

Instrument Hand and Needle Valves for Isolation, Vent and Drain Applications

- Bore Sizes:

1/8"	[3.2 mm]
3/16"	[4.8 mm]
5/16"	[8 mm]
3/8"	[9.5 mm]
7/16"	[10 mm]
5/8"	[16 mm]
- Straight-through (roddable) and globe-pattern models.
- Needle (rising plug) and ball stem models.
- Standard pressures up to 6000 psig [414 barg], optional pressures up to 10000 psig [689 barg] available.
- Various standard end-connections from 1/4" to 1".
- Temperatures up to 1000°F [538°C].
- Stem packing in all valves is below the stem thread to prevent galling due to lubricant washout or particle contamination from the process.
- CRN Registered.



CM1 - Soft seat, straight-through, 3/16" [4.8 mm] bore, 6000 psig [414 barg] hand valve

The CM1 (6000 psig [414 barg]) barstock construction, straight-through, rising stem plug valve hand valve is designed for a safe, in-line repairable, long service life. The CM1 is a soft seated valve, ensuring repetitive bubble-tight sealing in both standard and dirty process conditions and is available in a wide variety of inlet and outlet configurations and materials. The CM1 standard seat is Delrin® and is available with either Teflon® packing, GRAFOIL® packing or an O-ring seal.

Features

- Utilizes soft seat, which provides repetitive bubble-tight shutoff in a variety of process conditions.
- Either the Teflon® or GRAFOIL® packing is easily adjustable in field.
- All packing is below the threads, which ensures the process does not contaminate the valve's actuation threads. This feature ensures smooth valve operation and long service life.
- All CM1's feature safety back seating ensuring the prevention of both accidental stem blowout and removal under pressure.
- Soft seats are in-line replaceable, ensuring the CM1 provides economical, long service life. Standard seat material is Delrin®. Readily available seat options include PEEK.
- Standard dust covers ensure long service life.

CM1 - Ordering Code:

CM1 - 1 M44T CN 16 T SC

Materials of Construction

- 1: SS - 316/316L (ASTM 479-316/316L)
- 2: A105 CS Body w/SS Trim
- 3: CS - A108 CS
- 5: Other construction materials available - consult factory

Inlet/Outlet Connections (Standard Threaded Connections)

- | | |
|-----------------------------|-----------------------------|
| M22T: 1/4" MNPT x 1/4" FNPT | M64T: 3/4" MNPT x 1/2" FNPT |
| F22T: 1/4" FNPT x 1/4" FNPT | M66T: 3/4" MNPT x 3/4" FNPT |
| M44T: 1/2" MNPT x 1/2" FNPT | F66T: 3/4" FNPT x 3/4" FNPT |
| F44T: 1/2" FNPT x 1/2" FNPT | |

Optional socket weld or butt weld connections available - consult factory.

Bonnet Assembly

- A: O-ring
- CN: Adjustable packing

Seat

- 16: Delrin®
- 15: PEEK

Packing

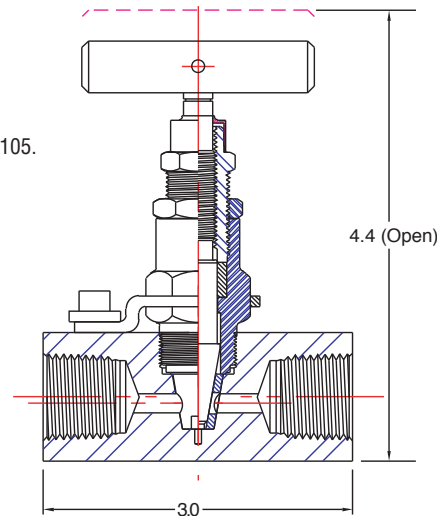
- A: Aflas® O-ring
- V: Viton® O-ring
- T: Teflon®, Adjustable packing
- G: Grafoil®, Adjustable packing

Special Construction Options

- SCL: Includes Bonnet Lock Upgrade and Hydro-Testing as per MSS-SP-61
- HD: Hydrostatic testing as per MSS-SP-61, meets the requirements of MSS-SP-105.

Notes:

All 316 SS and A105 CS bodied valves meets requirements of NACE MR0175/ISO 15156-3 and NACE MR0103-2005.



CM1BR - Hard or soft seat, straight-through (roddable), 3/8" [9.5 mm] bore, 6000 psig [414 barg] hand valve

The CM1BR (6000 psig [414 barg]) barstock construction valve features a rising stem plug with straight-through (roddable) 3/8" [9.5 mm] bore. This bidirectional valve has a high flow capability. The CM1BR is ideally suited for severe process conditions (eg. high-temperature steam) or in applications where valve plugging is a concern. Furthermore, the CM1BR is available with an optional metal seat API FIRESAFE 607/BS6755 Part 2 rating, making it the valve of choice for hazardous services. The CM1BR features replaceable soft or metal seats, which can be easily removed and replaced, eliminating the need for valve removal should the seat become damaged by process conditions.

The CM1BR is available in a wide variety of inlet and outlet configurations and materials. The CM1BR is available with either Teflon® or GRAFOIL® packing.

Features

- Large bore (3/8" [9.5 mm]), high-pressure, high-temperature, severe service isolation valve.
- API 607 FIRESAFE Addition 4, BS6755 Part 2 upgrade available ('P' bonnet only with metal seat).
- Plug type stem end provides bubble-tight shutoff and ensures long valve life. Replaceable/repairable seat ensure long, safe and economical installed valve life.

- Large handle ensures ease of operation while actuating valve.
- Either the Teflon® or GRAFOIL® packing is easily adjustable in field.
- All packing is below the threads (rotating version), which ensures the process does not contaminate the valve's actuation threads. This feature ensures smooth valve operation and long service life.
- All CM1BR's in the severe service series feature optional bonnet lock plate with bonnets assembly to ensure accidental removal under pressure does not occur.
- Temperatures up to 1000°F with 316 SS.

CM1BR - Ordering Code:

CM1BR - 1 F88T P 1 G SC

Materials of Construction


- 1: SS - 316/316L (ASTM 479-316/316L)
- 2: CS/SS - A105 CS Body w/SS Trim
- 5: Other construction materials available - consult factory

Inlet/Outlet Connections (Standard threaded connections)

- M44T: 1/2" MNPT x 1/2" FNPT
- F44T: 1/2" FNPT x 1/2" FNPT
- M64T: 3/4" MNPT x 1/2" FNPT
- M66T: 3/4" MNPT x 3/4" FNPT
- F66T: 3/4" FNPT x 3/4" FNPT
- M88T: 1" MNPT x 1" FNPT
- F88T: 1" FNPT x 1" FNPT

Optional socket weld and butt weld connections available - consult factory.

Bonnet Assembly

- P: Adjustable packing, firesafe bonnet with non-rotating stem and plug 

Seat

- 1: 316 SS
- 15: PEEK
- 16: Delrin®

Packing

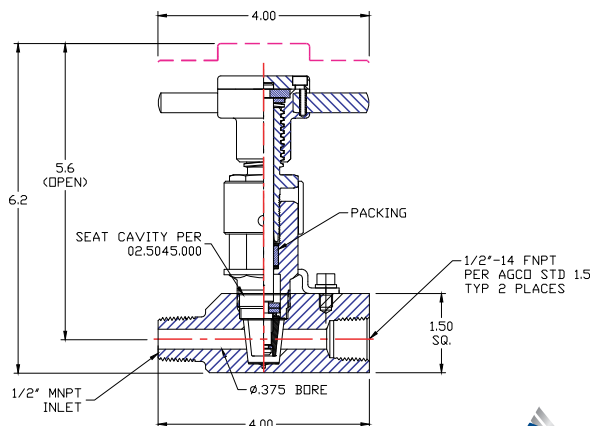
- T: Teflon®, Adjustable packing
- G: Grafoil®, Adjustable packing

Special Construction Options

- SCL: Bonnet lock upgrade with the "P" bonnet and 316 SS Seat, includes Hydro-Testing as per MSS-SP-61, and marking to meet requirements of ASME B16.34, as well as ASME B31.1 & ASME B31.3.
- HD: Hydrostatic testing as per MSS-SP-61, meets the requirements of MSS-SP-105.

Notes:

All 316 SS and A105 CS bodied valves meets requirements of NACE MR0175/ISO 15156-3 and NACE MR0103-2005.



CM1C - Straight-through (roddable), soft seat, 5/8" [16 mm] bore, 3500 psig [231 barg] hand valve

The CM1C (3500 psig [231 barg]) barstock construction valve is a severe service, high-pressure, straight-through (roddable) bidirectional flow unit. The CM1C is also ideally suited for process conditions where potential plugging is a concern. The CM1C features replaceable soft seats, which can be easily removed and replaced, eliminating the need for valve removal should the seat become damaged by process conditions.

The CM1C is available in a wide variety of inlet and outlet configurations and materials. The CM1C is available with either Teflon® or GRAFOIL® packing.

Features

- Rising stem soft seated plug valve provides bubble-tight shutoff and ensures long valve life. Replaceable seats ensure long, safe and economical installed valve life.
- Large handle ensures ease of operation while actuating valve.
- Either the Teflon® or GRAFOIL® packing is easily adjustable in field.
- All packing is below the threads, which ensures the process does not contaminate the valve's actuation threads. This feature ensures smooth valve operation and long service life.
- All CM1C's feature safety back seating ensuring the prevention of both accidental stem blowout and removal under pressure.
- All CM1C's feature an optional bonnet lock plate to ensure accidental removal under pressure does not occur.
- Standard dust covers ensure long service life by preventing the elements (rain, snow, dirt, etc.) access to the bonnet assembly.

CM1C - Ordering Code

CM1C - 1 M88T P 1 G SC

Materials of Construction

- 1: SS - 316/316L (ASTM 479-316/316L)
- 2: CS/SS - A105 CS Body w/SS Trim
- 5: Other construction materials available - consult factory

Inlet/Outlet Connections (Standard threaded connections)

- M66T: 3/4" MNPT x 3/4" FNPT
- F66T: 3/4" FNPT x 3/4" FNPT
- M88T: 1" MNPT x 1" FNPT
- F88T: 1" FNPT x 1" FNPT

Optional socket weld or butt weld connections available - consult factory.

Bonnet Assembly

- GN: Adjustable packing, non-rotating plug

Seat

- 15: PEEK
- 16: Delrin®

Packing

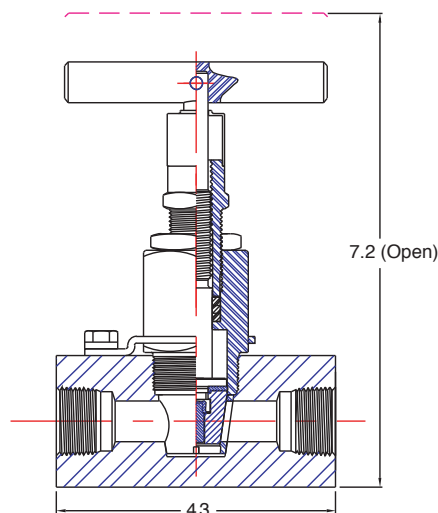
- T: Teflon®, Adjustable packing
- G: Grafoil®, Adjustable packing

Special Construction Options

- SCL: Bonnet lock upgrade includes Hydro-Testing as per MSS-SP-61, and marking to meet requirements ASME B31.3, and MSS-SP-105.
- HD: Hydrostatic testing as per MSS-SP-61, meets the requirements of MSS-SP-105.

Notes:

All 316 SS and A105 CS bodied valves meets requirements of NACE MR0175/ISO 15156-3 and NACE MR0103-2005.



CM2 - Globe pattern, 3/16" [4.8 mm] bore, 6000 psig [414 barg] metal seated hand valve

The CM2 (6000 psig [414 barg]) barstock construction needle valve is designed for multiple applications wherever throttling or bubble-tight shutoff is required. The CM2 is available in a wide variety of inlet and outlet configurations and materials. Available with Teflon® or GRAFOIL® packing or an O-ring seal.

Features

- Available with either ball or needle stem ends, providing bubble-tight shutoff and ensuring long valve life. The non-rotating ball tip eliminates seat galling.
- All valves are hydrostatically tested to rated pressure prior to factory shipment.
- Body material traceability is standard on each CM2.
- Either the Teflon® or GRAFOIL® packing is easily adjustable in field.

- All packing is below the threads which ensures the valve's actuation threads are not contaminated by the process. This feature ensures smooth valve operation and long service life.
- All CM2's feature safety back seating ensuring the prevention of both accidental stem blowout and removal under pressure.
- Standard dust covers ensure long service life by preventing the elements (rain, snow, dirt, etc.) access to the bonnet assembly.

CM2 - Ordering Code:

CM2 - 1 M44T D G SC

Materials

- 1: SS - 316/316L (ASTM 479-316/316L)
- 2: CS/SS - A105 CS Body w/ SS Trim
- 3: CS - A108 CS
- 5: Other construction materials available - consult factory

Inlet/Outlet Connections (Standard threaded connections)

- M22T: 1/4" MNPT x 1/4" FNPT
- F22T: 1/4" FNPT x 1/4" FNPT
- M44T: 1/2" MNPT x 1/2" FNPT
- F44T: 1/2" FNPT x 1/2" FNPT
- M64T: 3/4" MNPT x 1/2" FNPT

Optional socket weld or butt weld connections available - consult factory.

Bonnet Assembly

- B: O-ring, Needle tipped stem
- DN: Adjustable packing, Needle tipped stem

Packing

- A: Aflas® O-ring
- V: Viton® O-ring
- T: Teflon®, Adjustable packing
- G: Grafoil®, Adjustable packing

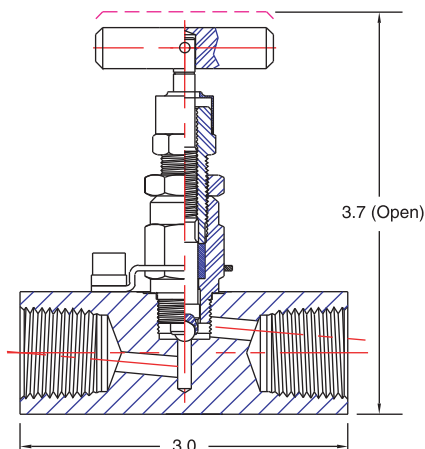
Special Construction Options

SCL: Bonnet lock upgrade with Grafoil Packing, includes Hydro-Testing as per MSS-SP-61, and marking to meet requirements of ASME B31.1 & ASME B31.3.

HD: Hydrostatic testing as per MSS-SP-61, meets the requirements of MSS-SP-105.

Notes:

All 316 SS and A105 CS bodied valves meets requirements of NACE MR0175/ISO 15156-3 and NACE MR0103-2005.



CM2M - Soft or hard seat, Globe pattern, 1/8" [3.2 mm] bore, 6000 psig [414 barg] metal seated; 3000 psig [207 barg] soft seated hand valve

The CM2M mini valves facilitate safe, compact and economical installations. They are excellent for both throttling and straight isolation. The valve seating is interchangeable between "hard" or "soft" without changing the bonnet assembly or removing the valve from the installation. This feature of the CM2M greatly extends valve life.

Features

- Utilizes needle stem ends, which provide repetitive bubble-tight shutoff.
- The O-ring packing is below the threads, which ensures the process does not contaminate the valve's actuation threads. This feature ensures smooth valve operation and long service life.
- All CM2M valves feature safety back seating ensuring the prevention of both accidental stem blowout and removal under pressure.
- Soft seats are replaceable, ensuring the CM2M provides economical, long service life. Standard soft seat material is Delrin®. Readily available seat options include PEEK and PCFTE.

CM2M - Ordering Code:

CM2M - 1 M2T I V SC

Materials of Construction

- 1: SS - 316/316L (ASTM 479-316/316L)
 3: CS - A108 CS
 5: Brass (ASTM B16-H02)

Inlet/Outlet Connections (Standard Threaded Connections)

- M2T: 1/4" MNPT x 1/4" FNPT
 F2T: 1/4" FNPT x 1/4" FNPT
 M2M: 1/4" MNPT x 1/4" MNPT

Seat

- I: Hard Seat D: Delrin® - Soft Seat
 E: PEEK - Soft Seat K: PCTFE¹

Packing

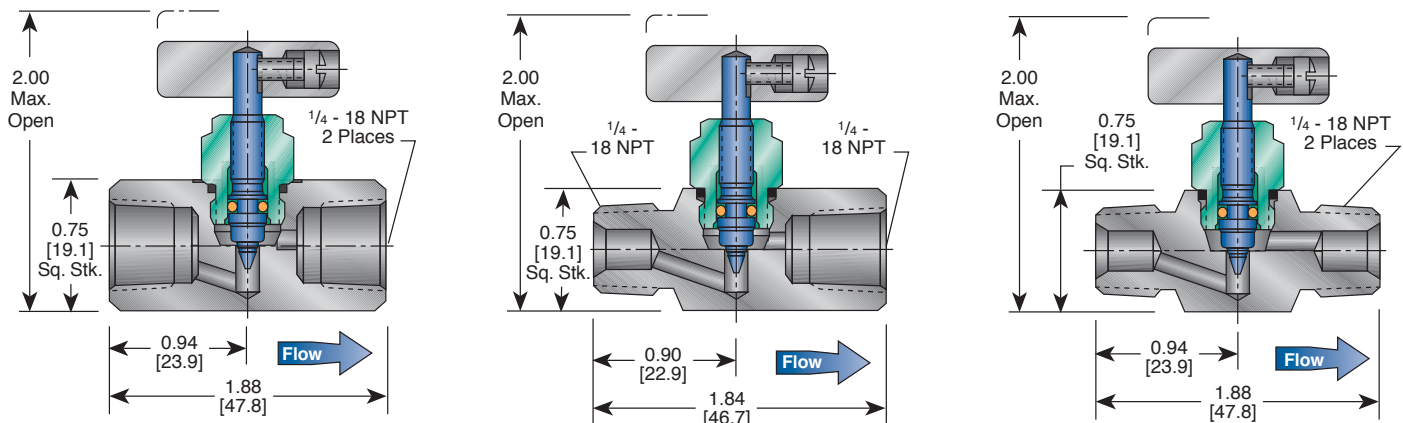
- V: O-ring (BUNA-N supplied on CS assembly; Viton® supplied on SS assembly)

Special Construction Options

- SG: Sour Gas - Meets requirements of NACE MR0175/ISO 15156-3 Corrigendum 2 [for chloride conditions less than or equal to 50 mg/l (ppm)] and NACE MR0103-2005
 OC: Gaseous Oxygen Cleaned
 RH: Round Handle
 HD: For optional Hydrostatic testing to MSS-SP-61

Note: 1. PCTFE (polychlorotrifluoroethylene) is the exact equivalent of Kel-F®.

Dimensions, inches [mm]



CM25 - Globe pattern, 3/16" [4.8 mm] bore, 10000 psig [689 barg] hand valve

The CM25 (10,000 psig [689 barg]) barstock construction needle valve is designed for multiple applications wherever bubble-tight shutoff is required. The CM25 is available in a wide variety of inlet and outlet configurations and materials. The CM25 is available with Teflon® or GRAFOIL® packing or an O-ring seal.

Features

- Available with either ball or needle stem, providing bubble-tight shutoff and ensuring long valve life. The non-rotating ball tip eliminates seat galling.
- Body material traceability is standard on each CM25.
- Either the Teflon® or GRAFOIL® packing is easily adjustable in field.

- All packing is below the threads which ensures the valve's actuation threads are not contaminated by the process. This feature ensures smooth valve operation and long service life.
- All CM25's feature safety back seating ensuring the prevention of both accidental stem blowout and removal under pressure.
- Standard dust covers ensure long service life by preventing the elements (rain, snow, dirt, etc.) access to the bonnet assembly.

CM25 - Ordering Code:

CM25 - 1 M44T C G SC

Materials

- 1: SS - 316/316L (ASTM 479-316/316L)
- 2: CS/SS - A105 CS Body w/SS Trim
- 3: CS - A108 CS (NACE not Available)
- 5: Other construction materials available - consult factory

Inlet/Outlet Connections (Standard threaded connections)

- | | |
|-----------------------------|-----------------------------|
| M22T: 1/4" MNPT x 1/4" FNPT | M64T: 3/4" MNPT x 1/2" FNPT |
| F22T: 1/4" FNPT x 1/4" FNPT | M66T: 3/4" MNPT x 3/4" FNPT |
| M44T: 1/2" MNPT x 1/2" FNPT | F66T: 3/4" FNPT x 3/4" FNPT |
| F44T: 1/2" FNPT x 1/2" FNPT | |

Optional socket weld or butt weld connections available - consult factory.

Bonnet Assembly

- A: O-ring, Needle tipped stem
- CN: Adjustable packing, Needle tipped stem

Packing

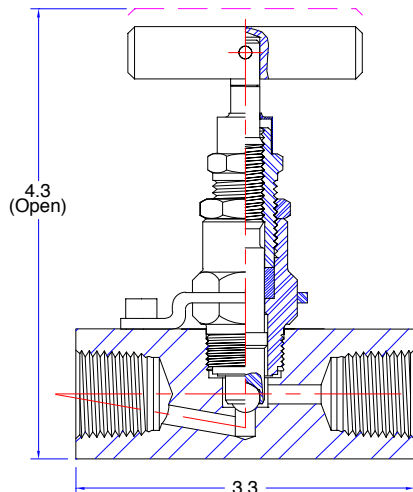
- A: Aflas® O-ring
- V: Viton® O-ring
- T: Teflon®, Adjustable packing
- G: Grafoil®, Adjustable packing

Special Construction Options

- SCL: Bonnet lock upgrade with, includes Hydro-Testing as per MSS-SP-61, and marking to meet requirements of MSS-SP-105.
- HD: Hydrostatic testing as per MSS-SP-61, meets the requirements of MSS-SP-105.

Notes:

- Grafoil Packing not available with Hydro-Testing. Only a Functional Air-Test available.
- All 316 SS and A105 CS bodied valves meets requirements of NACE MR0175/ISO 15156-3 and NACE MR0103-2005.



CM25H - Globe Pattern, 5/16" [8 mm] bore, 6000 psig [414 barg] hand valve

The CM25H (6000 psig [414 barg]) barstock valve features a large, globe pattern 5/16" [8 mm] bore, allowing free passage of viscous processes. Optional needle or ball stem ends provide repetitive, bubble-tight shutoff. The CM25H is available in a wide variety of inlet and outlet configurations and materials. The CM25H is available with Teflon® or GRAFOIL® packing or an O-ring seal.

Features

- Available with either ball or needle stem ends, providing bubble-tight shutoff and ensuring long valve life. The non-rotating ball stem end eliminates seat galling.
- Large handle ensures ease of operation while actuating valve.
- Either the Teflon® or GRAFOIL® packing is easily adjustable in field.
- All packing is below the threads, which ensures the process does not contaminate the valve's actuation threads. This feature ensures smooth valve operation and long service life.
- All CM25H's feature safety back seating ensuring the prevention of both accidental stem blowout and removal under pressure.
- Standard dust covers ensure long service life by preventing the elements (rain, snow, dirt, etc.) access to the bonnet assembly.

CM25H - Ordering Code:

CM25H - 1 M88T GN G SC

Materials of Construction

- 1: SS - 316/316L (ASTM 479-316/316L)
- 2: CS/SS - A105 CS Body w/SS Trim
- 3: CS - A108 CS (NACE not available)
- 5: Other construction materials available - consult factory

Inlet/Outlet Connections (Standard threaded connections)

- M88T: 1" MNPT x 1" FNPT
- F88T: 1" FNPT x 1" FNPT

Optional socket weld and butt weld connections available - consult factory.

Bonnet Assembly

- G: Adjustable packing, Non-rotating ball tipped stem
- GN: Adjustable packing, Needle tipped stem

Packing

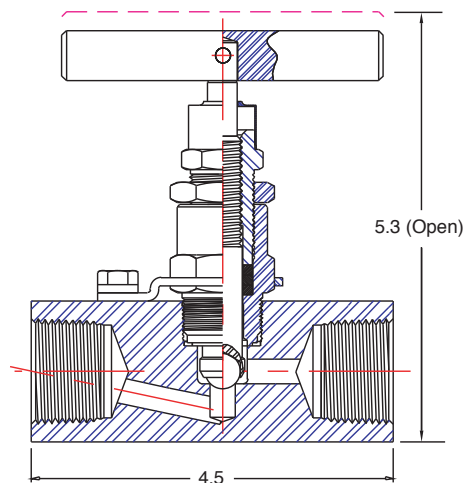
- T: Teflon®, Adjustable packing
- G: Grafoil®, Adjustable packing

Special Construction Options

- SCL: Bonnet lock upgrade with Grafoil Packing, includes Hydro-Testing as per MSS-SP-61, and marking to meet requirements of ASME B31.1 & ASME B31.3.
- HD: Hydrostatic testing as per MSS-SP-61, meets the requirements of MSS-SP-105.

Notes:

All 316 SS and A105 CS bodied valves meets requirements of NACE MR0175/ISO 15156-3 and NACE MR0103-2005.



CM25D - Globe Pattern 7/16" [11 mm] bore, 6000 psig [414 barg] hand valve

The CM25D barstock construction, globe pattern hand valve is ideally suited for severe service, high-temperature applications. The globe pattern construction of this unit ensures reliable bubble-tight shutoff and allows for throttling of the most severe of services. The standard packing for the CM25D is GRAFOIL® for high-temperature compatibility; however, Teflon® is readily available.

The CM25D is available in a wide variety of inlet and outlet configurations and materials. To simplify installation requirements the CM25D series can be factory configured with a wide variety of various manufacturers' tube fittings.

Features

- Rotating ball stem tip provides reliable bubble-tight shutoff of large (7/16" [11mm]) globe pattern bore.
- Large handle ensures ease of operation while actuating valve.
- Either the Teflon® or GRAFOIL® packing is easily adjustable in field.
- All packing is below the threads, which ensures the process does not contaminate the valve's actuation threads. This feature ensures smooth valve operation and long service life.

- All CM25D's feature safety back seating ensuring the prevention of both accidental stem blowout and removal under pressure.
- All CM25D's in the severe service series feature an upgraded bonnet lock plate to prevent accidental removal of bonnet assembly under pressure.

CM25D - Ordering Code:

CM25D - 1 M88T PID G SC

Materials of Construction

- 1: SS - 316/316L (ASTM 479-316/316L)
 2: CS/SS - A105 CS Body w/SS Trim
 5: Other construction materials available - consult factory

Inlet/Outlet Connections (Standard threaded connections)

- F66T: 3/4" FNPT x 3/4" FNPT F88T: 1" FNPT x 1" FNPT
 M66T: 3/4" MNPT x 3/4" FNPT M88T: 1" MNPT x 1" MNPT

Optional socket weld and butt weld connections available - consult factory.

Bonnet Assembly

PID: Adjustable packing, Rotating ball tipped stem

Packing

- T: Teflon®, Adjustable packing
 G: Grafoil®, Adjustable packing

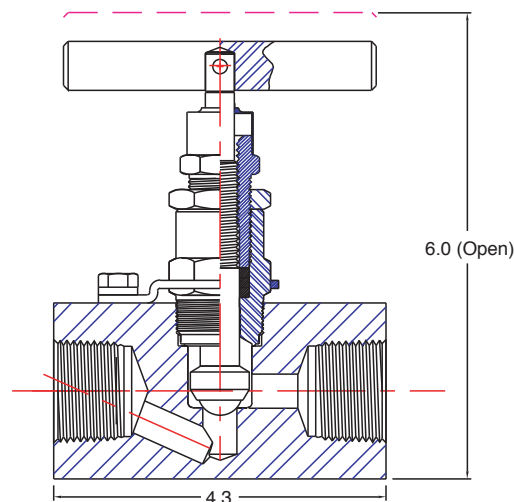
Special Options

SCL: Bonnet lock upgrade with Grafoil Packing, includes Hydro-Testing as per MSS-SP-61, and marking to meet requirements of ASME B31.1 & ASME B31.3.

HD: Hydrostatic testing as per MSS-SP-61, meets the requirements of MSS-SP-105.

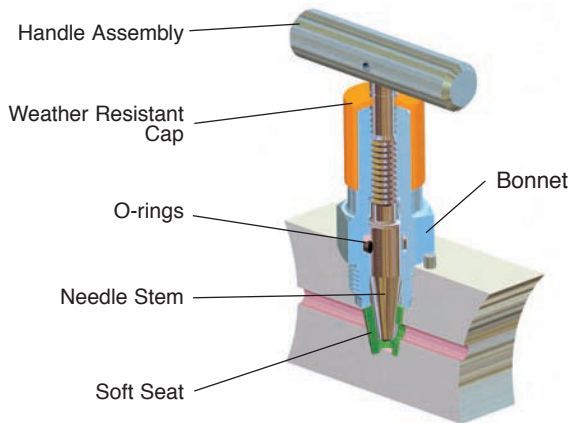
Notes:

- All seats on CM25D Series are integral – no nomenclature designation required.
- All 316 SS and A105 CS bodied valves meets requirements of NACE MR0175/ISO 15156-3 and NACE MR0103-2005.

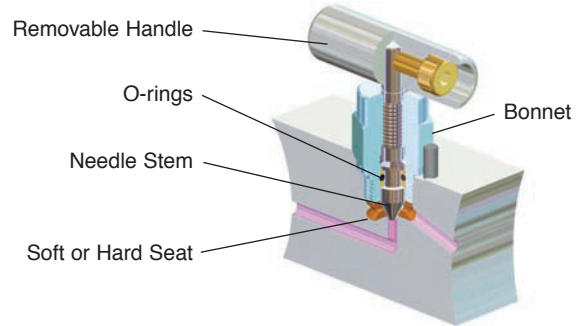


Bonnet Assemblies

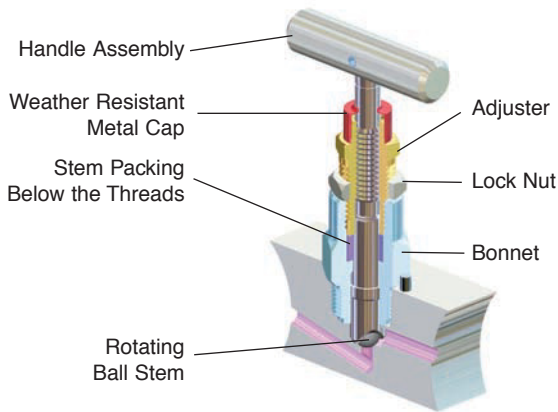
O-ring, Needle tipped stem



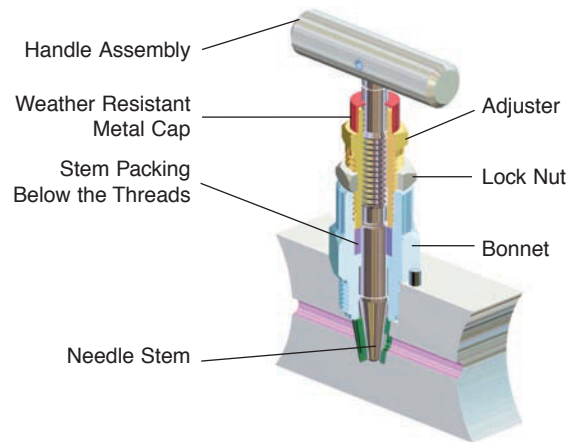
O-ring Needle tipped stem



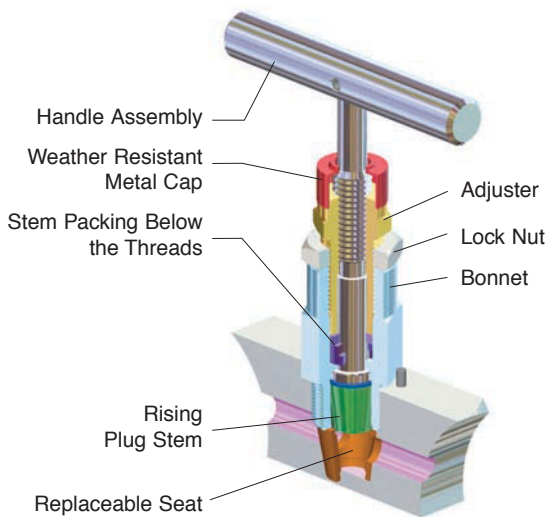
Adjustable packing, Non-rotating ball tipped stem



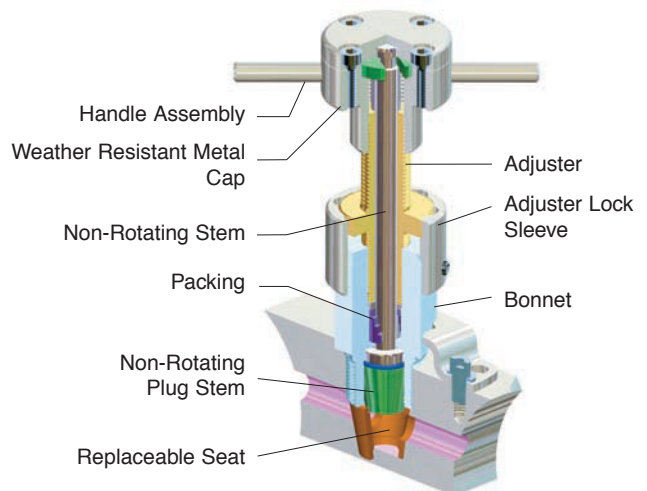
Adjustable packing, Needle tipped stem



Adjustable packing, Non-rotating plug

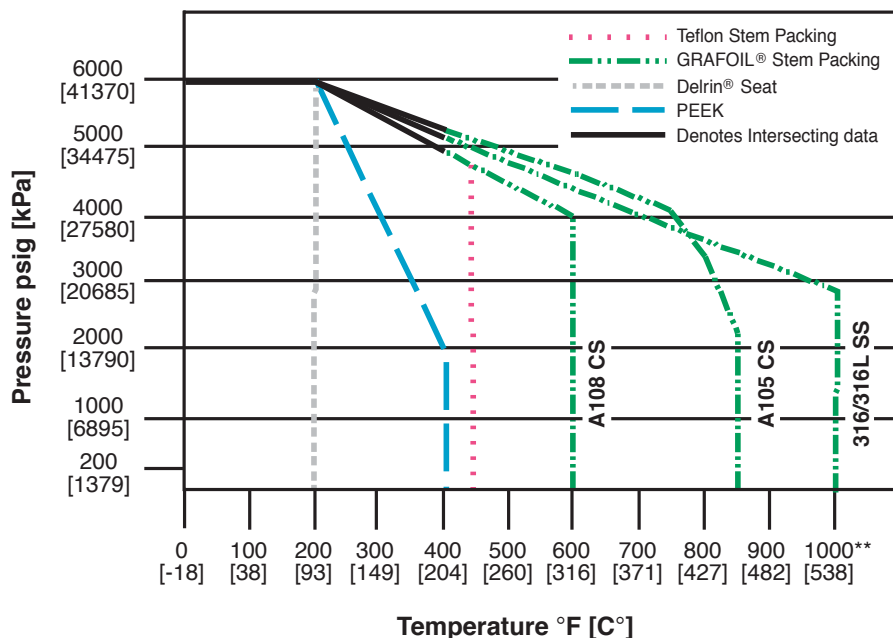


Adjustable packing, Non-rotating plug stem, Non-rotating plug - meets API 607 / BS6755 Part 2 requirements



Pressure/Temperature Chart

Standard 6000 psi Valve, 316/316L SS, A108CS, A105 CS*



* In accordance with ASME 16.34, ASME B31.1 ASME B31.1

** For applications above 1000°F, please consult factory.

Temperature Ratings

Body Materials		
	Minimum °F [°C]	Maximum °F [°C]
316/316L SS*	-70°F [-57°C]	1000°F [538°C]
A105 CS	-20°F [-29°C]	850°F [454°C]
A108 CS	-20°F [-29°C]	600°F [315°C]

Seat Materials	
	Maximum °F [°C]
316/316L	1000°F [538°C]
Delrin®	200°F [93°C]
PEEK	400°F [204°C]

* 316 SS with 0.04% minimum carbon option, for temperatures up to 1200°F.

Stem Seal Materials	
	Maximum °F [°C]
Viton®	400°F [204°C]
Aflas®	400°F [204°C]
Teflon®	450°F [232°C]
GRAFOIL®	1000°F [538°C]

Note: GRAFOIL® suitable for services in excess of 1000°F in a non-oxidizing environment.

- | Notes |
|----------------------------------------------------------------------------------------|
| 1 Teflon® and Delrin® are registered trademarks of the E.I. duPont de Nemours Company. |
| 2. GRAFOIL® is a registered trademark of UCAR Carbon. |
| 3. Viton® is a registered trademark of DuPont Dow Elastomers. |
| 4. Aflas® is a registered trademark of Asahi Glass Company, Ltd. |

Century Valve

Hand Valves, Severe Service, and Isolation Valves