

E-JOE



E-JOE Fluid Technology (Shanghai) CO.,LTD
No.1871 Huming Road, Minhang District,Shanghai,China
Tel: 86-21-64192603/13764653321
<http://www.e-joe.cn>

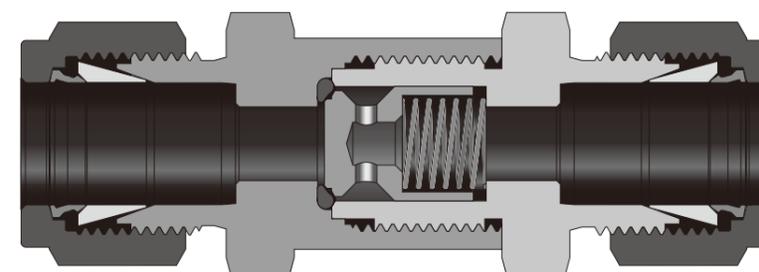
Check Valves

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Check Valves

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Check Valves 51 Series



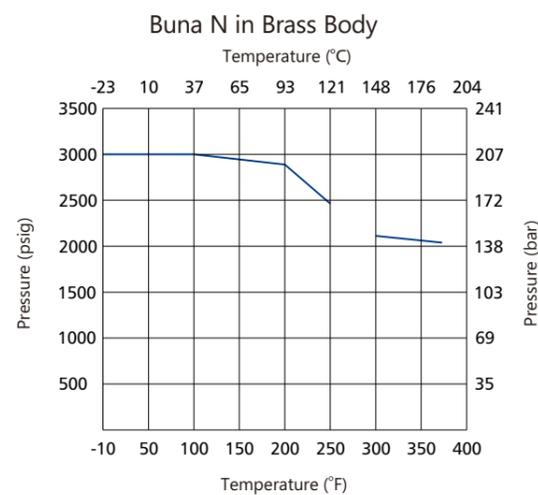
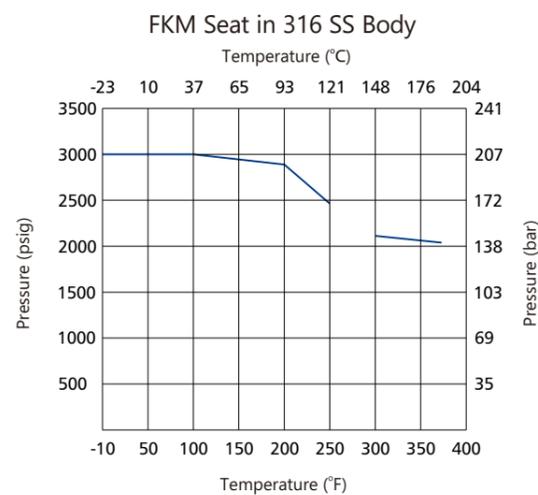
Features

- Resilient O-ring seat design for noise-free closing leakage-free
- Maximum working pressure: 3000 psig (207 bar)
- Working temperature: -10°F to 375°F (-23°C to 190°C)
- Cracking pressure: 1/3 to 25 psig (0.02 to 1.7 bar)
- Variety of end connections and materials available
- Suitable for sour gas service; materials are selected in accordance with NACE MR0175/ISO 15156.
- Every valve is 100% factory tested with nitrogen for leak-tight performance at its maximum working pressure.

Cracking Pressure and Resealing Pressure

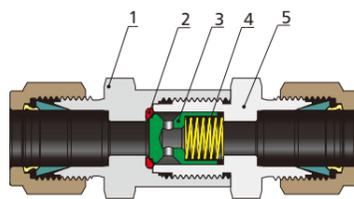
| Series | Nominal Cracking Pressure psig (bar) | Cracking Pressure Range psig (bar) | Resealing Pressure Range psig (bar) |
|--------|---|--|--|
| 51 | 1/3 (0.02) 1 (0.06) 10 (0.68) 25 (1.7) | 0 to 3 (0 to 0.21) 0 to 4 (0 to 0.28) 7 to 15 (0.49 to 1.1) 20 to 30 (1.4 to 2.1) | Up to 6 (0.42) downstream pressure Up to 6 (0.42) downstream pressure 3 (0.21) or higher upstream pressure 17 (1.2) or higher upstream pressure |

Pressure vs. Temperature



Standard Materials of Construction

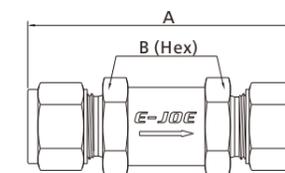
51 Series



| Component | Valve Material Grade/ASTM Specification | |
|---------------|---|---------------|
| | 316 SS | Brass |
| 1 Inlet Body | 316 SS/A479 | Brass 360/B16 |
| 2 O-ring | Fluorocarbon FKM | Buna N |
| 3 Poppet | 316 SS/A479 | Brass 360/B16 |
| 4 Spring | 302 SS/A313 | 302 SS/A313 |
| 5 Outlet Body | 316 SS/A479 | Brass 360/B16 |

Dimensions

51 Series



| Basic Ordering Number | Connection Type and Size | | Cv | Dimension, in. (mm) | |
|-----------------------|--------------------------|----------------|------|---------------------|----------------|
| | Inlet | Outlet | | A | B |
| □□51 -FJ2 | 1/8" E-JOE | 1/8" E-JOE | 0.16 | 2.14 (54.3) | 5/8 (15.88) |
| □□51 -FJ4 | 1/4" E-JOE | 1/4" E-JOE | 0.47 | 2.35 (59.7) | |
| □□51 -FJ6 | 3/8" E-JOE | 3/8" E-JOE | 1.47 | 3.17 (80.5) | 7/8 (22.23) |
| □□51 -FJ8 | 1/2" E-JOE | 1/2" E-JOE | 1.68 | 3.42 (86.9) | |
| □□51 -FJ12 | 3/4" E-JOE | 3/4" E-JOE | 4.48 | 4.32 (110) | 1 1/4 (31.75) |
| □□51 -FJ16 | 1" E-JOE | 1" E-JOE | | 4.74 (120) | 1 3/8 (34.93) |
| □□51 -MJ6 | 6 mm E-JOE | 6 mm E-JOE | 0.47 | 2.36 (59.9) | 5/8 (15.88) |
| □□51 -MJ10 | 10 mm E-JOE | 10 mm E-JOE | 1.68 | 3.32 (84.3) | 7/8 (22.23) |
| □□51 -MJ12 | 12 mm E-JOE | 12 mm E-JOE | | 3.42 (86.9) | |
| □□51 -FN2 | 1/8 Female NPT | 1/8 Female NPT | 0.16 | 1.89 (48.0) | 5/8 (15.88) |
| □□51 -FN4 | 1/4 Female NPT | 1/4 Female NPT | 0.47 | 2.15 (54.6) | 3/4 (19.05) |
| □□51 -FN6 | 3/8 Female NPT | 3/8 Female NPT | 1.47 | 2.98 (75.7) | 7/8 (22.23) |
| □□51 -FN8 | 1/2 Female NPT | 1/2 Female NPT | 1.68 | 3.58 (90.9) | 1 1/16 (26.99) |
| □□51 -FN12 | 3/4 Female NPT | 3/4 Female NPT | 4.48 | 4.08 (104) | 1 1/4 (31.75) |
| □□51 -FN16 | 1 Female NPT | 1 Female NPT | | 4.84 (123) | 1 5/8 (41.28) |
| □□51 -N2 | 1/8 Male NPT | 1/8 Male NPT | 0.16 | 1.71 (43.4) | 5/8 (15.88) |
| □□51 -N4 | 1/4 Male NPT | 1/4 Male NPT | 0.47 | 2.09 (53.1) | |
| □□51 -N6 | 3/8 Male NPT | 3/8 Male NPT | 1.47 | 2.78 (70.6) | 7/8 (22.23) |
| □□51 -N8 | 1/2 Male NPT | 1/2 Male NPT | 1.68 | 3.16 (80.3) | |
| □□51 -N12 | 3/4 Male NPT | 3/4 Male NPT | 4.48 | 4.08 (104) | 1 1/4 (31.75) |
| □□51 -N16 | 1 Male NPT | 1 Male NPT | | 4.52 (115) | 1 5/8 (41.28) |

Flow Data at 70°F (20°C)

51 Series

| Air Flow (std L/min) | Cracking Pressure (psig) | | | | | |
|-------------------------|--------------------------|----|-----|-----------|-----|-----|
| | Cv = 0.16 | | | Cv = 0.16 | | |
| | 1 | 10 | 25 | 1 | 10 | 25 |
| 5 | 10 | -- | -- | 114 | -- | -- |
| 10 | 29 | -- | -- | 157 | 36 | -- |
| 12.5 | 38 | 11 | -- | 176 | 150 | -- |
| 15 | 48 | 23 | -- | 196 | 170 | -- |
| 25 | 72 | 62 | 2 | 253 | -- | 18 |
| 30 | 78 | -- | 17 | 279 | -- | 146 |
| 35 | 85 | -- | 34 | 309 | -- | 330 |
| 50 | 103 | -- | 77 | 402 | -- | -- |
| 80 | 144 | -- | 136 | 580 | -- | -- |
| 100 | 171 | -- | 160 | 700 | -- | -- |

| Air Flow (std L/min) | Cracking Pressure (psig) | | | | | |
|-------------------------|--------------------------|------|------|-----------|------|------|
| | Cv = 1.47 | | | Cv = 1.68 | | |
| | 1 | 10 | 25 | 1 | 10 | 25 |
| 5 | 325 | -- | -- | 460 | -- | -- |
| 10 | 623 | -- | -- | 747 | -- | -- |
| 15 | 832 | 377 | -- | 916 | 475 | -- |
| 25 | 1146 | 800 | 32 | 1255 | 939 | 40 |
| 35 | 1440 | 1150 | 509 | 1594 | 1347 | 654 |
| 50 | 1879 | 1686 | 1072 | 2101 | 1960 | 1230 |
| 80 | 2761 | 2756 | 2087 | -- | -- | 2400 |
| 100 | -- | -- | 2763 | -- | -- | -- |

| Air Flow (std L/min) | Cracking Pressure (psig) | | |
|-------------------------|--------------------------|------|------|
| | Cv = 4.48 | | |
| | 1 | 10 | 25 |
| 5 | 468 | -- | -- |
| 10 | 975 | -- | -- |
| 15 | 1208 | 491 | -- |
| 20 | 1435 | 945 | -- |
| 25 | 1658 | 1232 | -- |
| 35 | 2122 | 1826 | 1059 |
| 50 | 2800 | 2678 | 1905 |
| 60 | -- | -- | 2454 |

| Water Flow (L/min) | Cracking Pressure (psig) | | | | | |
|-----------------------|--------------------------|-----|-----|-----------|-----|-----|
| | Cv = 0.16 | | | Cv = 0.16 | | |
| | 1 | 10 | 25 | 1 | 10 | 25 |
| 5 | 0.3 | -- | -- | 2.1 | -- | -- |
| 10 | 1.2 | -- | -- | 6.1 | -- | -- |
| 12.5 | 1.4 | 0.3 | -- | 6.5 | 6.5 | -- |
| 15 | 1.6 | 0.7 | -- | 6.9 | 6.9 | -- |
| 20 | 1.9 | 1.2 | -- | 7.8 | 7.8 | -- |
| 27.5 | 2.3 | 1.7 | 0.2 | -- | -- | 1.2 |
| 35 | 2.6 | 2.3 | 0.9 | -- | -- | 5.0 |
| 40 | 2.8 | 2.4 | 1.3 | -- | -- | 7.5 |
| 70 | 3.6 | 3.5 | 3.3 | -- | -- | -- |
| 80 | 3.8 | 3.8 | 3.8 | -- | -- | -- |

| Water Flow (L/min) | Cracking Pressure (psig) | | | | | |
|-----------------------|--------------------------|------|-----|-----------|------|------|
| | Cv = 1.47 | | | Cv = 1.68 | | |
| | 1 | 10 | 25 | 1 | 10 | 25 |
| 2.5 | 4.6 | -- | -- | 7.4 | -- | -- |
| 5 | 8.3 | -- | -- | 13.5 | -- | -- |
| 10 | 17.5 | -- | -- | 22.6 | -- | -- |
| 11 | -- | 3.3 | -- | -- | 6.8 | -- |
| 12.5 | -- | 7.7 | -- | -- | 12.9 | -- |
| 15 | -- | 13.1 | -- | -- | 20.0 | -- |
| 20 | -- | 20.0 | -- | -- | -- | -- |
| 27.5 | -- | -- | 2.2 | -- | -- | 7.3 |
| 30 | -- | -- | 4.4 | -- | -- | 12 |
| 35 | -- | -- | 8.8 | -- | -- | 19.5 |

| Water Flow (L/min) | Cracking Pressure (psig) | | |
|-----------------------|--------------------------|------|----|
| | Cv = 4.48 | | |
| | 1 | 10 | 25 |
| 2.5 | 29.5 | -- | -- |
| 5 | 45.0 | -- | -- |
| 10 | 59.3 | -- | -- |
| 12.5 | 65.8 | 65.8 | -- |
| 15 | 72.3 | 72.3 | -- |
| 20 | 85.4 | 85.4 | -- |
| 25.5 | -- | -- | 22 |
| 26 | -- | -- | 48 |
| 27 | -- | -- | 90 |

51 Series How to Order



Body Material

- SS: CF8M
- 6L: CF3M
- S4: CF8
- 4L: CF3
- D5: Duplex 2205
- D7: Duplex 2507
- M: Alloy 400
- INC: Alloy 600
- HC: Alloy C-276

Valve Series

- 51: 51 Series

Inlet/Outlet Type

- FN: Female NPT
- N: Male NPT
- FR: Female BSPT
- RT: Male BSPT
- FM: Female ISO (for MRP)
- MS: Male ISO (for MRG)
- FP: Female BSPP (for RP)
- BP: Male BSPP (for RG)
- FJ: Fractional Tube Fitting
- MJ: Metric Tube Fitting

Inlet/Outlet Size

- 2: 1/8"
- 4: 1/4"
- 6: 3/8" or 6 mm
- 8: 1/2" or 8 mm
- 10: 10 mm
- 12: 3/4" or 12 mm
- 14: 14 mm or M14 x 1.5
- 16: 1" or 16 mm
- 18: 18 mm
- 20: 1 1/4" or 20 mm or M20 x 1.5
- 22: 22 mm or M22 x 1.5
- 24: M24 x 1.5
- 25: 25 mm

Seal Material

- B: Buna N
- N: Neoprene
- E
- Z: Kalrez

NACE MR0175

Standard with no NACE Applicable

SG

Cracking Pressure

Standard for 3 psig cracking pressure

- 0: 1/3 psig cracking pressure
- 1: 1 psig cracking pressure
- 10: 10 psig cracking pressure
- 25: 25 psig cracking pressure

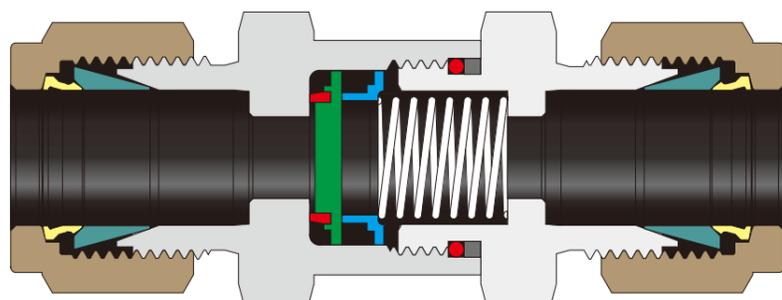
Remark:

- Standard thread pitch for metric threads are as follows:
M10 and below: 1 mm
M12 to M20: 1.5 mm
Standard thread pitch should be ignored in the ordering number, others should be specified.

Check Valves

52 Series

06



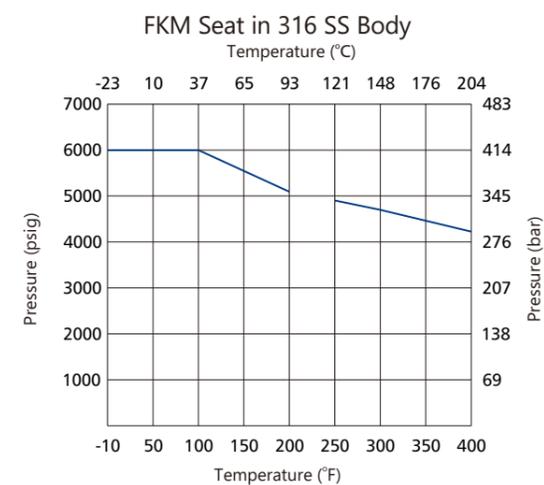
Features

- Seat ring continuously cleaned by media, avoiding secondary pollution
- Maximum working pressure: 6000 psig (414 bar)
- Working temperature: -10°F to 400°F (-23°C to 204°C)
- Cracking pressure: 1/3 to 25 psig (0.02 to 1.7 bar)
- Variety of end connections and materials available
- Suitable for sour gas service; materials are selected in accordance with NACE MR0175/ISO 15156.
- Every valve is 100% factory tested with nitrogen for leak-tight performance at its maximum working pressure.

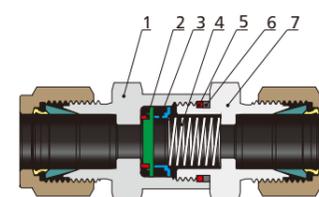
Cracking Pressure and Resealing Pressure

| Series | Nominal Cracking Pressure psig (bar) | Cracking Pressure Range psig (bar) | Resealing Pressure Range psig (bar) |
|--------|---|---|--|
| 52 | 1/3 (0.02) 1 (0.06) 5 (0.35) 10 (0.68) 25 (1.7) | 0 to 3 (0 to 0.21) 0 to 4 (0 to 0.28) 3 to 9 (0.21 to 0.63) 7 to 15 (0.49 to 1.1) 20 to 30 (1.4 to 2.1) | Up to 6 (0.42) back pressure Up to 5 (0.35) back pressure Up to 2 (0.14) back pressure 3 (0.21) or higher upstream pressure 17 (1.2) or higher upstream pressure |

Pressure vs. Temperature



52 Series

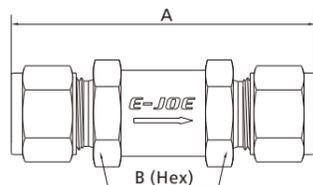


| Component | Valve Material Grade/ASTM Specification |
|---------------|---|
| 1 Inlet Body | 316 SS/A479 |
| 2 Poppet | Fluorocarbon FKM - bonded 316 SS/A479 |
| 3 Poppet Stop | 316 SS/A240 |
| 4 Spring | 302 SS/A313 |
| 5 O-ring | Fluorocarbon FKM |
| 6 Backup Ring | PTFE/D1710 |
| 7 Outlet Body | 316 SS/A479 |

07

E-JOE

Dimensions 52 Series



| Basic Ordering Number | Connection Type and Size | | Pressure Rating at 100° F (37° C) psig (bar) | CV | Dimension, in. (mm) | |
|-----------------------|--------------------------|-----------------|--|-------------|---------------------|----------------|
| | Inlet | Outlet | | | A | B |
| □□52-FJ2 | 1/8"E-JOE | 1/8"E-JOE | 6000 (414) | 0.67 | 2.27 (57.7) | 11/16 (17.46) |
| □□52-FJ4 | 1/4"E-JOE | 1/4"E-JOE | | | 2.43 (61.7) | |
| □□52-FJ6 | 3/8"E-JOE | 3/8"E-JOE | | 1.8 | 2.75 (69.9) | 1 (25.4) |
| □□52-FJ8 | 1/2"E-JOE | 1/2"E-JOE | | | 2.96 (75.2) | |
| □□52-FJ12 | 3/4"E-JOE | 3/4"E-JOE | 5000 (344) | 4.7 | 3.52 (89.4) | 1 5/8 (41.28) |
| □□52-FJ16 | 1"E-JOE | 1"E-JOE | 4700 (323) | | 3.88 (98.6) | |
| □□52-MJ6 | 6 mm E-JOE | 6 mm E-JOE | 6000 (414) | 0.67 | 2.43 (61.7) | 11/16 (17.46) |
| □□52-MJ8 | 8 mm E-JOE | 8 mm E-JOE | | | 2.70 (68.6) | |
| □□52-MJ10 | 10 mm E-JOE | 10 mm E-JOE | | 1.8 | 2.80 (71.1) | 1 (25.4) |
| □□52-MJ12 | 12 mm E-JOE | 12 mm E-JOE | | | 2.96 (75.2) | |
| □□52-MJ22 | 22 mm E-JOE | 22 mm E-JOE | 5000 (344) | 4.7 | 3.48 (88.4) | 1 5/8 (41.28) |
| □□52-MJ25 | 25 mm E-JOE | 25 mm E-JOE | | | 3.88 (98.6) | |
| □□52-FN4 | 1/4 Female NPT | 1/4 Female NPT | 6000 (414) | 0.67 | 2.13 (54.1) | 11/16 (17.46) |
| □□52-FN6 | 3/8 Female NPT | 3/8 Female NPT | 5000 (344) | | 1.8 | |
| □□52-FN8 | 1/2 Female NPT | 1/2 Female NPT | 4600 (316) | 4.7 | | 3.03 (77.0) |
| □□52-FN12 | 3/4 Female NPT | 3/4 Female NPT | 4300 (296) | | 3.23 (82.0) | 1 5/8 (41.28) |
| □□52-FN16 | 1 Female NPT | 1 Female NPT | 4100 (282) | 3.83 (97.3) | | |
| □□52-N2 | 1/8 Male NPT | 1/8 Male NPT | 6000 (414) | 0.67 | 1.79 (45.4) | 11/16 (17.46) |
| □□52-N4 | 1/4 Male NPT | 1/4 Male NPT | | | 2.17 (55.1) | |
| □□52-N6 | 3/8 Male NPT | 3/8 Male NPT | | 1.8 | 2.36 (59.9) | 1 (25.4) |
| □□52-N8 | 1/2 Male NPT | 1/2 Male NPT | | | 2.73 (69.3) | |
| □□52-N12 | 3/4 Male NPT | 3/4 Male NPT | 5000 (344) | 4.7 | 3.29 (83.6) | 1 5/8 (41.28) |
| □□52-N16 | 1 Male NPT | 1 Male NPT | | | 3.67 (93.2) | |
| □□52-FR4 | 1/4 Female BSPT | 1/4 Female BSPT | 6000 (414) | 0.67 | 2.28 (57.9) | 11/16 (17.46) |
| □□52-FR8 | 1/2 Female BSPT | 1/2 Female BSPT | 4600 (316) | 1.8 | 3.29 (83.6) | 1 1/16 (26.99) |
| □□52-FR12 | 3/4 Female BSPT | 3/4 Female BSPT | 4300 (296) | | | |
| □□52-RT16 | 1 Female BSPT | 1 Female BSPT | 4100 (282) | 3.83 (97.3) | | |
| □□52-RT4 | 1/4 Male BSPT | 1/4 Male BSPT | 6000 (414) | 0.67 | 2.17 (55.1) | 11/16 (17.46) |
| □□52-RT8 | 1/2 Male BSPT | 1/2 Male BSPT | | | 2.73 (69.3) | |
| □□52-RT12 | 3/4 Male BSPT | 3/4 Male BSPT | 5000 (344) | 4.7 | 3.35 (85.1) | 1 5/8 (41.28) |
| □□52-RT16 | 1 Male BSPT | 1 Male BSPT | | | 3.67 (93.2) | |

E-JOE

Flow Data at 70°F (20°C)

| Air Flow (std L/min) | Cracking Pressure (psig) | | |
|-----------------------|--------------------------|------|------|
| | 1 | 10 | 25 |
| Inlet Pressure (psig) | Cv = 0.67 | | |
| 5 | 8 | -- | -- |
| 10 | 80 | -- | -- |
| 25 | 160 | 200 | -- |
| 40 | 180 | 200 | -- |
| 60 | 600 | 390 | 180 |
| 80 | 900 | 880 | 640 |
| 95 | 1200 | 1060 | 830 |
| 110 | -- | 1240 | 1020 |
| 128 | -- | 1400 | 1200 |
| 140 | -- | -- | 1340 |

| Water Flow (L/min) | Cracking Pressure (psig) | | |
|----------------------|--------------------------|-----|-----|
| | 1 | 10 | 25 |
| Pressure Drop (psig) | Cv = 0.67 | | |
| 1 | 0.2 | -- | -- |
| 6 | 1.9 | -- | -- |
| 10 | 5.7 | -- | -- |
| 12 | 7.5 | 0.2 | -- |
| 20 | -- | 1.4 | -- |
| 26 | -- | 2.9 | -- |
| 36 | -- | 7.5 | 0.9 |
| 50 | -- | -- | 3.4 |
| 60 | -- | -- | 5.6 |
| 68 | -- | -- | 7.5 |

| Air Flow (std L/min) | Cracking Pressure (psig) | | |
|-----------------------|--------------------------|------|------|
| | 1 | 10 | 25 |
| Inlet Pressure (psig) | Cv = 1.8 | | |
| 2 | -- | -- | -- |
| 10 | 620 | -- | -- |
| 25 | 1140 | 520 | -- |
| 30 | 1320 | 720 | 190 |
| 40 | 1620 | 1130 | 590 |
| 50 | 1940 | 1520 | 1000 |
| 60 | 2250 | 1900 | 1400 |
| 78 | 2800 | 2520 | 2080 |
| 86 | -- | 2800 | 2430 |
| 97 | -- | -- | 2800 |

| Water Flow (L/min) | Cracking Pressure (psig) | | |
|----------------------|--------------------------|------|------|
| | 1 | 10 | 25 |
| Pressure Drop (psig) | Cv = 1.8 | | |
| 1.5 | -- | -- | -- |
| 5.0 | 14.4 | -- | -- |
| 7.5 | 20.4 | -- | -- |
| 10.0 | 22.5 | -- | -- |
| 15 | -- | 2.0 | -- |
| 20 | -- | 7.0 | -- |
| 22 | -- | 22.5 | -- |
| 30 | -- | -- | 0.7 |
| 40 | -- | -- | 2.6 |
| 45 | -- | -- | 22.5 |

| Air Flow (std L/min) | Cracking Pressure (psig) | | |
|-----------------------|--------------------------|------|------|
| | 1 | 10 | 25 |
| Inlet Pressure (psig) | Cv = 1.8 | | |
| 5 | 520 | -- | -- |
| 10 | 940 | -- | -- |
| 15 | 1240 | 540 | -- |
| 20 | 1560 | 880 | -- |
| 25 | 1620 | 1100 | -- |
| 30 | 1800 | 1325 | 420 |
| 35 | 2080 | 1520 | 720 |
| 40 | 2800 | 1760 | 980 |
| 50 | 2280 | 2240 | 1800 |
| 60 | 2560 | 2650 | 2280 |

| Water Flow (L/min) | Cracking Pressure (psig) | | |
|----------------------|--------------------------|----|----|
| | 1 | 10 | 25 |
| Pressure Drop (psig) | Cv = 1.8 | | |
| 2.5 | 32 | -- | -- |
| 5.0 | 48 | -- | -- |
| 7.5 | 58 | -- | -- |
| 10.0 | 68 | -- | -- |
| 11.0 | 75 | 10 | -- |
| 12.0 | 86 | 75 | -- |
| 30.0 | -- | -- | 8 |
| 32.5 | -- | -- | 13 |
| 35.0 | -- | -- | 21 |
| 38.0 | -- | -- | 86 |

52 Series How to Order



Body Material

SS: 316
 6L: 316L
 S4: 304
 4L: 304L
 D5: Duplex 2205
 D7: Duplex 2507
 M: Alloy 400
 INC: Alloy 600
 HC: Alloy C-276

Valve Series

52

Inlet/Outlet Type

FN Female NPT
 N Male NPT
 FR Female BSPT
 RT Male BSPT
 FM Female ISO (for MRP)
 MS Male ISO (for MRG)
 FP Female BSPP (for RP)
 BP Male BSPP (for RG)
 FJ Fractional Tube Fitting
 MJ Metric Tube Fitting

Inlet/Outlet Size

2 1/8"
 4 1/4"
 6 3/8" or 6 mm
 8 1/2" or 8 mm
 10 10 mm
 12 3/4" or 12 mm
 14 14 mm or M14 x 1.5
 16 1" or 16 mm
 18 18 mm
 20 1 1/4" or 20 mm or M20 x 1.5
 22 22 mm or M22 x 1.5
 24 M24 x 1.5
 25 25 mm

Seal Material

Standard with Fluorocarbon FKM
 B Buna N
 N Neoprene
 E Ethylene propylene
 Z Kalrez

NACE MR0175

Standard with no NACE Applicable

SG

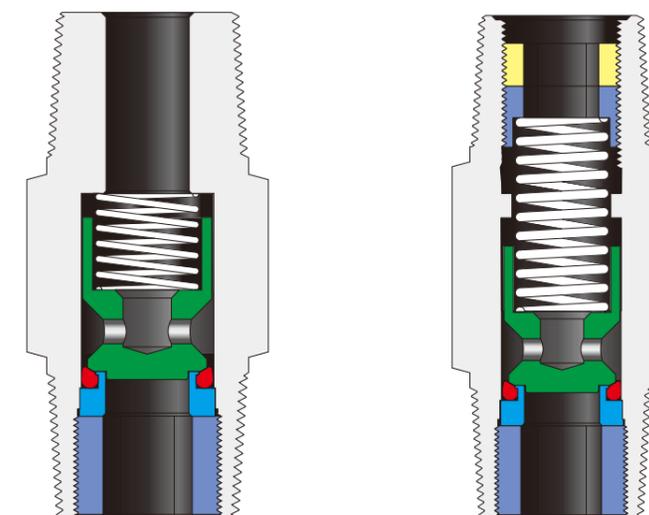
Cracking Pressure

Standard for 3 psig cracking pressure

0: 1/3 psig cracking pressure
 1: 1 psig cracking pressure
 10: 10 psig cracking pressure
 25: 25 psig cracking pressure

Remark:

- Standard thread pitch for metric threads are as follows:
 M10 and below: 1 mm
 M12 to M20: 1.5 mm
 Standard thread pitch should be ignored in the ordering number, others should be specified.

Check Valves
53 and 531 Series

Features

53 Series

- Compact, one piece body
- Maximum working pressure: 3000 psig (207 bar)
- Working temperature: -10F to 375F (-23°C to 190°C)
- Cracking pressure: 1/3 to 25 psig (0.02 to 1.7 bar)
- Variety of end connections and materials available
- Suitable for sour gas service; materials are selected in accordance with NACE MR0175/ISO 15156.
- Every valve is 100% factory tested with nitrogen for leak-tight performance at its maximum working pressure.

531 Series

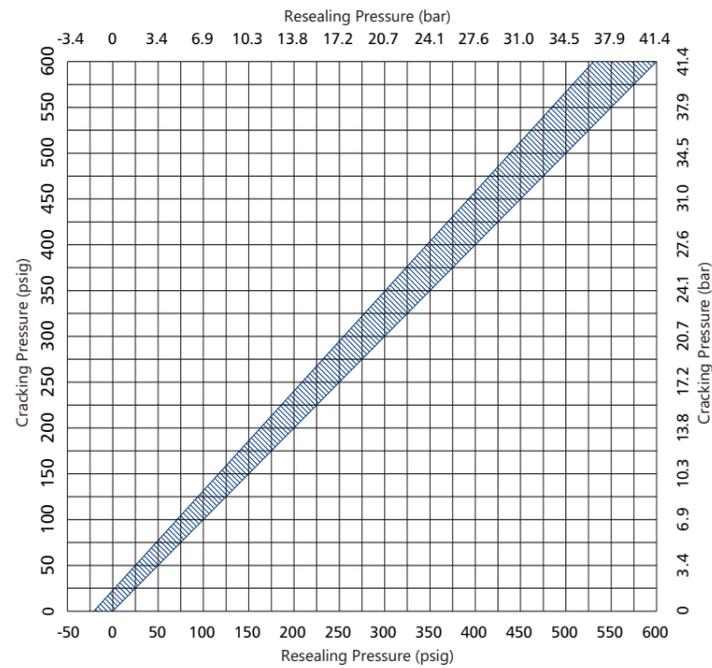
- Maximum working pressure: 3000 psig (207 bar)
- Working temperature: -10F to 375F (-23°C to 190°C)
- Cracking pressure: 3 to 600 psig (0.2 to 41.4 bar)
- Variety of end connections and materials available
- Suitable for sour gas service; materials are selected in accordance with NACE MR0175/ISO 15156.
- Every valve is 100% factory tested with nitrogen for leak-tight performance at its maximum working pressure.

Cracking Pressure and Resealing Pressure

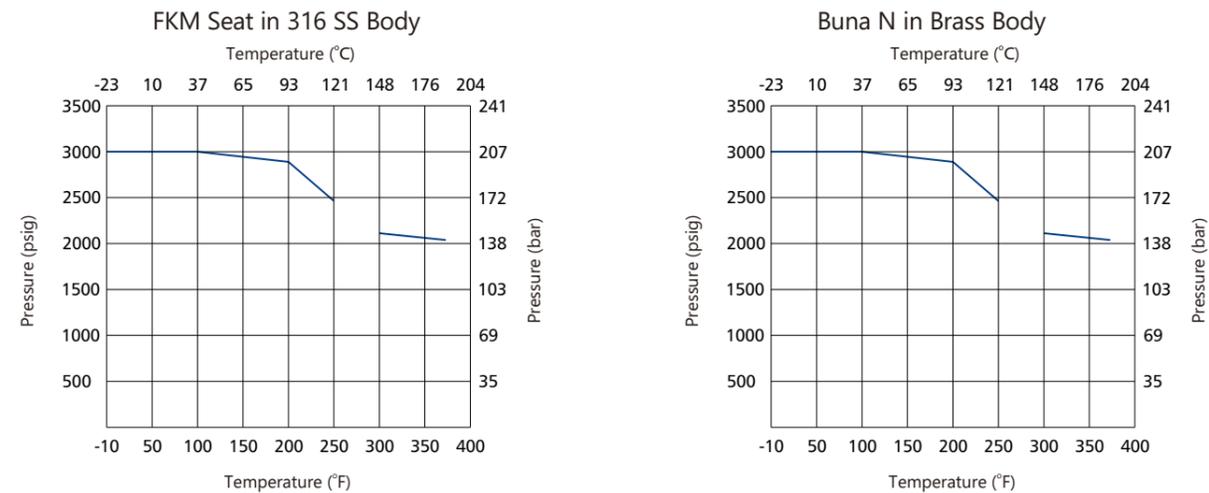
| Series | Nominal Cracking Pressure psig (bar) | Cracking Pressure Range psig (bar) | Resealing Pressure Range psig (bar) |
|--------|--|--|--|
| 53 | 1/3 (0.02) 1 (0.06) 10 (0.68) 25 (1.7) | 0 to 3 (0 to 0.21) 0 to 4 (0 to 0.28) 7 to 15 (0.49 to 1.1) 20 to 30 (1.4 to 2.1) | 6 to 20 (0.42 to 1.4) downstream pressure 5 to 20 (0.35 to 1.4) downstream pressure 3 to 10 (0.21 to 0.68) downstream pressure 5 (0.35) or higher upstream pressure |
| 531 | 3 to 50 (0.21 to 3.4) 50 to 150 (3.4 to 10.3) 150 to 350 (10.3 to 24.1) 350 to 600 (24.1 to 41.3) | — | Refer to the chart below |

Cracking Pressure and Resealing Pressure

53 and 531 Series

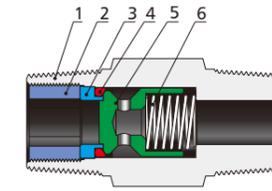


Pressure vs. Temperature



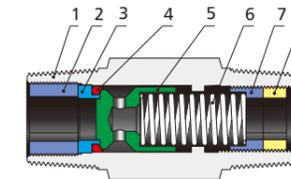
Standard Materials of Construction

53 Series



| Component | Valve Material Grade/ASTM Specification | |
|------------------------|---|---------------|
| | 316 SS | Brass |
| 1 Body | 316 SS/A479 | Brass 360/B16 |
| 2 Insert Locking Screw | 316 SS/A276 or A479 | Brass 360/B16 |
| 3 Insert | 316 SS/A479 | Brass 360/B16 |
| 4 O-ring | Fluorocarbon FKM | Buna N |
| 5 Poppet | 316 SS/A479 | Brass 360/B16 |
| 6 Spring | 302 SS/A313 | 302 SS/A313 |

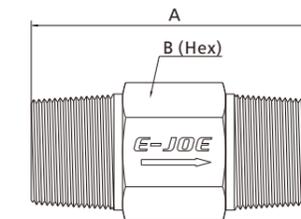
531 Series



| Component | Valve Material Grade/ASTM Specification | |
|------------------------|---|---------------|
| | 316 SS | Brass |
| 1 Body | 316 SS/A479 | Brass 360/B16 |
| 2 Insert Locking Screw | 316 SS/A479 | Brass 360/B16 |
| 3 Insert | 316 SS/A479 | Brass 360/B16 |
| 4 O-ring | Fluorocarbon FKM | Buna N |
| 5 Poppet | 316 SS/A479 | Brass 360/B16 |
| 6 Spring | 302 SS/A313 | 302 SS/A313 |
| 7 Adjusting Screw | 316 SS/A276 | 316 SS/A276 |
| 8 Locking Screw | 316 SS/A276 | 316 SS/A276 |

Dimensions

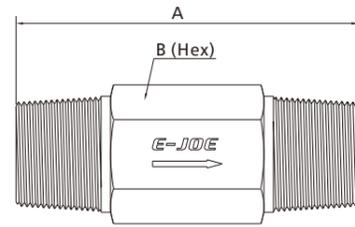
53 Series



| Basic Ordering Number | Connection Type and Size | | Cv | Dimension, in. (mm) | |
|-----------------------|--------------------------|-----------------|------|---------------------|----------------|
| | Inlet | Outlet | | A | B |
| □□ 53-FN4 | 1/4 Female NPT | 1/4 Female NPT | 0.35 | 2.41 (61.2) | 3/4 (19.05) |
| □□ 53-FN8 | 1/2 Female NPT | 1/2 Female NPT | 1.20 | 3.71 (94.2) | 1 1/16 (26.99) |
| □□ 53-N4 | 1/4 Male NPT | 1/4 Male NPT | 0.35 | 1.62 (41.1) | 9/16 (14.29) |
| □□ 53-N8 | 1/2 Male NPT | 1/2 Male NPT | 1.20 | 2.28 (57.9) | 7/8 (22.23) |
| □□ 53-FR4 | 1/4 Female BSPT | 1/4 Female BSPT | 0.35 | 2.54 (64.5) | 3/4 (19.05) |
| □□ 53-RT4 | 1/4 Male BSPT | 1/4 Male BSPT | | 1.62 (41.1) | 9/16 (14.29) |

Dimensions

531 Series



| Basic Ordering Number | Connection Type and Size | | Cv | Dimension, in. (mm) | |
|-----------------------|--------------------------|----------------|------|---------------------|--------------|
| | Inlet | Outlet | | A | B |
| □□ 531 -FN4 | 1/4 Female NPT | 1/4 Female NPT | 0.35 | 2.98 (75.7) | 3/4 (19.05) |
| □□ 531 -N4 | 1/4 Male NPT | 1/4 Male NPT | 0.35 | 1.62 (41.1) | 9/16 (14.29) |
| □□ 531 -N8 | 1/2 Male NPT | 1/2 Male NPT | 1.20 | 2.56 (65.0) | 7/8 (22.23) |
| □□ 531 -RT4 | 1/4 Male BSPT | 1/4 Male BSPT | 0.35 | 1.62 (41.1) | 9/16 (14.29) |
| □□ 531 -RT8 | 1/2 Male BSPT | 1/2 Male BSPT | 1.20 | 2.56 (65.0) | 7/8 (22.23) |

Flow Data at 70°F (20°C)

531 Series

| Air Flow (std L/min) | Cracking Pressure (psig) | | |
|----------------------|--------------------------|-----|-----|
| | 1 | 10 | 25 |
| | Cv = 0.35 | | |
| 12.5 | 85 | -- | -- |
| 25 | 201 | 121 | -- |
| 50 | 400 | 327 | 212 |
| 75 | 600 | 539 | 431 |
| 100 | 800 | 750 | 653 |
| 112.5 | -- | -- | 750 |

| Water Flow (L/min) | Cracking Pressure (psig) | | |
|--------------------|--------------------------|-----|-----|
| | 1 | 10 | 25 |
| | Cv = 0.35 | | |
| 7.5 | 2.6 | -- | -- |
| 15 | 5.3 | 0.9 | -- |
| 22.5 | 7.7 | 2.9 | -- |
| 30 | -- | 5 | 0.6 |
| 60 | -- | -- | 3.7 |
| 90 | -- | -- | 6.7 |

| Air Flow (std L/min) | Cracking Pressure (psig) | | |
|----------------------|--------------------------|------|------|
| | 1 | 10 | 25 |
| | Cv = 0.12 | | |
| 10 | 366 | -- | -- |
| 20 | 679 | 325 | -- |
| 30 | 1027 | 706 | 237 |
| 40 | 1351 | 1064 | 664 |
| 50 | 1692 | 1433 | 1122 |
| 60 | 2924 | 1814 | 1561 |

| Water Flow (L/min) | Cracking Pressure (psig) | | |
|--------------------|--------------------------|------|-----|
| | 1 | 10 | 25 |
| | Cv = 0.12 | | |
| 5 | 10.3 | -- | -- |
| 7.5 | 14.1 | -- | -- |
| 10 | 17.3 | -- | -- |
| 15 | -- | 2.3 | -- |
| 30 | -- | 13.2 | 1.0 |
| 37.5 | -- | 17.8 | 2.6 |
| 75 | -- | -- | 9.8 |

531 Series

| Air Flow (std L/min) | Cracking Pressure (psig) | | | |
|----------------------|--------------------------|------|------|------|
| | 3 | 50 | 150 | 350 |
| | Cv = 0.35 | | | |
| 50 | 323 | -- | -- | -- |
| 150 | 1165 | 841 | -- | -- |
| 250 | 2039 | 1769 | 615 | -- |
| 300 | 2425 | 2800 | 890 | -- |
| 400 | -- | -- | 1502 | 246 |
| 500 | -- | -- | 2098 | 726 |
| 600 | -- | -- | 2692 | 1207 |
| 700 | -- | -- | -- | 1700 |

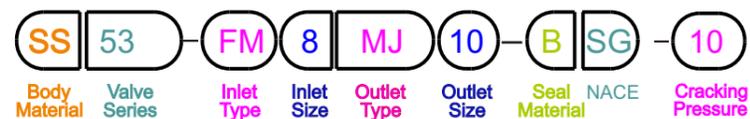
| Water Flow (L/min) | Cracking Pressure (psig) | | | |
|--------------------|--------------------------|-----|-----|-----|
| | 3 | 50 | 150 | 350 |
| | Cv = 0.35 | | | |
| 12.5 | 1.5 | -- | -- | -- |
| 25 | 4.1 | -- | -- | -- |
| 37.5 | 6.4 | -- | -- | -- |
| 75 | -- | 1.8 | -- | -- |
| 150 | -- | 6.3 | -- | -- |
| 175 | -- | 7.5 | 1.1 | -- |
| 250 | -- | -- | 4.5 | -- |
| 350 | -- | -- | 8.6 | -- |
| 400 | -- | -- | -- | 1.8 |
| 500 | -- | -- | -- | 5.1 |
| 550 | -- | -- | -- | 6.7 |

| Air Flow (std L/min) | Cracking Pressure (psig) | | | |
|----------------------|--------------------------|------|------|------|
| | 3 | 50 | 150 | 350 |
| | Cv = 0.12 | | | |
| 25 | 498 | -- | -- | -- |
| 50 | 1553 | -- | -- | -- |
| 75 | 2162 | 615 | -- | -- |
| 125 | -- | 1682 | -- | -- |
| 175 | -- | 2758 | 763 | -- |
| 250 | -- | -- | 1859 | -- |
| 300 | -- | -- | 2634 | -- |
| 350 | -- | -- | -- | 155 |
| 400 | -- | -- | -- | 1665 |
| 450 | -- | -- | -- | 2382 |

| Water Flow (L/min) | Cracking Pressure (psig) | | | |
|--------------------|--------------------------|------|------|------|
| | 3 | 50 | 150 | 350 |
| | Cv = 0.12 | | | |
| 12.5 | 3.0 | -- | -- | -- |
| 25 | 9.3 | -- | -- | -- |
| 37.5 | 15.2 | -- | -- | -- |
| 75 | -- | 5.3 | -- | -- |
| 150 | -- | 17.6 | -- | -- |
| 175 | -- | 21.4 | 2.5 | -- |
| 250 | -- | -- | 10.3 | -- |
| 350 | -- | -- | 20.2 | -- |
| 400 | -- | -- | -- | 4.4 |
| 500 | -- | -- | -- | 13.3 |
| 550 | -- | -- | -- | 21.5 |

53 and 531 Series How to Order

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Body Material

SS: CF8M
6L: CF3M
S4: CF8
4L: CF3
D5: Duplex 2205
D7: Duplex 2507
M: Alloy 400
INC: Alloy 600
HC: Alloy C-276

Valve Series

53: 53 Series
531: 531 Series

Inlet/Outlet Type

FN Female NPT
N Male NPT
FR Female BSPT
RT Male BSPT
FM Female ISO (for MRP)
MS Male ISO (for MRG)
FP Female BSPP (for RP)
BP Male BSPP (for RG)
FJ Fractional Tube Fitting
MJ Metric Tube Fitting

Inlet/Outlet Size

2 1/8"
4 1/4"
6 3/8" or 6 mm
8 1/2" or 8 mm
10 10 mm
12 3/4" or 12 mm
14 14 mm or M14 x 1.5
16 1" or 16 mm
18 18 mm
20 1 1/4" or 20 mm or M20 x 1.5
22 22 mm or M22 x 1.5
24 M24 x 1.5
25 25 mm

Seal Material

Standard with Fluorocarbon FKM
B Buna N
N Neoprene
E Ethylene propylene
Z Kalrez

NACE MR0175

Standard with no NACE Applicable

SG

Cracking Pressure

Standard for 3 psig cracking pressure (Only for 53 Series)
 Standard for 3 to 50 psig cracking pressure (Only for 531 Series)
0: 1/3 psig cracking pressure
1: 1 psig cracking pressure
10: 10 psig cracking pressure
25: 25 psig cracking pressure
50: 50 to 150 psig cracking pressure
150: 150 to 350 psig cracking pressure
350: 350 to 600 psig cracking pressure

Remark:

- Standard thread pitch for metric threads are as follows:
 M10 and below: 1 mm
 M12 to M20: 1.5 mm
 Standard thread pitch should be ignored in the ordering number, others should be specified.

NOTE:

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