

Instrument Valve

Needle Valve, Manifold, Check and Proportional Relief Valve



VEE-LOK[®]
valve & fitting

www.veelok.com

Index

Needle Valve

HBNV Series



02

SNV Series



05

BNV Series



08

Mini Valve



11

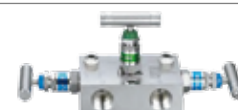
Instrument Manifolds

2 Valve Manifold



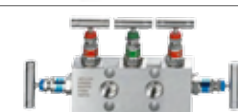
20

3 Valve Manifold



22

5 Valve Manifold



24

Proportional Relief Valve

RV01 Series



27

Check Valve

CV01 Series



31

Ball Valve

HPBV Series



33

Pressure Gauge Snubber

PGS Series



35

Adjustable Overload Protector

AOP Series



36

Filter

F Series / TF Series



37

Hexagonal Bar Stock Needle Valve

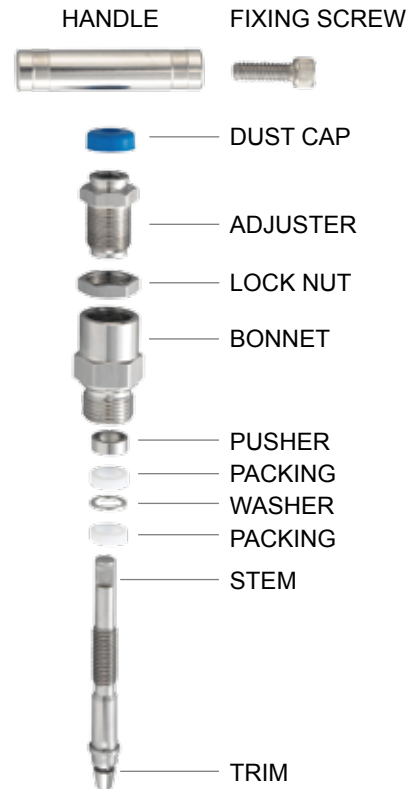
HBNV Series



Features

- Maximum working pressure:
 - 6000 psi (414bar) at 100°F (38°C)
 - 10000 psi (690bar) at 100°F (38°C)
- Working temperature:
 - 65°F (-54°C) to 464°F (240°C)
 - 65°F (-54°C) to 842°F (450°C)
- Teflon[®] packings can be adjusted to extend the valve life.
- Non rotating stem design to reduce the galling and provide excellent seal on seat.
- Stem threads are rolled and lubricated to prevent galling and reduce operating torque.
- Sealing area below the threads protects from the contaminant by process and prevents lubricant washout.
- Safety back seating seal in fully open position to perform a secondary stem seal.
- Body to bonnet seal creates metal to metal constant and reliable compression.
- Bonnet lock pin prevents accidental removal while in service.
- Optional sour gas service conforms to NACE MR0175.
- Hydro test performed with pure water at 1.5 times of working pressure
- 100% factory test
- Material traceability

Material of Construction

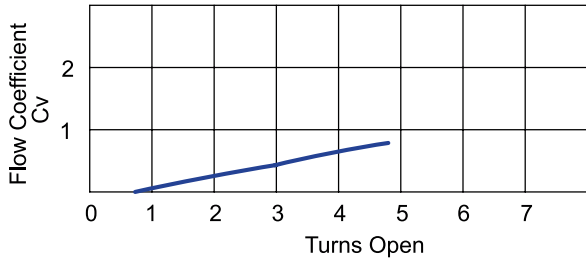


| Component | Valve Body Material | |
|--------------------------|-----------------------|-----------------------|
| | 316L S.S. | Carbon Steel |
| Body | 316L S.S./A479 | Carbon Steel /A108 |
| Bonnet | 316L S.S./A479 | Carbon Steel /A108 |
| Stem | 316L S.S./A276 | 304 S.S./A276 |
| Adjuster | 316L S.S./A276 | Carbon Steel /A108 |
| Lock Nut | 316L S.S./A276 | Carbon Steel /A108 |
| Handle | 303 S.S./A276 | Carbon Steel /A108 |
| Fixing Screw | 302 S.S. | Zinc plated steel |
| Packing | Teflon ^{® 1} | Teflon ^{® 1} |
| Washer | 316 S.S./A276 | 316 S.S./A276 |
| Pusher | 316 S.S./A276 | 316 S.S./A276 |
| Dust Cap | NBR | NBR |
| Lock Pin | 303 S.S./A276 | 303 S.S./A276 |
| Bleed Screw ² | 316 S.S./A276 | 316 S.S./A276 |

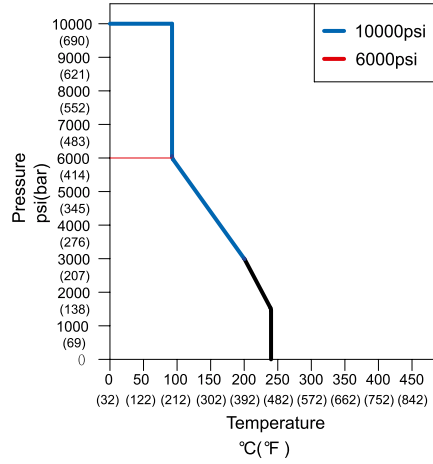
Note:

1. Packing is optional with graphite for high temperature to 450°C.
2. Optional with bleed screw

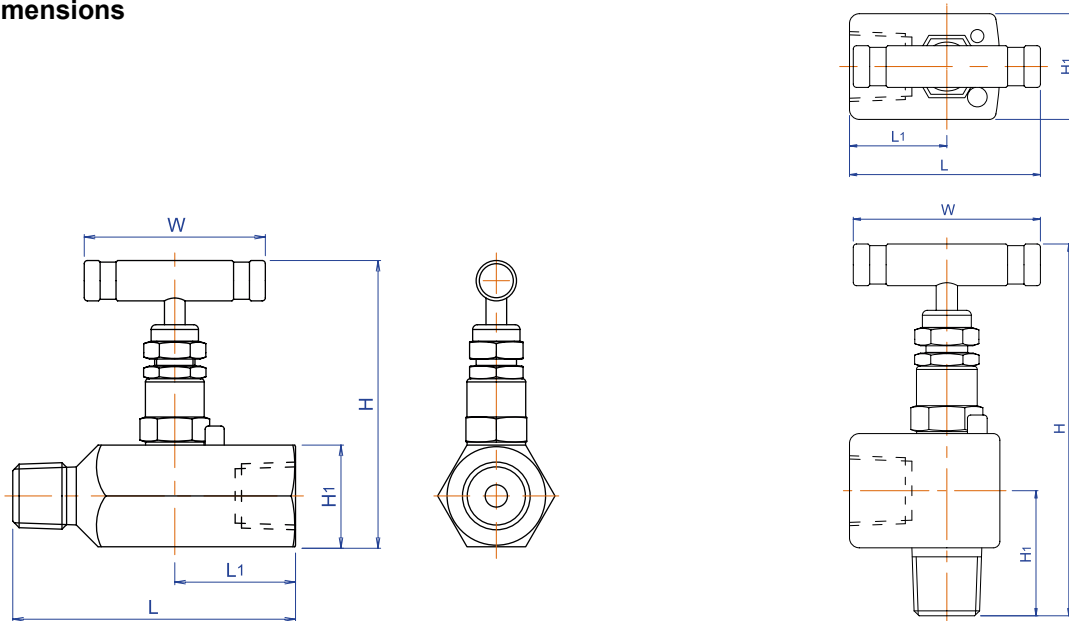
Flow Characteristics



Pressure Vs. Temperature



Dimensions



| Ordering No. | End Connection | | Orifice (bore) | Dimensions (mm) | | | | |
|--------------|----------------|----------------|----------------|-----------------|------|-------|------|----|
| | Inlet | Outlet | | L | L1 | H | H1 | W |
| HBNV□8MF | 1/2"NPT male | 1/2"NPT female | 6 | 89 | 38 | 90 | 32 | 57 |
| HBNV□8FF | 1/2"NPT female | 1/2"NPT female | 6 | 76 | 38 | 90 | 32 | 57 |
| HBNV□3412MF | 3/4"NPT male | 1/2"NPT female | 6 | 89 | 38 | 90 | 32 | 57 |
| HBNV□12MF | 3/4"NPT male | 3/4"NPT female | 6 | 89 | 38 | 93 | 35 | 57 |
| HBNV□12FF | 3/4"NPT female | 3/4"NPT female | 6 | 76 | 38 | 93 | 35 | 57 |
| HBNV□16MF | 1"NPT male | 1"NPT female | 6 | 94 | 42.5 | 99 | 41 | 57 |
| HBNV□16FF | 1"NPT female | 1"NPT female | 6 | 85 | 42.5 | 99 | 41 | 57 |
| HBNV□8MF90 | 1/2"NPT male | 1/2"NPT female | 6 | - | - | 121.3 | 37.5 | 57 |

All dimensions shown are for reference and subject to change without prior notice.

Sizes listed are standard. Other sizes and end types are available upon request. Refer to ordering information.

Standard Material

| Valve | Body | Bonnet | Stem | Packing | Trim |
|--------------|----------|----------|----------|---------------------|----------|
| 316L SS | 316-A479 | 316-A479 | 316-A276 | Teflon [®] | 316-A276 |
| Carbon Steel | A108 | A108 | 304-A276 | Teflon [®] | 304-A276 |

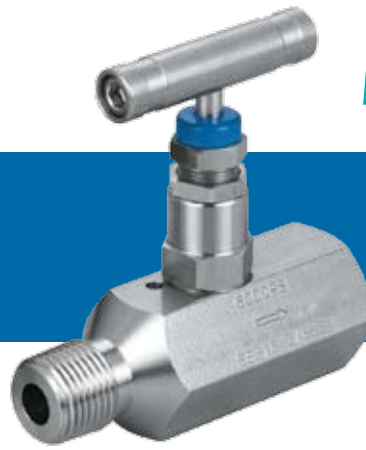
Ordering Information

| HBNV | S | | 8 | | MF | | 10 B | |
|-------------|---------------|--------------|----------|------|----------------|--------|-------------|----------------|
| Series | Body Material | | Size | | End Connection | | Optional | |
| HBNV | S | 316L S.S. | 4 | 1/4" | M | Male | 90 | Angle pattern |
| | C | Carbon Steel | 6 | 3/8" | F | Female | 10 | 10,000 psi |
| | | | 8 | 1/2" | | | B | Bleeding screw |
| | | | 12 | 3/4" | | | G | Graphite |
| | | | 16 | 1" | | | BSPT | BSPT thread |

Note:

1. Viton[®], Teflon[®] and Delrin[®] are all registered trademarks of DuPont. Refer to chemical resistance guide and choose suitable elastomer for your application.
2. Carbon steel valves are yellow zinc plated to resist corrosion.

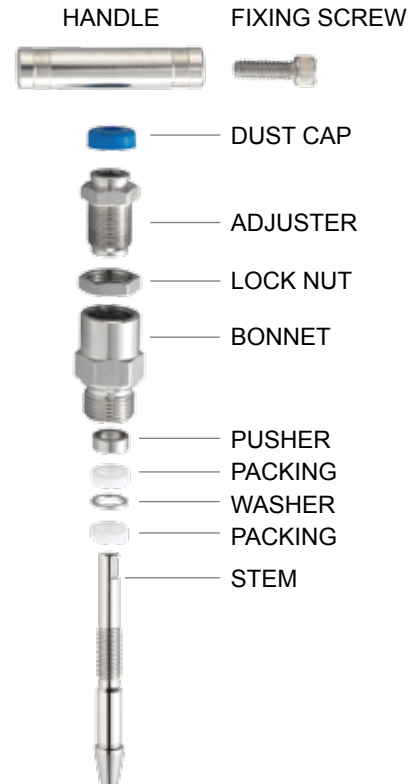
Hexagonal Bar Stock Needle Valve SNV Series



Features

- Maximum working pressure:
6000 psi (414bar) at 100°F (38°C)
- Working temperature:
Delrin[®] Seat: -20°F (-28°C) to 200°F (93°C)
PEEK Seat: -20°F (-28°C) to 400°F (204°C)
- Straight-through design provides high capacity with bi-directional flow and is roddable for easy cleaning.
- Teflon[®] packings can be adjusted to extend the valve life.
- Stem threads are rolled and lubricated to prevent galling and reduce operating torque.
- Sealing area below the threads protects from the contaminant by process and prevents lubricant washout.
- Safety back seating seal in fully open position to perform a secondary stem seal.
- Bonnet lock pin prevents accidental removal while in service.
- Optional sour gas service conforms to NACE MR0175.
- Hydro test performed with pure water at 1.5 times of working pressure
- 100% factory test
- Material traceability

Material of Construction

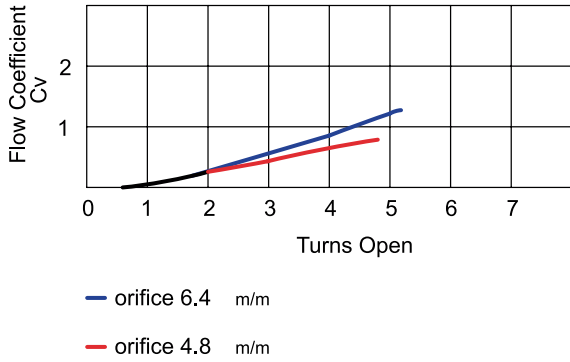


| Component | Valve Body Material | |
|--------------|---------------------|---------------------|
| | 316L S.S. | Carbon Steel |
| Body | 316L S.S./A479 | Carbon Steel/A108 |
| Bonnet | 316L S.S./A479 | Carbon Steel/A108 |
| Stem | 316L S.S./A276 | 304 S.S./A276 |
| Adjuster | 316L S.S./A276 | Carbon Steel/A108 |
| Lock Nut | 316L S.S./A276 | Carbon Steel /A108 |
| Handle | 303 S.S./A276 | Carbon Steel/A108 |
| Fixing Screw | 302 S.S. | Zinc plated steel |
| Packing | Teflon [®] | Teflon [®] |
| Washer | 316 S.S./A276 | 316 S.S./A276 |
| Pusher | 316 S.S./A276 | 316 S.S./A276 |
| Dust Cap | NBR | NBR |
| Lock Pin | 303 S.S./A276 | 303 S.S./A276 |
| Seat | Delrin [®] | Delrin [®] |

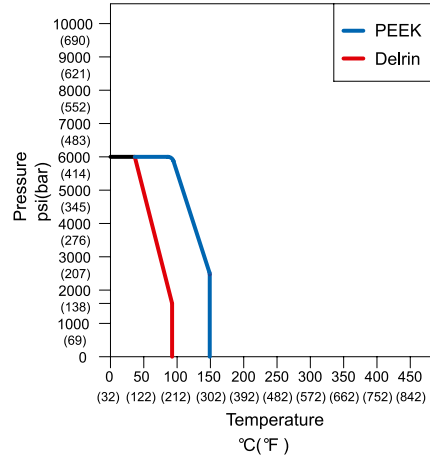
Note:

1. Optional PEEK seat is available.

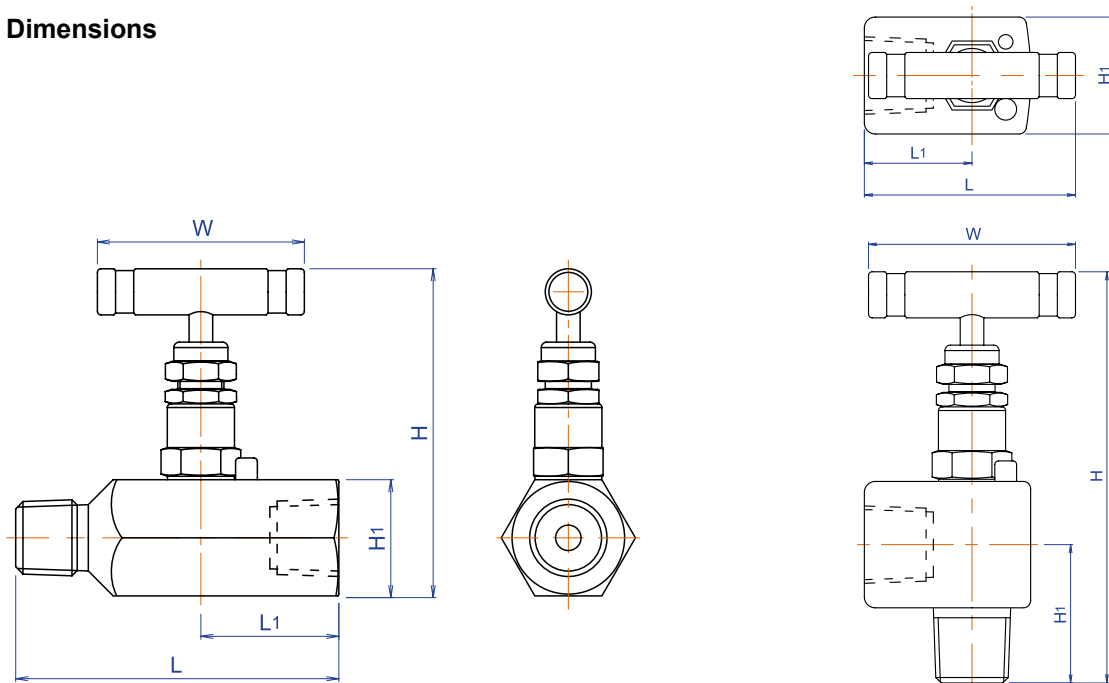
Flow Characteristics



Pressure Vs. Temperature



Dimensions



| Ordering No. | End Connection | | Orifice (bore) | Dimensions (mm) | | | | |
|--------------|----------------|----------------|----------------|-----------------|------|-------|------|----|
| | Inlet | Outlet | | L | L1 | H | H1 | W |
| SNV□8MF | 1/2"NPT male | 1/2"NPT female | 4.8 | 89 | 38 | 94 | 32 | 57 |
| SNV□8FF | 1/2"NPT female | 1/2"NPT female | 4.8 | 76 | 38 | 94 | 32 | 57 |
| SNV□12MF | 3/4"NPT male | 3/4"NPT female | 6.4 | 89 | 38 | 96 | 35 | 57 |
| SNV□12FF | 3/4"NPT female | 3/4"NPT female | 6.4 | 76 | 38 | 96 | 35 | 57 |
| SNV□16MF | 1"NPT male | 1"NPT female | 7 | 94 | 42.5 | 101 | 41 | 57 |
| SNV□16FF | 1"NPT female | 1"NPT female | 7 | 85 | 42.5 | 101 | 41 | 57 |
| SNV□8MF90 | 1/2"NPT male | 1/2"NPT female | 4.8 | - | - | 121.3 | 37.5 | 57 |

All dimensions shown are for reference and subject to change without prior notice.

Sizes listed are standard. Other sizes and end types are available upon request. Refer to ordering information.

Standard Material

| Valve | Body | Bonnet | Stem | Packing | Seat |
|--------------|----------|----------|----------|--|---------|
| 316L SS | 316-A479 | 316-A479 | 316-A276 | Teflon® or Viton® Oring with Teflon® backup ring | Delrin® |
| Carbon Steel | A108 | A108 | 304-A276 | Teflon® or Viton® Oring with Teflon® backup ring | Delrin® |

Ordering Information

| SNV | S | | 8 | | MF | | 90 | |
|--------|---------------|--------------|------|------|----------------|--------|----------|--|
| Series | Body Material | | Size | | End Connection | | Optional | |
| SNV | S | 316L S.S. | 4 | 1/4" | M | Male | PK | PEEK seat |
| | C | Carbon Steel | 6 | 3/8" | F | Female | VT | Viton® O-ring with Teflon® back-up rings |
| | | | 8 | 1/2" | | | 90 | Angle pattern |
| | | | 12 | 3/4" | | | BSPT | BSPT thread |
| | | | 16 | 1" | | | | |

Note:

1. Valves are standard with Delrin® soft seat and Teflon® packings.
2. Viton®, Teflon® and Delrin® are all registered trademarks of DuPont. Refer to chemical resistance guide and choose suitable elastomer for your application.
3. Carbon steel valves are yellow zinc plated to resist corrosion.

Square Bar Stock Needle Valve

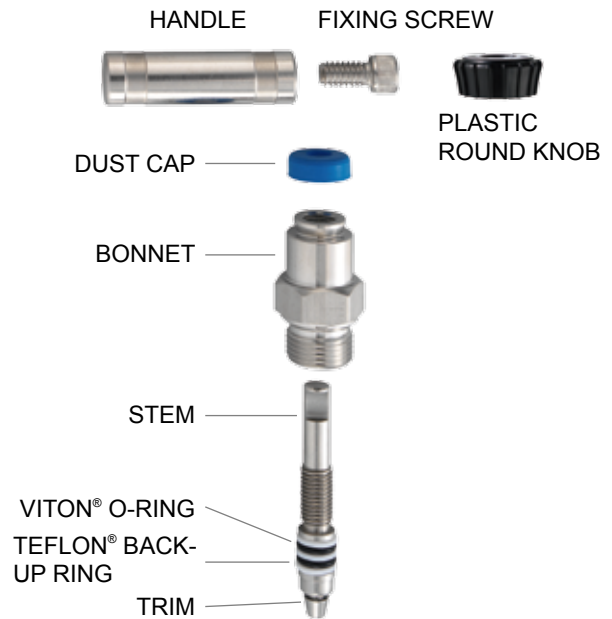
BNV Series



Features

- Maximum working pressure:
6000 psi (414bar) at 100°F (38°C)
- Working temperature:
-22°F (-30°C) to 392°F (200°C)
- Compact design provides economical and long service life.
- Non rotating stem design to reduce the galling and provide excellent seal on seat.
- Stem threads are rolled and lubricated to prevent galling and reduce operating torque.
- Sealing are below the threads protects from the contaminant by process and prevents lubricant washout.
- Safety back seating seal in fully open position to perform a secondary stem seal.
- Body to bonnet seal is metal to metal in constant compression, creating a reliable seal point to eliminate possible tensile breakage of bonnet and isolate bonnet threads from process fluid corrosion.
- Bonnet lock pin prevents accidental removal while in service.
- Hydro test performed with pure water at 1.5 times of working pressure
- 100% factory test
- Material traceability

Material of Construction



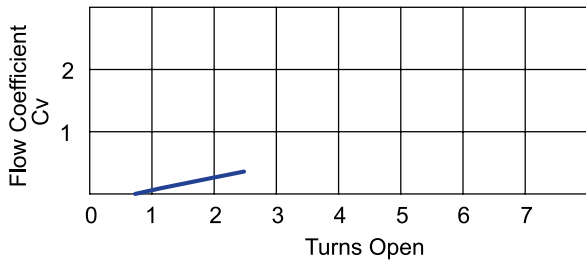
| Component | Valve Body Material | |
|--------------|---------------------|---------------------|
| | 316L S.S. | Carbon Steel |
| Body | 316L S.S./A479 | Carbon Steel/A108 |
| Bonnet | 316L S.S./A479 | Carbon Steel/A108 |
| Stem | 316L S.S./A276 | 304 S.S./A276 |
| Handle | 303 S.S./A276 | Carbon Steel/A108 |
| Fixing Screw | 302 S.S./A276 | Zinc plated steel |
| Lock Pin | 303 S.S./A276 | 303 S.S./A276 |
| O-Ring | Viton [®] | Viton [®] |
| Back-Up Ring | Teflon [®] | Teflon [®] |
| Dust Cap | NBR | NBR |

Note:

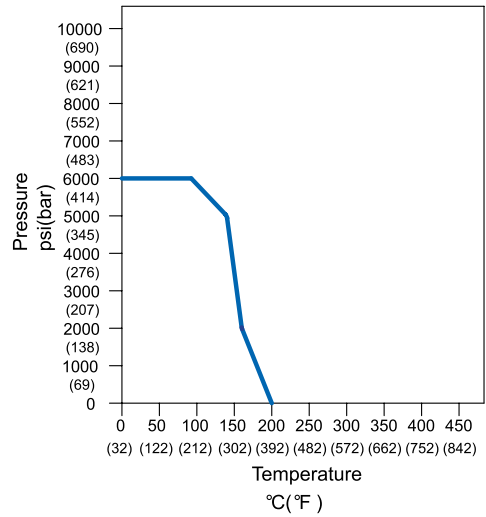
Optional with

1. VEE-LOK twin ferrule tube end
2. panel mountable nuts
3. bleeding screw
4. black plastic round knob

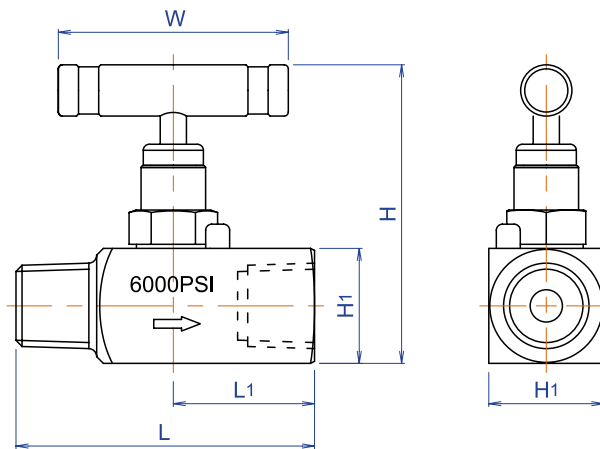
Flow Characteristics



Pressure Vs. Temperature



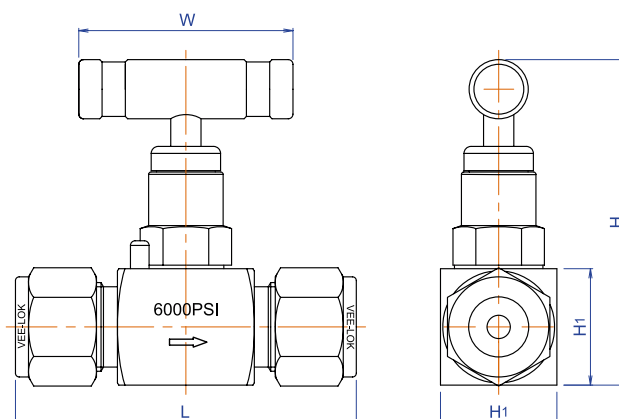
Dimensions



| Ordering No. | End Connection | | Orifice (bore) | Dimensions (mm) | | | | |
|--------------|----------------|----------------|----------------|-----------------|------|------|------|----|
| | Inlet | Outlet | | L | L1 | H | H1 | W |
| BNV□2MF | 1/8"NPT male | 1/8"NPT female | 4.8 | 57 | 27 | 64 | 19 | 46 |
| BNV□2FF | 1/8"NPT female | 1/8"NPT female | | 57 | 28.5 | 64 | 19 | 46 |
| BNV□4MF | 1/4"NPT male | 1/4"NPT female | | 57 | 27 | 64 | 19 | 46 |
| BNV□4FF | 1/4"NPT female | 1/4"NPT female | | 57 | 28.5 | 64 | 19 | 46 |
| BNV□6MF | 3/8"NPT male | 3/8"NPT female | | 65 | 31 | 70.5 | 25.4 | 57 |
| BNV□6FF | 3/8"NPT female | 3/8"NPT female | | 62 | 31 | 70.5 | 25.4 | 57 |
| BNV□8MF | 1/2"NPT male | 1/2"NPT female | | 74 | 35 | 74 | 29 | 57 |
| BNV□8FF | 1/2"NPT female | 1/2"NPT female | | 70 | 35 | 74 | 29 | 57 |

All dimensions shown are for reference and subject to change without prior notice.

Sizes listed are standard. Other sizes and end types are available upon request. Refer to ordering information.



| Ordering No. | End Connection | | Orifice (bore) | Dimensions (mm) | | | |
|--------------|----------------|-----------|----------------|-----------------|----|------|----|
| | Inlet | Outlet | | L | H | H1 | W |
| TBNV□2OD | 1/8" O.D. | 1/8" O.D. | 4.8 | 63.6 | 46 | 19 | 46 |
| TBNV□4OD | 1/4" O.D. | 1/4" O.D. | | 65 | 46 | 19 | 46 |
| TBNV□6OD | 3/8" O.D. | 3/8" O.D. | | 68 | 57 | 25.4 | 57 |
| TBNV□8OD | 1/2" O.D. | 1/2" O.D. | | 73.2 | 57 | 25.4 | 57 |
| TBNV□M6OD | 6mm O.D. | 6mm O.D. | | 65 | 46 | 19 | 46 |
| TBNV□M12OD | 12mm O.D. | 12mm O.D. | | 73.2 | 57 | 25.4 | 57 |

Dimensions shown are Vee-Lok twin ferrule tube nuts finger-tightened and subject to change without prior notice. Sizes listed are standard. Other sizes and end types are available upon request. Refer to ordering information.

Standard Material

| Valve | Body | Bonnet | Stem | Packing | Trim |
|--------------|----------|----------|----------|--------------------|----------|
| 316L SS | 316-A479 | 316-A479 | 316-A276 | Viton [®] | 316-A276 |
| Carbon Steel | A108 | A108 | 304-A276 | Viton [®] | 304-A276 |

Ordering Information

| BNV | | S | | 4 | | MF | | | |
|--------|---------------|--------------|-----|----------------|----|------------------------------------|------|--------------------|--|
| Series | Body Material | Size | | End Connection | | Optional | | | |
| BNV | S | 316L S.S. | 2 | 1/8" | M | Male | PN | Panel mountable | |
| TBNV | C | Carbon Steel | 4 | 1/4" | F | Female | B | M6 bleeding screw | |
| | | | 6 | 3/8" | OD | VEE-LOK twin ferrule tube fittings | R | Plastic round knob | |
| | | | 8 | 1/2" | | | BSPT | BSP Taper | |
| | | | M6 | 6mm | | | BSPP | BSP parallel | |
| | | | M12 | 12mm | | | | | |

Note:

1. Viton[®], Teflon[®] and Delrin[®] are all registered trademarks of DuPont. Refer to chemical resistance guide and choose suitable elastomer for your application.
2. Carbon steel valves are yellow zinc plated to resist corrosion.

Mini Valves

MNV Series

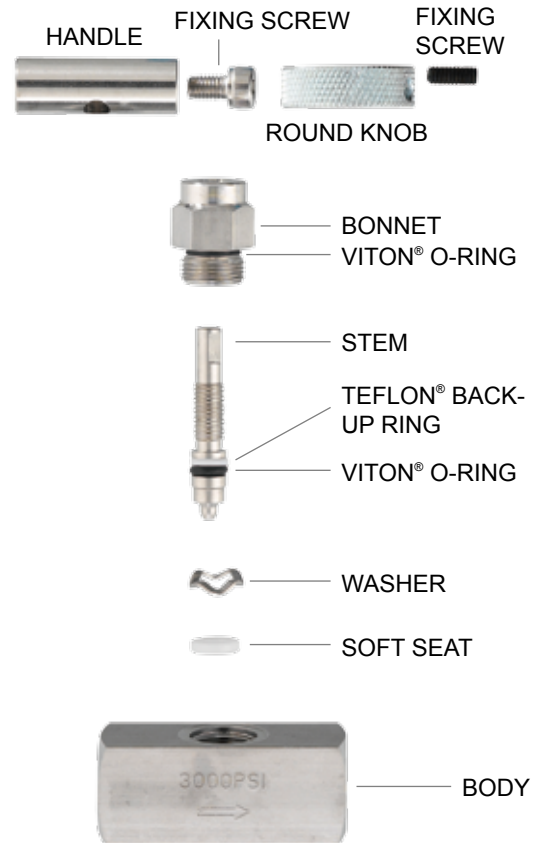
MSNV Series



Features

- Maximum working pressure:
3000 psi (207bar) at 100°F (38°C)
- Working temperature:
-22°F (-30°C) to 392°F (200°C)
- Mini valves facilitate safe, compact and economical installations.
- Valve seating is interchangeable between “Hard” or “Soft” without changing the bonnet assembly. When soft seat becomes damaged, it can be removed and leave a metal seated valve to extend service life.
- Orings below threads prevents lubricant washout, thread corrosion and keep thread from process contamination.
- Chrome plating of 316 SS stem on 316 SS valve to reduce galling or freezing of stem threads when similar metals mate. Carbon steel valves use 316 SS stem.
- Hydro test performed with pure water at 1.5 times of working pressure
- 100% factory test
- Material traceability

Material of Construction

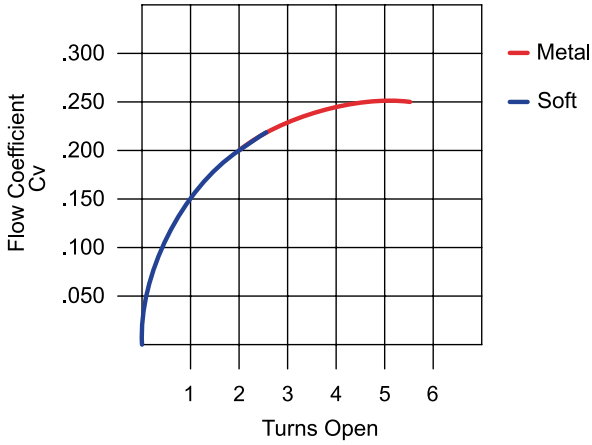


| Component | Valve Body Material | |
|--------------|---------------------|---------------------|
| | 316L S.S. | Carbon Steel |
| Body | 316L S.S./A479 | Carbon Steel/A108 |
| Bonnet | 316L S.S./A479 | Carbon Steel/A108 |
| Stem | 316L S.S./A276 | 316L S.S./A276 |
| Handle | 303 S.S./A276 | Carbon Steel/A108 |
| Fixing Screw | 302 S.S./A276 | Zinc plated steel |
| O-Ring | Viton [®] | Viton [®] |
| Back-Up Ring | Teflon [®] | Teflon [®] |
| Washer | 316 S.S./A479 | 316 S.S./A479 |
| Soft Seat | Delrin [®] | Delrin [®] |

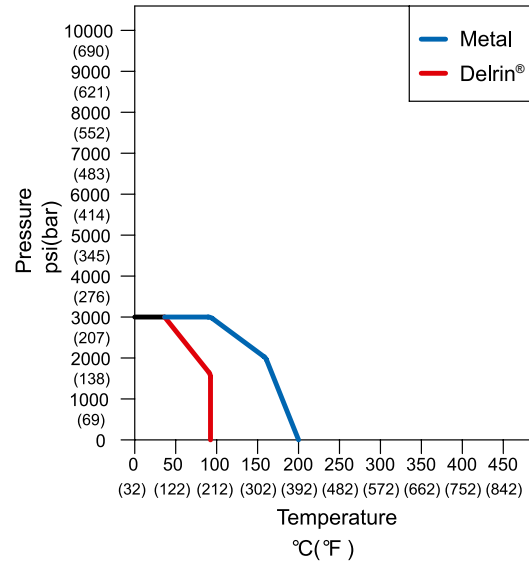
Note:

1. Hard seat valves installed with 303 SS Tee handles.
2. Soft seat valves with CS round handle.

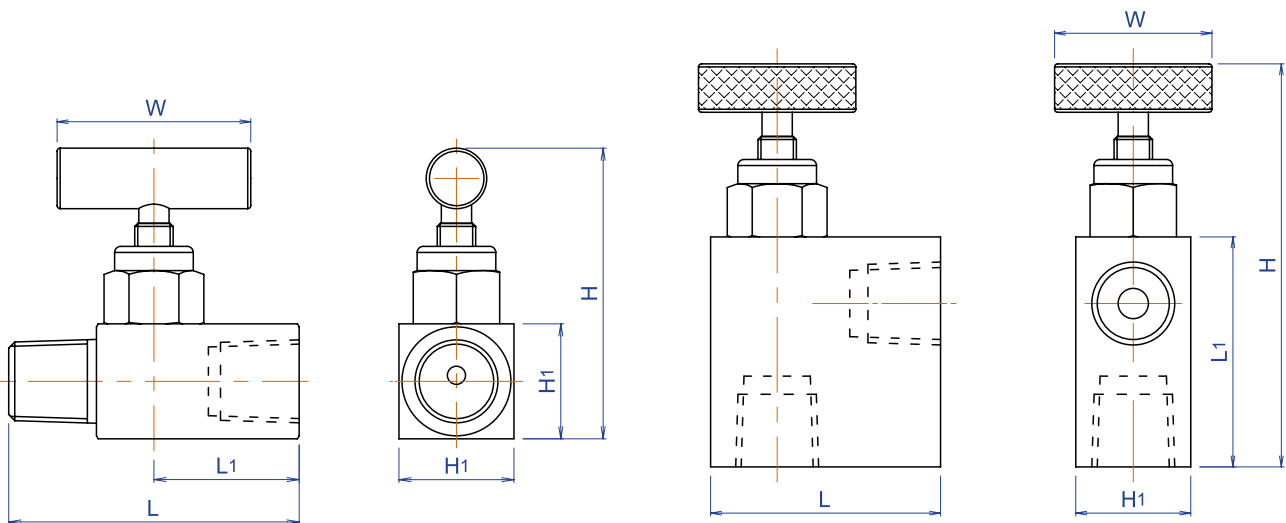
Flow Characteristics



Pressure Vs. Temperature



Dimensions



| Ordering No. | End Connection | | Orifice (bore) | Dimensions (mm) | | | | |
|--------------|----------------|----------------|----------------|-----------------|----|------|----|----|
| | Inlet | Outlet | | L | L1 | H | H1 | W |
| MNV□4MF | 1/4"NPT male | 1/4"NPT female | 3 | 48 | 24 | 48.5 | 19 | 32 |
| MNV□4FF | 1/4"NPT male | 1/4"NPT female | | 48 | 24 | 48.5 | 19 | 32 |
| MNV□4FF90 | 1/4"NPT female | 1/4"NPT female | | 38 | 38 | 66.5 | 19 | 32 |
| MSNV□4MF | 1/4"NPT male | 1/4"NPT female | | 48 | 24 | 47.5 | 19 | 26 |
| MSNV□4FF | 1/4"NPT female | 1/4"NPT female | | 48 | 24 | 47.5 | 19 | 26 |
| MSNV□4FF90 | 1/4"NPT female | 1/4"NPT female | | 38 | 38 | 66.5 | 19 | 26 |

All dimensions shown are for reference and subject to change without prior notice.

Sizes listed are standard. Other sizes and end types are available upon request. Refer to ordering information.

Standard Material

| Valve | Body | Bonnet | Stem | Packing | Seat |
|--------------|----------|----------|------------------------|--------------------|---------------------|
| 316L SS | 316-A479 | 316-A479 | Chrome Plating316-A276 | Viton [®] | Delrin [®] |
| Carbon Steel | A108 | A108 | 316-A276 | Viton [®] | Delrin [®] |

Ordering Information

| MNV | | S | | 4 | | MF | | | |
|--------|-----------|---------------|--------------|------|------|----------------|--------|----------|---------------|
| Series | | Body Material | | Size | | End Connection | | Optional | |
| MNV | Hard Seat | S | 316L S.S. | 2 | 1/8" | M | Male | 90 | Angle pattern |
| MSNV | Soft Seat | C | Carbon Steel | 4 | 1/4" | F | Female | | |

Note:

1. Viton[®], Teflon[®] and Delrin[®] are all registered trademarks of DuPont. Refer to chemical resistance guide and choose suitable elastomer for your application.
2. Carbon steel valves are yellow zinc plated to resist corrosion.

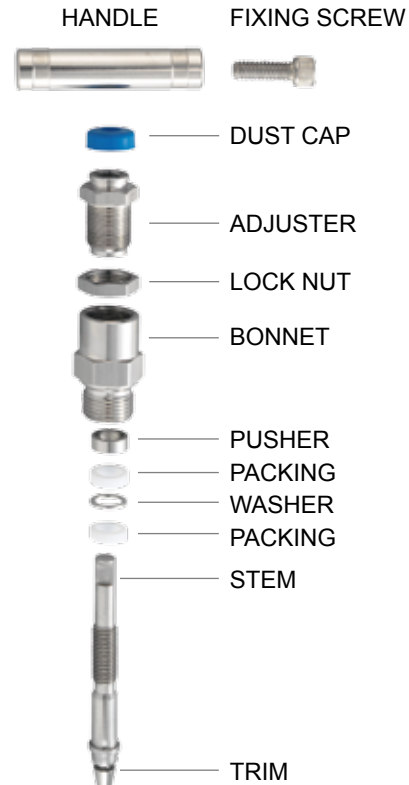
Multiport Gauge Valve MPGV Series



Features

- Maximum working pressure:
 - 6000 psi (414bar) at 100°F (38°C)
 - 10000 psi (690bar) at 100°F (38°C)
- Working temperature:
 - Metal Seat: -65°F (-54°C) to 464°F (240°C)
 - Delrin[®] Seat: -20°F (-28°C) to 200F (93°C)
- Multiport gauge valves allow the versatile positioning of gauges or pressure switches without requiring additional penetration of the main piping.
- Standard configuration has a male 1/2" NPT or 3/4" male inlet and three 1/2" NPT female outlet ports.
- Available with metal seats or soft seats operating in dirty service with repetitive bubble tight shutoff.
- Compact design requires minimum space for operation and installation and realizes cost savings to reduce the numbers of components and decrease possible leak points.
- TEFLON[®] packings can be adjusted to extend the valve life.
- Non rotating stem design to reduce the galling and provide excellent seal on seat
- Stem threads are rolled and lubricated to prevent galling and reduce operating torque.
- Sealing area below the threads protects from the contaminant by process and prevents lubricant washout.
- Safety back seating seal in fully open position to perform a secondary stem seal.
- Body to bonnet seal creates metal to metal constant and reliable compression.
- Bonnet lock pin prevents accidental removal while in service.
- Optional sour gas service conforms to NACE MR0175.
- Hydro test performed with pure water at 1.5 times of working pressure
- 100% factory test
- Material traceability

Material of Construction

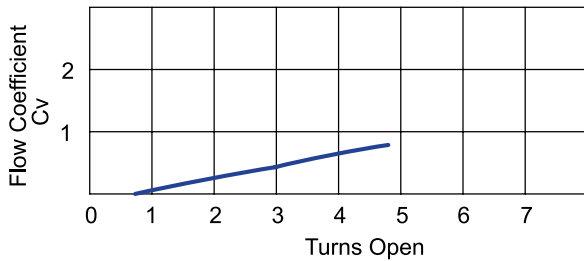


| Component | Valve Body Material | |
|--------------|----------------------|----------------------|
| | 316L S.S. | Carbon Steel |
| Body | 316L S.S./A479 | Carbon Steel/A108 |
| Bonnet | 316L S.S./A479 | Carbon Steel/A108 |
| Stem | 316L S.S./A276 | 304 S.S./A276 |
| Adjuster | 316L S.S./A276 | Carbon Steel/A108 |
| Lock Nut | 316L S.S./A276 | Carbon Steel/A108 |
| Handle | 303 S.S./A276 | Carbon Steel/A108 |
| Fixing Screw | 302 S.S. | Zinc plated steel |
| Packing | Teflon ^{®1} | Teflon ^{®1} |
| Washer | 316 S.S./A276 | 316 S.S./A276 |
| Pusher | 316 S.S./A276 | 316 S.S./A276 |
| Dust Cap | NBR | NBR |
| Lock Pin | 303 S.S./A276 | 303 S.S./A276 |

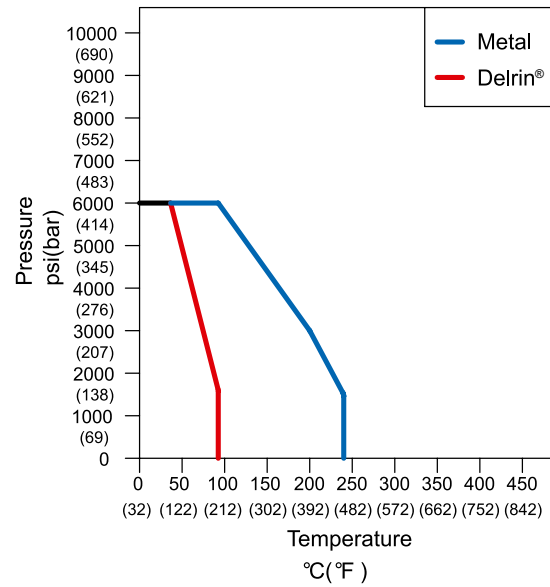
Note:

1. Packing is optional with graphite for high temperature to 450°C.
2. Delrin[®] soft seat limits working temperature to 93°C (200°F) maximum.
3. Optional accessories: plug and bleed valve.

Flow Characteristics



Pressure Vs. Temperature



Optional Accessories

Bleed valves can be used on gauge valves to bleed pressure before the removal of an instrument.

Bleed valves and plugs are purchased separately.

Bleed Valve



| Component | Valve Body Material | |
|-----------|---------------------|-------------------|
| | 316L S.S. | Carbon Steel |
| Body | 316L S.S./A479 | Carbon Steel/A108 |
| Stem | 316L S.S./A276 | 316L S.S./A276 |

| Ordering No. | Size |
|--------------|--------------|
| BV□4 | 1/4"NPT male |
| BV□8 | 1/2"NPT male |

Plugs



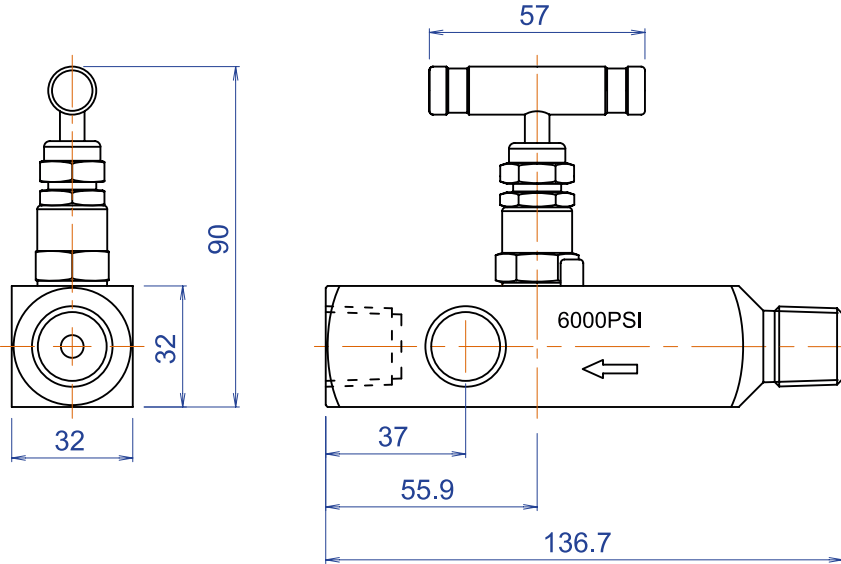
| Component | Valve Body Material | |
|-----------|---------------------|-------------------|
| | 316L S.S. | Carbon Steel |
| Body | 316L S.S./A276 | Carbon Steel/A108 |

| Ordering No. | Size |
|--------------|--------------|
| PP□4 | 1/4"NPT male |
| PP□8 | 1/2"NPT male |

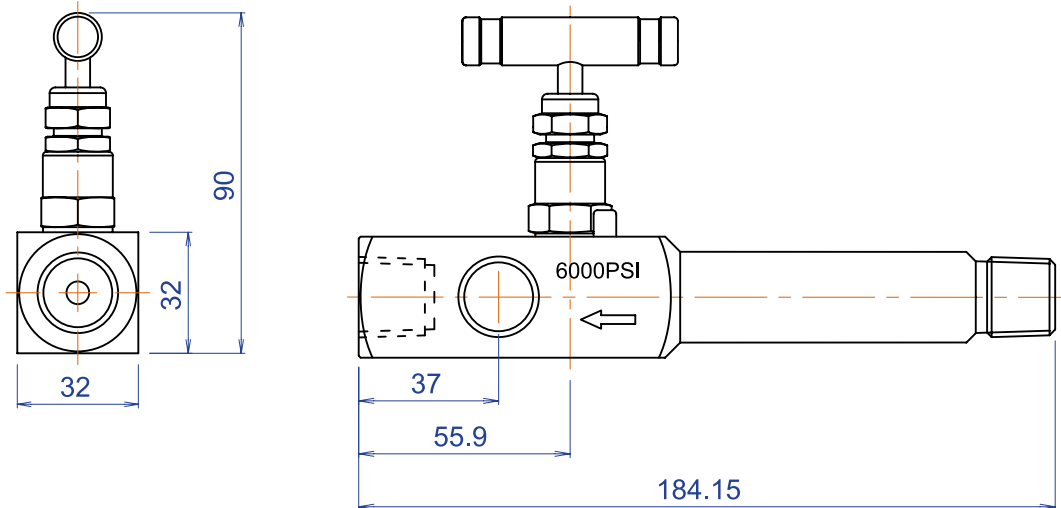


When venting out the pressure, open the valve slowly and direct the vent hole away from the operator for safety.

Dimensions



| Ordering No. | End Connection | | | Orifice (bore) |
|--------------|----------------|-------------------|-----------------|----------------|
| | Inlet/Process | Outlet/Instrument | Test/Vent | |
| MPGV□8 | 1/2"NPT male | 1/2"NPT female | 1/2" NPT female | 6 |
| MPGV□128 | 3/4"NPT male | 1/2"NPT female | 1/2" NPT female | 6 |



| Ordering No. | End Connection | | | Orifice (bore) |
|--------------|----------------|-------------------|-----------------|----------------|
| | Inlet/Process | Outlet/Instrument | Test/Vent | |
| MPGV□8LB | 1/2"NPT male | 1/2"NPT female | 1/2" NPT female | 6 |
| MPGV□128LB | 3/4"NPT male | 1/2"NPT female | 1/2" NPT female | 6 |

All dimensions shown are for reference and subject to change without prior notice.

Sizes listed are standard. Other sizes and end types are available upon request. Refer to ordering information.

Standard Material

Hard Seat

| Valve | Body | Bonnet | Stem | Packing | Trim |
|--------------|----------|----------|----------|---------------------|----------|
| 316L SS | 316-A479 | 316-A479 | 316-A276 | Teflon [®] | 316-A276 |
| Carbon Steel | A108 | A108 | 304-A276 | Teflon [®] | 304-A276 |

Soft Seat

| Valve | Body | Bonnet | Stem | Packing | Seat |
|--------------|----------|----------|----------|---------------------|---------------------|
| 316L SS | 316-A479 | 316-A479 | 316-A276 | Teflon [®] | Delrin [®] |
| Carbon Steel | A108 | A108 | 304-A276 | Teflon [®] | Delrin [®] |

Ordering Information

| MPGV | | S | | 12 | | 8 | | LB | |
|--------|-----------|---------------|--------------|-------|------|---------------|------|----------|--|
| Series | | Body Material | | Inlet | | Outlet & Vent | | Optional | |
| MPGV | Hard Seat | S | 316L S.S. | 8 | 1/2" | 8 | 1/2" | LB | Long body |
| SMPGV | Soft Seat | C | Carbon Steel | 12 | 3/4" | | | VT | Viton [®] O-rings with Teflon [®] backup rings |
| | | | | | | | | G | Low Emission Graphite |
| | | | | | | | | BSPT | BSPT thread |

Note:

1. Viton[®], Teflon[®] and Delrin[®] are all registered trademarks of DuPont. Refer to chemical resistance guide and choose suitable elastomer for your application.
2. Carbon steel valves are yellow zinc plated to resist corrosion.

Valve Manifolds

Features

Metal Seated Bonnet Assembly

The metal-seated bonnet assembly is designed with a non rotating stem with a conical trim to provide a repetitive shutoff and extend service life. Stem threads are rolled and lubricated to prevent galling and reduce operating torque. Stem seal is standard with Teflon[®] packings that can be adjustable in service. Stem packings below the threads intend to protect from the contaminant by process and prevent lubricant washout. Safety back seating in fully open position provides a secondary stem seal. An NBR dust cover is capped to contain stem lubricant and keep from particles or contaminants. All bonnets are fitted with a locking pin to prevent accidental removal while in service.

10,000 psi bonnet assembly utilizes a reinforced stem with mirror finish in packing area to enable smooth stem operation and benefit packing life.

High temperature bonnet assembly is furnished with similarly designed stem and bonnet and uses low emission graphite packings serving to 450°C maximum. Bonnet is fitted with a larger size T-bar handle for easy operation.

Soft Seated Bonnet Assembly

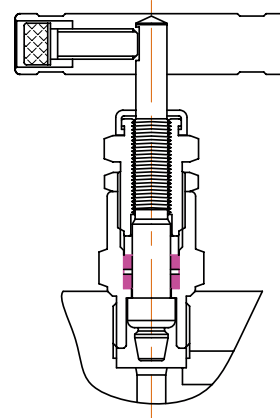
The soft-seated bonnet assembly has a one piece rotating stem and plug. The stem threads are rolled and lubricated to prevent galling and reduce operating torque. Stem seal is standard with Teflon[®] packings that can be adjustable in service. Stem packings below the threads intend to protect from the contaminant by process and prevents lubricant washout. Safety back seating in fully open position provides a secondary stem seal. An NBR dust cover is capped to contain stem lubricant and keep from particles or contaminants. All bonnets are fitted with a locking pin to prevent accidental removal while in service. Delrin[®] seat is standard.

Mini Soft-Seated Bonnet Assembly

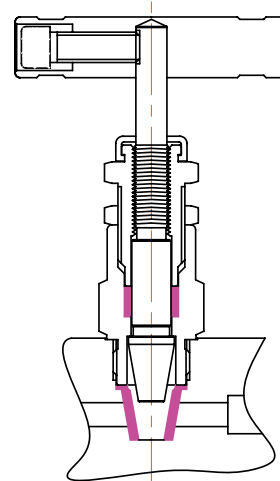
The mini soft-seated bonnet assembly is designed with a one-piece rotating stem having a "Vee" tip with a shoulder to be assembled as a metal or soft seated valve.

Bonnets on Manifolds

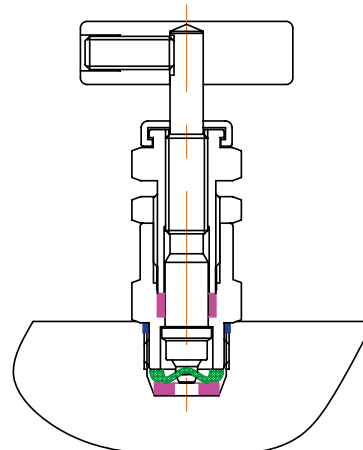
Metal Seated Bonnet



Soft Seated Bonnet



Mini Soft Seated Bonnet



Features

Valve manifolds are functionally installed to control, measure, isolate, equalize, calibrate, drain or differentiate the pressure of liquids and gases. Bonnets and dust covers are color coded to identify the functions of valves.

- BLUE : ISOLATE
- RED : VENT
- GREEN : EQUALIZE

2,3,5 valves in remote mounting (pipe to pipe) and direct mounting (pipe to flange & flange to flange) to the instrument on 54mm center.

Standard valve on manifolds has a 4.8mm orifice size, Cv 0.52 max.

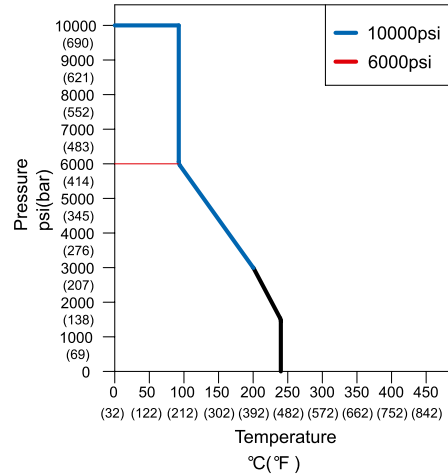
Specifications meet MSS-SP-105. Flange design meets the requirements of MSS SP-99.

Material selection for sour gas service conforming to NACE MR0175 is optional at request. Material of valve body is traceable.

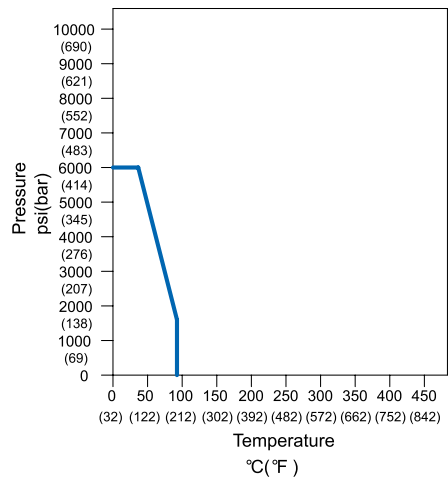
Seat and stem seal are hydro tested with pure water at 1.5 times of working pressure and perform to a requirement of no detectable leakage. Nitrogen test at 1000 psi for seat and stem seal is conducted with a maximum allowable leak rate of 0.1 std cm³/min.

Pressure Vs. Temperature

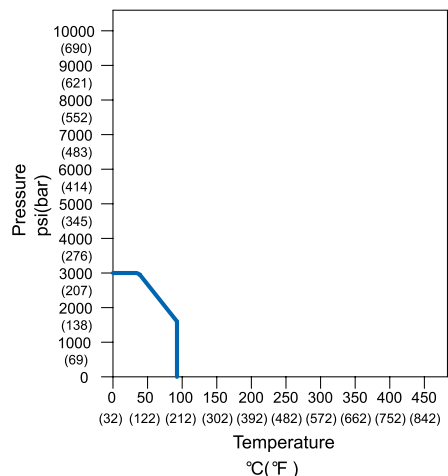
Metal-seated



Soft-seated



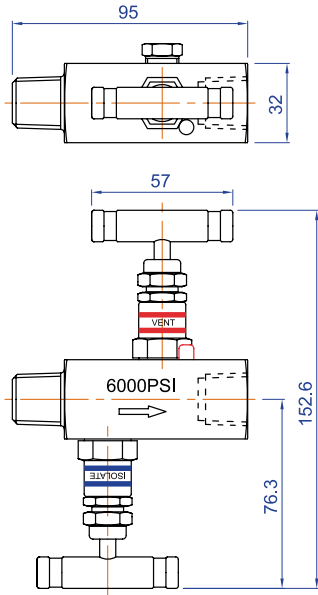
Mini Soft-seated



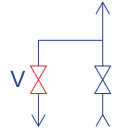
Graphs are based on 316 SS valves with Teflon[®] stem packings.

2 Valve Manifolds

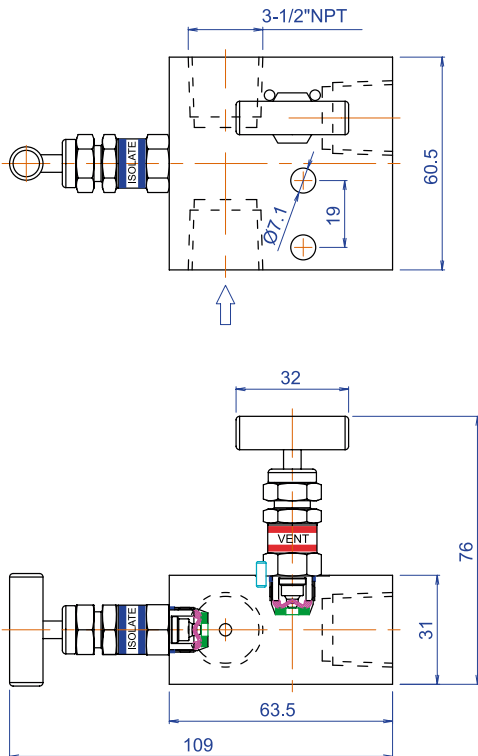
| Ordering No. | End Connection | | | Valve Seat | Max. W.P. at 38°C (100°F) |
|--------------|----------------|-------------------|----------------|------------|---------------------------|
| | Inlet/Process | Outlet/Instrument | Vent/Test | | |
| 2VM01S4MF | 1/4"NPT male | 1/4"NPT female | 1/4"NPT female | Metal | 6000 psi |
| 2VM01S4FF | 1/4"NPT female | 1/4"NPT female | 1/4"NPT female | Metal | 6000 psi |
| 2VM01S8MF | 1/2"NPT male | 1/2"NPT female | 1/4"NPT female | Metal | 6000 psi |
| 2VM01S8FF | 1/2"NPT female | 1/2"NPT female | 1/4"NPT female | Metal | 6000 psi |



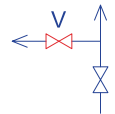
FLOW DIAGRAM



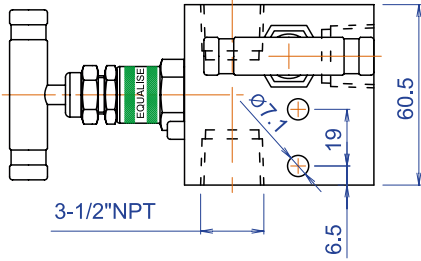
| Ordering No. | End Connection | | | Valve Seat | Max. W.P. at 38°C (100°F) |
|--------------|----------------|-------------------|----------------|---------------------|---------------------------|
| | Inlet/Process | Outlet/Instrument | Vent/Test | | |
| 2VM02S | 1/2"NPT female | 1/2"NPT female | 1/2"NPT female | Delrin [®] | 3000 psi |



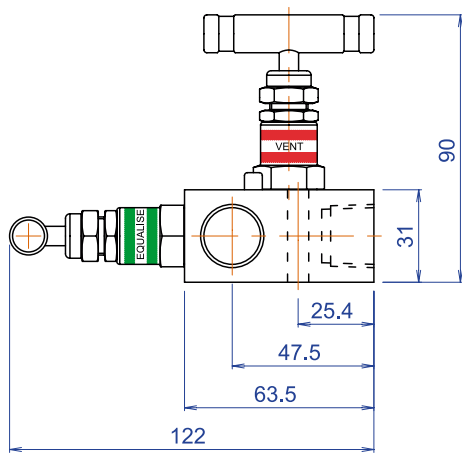
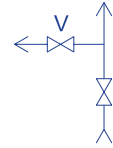
FLOW DIAGRAM



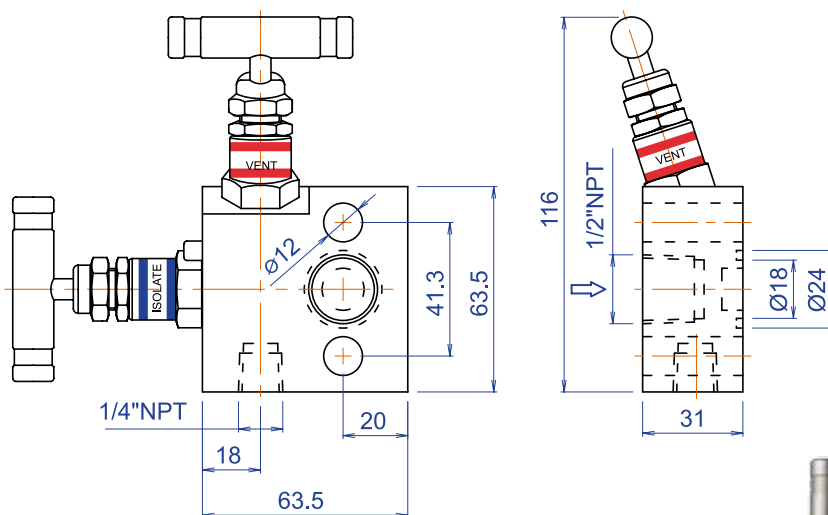
| Ordering No. | End Connection | | | Valve Seat | Max. W.P. at 38°C (100°F) |
|--------------|----------------|-------------------|----------------|------------|---------------------------|
| | Inlet/Process | Outlet/Instrument | Vent/Test | | |
| 2VM02SH | 1/2"NPT female | 1/2"NPT female | 1/2"NPT female | Metal | 6000 psi |



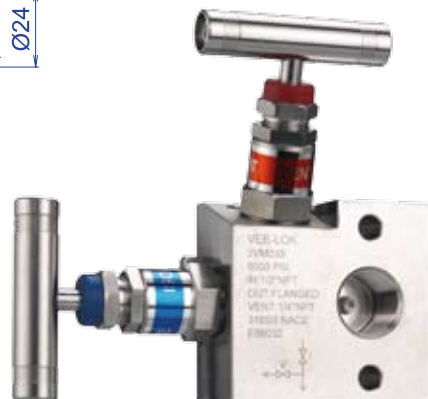
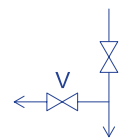
FLOW DIAGRAM



| Ordering No. | End Connection | | | Valve Seat | Max. W.P. at 38°C (100°F) |
|--------------|----------------|-------------------|----------------|------------|---------------------------|
| | Inlet/Process | Outlet/Instrument | Vent/Test | | |
| 2VM03S | 1/2"NPT female | Flange | 1/4"NPT female | Metal | 6000 psi |

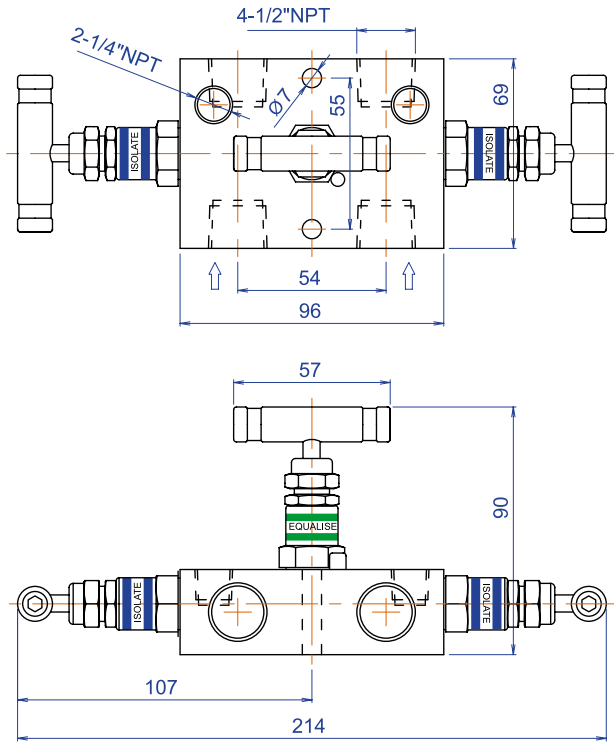


FLOW DIAGRAM

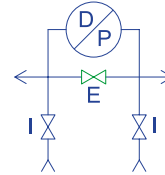


3 Valve Manifolds

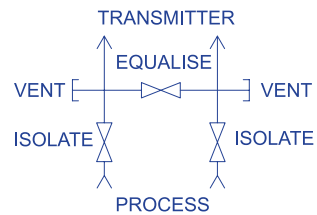
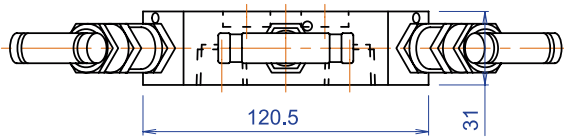
| Ordering No. | End Connection | | | Valve Seat | Max. W.P. at 38°C (100°F) |
|--------------|----------------|-------------------|----------------|------------|---------------------------|
| | Inlet/Process | Outlet/Instrument | Vent/Test | | |
| 3VM01S | 1/2"NPT female | 1/2"NPT female | 1/4"NPT female | Metal | 6000 psi |



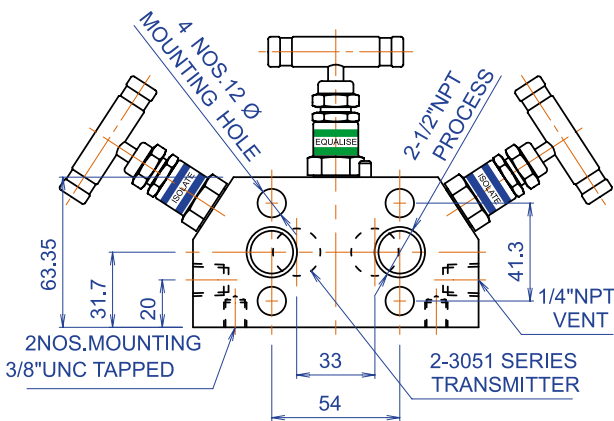
FLOW DIAGRAM



| Ordering No. | End Connection | | | Valve Seat | Max. W.P. at 38°C (100°F) |
|--------------|----------------|-------------------------------------|----------------|------------|---------------------------|
| | Inlet/Process | Outlet/Instrument | Vent/Test | | |
| 3VM02S | 1/2"NPT female | For pressure transmitter model 3051 | 1/4"NPT female | Metal | 6000 psi |

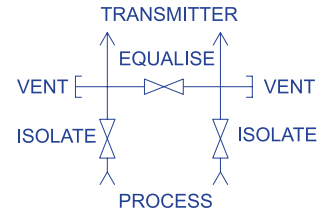
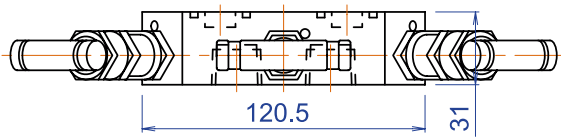


FLOW DIAGRAM

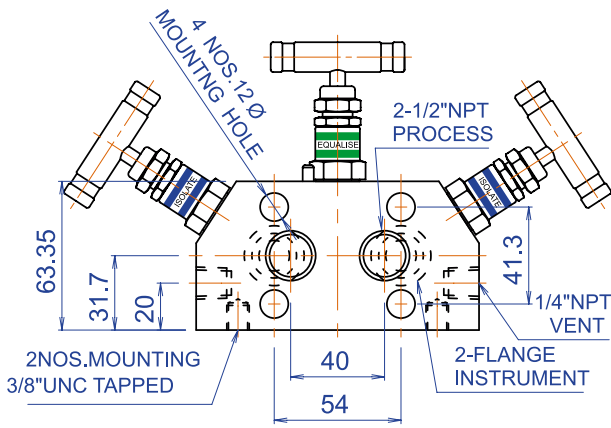


| Ordering No. | End Connection | | | Valve Seat | Max. W.P. at 38°C (100°F) |
|--------------|----------------|-------------------|----------------|------------|---------------------------|
| | Inlet/Process | Outlet/Instrument | Vent/Test | | |
| 3VM03S | 1/2"NPT female | Flange | 1/4"NPT female | Metal | 6000psi |

Manifold is supplied with two Teflon[®] sealing rings on instrument ports.

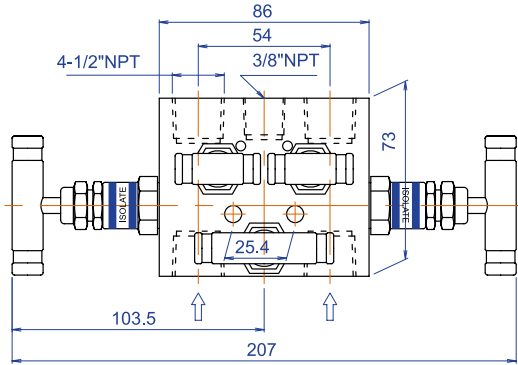


FLOW DIAGRAM

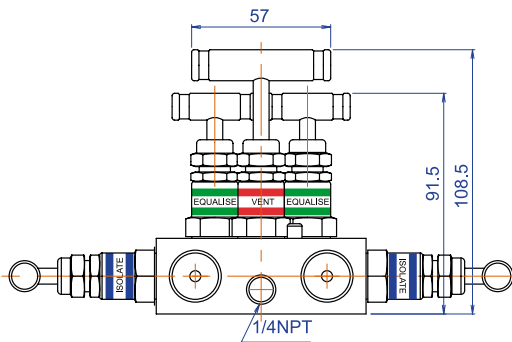
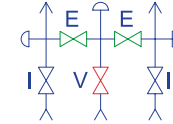


5 Valve Manifolds

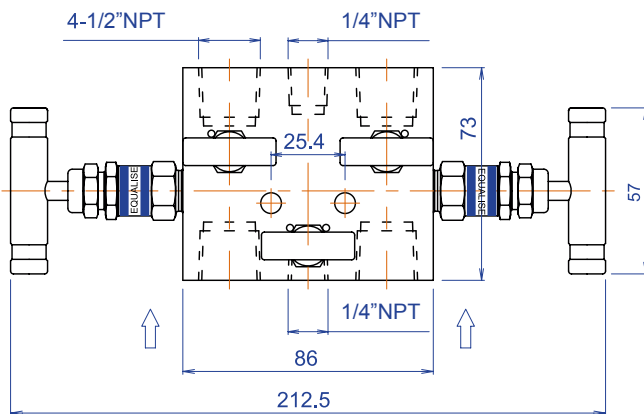
| Ordering No. | End Connection | | | Valve Seat | Max. W.P. at 38°C (100°F) |
|--------------|----------------|-------------------|----------------|------------|---------------------------|
| | Inlet/Process | Outlet/Instrument | Vent/Test | | |
| 5VM01S | 1/2"NPT female | 1/2"NPT female | 1/4"NPT female | Metal | 6000psi |



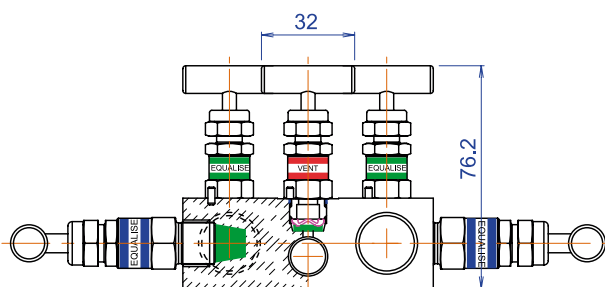
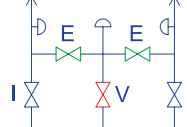
FLOW DIAGRAM



| Ordering No. | End Connection | | | Valve Seat | Max. W.P. at 38°C (100°F) |
|--------------|----------------|-------------------|----------------|---------------------|---------------------------|
| | Inlet/Process | Outlet/Instrument | Vent/Test | | |
| 5VM02S | 1/2"NPT female | 1/2"NPT female | 1/4"NPT female | Delrin [®] | 6000psi |

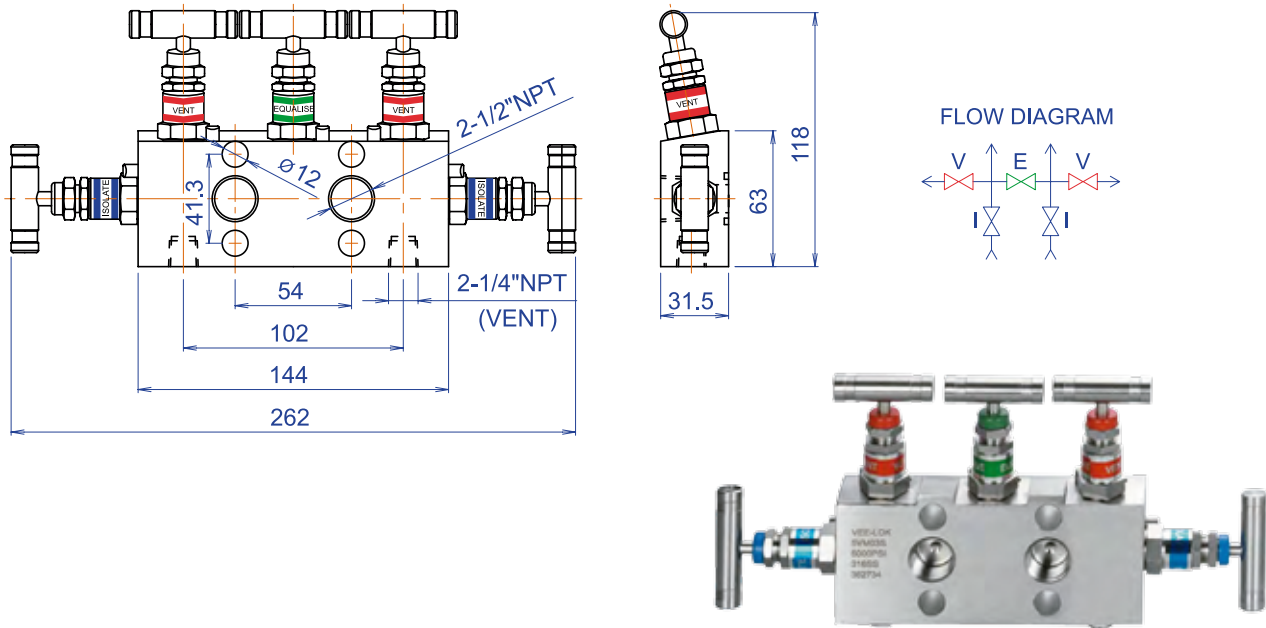


FLOW DIAGRAM

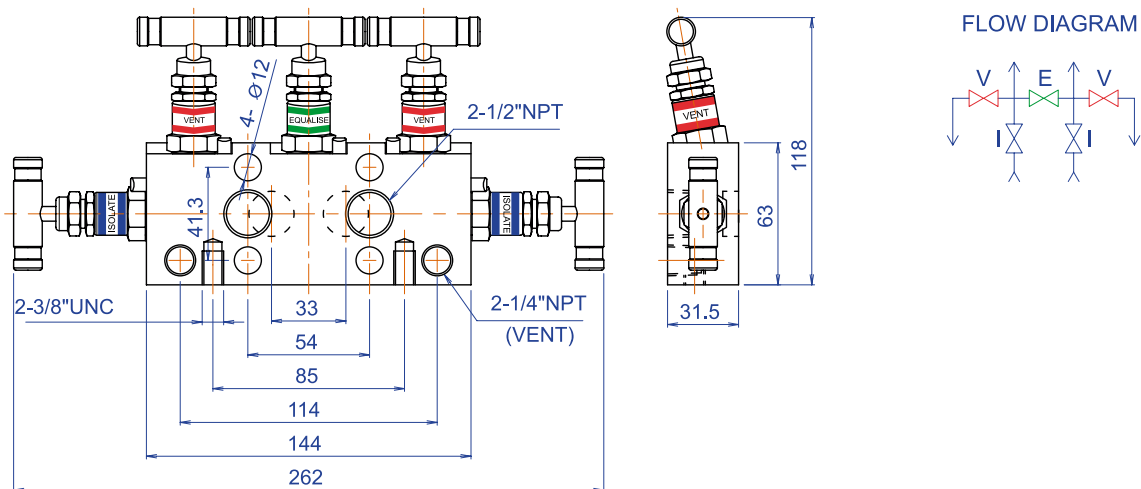


| Ordering No. | End Connection | | | Valve Seat | Max. W.P. at 38°C (100°F) |
|--------------|----------------|-------------------|----------------|------------|---------------------------|
| | Inlet/Process | Outlet/Instrument | Vent/Test | | |
| 5VM03S | 1/2"NPT female | Flange | 1/4"NPT female | Metal | 6000psi |

Manifold is supplied with two Teflon[®] sealing rings on instrument ports.



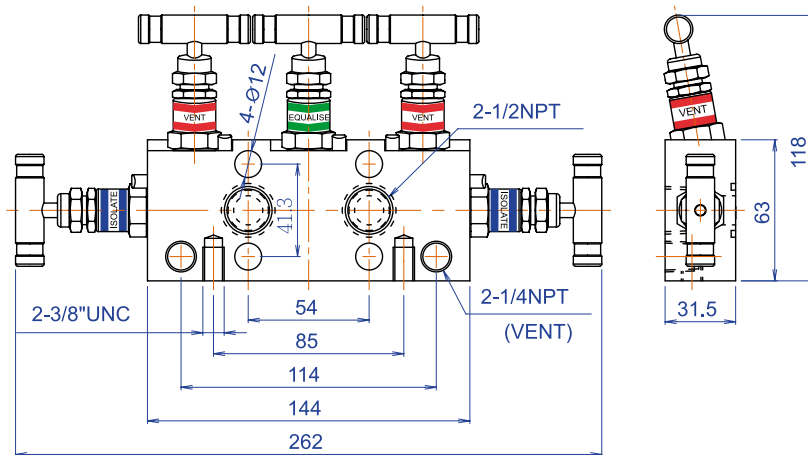
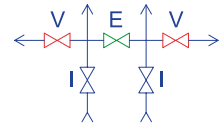
| Ordering No. | End Connection | | | Valve Seat | Max. W.P. at 38°C (100°F) |
|--------------|----------------|-------------------------------------|----------------|------------|---------------------------|
| | Inlet/Process | Outlet/Instrument | Vent/Test | | |
| 5VM05S | 1/2"NPT female | For pressure transmitter model 3051 | 1/4"NPT female | Metal | 6000psi |



| Ordering No. | End Connection | | | Valve Seat | Max. W.P. at 38°C (100°F) |
|--------------|----------------|-------------------|----------------|------------|---------------------------|
| | Inlet/Process | Outlet/Instrument | Vent/Test | | |
| 5VM06S | 1/2"NPT female | Flange | 1/4"NPT female | Metal | 6000psi |

Manifold is supplied with two Teflon[®] sealing rings on instrument ports.

FLOW DIAGRAM



Proportional Relief Valves

RV01 Series



Overview

Valves OPEN when system pressure reaches the set pressure to release system pressure. Valves CLOSE when the system pressure falls below the set pressure. Proportional relief valves open gradually as the pressure increases. There is no limit for relieving capacity. Therefore, valves should be selected carefully to conform to system requirements.

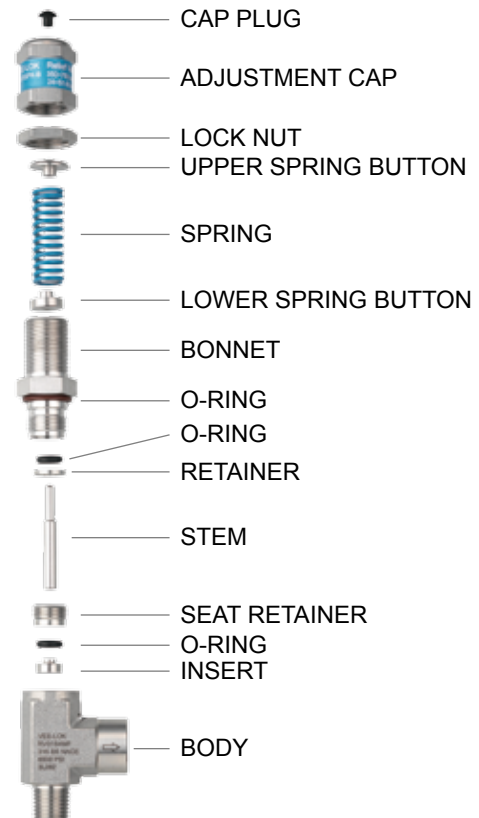
Features

- **Set Pressure:**
RV01 Series: color coded springs available for a wide range of set pressure
50 to 6000 psig @70°F (3.4 to 414 bar @20°C)
- **Orifice Size:**
3.60mm
- **Back Pressure:**
The effect of system back pressure is minimized by the design of these high pressure valves.
- **Variety of end connections**
- **Adjustable bonnet cap and adjustable set pressure**
- **Lock wire to secure cap to maintain set pressure adjustment.**
- **Label identifies set pressure range**



For valves not actuated for a period of time, initial relief pressure may be higher than the set pressure.

Materials of Construction

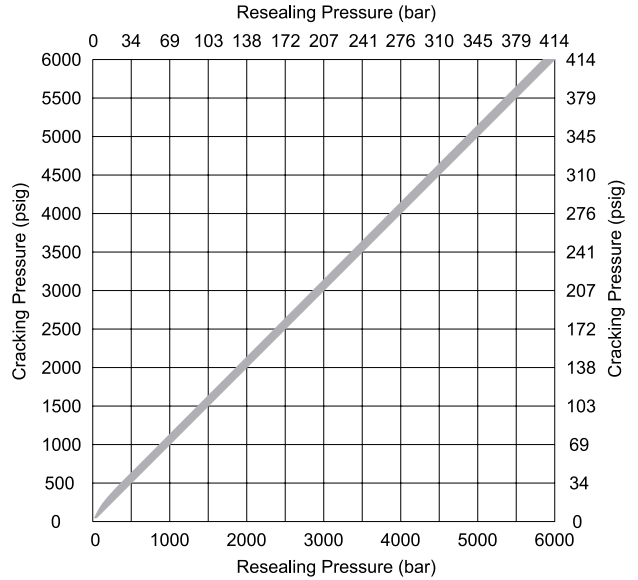


| Component | Material Grade/ASTM specification |
|---------------------|-----------------------------------|
| Cap Plug | Polypropylene |
| Adjustment Cap | 316L SS/A479 |
| Lock Nut | 316L SS/A276 |
| Upper Spring Button | 316L SS/A276 |
| Spring | 17-7 PH SS/AMS 5678 |
| Lower Spring Button | 316 L SS/A276 |
| Bonnet | 316L SS/A479 |
| O-Ring | Viton [®] |
| O-Ring | Viton [®] |
| Retainer | 316L SS/A276 |
| Stem | 316L SS/A479 |
| Seat Retainer | 316L SS/A276 |
| O-Ring | Viton [®] |
| Insert | 316L SS/A276 |
| Body | 316L SS/A479 |

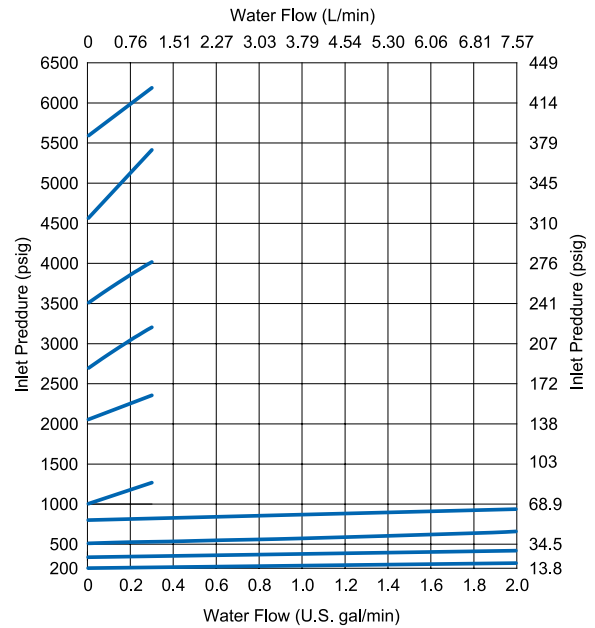
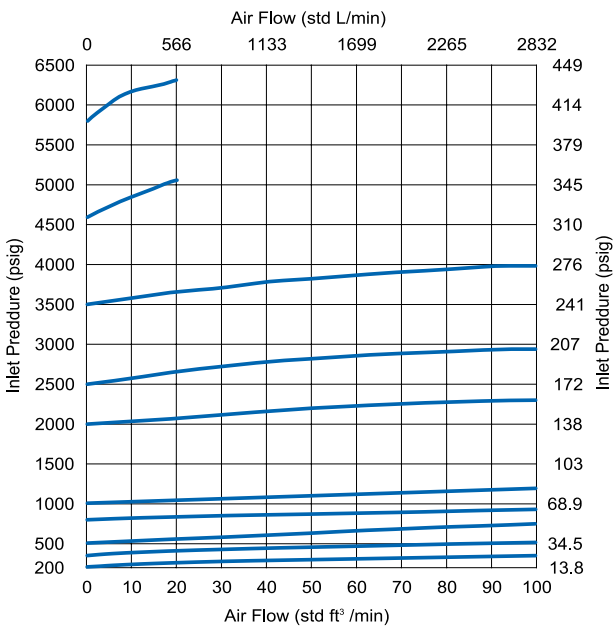
Set Pressure and Resealing Pressure

- Cracking pressure is the upstream pressure at which the first indication of flow occurs. The repeatability of the cracking pressure of each valve after initial relief is within $\pm 5\%$ at room temperature.
- Resealing pressure is the upstream pressure at which there is no indication of flow. Resealing pressure is always lower than set pressure.
- Back pressure: The pressure of the outlet of the valve. It increases the set pressure.

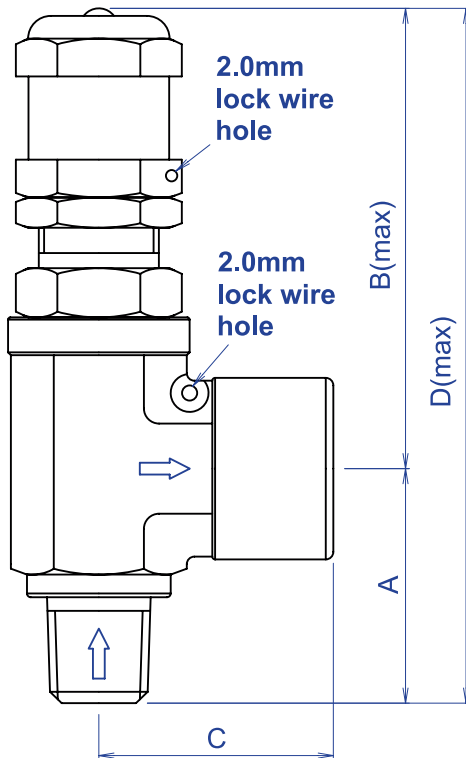
RV01 Series



Flow Characteristics RV01 Series



Dimensions



| Ordering No. | End Connections | | Dimensions, in. (mm) | | | |
|--------------|-----------------|----------------|----------------------|----|------|----|
| | Inlet | Outlet | A | B | C | D |
| RV01S4M4M | 1/4"NPT male | 1/4"NPT male | 28.5 | 68 | 28.5 | 96 |
| RV01S4M4F | 1/4"NPT male | 1/4"NPT female | 28.5 | 68 | 27.5 | 96 |
| RV01S4F4F | 1/4"NPT female | 1/4"NPT female | 27.5 | 68 | 27.5 | 95 |
| RV01S6M6M | 3/8"NPT male | 3/8"NPT male | 28.5 | 68 | 28.5 | 96 |
| RV01S4OD | 1/4"O.D. | 1/4"O.D. | 28.5 | 68 | 28.5 | 96 |
| RV01S6OD | 3/8"O.D. | 3/8"O.D. | 28.5 | 68 | 28.5 | 96 |
| RV01S8OD | 1/2"O.D. | 1/2"O.D. | 28.5 | 68 | 28.5 | 96 |
| RV01SM6OD | 6mm O.D. | 6mm O.D. | 28.5 | 68 | 28.5 | 96 |
| RV01SM8OD | 8mm O.D. | 8mm O.D. | 28.5 | 68 | 28.5 | 96 |
| RV01SM10OD | 10mm O.D. | 10mm O.D. | 28.5 | 68 | 28.5 | 96 |
| RV01SM12OD | 12mm O.D. | 12mm O.D. | 28.5 | 68 | 28.5 | 96 |

All dimensions are for reference only and are subject to change without prior notice.

Optional Accessories

Spring Kits

Spring kits include spring, label, lock wire with seal, spring buttons and installation instructions.

Select a spring kit basic ordering number and add the spring designator for the desired set pressure range.

Example: RV01SPK-A

| Ordering No. | Set Pressure Range | | Spring Designator | Spring Color |
|--------------|--------------------|-------------|-------------------|--------------|
| | psig | bar | | |
| RV01SPK-A | 50 to 350 | 3.4 to 24 | A | White |
| RV01SPK-B | 350 to 750 | 24 to 51.6 | B | Blue |
| RV01SPK-C | 750 to 1500 | 51.6 to 103 | C | Golden |
| RV01SPK-D | 1500 to 2250 | 103 to 155 | D | Black |
| RV01SPK-E | 2250 to 3000 | 155 to 206 | E | Green |
| RV01SPK-F | 3000 to 4000 | 206 to 275 | F | Yellow |
| RV01SPK-G | 4000 to 5000 | 275 to 344 | G | Brown |
| RV01SPK-H | 5000 to 6000 | 344 to 413 | H | Orange |

Seal Materials

Viton is the standard seal materials and designated as basic ordering number as RV01SS.

Buna N, ethylene propylene and neoprene are available.

| Ordering No. | O-ring Material | Temperature Ranges °F (°C) | Seal Designator |
|--------------|-------------------------------|-------------------------------|-----------------|
| RV01SS | Viton [®] (standard) | 25 to 250 (-4 to 121) | |
| RV01SS-BU | Buna N | 0 to 250 (-17 to 121) | BU |
| RV01SS-NE | Neoprene | -10 to 300 (-23 to 148) | NE |
| RV01SS-EP | Ethylene Propylene | 30 to 250 (-1 to 121) | EP |

Factory-Set Valves

Valves are available with springs factory-set to a specified set pressure. Valves are set, tested, locked, and labeled with the set pressure.

To order, add-SET and a spring designator whose range includes the desired set pressure to the valve ordering number.

Example:

RV01S4M4F-SETC

Valve without spring installed

To order, do not specify spring designator on the ordering number.

Example:

RV01S4M4F

Valves with no spring are supplied without labels.

Factory Test

Valves are factory tested for cracking and resealing performance.



Proportional relief valves should never be used as code safety relief valves.



Safe Product Selection

When selecting a product, the total system design must be considered to ensure safe performance. Function, material compatibility, adequate ratings, proper installation, operation and maintenance are the responsibilities of the system designer and user.

Ordering Information

| RV01 | S | | 4 | | 4F | | BN | | B | |
|--------|---------------|-----------|-------|------|----------------|--|---------------|--------------------|----------------------|----------------------|
| Series | Body Material | | Inlet | | End Connection | | Seal Material | | Spring Kit Color | |
| RV01 | S | 316L S.S. | 4 | 1/4" | M | Male | | Viton [®] | A | White 50~350psig |
| | | | 6 | 3/8" | F | Female | Bu | Buna N | B | Blue 350~750psig |
| | | | M6 | 6mm | OD | VEE-LOK twin ferrule tube fittings | NE | Neoprene | C | Golden 750~1500psig |
| | | | M10 | 10mm | | | EP | Ethylene propylene | D | Black 1500~2250psig |
| | | | M12 | 12mm | | | | | E | Green 2250~3000psig |
| | | | | | | | | | F | Yellow 3000~4000psig |
| | | | | | | | | | G | Brown 4000~5000psig |
| | | | | | | | | H | Orange 5000~6000psig | |

CHECK VALVE

CV01 Series



Features

- Maximum working pressure:
6000psi (414 bar)
- Working temperature:
-23°C to 200°C (-10°F to 392°F)
- Cracking pressure:
1 to 25 psi
- Fixed cracking pressures

Pressure Vs. Temperature

| Material | | 316 SS | |
|-------------|-----|------------------|-----|
| Temperature | | Working Pressure | |
| °C | °F | Psi | Bar |
| 38 | 100 | 6000 | 414 |
| 93 | 200 | 2500 | 172 |
| 121 | 250 | 1630 | 112 |
| 150 | 302 | 1545 | 106 |
| 200 | 392 | 1450 | 100 |

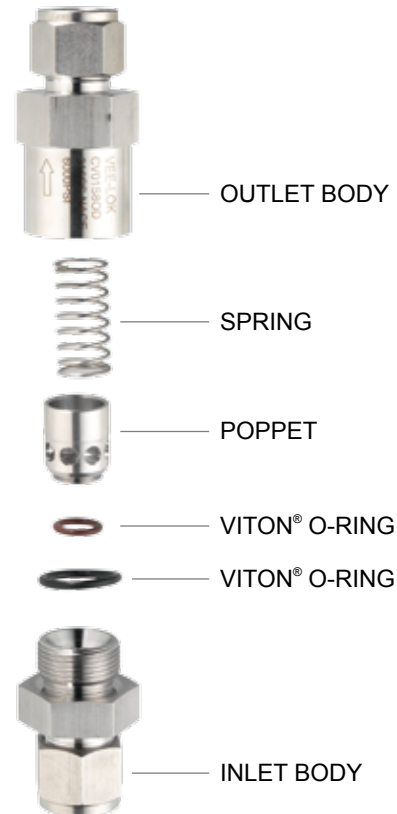
Cracking Pressure and Resealing Pressure

- Cracking pressure is the upstream pressure at which the first indication of flow occurs.
- Resealing pressure is the pressure at which there is no indication of flow.

CV01 Series

| Nominal Cracking Pressure psi (bar) | Cracking Pressure Range psi (bar) | Resealing Pressure Range psi (bar) |
|-------------------------------------|-----------------------------------|--------------------------------------|
| 1 (0.06) | Up to 4 (0.27) | Up to 6 (0.41) back pressure |
| 5 (0.34) | 3 to 9 (0.20 to 0.62) | Up to 2 (0.13) back pressure |
| 10 (0.68) | 7 to 15 (0.48 to 1.0) | 3 (0.20) or higher upstream pressure |
| 25 (1.7) | 20 to 30 (1.3 to 2.0) | 17 (1.1) or higher upstream pressure |

Material of Construction

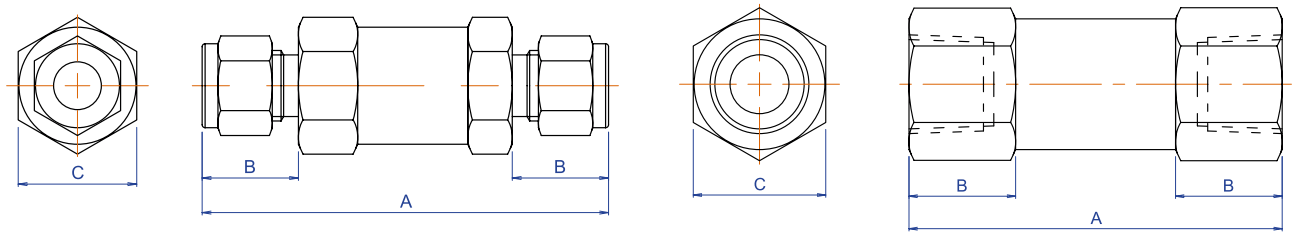


| Component | Valve Body Material |
|-------------|---------------------|
| | 316 S.S. |
| Inlet Body | 316L S.S./A479 |
| O-Ring | VITON [®] |
| O-Ring | VITON [®] |
| Poppet | 316L S.S./A479 |
| Spring | 302 S.S./A313 |
| Outlet Body | 316L S.S./A479 |



For valves not actuated for a period of time, initial cracking pressure may be higher than the set pressure.

Dimensions



| Ordering No. | End Connection | | Dimensions (mm) | | |
|--------------|----------------|----------------|-----------------|------|-------|
| | Inlet | Outlet | A | B | C |
| CV01S2FF | 1/8"NPT female | 1/8"NPT female | 55 | 14 | 17 |
| CV01S4FF | 1/4"NPT female | 1/4"NPT female | 62 | 16 | 22 |
| CV01S6FF | 3/8"NPT female | 3/8"NPT female | 72 | 20 | 24 |
| CV01S8FF | 1/2"NPT female | 1/2"NPT female | 80.5 | 23 | 28.58 |
| CV01S12FF | 3/4"NPT female | 3/4"NPT female | 85 | 22 | 41 |
| CV01S16FF | 1"NPT female | 1"NPT female | 97 | 23 | 47.6 |
| CV01S2OD | 1/8" O.D. | 1/8" O.D. | 65.5 | 15.5 | 17 |
| CV01S4OD | 1/4" O.D. | 1/4" O.D. | 73 | 17.5 | 20.63 |
| CV01S6OD | 3/8" O.D. | 3/8" O.D. | 80.5 | 19.5 | 24 |
| CV01S8OD | 1/2" O.D. | 1/2" O.D. | 90.5 | 22 | 28.58 |
| CV01SM6OD | 6mm O.D. | 6mm O.D. | 73 | 17.5 | 20.63 |
| CV01SM12OD | 12MM O.D. | 12MM O.D. | 90.5 | 22 | 28.58 |

All dimensions shown are for reference and subject to change without prior notice.

Ordering Information

| CV01 | | S | | 4 | | FF | |
|--------|---------------|-----------|-----|----------------|----|------------------------------------|--|
| Series | Body Material | Size | | End Connection | | | |
| CV01 | S | 316L S.S. | 2 | 1/8" | MF | NPT male-female | |
| | | | 4 | 1/4" | FF | NPT female-female | |
| | | | 6 | 3/8" | OD | VEE-LOK twin ferrule tube fittings | |
| | | | 8 | 1/2" | | | |
| | | | 12 | 3/4" | | | |
| | | | 16 | 1" | | | |
| | | | M6 | 6mm | | | |
| | | | M12 | 12mm | | | |

High Pressure Ball Valve

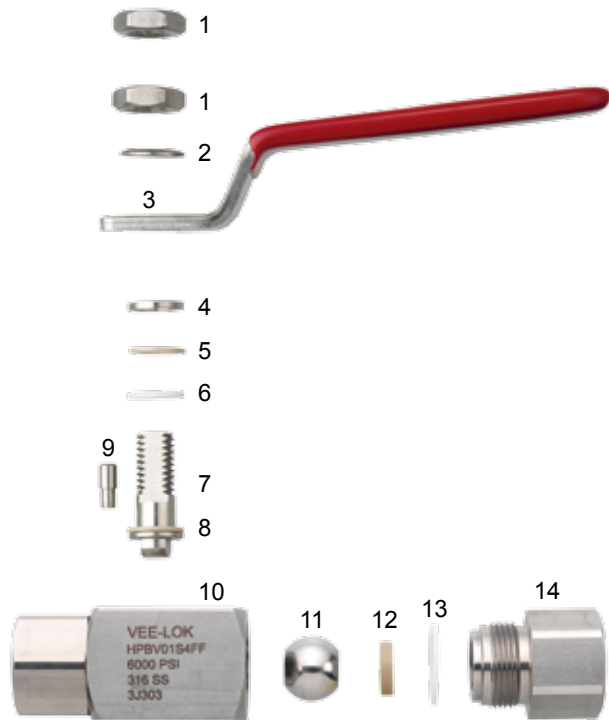
HPBV series



Features

- Maximum working pressure:
6000 psi (414bar) at 100°F (38°C)
- Working temperature:
From -65°F (-54°C) to 500°F (260°C) with PEEK seat
From -22°F (-30°C) to 265°F (130°C) with PVDF seat
From -315°F (-193°C) to 392°F (200°C) with Devlon[®]
V-API seat
- A 316 stainless steel handle covered with vinyl sleeve gives quarter turn rust-free operation.
- Valves with PEEK seats are supplied with red sleeves on handles. PVDF seats are identified with green sleeves while Devlon V-API with blue ones.
- A robust pin is to create a positive stop.
- The stem with shoulder provides blowout proof design to maintain seal integrity at all pressure.
- Optional sour gas service conforms to NACE MR0175.
- Ball valves are hydrostatic tested at the full rated pressure and low pressure pneumatic at 70 psi.
- 100% factory test
- Material traceability

Material of Construction



| No. | Component | Material Grade |
|-----|---------------|----------------------|
| | | ASTM specification |
| 1 | Lock Nut | 304 S.S. |
| 2 | Fixing Washer | 304 S.S. |
| 3 | Handle | 316 S.S./A276 |
| 4 | Gland | 316 S.S./A276 |
| 5 | Back-up Ring | PEEK |
| 6 | Packing | Teflon [®] |
| 7 | Stem | 316 S.S./A276 |
| 8 | Gasket | PEEK |
| 9 | Pin | 303 S.S. |
| 10 | Body | 316 S.S./A479 |
| 11 | Ball | 316 S.S./A276 |
| 12 | Seat | PEEK ^{Note} |
| 13 | Seal | Teflon [®] |
| 14 | End Connector | 316 S.S./A479 |

Note:

1. Standard PEEK seats use red sleeves on handles.
2. Green sleeves identify PVDF seats. Blue sleeves identify Devlon[®] V-API seats.

Operation

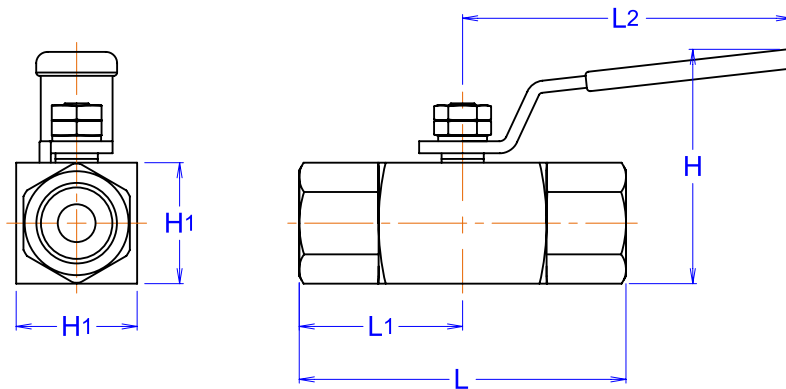
- Valves are designed to control fluids in full open or full closed position.
- Valves that have not been actuated for a period of time may require a higher initial actuation torque.
- Valve must be in open position during system test not to damage the valve seat.



Safe Product Selection

When selecting a product, the total system design must be considered to ensure safe performance. Function, material compatibility, adequate ratings, proper installation, operation and maintenance are the responsibilities of the system.

Dimensions



| Ordering No. | End Connection | | Bore | Dimensions (mm) | | | | |
|--------------|----------------|----------------|------|-----------------|-------|----|----|----|
| | Inlet | Outlet | | L | L1 | H | H1 | W |
| HPBV01S4FF | 1/4"NPT female | 1/4"NPT female | 9.52 | 62.4 | 31.2 | 61 | 32 | 87 |
| HPBV01S6FF | 3/8"NPT female | 3/8"NPT female | 9.52 | 62.4 | 31.2 | 61 | 32 | 87 |
| HPBV01S8FF | 1/2"NPT female | 1/2"NPT female | 9.52 | 86.5 | 43.25 | 61 | 32 | 87 |
| HPBV01S4OD | 1/4" O.D. | 1/4" O.D. | 9.52 | 89.8 | 44.9 | 61 | 32 | 87 |
| HPBV01S6OD | 3/8" O.D. | 3/8" O.D. | 9.52 | 93.4 | 46.7 | 61 | 32 | 87 |
| HPBV01S8OD | 1/2" O.D. | 1/2" O.D. | 9.52 | 98.4 | 49.2 | 61 | 32 | 87 |

All dimensions shown are for reference and subject to change without prior notice.

Sizes listed are standard. Other sizes and end types are available upon request. Refer to ordering information.

Ordering Information

| HPBV | S | | 4 | | FF | | | |
|--------|---------------|----------|------|------|----------------|------------------------------------|---------------|---------------------------|
| Series | Body Material | | Size | | End Connection | | Seat Material | |
| HPBV01 | S | 316 S.S. | 4 | 1/4" | FF | Female X Female | PK | PEEK |
| | | | 6 | 3/8" | OD | VEE-LOK twin ferrule tube fittings | PV | PVDF |
| | | | 8 | 1/2" | | | DV | Devlon [®] V-API |

Pressure Gauge Snubber PGS series

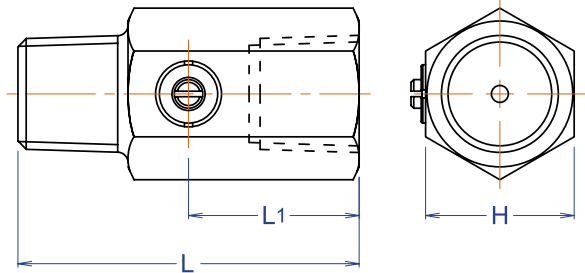


Features

- Maximum working pressure:
6000 psi (414bar) at 100°F (38°C)
- Working temperature:
25°F (-4°C) to 250°F (121°C)
- Utilized to protect pressure gauges from damage caused by pressure pulses and pressure peaks.
- Provided with an adjustable needle valve that enables the operator to restrict the flow when operating conditions may demand even when the snubber is in service.

| Component | Material Grade |
|-----------|--------------------|
| | ASTM specification |
| Body | 316 S.S./A479 |
| Bonnet | 316 S.S./A276 |
| Stem | 316 S.S./A276 |
| O-ring | Viton [®] |

Material of Construction



| Ordering No. | End Connection | | Dimensions (mm) | | |
|--------------|----------------|----------------|-----------------|----|----|
| | Inlet | Outlet | L | L1 | H |
| PGSS4MF | 1/4"NPT male | 1/4"NPT female | 52 | 25 | 27 |
| PGSS8MF | 1/2"NPT male | 1/2"NPT female | 62 | 30 | 27 |

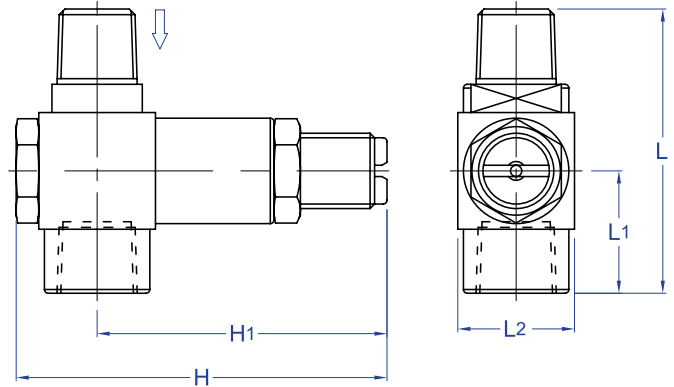
Adjustable Overload Protector
AOP series



Features

- Maximum working pressure:
6000 psi (414bar) at 100°F (38°C)
- Working temperature:
-13°F (-25°C) to 212°F (100°C)
- SETTING RANGE:
0.5~4 BARS
2~60 BARS
60~200 BARS
- Used to protect pressure gauges and pressure switches from overpressure. When pressure exceeds the pre-set pressure, the device automatically shuts off the pressure to the instrument.
- Pressure adjustment can be done by manipulating an external adjusting screw and lock nut.

Material of Construction



| Ordering No. | End Connection | | Dimensions (mm) | | | | |
|--------------|----------------|----------------|-----------------|------|------|----|----|
| | Inlet | Outlet | L | L1 | H | H1 | L2 |
| AOPS8 | 1/2"NPT male | 1/2"NPT female | 75.5 | 32.5 | 98.5 | 77 | 31 |

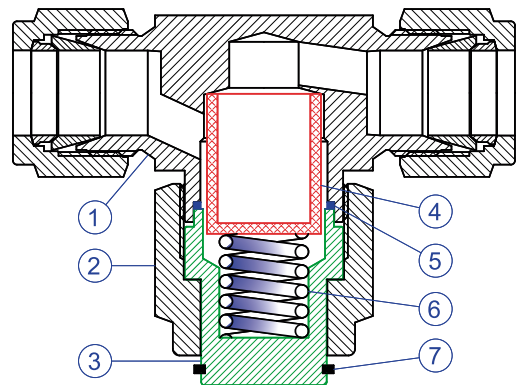
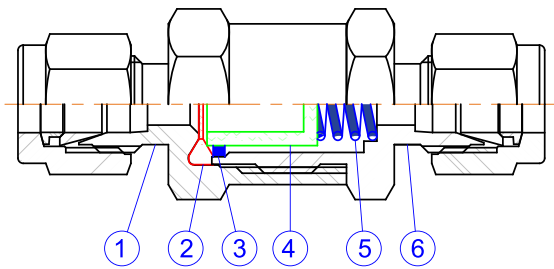
Filter
F Series
TF Series



Features

- Traps fine particles to maintain system purity
- Compact in-line design for limited space
- Replaceable sintered 316 stainless steel filter element available in 1,5,10 and 50 microns
- Maximum working pressure 3000 psi @100°F (206 bar @38°C)
- Replaceable sintered elements are available in 0.5, 2,7, 15 and 60 microns
- Tee type filter element can be replaced without removing body from system.
- Optional Bypass for sampling or purging of process fluid

Material of Construction

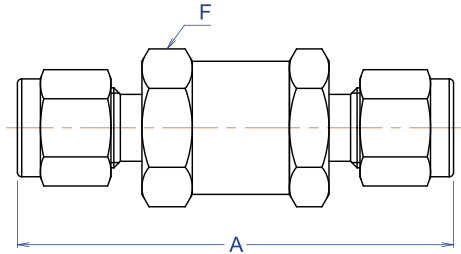


| No. | Component | Material |
|-----|------------------|-------------|
| 1 | Cap | 316 SS/A479 |
| 2 | Seal | Viton |
| 3 | Guide Ring | PTFE |
| 4 | Sintered Element | 316 SS |
| 5 | Spring | 302 SS |
| 6 | Body | 316 SS/A479 |

| No. | Component | Material |
|-----|------------------|----------------------|
| 1 | Body | 316 SS/A479 |
| 2 | Nut | 316 SS/A479 |
| 3 | Cap | 316 SS/A479 |
| 4 | Sintered Element | 316 SS |
| 5 | Gasket | 316 SS/silver plated |
| 6 | Spring | 302 SS |
| 7 | Retainer Ring | Stainless steel |

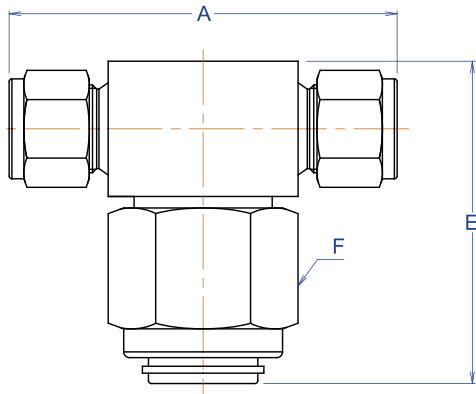
Dimensions

F Series



| Ordering No. | End Connection | | Dimensions (mm) | | |
|--------------|----------------------|------|-----------------|----|--|
| | Inlet/Outlet | Size | A | F | |
| F01S2OD-□ | VEE-LOK tube fitting | 1/8" | 55.7 | 19 | |
| F01S4OD-□ | VEE-LOK tube fitting | 1/4" | 61.5 | 19 | |
| F01SM6OD-□ | VEE-LOK tube fitting | 6mm | 61.5 | 19 | |
| F01S2MM-□ | Male NPT | 1/8" | 46.5 | 19 | |
| F01S2FF-□ | Female NPT | 1/8" | 51.0 | 19 | |
| F01S4MM-□ | Male NPT | 1/4" | 55.5 | 19 | |
| F01S4FF-□ | Female NPT | 1/4" | 61.0 | 19 | |

TF Series



| Ordering No. | End Connection | | Dimensions (mm) | | |
|--------------|----------------------|------|-----------------|------|------|
| | Inlet/Outlet | Size | A | E | F |
| TF01S2OD-□ | VEE-LOK tube fitting | 1/8" | 62.4 | 55.9 | 28.6 |
| TF01S4OD-□ | VEE-LOK tube fitting | 1/4" | 68.2 | 55.9 | 28.6 |
| TF01S6OD-□ | VEE-LOK tube fitting | 3/8" | 72.1 | 55.9 | 28.6 |
| TF01S8OD-□ | VEE-LOK tube fitting | 1/2" | 77.2 | 55.9 | 28.6 |
| TF01SM6OD-□ | VEE-LOK tube fitting | 6mm | 68.2 | 55.9 | 28.6 |
| TF01SM8OD-□ | VEE-LOK tube fitting | 8mm | 72.1 | 55.9 | 28.6 |
| TF01SM10OD-□ | VEE-LOK tube fitting | 10mm | 72.6 | 55.9 | 28.6 |
| TF01SM12OD-□ | VEE-LOK tube fitting | 12mm | 77.2 | 55.9 | 28.6 |
| TF01S4MM-□ | Male NPT | 1/4" | 62 | 55.9 | 28.6 |
| TF01S4FF-□ | Female NPT | 1/4" | 62 | 55.9 | 28.6 |
| TF01S8MM-□ | Male NPT | 1/2" | 69.9 | 55.9 | 28.6 |

Sintered Elements

■ Add an element designator to the basic ordering number.

Example: TF01S8OD-**60**

| Nominal Pore Size μm | Pore Size Range μm | Element Designator |
|---------------------------------|-------------------------------|--------------------|
| 0.5 | 0.5 to 2 | 05 |
| 2 | 1 to 4 | 2 |
| 7 | 5 to 10 | 7 |
| 15 | 11 to 25 | 15 |
| 60 | 50 to 75 | 60 |

Ordering Information

| F01 | S | 4 | FF | 10 |
|--------|---------------|----------|-------------------------|----------------------|
| TF01 | | | | |
| Series | Body Material | Size | End Connection | Sintered Element |
| | S 316 S.S. | 2 1/8" | OD VEE-LOK tube fitting | 0.5 μm 05 |
| | | 4 1/4" | MM Male-Male NPT | 2 μm 2 |
| | | 6 3/8" | FF Female-Female NPT | 7 μm 7 |
| | | 8 1/2" | | 15 μm 15 |
| | | M6 6mm | | 60 μm 60 |
| | | M12 12mm | | |



The selection of a filter for any application or system design must be considered to ensure safe performance. Filter function, rating, material compatibility, proper installation, operation and maintenance remain the responsibilities of the system designer and user.

Vertex Co., Ltd.

3F, No.3, Lane 551, Sec. 1, Wanshou Rd.,
Gueishan Township, Taoyuan County 33351,
Taiwan

Tel: +886 2 8200 3813

Fax: +886 2 8200 3817

vertex.jo@msa.hinet.net

