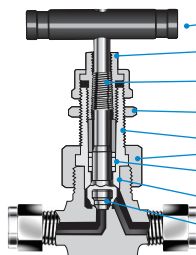
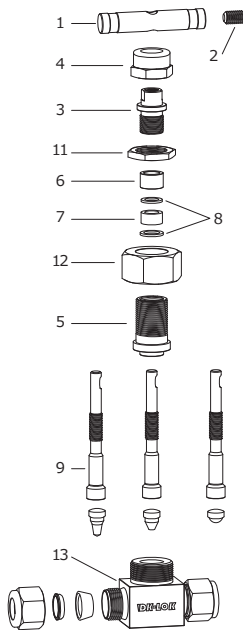


Features

- Pressure Rating up to 6,000 psig (413 bar) @ 100°F (38 °C).
- Temperature Rating up to 449°F (232°C) with standard PTFE packing; up to 1,200°F (648°C) with Grafoil packing.
- Standard 316 stainless steel, optional Alloy 400, and Alloy C276 construction.
- Valve stem back seating against the bevelled edge of bonnet in fully open position prevents maximum leakage through bonnet when packing fails.
- Standard non-rotating stem disc and stem packing below the threads design.



- **Handle**- Standard SS316 bar handle, optional aluminum bar handle.
- **External Packing Bolt**- allows packing adjustment without the valve disassembly.
- **Roll threaded and hard chrome plated stem**- is for long valve life.
- **Panel Mounting Nut**- is standard and permits valve to panel or actuator.
- **Union Nut**- prevents accidental disassembly of the valve in service.
- **Stem Packing below the threads**- prevents media contamination and thread lubricant washout.
- **Stem Back Seating**- in fully open position.
- **Non-Rotating Stem Disc at Closure**- is for maximum metal seat life and positive seal.



Materials of Construction

| Component | Valve Body Materials | | |
|---|---|----------------|------------|
| | SS316 | Alloy 400 | Alloy C276 |
| | Material Grade/ASTM Specification | | |
| 1. Bar handle | SS316/A276, optional anodized aluminum handle | | |
| 2. Set screw | SS304, Grade B8/A193 | | |
| 3. Packing bolt | SS316/A276 or A479 | | |
| 4. Cap nut | SS316/A276 or A479 | | |
| 5. Bonnet | SS316/A276 or A479 | Alloy 400/B164 | C276/B574 |
| 6. Gland | SS316/A276 or A479 | Alloy 400/B164 | C276/B574 |
| 7. Packing (2) | PTFE/D1710, optional PEEK & Grafoil | | |
| 8. Packing supports (2) | SS316/A276 or A479 | Alloy 400/B164 | C276/B574 |
| 9. Stem | Hard Chrome-plated SS316/A276 or A479 | Alloy 400/B164 | C276/B574 |
| 10. Standard globe disc, optional globe ball & regulating disc. | TYPE630/A564 | Alloy 400/B164 | C276/B574 |
| 11. Panel nut | SS316/A276 or A479 | | |
| 12. Union nut | SS316/A276 or A479 | | |
| 13. Body | SS316/A276 or A479 | Alloy 400/B164 | C276/B574 |

Wetted parts and lubricants are listed in blue.

Lubrication :

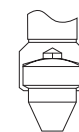
- Nickel anti-seize lubricant (hydrocarbon carrier).
- Ball disc: hydrocarbon-based.

Technical Data

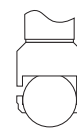
Ratings below are for valves with standard PTFE packing. Refer to valve ratings with optional packing on Page 3.

| Valve Material | Stem Disc Designator | Temperature Rating °F(°C) | Pressure Rating @ -65 to 100°F (-53 to 38°C) |
|----------------------------------|---|---------------------------|--|
| SS316 Alloy 400 Alloy C276 | Globe: Nil. Regulating: -R Ball: -B | -65 to 450 (-53 to 232) | 6,000 psig (413 bar) |

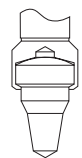
Globe Disc



Ball Disc

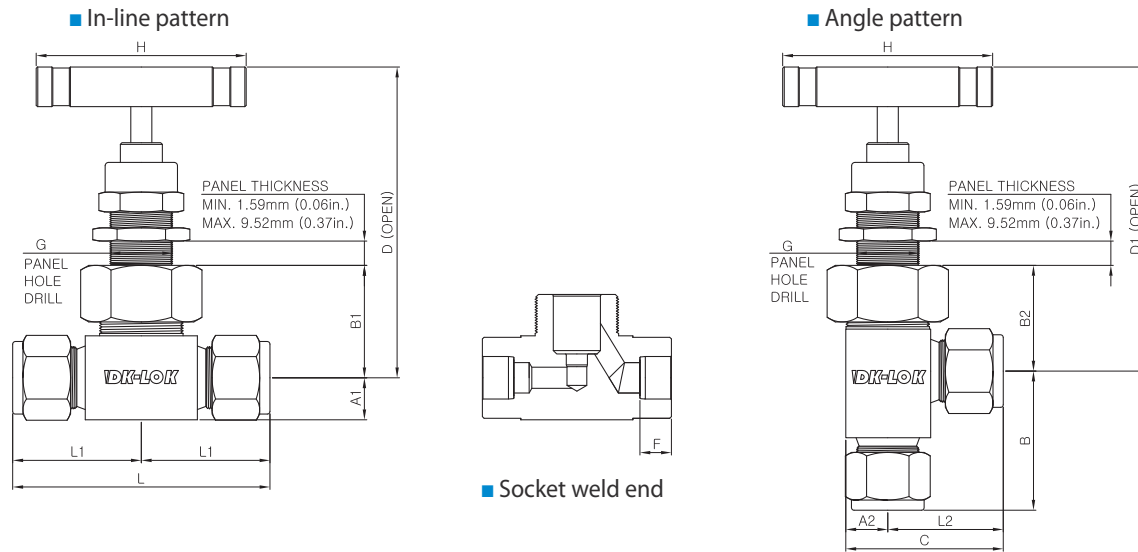


Regulating Disc



Factory Test and Cleaning

Every valve is tested with the nitrogen gas @ 1,000 psig (68.9 bar) for leakage at the seat to a maximum allowable leak rate of 0.1 SCCM. The packing is tested for no detectable leakage. Optional hydrostatic shell test with additional cost is performed with pure water at 1.5 times the working pressure. Every valve is cleaned and packaged in accordance with DK-Lok cleaning standard DC-01.



| Basic Ordering Number | End connections | | Orifice mm (in.) | Cv | Dimensions, mm (inch) | | | | | | | | | | | | | |
|-----------------------|-----------------|------------------------|------------------|------|-----------------------|------------|------------|------------|------------|------------|------------|--------------|------------|------------|--------------|------------|------------|-----------|
| | Inlet | Outlet | | | L | L1 | L2 | B | C | B1 | B2 | A1 | A2 | H | G | D | D1 | F |
| V16A- | F2N- | 1/8 Female NPT | 4.0 (0.156) | 0.35 | 50.8(2.00) | 25.4(1.00) | 22.6(0.89) | 25.4(1.00) | 32.3(1.27) | 27.7(1.09) | 27.7(1.09) | 9.7(0.38) | 9.7(0.38) | 44.4(1.75) | 15.1(19/32) | 77.2(3.04) | 77.2(3.04) | - |
| | F4N- | 1/4 Female NPT | | | 52.3(2.06) | 26.2(1.03) | 22.6(0.89) | 25.4(1.00) | 32.3(1.27) | 27.7(1.09) | 27.7(1.09) | 9.7(0.39) | 9.7(0.38) | 44.4(1.75) | 15.1(19/32) | 77.2(3.04) | 77.2(3.04) | - |
| | M4N- | 1/4 Male NPT | | | 50.8(2.00) | 25.4(1.00) | 25.4(1.00) | 25.4(1.00) | 35.1(1.38) | 27.7(1.09) | 27.7(1.09) | 9.7(0.38) | 9.7(0.38) | 44.4(1.75) | 15.1(19/32) | 77.2(3.04) | 77.2(3.04) | - |
| | MF4N- | 1/4 Male to Female NPT | | | 51.6(2.03) | 26.2(1.03) | 22.6(0.89) | 25.4(1.00) | 32.3(1.27) | 27.7(1.09) | 27.7(1.09) | 9.7(0.39) | 9.7(0.38) | 44.4(1.75) | 15.1(19/32) | 77.2(3.04) | 77.2(3.04) | - |
| | D6M- | 6mm DK-Lok | | | 61.0(2.40) | 30.5(1.20) | 29.5(1.16) | 37.6(1.48) | 39.1(1.54) | 27.7(1.09) | 27.7(1.09) | 9.7(0.38) | 9.7(0.38) | 44.4(1.75) | 15.1(19/32) | 77.2(3.04) | 77.2(3.04) | - |
| | D4T- | 1/4 DK-Lok | | | 61.0(2.40) | 30.5(1.20) | 29.5(1.16) | 37.6(1.48) | 39.1(1.54) | 27.7(1.09) | 27.7(1.09) | 9.7(0.38) | 9.7(0.38) | 44.4(1.75) | 15.1(19/32) | 77.2(3.04) | 77.2(3.04) | - |
| | SW4T- | 1/4 TSW | | | 46.2(1.82) | 23.1(0.91) | 22.4(0.88) | 30.2(1.19) | 31.8(1.25) | 27.7(1.09) | 27.7(1.09) | 9.7(0.38) | 9.7(0.38) | 44.4(1.75) | 15.1(19/32) | 77.2(3.04) | 77.2(3.04) | 7.1(0.28) |
| | D8M- | 8 mm DK-Lok | | | 61.0(2.40) | 30.5(1.20) | - | - | - | 27.7(1.09) | - | 9.7(0.38) | - | 44.4(1.75) | 15.1(19/32) | 77.2(3.04) | - | - |
| V16B- | F4N- | 1/4 Female NPT | 6.4 (0.25) | 0.86 | 57.2(2.25) | 28.4(1.12) | 25.4(1.00) | 28.4(1.12) | 38.1(1.50) | 34.0(1.34) | 37.3(1.47) | 12.7(0.50) | 12.7(0.50) | 63.5(2.50) | 19.8(25/32) | 92(3.62) | 92(3.62) | - |
| | F6N- | 3/8 Female NPT | | | 57.2(2.25) | 28.4(1.12) | 25.4(1.00) | 28.4(1.12) | 38.1(1.50) | 34.0(1.34) | 37.3(1.47) | 12.7(0.50) | 12.7(0.50) | 63.5(2.50) | 19.8(25/32) | 92(3.62) | 92(3.62) | - |
| | D10M- | 10mm DK-Lok | | | 72.4(2.85) | 36.1(1.42) | 33.0(1.30) | 39.4(1.55) | 45.7(1.80) | 34.0(1.34) | 34.3(1.35) | 12.7(0.50) | 12.7(0.50) | 63.5(2.50) | 19.8(25/32) | 92(3.62) | 92(3.62) | - |
| | D6T- | 3/8 DK-Lok | | | 71.9(2.83) | 35.8(1.41) | 32.8(1.29) | 42.2(1.66) | 45.5(1.79) | 34.0(1.34) | 31.0(1.22) | 12.7(0.50) | 12.7(0.50) | 63.5(2.50) | 19.8(25/32) | 92(3.62) | 92(3.62) | - |
| | D12M- | 12mm DK-Lok | | | 77.2(3.04) | 38.6(1.52) | 35.6(1.40) | 41.9(1.65) | 48.3(1.90) | 34.0(1.34) | 34.0(1.34) | 12.7(0.50) | 12.7(0.50) | 63.5(2.50) | 19.8(25/32) | 92(3.62) | 92(3.62) | - |
| | D8T- | 1/2 DK-Lok | | | 77.2(3.04) | 38.6(1.52) | 35.6(1.40) | 41.9(1.65) | 48.3(1.90) | 34.0(1.34) | 34.0(1.34) | 12.7(0.50) | 12.7(0.50) | 63.5(2.50) | 19.8(25/32) | 92(3.62) | 92(3.62) | - |
| | SW4P- | 1/4 PSW | | | 57.2(2.25) | 28.4(1.12) | 25.4(1.00) | 28.4(1.12) | 38.1(1.50) | 34.0(1.34) | 37.3(1.47) | 12.7(0.50) | 12.7(0.50) | 63.5(2.50) | 19.8(25/32) | 92(3.62) | 92(3.62) | 9.5(0.37) |
| | SW6T- | 3/8 TSW | | | 57.2(2.25) | 28.4(1.12) | 25.4(1.00) | 31.8(1.25) | 38.1(1.50) | 34.0(1.34) | 34.0(1.34) | 12.7(0.50) | 12.7(0.50) | 63.5(2.50) | 19.8(25/32) | 92(3.62) | 92(3.62) | 7.9(0.31) |
| | SW8T- | 1/2 TSW | | | 57.2(2.25) | 28.4(1.12) | 25.4(1.00) | 25.4(1.00) | 38.1(1.50) | 34.0(1.34) | 35.6(1.40) | 12.7(0.50) | 12.7(0.50) | 63.5(2.50) | 19.8(25/32) | 92(3.62) | 92(3.62) | 9.5(0.37) |
| V16C- | F8N- | 1/2 Female NPT | 11.1 (0.437) | 2.20 | 79.2(3.12) | 39.6(1.56) | 33.3(1.31) | 39.6(1.56) | 50.8(2.00) | 46.2(1.82) | 50.8(2.00) | 15.7(0.62) | 17.5(0.69) | 88.9(3.50) | 26.2(1-1/32) | 121(4.78) | 126(4.97) | - |
| | F12N- | 3/4 Female NPT | | | 82.6(3.25) | 41.1(1.62) | - | - | - | 48.5(1.91) | - | 19.8(0.78) | - | 88.9(3.50) | 26.2(1-1/32) | 124(4.88) | - | - |
| | F16N- | 1" Female NPT | | | 91.9(3.62) | 46.0(1.81) | - | - | - | 54.1(2.13) | - | 25.4(1.00) | - | 88.9(3.50) | 26.2(1-1/32) | 129(5.10) | - | - |
| | MF8N- | 1/2 Male to Female NPT | | | 79.2(3.12) | 39.6(1.56) | 33.3(1.31) | 39.6(1.56) | 50.8(2.00) | 46.2(1.82) | 50.8(2.00) | 15.7(0.62) | 17.5(0.69) | 88.9(3.50) | 26.2(1-1/32) | 121(4.78) | 126(4.97) | - |
| | MF12N- | 3/4 Male to Female NPT | | | 82.6(3.25) | 41.1(1.62) | 36.5(1.43) | 41.3(1.62) | 56.4(2.22) | 48.5(1.91) | 50.8(2.0) | 19.8(0.78) | 19.8(0.78) | 88.9(3.50) | 26.2(1-1/32) | 124(4.88) | 126(4.97) | - |
| | MF16N- | 1" Male to Female NPT | | | 91.9(3.62) | 46.0(1.81) | - | - | - | 54.1(2.13) | - | 25.4(1.00) | - | 88.9(3.50) | 26.2(1-1/32) | 129(5.10) | - | - |
| | D12M- | DK-Lok 12mm | | | 99.6(3.92) | 49.8(1.96) | 42.7(1.68) | 52.8(2.08) | 60.2(2.37) | 46.2(1.82) | 47.8(1.88) | 15.7(0.62) | 17.5(0.69) | 88.9(3.50) | 26.2(1-1/32) | 121(4.78) | 123(4.85) | - |
| | D8T- | 1/2 DK-Lok | | | 99.6(3.92) | 49.8(1.96) | 42.7(1.68) | 52.8(2.08) | 60.2(2.37) | 46.2(1.82) | 47.8(1.88) | 15.7(0.62) | 17.5(0.69) | 88.9(3.50) | 26.2(1-1/32) | 121(4.78) | 123(4.85) | - |
| | D12T- | 3/4 DK-Lok | | | 99.0(3.89) | 49.5(1.94) | 42.7(1.68) | 52.8(2.08) | 60.2(2.37) | 46.2(1.82) | 47.8(1.88) | 15.7(0.62) | 17.5(0.69) | 88.9(3.50) | 26.2(1-1/32) | 121(4.78) | 123(4.85) | - |
| | D16T- | 1 DK-Lok | | | 104(4.09) | 51.8(2.04) | - | - | - | 47.8(1.88) | - | 17.5(0.69) | - | 88.9(3.50) | 26.2(1-1/32) | 123(4.85) | - | - |
| | SW8P- | 1/2 PSW | | | 79.2(3.12) | 39.6(1.56) | 33.3(1.31) | 39.6(1.56) | 50.8(2.00) | 47.8(1.88) | 50.8(2.00) | 15.7(0.69) | 17.5(0.69) | 88.9(3.50) | 26.2(1-1/32) | 123(4.85) | 126(4.97) | 9.5(0.37) |
| | SW8T- | 1/2 TSW | | | 79.2(3.12) | 39.6(1.56) | 33.3(1.31) | 42.9(1.69) | 50.8(2.00) | 46.2(1.82) | 47.8(1.88) | 15.7(0.62) | 17.5(0.69) | 88.9(3.50) | 26.2(1-1/32) | 121(4.78) | 123(4.85) | 9.5(0.37) |
| SW12T- | 3/4 TSW | 79.2(3.12) | 39.6(1.56) | - | - | - | 46.2(1.82) | - | 15.7(0.62) | - | 88.9(3.50) | 26.2(1-1/32) | 121(4.78) | - | 11.2(0.44) | | | |

All dimensions shown are for reference only and are subject to change. Dimensions with DK-Lok nuts are in finger-tight position.

- Non-rotating globe disc providing repetitive leak tight shut-off is standard.
- To order Angle Pattern, insert -A in the basic ordering number. Refer to the ordering information on page 3.

Pressure-Temperature Ratings

Ratings are based on valves with optional Grafoil packing.

| ASME Class | 2500 | | N/A |
|-----------------------|------------------------------|------------|-------------|
| Material Group | 2.2 | 3.4 | N/A |
| Material Name | SS316 | Alloy 400 | Alloy C-276 |
| Temperature, °F (°C) | Working pressure, psig (bar) | | |
| -65 (-53) to 100 (38) | 6000 (413) | 5000 (344) | 6000 (413) |
| 200 (93) | 5160 (355) | 4400 (303) | 6000 (413) |
| 300 (148) | 4660 (321) | 4120 (283) | 6000 (413) |
| 400 (204) | 4280 (294) | 3980 (274) | 5880 (405) |
| 500 (260) | 3980 (274) | 3960 (272) | 5540 (381) |
| 600 (315) | 3760 (259) | - | 5040 (347) |
| 700 (371) | 3600 (248) | - | 4730 (325) |
| 800 (426) | 3460 (238) | - | 4230 (291) |
| 900 (482) | 3280 (225) | - | 3745 (258) |
| 1000 (537) | 3030 (208) | - | 3030 (208) |
| 1100 (593) | 2685 (184) | - | 2685 (184) |
| 1200 (648) | 1715 (118) | - | 1545 (106) |

Grafoil packing information

Grafoil is a high temperature packing material that requires a load on the material to generate a seal. In air, Grafoil maximum temperature is 973°F (523°C), in steam, Grafoil goes up to the maximum temperature of 1,200°F (648°C). Grafoil packing is not for use with pneumatic actuating valves.

Valve ratings with DK-Lok end connections

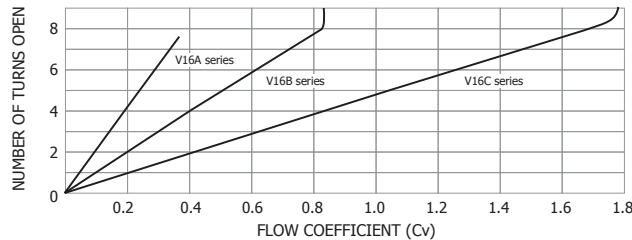
Valve ratings may be limited to the maximum working pressure of connective pipe and tubing. For valve rating with DK-Lok tube fitting end connections, refer to DK-Lok catalog providing suggested working pressures in various tubing OD, wall thicknesses, and materials.

Packing adjustment and actuation torque

Extreme temperature fluctuations while valve in service may require packing adjustment. Valves that have not been actuated for a period of time may have a higher initial actuation torque.

Valve ratings with optional PEEK packing SS316 and C276 valve with PEEK packing is limited to maximum 600 °F (315 °C) rating ; Alloy 400 valve with PEEK packing is limited to maximum 500 °F (260 °C) rating.

Flow Data @ 100°F (38°C) for valves with regulating disc



Globe and Ball Disc

Valve with standard globe and ball disc is designed for use in a fully open or fully closed position. Refer to Cv in the ordering information and dimensions table on Page 2.

Cv reduction

Valve flow may be reduced by the restriction of pipe and tubing connected.



Sour Gas Valves

Valves for use in sour gas are available. Valve wetted components are selected to the requirements of NACE MR0175 for sulfide stress cracking resistant materials. To order, insert -SG in the basic ordering number.

Optional Handles

SS316 bar handle is standard. Optional anodized black aluminum bar handle is available. To order valve with factory-assembled optional aluminum handle, insert designator -AH in the ordering number. To order handle for field assembly, select desired handle ordering number from the table.

| Valve Series | Field Assembly Bar Handle | |
|--------------|---------------------------|----------|
| | SS316 | Aluminum |
| V16A | V16A-BH | V16A-AH |
| V16B | V16B-BH | V16B-AH |
| V16C | V16C-BH | V16C-AH |

Ordering Information

Select the desired valve basic ordering number, options and body material.

| V16B-D-6T- V16C-MF-12N- | A | -PK GF | -B | -AH | -SG | -BD | -S |
|----------------------------|--|---|--|------------------------------------|--|---|----|
| Valve Pattern Designator | Packing Material Designator | Stem Disc Designator | Handle Designator | Sour Gas Designator | Pneumatic Double Acting Actuator | Valve Material Designator | |
| Nil : In-line A : Angle | Nil : PTFE PK : PEEK GF : Grafoil* | Nil : Globe R : Regulating B : Ball | Nil : SS316 bar handle AH : Aluminum Bar handle | Nil : no Sour Gas SG : Sour Gas | AD : V16A series valves BD : V16B series valves | S : SS316 M : Alloy 400 HC : Alloy C276 | |

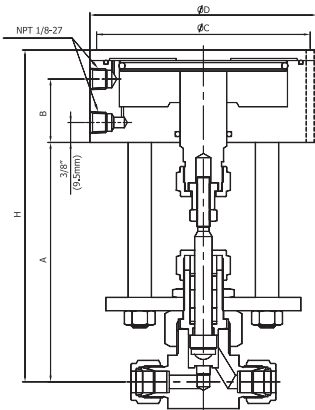
* Grafoil™ UCAR

We reserve the right to change the specifications stated in this catalog for our continuing program of improvement.

Double Acting Pneumatic Actuator

V16 series Pneumatic actuators are designed to actuate valves remotely. V16A and V16B series are available to be equipped with pneumatic actuators in double acting.

Double Acting Dimensions



| Valve Series | Dimensions in. (mm) | | | | |
|--------------|---------------------|------------|-------------|-------------|-------------|
| | A | H | D | C | B |
| V16A | 4.22 (107) | 5.91 (150) | 3.25 (82.6) | 3.25 (82.6) | 1.12 (28.4) |
| V16B | 4.47 (114) | 6.22 (158) | 4.25 (108) | 3.81 (96.8) | 1.19 (30.2) |

All dimensions are reference only and subject to change.

Double Acting Actuator Technical Data

| Maximum applicable pressure | Temperature ratings °F (°C) |
|-----------------------------|-----------------------------|
| 150 psig (10.4 bar) | -20 to 300 (-28 to 204) |

Pneumatic Actuator Applicability

V16A and V16B series valves with PTFE or PEEK packing are applicable to pneumatic actuator. Those valves with Grafoil packing are not applicable to pneumatic actuator.

Operation Information

Curve 1 and 2 indicate the minimum actuator pressure to open or close double acting actuator against system pressure. To prolong valve life, actuators should be operated at minimum air actuator pressures.

Curves shown are based on packing bolt factory adjustment.

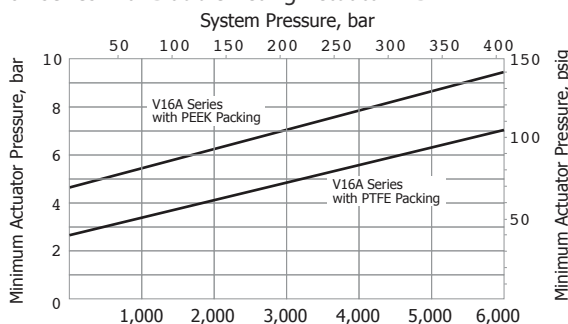
Packing bolt adjustment may be required to maintain the valve leak-tight.

If the packing bolt is over-tightened, the actuating pressure can not overcome the friction force between the over-tightened packing and the stem. If the packing bolt is under-tightened for low system pressures, it may leak at high system pressures.

However, packing bolt torque must be sufficiently maintained to prevent packing from leakage.

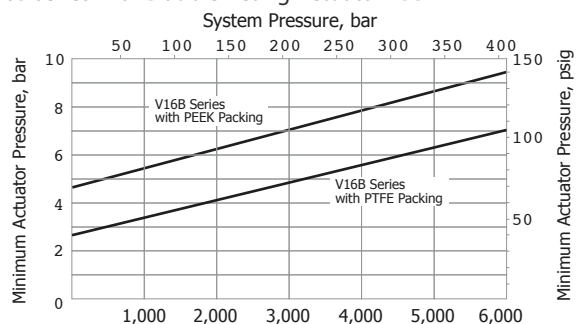
Curve 1

V16A series with Double Acting Actuator -AD



Curve 1

V16B series with Double Acting Actuator - BD



Actuator Ordering Information

To order valves with a pneumatic double acting actuator, insert the desired actuator designator from the chart in the valve ordering number.

Example: V16B-D6T-PK-B-**BD**-S

| Valve Series | Double Acting Designator |
|--------------|--------------------------|
| V16A | AD |
| V16B | BD |

Safe Valve Selection

The selection of a valve for any application or system design must be considered to ensure safe performance.

Valve function, valve rating, material compatibility, proper installation, operation and maintenance remain the sole responsibility of the system designer and the user. DK-Lok accepts no liability for any improper selection, installation, operation or maintenance.