

## Type 488 Safety Relief Valves – spring loaded

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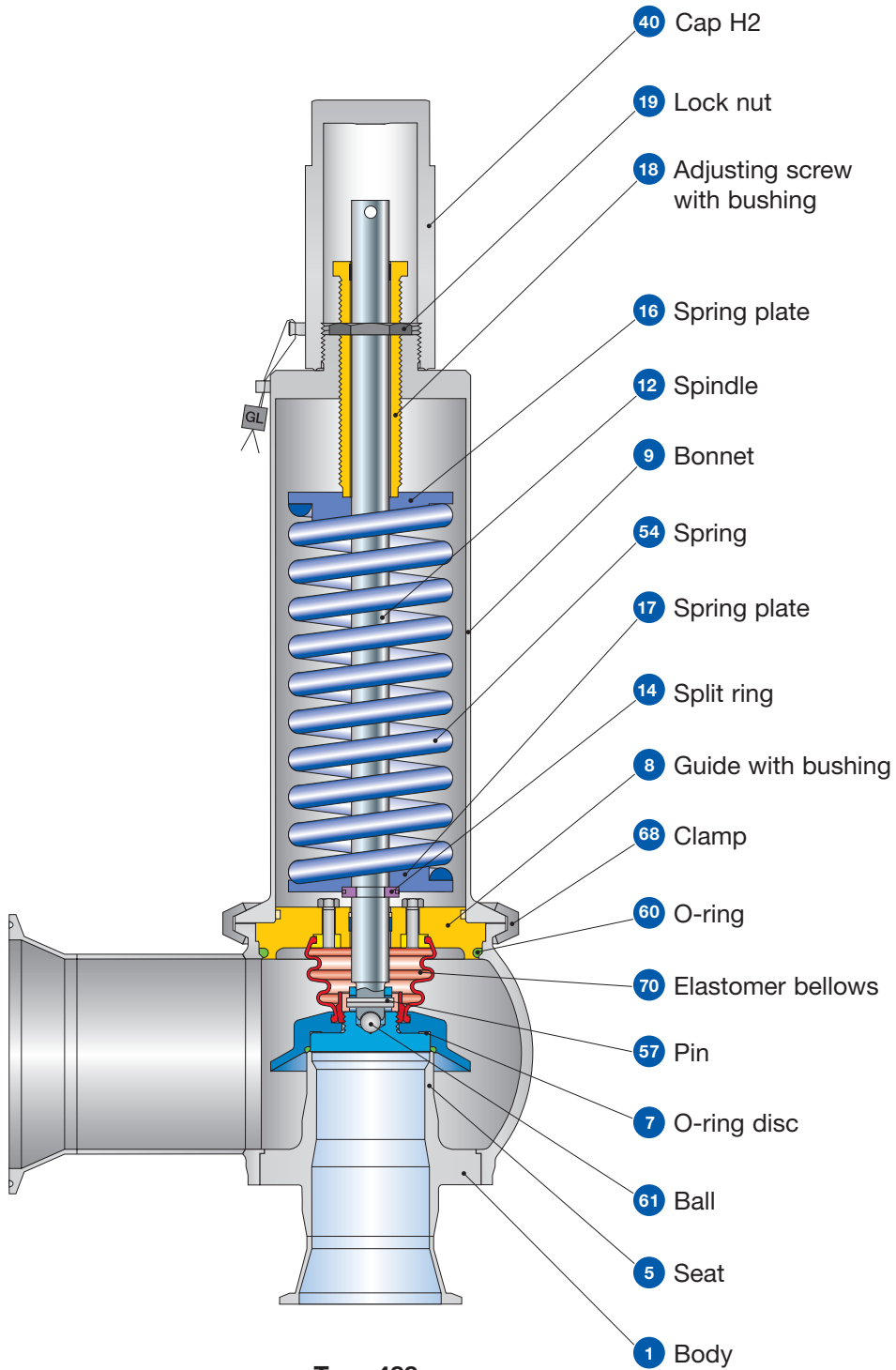


**Type 488  
Cap H2**  
Inlet and outlet: Clamp connection







**Type 488  
Packed knob H4**  
Inlet and outlet: Flange connection

# Type 488 HyTight Assembly



**Type 488**  
Cap H2  
Inlet and outlet: Clamp connection

**Type 488**  
**HyTight Assembly**  
Materials

Item	Component	Remarks	Type 4884 HyTight
1	Body		1.4404
			SA 479 316L
5	Seat		1.4404
			316L
7	O-ring disc	HyTight Assembly	1.4404
			316L
7.4	Soft seal O-ring	"D" 	EPDM
		"K"	CR
		"L" 	FKM
		"C" 	FFKM
8	Guide with bushing	PTFE + 15 % glass	1.4404
			316L
9	Bonnet		1.4404
			SA 479 316L
12	Spindle		1.4404
			316L
14	Split ring		1.4404
			316L
16 / 17	Spring plate		1.4404
			316L
18	Adjusting screw with bushing	PTFE + 15 % glass	1.4104 / PTFE 430 / PTFE
19	Lock nut		1.4404
			316L
40	Cap H2		1.4404
			316L
54	Spring		1.4310
			Stainless steel
57	Pin		1.4310
			Stainless steel
60	O-ring		EPDM
61	Ball		1.4401
			316
68	Clamp		1.4401
			316
70	Elastomer bellows		EPDM

**Please notice:**

- Modifications reserved by LESER.
- LESER can upgrade materials without notice.
- Every part can be replaced by other material acc. to customer specification.

## Type 488

### Article numbers

Actual Orifice diameter $d_0$ [mm]	23	37	46	60	74	92		
Actual Orifice area $A_0$ [mm <sup>2</sup> ]	416	1075	1662	2827	4301	6648		
Actual Orifice diameter $d_0$ [inch]	0,906	1,457	1,811	2,362	2,913	3,622		
Actual Orifice area $A_0$ [inch <sup>2</sup> ]	0,644	1,667	2,576	4,383	6,666	10,304		
<b>O-ring material</b>			EPDM	"D"	J22			
			CR	"K"	J21			
			FKM	"L"	J23			
			FFKM	"C"	J20			
<b>Body material: 1.4404 (316L)</b>			<b>HyTight</b>					
<b>Bonnet</b>	<b>H2</b>	Art. No. <b>4884.</b>	<b>8842</b>	<b>8852</b>	<b>8862</b>	<b>8872</b>	<b>8882</b>	<b>8892</b>
closed	<b>H4</b>	Art. No. <b>4884.</b>	<b>8844</b>	<b>8854</b>	<b>8864</b>	<b>8874</b>	<b>8884</b>	<b>8894</b>
	<b>H8</b>	Art. No. <b>4884.</b>	<b>8848</b>	<b>8858</b>	<b>8868</b>	<b>8878</b>	<b>8888</b>	<b>8898</b>
		p [bar] S/G/L	<b>0,1 – 16</b>	<b>0,1 – 16</b>	<b>0,2 – 15</b>	<b>0,1 – 10,34</b>	<b>0,1 – 10,34</b>	<b>0,1 – 8,2</b>
		p [psig] S/G/L	<b>1,5 – 232</b>	<b>1,5 – 232</b>	<b>3 – 217,56</b>	<b>1,5 – 150</b>	<b>1,5 – 150</b>	<b>1,5 – 118,9</b>

## Type 488

### Available connections

	d <sub>0</sub> [mm]	23	37	46	60	74	92	
	A <sub>0</sub> [mm <sup>2</sup> ]	416	1057	1662	2827	4301	6648	
<b>Clamps</b>								
		<b>Option code inlet</b>						
DN	25	40	50	65	80	100		
SO	L79							
DO	I73							
NPS	1 1/2"	2"	2 1/2"	3"	4"	1)		
BO	I75							
NPS	1 1/2"	2"	2 1/2"	3"	4"	4 1/2"		
CO	L96							
<b>Aseptic screwed connection</b>								
		<b>Option code inlet</b>						
Pipe standard	DN	25	40	50	65	80	100	
DIN 11850 / DIN 11866 Range A	00	H85L77						
	GS	H85H34						
	BS	H85H36						
	GT	H85H54						
	BT	H85H56						
	GO	H85L75						
	KO	H85L76						
	GD	H85H60						
BD	H85H58							
Pipe standard	DN	25	40	50	65	80	100	
DIN EN ISO 1127 / DIN 11866 Range B	GS	H86H34						
	BS	H86H36						
	GT	H86H54						
	BT	H86H56						
	GD	H86H60						
	BD	H86H58						
	Pipe standard	NPS	1 1/2"	2"	2 1/2"	3"	4"	4 1/2"
BS 4825-1 DIN 11866 Range C	GS	H66H34						
	BS	H66H36						
	GT	H66H54						
	BT	H66H56						
<b>Flanged connection</b>								
		<b>Option code inlet</b>						
DN	25	40	50	65	80	100		
FD	I71							
NPS	1"	1 1/2"	2"	2 1/2"	3"	4"		
FA	L94							
<b>Aseptic flanged connection</b>								
		<b>Option code inlet</b>						
Pipe standard	DN	25	40	50	65	80	100	
DIN 11850 / DIN 11866 Range A	NF	H85H71						
	BF	H85H73						
	NG	H85H75						
	BG	H85H77						
	TN	H85L78						
	AF	L90						
	AN	L92						
	VC	L70						
	VG	I82	-					
	VH	I83						
	VE	L80						
Pipe standard	DN	25	40	50	65	80	100	
DIN EN ISO 1127 / DIN 11866 Range B	NF	H86H71						
	BF	H86H73						
	NG	H86H75						
	BG	H86H77						
Pipe standard	NPS	1 1/2"	2"	2 1/2"	3"	4"	4 1/2"	
BS 4825-1 DIN 11866 Range C	NF	H66H71						
	BF	H66H73						
	NG	H66H75						
	BG	H66H77						

	d <sub>0</sub> [mm]	23	37	46	60	74	92
	A <sub>0</sub> [mm <sup>2</sup> ]	416	1057	1662	2827	4301	6648
<b>Clamps</b>							
		<b>Option code outlet</b>					
DN	40	65	80	100	125	150	
SO	L86						-
DO	I74						
NPS	2"	3"	4"	1)	1)	1)	
BO	I76						
NPS	2"	3"	3 1/2"	4 1/2"	5 1/2"	6,625"	
CO	L97						
<b>Aseptic screwed connection</b>							
		<b>Option code outlet</b>					
DN	40	65	80	100	125	150	
00	A85L83						-
GS	A85H35						-
BS	A85H37						-
GT	A85H55						-
BT	A85H57						-
GO	A85L81						-
KO	A85L82						-
GD	A85H61						-
BD	A85H59						-
DN	40	65	80	100	125	150	
GS	A86H35						-
BS	A86H37						-
GT	A86H55						-
BT	A86H57						-
GD	A86H61						-
BD	A86H59						-
NPS	2"	3"	4"	4 1/2"	5"	6"	
GS	A84H35						-
BS	A84H37						-
GT	A84H55						-
BT	A84H57						-
<b>Flanged connection</b>							
		<b>Option code outlet</b>					
DN	40	65	80	100	125	150	
FD	I72						
NPS	1 1/2"	2 1/2"	3"	4"	5"	6"	
FA	L95						
<b>Aseptic flanged connection</b>							
		<b>Option code outlet</b>					
DN	40	65	80	100	125	150	
NF	A85H72						
BF	A85H74						
NG	A85H76						
BG	A85H78						
TN	A85L84						
AF	L91						
AN	L93						
VC	-						
VG	-						
VH	-						
VE	-						
DN	40	65	80	100	125	150	
NF	A86H72						-
BF	A86H74						-
NG	A86H76						-
BG	A86H78						-
NPS	2"	3"	4"	4 1/2"	5"	6"	
NF	A84H72						-
BF	A84H74						-
NG	A84H76						-
BG	A84H78						-

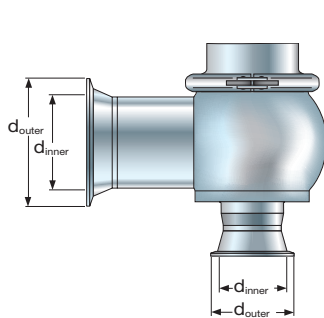
For definitions of connection codes please refer to pages 12 up to 15.

<sup>1)</sup> Please select CO-Clamp

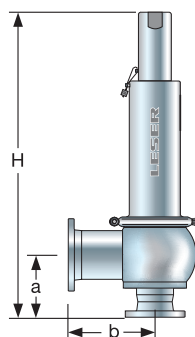
## Type 488

### Dimensions and weights

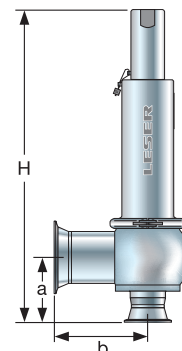
Metric Units



Clamp diameters



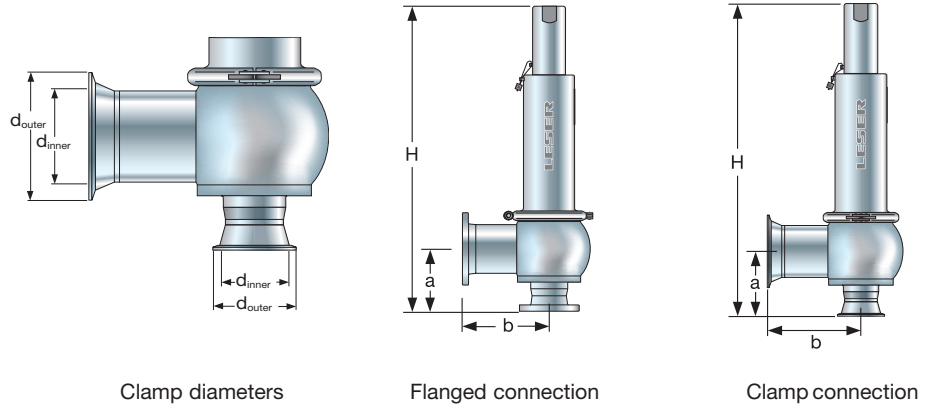
Flanged connection



Clamp connection

Actual Orifice diameter $d_0$ [mm]		23	37	46	60	74	92
Actual Orifice area $A_0$ [mm <sup>2</sup> ]		416	1075	1662	2827	4301	6648
<b>Welded connections</b>							
				<b>Inlet a</b>			
	<b>PN</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>
<b>Center to face</b>	[mm]	53	70	78	87	103	121
<b>Height – H4</b>	H max. [mm]	310	487	502	521	625	662
<b>Height – H8</b> double piston design	H max. [mm]	318	514	529	548	687	724
				<b>Outlet b</b>			
	<b>PN</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>
	[mm]	90	125	125	125	150	–
	[mm]	310	487	502	521	625	662
	[mm]	318	514	529	548	687	724
<b>Clamp connections</b>							
				<b>Inlet a</b>			
	<b>PN</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>10</b>	<b>10</b>	<b>10</b>
<b>Center to face</b>	[mm]	75	92	99	109	124	149
<b>Clamp diameter</b>	$d_{inner}$ [mm]	For varying clamp diameters please refer to page 16 and 17					
	$d_{outer}$ [mm]	For varying clamp diameters please refer to page 16 and 17					
<b>Height – H4</b>	H max. [mm]	331	509	524	543	646	690
<b>Height – H8</b> double piston design	H max. [mm]	339	536	551	570	709	752
				<b>Outlet b</b>			
	<b>PN</b>	<b>16</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>
	[mm]	112	147	147	153	178	181
<b>Aseptic screwed connections</b>							
				<b>Inlet a</b>			
	<b>PN</b>	<b>40</b>	<b>40</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>25</b>
<b>Center to face</b>	[mm]	93	110	106	117	133	151
<b>Height – H4</b>	H max. [mm]	349	527	530	551	655	692
<b>Height – H8</b> double piston design	H max. [mm]	357	554	557	578	717	754
				<b>Outlet b</b>			
	<b>PN</b>	<b>40</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>16</b>	<b>16</b>
	[mm]	130	155	155	155	185	–
	[mm]	349	527	530	551	655	692
	[mm]	357	554	557	578	717	754
<b>Aseptic flanged connections acc. to DIN 11684</b>							
				<b>Inlet a</b>			
	<b>PN</b>	<b>25</b>	<b>25</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>
<b>Center to face</b>	[mm]	78	95	103	112	128	146
<b>Height – H4</b>	H max. [mm]	335	512	527	546	650	687
<b>Height – H8</b> double piston design	H max. [mm]	343	539	554	573	712	749
				<b>Outlet b</b>			
	<b>PN</b>	<b>25</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>10</b>	<b>10</b>
	[mm]	115	150	150	150	175	183
	[mm]	335	512	527	546	650	687
	[mm]	343	539	554	573	712	749
<b>Weight</b>							
<b>Weight</b>	max. [kg]	9	20	21,7	26,5	47	56

**Type 488**  
**Dimensions and weights**  
US Units

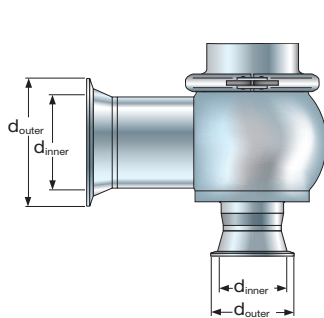


Actual Orifice diameter d <sub>0</sub> [inch]		0,906	1,457	1,811	2,362	2,913	3,622	0,906	1,457	1,811	2,362	2,913	3,622
Actual Orifice area A <sub>0</sub> [inch <sup>2</sup> ]		0,644	1,67	2,576	4,38	6,666	10,30	0,644	1,67	2,576	4,38	6,666	10,30
<b>Welded connections</b>		<b>Inlet a</b>						<b>Outlet b</b>					
	<b>PN</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>
<b>Center to face</b>	[inch]	2 3/32	2 3/4	3 1/16	3 7/16	4 1/32	4 3/4	3 17/32	4 15/16	4 15/16	4 15/16	5 14/16	-
<b>Height – H4</b>	H max. [inch]	12 3/16	19 3/16	19 3/4	20 1/2	24 5/8	16 1/16	12 3/16	19 3/16	19 3/4	20 1/2	24 5/8	16 1/16
<b>Height – H8</b> double piston design	H max. [inch]	12 1/2	20 1/4	20 13/16	21 9/16	27 1/16	28 1/2	12 1/2	20 1/4	20 13/16	21 9/16	27 1/16	28 1/2
<b>Clamp connections</b>		<b>Inlet a</b>						<b>Outlet b</b>					
	<b>PN</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>10</b>	<b>10</b>	<b>10</b>
<b>Center to face</b>	[inch]	2 15/16	3 19/32	3 29/32	4 9/32	4 7/8	5 7/8	4 3/8	5 25/32	5 25/32	6	7	7 1/8
<b>Clamp diameter</b>	d <sub>inner</sub> [inch]	For varying clamp diameters please refer to page 16 and 17						For varying clamp diameters please refer to page 16 and 17					
	d <sub>outer</sub> [inch]	For varying clamp diameters please refer to page 16 and 17						For varying clamp diameters please refer to page 16 and 17					
<b>Height – H4</b>	H max. [inch]	13 1/16	20 1/16	20 5/8	21 3/8	25 7/16	27 3/16	13 1/16	20 1/16	20 5/8	21 3/8	25 7/16	27 3/16
<b>Height – H8</b> double piston design	H max. [inch]	13 3/8	21 1/8	21 11/16	22 7/16	27 15/16	29 5/8	13 3/8	21 1/8	21 11/16	22 7/16	27 15/16	29 5/8
<b>Aseptic screwed connections</b>		<b>Inlet a</b>						<b>Outlet b</b>					
	<b>PN</b>	<b>40</b>	<b>40</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>40</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>16</b>	<b>16</b>
<b>Center to face</b>	[inch]	3 21/32	4 5/16	4 1/8	4 5/8	5 3/16	5 15/16	5 1/8	6 1/8	6 1/8	6 1/8	7 9/32	-
<b>Height – H4</b>	H max. [inch]	13 3/4	20 3/4	20 7/8	21 11/16	25 13/16	27 1/4	13 3/4	20 3/4	20 7/8	21 11/16	25 13/16	27 1/4
<b>Height – H8</b> double piston design	H max. [inch]	14 1/16	21 13/16	21 15/16	22 3/4	28 1/4	29 11/16	14 1/16	21 13/16	21 15/16	22 3/4	28 1/4	29 11/16
<b>Aseptic flanged connections</b> acc. to DIN 11684		<b>Inlet a</b>						<b>Outlet b</b>					
	<b>PN</b>	<b>25</b>	<b>25</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>25</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>10</b>	<b>10</b>
<b>Center to face</b>	[inch]	3 1/16	3 3/4	4 1/16	4 7/16	5	5 3/4	4 1/2	5 7/8	5 7/8	5 7/8	6 7/8	7 3/16
<b>Height – H4</b>	H max. [inch]	13 3/16	20 3/16	20 3/4	21 1/2	25 9/16	27 1/16	13 3/16	20 3/16	20 3/4	21 1/2	25 9/16	27 1/16
<b>Height – H8</b> double piston design	H max. [inch]	13 1/2	21 1/4	21 13/16	22 9/16	28 1/16	29 1/2	13 1/2	21 1/4	21 13/16	22 9/16	28 1/16	29 1/2
<b>Weight</b>		<b>Weight</b>						<b>Weight</b>					
<b>Weight</b>	max. [lb]	19,8	44,1	47,8	58,4	103,6	123,5						

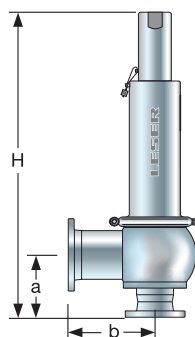
## Type 488

### Dimensions and weights

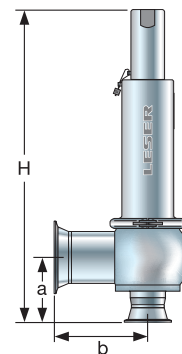
Metric Units



Clamp diameters



Flanged connection

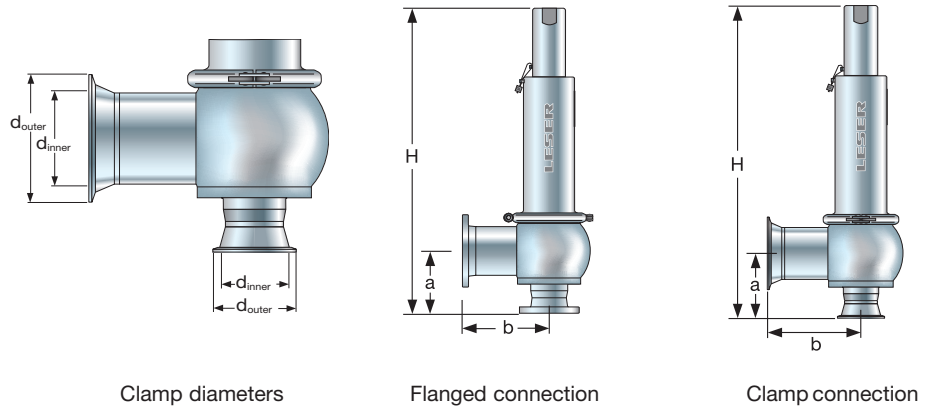


Clamp connection

Actual Orifice diameter $d_o$ [mm]		23	37	46	60	74	92	23	37	46	60	74	92
Actual Orifice area $A_o$ [mm <sup>2</sup> ]		416	1075	1662	2827	4301	6648	416	1075	1662	2827	4301	6648
<b>DIN / ASME Flange</b>		<b>Inlet a</b>						<b>Outlet b</b>					
	<b>PN</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>
<b>Center to face</b>	[mm]	91	112	123	132	153	173	132	170	175	177	179	184
<b>Height – H4</b>	H max. [mm]	348	529	547	566	675	714	348	529	547	566	675	714
<b>Height – H8</b> double piston design	H max. [mm]	356	556	574	593	737	776	356	556	574	593	737	776
<b>APV Flange</b>		<b>Inlet a</b>						<b>Outlet b</b>					
	<b>PN</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>
<b>Center to face</b>	[mm]	77	94	102	111	127	145	114	149	149	149	177	–
<b>Height – H4</b>	H max. [mm]	334	511	526	545	649	686	334	511	526	545	649	686
<b>Height – H8</b> double piston design	H max. [mm]	342	538	553	572	711	748	342	538	553	572	711	748
<b>Tuchenhagen Varivent Connections</b>		<b>Inlet a</b>						<b>Outlet b</b>					
	<b>PN</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	–	–	–	–	–	–
<b>Center to face</b>	[mm]	90	107	115	124	140	158	–	–	–	–	–	–
<b>Height – H4</b>	H max. [mm]	347	524	539	558	662	699	347	524	539	558	662	699
<b>Height – H8</b> double piston design	H max. [mm]	355	551	566	585	724	761	355	551	566	585	724	761
<b>Weight</b>													
<b>Weight</b>	max. [kg]	9	20	21,7	26,5	47	56						



**Type 488**  
**Dimensions and weights**  
US Units



Clamp diameters

Flanged connection

Clamp connection

Actual Orifice diameter $d_o$ [inch]		23	37	46	60	74	92	23	37	46	60	74	92
Actual Orifice area $A_o$ [inch <sup>2</sup> ]		416	1075	1662	2827	4301	6648	416	1075	1662	2827	4301	6648
<b>DIN / ASME Flange</b>		<b>Inlet a</b>						<b>Outlet b</b>					
	<b>PN</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>16</b>
<b>Center to face</b>	[inch]	3 <sup>9</sup> / <sub>16</sub>	4 <sup>7</sup> / <sub>16</sub>	4 <sup>13</sup> / <sub>16</sub>	5 <sup>3</sup> / <sub>16</sub>	6	6 <sup>13</sup> / <sub>16</sub>	5 <sup>3</sup> / <sub>16</sub>	6 <sup>11</sup> / <sub>16</sub>	6 <sup>7</sup> / <sub>8</sub>	6 <sup>15</sup> / <sub>16</sub>	7 <sup>1</sup> / <sub>16</sub>	7 <sup>1</sup> / <sub>4</sub>
<b>Height – H4</b>	H max. [inch]	13 <sup>11</sup> / <sub>16</sub>	20 <sup>13</sup> / <sub>16</sub>	21 <sup>9</sup> / <sub>16</sub>	22 <sup>5</sup> / <sub>16</sub>	26 <sup>9</sup> / <sub>16</sub>	28 <sup>1</sup> / <sub>8</sub>	13 <sup>11</sup> / <sub>16</sub>	20 <sup>13</sup> / <sub>16</sub>	21 <sup>9</sup> / <sub>16</sub>	22 <sup>5</sup> / <sub>16</sub>	26 <sup>9</sup> / <sub>16</sub>	28 <sup>1</sup> / <sub>8</sub>
<b>Height – H8</b> double piston design	H max. [inch]	14	21 <sup>7</sup> / <sub>8</sub>	22 <sup>5</sup> / <sub>8</sub>	23 <sup>3</sup> / <sub>8</sub>	29	30 <sup>9</sup> / <sub>16</sub>	14	21 <sup>7</sup> / <sub>8</sub>	22 <sup>5</sup> / <sub>8</sub>	23 <sup>3</sup> / <sub>8</sub>	29	30 <sup>9</sup> / <sub>16</sub>
<b>APV Flange</b>		<b>Inlet a</b>						<b>Outlet b</b>					
	<b>PN</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>
<b>Center to face</b>	[inch]	13 <sup>1</sup> / <sub>16</sub>	13 <sup>11</sup> / <sub>16</sub>	4	4 <sup>3</sup> / <sub>8</sub>	5	5 <sup>11</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>2</sub>	5 <sup>7</sup> / <sub>8</sub>	5 <sup>7</sup> / <sub>8</sub>	5 <sup>7</sup> / <sub>8</sub>	6 <sup>15</sup> / <sub>16</sub>	–
<b>Height – H4</b>	H max. [inch]	13 <sup>1</sup> / <sub>8</sub>	20 <sup>1</sup> / <sub>8</sub>	20 <sup>11</sup> / <sub>16</sub>	21 <sup>7</sup> / <sub>16</sub>	25 <sup>9</sup> / <sub>16</sub>	27	13 <sup>1</sup> / <sub>8</sub>	20 <sup>1</sup> / <sub>8</sub>	20 <sup>11</sup> / <sub>16</sub>	21 <sup>7</sup> / <sub>16</sub>	25 <sup>9</sup> / <sub>16</sub>	27
<b>Height – H8</b> double piston design	H max. [inch]	13 <sup>7</sup> / <sub>8</sub>	21 <sup>3</sup> / <sub>16</sub>	21 <sup>3</sup> / <sub>4</sub>	22 <sup>1</sup> / <sub>2</sub>	28	29 <sup>7</sup> / <sub>16</sub>	13 <sup>7</sup> / <sub>8</sub>	21 <sup>3</sup> / <sub>16</sub>	21 <sup>3</sup> / <sub>4</sub>	22 <sup>1</sup> / <sub>2</sub>	28	29 <sup>7</sup> / <sub>16</sub>
<b>Tuchenhagen Varivent Connections</b>		<b>Inlet a</b>						<b>Outlet b</b>					
	<b>PN</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	–	–	–	–	–	–
<b>Center to face</b>	[inch]	3 <sup>9</sup> / <sub>16</sub>	4 <sup>3</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>2</sub>	4 <sup>7</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>2</sub>	6 <sup>1</sup> / <sub>4</sub>	–	–	–	–	–	–
<b>Height – H4</b>	H max. [inch]	13 <sup>11</sup> / <sub>16</sub>	20 <sup>5</sup> / <sub>8</sub>	21 <sup>1</sup> / <sub>4</sub>	21 <sup>15</sup> / <sub>16</sub>	26 <sup>1</sup> / <sub>16</sub>	27 <sup>1</sup> / <sub>2</sub>	13 <sup>11</sup> / <sub>16</sub>	20 <sup>5</sup> / <sub>8</sub>	21 <sup>1</sup> / <sub>4</sub>	21 <sup>15</sup> / <sub>16</sub>	26 <sup>1</sup> / <sub>16</sub>	27 <sup>1</sup> / <sub>2</sub>
<b>Height – H8</b> double piston design	H max. [inch]	14	21 <sup>11</sup> / <sub>16</sub>	22 <sup>5</sup> / <sub>16</sub>	23 <sup>1</sup> / <sub>16</sub>	28 <sup>1</sup> / <sub>2</sub>	29 <sup>15</sup> / <sub>16</sub>	14	21 <sup>11</sup> / <sub>16</sub>	22 <sup>5</sup> / <sub>16</sub>	23 <sup>1</sup> / <sub>16</sub>	28 <sup>1</sup> / <sub>2</sub>	29 <sup>15</sup> / <sub>16</sub>
<b>Weight</b>													
<b>Weight</b>	max. [lb]	19,8	44,1	47,8	58,4	103,6	123,5						

## Type 488

### Pressure temperature ratings

#### Metric Units

Actual Orifice diameter $d_0$ [mm]		23	37	46	60	74	92
Actual Orifice area $A_0$ [mm <sup>2</sup> ]		416	1075	1662	2827	4301	6648
<b>Body material: 1.4404 (316L)</b>							
<b>Inlet / Outlet</b>	<b>Pressure rating</b>	For pressure ratings and connection size please refer to chapter dimensions and weights (page 48/50)					
<b>Minimum set pressure<sup>1)</sup></b>	p [bar] S/G/L	0,1	0,1	0,2	0,1	0,1	0,1
<b>Maximum set pressure</b>	p [bar] S/G/L	16	16	15	10,34	10,34	8,2
<b>Temperature range<sup>2)</sup></b>				Min.	Max.		
EPDM	[°C]			-45	+150		
CR	[°C]			-40	+100		
FKM	[°C]			-18	+150		
FFKM	[°C]			0	+150		

#### US Units

Actual Orifice diameter $d_0$ [inch]		0,906	1,457	1,811	2,362	2,913	3,622
Actual Orifice area $A_0$ [inch <sup>2</sup> ]		0,644	1,667	2,576	4,383	6,666	10,304
<b>Body material: 1.4404 (316L)</b>							
<b>Inlet / Outlet</b>	<b>Pressure rating</b>	For pressure ratings and connection size please refer to chapter dimensions and weights (page 49/51)					
<b>Minimum set pressure<sup>1)</sup></b>	p [psig] S/G/L	1,5	1,5	3	1,5	1,5	1,5
<b>Maximum set pressure</b>	p [psig] S/G/L	232	232	217,56	150	150	118,9
<b>Temperature range<sup>2)</sup></b>				Min.	Max.		
EPDM	[°F]			-49	+302		
CR	[°F]			-40	+212		
FKM	[°F]			-0,4	+302		
FFKM	[°F]			+32	+302		

<sup>1)</sup> For steam, air/gas starting from 1,38 bar (20 psig) the safety valve is certified acc. to ASME Code Sec. VIII, Div. 1.

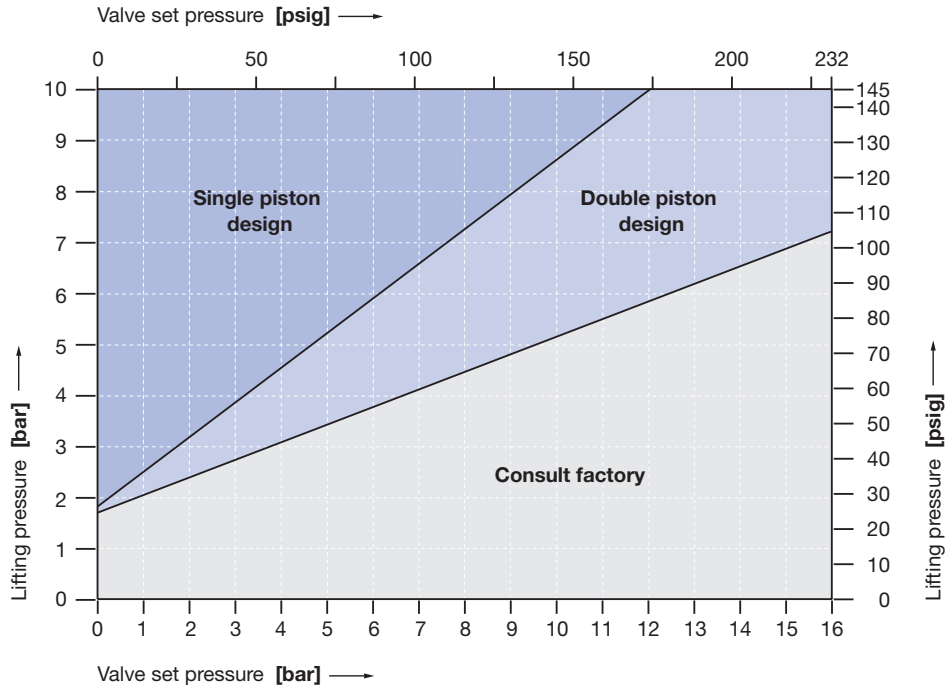
For liquides starting from 1 bar (15 psig) the safety valve is certified acc. to ASME Code Sec. VIII, Div. 1.

<sup>2)</sup> The temperature is limited by the elastomer bellows up to 150 °C / 302 °F.

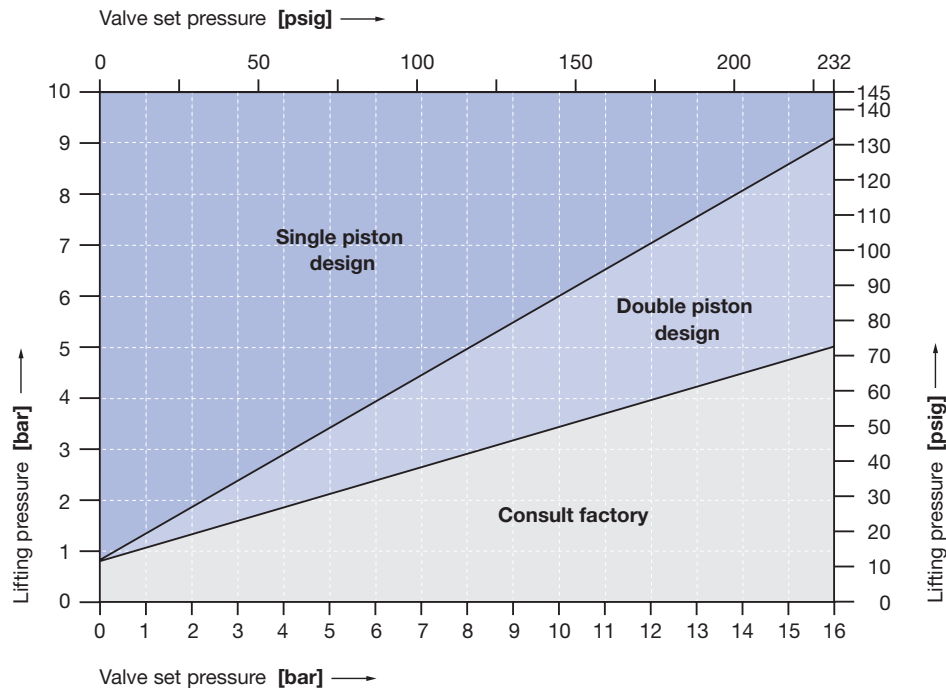
## Type 488 Selection chart H8

Depending on the set pressure and lifting pressure (air supply) a double piston lifting device (option code J41) may be required instead of a single piston. The chart below determines the required lifting device.

Selection chart lifting device H8, size I.  $d_0$  23 mm / 0,906 inch



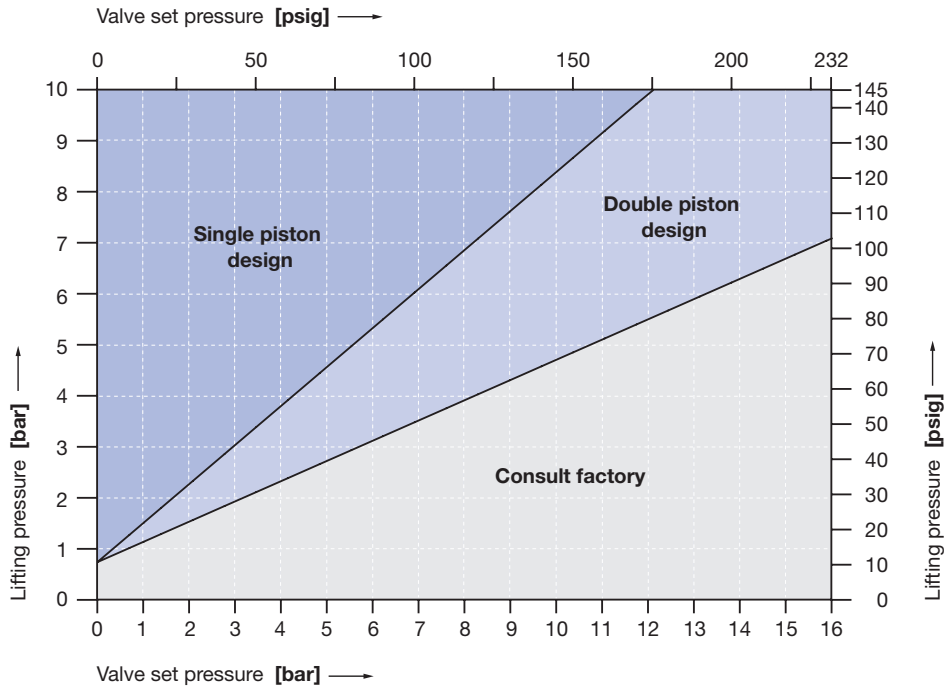
Selection chart lifting device H8, size II.  $d_0$  37 mm / 1,457 inch



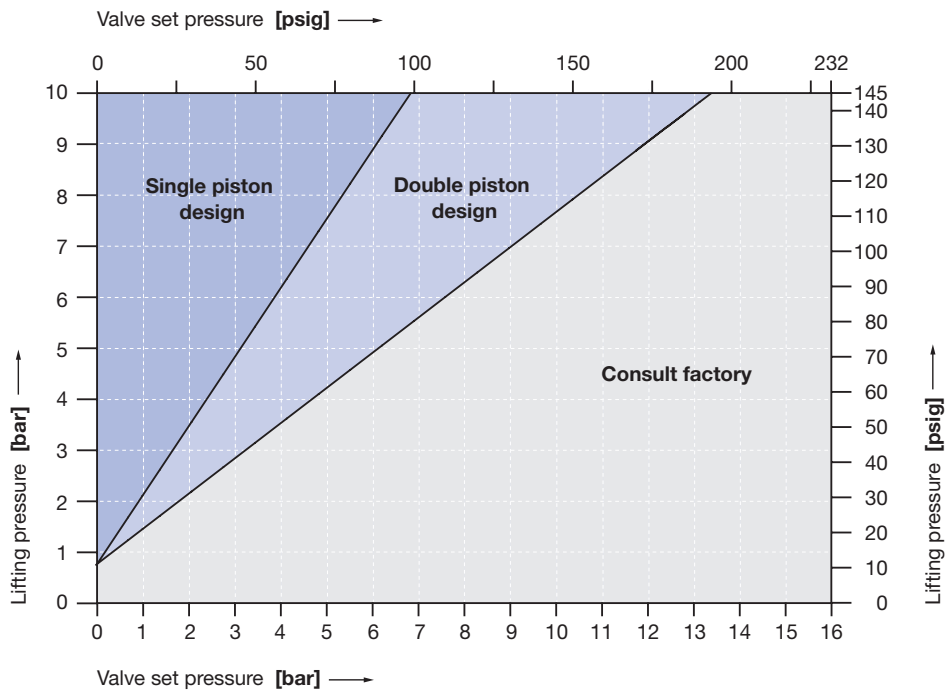
# Type 488

## Selection chart H8

Selection chart lifting device H8, size II.  $d_0$  46 mm / 1,811 inch

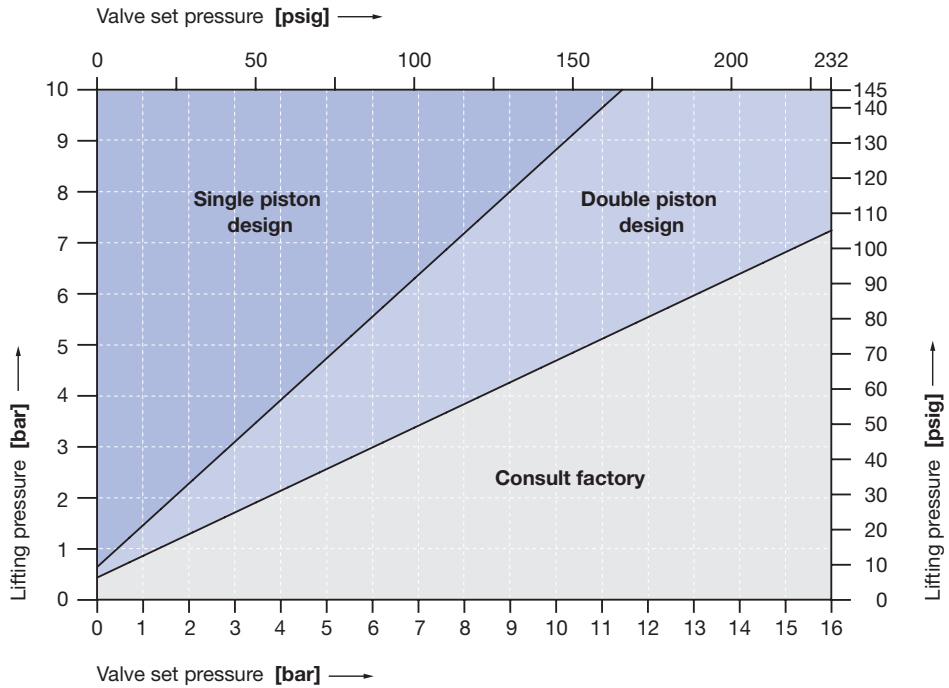


Selection chart lifting device H8, size II.  $d_0$  60 mm / 2,362 inch

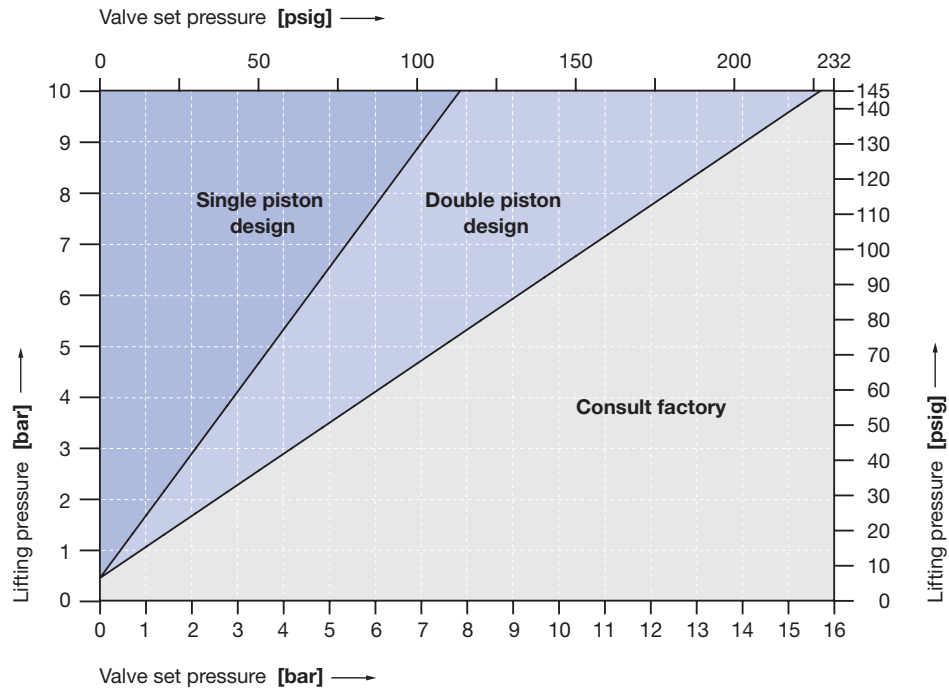


**Type 488**  
**Selection chart H8**

Selection chart lifting device H8, size III.  $d_0$  74 mm / 2,913 inch



Selection chart lifting device H8, size III.  $d_0$  92 mm / 3,622 inch

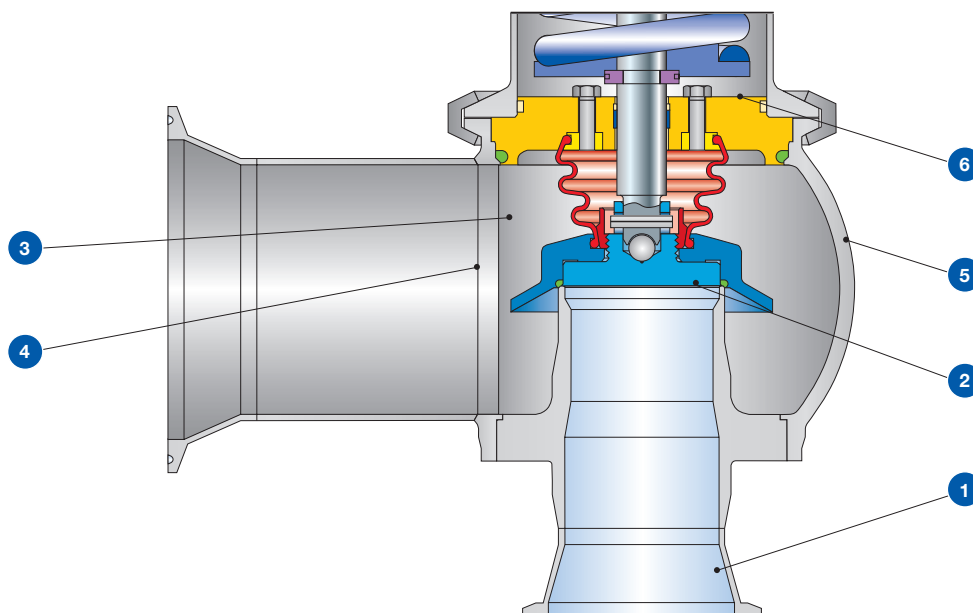


## Type 488

### Surface quality

Type of surface	Area		Option code	LESER Surface package		
				Clean finish	HyClean finish	Sterile finish
	Description	No.		B68	B69	B70
				R <sub>a</sub> max.	R <sub>a</sub> max.	R <sub>a</sub> max.
<b>LESER Surface grade</b>						
Product contact surface	Inlet	1		<b>M4</b>	<b>ME4</b>	<b>ME1</b>
			[μm]	0,750	0,750	0,375
			[μinch]	30	30	15
	Bottom side of disc	2		<b>M4</b>	<b>ME4</b>	<b>ME1</b>
[μm]			0,750	0,750	0,375	
			[μinch]	30	30	15
Blow off surface	Inside surface of outlet area	3		<b>M5</b>	<b>ME5</b>	<b>ME4</b>
			[μm]	1,500	1,500	0,750
			[μinch]	60	60	30
	Welding seam	4		<b>M6</b>	<b>ME6</b>	<b>ME6</b>
[μm]			3,000	3,000	3,000	
			[μinch]	120	120	120
Outer surface	Outside surface of body, bonnet and cap/lifting device	5		<b>M5</b>	<b>ME5</b>	<b>ME5</b>
			[μm]	1,500	1,500	1,500
			[μinch]	60	60	60
Shielded surface	Surface never in contact with the product because it is shielded by the bellows	6		<b>No definition</b>		

If required surface deviates from standard specify No. and required LESER Surface Grade.



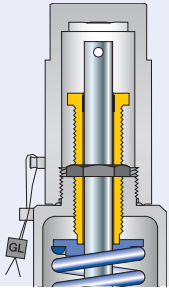
## Type 488 Approvals

Actual Orifice diameter $d_0$ [mm]	23	37	46	60	74	92
Actual Orifice area $A_0$ [mm <sup>2</sup> ]	416	1075	1662	2827	4301	6648
Actual Orifice diameter $d_0$ [inch]	0,906	1,457	1,811	2,362	2,913	3,622
Actual Orifice area $A_0$ [inch <sup>2</sup> ]	0,644	1,667	2,576	4,383	6,666	10,304
<b>Europe</b>		<b>Coefficient of discharge <math>K_{dr}</math></b>				
DIN EN ISO 4126-1, PED	Approval No.	07 202 0111 Z 0008/0/25				
	S/G	0,7				
	L	0,45				
<b>Germany</b>		<b>Coefficient of discharge <math>\alpha_w</math></b>				
AD 2000-Merkblatt A2, PED	Approval No.	TÜV SV 1047				
	S/G	0,7				
	L	0,45				
<b>United States</b>		<b>Coefficient of discharge K</b>				
ASME Sec. VIII	Approval No.	M37022 (1,37 – 16 bar)				
	S/G	0,721				
	Approval No.	M37033 (1 – 16 bar)				
	L	0,472				
<b>Canada</b>		<b>Coefficient of discharge K</b>				
CRN	Approval No.	OG0772.9C				
	S/G	0,721				
	L	0,472				
<b>China</b>		<b>Coefficient of discharge <math>\alpha_w</math></b>				
AQSIQ	Approval No.	For current approval no. see <a href="http://www.leser.com">www.leser.com</a>				
	S/G	0,7				
	L	0,45				
<b>Eurasian Custom Union</b>		<b>Coefficient of discharge <math>\alpha_w</math></b>				
EAC	Approval No.	For current approval no. see <a href="http://www.leser.com">www.leser.com</a>				
	S/G	0,7				
	L	0,45				
<b>Classification societies</b>		on request				

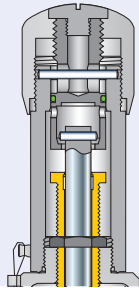
# Type 488

## Available options

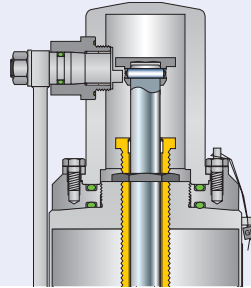
**Gastight cap H2**  
H2



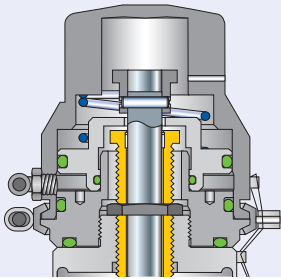
**Gastight lifting device H4**  
Packed knob H4 (d<sub>0</sub> 23 only)



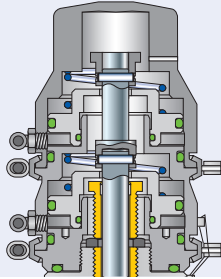
**Packed lever H4**  
(for d<sub>0</sub> > 23)








**Pneumatic lifting device H8**  
H8 single piston design

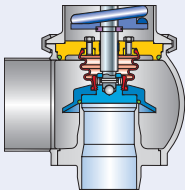


**Pneumatic lifting device H8**  
J41: H8 double piston design

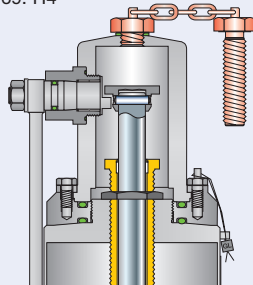


**HyTight Assembly**

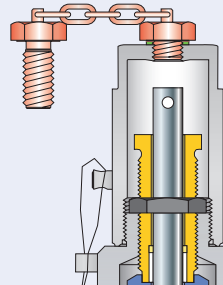
- J22: EPDM "D"  
- J21: CR "K" 
- J23: FKM "L" 
- J20: FFKM "C" 



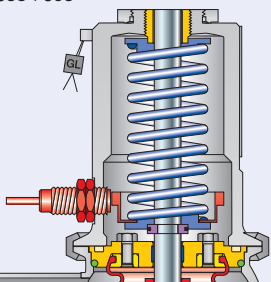
**Test gag**  
(for d<sub>0</sub> > 23)  
J69: H4



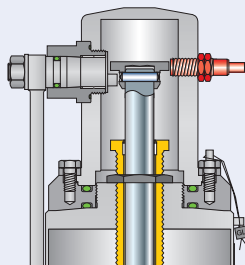
**Test gag**  
J70: H2



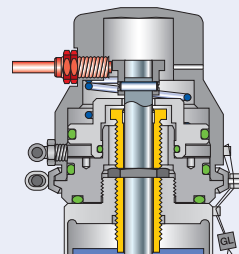
**Lift indicator bonnet**  
(d<sub>0</sub> 23 only)  
J38 + J93



**Lift indicator H4**  
(for d<sub>0</sub> > 23)  
J39 + J93



**Lift indicator H8**  
(for d<sub>0</sub> > 23)  
J40 + J93



**Multiple possibilities of aseptic connections**

- Dairy industry coupling
- Sterile screw coupling
- Small flange
- Clamp

