

CHECK VALVES

H-400 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 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

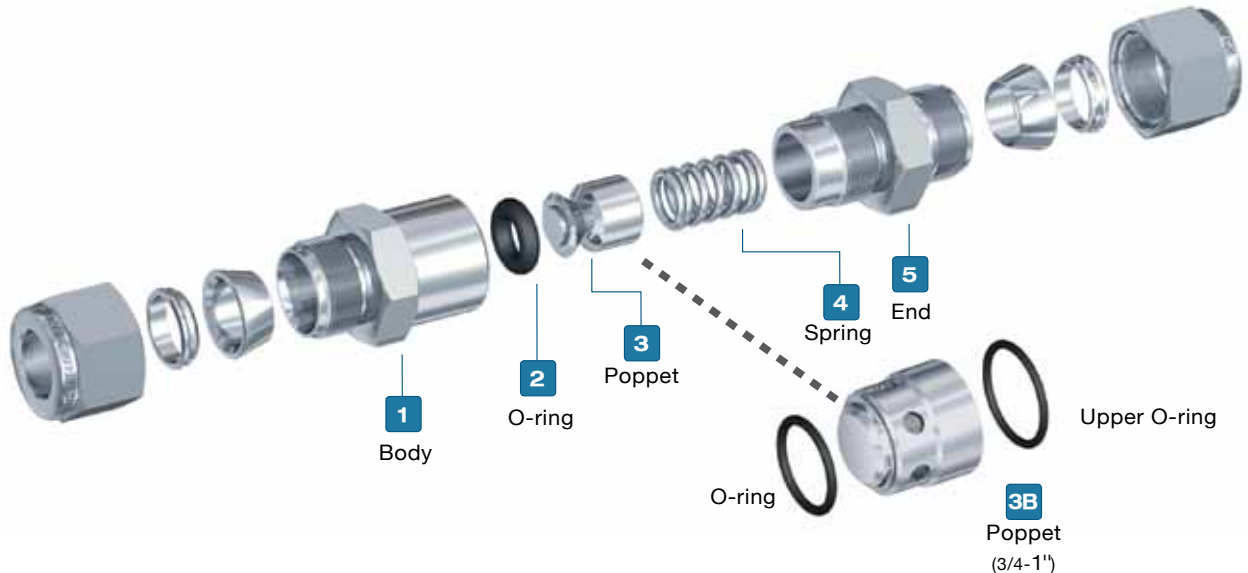
- 316 St.St. and Brass construction
- Moderate Pressure Characteristics (up to 3000 psi)
- Compact Design
- Variable fixed cracking-pressure springs
- HAM-LET LET-LOK®, Male & Female NPT, and HTC® Face-Seal Bead Ends.

GENERAL

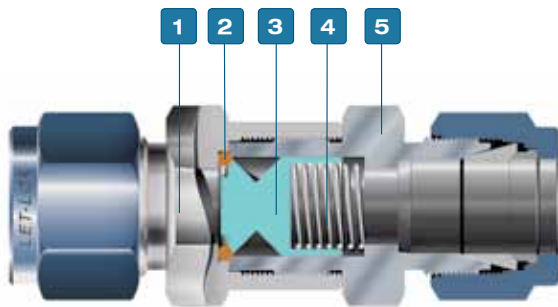
The H-400 Series is a compact design for instrumentation panels and systems, which provides an accurate operating point. H-400 valves are normally closed. When differential pressure between inlet and outlet is higher than the set pressure of the spring, the loaded poppet will move backwards and will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

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	Viton®
3		Poppet	1	St.St. 316
4	A	Spring 1/3 psi	1	St.St. 302
	B	Spring 3 psi	1	St.St. 302
	C	Spring 10 psi	1	St.St. 302
	D	Spring 25 psi	1	St.St. 302
5		End	1	St.St. 316

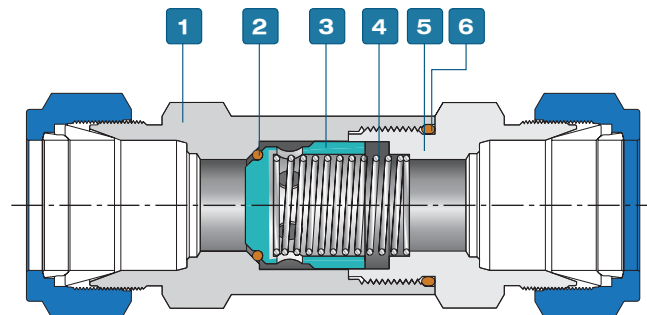
MATERIALS OF CONSTRUCTION for sizes 3/4"-1"				
Item No.		Components	Qty.	Valve Body Material
1		Body	1	St.St. 316
2		O-ring	1	Viton®
3B		Poppet	1	St.St. 316
4	A	Spring 1/3 psi	1	St.St. 302
	B	Spring 3 psi	1	St.St. 302
	C	Spring 10 psi	1	St.St. 302
	D	Spring 25 psi	1	St.St. 302
5		End	1	St.St. 316
6		Upper O-ring	1	Viton®

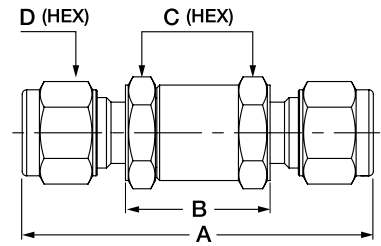


Sizes 1/8"-1/2"



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	6MM LET-LOK®	6MM 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	10MM 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	12MM LET-LOK®	12MM 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	11/8	28.60	11/8
H-400	1" LET-LOK®	1" LET-LOK®	4.48	120	4.72	67.2	2.65	34.9	13/8	38.10	11/2
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	11/8		
H-410	3/4" Female NPT	3/4" Female NPT	4.48	86.0	3.39	56.0	2.20	34.9	13/8		
H-410	1" Female NPT	1" Female NPT	4.48	107	4.21	73.0	2.87	41.28	15/8		
H-480	1/4" Male NPT	1/4" Male NPT	0.47	53.3	2.10	25.0	0.98	19.05	3/4		
H-485	1/4" Male NPT	1/4" Female NPT	0.47	53.7	2.11	27.3	1.07	19.05	3/4		



CRACKING PRESSURE

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

RESEAL PRESSURE

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

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". For higher back pressure please select valve from 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)
Viton® (Fluorocarbon)	-10 to 375 (-23 to 190)
Perfluor	-15 to 500 (-26 to 260)
Neoprene	-40 to 250 (-40 to 121)

*Different materials are available for special applications.

MAWP PRESSURE AT 21°C (70°F)		
SIZE	BRASS psi (bar)	AISI 316 psi (bar)
1/8 , 1/4, 6mm	3000 (207)	3000 (207)
3/8, 1/2, 5/8, 10mm, 12mm	3000 (207)	3000 (207)
3/4, 1", 16, 20, 22 mm	1500 (103)	2000 (138)

CRACKING AND RESEAL PRESSURE			
Nominal Cracking Pressure	Cracking Pressure Range	Reseal Pressure	
psi (bar)	psi (bar)	psi (bar)	Upstream / Downstream Pressure
1/3 (0.02)	Up to 3 (0.2)	Up to 6 (0.40)	Downstream
1 (0.06)	Up to 4 (0.27)	Up to 6 (0.41)	Downstream
10 (0.68)	7 to 15 (0.48 to 1.0)	3 (0.2) or more	Upstream
25 (1.7)	20 to 30 (1.3 to 2.0)	17 (1.1) or more	Upstream

PRESSURE - TEMPERATURE RATING FOR STANDARD CONFIGURATIONS

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

3/4 TO 1 INCH, 18MM TO 25MM		
Material Size	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 Viton O-ring.

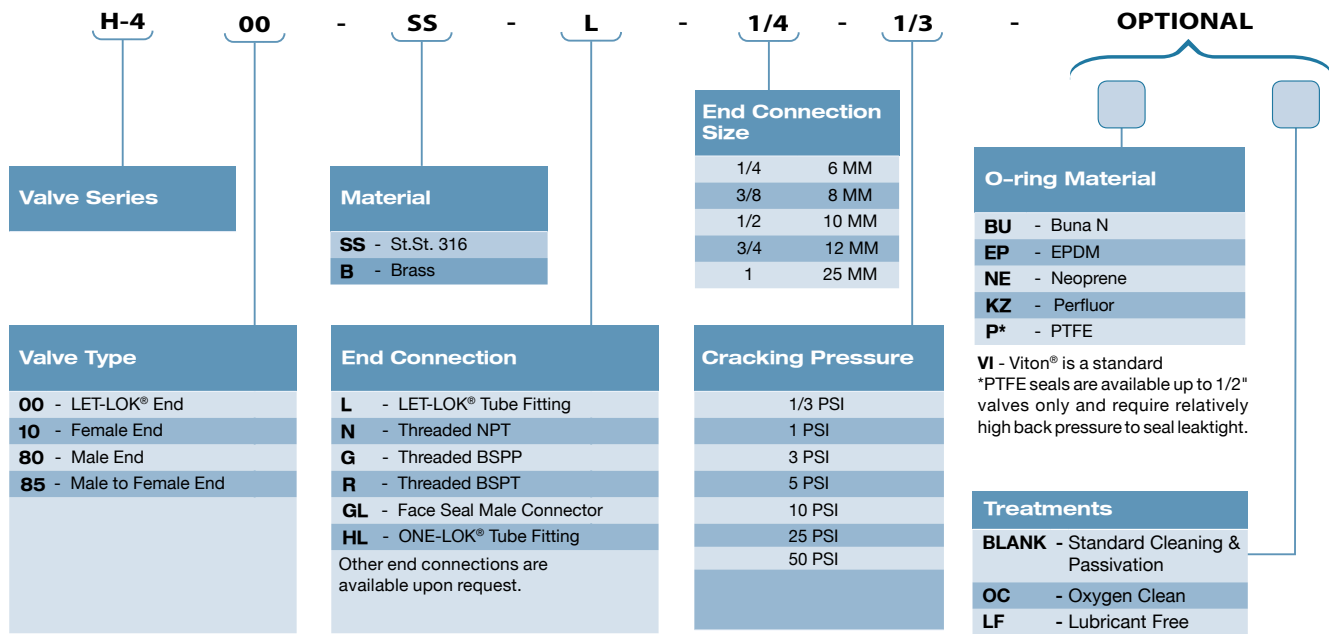
CLEANING & PACKAGING

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

TESTING

The H-400 valve designs have been tested for Proof and Burst. Every H-400 valve is factory tested for proper assembly, by leakage detection 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.

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-3/4- X PSI	Z-410-SK-3/4- □

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.

FEATURES

- 316 St.St. construction
- High Pressure Characteristics (up to 6000 psi)
- Small Size
- Variable Fixed Cracking Pressure
- HAM-LET LET-LOK®, Male & Female NPT, and HTC Face Seal Bead Ends

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.

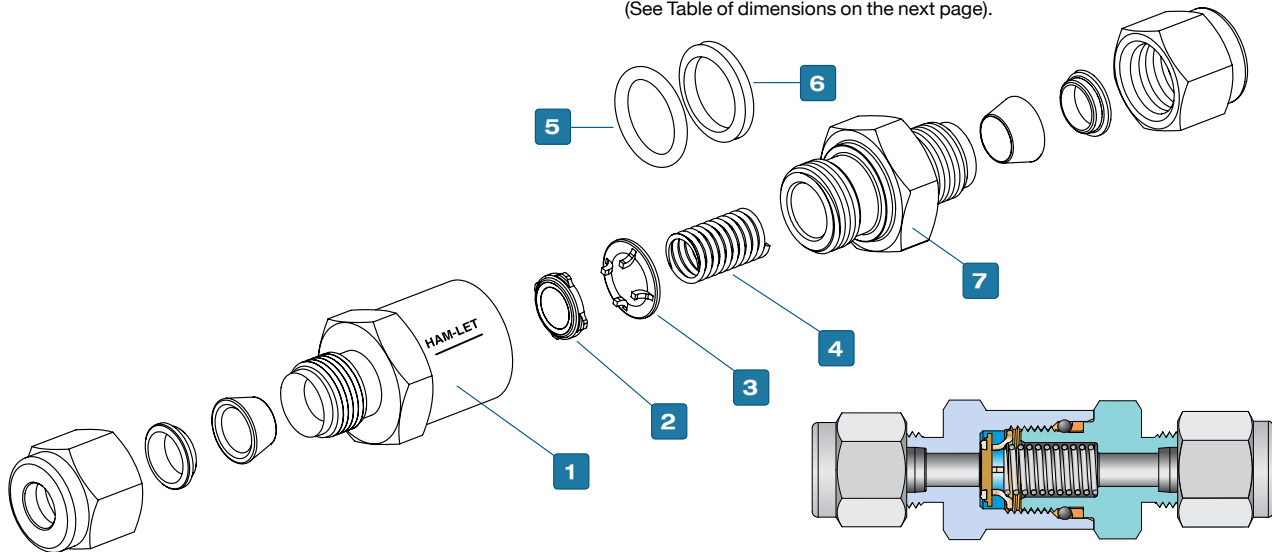
MATERIALS OF CONSTRUCTION

No.	Components	Qty.	Valve body material
1	Body	1	St.St. ASTM A-276
2	Poppet	1	Viton Bonded on 316 St.St.
3	Pusher	1	St.St. ASTM A-276
4	Spring	1	St.St. 304
5	O-ring	1	Viton®
6	Back Up	1	Viton®
7	End	1	St.St. ASTM A-276

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)

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



CRACKING AND RESEAL PRESSURE

Nominal Cracking Pressure	Cracking Pressure Range	Reseal Pressure	
		psi (bar)	Upstream/Downstream Pressure
1/3 (0.02)	Up to 3 (0.2)	Up to 5 (0.40)	Downstream
1 (0.06)	Up to 4 (0.27)	Up to 4 (0.27)	Downstream
5 (0.34)	3 to 9 (0.20 to 0.62)	Up to 2 (0.13)	Downstream
10 (0.68)	7 to 15 (0.48 to 1.0)	3 (0.2) or more	Upstream
25 (1.7)	20 to 30 (1.3 to 2.0)	17 (1.1) or more	Upstream

TECHNICAL DATA

Connection Sizes	Max. Flow Coefficient (Cv)	Nominal Cracking Pressure psi (bar)	Downstream 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)

Cracking Pressure

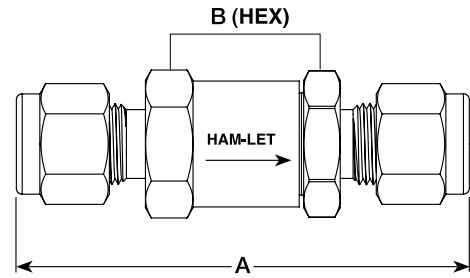
The differential pressure between inlet and outlet, at which an initial flow is passing through the valve.

Reseal Pressure

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

CLEANING & PACKAGING

HAM-LET H-400HP valves are treated with HAM-LET Passivation, Cleaning and Packaging (Procedure 8075).
 HAM-LET H-400HP 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						
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	
	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	
H-410HP	1/4" Female NPT	1/4" Female NPT	6000 (413)	54.1	2.13	11/16
	3/8" Female NPT	3/8" Female NPT	5000 (344)	64.8	2.55	1
	1/2" Female NPT	1/2" Female NPT	4600 (316)	77.0	3.03	1 1/16
	3/4" Female NPT	3/4" Female NPT	4300 (296)	82.0	3.23	1 5/8
	1" Female NPT	1" Female NPT	4100 (282)	97.3	3.83	
	1/4" Female BSPT	1/4" Female BSPT	6000 (413)	58.0	2.28	11/16
	1/2" Female BSPT	1/2" Female BSPT	4600 (316)	83.5	3.29	1 1/16
	3/4" Female BSPT	3/4" Female BSPT	4300 (296)	90.1	3.55	1 5/8
	1" Female BSPT	1" Female BSPT	4100 (282)	97.4	3.83	
	1/2" Female SAE/MS	1/2" Female SAE/MS	4600 (316)	69.5	2.74	1
H-480HP	1/8" Male NPT	1/8" Male NPT	6000 (413)	45.6	1.80	11/16
	1/4" Male NPT	1/4" Male NPT	6000 (413)	55.0	2.17	
	3/8" Male NPT	3/8" Male NPT		60.0	2.36	1
	1/2" Male NPT	1/2" Male NPT	4600 (317)	69.2	2.72	
	3/4" Male NPT	3/4" Male NPT	5000 (344)	83.5	3.29	1 5/8
	1" Male NPT	1" Male NPT		93.3	3.67	
	1/4" Male BSPT	1/4" Male BSPT	6000 (413)	55.0	2.17	11/16
	1/2" Male BSPT	1/2" Male BSPT		69.2	2.72	1
	3/4" Male BSPT	3/4" Male BSPT	5000 (344)	85.2	3.35	1 5/8
	1" Male BSPT	1" Male BSPT		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	5000 (344)	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	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.

H-400HP SERIES High performance fixed cracking pressure check valve



O-RINGS

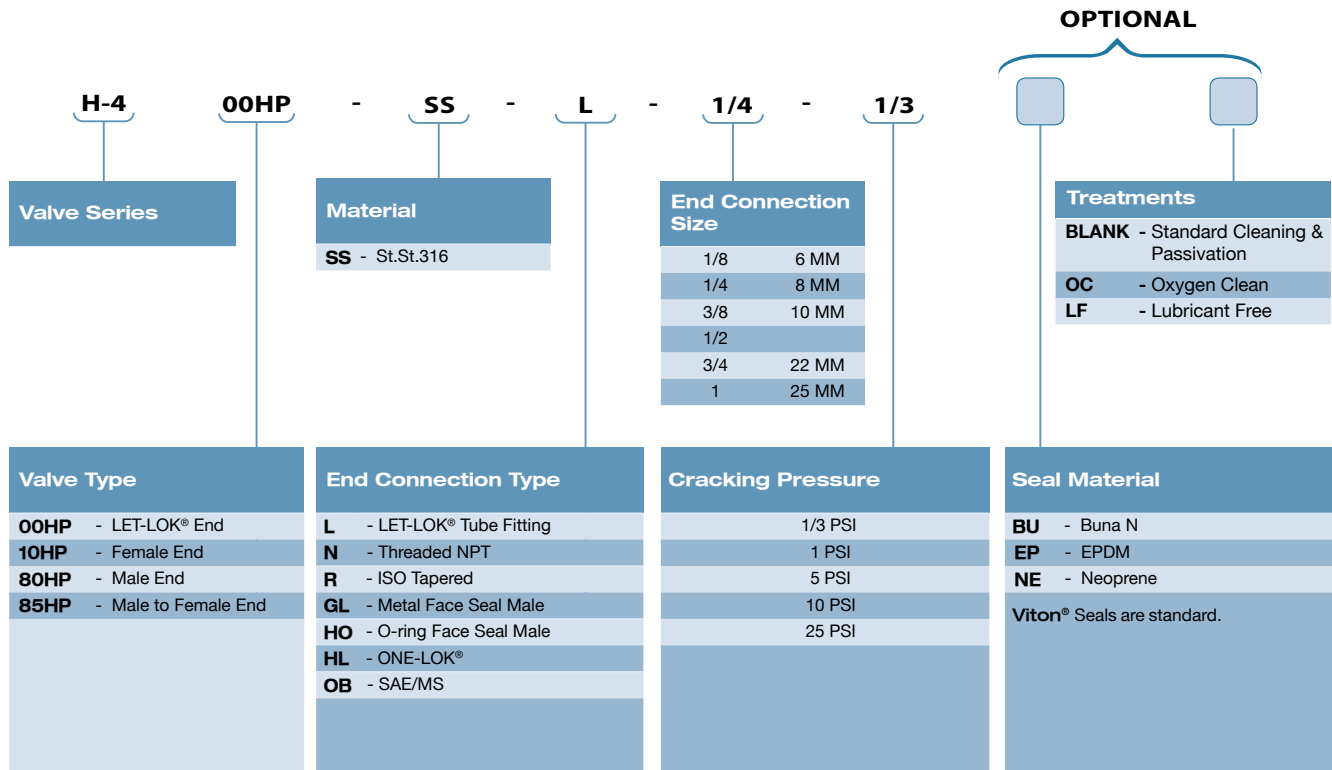
Different materials are available for special applications.

O-ring Material	Temperature Rating °F (°C)
Buna N	-10 to 250 (-23 to 121)
EPDM	-50 to 300 (-45 to 148)
Viton® (Fluorocarbon)	-10 to 400 (-23 to 204)
Neoprene	-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, by leakage detection 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.

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	Seal Material
1/4 For 1/8, 1/4, 6MM	VI - Viton®
1/2 For 3/8, 1/2, 10MM, 12MM	BU - Buna N
3/4 For 3/4, 1", 25MM	NE - Neoprene
	EP - EPDM

SPRING KIT

The kit includes Spring & Label.

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

Body Designator per End Connection	Cracking Pressure
1/4 For 1/8, 1/4, 6MM	1/3 PSI
1/2 For 3/8, 1/2, 10MM, 12MM	1 PSI
3/4 For 3/4, 1", 25MM	5 PSI
	10 PSI
	25 PSI

Warning Select the right component for safety's sake: The total design of the system must be taken into consideration when selecting components in order to ensure that your HAM-LET products provide safe, trouble-free operation. It is the responsibility of the system designer and the user to consider the compatibility of the materials, of the components and system, the function of the component, appropriate ratings and to ensure proper installation, operation and maintenance. Improper selection or use of products can cause property damage or personal injury, in respect of which the system designer and/or the user shall be solely liable and responsible.

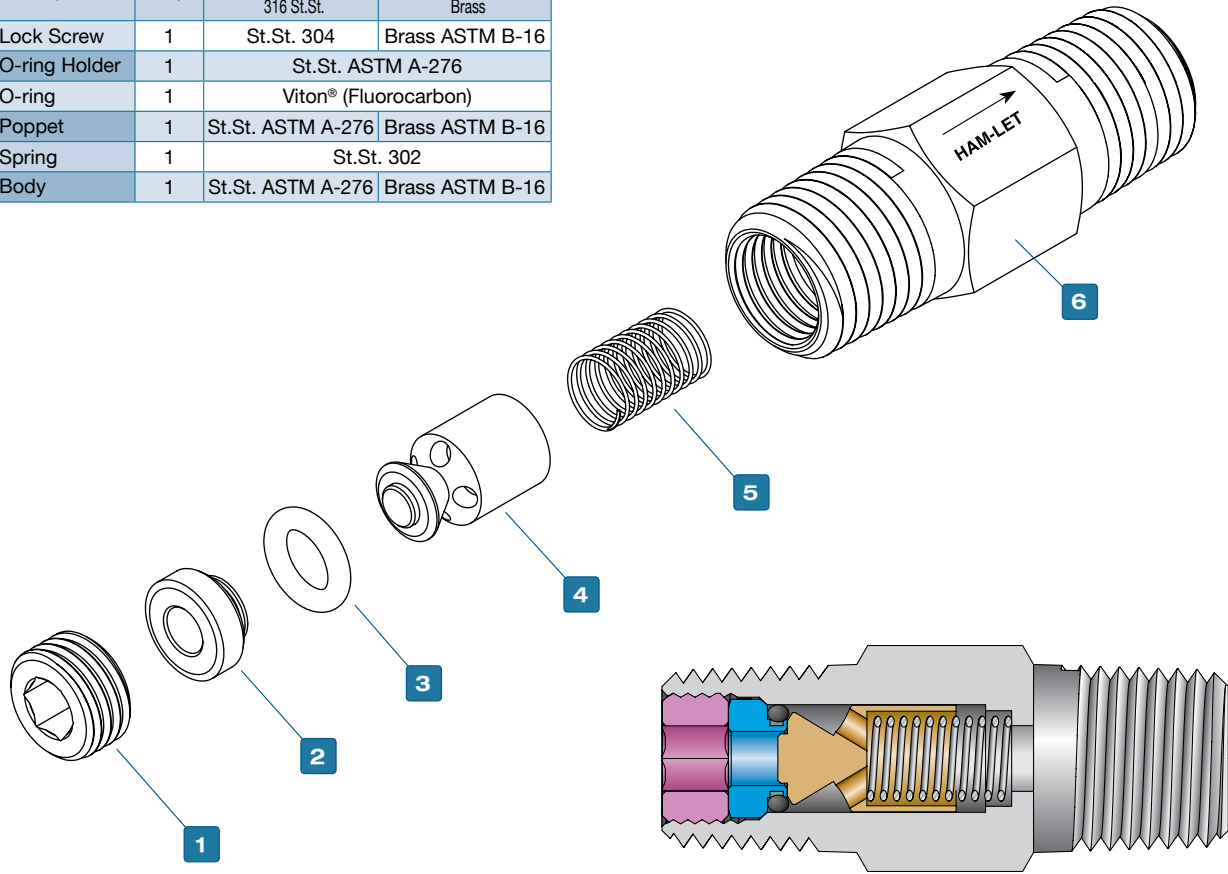
HAM-LET Check Valves should never be used as safety relief devices.

GENERAL

The H-400P Series is a compact one-piece design for moderate pressure (up to 3000 psi) instrumentation panels and systems, which provides an fixed operating point. H-400P 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	Lock Screw	1	St.St. 304	Brass ASTM B-16	
2	O-ring Holder	1	St.St. ASTM A-276		
3	O-ring	1	Viton® (Fluorocarbon)		
4	Poppet	1	St.St. ASTM A-276	Brass ASTM B-16	
5	Spring	1	St.St. 302		
6	Body	1	St.St. ASTM A-276	Brass ASTM B-16	



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	-50 to 300 (-45 to 148)
Viton® (Fluorocarbon)	-10 to 375 (-23 to 190)
Perfluor	-15 to 375 (-26 to 190)
Neoprene	-40 to 250 (-40 to 121)

TECHNICAL DATA			
Connection Sizes	Max. Flow Coefficient (Cv)	Nominal Cracking Pressure psi (bar)	Downstream 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)	

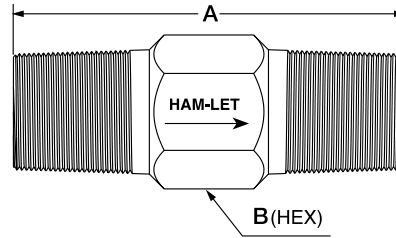
CLEANING & PACKAGING

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

TESTING

The H-400OP valve designs have been tested for Proof and Burst. Every H400-OP valve is factory tested for proper assembly, by leakage detection at 100 psig (6.8bar) for 10 seconds. Every H-400OP valve is factory tested for functionality at the relevant cracking pressure, 5 cycles each.

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	11/16
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	11/16
Female BSPT	1/4	64.5	2.54	3/4
Male BSPT	1/2	41.0	1.61	9/16



PRESSURE TEMPERATURE RATING		
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)	-

CRACKING AND RESEAL PRESSURE			
Nominal Cracking Pressure	Cracking Pressure Range	Reseal Pressure	
		psi (bar)	Upstream / Downstream Pressure
1/3 (0.02)	Up to 3 (0.02)	6 to 20 (0.41 to 1.3)	Downstream
1 (0.06)	Up to 4 (0.27)	5 to 20 (0.34 to 1.3)	Downstream
10 (0.68)	7 to 13 (0.48 to 0.89)	3 to 10 (0.2 to 0.68)	Downstream
25 (1.7)	21 to 29 (1.4 to 1.9)	5 (0.34) or more	Upstream

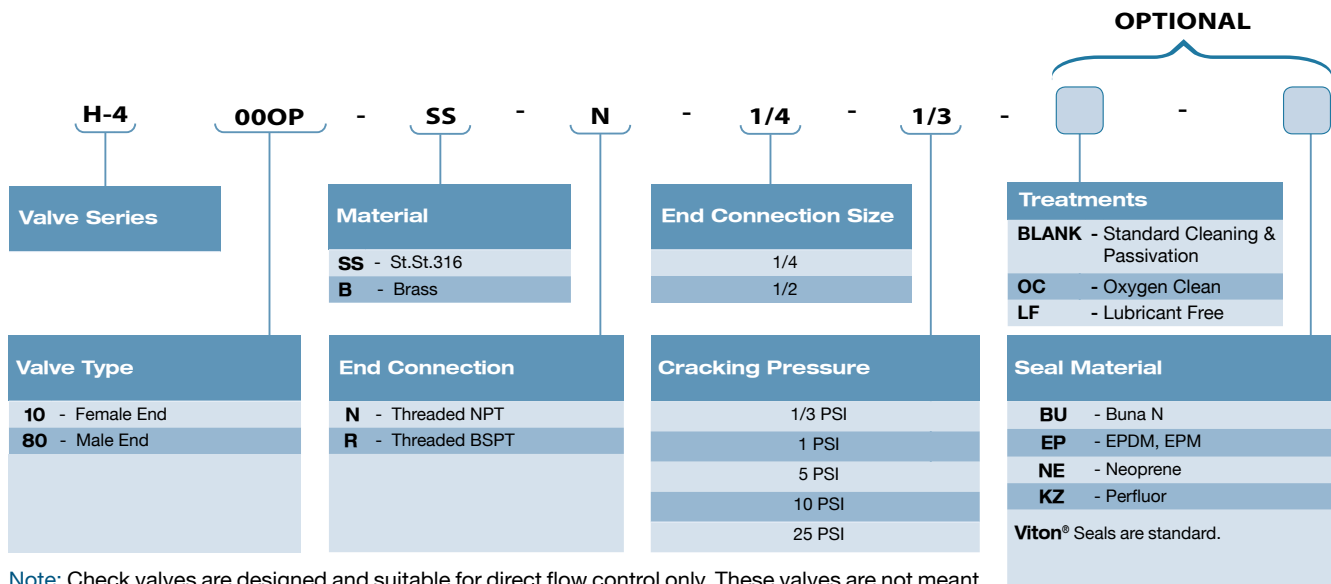
CRACKING PRESSURE

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

RESEAL PRESSURE

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

H-400OP SERIES ORDERING INFORMATION

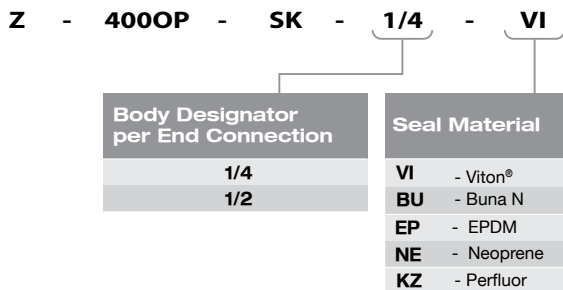


Note: Check valves are designed and suitable for direct flow control only. These valves are not meant for pressure release.

ORDERING INFORMATION SPARE KITS

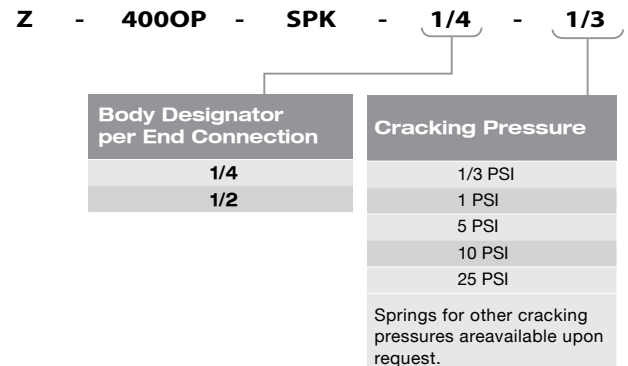
SEAL KIT

The kit includes O-Ring and label



SPRING KIT

The kit includes Spring & label



Warning Select the right component for safety's sake: The total design of the system must be taken into consideration when selecting components in order to ensure that your HAM-LET products provide safe, trouble-free operation. It is the responsibility of the system designer and the user to consider the compatibility of the materials, of the components and system, the function of the component, appropriate ratings and to ensure proper installation, operation and maintenance. Improper selection or use of products can cause property damage or personal injury, in respect of which the system designer and/or the user shall be solely liable and responsible.

*Dimensions are for reference only, and are subject to change

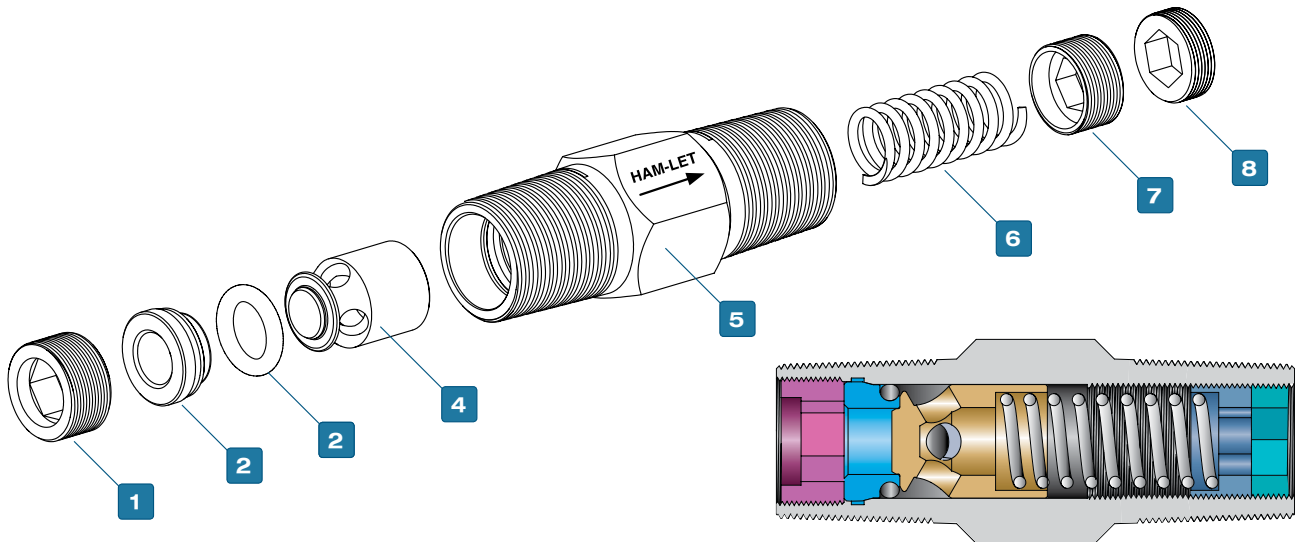
FEATURES

- 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.

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-276	Brass ASTM B-16
3	O-ring	1	Viton® (Fluorocarbon)	
4	Poppet	1	St.St. ASTM A-276	Brass ASTM B-16
5	Body	1	St.St. ASTM A-276	Brass ASTM B-16
6	Spring	1	St.St. 302	
7	Adjusting Screw	1	St.St. 304	
8	Lock Screw	1	St.St. 304	



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)
Viton® (Fluorocarbon)	-10 to 375 (-23 to 190)
Perfluor	-10 to 375 (-23 to 190)
Neoprene	-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.

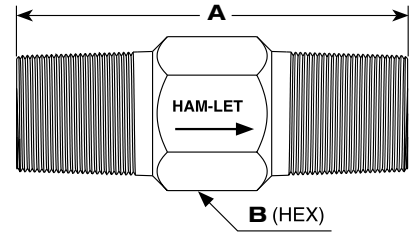
TESTING

The H-400OPA valve designs have been tested for Proof and Burst.

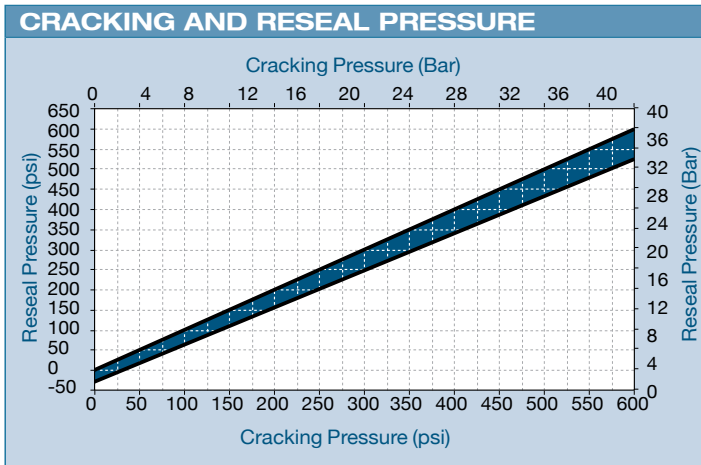
Every H-400OPA valve is factory tested for proper assembly, by leakage detection at 1000 psig (68 bar) for 10 seconds.

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

STANDARD CONFIGURATION DIMENSIONS				
End Connection	Size Inlet / Outlet	Dimensions		
		A		B
		mm	in	in
Female NPT	1/4	75.5	2.97	3/4
	1/2	91.5	3.54	9/16
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



TECHNICAL DATA			
End Connection Sizes	Max. Flow Coefficient (Cv)	Nominal Cracking Pressure psi (bar)	Downstream 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

H-4 - **00OPA** - **SS** - **N** - **1/4** - **3** - **OPTIONAL**

Valve Series	Material	End Connection Size	Treatments
	SS - 316St.St. B - 316St.St.	1/4 1/2	BLANK - Standard Cleaning & Passivation OC - Oxygen Clean LF - Lubricant Free
Valve Type	End Connection	Cracking Pressure	O-ring Material
10 - Female End 80 - Male End	N - Threaded NPT R - Threaded BSPT	Designator Values (psi)	EP - EPDM NE - Neoprene KZ - Perfluor BU - Buna N Viton® Seals are standard.
		3 3-50 50 50-150 150 150-350 350 350-600	

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 & label

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

Body Designator per End Connection	Seal Material
1/4 1/2	VI - Viton® BU - Buna N NE - Neoprene KZ - Perfluor EP - EPDM

SPRING KIT

The kit includes Spring & label.

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

Body Designator per End Connection	Cracking Pressure
1/4 1/2	Designator Values (psi)
	3 3-50 50 50-150 150 150-350 350 350-600

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FEATURES

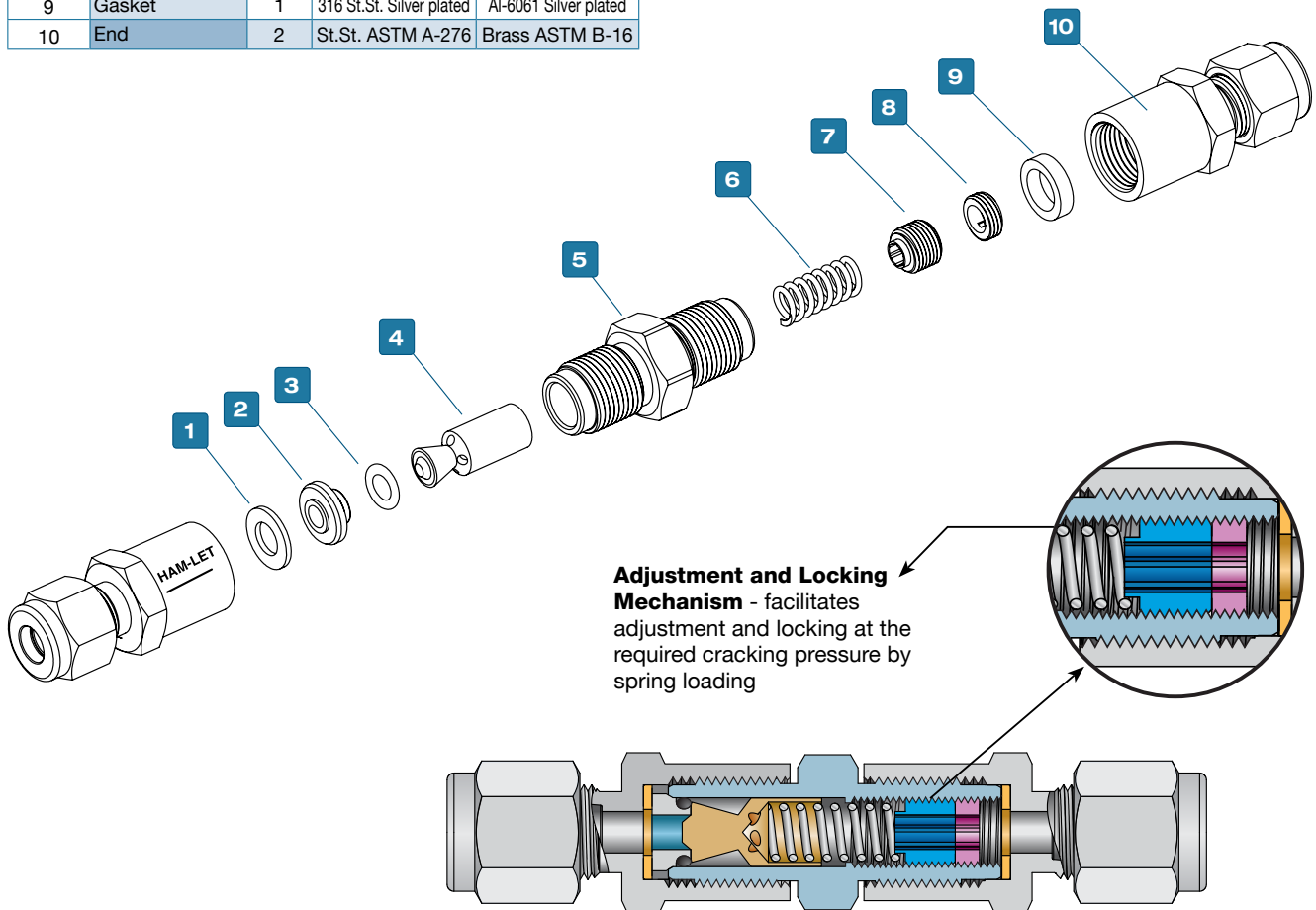
- 316 St.St. or Brass Construction
- Variable Adjustable Cracking Pressure Ranges
- Pressure Characteristics: up to 3000 psi
- HAM-LET LET-LOK® Fittings, Male NPT, and HTC® Face Seal Bead

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-276	Brass ASTM B-16
3	O-ring	1	Viton® (Fluorocarbon)	
4	Poppet	1	St.St. ASTM A-276	Brass ASTM B-16
5	Body	1	St.St. ASTM A-276	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-276	Brass ASTM B-16

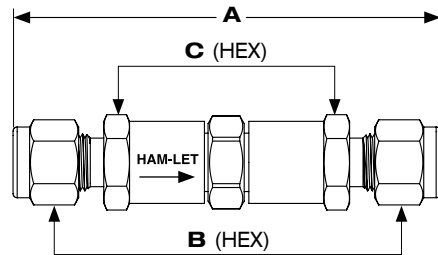
PRESSURE - TEMPERATURE RATING FOR STANDARD CONFIGURATIONS		
Material Size	316St.St.	Brass
Temperature F° (C°)	Working Pressure, psi (bar)	
-10 (-23) to 100 (37)	3000 (206)	3000 (206)
200 (93)	2575 (177)	2600 (179)
250 (121)	2450 (168)	2405 (165)
300 (148)	2325 (160)	-
375 (190)	2185 (150)	-



CLEANING & PACKAGING

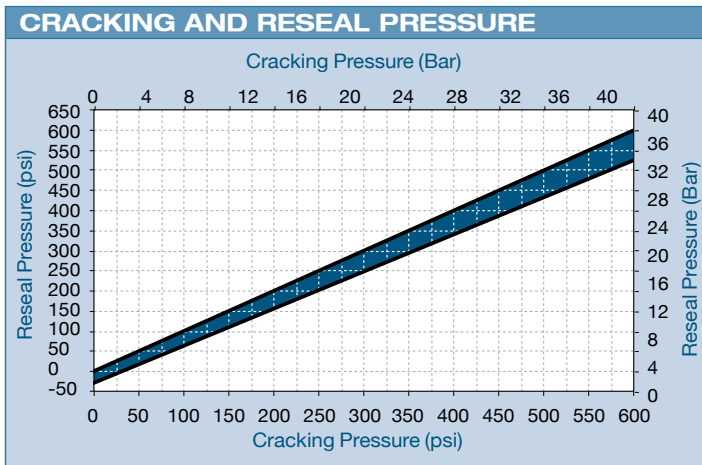
HAM-LET H-400A valves are treated with HAM-LET Passivation, Cleaning and Packaging (Procedure 8075).
 HAM-LET H-400A valves with face-seal end connections are treated with Ham-Let Oxygen Cleaning and Packaging (Procedure 8055). Oxygen cleaning and packaging for other end connections are available as an option.

DIMENSIONS					
Inlet	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



TECHNICAL DATA			
Connection Sizes	Max. Flow Coefficient (Cv)	Nominal Cracking Pressure psi (bar)	Downstream 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)
Viton® (Fluorocarbon)	-10 to 375 (-23 to 190)
Perfluor	-15 to 375 (-26 to 190)
Neoprene	-40 to 250 (-40 to 121)

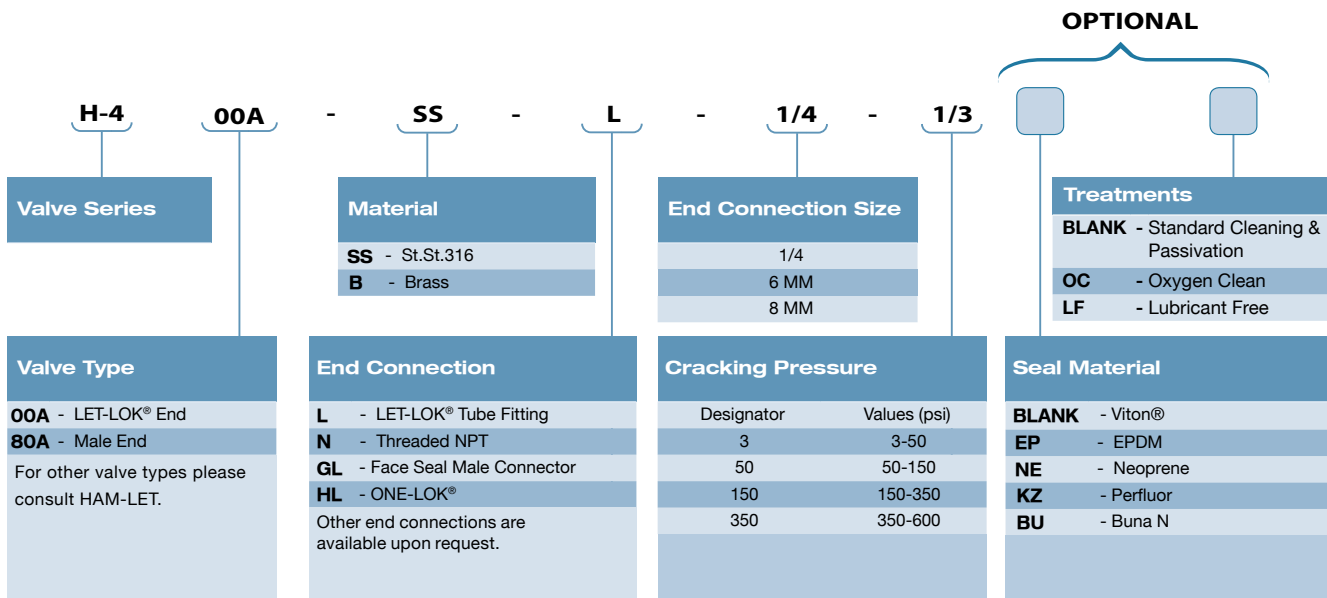


Dimensions are for reference only, and are subject to change

TESTING

The H-400A valve designs have been tested for Proof and Burst. Every H-400A valve is factory tested for proper assembly by leak detection 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.

H-400A SERIES ORDERING INFORMATION

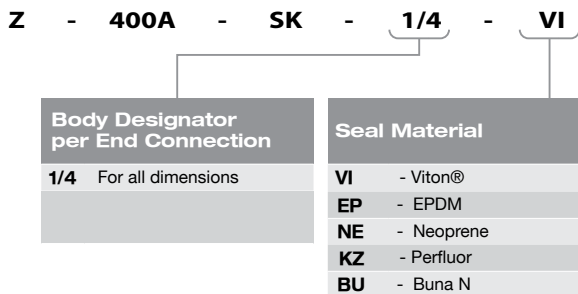


Note: Check valves are designed and suitable for direct flow control only. These valves are not meant for pressure release.

ORDERING INFORMATION SPARE KITS

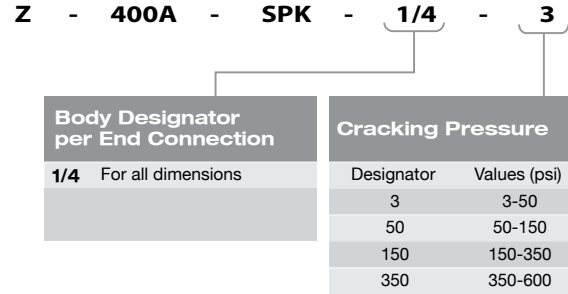
SEAL KIT

The kit includes O-ring & Label .



SPRING KIT

The kit includes Spring & Label.



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

Viton® - TM DuPont H-400, Rev.06, January 2010