

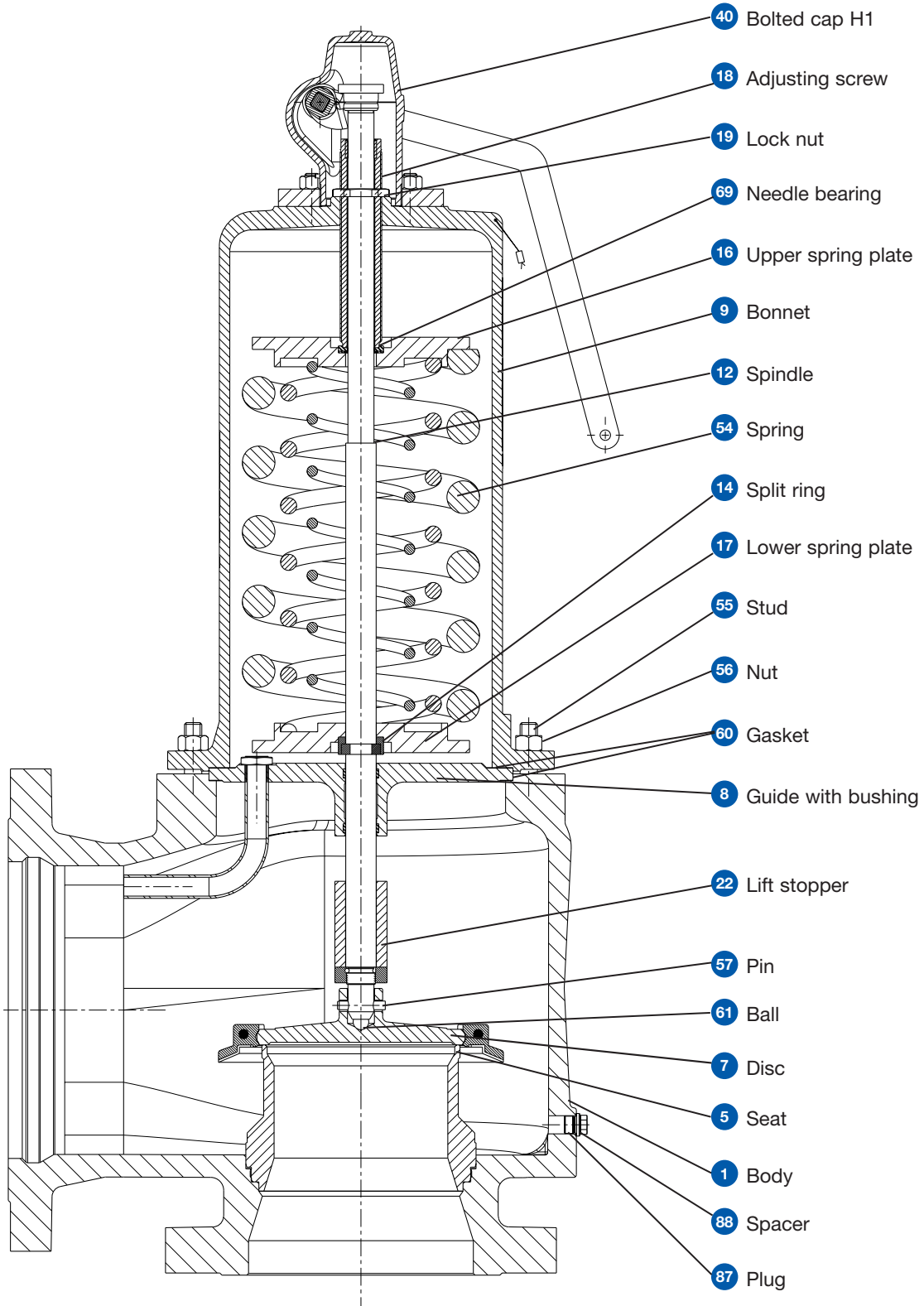


**Type 441, 442 XXL**  
**New version in cast design**

<b>Contents</b>	<b>Page</b>
<b>Materials</b>	
• Conventional design	2
• Balanced bellows design	4
<b>Article numbers</b>	6
<b>Dimensions and weights</b>	
• Metric Units	7
• US Units	8
<b>Pressure temperature ratings</b>	
• Metric Units	9
• US Units	10
<b>Flange drillings and facings</b>	
Approvals	12
Available options	13

**Type 441 XXL**  
Packed lever H4  
Closed bonnet  
Conventional and balanced  
bellows design

**Type 441, 442 XXL**  
**Conventional design**



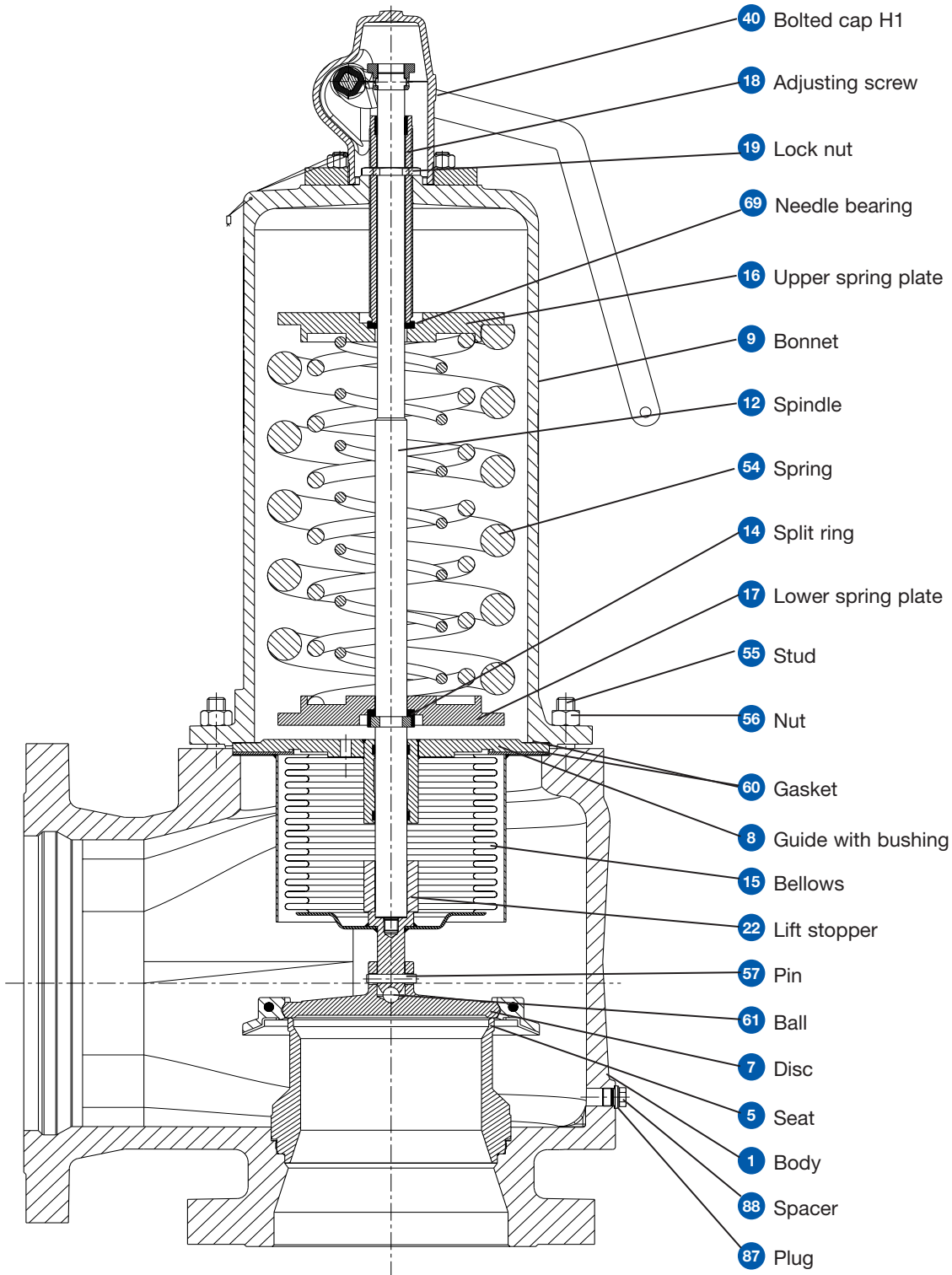
## Type 441, 442 XXL Conventional design Materials

**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.
- <sup>1)</sup> Bolted cap H1 only available for DN 200 and DN 250.

Item	Component	Type 4412 XXL / 4422 XXL		Type 4414 XXL	
1	Body	1.0619		1.4408	
		SA-216 WCB/WCC/LCB/LCC		SA-351 CF8M	
5	Seat	1.4408 stellite		1.4408 stellite	
		SA-351 CF8M stellite		SA-351 CF8M stellite	
7	Disc	1.4404		1.4404	
		316L		316L	
8	DN250: Guide with bushing	0.7040		1.4404	
		Ductile Gr. 60-40-18 / Chrome steel		316L	
	DN 300 – 400: Guide	1.4404		1.4404	
		316L		316L	
9	Bonnet casted	DN 250: 0.7043		DN 250: 1.4408	
		Ductile Gr. 60-40-18		SA-351 CF8M	
	Bonnet welded			1.4571 / 1.4404	
DN 300 / DN 400: 1.0254 / 1.4571(316Ti) / 1.0345 (Steel) The welded construction may consist of additional materials		DN 300 / DN 400 316Ti / 316L			
12	Spindle	1.4021 oder 1.4404		1.4404	
		420 oder 316L		316L	
14	Split ring	1.4104		1.4404	
		Chrome steel		316L	
16 / 17	Spring plate	1.0460 oder 1.4404		1.4404	
		SA-105 oder 316L		316L	
18	Adjusting screw with bushing	1.4401 / 1.4404 PTFE		1.4404 PTFE	
		316 / 316L PTFE		316L PTFE	
19	Lock nut	1.4404		1.4404	
		316L		316L	
22	Lift stopper	1.4404		1.4404	
		316L		316L	
40	Bolted cap H1 <sup>1)</sup>	DN250: 0.7040, Flange 1.0460	DN 300 + DN 400: 1.4408	DN250: 1.4404	DN 300 + DN 400: 1.4408
		Ductil Gr. 60-40-18, Flange SA 105	CF8M	316L	CF8M
54	Spring standard	1.8159		1.4310	
		Carbon steel		Stainless steel	
54	Spring optional	1.4310		-	
		Stainless steel		-	
55	Stud	1.4401 or 1.7225		1.4401	
		B8M or L7/B7		B8M	
56	Nut	1.4401 or 1.7225		1.4401	
		8M or 7/7L		8M	
57	Pin	1.4404		1.4404	
		316L		316L	
60	Gasket	Graphit e/ 1.4401		Graphite / 1.4401	
		Graphite / 316		Graphite / 316	
61	Ball	1.3541		1.4401	
		Hardened stainless steel		316	
69	Needle bearing	1.4401		1.4401	
		316		316	
87 / 88	Plug / Spacer	1.4401 / 1.4571		1.4401 / 1.4571	
		316 / 316Ti		316 / 316Ti	

**Type 441, 442 XXL**  
**Balanced bellows design**



## Type 441, 442 XXL

### Balanced bellows design

#### Materials

**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.
- <sup>1)</sup> Bolted cap H1 only available for DN 200 and DN 250.

Item	Component	Type 4412 XXL / 4422 XXL		Type 4414 XXL	
1	Body	1.0619		1.4408	
		SA-216 WCB/WCC/LCB/LCC		SA-351 CF8M	
5	Seat DN250:  DN 300 – 400	1.4408 stellite		1.4408 stellite	
		SA-351 CF8M stellite		SA-351 CF8M stellite	
		1.4408 stellite Steel, stellite		1.4408 stellite SA-351 CF8M stellite	
7	Disc	1.4404		1.4404	
		316L		316L	
8	Guide	1.4571		1.4571	
		316Ti		316Ti	
9	Bonnet casted	DN 250: 0.7043 Ductile Gr. 60-40-18		DN 250: 1.4408 SA-351 CF8M	
	Bonnet welded	DN 300 / DN 400: 1.0254 / 1.4571(316Ti) / 1.0345 (Steel) The welded construction may consist of additional materials		1.4571 / 1.4404  DN 300 / DN 400 316Ti / 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	1.0570 or 1.4404		1.4404	
		Steel or 316L		316L	
18	Adjusting screw with bushing	1.4104 PTFE		1.4404 PTFE	
		Chrome steel PTFE		316L PTFE	
19	Lock nut	1.4404		1.4404	
		316L		316L	
22	Lift stopper	1.4404		1.4404	
		316L		316L	
40	Bolted cap H1 <sup>1)</sup>	DN250: 0.7040, Flange 1.0460	DN 300 + DN 400: 1.4408	DN250: 1.4404	DN 300 + DN 400: 1.4408
		Ductil Gr. 60-40-18, Flange SA 105	CF8M	316L	CF8M
54	Spring standard	1.8159		1.4310	
		Carbon steel		Stainless steel	
	Spring optional	1.4310		-	
55	Stud	1.4401 or 1.7225		1.4401 or 1.7225	
		B8M or L7/B7		B8M or L7	
56	Nut	1.4401 or 1.7225		1.4401	
		B8M or 7/7L		8M	
57	Pin	1.4404		1.4404	
		316L		316L	
60	Gasket	Graphite / 1.4401		Graphite / 1.4401	
		Graphite / 316		Graphite / 316	
61	Ball	1.3541		1.4401	
		Hardened stainless steel		316	
69	Needle bearing	1.4401		1.4401	
		316		316	
87 / 88	Plug / Spacer	1.4401 / 1.4571		1.4401 / 1.4571	
		316 / 316Ti		316 / 316Ti	

## Type 441, 442 XXL Article numbers

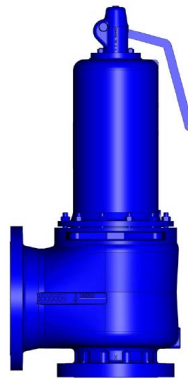
DN <sub>I+O</sub>		250 x 350	300 x 400	400 x 500	
Valve size		10" x 14"	12" x 16"	16" x 20"	
Actual Orifice diameter d <sub>0</sub> [mm]		200	235	295	
Actual Orifice area A <sub>0</sub> [mm <sup>2</sup> ]		31416	43374	68349	
<b>Body material: 1.0619 (SA-216 WCB/WCC/LCB/LCC)</b>					
Bonnet closed	H1 <sup>1)</sup>	Art. No. 4412.	4922	4932	4942
	H3	Art. No. 4412.	-	-	-
	H6 <sup>1)</sup>	Art. No. 4412.	4924	4934	4944
open	H6 <sup>1)</sup>	Art. No. 4422.	4925	4935	4945
<b>Body material: 1.4408 (SA-351 CF8M)</b>					
Bonnet closed	H1 <sup>1)</sup>	Art. No. 4414.	4952	4962	4972
	H6 <sup>1)</sup>	Art. No. 4414.	4954	4963	4973

<sup>1)</sup> Bolted cap H1 and bolted lifting device H6 only available for DN 200 and DN 250.  
DN 300 and DN 400 available with cap H2 and lifting device H4.

Type 441, 442  
XXL



**Type 441 XXL**  
Bolted cap H1  
Closed bonnet  
Conventional and  
balanced bellows design



**Type 441 XXL**  
Bolted lifting device H6  
Closed bonnet  
Conventional and  
balanced bellows design



**Type 441 XXL**  
Bolted lifting device H6  
Open bonnet  
Conventional and  
balanced bellows design

## Type 441, 442 XXL

### Dimensions and weights

Metric Units

DN <sub>I+O</sub>		250 x 350	300 x 400	400 x 500
Valve size		10" x 14"	12" x 16"	16" x 20"
Actual Orifice diameter d <sub>0</sub> [mm]		200	235	295
Actual Orifice area A <sub>0</sub> [mm <sup>2</sup> ]		31416	43374	68349
<b>Weight<sup>3)</sup></b>				
[kg]		515	695	1135
	with bellows	520	701	1142
<b>Center to face</b>				
[mm]	Inlet a	305	356	406
	Outlet b	406	406	508
<b>Height (H6)<sup>3)</sup></b>				
[mm]	Standard H max.	1432	1632	1914
	Bellows H max.	1432	1632	1914
<b>Support brackets<sup>3)</sup></b>				
[mm]	A	530	630	n.a.
	B	280	330	n.a.
	C	Ø 26	Ø 30	n.a.
	D	530	620	n.a.
	E	27	30	n.a.

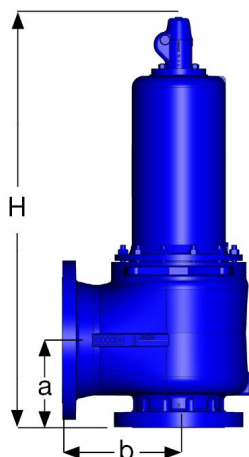
#### Body material: 1.0619 (SA-216 WCB/WCC/LCB/LCC)

DIN Flange <sup>2)</sup>	Inlet	PN 40	PN 25	PN 25
	Outlet	PN 25	PN 16	PN 16

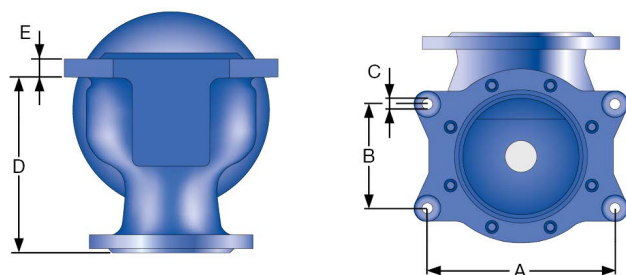
#### Body material: 1.4408 (SA-351 CF8M)

DIN Flange <sup>2)</sup>	Inlet	PN 40	PN 25	PN 16
	Outlet	PN 16	PN 10	PN 10

- <sup>1)</sup> For pressure rating outlet higher than PN 10 centre to face dimension will change  
<sup>2)</sup> Standard flange rating. For other flange drillings and facings please refer to page 61.  
<sup>3)</sup> preliminary dimensions



Conventional and balanced bellows design



Support brackets

## Type 441, 442 XXL

### Dimensions and weights

US Units

DN <sub>I+O</sub>		250 x 350	300 x 400	400 x 500
Valve size		10" x 14"	12" x 16"	16" x 20"
Actual Orifice diameter d <sub>0</sub> [inch]		7.87	9.25	11.61
Actual Orifice area A <sub>0</sub> [inch <sup>2</sup> ]		48.695	67.229	105.942
<b>Weight <sup>2)</sup></b> [lbs]				
	with bellows	1135	1532	2502
		1146	1545	2517
<b>Center to face</b> [inch]				
	Inlet a	12 <sup>63</sup> / <sub>64</sub>	14 <sup>1</sup> / <sub>64</sub>	15 <sup>63</sup> / <sub>64</sub>
	Outlet b	15 <sup>63</sup> / <sub>64</sub>	15 <sup>63</sup> / <sub>64</sub>	20
<b>Height (H6) <sup>2)</sup></b> [inch]				
	Standard H max.	56 <sup>3</sup> / <sub>8</sub>	64 <sup>1</sup> / <sub>4</sub>	75 <sup>23</sup> / <sub>64</sub>
	Bellows H max.	56 <sup>3</sup> / <sub>8</sub>	64 <sup>1</sup> / <sub>4</sub>	75 <sup>23</sup> / <sub>64</sub>
<b>Support brackets <sup>2)</sup></b> [inch]				
	A	20 <sup>55</sup> / <sub>64</sub>	24 <sup>51</sup> / <sub>64</sub>	n.a.
	B	11 <sup>1</sup> / <sub>32</sub>	12 <sup>63</sup> / <sub>64</sub>	n.a.
	C	∅ 1 <sup>1</sup> / <sub>32</sub>	∅ 1 <sup>3</sup> / <sub>16</sub>	n.a.
	D	20 <sup>55</sup> / <sub>64</sub>	24 <sup>13</sup> / <sub>32</sub>	n.a.
	E	1 <sup>1</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>16</sub>	n.a.

#### Body material: 1.0619 (SA-216 WCB/WCC/LCB/LCC)

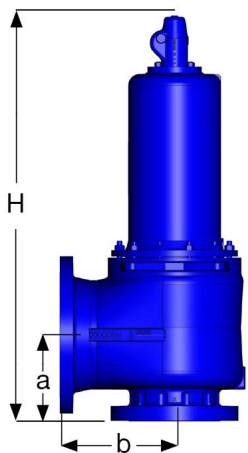
<b>ANSI Flange Class<sup>1)</sup></b>	Inlet	CL150 or CL300
	Outlet	CL 150

#### Body material: 1.4408 (SA-351 CF8M)

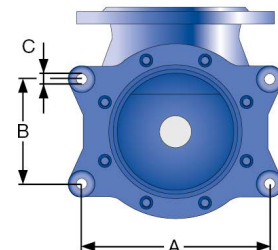
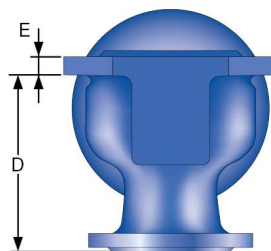
<b>ANSI Flange Class<sup>1)</sup></b>	Inlet	CL150 or CL300
	Outlet	CL 150

<sup>1)</sup> Standard flange rating. For other flange drillings and facings please refer to page 61.

<sup>2)</sup> preliminary dimensions



Conventional and balanced bellows design



Support brackets



## Type 441, 442 XXL

### Pressure temperature ratings

Metric Units

	DN <sub>I+O</sub>	250 x 350	300 x 400	400 x 500
	Valve size	10" x 14"	12" x 16"	16" x 20"
	Actual Orifice diameter d <sub>0</sub> [mm]	200	235	295
	Actual Orifice area A <sub>0</sub> [mm <sup>2</sup> ]	31416	43374	68349
<b>Body material: 1.0619 (SA-216 WCB/WCC/LCB/LCC)</b>				
<b>DIN Flange</b>	Inlet	<b>PN 40</b>	<b>PN 25</b>	<b>PN 25</b>
	Outlet	<b>PN 25</b>	<b>PN 16</b>	<b>PN 16</b>
<b>Minimum set pressure</b>	p [bar <sub>g</sub> ] D/G/F	0.2	0.2	0.2
<b>Min. set pressure<sup>1)</sup> standard bellows</b>	p [bar <sub>g</sub> ] D/G/F	0.2	0.2	0.2
<b>Max. set pressure<sup>2)</sup> with special spring</b>	p [bar <sub>g</sub> ] D/G/F	18	18	10
<b>Temperature acc. to DIN EN</b>	min. [°C]	-29		
	max. [°C]	+450		
<b>Temperature acc. to ASME</b>	min. [°C]	-29		
	max. [°C]	+427		
<b>Body material: 1.4408 (SA-351 CF8M)</b>				
<b>DIN Flange</b>	Inlet	<b>PN 40</b>	<b>PN 25</b>	<b>PN 16</b>
	Outlet	<b>PN 16</b>	<b>PN 10</b>	<b>PN 10</b>
<b>Minimum set pressure</b>	p [bar <sub>g</sub> ] D/G/F	0.2	0.2	0.2
<b>Min. set pressure<sup>1)</sup> standard bellows</b>	p [bar <sub>g</sub> ] D/G/F	0.2	0.2	0.2
<b>Max. set pressure<sup>2)</sup> with special spring</b>	p [bar <sub>g</sub> ] D/G/F	18	18	5
<b>Temperature acc. to DIN EN</b>	min. [°C]	-196		
	max. [°C]	+400		
<b>Temperature acc. to ASME</b>	min. [°C]	-196		
	max. [°C]	+538		

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

<sup>2)</sup> Availability of springs to be examined

## Type 441, 442 XXL

### Pressure temperature ratings

US Units

DN <sub>I+O</sub>		250 x 350	300 x 400	400 x 500
Valve size		10" x 14"	12" x 16"	16" x 20"
Actual Orifice diameter d <sub>0</sub> [inch]		7.87	9.25	11.61
Actual Orifice area A <sub>0</sub> [inch <sup>2</sup> ]		48.695	67.229	105.942
<b>Body material: 1.0619 (SA-216 WCB/WCC/LCB/LCC)</b>				
<b>ANSI Flange Class<sup>1)</sup></b>	Inlet	<b>CL150 or CL300</b>		
	Outlet	<b>CL150</b>		
<b>Minimum set pressure</b>	p [psig] D/G/F	2.9	2.9	2.9
<b>Min. set pressure<sup>2)</sup> standard bellows</b>	p [psig] D/G/F	2.9	2.9	2.9
<b>Max. set pressure<sup>3)</sup> with special spring</b>	p [psig] D/G/F	261	261	145
<b>Temperature acc. to DIN EN</b>	min. [°F]	-4		
	max. [°F]	+842		
<b>Temperature acc. to ASME</b>	min. [°F]	-4		
	max. [°F]	+800		
<b>Body material: 1.4408 (SA-351 CF8M)</b>				
<b>ANSI Flange Class<sup>1)</sup></b>	Inlet	<b>CL150 or CL300</b>		
	Outlet	<b>CL150</b>		
<b>Minimum set pressure</b>	p [psig] D/G/F	2.9	2.9	2.9
<b>Min. set pressure<sup>2)</sup> standard bellows</b>	p [psig] D/G/F	2.9	2.9	2.9
<b>Max. set pressure<sup>3)</sup> with special spring</b>	p [psig] D/G/F	261	261	72,5
<b>Temperature acc. to DIN EN</b>	min. [°F]	-321		
	max. [°F]	+752		
<b>Temperature acc. to ASME</b>	min. [°F]	-321		
	max. [°F]	+1000		

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

<sup>2)</sup> Min. set pressure standard bellows = Max. set pressure low pressure bellows.

<sup>3)</sup> Availability of springs to be examined

## Type 441, 442 XXL Flange drillings

	DN <sub>I+O</sub>		250 x 350	300 x 400	400 x 500
	Valve size		10" x 14"	12" x 16"	16" x 20"
	Actual Orifice diameter d <sub>0</sub> [mm]		200	235	295
	Actual Orifice area A <sub>0</sub> [mm <sup>2</sup> ]		31416	43374	68349
<b>Body material: 1.0619 (SA-216 WCB/WCC/LCB/LCC), 1.4408 (SA-351 CF8M)</b>					
Inlet	DIN EN 1092	PN 10	H44	H44	H44
		PN 16	H45	*	*
		PN 25	*	H46	H46
		PN 40	H47	-	-
	ASME B16.5	CL150	H64	H64	H64
		CL300	H65	H65	-
Outlet	DIN EN 1092	PN 10	*	*	*
		PN 16	H51	H51	H51
		PN 25	H52	-	-
		PN 40	-	-	-
	ASME B16.5	CL150	H79	H79	H79
		CL300	-	-	-

## Flange facings

Indication	Standard	Inlet	Outlet	Remark
<b>General</b>				

<b>Acc. to DIN EN 1092</b>				
Flange facing (see also LDeS 3313.40)		Inlet	Outlet	Remark
Raised face	Type B1	*	*	Facing: Rz = 12.5 – 50
	Type B2	L36	L38	Facing: Rz = 3.2 – 12.5
Tongue face C <sup>1)</sup>		H94	H92	Steel flanges only
Groove face D <sup>1)</sup>		H93	H91	
Male face E		H96	H98	
Female face F		H97	H99	
O-ring male face G		J01	J02	
O-ring female face H		J03	J04	

<b>Acc. to ASME B16.5</b>						
Body material	Inlet	Outlet	Smooth finish <sup>2)</sup>		Serrated finish	
			Inlet	Outlet	Inlet	Outlet
			Option code		Option code	
1.0619, 1.4408	all	all	L52	L53	*	*

<sup>1)</sup> 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".

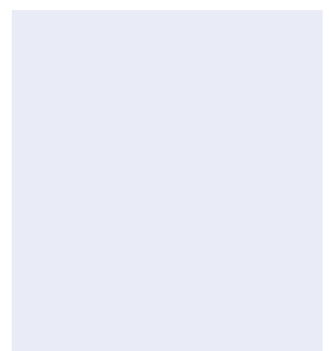
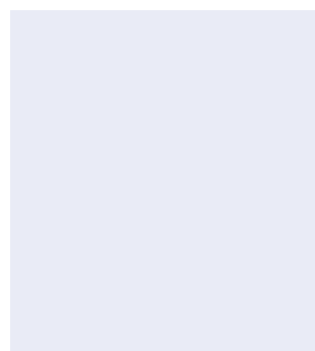
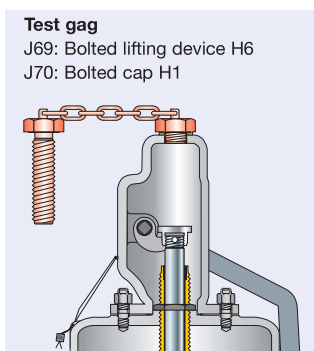
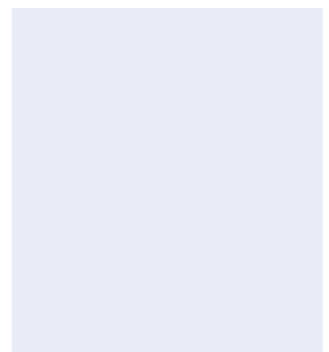
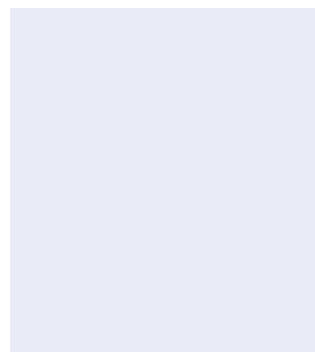
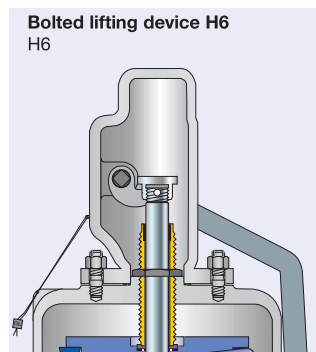
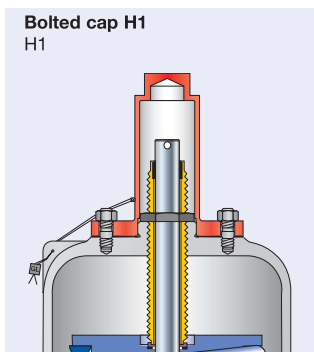
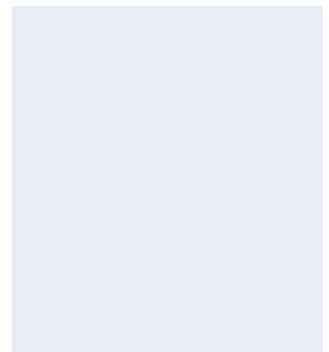
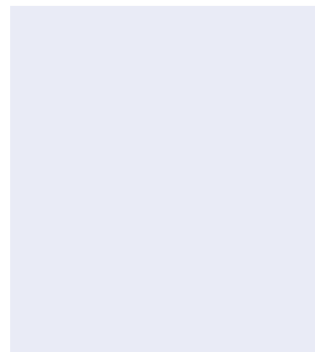
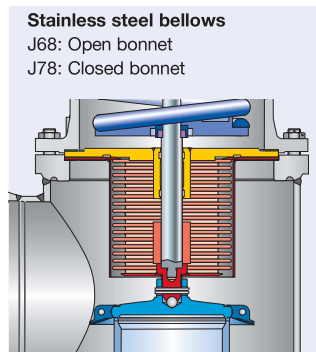
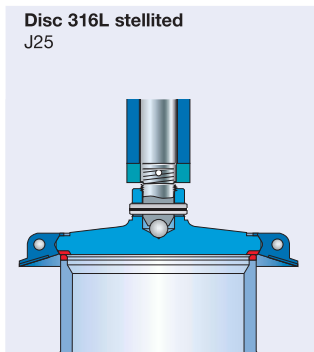
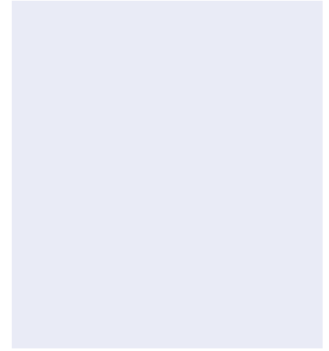
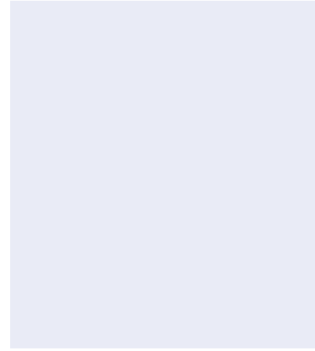
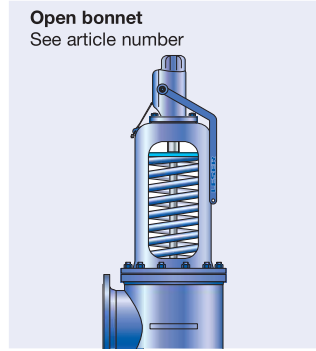
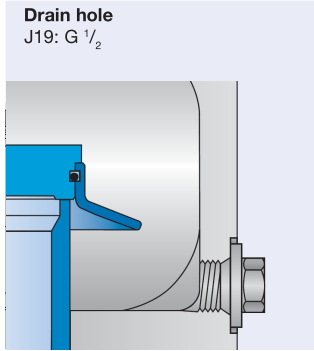
<sup>2)</sup> Smooth finish is not defined in the effective standards.

Note: Flange drillings and facings meet always the requirements of mentioned flange standards.  
Flange thickness and outer diameter may vary from flange standard.

## Type 441, 442 XXL Approvals

DN <sub>I+O</sub>		250 x 350	300 x 400	400 x 500
Valve size		10" x 14"	12" x 16"	16" x 20"
Actual Orifice diameter d <sub>0</sub> [mm]		200	235	295
Actual Orifice area A <sub>0</sub> [mm <sup>2</sup> ]		31416	43374	68349
<b>Europe</b>		<b>Coefficient of discharge K<sub>dr</sub></b>		
PED / DIN EN ISO 4126-1		Approval No. will be reissued		
	D/G	0.7	0.7	0.7
	F	0.52	0.52	0.52
<b>Germany</b>		<b>Coefficient of discharge C<sub>w</sub></b>		
PED / AD 2000-Merkblatt A2		Approval No. 0045/202/1201/Z/00616/19/D/001 and TÜV SV 576		
	D/G	0.7	0.7	0.7
	F	0.45	0.45	0.45
<b>United States</b>		<b>Coefficient of discharge K</b>		
ASME Sec. VIII Div. 1		Approval No. M37044		
	D/G	0.699		
	F	0.521		
<b>Canada</b>		<b>Coefficient of discharge K</b>		
CRN		Approval No. For current approval no. see www.leser.com		
	D/G	0.699		
	F	0.521		
<b>China</b>		<b>Coefficient of discharge C<sub>w</sub></b>		
AQSIQ		Approval No. For current approval no. see www.leser.com		
	D/G	0.7	0.7	0.7
	F	0.52	0.52	0.52
<b>Eurasian Custom Union</b>		<b>Coefficient of discharge C<sub>w</sub></b>		
EAC		Approval No. For current approval no. see www.leser.com		
	D/G	0.7	0.7	0.7
	F	0.52	0.52	0.52
<b>Classification societies</b>		<b>Homepage</b>		
Bureau Veritas	BV	www.bureauveritas.com		The valid certification number is changed with every renewal.
DNV		www.dnvgl.com		
Lloyd' s Register EMEA	LREMEA	www.lr.org		For a sample certificate including the valid certification number see www.leser.com
Registro Italiano Navale	RINA	www.rina.org		

## Type 441, 442 XXL Available options



Type 441, 442  
XXL