

CHECK VALVES

H400
SERIES



- H-400** General purpose fixed cracking pressure check valve (MAWP 3000 psig)
- H-400 HP** High-performance fixed cracking pressure check valve (MAWP 6000 psig)
- H-400 CNG** ECE R110 Approved for the CNG / NGV fixed cracking pressure check valve (MAWP 3770 psig)
- H-400 OP** Compact one-piece fixed cracking pressure check valve (MAWP 3000 psigs)
- H-400 OPA** One-piece adjustable cracking pressure check valve (MAWP 3000 psig)
- H-400 A** Adjustable cracking pressure check valve (MAWP 3000 psig)

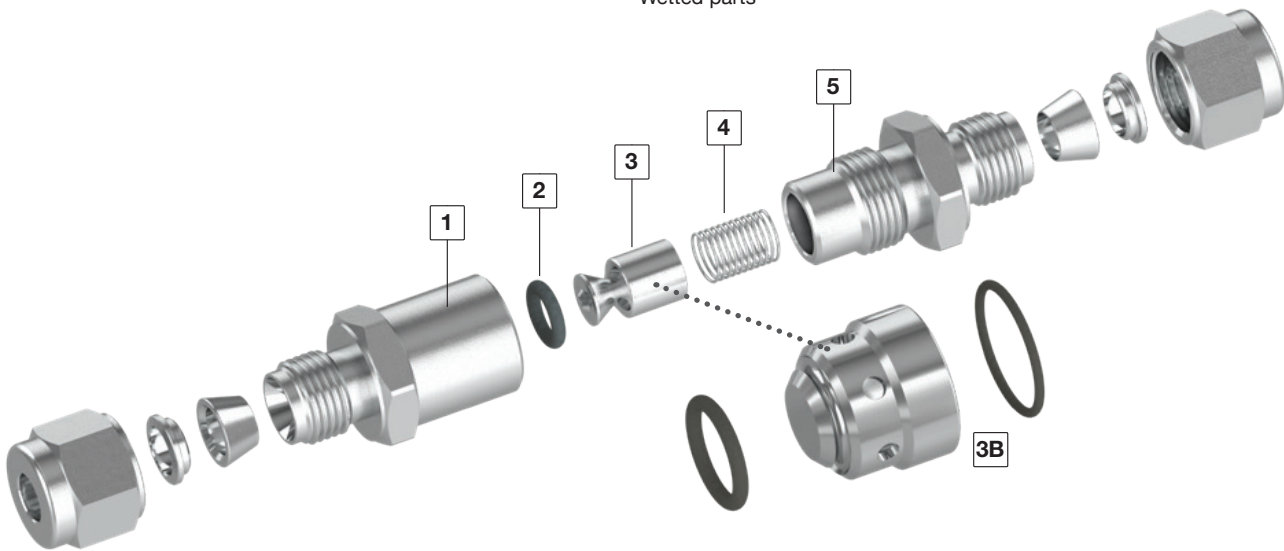
FEATURES

- 316 St.St. or brass body construction
- Moderate-Pressure Characteristics up to 3000 psi (206 bar)
- Compact design
- Varying fixed cracking-pressure springs
- HAM-LET LET-LOK®, Male & Female NPT, and HTC® Face-Seal Bead Ends.

MATERIALS OF CONSTRUCTION
for sizes 1/8"-1/2"

| Item No. | | Components | Qty. | Valve Body Material |
|-----------|---|-----------------|-------------------------|---------------------|
| 1 | | *Body | 1 | St.St. 316 |
| 2 | | *O-ring | 1 | Fluorocarbon FKM |
| 3 | | *Poppet | 1 | St.St. 316 |
| 4 | A | *Spring 1/3 psi | 1 | St.St. 304 |
| | B | *Spring 3 psi | 1 | St.St. 304 |
| | C | *Spring 10 psi | 1 | St.St. 304 |
| | D | *Spring 25 psi | 1 | St.St. 304 |
| 5 | | *End | 1 | St.St. 316 |
| Lubricant | | | Silicone and PTFE based | |

*Wetted parts



Sizes 1/8"-1/2"

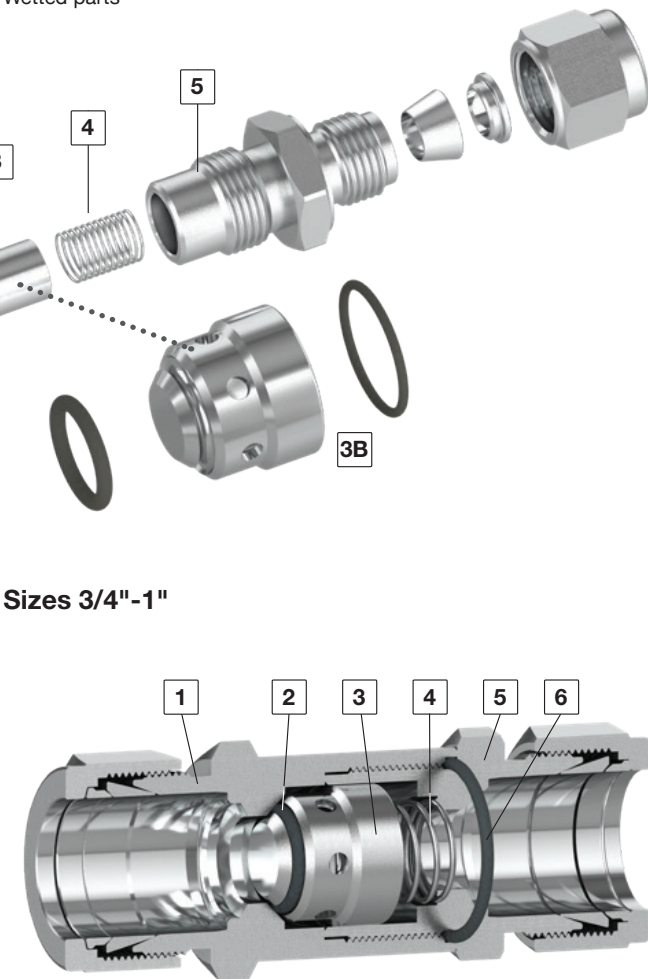
GENERAL

The H-400 Series is a compact design for instrumentation panels and systems, which provides an accurate operating point. H-400 valves are normally closed. When differential pressure between the inlet and outlet is higher than the set pressure of the spring, the loaded poppet will move backwards and will enable a free passage of flow through the valve.
For vacuum applications please select H-400HP series.

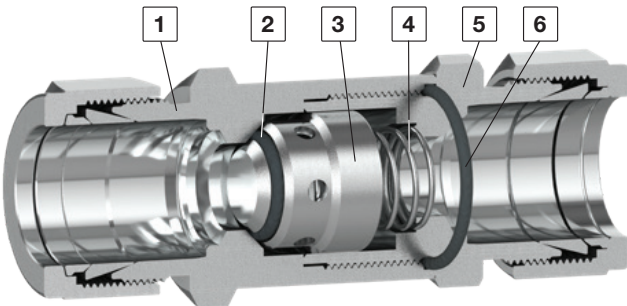
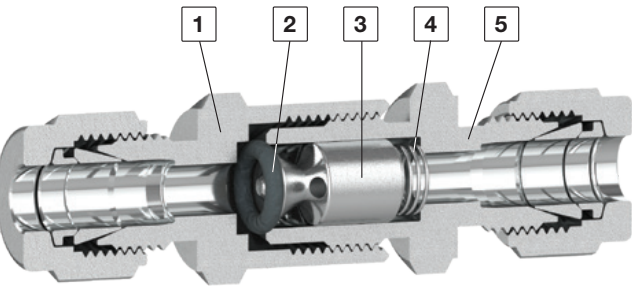
MATERIALS OF CONSTRUCTION
for sizes 3/4"-1"

| Item No. | | Components | Qty. | Valve Body Material |
|-----------|---|-----------------|-------------------------|---------------------|
| 1 | | *Body | 1 | St.St. 316 |
| 2 | | *O-ring | 1 | Fluorocarbon FKM |
| 3B | | *Poppet | 1 | St.St. 316 |
| 4 | A | *Spring 1/3 psi | 1 | St.St. 304 |
| | B | *Spring 3 psi | 1 | St.St. 304 |
| | C | *Spring 10 psi | 1 | St.St. 304 |
| | D | *Spring 25 psi | 1 | St.St. 304 |
| 5 | | *End | 1 | St.St. 316 |
| 6 | | *Upper O-ring | 1 | Fluorocarbon FKM |
| Lubricant | | | Silicone and PTFE based | |

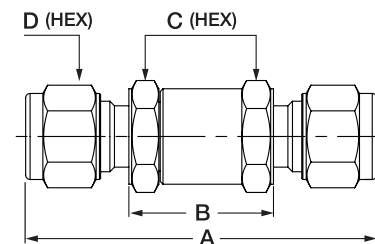
*Wetted parts



Sizes 3/4"-1"



STANDARD CONFIGURATION DIMENSIONS



| Valve Type | Connection / Size | | Cv | A | | B | | C | | D | |
|------------|-------------------------|-------------------------|------|------|------|------|------|-------|-------|-------|-------|
| | Inlet | Outlet | | mm | in | mm | in | mm | in | mm | in |
| H-400 | 1/8" LET-LOK® | 1/8" LET-LOK® | 0.1 | 56.0 | 2.20 | 25.3 | 1.00 | 15.88 | 5/8 | 11.11 | 7/16 |
| H-400 | 1/4" LET-LOK® | 1/4" LET-LOK® | 0.47 | 60.5 | 2.38 | 25.0 | 0.98 | 15.88 | 5/8 | 14.28 | 9/16 |
| H-400 | 6 MM LET-LOK® | 6 MM LET-LOK® | 0.47 | 60.5 | 2.38 | 25.0 | 0.98 | 15.88 | 5/8 | 14.00 | |
| H-400 | 3/8" LET-LOK® | 3/8" LET-LOK® | 1.47 | 63.5 | 2.50 | 24.9 | 0.98 | 17.46 | 11/16 | 17.46 | 11/16 |
| H-400 | 8 MM LET-LOK® | 8 MM LET-LOK® | 1.47 | 63.3 | 2.49 | 24.9 | 0.98 | 17.5 | 11/16 | 16.00 | |
| H-400 | 10 MM LET-LOK® | 10MM LET-LOK® | 1.68 | 64.0 | 2.52 | 24.9 | 0.98 | 17.46 | 11/16 | 19.00 | |
| H-400 | 1/2" LET-LOK® | 1/2" LET-LOK® | 1.68 | 77.0 | 3.03 | 32.6 | 1.28 | 23.8 | 15/16 | 22.23 | 7/8 |
| H-400 | 12 MM LET-LOK® | 12 MM LET-LOK® | 1.68 | 77.0 | 3.03 | 32.8 | 1.28 | 23.8 | 15/16 | 22.00 | |
| H-400 | 3/4" LET-LOK® | 3/4" LET-LOK® | 4.48 | 88.5 | 3.48 | 44.4 | 1.75 | 28.6 | 1-1/8 | 28.60 | 1-1/8 |
| H-400 | 1" LET-LOK® | 1" LET-LOK® | 4.48 | 120 | 4.72 | 67.2 | 2.65 | 34.9 | 1-3/8 | 38.10 | 1-1/2 |
| H-400 | 1" LET-LOK® High flow | 1" LET-LOK® High flow | 7.9 | 120 | 4.72 | 67.2 | 2.65 | 41.28 | 1-5/8 | 38.10 | 1-1/2 |
| H-410 | 1/8" Female NPT | 1/8" Female NPT | 0.1 | 44.0 | 1.73 | 25.4 | 1.00 | 15.88 | 5/8 | | |
| H-410 | 1/4" Female NPT | 1/4" Female NPT | 0.47 | 52.5 | 2.07 | 28.0 | 1.10 | 19.05 | 3/4 | | |
| H-410 | 3/8" Female NPT | 3/8" Female NPT | 1.47 | 51.5 | 2.03 | 34.1 | 1.34 | 22.23 | 7/8 | | |
| H-410 | 1/2" Female NPT | 1/2" Female NPT | 1.68 | 76.5 | 3.01 | 43.4 | 1.71 | 28.6 | 1-1/8 | | |
| H-410 | 3/4" Female NPT | 3/4" Female NPT | 4.48 | 86.0 | 3.39 | 56.0 | 2.20 | 34.9 | 1-3/8 | | |
| H-410 | 1" Female NPT | 1" Female NPT | 4.48 | 107 | 4.21 | 73.0 | 2.87 | 41.28 | 1-5/8 | | |
| H-410 | 1" Female NPT High flow | 1" Female NPT High flow | 7.9 | 107 | 4.21 | 67.2 | 2.65 | 41.28 | 1-5/8 | | |
| H-480 | 1/8" Male NPT | 1/8" Male NPT | 0.1 | 44.3 | 1.74 | 24.9 | 0.98 | 15.88 | 5/8 | | |
| H-480 | 1/4" Male NPT | 1/4" Male NPT | 0.47 | 55.7 | 2.19 | 25.0 | 0.98 | 19.05 | 3/4 | | |
| H-480 | 3/8" Male NPT | 3/8" Male NPT | 1.47 | 53.1 | 2.09 | 24.9 | 0.98 | 17.46 | 11/16 | | |
| H-480 | 1/2" Male NPT | 1/2" Male NPT | 1.68 | 70.4 | 2.77 | 32.6 | 1.28 | 23.8 | 15/16 | | |
| H-480 | 1/4" Male Face Seal | 1/4" Male Face Seal | 0.47 | 56.4 | 2.22 | 24.9 | 0.98 | 15.88 | 5/8 | | |
| H-480 | 1/2" Male Face Seal | 1/2" Male Face Seal | 1.68 | 68.2 | 2.69 | 32.6 | 1.28 | 23.8 | 15/16 | | |
| H-485 | 1/8" Male NPT | 1/8" Female NPT | 0.1 | 44.3 | 1.74 | 25.4 | 1.0 | 15.88 | 5/8 | | |
| H-485 | 1/4" Male NPT | 1/4" Female NPT | 0.47 | 53.7 | 2.11 | 27.3 | 1.07 | 19.05 | 3/4 | | |

Dimensions are for reference only and are subject to change.



GENERAL PURPOSE FIXED CRACKING PRESSURE CHECK VALVE **H-400 SERIES**

CRACKING PRESSURE

The differential pressure between the inlet and outlet, at which an initial flow is passing through the valve.

RESEAL PRESSURE

The differential pressure between the outlet and inlet, at which no flow is passing through the valve.

⚠ **Lubricant-Free cleaned valves have higher re-seal pressure.**

BACK PRESSURE

Maximum allowable back pressure is rated to 1000 psi (69 bar) for 1/4, 200 psi (14 bar) for 3/8 to 1".

In systems where pulses, pressure shock or pressure surges occur please select a valve from the H-400HP Series

O-RINGS*

| O-ring Material | Temperature Rating °F (°C) |
|----------------------|----------------------------|
| Buna N | -10 to 250 (-23 to 121) |
| EPDM | -50 to 300 (-45 to 148) |
| Fluorocarbon FKM | -10 to 375 (-23 to 190) |
| Perfluor | -15 to 500 (-26 to 260) |
| Polychloroprene (CR) | -40 to 250 (-40 to 121) |

*Different materials are available for special applications.

MAWP PRESSURE AT 21°C (70°F)

| SIZE | BRASS psi (bar) | ALSI 316 psi (bar) |
|---|-----------------|--------------------|
| 1/8, 1/4, 3/8, 1/2, 5/8, 6mm, 8mm, 10mm, 12mm | 3000 (207) | 3000 (207) |
| 3/4, 1", 16mm, 20mm, 22 mm | 1500 (103) | 2000 (138)** |

**CRN approved 1" Female NPT is limited to 1500 psi (103 bar)

CRACKING AND RESEAL PRESSURE

| Nominal Cracking Pressure | Cracking Pressure Range | Reseal Pressure |
|---------------------------|-------------------------|---------------------------------|
| psi (bar) | psi (bar) | psi (bar) |
| 1/3 (0.02) | Up to 3 (0.2) | Up to 6 (0.40) back pressure |
| 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 (0.2) or more inlet pressure |
| 25 (1.7) | 20 to 30 (1.3 to 2.0) | 17 (1.1) or more inlet pressure |

PRESSURE - TEMPERATURE RATING FOR STANDARD CONFIGURATIONS

1/8 TO 1/2 INCH, 3MM TO 12 MM

| Material | 316St.St. | Brass |
|-----------------------|-----------------------------|------------|
| Temperature F° (C°) | Working Pressure, psi (bar) | |
| -10 (-23) to 100 (37) | 3000 (206) | 3000 (206) |
| 200 (93) | 2575 (177) | 2600 (179) |
| 250 (121) | 2450 (168) | 2405 (165) |
| 300 (148) | 2325 (160) | - |
| 375 (190) | 2185 (150) | - |

3/4 TO 1 INCH, 18MM TO 25MM

| Material | 316St.St. | Brass |
|-----------------------|-----------------------------|-------------|
| Temperature F° (C°) | Working Pressure, psi (bar) | |
| -10 (-23) to 100 (37) | 2000 (137) | 1500 (103) |
| 200 (93) | 1715 (118) | 1300 (89.5) |
| 250 (121) | 1630 (112) | 1200 (82.6) |
| 300 (148) | 1545 (106) | - |
| 375 (190) | 1450 (99.9) | - |

Note: Ratings based on Fluorocarbon FKM O-ring.

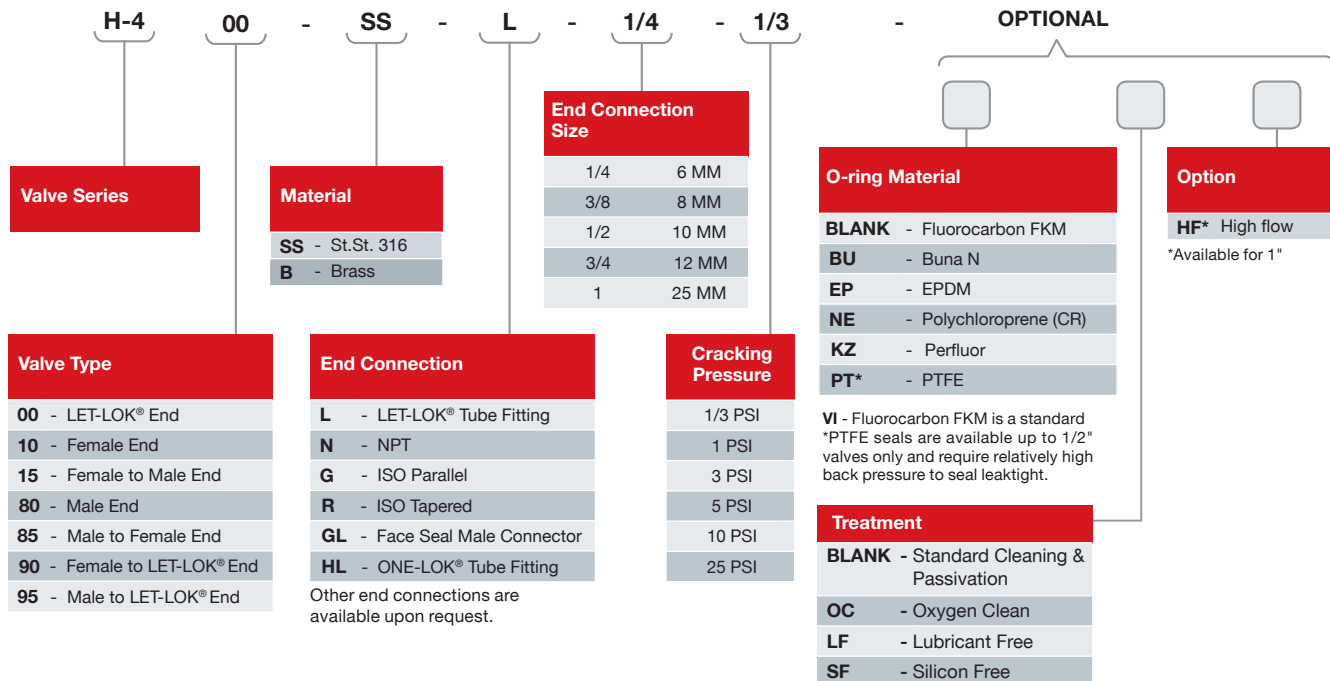
CLEANING & PACKAGING

Every H-400 series Check valve is cleaned in accordance with Standard Cleaning and Packaging (procedure 8184). Oxygen Clean & Lubricant-Free Cleaning and packaging, in accordance with Special Cleaning and Packaging (procedure 8185), is available as an option.

TESTING

The H-400 valve designs have been tested for proof and burst. Every H-400 valve is factory tested for proper assembly with Nitrogen at 1000 psig (68 bar) for 10 seconds. Every H-400 valve is factory tested for functionality at the relevant cracking pressure, 5 cycles each. No detectable leakage is allowed during shell test.

H-400 SERIES ORDERING INFORMATION



SPARE KITS

| Series | End Size | Spring Kit* | O-Ring Kit** |
|--|-----------------|-----------------------------|------------------------|
| H-410 Female Ends H-490 Female to Let-Lok® | 1/8 | Z-400-SPK-1/4- X PSI | Z-400-SK-1/4- □ |
| | 1/4 , 3/8 | Z-400-SPK-3/8- X PSI | Z-400-SK-3/8- □ |
| | 1/2 | Z-410-SPK-1/2- X PSI | Z-410-SK-1/2- □ |
| | 3/4 | Z-410-SPK-3/4- X PSI | Z-410-SK-3/4- □ |
| | 1 | Z-410-SPK-1"- X PSI | Z-410-SK-1"- □ |
| H-485 Male to Female H-415 Female to Male | 1/8 | Z-400-SPK-1/4- X PSI | Z-400-SK-1/4- □ |
| | 1/4, 3/8 | Z-400-SPK-3/8- X PSI | Z-400-SK-3/8- □ |
| | 1/2 | Z-410-SPK-1/2- X PSI | Z-410-SK-1/2- □ |
| | 3/4 | Z-410-SPK-3/4- X PSI | Z-410-SK-3/4- □ |
| H-400 Let-Lok® H-480 Male Ends H-495 Male to Let-Lok | 1/8, 1/4, 6mm | Z-400-SPK-1/4- X PSI | Z-400-SK-1/4- □ |
| | 3/8 , 8mm, 10mm | Z-400-SPK-3/8- X PSI | Z-400-SK-3/8- □ |
| | 1/2, 12mm | Z-400-SPK-1/2- X PSI | Z-400-SK-1/2- □ |
| | 3/4 | Z-400-SPK-3/4- X PSI | Z-400-SK-3/4- □ |
| | 1 | Z-410-SPK-1- X PSI | Z-410-SK-1- □ |

* Spring Kit includes Spring and label

** O-ring Kit includes O-ring and label

X =spring type per "How To Order"

□ =O-Ring material per "How To Order"

HAM-LET Check Valves should never be used as safety relief devices. These valves are not designed for pressure release.

HIGH PERFORMANCE FIXED CRACKING PRESSURE CHECK VALVE **H-400HP SERIES**

FEATURES

- 316 St.St. construction
- High-Pressure Characteristics up to 6000 psi (413 bar)
- Small Size
- Variable Fixed Cracking Pressure
- HAM-LET LET-LOK®, Male & Female NPT, and HTC Face Seal Bead Ends
- Suitable for vacuum applications
- ECE R110 approved for the CNG/NGV as an option

GENERAL

The H-400HP Series is a compact, robust and heavy duty design for high-pressure (up to 6000 psi) instrumentation panels and systems, which provides an accurate operating point. H-400HP valves are normally closed. When the differential pressure between the inlet and the outlet is higher than the set pressure of the spring, the loaded poppet will move backwards and provide a free passage of flow through the valve.

H-400HP CNG is specially designed for the CNG/NGV

MATERIALS OF CONSTRUCTION

| No. | Components | Qty. | Standard | CNG ⁽¹⁾ |
|-----------|----------------|------|---------------------------------------|---|
| 1 | *Body | 1 | St.St. ASTM A-479 | St.St. ASTM A-479 |
| 2 | *Bonded Poppet | 1 | Fluorocarbon FKM Bonded on 316 St.St. | Low temperature Fluorocarbon FKM Bonded on 316 St.St. |
| 3 | *Pusher | 1 | St.St. ASTM A-479 | St.St. ASTM A-479 |
| 4 | *Spring | 1 | St.St. 304 | St.St. 304 |
| 5 | *O-ring | 1 | Fluorocarbon FKM | Low temperature Fluorocarbon FKM |
| 6 | *Back Up | 1 | Fluorocarbon FKM | Fluorocarbon FKM |
| 7 | *End | 1 | St.St. ASTM A-479 | St.St. ASTM A-479 |
| Lubricant | | | Silicone and PTFE based | |

⁽¹⁾ **CNG:** MAWP 3770 psi (260 bar) Temperature range: -40°C (-40°F)

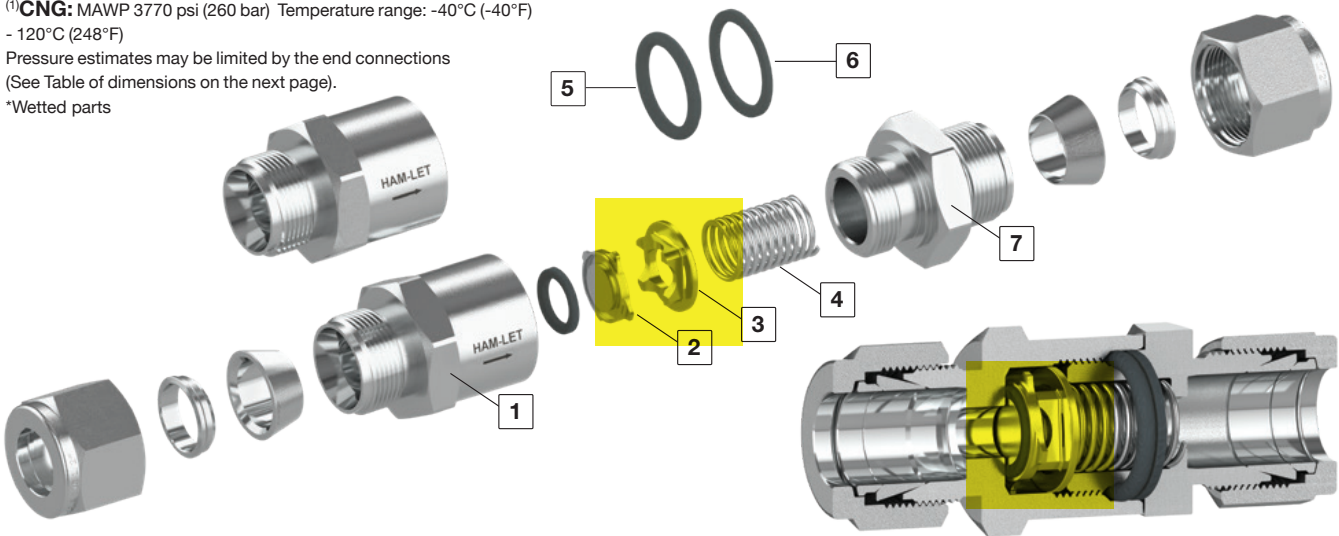
- 120°C (248°F)

Pressure estimates may be limited by the end connections
(See Table of dimensions on the next page).

*Wetted parts

PRESSURE TEMPERATURE RATING*

| Material Size | 316SS | |
|-----------------------|-------------------------------------|------------------|
| | 1/8, 1/4, 3/8, 1/2", 6,8,10,12mm | 22&25mm , 3/4&1" |
| Temperature F° (C°) | Working-Pressure, psi (bar) | |
| -10 (-23) to 100 (37) | 6000 (413) | 5000 (344) |
| 200 (93) | 5160 (355) | 4290 (296) |
| 250 (121) | 4910 (338) | 4080 (281) |
| 300 (148) | 4660 (321) | 3875 (267) |
| 400 (204) | 4280 (295) | 3560 (245) |



CRACKING AND RESEAL PRESSURE

| Nominal Cracking Pressure | Cracking Pressure Range | Reseal Pressure |
|---------------------------|-------------------------|---------------------------------|
| psi (bar) | psi (bar) | psi (bar) |
| 1/3 (0.02) | Up to 3 (0.2) | Up to 6 (0.40) back pressure |
| 1 (0.06) | Up to 4 (0.27) | Up to 4 (0.27) 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 (0.2) or more inlet pressure |
| 25 (1.7) | 20 to 30 (1.3 to 2.0) | 17 (1.1) or more inlet pressure |

CRACKING PRESSURE

The differential pressure between the inlet and outlet, at which an initial flow is passing through the valve.

TECHNICAL DATA

| Connection Sizes | Max. Flow Coefficient (Cv) | Nominal Cracking Pressure psi (bar) | Back Pressure at 70°F (20°C) psi (bar) |
|--------------------|----------------------------|-------------------------------------|--|
| 1/8, 1/4, 6mm | 0.67 | 1/3, 1, 5, 10 & 25 | 6000 (413) |
| 3/8, 1/2, 8-12 mm | 1.80 | (0.02, 0.06, 0.34, | |
| 3/4, 1, 22mm, 25mm | 4.7 | 0.68, and 7.1) | 5000 (344) |

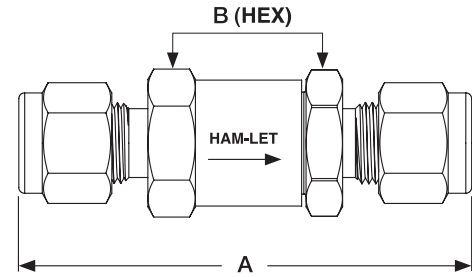
RESEAL PRESSURE

The differential pressure between the outlet and inlet, at which no flow is passing through the valve.

⚠ **Lubricant-Free cleaned valves have higher re-seal pressure.**

CLEANING & PACKAGING

Every H-400HP series Check valve is cleaned in accordance with Standard Cleaning and Packaging (procedure 8184). Oxygen Clean & Lubricant-Free Cleaning and packaging, in accordance with Special Cleaning and Packaging (procedure 8185), is available as an option.



STANDARD CONFIGURATION DIMENSIONS

| Valve Type | Inlet | Outlet | Pressure Ratings at 100F° / 37C° psig (bar) | Dimensions | | |
|------------|----------------------|----------------------|--|------------|------|-------|
| | | | | A | | B |
| | | | | mm | in | in |
| H-400HP | 1/8" LET-LOK® | 1/8" LET-LOK® | 6000 (413) | 57.8 | 2.28 | 11/16 |
| | 1/4" LET-LOK® | 1/4" LET-LOK® | | 61.8 | 2.43 | |
| | 3/8" LET-LOK® | 3/8" LET-LOK® | | 70.0 | 2.76 | 1 |
| | 1/2" LET-LOK® | 1/2" LET-LOK® | | 75.3 | 2.96 | |
| | 3/4" LET-LOK® | 3/4" LET-LOK® | 5000 (344) | 89.5 | 3.52 | 1 5/8 |
| | 1" LET-LOK® | 1" LET-LOK® | 4700 (323) | 98.5 | 3.88 | |
| | 6MM LET-LOK® | 6MM LET-LOK® | 6000 (413) | 61.8 | 2.43 | 11/16 |
| | 8MM LET-LOK® | 8MM LET-LOK® | | 68.5 | 2.70 | |
| | 10MM LET-LOK® | 10MM LET-LOK® | | 71.1 | 2.80 | 1 |
| | 12MM LET-LOK® | 12MM LET-LOK® | | 75.3 | 2.96 | |
| H-410HP | 22MM LET-LOK® | 22MM LET-LOK® | 5000 (344) | 88.5 | 3.48 | 1 5/8 |
| | 25MM LET-LOK® | 25MM LET-LOK® | 4700 (323) | 98.5 | 3.88 | |
| | 1/4" Female NPT/BSPT | 1/4" Female NPT/BSPT | 6000 (413) | 54.1 | 2.13 | 11/16 |
| | 3/8" Female NPT/BSPT | 3/8" Female NPT/BSPT | 5000 (344) | 64.8 | 2.55 | 1 |
| | 1/2" Female NPT/BSPT | 1/2" Female NPT/BSPT | 4600 (316) | 83.6 | 3.03 | 1 |
| | 3/4" Female NPT/BSPT | 3/4" Female NPT/BSPT | 4300 (296) | 90.1 | 3.23 | 1 5/8 |
| | 1" Female NPT/BSPT | 1" Female NPT/BSPT | 4100 (282) | 97.3 | 3.83 | |
| | 1/4" Female BSPP | 1/4" Female BSPP | 6000 (413) | 58.0 | 2.28 | 11/16 |
| | 1/2" Female BSPP | 1/2" Female BSPP | 4600 (316) | 83.5 | 3.29 | 1 |
| | 3/4" Female BSPP | 3/4" Female BSPP | 4300 (296) | 90.1 | 3.55 | 1 5/8 |
| H-480HP | 1" Female BSPP | 1" Female BSPP | 4100 (282) | 97.4 | 3.83 | |
| | 1/2" Female SAE/MS | 1/2" Female SAE/MS | 4600 (316) | 69.5 | 2.74 | 1 |
| | 1/8" Male NPT/BSPT | 1/8" Male NPT/BSPT | 6000 (413) | 45.6 | 1.80 | 11/16 |
| | 1/4" Male NPT/BSPT | 1/4" Male NPT/BSPT | 6000 (413) | 55.0 | 2.17 | |
| | 3/8" Male NPT/BSPT | 3/8" Male NPT/BSPT | | 60.0 | 2.36 | 1 |
| | 1/2" Male NPT/BSPT | 1/2" Male NPT/BSPT | 6000 (413) | 69.2 | 2.72 | |
| | 3/4" Male NPT/BSPT | 3/4" Male NPT/BSPT | 5000 (344) | 83.5 | 3.29 | 1 5/8 |
| | 1" Male NPT/BSPT | 1" Male NPT/BSPT | | 93.3 | 3.67 | |
| | 1/4" Male BSPP | 1/4" Male BSPP | 6000 (413) | 55.0 | 2.17 | 3/4 |
| | 1/2" Male BSPP | 1/2" Male BSPP | | 69.2 | 2.72 | 1 |
| | 3/4" Male BSPP | 3/4" Male BSPP | 5000 (344) | 85.2 | 3.35 | 1 5/8 |
| | 1" Male BSPP | 1" Male BSPP | | 93.3 | 3.67 | |
| | 1/2" Male SAE/MS | 1/2" Male SAE/MS | 6000 (413) | 63.0 | 2.48 | 1 |
| | 1/4" Male HO Fitting | 1/4" Male HO Fitting | | 50.4 | 1.98 | 11/16 |
| | 1/2" Male HO Fitting | 1/2" Male HO Fitting | | 59.8 | 2.35 | 1 |
| | 3/4" Male HO Fitting | 3/4" Male HO Fitting | | 73.6 | 2.90 | 1 5/8 |
| | 1" Male HO Fitting | 1" Male HO Fitting | 5000 (344) | 73.6 | 2.90 | |
| | 1/4" Male Face Seal | 1/4" Male Face Seal | 6000 (413) | 58.0 | 2.28 | 11/16 |
| | 1/2" Male Face Seal | 1/2" Male Face Seal | 3500 (241) | 69.2 | 2.72 | 1 |
| | 3/4" Male Face Seal | 3/4" Male Face Seal | 3000 (206) | 96.1 | 3.78 | 1 5/8 |

Dimensions are for reference only and are subject to change.

HIGH PERFORMANCE FIXED CRACKING PRESSURE CHECK VALVE **H-400HP SERIES**



O-RINGS

Different materials are available for special applications.

| O-ring Material | Temperature Rating °F (°C) |
|----------------------|-------------------------------|
| Buna N | -10 to 250 (-23 to 121) |
| EPDM | -50 to 300 (-45 to 148) |
| Fluorocarbon FKM | -10 to 400 (-23 to 204) |
| Polychloroprene (CR) | -40 to 250 (-40 to 121) |

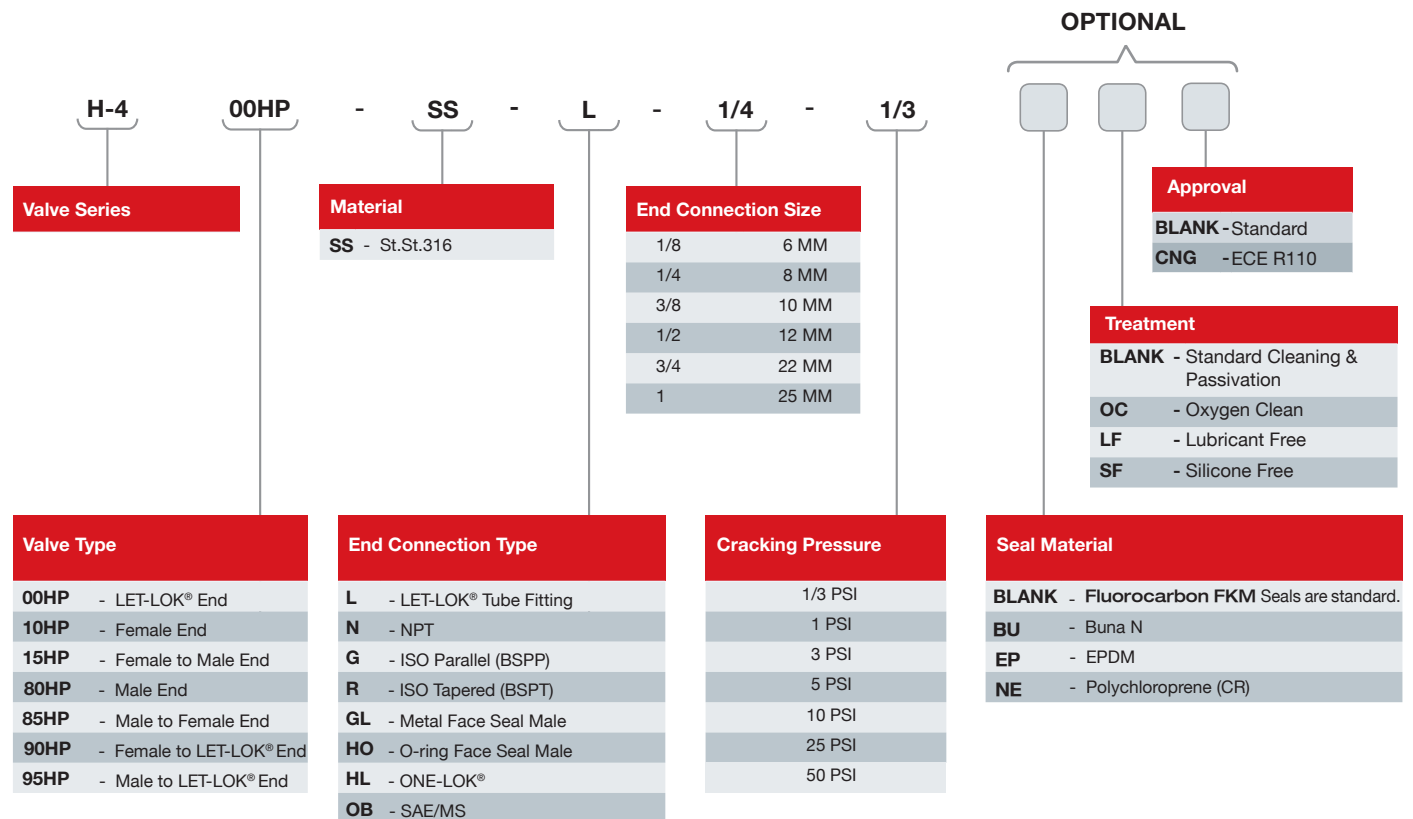
TESTING

The H-400HP valve designs have been tested for proof and burst. Every H-400HP valve is factory tested for proper assembly with Nitrogen at 1000 psig (68 bar) for 10 seconds.

Every H-400HP valve is factory tested for functionality at the relevant cracking pressure, 5 cycles each.

No detectable leakage is allowed during shell test.

H-400HP SERIES ORDERING INFORMATION



Note: Check valves are designed and suitable for direct flow control only. These valves are not meant for pressure release.

ORDERING INFORMATION SPARE PARTS KIT / REPAIR KIT

SEAL KIT

The kit includes O-ring, Back-up & Bonded Poppet and Label.

Z - 400HP - SK - 1/4 - VI

| Body Designator per End Connection |
|---------------------------------------|
| 1/4 For 1/8, 1/4, 6MM |
| 1/2 For 3/8, 1/2, 10MM, 12MM |
| 3/4 For 3/4, 1", 25MM |

| Seal Material |
|---------------------------|
| VI - Fluorocarbon FKM |
| BU - Buna N |
| NE - Polychloroprene (CR) |
| EP - EPDM |

SPRING KIT

The kit includes Spring & Label.

Z - 400HP - SPK - 1/4 - 1/3

| Body Designator per End Connection |
|---------------------------------------|
| 1/4 For 1/8, 1/4, 6MM |
| 1/2 For 3/8, 1/2, 10MM, 12MM |
| 3/4 For 3/4, 1", 25MM |

| Cracking Pressure |
|-------------------|
| 1/3 PSI |
| 1 PSI |
| 3 PSI |
| 5 PSI |
| 10 PSI |
| 25 PSI |
| 50 PSI |

Warning!
The system designer and user have the sole responsibility for selecting products suitable for their special application requirements, ensuring their safe and trouble-free installation, operation, and maintenance. Application details, material compatibility and product ratings should all be considered for each selected product. Improper selection, installation or use of products can cause property damage or personal injury.

HAM-LET Check Valves should never be used as safety relief devices.

GENERAL

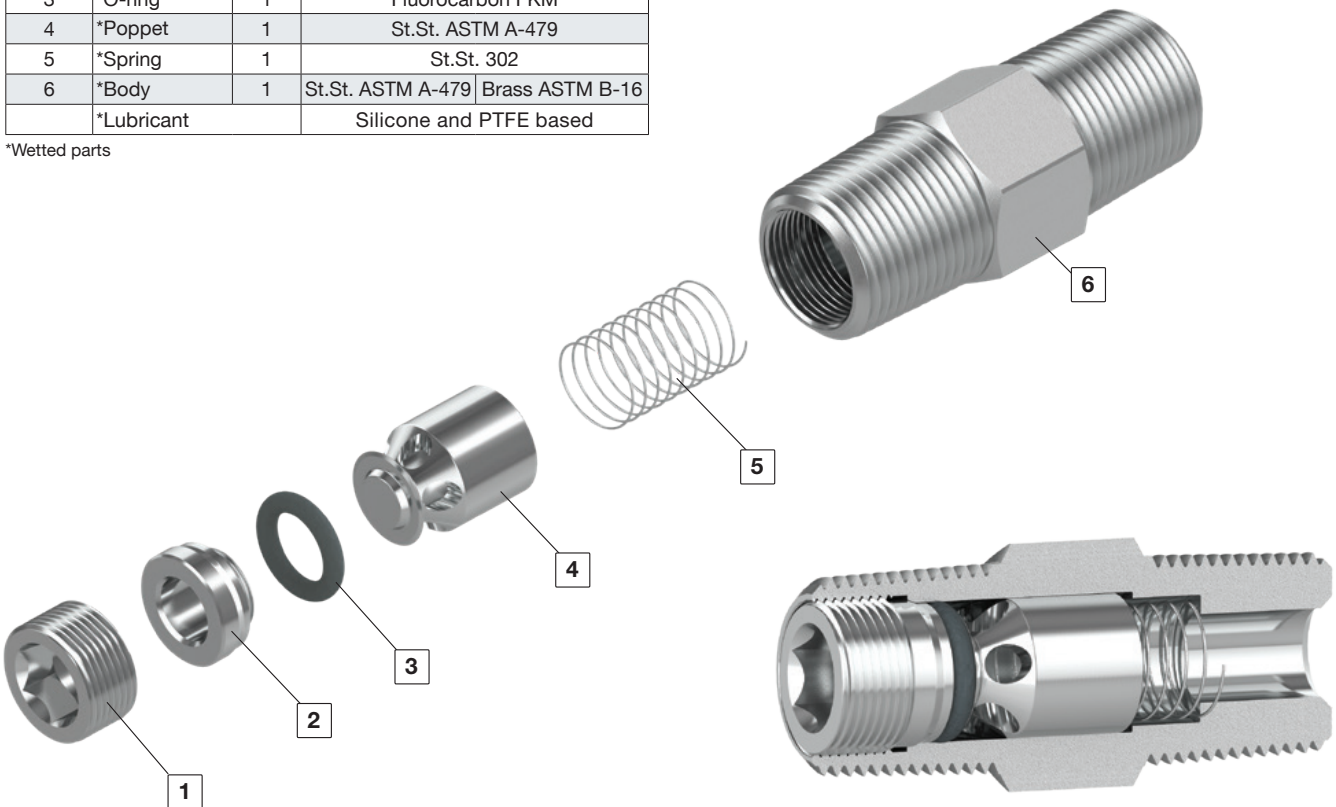
The H-400OP Series is a compact one-piece design for moderate pressure (up to 3000 psi) instrumentation panels and systems, which provides a fixed operating point. H-400OP valves are normally closed. When the differential pressure between the inlet and the outlet is higher than the set pressure of the spring, the loaded poppet will move backwards and provide a free passage for flow through the valve.

For vacuum applications, please select the H-400HP series.

MATERIALS OF CONSTRUCTION

| Item No. | Components | Qty. | Valve Body Material | |
|----------|----------------|------|-------------------------|-----------------|
| | | | 316 St.St. | Brass |
| 1 | *Lock Screw | 1 | St.St. 304 | Brass ASTM B-16 |
| 2 | *O-ring Holder | 1 | St.St. ASTM A-479 | |
| 3 | *O-ring | 1 | Fluorocarbon FKM | |
| 4 | *Poppet | 1 | St.St. ASTM A-479 | |
| 5 | *Spring | 1 | St.St. 302 | |
| 6 | *Body | 1 | St.St. ASTM A-479 | Brass ASTM B-16 |
| | *Lubricant | | Silicone and PTFE based | |

*Wetted parts



O-RINGS

Different materials are available for special applications.

| O-ring Material | Temperature Rating °F (°C) |
|---------------------------|-------------------------------|
| Buna N | -10 to 250 (-23 to 121) |
| Ethylene Propylene (EPDM) | -50 to 300 (-45 to 148) |
| Fluorocarbon FKM | -10 to 375 (-23 to 190) |
| Perfluor | -15 to 500 (-26 to 260) |
| Polychloroprene (CR) | -40 to 250 (-40 to 121) |

TECHNICAL DATA

| Connection Sizes | Max. Flow Coefficient (Cv) | Nominal Cracking Pressure psi (bar) | Back Pressure at 70°F (20°C) psi (bar) |
|------------------|----------------------------|--|--|
| 1/4 | 0.35 | 1/3, 1, 10 & 25 | 3000 (207) |
| 1/2 | 1.20 | (0.02, 0.06, 0.68, and 7.1) | |

CLEANING & PACKAGING

Every H-400OP series Check valve is cleaned in accordance with Standard Cleaning and Packaging (procedure 8184). Oxygen Clean & Lubricant-Free Cleaning and packaging, in accordance with Special Cleaning and Packaging (procedure 8185), is available as an option.

TESTING

The H-400OP valve designs have been tested for proof and burst. Every H-400OP valve is factory tested for proper assembly with Nitrogen at 1000 psig (68 bar) for 10 seconds. Every H-400OP valve is factory tested for functionality at the relevant cracking pressure, 5 cycles each. No detectable leakage is allowed during shell test.

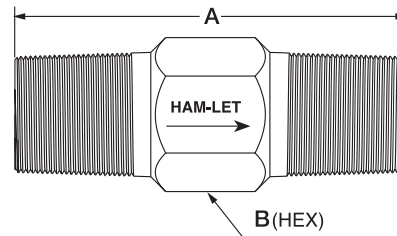
STANDARD CONFIGURATION DIMENSIONS

| End Connection Inlet / Outlet | Size | Dimensions | | |
|----------------------------------|------|------------|------|--------|
| | | A | | B |
| | | mm | in | in |
| Female NPT | 1/4 | 61.0 | 2.4 | 3/4 |
| | 1/2 | 94.0 | 3.7 | 1 1/16 |
| Male NPT | 1/4 | 41.0 | 1.61 | 9/16 |
| | 1/2 | 58.0 | 2.28 | 7/8 |
| Female / Male NPT | 1/4 | 58.0 | 2.28 | 3/4 |
| Male / Female NPT | 1/4 | 44.5 | 1.75 | 3/4 |
| | 1/2 | 72.0 | 2.83 | 1 1/16 |
| Female BSPT | 1/4 | 61.0 | 2.54 | 3/4 |
| Male BSPT | 1/2 | 41.0 | 1.61 | 9/16 |

Dimensions are for reference only and are subject to change.

PRESSURE TEMPERATURE RATING

| Material | 316 St.St. | Brass |
|-----------------------|-----------------------------|------------|
| Temperature F° (C°) | Working Pressure, psi (bar) | |
| -10 (-23) to 100 (37) | 3000 (206) | 3000 (206) |
| 200 (93) | 2575 (177) | 2600 (179) |
| 250 (121) | 2450 (168) | 2405 (165) |
| 300 (148) | 2325 (160) | - |
| 375 (190) | 2185 (150) | - |



CRACKING AND RE-SEAL PRESSURE

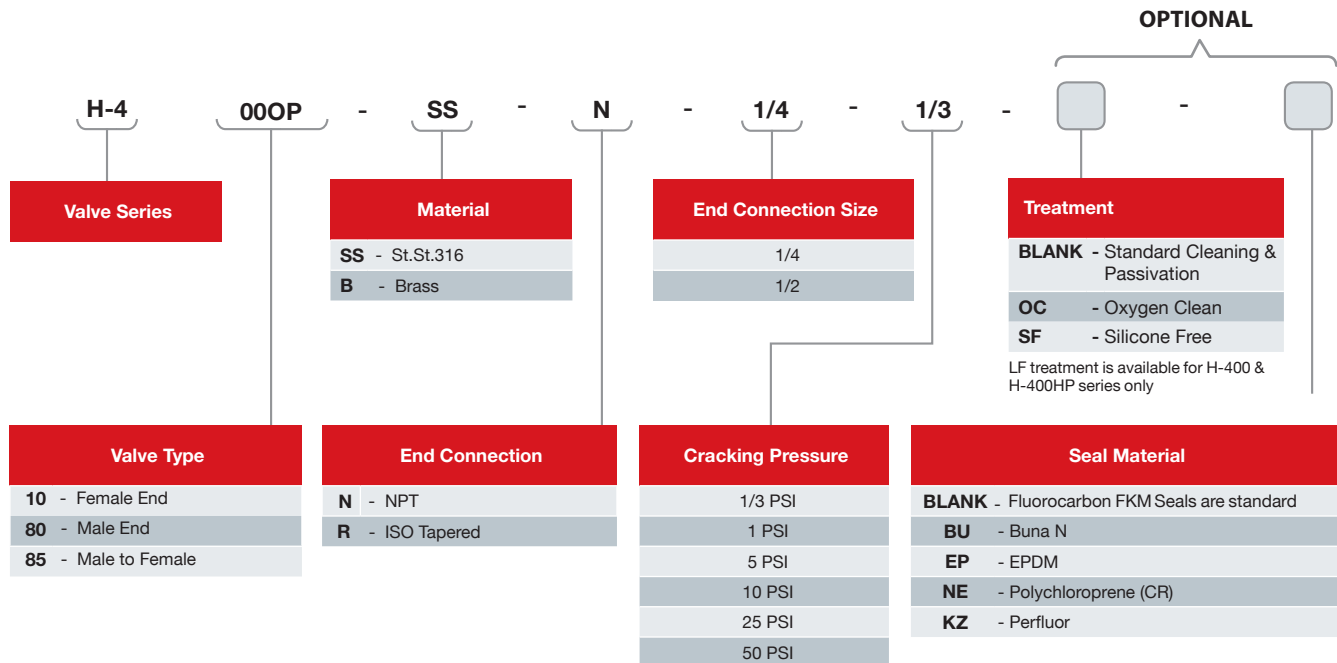
| Nominal Cracking Pressure | Cracking Pressure Range | Reseal Pressure |
|---------------------------------|-------------------------------|-------------------------------------|
| psi (bar) | psi (bar) | psi (bar) |
| 1/3 (0.02) | Up to 3 (0.2) | 6 to 20 (0.41 to 1.3) back pressure |
| 1 (0.06) | Up to 4 (0.27) | 5 to 20 (0.34 to 1.3) back pressure |
| 10 (0.68) | 7 to 13 (0.48 to 0.89) | 3 to 10 (0.2 to 0.68) back pressure |
| 25 (1.7) | 21 to 29 (1.4 to 1.9) | 5 (0.34) or more inlet pressure |

CRACKING PRESSURE

The differential pressure between the inlet and outlet, at which an initial flow is passing through the valve.

RESEAL PRESSURE

The differential pressure between the outlet and inlet, at which no flow is passing through the valve.

H-400OP SERIES ORDERING INFORMATION

Note: Check valves are designed and suitable for direct flow control only. These valves are not meant for pressure release.

ORDERING INFORMATION SPARE KITS**SEAL KIT**

The kit includes O-Ring and label

Z - **400OP** - **SK** - **1/4** - **VI**

| Body Designator per End Connection | Seal Material |
|------------------------------------|----------------------------------|
| 1/4 | VI - Fluorocarbon FKM |
| 1/2 | BU - Buna N |
| | EP - EPDM |
| | NE - Polychloroprene (CR) |
| | KZ - Perfluor |

SPRING KIT

The kit includes Spring & label

Z - **400OP** - **SPK** - **1/4** - **1/3**

| Body Designator per End Connection | Cracking Pressure |
|------------------------------------|-------------------|
| 1/4 | 1/3 PSI |
| 1/2 | 1 PSI |
| | 5 PSI |
| | 10 PSI |
| | 25 PSI |
| | 50 PSI |

Springs for other cracking pressures are available upon request.

Warning!

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FEATURES

- One-piece body
- 316 St.St. or Brass construction
- Variable Adjustable Cracking Pressure Ranges
- Pressure Characteristics: up to 3000 psi
- HAM-LET Male & Female NPT, Male BSPT

GENERAL

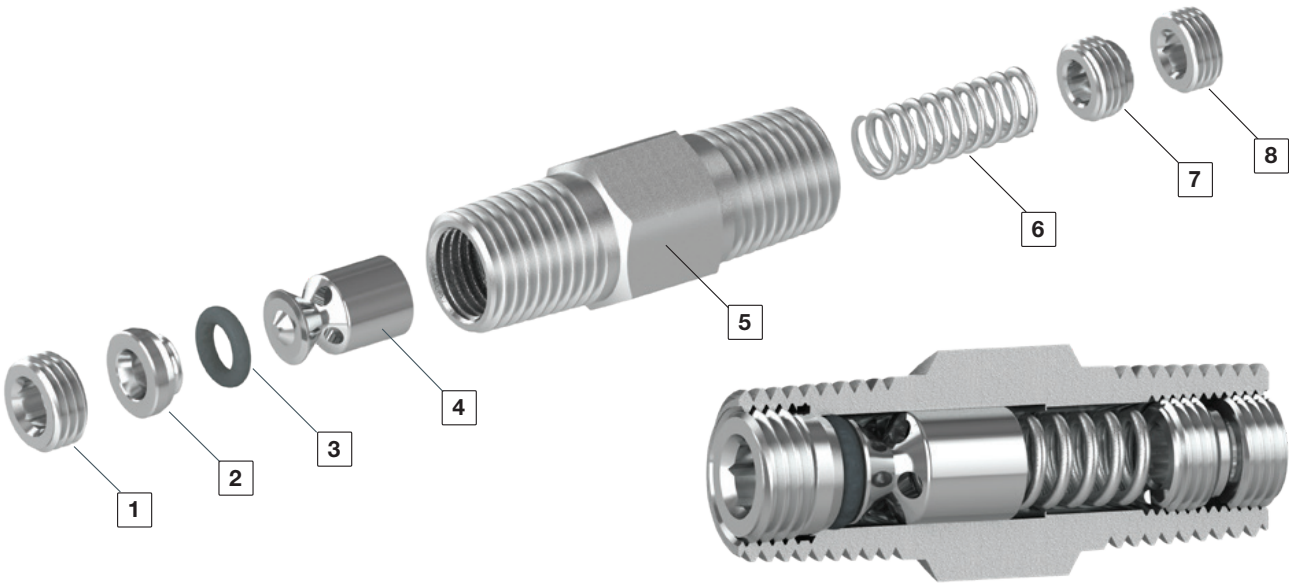
The H-400OPA Series is a compact one-piece design for moderate-pressure up to 3000 psi (206 bar) instrumentation panels and systems, which provides an accurate and adjustable operating point. H-400OPA valves are normally closed. When the differential pressure between the inlet and the outlet is higher than the set pressure of the spring, the loaded poppet will move backwards and provide a free passage for flow through the valve.

For vacuum applications, please select the H-400HP series.

MATERIALS OF CONSTRUCTION

| Item No. | Components | Qty. | Valve Body Material | |
|----------|-------------------|------|-------------------------|-----------------|
| | | | 316 St.St. | Brass |
| 1 | *Inlet Lock Screw | 1 | St.St. 304 | Brass ASTM B-16 |
| 2 | *O-ring Holder | 1 | St.St. ASTM A-479 | Brass ASTM B-16 |
| 3 | *O-ring | 1 | Fluorocarbon FKM | |
| 4 | *Poppet | 1 | St.St. ASTM A-479 | |
| 5 | *Body | 1 | St.St. ASTM A-479 | Brass ASTM B-16 |
| 6 | *Spring | 1 | St.St. 302 | |
| 7 | *Adjusting Screw | 1 | St.St. 304 | |
| 8 | *Lock Screw | 1 | St.St. 304 | |
| | Lubricant | | Silicone and PTFE based | |

*Wetted parts



PRESSURE TEMPERATURE RATING

| Material Size | 316St.St. | Brass |
|-----------------------|------------------------------|------------|
| Temperature F° (C°) | Working Pressure, psig (bar) | |
| -10 (-23) to 100 (37) | 3000 (206) | 3000 (206) |
| 200 (93) | 2575 (177) | 2600 (179) |
| 250 (121) | 2450 (168) | 2405 (165) |
| 300 (148) | 2325 (160) | - |
| 375 (190) | 2185 (150) | - |

O-RINGS

Different materials are available for special applications.

| O-ring Material | Temperature Rating °F (°C) |
|----------------------|----------------------------|
| Buna N | -10 to 250 (-23 to 121) |
| EPDM | -50 to 300 (-45 to 148) |
| Fluorocarbon FKM | -10 to 375 (-23 to 190) |
| Perfluor | -15 to 500 (-26 to 260) |
| Polychloroprene (CR) | -40 to 250 (-40 to 121) |

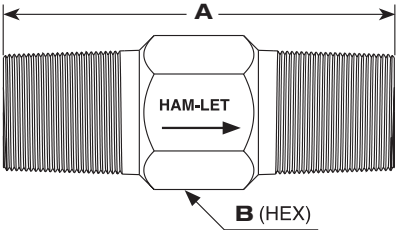
CLEANING & PACKAGING

HAM-LET H-400OPA valves are treated with HAM-LET Passivation, Cleaning and Packaging (Procedure 8075).

HAM-LET H-400OPA valves with face-seal end connections are treated with HAM-LET Oxygen Cleaning and Packaging (Procedure 8055). Oxygen Cleaning and Packaging for other end connections are available as an option.

STANDARD CONFIGURATION DIMENSIONS

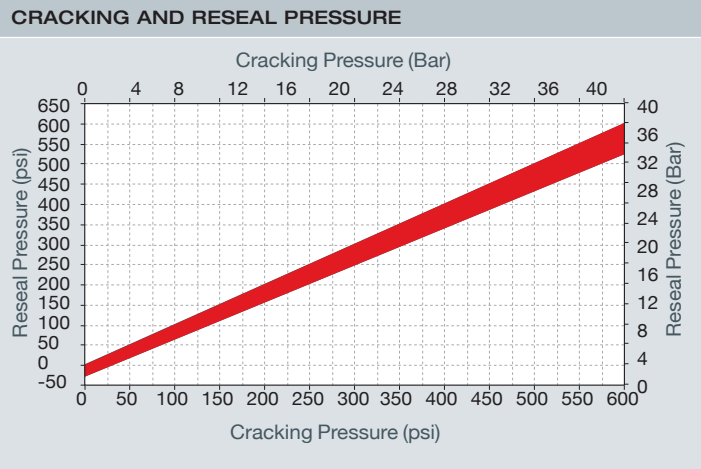
| End Connection | Size Inlet / Outlet | Dimensions | | |
|----------------|------------------------|------------|------|------|
| | | A | | B |
| | | mm | in | in |
| Female NPT | 1/4 | 75.5 | 2.97 | 3/4 |
| Male NPT | 1/4 | 41 | 1.61 | 9/16 |
| | 1/2 | 65 | 2.55 | 7/8 |
| Male BSPT | 1/4 | 41 | 1.61 | 9/16 |
| | 1/2 | 65 | 2.55 | 7/8 |



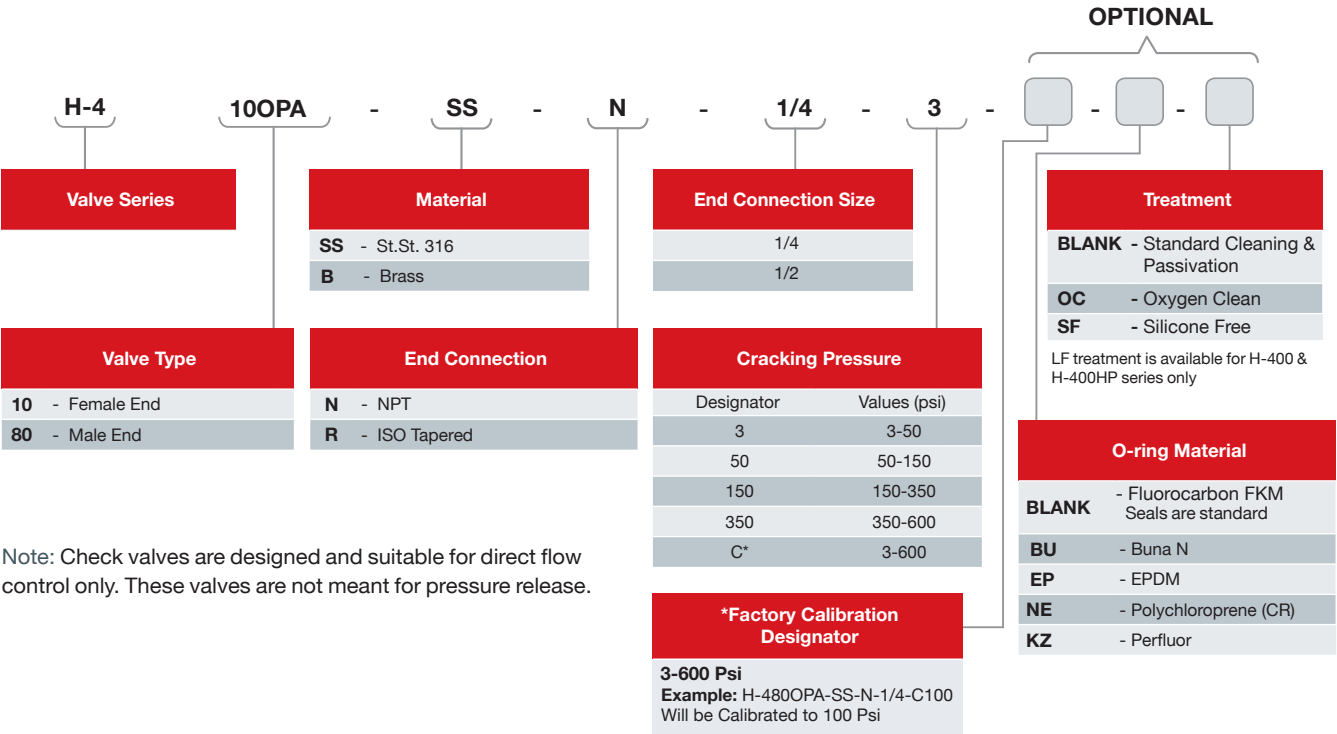
Dimensions are for reference only and are subject to change.

TECHNICAL DATA

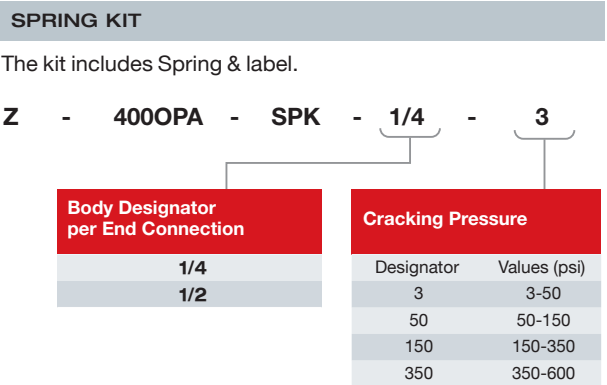
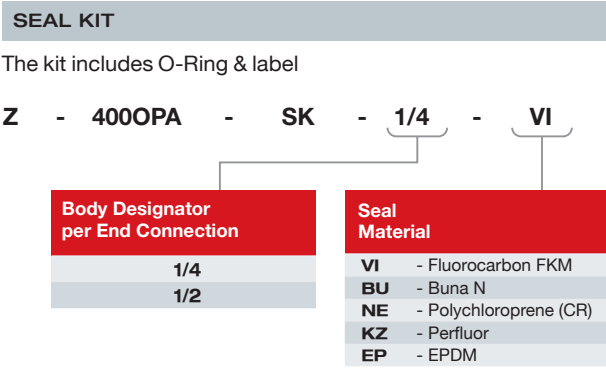
| End Connection Size | Max. FlowCoefficient (Cv) | Nominal Cracking Pressure psi (bar) | Back Pressure at 70°F (20°C) psi (bar) |
|---------------------|-------------------------------|--|---|
| 1/4 | 0.35 | 3 to 50 (0.2 to 3.4) | 3000 (207) |
| | | 50 to 150 (3.4 to 10.3) | |
| 1/2 | 1.20 | 150 to 350 (10.3 to 24.1) | |
| | | 350 to 600 (24.1 to 41.3) | |



H-400OPA SERIES ORDERING INFORMATION



ORDERING INFORMATION SPARE KITS



Warning!
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FEATURES

- 316 St.St. or Brass construction
- Variable adjustable cracking pressure ranges
- Pressure Characteristics: up to 3000 psi
- HAM-LET LET-LOK® Fittings, Male NPT, and HTC® Face Seal Bead

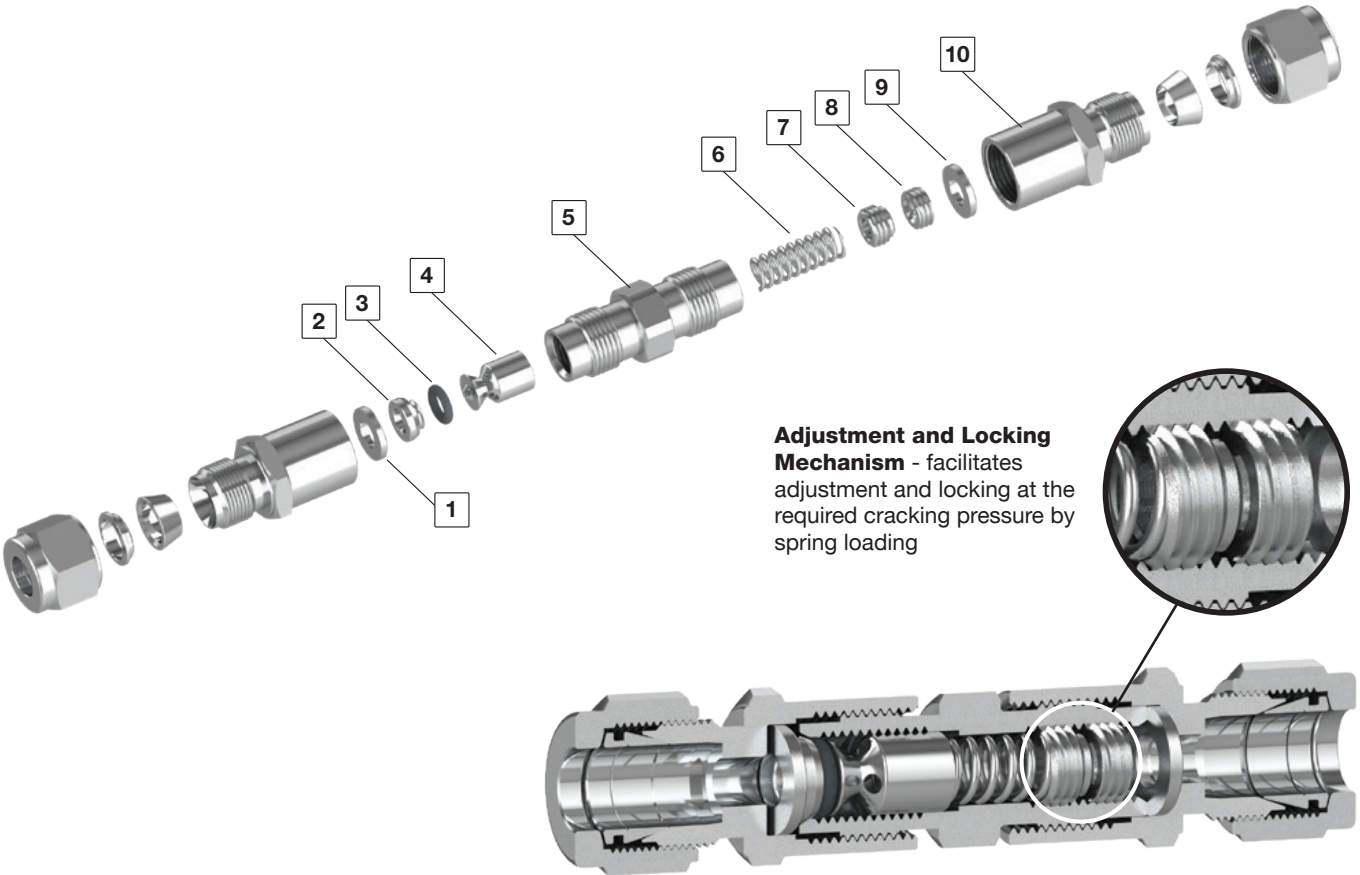
GENERAL

The H-400A Series is a compact design for moderate-pressure (up to 3000 psi) instrumentation panels and systems, which provides an accurate and adjustable operating point. H-400A valves are normally closed. When the differential pressure between the inlet and the outlet is higher than the set pressure of the spring, the loaded poppet will move backwards and provide a free passage for flow through the valve.

| MATERIALS OF CONSTRUCTION | | | | |
|---------------------------|------------------|------|--------------------------|-----------------------|
| Item No. | Components | Qty. | Valve Body Material | |
| | | | 316 St.St. | Brass |
| 1 | *Gasket | 1 | 316 St.St. Silver plated | Al-6061 Silver plated |
| 2 | *O-ring Holder | 1 | St.St. ASTM A-479 | Brass ASTM B-16 |
| 3 | *O-ring | 1 | Fluorocarbon FKM | |
| 4 | *Poppet | 1 | St.St. ASTM A-479 | |
| 5 | *Body | 1 | St.St. ASTM A-479 | Brass ASTM B-16 |
| 6 | *Spring | 1 | St.St. 302 | |
| 7 | *Adjusting Screw | 1 | St.St. 304 | |
| 8 | *Lock Screw | 1 | St.St. 304 | |
| 9 | *Gasket | 1 | 316 St.St. Silver plated | Al-6061 Silver plated |
| 10 | *End | 2 | St.St. ASTM A-479 | Brass ASTM B-16 |
| | Lubricant | | Silicone and PTFE based | |

*Wetted parts

| PRESSURE - TEMPERATURE RATING FOR STANDARD CONFIGURATIONS | | |
|---|-----------------------------|------------|
| Material Size | 316St.St. | Brass |
| Temperature F° (C°) | Working Pressure, psi (bar) | |
| -10 (-23) to 100 (37) | 3000 (206) | 3000 (206) |
| 200 (93) | 2575 (177) | 2600 (179) |
| 250 (121) | 2450 (168) | 2405 (165) |
| 300 (148) | 2325 (160) | - |
| 375 (190) | 2185 (150) | - |



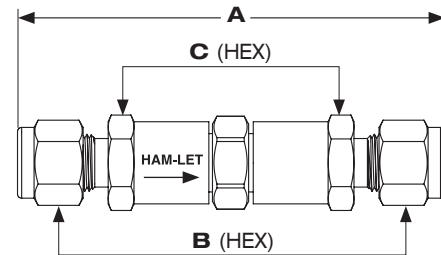
CLEANING & PACKAGING

Every H-4000A series Check valve is cleaned in accordance with Standard Cleaning and Packaging (procedure 8184). Oxygen Clean & Lubricant-Free Cleaning and packaging, in accordance with Special Cleaning and Packaging (procedure 8185), is available as an option.

DIMENSIONS

| Intlet | Outlet | A | | B | C |
|--------------------|--------------------|------|------|------|-----|
| | | mm | in | Hex | Hex |
| 1/4 Let-Lok® | 1/4 Let-Lok® | 82.5 | 3.25 | 9/16 | 5/8 |
| 6MM Let-Lok® | 6MM Let-Lok® | 82.5 | 3.25 | 14MM | 5/8 |
| 8MM Let-Lok® | 8MM Let-Lok® | 84.4 | 3.32 | 16MM | 5/8 |
| 1/4 Male NPT | 1/4 Let-Lok® | 79.3 | 3.12 | 9/16 | 5/8 |
| 1/4 Male Face Seal | 1/4 Male Face Seal | 78.4 | 3.09 | - | 5/8 |
| 1/4 Male NPT | 1/4 Male NPT | 75.7 | 2.98 | - | 5/8 |

Dimensions are for reference only and are subject to change.



TECHNICAL DATA

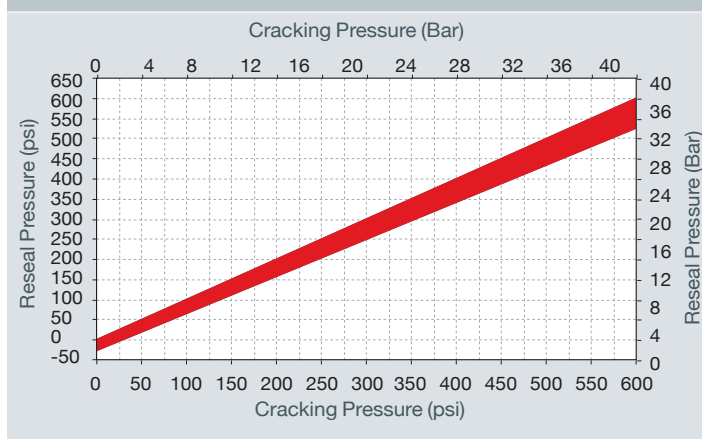
| Connection Size | Max. Flow Coefficient (Cv) | Nominal Cracking Pressure psi (bar) | Back Pressure at 70°F (20°C) psi (bar) |
|-----------------|----------------------------|-------------------------------------|--|
| 1/4, 6mm, 8mm | 0.37 | 3 to 50 (0.2 to 3.4) | 3000 (413) |
| | | 50 to 150 (3.4 to 10.3) | |
| | | 150 to 350 (10.3 to 24.1) | |
| | | 350 to 600 (24.1 to 41.3) | |

O-RINGS

Different materials are available for special applications.

| O-ring Material | Temperature Rating °F (°C) |
|----------------------|----------------------------|
| Buna N | -10 to 250 (-23 to 121) |
| EPDM | -50 to 300 (-45 to 148) |
| Fluorocarbon FKM | -10 to 375 (-23 to 190) |
| Perfluor | -15 to 500 (-26 to 260) |
| Polychloroprene (CR) | -40 to 250 (-40 to 121) |

CRACKING AND RESEAL PRESSURE

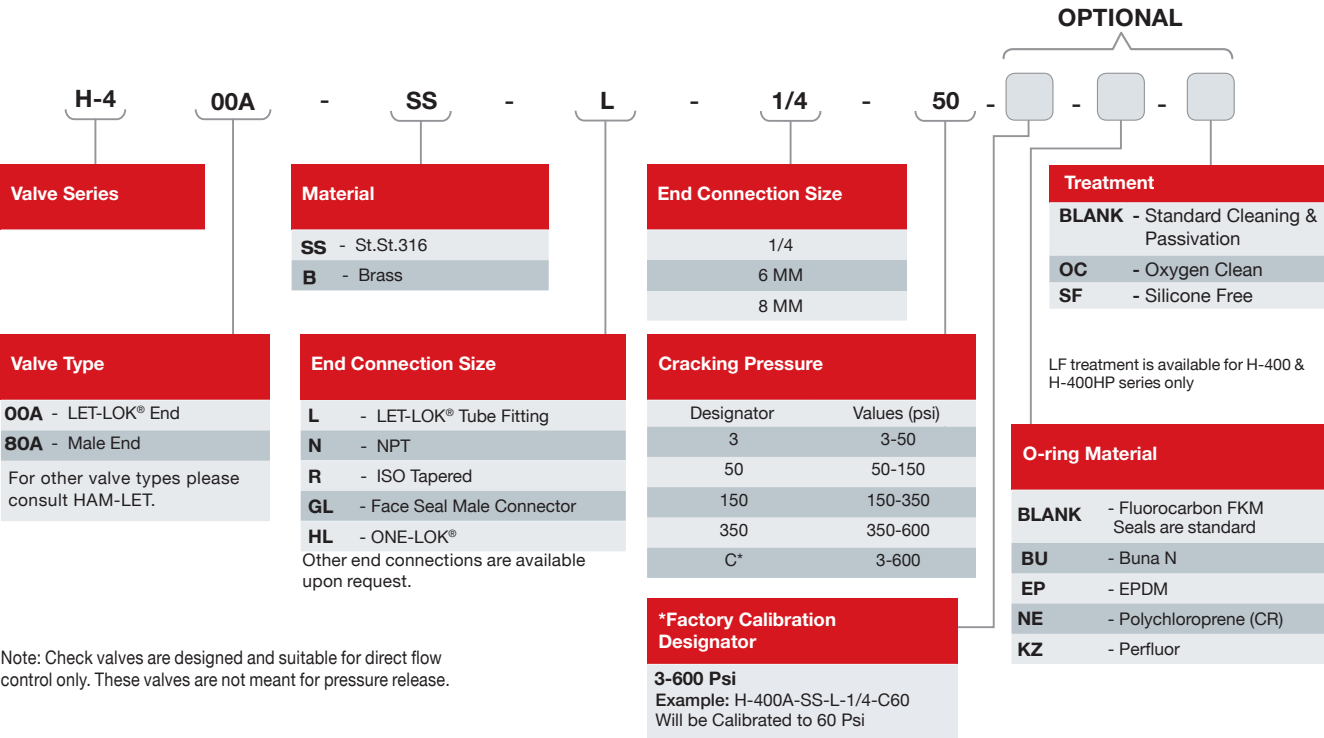


TESTING

The H-400A valve designs have been tested for proof and burst.
Every H-400A valve is factory tested for proper assembly with Nitrogen at 1000 psig (68 bar) for 10 seconds.

Every H-400A valve is factory tested for functionality at the relevant cracking pressure, 5 cycles each.
No detectable leakage is allowed during shell test.

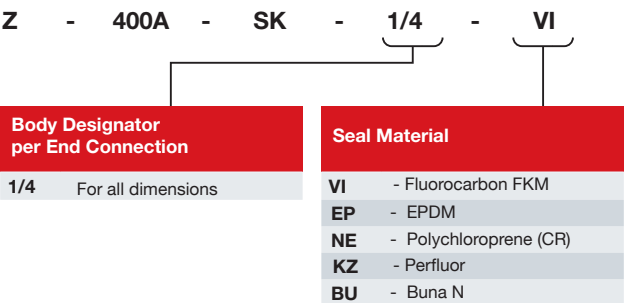
H-400A SERIES ORDERING INFORMATION



ORDERING INFORMATION SPARE KITS

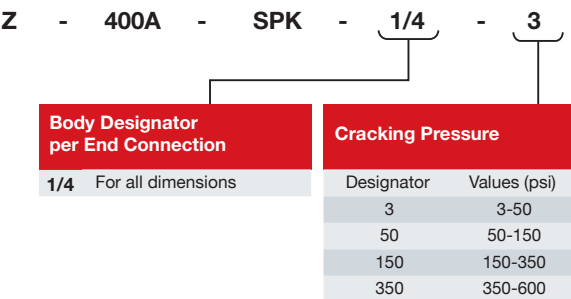
SEAL KIT

The kit includes O-ring & Label.



SPRING KIT

The kit includes Spring & Label.



Warning!

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