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 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)

HAM-LET®
ADVANCED CONTROL TECHNOLOGY

FEATURES

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

GENERAL

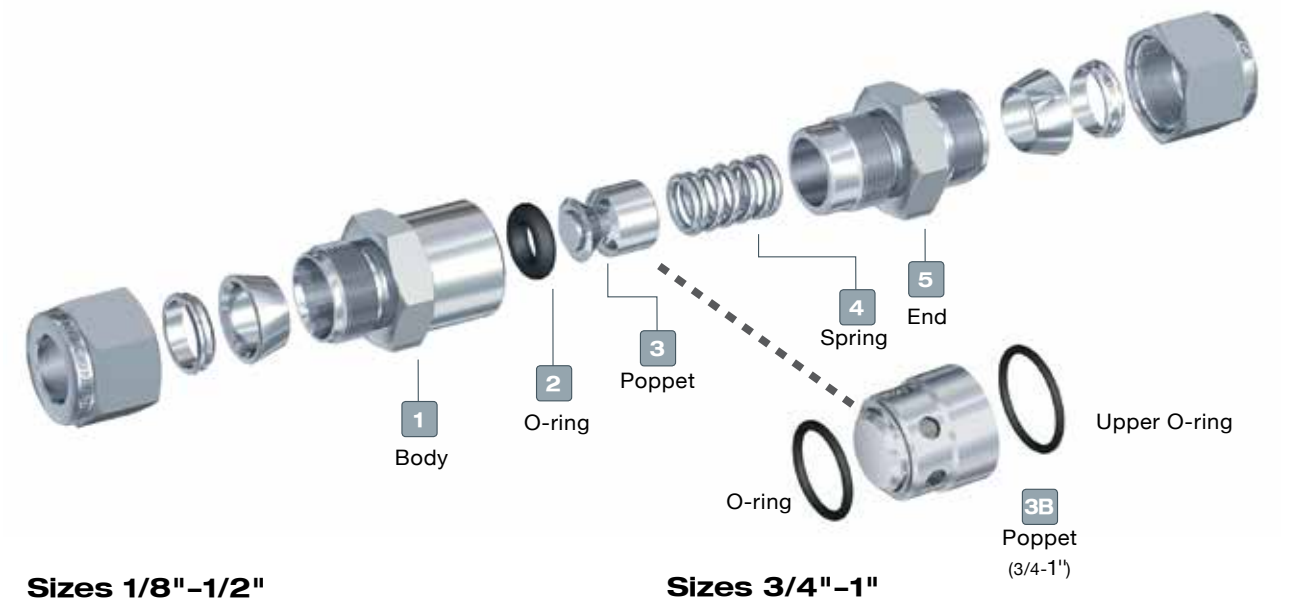
The H-400 Series is a compact design for instrumentation panels and systems, which provides an accurate operating point. H-400 valves are normally closed. When differential pressure between the inlet and outlet is higher than the set pressure of the spring, the loaded poppet will move backwards and will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

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

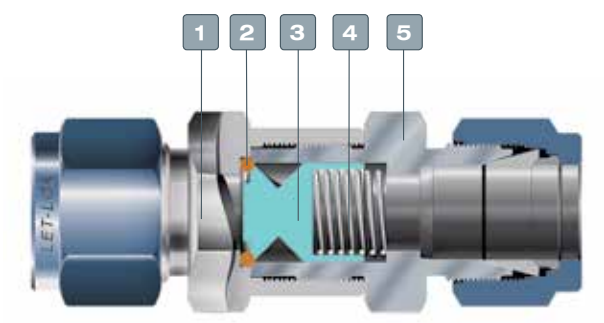
Item No.		Components	Qty.	Valve Body Material
1		Body	1	St.St. 316
2		O-ring	1	Fluorocarbon FKM
3		Poppet	1	St.St. 316
4	A	Spring 1/3 psi	1	St.St. 302
	B	Spring 3 psi	1	St.St. 302
	C	Spring 10 psi	1	St.St. 302
	D	Spring 25 psi	1	St.St. 302
5		End	1	St.St. 316

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

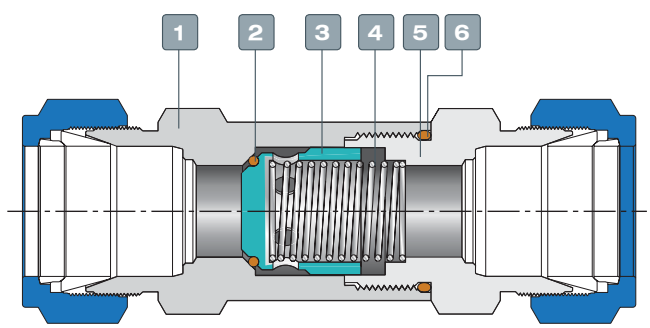
Item No.		Components	Qty.	Valve Body Material
1		Body	1	St.St. 316
2		O-ring	1	Fluorocarbon FKM
3B		Poppet	1	St.St. 316
4	A	Spring 1/3 psi	1	St.St. 302
	B	Spring 3 psi	1	St.St. 302
	C	Spring 10 psi	1	St.St. 302
	D	Spring 25 psi	1	St.St. 302
5		End	1	St.St. 316
6		Upper O-ring	1	Fluorocarbon FKM

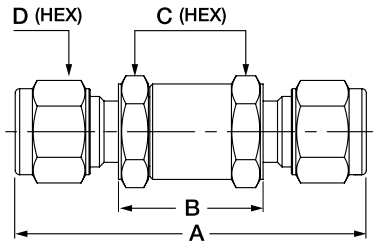


Sizes 1/8"–1/2"



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	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-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-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.

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 reseal 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". For higher back pressure please select 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)	AISI 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, 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

H-4 00 - SS - L - 1/4 - 1/3 - OPTIONAL

Valve Series

Valve Type

00	- LET-LOK® End
10	- Female End
15	- Female to Male End
80	- Male End
85	- Male to Female End
90	- Female to LET-LOK® End
95	- Male to LET-LOK® End

Material

SS	- St.St. 316
B	- Brass

End Connection

L	- LET-LOK® Tube Fitting
N	- NPT
G	- ISO Parallel
R	- ISO Tapered
GL	- Face Seal Male Connector
HL	- ONE-LOK® Tube Fitting

Other end connections are available upon request.

End Connection Size

1/4	6 MM
3/8	8 MM
1/2	10 MM
3/4	12 MM
1	25 MM

Cracking Pressure

1/3 PSI
1 PSI
3 PSI
5 PSI
10 PSI
25 PSI
50 PSI

O-ring Material

BLANK	- Fluorocarbon FKM
BU	- Buna N
EP	- EPDM
NE	- Polychloroprene (CR)
KZ	- Perfluor
PT*	- PTFE

VI - Fluorocarbon FKM is a standard
*PTFE seals are available up to 1/2" valves only and require relatively high back pressure to seal leaktight.

Treatment

BLANK	- Standard Cleaning & Passivation
OC	- Oxygen Clean
LF	- Lubricant Free

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-□
	¼,3/8	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 lable
** O-ring Kit includes O-ring and lable

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

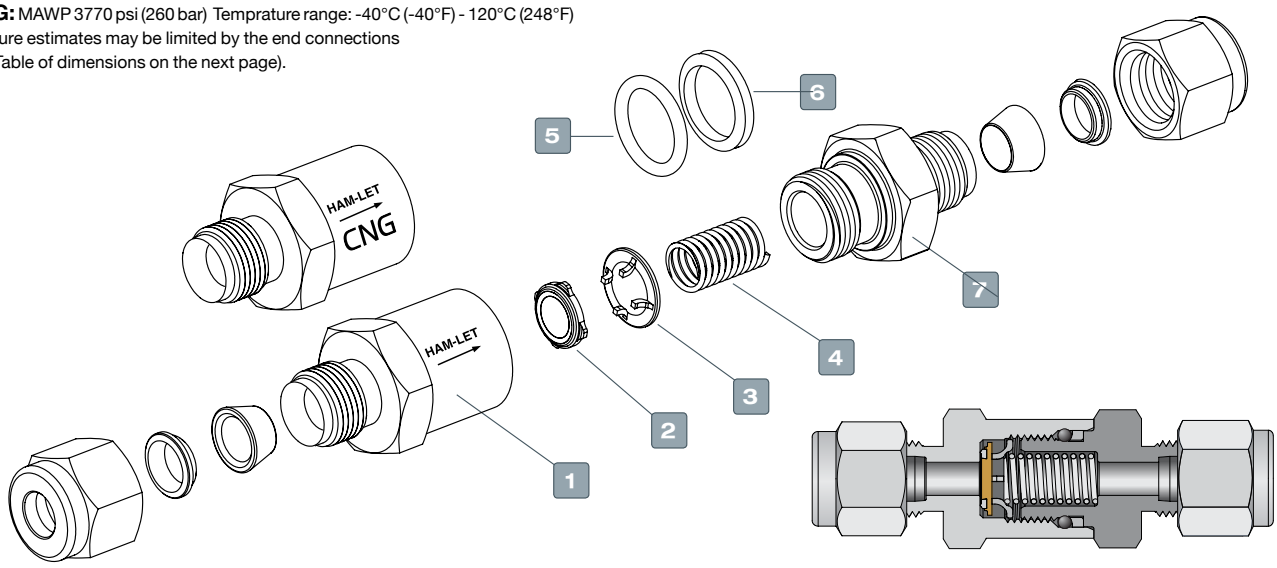
MATERIALS OF CONSTRUCTION

No.	Components	Qty.	Standard	CNG*
1	Body	1	St.St. ASTM A-276	St.St. ASTM A-276
2	Bonded Poppet	1	Fluorocarbon FKM Bonded on 316 St.St.	Low temprature Fluorocarbon FKM Bonded on 316 St.St.
3	Pusher	1	St.St. ASTM A-276	St.St. ASTM A-276
4	Spring	1	St.St. 304	St.St. 304
5	O-ring	1	Fluorocarbon FKM	Low temprature Fluorocarbon FKM
6	Back Up	1	Fluorocarbon FKM	Fluorocarbon FKM
7	End	1	St.St. ASTM A-276	St.St. ASTM A-276

*CNG: MAWP 3770 psi (260 bar) Temprature 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).

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

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)

CRACKING PRESSURE

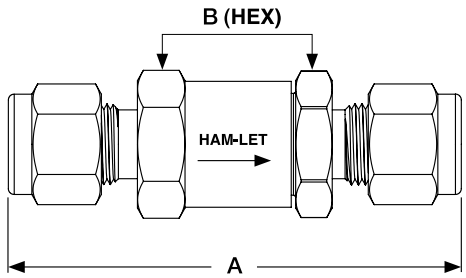
The differential pressure between the inlet and outlet, at which an initial flow is passing through the valve.

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 reseal 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	1
	10MM LET-LOK®	10MM LET-LOK®		71.1	2.80	
	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/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
	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
H-480HP	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	5000 (344)	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.

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, 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

OPTIONAL

H-4 | 00HP | - | SS | - | L | - | 1/4 | - | 1/3 | | | |

Valve Series

Material

SS	- St.St.316

End Connection Size

1/8	6 MM
1/4	8 MM
3/8	10 MM
1/2	
3/4	22 MM
1	25 MM

Approval

BLANK	- Standard
CNG	- ECE R110

Treatment

BLANK	- Standard Cleaning & Passivation
OC	- Oxygen Clean
LF	- Lubricant Free

Valve Type

00HP	- LET-LOK® End
10HP	- Female End
15HP	- Female to Male End
80HP	- Male End
85HP	- Male to Female End
90HP	- Female to LET-LOK® End
95HP	- Male to LET-LOK® End

End Connection Type

L	- LET-LOK® Tube Fitting
N	- NPT
G	- ISO Parallel
R	- ISO Tapered
GL	- Metal Face Seal Male
HO	- O-ring Face Seal Male
HL	- ONE-LOK®
OB	- SAE/MS

Cracking Pressure

1/3 PSI
1 PSI
3 PSI
5 PSI
10 PSI
25 PSI

Seal Material

BLANK	- **Fluorocarbon FKM** Seals are standard.
BU	- Buna N
EP	- EPDM
NE	- Polychloroprene (CR)

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

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.

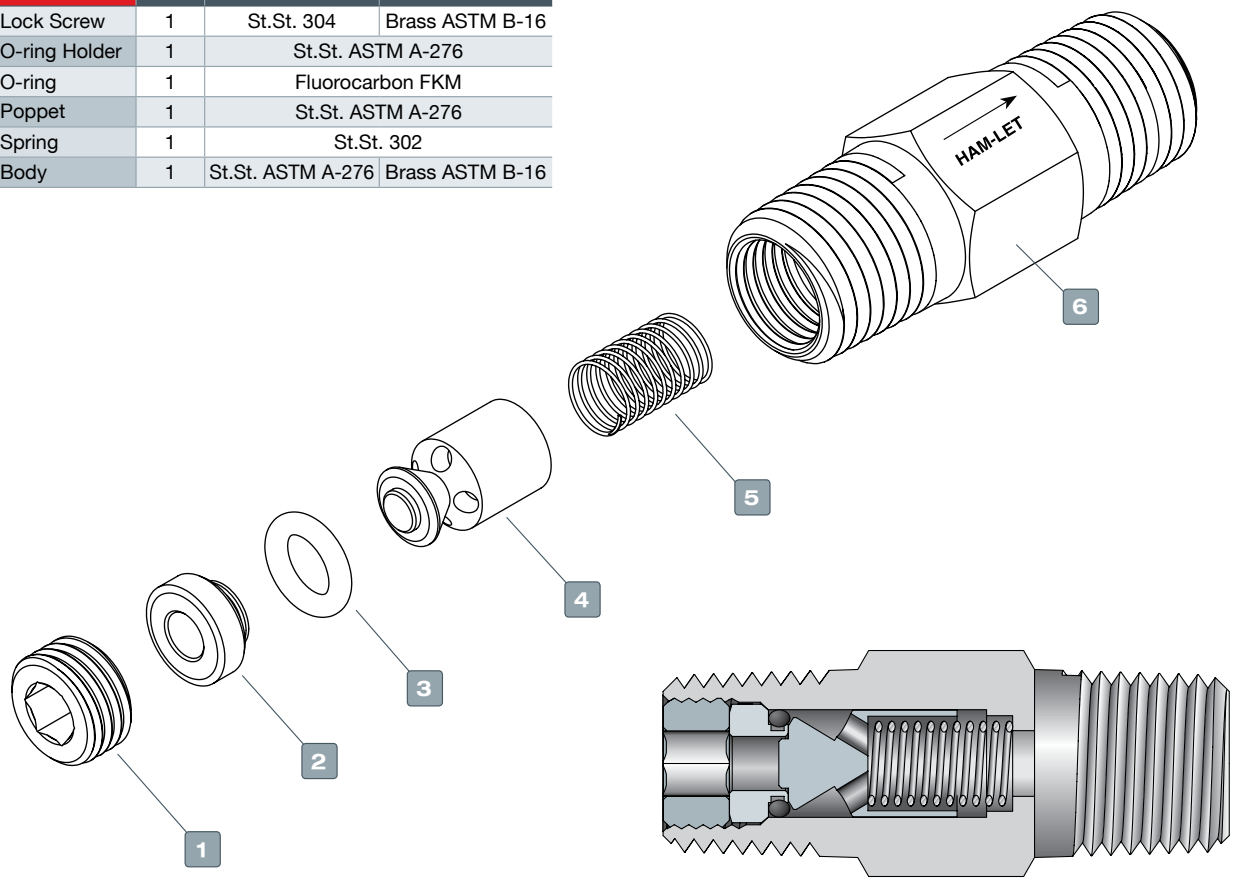
HAM-LET Check Valves should never be used as safety relief devices.

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-276	
3	O-ring	1	Fluorocarbon FKM	
4	Poppet	1	St.St. ASTM A-276	
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 (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

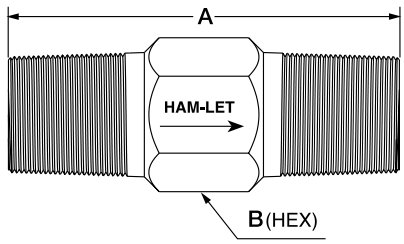
Connection Sizes	Max. Flow Coefficient (Cv)	Nominal Cracking Pressure psi (bar)	Back Pressure at 70°F (20°C) psi (bar)
1/4	0.35	1/3, 1,10 & 25	3000 (207)
1/2	1.20	(0.02, 0.06, 0.68, and 7.1)	

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, 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	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 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)	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

OPTIONAL

H-4 **00OP** - **SS** - **N** - **1/4** - **1/3** - -

Valve Series

Material

SS	- St.St.316
B	- Brass

End Connection Size

1/4
1/2

Treatment

BLANK	- Standard Cleaning & Passivation
OC	- Oxygen Clean

LF treatment is available for H-400 & H-400HP series only

Valve Type

10	- Female End
80	- Male End
85	- Male to Female

End Connection

N	- NPT
R	- ISO Tapered

Cracking Pressure

1/3 PSI
1 PSI
5 PSI
10 PSI
25 PSI

Seal Material

BLANK	- Fluorocarbon FKM Seals are standard
BU	- Buna N
EP	- EPDM
NE	- Polychloroprene (CR)
KZ	- Perfluor

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

1/4
1/2

Seal Material

VI	- Fluorocarbon FKM
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

1/4
1/2

Cracking Pressure

1/3 PSI
1 PSI
5 PSI
10 PSI
25 PSI

Springs for other cracking pressures are available upon request.

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.

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

FEATURES

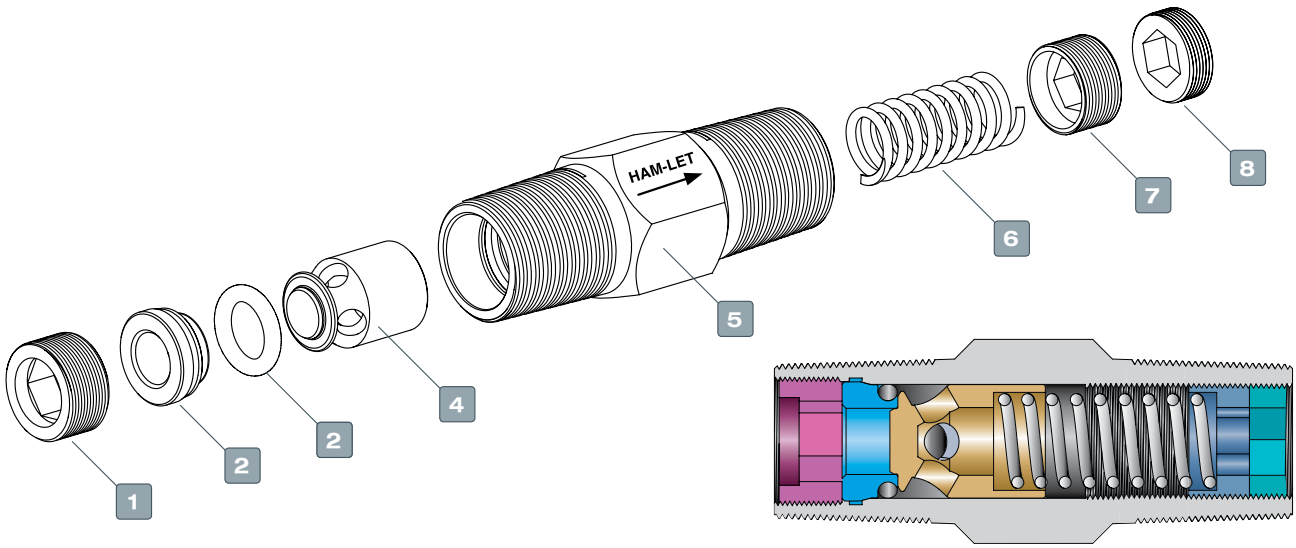
- One-piece Body
- 316 St.St. or Brass Construction
- Variable Adjustable Cracking Pressure Ranges
- Pressure Characteristics: up to 3000 psi
- HAM-LET Male & Female NPT, Male BSPT

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.
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-276	Brass ASTM B-16
3	O-ring	1	Fluorocarbon FKM	
4	Poppet	1	St.St. ASTM A-276	
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)
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.

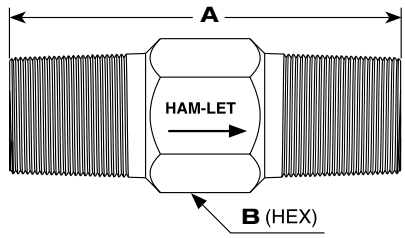
CLEANING & PACKAGING

Every H-400OPA 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

End Connection	Size Inlet / Outlet	Dimensions A mm	Dimensions A in	Dimensions B 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

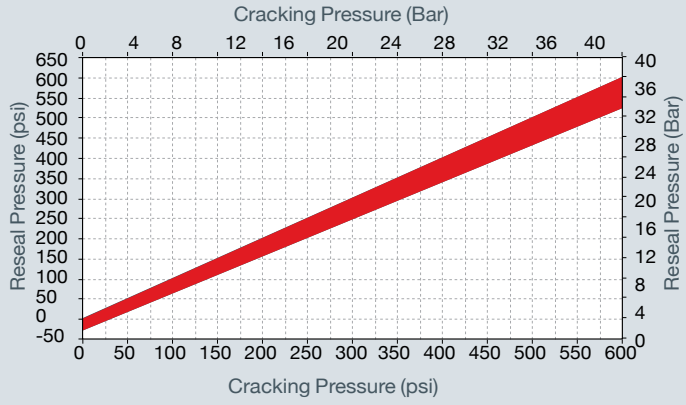
Dimensions are for reference only and are subject to change.



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)	

CRACKING AND RESEAL PRESSURE



H-400OPA SERIES ORDERING INFORMATION

OPTIONAL

H-4 10OPA - SS - N - 1/4 - 3 - [ ] - [ ] - [ ]

Valve Series

Material

SS	- St.St. 316
B	- Brass

End Connection Size

1/4
1/2

Treatment

BLANK	- Standard Cleaning & Passivation
OC	- Oxygen Clean
LF	- Lubricant Free

LF treatment is available for H-400 & H-400HP series only

Valve Type

10	- Female End
80	- Male End

End Connection

N	- NPT
R	- ISO Tapered

Cracking Pressure

Designator	Values (psi)
3	3-50
50	50-150
150	150-350
350	350-600
C*	3-600

O-ring Material

BLANK	- Fluorocarbon FKM Seals are standard
BU	- Buna N
EP	- EPDM
NE	- Polychloroprene (CR)
KZ	- Perfluor

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

***Factory Calibration Designator**

3-600 Psi
Example: H-480OPA-SS-N-1/4-C100
Will be Calibrated to 100 Psi

ORDERING INFORMATION SPARE KITS

SEAL KIT

The kit includes O-Ring & label

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

Body Designator per End Connection

1/4
1/2

Seal Material

VI	- Fluorocarbon FKM
BU	- Buna N
NE	- Polychloroprene (CR)
KZ	- Perfluor
EP	- EPDM

SPRING KIT

The kit includes Spring & label.

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

Body Designator per End Connection

1/4
1/2

Cracking Pressure

Designator	Values (psi)
3	3-50
50	50-150
150	150-350
350	350-600

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.

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

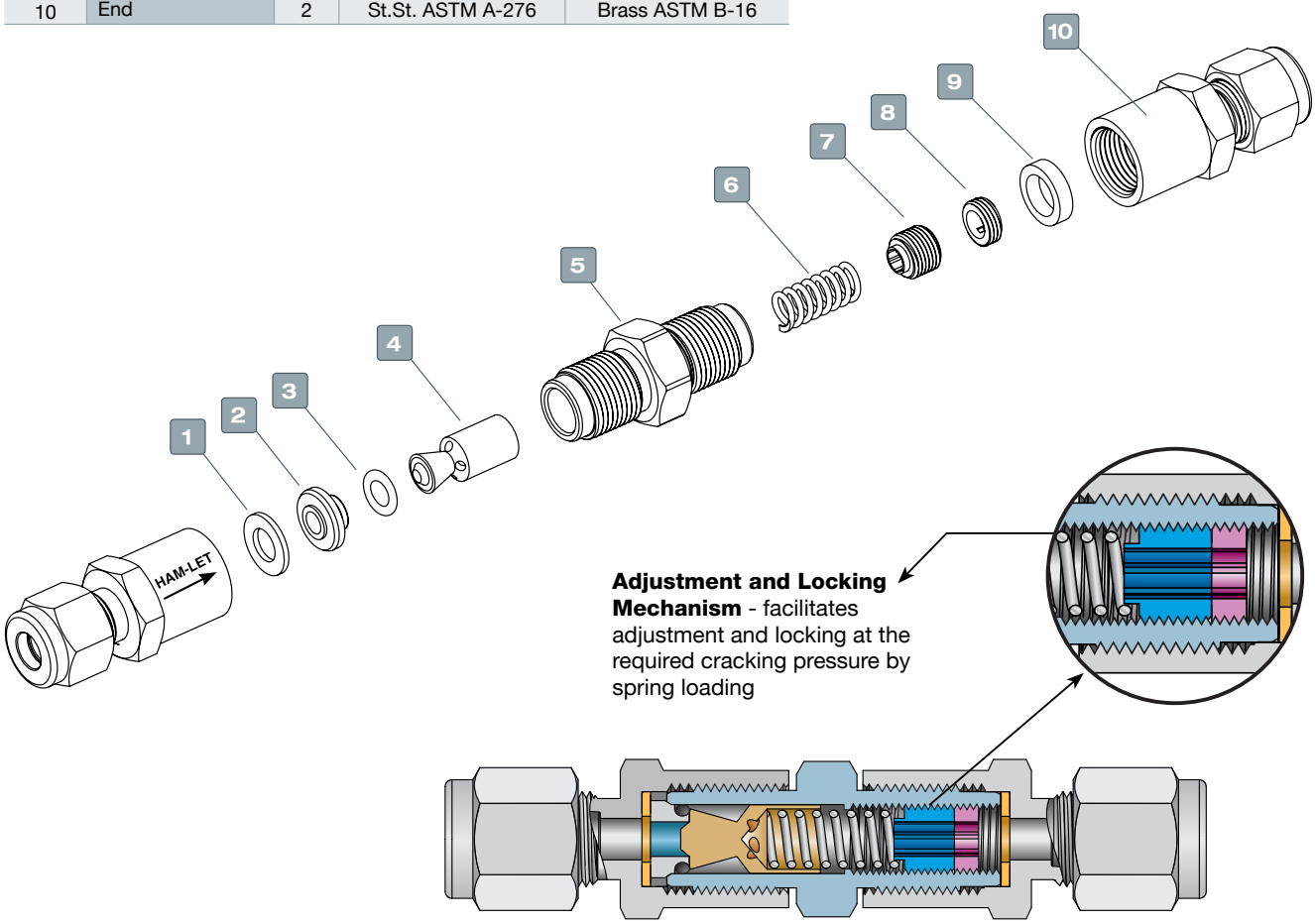
The H-400A Series is a compact design for moderate-pressure (up to 3000 psi) instrumentation panels and systems, which provides an accurate and adjustable operating point. H-400A valves are normally closed. When the differential pressure between the inlet and the outlet is higher than the set pressure 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	Fluorocarbon FKM	
4	Poppet	1	St.St. ASTM A-276	
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)	-



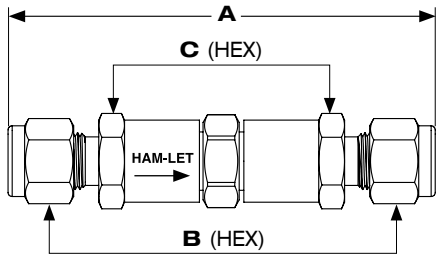
CLEANING & PACKAGING

Every H-400OA 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

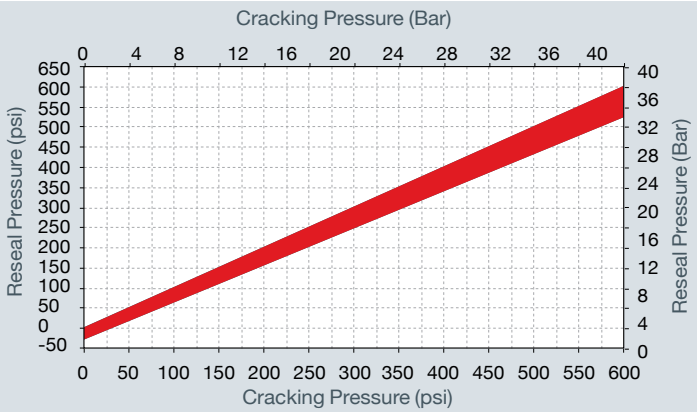
Connection Size	Max. Flow Coefficient (Cv)	Nominal Cracking Pressure psi (bar)	Back Pressure at 70°F (20°C) psi (bar)
1/4, 6mm, 8mm	0.37	3 to 50 (0.2 to 3.4)	3000 (413)
		50 to 150 (3.4 to 10.3)	
		150 to 350 (10.3 to 24.1)	
		350 to 600 (24.1 to 41.3)	

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 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

OPTIONAL

H-4 | 00A | - | SS | - | L | - | 1/4 | - | 50 | - | | - | |

Valve Series

Valve Type

00A	- LET-LOK® End
80A	- Male End

For other valve types please consult HAM-LET.

Material

SS	- St.St.316
B	- Brass

End Connection

L	- LET-LOK® Tube Fitting
N	- NPT
R	- ISO Tapered
GL	- Face Seal Male Connector
HL	- ONE-LOK®

Other end connections are available upon request.

End Connection Size

1/4
6 MM
8 MM

Cracking Pressure

Designator	Values (psi)
3	3-50
50	50-150
150	150-350
350	350-600
C*	3-600

*Factory Calibration Designator

3-600 Psi
Example: H-400A-SS-L-1/4-C60
Will be Calibrated to 60 Psi

Treatment

BLANK	- Standard Cleaning & Passivation
OC	- Oxygen Clean
LF	- Lubricant Free

LF treatment is available for H-400 & H-400HP series only

O-ring Material

BLANK	- Fluorocarbon FKM Seals are standard
BU	- Buna N
EP	- EPDM
NE	- Polychloroprene (CR)
KZ	- Perfluor

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 - 400A - SK - 1/4 - VI

Body Designator per End Connection

1/4	For all dimensions

Seal Material

VI	- Fluorocarbon FKM
EP	- EPDM
NE	- Polychloroprene (CR)
KZ	- Perfluor
BU	- Buna N

SPRING KIT

The kit includes Spring & Label.

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

Body Designator per End Connection

1/4	For all dimensions

Cracking Pressure

Designator	Values (psi)
3	3-50
50	50-150
150	150-350
350	350-600

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.

H-400, Rev 10, June 2015