Type

441, 442

Full nozzle ANSI

Flanged Safety Relief Valves – spring loaded

Metric Units

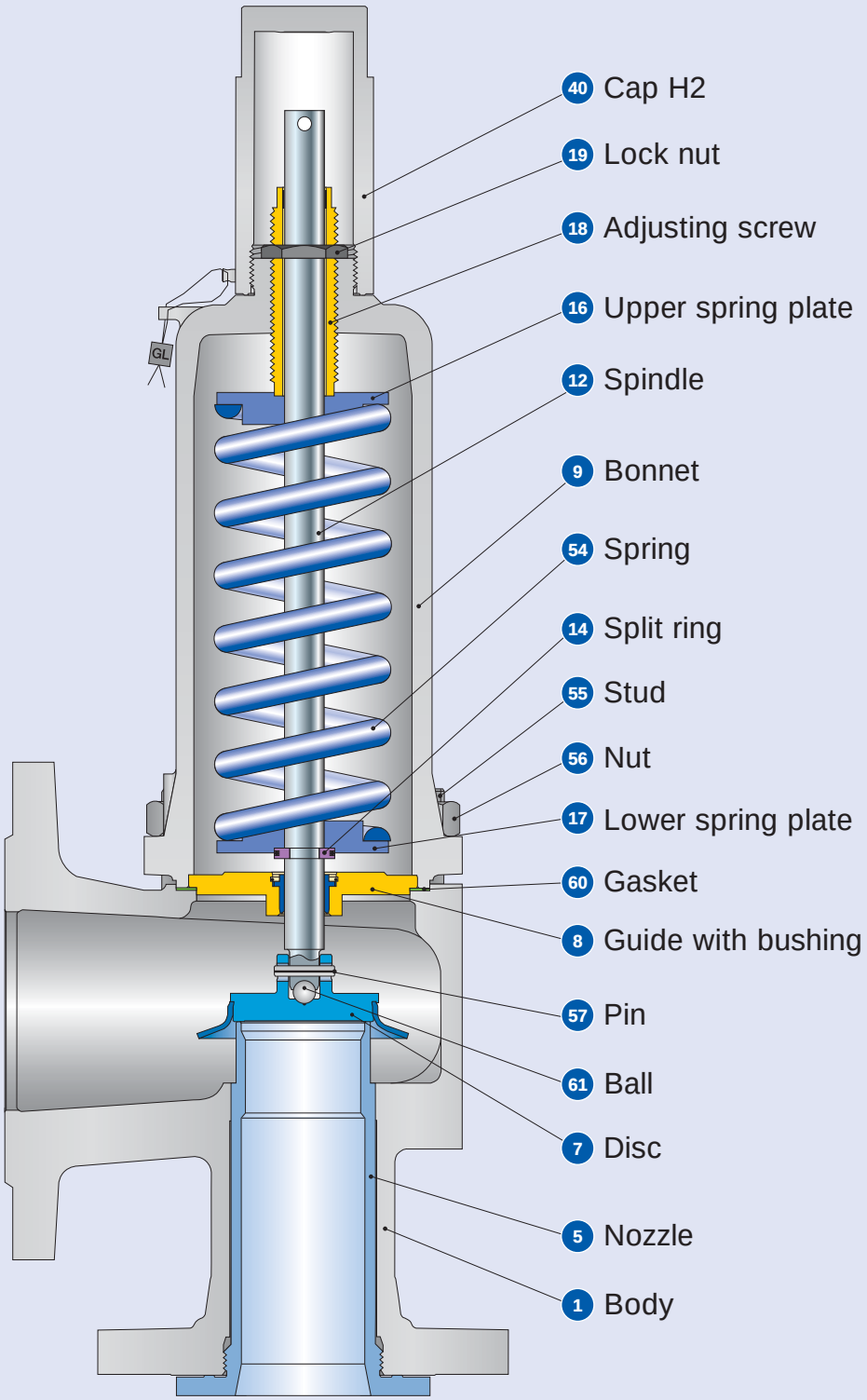
Facts

LESER

The-Safety-Valve.com

Type 441, 442 Full nozzle ANSI

Conventional design



Conventional design

Materials

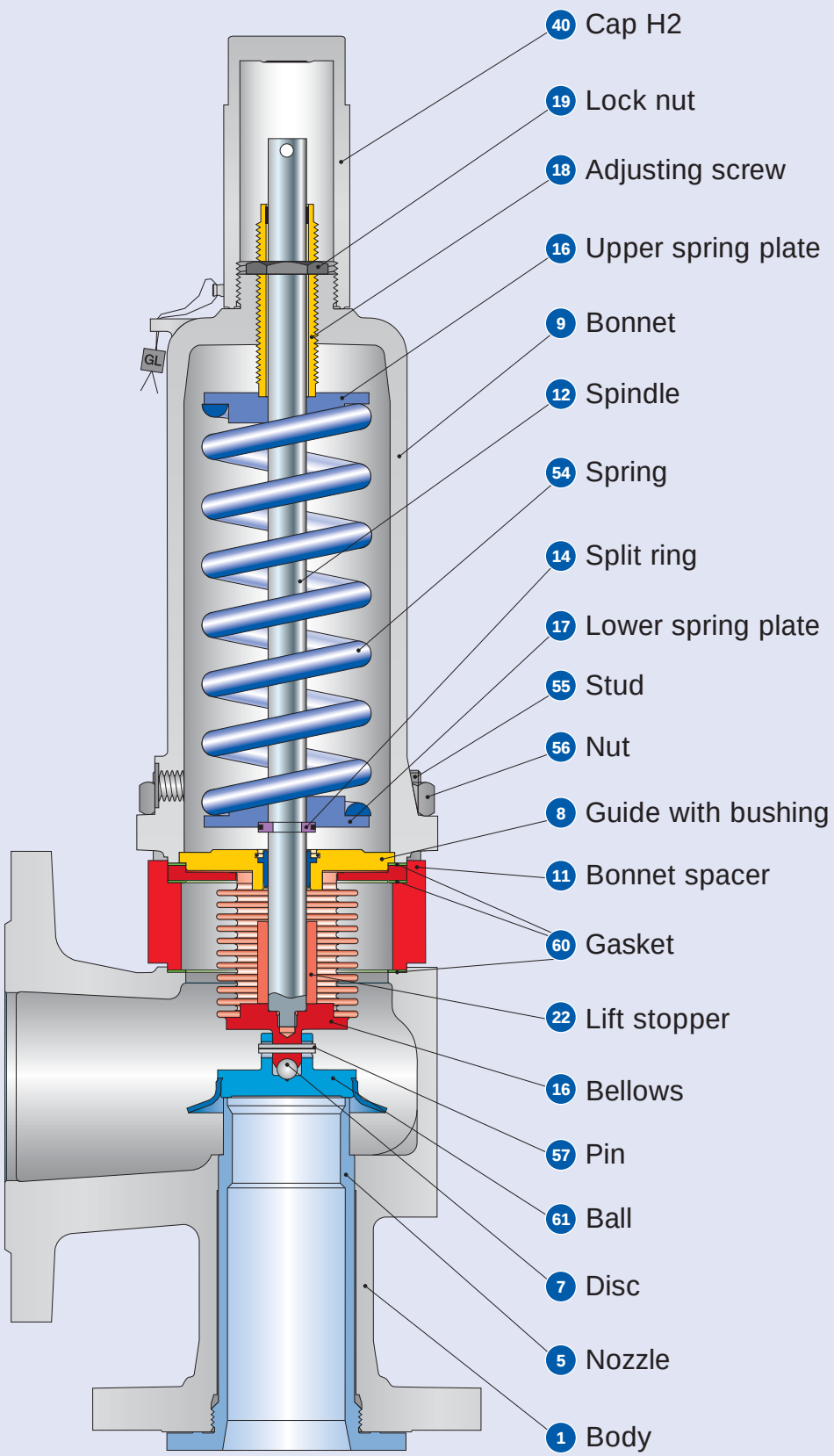
Item	Component	Type 4412 / 4422 Full nozzle ANSI	Type 4414 Full nozzle ANSI
1	**Body**	1.0619 SA 216 WCB	1.4408 SA 351 CF8M
5	Nozzle	1.4404 316L	1.4404 316L
7	Disc	1.4122 Hardened stainless steel	1.4404 316L
8	Guide	1.0501 Carbon steel	1.4404 316L
	with bushing	1.4104 tenifer Chrome steel	– –
9	**Bonnet**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

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 441, 442 Full nozzle ANSI

Balanced bellows design



Balanced bellows design

Materials

Item	Component	Type 4412 / 4422 Full nozzle ANSI	Type 4414 Full nozzle ANSI
1	**Body**	1.0619 SA 216 WCB	1.4408 SA 351 CF8M
5	Nozzle	1.4404 316L	1.4404 316L
7	Disc	1.4122 Hardened stainless steel	1.4404 316L
8	Guide	1.0501/0.7040 Chrome or carbon steel	1.4404 316L
	with bushing	1.4104 tenifer Chrome steel	– –
9	**Bonnet**	0.7040, 0.7043, 1.0619 Ductile Gr. 60-40-18, SA 216 WCB	1.4408 or 1.4571 SA 351 CF8M or SA 479 316Ti
11	Bonnet spacer	1.0460 Carbon steel	1.4404 316L
12	Spindle	1.4404 316L	1.4404 316L
14	Split ring	1.4104 Chrome steel	1.4404 316L
15	Bellows	1.4571 316 Ti	1.4571 316 Ti
16 / 17	Spring plate	1.0718 Steel	1.4404 316L
18	Adjusting screw with bushing	1.4104 PTFE Chrome steel PTFE	1.4404 PTFE 316L PTFE
19	Lock nut	1.0718 Steel	1.4404 316L
22	Lift stopper	1.4404 316L	1.4404 316L
40	Cap H2	1.0718 12L13	1.4404 316L
54	Spring standard	1.1200, 1.8159, 1.7102 Carbon steel	1.4310 Stainless steel
	Spring optional	1.4310 Stainless steel	– –
55	Stud	1.1181 Steel	1.4401 B8M
56	Nut	1.0501 2H	1.4401 8M
57	Pin	1.4310 Stainless steel	1.4310 Stainless steel
60	Gasket	Graphite / 1.4401 Graphite / 316	Graphite / 1.4401 Graphite / 316
61	Ball	1.3541 Hardened stainless steel	1.4401 316

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

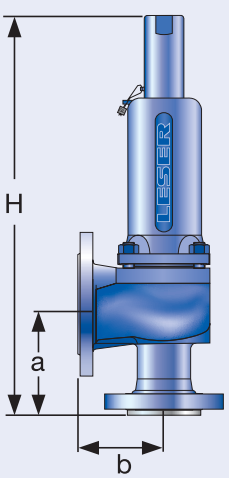
			Valve size	1" x 2"	1 1/2" x 2"	1 1/2" x 2 1/2"	2" x 3"	3" x 4"	4" x 6"
			Actual Orifice diameter d_0 [mm]	23	29	37	46	60	92
			Actual Orifice area A_0 [mm²]	416	661	1075	1662	2827	6648
Body material: 1.0619 (WCB)									
Bonnet closed	**H2**	Art.-No. **4412.**		**1282**	**1292**	**1302**	**1312**	**1322**	**1332**
	H3	Art.-No. **4412.**		**1283**	**1293**	**1303**	**1313**	**1323**	**1333**
	H4	Art.-No. **4412.**		**1284**	**1294**	**1304**	**1314**	**1324**	**1334**
open	**H3**	Art.-No. **4422.**		**1285**	**1295**	**1305**	**1315**	**1325**	**1335**
Body material: 1.4408 (CF8M)									
Bonnet closed	**H2**	Art.-No. **4414.**		**5682**	**–**	**5702**	**5712**	**5722**	**5732**
	H4	Art.-No. **4414.**		**5684**	**–**	**5704**	**5714**	**5724**	**5734**

Type 441, 442 Full nozzle ANSI

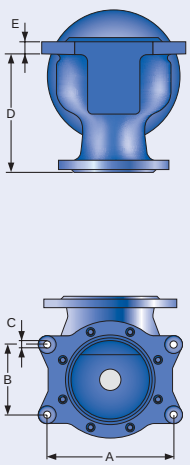
Dimensions and weights

Metric Units

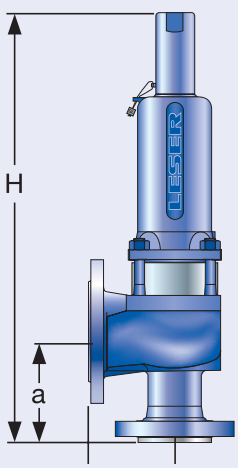
	Valve size	1" x 2"	1 1/2" x 2"	1 1/2" x 2 1/2"	2" x 3"	3" x 4"	4" x 6"
	Actual Orifice diameter d_0 [mm]	23	29	37	46	60	92
	Actual Orifice area A_0 [inch^2]	416	661	1075	1662	2827	6648
Weight [lbs]		10	13	16	22	33	75
	with bellows	11	14	17	24	37	83
Center to face [mm]	Inlet a	109	129,5	129,5	141	163	188
	Outlet b	114	121	121	124	165	229
Height (H4) [mm]	Standard H max.	339	455	496	556	685	844
	Bellows H max.	378	497	534	602	741	902
Support brackets [mm] (drilled only on request)	**A**						280
	B						160
	C						Ø 18
	D						250
	E						25
Body material: 1.0619 (WCB)							
ANSI Flange Class	Inlet	CL150 or CL300					
	Outlet	CL150					
Body material: 1.4408 (CF8M)							
ANSI Flange Class	Inlet	CL150 or CL300	–	CL150 or CL300			
	Outlet	CL150	–	CL150			



Conventional design



Support brackets



Balanced bellows design

Pressure temperature ratings

Metric 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 [mm]	23	29	37	46	60	92
	Actual Orifice area A_0 [mm]	416	661	1075	1662	2827	6648
Body material: 1.0619 (WCB)							
ANSI Flange Class[1]	Inlet	**CL150 or CL300**					
	Outlet	**CL150**					
Minimum set pressure	p [bar_g] S/G/L	0,1	0,1	0,1	0,1	0,1	0,1
Min. set press.[2] standard bellows	p [bar_g] S/G/L	3	3	3	3	3	3
Minimum low press. bellows	p [bar_g] S/G/L	0,98	1,41	1,11	1,81	1,50	1,18
Maximum set pressure	p [bar_g] S/G/L	49	48	46	51	35	34
Maximum with special spring	p [bar_g] S/G/L	51	48	46	51	40	34
Temperature acc. to DIN EN	min. [°C]	-85					
	max. [°C]	+450					
Temperature acc. to ASME	min. [°C]	-29					
	max. [°C]	+427					

Body material: 1.4408 (CF8M)							
ANSI Flange Class[1]	Inlet	**CL150 or CL300**	–	**CL150 or CL300**			
	Outlet	**CL150**	–	**CL150**			
Minimum set pressure	p [bar_g] S/G/L	0,1	–	0,1	0,1	0,1	0,1
Min. set press.[2] standard bellows	p [bar_g] S/G/L	3	–	3	3	3	3
Min. set press. low press. bellows	p [bar_g] S/G/L	0,98	–	1,11	1,81	1,50	1,18
Maximum set pressure	p [bar_g] S/G/L	42,5	–	27	25	27	15
Maximum with special spring	p [bar_g] S/G/L	51	–	38	40	27	25
Temperature acc. to DIN EN	min. [°C]	-270	–	-270			
	max. [°C]	+400	–	+400			
Temperature acc. to ASME	min. [°C]	-268	–	-268			
	max. [°C]	+538	–	+538			

[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.

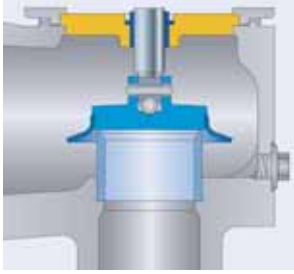
Type 441, 442 Full nozzle ANSI

Available Options

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

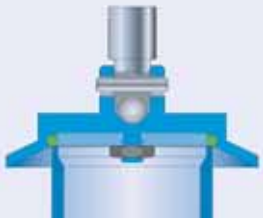
Heating jacket
H29, H30: Couplings G $^{3}/_{8}$, G $^{3}/_{4}$
H31, H32: Flanges DN 15, DN 25

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

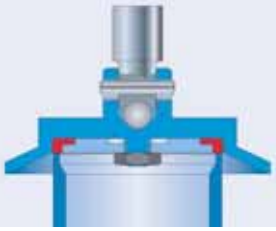


Open bonnet
See Art.-No.

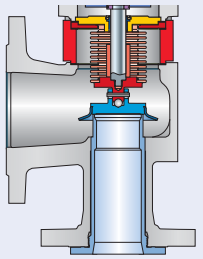
O-ring-disc
J20: FFKM “C”
J21: CR “K”
J22: EPDM “D”
J23: FKM “L”



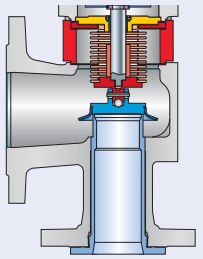
Disc with inserted sealing plate
J44: PTFE-FDA
J48: PCTFE
J49: SP



Stainless steel bellows
J68: Open bonnet
J78: Closed bonnet



Conversion kit for stainless steel bellows
See Art.-No. page 07/15

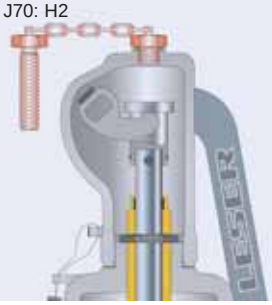


Screwed cap H2
H2

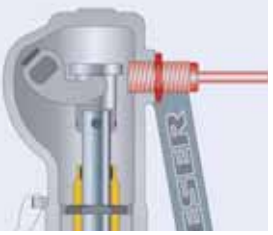
Plain lever H3
H3

Packed lever H4
H4

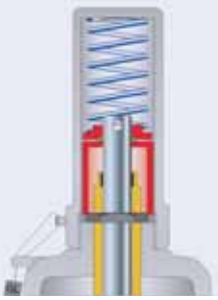
Test gag
J69: H4
J70: H2



Lift indicator
J39: Adaptor H4
J93: Lift indicator



O-ring-damper H2
J65



O-ring-damper H4
J66