



Type

441, 442

Full nozzle ANSI

Flanged Safety Relief Valves
- spring loaded

US Units



Facts

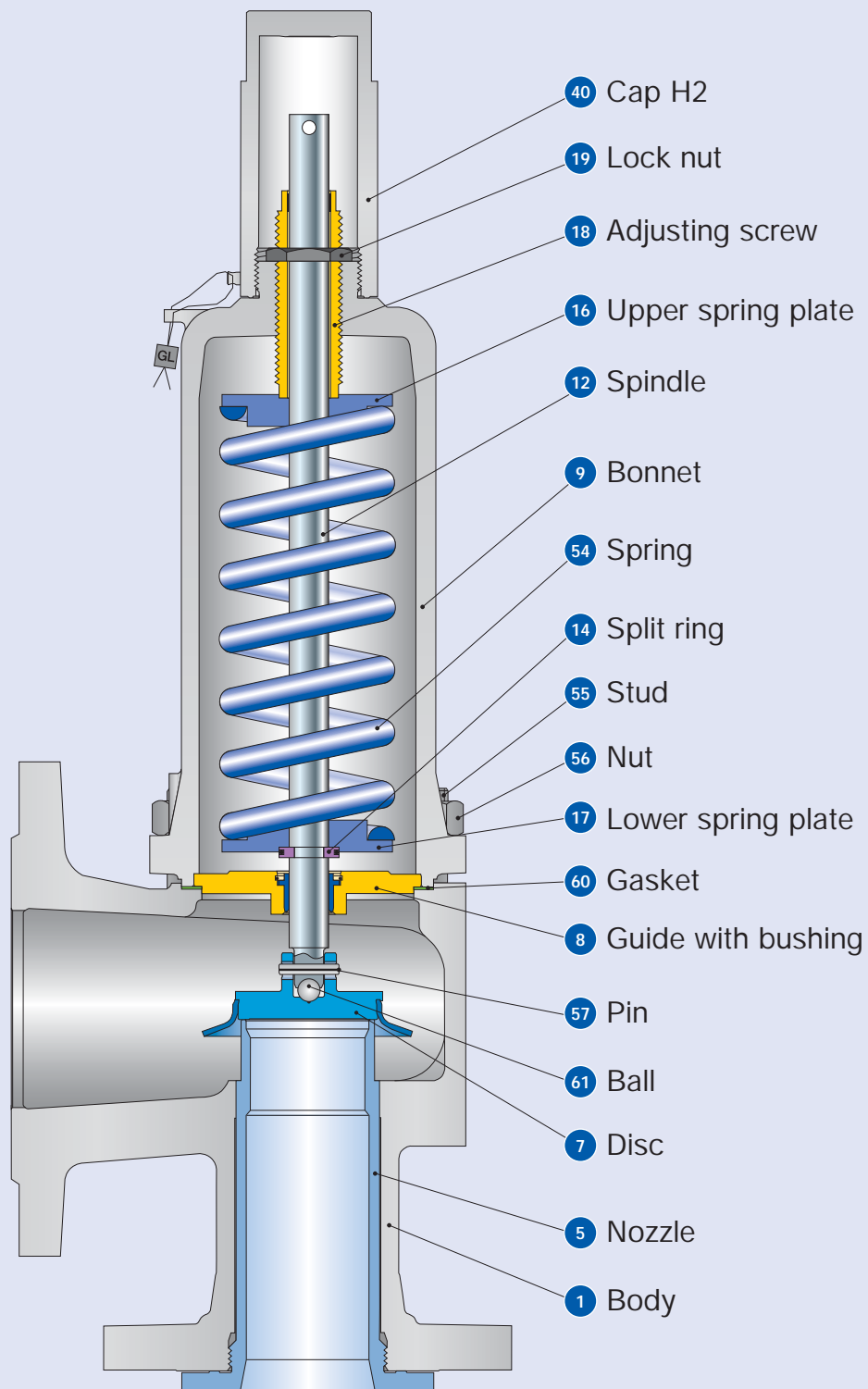
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Type 441, 442 Full nozzle ANSI **LESER**

Conventional design

Type 441, 442 Full nozzle ANSI



Type 441, 442 Full nozzle ANSI **LESER**

Conventional design

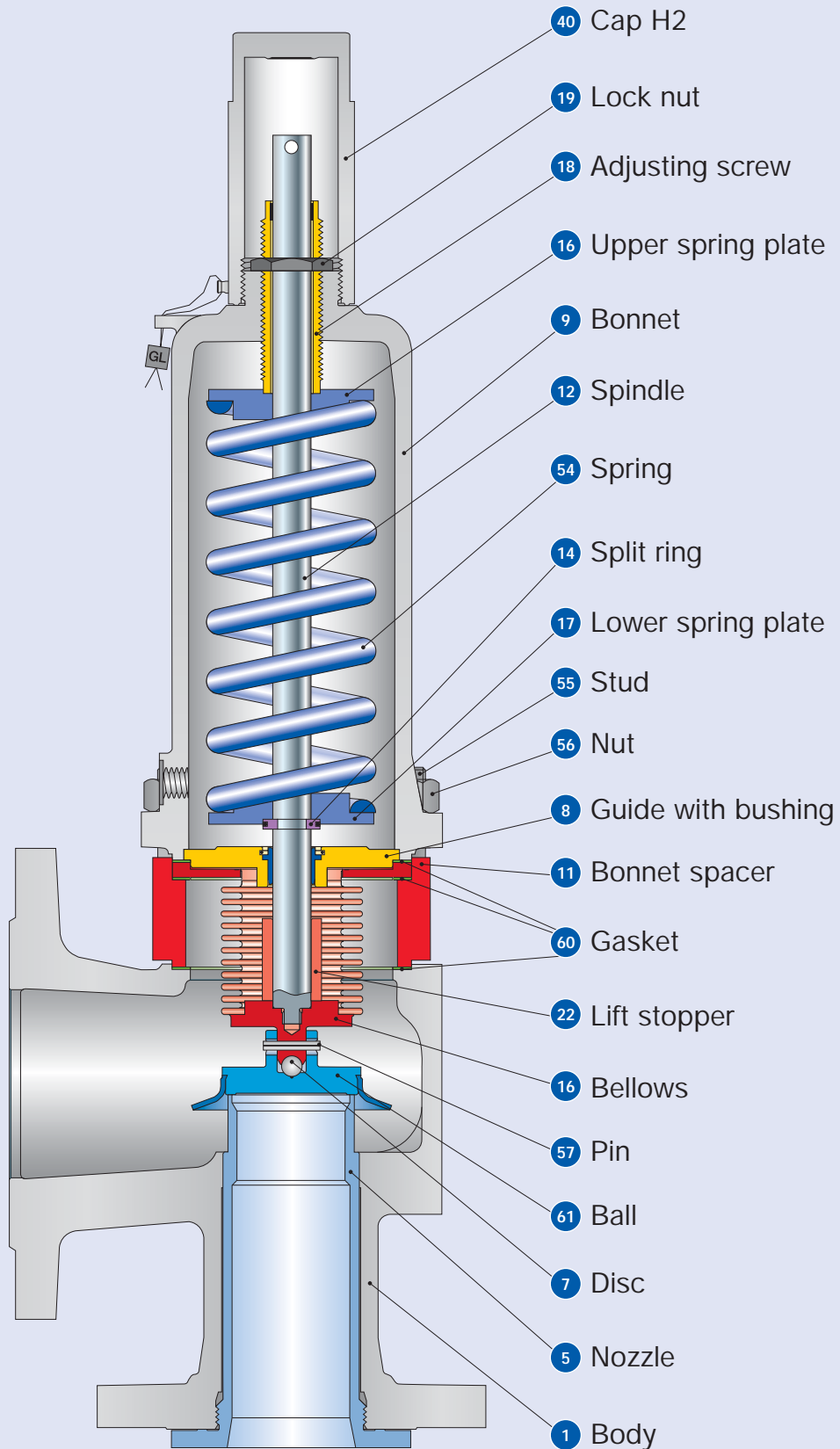
Materials			
Item	Component	Type 4412 / 4422 Full nozzle ANSI	Type 4414 Full nozzle ANSI
1	Body	1.0619	1.4408
		SA 216 WCB	SA 351 CF8M
5	Nozzle	1.4404	1.4404
		316L	316L
7	Disc	1.4122	1.4404
		Hardened stainless steel	316L
8	Guide with bushing	1.0501	1.4404
		Carbon steel	316L
		1.4104 tenifer	-
		Chrome steel	-
9	Bonnet	0.7040, 0.7043, 1.0619	1.4408 or 1.4571
		Ductile Gr. 60-40-18, SA 216 WCB	SA CF8M or 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
		12L13	316L
18	Adjusting screw with bushing	1.4104 PTFE	1.4404
		Chrome steel PTFE	316L PTFE
19	Lock nut	1.0718	1.4404
		Steel	316L
40	Cap H2	1.0718	1.4404
		12L13	316L
54	Spring standard	1.1200, 1.8159, 1.7102	1.4310
		Carbon steel	Stainless steel
	Spring optional	1.4310	-
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.
- LESER can upgrade materials without notice.
- Every part can be replaced by other material acc. to customer specification.

Type 441, 442 Full nozzle ANSI **LESER**

Balanced bellows design



Type 441, 442 Full nozzle ANSI

Type 441, 442 Full nozzle ANSI **LESER**

Balanced bellows design

Materials		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 with bushing	1.0501/0.7040 Chrome or carbon steel	1.4404 316L
		1.4104 tenifer Chrome steel	- -
		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
		1.0718 Steel	1.4404 316L
22	Lift stopper	1.4404 316L	1.4404 316L
40	Cap H2	1.0718 12L13	1.4404 316L
		1.1200, 1.8159, 1.7102 Carbon steel	1.4310 Stainless steel
54	Spring standard Spring optional	1.4310 Stainless steel	- -
		1.1181 Steel	1.4401 B8M
55	Stud	1.0501 2H	1.4401 8M
56	Nut	1.4310 Stainless steel	1.4310 Stainless steel
57	Pin	1.4310 Stainless steel	1.4310 Stainless steel
		Graphite / 1.4401 Graphite / 316	Graphite / 1.4401 Graphite / 316
60	Gasket	1.3541 Hardened stainless steel	1.4401 316
61	Ball		

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Type 441, 442 Full nozzle ANSI **LESER**

How to order – Article numbers

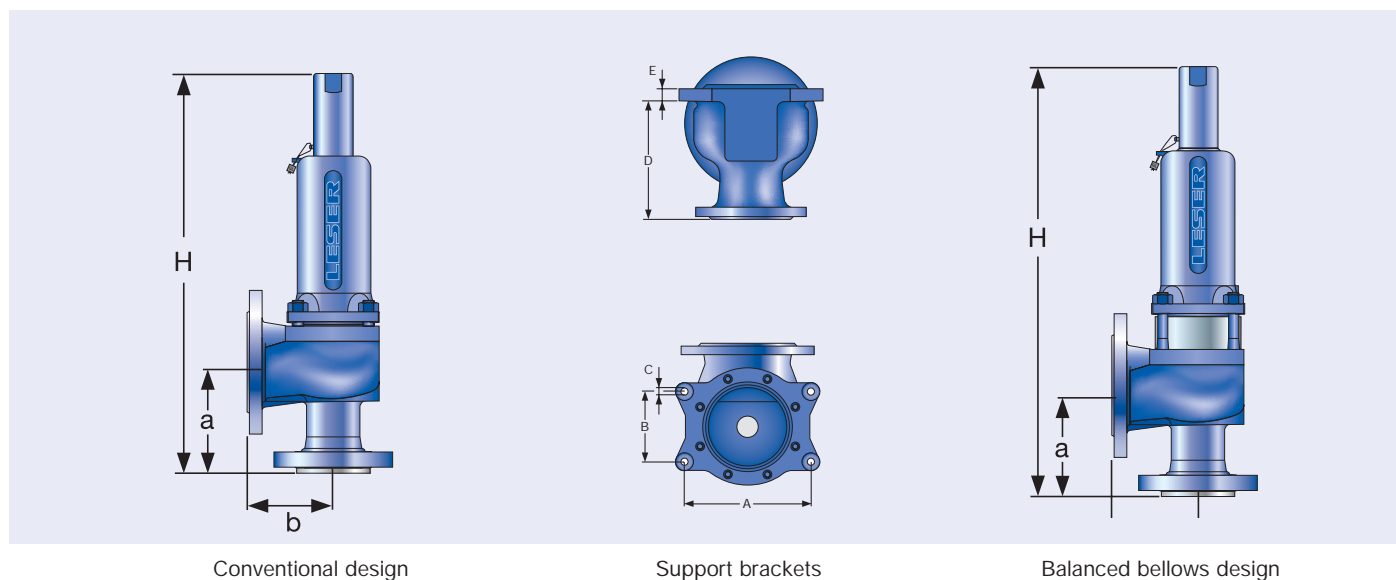
Article numbers			1" x 2"	1 1/2" x 2"	1 1/2" x 2 1/2"	2" x 3"	3" x 4"	4" x 6"
Valve size			1" x 2"	1 1/2" x 2"	1 1/2" x 2 1/2"	2" x 3"	3" x 4"	4" x 6"
Actual Orifice diameter d ₀ [mm]			23	29	37	46	60	92
Actual Orifice area A ₀ [mm ²]			416	661	1075	1662	2827	6648
Body material: 1.0619 (WCB)								
closed	Bonnet 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)								
closed	Bonnet H2	Art.-No. 4414.	5682	–	5702	5712	5722	5732
	H4	Art.-No. 4414.	5684	–	5704	5714	5724	5734

Type 441, 442 Full nozzle ANSI **LESER**

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							
		22	29	35	49	73	165
[lbs]	with bellows	23	30	38	52	81	183
Center to face							
	Inlet a	4 1/4	5 1/8	5 1/8	5 1/2	6 3/8	7 3/8
[inch]	Outlet b	4 1/2	4 3/4	4 3/4	4 7/8	6 1/2	9
Height (H4)							
	Standard H max.	13 1/4	18 1/8	19 3/4	22 1/16	27 1/4	33 1/2
[inch]	Bellows H max.	15 1/16	19 13/16	21 1/4	23 7/8	29 7/16	35 13/16
Support brackets							
	A						11
[mm]	B						6 1/4
(drilled only on request)	C						Ø 3/4
	D						9 7/8
	E						1
Body material: 1.0619 (WCB)							
	ANSI Flange Inlet	CL150 or CL300					
Class	Outlet	CL150					
Body material: 1.4408 (CF8M)							
	ANSI Flange Inlet	CL150 or CL300	-	CL150 or CL300			
Class	Outlet	CL150	-	CL150			

Type 441, 442 Full nozzle ANSI



Type 441, 442 Full nozzle ANSI **LESER**

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_o [inch]		0,91	1,14	1,46	1,81	2,36	3,62
Actual Orifice area A_o [inch ²]		0,644	1,024	1,667	2,576	4,383	10,304
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 press. ²⁾ standard bellows	p [psig]	S/G/L	43,5	43,5	43,5	43,5	43,5
Minimum low press. bellows	p [psig]	S/G/L	14	20	16	26	22
Maximum set pressure	p [psig]	S/G/L	711	696	667	740	508
Maximum with special spring	p [psig]	S/G/L	740	696	667	740	580
Temperature acc. to DIN EN	min. [°F]		-121				
	max. [°F]		+842				
Temperature acc. to ASME	min. [°F]		-20				
	max. [°F]		+800				

Body material: 1.4408 (CF8M)							
ANSI Flange Class ¹⁾	Inlet		CL150 or CL300	–	CL150 or CL300		
	Outlet		CL150	–	CL150		
Minimum set pressure	p [psig]	S/G/L	1,5	–	1,5	1,5	1,5
Min. set press. ²⁾ standard bellows	p [psig]	S/G/L	43,5	–	43,5	43,5	43,5
Minimum low press. bellows	p [psig]	S/G/L	14	–	16	26	22
Maximum set pressure	p [psig]	S/G/L	616	–	392	363	392
Maximum with special spring	p [psig]	S/G/L	740	–	551	580	392
Temperature acc. to DIN EN	min. [°F]		-454		-454		
	max. [°F]		+752		+752		
Temperature 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.

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Available Options

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

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