Type 427, 429

Flanged Safety Relief Valves – spring loaded

Metric Units

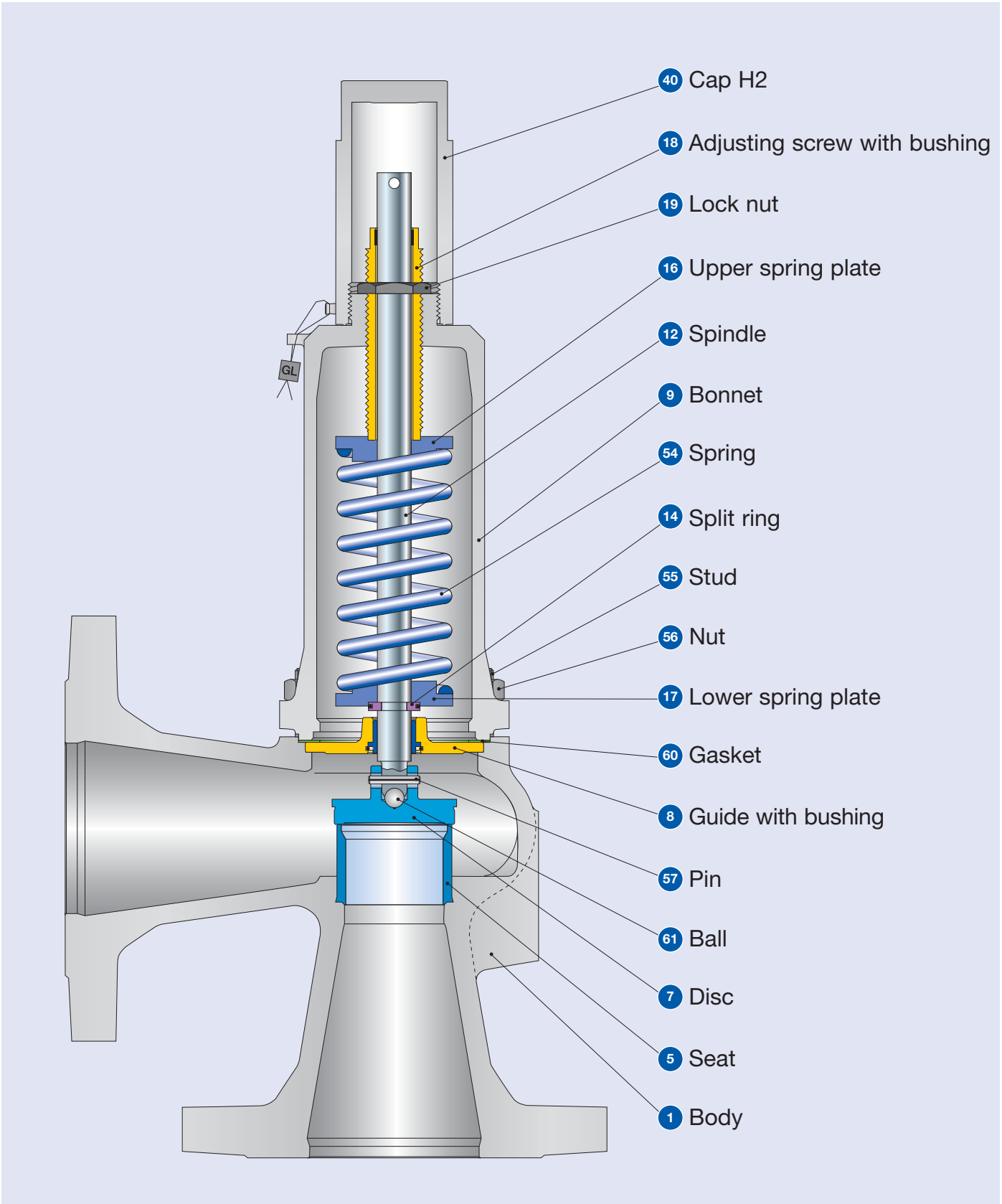
Facts

LESER

The-Safety-Valve.com

LWN 465.05-E

Conventional design



Conventional design

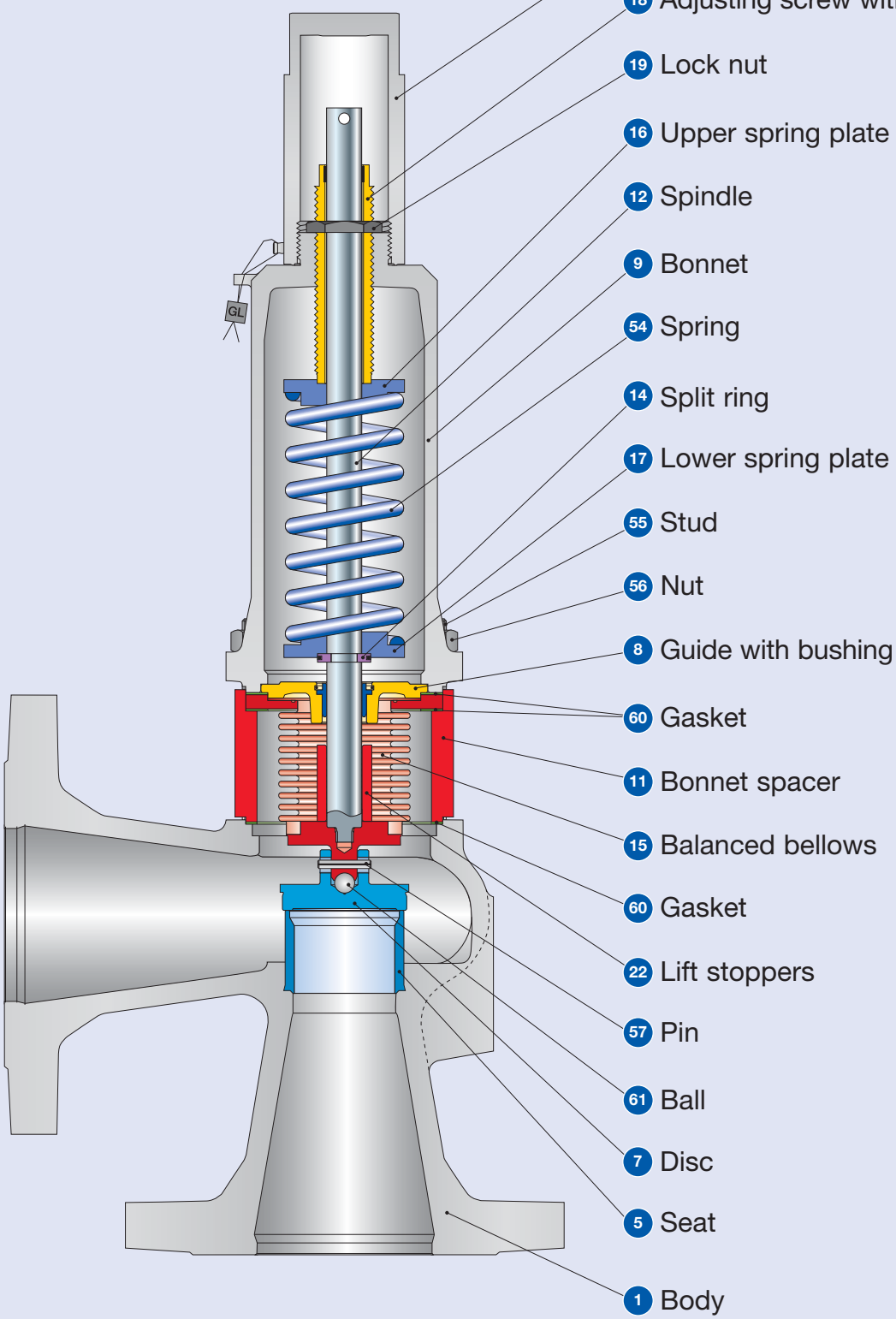
Materials

Item	Component	Type 4275 / 4295	Type 4272 / 4292	Type 4294
1	**Body**	0.7043 Ductile Gr. 60-40-18	1.0619 SA 216 WCB	1.4408 SA 351 CF8M
5	Seat	1.4404 316L	1.4404 316L	1.4404 316L
7	Disc	1.4122 Hardened stainless steel	1.4122 Hardened stainless steel	1.4404 316L
8	Guide	1.4104, 1.0501 Chrome steel or steel	1.4104, 1.0501, 1.0570 Chrome steel or steel	1.4404 316L
	with bushing	1.4104 tenifer Chrome steel tenifer	1.4104 tenifer Chrome steel tenifer	– –
9	**Bonnet**	0.7040 Ductile Gr. 60-40-18	0.7040 Ductile Gr. 60-40-18	1.4408, 1.4404 SA 351 CF8M, SA 479 316 L
12	Spindle	1.4021 420	1.4021 420	1.4404 316L
14	Split ring	1.4104 Chrome steel	1.4104 Chrome steel	1.4404 316L
16/17	Spring plate	1.0718 Steel	1.0718 Steel	1.4404 316L
18	Adjusting screw with bushing	1.4104 PTFE Chrome steel PTFE	1.4104 PTFE Chrome steel PTFE	1.4404 PTFE 316L PTFE
19	Lock nut	1.0718 Steel	1.0718 Steel	1.4404 316L
40	Cap H2	1.0718 12L13	1.0718 12L13	1.4404 316L
54	Spring, standard	1.1200, 1.8159, 1.7102 Steel	1.1200, 1.8159, 1.7102 Steel	1.4310 Stainless steel
	Spring, optional	1.4310 Stainless steel	1.4310 Stainless steel	– –
55	Stud	1.1181 Steel	1.1181 Steel	1.4401 B8M
56	Nut	1.0501 2H	1.0501 2H	1.4401 8M
57	Pin	1.4310 Stainless steel	1.4310 Stainless steel	1.4310 Stainless steel
60	Gasket	Graphite / 1.4401 Graphite / 316	Graphite / 1.4401 Graphite / 316	Graphite / 1.4401 Graphite / 316
61	Ball	1.3541 Hardened stainless steel	1.3541 Hardened stainless steel	1.4401 316

Note:

- LESER reserves the right to make changes.
- If several materials are specified LESER defines the material.
- LESER may use higher quality materials without giving prior notice
- Each component can be constructed of another material according to the customer's specification.
- All components exposed to pressure are highlighted in bold. The material will be specified according to DIN and ASTM here.

Balanced bellows design



Balanced bellows design

Materials

Item	Component	Type 4275 / 4295	Type 4272 / 4292	Type 4294
1	**Body**	0.7043 Ductile Gr. 60-40-18	1.0619 SA 216 WCB	1.4408 SA 351 CF8M
5	Seat	1.4404 316L	1.4404 316L	1.4404 316L
7	Disc	1.4122 Hardened stainless steel	1.4122 Hardened stainless steel	1.4404 316L
8	Guide	1.4104, 1.0501 Chrome steel or steel	1.4104, 1.0501, 1.0570 Chrome steel or steel	1.4404 316L
	with bushing	1.4104 tenifer Chrome steel tenifer	1.4104 tenifer Chrome steel tenifer	– –
9	Bonnet	0.7040 Ductile Gr. 60-40-18	0.7040 Ductile Gr. 60-40-18	1.4408 SA 351 CF8M
11	Bonnet spacer	1.4404 316L	1.4404 316L	1.4404 316L
12	Spindle	1.4404 316L	1.4404 316L	1.4404 316L
14	Split ring	1.4104 Chrome steel	1.4104 Chrome steel	1.4404 316L
15	Balanced bellows	1.4571 316Ti	1.4571 316Ti	1.4571 316Ti
16/17	Spring plate	1.0718 Steel	1.0718 Steel	1.4404 316L
18	Adjusting screw with bushing	1.4104 PTFE Chrome steel PTFE	1.4104 PTFE Chrome steel PTFE	1.4404 PTFE 316L PTFE
19	Lock nut	1.0718 Steel	1.0718 Steel	1.4404 316L
22	Lift stoppers	1.4404 316L	1.4404 316L	1.4404 316L
40	Cap H2	1.0718 12L13	1.0718 12L13	1.4404 316L
54	Spring, standard	1.1200, 1.8159, 1.7102 Steel	1.1200, 1.8159, 1.7102 Steel	1.4310 Stainless steel
	Spring, optional	1.4310 Stainless steel	1.4310 Stainless steel	– –
55	Stud	1.4401 8M	1.4401 B8M	1.4401 B8M
56	Nut	1.4401 8M	1.4401 B8M	1.4401 B8M
57	Pin	1.4310 Stainless steel	1.4310 Stainless steel	1.4310 Stainless steel
60	Gasket	Graphite / 1.4401 Graphite / 316	Graphite / 1.4401 Graphite / 316	Graphite / 1.4401 Graphite / 316
61	Ball	1.3541 Hardened stainless steel	1.3541 Hardened stainless steel	1.4401 316

Note:

- LESER reserves the right to make changes.
- If several materials are specified LESER defines the material.
- LESER may use higher quality materials without giving prior notice
- Each component can be constructed of another material according to the customer's specification.
- All components exposed to pressure are highlighted in bold. The material will be specified according to DIN and ASTM here.

How to order – Article numbers

Article numbers

			DN_I	15	20	25	32	40	50	65	80	100	125	150
			DN_O	15	20	25	32	40	50	65	80	100	125	150
			Actual orifice diameter d_0 [mm]	12	18	18	18	23	29	37	46	60	74	92
			Actual orifice area A_0 [mm²]	113	254	254	254	416	661	1075	1662	2827	4301	6648
Body material: 0.7043 (Ductile Gr. 60-40-18)														
Bonnet closed	**H2**	Art.-No. **4295.**		**8612**	**8622**	**8632**	**8642**	**8652**	**8662**	**8672**	**8682**	**8692**	–	–
	H3	Art.-No. **4295.**		**8613**	**8623**	**8633**	**8643**	**8653**	**8663**	**8673**	**8683**	**8693**	–	–
	H4	Art.-No. **4295.**		**8614**	**8624**	**8634**	**8644**	**8654**	**8664**	**8674**	**8684**	**8694**	–	–
open	**H3**	Art.-No. **4275.**		**8615**	**8625**	**8635**	**8645**	**8655**	**8665**	**8675**	**8685**	**8695**	–	–
Body material: 1.0619 (WCB)														
Bonnet closed	**H2**	Art.-No. **4292.**		**7122**	**7132**	**7142**	**7152**	**7162**	**7172**	**7182**	**7192**	**7202**	**7212**	**7222**
	H3	Art.-No. **4292.**		**7123**	**7133**	**7143**	**7153**	**7163**	**7173**	**7183**	**7193**	**4203**	**7213**	**7223**
	H4	Art.-No. **4292.**		**7124**	**7134**	**7144**	**7154**	**7164**	**7174**	**7184**	**7194**	**4204**	**7214**	**7224**
open	**H3**	Art.-No. **4272.**		**7125**	**7135**	**7145**	**7155**	**7165**	**7175**	**7185**	**7195**	**4205**	**7215**	**7225**
Body material: 1.4408 (CF8M)														
Bonnet closed	**H2**	Art.-No. **4294.**		**7242**	**7252**	**7262**	**7272**	**7282**	**7292**	**7302**	**7312**	**7322**	–	–
	H4	Art.-No. **4294.**		**7244**	**7254**	**7264**	**7274**	**7284**	**7294**	**7304**	**7314**	**7324**	–	–

Pressure temperature ratings

Metric units

	DN_I	15	20	25	32	40	50	65	80	100	125	150
	DN_O	15	20	25	32	40	50	65	80	100	125	150
	Actual orifice diameter d_0 [mm]	12	18	18	18	23	29	37	46	60	74	92
	Actual orifice area A_0 [mm²]	113	254	254	254	416	661	1075	1662	2827	4301	6648
Body material: 0.7043 (Ductile Gr. 60-40-18)												
DIN flange	Inlet	**PN 16**									–	–
	Outlet	**PN 16**									–	–
Minimum set pressure	p [bar_g] S/G/L	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	–	–
Min. set pressure[1] standard bellows	p [bar_g] S/G/L	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	–	–
Min. set pressure low pressure bellows	p [bar_g] S/G/L	–	2.0	2.0	2.0	1.8	1.9	1.8	1.8	1.2	–	–
Maximum set pressure	p [bar_g] S/G/L	40	40	40	40	40	40	35	35	30	–	–
Max. set pressure with special spring	p [bar_g] S/G/L	40	40	40	40	40	40	40	35	30	–	–
Temperature[2] acc. to DIN EN	min. [°C]	-60									–	–
	max. [°C]	+350									–	–

[1] Min. set pressure of standard bellows = max. set pressure of bellows for low set pressure.

[2] The temperature is limited by the soft seal material (see page 99/10). The values given here are valid for EPDM. Between -10°C and the lowest specified application temperature, proceed acc. to AD 2000-Merkblatt W10.

Metric units

	DN_I	15	20	25	32	40	50	65	80	100	125	150
	DN_O	15	20	25	32	40	50	65	80	100	125	150
	Actual orifice diameter d_0 [mm]	12	18	18	18	23	29	37	46	60	74	92
	Actual orifice area A_0 [mm²]	113	254	254	254	416	661	1075	1662	2827	4301	6648
Body material: 1.0619 (WCB)												
DIN flange	Inlet	**PN 40**										
	Outlet	**PN 40**										
Minimum set pressure	p [bar_g] S/G/L	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Min. set pressure[1] standard bellows	p [bar_g] S/G/L	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Min. set pressure low pressure bellows	p [bar_g] S/G/L	–	2.0	2.0	2.0	1.8	1.9	1.8	1.8	1.2	1.2	on request
Maximum set pressure	p [bar_g] S/G/L	40	40	40	40	40	40	35	35	30	32	16
Max. set pressure with special spring	p [bar_g] S/G/L	40	40	40	40	40	40	40	35	30	32	16
Temperature[2] acc. to DIN EN	min. [°C]	-85										
	max. [°C]	+450										

Pressure temperature ratings

Metric units

	DN_I	15	20	25	32	40	50	65	80	100	125	150
	DN_O	15	20	25	32	40	50	65	80	100	125	150
	Actual orifice diameter d_0 [mm]	12	18	18	18	23	29	37	46	60	74	92
	Actual orifice area A_0 [mm²]	113	254	254	254	416	661	1075	1662	2827	4301	6648
Body material: 1.4408 (CF8M)												
DIN flange	Inlet										–	–
	Outlet										–	–
Minimum set pressure	p [bar_g] S/G/L	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	–	–
Min. set pressure[1] standard bellows	p [bar_g] S/G/L	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	–	–
Min. set pressure low pressure bellows	p [bar_g] S/G/L	–	2.0	2.0	2.0	1.8	1.9	1.8	1.8	1.2	–	–
Maximum set pressure	p [bar_g] S/G/L	40	40	40	40	40	31.6	31.0	30	22	–	–
Max. set pressure with special spring	p [bar_g] S/G/L	40	40	40	40	40	40	31	30	22	–	–
Temperature[2] acc. to DIN EN	min. [°C]	-270									–	–
	max. [°C]	+400									–	–

[1] Min. set pressure of standard bellows = max. set pressure of bellows for low set pressure.

[2] The temperature is limited by the soft seal material (see page 99/10). The values given here are valid for EPDM. Between -10°C and the lowest specified application temperature, proceed acc. to AD 2000-Merkblatt W10.

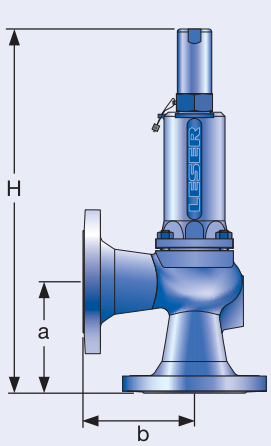
Dimensions and weights

Metric units

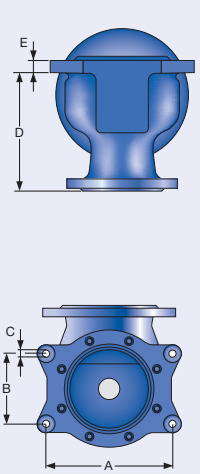
	DN_I	15	20	25	32	40	50	65	80	100	125	150
	DN_O	15	20	25	32	40	50	65	80	100	125	150
	Actual orifice diameter d_0 [mm]	12	18	18	18	23	29	37	46	60	74	92
	Actual orifice area A_0 [mm²]	113	254	254	254	416	661	1075	1662	2827	4301	6648
Weight [kg]		5	6	6	8	9	12	15	20	33	48	65
	with bellows	6.3	6.4	6.4	8.4	9.6	13	16	21.6	35.6	52.1	78.4
Centre to face [mm]	Inlet a	90	95	100	105	115	125	145	155	175	200	225
	Outlet b	90	95	100	105	115	125	145	155	175	200	225
Height (H4) [mm]	Standard H max.	310	307	311	320	320	360	476	525	609	743	865
	Bellows H max.	359	337	341	355	355	425	536	595	684	823	960
Support brackets [mm]	A											277
	B											160
(Drilled only on request,	C											Ø 18
option code H42)	D											278
	E											21

Body material: 0.7043 (Ductile Gr. 60-40-18)						
DIN flange[1)]	Inlet	**PN 40**			–	–
	Outlet	**PN 40**			–	–
Body material: 1.0619 (WCB)						
DIN flange[1)]	Inlet	**PN 40**				
	Outlet	**PN 40**				
Body material: 1.4408 (CF8M)						
DIN flange[1)]	Inlet	**PN 40**			–	–
	Outlet	**PN 40**			–	–

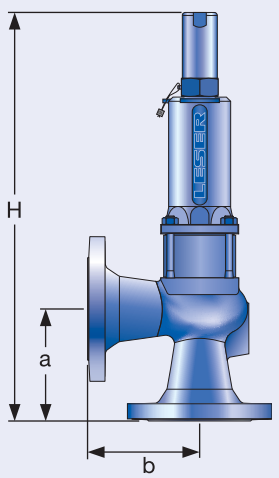
[1)] Standard flange class For other flange drillings, see page 03/13.



Conventional design



Support brackets



Balanced bellows design

Flange drillings

Flange drillings

		DN_I	15	20	25	32	40	50	65	80	100	125	150
		DN_O	15	20	25	32	40	50	65	80	100	125	150
		Valve size	1/2" x 1/2"	3/4" x 3/4"	1" x 1"	1 1/4"x1 1/4"	1 1/2"x1 1/2"	2" x 2"	2 1/2" x 2 1/2"	3" x 3"	4" x 4"	5" x 5"	6" x 6"
		Actual orifice diameter d_0 [mm]	12	18	18	18	23	29	37	46	60	74	92
		Actual orifice area A_0 [mm²]	113	254	254	254	416	661	1075	1662	2827	4301	6648
Body material: 0.7043 (Ductile Gr. 60-40-18), 1.0619 (WCB), 1.4408 (CF8M)													
Inlet	**DIN EN 1092**	PN 10	*	*	*	*	*	*	H44	H44	H44	H44	H44
		PN 16	*	*	*	*	*	*	H45	H45	H45	H45	H45
		PN 25	*	*	*	*	*	*	*	*	*	*	*
		PN 40	*	*	*	*	*	*	*	*	*	*	*
	ASME B16.5[1)]	CL150	H64	H64	H64	H64	H64	H64	H64	H64	[H64]	H64	H64
		CL300	[H65]	–	H65	H65	–	[H65]	[H65]	–	–	–	–
Outlet	**DIN EN 1092**	PN 10	*	*	*	*	*	*	H50	H50	H50	H50	H50
		PN 16	*	*	*	*	*	*	H51	H51	H51	H51	H51
		PN 25	*	*	*	*	*	*	*	*	*	*	*
		PN 40	*	*	*	*	*	*	*	*	*	*	*
	ASME B16.5[1)]	CL150	H79	H79	H79	H79	H79	H79	H79	H79	[H79]	H79	H79
		CL300	H80	–	H80	H80	–	[H80]	[H80]	–	–	–	–

Flange facings

Information	Standard	Inlet	Outlet	Remark
General				
Flange, undrilled	–	H38	H39	
Linde-V-Nut, Form V48	Linde Standard 420-08 LWN 313.36	J07	J08	Groove: Rz = 16
Linde-V-Nut, Form V48A		J05	J06	Groove: Rz = 4, e.g. for hydrogen
Lens-shape seal form L (without lens-shape seal)	DIN 2696 LWN 313.35	J11	J12	
According to DIN EN 1092				
Flange facings		**Inlet**	**Outlet**	**Remark**
DIN EN 1092 (also see LWN 313.40)		PN 10 – PN 40	PN 10 – PN 40	Rz specification acc. to DIN EN 1092 in µm
Sealing strip	Form B1	*	*	Seal. strip.: Rz = 12.5 – 50
	Form B2	L36	L38	Seal. strip.: Rz = 3.2 – 12.5
Tongue, Form C[1)]		H94	H92	only for steel flange
Groove, Form D[1)]		H93	H91	only for steel flange
Male, Form E		H96	H98	only for steel flange
Female, Form F		H97	H99	only for steel flange
O-ring Male, Form G		J01	J02	only for steel flange
O-ring Female, Form H		J03	J04	only for steel flange

According to ASME B16.5

Body material	Inlet	Outlet	Smooth Finish[2)]		Serrated Finish		RTJ-Groove			
			Inlet	Outlet	Inlet	Outlet	Inlet		Outlet	
			Option code		Option code		Pressure level	Option code	Pressure level	Option code
0.7043, 1.0619, 1.4408	all	all	L52	L53	*	*	–	–	–	–

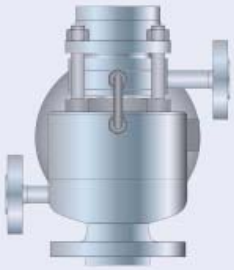
[1)] LESER manufactures the groove at flanged valves by milling. If a customer demands a turned surface in the soil of the groove according to DIN EN 1092-1 an additional option code is necessary: “S01: soil of the groove drilled”.
[2)] Smooth finish is not defined in the effective standards.

For an explanation of signs and symbols, refere to page 00/07.
Note: Flange drillings and facings always meet the requirements of mentioned flange standards.
Flange thickness and outer diameter may deviate from flange standard.

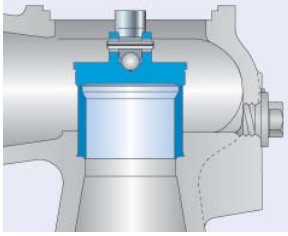
Available options

For more information, also see
“Accessories and options” as of page 99/01.

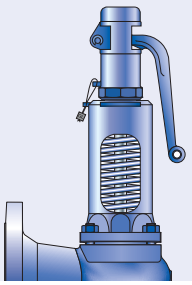
Heating jacket
H29, H30: Coupling G $^{3}/_{8}$, G $^{3}/_{4}$
H31, H32: Flange DN15, DN25



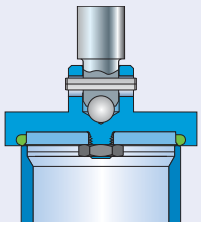
Drain hole
J18: G $^{1}/_{4}$
J19: G $^{1}/_{2}$



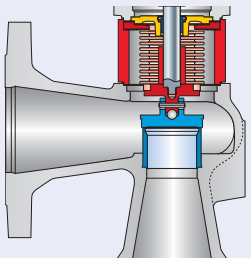
Open bonnet
See Art.-No.



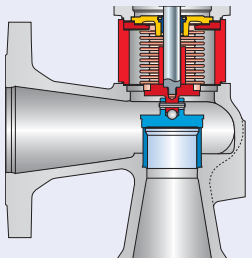
O-ring disc
J20: FFKM “C”
J21: CR “K”
J22: EPDM “D”
J23: FKM “L”



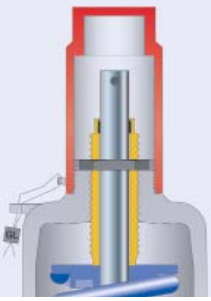
Balanced bellows
J68: Open bonnet
J78: Closed bonnet



Conversion set for balanced bellows
Art.-No. see page 02/14

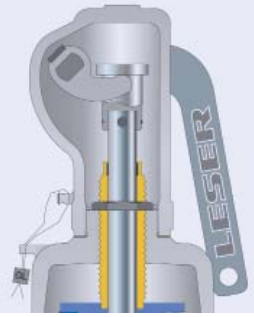


Screwed cap H2
H2

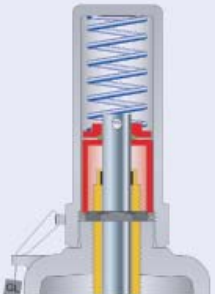


Plain lever H3
H3

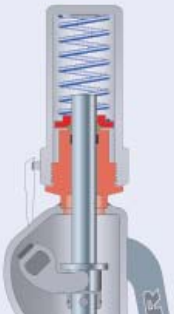
Packed lever H4
H4



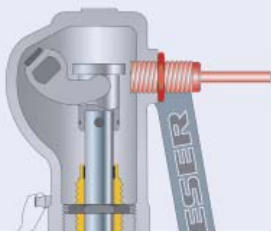
O-ring damper H2
J65



O-ring damper H4
J66



Lift indicator
J39: Adaptor H4
J93: Lift indicator



Test gag
J69: H4
J70: H4