



Type 441 ANSI 442 ANSI

Flanged Safety Relief Valves
- spring loaded

US Units



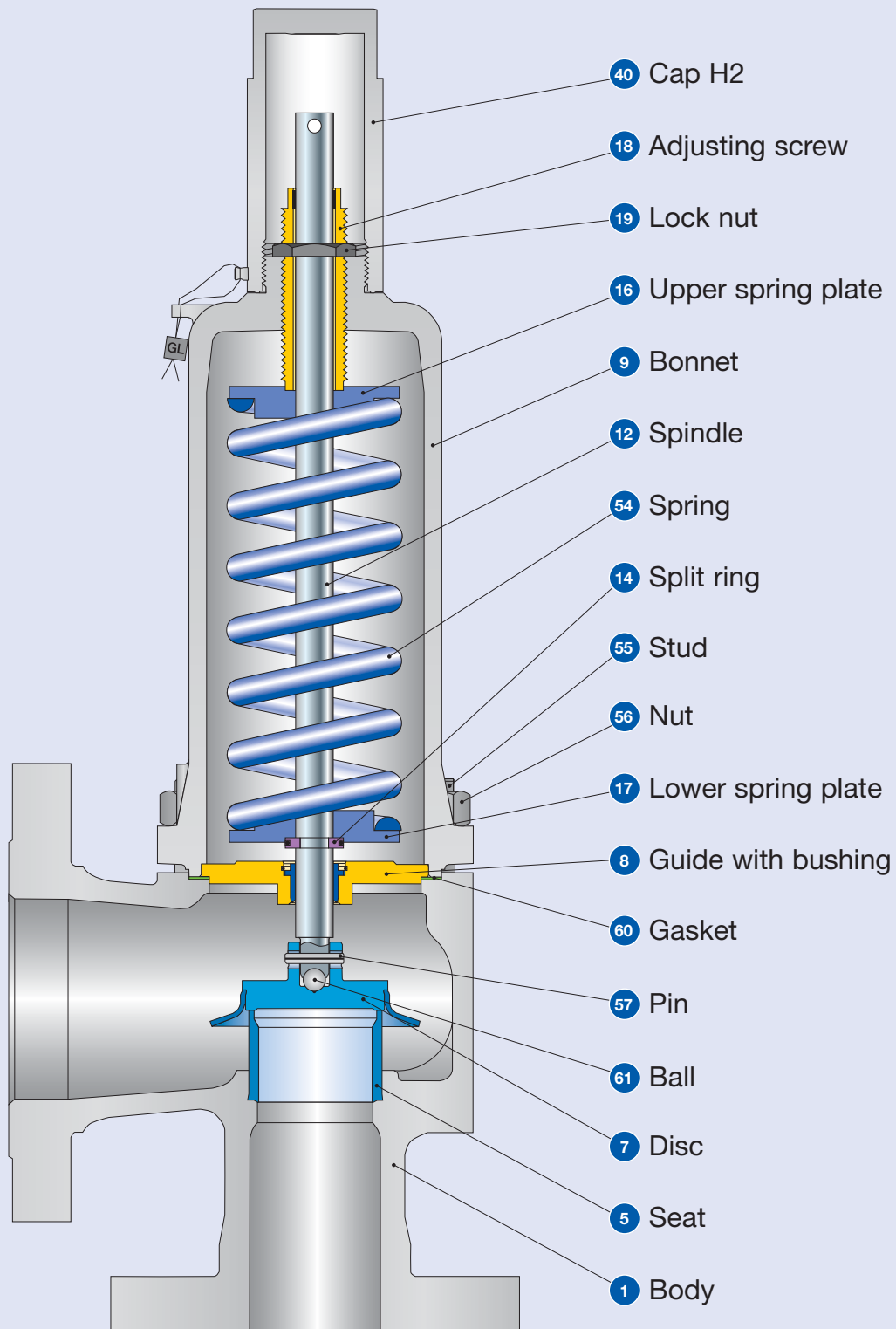
Facts

LESER

The-Safety-Valve.com

Conventional design

Type 441, 442 ANSI



Conventional design

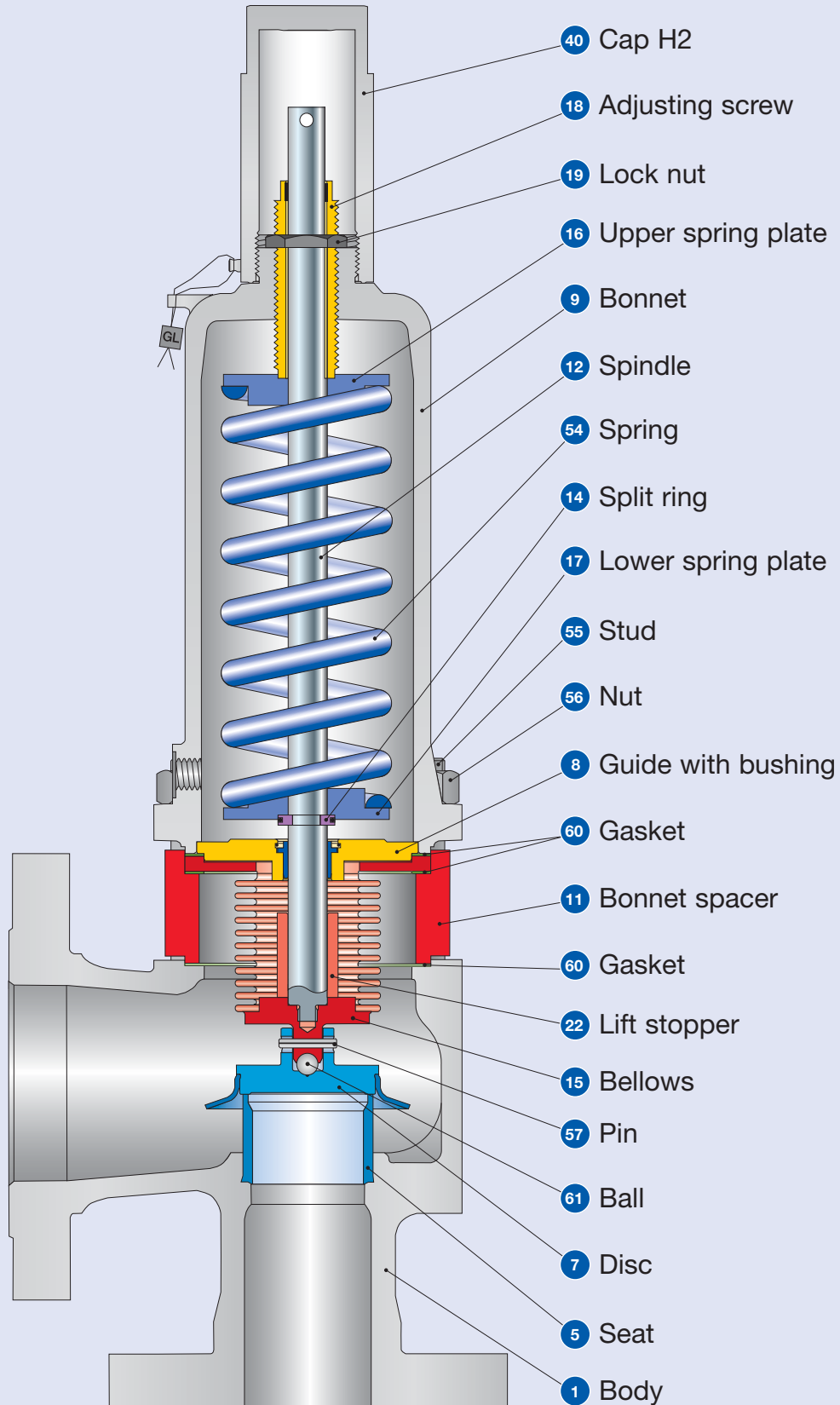
Materials			
Item	Component	Type 4412 / 4422 ANSI	Type 4414 ANSI
1	Body	1.0619	1.4408
		SA 216 WCB	SA 351 CF8M
5	Seat	1.4404	1.4404
		316L	316L
7	Disc	1.4122	1.4404
		Hardened stainless steel	316L
8	Guide with bushing	1.4104, 1.0501, 0.7040	1.4404
		Chrome or carbon steel	316L
		1.4104 tenifer	-
		Chrome steel tenifer	-
9	Bonnet	0.7040, 0.7043, 1.0619	1.4408, 1.4404, 1.4571
		Ductile Gr. 60-40-18, SA 216 WCB	SA 351 CF8M, SA 479 316L, SA 479 316Ti
12	Spindle	1.4021	1.4404
		420	316L
14	Split ring	1.4104	1.4404
		Chrome steel	316L
16/17	Spring plate	1.0718	1.4404
		Steel	316L
18	Adjusting screw with bushing	1.4104 PTFE	1.4404 PTFE
		Chrome steel PTFE	316L PTFE
19	Lock nut	1.0718	1.4404
		Steel	316L
40	Cap H2	1.0718 or 0.7043	1.4404
		12L13 or Gr. 60-40-18	316L
54	Spring standard Spring optional	1.1200, 1.8159, 1.7102	1.4310
		Carbon steel	Stainless steel
55	Stud	1.4310	-
		Stainless steel	-
55	Stud	1.1181	1.4401
		Steel	B8M
56	Nut	1.0501	1.4401
		2H	8M
57	Pin	1.4310	1.4310
		Stainless steel	Stainless steel
60	Gasket	Graphite / 1.4401	Graphite / 1.4401
		Graphite / 316	Graphite / 316
61	Ball	1.3541	1.4401
		Hardened stainless steel	316

Please notice:

- Modifications reserved by LESER.
- If several materials are specified LESER defines the material.
- LESER can upgrade materials without notice.
- Every part can be replaced by other material acc. to customer specification.

Balanced bellows design

Type 441, 442 ANSI



Balanced bellows design

Materials		Type 4412 / 4422 ANSI	Type 4414 ANSI
1	Body	1.0619	1.4408
		SA 216 WCB	SA 351 CF8M
5	Seat	1.4404	1.4404
		316L	316L
7	Disc	1.4122	1.4404
		Hardened stainless steel	316L
8	Guide with bushing	1.4104, 1.0501, 0.7040	1.4404
		Chrome or carbon steel	316L
		1.4104 tenifer	-
9	Bonnet	0.7040, 0.7043, 1.0619	1.4408, 1.4404, 1.4571
		Ductile Gr. 60-40-18, SA 216 WCB	SA 351 CF8M, SA 479 316L, SA 479 316Ti
11	Bonnet spacer	1.4404	1.4404
		316L	316L
12	Spindle	1.4404	1.4404
		316L	316L
14	Split ring	1.4104	1.4404
		Chrome steel	316L
15	Bellows	1.4571	1.4571
		316Ti	316Ti
16/17	Spring plate	1.0718	1.4404
		Steel	316L
18	Adjusting screw with bushing	1.4104 PTFE	1.4404 PTFE
		Chrome steel PTFE	316L PTFE
19	Lock nut	1.0718	1.4404
		Steel	316L
22	Lift stopper	1.4404	1.4404
		316L	316L
40	Cap H2	1.0718 or 0.7043	1.4404
		12L13 or Gr. 60-40-18	316L
54	Spring standard	1.1200, 1.8159, 1.7102	1.4310
		Carbon steel	Stainless steel
55	Stud	1.4401	1.4401
		B8M	B8M
56	Nut	1.4401	1.4401
		8M	8M
57	Pin	1.4310	1.4310
		Stainless steel	Stainless steel
60	Gasket	Graphite / 1.4401	Graphite / 1.4401
		Graphite / 316	Graphite / 316
61	Ball	1.3541	1.3541
		Hardened stainless steel	316

Please notice:

- Modifications reserved by LESER.
- If several materials are specified LESER defines the material.
- 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			1" x 2"	1 1/2" x 2"	1 1/2" x 2 1/2"	2" x 3"	3" x 4"	4" x 6"
Valve size			1" x 2"	1 1/2" x 2"	1 1/2" x 2 1/2"	2" x 3"	3" x 4"	4" x 6"
Actual Orifice diameter d_0 [mm]			23	29	37	46	60	92
Actual Orifice area A_0 [mm ²]			416	661	1075	1662	2827	6648
Body material: 1.0619 (WCB)								
Bonnet closed	H2	Art.-No. 4412.	4812	4822	4832	4842	4862	4872
	H3	Art.-No. 4412.	4813	4823	4833	4843	4863	4873
	H4	Art.-No. 4412.	4814	4824	4834	4844	4864	4874
open	H3	Art.-No. 4422.	4815	4825	4835	4845	4865	4875
Body material: 1.4408 (CF8M)								
Bonnet closed	H2	Art.-No. 4414.	7912	–	7932	7942	7962	7972
	H4	Art.-No. 4414.	7914	–	7934	7944	7964	7974

Dimensions and weights

US Units							
Valve size		1" x 2"	1 1/2" x 2"	1 1/2" x 2 1/2"	2" x 3"	3" x 4"	4" x 6"
Actual Orifice diameter d ₀ [inch]		0.91	1.14	1.46	1.81	2.36	3.62
Actual Orifice area A ₀ [inch ²]		0.644	1.024	1.667	2.576	4.383	10.304
Weight							
[lbs]		22	29	35	49	73	165
	with bellows	23	30	38	52	81	183
Center to face							
[inch]	Inlet a	4 1/8	4 7/8	4 7/8	5 3/8	6 1/8	7 1/8
	Outlet b	4 1/2	4 3/4	4 3/4	4 7/8	6 1/2	9
Height (H4)							
[inch]	Standard H max.	13 11/32	17 29/32	19 17/32	21 1/16	26 31/32	33 7/32
	Bellows H max.	14 7/8	19 9/16	21 1/32	23 11/16	29 3/16	35 1/2
Support brackets							
[inch]	A						11
	B						6 1/4
	C						Ø 3/4
	D						9 7/8
	E						25

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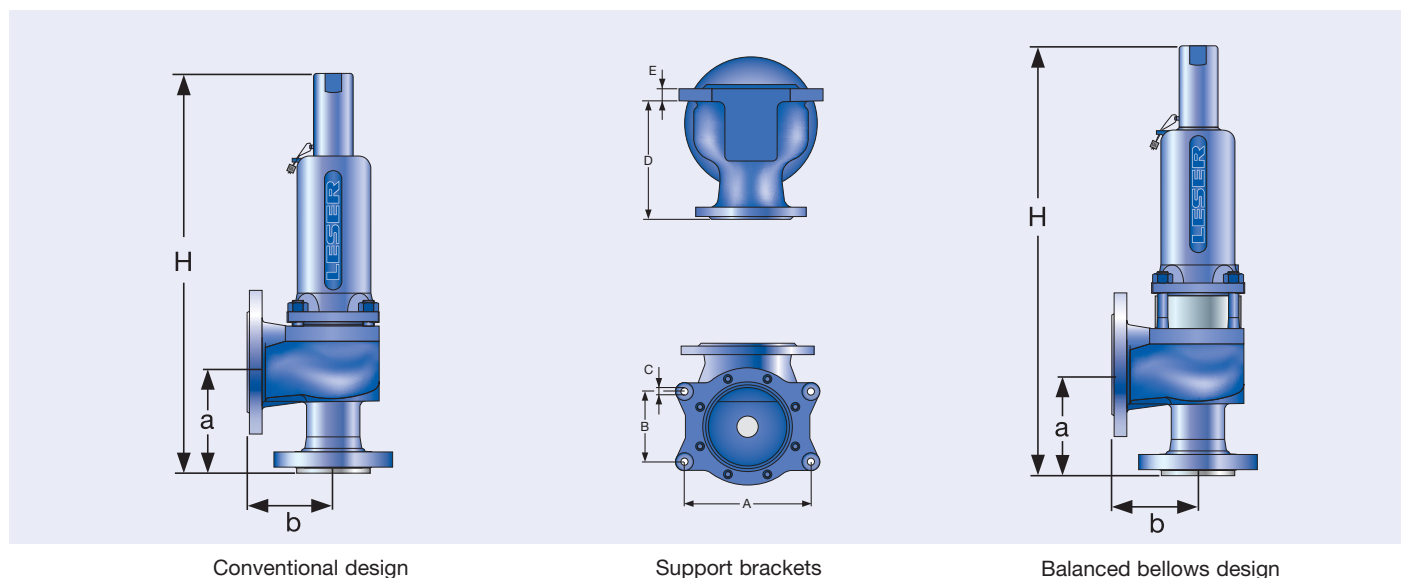
Body material: 1.0619 (WCB)

ANSI Flange Class¹⁾	Inlet	CL150 or CL300	
	Outlet	CL150	

Body material: 1.4408 (CF8M)

ANSI Flange Class¹⁾	Inlet	CL150 or CL300	-	CL150 or CL300
	Outlet	CL150	-	CL150

¹⁾ Standard flange rating. For other flange drillings and facings please refer to page 02/14.



Conventional design

Support brackets

Balanced bellows design

Pressure temperature ratings

US Units							
Valve size		1" x 2"	1 1/2" x 2"	1 1/2" x 2 1/2"	2 x 3"	3 x 4"	4 x 6"
Actual Orifice diameter d ₀ [inch]		0.91	1.14	1.46	1.81	2.36	3.62
Actual Orifice area A ₀ [inch ²]		0.644	1.024	1.667	2.576	4.383	1.304
Body material: 1.0619 (WCB)							
ANSI Flange Class ¹⁾	Inlet		CL150 or CL300				
	Outlet		CL150				
Minimum set pressure	p [psig]	S/G/L	1.5	1.5	1.5	1.5	1.5
Min. set pressure²⁾ standard bellows	p [psig]	S/G/L	43.5	43.5	43.5	43.5	43.5
Min. set pressure low press. bellows	p [psig]	S/G/L	14	20	16	26	17
Maximum set pressure	p [psig]	S/G/L	711	696	667	740	508
Max. set pressure with special spring	p [psig]	S/G/L	740	696	667	740	580
Temperature³⁾ acc. to DIN EN	min. [°F]		-121				
	max. [°F]		+842				
Temperature³⁾ acc. to ASME	min. [°F]		-20				
	max. [°F]		+800				

Body material: 1.4408 (CF8M)							
ANSI Flange Class ¹⁾	Inlet		CL150 or CL300	-	CL150 or C300		
	Outlet		CL150	-	CL150		
Minimum set pressure	p [psig]	S/G/L	1.5	-	1.5	1.5	1.5
Min. set pressure²⁾ standard bellows	p [psig]	S/G/L	43.5	-	43.5	43.5	43.5
Min. set pressure low press. bellows	p [psig]	S/G/L	14	-	16	26	17
Maximum set pressure	p [psig]	S/G/L	616	-	580	464	392
Max. set pressure with special spring	p [psig]	S/G/L	740	-	580	580	392
Temperature³⁾ acc. to DIN EN	min. [°F]		-454	-	-454		
	max. [°F]		+752	-	+752		
Temperature³⁾ acc. to ASME	min. [°F]		-450	-	-450		
	max. [°F]		+1000	-	+1000		

¹⁾ For flange rating class 150 the pressure temperature ratings according to ASME ANSI B 16.34 apply.

²⁾ Min. set pressure standard bellows = Max. set pressure low pressure bellows.

³⁾ Between -10 °C and lowest temperature indicated „AD 2000-Merkblatt“ W10 shall be taken into account.

Available Options

For further information refer to
"Accessories and Options", page 99/01

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