



Type 437
Packed knob H 4
Conventional design



Type 437
Packed knob H 4
Flanged connection



Type 437
Cap H 2
Long version

Type 437

Safety Relief Valves - spring loaded

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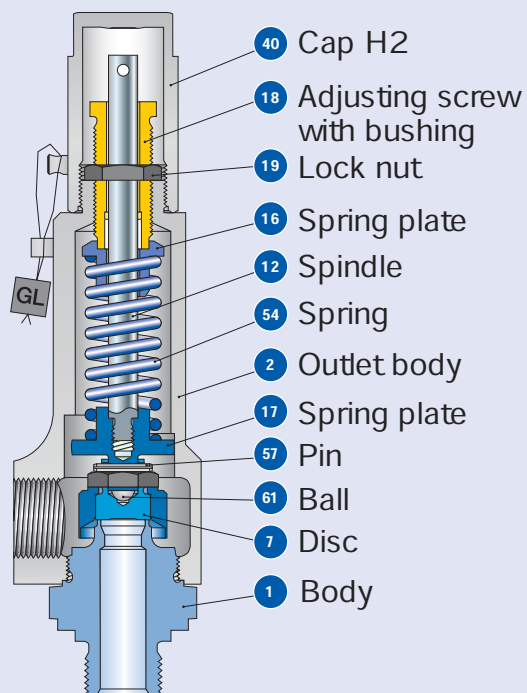
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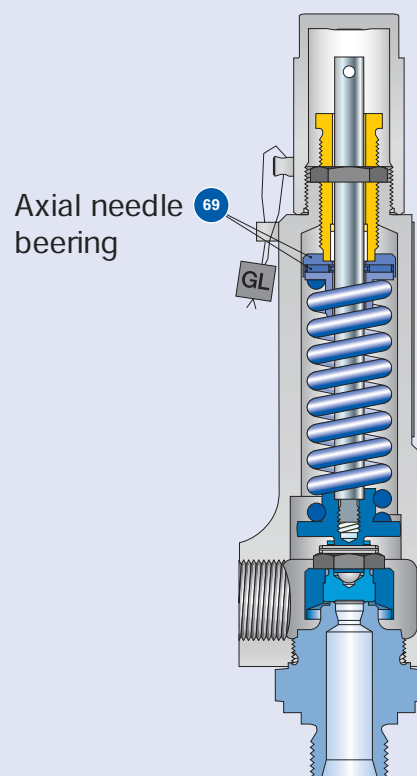
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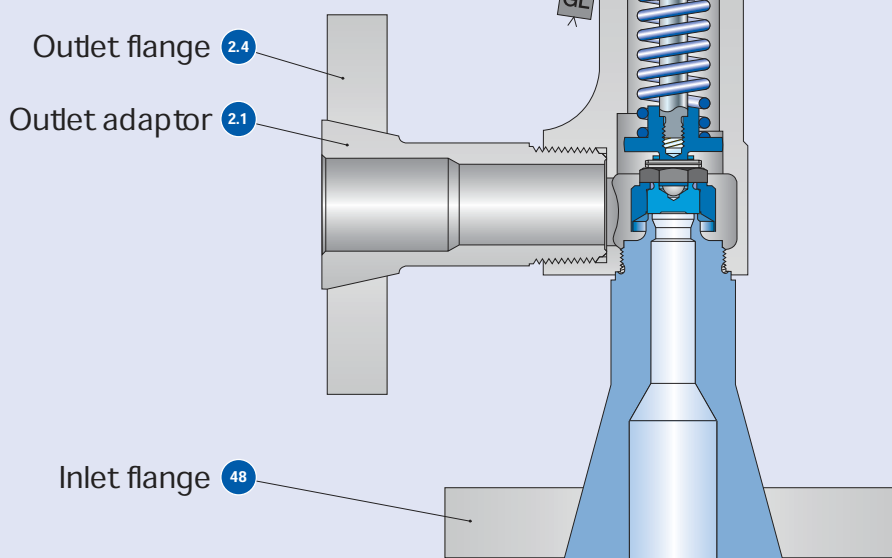
Available designs



Conventional design
Threaded connection



Long version
Threaded connection



Conventional design
Flange connection

Available designs - materials

Materials				
Item	Component	Remarks	Type 4373	Type 4374
1	Base / Inlet body	Threaded connection	1.4104	1.4404
			SA 479 430	SA 479 316L
		Flange connection	1.4404	1.4404
			SA 479 316L	SA 479 316L
		Long version	1.4404 Stellite	1.4404 Stellite
			SA 479 316L Stellite	SA 479 316L Stellite
2	Outlet body		1.4104	1.4404
			SA 479 430	SA 479 316L
2.1	Outlet adaptor	Flange connection	1.4404 316L	1.4404 316L
2.4	Outlet flange	Flange connection	1.4404 316L	1.4404 316L
7	Disc		1.4122	1.4404
			Hardened stainless steel	SA 316L
		Long version	1.4404 Stellite 316L Stellite	1.4404 Stellite 316L Stellite
12	Spindle		1.4021	1.4404
			420	316L
16/17	Spring plate		1.4104	1.4404
			Chrome steel	316L
18	Adjusting screw with bushing		1.4104 / PTFE	1.4104 / PTFE
			Chrome steel / PTFE	316L / PTFE
19	Lock nut		1.0718	1.4404
			Steel	316L
40	Cap H2		1.0718	1.4404
			Steel	316L
48	Inlet flange	Flange connection	1.4404	1.4404
			316L	316L
54	Spring		1.4310	1.4310
			Stainless steel	Stainless steel
57	Pin		1.4310	1.4310
			Stainless steel	Stainless steel
61	Ball		1.3541	1.4401
			Hardened stainless steel	316
69	Axial needle bearing	Long version	1.4404	1.4404
			316L	316L

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 - Numbering system

1

Article Number

1	2	3	4
437	4	314	2

1 Type 437

Types of sealing

Metal seat

Metal-to-metal

Metal-to-metal stellited

Soft seal (Sealing plate)

SP Vespel-SP1

PCTFE Kel-F

PTFE-FDA Teflon

2 Material code

Code	Body material
3	1.4104 (430)
4	1.4404 (316L)

3 Valve code

Identifies valve size, body material and orifice, refer to page 01/07 and following.

4 Code for lifting device

Code	Lifting device	
2	Screw cap	H2
3	Pull button	H3
4	Packed knob	H4

2

Set Pressure

Please state unit (in gauge)

Please do not exceed pressure range mentioned in the spring charts.

3

Connections

Please refer to table "Available Connections" on pages 04/04 and 04/05.

Please state one option code for each, inlet **and** outlet.

4374.3142

Article No.

10 bar_g

Set Pressure

V62

V71

Connections

4

Options

Type 437	Option code
• Base / Inlet body stellited (Type 437 Standard only)	L 20
• Disc stellited	J 25
• Plastic seal material	
PTFE	"A" J 44
PCTFE	"G" J 48
VESPEL SP	"T" J 49
• Heating jacket	H 29

J 44
Options

5

Documentation

Please select requested documentation:

Inspections, tests:	Option code
DIN EN 10204-3.2 TÜV-Nord Certificate for test pressure	M 33

LESER Certificate for Global Application	Option code
	H 03

- Inspection certificate 3.1 acc.
to DIN EN 10204
- Declaration of conformity acc.
to PED 97/23/EC

Material test certificate:
DIN EN 10204-3.1

Part	Option code
Base / Inlet body	H 01
Outlet body	L 34
Cap / lever cover	L 31
Disc	L 23

H 01
L 23
Documentation

6

Code and Medium

1	2
2	0

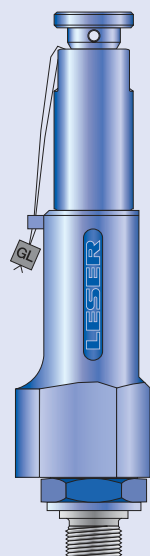
- 1 Code**
- ASME Section VIII
 - CE /VdTUEV
 - ASME Section VIII
+ CE /VdTUEV

- 2 Medium**
- Gases
 - Liquids
 - Steam
 - Steam /Gases /Liquids
(valid only for CE /VdTUEV)

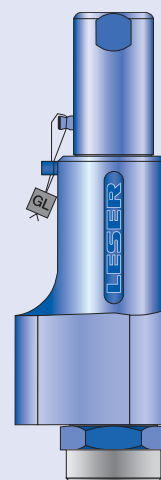
2.0
Code and Medium

How to order - Article numbers

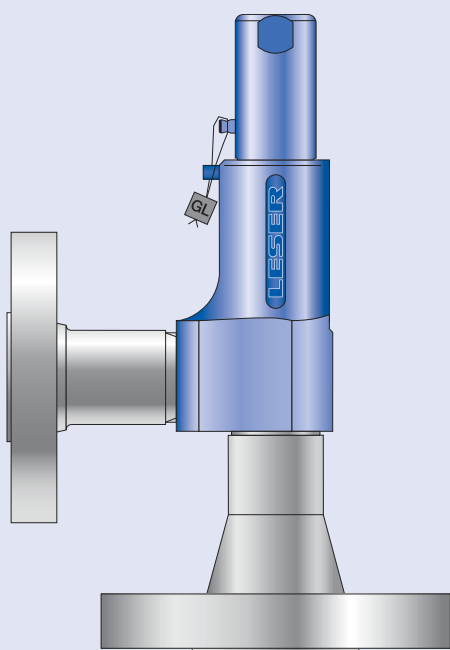
Type 437



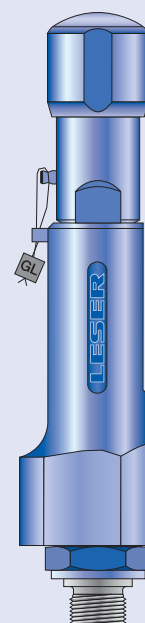
Type 437 Male
Outlet body 1½"
Pull button H3
Conventional design



Type 437 Female
Outlet body 1"
Cap H2
Conventional design



Type 437 Flanged connection
Outlet body 1"
Cap H2
Conventional design



Type 437 Male
Outlet body 1½"
Packed knob H4
Long version

How to order - Article numbers

Article numbers

Conventional design		
Actual Orifice diameter d_o [mm]		10
Actual Orifice area A_o [mm ²]		78,5
Actual Orifice diameter d_o [inch]		Q 394
Actual Orifice area A_o [inch ²]		Q 122
Base / Inlet body material: 1.4104 (430)		
H 2	Art.-No. 4373.	2602
H 3	Art.-No. 4373.	2603
p_{max} = 10 barg		
H 4	Art.-No. 4373.	2604
p [barg]	S/G/L	0,1 - 93
p [psig]	S/G/L	1,5 - 1349
Base / Inlet body material: 1.4404 (316L)		
H 2	Art.-No. 4374.	3142
H 4	Art.-No. 4374.	3144
p [barg]	S/G/L	0,1 - 68
p [psig]	S/G/L	1,5 - 986

Article numbers

Long version			
Actual Orifice diameter d_o [mm]	6	6	10
Actual Orifice area A_o [mm ²]	28,3	28,3	78,5
Actual Orifice diameter d_o [inch]	Q 236	Q 236	Q 394
Actual Orifice area A_o [inch ²]	Q 044	Q 044	Q 122
Base / Inlet body material: 1.4104 (430)			
H 2	Art.-No. 4373.	2622	2612
H 4	Art.-No. 4373.	2624	2614
p [barg]	S/G/L	180 - 365	93 - 180
p [psig]	S/G/L	2611 - 5294	1349 - 2611
Base / Inlet body material: 1.4404 (316L)			
H 2	Art.-No. 4374.	3122	3153
H 4	Art.-No. 4374.	3124	3154
p [barg]		S/G 180 - 365	S/G/L 68 - 180
p [psig]		S/G 2611 - 4786	S/G/L 986 - 2611

¹⁾ At the moment no TÜV approval, useable for thermal expansion.
 Use "Long version" only for set pressure exceeding set pressure range of "Standard" model.
 For selection of inlet and outlet connection please refer to page 04/04 - 04/05.

Dimensions and weights - Metric Units

Threaded connections

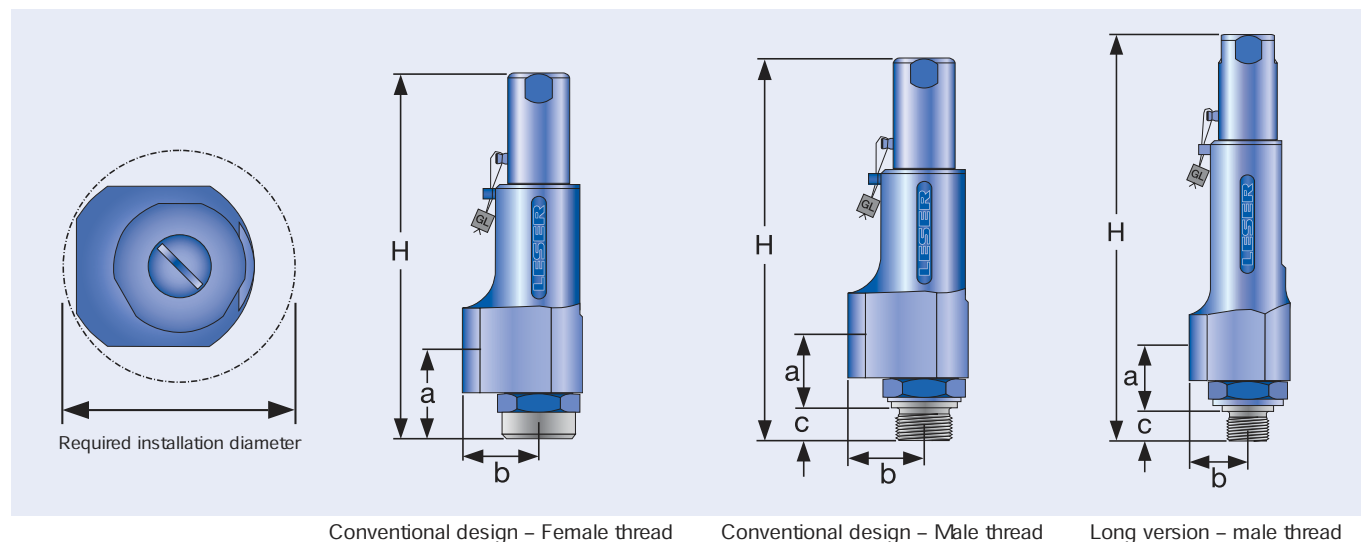
			Conventional design			Long version						
Size Outlet body			1/2"	3/4"	1"	1/2"	3/4"	1"	1/2"	3/4"	1"	
Actual Orifice diameter d ₀ [mm]			10	10	10	6	6	6	10	10	10	
Actual Orifice area A ₀ [mm ²]			78,5	78,5	78,5	28,3	28,3	28,3	78,5	78,5	78,5	
Weight [kg]			1,2	1,6	1,6	1,4	2,1	2,1	1,4	2,1	2,1	
Required installation diameter [mm]			65	80	80	65	80	80	65	80	80	
Inlet thread "F emale"												
DIN ISO 228-1	G	Inlet a	45	55	55	45	55	55	45	55	55	
		Center to face [mm]	Outlet b	30	37	37	30	37	37	30	37	37
		Height [mm]	H max.	210	220	220	230	240	240	230	240	240
ISO 7-1/BS 21	R c	Inlet a	45	55	55	45	55	55	45	55	55	
		Center to face [mm]	Outlet b	30	37	37	30	37	37	30	37	37
		Height [mm]	H max.	210	220	220	230	240	240	230	240	240
ANSI/ASME B1.20.1	NPT	Inlet a	45	55	55	45	55	55	45	55	55	
		Center to face [mm]	Outlet b	30	37	37	30	37	37	30	37	37
		Height [mm]	H max.	210	220	220	230	240	240	230	240	240
Inlet thread "Male"												
DIN ISO 228-1	G	Inlet a	33	33	36	33	33	36	33	33	36	
		Center to face [mm]	Outlet b	30	37	37	30	37	37	30	37	37
ISO 7-1/BS 21	R	Inlet a	31	31	34	31	31	34	31	31	34	
		Center to face [mm]	Outlet b	30	37	37	30	37	37	30	37	37
ANSI/ASME B1.20.1	NPT	Inlet a	31	31	34	31	31	34	31	31	34	
		Center to face [mm]	Outlet b	30	37	37	30	37	37	30	37	37

Height inlet thread "Male"

			Conventional design				Long version			
Inlet thread	Size		3/8"	1/2"	3/4"	1"	3/8"	1/2"	3/4"	1"
DIN ISO 228-1 [mm] G	H max.		210	212	214	216	230	232	234	236
ISO 7-1/BS 21 [mm] R	H max.		–	215	216	219	–	235	236	239
ASME B1.20.1 [mm] NPT	H max.		–	218	218	223	–	238	238	243

Length of screwed end "c" inlet thread "Male"

Inlet thread	Size		3/8"	1/2"	3/4"	1"
DIN ISO 228-1 [mm] G			12	14	16	18
ISO 7-1/BS 21 [mm] R			–	19	20	23
ASME B1.20.1 [mm] NPT			–	22	22	27



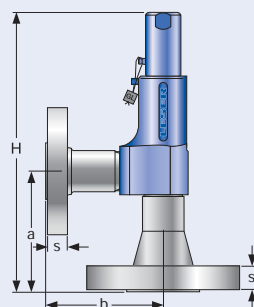
Dimensions and weights - Metric U nits

F langed connection

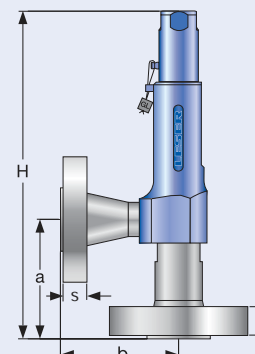
Conventional design					Long version				
Actual Orifice diameter d _O [mm]		6		10		6		10	
Actual Orifice area A _O [mm ²]		28,3		78,5		28,3		78,5	
DIN ISO 1092-1 (Available flange sizes refer to page 04/05)									
F lange rating PN 40									
Center to face	[mm]	Inlet a	100		100		100		100
		Outlet b	100		100		100		100
Height [H 4]	[mm]	H max.	263		263		284		284
F lange rating ≥ PN 160									
Center to face	[mm]	Inlet a	103		103		103		103
		Outlet b	100		100		100		100
Height [H 4]	[mm]	H max.	266		266		287		287
ASME B 16.5 (Available flange sizes refer to page 04/05)									
F lange rating class 150									
Center to face	[mm]	Inlet a	100		100		100		100
		Outlet b	100		100		100		100
Height [H 4]	[mm]	H max.	263		263		284		284
F lange rating class ≥ 300									
Center to face	[mm]	Inlet a	103		103		103		103
		Outlet b	100		100		100		100
Height [H 4]	[mm]	H max.	266		266		287		287
Weight									
For the calculation of the total weight please use the Formular: W _T = W _N + W _F (Inlet) + W _F (Outlet)									
Weight net	[kg]								
(without inlet and outlet flange)	W _N		2,4		2,4		2,8		2,8

F lange dimensions and availability

		DIN ISO 1092-1 / F lange rating PN					ASME B16.5 / F lange rating class						
Size		40	160	250	320	400	Size	150	300	600	900	1500	2500
DN 15		NPS 1/2"											
Flange thickness	[mm] s	18	22	26	26	30		14	18		26	30,2	
Weight slip on flange	[kg] W _F	0,8	1,2	2,5	2,5	3,6		0,6	0,9		2,1	3	
Available at Inlet		✓	✓	✓	✓	✓		✓	✓		✓	✓	
Available at Outlet		✓	✓	✓				✓	✓		✓		✓
DN 20		NPS 3/4"											
Flange thickness	[mm] s	20	22					15	18		25,4	32	
Weight slip on flange	[kg] W _F	1,1	1,3					0,8	1,4		2,3	3,5	
Available at Inlet		✓	✓					✓	✓		✓	✓	
Available at Outlet		✓	✓					✓	✓		✓		✓
DN 25		NPS 1"											
Flange thickness	[mm] s	22	26	30	36	40		17	21,5		32,5	40	
Weight slip on flange	[kg] W _F	1,3	2,6	3,5	5	7,5		1	2,1		4,1	5,1	
Available at Inlet		✓	✓	✓	✓	✓		✓	✓		✓	✓	
Available at Outlet		✓	✓	✓	✓	✓		✓	✓		✓		✓



Conventional design



Long version

Dimensions and weights - US Units

Threaded connections

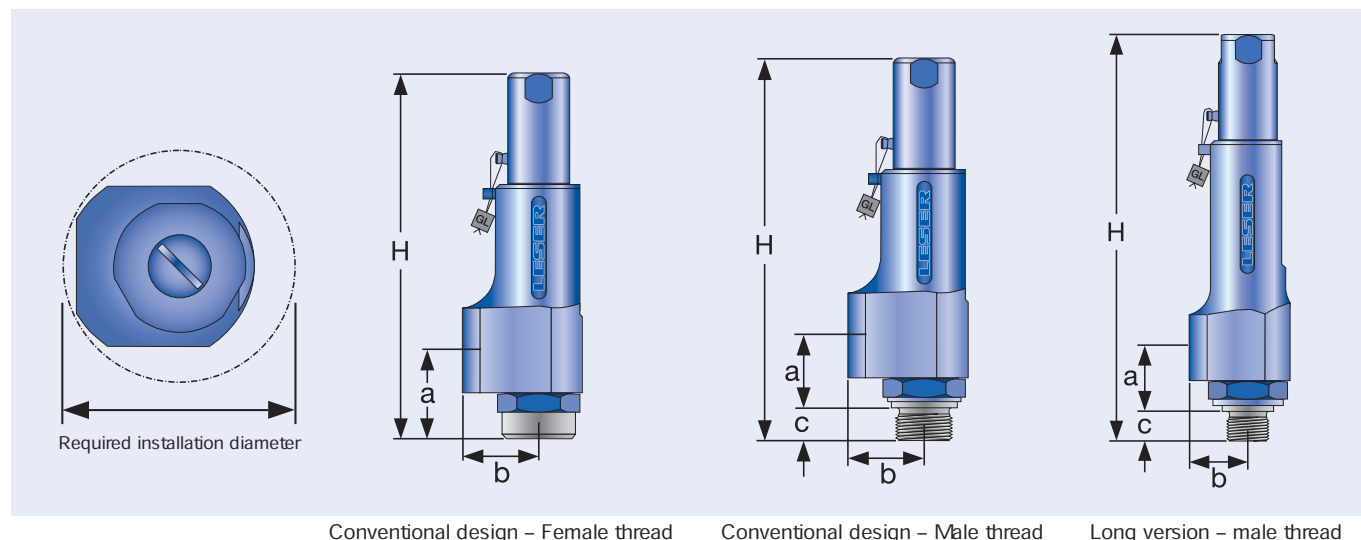
			Conventional design			Long version					
Size Outlet body			1/2"	3/4"	1"	1/2"	3/4"	1"	1/2"	3/4"	1"
Actual Orifice diameter d ₀ [inch]			Q 394	Q 394	Q 394	Q 236	Q 236	Q 236	Q 394	Q 394	Q 394
Actual Orifice area A ₀ [inch ²]			Q 122	Q 122	Q 122	Q 044	Q 044	Q 044	Q 122	Q 122	Q 122
Inlet thread "Female"											
DIN ISO 228-1	G	Inlet a	1 ³ / ₄	2 ¹ / ₄	2 ¹ / ₄	1 ³ / ₄	2 ¹ / ₄	2 ¹ / ₄	1 ³ / ₄	2 ¹ / ₄	2 ¹ / ₄
Center to face	[inch]	Outlet b	1 ¹ / ₈	1 ⁷ / ₁₆	1 ⁷ / ₁₆	1 ¹ / ₈	1 ⁷ / ₁₆	1 ⁷ / ₁₆	1 ¹ / ₈	1 ⁷ / ₁₆	1 ⁷ / ₁₆
Height	[inch]	H max.	8 ¹ / ₂	8 ¹¹ / ₁₆	8 ¹¹ / ₁₆	9 ¹ / ₁₆	9 ⁷ / ₁₆	9 ⁷ / ₁₆	9 ¹ / ₁₆	9 ⁷ / ₁₆	9 ⁷ / ₁₆
ISO 7-1/BS 21	R c	Inlet a	1 ³ / ₄	2 ¹ / ₄	2 ¹ / ₄	1 ³ / ₄	2 ¹ / ₄	2 ¹ / ₄	1 ³ / ₄	2 ¹ / ₄	2 ¹ / ₄
Center to face	[inch]	Outlet b	1 ¹ / ₈	1 ⁷ / ₁₆	1 ⁷ / ₁₆	1 ¹ / ₈	1 ⁷ / ₁₆	1 ⁷ / ₁₆	1 ¹ / ₈	1 ⁷ / ₁₆	1 ⁷ / ₁₆
Height	[inch]	H max.	8 ¹ / ₂	8 ¹¹ / ₁₆	8 ¹¹ / ₁₆	9 ¹ / ₁₆	9 ⁷ / ₁₆	9 ⁷ / ₁₆	9 ¹ / ₁₆	9 ⁷ / ₁₆	9 ⁷ / ₁₆
ANSI/ASME B1.20.1	NPT	Inlet a	1 ³ / ₄	2 ¹ / ₄	2 ¹ / ₄	1 ³ / ₄	2 ¹ / ₄	2 ¹ / ₄	1 ³ / ₄	2 ¹ / ₄	2 ¹ / ₄
Center to face	[inch]	Outlet b	1 ¹ / ₈	1 ⁷ / ₁₆	1 ⁷ / ₁₆	1 ¹ / ₈	1 ⁷ / ₁₆	1 ⁷ / ₁₆	1 ¹ / ₈	1 ⁷ / ₁₆	1 ⁷ / ₁₆
Height	[inch]	H max.	8 ¹ / ₂	8 ¹¹ / ₁₆	8 ¹¹ / ₁₆	9 ¹ / ₁₆	9 ⁷ / ₁₆	9 ⁷ / ₁₆	9 ¹ / ₁₆	9 ⁷ / ₁₆	9 ⁷ / ₁₆
Inlet thread "Male"											
DIN ISO 228-1	G	Inlet a	1 ⁵ / ₁₆	1 ⁵ / ₁₆	1 ⁷ / ₁₆	1 ⁵ / ₁₆	1 ⁵ / ₁₆	1 ⁷ / ₁₆	1 ⁵ / ₁₆	1 ⁵ / ₁₆	1 ⁷ / ₁₆
Center to face	[inch]	Outlet b	1 ¹ / ₈	1 ⁷ / ₁₆	1 ⁷ / ₁₆	1 ¹ / ₈	1 ⁷ / ₁₆	1 ⁷ / ₁₆	1 ¹ / ₈	1 ⁷ / ₁₆	1 ⁷ / ₁₆
ISO 7-1/BS 21	R	Inlet a	1 ¹ / ₄	1 ¹ / ₄	1 ⁵ / ₁₆	1 ¹ / ₄	1 ¹ / ₄	1 ⁵ / ₁₆	1 ¹ / ₄	1 ¹ / ₄	1 ⁵ / ₁₆
Center to face	[inch]	Outlet b	1 ¹ / ₈	1 ⁷ / ₁₆	1 ⁷ / ₁₆	1 ¹ / ₈	1 ⁷ / ₁₆	1 ⁷ / ₁₆	1 ¹ / ₈	1 ⁷ / ₁₆	1 ⁷ / ₁₆
Height	[inch]	H max.	8 ¹ / ₂	8 ¹¹ / ₁₆	8 ¹¹ / ₁₆	9 ¹ / ₁₆	9 ⁷ / ₁₆	9 ⁷ / ₁₆	9 ¹ / ₁₆	9 ⁷ / ₁₆	9 ⁷ / ₁₆
ANSI/ASME B1.20.1	NPT	Inlet a	1 ¹ / ₄	1 ¹ / ₄	1 ⁵ / ₁₆	1 ¹ / ₄	1 ¹ / ₄	1 ⁵ / ₁₆	1 ¹ / ₄	1 ¹ / ₄	1 ⁵ / ₁₆
Center to face	[inch]	Outlet b	1 ¹ / ₈	1 ⁷ / ₁₆	1 ⁷ / ₁₆	1 ¹ / ₈	1 ⁷ / ₁₆	1 ⁷ / ₁₆	1 ¹ / ₈	1 ⁷ / ₁₆	1 ⁷ / ₁₆

Height inlet thread "Male"

			Conventional design				Long version			
Inlet thread	Size		3/8"	1/2"	3/4"	1"	3/8"	1/2"	3/4"	1"
DIN ISO 228-1 [inch] G	H max.		8 ¹ / ₂	8 ⁵ / ₁₆	8 ⁷ / ₁₆	8 ¹ / ₂	9 ¹ / ₁₆	9 ² / ₁₆	9 ³ / ₁₆	9 ⁵ / ₁₆
ISO 7-1/BS 21 [inch] R	H max.		–	8 ⁵ / ₁₆	8 ¹ / ₂	8 ⁵ / ₂	–	9 ¹ / ₄	9 ¹ / ₄	9 ³ / ₈
ASME B1.20.1 [inch] NPT	H max.		–	8 ⁵ / ₈	8 ⁵ / ₈	8 ³ / ₄	–	9 ³ / ₈	9 ³ / ₈	9 ⁵ / ₈

Length of screwed end "c" inlet thread "Male"

Inlet thread	Size	3/8"	1/2"	3/4"	1"
DIN ISO 228-1 [inch] G		1 ¹ / ₂	9 ⁹ / ₁₆	5 ⁵ / ₈	6 ⁶ / ₈
ISO 7-1/BS 21 [inch] R		–	3 ³ / ₄	13 ¹³ / ₁₆	7 ⁷ / ₈
ASME B1.20.1 [inch] NPT		–	7 ⁷ / ₈	7 ⁷ / ₈	11 ¹¹ / ₈

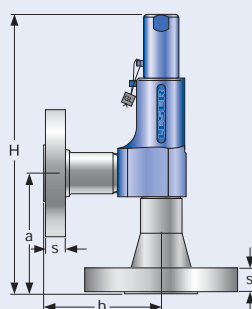


Dimensions and weights - US Units

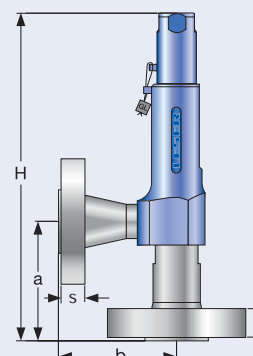
F langed connection

Conventional design					Long version	
Actual Orifice diameter d ₀ [inch]		Q 236	Q 394	Q 236	Q 394	
Actual Orifice area A ₀ [inch ²]		Q 044	Q 122	Q 044	Q 122	
D IN ISO 1092-1 (Available flange sizes refer to page 04/05)						
F lange rating PN 40						
Center to face	[inch]	Inlet a	3 ⁷ / ₈	3 ⁷ / ₈	3 ⁷ / ₈	
		Outlet b	3 ⁷ / ₈	3 ⁷ / ₈	3 ⁷ / ₈	
Height [H 4]	[inch]	H max.	10 ³ / ₈	11 ³ / ₁₆	11 ³ / ₁₆	
F lange rating ≥ PN 160						
Center to face	[inch]	Inlet a	4 ¹ / ₁₆	4 ¹ / ₁₆	4 ¹ / ₁₆	
		Outlet b	3 ⁷ / ₈	3 ⁷ / ₈	3 ⁷ / ₈	
Height [H 4]	[inch]	H max.	10 ¹ / ₂	11 ³ / ₁₆	11 ³ / ₁₆	
ASME B 16.5 (Available flange sizes refer to page 04/05)						
F lange rating class 150						
Center to face	[inch]	Inlet a	3 ⁷ / ₈	3 ⁷ / ₈	3 ⁷ / ₈	
		Outlet b	3 ⁷ / ₈	3 ⁷ / ₈	3 ⁷ / ₈	
Height [H 4]	[inch]	H max.	10 ³ / ₈	11 ³ / ₁₆	11 ³ / ₁₆	
F lange rating class ≥ 300						
Center to face	[inch]	Inlet a	4 ¹ / ₁₆	4 ¹ / ₁₆	4 ¹ / ₁₆	
		Outlet b	3 ⁷ / ₈	3 ⁷ / ₈	3 ⁷ / ₈	
Height [H 4]	[inch]	H max.	10 ¹ / ₂	11 ³ / ₁₆	11 ³ / ₁₆	
Weight						
For the calculation of the total weight please use the Formular: W _T = W _N + W _F (Inlet) + W _F (Outlet)						
Weight net [lbs]						
(without inlet and outlet flange) W _N		5,3	5,3	6,2	6,2	

F lange dimensions and availability														
Size			DIN ISO 1092-1 / F lange rating PN					ASME B16.5 / F lange rating class						
			40	160	250	320	400	Size	150	300	600	900	1500	2500
DN 15			NPS 1/2"											
Flange thickness	[inch]	s	6/8	7/8	1 ¹ /32	1 ¹ /32	1 ¹ /8		9/16	1 ¹ /16	1 ¹ /32	1 ¹ /32	1 ³ /16	
Weight slip on flange	[lbs]	W _F	1,8	2,6	5,5	5,5	7,9		1,3	2	4,6		6,6	
Available at Inlet			✓	✓	✓	✓	✓		✓	✓	✓		✓	
Available at Outlet			✓	✓	✓				✓	✓	✓			
DN 20			NPS 3/4"											
Flange thickness	[inch]	s	6/8	7/8					5/8	1 ¹ /16	1		1 ¹ /4	
Weight slip on flange	[lbs]	W _F	2,4	2,9					1,8	3,1	5		7,7	
Available at Inlet			✓	✓					✓	✓	✓		✓	
Available at Outlet			✓	✓					✓	✓	✓			
DN 25			NPS 1"											
Flange thickness	[inch]	s	7/8	1 ¹ /32	1 ¹ /8	1 ³ /8	1 ⁵ /8		5/8	7/8	1 ¹ /4	1 ¹ /4	1 ⁵ /8	
Weight slip on flange	[lbs]	W _F	2,9	5,7	7,7	11	16,5		2,2	4,6	9		11,2	
Available at Inlet			✓	✓	✓	✓	✓		✓	✓	✓		✓	
Available at Outlet			✓	✓	✓	✓	✓		✓	✓	✓			



Conventional design



Long version

Pressure temperature ratings

Metric U nits

Actual Orifice diameter d ₀ [mm]			6				10			
Actual Orifice Area A ₀ [mm ²]			28,3				78,5			
B ody material: 1.4104 (430)										
B ase / Inlet B ody	Connection size		3/8"	1/2"	3/4"	1"	3/8"	1/2"	3/4"	1"
	Pressure rating		PN 400				PN 250			
O utlet b ody	Pressure rating		PN 160				PN 160			
M inimum set pressure	p [bar _g]	S/G/L	180 [S/G only]				Q,1			
M aximum set pressure	p [bar _g]	S/G/L	365 [S/G only]				10 only H3 180			
T emperature acc. to DIN EN	min [°C]		-10				-10			
	max [°C]		+220				+220			
T emperature acc. to ASME	min [°C]		-29				-29			
	max [°C]		+220				+220			
B ody material: 1.4404 (316L)										
B ase / Inlet B ody	Connection size		3/8"	1/2"	3/4"	1"	3/8"	1/2"	3/4"	1"
	Pressure rating		PN 400				PN 250			
O utlet b ody	Pressure rating		PN 160				PN 160			
M inimum set pressure	p [bar _g]	S/G/L	180 [S/G only]				Q,1			
M aximum set pressure	p [bar _g]	S/G/L	365 [S/G only]				10 only H3 180			
T emperature acc. to DIN EN	min [°C]		-270				-270			
	max [°C]		+280				+280			
T emperature acc. to ASME	min [°C]		-268				-268			
	max [°C]		+280				+280			

US U nits

Actual Orifice diameter d _o [inch]			Q,236				Q,394			
Actual Orifice area A _o [inch ²]			Q,044				Q,122			
B ody material: 1.4104 (430)										
B ase / Inlet B ody	Connection size		3/8"	1/2"	3/4"	1"	3/8"	1/2"	3/4"	1"
Minimum set pressure	p [bar _g]	S/G/L	2610				1,			
Maximum set pressure	p [bar _g]	S/G/L	5294				145 only H3 2610			
Temperature acc. to DIN EN	min [°F]		+14				+14			
	max [°F]		+428				+428			
Temperature acc. to ASME	min [°F]		-20				-20			
	max [°F]		+428				+428			
B ody material: 1.4404 (316L)										
B ase / Inlet B ody	Connection size		3/8"	1/2"	3/4"	1"	3/8"	1/2"	3/4"	1"
Minimum set pressure	p [bar _g]	S/G/L	2610				1,5			
Maximum set pressure	p [bar _g]	S/G/L	5294				145 only H3 2610			
Temperature acc. to DIN EN	min [°F]		-450				-450			
	max [°F]		+536				+536			
Temperature acc. to ASME	min [°F]		-450				-450			
	max [°F]		+536				+536			

Order information - Spare parts

Spare parts

Actual Orifice diameter d_0 [mm]	6	10
Actual Orifice area A_0 [mm ²]	28,3	78,5
Actual Orifice diameter d_0 [inch]	Q,236	Q,394
Actual Orifice area A_0 [inch ²]	Q,044	Q,122

Body (Item 1): Male thread			Material-No. / Art.-No.							
Connection Size			3/8"	1/2"	3/4"	1"	3/8"	1/2"	3/4"	1"
DIN ISO 228-1	G	1.4104	-	-	-	-	136 5239.9000	136 4439.9000	136 4539.9000	136 5839.9000
		316L	-	-	-	-	136 5249.9000	136 4449.9000	136 4549.9000	136 4849.9000
		316L stellited	136 5169.9000	136 4369.9000	136 5569.9000	136 6769.9000	-	-	-	-
	R	316L	-	-	-	-	-	136 4449.9220	136 4549.9220	136 5849.9220
		316L stellited	-	136 4369.9220	136 5569.9220	136 6769.9220	-	-	-	-
ANSI/ASME B1.20.1	NPT	316L	-	-	-	-	-	136 4449.9204	136 4549.9204	136 5849.9204
		316L stellited	-	136 4369.9204	136 5569.9204	136 6769.9204	-	-	-	-

B o d y (I t e m 1): F e m a l e t h r e a d			M a t e r i a l - N o . / A r t . - N o .							
C o n n e c t i o n S i z e			3/8"	1/2"	3/4"	1"	3/8"	1/2"	3/4"	1"
DIN ISO 228-1	G	316L	-	-	-	-	-	136.4449.9210	136.4549.9210	136.5849.9210
		316L stellited	-	136.4369.9210	136.5569.9210	136.6769.9210	-	-	-	-
ISO 7-1/BS 21	R c	316L	-	-	-	-	-	136.4449.9222	136.4549.9222	136.5849.9222
		316L stellited	-	136.4369.9222	136.5569.9222	136.6769.9222	-	136.4449.9222	136.4549.9222	136.5869.9222
ANSI/ASME B1.20.1	NPT	316L	-	-	-	-	-	136.4449.9211	136.4549.9211	136.5849.9211
		316L stellited	-	136.4369.9211	136.5569.9211	136.6769.9211	-	-	-	-

Body (Item 1): Flange design			Material-No. / Art.-No.		
DN 15 / NPS 1/2"	PN 40 – 400	316L	–		136.6349.9208
	CL 150	316L	–		136.4449.9202
	CL 300 – 2500	316L	136.4369.9208		136.6349.9208
DN 20 / NPS 3/4"	PN 40 – 160	316L	136.5569.9208		136.4549.9208
	CL 150 – 2500	316L	136.5569.9208		136.4549.9208
DN 25 / NPS 1"	PN 40 – 400	316L	136.6769.9208		136.4449.9208
	CL 150 – 2500	316L	136.6769.9208		136.4449.9208

Disc (Item 7): Metal to metal			Material-No. / Art.-No.		
Disc	1.4122	420RM	-	-	200.8739.9000
	1.4404	316L	-	-	200.8749.9000
		316L stellited	200.8869.9000	-	-

Disc with sealing plate (Item 7)			Material-No. / Art.-No.	
Disc	PTFE	"A"	200.9249.9005	200.8449.9005
	1.4404	PCTFE	200.9249.9006	200.8449.9006
	SP	"T"	200.9249.9007	200.8449.9007

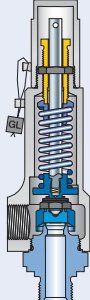
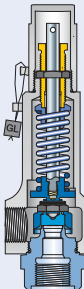
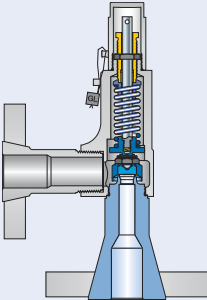
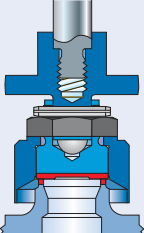
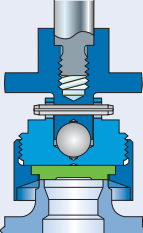
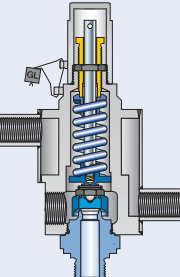
Sealing plate (Item 7.3)				Material-No. / Art.-No.	
Sealing plate	PTFE	"A"	236.3259.0000		236.2859.0000
	PCTFE	"G"	236.3269.0000		236.2869.0000
	SP	"T"	236.3279.0000		236.2879.0000

Pin (Item 57)		Material-No. / Art.-No.	
Pin	1.4310	480.0305.0000	480.0305.0000

Ball (Item 61)		Material-No. / Art.-No.	
Ball	Ball Ø [mm]	6	6
	1.4401	510.0104.0000	510.0104.0000

Available Options

Type 437

Male thread 	Female thread 	Flanged version 	
Stellited sealing surface J25: Disc stellited L20: Base/inlet body 	Disc with inserted sealing plate J44: PTFE-FDA "A" J48: PCTFE "G" J49: VESPEL-SP1 "T" 		
Heating jacket H29 			
Special material 2.4610 Hastelloy® C4 2.4360 Monel® 400 1.4462 Duplex 			

Approvals

Approvals			
Actual Orifice diameter d_o [mm]		6	10
Actual Orifice area A_o [mm ²]		28,3	78,5
Actual Orifice diameter d_o [inch]		0,236	0,394
Actual Orifice area A_o [inch ²]		0,044	0,122
Europe		Coefficient of discharge K_{dr}	
DIN EN ISO 4126-1	Approval No.	07/20201110008/O/21-1	
	S/G	0,72	0,50
	L	-	0,35
Germany		Coefficient of discharge α_w	
AD 2000-Merkblatt A2	Approval No.	TÜV SV 980	
	S/G	0,72	0,50
	L	-	0,35
United States		Coefficient of discharge K	
ASME Sec. VIII	Approval No.	-	M 37213
	S/G	-	0,509
	Approval No.	-	M 37189
	L	-	0,370
Canada		Coefficient of discharge K	
CRN	Approval No.	OG0772.9C	
	S/G	-	0,509
	L	-	0,370
China		Coefficient of discharge α_w	
CSBQTS	Approval No.		
	S/G	0,72	0,50
	L	-	0,35
Russia		Coefficient of discharge α_w	
GGTN /	Approval No.	PPC 00-18458	
GOSGOTECHNADZOR	S/G	0,72	0,50
GOST R	L	-	0,35
Classification societies		Homepage	
Bureau Veritas	BV	www.bureauveritas.com	The valid certification number is changed with every renewal.
Det Norske Veritas	DNV	www.dnv.com	
Germanischer Lloyd	GL	www.gl-group.com	A sample certificate including the valid certification number can be taken from the homepage of the classification societies.
Lloyd's Register EMEA	LREMEA	www.lr.org	
Registro Italiano Navale	RINA	www.rina.org	

Capacities - S team

Capacities for saturated steam according to AD 2000-Merkblatt A2 based on set pressure plus 10 % overpressure. Capacities at 1 bar (14,5 psig) and below are based on Q1 bar (1,45 psig) overpressure

Capacities for saturated steam according to ASME Section VIII (UV), based on set pressure plus 10% overpressure. Capacities at 30 psig (2,07 bar) and below are based on 3 psig (Q,207 bar) overpressure.

Metric U nits		AD 2000-Merkblatt A2 [kg/h]
Act. Orifice dia. d ₀ [mm]	6	10
Act. Orifice area A ₀ [mm ²]	28,3	78,5
LEO _{s,G} *) [inch ²]	Q,021	Q,057
Set pressure [bar]	Capacities [kg/h]	
Q,1	No saturated steam application in set pressure range	12
Q,2		17
Q,5		29
1		43
2		70
3		94
4		118
5		141
6		164
7		186
8		209
9		232
10		255
12		301
14		346
16		392
18		437
20		483
22		528
24		573
26		619
28		666
30		712
32		758
34		803
36		849
38		896
40		943
42		990
44		1038
46		1085
48		1133
50		1181
60		1421
70		1670
80		1921
90		2185
100		2451
110		2735
120		3032
130		3345
140		3688
150		4044
160		4445
170		4880
180		5401

US U nits		ASME Section VIII [lb/h]
Act. Orifice dia. d ₀ [inch]	Q,236	Q,394
Act. Orifice area A ₀ [inch ²]	Q,044	Q,122
LEO _{s,G} *) [inch ²]	Q,021	Q,057
Set pressure [psig]	Capacities [lb/h]	
15	No saturated steam application in set pressure range	94
20		108
30		137
40		168
50		200
60		232
70		263
80		295
90		326
100		358
120		421
140		484
160		547
180		611
200		674
220		737
240		800
260		863
280		926
300		990
320		1053
340		1116
360		1179
380		1242
400		1306
420		1369
440		1432
460		1495
480		1558
500		1621
600		1937
700		2253
800		2569
900		2885
1000		3201
1100		3516
1200		3832
1300		4148
1400		4458
1500		4803
2000		6641
2500		8788

*) LEO_{s,G} = LESER Effective Orifice steam / gas please refer to page 00/11
How to use capacity-sheets refer to page 00/09

Type 437

Capacities for air according to ASME Section VIII (UV), based on set pressure plus 10% overpressure at 60°F (16 °C). Capacities at 30 psig (2,07 bar) and below are based on 3 psig (0,207 bar) overpressure.

[illegible]

01/17

Capacities - Water

Capacities for water according to AD 2000-Merkblatt A2, based on set pressure plus 10 % overpressure at 20 °C (68 °F). Capacities at 1 bar (14,5 psig) and below are based on 0,1 bar (1,45 psig) overpressure.

Capacities for water according to ASME Section VIII (UV), based on set pressure plus 10 % overpressure at 70 °F (21 °C). Capacities at 30 psig (2,07 bar) and below are based on 3 psig (0,207 bar) overpressure.

Metric Units	AD 2000-Merkblatt A2 [10 ³ kg/h]	
Act. Orifice dia. d ₀ [mm]	6	10
Act. Orifice area A ₀ [mm ²]	28,3	78,5
LEO _L *) [inch ²]	Q.021	Q.062
Set pressure [bar]	Capacities [10 ³ kg/h]	
0,1	No TÜV approval, useable for thermal expansion	0,63
0,2		0,77
0,5		1,08
1		1,5
2		2,1
3		2,5
4		2,9
5		3,3
6		3,6
7		3,9
8		4,1
9		4,4
10		4,6
12		5,1
14		5,5
16		5,9
18		6,2
20		6,6
22		6,9
24		7,2
26		7,5
28		7,8
30		8
32		8,3
34		8,6
36		8,8
38		9
40		9,3
42		9,5
44		9,7
46		9,9
48		10,2
50		10,4
60		11,4
70		12,3
80		13,1
90		13,9
100		14,7
110		15,4
120		16,1
130		16,7
140		17,4
150		18
160		18,5
170		19,1
180		19,7

US Units	ASME Section VIII [US-G.P.M.]	
Act. Orifice dia. d ₀ [inch]	Q.236	Q.394
Act. Orifice area A ₀ [inch ²]	Q.044	Q.122
LEO _L *) [inch ²]	Q.021	Q.062
Set pressure [psig]	Capacities [US-G.P.M.]	
15	No TÜV approval, useable for thermal expansion	6,54
20		7,39
30		8,86
40		10,2
50		11,4
60		12,5
70		13,5
80		14,5
90		15,3
100		16,2
120		17,7
140		19,1
160		20,5
180		21,7
200		22,9
220		24
240		25
260		26,1
280		27,1
300		28
320		28,9
340		29,8
360		30,7
380		31,5
400		32,3
420		33,1
440		33,9
460		34,7
480		35,4
500		36,2
600		39,6
700		42,8
800		45,7
900		48,5
1000		51,5
1100		53,6
1200		56
1300		58,3
1400		60,5
1500		62,6
2000		72,3
2500		80,8

*) LEO_L = LESER Effective Orifice liquids please refer to page 00/11
How to use capacity-sheets refer to page 00/09

Determination of coefficient of discharge in case of lift restriction or back pressure

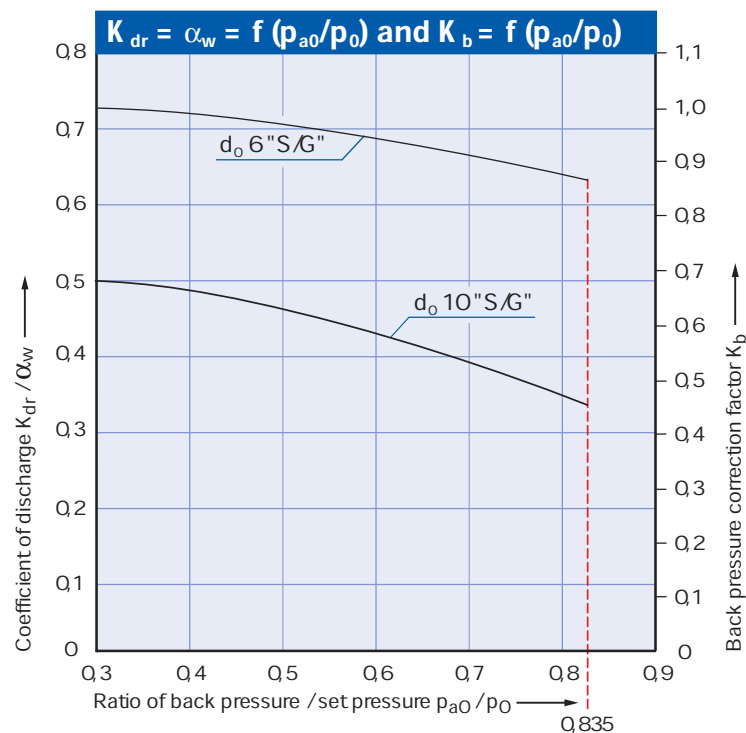
Diagram for evaluation of ratio of lift / flow diameter (h/d_o) in reference to the coefficient of discharge (K_{dr}/α_w)

h	= Lift [mm]
d_o	= Flow diameter [mm] of selected safety valve, refer to table article numbers
h/d_o	= Ratio of lift / flow diameter
p_{a0}	= Back pressure [bar _a]
p_o	= Set pressure [bar _a]
p_{a0}/p_o	= Ratio of back pressure / set pressure
K_{dr}	= Coefficient of discharge acc. to DIN EN ISO 4126-1
α_w	= Coefficient of discharge acc. to AD 2000-Merkblatt A2
K_b	= Back pressure correction factor acc. to API 520 topic 3.3

$$K_{dr} = \alpha_w = f(h/d_o)$$

A lift restriction is not applicable because the actual design and the certified lift are $\leq 1,5 \text{ mm} / 1/16 \text{ inch}$.

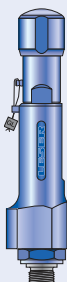
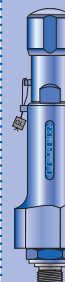
Diagram for evaluation of ratio of the coefficient of discharge (K_{dr}/α_w) in reference to the ratio of back pressure / set pressure (p_{a0}/p_o)



Application range of conventional design and long version

Application range

Type 4373

Conventional design		S/G/L		Long version		S/G					
	S/G/L			S/G/L			S/G				
	Act. O rifice diameter	d_o [mm]		10	Act. O rifice diameter		d_o [mm]	10	Act. O rifice diameter	d_o [mm]	6
		[inch]		Q.394			[inch]	Q.394		[inch]	Q.236
	Act. O rifice area	A_o [mm ²]		78.5	Act. O rifice area		A_o [mm ²]	78.5	Act. O rifice area	A_o [mm ²]	28.3
		[inch ²]		Q.122			[inch ²]	Q.122		[inch ²]	Q.044
Components	Materials		Components	Materials		Components	Materials				
Base / Inlet Body	1.4104 SA 479 430		Base / Inlet Body	1.4104 SA 479 430		Base / Inlet Body	1.4404 Stellite SA 479 31L Stellite				
Disc	1.4122 Hardened stainless steel		Disc	1.4122 Hardened stainless steel		Disc	1.4404 Stellite SA 479 31L Stellite				
0	986	1349	2611	4786	5294	5511					
0	68	93	180	330	365	380					

Type 4374

Conventional design		Long version	
S/G / L		S/G / L	S/G
	Act. O rifice diameter d_o [mm] 10 [inch] Q.394	Act. O rifice diameter d_o [mm] 10 [inch] Q.394	Act. O rifice diameter d_o [mm] 6 [inch] Q.236
	Act. O rifice area A_o [mm ²] 78.5 [inch ²] Q.122	Act. O rifice area A_o [mm ²] 78.5 [inch ²] Q.122	Act. O rifice area A_o [mm ²] 28.3 [inch ²] Q.044
	Components Base / Inlet Body Disc	Components Base / Inlet Body Disc	Components Base / Inlet Body Disc
	Materials 1.4404 SA 479 316L 1.4404 SA 479 316L	Materials 1.4404 SA 479 316L 1.4404 SA 479 316L	Materials 1.4404 Stelled SA 479 316L Stelled 1.4404 Stelled SA 479 316L Stelled