



# Type 485

Safety Relief Valves  
– spring loaded

Metric + US Units

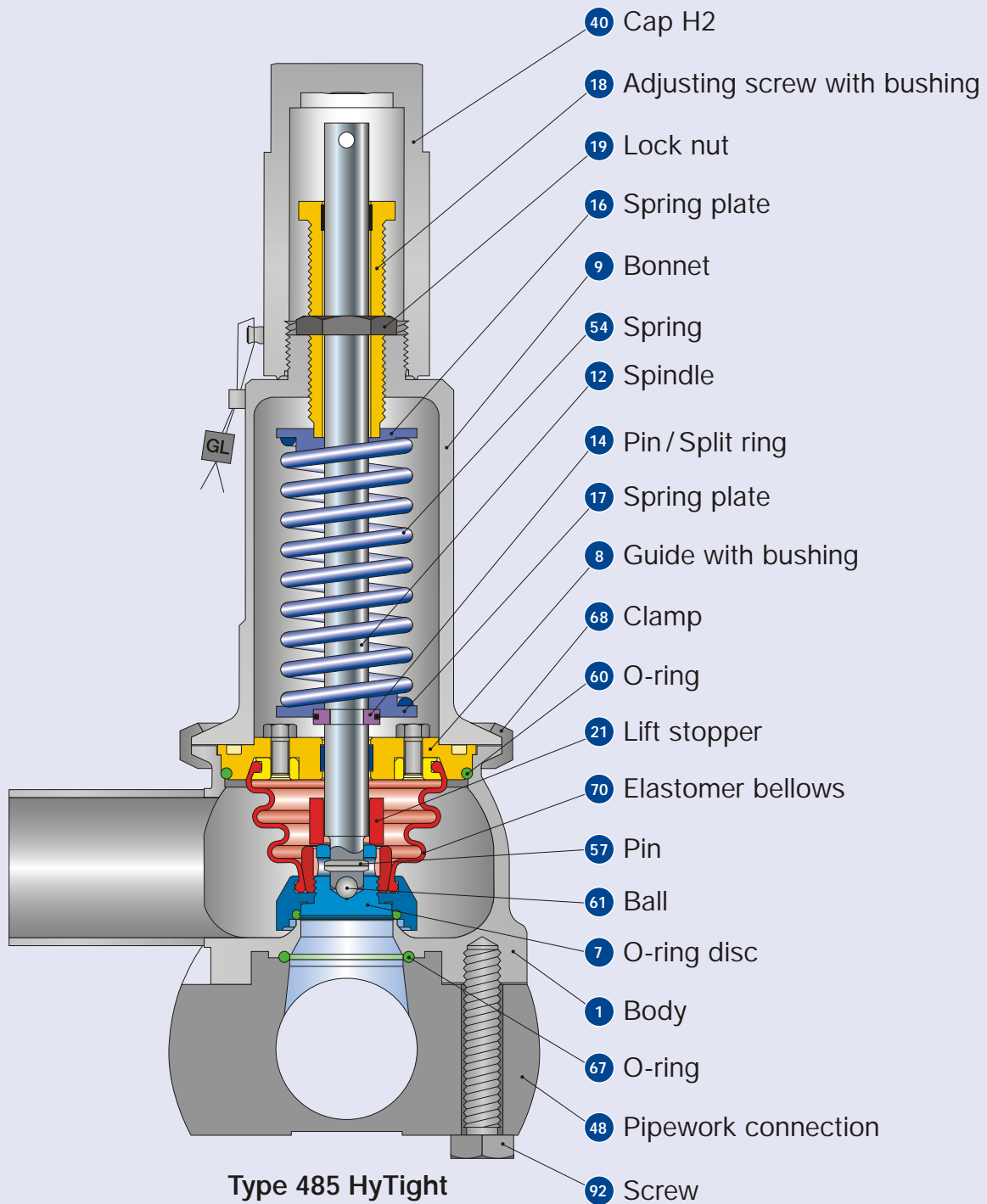


## Facts

**LESER**

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## HyTight Assembly



**Type 485 HyTight**  
Cap H2

Inlet: Integrated pipework connection Type 5034  
Outlet: Welded end connection

## HyTight Assembly

Materials			
Item	Component	Remarks	Type 4854 HyTight
1	Body		1.4435 (BN 2) <sup>*)</sup>
			SA 479 316L
7	Disc	HyTight Assembly	1.4435 316L
7.1	Soft seal O-ring	"D" 	EPDM
		"K"	CR
		"L" 	FKM
		"N"	NBR
		"C" 	FFKM
8	Guide with bushing	PTFE + 15 % glass	1.4435
			316L
9	Bonnet		1.4404
			316L
12	Spindle		1.4404
			316L
14	Pin/ Split ring		1.4310 / 1.4404
			Stainless steel / 316L
16 / 17	Spring plate		1.4404
			316L
18	Adjusting screw with bushing	PTFE + 15 % glass	1.4404 / PTFE
			316L / PTFE
19	Lock nut		1.4404
			316L
21	Lift stopper		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
Integrated pipework connection Type 5034			
48	Pipework connection		1.4435 (BN 2) <sup>*)</sup>
			SA 479 316L
67	O-ring		EPDM
92	Screw		1.4401
			316
-	Blind flange for pressure test		1.4404
			316L

<sup>\*)</sup> The material 1.4435/SA 479 316L fulfils the requirements of the Swiss chemical and pharmaceutical industry Basler Norm (BN 2). For details please refer to LWN 290.90.

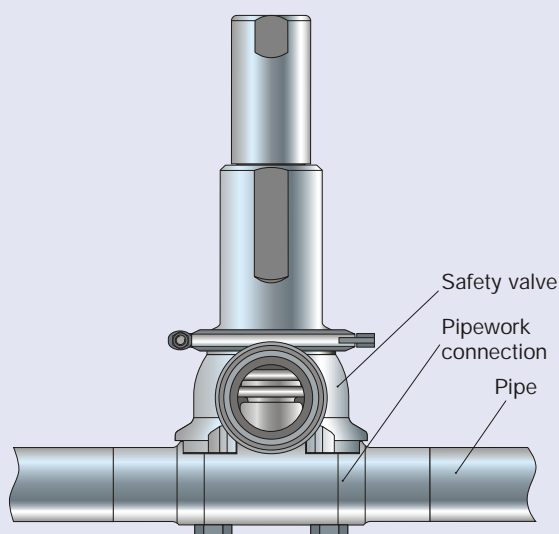
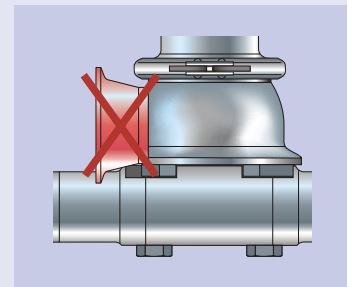
**Please notice:**

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

## How to order – Article numbers

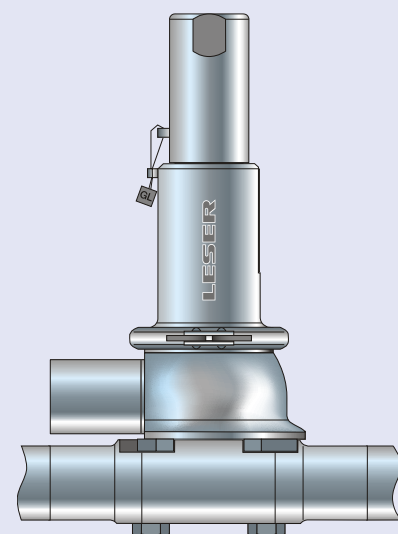
Article numbers					
Actual Orifice diameter $d_0$ [mm]			13		25
Actual Orifice area $A_0$ [mm <sup>2</sup> ]			133		491
Actual Orifice diameter $d_0$ [inch]			0,512		0,984
Actual Orifice area $A_0$ [inch <sup>2</sup> ]			0,206		0,761
O-ring material			EPDM "D" J22		EPDM "D" J22
			CR "K" J21		CR "K" J21
			FKM "L" J23		FKM "L" J23
			NBR "N" J30		NBR "N" J30
			FFKM "C" J20		FFKM "C" J20
Body material: 1.4435 (316L)					
Bonnet closed	H2	Art.-No. 4854.	7742		7752
	H4	Art.-No. 4854.	7744		7754
	H8	Art.-No. 4854.	7748		7758
		p [bar] S/G/L	0,3 – 16		0,1 – 16
		p [psig] S/G/L	4,4 – 232		1,5 – 232
Integrated pipework connection material: 1.4435 (316L)			Please order separately		
	DN		25	40	50
DIN 11850	Art.-No. 5034.		0991	0992	0993
ISO 2037	Art.-No. 5034.		0994	0995	0996
DIN EN ISO 1127	Art.-No. 5034.		0998	0999	-
Blind flange for pressure test: 1.4404 (316L)			Please order separately		
	Art.-No.		138.8949.9000		138.8749.9000

## Fitting information



**Type 5034**

Installation: Integrated pipework connection, safety valve



**Type 5034**

If the outlet has the same direction like the pipe, the Clamp is not possible

## Pressure temperature ratings

Metric Units					
Actual Orifice diameter $d_0$ [mm]		13	25		
Actual Orifice area $A_0$ [mm <sup>2</sup> ]		133	491		
Body material: 1.4435 (316L)					
Minimum set pressure	p [bar] S/G/L	0,3		0,1	
Maximum set pressure	p [bar] S/G/L	16		16	
Temperature range <sup>1)</sup>		Minimum	Maximum	Minimum	Maximum
EPDM	[°C]	-45	+150	-45	+150
CR	[°C]	-40	+100	-40	+100
FKM	[°C]	-20	+180	-20	+180
NBR	[°C]	-25	+110	-25	+110
FFKM	[°C]	0	+250	0	+250

US Units					
Actual Orifice diameter $d_0$ [inch]		0,512	0,984		
Actual Orifice area $A_0$ [inch <sup>2</sup> ]		0,206	0,761		
Body material: 1.4435 (316L)					
Minimum set pressure	p [psig] S/G/L	4,4		1,5	
Maximum set pressure	p [psig] S/G/L	232		232	
Temperature range <sup>1)</sup>		Minimum	Maximum	Minimum	Maximum
EPDM	[°F]	-49	+302	-49	+302
CR	[°F]	-40	+212	-40	+212
FKM	[°F]	-4	+356	-4	+356
NBR	[°F]	-13	+230	-13	+230
FFKM	[°F]	+32	+482	+32	+482

<sup>1)</sup>The temperature is limited by the soft seal material. Refer to table "Soft seal selection" on page 99/11.

## Dimensions – Bestseller

For shortest delivery time please select bestsellers. The specified bestsellers can vary depending on different market requirements.

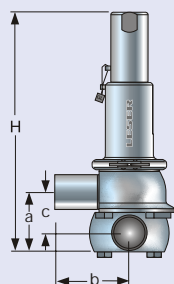
For further available connections please refer to page 05/12.

Metric Units			
Actual Orifice diameter $d_0$ [mm]		13	
Actual Orifice area $A_0$ [mm <sup>2</sup> ]		133	
Integrated pipework connection ISO 2037		Inlet	
Nominal pipe size tube		25	
		1"	
Wall thickness	s [mm]	1,6	
Diameter	d [mm]	25,4	
Length	L [mm]	130	
Welded connections		Inlet a (with integrated pipework connection)	Outlet b
<b>00: Butt-welded end</b>		<b>25</b>	
Option code		A85L83A16	
Center to face	[mm]	58	80
Offset	c [mm]	38	
Height – H4	H max. [mm]	234	
Threaded connections		Inlet a (with integrated pipework connection)	Outlet b
<b>GD</b>		<b>25</b>	
Option code (DIN 11850 / DIN 11866 Range A)		A85H61A16	
Option code (DIN EN ISO 1127 / DIN 11866 Range B)		A86H61A16	
Center to face	[mm]	58	120
Offset	c [mm]	38	
Height – H4	H max. [mm]	234	

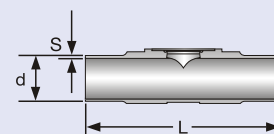
		25	
		491	
Inlet			
<b>40</b>		<b>50</b>	
<b>1 1/2"</b>		<b>2"</b>	
1,6		1,6	
38		51	
180		180	
Inlet a (with integrated pipework connection)	Outlet b	Inlet a (with integrated pipework connection)	Outlet b
	<b>40</b>		<b>40</b>
	A85L83A17		A85L83A17
72	90	84	90
49		55	
331		343	
Inlet a (with integrated pipework connection)	Outlet b	Inlet a (with integrated pipework connection)	Outlet b
	<b>40</b>		<b>40</b>
	A85H61A17		A85H61A17
	A86H61A17		A86H61A17
72	130	84	130
49		55	
331		343	

US Units			
Actual Orifice diameter $d_0$ [inch]		0,512	
Actual Orifice area $A_0$ [inch <sup>2</sup> ]		0,206	
Integrated pipework connection ISO 2037		Inlet	
Nominal pipe size tube		25	
		1"	
Wall thickness	s [inch]	1/16	
Diameter	d [inch]	1	
Height – H4	L [inch]	5 1/8	
Welded connections		Inlet a (with integrated pipework connection)	Outlet b
<b>00: Butt-welded end</b>		<b>25</b>	
Option code		A85L83A16	
Center to face	[inch]	2 1/4	3 5/32
Offset	c [inch]	1 1/2	
Height – H4	H max. [inch]	9 7/32	
Threaded connections		Inlet a (with integrated pipework connection)	Outlet b
<b>GD</b>		<b>25</b>	
Option code (DIN 11850 / DIN 11866 Range A)		A85H61A16	
Option code (DIN EN ISO 1127 / DIN 11866 Range B)		A86H61A16	
Center to face	[inch]	2 1/4	4 23/32
Offset	c [inch]	1 1/2	
Height – H4	H max. [inch]	9 7/32	

		0,984	
		0,761	
Inlet			
<b>40</b>		<b>50</b>	
<b>1 1/2"</b>		<b>2"</b>	
1/16		1/16	
1 1/2		1 1/2	
7 3/32		7 3/32	
Inlet a (with integrated pipework connection)	Outlet b	Inlet a (with integrated pipework connection)	Outlet b
	<b>40</b>		<b>40</b>
	A85L83A17		A85L83A17
2 27/32	3 17/32	3 5/16	3 17/32
1 15/16		2 5/32	
13 1/32		13 1/2	
Inlet a (with integrated pipework connection)	Outlet b	Inlet a (with integrated pipework connection)	Outlet b
	<b>40</b>		<b>40</b>
	A85H61A17		A85H61A17
	A86H61A17		A86H61A17
2 27/32	5 1/8	3 5/16	5 1/8
1 15/16		2 5/32	
13 1/32		13 1/2	



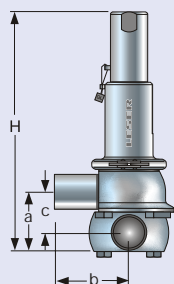
Type 485 – Cap H2



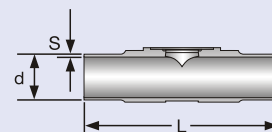
Type 5034 – Integrated pipework connection

## Dimensions and weights

Metric Units									
Actual Orifice diameter $d_0$ [mm]		13		25					
Actual Orifice area $A_0$ [mm <sup>2</sup> ]		133		491					
Integrated pipework connection		Inlet		Inlet					
PN		16		16					
Nominal pipe size tube DN		25		40		50			
Offset	c [mm]	38		49		55			
Length	L [mm]	130		180		180			
DIN 11850	Diameter d [mm]	30		42		54			
	Wall thickness s [mm]	2		2		2			
ISO 2037	Diameter d [mm]	25,4		38		51			
	Wall thickness s [mm]	1,6		1,6		1,6			
DIN EN ISO	Diameter d [mm]	33,7		48,3		-			
ISO 1127	Wall thickness s [mm]	2		2		-			
Welded connections		Inlet a (with integrated pipework connection)		Outlet b		Inlet a (with integrated pipework connection)		Outlet b	
PN		16		16		16		16	
Center to face	[mm]	58		80		72		90	
Height - H4	H max. [mm]	234		331		331		343	
Height - H8 double piston design	H max. [mm]	262,2		338,7		338,7		350,7	
Clamp connections		Inlet a (with integrated pipework connection)		Outlet b		Inlet a (with integrated pipework connection)		Outlet b	
PN		16		16		16		16	
Center to face	[mm]	58		102		72		112	
Clamp diameter	$d_{inner}$ [mm] $d_{outer}$ [mm]	For varying clamp diameters please refer to page 00/11		For varying clamp diameters please refer to page 00/11		72		112	
Height - H4	H max. [mm]	234		331		331		343	
Height - H8 double piston design	H max. [mm]	262,2		338,7		338,7		350,7	
Threaded connections		Inlet a (with integrated pipework connection)		Outlet b		Inlet a (with integrated pipework connection)		Outlet b	
PN		16		16		16		16	
Center to face	[mm]	58		120		72		130	
Height - H4	H max. [mm]	234		331		331		334	
Height - H8 double piston design	H max. [mm]	262,2		338,7		338,7		350,7	
Flanged connections		Inlet a (with integrated pipework connection)		Outlet b		Inlet a (with integrated pipework connection)		Outlet b	
PN		16		16		16		16	
Center to face	[mm]	58		126		72		134	
Height - H4	H max. [mm]	234		331		331		343	
Height - H8 double piston design	H max. [mm]	262,2		338,7		338,7		350,7	
Weight									
Weight	max. [kg]	3,0		5,0		5,0		5,0	



Type 485 - Cap H2



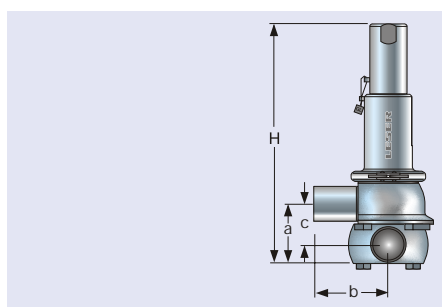
Type 5034 - Integrated pipework connection

## Dimensions and weights

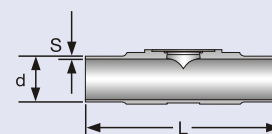
### US Units

Actual Orifice diameter $d_0$ [inch]			0,512	
Actual Orifice area $A_0$ [inch <sup>2</sup> ]			0,206	
Integrated pipework connection			Inlet	
PN			16	
Nominal pipe size tube			NPS 1"	
Offset	c	[inch]	1 1/2	
Length	L	[inch]	5 1/8	
DIN 11850	Diameter	d [inch]	1 3/16	
	Wall thickness	s [inch]	3/32	
ISO 2037	Diameter	d [inch]	1	
	Wall thickness	s [inch]	1/16	
DIN EN ISO	Diameter	d [inch]	1 5/16	
	Wall thickness	s [inch]	3/32	
Welded connections			Inlet a (with integrated pipework connection)   Outlet b	
PN			16	
Center to face	[inch]		2 1/4   3 5/32	
Height – H4	H max. [inch]		9 7/32	
Height – H8 double piston design	H max. [inch]		10 5/16	
Clamp connections			Inlet a (with integrated pipework connection)   Outlet b	
PN			16	
Center to face	[inch]		2 1/4   4 1/32	
Clamp diameter	d <sub>inner</sub> [inch]   d <sub>outer</sub> [inch]		For varying clamp diameters please refer to page 00/11	
Height – H4	H max. [inch]		9 7/32	
Height – H8 double piston design	H max. [inch]		10 5/16	
Threaded connections			Inlet a (with integrated pipework connection)   Outlet b	
PN			16	
Center to face	[inch]		2 1/4   4 23/32	
Height – H4	H max. [inch]		9 7/32	
Height – H8 double piston design	H max. [inch]		10 5/16	
Flanged connections			Inlet a (with integrated pipework connection)   Outlet b	
PN			16	
Center to face	[inch]		2 1/4   4 31/32	
Height – H4	H max. [inch]		9 7/32	
Height – H8 double piston design	H max. [inch]		10 5/16	
Weight				
Weight	max. [lb]		6,6	

0,984			
0,761			
Inlet			
16			
1 1/2"		2"	
1 15/16		2 5/32	
7 3/32		7 3/32	
1 21/32		2 1/8	
3/32		3/32	
1 1/2		2	
1/16		1/16	
1 29/32		–	
3/32		–	
Inlet a (with integrated pipework connection)		Outlet b	
16		16	
2 27/32		3 17/32	
13 1/32		13 1/2	
13 11/32		13 13/16	
Inlet a (with integrated pipework connection)		Outlet b	
16		16	
2 27/32		4 13/32	
13 1/32		13 1/2	
13 11/32		13 13/16	
Inlet a (with integrated pipework connection)		Outlet b	
16		16	
2 27/32		5 1/8	
13 1/32		13 1/2	
13 11/32		13 13/16	
Inlet a (with integrated pipework connection)		Outlet b	
16		16	
2 27/32		5 9/32	
13 1/32		13 1/2	
13 11/32		13 13/16	
11,0			



Type 485 – Cap H2



Type 5034 – Integrated pipework connection

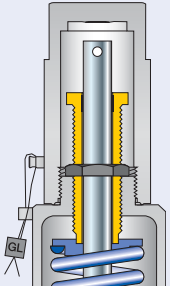
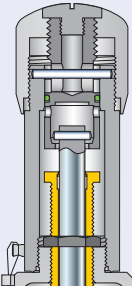
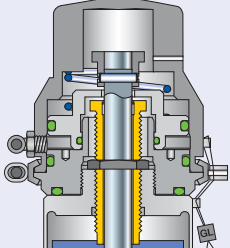
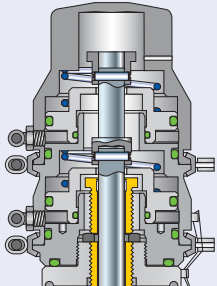





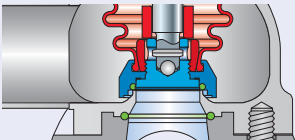

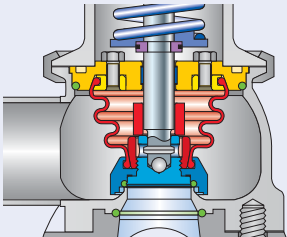
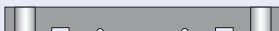

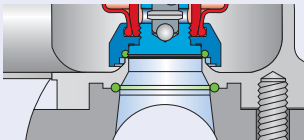
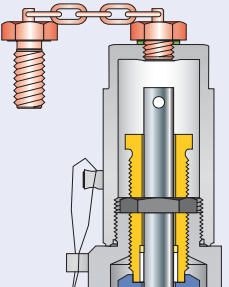
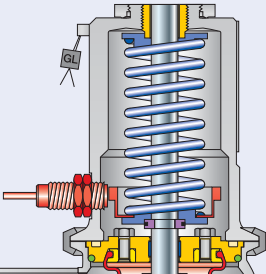
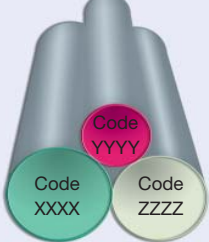


## Option codes for available connections

For detailed information about the available connections please refer to "How to use" on page 00/07

Connections			
Clamps		Option code inlet	
For dimensions refer to page 00/07	For inlet please select integrated pipework connection Type 5034 as shown on page 05/07		
Threaded connections		Option code inlet	
Pipe standard			
DIN 11850 / DIN 11866 Range A			
Pipe standard			
DIN EN ISO 1127 / DIN 11866 Range B			
Pipe standard			
BS 4825-1 DIN 11866 Range C			
Flange connections		Option code inlet	
Pipe standard			
DIN 11850 / DIN 11866 Range A			
Pipe standard			
DIN EN ISO 1127 / DIN 11866 Range B			
Pipe standard			
BS 4825-1 DIN 11866 Range C			
		d <sub>0</sub> [mm]	13                      25
		d <sub>0</sub> [inch]	0,512                      0,984
		Option code outlet	
		DN	25                      40
		SO	L86A16                      L86A17
		DO	I74A16                      I74A17
		NPS	1 1/2"                      2"
		BO	I76A80                      I76A81
		CO	L97A80                      L97A81
		Option code outlet	
		DN	25                      40
		00	A85L83A16                      A85L83A17
		GS	A85H35A16                      A85H35A17
		BS	A85H37A16                      A85H37A17
		GT	A85H55A16                      A85H55A17
		BT	A85H57A16                      A85H57A17
		GO	A85L81A16                      A85L81A17
		KO	A85L82A16                      A85L82A17
		GD	A85H61A16                      A85H61A17
		BD	A85H59A16                      A85H59A17
		DN	25                      40
		GS	A86H35A16                      A86H35A17
		BS	A86H37A16                      A86H37A17
		GT	A86H55A16                      A86H55A17
		BT	A86H57A16                      A86H57A17
		GD	A86H61A16                      A86H61A17
		BD	A86H59A16                      A86H59A17
		NPS	1 1/2"                      2"
		GS	A84H35A16                      A84H35A17
		BS	A84H37A16                      A84H37A17
		GT	A84H55A16                      A84H55A17
		BT	A84H57A16                      A84H57A17
		DN	25                      40
		NF	A85H72A16                      A85H72A17
		BF	A85H74A16                      A85H74A17
		NG	A85H76A16                      A85H76A17
		BG	A85H78A16                      A85H78A17
		TN	A85L84A16                      A85L84A17
		AF	A85L91A16                      A85L91A17
		AN	A85L93A16                      A85L93A17
		DN	25                      40
		NF	A86H72A16                      A86H72A17
		BF	A86H74A16                      A86H74A17
		NG	A86H76A16                      A86H76A17
		BG	A86H78A16                      A86H78A17
		NPS	1 1/2"                      2"
		NF	A84H72A80                      A84H72A81
		BF	A84H74A80                      A84H74A81
		NG	A84H76A80                      A84H76A81
		BG	A84H78A80                      A84H78A81

## Available options

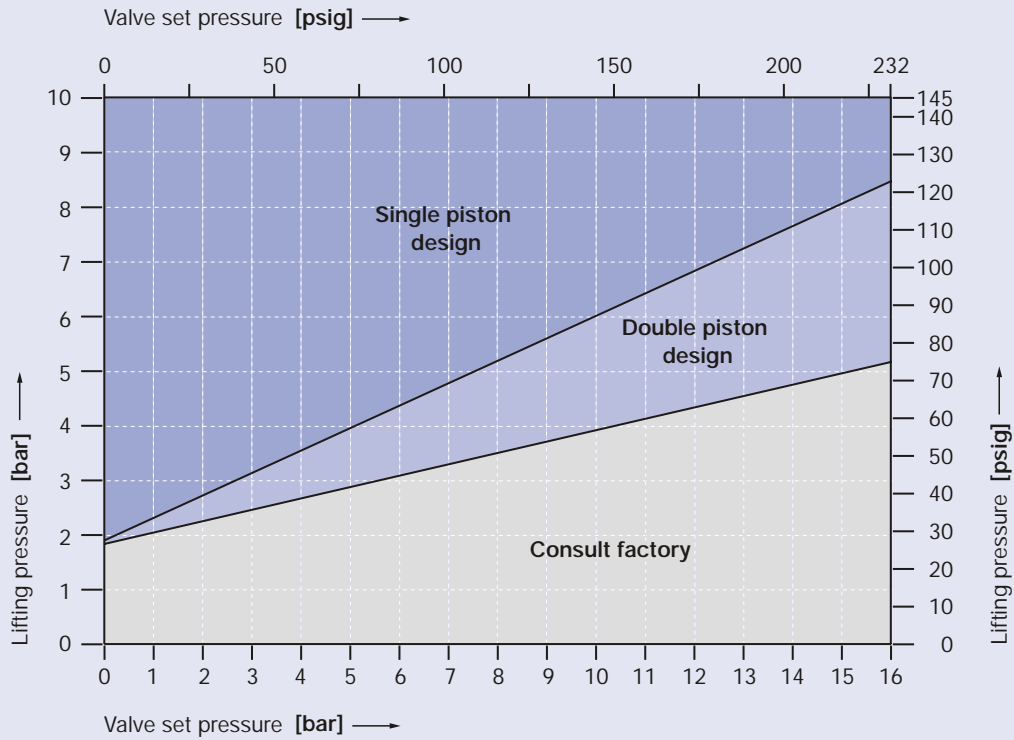
<p><b>Gastight cap H2</b> H2</p> 	<p><b>Gastight lifting device H4</b> Packed knob H4</p> 	<p><b>Pneumatic lifting device H8</b> H8 single piston design</p> 	<p><b>Pneumatic lifting device H8</b> J41: H8 double piston design</p> 
<p><b>O-ring-disc</b> J22: EPDM "D"   J21: CR "K" J23: FKM "L"  J30: NBR "N" J20: FFKM "C"  </p> 	<p><b>Bellows FFKM "C"</b>  S70</p> 	<p><b>Blind flange for pressure test</b> Material No. 138.8949.9000 (d<sub>0</sub> 13) Material No. 138.8749.9000 (d<sub>0</sub> 25)</p> 	<p><b>O-ring for integrated pipework connection</b> EPDM "D"  Material No. 502.0180.3041 (d<sub>0</sub> 13) Material No. 502.0300.3041 (d<sub>0</sub> 25)</p> 
<p><b>Test gag</b> J70: H2</p> 			
<p><b>Lift indicator placed in bonnet</b> J38 + J93</p> 	<p><b>Special material</b> 2.4610 HASTELLOY C4 2.4360 MONEL 400 1.4462 DUPLEX</p> 		

## Selection chart H8

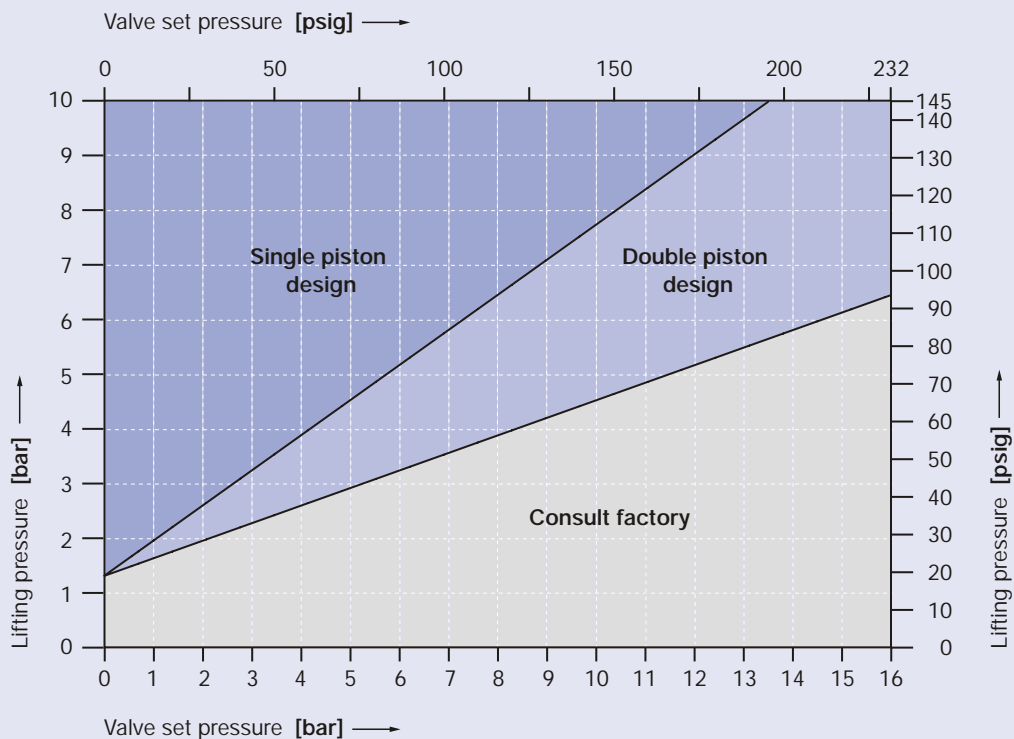
Depending on the set pressure and lifting pressure (air supply) a double piston lifting device (option code J41) may be required instead of a single piston. The chart below determines the required lifting device.

For information about this chart please refer to "How to use" on page 00/12.

Selection chart lifting device H8, size 0.  $d_0$  13 mm / 0,512 inch



Selection chart lifting device H8, size I.  $d_0$  25 mm / 0,984 inch



Type 485

## Surface quality

Surface quality			LESER Surface package				
Type of surface	Area		Option code	Clean finish	HyClean finish	Sterile finish	
	Description	No.		B62	B63	B64	
				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		ME4	ME2	ME1	
			[µm]	0,750	0,500	0,375	
				[µinch]	30	20	15
	Bottom side of disc	2		ME4	ME2	ME1	
[µm]			0,750	0,500	0,375		
			[µinch]	30	20	15	
Blow off surface	Inside surface of outlet area	3		ME4	ME3	ME2	
			[µm]	0,750	0,625	0,500	
				[µinch]	30	25	20
	Welding seam	4		ME6	ME5	ME4	
[µm]			3,000	1,500	0,750		
			[µinch]	120	60	30	
Outer surface	Outside surface of body, bonnet and cap/lifting device	5		ME5	ME4	ME4	
			[µm]	1,500	0,750	0,750	
			[µinch]	60	30	30	
Shielded surface	Surface never in contact with the product because it is shielded by the bellows	6		No definition			

## Type 5034

### Integrated pipework connection

			LESER Surface package			
Type of surface	Area		Option code	Clean finish	HyClean finish	Sterile finish
	Description	No.		B65	B66	B67
				R <sub>a</sub> max.	R <sub>a</sub> max.	R <sub>a</sub> max.
<b>LESER Surface grade</b>						
Product contact surface	Pipework side	7		M4	M2	M1
			[µm]	0,750	0,500	0,375
			[µinch]	30	20	15
Outer surface	Outside surface	8		M5	M4	M4
			[µm]	1,500	0,750	0,750
			[µinch]	60	30	30

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

