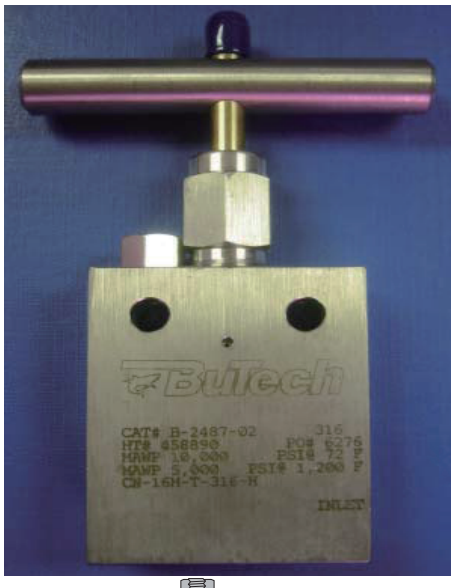
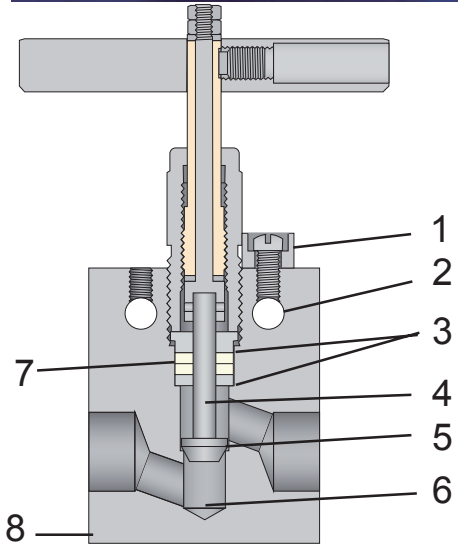
# N-Series Valves




## *Technical Data*

| VALVE SERIES | | ORIFICE mm | ORIFICE in | PRESSURE RATING |
|---|---|---|---|---|
| N | A | 6.25 | 0.25 | 10000PSI@72℉ (690bar@25℃) |
| | B | 8.00 | 0.32 | |
| Series | C | 11.10 | 0.43 | 5000PSI@1200℉ |
| | D | 17.00 | 0.67 | (345bar@648℃) |

Graphite is the standard packing material for high temperature applications up to +1200℉,while glass-filled Teflon packing is the standard material used for cryogenic applications from 0℉ to -420℉. Proper cooling and ventilation is required.

## *High Pressure and Temperature&Cryogenic Valve*

BuTech N-Series Valves are designed for "Performance Under Pressure"with applications in petro-chemical,power,waterblasting, LPG,LNG,CNG,aeronautic and astronautic industry,etc.
Our N-Series Valves are constructed of 316 cold-worked stainless steel for effective corrosion resistance or can be manufactured in any machinable metal including Nickel,Brass,Titanium, Inconel,Monel,Hastelloy C,and other exotic alloys.

To conform with $H_2S$ Sour Gas Service requirements,BuTech N-Series valves can be manufactured in accordance with NACE Specification MR-01-75.

Our valves can be cleaned for Oxygen Service and/or cleaned to satisfy the requirements of MIL-STD-767.

BuTech's Navy-Approved Quality Assurance Program satisfies the requirements of MIL-I-45208A.

## *Features*

**1 Positive packing gland locking device**
Prevents accidental unthreading of bonnet

**2 Panel Mounting Holes**
Top or side mounting

**3 Gland**
Packing support washers resist extrusion of packings,increasing packing life and decreasing retorque adjustments

**4 Stem**
Non-rotating stem prevents galling and scoring

**5 Shouldered stem tip**
Shouldered stem tip design simplifies maintenance by eliminating packing hooks or extractors

**6 Full Porting below stem gives excellent flow**

**7 Packing**
Glass-filled Teflon standard;Graphite optional

**8 Body**
Bodies cold-worked
Weep holes for instant leak detection and safety

- **Low Operating Torque**
- **Rating basis is a factor of safety of 4:1 on pressure containing parts and 2:1 for packing or seal leakage**

**For services above 1200℉,contact factory or local distributor**



BuTech an Accudyne Industries brand

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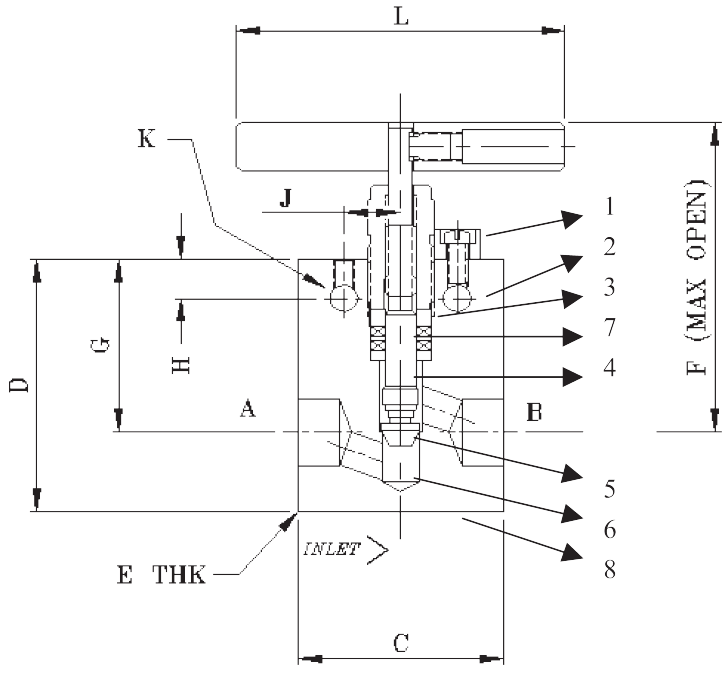
# P-Series Valves


## *High Pressure and Temperature Valve*

BuTech P-Series Valves are designed for "Performance Under Pressure"with special application in power generation plant. Our P-Series Valves are constructed of 316 cold-worked stainless steel for extremely high pressure and temperature in power industry or can be manufactured in any machinable metal including Nickel,Brass,Titanium,Inconel,Monel,Hastelloy C,and other exotic alloys.

## *Technical Data*

| VALVE SERIES | | ORIFICE mm | ORIFICE in | PRESSURE RATING |
|---|---|---|---|---|
| P Series | A | 6.25 | 0.25 | 10000PSI@72℉ (690bar@25℃) |
| | B | 8.00 | 0.32 | |
| | C | 11.10 | 0.43 | 5000PSI@1200℉ |
| | D | 20.00 | 0.79 | (345bar@648℃) |

Graphite is the standard packing material for high temperature applications up to +1200℉,while glass-filled Teflon packing is the standard material used for cryogenic applications from 0℉ to -420℉. Proper cooling and ventilation is required.

## *Features*

**1 Positive packing gland locking device**
Prevents accidental unthreading of bonnet

**2 Panel Mounting Holes**
Top or side mounting

**3 Gland**
Packing support washers resist extrusion of packings,increasing packing life and decreasing retorque adjustments

**4 Stem**
Non-rotating stem prevents galling and scoring

**5 Shouldered stem tip**
Shouldered stem tip design simplifies maintenance by eliminating packing hooks or extractors

**6 Full Porting below stem gives excellent flow**

**7 Packing**
Glass-filled Teflon standard;Graphite optional

**8 Body**
Bodies cold-worked
Weep holes for instant leak detection and safety

- **Low Operating Torque**
- **Rating basis is a factor of safety of 4:1 on pressure containing parts and 2:1 for packing or seal leakage**

**For services above 1200℉,contact factory or local distributor**

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# Needle Valve - Model Number Codes

| AU | - | 12M | / | 16M | - | B | - | 316 | - | H | - | * |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | 7 |

## 1 - Valve Style / Orifice Size

| Orifice | Type | Working Pressure |
|---|---|---|
| **AE** = 4.0 / 6.0 mm<br>**CE** = 10.0 mm | Needle Valve | 483 Bar @ 25$^0$C<br>246 Bar @ 648$^0$C |
| **AF** = 6.0 mm<br>**CF** = 10.0 mm | Tube Weld Needle Valve | 483 Bar @ 25$^0$C<br>246 Bar @ 648$^0$C |
| **AU** = 6.0 mm<br>**CU** = 10.0 mm | Weld Nipple Needle Valve | 483 Bar @ 25$^0$C<br>246 Bar @ 648$^0$C |
| **DE** = 20.0 mm | Needle Valve | 483 Bar @ 25$^0$C<br>246 Bar @ 648$^0$C |
| **AP/AB** = 6.25 mm<br>**CP/CB** = 11.1 mm | High Pressure Needle Valve | 690 Bar @ 25$^0$C<br>345 Bar @ 648$^0$C |
| **AN** = 6.25 mm<br>**CN** = 11.1 mm | High Pressure Needle Valve | 690 Bar @ 25$^0$C<br>345 Bar @ 648$^0$C |
| **DN** = 17.0 mm | High Pressure Needle Valve | 690 Bar @ 25$^0$C<br>345 Bar @ 648$^0$C |
| **DP/DB** = 20.0 mm | High Pressure Needle Valve | 690 Bar @ 25$^0$C<br>345 Bar @ 648$^0$C |
| **AM** = 6.0 mm<br>**CM** = 10.0 mm | Double Needle Valve | 483 Bar @ 25$^0$C<br>246 Bar @ 648$^0$C |

## 2 - Inlet Size

| | | |
|---|---|---|
| **8M** = 8 mm | **18M** = 18 mm | **4** = 1/4" |
| **10M** = 10 mm | **22M** = 22 mm | **6** = 3/8" |
| **12M** = 12 mm | **25M** = 25 mm | **8** = 1/2" |
| **14M** = 14 mm | **28M** = 28 mm | **12** = 3/4" |
| **16M** = 16 mm | **32M** = 32 mm | **16** = 1" |

## 3 - Outlet Size (Omit if same as inlet size)

| | | |
|---|---|---|
| **8M** = 8 mm | **18M** = 18 mm | **4** = 1/4" |
| **10M** = 10 mm | **22M** = 22 mm | **6** = 3/8" |
| **12M** = 12 mm | **25M** = 25 mm | **8** = 1/2" |
| **14M** = 14 mm | **28M** = 28 mm | **12** = 3/4" |
| **16M** = 16 mm | **32M** = 32 mm | **16** = 1" |

## 4 - Connection Type

| | | |
|---|---|---|
| **T** = Tube Socket Weld | **F** = FNPT | **G** = Double-Ferrule |
| **P** = Pipe Socket Weld | **M** = MNPT | **B** = Butt Weld Tube |

## 5 - Material

**316** = 316 SS **316L** = 316L SS **321** = 321 SS **CS** = Carbon Steel

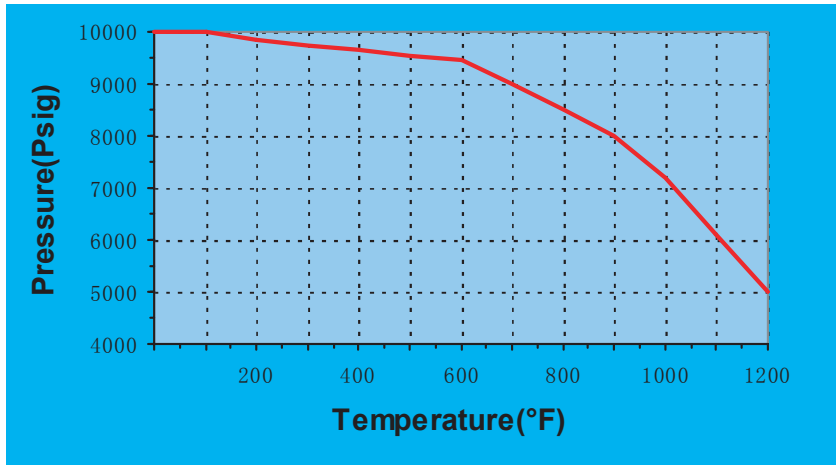
## 6 - Options

**H** = High Temperature **PM** = Panel Mount

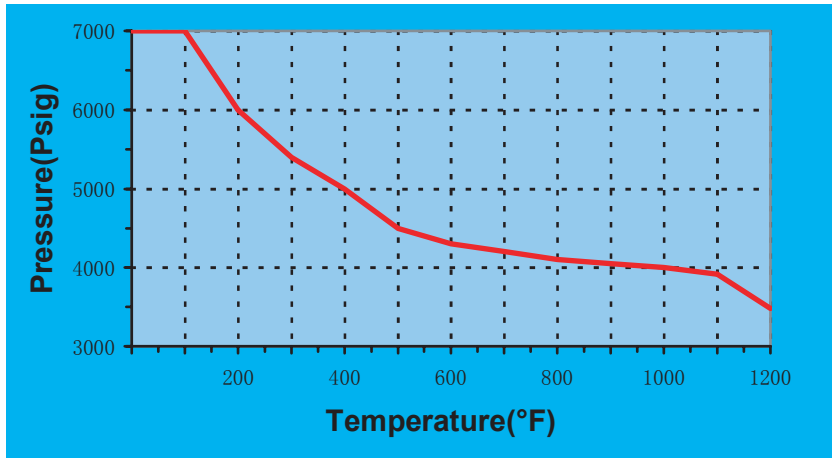
## 7 - * Special Instructions (Please clearly specify)

# Temperature/Pressure

## N,P,B Series




## Other Series




# Testing

Standard Production Test: Each valve of N&P&B-Series is 100% tested with nitrogen @2000 PSI for leakage at the seat, and other Series are 100% tested with nitrogen @1000 PSI for leakage at the seat. Each test is performed to a maximum allowable leak rate of 0.1 scc./min.

Each valve is tested with pure water at 1.5 times the working pressure.

Other test methods are available.

***BuTech Valve*** is designed,manufactured and tested in compliance with ANSI B31.1 Power Piping Code and ANSI B31.3 Chemical Plant and Petroleum Refinery Piping Code.

**For special requirement, contact factory or local distributor**



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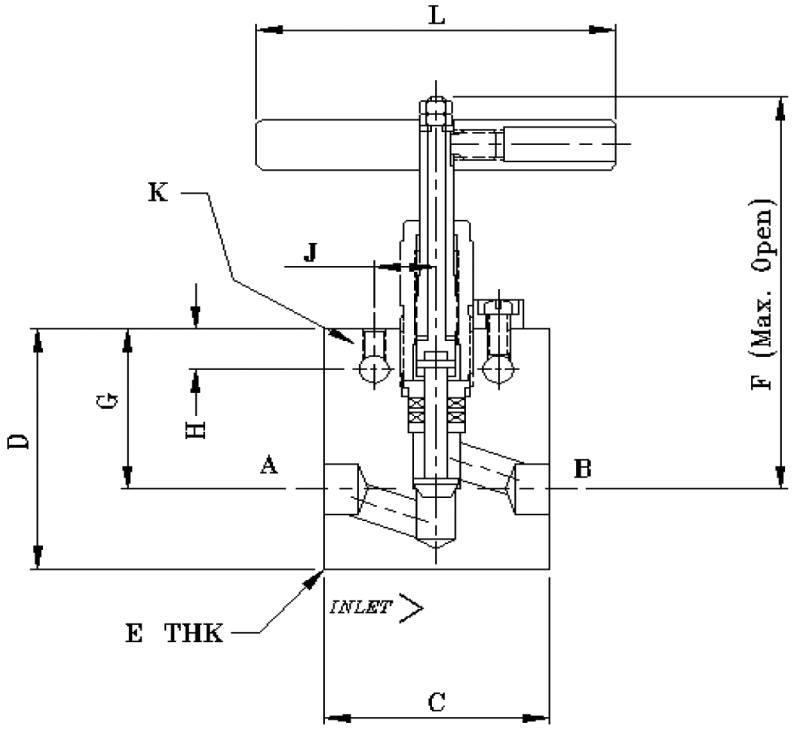
# AN/CN Series - Needle Valves - High Pressure - Tube Socket Weld



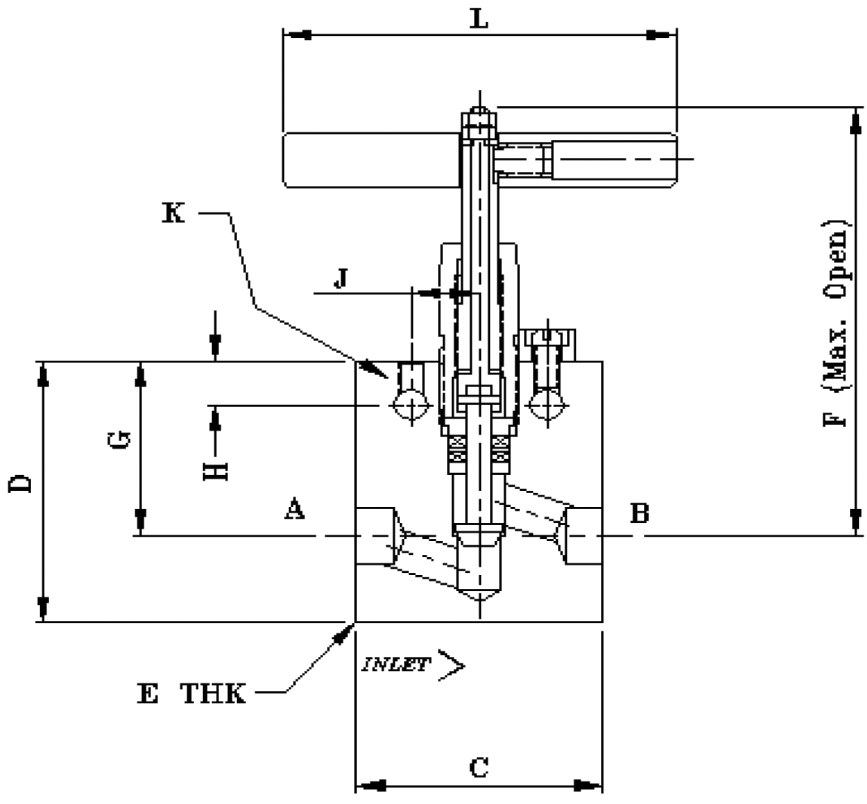

**Standard: ANSI B16.34**

**Working Pressure:** **690 Bar @ 25°C**
**345 Bar @ 648°C**

**Temperature Rating:** **232°C with PTFE packing**
**648°C with Graphite packing (-H option)**

| Model | Inlet x Outlet | | | Dimensions (mm) | | | | | | | | | Orifice (mm) | Cv |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Size 'A' | Size 'B' | Connection | C | D | E | F | G | H | J | K | L | | |
| AN-8M-T | 8mm | 8mm | Tube Socket Weld | 63.5 | 50.8 | 25.4 | 93.2 | 34.8 | 9.7 | 15.7 | 6.4 | 76.2 | 6.25 | 0.73 |
| AN-10M-T | 10mm | 10mm | | 63.5 | 50.8 | 25.4 | 93.2 | 34.8 | 9.7 | 15.7 | 6.4 | 76.2 | 6.25 | 0.73 |
| AN-12M-T | 12mm | 12mm | | 63.5 | 50.8 | 25.4 | 93.2 | 34.8 | 9.7 | 15.7 | 6.4 | 76.2 | 6.25 | 0.73 |
| AN-14M-T | 14mm | 14mm | | 63.5 | 50.8 | 25.4 | 93.2 | 34.8 | 9.7 | 15.7 | 6.4 | 76.2 | 6.25 | 0.73 |
| AN-16M-T | 16mm | 16mm | | 63.5 | 50.8 | 25.4 | 93.2 | 34.8 | 9.7 | 15.7 | 6.4 | 76.2 | 6.25 | 0.73 |
| CN-12M-T | 12mm | 12mm | | 63.5 | 76.2 | 25.4 | 135.9 | 50.8 | 12.7 | 17.5 | 8.6 | 101.6 | 11.1 | 2.8 |
| CN-14M-T | 14mm | 14mm | | 63.5 | 76.2 | 25.4 | 135.9 | 50.8 | 12.7 | 17.5 | 8.6 | 101.6 | 11.1 | 2.8 |
| CN-16M-T | 16mm | 16mm | | 63.5 | 76.2 | 25.4 | 135.9 | 50.8 | 12.7 | 17.5 | 8.6 | 101.6 | 11.1 | 2.8 |
| CN-25M-T | 25mm | 25mm | | 63.5 | 76.2 | 38.1 | 135.9 | 50.8 | 12.7 | 17.5 | 8.6 | 101.6 | 11.1 | 2.8 |
| CN-16M/14M-T | 16mm | 14mm | | 63.5 | 76.2 | 25.4 | 135.9 | 50.8 | 12.7 | 17.5 | 8.6 | 101.6 | 11.1 | 2.8 |
| CN-25M/14M-T | 25mm | 14mm | | 63.5 | 76.2 | 38.1 | 135.9 | 50.8 | 12.7 | 17.5 | 8.6 | 101.6 | 11.1 | 2.8 |
| CN-25M/16M-T | 25mm | 16mm | | 63.5 | 76.2 | 38.1 | 135.9 | 50.8 | 12.7 | 17.5 | 8.6 | 101.6 | 11.1 | 2.8 |

**For other connections and sizes, contact factory or local distributor**




**Standard: ANSI B16.34**

**Working Pressure:** **690 Bar @ 25°C**
**345 Bar @ 648°C**

**Temperature Rating:** **232°C with PTFE packing**
**648°C with Graphite packing (-H option)**

| Model | Inlet x Outlet | | | Dimensions (mm) | | | | | | | | | Orifice (mm) | Cv |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Size 'A' | Size 'B' | Connection | C | D | E | F | G | H | J | K | L | | |
| AN-8-P | 1/2" | 1/2" | Pipe Socket Weld | 63.5 | 50.8 | 34.8 | 95.3 | 34.8 | 9.7 | 15.7 | 6.4 | 76.2 | 6.25 | 0.73 |
| CN-8-P | 1/2" | 1/2" | | 63.5 | 76.2 | 34.8 | 135.9 | 50.8 | 12.7 | 17.5 | 8.6 | 101.6 | 11.1 | 2.8 |

**For other connections and sizes, contact factory or local distributor**



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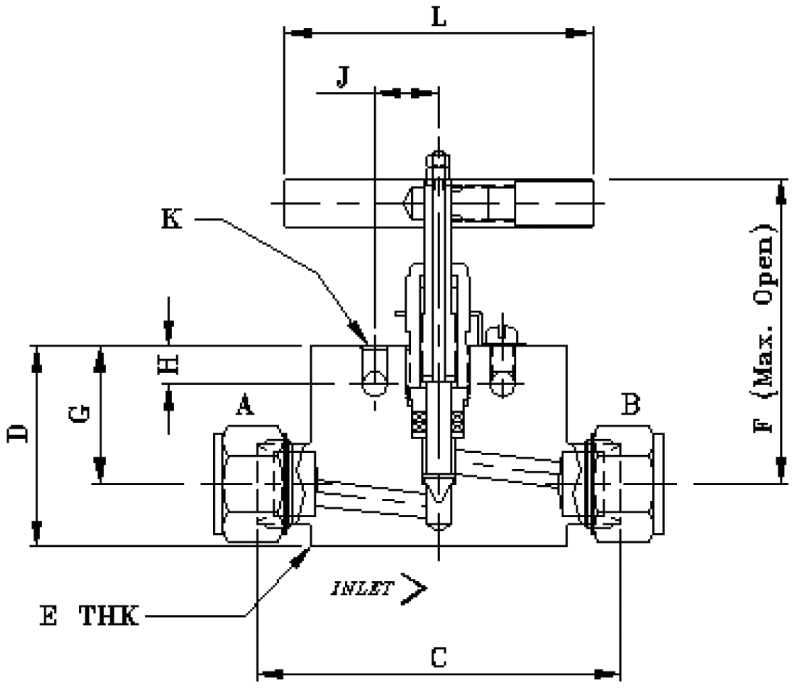
# AN/CN Series - Needle Valves - High Pressure - Double Ferrule




**Standard: ANSI B16.34**

**Working Pressure:** **690 Bar @ 25°C**
**345 Bar @ 648°C**

**Temperature Rating:** **232°C with PTFE packing**
**648°C with Graphite packing (-H option)**

| Model | Inlet x Outlet | | | Dimensions (mm) | | | | | | | | | Orifice (mm) | Cv |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Size 'A' | Size 'B' | Connection | C | D | E | F | G | H | J | K | L | | |
| AN-12M-G | 12mm | 12mm | Double Ferrule | 88.9 | 50.8 | 25.4 | 93.2 | 34.8 | 9.7 | 15.7 | 6.4 | 76.2 | 6.25 | 0.73 |
| AN-14M-G | 14mm | 14mm | | 88.9 | 50.8 | 25.4 | 93.2 | 34.8 | 9.7 | 15.7 | 6.4 | 76.2 | 6.25 | 0.73 |
| AN-16M-G | 16mm | 16mm | | 89.9 | 50.8 | 34.8 | 93.2 | 34.8 | 9.7 | 15.7 | 6.4 | 76.2 | 6.25 | 0.73 |
| AN-8-G | 1/2" | 1/2" | | 90.4 | 50.8 | 25.4 | 91.4 | 33.0 | 9.7 | 15.7 | 6.4 | 76.2 | 6.25 | 0.73 |
| CN-14M-G | 14mm | 14mm | | 101.6 | 76.2 | 34.8 | 135.9 | 50.8 | 12.7 | 17.5 | 8.6 | 101.6 | 11.1 | 2.8 |
| CN-16M-G | 16mm | 16mm | | 102.6 | 76.2 | 34.8 | 135.9 | 50.8 | 12.7 | 17.5 | 8.6 | 101.6 | 11.1 | 2.8 |
| CN-18M-G | 18mm | 18mm | | 104.7 | 76.2 | 34.8 | 135.9 | 50.8 | 12.7 | 17.5 | 8.6 | 101.6 | 11.1 | 2.8 |
| CN-25M-G | 25mm | 25mm | | 91.2 | 76.2 | 38.1 | 135.9 | 50.8 | 12.7 | 17.5 | 8.6 | 101.6 | 11.1 | 2.8 |

**For other connections and sizes, contact factory or local distributor**

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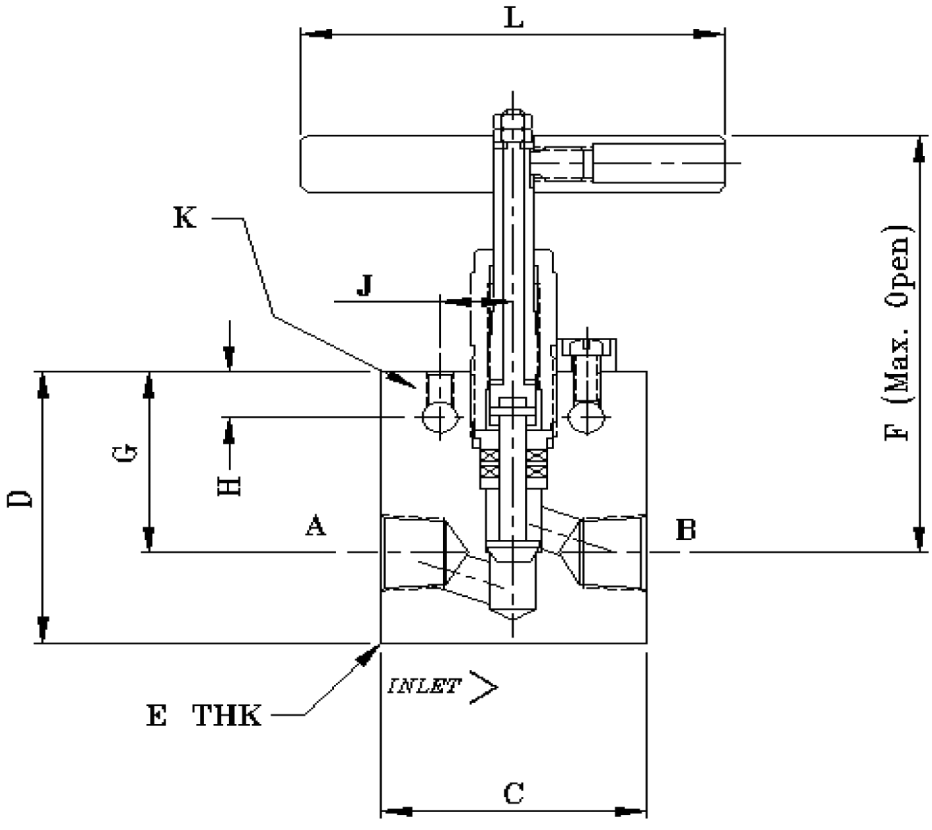


**Standard: ANSI B16.34**

**Working Pressure:** **690 Bar @ 25°C**
**345 Bar @ 648°C**

**Temperature Rating:** **232°C with PTFE packing**
**648°C with Graphite packing (-H option)**

| Model | Inlet x Outlet | | | Dimensions (mm) | | | | | | | | | Orifice (mm) | Cv |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Size 'A' | Size 'B' | Connection | C | D | E | F | G | H | J | K | L | | |
| AN-4-F | 1/4" | 1/4" | FNPT | 63.5 | 50.8 | 25.4 | 93.2 | 34.8 | 9.7 | 15.7 | 6.4 | 76.2 | 6.25 | 0.73 |
| AN-8-F | 1/2" | 1/2" | | 63.5 | 50.8 | 31.8 | 93.2 | 34.8 | 9.7 | 15.7 | 6.4 | 76.2 | 6.25 | 0.73 |
| CN-8-F | 1/2" | 1/2" | | 63.5 | 76.2 | 31.8 | 135.9 | 50.8 | 12.7 | 17.5 | 8.6 | 101.6 | 11.1 | 2.8 |
| CN-12-F | 3/4" | 3/4" | | 127 | 104.6 | 44.5 | 212.4 | 71.4 | 28.4 | 31.8 | 14.2 | 254.0 | 11.1 | 2.8 |
| CN-16-F | 1" | 1" | | 127 | 104.6 | 44.5 | 212.4 | 71.4 | 28.4 | 31.8 | 14.2 | 254.0 | 11.1 | 2.8 |

**For other connections and sizes, contact factory or local distributor**



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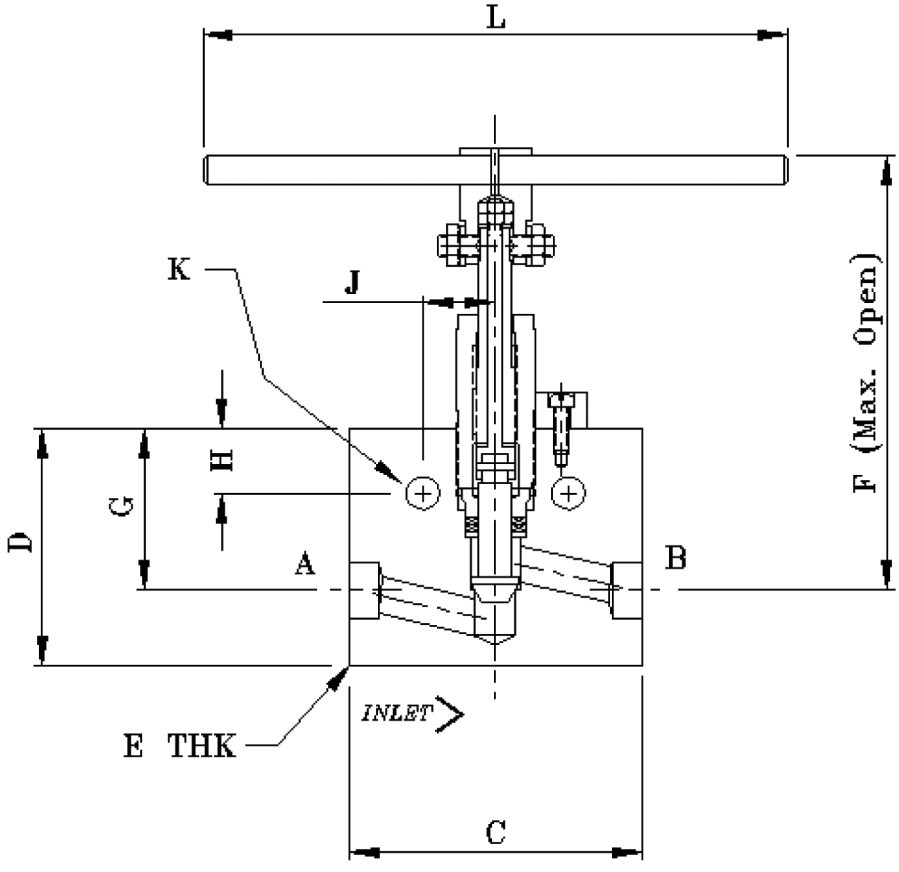
# DN Series - Needle Valves - High Pressure - Tube Socket Weld



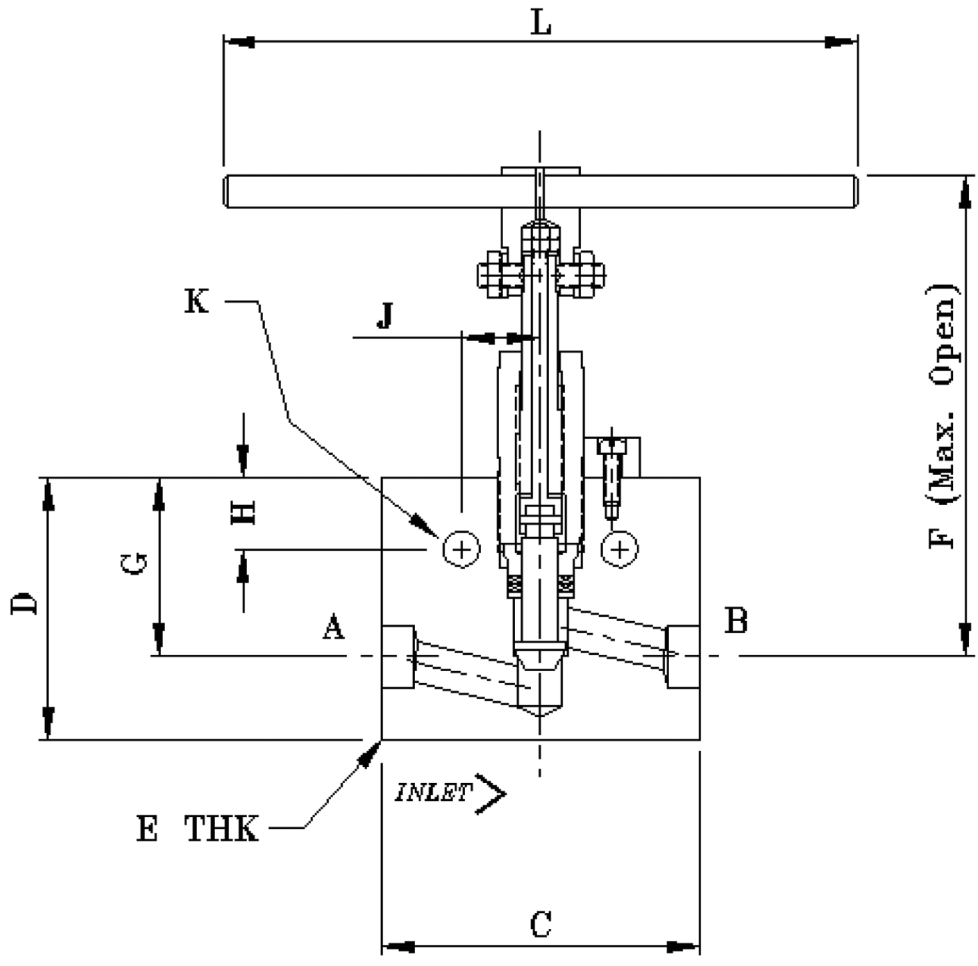

**Standard: ANSI B16.34**

**Working Pressure:** **690 Bar @ 25°C**
**345 Bar @ 648°C**

**Temperature Rating:** **232°C with PTFE packing**
**648°C with Graphite packing (-H option)**

| Model | Inlet x Outlet | | | Dimensions (mm) | | | | | | | | | Orifice (mm) | Cv |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Size 'A' | Size 'B' | Connection | C | D | E | F | G | H | J | K | L | | |
| DN-18M-T | 18mm | 18mm | Socket Weld | 127.0 | 104.6 | 44.5 | 212.4 | 71.4 | 28.4 | 31.8 | 14.2 | 254.0 | 15.9 | 5.2 |
| DN-25M-T | 25mm | 25mm | | 127.0 | 104.6 | 44.5 | 212.4 | 71.4 | 28.4 | 21.8 | 14.2 | 254.0 | 17.0 | 5.2 |
| DN-28M-T | 28mm | 28mm | | 127.0 | 104.6 | 44.5 | 212.4 | 71.4 | 28.4 | 31.8 | 14.2 | 254.0 | 17.0 | 5.2 |

**For other connections and sizes, contact factory or local distributor**




**Standard: ANSI B16.34**

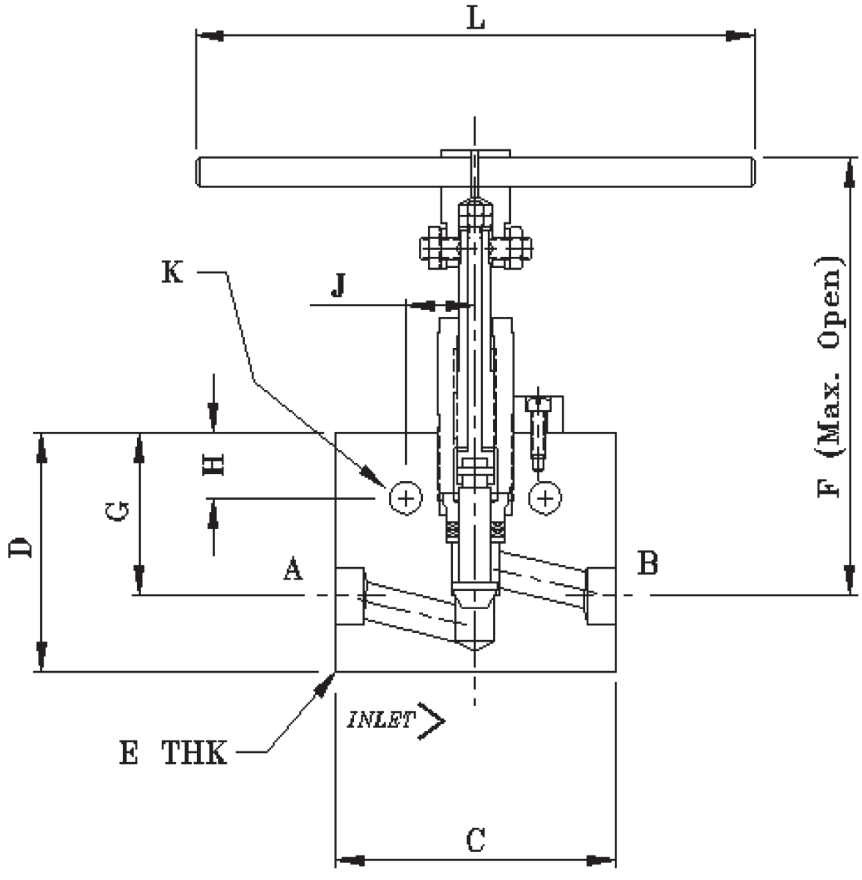
**Working Pressure:** **690 Bar @ 25°C**
**345 Bar @ 648°C**

**Temperature Rating:** **232° with PTFE packing**
**648° with Graphite packing (-H option)**

| Model | Inlet x Outlet | | | Dimensions (mm) | | | | | | | | | Orifice (mm) | Cv |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Size 'A' | Size 'B' | Connection | C | D | E | F | G | H | J | K | L | | |
| DN-12-P | 3/4" | 3/4" | Pipe Socket Weld | 127.0 | 104.6 | 44.5 | 212.4 | 71.4 | 28.4 | 31.8 | 14.2 | 254.0 | 17.0 | 5.2 |
| DN-16-P | 1" | 1" | | 127.0 | 104.6 | 44.5 | 212.4 | 71.4 | 28.4 | 31.8 | 14.2 | 254.0 | 17.0 | 5.2 |

**For other connections and sizes, contact factory or local distributor**

# DN Series - Needle Valves - High Pressure - Double Ferrule



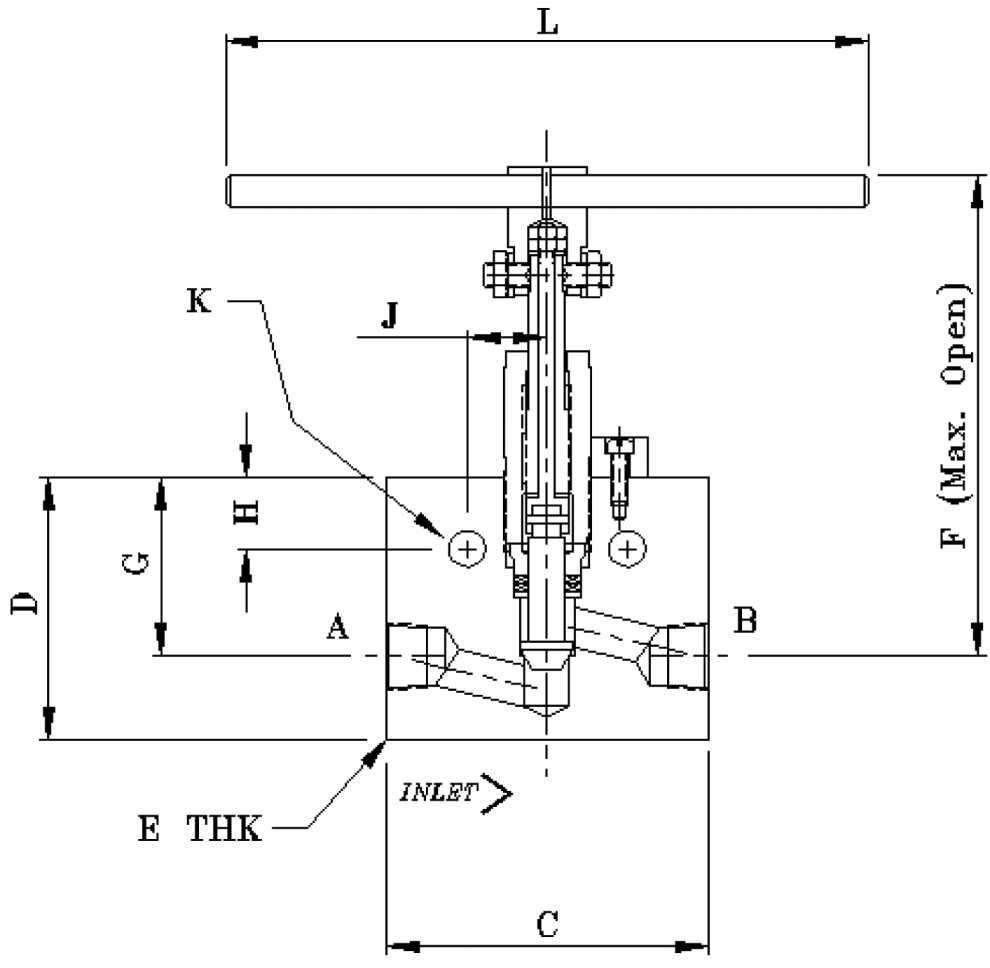

**Standard: ANSI B16.34**

**Working Pressure:** **690 Bar @ 25°C**
**345 Bar @ 648°C**

**Temperature Rating:** **232°C with PTFE packing**
**648°C with Graphite packing (-H option)**

| Model | Inlet x Outlet | | | Dimensions (mm) | | | | | | | | | Orifice (mm) | Cv |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Size 'A' | Size 'B' | Connection | C | D | E | F | G | H | J | K | L | | |
| DN-22M-G | 22mm | 22mm | Double Ferrule | 139.7 | 104.6 | 44.5 | 212.4 | 71.4 | 28.4 | 31.8 | 14.2 | 254.0 | 17.0 | 5.2 |
| DN-25M-G | 25mm | 25mm | | 139.7 | 104.6 | 44.5 | 212.4 | 71.4 | 28.4 | 31.8 | 14.2 | 254.0 | 17.0 | 5.2 |

**For other connections and sizes, contact factory or local distributor**




**Standard: ANSI B16.34**

**Working Pressure:** **690 Bar @ 25°C**
**345 Bar @ 648°C**

**Temperature Rating:** **232°C with PTFE packing**
**648°C with Graphite packing (-H option)**

| Model | Inlet x Outlet | | | Dimensions (mm) | | | | | | | | | Orifice (mm) | Cv |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Size 'A' | Size 'B' | Connection | C | D | E | F | G | H | J | K | L | | |
| DN-12-F | 3/4" | 3/4" | FNPT | 127.0 | 104.6 | 44.5 | 212.4 | 71.4 | 28.4 | 31.8 | 14.2 | 254.0 | 17.0 | 5.2 |
| DN-16-F | 1" | 1" | | 127.0 | 104.6 | 44.5 | 212.4 | 71.4 | 28.4 | 31.8 | 14.2 | 254.0 | 17.0 | 5.2 |

**For other connections and sizes, contact factory or local distributor**



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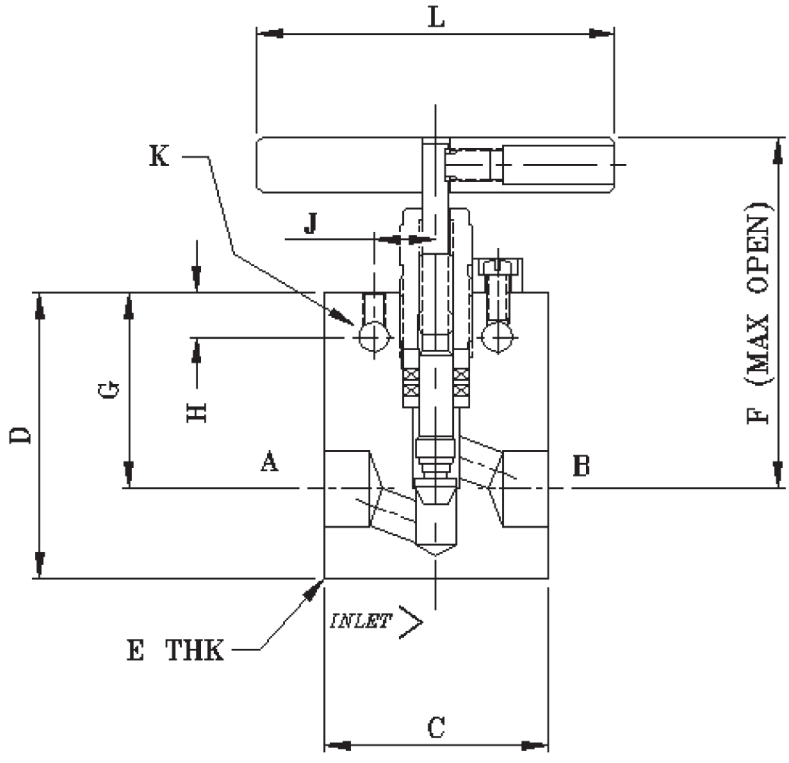
# AP/CP Series - Needle Valves - High Pressure - Socket Weld




**Standard: ANSI B16.34**

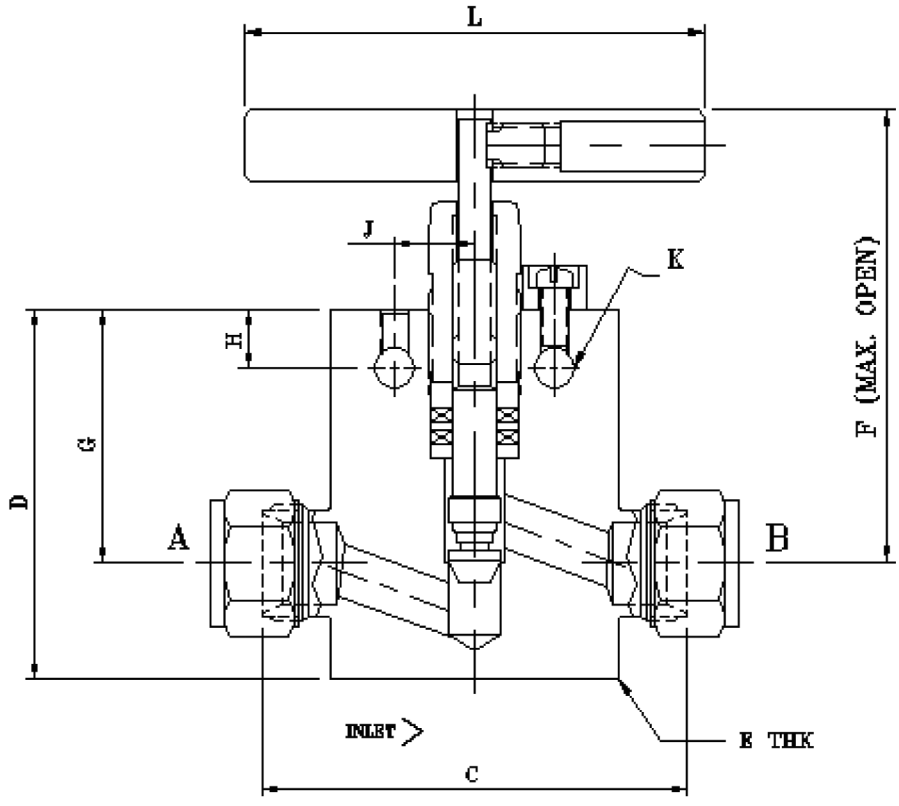
**Working Pressure:** **690 Bar @ 25°C**
**345 Bar @ 648°C**

**Temperature Rating:** **232°C with PTFE packing**
**648°C with Graphite packing (-H option)**

| Model | Inlet x Outlet | | | Dimensions (mm) | | | | | | | | | Orifice (mm) | Cv |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Size 'A' | Size 'B' | Connection | C | D | E | F | G | H | J | K | L | | |
| AP-14M-T | 14mm | 14mm | Socket Weld | 63.5 | 55.6 | 25.4 | 83.6 | 39.6 | 12.7 | 16.5 | 6.3 | 76.2 | 6.25 | 0.75 |
| AP-16M-T | 16mm | 16mm | | 63.5 | 55.6 | 25.4 | 83.6 | 39.6 | 12.7 | 16.5 | 6.3 | 76.2 | 6.25 | 0.75 |
| AP-18M-T | 18mm | 18mm | | 63.5 | 55.6 | 31.8 | 83.6 | 39.6 | 12.7 | 16.5 | 6.3 | 76.2 | 6.25 | 0.75 |
| CP-8-P | 1/2" | 1/2" | | 63.5 | 81.0 | 34.8 | 107.7 | 55.6 | 12.7 | 17.5 | 8.6 | 101.6 | 11.1 | 2.8 |
| CP-14M-T | 14mm | 14mm | | 63.5 | 81.0 | 25.4 | 107.7 | 55.6 | 12.7 | 17.5 | 8.6 | 101.6 | 11.1 | 2.8 |
| CP-16M-T | 16mm | 16mm | | 63.5 | 81.0 | 25.4 | 107.7 | 55.6 | 12.7 | 17.5 | 8.6 | 101.6 | 11.1 | 2.8 |
| CP-18M-T | 18mm | 18mm | | 63.5 | 81.0 | 34.8 | 107.7 | 55.6 | 12.7 | 17.5 | 8.6 | 101.6 | 11.1 | 2.8 |
| CP-25M-T | 25mm | 25mm | | 63.5 | 81.0 | 38.1 | 107.7 | 55.6 | 12.7 | 17.5 | 8.6 | 101.6 | 11.1 | 2.8 |
| CP-16M/14M-T | 16mm | 14mm | | 63.5 | 81.0 | 25.4 | 107.7 | 55.6 | 12.7 | 17.5 | 8.6 | 101.6 | 11.1 | 2.8 |
| CP-25M/16M-T | 25mm | 16mm | | 63.5 | 81.0 | 38.1 | 107.7 | 55.6 | 12.7 | 17.5 | 8.6 | 101.6 | 11.1 | 2.8 |

**For other connections and sizes, contact factory or local distributor**

# AP/CP Series - Needle Valves - High Pressure - Double Ferrule




**Standard: ANSI B16.34**

**Working Pressure:** **690 Bar @ 25°C**
**345 Bar @ 648°C**

**Temperature Rating:** **232°C with PTFE packing**
**648°C with Graphite packing (-H option)**

| Model | Inlet x Outlet | | | Dimensions (mm) | | | | | | | | | Orifice (mm) | Cv |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Size 'A' | Size 'B' | Connection | C | D | E | F | G | H | J | K | L | | |
| AP-12M-G | 12mm | 12mm | Double Ferrule | 88.9 | 55.6 | 25.4 | 83.6 | 39.6 | 12.7 | 16.5 | 6.4 | 76.2 | 6.25 | 0.75 |
| AP-14M-G | 14mm | 14mm | | 88.9 | 55.6 | 25.4 | 83.6 | 39.6 | 12.7 | 16.5 | 6.4 | 76.2 | 6.25 | 0.75 |
| AP-16M-G | 16mm | 16mm | | 89.9 | 55.6 | 25.4 | 83.6 | 39.6 | 12.7 | 16.5 | 6.4 | 76.2 | 6.25 | 0.75 |
| AP-18M-G | 18mm | 18mm | | 92.0 | 55.6 | 31.8 | 83.6 | 39.6 | 12.7 | 16.5 | 6.4 | 76.2 | 6.25 | 0.75 |
| AP-25M-G | 25mm | 25mm | | 91.2 | 55.6 | 38.1 | 83.6 | 39.6 | 12.7 | 16.5 | 6.4 | 76.2 | 6.25 | 0.75 |
| CP-12M-G | 12mm | 12mm | | 88.9 | 81.0 | 25.4 | 107.7 | 55.6 | 12.7 | 17.5 | 8.6 | 101.6 | 11.1 | 2.8 |
| CP-14M-G | 14mm | 14mm | | 88.9 | 81.0 | 25.4 | 107.7 | 55.6 | 12.7 | 17.5 | 8.6 | 101.6 | 11.1 | 2.8 |
| CP-16M-G | 16mm | 16mm | | 89.9 | 81.0 | 25.4 | 107.7 | 55.6 | 12.7 | 17.5 | 8.6 | 101.6 | 11.1 | 2.8 |
| CP-18M-G | 18mm | 18mm | | 92.0 | 81.0 | 34.8 | 107.7 | 55.6 | 12.7 | 17.5 | 8.6 | 101.6 | 11.1 | 2.8 |
| CP-25M-G | 25mm | 25mm | | 91.2 | 81.0 | 38.1 | 107.7 | 55.6 | 12.7 | 17.5 | 8.6 | 101.6 | 11.1 | 2.8 |

**For other connections and sizes, contact factory or local distributor**

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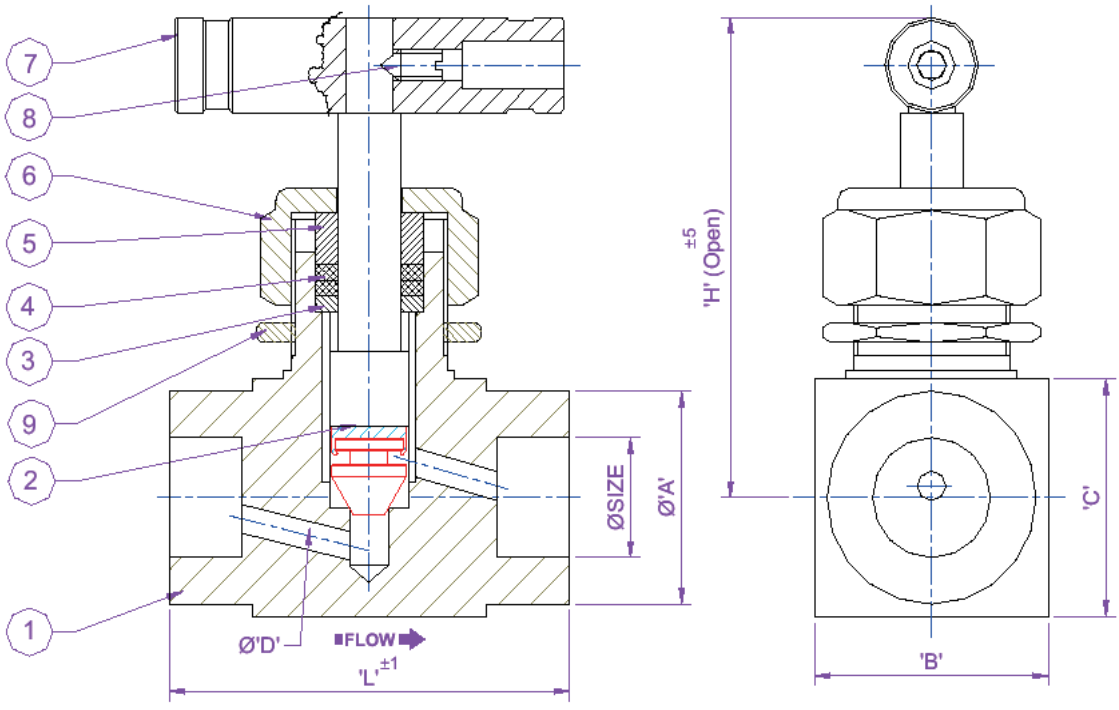


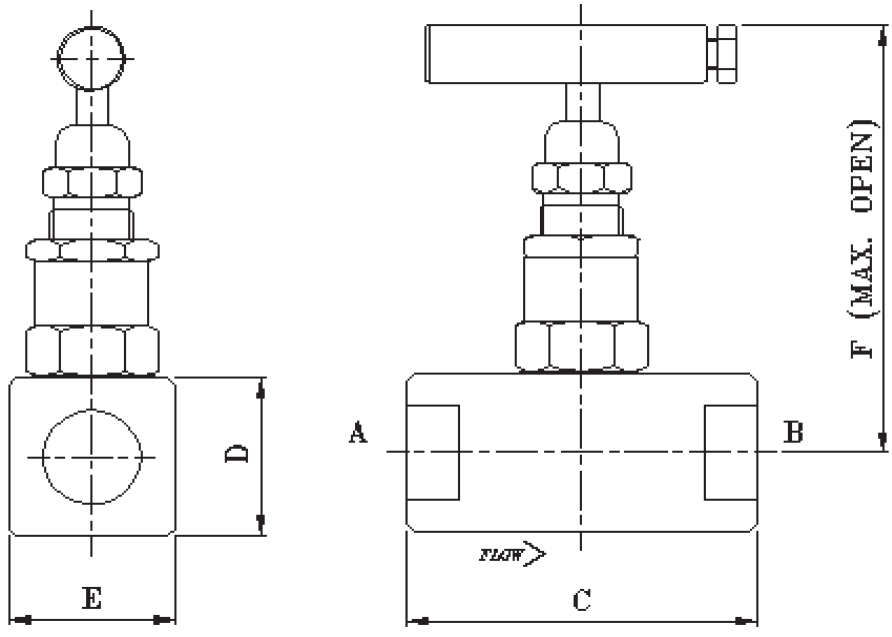

**Standard: ANSI B16.34**

**Working Pressure:** 690 Bar @ 25°C
345 Bar @ 648°C

**Temperature Rating:** 232°C with PTFE packing
648°C with Graphite packing (-H option)

| Model | Inlet x Outlet Size | | Connection | Dimensions (mm) A | B | C | D | H | L | Orifice (mm) | Cv |
|---|---|---|---|---|---|---|---|---|---|---|---|
| AB-14M-T | 14mm | 14mm | Socket Weld | 24.0 | 25.0 | 25.0 | 6.0 | 59.0 | 50.0 | 6.25 | 0.75 |
| AB-16M-T | 16mm | 16mm | | 27.0 | 28.0 | 28.0 | 6.0 | 62.0 | 52.0 | 6.25 | 0.75 |
| CB-14M-T | 14mm | 14mm | | 27.0 | 28.0 | 28.0 | 10.0 | 62.0 | 52.0 | 11.1 | 2.8 |
| CB-16M-T | 16mm | 16mm | | 27.0 | 28.0 | 28.0 | 10.0 | 62.0 | 52.0 | 11.1 | 2.8 |
| CB-16M/14M-T | 16mm | 14mm | | 27.0 | 28.0 | 28.0 | 10.0 | 62.0 | 52.0 | 11.1 | 2.8 |
| DB-28M-T | 28mm | 28mm | | 37.0 | 38.0 | 50.0 | 20.0 | 78.0 | 56.0 | 20.0 | 8.0 |

**For other connections and sizes, contact factory or local distributor**




**Standard: ANSI B16.34**

**Working Pressure:** **483 Bar @ 25°C**
**246 Bar @ 648°C**

**Temperature Rating:** **232°C with PTFE packing**
**648°C with Graphite packing (-H option)**

| Model | Inlet x Outlet | | | Dimensions(mm) | | | | Orifice (mm) | Cv |
|---|---|---|---|---|---|---|---|---|---|
| | Size 'A' | Size 'B' | Connection | C | D | E | F | | |
| AE-12M-T | 12mm | 12mm | Tube Socket Weld | 76.0 | 32.0 | 32.0 | 92.0 | 6.0 | 0.7 |
| AE-14M-T | 14mm | 14mm | | 76.0 | 32.0 | 32.0 | 92.0 | 6.0 | 0.7 |
| AE-16M-T | 16mm | 16mm | | 76.0 | 32.0 | 32.0 | 92.0 | 6.0 | 0.7 |
| CE-12M-T | 12mm | 12mm | | 89.0 | 49.0 | 49.0 | 110.0 | 10.0 | 2.5 |
| CE-14M-T | 14mm | 14mm | | 89.0 | 49.0 | 49.0 | 110.0 | 10.0 | 2.5 |
| CE-16M-T | 16mm | 16mm | | 89.0 | 49.0 | 49.0 | 110.0 | 10.0 | 2.5 |
| CE-18M-T | 18mm | 18mm | | 89.0 | 49.0 | 49.0 | 110.0 | 10.0 | 2.5 |
| CE-25M-T | 25mm | 25mm | | 89.0 | 49.0 | 49.0 | 110.0 | 10.0 | 2.5 |
| CE-16M/14M-T | 16mm | 14mm | | 89.0 | 49.0 | 49.0 | 110.0 | 10.0 | 2.5 |
| CE-25M/14M-T | 25mm | 14mm | | 89.0 | 49.0 | 49.0 | 110.0 | 10.0 | 2.5 |
| CE-25M/16M-T | 25mm | 16mm | | 89.0 | 49.0 | 49.0 | 110.0 | 10.0 | 2.5 |

**For other connections and sizes, contact factory or local distributor**



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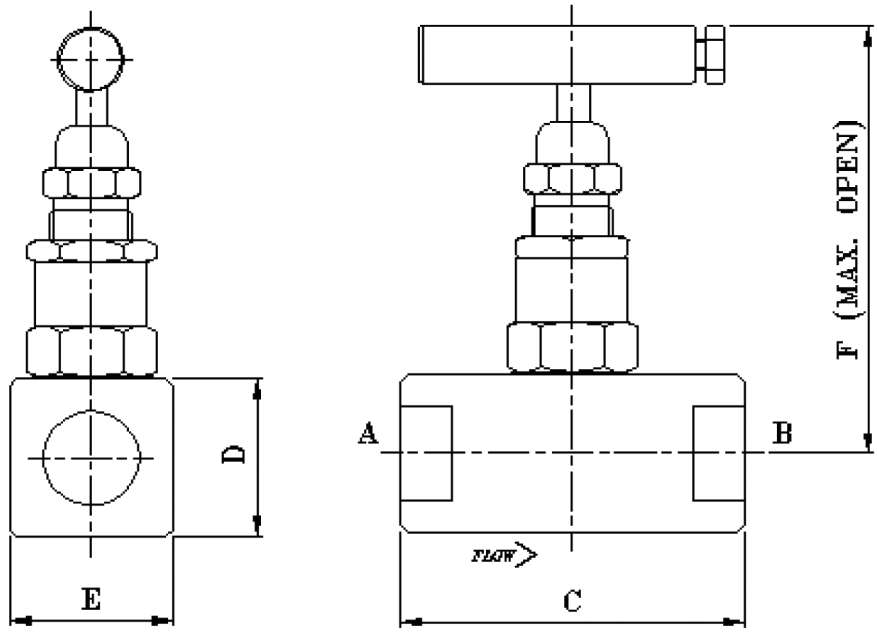


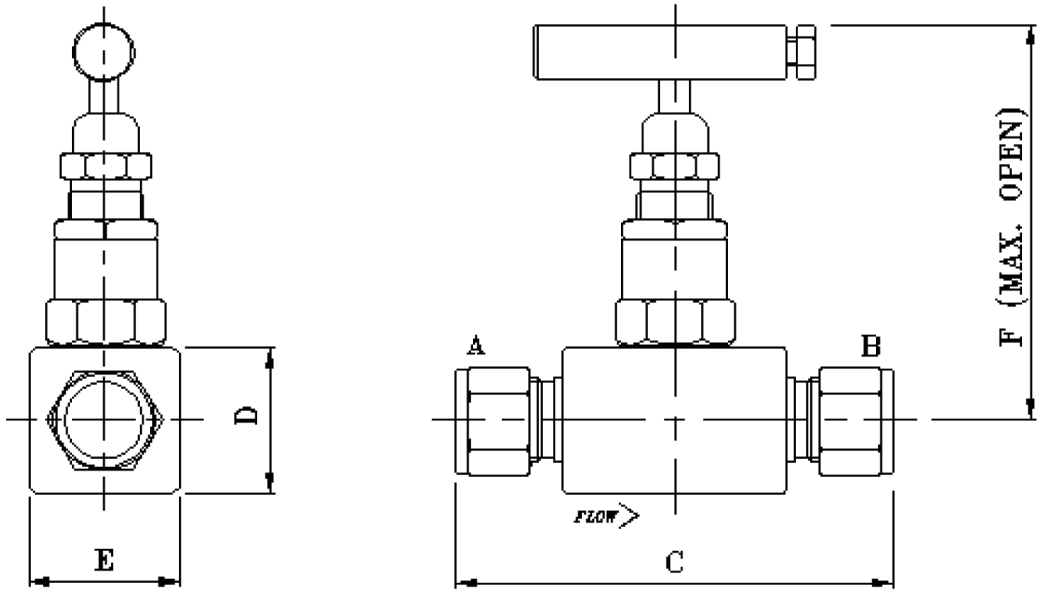

**Standard: ANSI B16.34**

**Working Pressure:** **483 Bar @ 25°C**
**246 Bar @ 648°C**

**Temperature Rating:** **232°C with PTFE packing**
**648°C with Graphite packing (-H option)**

| Model | Inlet x Outlet | | | Dimensions (mm) | | | | Orifice (mm) | Cv |
|---|---|---|---|---|---|---|---|---|---|
| | Size 'A' | Size 'B' | Connection | C | D | E | F | | |
| AE-4-P | 1/4" | 1/4" | Pipe Socket Weld | 76.0 | 32.0 | 32.0 | 92.0 | 6.0 | 0.7 |
| AE-6-P | 3/8" | 3/8" | | 76.0 | 32.0 | 32.0 | 92.0 | 6.0 | 0.7 |
| AE-8-P | 1/2" | 1/2" | | 76.0 | 32.0 | 32.0 | 92.0 | 6.0 | 0.7 |
| CE-8-P | 1/2" | 1/2" | | 89.0 | 49.0 | 49.0 | 110.0 | 10.0 | 2.5 |
| CE-12-P | 3/4" | 3/4" | | 89.0 | 49.0 | 49.0 | 110.0 | 10.0 | 2.5 |
| CE-16-P | 1" | 1" | | 89.0 | 49.0 | 49.0 | 110.0 | 10.0 | 2.5 |

**For other connections and sizes, contact factory or local distributor**



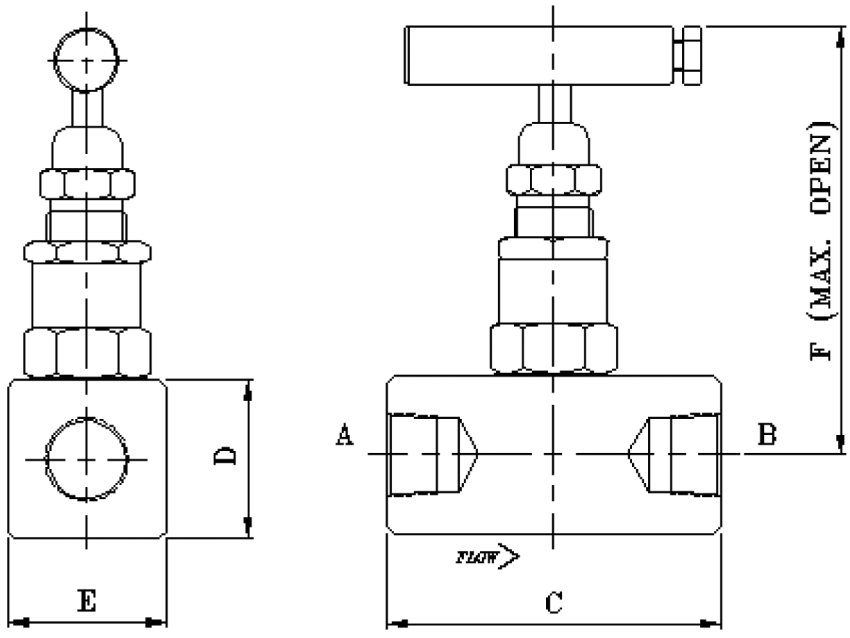

**Standard: ANSI B16.34**

**Working Pressure: 483 Bar @ 25°C**
**246 Bar @ 648°C**

**Temperature Rating: 232°C with PTFE packing**
**648°C with Graphite packing (-H option)**

| Model | Inlet x Outlet | | | Dimensions (mm) | | | | Orifice (mm) | Cv |
|---|---|---|---|---|---|---|---|---|---|
| | Size 'A' | Size 'B' | Connection | C | D | E | F | | |
| AE-12M-G | 12mm | 12mm | Double Ferrule | 96.0 | 32.0 | 32.0 | 92.0 | 6.0 | 0.7 |
| AE-14M-G | 14mm | 14mm | | 97.0 | 32.0 | 32.0 | 92.0 | 6.0 | 0.7 |
| AE-16M-G | 16mm | 16mm | | 97.0 | 32.0 | 32.0 | 92.0 | 6.0 | 0.7 |
| AE-8-G | 1/2" | 1/2" | | 96.0 | 32.0 | 32.0 | 92.0 | 6.0 | 0.7 |
| CE-12M-G | 12mm | 12mm | | 109.0 | 49.0 | 49.0 | 110.0 | 10.0 | 2.5 |
| CE-14M-G | 14mm | 14mm | | 110.0 | 49.0 | 49.0 | 110.0 | 10.0 | 2.5 |
| CE-16M-G | 16mm | 16mm | | 110.0 | 49.0 | 49.0 | 110.0 | 10.0 | 2.5 |
| CE-25M-G | 25mm | 25mm | | 115.0 | 49.0 | 49.0 | 110.0 | 10.0 | 2.5 |
| CE-8-G | 1/2" | 1/2" | | 109.0 | 49.0 | 49.0 | 110.0 | 10.0 | 2.5 |
| CE-12-G | 3/4" | 3/4" | | 110.0 | 49.0 | 49.0 | 110.0 | 10.0 | 2.5 |
| CE-16-G | 1" | 1" | | 115.0 | 49.0 | 49.0 | 110.0 | 10.0 | 2.5 |

**For other connections and sizes, contact factory or local distributor**




**Standard: ANSI B16.34**

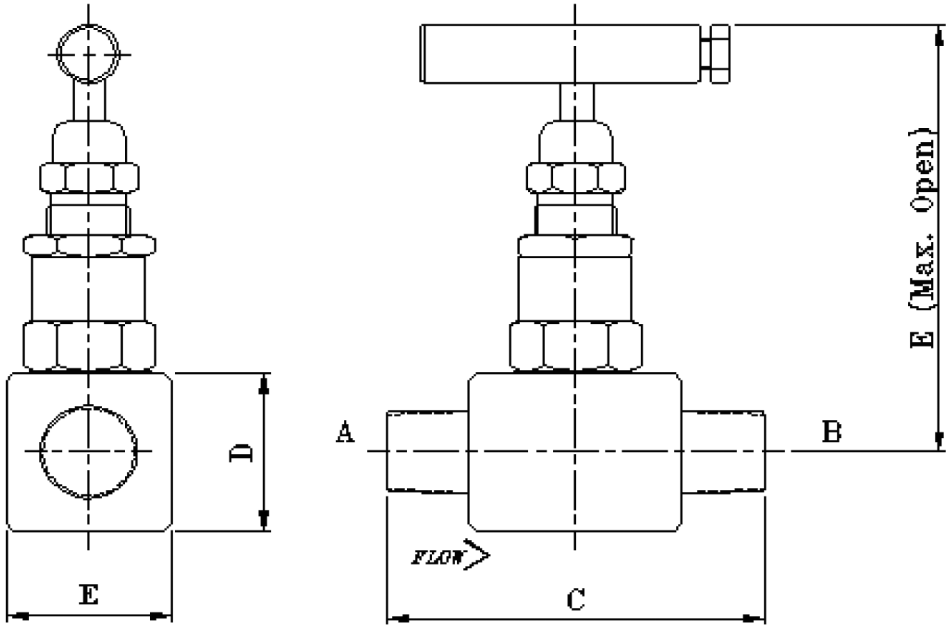
**Working Pressure:** **483 Bar @ 25°C**
**246 Bar @ 648°C**

**Temperature Rating:** **232°C with PTFE packing**
**648°C with Graphite packing (-H option)**

| Model | Inlet x Outlet | | | Dimensions (mm) | | | | Orifice (mm) | Cv |
|---|---|---|---|---|---|---|---|---|---|
| | Size 'A' | Size 'B' | Connection | C | D | E | F | | |
| AE-4-F | 1/4" | 1/4" | FNPT | 76.0 | 32.0 | 32.0 | 92.0 | 6.0 | 0.7 |
| AE-6-F | 3/8” | 3/8” | | 76.0 | 32.0 | 32.0 | 92.0 | 6.0 | 0.7 |
| AE-8-F | 1/2" | 1/2" | | 76.0 | 32.0 | 32.0 | 92.0 | 6.0 | 0.7 |
| CE-8-F | 1/2" | 1/2" | | 89.0 | 49.0 | 49.0 | 110.0 | 10.0 | 2.5 |
| CE-12-F | 3/4" | 3/4" | | 89.0 | 49.0 | 49.0 | 110.0 | 10.0 | 2.5 |
| CE-16-F | 1” | 1” | | 89.0 | 49.0 | 49.0 | 110.0 | 10.0 | 2.5 |

**For other connections and sizes, contact factory or local distributor**

# AE Series - Needle Valves - Male NPT




**Standard: ANSI B16.34**

**Working Pressure:** 483 Bar @ 25°C
246 Bar @ 648°C

**Temperature Rating:** 232°C with PTFE packing
648°C with Graphite packing (-H option)

| Model | Inlet x Outlet | | | Dimensions (mm) | | | | Orifice (mm) | Cv |
|---|---|---|---|---|---|---|---|---|---|
| | Size 'A' | Size 'B' | Connection | C | D | E | F | | |
| AE-4-M | 1/4" | 1/4" | MNPT | 76.0 | 28.5 | 28.5 | 90.0 | 4.0 | 0.35 |
| AE-6-M | 3/8" | 3/8" | | 76.0 | 32.0 | 32.0 | 90.0 | 6.0 | 0.7 |
| AE-8-M | 1/2" | 1/2" | | 89.0 | 32.0 | 32.0 | 90.0 | 6.0 | 0.7 |
| AE-12-M | 3/4" | 3/4" | | 89.0 | 38.0 | 38.0 | 95.0 | 6.0 | 0.7 |

**For other connections and sizes, contact factory or local distributor**

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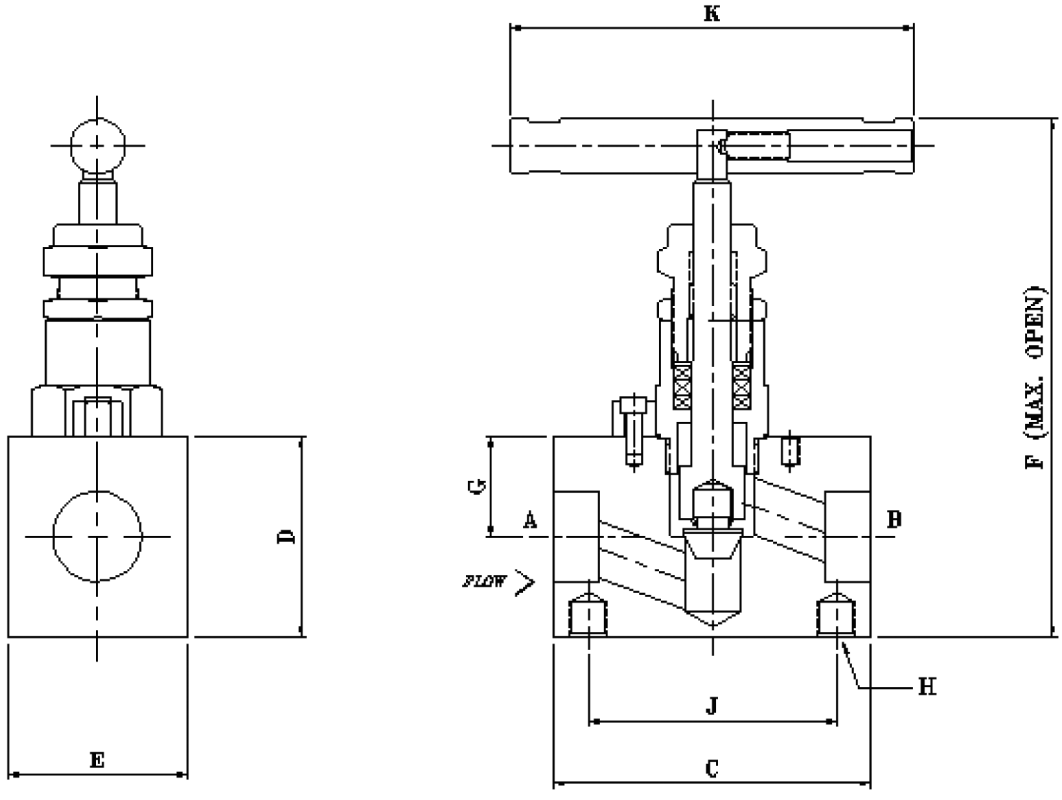


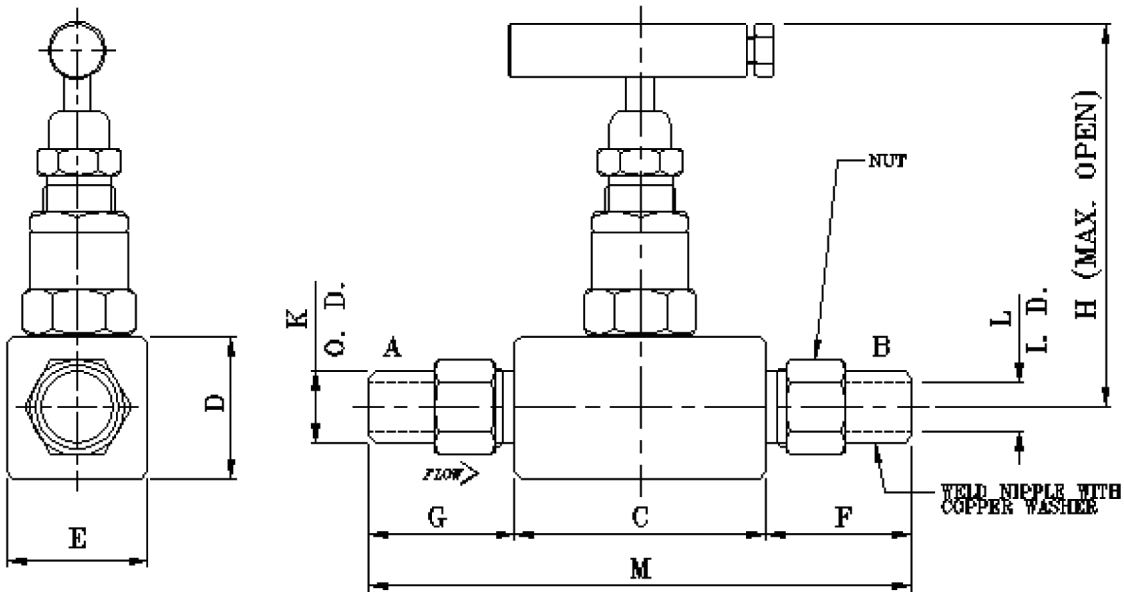

**Standard: ANSI B16.34**

**Working Pressure:** 483 Bar @ 25°C
246 Bar @ 648°C

**Temperature Rating:** 232°C with PTFE packing
648°C with Graphite packing (-H option)

| Model | Inlet x Outlet | | | Dimensions (mm) | | | | | | | | Orifice (mm) | Cv |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Size 'A' | Size 'B' | Connection | C | D | E | F | G | H | J | K | | |
| DE-22M-T | 22mm | 22mm | Socket Weld | 100.0 | 63.0 | 38.0 | 172.0 | 31.5 | 2-M10 | 78.0 | 127.0 | 20.0 | 8.0 |
| DE-25M-T | 25mm | 25mm | Socket Weld | 100.0 | 63.0 | 38.0 | 172.0 | 31.5 | 2-M10 | 78.0 | 127.0 | 20.0 | 8.0 |
| DE-28M-T | 28mm | 28mm | Socket Weld | 100.0 | 63.0 | 38.0 | 172.0 | 31.5 | 2-M10 | 78.0 | 127.0 | 20.0 | 8.0 |

**For other connections and sizes, contact factory or local distributor**




**Standard: ANSI B16.34**

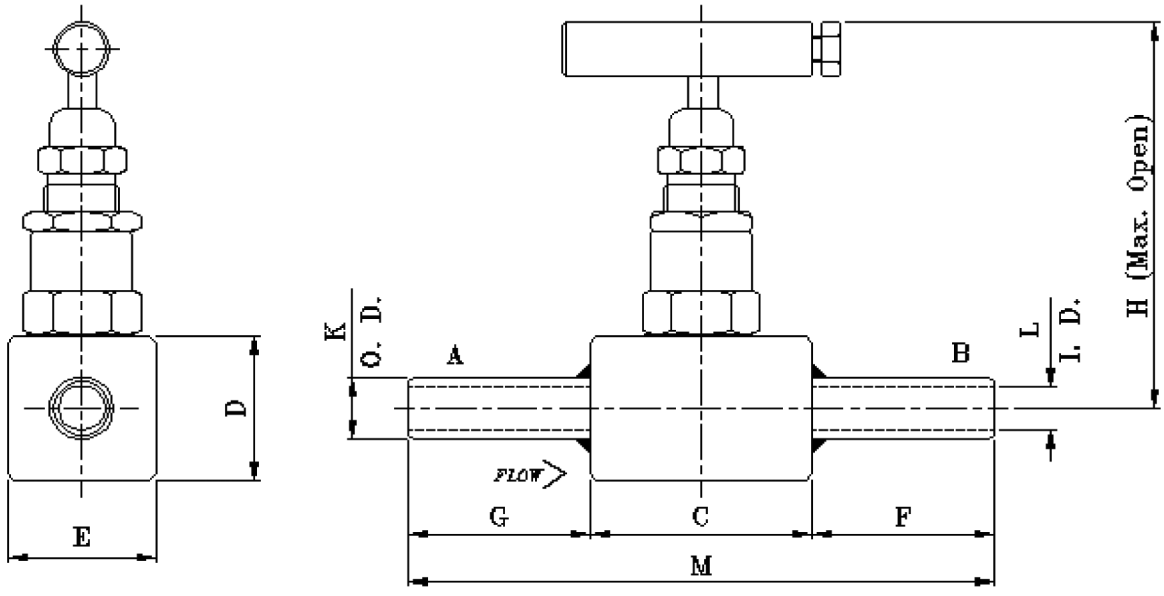
**Working Pressure:** **483 Bar @ 25°C**
**246 Bar @ 648°C**

**Temperature Rating:** **232°C with PTFE packing**
**648°C with Graphite packing (-H option)**

| Model | Inlet x Outlet | | | Dimensions (mm) | | | | | | | | | Orifice (mm) | Cv |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Size 'A' | Size 'B' | Connection | C | D | E | F | G | H | K | L | M | | |
| AU-12M-B | 12mm | 12mm | Weld Nipple | 44.0 | 32.0 | 32.0 | 52.0 | 52.0 | 92.0 | 12.0 | 6.0 | 148.0 | 6.0 | 0.7 |
| AU-14M-B | 14mm | 14mm | | 44.0 | 32.0 | 32.0 | 52.0 | 52.0 | 92.0 | 14.0 | 8.0 | 148.0 | 6.0 | 0.7 |
| AU-16M-B | 16mm | 16mm | | 44.0 | 32.0 | 32.0 | 52.0 | 52.0 | 92.0 | 16.0 | 10.0 | 148.0 | 6.0 | 0.7 |
| AU-8-B | 1/2" | 1/2" | | 44.0 | 32.0 | 32.0 | 52.0 | 52.0 | 92.0 | 21.3 | 12.0 | 148.0 | 6.0 | 0.7 |
| CU-12M-B | 12mm | 12mm | | 57.0 | 49.0 | 49.0 | 52.0 | 52.0 | 110.0 | 12.0 | 6.0 | 161.0 | 10.0 | 2.5 |
| CU-14M-B | 14mm | 14mm | | 57.0 | 49.0 | 49.0 | 52.0 | 52.0 | 110.0 | 14.0 | 8.0 | 161.0 | 10.0 | 2.5 |
| CU-16M-B | 16mm | 16mm | | 57.0 | 49.0 | 49.0 | 52.0 | 52.0 | 110.0 | 16.0 | 10.0 | 161.0 | 10.0 | 2.5 |
| CU-18M-B | 18mm | 18mm | | 57.0 | 49.0 | 49.0 | 52.0 | 52.0 | 110.0 | 18.0 | 12.0 | 161.0 | 10.0 | 2.5 |
| CU-22M-B | 22mm | 22mm | | 57.0 | 49.0 | 49.0 | 52.0 | 52.0 | 110.0 | 22.0 | 16.0 | 161.0 | 10.0 | 2.5 |
| CU-25M-B | 25mm | 25mm | | 57.0 | 49.0 | 49.0 | 52.0 | 52.0 | 110.0 | 25.0 | 17.0 | 161.0 | 10.0 | 2.5 |
| CU-8-B | 1/2" | 1/2" | | 57.0 | 49.0 | 49.0 | 52.0 | 52.0 | 110.0 | 21.3 | 12.0 | 161.0 | 10.0 | 2.5 |
| CU-12-B | 3/4" | 3/4" | | 57.0 | 49.0 | 49.0 | 52.0 | 52.0 | 110.0 | 26.6 | 15.0 | 161.0 | 10.0 | 2.5 |

**Note**: For the material of the gaskets, please add a code at the end of the model number.
For example, AU-14M-B-316-H-1.
1--------Teflon 2---------Copper 3---------316LSS X---------Special

**For other connections and sizes, contact factory or local distributor**



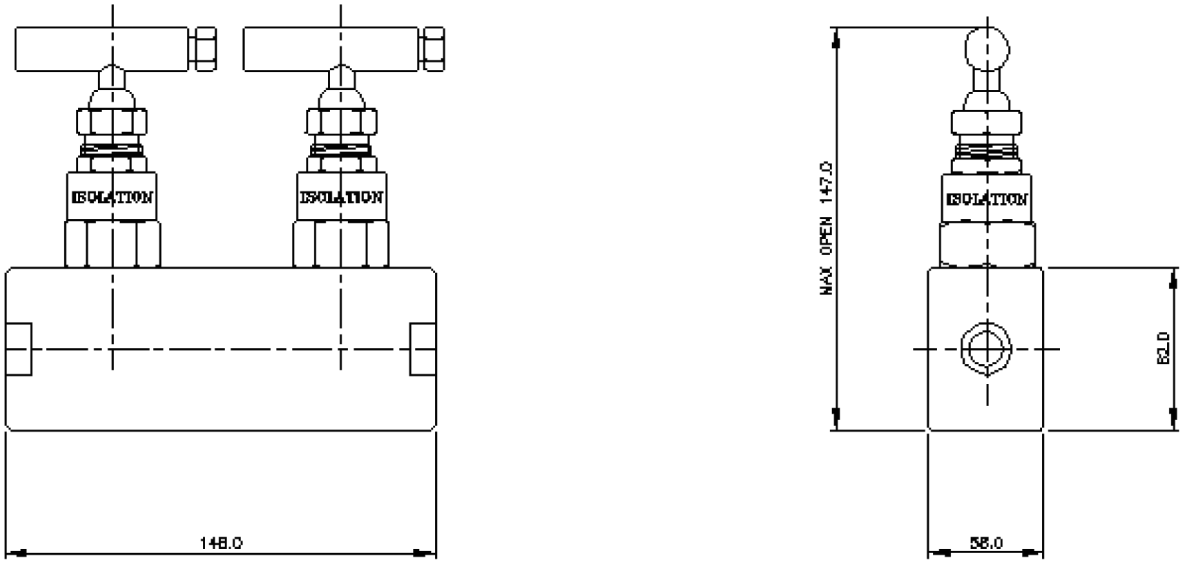

**Standard: ANSI B16.34**

**Working Pressure:** **483 Bar @ 25°C**
**246 Bar @ 648°C**

**Temperature Rating:** **232°C with PTFE packing**
**648°C with Graphite packing with (-H option)**

| Model | Inlet x Outlet | | | Dimensions (mm) | | | | | | | | | Orifice (mm) | Cv |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Size 'A' | Size 'B' | Connection | C | D | E | F | G | H | K | L | M | | |
| AE-12M-B | 12mm | 12mm | Tube Weld | 76.0 | 32.0 | 32.0 | 100.0 | 100.0 | 92.0 | 12.0 | 8.0 | 276.0 | 6.0 | 0.7 |
| AE-14M-B | 14mm | 14mm | | 76.0 | 32.0 | 32.0 | 100.0 | 100.0 | 92.0 | 14.0 | 10.0 | 276.0 | 6.0 | 0.7 |
| AE-16M-B | 16mm | 16mm | | 76.0 | 32.0 | 32.0 | 100.0 | 100.0 | 92.0 | 16.0 | 10.0 | 276.0 | 6.0 | 0.7 |
| CE-12M-B | 12mm | 12mm | | 89.0 | 49.0 | 49.0 | 100.0 | 100.0 | 110.0 | 12.0 | 8.0 | 289.0 | 11.0 | 2.5 |
| CE-14M-B | 14mm | 14mm | | 89.0 | 49.0 | 49.0 | 100.0 | 100.0 | 110.0 | 14.0 | 10.0 | 289.0 | 11.0 | 2.5 |
| CE-16M-B | 16mm | 16mm | | 89.0 | 49.0 | 49.0 | 100.0 | 100.0 | 110.0 | 16.0 | 10.0 | 289.0 | 11.0 | 2.5 |
| CE-18M-B | 18mm | 18mm | | 89.0 | 49.0 | 49.0 | 100.0 | 100.0 | 110.0 | 18.0 | 12.0 | 289.0 | 11.0 | 2.5 |
| CE-22M-B | 22mm | 22mm | | 89.0 | 49.0 | 49.0 | 100.0 | 100.0 | 110.0 | 22.0 | 16.0 | 289.0 | 11.0 | 2.5 |
| CE-25M-B | 25mm | 25mm | | 89.0 | 49.0 | 49.0 | 100.0 | 100.0 | 110.0 | 25.0 | 17.0 | 289.0 | 11.0 | 2.5 |
| CE-8-B | 1/2” | 1/2” | Pipe Weld | 89.0 | 49.0 | 49.0 | 100.0 | 100.0 | 110.0 | | | 289.0 | 11.0 | 2.5 |
| CE-12-B | 3/4” | 3/4” | | 89.0 | 49.0 | 49.0 | 100.0 | 100.0 | 110.0 | | | 289.0 | 11.0 | 2.5 |

**For other connections and sizes, contact factory or local distributor**




**Standard: ANSI B16.34**

**Working Pressure:** **483 Bar @ 25°C**
**246 Bar @ 648°C**

**Temperature Rating:** **232°C with PTFE packing**
**648°C with Graphite packing with (-H option)**

| Model | Inlet x Outlet | | Orifice (mm) |
|---|---|---|---|
| | Size | Connection | |
| AM-14M-T-321 | 14 mm | Tube Socket Weld | 6.0 |
| AM-16M-T-321 | 16 mm | | 6.0 |
| CM-14M-T-321 | 14 mm | | 11.0 |
| CM-16M-T-321 | 16 mm | | 11.0 |

**For other connections and sizes, contact factory or local distributor**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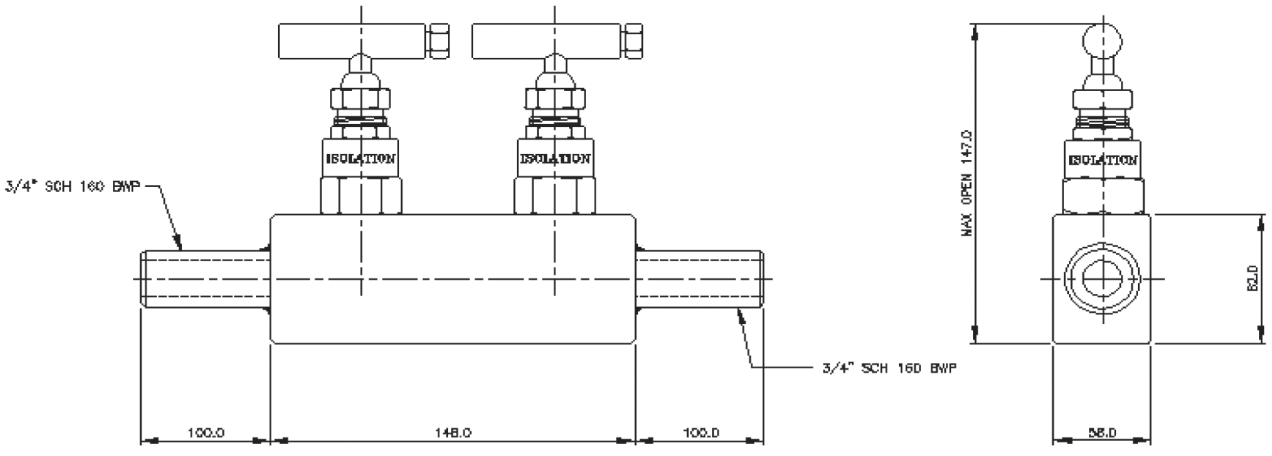
# AM/CM Series - Double Needle Valves - Butt Weld Pipe




**Standard: ANSI B16.34, Class 2500**

**Working Pressure:** **483 Bar @ 25°C**
**246 Bar @ 648°C**

**Temperature Rating:** **232°C with PTFE packing**
**648°C with Graphite packing with (-H option)**

| Model | Inlet x Outlet | | Orifice (mm) |
|---|---|---|---|
| | Size | Connection | |
| AMT-12M-B-321 | 12mm | Butt Weld Pipe | 6.0 |
| AMT-14M-B-321 | 14mm | | 6.0 |
| AMP-8-B-321 | 1/2" | | 6.0 |
| AMP-12-B-321 | 3/4" | | 6.0 |
| CMT-16M-B-321 | 16mm | | 11.0 |
| CMT-18M-B-321 | 18mm | | 11.0 |
| CMT-25M-B-321 | 25mm | | 11.0 |
| CMP-8-B-321 | 1/2" | | 11.0 |
| CMP-12-B-321 | 3/4" | | 11.0 |
| CMP-16-B-321 | 1" | | 11.0 |

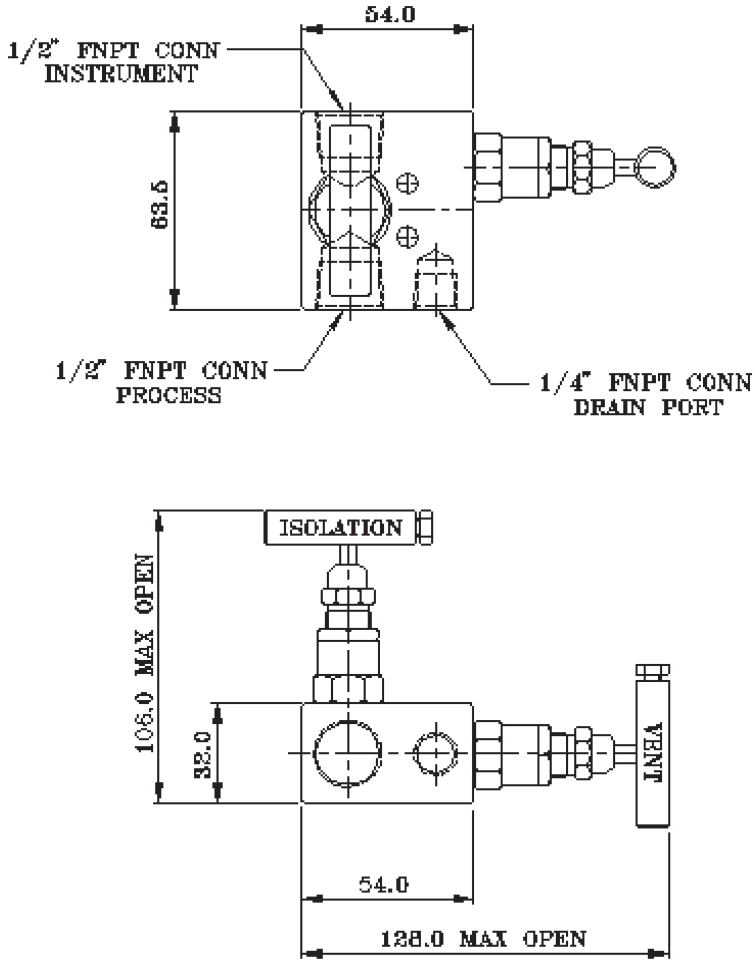
**Note: 1)** **A M** ☐

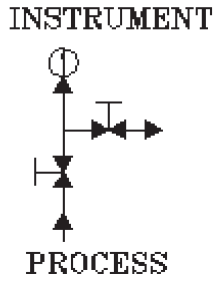
**"T" means butt-weld tube**
**"P" means butt-weld pipe**

**2) To specify the length of the long pipe or tube, please add a number plus "M" at the end of Model No., for example CMP-12-B-321-H-100M means double needle valve with 100mm long pipe.**

**For other connections,sizes and materials, contact factory or local distributor**

# Two Valve Manifold - Pipe to Pipe




**Two Valve Manifold – Block and Bleed**

**Standard: ANSI B16.34, Class 2500**

**Working Pressure: 483 Bar @ 25°C**
**246 Bar @ 648°C**

**Temperature Rating: 232°C with PTFE packing**
**648°C with Graphite packing (-H option)**

| Model | Process | Instrument | Drain | Connection |
|---|---|---|---|---|
| 2M-01-316 | 1/2" | 1/2" | 1/4" | FNPT |

**For other connections and sizes, contact factory or local distributor**

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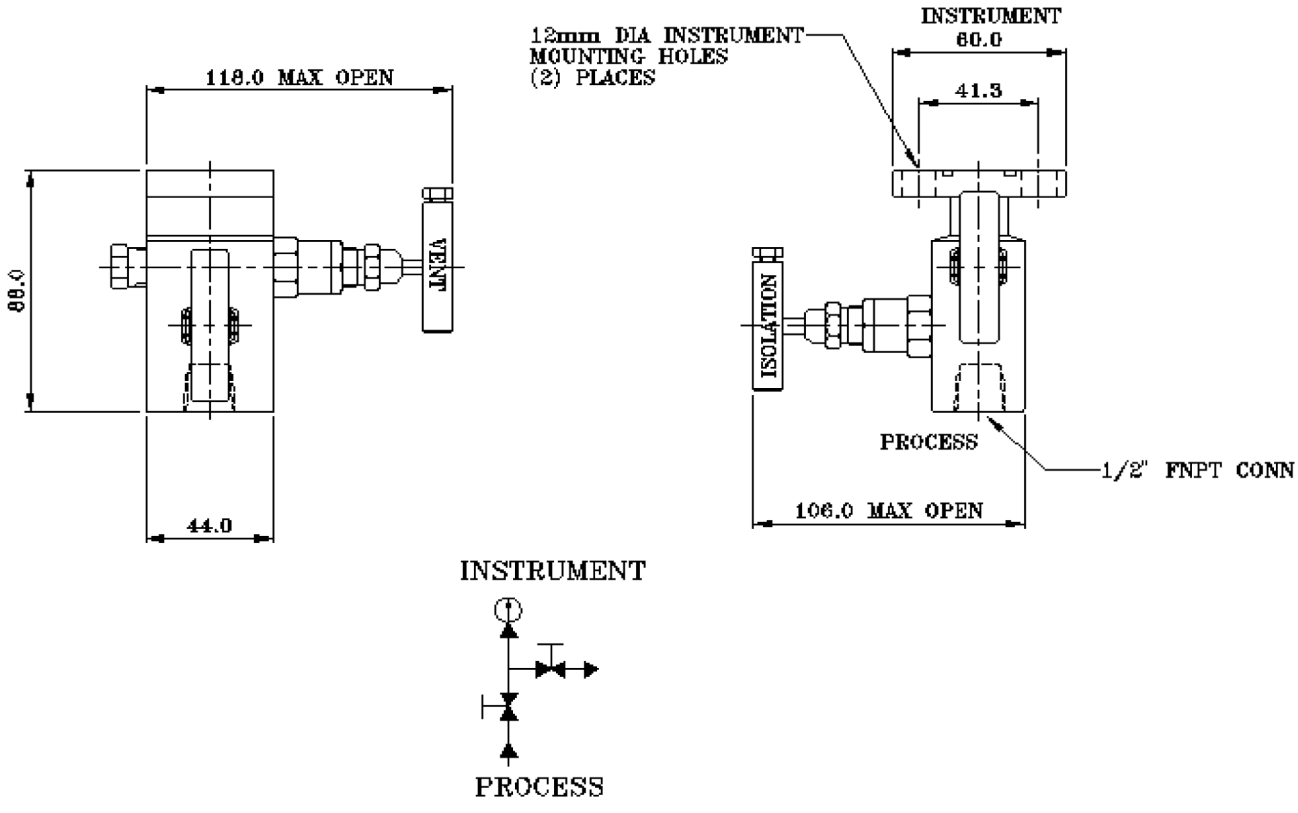
# Two Valve Manifold - Pipe to Flange




**Two Valve Manifold**

**Standard: ANSI B16.34, Class 2500**

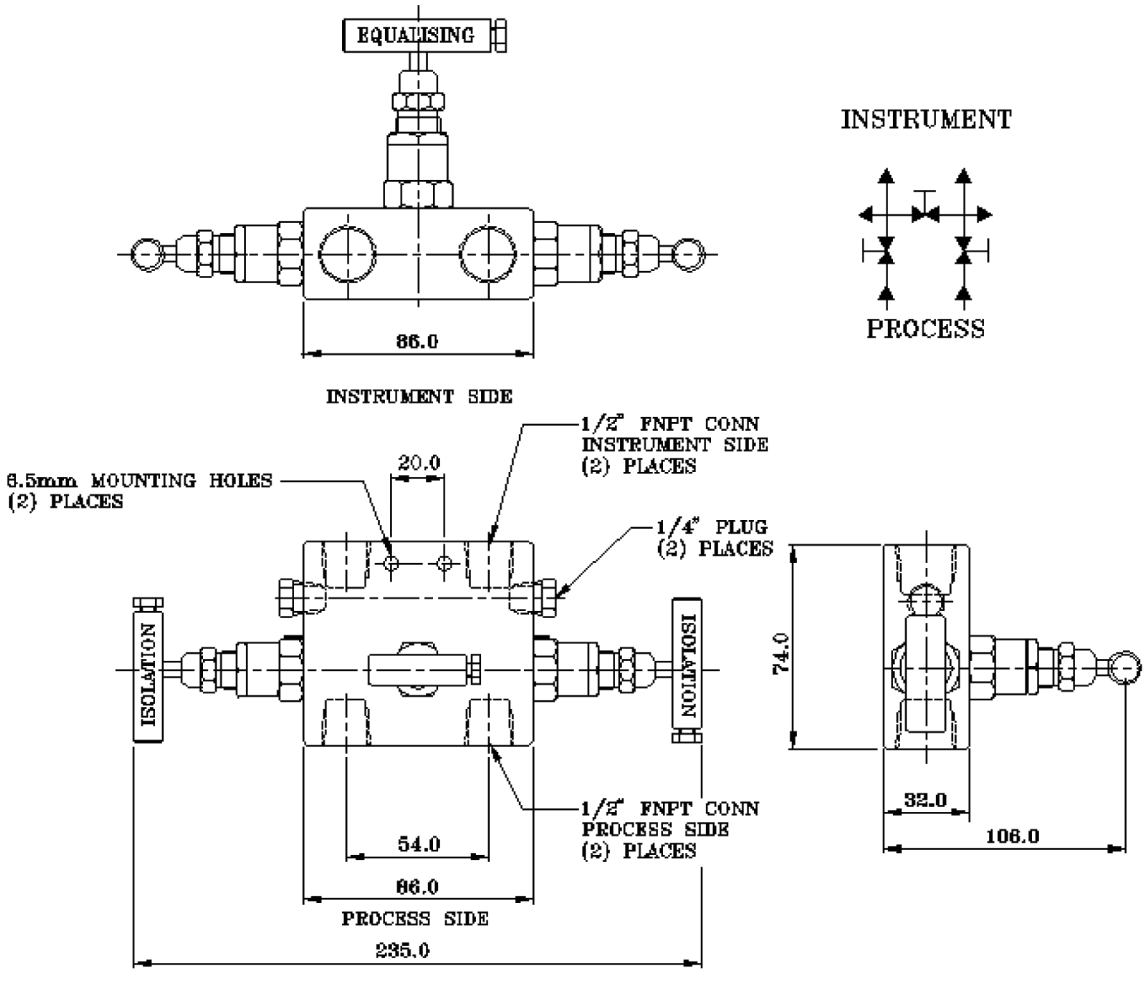
**Working Pressure:** **483 Bar @ 25°C**
**246 Bar @ 648°C**

**Temperature Rating:** **232°C with PTFE packing**
**648°C with Graphite packing (-H option)**

| Model | Process | Connection | Instrument |
|---|---|---|---|
| 2M-02-316 | 1/2" | FNPT | Flange |

**For other connections and sizes, contact factory or local distributor**

# Three Valve Manifold - Pipe to Pipe




**Three Valve Manifold**

**Standard: ANSI B16.34, Class 2500**

**Working Pressure: 483 Bar @ 25°C**
**246 Bar @ 648°C**

**Temperature Rating: 232°C with PTFE packing**
**648°C with Graphite packing (-H option)**

| Model | Process | Connection | Instrument |
|---|---|---|---|
| 3M-01-316 | 1/2" | FNPT | FNPT |

**For other connections and sizes, contact factory or local distributor**

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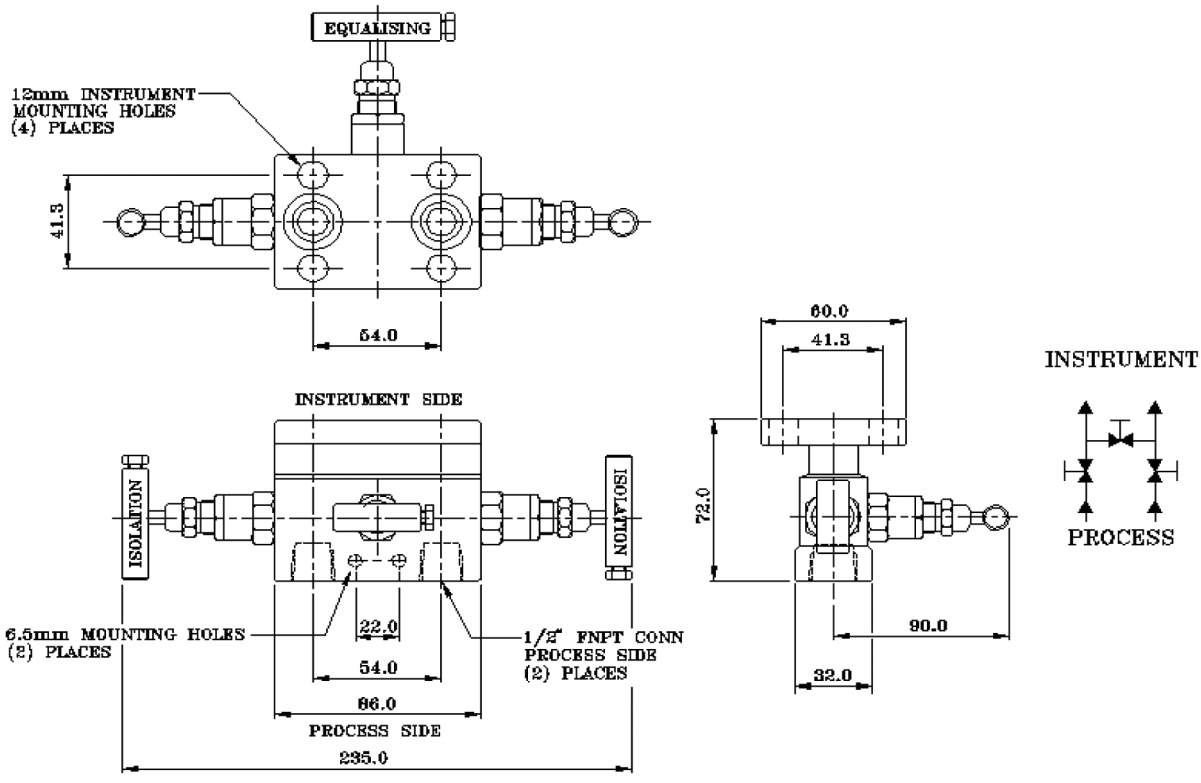
# Three Valve Manifold - Pipe to Flange - Type 'T'




**Three Valve Manifold**

**Standard: ANSI B16.34, Class 2500**

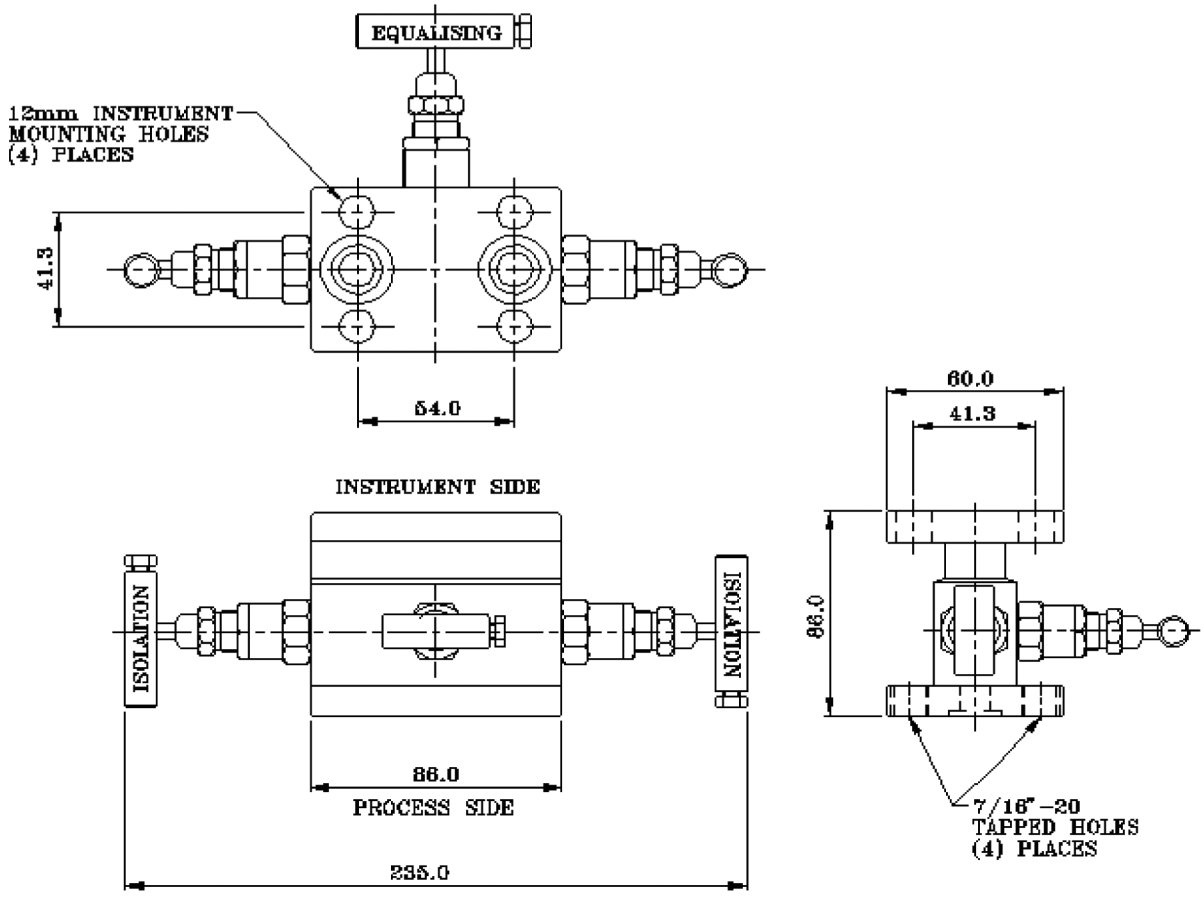
**Working Pressure:** **483 Bar @ 25°C**
**246 Bar @ 648°C**

**Temperature Rating:** **232°C with PTFE packing**
**648°C with Graphite packing (-H option)**

| Model | Process | Connection | Instrument |
|---|---|---|---|
| 3M-02-316 | 1/2" | FNPT | Flange |

**For other connections and sizes, contact factory or local distributor**

# Three Valve Manifold - Flange to Flange - Type 'H'




**Three Valve Manifold**

**Standard: ANSI B16.34, Class 2500**

**Working Pressure:** 483 Bar @ 25°C
246 Bar @ 648°C

**Temperature Rating:** 232°C with PTFE packing
648°C with Graphite packing (-H option)

| Model | Process | Instrument |
|---|---|---|
| 3M-03-316 | Flange | Flange |

**For other connections and sizes, contact factory or local distributor**

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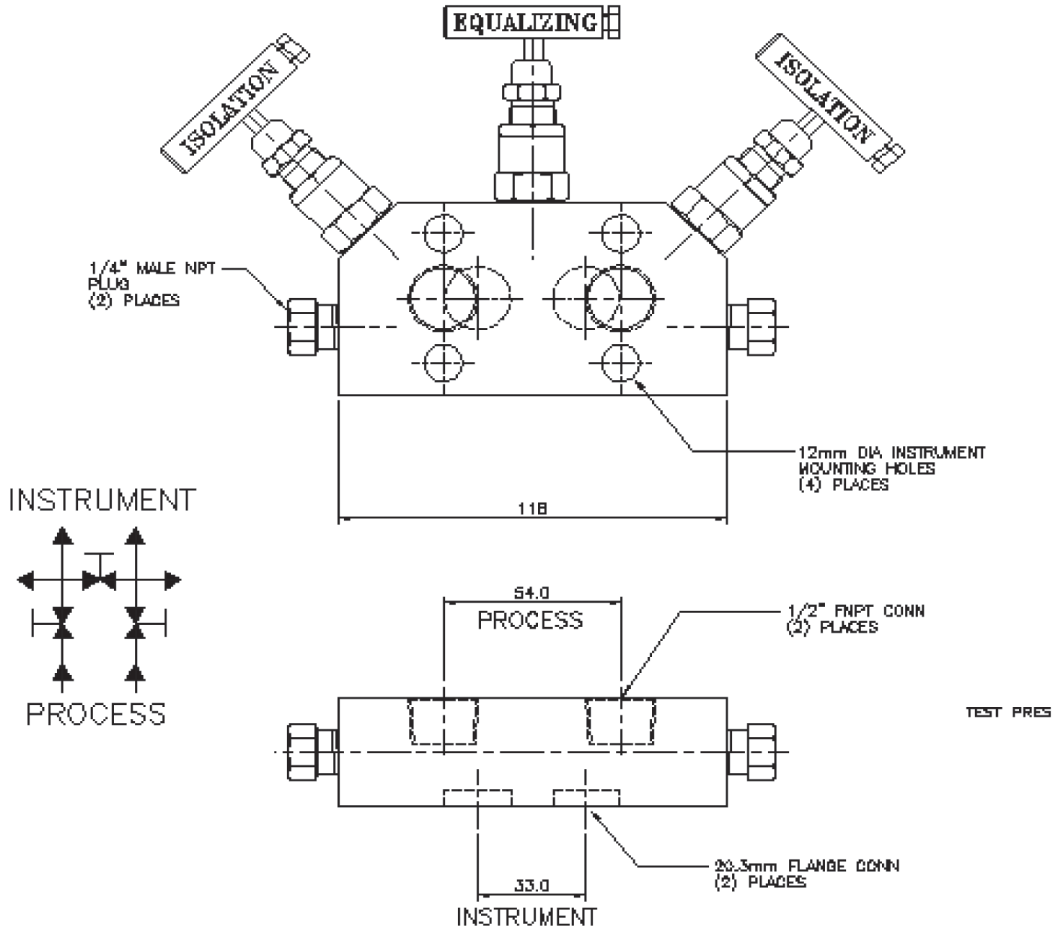
# Three Valve Manifold - Pipe to Flange -Type '3051'




**Three Valve Manifold**

**Standard: ANSI B16.34, Class 2500**

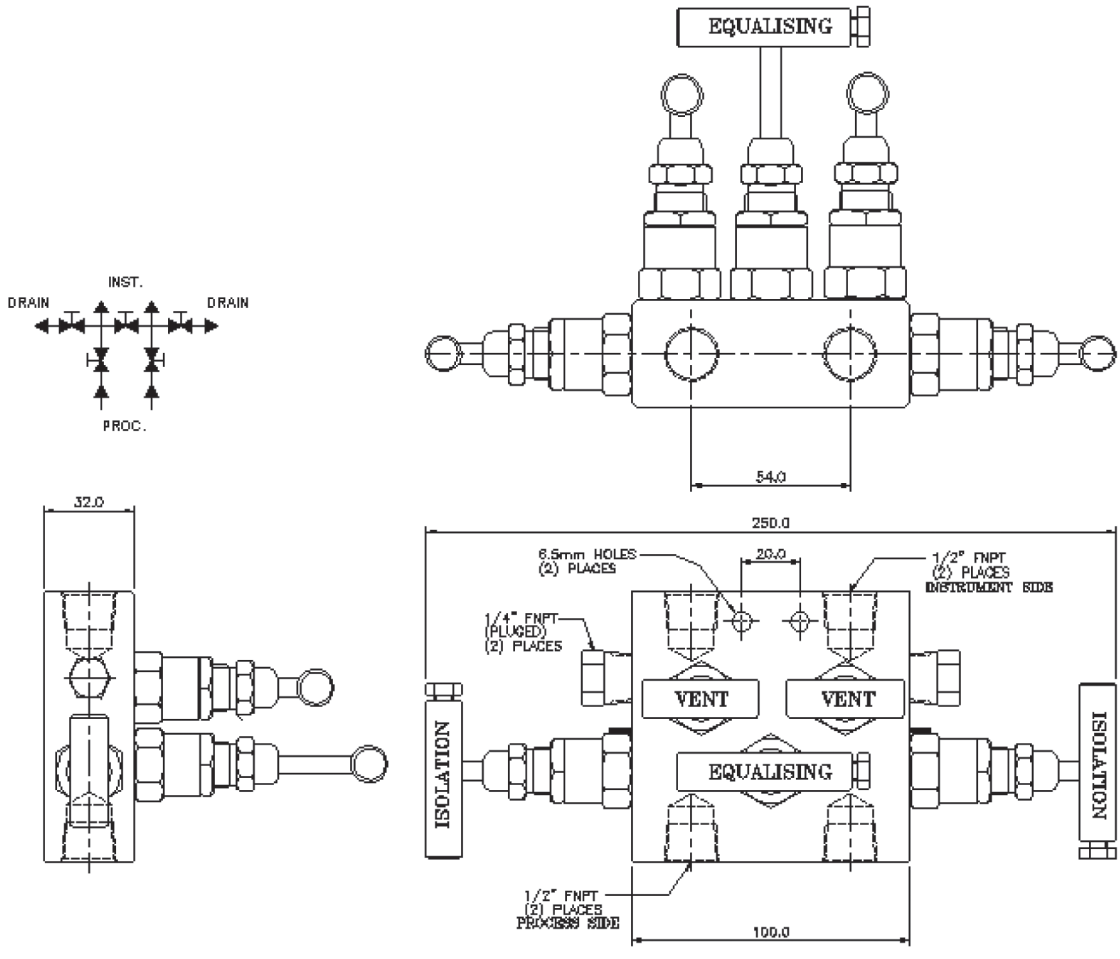
**Working Pressure:** **483 Bar @ 25°C**
**246 Bar @ 648°C**

**Temperature Rating:** **232°C with PTFE packing**
**648° wit Graphite packing (-H option)**

| Model | Process | Connection | Instrument |
|---|---|---|---|
| 3MS-04-316 | 1/2" | FNPT | Flange |

**For other connections and sizes, contact factory or local distributor**

# Five Valve Manifold - Pipe to Pipe




**Five Valve Manifold—Pipe to Pipe**

**Standard: ANSI B16.34, Class 2500**

**Working Pressure:** **483 Bar @ 25°C**
**246 Bar @ 648°C**

**Temperature Rating:** **232°C with PTFE packing**
**648°C with Graphite packing (-H option)**

| Model | Process | Instrument | Drain | Connection |
|---|---|---|---|---|
| 5M-01-316 | 1/2" | 1/2" | 1/4" | FNPT |

**For other connections and sizes, contact factory or local distributor**

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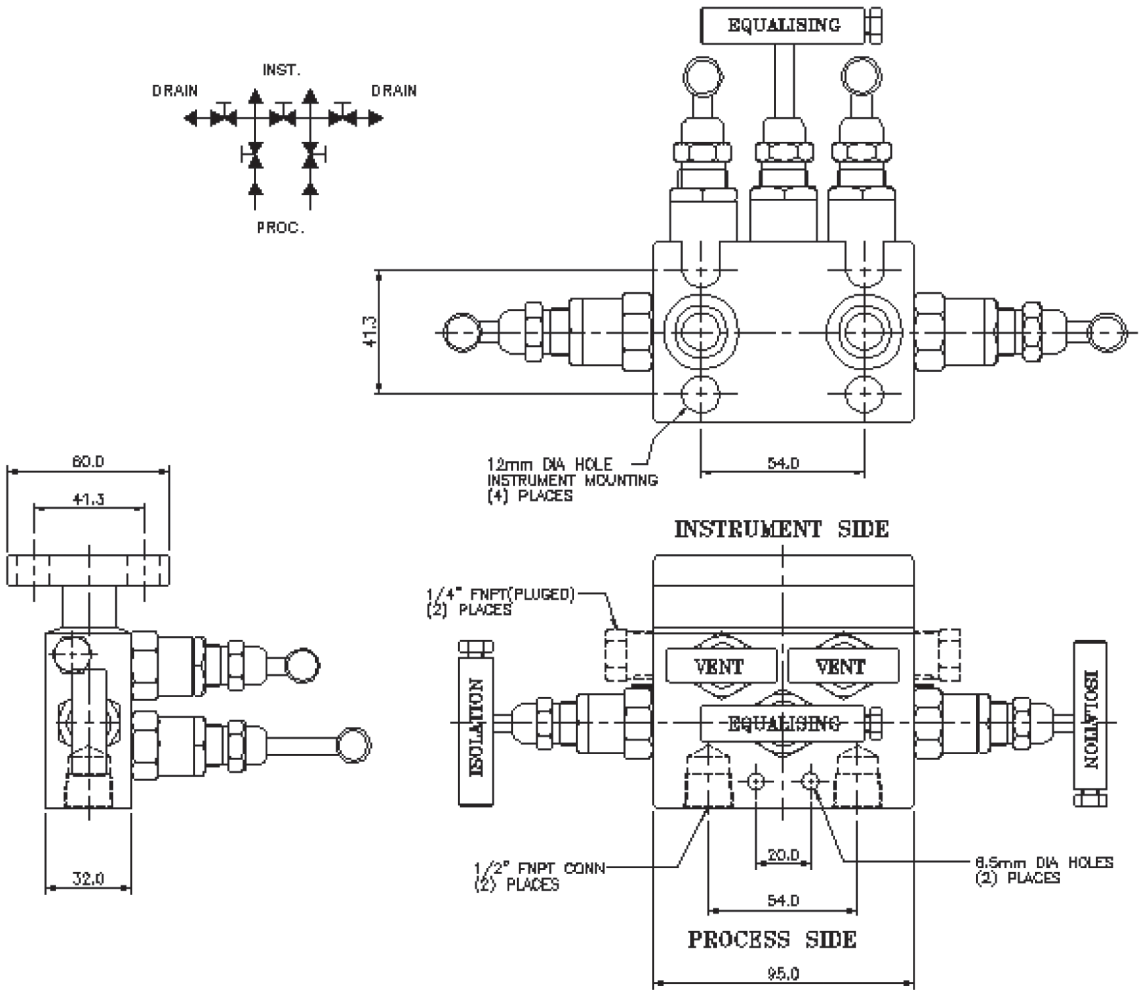
# Five Valve Manifold - Pipe to Flange - Type 'T'




**Five Valve Manifold—Integral 'T' Type**

**Standard: ANSI B16.34, Class 2500**

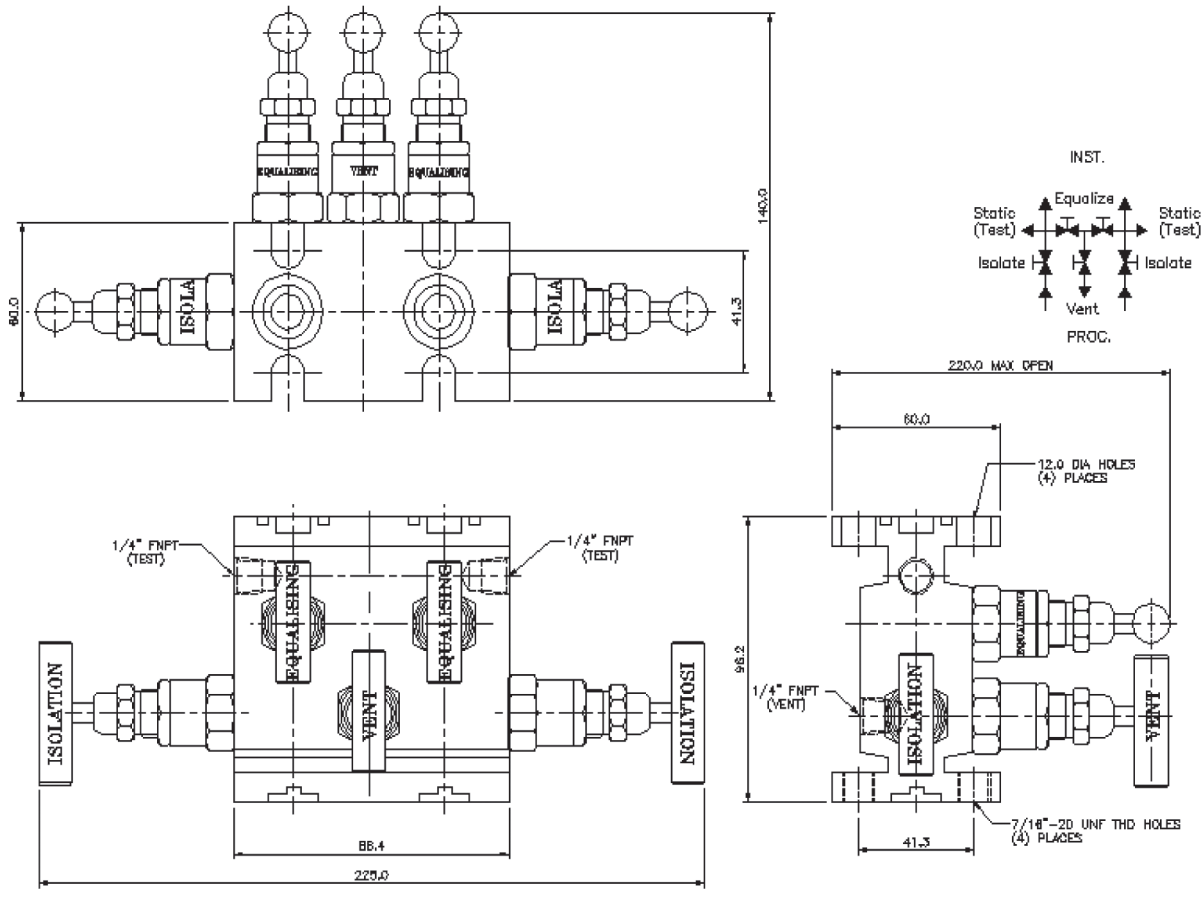
**Working Pressure:** **483 Bar @ 25°C**
**246 Bar @ 648°C**

**Temperature Rating:** **232°C with PTFE packing**
**648°C with Graphite packing (-H option)**

| Model | Process | Instrument | Drain | Connection |
|---|---|---|---|---|
| 5M-02-316 | 1/2" | Flange | 1/4" | FNPT to Flange |

**For other connections and sizes, contact factory or local distributor**

# Five Valve Manifold - Flange to Flange - Type 'H'




**Five Valve Manifold—Flange to Flange**

**Standard: ANSI B16.34, Class 2500**

**Working Pressure:** **483 Bar @ 25°C**
**246 Bar @ 648°C**

**Temperature Rating:** **232°C with PTFE packing**
**648°C with Graphite packing (-H option)**

| Model | Process | Instrument | Static Test |
|---|---|---|---|
| 5M-03-316 | 1/2" Flange | 1/2" Flange | 1/4" FNPT |

**For other connections and sizes, contact factory or local distributor**

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# H-Series Fittings

BuTech H-Series Fittings are ingeniously designed and popularly known for their superior quality.A wide range of fittings has been developed to meet the needs of petrochemical,pharmaceutical,power,food,pulp and paper,semiconductor,biotechnology, LNG,LPG,CNG,aeronautic and astronautic industries.Various connection types and alternate materials are generally available.

## *Connection Type*

Double Ferrule,Thread Type(NPT,BSPP,BSPT,etc.),Socket-Weld,Butt-Weld

## *Material*

For Double Ferrule: Standard: Brass,316 SS
Optional: Carbon Steel,Monel,Hastelloy,Inconel
For other connection: Standard: Brass,Carbon Steel,316 SS,321 SS,316 L
Optional: Monel,Hastelloy,Inconel

*For other materials,contact factory or local distributor

## *Pressure Rating*

For Double Ferrule:Effective seal pressure up to the burst pressure of the connected tube
*Calculated burst pressure is 4 times the maximum allowable working pressure
Other connections: 3000PSI, 6000PSI, 9000PSI
*For services above 9000PSI, contact factory or local distributor

## *Temperature Range*

The temperature range of H-Series fittings is from -198℃ to +648℃
*In case of different materials with different ranges, contact factory or local distributor

## *Size*

| Connection | Inlet Size | Outlet Size |
|---|---|---|
| Double Ferrule | 1/16"~1"; Φ3mm~25mm | 1/16"~1"; Φ3mm~25mm |
| Thread Type | 1/8"~2" | 1/8"~2" |
| Socket Weld | 1/8"~2" | 1/8"~2" |
| Butt-weld | 1/8"~2" | 1/8"~2" |

**For services above 1200℉ , contact factory or local distributor**



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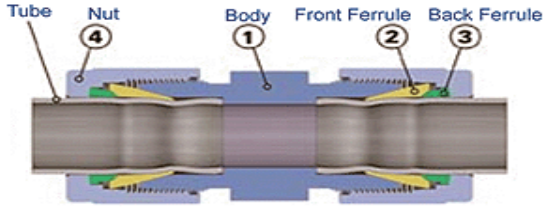
## *Instructions for Double Ferrule Connection*

BuTech H-series double Ferrule fittings are used to connect with tube.The fittings have been carefully manufactured and tested by the most advanced computerized automation to withstand the demands such as high pressure,impulse vibration,vacuum and high temperature and cryogenic application.Cleaned by special ways,BuTech H-series double ferrule fittings can be used for oxygen service and nuclear service. Effective seal pressure of the fittings is up to the burst pressure of the connected tube,and at the same time,the fittings offer excellent vacuum capability-leaktight at vacuum levels of $10^{-9}$ torr while tested with a leakage sensitivity of $10^{-9}$ sccs.The temperature range of the fittings is from -198℃ to +648℃ .

BuTech H-series Double Ferrule fittings are composed of 4 parts: 1) body 2) front ferrule 3) back ferrule and 4) nut.All components are made of the same material.In case different materials of front and back ferrules are required,contact factory or local distributor.The fittings can be assembled and disassembled repeatedly and can be completely interchangeable with the similar fittings of certain other manufacturers.
Assembly instructions(*Please see the tubing instruction before assembly)
Insert the tubing resting it against the shoulder in the fitting body and be sure the nut is finger tight,then simply tighten the nut 1-1/4 turns.

Reassembly instructions:
Insert the tubing end with the previously set ferrules into the fitting body and tighten the nut to a hand-tight postition,then tighten the nut with a wrench until a sharp rise in torque is felt,then simply snug with wrench.

Additional tubing considerations:
1 Metallic tubing material should be softer than fitting material.For example:stainless steel tubing should not be used with brass fittings
2 when tubing and fittings are made of the same material,tubing must be fully annealed
3 Always use an insert with extremely soft or pliable plastic tubing
4 Extremes of wall thickness should always be checked against fitting manufacturer's suggested minimum and maximum wall thickness limitations
5 Surface finish is very important to proper sealing.Tubing with any kind of depression,scratch,raised portion or other surface defect will be difficult to seal,particularly in gas service
6 Tubing that is oval, that will not easily fit through fitting nuts, ferrules and bodies should never be forced into fitting
7 Suitable Tubing Materials: Stainless Steel-seamless, fully annealed and welded redrawn, suitable for bending
8 Maximum Hardness-Rockwell B90; ASTM A269, ASTM A213
Type: 304 and 316 stainless steel




## *Pipe Fitting*

Size ranges from 1/8" through 2"
Fittings are properly packaged with the exposed threads protected to ensure undamaged delivery
Materials include 316 stainless steel,brass,and carbon steel; special alloys available
Full thread engagement ensures reliable make-up of pipe connections
Attractive finishes meet quality appearance requirements for precision equipment
Male threads are protected to ensure thread integrity
All pipe threads meet the requirement of ANSI B1.20.1(1983) for tapered pipe threads(NPT)
Working pressures calculated in accordance with Power Piping Code ANSI B31.1, Refinery Piping Code ANSI B31.3 and section VIII of ASME Boiler Pressure Vessel Code

| Material | Specification | |
|---|---|---|
| | Barstock | Forging |
| 316 Stainless Steel | ASME SA479<br>ASME A276 | ASME SA182<br>ASME A182 |
| Brass | ASME B16<br>ASME B453 | ASME B283 |
| Carbon Steel | ASME A108 | |

# Ordering Information & Options

## UNIONS


Types

| | |
|---|---|
| **U** | Normal |
| **U11** | Nut+Gaskets+Nipple |
| **U12** | Bulkhead Union |
| **U13** | Bored-Through Union |

Connection Size*

| A | B |
|---|---|
| 8M | 8mm |
| 10M | 10mm |
| 14M | 14mm |
| 16M | 16mm |
| 4 | 1/4” |
| 8 | 1/2” |
| 12 | 3/4” |
| 16 | 1” |

Omit “B” size if same as “A” size
Metric size first

Connection Type

| | |
|---|---|
| B | Butt-Weld |
| T | Tube Socket Weld |
| P | Pipe Socket Weld |
| M | Male NPT |
| F | Female NPT |
| G | Double Ferrule |
| H | Special |

Omit “B”connection if same as “A”connection

Material

| | |
|---|---|
| 316 | 316 SS |
| 316L | 316L SS |
| 321 | 321 SS |
| M | Monel |
| Ti | Titanium |
| B | Brass |
| Al | Aluminum |
| A | Alloy |
| CS | Carbon Steel |

Options

( If “U11” specified )
1-----Teflon Gasket
2-----Copper Gasket
3-----316LSS Gasket

## ELBOWS


Connection Size*

| A | B |
|---|---|
| 10M | 10mm |
| 14M | 14mm |
| 4 | 1/4” |
| 8 | 1/2” |

Omit “B” size if same as “A” size
Metric size first

Connection Type

| | |
|---|---|
| B | Butt-Weld |
| T | Tube Socket Weld |
| P | Pipe Socket Weld |
| M | Male NPT |
| F | Female NPT |
| G | Double Ferrule |
| H | Special |

Omit “B” connection if same as “A” connection

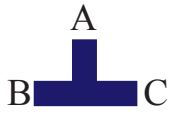
Material

| | |
|---|---|
| 316 | 316 SS |
| 316L | 316L SS |
| 321 | 321 SS |
| M | Monel |
| Ti | Titanium |
| B | Brass |

Options

Spell out in clear text

## TEES




Connection Size*

| A | B | C |
|---|---|---|
| 10M | 10mm | |
| 14M | 14mm | |
| 4 | 1/4” | |
| 8 | 1/2” | |

Omit “B” size if same as “A” size
Omit “C” size if same as “B” size
Metric size first

Connection Type

| | |
|---|---|
| B | Butt-Weld |
| T | Tube Socket Weld |
| P | Pipe Socket Weld |
| M | Male NPT |
| F | Female NPT |
| G | Double Ferrule |
| H | Special |

Omit “B” connection if same as “A” connection

Material

| | |
|---|---|
| 316 | 316 SS |
| 316L | 316L SS |
| 321 | 321 SS |
| M | Monel |
| Ti | Titanium |
| B | Brass |

Omit “C”connection if same as “B” connection

Options

Spell out in clear text

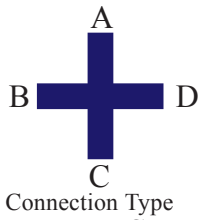
**For pressure above 6000psi, contact factory or local distributor.**

***For fractional connections, multiply actual size by 16.**

**For metric connections, specify actual millimeter size followed by “M”**

# Ordering Information & Options

## CROSSES




C — [A] / [B] / [C] / [D] — [A] [B] [C] [D] — [Material] — [Options]

| Connection Size* | | | |
|---|---|---|---|
| A | B | C | D |

| | |
|---|---|
| 10M | 10mm |
| 14M | 14mm |
| 4 | 1/4” |
| 8 | 1/2” |

Omit “B” size if same as “A” size
Omit “C” size if same as “B” size
Omit “D” size if same as “C” size
Metric size first

| Connection Type | | | |
|---|---|---|---|
| A | B | C | D |

| | |
|---|---|
| B | Butt-Weld |
| T | Tube Socket Weld |
| P | Pipe Socket Weld |
| M | Male NPT |
| F | Female NPT |
| G | Double Ferrule |
| H | Special |

Omit “B” connection if same as “A” connection
Omit “C” connection if same as “B” connection
Omit “D” connection if same as “C” connection

| Material | | Options |
|---|---|---|
| 316 | 316 SS | Spell out in clear text |
| 316L | 316L SS | |
| 321 | 321 SS | |
| M | Monel | |
| Ti | Titanium | |
| B | Brass | |

## CAPS & PLUGS

PC / PP — [Connection Size*] — [Connection Type] — [Material] — [Options]

| Connection Size* | |
|---|---|
| 10M | 10mm |
| 14M | 14mm |
| 4 | 1/4” |
| 8 | 1/2” |

***PC stands for CAPS**
**PP stands for PLUGS**

| Connection Type | |
|---|---|
| B | Butt-Weld |
| T | Tube Socket Weld |
| P | Pipe Socket Weld |
| M | Male NPT |
| F | Female NPT |
| G | Double Ferrule |
| H | Special |

| Material | |
|---|---|
| 316 | 316 SS |
| 316L | 316L SS |
| 321 | 321 SS |
| M | Monel |
| Ti | Titanium |
| B | Brass |

| Options |
|---|
| Spell out in clear text |

## SPARE PARTS

HA / HB / HC / HS — [Connection Size*] — [Material] — [Options]

HA-Front ferrule
HB-Back ferrule
HC-Nut
HS-Special

| Connection Size* | |
|---|---|
| 10M | 10mm |
| 14M | 14mm |
| 4 | 1/4” |
| 8 | 1/2” |

| Material | |
|---|---|
| 316 | 316 SS |
| 316L | 316L SS |
| 321 | 321 SS |
| M | Monel |
| Ti | Titanium |
| B | Brass |

| Options |
|---|
| Spell out in clear text |

**For pressure above 6000psi, contact factory or local distributor.**

***For fractional connections, multiply actual size by 16.**

**For metric connections, specify actual millimeter size followed by “M”**

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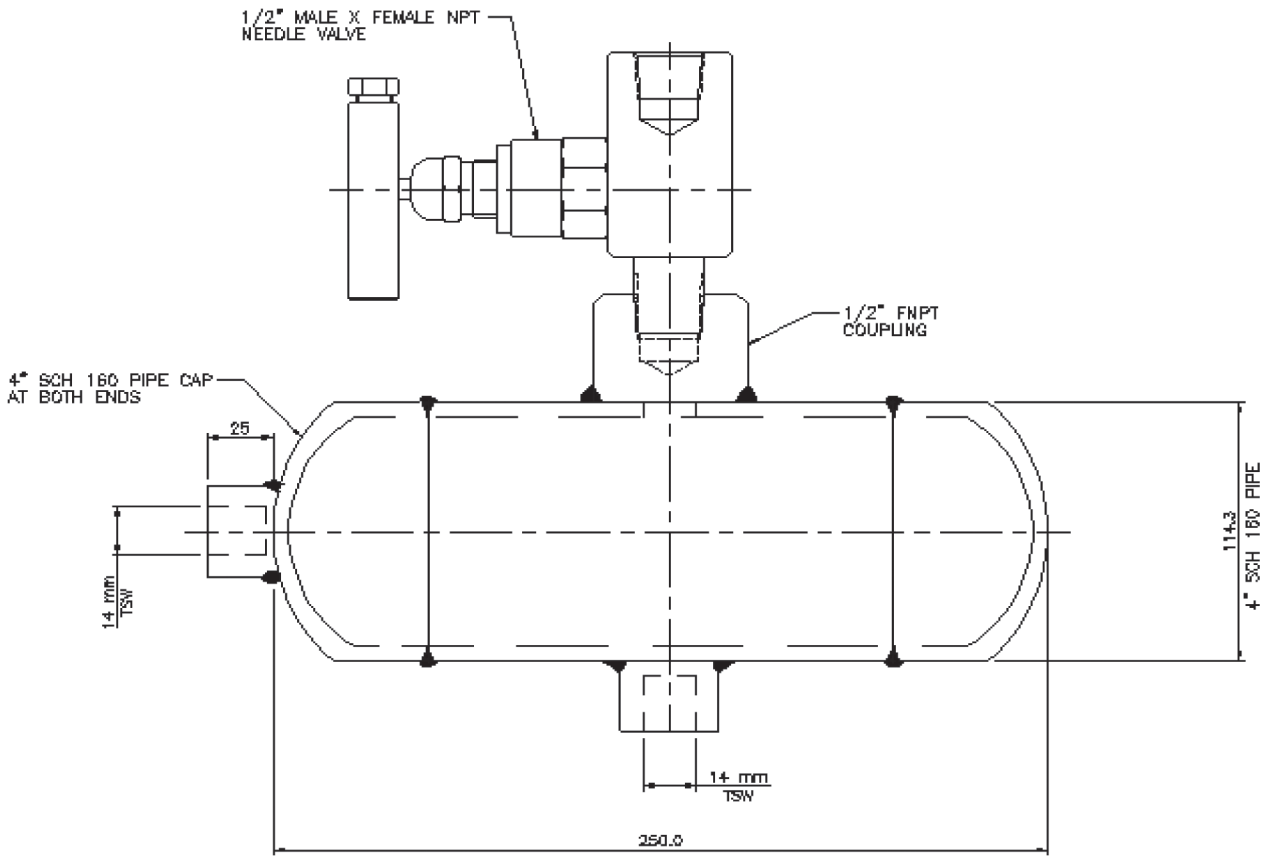
# Condensate Pot

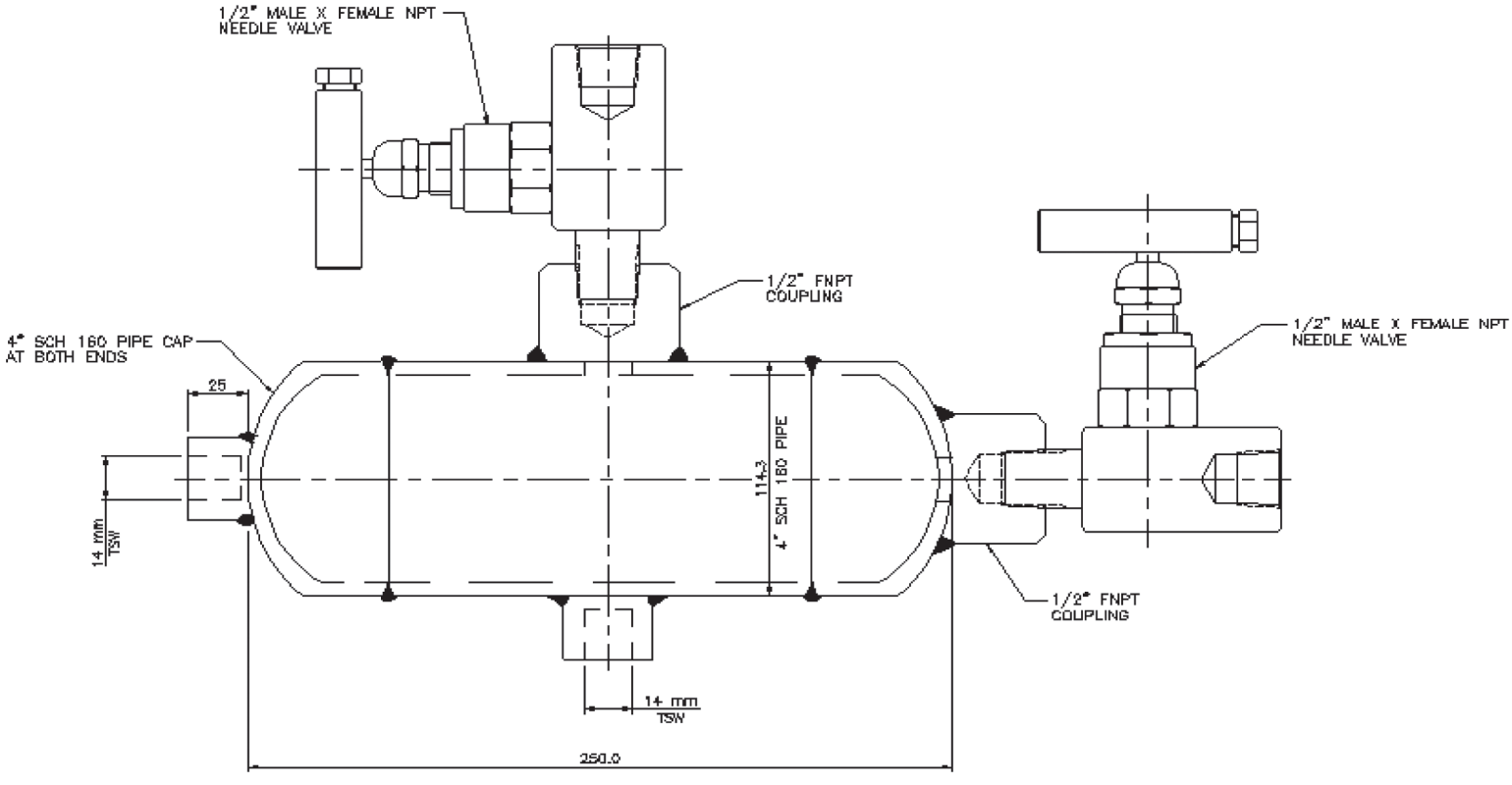



**Standard: ANSI B16.34, Class 900#~2500#**

| Model | Pipe | Cap | Coupling | TSW | Pressure | Material |
|---|---|---|---|---|---|---|
| BCP01-321-100M-900 | 4" NB SCH 80 | 4" NB SCH 80 | 1/2" FNPT | 14 mm | 900# | 321 SS |
| BCP01-321-100M-1500 | 4" NB SCH 120 | 4" NB SCH 120 | 1/2" FNPT | 14 mm | 1500# | 321 SS |
| BCP01-321-100M-2500 | 4" NB SCH 160 | 4" NB SCH 160 | 1/2" FNPT | 14 mm | 2500# | 321 SS |

**For other connections and sizes, contact factory or local distributor**

# Condensate Pot




**Standard: ANSI B16.34, Class 900#~2500#**

| Model | Pipe | Cap | Coupling | TSW | Pressure | Material |
|---|---|---|---|---|---|---|
| BCP02-321-100M-900 | 4" NB SCH 80 | 4" NB SCH 80 | 1/2" FNPT | 14mm | 900# | 321 SS |
| BCP02-321-100M-1500 | 4" NB SCH 120 | 4" NB SCH 120 | 1/2" FNPT | 14mm | 1500# | 321 SS |
| BCP02-321-100M-2500 | 4" NB SCH 160 | 4" NB SCH 160 | 1/2" FNPT | 14mm | 2500# | 321 SS |

**For other connections and sizes, contact factory or local distributor**

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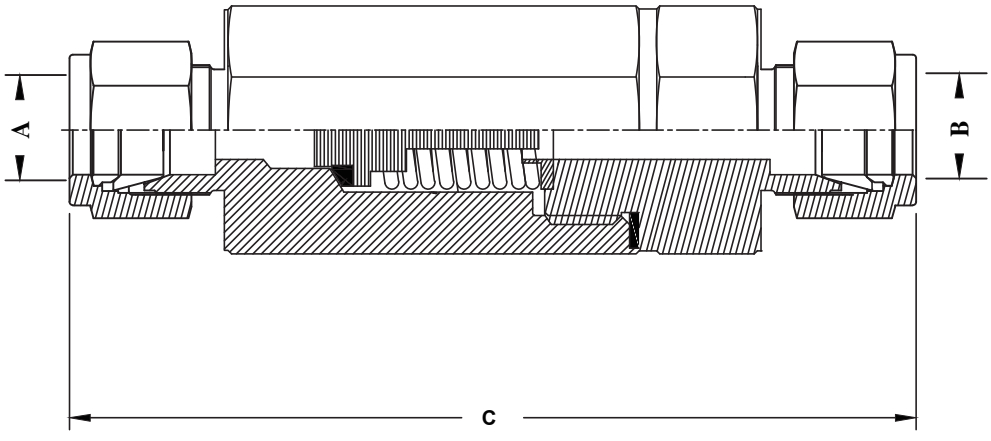



***NOTE:Standard Cracking Pressure - 1Kg/cm to 2 Kg/cm***

**Standard: ANSI B16.34**

**Working Pressure:** **414 Bar @ 25°C**
**207 Bar @ 204°C**

**Temperature Rating:** **-23~204°C**

| Model | Inlet x Outlet | | | Dimmension |
|---|---|---|---|---|
| | Size 'A' | Size 'B' | Connection | C(mm) |
| BC-8M-G-321 | 8mm | 8mm | Doubel ferrule | 93 |
| BC-8-G-321 | 1/2" | 1/2" | | 102 |
| BC-14M-G-321 | 14mm | 14mm | | 104 |

**For other connections and sizes, contact factory or local distributor**

# CQP Series

## Main Feature

**1.One-piece body**

**2.CQP series with two sides short nipple(60-100mm) is integral with valve body together**

**3.Seat:body+STL, Disc:Gr.660+STL**

**4.Standard inner diameter size:11mm**

**5.Stem threads are hardened to prevent biting**

**6.Grease for stem threads is isolated from the system medium**

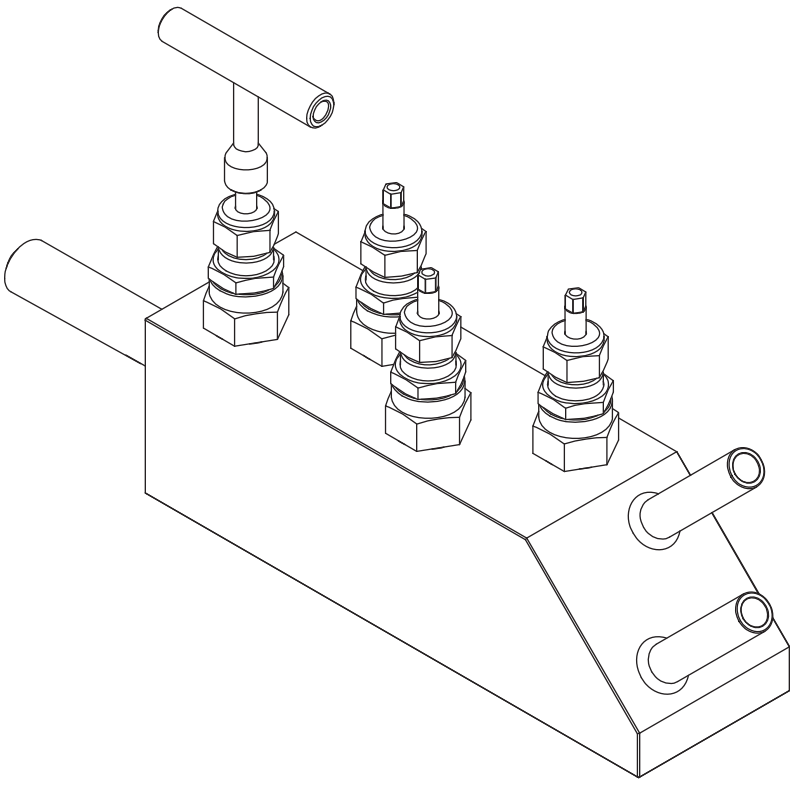
**7.The non-rotating lower stem moves up and down， reducing packing friction with each stroke and biting between the seat and the head**

**8.The externally adjusted gland is not constrained by stem threads**

**9.Each valve is sealed with nitrogen or compressed air at rated working pressure before delivery.**

**10.Design standard is accordance with ASME B 16.34,ASME B16.11,ASME B16.25**

**11.Test standard is accordance with API598**





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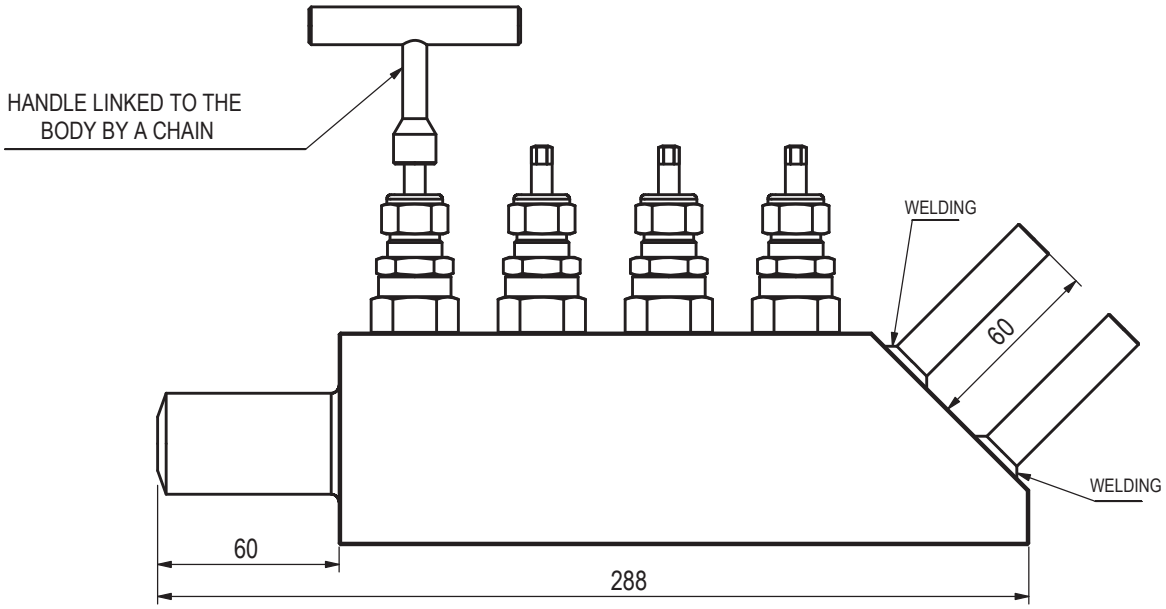


| ITEM | DESCRIPTION | MATERIAL | | |
|---|---|---|---|---|
| | | STD Temperature | HIGH Temperature | Stainless Steel |
| 1 | BODY | ASTM A105 | ASTM A182-F11/F22/F91/F92 | ASTM A182-F316/F321/F347 |
| 2 | BONNET | ASTM A182 316SS | ASTM A182-F321 | ASTM A182-F316/F321/F347 |
| 3 | DISC | 321SS+STL | 321SS+STL | 321SS+STL |
| 4 | SEAT | ASTM A105+STL | ASTM A182-F11/F22/F91/F92+STL | ASTM A182-F316/F321/F347+STL |
| 5 | STEM | ASTM A182 316SS | ASTM A182 316SS | ASTM A182 316SS |
| 6 | GASKET | 304SS/316L | 304SS/316L | 304SS/316L |
| 7 | HANDLE | 304SS | 304SS | 304SS |
| 8 | PACKING | GRAPHITE | GRAPHITE | GRAPHITE |

**Note:Butech can customize materials and body lengths to meet customer requirements**



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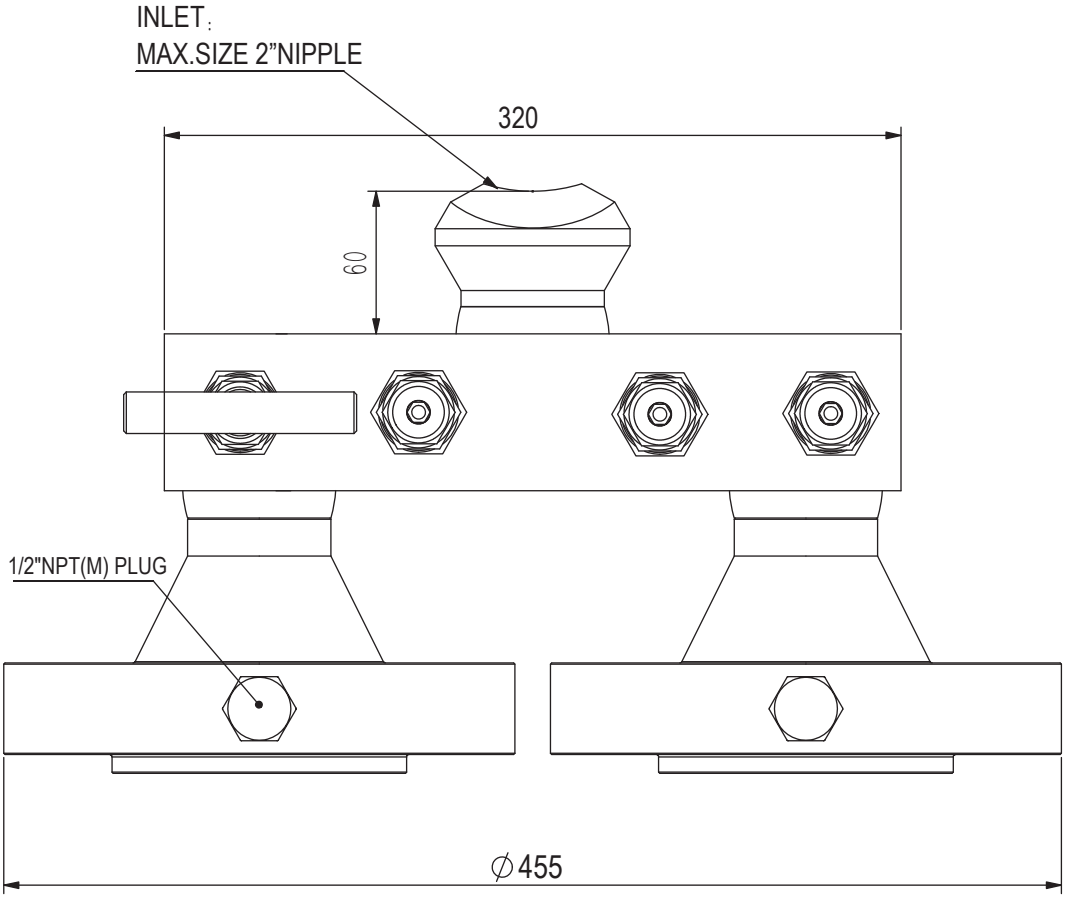


| ITEM | DESCRIPTION | MATERIAL | | |
|---|---|---|---|---|
| | | STD Temperature | HIGH Temperature | Stainless Steel |
| 1 | BODY | ASTM A105 | ASTM A182-F11/F22/F91/F92 | ASTM A182-F316/F321/F347 |
| 2 | BONNET | ASTM A182 316SS | ASTM A182-F321 | ASTM A182-F316/F321/F347 |
| 3 | DISC | 321SS+STL | 321SS+STL | 321SS+STL |
| 4 | SEAT | ASTM A105+STL | ASTM A182-F11/F22/F91/F92+STL | ASTM A182-F316/F321/F347+STL |
| 5 | STEM | ASTM A182 316SS | ASTM A182 316SS | ASTM A182 316SS |
| 6 | GASKET | 304SS/316L | 304SS/316L | 304SS/316L |
| 7 | HANDLE | 304SS | 304SS | 304SS |
| 8 | PACKING | GRAPHITE | GRAPHITE | GRAPHITE |

**Note:Butech can customize materials and body lengths to meet customer requirements**



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## Main Feature

1.One-piece forge body

2.CMGseries are double wedge gates valves with PSB-BG-OS&Y type bonnets.

3.Seat&Disc:STL

4.Standard inner diameter size(API602）: 18mm,28mm

5.Stem threads are hardened to prevent biting

6.Grease for stem threads is isolated from the system medium

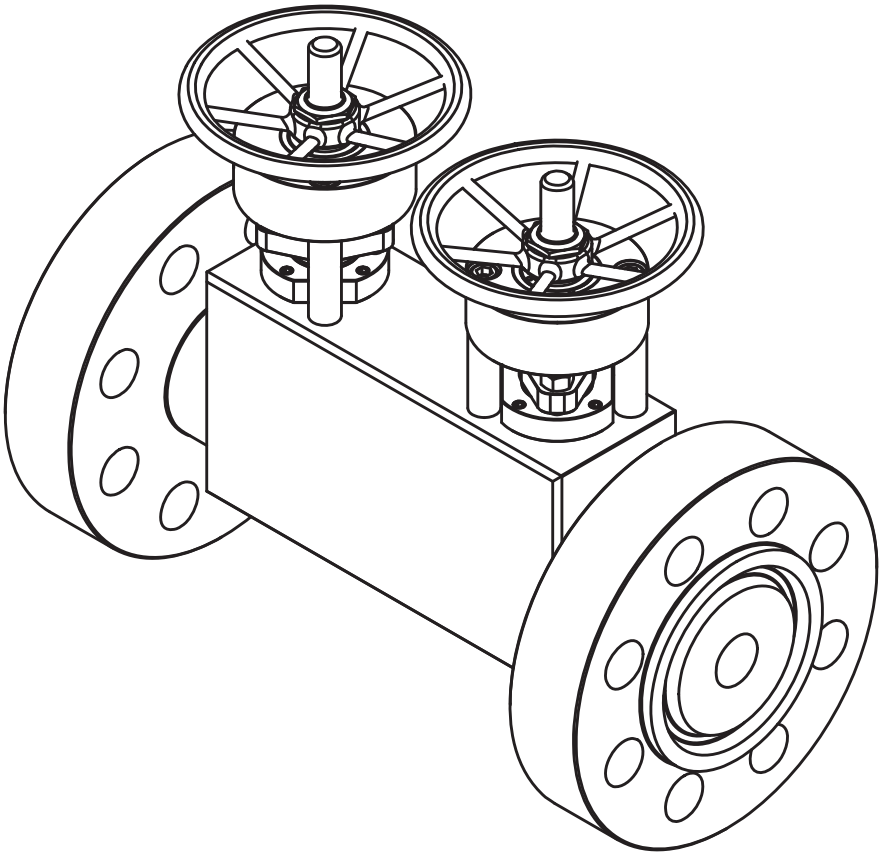
7.The non-rotating stem moves up and down，reducing packing friction with each stroke and biting between the seat and the head

8.Valves size is from 1/2”PSW-2”RTJ

9.Each valve is sealed with nitrogen or compressed air at rated working pressure before delivery.

10.Design standard is accordance with ASME B 16.34,API 602,ASME B16.11,ASME B16.25

11.Test standard is accordance with API598





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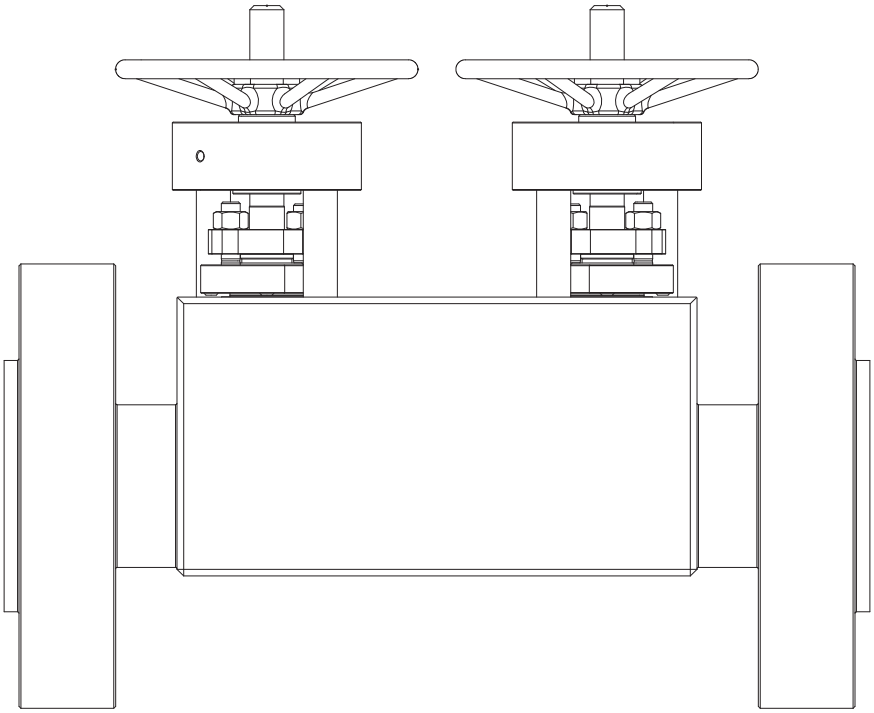

| ITEM | DESCRIPTION | MATERIAL | | |
|---|---|---|---|---|
| | | STD Temperature | HIGH Temperature | Stainless Steel |
| 1 | BODY | ASTM A105 | ASTM A182-F11/F22/F91/F92 | ASTM A182-F316/F321/F347 |
| 2 | BONNET | ASTM A105 | ASTM A182-F11/F22/F91/F92 | ASTM A182-F316/F321/F347 |
| 3 | DISC | Gr.660+STL | Gr.660+STL | Gr.660+STL |
| 4 | SEAT | ASTM A105+STL | ASTM A182-F11/F22/F91/F92+STL | ASTM A182-F316/F321/F347+STL |
| 5 | STEM BOLTS | ASTM A276-420 | ASTM A276-420 | ASTM A276-420 |
| 6 | STEM | ASTM A276-F6a | ASTM A276-F6a | ASTM A276-F6a |
| 7 | GASKET | 304SS/316L | 304SS/316L | 304SS/316L |
| 8 | HANDWHEEL | A197 | A197 | A197 |
| 9 | PACKING | GRAPHITE | GRAPHITE | GRAPHITE |
| 10 | BOLTS | ASTM A193-B7 | ASTM A193-B16 | ASTM A193-B8 |

**Note:Butech can customize materials and body lengths to meet customer requirements**



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# CQF Series

## Main Feature

**1.4-valves are one-piece body**

**2.CQF series with two sides short nipple(60-100mm) and flanges are welded with valve body together**

**3.Seat:body+STL, Disc:Gr.660+STL**

**4.Standard inner diameter size:15mm**

**5.Stem threads are hardened to prevent biting**

**6.Grease for stem threads is isolated from the system medium**

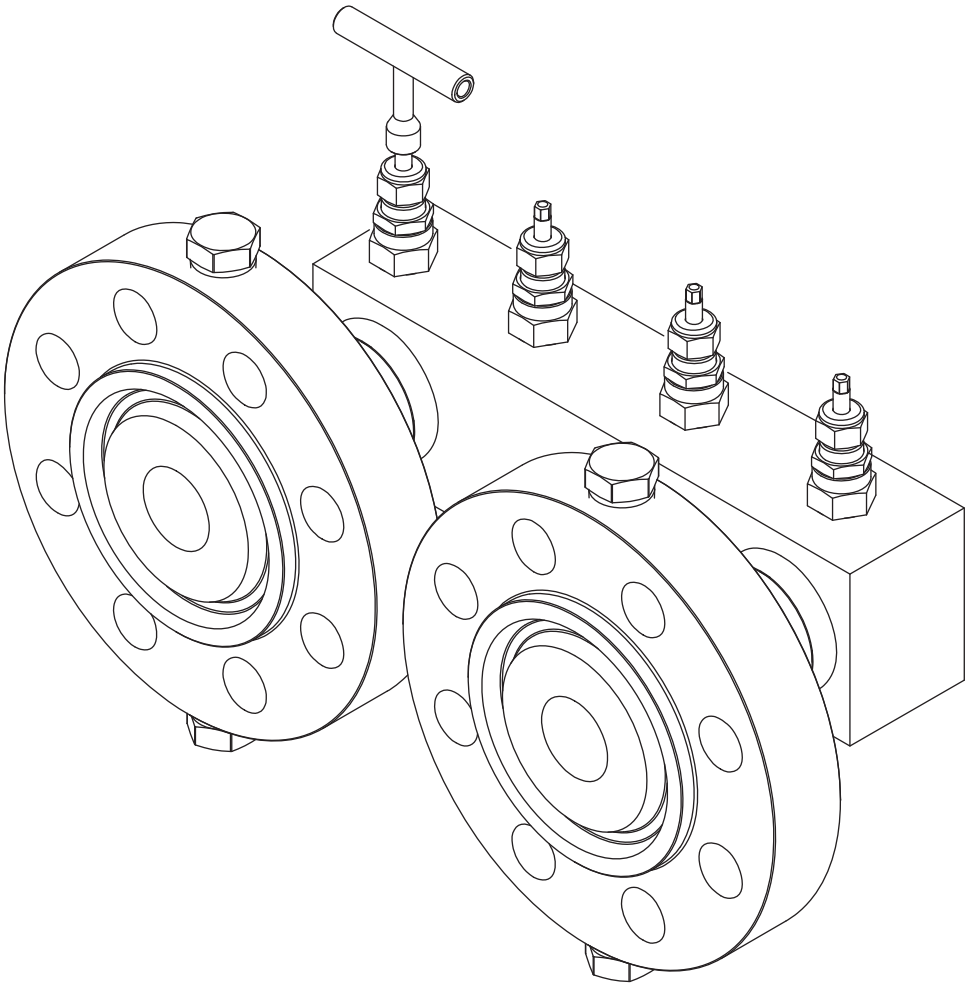
**7.The non-rotating lower stem moves up and down， reducing packing friction with each stroke and biting between the seat and the head**

**8.The externally adjusted gland is not constrained by stem threads**

**9.Each valve is sealed with nitrogen or compressed air at rated working pressure before delivery.**

**10.Design standard is accordance with ASME B 16.34,ASME B16.11,ASME B16.25,ASME B16.5**

**11.Test standard is accordance with API598**





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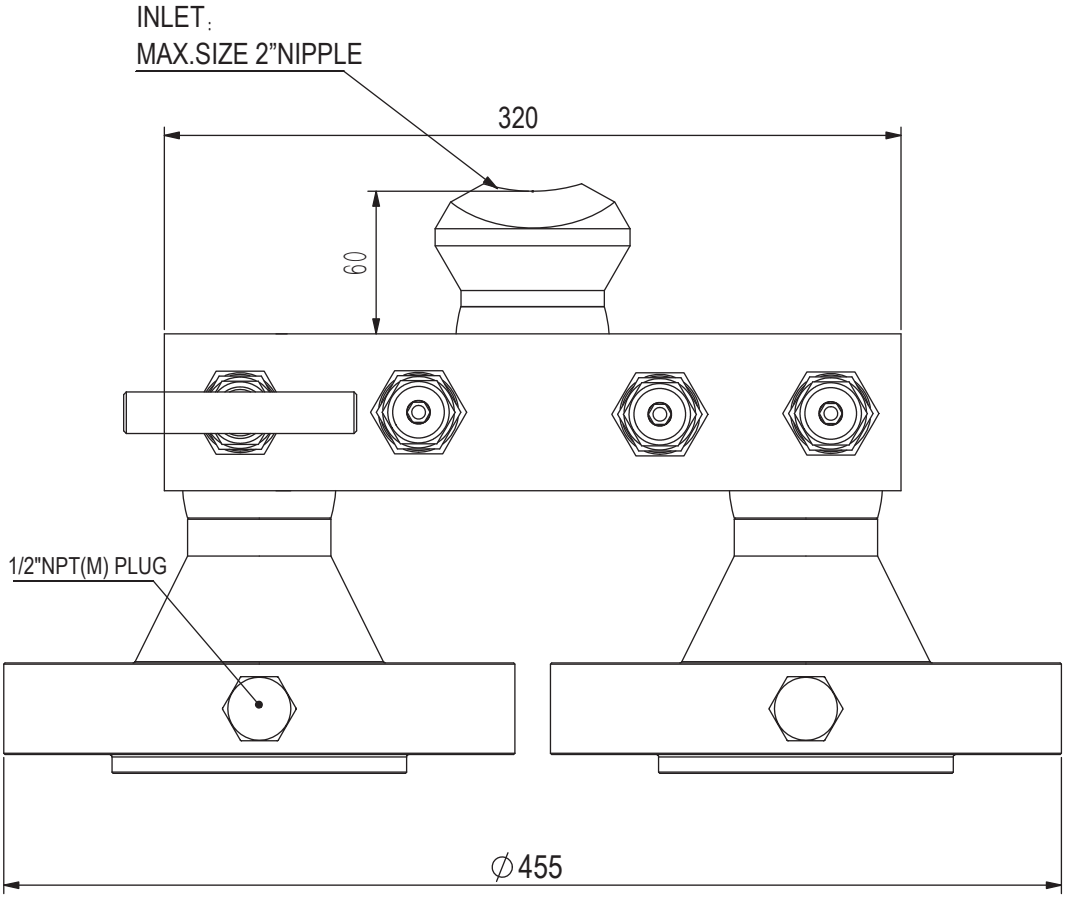


| ITEM | DESCRIPTION | MATERIAL | | |
|---|---|---|---|---|
| | | STD Temperature | HIGH Temperature | Stainless Steel |
| 1 | BODY | ASTM A105 | ASTM A182-F11/F22/F91/F92 | ASTM A182-F316/F321/F347 |
| 2 | BONNET | ASTM A182 316SS | ASTM A182-F321 | ASTM A182-F316/F321/F347 |
| 3 | DISC | 321SS+STL | 321SS+STL | 321SS+STL |
| 4 | SEAT | ASTM A105+STL | ASTM A182-F11/F22/F91/F92+STL | ASTM A182-F316/F321/F347+STL |
| 5 | STEM | ASTM A182 316SS | ASTM A182 316SS | ASTM A182 316SS |
| 6 | GASKET | 304SS/316L | 304SS/316L | 304SS/316L |
| 7 | HANDLE | 304SS | 304SS | 304SS |
| 8 | PACKING | GRAPHITE | GRAPHITE | GRAPHITE |

**Note:Butech can customize materials and body lengths to meet customer requirements**



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## Main Feature

1.One-piece body

2.COB series with two sides short nipple(60-100mm) is integral with valve body together

3.Seat:body+STL, Disc:Gr.660+STL

4.Standard inner diameter size:11mm,14mm,18mm

5.Stem threads are hardened to prevent biting

6.Grease for stem threads is isolated from the system medium

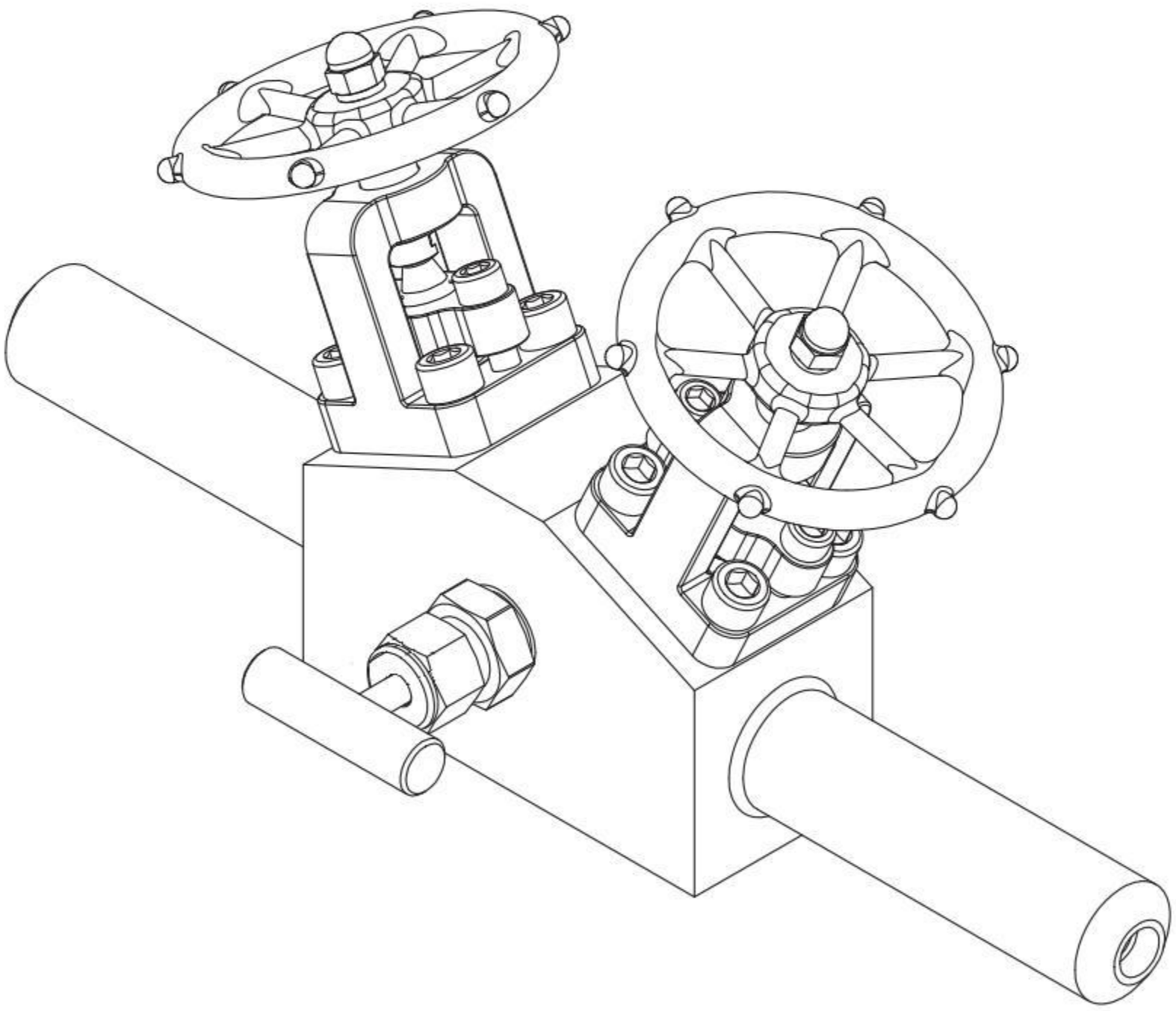
7.The non-rotating lower stem moves up and down， reducing packing friction with each stroke and biting between the seat and the head

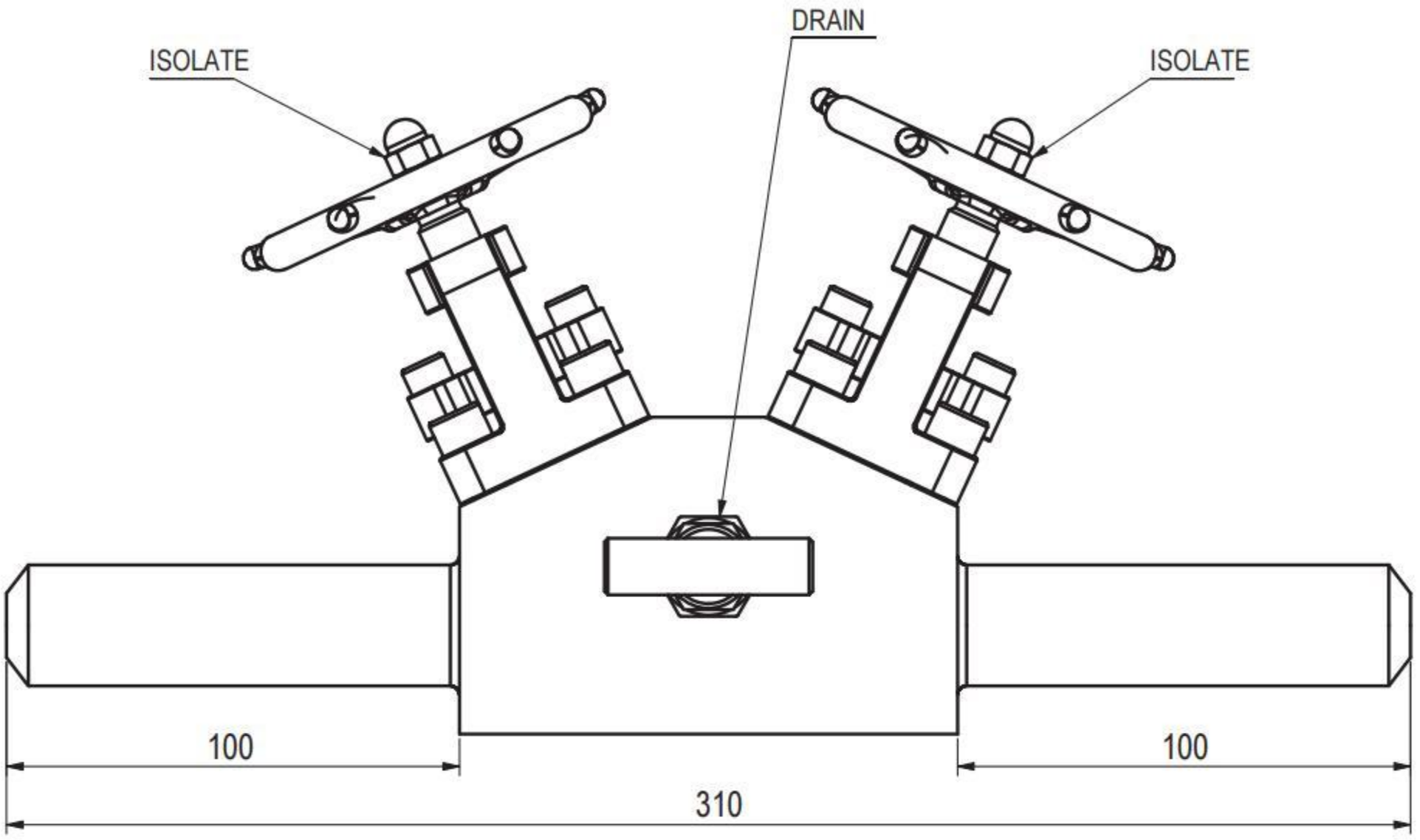
8.The externally adjusted gland is not constrained by stem threads

9.Each valve is sealed with nitrogen or compressed air at rated working pressure before delivery.

10.Design standard is accordance with ASME B 16.34,API 602,ASME B16.11,ASME B16.25

11.Test standard is accordance with API598






| ITEM | DESCRIPTION | MATERIAL | | |
|---|---|---|---|---|
| | | STD Temperature | HIGH Temperature | Stainless Steel |
| 1 | BODY | ASTM A105 | ASTM A182-F11/F22/F91/F92 | ASTM A182-F316/F321/F347 |
| 2 | BONNET | ASTM A105 | ASTM A182-F11/F22/F91/F92 | ASTM A182-F316/F321/F347 |
| 3 | DISC | Gr.660+STL | Gr.660+STL | Gr.660+STL |
| 4 | SEAT | ASTM A105+STL | ASTM A182-F11/F22/F91/F92+STL | ASTM A182-F316/F321/F347+STL |
| 5 | STEM BOLTS | ASTM A276-420 | ASTM A276-420 | ASTM A276-420 |
| 6 | STEM | ASTM A276-F6a | ASTM A276-F6a | ASTM A276-F6a |
| 7 | GASKET | 304SS/316L | 304SS/316L | 304SS/316L |
| 8 | HANDWHEEL | A197 | A197 | A197 |
| 9 | PACKING | GRAPHITE | GRAPHITE | GRAPHITE |
| 10 | BOLTS | ASTM A193-B7 | ASTM A193-B16 | ASTM A193-B8 |

**Note: Butech can customize materials and body lengths to meet customer requirements**



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