



# Type

441, 442

Full nozzle DIN

Flanged Safety Relief Valves  
- spring loaded

Metric Units



# Facts

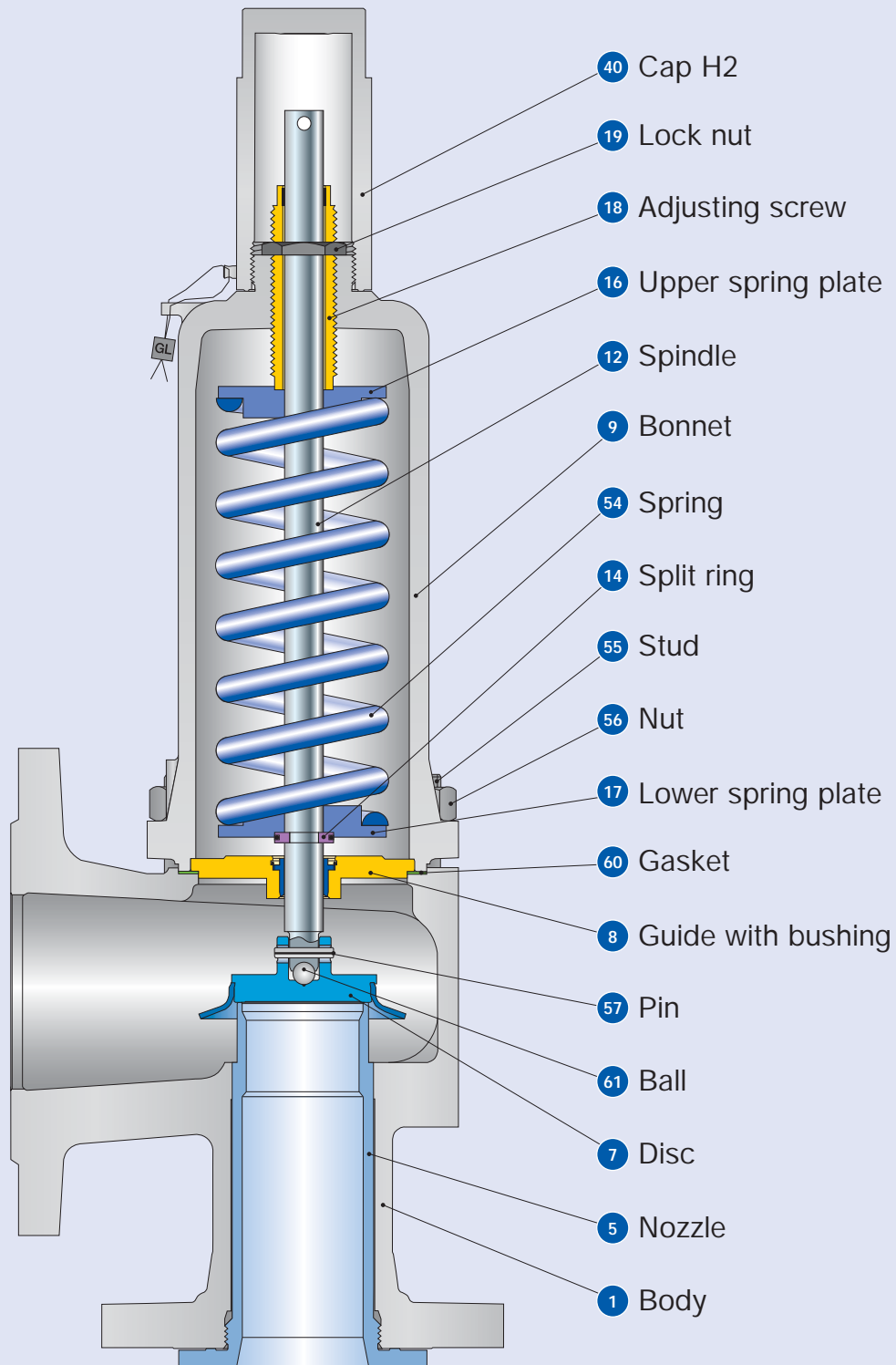
**LESER**

[The-Safety-Valve.com](http://The-Safety-Valve.com)

# Type 441, 442 Full Nozzle DIN **LESER**

Conventional design

Type 441, 442 Full nozzle DIN



# Type 441, 442 Full Nozzle DIN **LESER**

## Conventional design

Materials			
Item	Component	Type 4412 / 4422 Full nozzle DIN	Type 4414 Full nozzle DIN
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

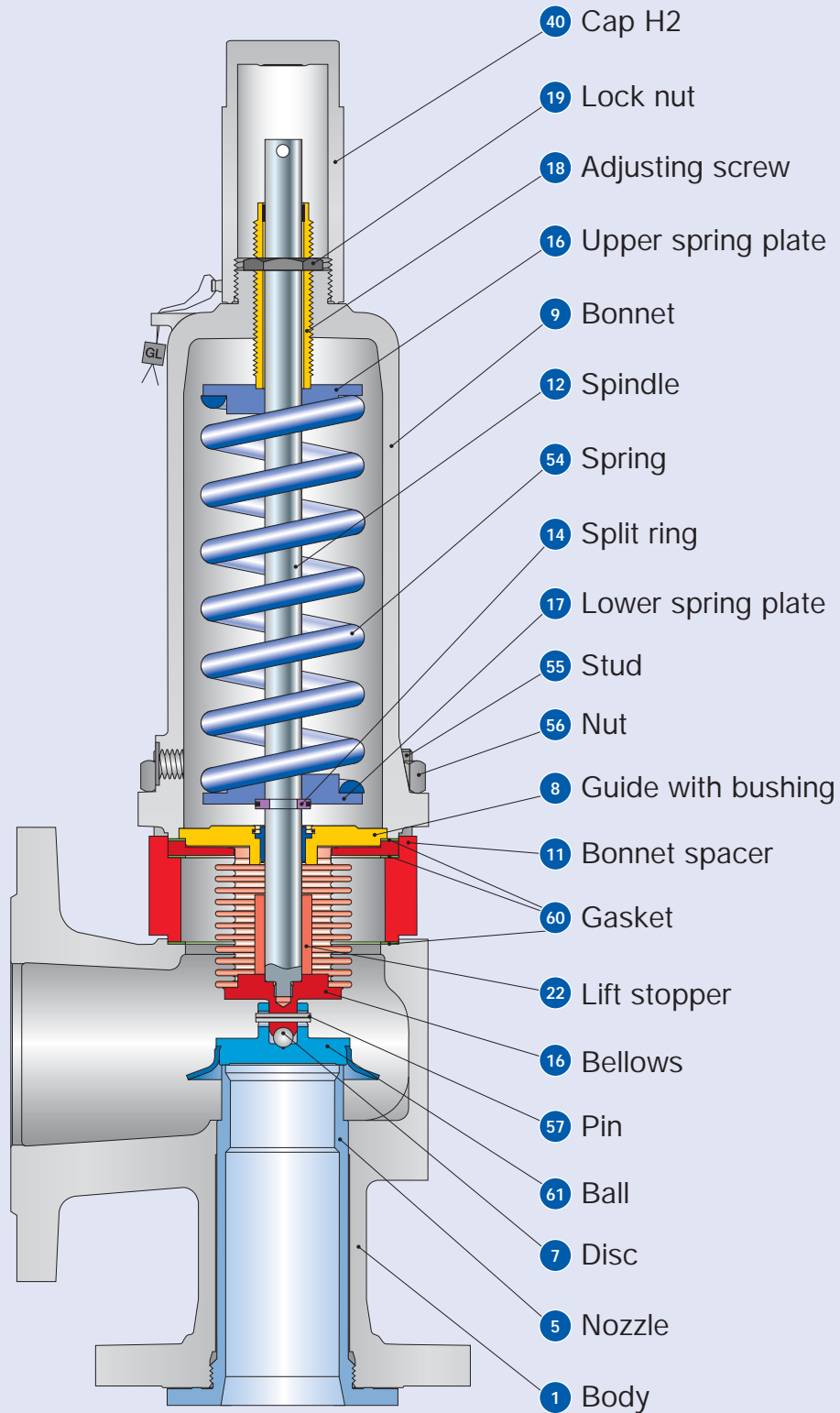
**Please notice:**

- 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 DIN **LESER**

Balanced bellows design

Type 441, 442 Full nozzle DIN



# Type 441, 442 Full nozzle DIN **LESER**

## Balanced bellows design

Materials			
Item	Component	Type 4412 / 4422 Full nozzle DIN	Type 4414 Full nozzle DIN
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 351 CF8M or SA 479 316Ti
11	Bonnet spacer	1.0460	1.4404
		Carbon steel	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
		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
22	Lift stopper	1.4404	1.4404
		316L	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 DIN **LESER**

## How to order – Article numbers

Article numbers					
	DN <sub>i</sub>		25	40	50
	DN <sub>o</sub>		40	65	80
	Actual Orifice diameter d <sub>0</sub> [mm]		23	37	46
	Actual Orifice area A <sub>0</sub> [mm <sup>2</sup> ]		416	1075	1662
<b>Body material: 1.0619 (WCB)</b>					
<b>Bonnet</b>	<b>H2</b>	Art.-No. <b>4412.</b>	<b>0572</b>	<b>0582</b>	<b>0592</b>
closed	<b>H3</b>	Art.-No. <b>4412.</b>	<b>0573</b>	<b>0583</b>	<b>0593</b>
	<b>H4</b>	Art.-No. <b>4412.</b>	<b>0574</b>	<b>0584</b>	<b>0594</b>
open	<b>H3</b>	Art.-No. <b>4422.</b>	<b>0575</b>	<b>0585</b>	<b>0595</b>
<b>Body material: 1.4408 (CF8M)</b>					
<b>Bonnet</b>	<b>H2</b>	Art.-No. <b>4414.</b>	<b>0952</b>	<b>0962</b>	<b>0972</b>
closed	<b>H4</b>	Art.-No. <b>4414.</b>	<b>0954</b>	<b>0964</b>	<b>0974</b>

For sizes DN 80/3" and above please select Series 526 valves, DIN drilled or 441 Full nozzle ANSI, DIN drilled.

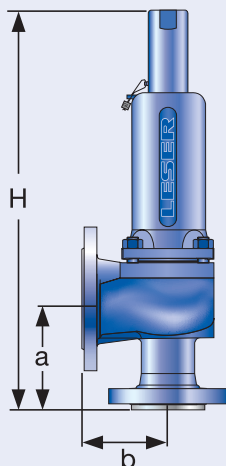
# Type 441, 442 Full nozzle DIN **LESER**

## Dimensions and weights

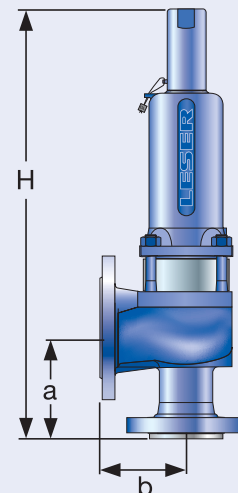
### Metric Units

	DN <sub>i</sub>	25	40	50
	DN <sub>o</sub>	50	65	80
	Actual Orifice diameter d <sub>0</sub> [mm]	23	37	46
	Actual Orifice area A <sub>0</sub> [mm <sup>2</sup> ]	416	1075	1662
<b>Weight</b> [kg]		9	16	22
	with bellows	10	17	24
<b>Center to face</b> [mm]	Inlet a	111	143,5	154
	Outlet b	100	115	120
<b>Height (H4)</b> [mm]	Standard H max.	345	515,5	573
	Bellows H max.	384	553,5	619
<b>Body material: 1.0619 (WCB)</b>				
<b>DIN Flange<sup>1)</sup></b>	Inlet	PN 40 or 16		
	Outlet	PN 16		
<b>Body material: 1.4408 (CF8M)</b>				
<b>DIN Flange<sup>1)</sup></b>	Inlet	PN 40 or 16		
	Outlet	PN 16		

<sup>1)</sup> Standard flange rating. For other flange drillings and facings please refer to page 06/14.



Conventional design



Balanced bellows design

# Type 441, 442 Full nozzle DIN **LESER**

## Pressure temperature ratings

### Metric Units

DN <sub>i</sub>	25	40	50
DN <sub>o</sub>	50	65	80
Actual Orifice diameter d <sub>0</sub> [mm]	23	37	46
Actual Orifice area A <sub>0</sub> [mm <sup>2</sup> ]	416	1075	1662

### Body material: 1.0619 (WCB)

DIN Flange	Inlet		PN 40 or 16		
	Outlet		PN 16		
<b>Minimum set pressure</b>	p [bar <sub>g</sub> ]	S/G/L	0,1	0,1	0,1
<b>Min. set pressure<sup>1)</sup> standard bellows</b>	p [bar <sub>g</sub> ]	S/G/L	3	3	3
<b>Min. set pressure low press. bellows</b>	p [bar <sub>g</sub> ]	S/G/L	0,98	1,11	1,81
<b>Maximum set pressure</b>	p [bar <sub>g</sub> ]	S/G/L	40	40	40
<b>Max. set pressure with special spring</b>	p [bar <sub>g</sub> ]	S/G/L	40	40	40
<b>Temperature acc. to DIN EN</b>	min. [°C]		-85		
	max. [°C]		+450		
<b>Temperature acc. to ASME</b>	min. [°C]		-29		
	max. [°C]		+427		

### Body material: 1.4408 (CF8M)

DIN Flange	Inlet		PN 40 or 16		
	Outlet		PN 16		
<b>Minimum set pressure</b>	p [bar <sub>g</sub> ]	S/G/L	0,1	0,1	0,1
<b>Min. set pressure<sup>1)</sup> standard bellows</b>	p [bar <sub>g</sub> ]	S/G/L	3	3	3
<b>Min. set pressure low press. bellows</b>	p [bar <sub>g</sub> ]	S/G/L	0,98	1,11	1,81
<b>Maximum set pressure</b>	p [bar <sub>g</sub> ]	S/G/L	40	40	33
<b>Max. set pressure with special spring</b>	p [bar <sub>g</sub> ]	S/G/L	40	40	37
<b>Temperature acc. to DIN EN</b>	min. [°C]		-270		
	max. [°C]		+400		
<b>Temperature acc. to ASME</b>	min. [°C]		-268		
	max. [°C]		+538		

<sup>1)</sup> Min. set pressure standard bellows = Max. set pressure low pressure bellows.



# Type 441, 442 Full nozzle DIN **LESER**

## Available Options

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

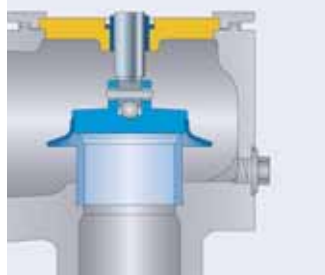
### Heating jacket

H29, H30: Couplings G  $\frac{3}{8}$ , G  $\frac{3}{4}$   
H31, H32: Flanges DN 15, DN 25



### Drain hole

J18: G  $\frac{1}{4}$   
J19: G  $\frac{1}{2}$



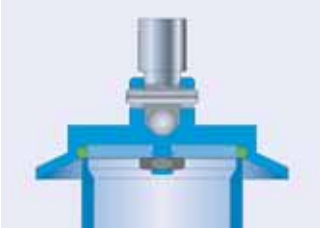
### Open bonnet

See Art.-No.



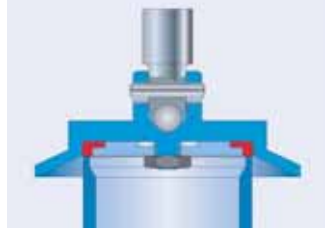
### O-ring-disc

J20: FFKM "C"  
J21: CR "K"  
J22: EPDM "D"  
J23: FKM "L"



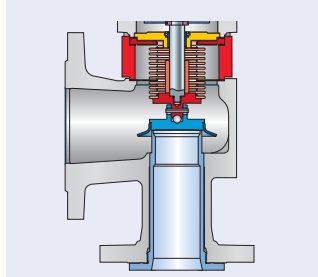
### Disc with inserted sealing plate

J44: PTFE-FDA  
J48: PCTFE  
J49: SP



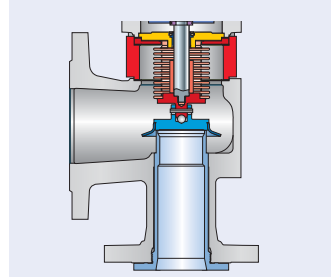
### Stainless steel bellows

J68: Open bonnet  
J78: Closed bonnet



### Conversion kit for stainless steel bellows

See Art.-No. page 06/15



### Screwed cap H2



### Plain lever H3

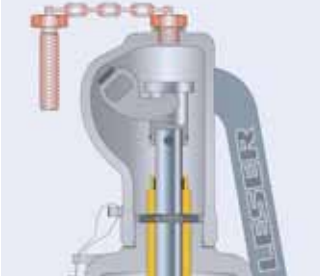


### Packed lever H4



### Test gag

J69: H4  
J70: H2



### Lift indicator

J39: Adaptor H4  
J93: Lift indicator



### O-ring-damper H2

J65



### O-ring-damper H4

J66

