

# RELIEF VALVES | H900 SERIES



## FEATURES

- St.St. 316 construction
- Service 10-225 psi
- MAWP\* 300 psi
- One spring for all set pressure range
- Available in all pipe threads and LET-LOK® connections
- Option to comply with standards CE/PED
- End connections: 1/4", 1/2", 6mm and 12mm

\* Maximum Allowable Working Pressure.

## GENERAL

The H-900 series is a relief valve designed for low pressure services. It is most suited for use where changes in pressure can cause process issues, system damage or personal injury.

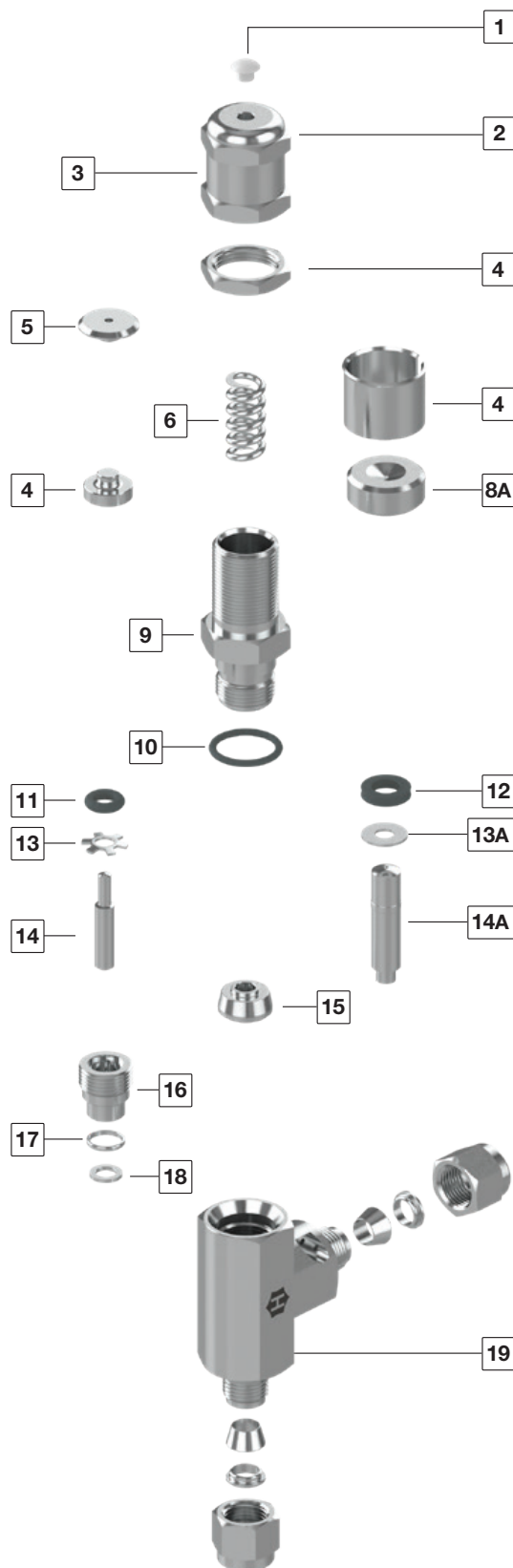
## MATERIALS OF CONSTRUCTION

Item No.	Components	Qty.	1/4" Body Size	1/2" Body Size
1	Cap Plug	1	Polypropylene	Polypropylene
2	Adjustment Cap	1	St.St. 316	St.St. 316
3	Cap Lable	1	Polyester	Polyester
4	Locking Nut	1	St.St. 316	St.St. 316
5	Upper Spring Button	1	St.St. 316	-
6	Spring	1	St.St. 302	St.St. 302
7	Spring sleeve	1	-	St.St. 302
8	Lower Spring Button	1	St.St. 316	-
8A	Lower Spring Button	1	-	St.St. 316
9	Bonnet	1	St.St. 316	St.St. 316
10	O-ring	1	Fluorocarbon FKM	Fluorocarbon FKM
11	O-ring	1	Fluorocarbon FKM	-
12	Quad ring	1	-	Fluorocarbon FKM
13	Retaining Ring	1	PH15-7 Mo	-
13A	Location Ring	1	-	St.St. 316
14	*Stem	1	St.St. 316	-
14A	*Stem	1	-	St.St. 316
15	*Bonded Poppet	1	St.St. 316 bonded with Fluorocarbon FKM	St.St. 316 bonded with Fluorocarbon FKM
16	*Insert	1	St.St. 316	-
17	*Packing	1	PTFE	-
18	*Ring	1	St.St. 316	-
19	*Body	1	St.St. 316	St.St. 316
	*Lubricant		Silicone based and PTFE based	

\* Wetted parts

## PRESSURE TEMPERATURE RATING

Series	H-900 Body Size: 1/4" & 1/2"			
Seal Material	Fluorocarbon FKM	Buna N	Polychloroprene (CR)	EPDM
TEMP °C (°F)	MAX SET PRESSURE psig (bar)			
-40 (-40)	-	-	-	225 (15.5)
-34 (-30)	-	-	225 (15.5)	
-23 (-10)	-	225 (15.5)		
-18 (0)	-			
-12 (10)	225 (15.5)			
-4 (25)				
-1 (30)				
10 (50)				
65 (150)				
93 (200)				
121 (250)				
135 (275)				
148 (300)	-			



## CLEANING & PACKAGING

Every H-900 series relief valve is cleaned in accordance with Standard Cleaning and Packaging Procedure 8184. Oxygen Clean & Lubricant-Free cleaning and packaging is conducted in accordance with Special Cleaning and Packaging Procedure 8185.

## TESTING

The H-900 relief valve designs have been tested for proof and burst. Every H-900 relief valve is factory tested for proper assembly, set and resealing performance. No detectable leakage is allowed during the shell test.

## SETTING AND RESEALING PRESSURE

- Upstream set pressure is the first indicator of flow process. Every pressure relief after the first indication is repeatable within a deviation of 5% at room temperature.
- Blocked upstream set pressure is the first indicator of a stopped flow process and is always lower than the set pressure.
- Calculation of set pressure valve design demands back pressure consideration as the system back pressure increases the set pressure. To balance the system, the back pressure must be multiplied by 0.8 and the result shall be subtracted from the required set pressure.
- Lubricant-Free cleaned valves have higher reseat pressure.

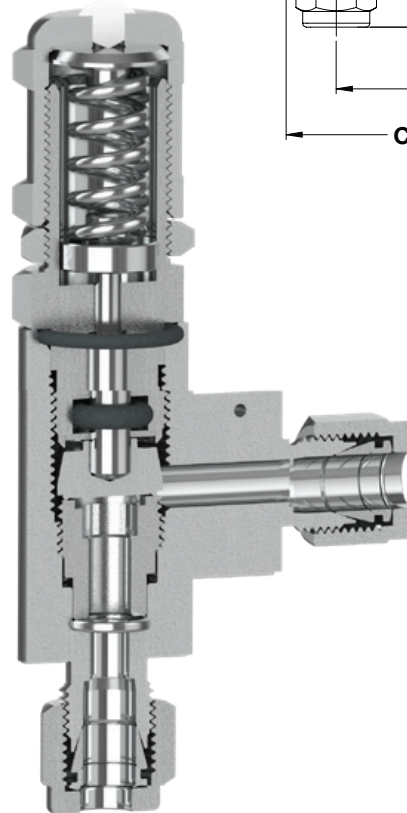
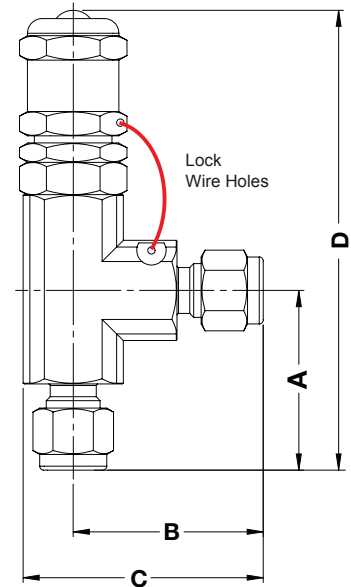
## STANDARD CONFIGURATION DIMENSIONS

Description	Connection / size		Orifice*		Dimensions							
	Inlet	Outlet			A		B		C		D	
			mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
H-900	1/4 LET-LOK	1/4 LET-LOK	4.8	0.19	37	1.45	39	1.53	50	1.97	96	3.78
H-900	6MM LET-LOK	6MM LET-LOK			37	1.45	39	1.53	50	1.97	96	3.78
H-985	1/4 Male NPT	1/4 Female NPT			32	1.26	30	1.18	40	1.57	88.6	3.49
H-995	1/4 Male NPT	1/4 LET-LOK			32	1.26	39	1.53	50	1.97	88.6	3.49
H-900	½ LET-LOK	½ LET-LOK	6.4	0.25	46.5	1.83	46.5	1.83	59.2	2.33	150	5.92
H-900	12MM LET-LOK	12MM LET-LOK			46.5	1.83	46.5	1.83	59.2	2.33	150	5.92
H-985	½ Male NPT	½ Female NPT			36.3	1.43	36.3	1.43	49	1.93	140	5.52
H-995	½ Male NPT	½ LET-LOK			36.3	1.43	46.5	1.83	59.2	2.33	140	5.52

\* Orifice in fully open position

## H900 RE-SEAL PRESSURE

Series	Test Set Pressure psig (bar)	Min Resealing Pressure as a Percentage of set pressure, %
H-900	10 - 20 (0.68 to 1.3)	50
	175 - 225 (12.0 to 15.5)	90



## APPLICATIONS

The H-900 is a relief valve and therefore is not certified to ASME due to not having capacity rating at a given pressure rise (accumulation).

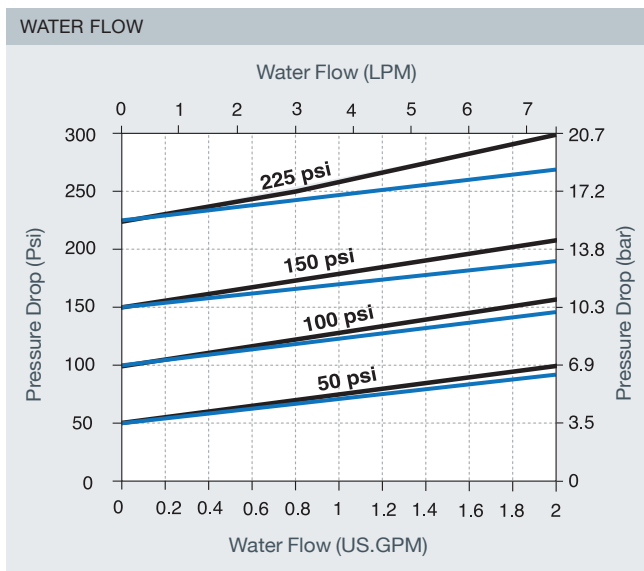
## OPERATION

H-900 relief valves open when the system pressure gets to the set pressure and close when the system pressure drops below the set pressure.

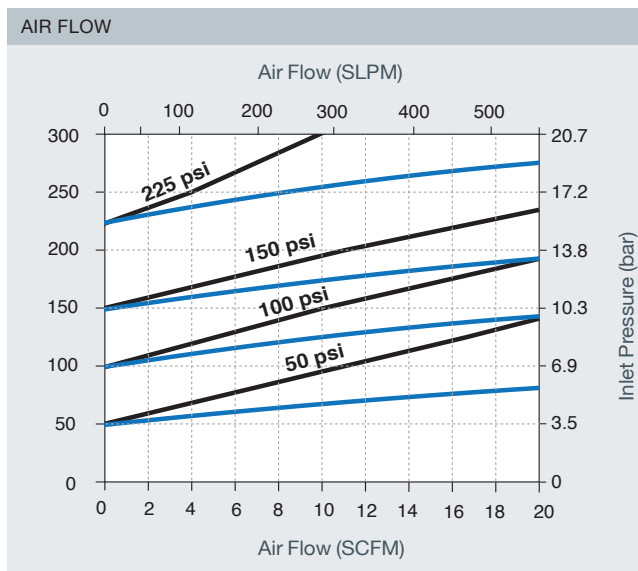
## Warning

- Valves that have not been actuated for some time may contain pressure higher than the set pressure.
- The system designer and user have the sole responsibility for selecting products that will conform to the specific safety codes appropriate for the system.

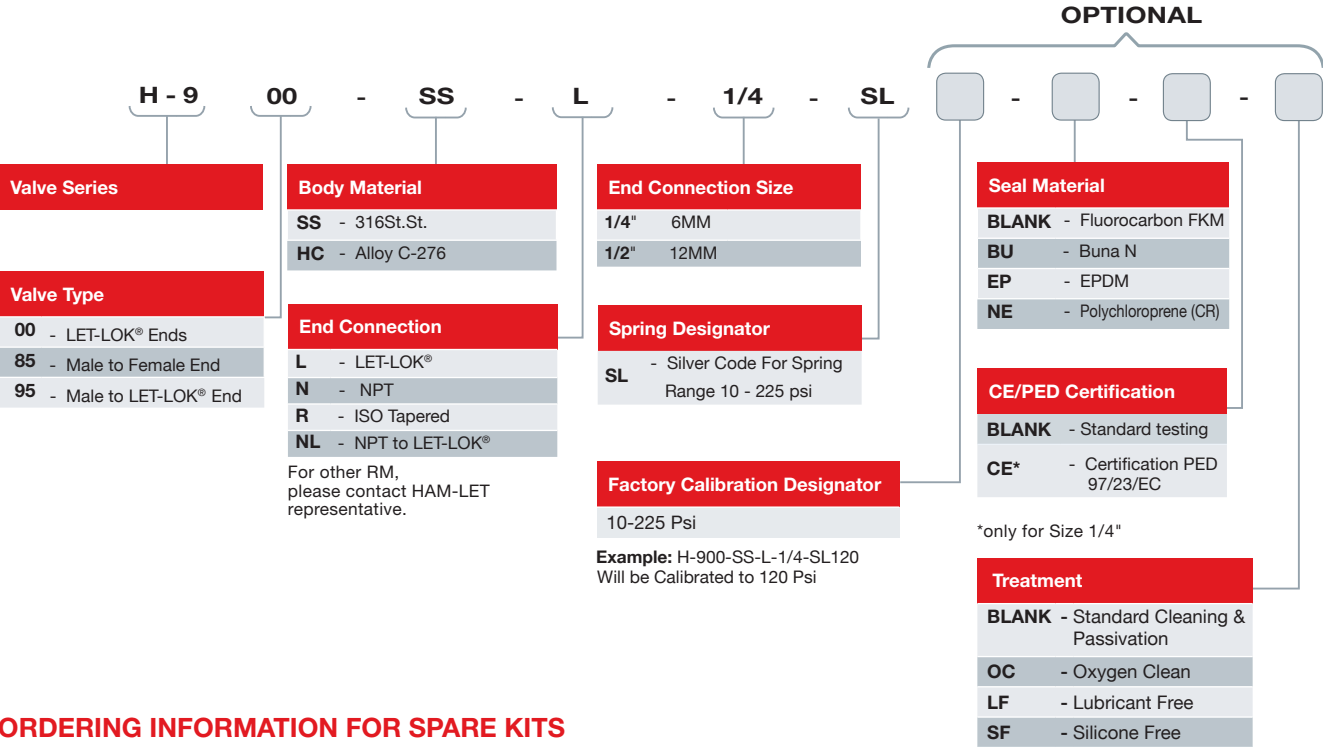
## FLOW DATA AT 70°F (20°C) SPRING 10-225psig



— 1/4" Body Size    — 1/2" Body Size



H-900 SERIES ORDERING INFORMATION



ORDERING INFORMATION FOR SPARE KITS

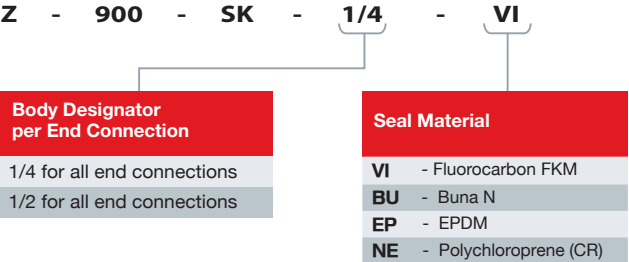
SPRING KIT

Includes: Spring, Label, Wire and Lock



SEAL KIT

Includes: O-rings, Bonded Poppet and Label



For oxygen applications work shall be carried out according to procedures for working with oxygen. In case spare kits are ordered for oxygen clean valves, such kits have to be ordered as oxygen clean by adding "-OC" designator.  
Example: Z-900-SK-1/4-VI-OC





# HIGH-PRESSURE RELIEF VALVES

H900HP SERIES



## FEATURES

- St.St. 316 construction
- MAWT up to 6000 psi
- Set Pressure from 50 psig to 6000 psig (3.50 to 414 bar)
- Identifying colored springs for each pressure range
- Replaceable springs for variable pressure ranges
- Available in all pipe threads and LET-LOK® connections
- Option to comply with standards CE/PED
- Sizes range: 1/4", 1/2", 6mm and 12mm

## GENERAL

The H-900 HP Series is a relief valve designed for high-pressure services. It is most suited for use where changes in pressure can cause process issues, system damage or personal injury.

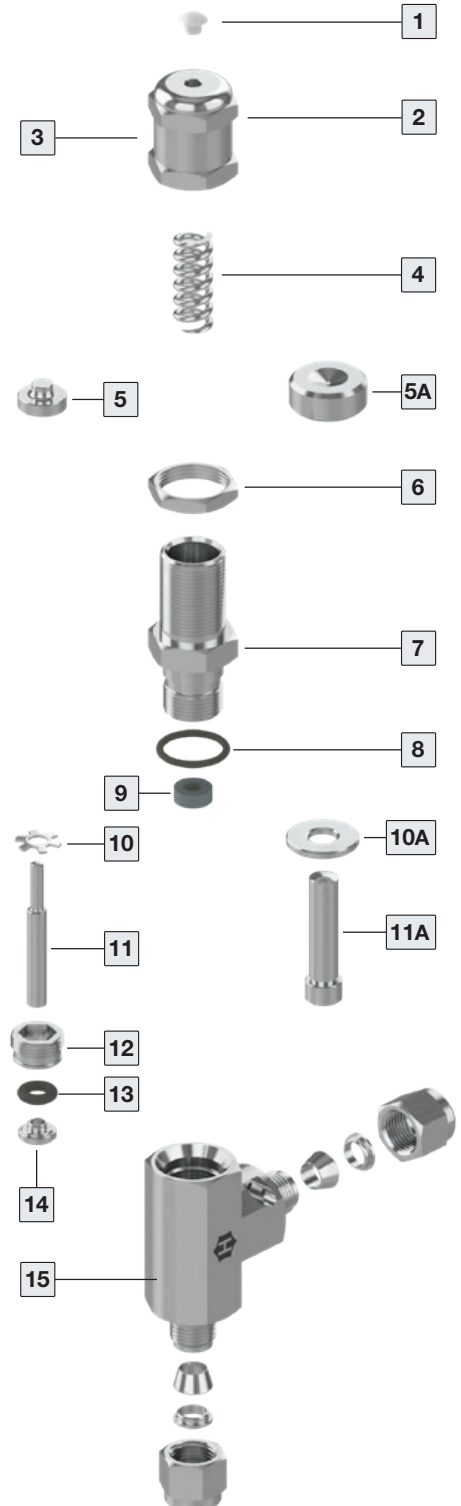
## MATERIALS OF CONSTRUCTION

Item No.	Components	Qty.	1/4" Body Size	1/2" Body Size
1	Cap Plug	1	Polypropylene	Polypropylene
2	Label	1	Polyester	Polyester
3	Adjustment Cap	1	St.St 316	St.St 316
4	Spring	1	St.St. 302,17-7PH	St.St. 302,17-7PH
5	Lower Spring Button	1	St.St 316	-
5A	Lower Spring Button	1	-	St.St 316
6	Locking Nut	1	St.St 316	St.St 316
7	Bonnet	1	St.St 316	St.St 316
8	O-Ring	1	Fluorocarbon FKM	Fluorocarbon FKM
9	Quad Ring	1	Fluorocarbon FKM	Fluorocarbon FKM
10	Retaining Ring	1	PH15-7 Mo	-
10A	Location Ring	1	-	St.St 316
11	*Stem	1	St.St 316	-
11A	*Stem	1	-	St.St. 316 bonded with Fluorocarbon FKM
12	*Clamps Screw	1	St.St 316	-
13	*O-Ring	1	Fluorocarbon FKM	-
14	*Insert	1	St.St 316	-
15	*Body	1	St.St 316	St.St 316
	*Lubricant		Silicone based and PTFE based	

\* Wetted parts

## PRESSURE TEMPERATURE RATING

Series	H-900HP Body Size: 1/4" & 1/2"			
Seal Material	Fluorocarbon FKM	Buna N	Polychloroprene (CR)	EPDM
TEMP °C (°F)	MAX SET PRESSURE psig (bar)			
-40 (-40)	-	-	-	-
-34 (-30)				
-23 (-10)				
-18 (0)				
-12 (10)				
-4 (25)	6000 (413)	6000 (413)	6000 (413)	6000 (413)
-1 (30)				
10 (50)				
65 (150)	5600 (386)	5600 (386)	5600 (386)	5600 (386)
93 (200)	5200 (358)	5200 (358)	5200 (358)	5200 (358)
121 (250)	4900 (338)	4900 (338)	4900 (338)	4900 (338)
135 (275)	-	-	4700 (324)	-
148 (300)				





## CLEANING & PACKAGING

Every H-900HP series relief valve is cleaned in accordance with Standard Cleaning and Packaging Procedure 8184. Oxygen Clean & Lubricant-Free Cleaning and packaging is conducted in accordance with Special Cleaning and Packaging Procedure 8185.

## TESTING

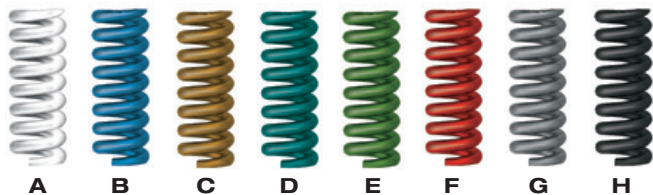
The H-900HP Relief Valve designs have been tested for proof and burst. Every H-900HP Relief Valve is factory tested for proper assembly, set and resealing performance. No detectable leakage is allowed during the shell test.

### NOMINAL CRACKING PRESSURE RANGE FOR 1/4"

psig	Bar	Spring Designator	Color
50-350	3.4 - 24	A	White
350-750	24 - 51.5	B	Blue
750-1500	51.5 - 103	C	Gold
1500-2250	103 - 155	D	Turquoise
2250-3000	155 - 206	E	Green
3000-4000	206 - 275	F	Red
4000-5000	275 - 344	G	Silver
5000-6000	344 - 413	H	Black

### NOMINAL CRACKING PRESSURE RANGE FOR 1/2"

psig	Bar	Spring Designator	Color
50-350	3.4 - 24	A	White
350-750	24 - 51.5	B	Blue
750-1500	51.5 - 103	C	Gold



### STANDARD CONFIGURATION DIMENSIONS

Description	Connection / size		Orifice*		Dimensions							
	Inlet	Outlet			A		B		C		D	
			mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
H-900HP	1/4 LET-LOK	1/4 LET-LOK	3.6	0.14	37	1.45	39	1.53	50	1.97	96.0	3.78
H-900HP	6MM LET-LOK	6MM LET-LOK			37	1.45	39	1.53	50	1.97	96.0	3.78
H-985HP	1/4 Male NPT	1/4 Female NPT			32	1.26	30	1.18	40	1.57	88.6	3.49
H-995HP	1/4 Male NPT	1/4 LET-LOK			32	1.26	39	1.53	50	1.97	88.6	3.49
H-900HP	½ LET-LOK	½ LET-LOK	6.4	0.25	46.5	1.83	46.5	1.8	59.2	2.33	150	5.92
H-900HP	12MM LET-LOK	12MM LET-LOK			46.5	1.83	46.5	1.83	59.2	2.33	150	5.92
H-985HP	½ Male NPT	½ Female NPT			36.3	1.43	36.3	1.43	49	1.93	140	5.52
H-995HP	½ Male NPT	½ LET-LOK			36.3	1.43	46.5	1.83	59.2	2.33	140	5.52

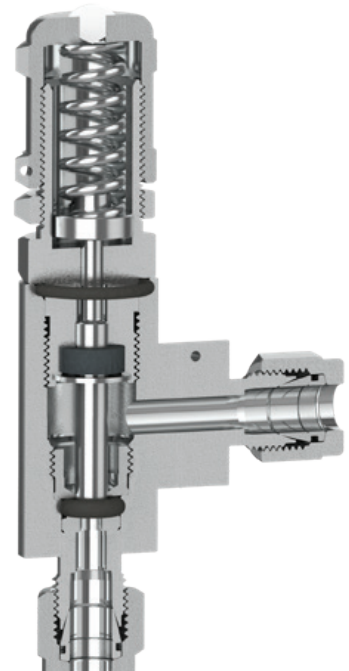
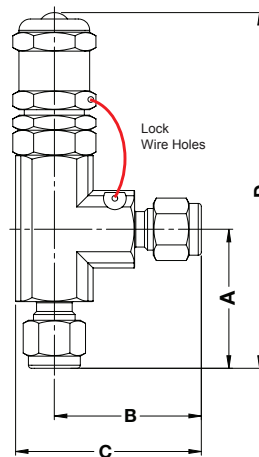
\* Orifice in fully open position

### SETTING AND RE-SEALING PRESSURE

- Upstream set pressure is the first indicator of flow process. Every pressure relief after the first is repeatable within a deviation of 5% at room temperature.
- Blocked upstream set pressure is the first indicator of a stopped flow process and is always lower than the set pressure.
- Lubricant-Free cleaned valves have higher reseal pressure.

### H-900HP RE-SEAL PRESSURE

Series	Test Set Pressure psig (bar)	Min Resealing Pressure as a Percentage of set pressure, %
H-900HP	100 - 200 (6.8 to 13.7)	50
	850 - 1000 (58.5 to 68.9)	84



FLOW DATA AT 70°F (20°C) FOR 1/4" BODY SIZE

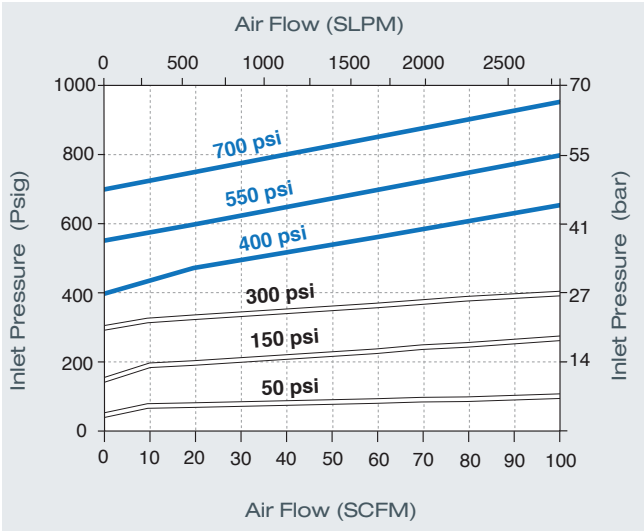


**A**  
**SPRING 50-350psig**

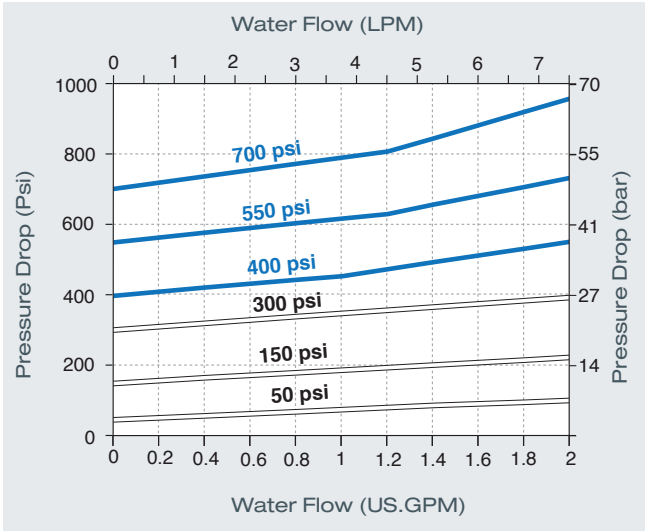


**B**  
**SPRING 350-750psig**

**AIR FLOW**



**WATER FLOW**

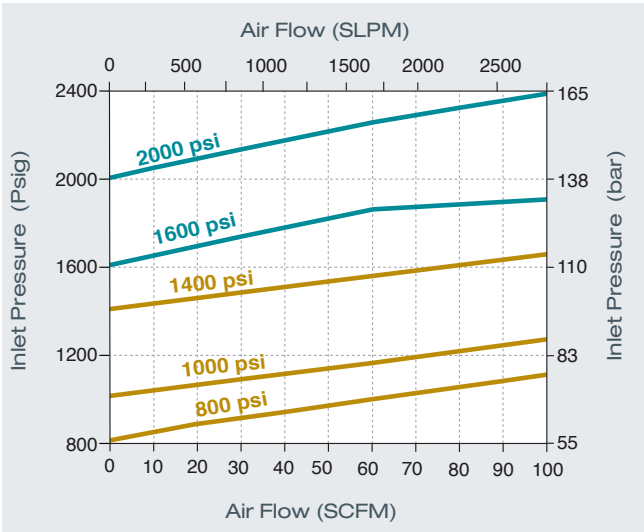


**C**  
**SPRING 750-1500psig**

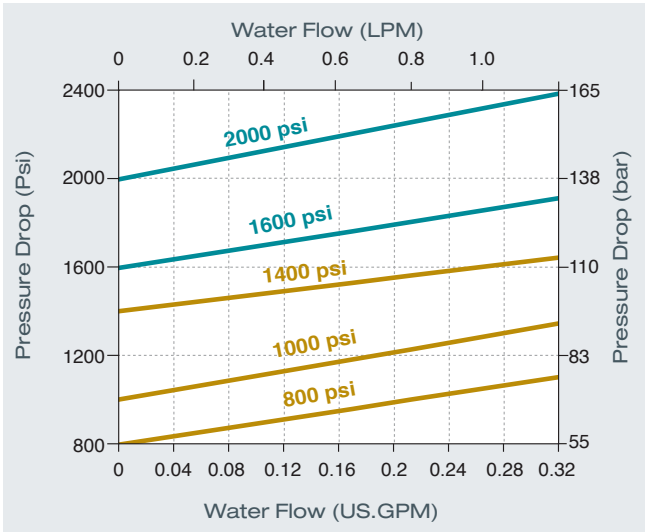


**D**  
**SPRING 1500-2250psig**

**AIR FLOW**



**WATER FLOW**



FLOW DATA AT 70°F (20°C) FOR 1/4" BODY SIZE



E

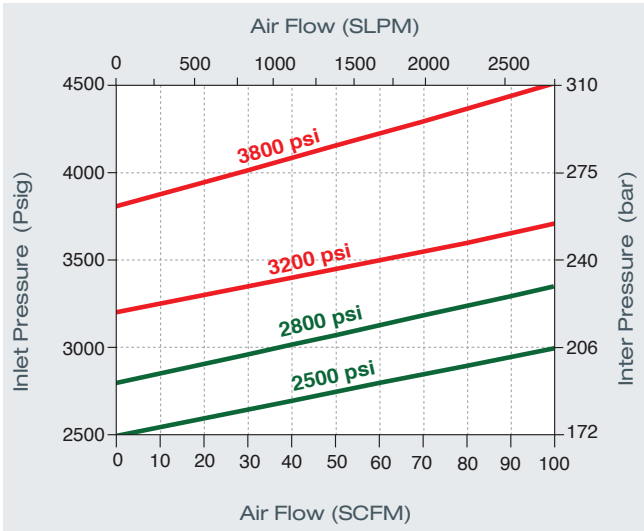
SPRING 2250-3000psig



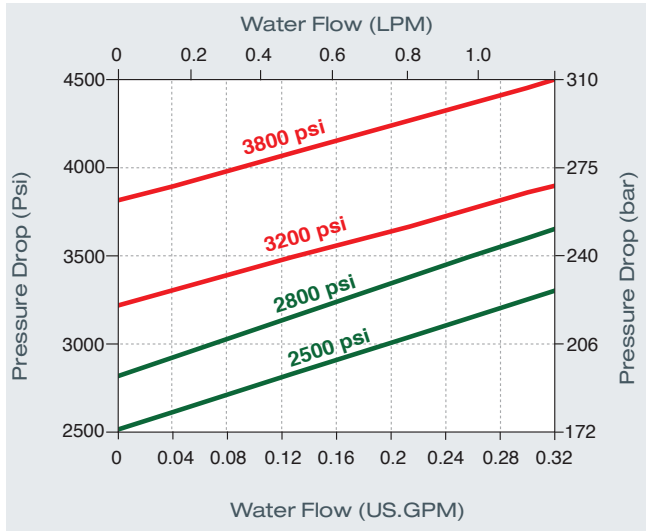
F

SPRING 3000-4000psig

AIR FLOW



WATER FLOW



G

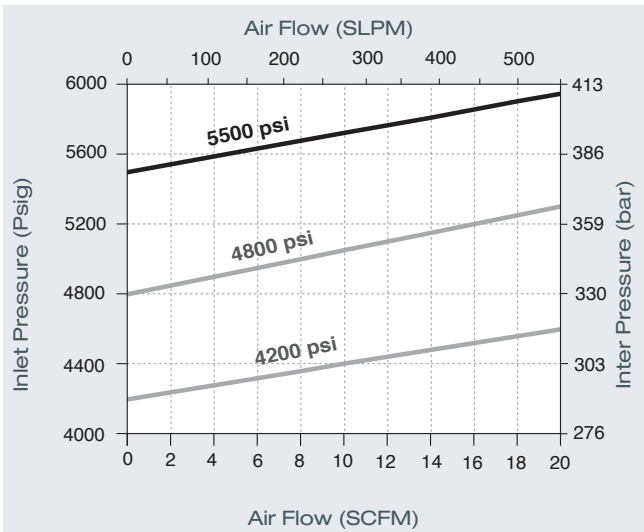
SPRING 4000-5000psig



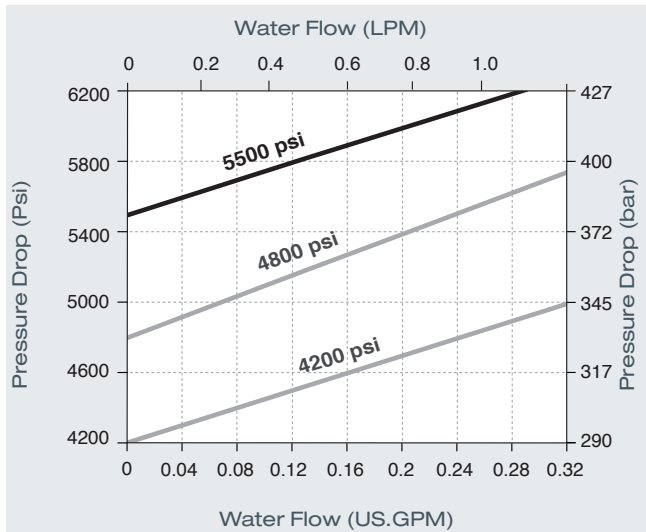
H

SPRING 5000-6000psig

AIR FLOW



WATER FLOW



FLOW DATA AT 70°F (20°C) FOR 1/2" BODY SIZE



A

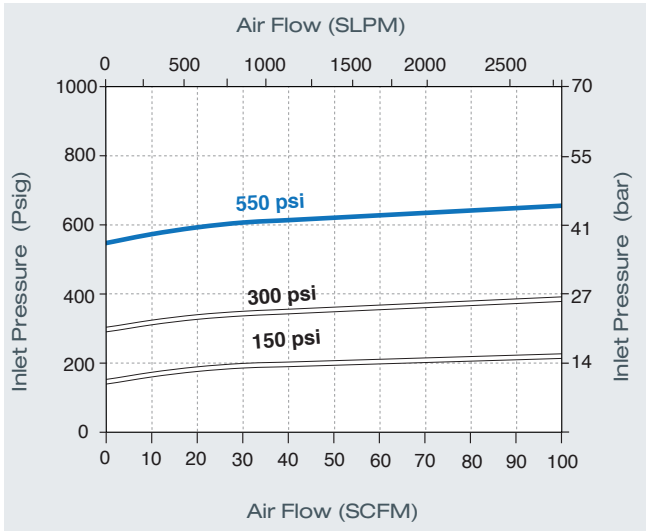
SPRING 50-350psig



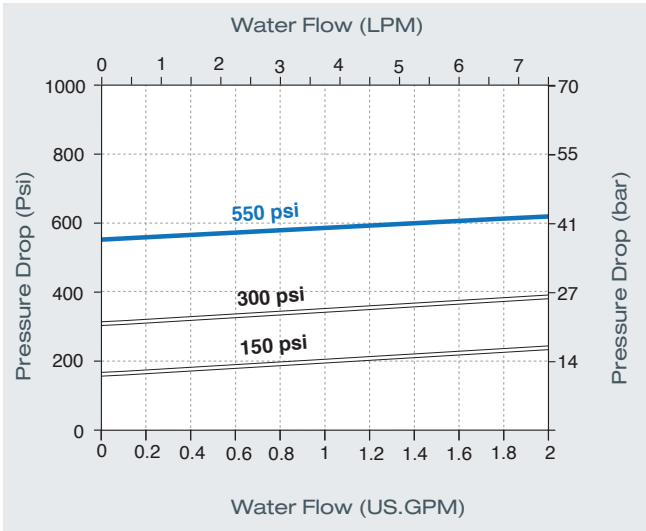
B

SPRING 350-750psig

AIR FLOW



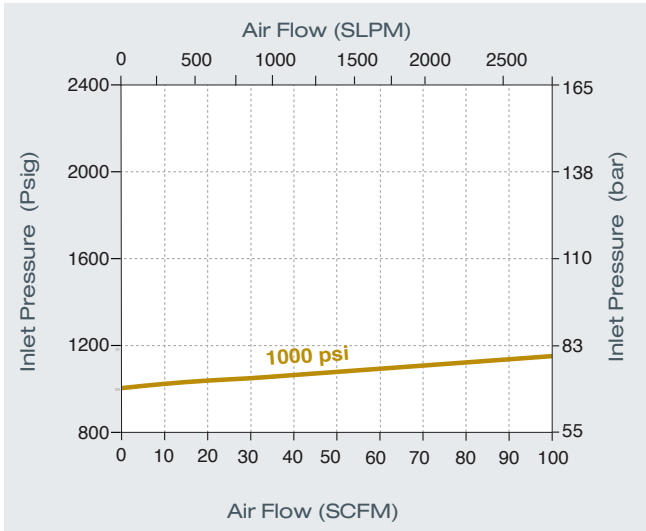
WATER FLOW



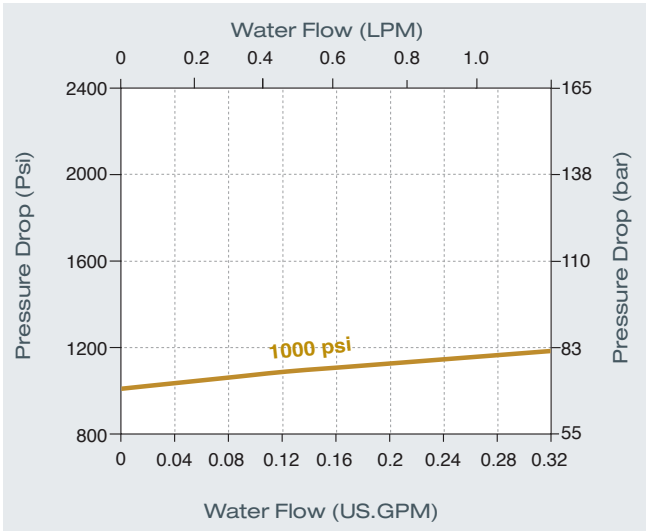
C

SPRING 750-1500psig

AIR FLOW



WATER FLOW



## APPLICATIONS

The H-900HP is a relief valve and therefore is not certified to ASME due to not having capacity rating at a given pressure rise (accumulation).

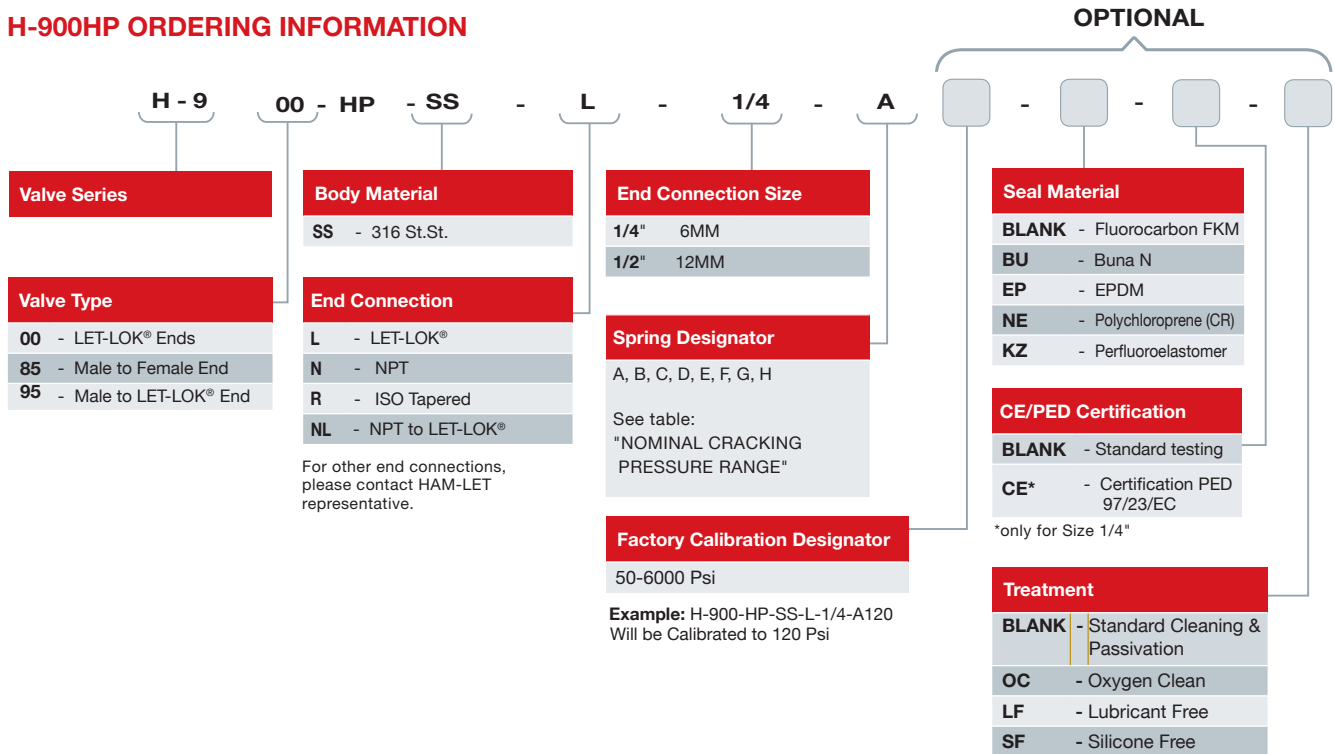
## OPERATION

H-900HP relief valves open when system pressure gets to the set pressure and close when system pressure drops below the set pressure.

## Warning

- Valves that have not been actuated for some time may contain pressure higher than the set pressure.
- The system designer and user have the sole responsibility for selecting products that will conform to the specific safety codes appropriate for the system.

## H-900HP ORDERING INFORMATION



## ORDERING INFORMATION FOR SPARE KITS

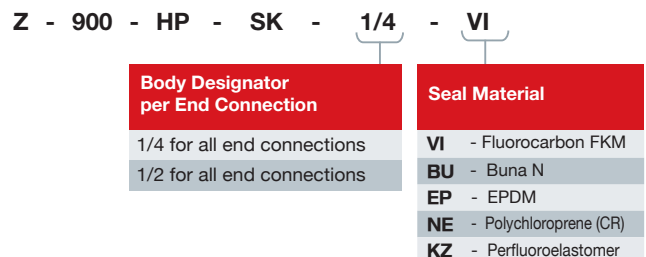
### SPRING KIT

Includes:  
Spring (specific to desired set pressure range) and label.



### SEAL KIT

Includes: O-Rings and label



■ For oxygen applications work shall be carried out according to procedures for working with oxygen. In case spare kits are ordered for oxygen clean valves, such kits have to be ordered as oxygen clean by adding "-OC" designator.  
Example: Z-900-HP-SK-1/4-VI-OC

### 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.

H-900HP | 2019\_Rev00

