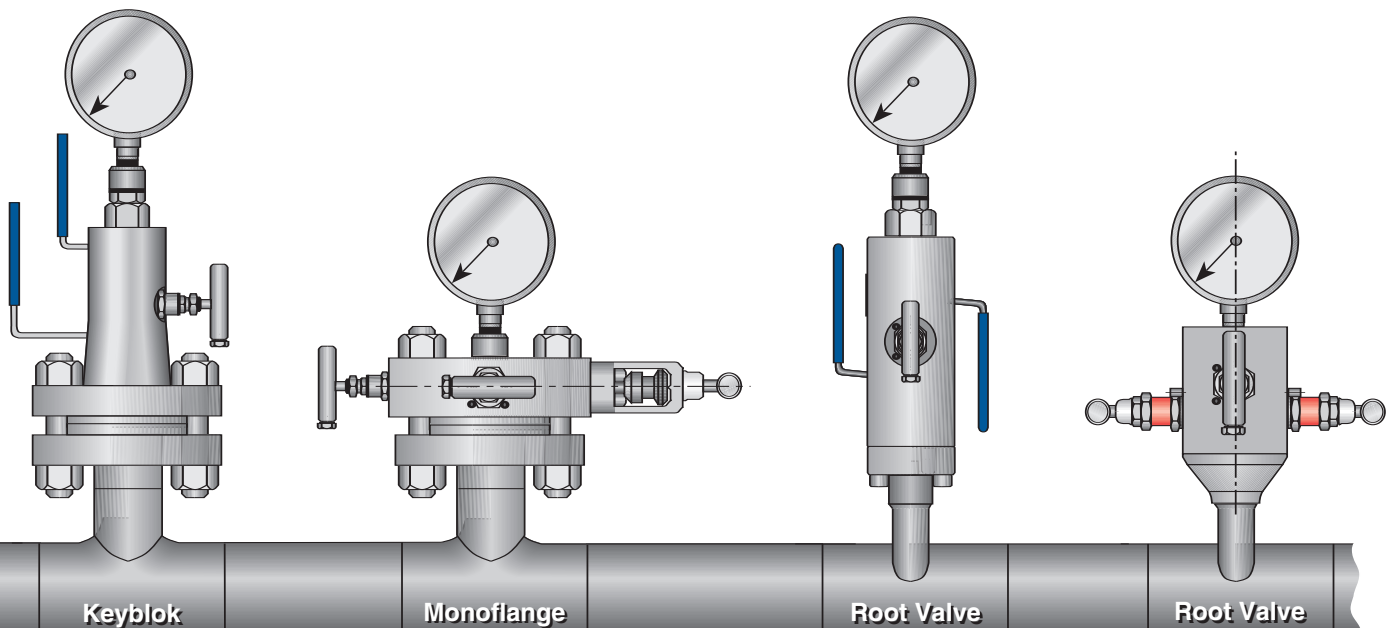
Applications

- Double block and bleed instrument isolation
- Gauge isolation
- Instrument drain
- Chemical injection connection
- Sample connections
- Chemical seal instrument isolation
- Piping/instrument interface
- Direct mounting of instruments
- Remote mounting of instruments

Advantages

Advantages gained by installing Anderson Greenwood Instrumentation Products Keyblok and Monoflange Primary Isolation Valves, based on a typical ANSI 1-inch [25 mm], 1500-lb one-piece integrally forged valve:

- Reduced weight - 15.4 lb [7.0 kg]
- Reduced height - 10 in [250.0 mm]
- Reduced leakage points
- Reduced effect of system vibration
- Supporting brackets are not required
- Reduced bending moment acting on the vessel branch fitting weld
- Reduced installation cost
- Reduced gaskets and bolting



Keyblok

- Ball and Globe Style Needle Valves
- Flanged and Threaded Connections
- Integrally Forged Body

Monoflange

- Globe Style Needle Valves
- Flanged and Threaded Connections
- Slimline Integrally Forged Body

Root Valves

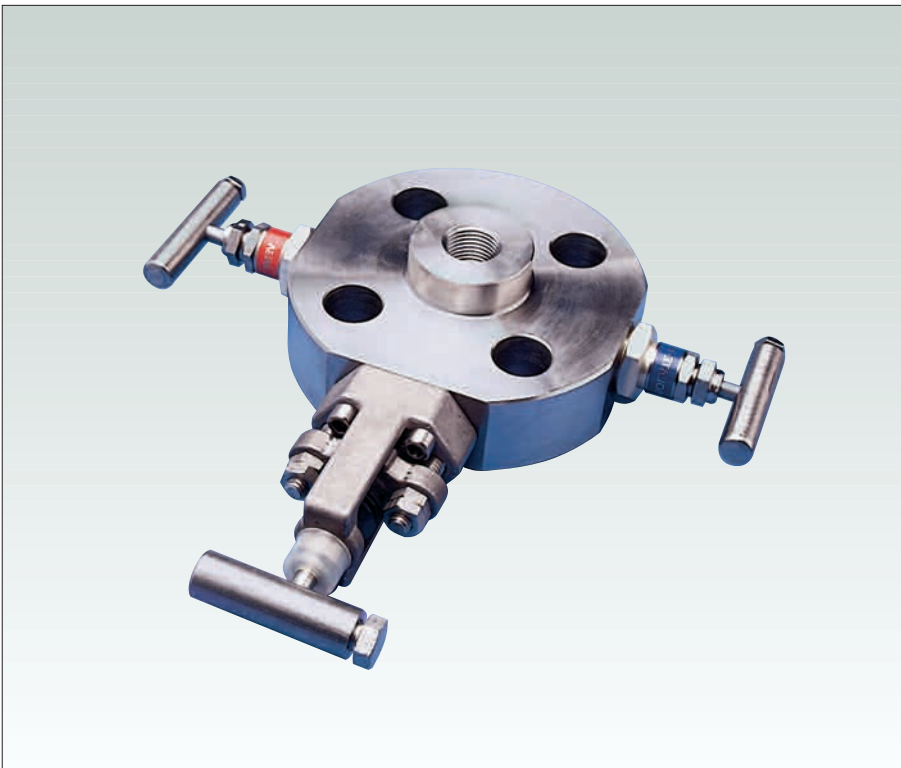
- Ball and Globe Style Needle Valves
- Weld or Threaded Connections
- Direct Connection to the Vessel
- Integrally Forged Body

Primary Isolation Valve Product Features and Benefits



Keyblok Valve - Ball and Needle Type Globe Valves

- **One-piece forged body** combines a compact design with strength and reduced potential leak paths compared to conventional designs.
- **Flanged connections** are available on inlet or inlet and outlet in a choice of sizes and ratings to suit each application.
- **Camlock safety feature** is fitted on threaded outlet connections, preventing accidental loosening of the connection in service.
- **Primary isolation ball valves** are precision machined and super finished for high performance pressure and temperature ratings. Designed and tested as standard to be fire safe and anti-static.
- **Heavy duty needle type globe valve** is designed and tested to fire safe standards, ensuring bubble-tight shutoff on venting or isolation service.
- **Bolt-on outlet option** allows choice of connections for dual instrument mounting, welded connections and chemical injection.



Monoflange Valve - Needle Type Globe Valves

- **One-piece ultra-slimline forged body** combines a compact design with strength and reduced potential leak paths compared to conventional designs.
- **Outside screw and yoke (OS&Y) needle type globe valve** with investment cast yoke and bolted bonnet provide high mechanical strength and long cycle life on primary isolation service.
- **Flanged connections** available on inlet or inlet and outlet in a choice of sizes and ratings to suit each particular application.
- **Heavy duty needle type globe valve** is designed and tested to fire safe standards, ensuring bubble-tight shutoff on isolation and vent service.
- **Gauge adaptors** allow flexible positioning of gauges and instruments with a choice of designs available.

Primary Isolation Valve Product Features and Benefits

Root Valve - Ball and Needle Type Globe Valves

- **One-piece forged or barstock body** combines a compact design with strength and reduced potential leak paths compared to conventional designs.
- **Threaded or welded inlet connection** allows direct connection to a pressure vessel without the need for a flanged connection.
- **Primary isolation ball valves** are precision machined and super finished for high performance pressure and temperature ratings. Designed and tested as standard to be fire safe and anti-static.
- **Heavy duty needle type globe valve** is designed and tested to fire safe standards, ensuring bubble-tight shutoff on vent and isolation service.
- **Camlock safety feature** is fitted on threaded connections, preventing accidental loosening of connection in service.

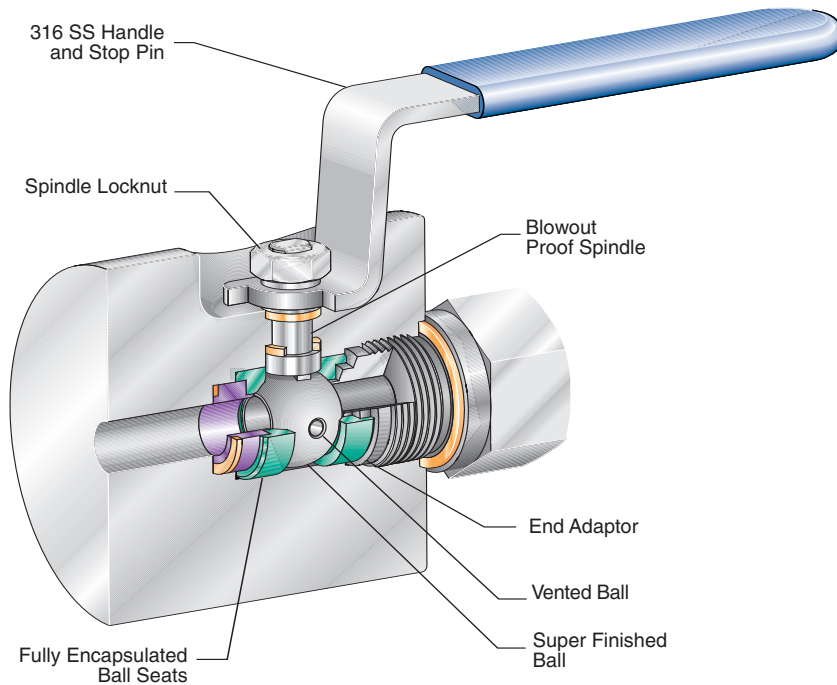


Root Valve - Needle Type Globe Valves

- **One-piece forged or barstock body** provides strength and reduced potential leak paths compared to conventional designs.
- **Heavy duty needle type globe valve** is designed and tested to fire safe standards, ensuring bubble-tight shutoff on vent and isolation service.
- **Threaded or welded inlet connection** allows direct connection to a pressure vessel without the need for a flanged vessel service.
- **Compact design** combines space and weight savings with ease of operation when compared with conventional designs.



Quarter Turn Ball Valve Specifications

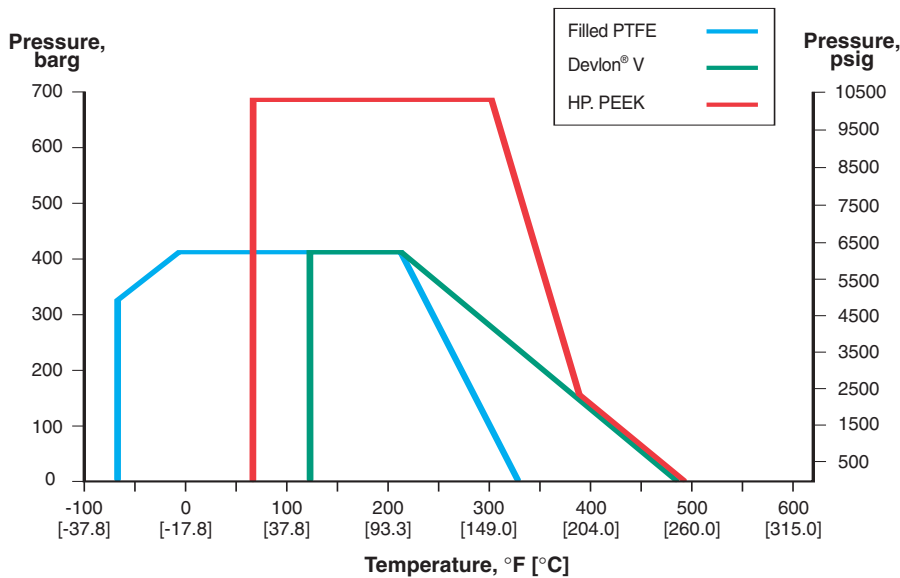


Features and Benefits

- **316 SS handle and stop pin as standard** for corrosion resistance and strength.
- **Blowout proof** one-piece stem spindle.
- **Vented ball** provides upstream cavity relief, making the valve uni-directional.
- **Fully supported ball seats** minimize seat seal extrusion and allow high working pressures.
- **Super finished ball** for low operating torque and long life.
- **End adaptor** threads are fully isolated from process by primary and secondary static seals.
- **Spindle locknut** is vibration resistant to avoid working loose.
- **3/8-inch [10 mm] bore** fully roddable.
- FIRESAFE to API 607, BS6755 Part 2.
- **Ball seats** choice of seat materials: Filled PTFE, Devlon-V® or PEEK.
- **Anti-static design as standard.**
- **Pressure rating** up to 10,000 psig [680 barg].
- **Temperature rating** -70.6°F to 482°F [-57°C to +250°C].
- **Camlock safety feature** prevents accidental removal of thread connectors.

Pressure and Temperature Ratings

Ball Valve



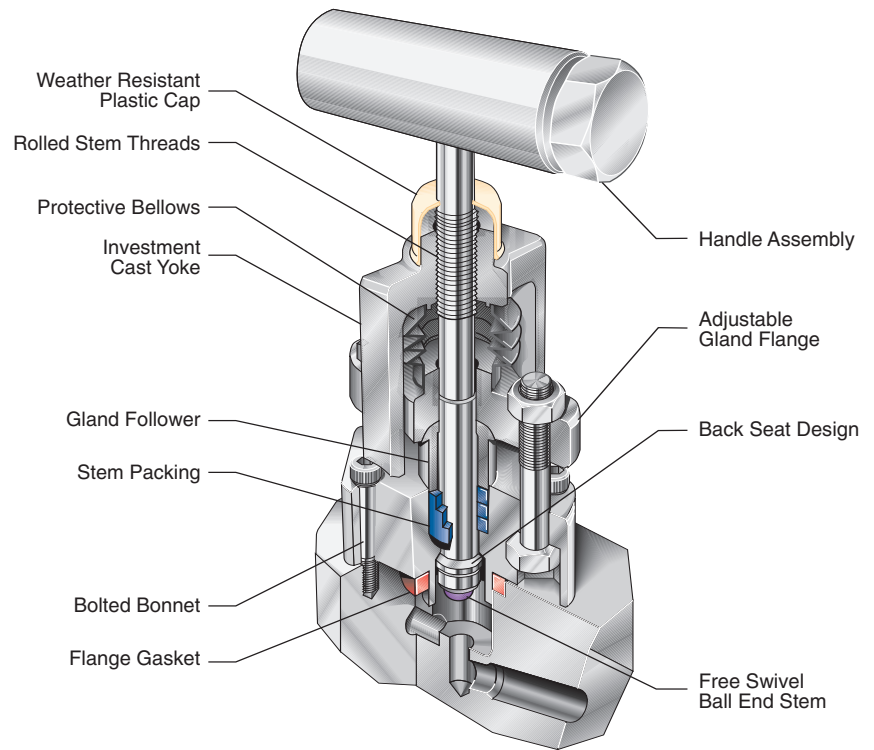
Note

1. Devlon® and Devlon-V® are registered trademarks of Devol Engineering Ltd.

OS&Y Needle Type Globe Valve Specifications

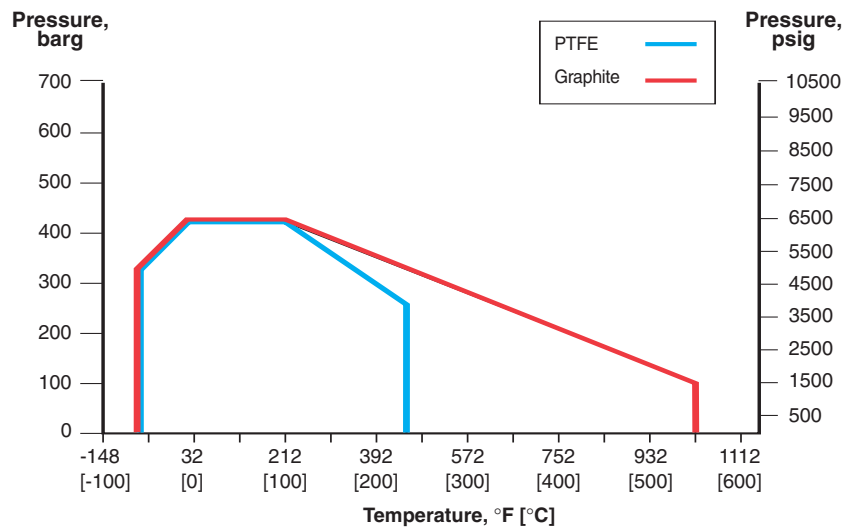
Features and Benefits

- **Weather-resistant plastic cap** prevents stem lubricant contamination.
- **Rolled stem threads** prevent galling. Stem threads are completely isolated from the process.
- **Stem packing** with Graphite or PTFE rings for bubble-tight seal.
- **Bolted bonnet** for strength and reliability.
- **Free swivel ball end stem** for repetitive bubble-tight shutoff.
- **Flange gasket ring** ensures a bubble-tight seal between body and bonnet.
- **Back seat design** provides secondary stem sealing and prevents stem blowout.
- **Adjustable gland flange/follower** allows easy access to the packing gland, which can be replaced while the valve is under pressure. This design provides consistent packing adjustment for an effective stem seal.
- **Protective bellows** protect stem threads from atmospheric contamination.
- **Investment cast yoke** is precision cast for strength and perfect stem alignment.
- **Handle assembly** utilizes locking bolt and will not vibrate or work loose.
- **FIRESAFE** to API 607, BS6755 Part 2.
- **0.2-inch [5 mm] bore.**
- **Pressure rating** up to 6000 psig [414 barg].
- **Temperature rating** -71°F to 1022°F [-57°C to +550°C].

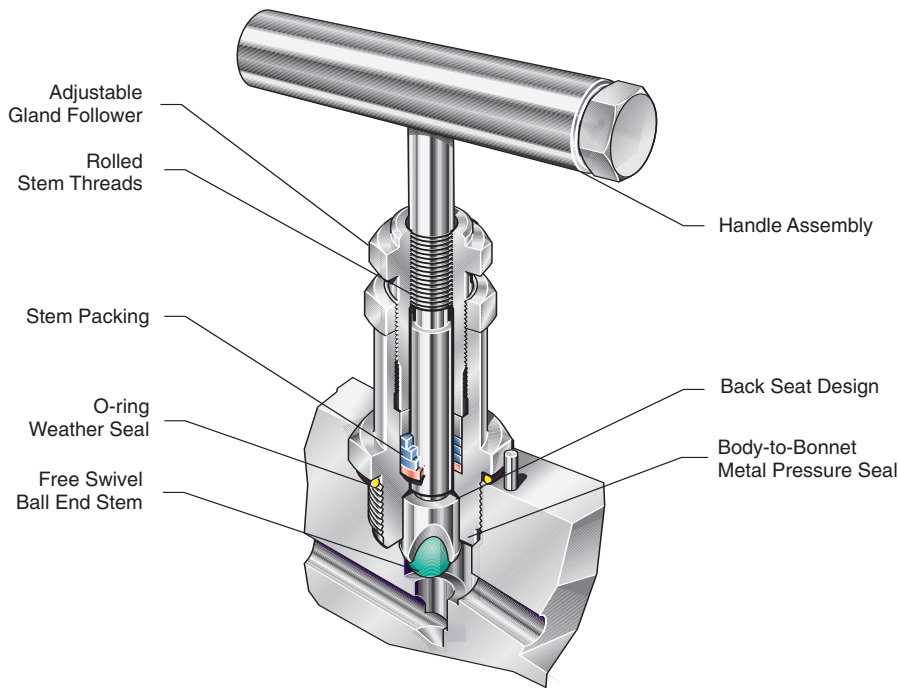


Pressure and Temperature Ratings

OS&Y Needle Type Globe Valve



HD Needle Type Globe Valve Specifications

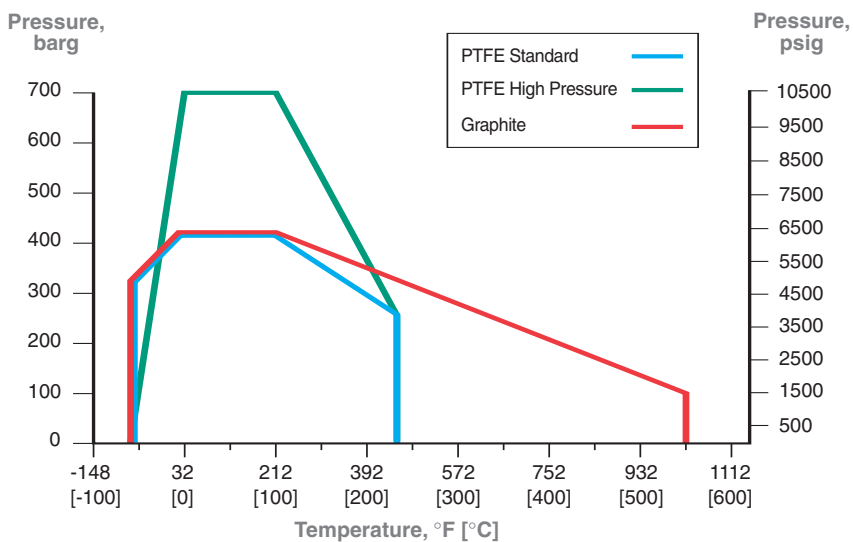


Features and Benefits

- **Rolled stem threads** for low operating torque and long cycle life. Stem threads are located above the spindle packing and are completely isolated from the process.
- **Stem packing** with Graphite or PTFE for bubble-tight sealing.
- **O-ring weather seal** protects bonnet retention threads from harsh environments.
- **Free swivel ball end stem** for repetitive bubble-tight shutoff.
- **Body-to-bonnet metal pressure seal** below threads prevents process from corroding bonnet retention threads and ensures the bonnet threads are in loaded compression for additional strength.
- **Back seat design** provides secondary stem sealing and prevents stem blowout.
- **Adjustable gland follower** allows easy access to adjust the packing gland.
- **Handle assembly** utilizes locking bolt and will not vibrate or work loose.
- **0.2-inch [5 mm] bore.**
- FIRESAFE to API 607, BS6755 Part 2.
- **Pressure rating** up to 10,000 psig [680 barg].
- **Temperature rating** -71°F to 1022°F [-57°C to +550°C].

Pressure and Temperature Ratings

HD Needle Type Globe Valve



Materials of Construction

Valve Body and Components - Material Codes

| Valve Type | Description | C ¹ | L ¹ | S | D |
|------------|-------------------------|----------------|----------------|-----------|------------|
| Keyblok | Valve Body/End Adaptors | A105N | A350 LF2 | A182 F316 | A182 F51 |
| Monoflange | Valve Body | A105N | A350 LF2 | A182 F316 | A182 F51 |
| Root Valve | Valve Body | A105N | A350 LF2 | 316 S11 | UNS-S31803 |
| Root Valve | Valve Body/End Adaptors | A105N | A350 LF2 | 316 S11 | UNS-S31803 |

Standard Trim Combinations

| Body | Trim |
|------|--------------|
| C | S |
| L | S |
| S | S |
| D | S |
| D | D (optional) |

Ball Valve Components - Trim Codes

| Item | Description | S | D |
|------|-----------------------|-----------------------|-----------------------|
| 1 | Handle/Stop Pin | 316 SS | 316 SS |
| 2 | Stem Seal (2 off) | Graphite | Graphite |
| 3 | Ball Seat | PTFE, Devlon® or PEEK | PTFE, Devlon® or PEEK |
| 4 | Housing Static Seal | Graphite | Graphite |
| 5 | Seat Housing | A276-316 | A276-S31803 |
| 6 | Ball | A479-316 | A479-S31803 |
| 7 | Secondary Static Seal | Graphite | Graphite |
| 8 | Locknut | 316 SS | 316 SS |
| 9 | Spindle | A479-316 | A479-S31803 |

OS&Y Needle Type Globe Valve Components - Trim Codes

| Item | Description | S | D |
|------|----------------------|----------------------|----------------------|
| 1 | Cap | Plastic | Plastic |
| 2 | Stem | A479-316 | A479-S31803 |
| 3 | Protective Bellows | Polyurethane | Polyurethane |
| 4 | Yoke | A351-CF8M | A890-4A |
| 5 | Gland Follower | B783-SS-316-N2-33 | A276-S31803 |
| 6 | Stem Packing | PTFE or Graphite | PTFE or Graphite |
| 7 | Body/Bonnet - Bolts | Alloy 286 UNS S66286 | Alloy 286 UNS S66286 |
| 8 | Flange Gasket | Graphite | Graphite |
| 9 | Ball (stem tip) | 316 SS | Ceramic |
| 10 | Gland Flange - Bolts | Austenetic SS | Austenetic SS |
| 11 | Handle Assembly | Austenetic SS | Austenetic SS |
| 12 | Gland Flange | A351 CF8M | A351 CF8M |

Note

- Carbon steel valve bodies and components are zinc plated and passivated as standard.

HD Needle Type Globe Valve Components - Trim Codes

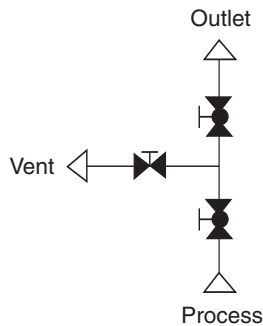
| Item | Description | S | D |
|------|---------------------|------------------|------------------|
| 1 | Gland Follower | Austenetic SS | A276-S31803 |
| 2 | Stem | A479-316 | A479-S31803 |
| 3 | Locknut | Austenetic SS | Austenetic SS |
| 4 | Stem Packing | PTFE or Graphite | PTFE or Graphite |
| 5 | O-ring Weather Seal | BUNA-N | BUNA-N |
| 6 | Ball (stem tip) | 316 SS | Ceramic |
| 7 | Bonnet Locking Pin | Austenetic SS | Austenetic SS |
| 8 | Handle Assembly | Austenetic SS | Austenetic SS |

Keyblok Range - F63 and F64



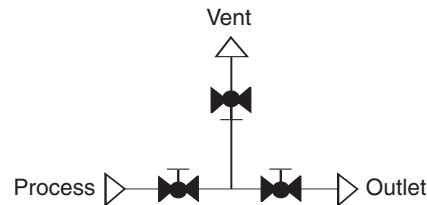
Keyblok F63 - Double Block and Bleed

The F63 features two independently operable $\frac{3}{8}$ -inch [10 mm] bore ball valves for isolation service with an intermediate 0.2-inch [5 mm] bore HD globe style needle valve for venting service.



Keyblok F64 - Double Block and Bleed

The F64 features two independently operable $\frac{3}{8}$ -inch [10 mm] bore ball valves for isolation service with an intermediate $\frac{3}{8}$ -inch [10 mm] bore ball valve for venting service.



The F63 and F64 are integrally forged, one-piece double block and bleed assemblies for primary isolation of pressure take-offs, where the valve is directly mounted to the vessel or process pipe. Instruments may be directly mounted to the valve outlet or alternatively remotely mounted with gauge lines/impulse pipe work.

Applications

- Double Block and Bleed
- Pressure Measurement
- Chemical Injection
- Level Measurement
- Sampling
- Flow Measurement

Standard Features

- $\frac{1}{2}$ -inch NPT threaded female outlet to ASME B1.20.1.
- Four bolted outlet options.
- $\frac{1}{2}$ -inch NPT threaded female vent connection to ASME B1.20.1.
- Material thickness to ASME B16.34.
- ASME B16.5 flanged Inlet connections $\frac{1}{2}$ to 2-inch sizes 150 lb rated to 2500 lb rated.
- API flanged inlet connections Sizes to $2\frac{1}{16}$ -inch
- FIRESAFE to API 607.

Standard Pressure Testing

to BS EN 12266-1.

Standard Material Traceability

to DIN 50049 3.1.B (body and end adaptors only).

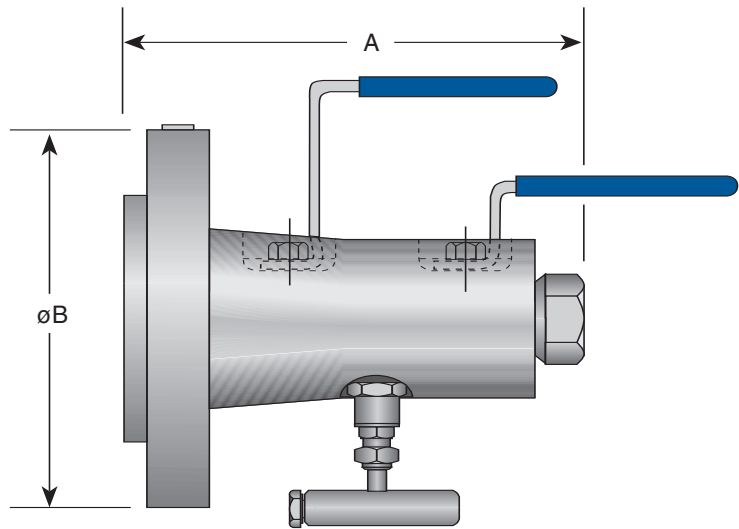
Ball Isolation Valve Seat Materials

A choice of filled PTFE, Devlon-V® and PEEK are available.

HD Globe Style Needle Vent Valve Gland Packing Materials

Standard vent valves are offered with Graphite. PTFE is also available as an option.

Keyblok Weights and Dimensions



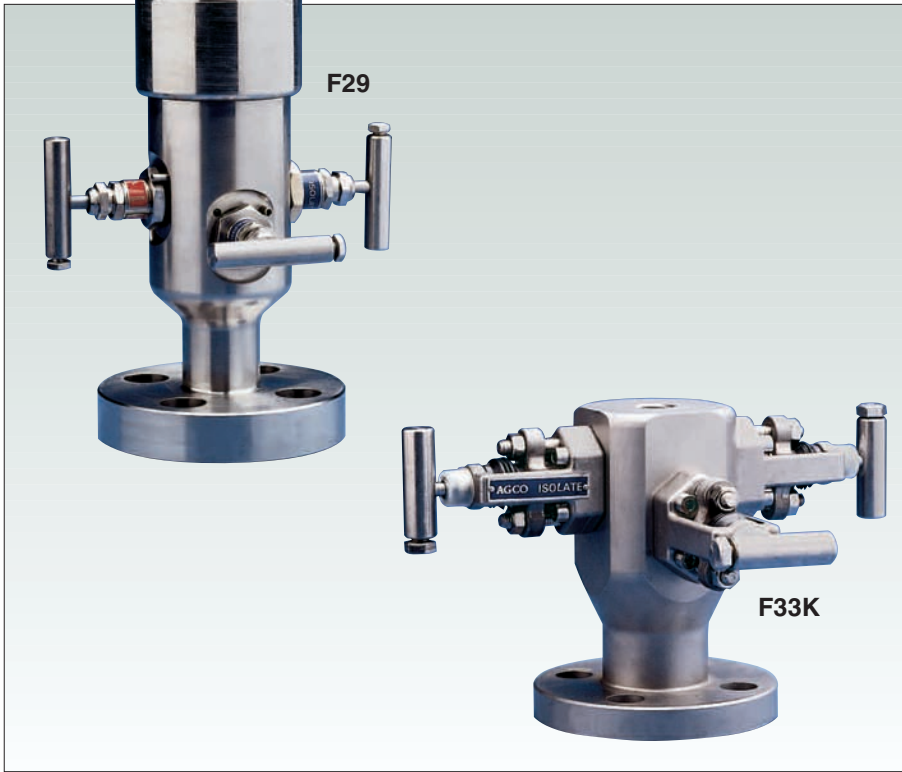
Note

- Metric Calculations:
mm = in x 25.4
kg = lb x 0.4536

F63 and F64 Series Flanged x Threaded

| Size in | Rating lb | Dimensions, inches [mm] | | | | | | Weight | |
|------------|--------------|-------------------------|-------|---------|-------|-----|-------|--------|--------|
| | | A - RF | | A - RTJ | | B | | lb | [kg] |
| 1/2 | 150 | 7.4 | [188] | — | — | 3.5 | [89] | 7.9 | [3.6] |
| 1/2 | 300 | 7.4 | [188] | 7.6 | [193] | 3.8 | [96] | 8.6 | [3.9] |
| 1/2 | 600 | 7.4 | [188] | 7.7 | [196] | 3.8 | [96] | 8.8 | [4.0] |
| 1/2 | 900/1500 | 8.1 | [206] | 8.4 | [213] | 4.8 | [121] | 11.9 | [5.4] |
| 1/2 | 2500 | 8.1 | [206] | 8.4 | [213] | 5.3 | [134] | 15.2 | [6.9] |
| 3/4 | 150 | 7.4 | [188] | — | — | 3.9 | [99] | 8.6 | [3.9] |
| 3/4 | 300 | 7.4 | [188] | 7.7 | [196] | 4.6 | [118] | 10.1 | [4.6] |
| 3/4 | 600 | 7.4 | [188] | 7.7 | [196] | 4.6 | [118] | 10.4 | [4.7] |
| 3/4 | 900/1500 | 8.1 | [206] | 8.4 | [213] | 5.1 | [130] | 13.9 | [6.3] |
| 3/4 | 2500 | 8.1 | [206] | 8.4 | [213] | 5.5 | [140] | 16.5 | [7.5] |
| 1 | 150 | 7.0 | [178] | 7.2 | [183] | 4.3 | [108] | 8.8 | [4.0] |
| 1 | 300 | 7.1 | [180] | 7.3 | [185] | 4.9 | [124] | 10.1 | [4.6] |
| 1 | 600 | 7.1 | [180] | 7.4 | [188] | 4.9 | [124] | 10.4 | [4.7] |
| 1 | 900/1500 | 7.5 | [191] | 7.8 | [198] | 5.9 | [150] | 15.4 | [7.0] |
| 1 | 2500 | 8.1 | [206] | 8.1 | [206] | 6.3 | [159] | 19.0 | [8.6] |
| 1 1/2 | 150 | 7.1 | [180] | 7.3 | [185] | 5.0 | [127] | 10.1 | [4.6] |
| 1 1/2 | 300 | 7.2 | [183] | 7.4 | [188] | 6.1 | [156] | 13.2 | [6.0] |
| 1 1/2 | 600 | 7.6 | [193] | 7.6 | [193] | 6.1 | [156] | 14.3 | [6.5] |
| 1 1/2 | 900/1500 | 8.0 | [203] | 8.0 | [203] | 7.0 | [178] | 20.7 | [9.4] |
| 1 1/2 | 2500 | 8.5 | [216] | 8.5 | [216] | 8.0 | [203] | 35.1 | [15.9] |
| 2 | 150 | 7.2 | [183] | 7.4 | [188] | 6.0 | [153] | 14.6 | [6.6] |
| 2 | 300 | 7.3 | [185] | 7.6 | [192] | 6.5 | [165] | 17.6 | [8.0] |
| 2 | 600 | 7.7 | [196] | 7.8 | [197] | 6.5 | [165] | 18.3 | [8.3] |
| 2 | 900/1500 | 8.2 | [208] | 8.3 | [210] | 8.5 | [216] | 32.8 | [15.0] |
| 2 | 2500 | 8.7 | [221] | 8.8 | [223] | 9.3 | [235] | 48.5 | [22.0] |

Keyblok Range - F29 and F33K



Keyblok F29 - Double Block and Bleed

The F29 features two independently operable 0.2-inch [5 mm] HD globe style needle valves for isolation service, with an intermediate HD globe style needle valve for venting service. Metal seating features as standard for all valves.

Keyblok F33K- Double Block and Bleed

The F33K features two independently operable 0.2-inch [5 mm] bore outside screw and yoke bonnet (OS&Y) valves for isolation service, with an (OS&Y) valve for venting service. Metal seating features as standard for all valves.

The F29 and F33K are integrally forged, one-piece double block and bleed assemblies for primary isolation of pressure take-offs where the valve is mounted directly to the vessel or process pipe. Instruments may be directly mounted to the valve outlet or alternatively remotely mounted with gauge lines/impulse pipe work.

Applications

- Double Block and Bleed
- Pressure Measurement
- Chemical Injection
- Level Measurement
- Sampling
- Flow Measurement

Standard Features

- 1/2-inch NPT threaded female outlet to ASME B1.20.1.
- Four bolted outlet options.
- 1/2-inch NPT threaded female vent port to ASME B1.20.1.
- Material thickness to ASME B16.34.
- ASME B16.5 flanged Inlet connections 1/2 to 2-inch sizes 150 lb rated to 2500 lb rated.
- API flanged inlet connections Sizes to 2¹/₁₆-inch
- FIRESAFE to API 607.

Standard Pressure Testing

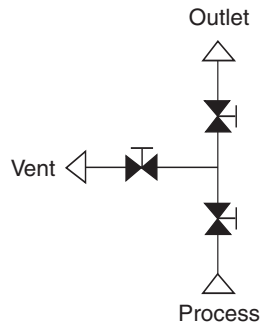
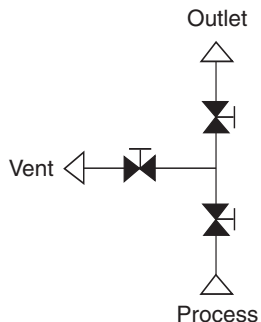
to BS EN 12266-1.

Standard Material Traceability

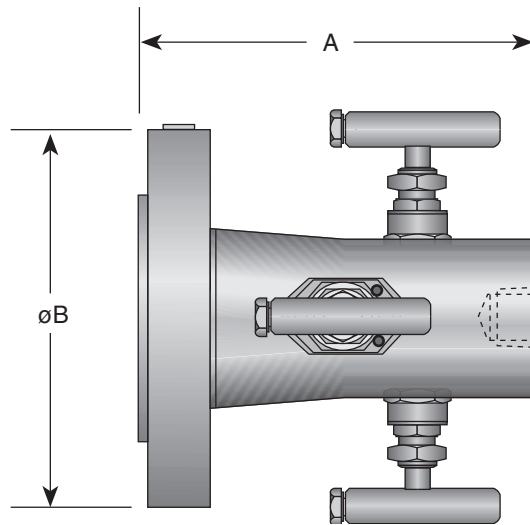
to DIN 50049 3.1.B (body and yoke only).

OS&Y and HD Globe Style Needle Valves Gland Packing Materials

Standard valves are offered with Graphite. PTFE is also available as an option.



Keyblok Weights and Dimensions



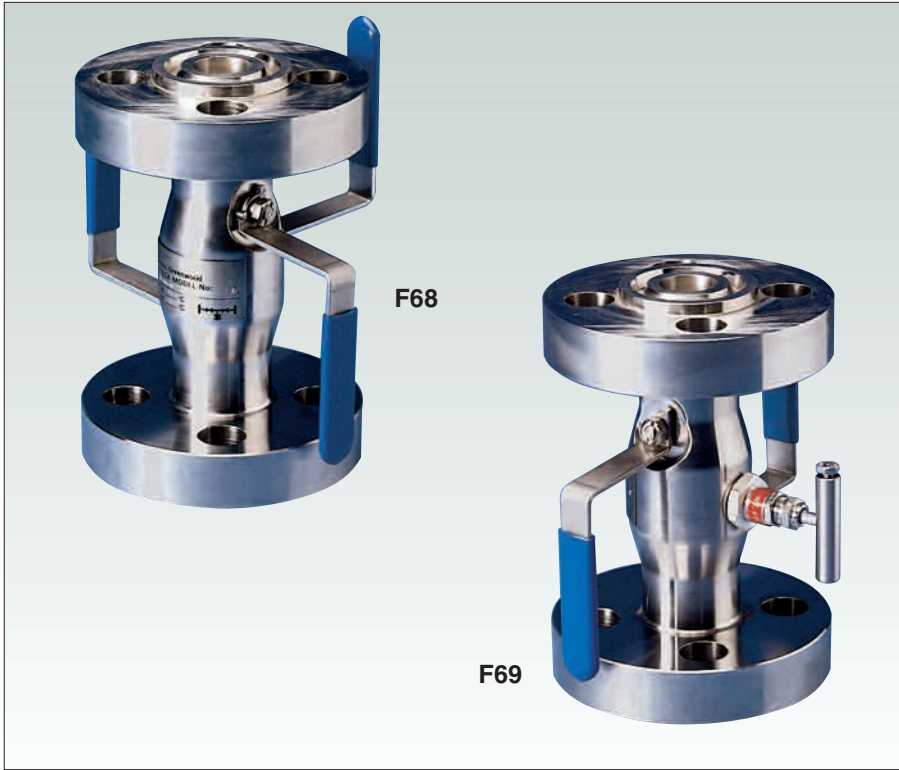
Note

- Metric Calculations:
mm = in x 25.4
kg = lb x 0.4536

F29 and F33K Series Flanged x Threaded

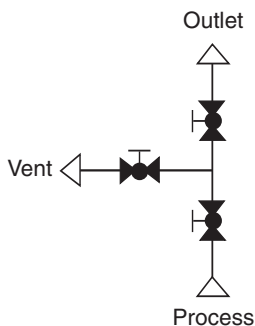
| Size in | Rating lb | Dimensions, inches [mm] | | | | | | Weight | |
|------------|--------------|-------------------------|-------|---------|-------|-----|-------|--------|--------|
| | | A - RF | | A - RTJ | | B | | lb | [kg] |
| 1/2 | 150 | 6.3 | [161] | — | — | 3.5 | [89] | 7.9 | [3.6] |
| 1/2 | 300 | 6.3 | [161] | 6.4 | [163] | 3.8 | [96] | 8.6 | [3.9] |
| 1/2 | 600 | 6.5 | [166] | 6.5 | [165] | 3.8 | [96] | 8.8 | [4.0] |
| 1/2 | 900/1500 | 7.2 | [184] | 7.2 | [184] | 4.8 | [121] | 11.9 | [5.4] |
| 1/2 | 2500 | 7.2 | [184] | 7.2 | [184] | 5.3 | [134] | 15.2 | [6.9] |
| 3/4 | 150 | 6.3 | [161] | — | — | 3.9 | [99] | 8.6 | [3.9] |
| 3/4 | 300 | 6.3 | [161] | 6.5 | [165] | 4.6 | [118] | 10.1 | [4.6] |
| 3/4 | 600 | 6.5 | [166] | 6.5 | [165] | 4.6 | [118] | 10.4 | [4.7] |
| 3/4 | 900/1500 | 7.2 | [184] | 7.2 | [184] | 5.1 | [130] | 13.9 | [6.3] |
| 3/4 | 2500 | 7.2 | [184] | 7.2 | [184] | 5.5 | [140] | 16.5 | [7.5] |
| 1 | 150 | 6.1 | [156] | 6.3 | [161] | 4.3 | [108] | 8.8 | [4.0] |
| 1 | 300 | 6.3 | [159] | 6.5 | [164] | 4.9 | [124] | 10.1 | [4.6] |
| 1 | 600 | 6.3 | [159] | 6.5 | [166] | 4.9 | [124] | 10.4 | [4.7] |
| 1 | 900/1500 | 6.7 | [169] | 7.0 | [177] | 5.9 | [150] | 15.4 | [7.0] |
| 1 | 2500 | 7.2 | [183] | 7.2 | [183] | 6.3 | [159] | 19.0 | [8.6] |
| 1 1/2 | 150 | 6.3 | [159] | 6.5 | [164] | 5.0 | [127] | 10.1 | [4.6] |
| 1 1/2 | 300 | 6.3 | [162] | 6.6 | [167] | 6.1 | [156] | 13.2 | [6.0] |
| 1 1/2 | 600 | 6.7 | [170] | 6.7 | [170] | 6.1 | [156] | 14.3 | [6.5] |
| 1 1/2 | 900/1500 | 7.1 | [180] | 7.1 | [180] | 7.0 | [178] | 20.7 | [9.4] |
| 1 1/2 | 2500 | 7.6 | [193] | 7.6 | [194] | 8.0 | [203] | 35.1 | [15.9] |
| 2 | 150 | 6.3 | [161] | 6.5 | [166] | 6.0 | [153] | 14.6 | [6.6] |
| 2 | 300 | 6.5 | [164] | 6.7 | [170] | 6.5 | [165] | 17.6 | [8.0] |
| 2 | 600 | 6.8 | [173] | 6.9 | [175] | 6.5 | [165] | 18.3 | [8.3] |
| 2 | 900/1500 | 7.3 | [186] | 7.4 | [188] | 8.5 | [216] | 32.8 | [15.0] |
| 2 | 2500 | 7.8 | [199] | 7.9 | [201] | 9.3 | [235] | 48.5 | [22.0] |

Keyblok Range - F68 and F69



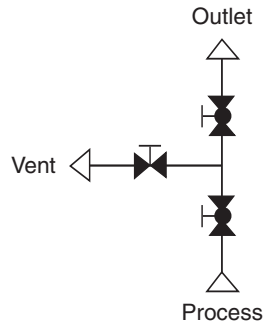
Keyblok F68 - Double Block and Bleed

The F68 features two independently operable $\frac{3}{8}$ -inch [10 mm] bore ball valves for isolation service with intermediate $\frac{3}{8}$ -inch [10 mm] bore ball valve for venting service.



Keyblok F69 - Double Block and Bleed

The F69 features two independently operable $\frac{3}{8}$ -inch [10 mm] bore ball valves for isolation service with an intermediate 0.2-inch [5 mm] bore HD globe style needle valve for venting service.



The F68 and F69 are integrally forged, one-piece valve assemblies for primary isolation of pressure take-offs, where the valve is mounted directly to the vessel or process pipe. Instruments may be directly mounted to the valve outlet or alternatively remotely mounted with gauge lines/ impulse pipe work.

Applications

- Double Block and Bleed
- Pressure Measurement
- Level Measurement
- Flow Measurement
- Chemical Seal Isolation
- Sampling
- Chemical Injection

Standard Features

- $\frac{1}{2}$ -inch NPT threaded female vent connection to ASME B1.20.1.
- Material thickness to ASME B16.34.
- ASME B16.5 flanged inlet and outlet connections
 $\frac{1}{2}$ to 2-inch sizes
150 lb rated to 2500 lb rated.
- API flanged inlet connections
Sizes to 2 $\frac{1}{16}$ -inch
- FIRESAFE to API 607.

Standard Pressure Testing

to BS EN 12266-1.

Standard Material Traceability

to DIN 50049 3.1.B (body and end adaptors only).

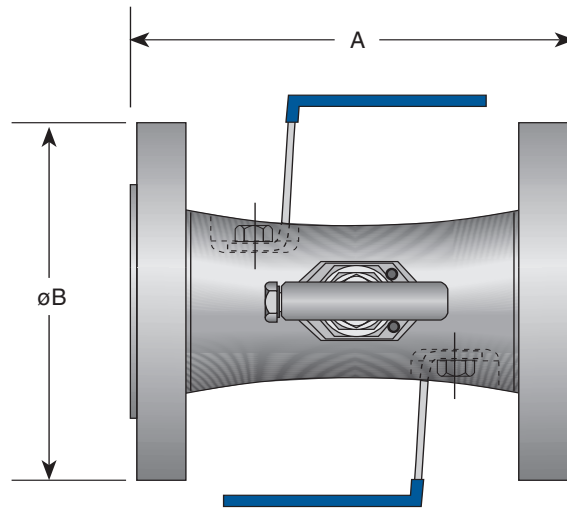
Ball Isolation Seat Materials

A choice of filled PTFE, Devlon-V® and PEEK are available.

HD Globe Style Needle Valve Gland Packing Materials

Standard valves are offered with Graphite. PTFE is also available as an option.

Keyblok Weights and Dimensions



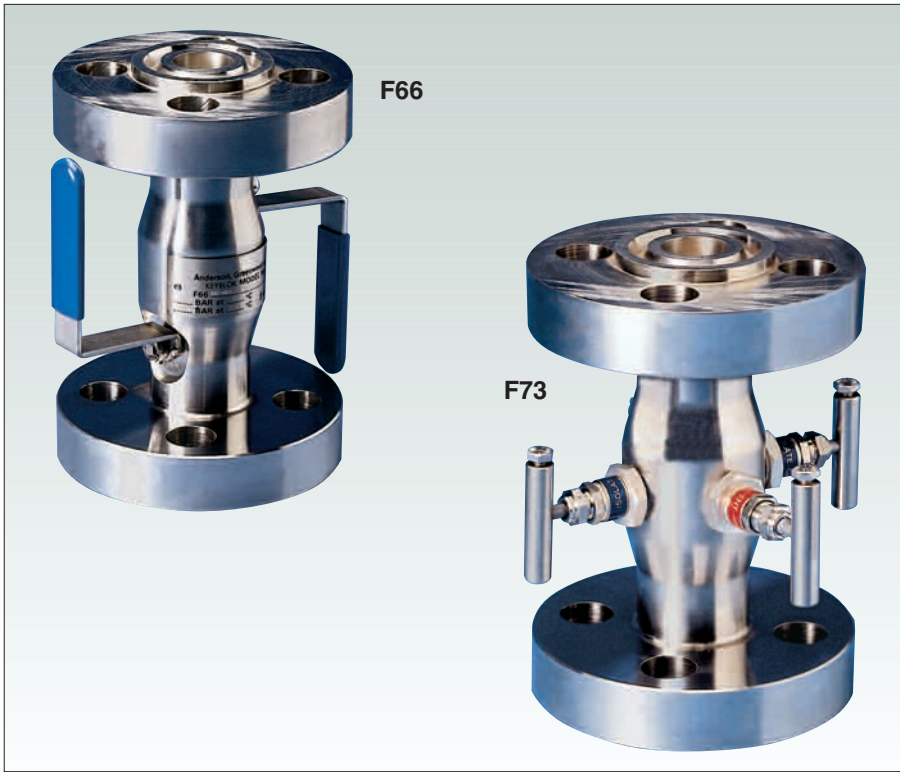
Note

- Metric Calculations:
mm = in x 25.4
kg = lb x .4536

F68 and F69 Series Flanged x Flanged

| Size in | Rating lb | Dimensions, inches [mm] | | | | | | Weight | |
|------------|--------------|-------------------------|-------|---------|-------|-----|-------|--------|--------|
| | | A - RF | | A - RTJ | | B | | lb | [kg] |
| 1/2 | 150 | 8.2 | [208] | — | — | 3.5 | [89] | 9.5 | [4.3] |
| 1/2 | 300 | 8.2 | [208] | 8.7 | [221] | 3.8 | [96] | 11.0 | [5.0] |
| 1/2 | 600 | 8.2 | [208] | 8.7 | [221] | 3.8 | [96] | 11.5 | [5.2] |
| 1/2 | 900/1500 | 9.6 | [243] | 10.0 | [256] | 4.8 | [121] | 17.4 | [7.9] |
| 1/2 | 2500 | 9.6 | [243] | 10.0 | [256] | 5.3 | [134] | 23.8 | [10.8] |
| 3/4 | 150 | 8.2 | [208] | — | — | 3.9 | [99] | 10.8 | [4.9] |
| 3/4 | 300 | 8.2 | [208] | 8.7 | [221] | 4.6 | [118] | 13.9 | [6.3] |
| 3/4 | 600 | 8.2 | [208] | 8.7 | [221] | 4.6 | [118] | 14.4 | [6.5] |
| 3/4 | 900/1500 | 9.6 | [243] | 10.0 | [256] | 5.1 | [130] | 20.9 | [9.5] |
| 3/4 | 2500 | 9.6 | [243] | 10.0 | [256] | 5.5 | [140] | 26.5 | [12.0] |
| 1 | 150 | 7.1 | [180] | 7.4 | [189] | 4.3 | [108] | 10.9 | [5.0] |
| 1 | 300 | 7.3 | [186] | 7.7 | [196] | 4.9 | [124] | 13.8 | [6.3] |
| 1 | 600 | 7.8 | [199] | 7.8 | [199] | 4.9 | [124] | 14.4 | [6.5] |
| 1 | 900/1500 | 8.7 | [221] | 8.7 | [221] | 5.9 | [150] | 24.7 | [11.2] |
| 1 | 2500 | 9.2 | [234] | 9.2 | [234] | 6.3 | [159] | 31.6 | [14.3] |
| 1 1/2 | 150 | 7.3 | [186] | 7.7 | [196] | 5.0 | [127] | 14.2 | [6.4] |
| 1 1/2 | 300 | 7.6 | [192] | 8.0 | [202] | 6.1 | [156] | 20.1 | [9.1] |
| 1 1/2 | 600 | 8.2 | [208] | 8.2 | [208] | 6.1 | [156] | 22.3 | [10.1] |
| 1 1/2 | 900/1500 | 8.9 | [227] | 8.9 | [227] | 7.0 | [178] | 35.2 | [16.0] |
| 1 1/2 | 2500 | 10.0 | [253] | 10.0 | [256] | 8.0 | [203] | 61.3 | [27.8] |
| 2 | 150 | 7.4 | [189] | 7.8 | [199] | 6.0 | [153] | 21.8 | [9.9] |
| 2 | 300 | 7.7 | [196] | 8.2 | [208] | 6.5 | [165] | 26.2 | [11.9] |
| 2 | 600 | 8.5 | [215] | 8.6 | [218] | 6.5 | [165] | 29.6 | [13.4] |
| 2 | 900/1500 | 9.4 | [240] | 9.6 | [243] | 8.5 | [216] | 60.0 | [27.2] |
| 2 | 2500 | 10.4 | [265] | 10.6 | [268] | 9.3 | [235] | 88.2 | [40.0] |

Keyblok Range - F66 and F73/F73K



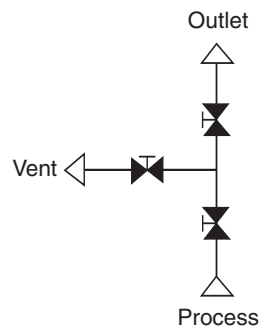
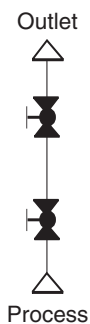
Keyblok F66 - Double Block

The F66 features two independently operable 3/8-inch [10 mm] bore ball valves for isolation service.

Keyblok F73/F73K - Double Block and Bleed

The F73 features two independently operable 0.2-inch [5 mm] bore HD style needle valves for isolation service with an intermediate HD globe style needle valve for venting service. Metal seating is standard for valves.

The F73K offers the same functionality as the F73 with the exception that all valves feature outside screw and yoke bolted bonnet (OS&Y) 0.2-inch [5 mm] bore valves.



The F66 and F73/F73K are integrally forged, one-piece valve assemblies for primary isolation of pressure take-offs, where the valve is mounted directly to the vessel or process pipe. Instruments may be directly mounted to the valve outlet or alternatively remotely mounted with gauge lines/impulse pipe work.

Applications

- Double Block and Bleed (F73/F73K)
- Double Block (F66)
- Pressure Measurement
- Level Measurement
- Flow Measurement
- Chemical Seal Isolation
- Sampling
- Chemical Injection

Standard Features

- 1/2-inch NPT threaded female vent connection to ASME B1.20.1 (F73/F73K only).
- Material thickness to ASME B16.34.
- ASME B16.5 flanged Inlet and outlet connections
1/2 to 2-inch sizes
150 lb rated to 2500 lb rated.
- API flanged inlet and outlet connections
Sizes to 2 1/16-inch
- FIRESAFE to API 607.

Standard Pressure Testing

to BS EN 12266-1.

Standard Material Traceability

to DIN 50049 3.1.B (body, end adaptors and yoke only).

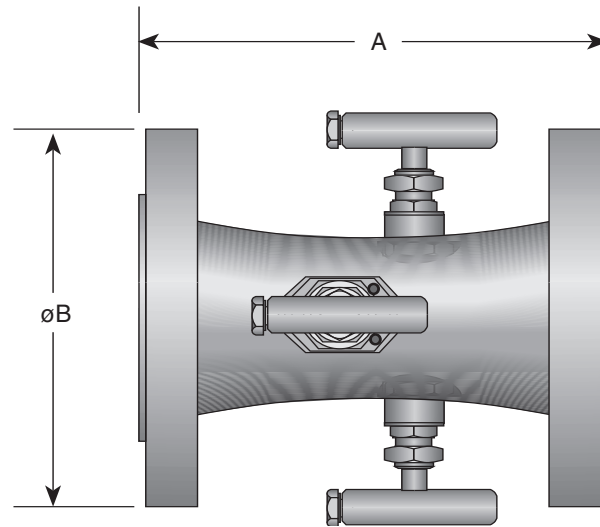
Ball Isolation Seat Materials

A choice of filled PTFE, Devlon-V® and PEEK are available.

OS&Y and HD Globe Style Needle Valves Standard Gland Packing Materials

Standard valves are offered with Graphite. PTFE is also available as an option.

Keyblok Weights and Dimensions



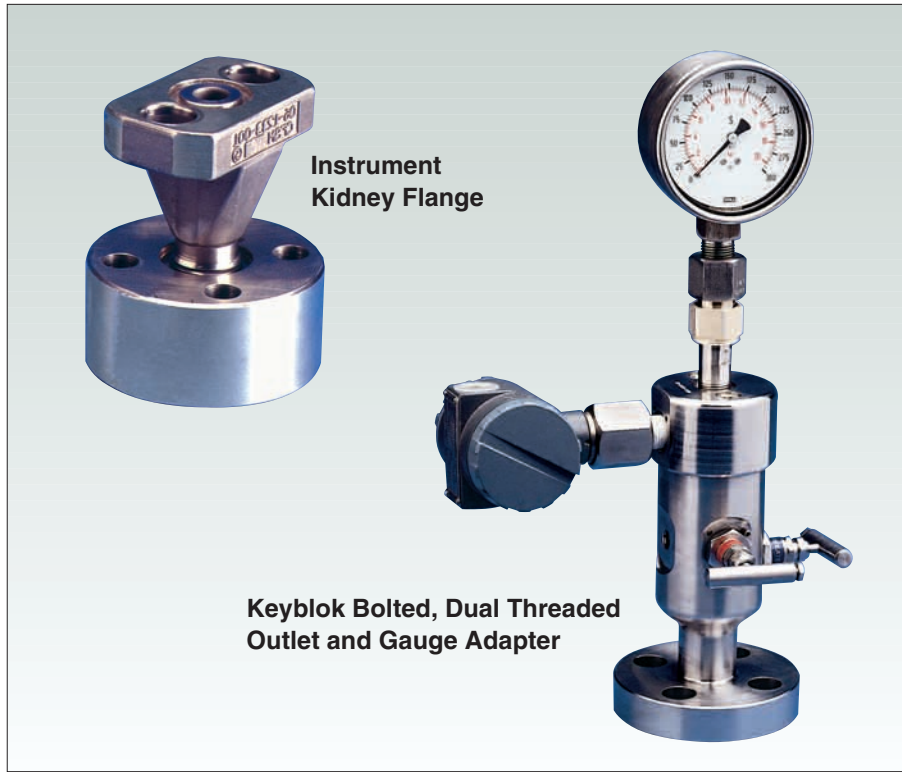
Note

- Metric Calculations:
mm = in x 25.4
kg = lb x 0.4536

F66, F73 and F73K Series Flanged x Flanged

| Size in | Rating lb | Dimensions, inches [mm] | | | | | | Weight | |
|------------|--------------|-------------------------|-------|---------|-------|-----|-------|--------|--------|
| | | A - RF | | A - RTJ | | B | | lb | [kg] |
| 1/2 | 150 | 7.8 | [197] | — | — | 3.5 | [89] | 9.5 | [4.3] |
| 1/2 | 300 | 7.8 | [197] | 8.1 | [206] | 3.8 | [96] | 11.0 | [5.0] |
| 1/2 | 600 | 8.1 | [206] | 8.1 | [206] | 3.8 | [96] | 11.5 | [5.2] |
| 1/2 | 900/1500 | 9.6 | [243] | 9.6 | [243] | 4.8 | [121] | 17.4 | [7.9] |
| 1/2 | 2500 | 9.6 | [243] | 9.6 | [243] | 5.3 | [134] | 23.8 | [10.8] |
| 3/4 | 150 | 7.8 | [197] | — | — | 3.9 | [99] | 10.8 | [4.9] |
| 3/4 | 300 | 7.8 | [197] | 8.1 | [206] | 4.6 | [118] | 13.9 | [6.3] |
| 3/4 | 600 | 8.1 | [206] | 8.1 | [206] | 4.6 | [118] | 14.4 | [6.5] |
| 3/4 | 900/1500 | 9.6 | [243] | 9.6 | [243] | 5.1 | [130] | 20.9 | [9.5] |
| 3/4 | 2500 | 9.6 | [243] | 9.6 | [243] | 5.5 | [140] | 26.5 | [12.0] |
| 1 | 150 | 7.1 | [180] | 7.4 | [189] | 4.3 | [108] | 10.9 | [5.0] |
| 1 | 300 | 7.3 | [186] | 7.7 | [196] | 4.9 | [124] | 13.8 | [6.3] |
| 1 | 600 | 7.8 | [199] | 7.8 | [199] | 4.9 | [124] | 14.4 | [6.5] |
| 1 | 900/1500 | 8.7 | [221] | 8.7 | [221] | 5.9 | [150] | 24.7 | [11.2] |
| 1 | 2500 | 9.2 | [234] | 9.2 | [234] | 6.3 | [159] | 31.6 | [14.3] |
| 1 1/2 | 150 | 7.3 | [186] | 7.7 | [196] | 5.0 | [127] | 14.2 | [6.4] |
| 1 1/2 | 300 | 7.6 | [192] | 8.0 | [202] | 6.1 | [156] | 20.1 | [9.1] |
| 1 1/2 | 600 | 8.2 | [208] | 8.2 | [208] | 6.1 | [156] | 22.3 | [10.1] |
| 1 1/2 | 900/1500 | 8.9 | [227] | 8.9 | [227] | 7.0 | [178] | 35.2 | [16.0] |
| 1 1/2 | 2500 | 10.0 | [253] | 10.0 | [256] | 8.0 | [203] | 61.3 | [27.8] |
| 2 | 150 | 7.4 | [189] | 7.8 | [199] | 6.0 | [153] | 21.8 | [9.9] |
| 2 | 300 | 7.7 | [196] | 8.2 | [208] | 6.5 | [165] | 26.2 | [11.9] |
| 2 | 600 | 8.5 | [215] | 8.6 | [218] | 6.5 | [165] | 29.6 | [13.4] |
| 2 | 900/1500 | 9.4 | [240] | 9.6 | [243] | 8.5 | [216] | 60.0 | [27.2] |
| 2 | 2500 | 10.4 | [265] | 10.6 | [268] | 9.3 | [235] | 88.2 | [40.0] |

Keyblok Options



- **Bolted outlet options**

The Keyblok product types F63, F64, F29 and F33K feature a unique series of optional end connections which can be bolted onto the valve outlet in place of the standard 1/2-inch NPT female threaded connection. Bolt on connections are available as:

- Instrument Kidney Flange
- Welded Connection
- Dual Threaded Connection

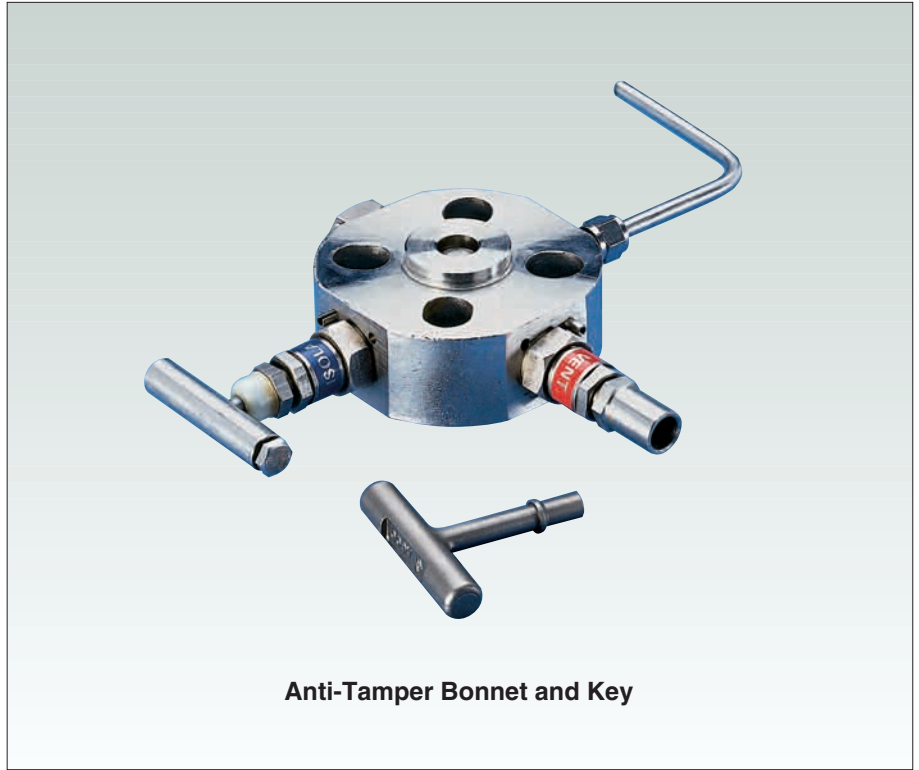
- **Instrument kidney flange** is designed for remote or direct mounting of instruments. The bolted instrument kidney flange also allows a breakaway joint in high integrity systems where no NPT threads are allowed.

- **Welded Connection**

- NB male butt weld
- NB female socket weld
- NB male plain end, suitable for socket weld

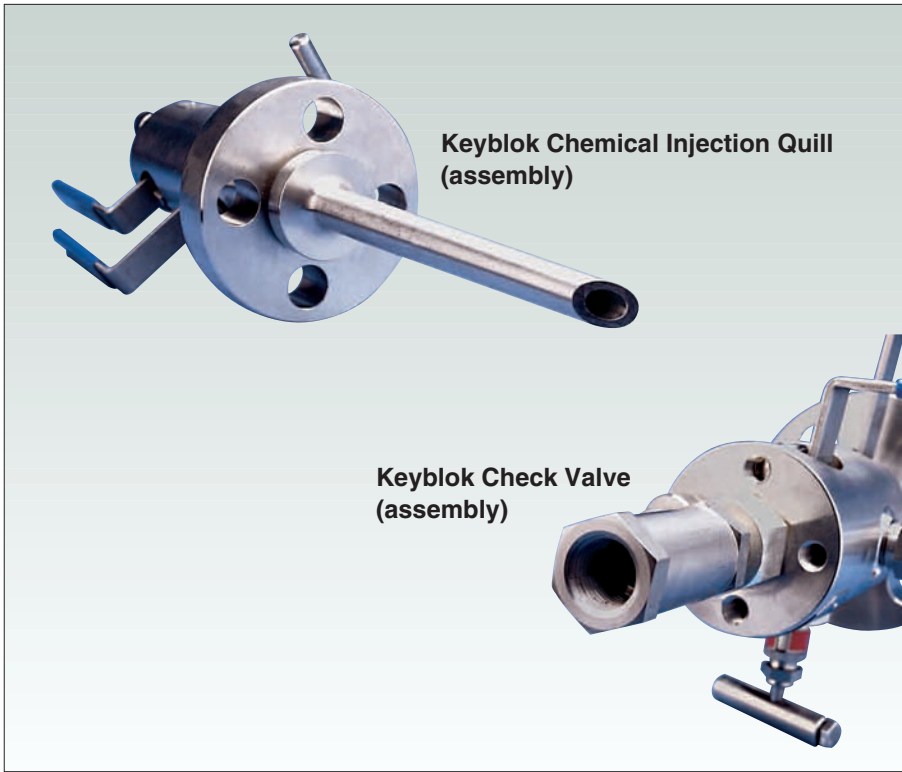
- **Dual threaded connection** enables more versatile positioning of gauges or pressure switches and reduces the number of components required for instrument installation, thereby minimizing possible leak points. Available as 1/2-inch NPT female outlet or G1/2-inch female. The valve outlet allows horizontal or vertical mounting, or may be used to mount two instruments – i.e. pressure switch and pressure gauge. Because the valve has two outlets, it eliminates the need for two separate valves and extra penetrations into the vessel.
- **Swivel gauge adaptor** is designed for use with any gauge to increase versatility. It allows positioning of pressure gauges in any direction through 360 degrees via union connection fitting. Available as 1/2-inch NPT female or G1/2-inch female version.

Keyblok Options



- **Ball valve locking handle** provides additional security against tampering or accidental loosening as a result of vibration or physical damage. Allows the valve to be locked open or closed.
- **Anti-tamper heavy duty bonnets** available with a removable T-bar key to prevent unauthorized operation of valves.
- **Lockable anti-tamper heavy duty bonnets** designed to enable padlocking for additional security are available.
- **Ball end stem types (HD and OS&Y globe style needle valves)** of ceramic or Stellite balls may be supplied to ensure maximum life on dirty or erosive service.
- **Low temperature** valves are available suitable for low temperature service to -71°F [-57°C].

Keyblok Options



**Keyblok Chemical Injection Quill
(assembly)**

**Keyblok Check Valve
(assembly)**

- **Quill for chemical injection and sampling service** designed to ensure high pressure media can be injected into the optimum position of the flow stream through the process pipe work. It also enables clean product samples to be removed from the main flow. The quill features a length of heavy wall pipe with a screwed connection into the valve body. Quill lengths are customer specified. The quill outlet is available in straight or 45-degree options.
- **Sour Gas (NACE)** valves are available in materials which comply with standard NACE MR0175 latest revision relating to metallic materials offering optimum resistance to sulfide stress cracking.
- **Integral check valve for chemical injection** designed to ensure safe operation and prevent a back flow condition during the injection of liquids or gases to a process line, incorporating a poppet check valve with 1/2-inch NPT female outlet connection. The check valve is integral to the valve body.
- **Low temperature service** valves are available assembled suitable for low temperature service to -71°F [-57°C].

Keyblok Ordering Information

F63 V S S - 061L - 047B - QV

Manifold Type

Ball Valve Type

F63 Flanged x Threaded Double Block & Bleed
F64 Flanged x Threaded Double Block & Bleed
F66 Flanged x Flanged Double Block
F68 Flanged x Flanged Double Block & Bleed
F69 Flanged x Flanged Double Block & Bleed

Globe Needle Valve Type

F29 Flanged x Threaded Double Block & Bleed
F33K Flanged x Threaded Double Block & Bleed
F73 Flanged x Flanged Double Block & Bleed
F73K Flanged x Flanged Double Block & Bleed

Ball Valve Seat Material or Needle Valve Packing

Ball Valve Type

V – Filled PTFE N – Devlon-V® E – PEEK

Needle Valve Type

V – PTFE H – Graphite

Body Material

C – A105N S – A182 F316
L – A350 LF2 D – A182 F51

Trim Material

S – SS 316
D – Duplex UNS S31803

Standard Trim Combinations

C, L and S Body = S Trim, D Body = S Trim, D Trim Optional

Inlet Connection

| | | | | | |
|-------------|--|----------|------------|--------------------------|--------------------------|
| 04 – 1/2" | 17 – 1 ¹³ / ₁₆ " | 1 – RF | 5 – RX | A – 150 lb (ASME B16.5) | M – 2500 lb (ASME B16.5) |
| 06 – 3/4" | 18 – 2 ¹ / ₁₆ " | 2 – Male | 6 – R | J – 300 lb (ASME B16.5) | N – 5000 lb (API 6A) |
| 08 – 1" | 24 – 3" | 3 – RTJ | 7 – Female | K – 600 lb (ASME B16.5) | P – 10,000 lb (API 6A) |
| 12 – 1 1/2" | 25 – 3 ¹ / ₁₆ " | 4 – BX | 8 – Hub | T – 900 lb (ASME B16.5) | V – 3000 lb (API 6A) |
| 16 – 2" | 50 – 4 ¹ / ₁₆ " | | | L – 1500 lb (ASME B16.5) | |

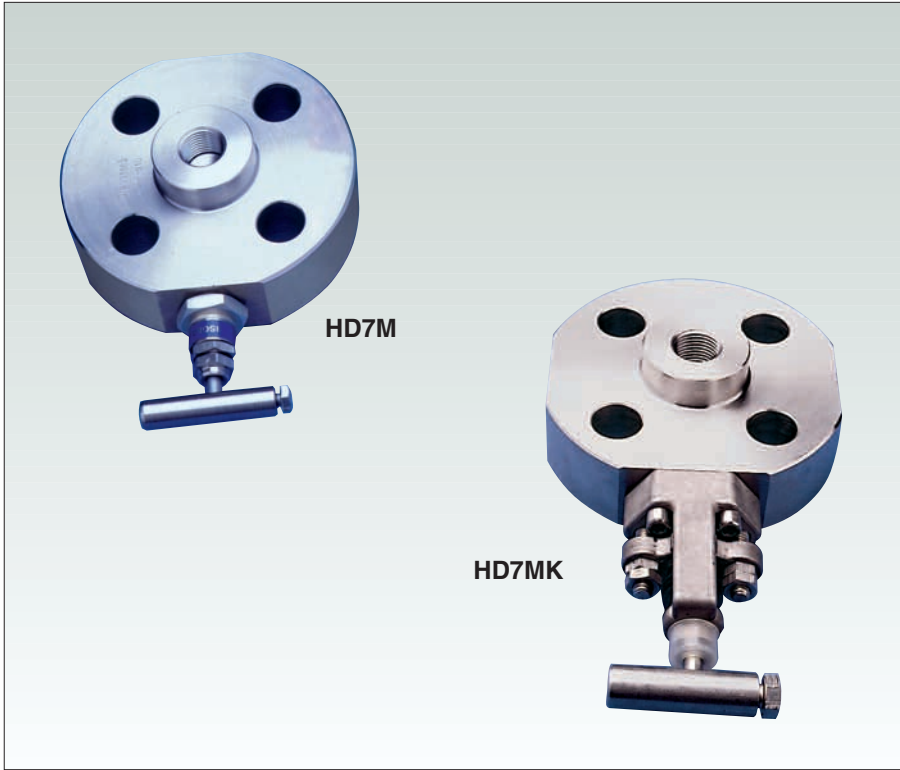
Outlet Connection

| | | | | | | |
|-------------|--|----------|------------|-------------------------------------|--------------------------|------------------------|
| 04 – 1/2" | 17 – 1 ¹³ / ₁₆ " | 1 – RF | 5 – RX | A – 150 lb (ASME B16.5) | J – 300 lb (ASME B16.5) | N – 5000 lb (API 6A) |
| 06 – 3/4" | 18 – 2 ¹ / ₁₆ " | 2 – Male | 6 – R | B – NPT | K – 600 lb (ASME B16.5) | P – 10,000 lb (API 6A) |
| 08 – 1" | 24 – 3" | 3 – RTJ | 7 – Female | C – Butt Weld (XXS) | T – 900 lb (ASME B16.5) | V – 3000 lb (API 6A) |
| 12 – 1 1/2" | 50 – 4 ¹ / ₁₆ " | 4 – BX | 8 – Hub | D – Socket Weld (XXS) | L – 1500 lb (ASME B16.5) | |
| 16 – 2" | | | | E – G ¹ / ₂ " | M – 2500 lb (ASME B16.5) | |

Options

| | | |
|--|----------------------------------|--|
| 316T – Full 316 SS Trim | MP04 – Multiport Outlet 1/2" NPT | SG – (Sour Gas) meets the requirements of NACE MR0175/ISO 15156-3 Corrigendum 2 (for Chloride conditions ≤ 50 mg/l [ppm]) and NACE MR0103-2005 |
| AL – Low Temperature Service | PO – Plugged Outlet | SG3 – (Sour Gas) meets the requirements of NACE MR0175/ISO 15156-3 Corrigendum 2 (for Chloride conditions > 50 mg/l [ppm]) |
| AT – Anti-Tamper Vent (needle valve only) | PT – PTFE Packed Needle Valve | VO – Vent Option (please specify compression fittings, if required) |
| CB – Ceramic Ball Ended Stem | PV – Plugged Vent | |
| ICV – Integral Check Valve (injection) | QV – 1/4" NPT (f) Vent | |
| IQ(- - -) – Integral Quill (required length) | 3QV – 3/4" NPT (f) Vent | |
| KFGTX – Kidney Flange Adaptor | SP – Special Requirement | |
| LH – Lockable Ball Valve Handles (specify number required) | ST – Stellite Ball Ended Stem | |

Monoflange Range - HD7M and HD7MK



Monoflange HD7M - Isolation Valve

The HD7M features a 0.2-inch [5 mm] bore HD globe style needle valve for isolation service.



Monoflange HD7MK - Isolation Valve

The HD7MK features a 0.2-inch [5 mm] bore outside screw and yoke bolted bonnet (OS&Y) valve for isolation service.



The HD7 and HD7MK are integrally forged one-piece isolation valves for primary isolation of pressure take-offs, where the valve is directly mounted to the vessel or process pipe. Instruments may be directly mounted to the valve outlet or alternatively remotely mounted with gauge lines/impulse pipe work.

Applications

- Isolation Service
- Pressure Measurement
- Level Measurement
- Sampling

Standard Features

- 1/2-inch NPT threaded female outlet as standard to ASME B1.20.1.
- Material thickness to ASME B16.34.
- ASME B16.5 flanged inlet connections 1/2 to 2-inch sizes 150 lb rated to 2500 lb rated.
- API flanged inlet connections Sizes to 2¹/₁₆-inch 3000 psig [204 barg], 5000 psig [340 barg] and 10,000 psig [680 barg] rated.
- FIRESAFE to API 607.

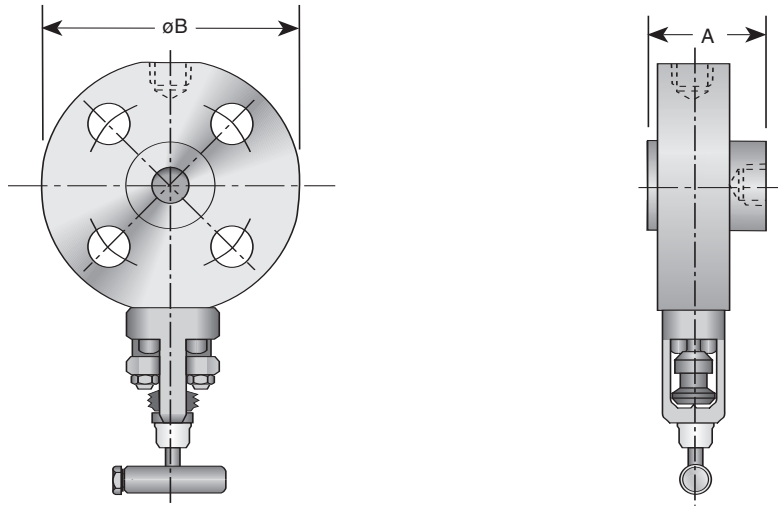
Standard Pressure Testing to BS EN 12266-1.

Standard Material Traceability to DIN 50049 3.1.B (body and yoke only).

OS&Y and HD Globe Style Needle Valves Gland Packing Materials

Standard valves are offered with Graphite. PTFE is also available as an option.

Monoflange Weights and Dimensions



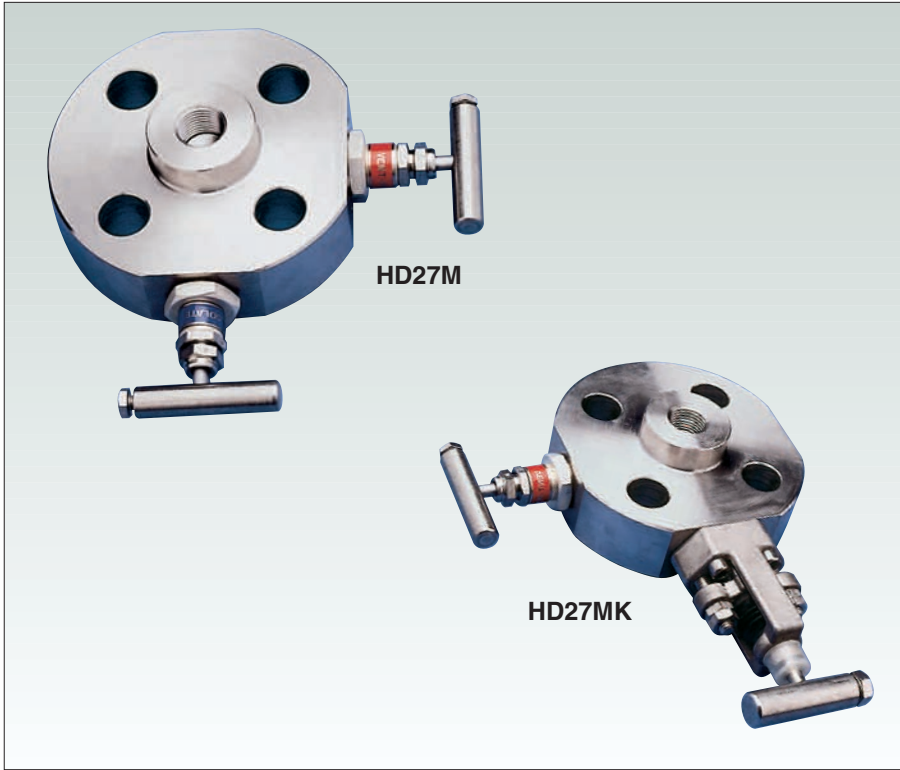
Note

- Metric Calculations:
mm = in x 25.4
kg = lb x 0.4536

HD7M and HD7MK Series Flanged x Threaded

| Size in | Rating lb | Dimensions, inches [mm] | | | | | | Weight | |
|------------|--------------|-------------------------|---------|---------|---------|------|----------|--------|--------|
| | | A - RF | | A - RTJ | | B | | lb | [kg] |
| 1/2 | 150 | 2.50 | [63.50] | — | — | 3.88 | [98.55] | 4.3 | [2.0] |
| 1/2 | 300 | 2.50 | [63.50] | 2.66 | [67.56] | 3.88 | [98.55] | 4.3 | [2.0] |
| 1/2 | 600 | 2.69 | [68.35] | 2.66 | [67.56] | 3.88 | [98.55] | 4.3 | [2.0] |
| 1/2 | 900/1500 | 2.69 | [68.35] | 2.69 | [68.35] | 5.25 | [133.35] | 8.3 | [3.8] |
| 1/2 | 2500 | 2.69 | [68.35] | 2.69 | [68.35] | 5.25 | [133.35] | 8.3 | [3.8] |
| 3/4 | 150 | 2.50 | [63.50] | — | — | 3.88 | [98.55] | 4.3 | [2.0] |
| 3/4 | 300 | 2.50 | [63.50] | 2.69 | [68.35] | 5.25 | [133.35] | 8.3 | [3.8] |
| 3/4 | 600 | 2.69 | [68.35] | 2.69 | [68.35] | 5.25 | [133.35] | 8.3 | [3.8] |
| 3/4 | 900/1500 | 2.69 | [68.35] | 2.69 | [68.35] | 5.25 | [133.35] | 8.3 | [3.8] |
| 3/4 | 2500 | 2.88 | [73.35] | 2.88 | [73.35] | 6.25 | [158.75] | 14.9 | [6.8] |
| 1 | 150 | 2.50 | [63.50] | 2.69 | [68.35] | 5.25 | [133.35] | 7.9 | [3.6] |
| 1 | 300 | 2.50 | [63.50] | 2.69 | [68.35] | 5.25 | [133.35] | 7.9 | [3.6] |
| 1 | 600 | 2.69 | [68.35] | 2.69 | [68.35] | 5.25 | [133.35] | 7.9 | [3.6] |
| 1 | 900/1500 | 2.88 | [73.35] | 2.88 | [73.35] | 6.25 | [158.75] | 14.9 | [6.8] |
| 1 | 2500 | 2.88 | [73.35] | 2.88 | [73.35] | 6.25 | [158.75] | 14.9 | [6.8] |
| 1 1/2 | 150 | 2.50 | [63.50] | 2.69 | [68.35] | 5.00 | [127.00] | 9.0 | [4.1] |
| 1 1/2 | 300 | 2.70 | [68.52] | 2.70 | [68.52] | 6.25 | [158.75] | 14.9 | [6.8] |
| 1 1/2 | 600 | 2.88 | [73.35] | 2.88 | [73.35] | 6.25 | [158.75] | 14.9 | [6.8] |
| 1 1/2 | 900/1500 | 2.88 | [73.35] | 2.88 | [73.35] | 7.00 | [177.80] | 18.2 | [8.3] |
| 1 1/2 | 2500 | 3.23 | [82.15] | 3.29 | [83.72] | 9.25 | [235.00] | 35.8 | [16.3] |
| 2 | 150 | 2.70 | [68.52] | 2.88 | [73.35] | 6.25 | [158.75] | 14.9 | [6.8] |
| 2 | 300 | 2.70 | [68.52] | 2.95 | [74.92] | 7.00 | [177.80] | 18.2 | [8.3] |
| 2 | 600 | 2.88 | [73.35] | 2.95 | [74.92] | 7.00 | [177.80] | 18.2 | [8.3] |
| 2 | 900/1500 | 3.23 | [82.15] | 3.29 | [83.72] | 9.25 | [235.00] | 35.8 | [16.3] |
| 2 | 2500 | 3.23 | [82.15] | 3.29 | [83.72] | 9.25 | [235.00] | 35.8 | [16.3] |

Monoflange Range - HD27M and HD27MK

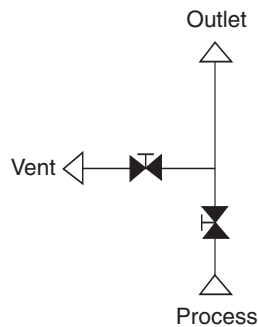
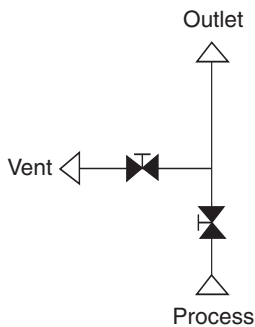


HD27M - Block and Bleed Valve

The HD27M features 0.2-inch [5 mm] bore HD globe style needle valves for both isolation and venting service.

Monoflange HD27MK - Block and Bleed

The HD27MK features a 0.2-inch [5 mm] outside screw and yoke bolted bonnet (OS&Y) valve for isolation service and an HD globe style needle valve for venting service.



The HD27 and HD27MK are integrally forged one-piece block and bleed assemblies for primary isolation of pressure take-offs, where the valve is directly mounted to the vessel or process pipe. Instruments may be directly mounted to the valve outlet or alternatively remotely mounted with gauge lines/impulse pipe work.

Applications

- Block and Bleed
- Pressure Measurement
- Chemical Injection
- Sampling
- Flow Measurement

Standard Features

- 1/2-inch NPT threaded female outlet as standard to ASME B1.20.1.
- Material thickness to ASME B16.34.
- 1/4-inch NPT threaded female vent connection to ASME B1.20.1.
- ASME B16.5 flanged inlet connections 1/2 to 2-inch sizes 150 lb rated to 2500 lb rated.
- API flanged inlet connections Sizes to 2 1/16-inch 3000 psig [204 barg], 5000 psig [340 barg] and 10,000 psig [680 barg] rated.
- FIRESAFE to API 607.

Standard Pressure Testing

to BS EN 12266-1.

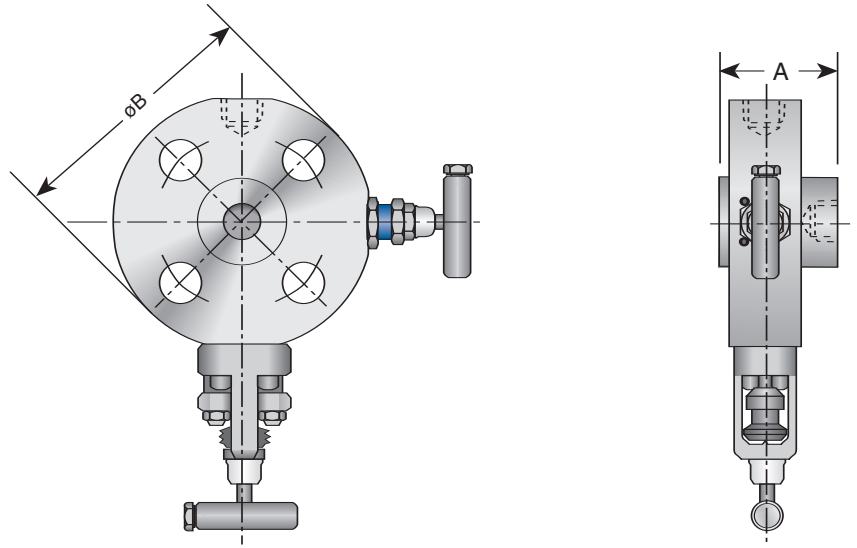
Standard Material Traceability

to DIN 50049 3.1.B (body and yoke only).

OS&Y and HD Globe Style Needle Valves Gland Packing Materials

Standard valves are offered with Graphite. PTFE is also available as an option.

Monoflange Weights and Dimensions



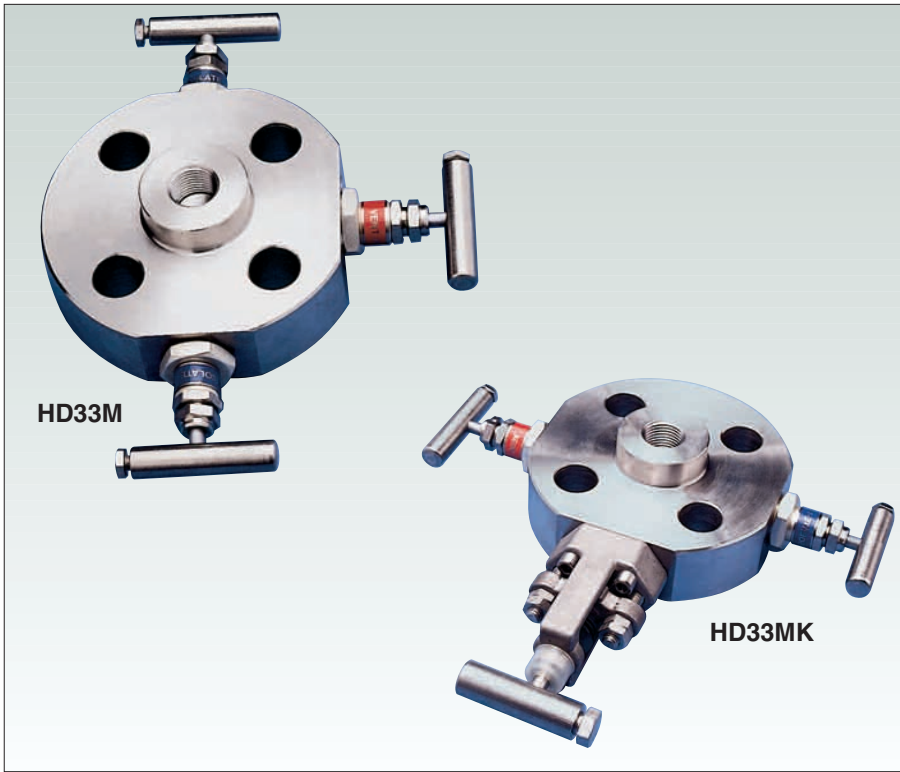
Note

- Metric Calculations:
mm = in x 25.4
kg = lb x .4536

HD7M and HD7MK Series Flanged x Threaded

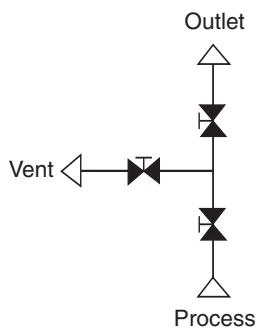
| Size | Rating | Dimensions, inches [mm] | | | | | | Weight | |
|-------|----------|-------------------------|---------|---------|---------|------|----------|--------|--------|
| | | A - RF | | A - RTJ | | B | | lb | [kg] |
| in | lb | | | | | | | | |
| 1/2 | 150 | 2.50 | [63.50] | — | — | 3.88 | [98.55] | 4.3 | [2.0] |
| 1/2 | 300 | 2.50 | [63.50] | 2.66 | [67.56] | 3.88 | [98.55] | 4.3 | [2.0] |
| 1/2 | 600 | 2.69 | [68.35] | 2.66 | [67.56] | 3.88 | [98.55] | 4.3 | [2.0] |
| 1/2 | 900/1500 | 2.69 | [68.35] | 2.69 | [68.35] | 5.25 | [133.35] | 8.3 | [3.8] |
| 1/2 | 2500 | 2.69 | [68.35] | 2.69 | [68.35] | 5.25 | [133.35] | 8.3 | [3.8] |
| 3/4 | 150 | 2.50 | [63.50] | — | — | 3.88 | [98.55] | 4.3 | [2.0] |
| 3/4 | 300 | 2.50 | [63.50] | 2.69 | [68.35] | 5.25 | [133.35] | 8.3 | [3.8] |
| 3/4 | 600 | 2.69 | [68.35] | 2.69 | [68.35] | 5.25 | [133.35] | 8.3 | [3.8] |
| 3/4 | 900/1500 | 2.69 | [68.35] | 2.69 | [68.35] | 5.25 | [133.35] | 8.3 | [3.8] |
| 3/4 | 2500 | 2.88 | [73.35] | 2.88 | [73.35] | 6.25 | [158.75] | 14.9 | [6.8] |
| 1 | 150 | 2.50 | [63.50] | 2.69 | [68.35] | 5.25 | [133.35] | 7.9 | [3.6] |
| 1 | 300 | 2.50 | [63.50] | 2.69 | [68.35] | 5.25 | [133.35] | 7.9 | [3.6] |
| 1 | 600 | 2.69 | [68.35] | 2.69 | [68.35] | 5.25 | [133.35] | 7.9 | [3.6] |
| 1 | 900/1500 | 2.88 | [73.35] | 2.88 | [73.35] | 6.25 | [158.75] | 14.9 | [6.8] |
| 1 | 2500 | 2.88 | [73.35] | 2.88 | [73.35] | 6.25 | [158.75] | 14.9 | [6.8] |
| 1 1/2 | 150 | 2.50 | [63.50] | 2.69 | [68.35] | 5.00 | [127.00] | 9.0 | [4.1] |
| 1 1/2 | 300 | 2.70 | [68.52] | 2.70 | [68.52] | 6.25 | [158.75] | 14.9 | [6.8] |
| 1 1/2 | 600 | 2.88 | [73.35] | 2.88 | [73.35] | 6.25 | [158.75] | 14.9 | [6.8] |
| 1 1/2 | 900/1500 | 2.88 | [73.35] | 2.88 | [73.35] | 7.00 | [177.80] | 18.2 | [8.3] |
| 1 1/2 | 2500 | 3.23 | [82.15] | 3.29 | [83.72] | 9.25 | [235.00] | 35.8 | [16.3] |
| 2 | 150 | 2.70 | [68.52] | 2.88 | [73.35] | 6.25 | [158.75] | 14.9 | [6.8] |
| 2 | 300 | 2.70 | [68.52] | 2.95 | [74.92] | 7.00 | [177.80] | 18.2 | [8.3] |
| 2 | 600 | 2.88 | [73.35] | 2.95 | [74.92] | 7.00 | [177.80] | 18.2 | [8.3] |
| 2 | 900/1500 | 3.23 | [82.15] | 3.29 | [83.72] | 9.25 | [235.00] | 35.8 | [16.3] |
| 2 | 2500 | 3.23 | [82.15] | 3.29 | [83.72] | 9.25 | [235.00] | 35.8 | [16.3] |

Monoflange Range - HD33M and HD33MK



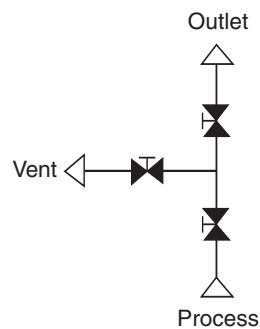
Monoflange HD33M - Double Block and Bleed

The HD33M features two 0.2-inch [5 mm] bore independently operable HD globe style needle valves for isolation service with an intermediate HD globe style needle valve for venting service.



Monoflange HD33MK - Double Block and Bleed

The HD33MK features a 0.2-inch [5 mm] bore outside screw and yoke bolted bonnet (OS&Y) valve for first isolation service with 0.2-inch [5 mm] bore HD globe style needle valves for second isolation service and intermediate venting service.



The HD33 and HD33MK are integrally forged one-piece double block and bleed assemblies for primary isolation of pressure take-offs, where the valve is directly mounted to the vessel or process pipe. Instruments may be directly mounted to the valve outlet or alternatively remotely mounted with gauge lines/impulse pipe work.

Applications

- Double Block and Bleed
- Pressure Measurement
- Chemical Injection
- Sampling
- Flow Measurement

Standard Features

- 1/2-inch NPT threaded female outlet as standard to ASME B1.20.1.
- 1/4-inch NPT threaded female vent connection to ASME B16.34.
- ASME B16.5 flanged inlet connections 1/2 to 2-inch sizes 150 lb rated to 2500 lb rated.
- API flanged inlet connections Sizes to 2 1/16-inch 3000 psig [204 barg], 5000 psig [340 barg] and 10,000 psig [680 barg] rated.
- FIRESAFE to API 607.

Standard Pressure Testing

to BS EN 12266-1.

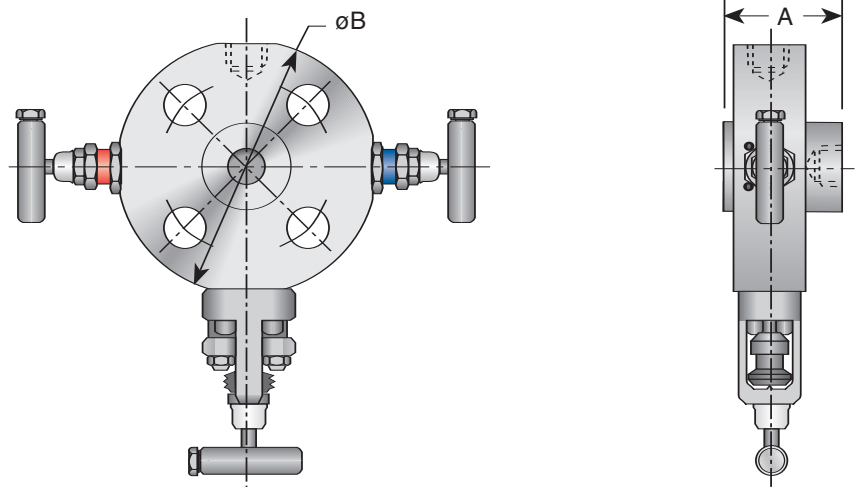
Standard Material Traceability

to DIN 50049 3.1.B (body and yoke only).

OS&Y and HD Globe Style Needle Valves Gland Packing Materials

Standard valves are offered with Graphite. PTFE is also available as an option.

Monoflange Weights and Dimensions



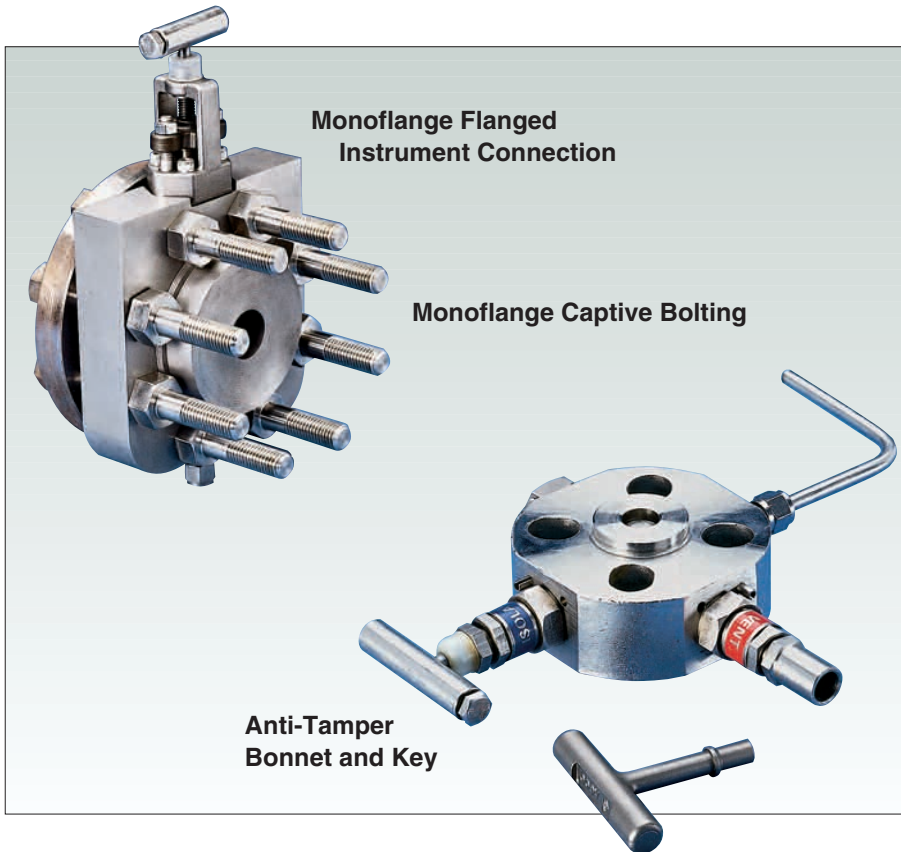
Note

- Metric Calculations:
mm = in x 25.4
kg = lb x 0.4536

HD7M and HD7MK Series Flanged x Threaded

| Size in | Rating lb | Dimensions, inches [mm] | | | | | | Weight | |
|------------|--------------|-------------------------|---------|---------|---------|------|----------|--------|--------|
| | | A - RF | | A - RTJ | | B | | lb | [kg] |
| 1/2 | 150 | 2.50 | [63.50] | — | — | 3.88 | [98.55] | 4.3 | [2.0] |
| 1/2 | 300 | 2.50 | [63.50] | 2.66 | [67.56] | 3.88 | [98.55] | 4.3 | [2.0] |
| 1/2 | 600 | 2.69 | [68.35] | 2.66 | [67.56] | 3.88 | [98.55] | 4.3 | [2.0] |
| 1/2 | 900/1500 | 2.69 | [68.35] | 2.69 | [68.35] | 5.25 | [133.35] | 8.3 | [3.8] |
| 1/2 | 2500 | 2.69 | [68.35] | 2.69 | [68.35] | 5.25 | [133.35] | 8.3 | [3.8] |
| 3/4 | 150 | 2.50 | [63.50] | — | — | 3.88 | [98.55] | 4.3 | [2.0] |
| 3/4 | 300 | 2.50 | [63.50] | 2.69 | [68.35] | 5.25 | [133.35] | 8.3 | [3.8] |
| 3/4 | 600 | 2.69 | [68.35] | 2.69 | [68.35] | 5.25 | [133.35] | 8.3 | [3.8] |
| 3/4 | 900/1500 | 2.69 | [68.35] | 2.69 | [68.35] | 5.25 | [133.35] | 8.3 | [3.8] |
| 3/4 | 2500 | 2.88 | [73.35] | 2.88 | [73.35] | 6.25 | [158.75] | 14.9 | [6.8] |
| 1 | 150 | 2.50 | [63.50] | 2.69 | [68.35] | 5.25 | [133.35] | 7.9 | [3.6] |
| 1 | 300 | 2.50 | [63.50] | 2.69 | [68.35] | 5.25 | [133.35] | 7.9 | [3.6] |
| 1 | 600 | 2.69 | [68.35] | 2.69 | [68.35] | 5.25 | [133.35] | 7.9 | [3.6] |
| 1 | 900/1500 | 2.88 | [73.35] | 2.88 | [73.35] | 6.25 | [158.75] | 14.9 | [6.8] |
| 1 | 2500 | 2.88 | [73.35] | 2.88 | [73.35] | 6.25 | [158.75] | 14.9 | [6.8] |
| 1 1/2 | 150 | 2.50 | [63.50] | 2.69 | [68.35] | 5.00 | [127.00] | 9.0 | [4.1] |
| 1 1/2 | 300 | 2.70 | [68.52] | 2.70 | [68.52] | 6.25 | [158.75] | 14.9 | [6.8] |
| 1 1/2 | 600 | 2.88 | [73.35] | 2.88 | [73.35] | 6.25 | [158.75] | 14.9 | [6.8] |
| 1 1/2 | 900/1500 | 2.88 | [73.35] | 2.88 | [73.35] | 7.00 | [177.80] | 18.2 | [8.3] |
| 1 1/2 | 2500 | 3.23 | [82.15] | 3.29 | [83.72] | 9.25 | [235.00] | 35.8 | [16.3] |
| 2 | 150 | 2.70 | [68.52] | 2.88 | [73.35] | 6.25 | [158.75] | 14.9 | [6.8] |
| 2 | 300 | 2.70 | [68.52] | 2.95 | [74.92] | 7.00 | [177.80] | 18.2 | [8.3] |
| 2 | 600 | 2.88 | [73.35] | 2.95 | [74.92] | 7.00 | [177.80] | 18.2 | [8.3] |
| 2 | 900/1500 | 3.23 | [82.15] | 3.29 | [83.72] | 9.25 | [235.00] | 35.8 | [16.3] |
| 2 | 2500 | 3.23 | [82.15] | 3.29 | [83.72] | 9.25 | [235.00] | 35.8 | [16.3] |

Monoflange Options



- **Flanged instrument outlet connection** monoflange is available with an optional body style outlet which allows for flange-to-flange mounting.
- **Anti-tamper** bonnets are available with a removable T-bar key to prevent unauthorized operation of valves.
- **Lockable anti-tamper** bonnets designed to enable padlocking for additional security.
- **Sour gas (NACE)** valves are available in materials which comply with standard NACE MR0175 latest revision relating to metallic materials offering optimum resistance to sulfide stress cracking.
- **Monoflange captive bolting** allows monoflange to be held captive against vessel flange, when outlet mating flange connection is unbolted or removed. Please consult factory for details.
- **Dual outlet threaded connections** are available for all monoflanges. Consult factory for details.
- **Ball end stem types (HD and OS&Y globe style needle valves)** of ceramic or Stellite balls may be supplied to ensure maximum life on dirty or erosive service.
- **Threaded connections** available as 1/2-inch NPT as standard with optional G1/2-inch.
- **Swivel gauge adaptor** is designed for use with any gauge to increase versatility. It allows positioning of pressure gauges in any direction through 360 degrees via union connection fitting. Available as 1/2-inch NPT gauge adaptor or G1/2-inch version.
- **Low temperature service** valves are available for service to -71°F [-57°C].

Monoflange Ordering Information

HD27M V S S - 041K - 047B - QV

Manifold Type

Globe Needle Style

HD7M Flanged x Threaded Single Block
 HD7MK Flanged x Threaded Single Block
 HD27M Flanged x Threaded Block & Bleed
 HD27MK Flanged x Threaded Block & Bleed
 HD33M Flanged x Threaded Double Block & Bleed
 HD33MK Flanged x Threaded Double Block & Bleed

Needle Valve Packing

V - PTFE
 H - Graphite

Body Material

C - A105N S - A182 F316
 L - A350 LF2 D - A182 F51

Trim Material

S - SS 31611
 D - Duplex UNS S31803

Standard Trim Combinations

C, L and S Body = S Trim, D Body = S Trim, D Trim Optional

Inlet Connection

| | | | | | |
|-------------|---------------|----------|------------|--------------------------|--------------------------|
| 04 - 1/2" | 17 - 1 13/16" | 1 - RF | 5 - RX | A - 150 lb (ASME B16.5) | M - 2500 lb (ASME B16.5) |
| 06 - 3/4" | 18 - 2 1/16" | 2 - Male | 6 - R | J - 300 lb (ASME B16.5) | N - 5000 lb (API 6A) |
| 08 - 1" | 24 - 3" | 3 - RTJ | 7 - Female | K - 600 lb (ASME B16.5) | P - 10,000 lb (API 6A) |
| 12 - 1 1/2" | 50 - 4 1/16" | 4 - BX | 8 - Hub | T - 900 lb (ASME B16.5) | V - 3000 lb (API 6A) |
| 16 - 2" | | | | L - 1500 lb (ASME B16.5) | |

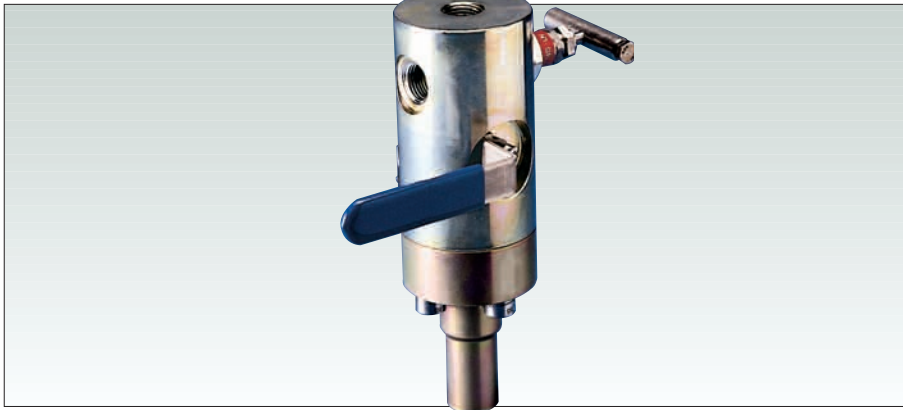
Outlet Connection

| | | | | | | |
|-------------|---------------|----------|------------|-------------------------|--------------------------|------------------------|
| 04 - 1/2" | 17 - 1 13/16" | 1 - RF | 5 - RX | A - 150 lb (ASME B16.5) | J - 300 lb (ASME B16.5) | N - 5000 lb (API 6A) |
| 06 - 3/4" | 18 - 2 1/16" | 2 - Male | 6 - R | B - NPT | K - 600 lb (ASME B16.5) | P - 10,000 lb (API 6A) |
| 08 - 1" | 24 - 3" | 3 - RTJ | 7 - Female | C - Butt Weld (XXS) | T - 900 lb (ASME B16.5) | V - 3000 lb (API 6A) |
| 12 - 1 1/2" | 25 - 3 1/16" | 4 - BX | 8 - Hub | D - Socket Weld (XXS) | L - 1500 lb (ASME B16.5) | |
| 16 - 2" | 50 - 4 1/16" | | | E - G 1/2" | M - 2500 lb (ASME B16.5) | |

Options

| | | |
|---|--|--|
| 316T - Full 316 SS Trim | PV - Plugged Vent | SG3 - (Sour Gas) meets the requirements of NACE MR0175/ISO 15156-3 Corrigendum 2 (for Chloride conditions > 50 mg/l [ppm]) |
| AL - Low Temperature Service | QV - 1/4" NPT (f) Vent | VO - Vent Option (please specify compression fittings, if required) |
| AT - Anti-Tamper Bonnets | 3QV - 3/4" NPT (f) Vent | |
| CB - Ceramic Ball Ended Stem | SP - Special Requirement | |
| LAT - Lockable Ball Valve Handles (specify number required) | ST - Stellite Ball Ended Stem | |
| MP04 - Multiport Outlet 1/2" NPT | SG - (Sour Gas) meets the requirements of NACE MR0175/ISO 15156-3 Corrigendum 2 (for Chloride conditions ≤ 50 mg/l [ppm]) and NACE MR0103-2005 | |
| PD - Lockable Anti-Tamper Bonnets | | |
| PO - Plugged Outlet | | |
| PT - PTFE Packed Needle Valve | | |

Root Valves Range - P62

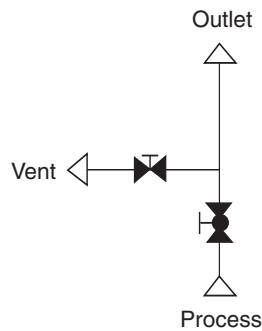


Root Valve P62 - Block and Bleed

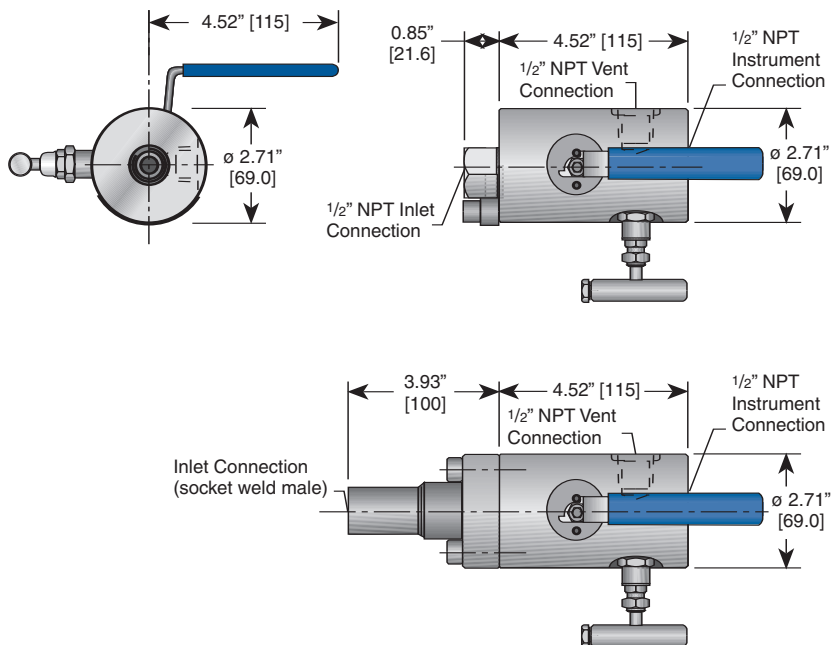
The P62 features a 3/8-inch [10 mm] bore ball valve for isolation service with a 0.2-inch [5 mm] bore HD globe style needle valve for venting service.

Note

1. Valve weight 10.3 lb [4.7 kg].



Dimensions, inches [mm]



The P62 is an integrally forged one-piece block and bleed assembly for primary isolation of pressure take-offs, where the valve is either screwed or welded directly into the vessel or process pipe without the need for a flanged connection. Instruments may be directly mounted to the valve outlet or alternatively remotely mounted with gauge lines/impulse pipe work.

Applications

- Block and Bleed
- Pressure Measurement
- Flow Measurement

Standard Features

- 1/2-inch NPT threaded female outlet as standard to ASME B1.20.1.
- Material thickness to ASME B16.34.
- Four bolted outlet options.
- 1/2-inch NPT threaded female vent connections to ASME B1.20.1.
- Weld inlet connections 1/2 to 2-inch [15 mm to 50 mm] sizes 150 lb rated to 2500 lb rated.
- API pressure ratings 3000 psig [204 barg], 5000 psig [340 barg] and 10,000 psig [680 barg] rated.
- FIRESAFE to API 607.

Standard Pressure Testing

to BS EN 12266-1.

Standard Material Traceability

to DIN 50049 3.1.B (body and end adaptors only).

Ball Isolation Valve Seat Materials

A choice of filled PTFE, Devlon-V® and PEEK are available.

HD Globe Style Needle Vent Valve Gland Packing Materials

Standard valves are offered with Graphite. PTFE is also available as an option.

Options

Optional requirements are the same as the Keyblok and Monoflange range.

Root Valves Range - P63

The P63 is an integrally forged one-piece double block and bleed assembly for primary isolation of pressure take-offs, where the valve is either screwed or welded directly into the vessel or process pipe without the need for a flanged connection. Instruments may be directly mounted to the valve outlet or alternatively remotely mounted with gauge lines/impulse pipe work.

Applications

- Double Block and Bleed
- Pressure Measurement
- Flow Measurement

Standard Features

- 1/2-inch NPT threaded female outlet as standard to ASME B1.20.1.
- Material thickness to ASME B16.34.
- Four bolted outlet options.
- 1/2-inch NPT threaded female vent connection to ASME B1.20.1.
- Weld inlet connections
1/2 to 2-inch sizes [15 mm to 50 mm]
150 lb rated to 2500 lb rated.
- API pressure ratings
3000 psig [204 barg], 5000 psig [340 barg] and 10,000 psig [680 barg] rated.
- FIRESAFE to API 607.

Standard Pressure Testing

to BS EN 12266-1.

Standard Material Traceability

to DIN 50049 3.1.B (body and end adaptors only).

Ball Isolation Valve Seat Materials

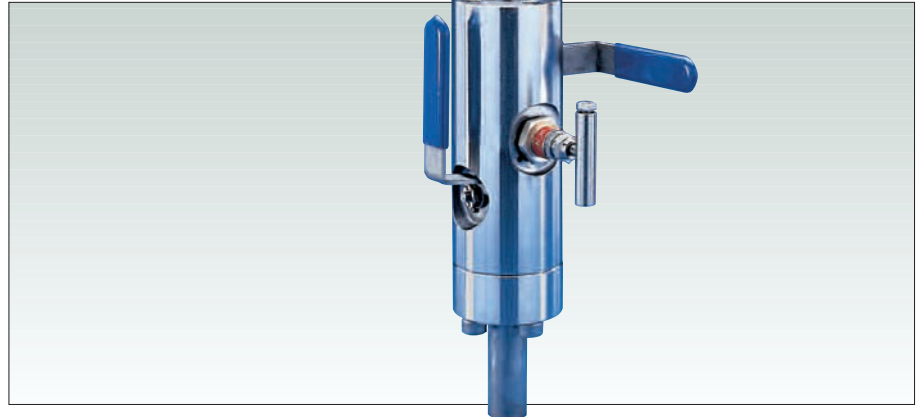
A choice of filled PTFE, Devlon-V® and PEEK are available.

HD Globe Style Needle Vent Valve Gland Packing Materials

Standard valves are offered with Graphite. PTFE is also available as an option.

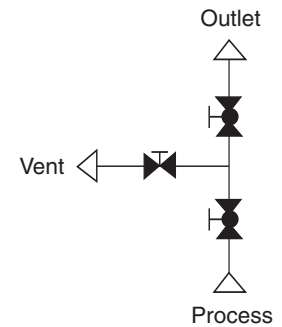
Options

Optional requirements are the same as the Keyblok and Monoflange range.



Root Valve P63 - Double Block and Bleed

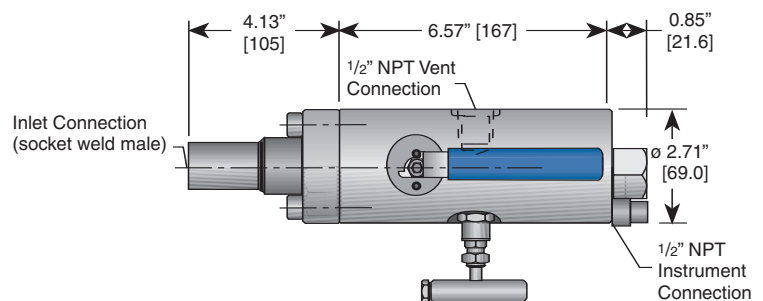
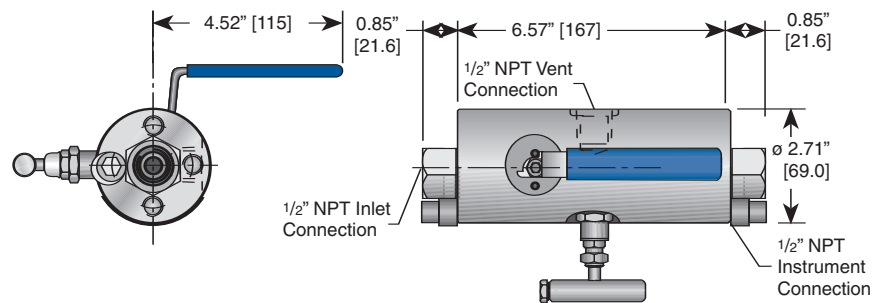
The P63 features two independently operable 3/8-inch [10 mm] bore ball valves for isolation service with an intermediate 0.2-inch [5 mm] bore HD globe style needle valve for venting service.



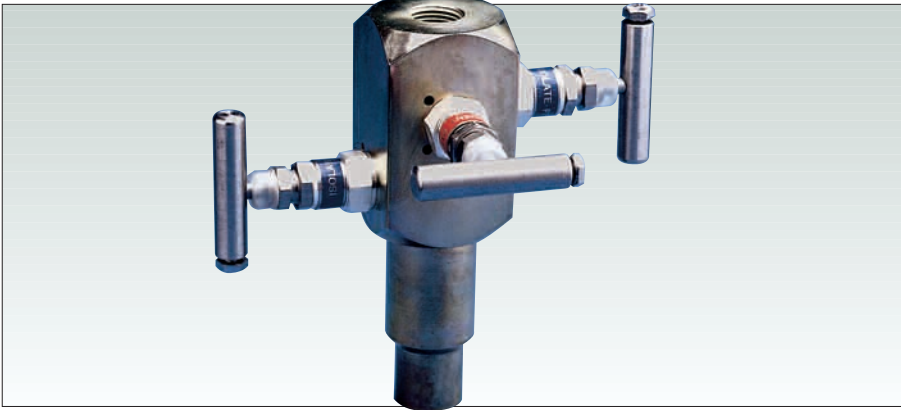
Note

1. Valve weight 13.6 lb [6.2 kg].

Dimensions, inches [mm]



Root Valves Range - HD29

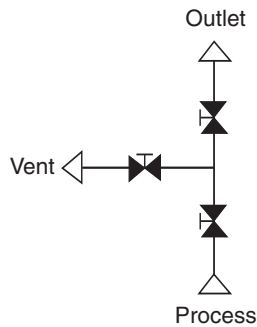


Root Valve HD29 - Double Block and Bleed

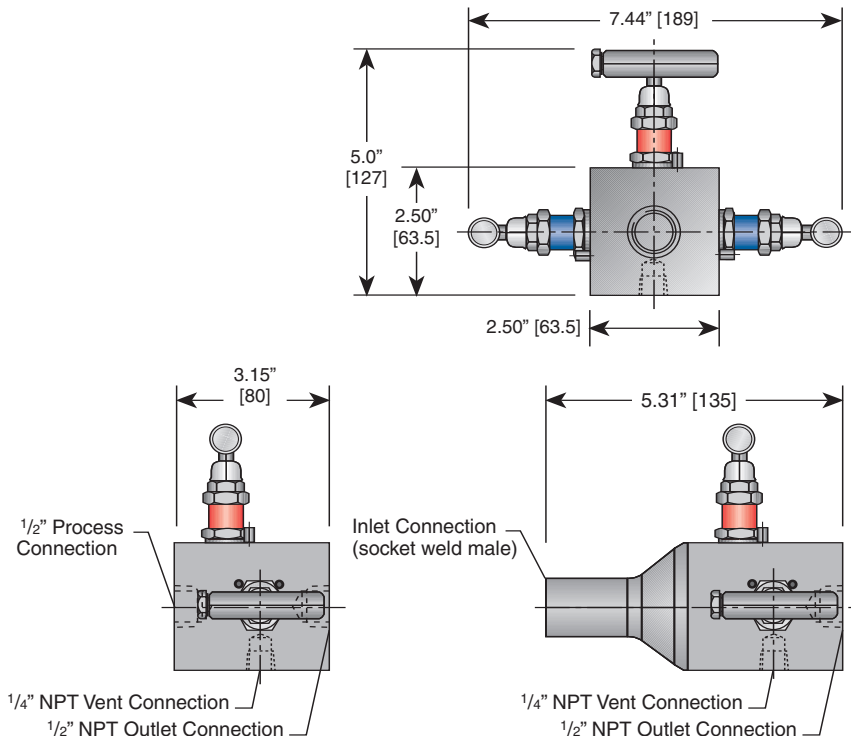
The HD29 features two independently operable 0.2-inch [5 mm] bore HD globe style needle valves for isolation service with an intermediate HD globe style needle valve for venting service.

Note

1. Valve weight 5.9 lb [2.7 kg].



Dimensions, inches [mm]



The HD29 is an integrally forged one-piece double block and bleed assembly for primary isolation of pressure take-offs where the valve is either screwed or welded directly into the vessel or process pipe without the need for a flanged connection. Instruments may be directly mounted to the valve outlet or alternatively remotely mounted with gauge lines/impulse pipe work.

Applications

- Double Block and Bleed
- Pressure Measurement
- Flow Measurement

Standard Features

- 1/2-inch NPT threaded female outlet as standard to ASME B1.20.1.
- Material thickness to ASME B16.34.
- 1/4-inch NPT threaded female vent connection to ASME B1.20.1.
- Weld inlet connections
1/2 to 2-inch [15 mm to 50 mm] sizes
150 lb rated to 2500 lb rated.
- API pressure ratings
3000 psig [204 barg], 5000 psig [340 barg] and 10,000 psig [680 barg] rated.
- FIRESAFE to API 607.

Standard Pressure Testing

to BS EN 12266-1.

Standard Material Traceability

to DIN 50049 3.1.B (body only).

HD Globe Style Needle Vent Valve Gland Packing Materials

Standard valves are offered with Graphite. PTFE is also available as an option.

Options

Optional requirements are the same as the Keyblok monoflange range.

Keyblok Root Valve Ordering Information

P63 N C S - 047B - 047B - PV

Manifold Type

Ball Valve Type

P62 Threaded x Threaded Block & Bleed
P63 Threaded x Threaded Double Block & Bleed

Globe/Needle Valve Type

HD29 Threaded x Threaded Double Block & Bleed

Ball Valve Seat Material or Needle Valve Packing

Ball Valve Type

V – Filled PTFE
E – PEEK
N – Devlon®

Needle Valve Type

V – PTFE
H – Graphite

Body Material

C – CS 220 M07
S – SS 31611
D – Duplex UNS S31803

Trim Material

S – SS 31611
D – Duplex

Standard Trim Combinations

C, L and S Body = S Trim, D Body = S Trim, Duplex Trim Optional

Inlet Connection

| | | |
|---------------|------------|-----------------------|
| 04 – 1/2" NPS | 2 – Male | B – NPT |
| 06 – 3/4" NPS | 7 – Female | C – Butt Weld (XXS) |
| 08 – 1" NPS | | D – Socket Weld (XXS) |

Outlet Connection

| | | |
|---------------|------------|-----------------------|
| 04 – 1/2" NPS | 2 – Male | B – NPT |
| 06 – 3/4" NPS | 7 – Female | C – Butt Weld (XXS) |
| 08 – 1" NPS | | D – Socket Weld (XXS) |

Options

MP04 – Multiport Outlet 1/2" NPT

AL – Low Temperature Service

ICV – Integral Check Valve (Injection)

AT – Anti-Tamper Vent (needle valve only)
KFGTX – Kidney Flange Adaptor
LAT – Lockable Anti-Tamper
LH – Lockable Ball Valve Handles (specify number required)
PD – Padlock for –LAT Option
PV – Plugged Vent
SG – (Sour Gas) meets the requirements of NACE MR0175/ISO 15156-3 Corrigendum 2 (for Chloride conditions ≤ 50 mg/l [ppm]) and NACE MR0103-2005
SG3 – (Sour Gas) meets the requirements of NACE MR0175/ISO 15156-3 Corrigendum 2 (for Chloride conditions > 50 mg/l [ppm])

QV – 1/4" NPT (F) Vent – P62/P63 only

316T – Full 316 SS Trim
CB – Ceramic Ball Ended Stem
PO – Plugged Outlet
PT – PTFE Packed Needle Valve
SB – Stellite Ball Ended Stem
SP – Special Requirement
VO – Vent Options (please specify compression fittings, if required)

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