



Type 442 Full nozzle
 Plain lever H3
 Bonnet open
 Conventional design



Type 442 Full nozzle
 Plain lever H3
 Bonnet open
 Conventional design

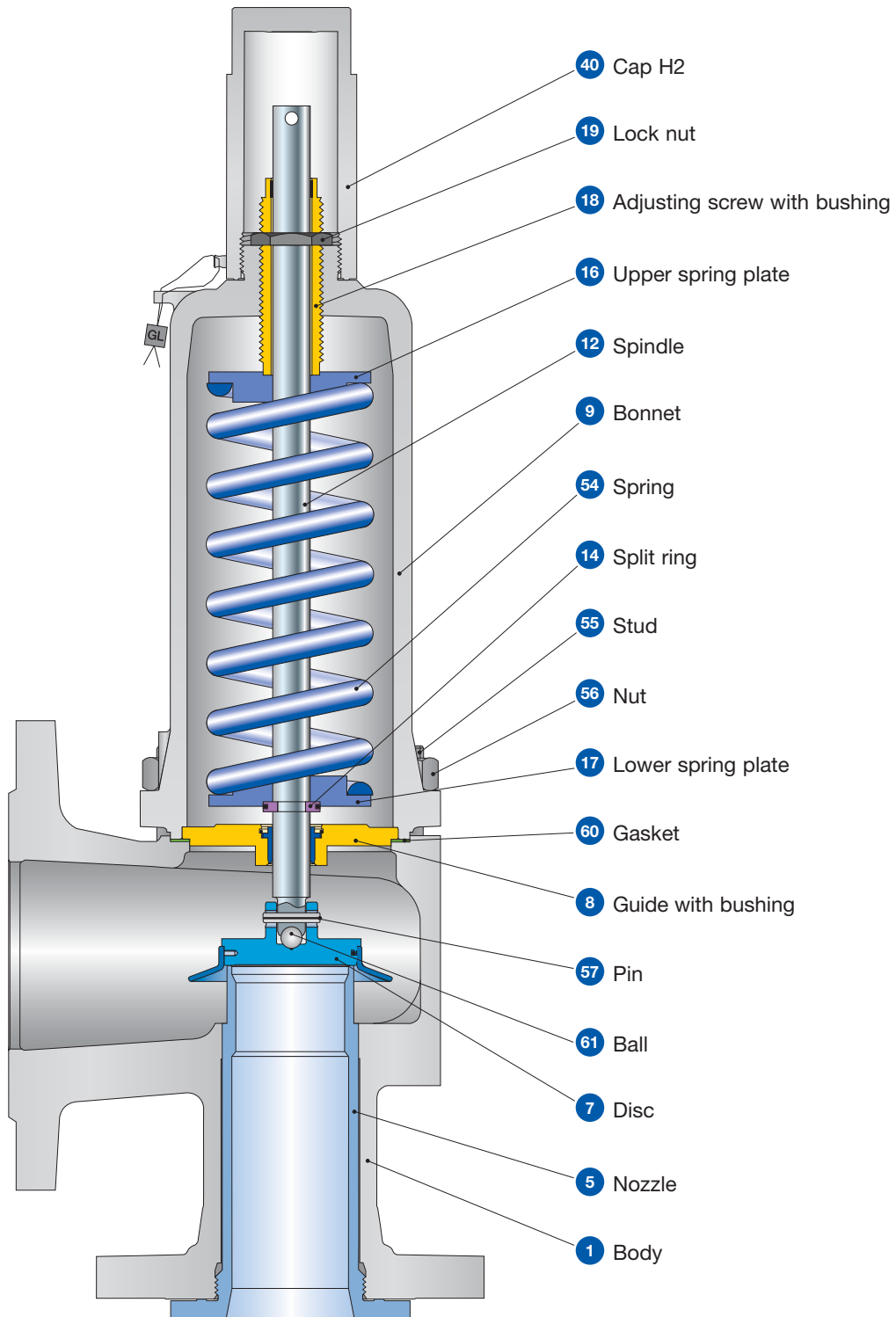
Type 441, 442 Full nozzle DIN
Type 441, 442 Full nozzle ANSI
Flanged Safety Relief Valve

Type 441, 442
 Full nozzle

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Type 441, 442 Full nozzle DIN, ANSI
Conventional design

Type 441, 442
 Full nozzle



Type 441, 442 Full nozzle DIN, ANSI

Conventional design

Materials

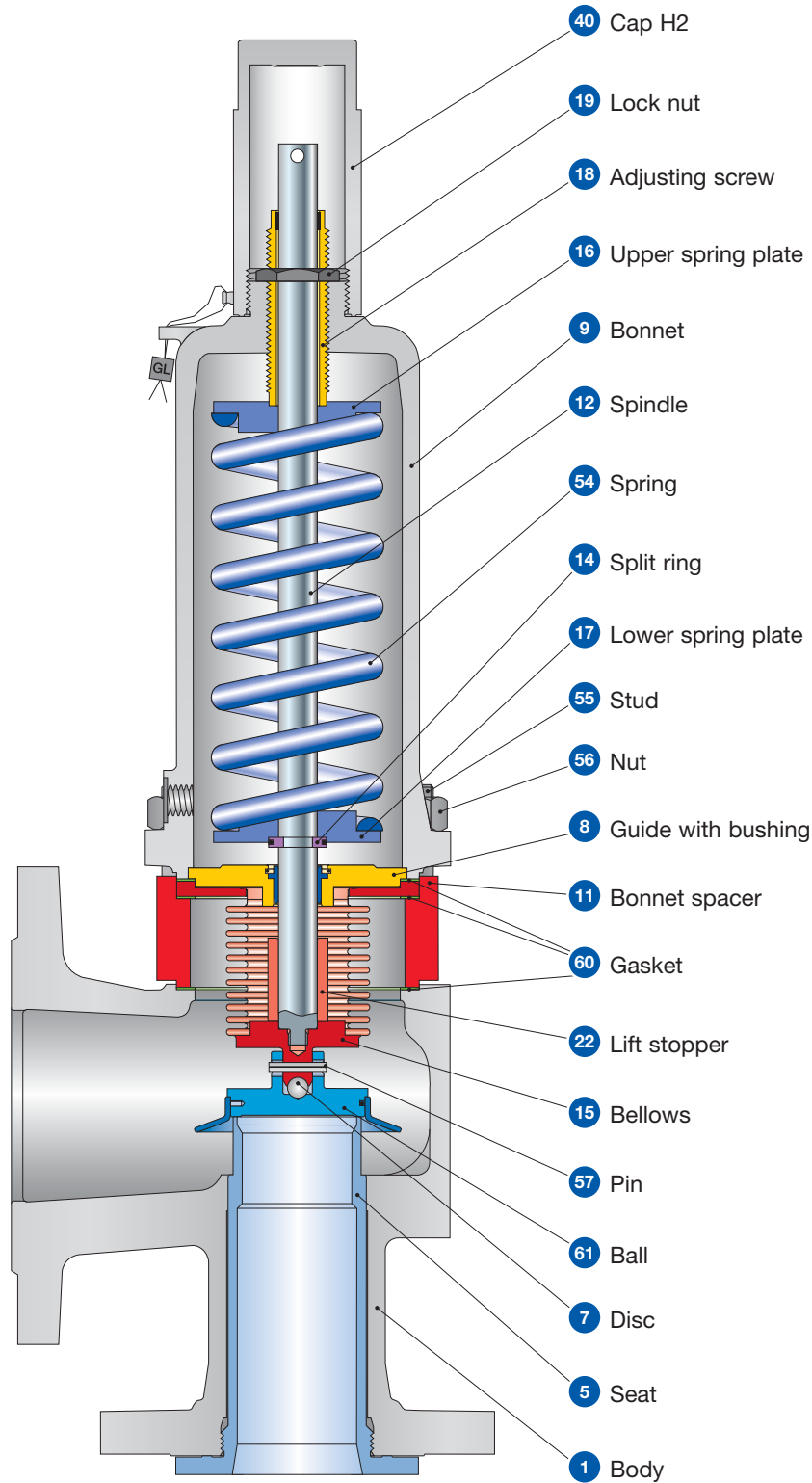
Item	Component	Type 4412 / 4422 Full nozzle	Type 4414 Full nozzle
1	Body	1.0619	1.4408
		SA 216 WCB	SA 351 CF8M
5	Seat	1.4404	1.4404
		316L	316L
7	Disc	1.4122	1.4404
		Hardened stainless steel	316L
8	Guide with bushing	1.0501	1.4404
		Carbon steel	316L
		1.4104 tenifer	-
		Chrome steel tenifer	-
9	Bonnet	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 PTFE
		Chrome steel PTFE	316L PTFE
19	Lock nut	1.0718	1.4404
		Steel	316L
40	Cap H2	1.0460	1.4404
		SA 105	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
- 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.

Type 441, 442 Full nozzle DIN, ANSI
Balanced bellows design

Type 441, 442
 Full nozzle



Type 441, 442 Full nozzle DIN, ANSI

Balanced bellows design

Materials

Item	Component	Type 4412 / 4422 Full nozzle	Type 4414 Full nozzle
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	1.0501	1.4404
		Carbon steel	316L
		1.4104 tenifer	-
		Chrome steel tenifer	-
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
		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	1.0460	1.4404
		SA 105	316L
54	Spring standard	1.1200, 1.8159, 1.7102	1.4310
		Carbon steel	Stainless steel
	Spring optional	1.4310	-
		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	1.4401
		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.

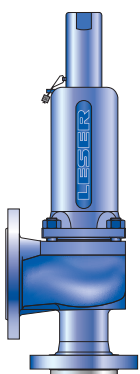
Type 441, 442 Full nozzle DIN, ANSI
Article numbers

Type 441, 442 Full nozzle DIN

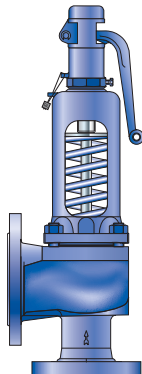
	DN _i	25	40	50
	DN _o	50	65	80
	Actual Orifice diameter d _o [mm]	23	37	46
	Actual Orifice area A _o [mm ²]	416	1075	1662
Body material: 1.0619 (WCB)				
Bonnet closed	H2	Art. No. 4412.	0572	0582
	H3	Art. No. 4412.	0573	0583
	H4	Art. No. 4412.	0574	0584
open	H3	Art. No. 4422.	0575	0585
Body material: 1.4408 (CF8M)				
Bonnet closed	H2	Art. No. 4414.	0952	0962
	H4	Art. No. 4414.	0954	0964

Type 441, 442 Full nozzle ANSI

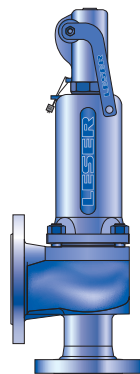
	Valve size	1" x 2"	1½" x 2"	1½" x 2½"	2" x 3"	3" x 4"	4" x 6"
	Actual Orifice diameter d _o [mm]	23	29	37	46	60	92
	Actual Orifice area A _o [mm ²]	416	661	1075	1662	2827	6648
Body material: 1.0619 (WCB)							
Bonnet closed	H2	Art. No. 4412.	1282	1292	1302	1312	1322
	H3	Art. No. 4412.	1283	1293	1303	1313	1323
	H4	Art. No. 4412.	1284	1294	1304	1314	1324
open	H3	Art. No. 4422.	1285	1295	1305	1315	1325
Body material: 1.4408 (CF8M)							
Bonnet closed	H2	Art. No. 4414.	5682	-	5702	5712	5722
	H4	Art. No. 4414.	5684	-	5704	5714	5724



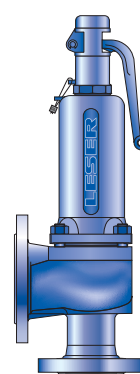
Type 441 Full nozzle
 Cap H2
 Closed bonnet
 Conventional design



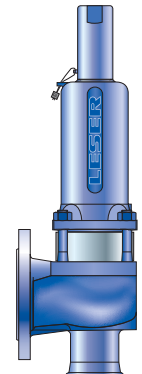
Type 442 Full nozzle
 Plain lever H3
 Bonnet open
 Conventional design



Type 441 Full nozzle
 Packed lever H4
 Closed bonnet
 Conventional design



Type 441 Full nozzle
 Plain lever H3
 Closed bonnet
 Conventional design



Type 441 Full nozzle
 Cap H2
 Closed bonnet
 Balanced bellows design

Type 441, 442 Full nozzle

Type 441, 442 Full nozzle DIN Dimensions and weights

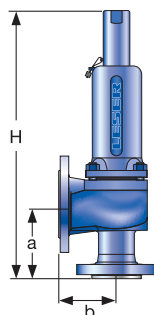
Metric Units

	DN _i	25	40	50
	DN _o	50	65	80
	Actual Orifice diameter d ₀ [mm]	23	37	46
	Actual Orifice area A ₀ [mm ²]	416	1075	1662
Weight				
[kg]		9	16	22
	with bellows	10	17	24
Center to face	Inlet a	111	143.5	154
[mm]	Outlet b	100	115	120
Height (H4)	Standard H max.	345	515.5	573
[mm]	Bellows H max.	384	553.5	619
Body material: 1.0619 (WCB)				
DIN Flange¹⁾	Inlet	PN 40 or 16		
	Outlet	PN 16		
Body material: 1.4408 (CF8M)				
DIN Flange¹⁾	Inlet	PN 40 or 16		
	Outlet	PN 16		

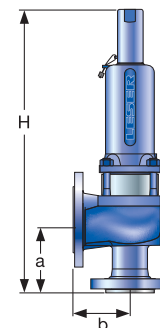
US Units

	DN _i	25	40	50
	DN _o	50	65	80
	Actual Orifice diameter d ₀ [inch]	0.91	1.46	1.81
	Actual Orifice area A ₀ [inch ²]	0.644	1.667	2.576
Weight				
[lbs]		20	35	49
	with bellows	21	38	52
Center to face	Inlet a	4 3/8	5 5/8	6 1/16
[inch]	Outlet b	3 15/16	4 1/2	4 3/4
Height (H4)	Standard H max.	9 3/16	13	14 5/8
[inch]	Bellows H max.	10 11/16	14	16 1/8
Body material: 1.0619 (WCB)				
DIN Flange¹⁾	Inlet	PN 40 or 16		
	Outlet	PN 16		
Body material: 1.4408 (CF8M)				
DIN Flange¹⁾	Inlet	PN 40 or 16		
	Outlet	PN 16		

¹⁾ Standard flange rating. For other flange drillings please refer to page 46.



Conventional design



Balanced bellows design

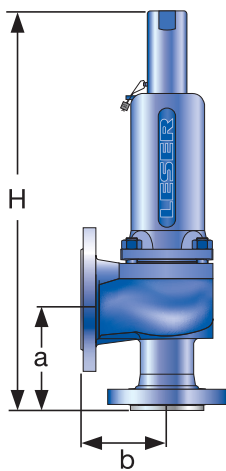
Type 441, 442 Full nozzle ANSI

Dimensions and weights

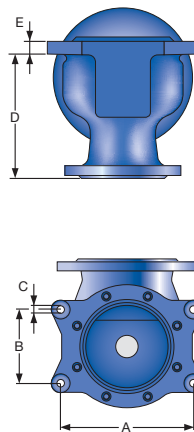
Metric Units

Valve size	1" x 2"	1½" x 2"	1½" x 2½"	2" x 3"	3" x 4"	4" x 6"
Actual Orifice diameter d_o [mm]	23	29	37	46	60	92
Actual Orifice area A_o [mm ²]	416	661	1075	1662	2827	6648
Weight [kg]	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]						
A						280
B						160
(drilled only on request, Option code H42)						Ø 18
D						250
E						25
Body material: 1.0619 (WCB)						
ANSI Flange¹⁾	Inlet	CL150 or CL300				
Class	Outlet	CL150				
Body material: 1.4408 (CF8M)						
ANSI Flange¹⁾	Inlet	CL150 or CL300	-	CL150 or CL300		
Class	Outlet	CL150	-	CL150		

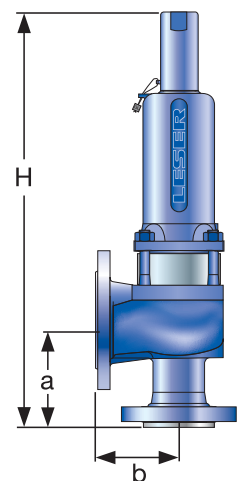
¹⁾ Standard flange rating. For other flange drillings please refer to page 46.



Conventional design



Support brackets



Balanced bellows design

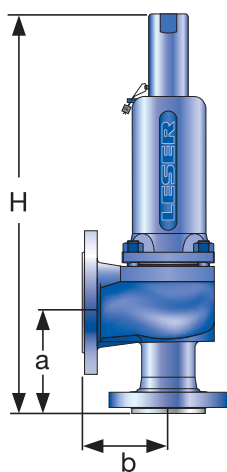
Type 441, 442 Full nozzle ANSI

Dimensions and weights

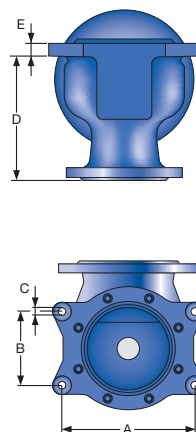
US Units

Valve size	1" x 2"	1½" x 2"	1½" x 2½"	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 ¼	5 ⅛	5 ⅛	5 ½	6 ⅜	7 ⅜
Outlet b	4 ½	4 ¾	4 ¾	4 ⅞	6 ½	9
Height (H4) [inch]						
Standard H max.	13 ¼	18 ⅛	19 ¾	22 ⅛	27 ¼	33 ½
Bellows H max.	15 ⅛	19 ⅜	21 ¼	23 ⅞	29 ⅞	35 ⅜
Support brackets [inch]						
A						11
B						6 ¼
(drilled only on request, Option code H42)						Ø ¾
C						9 ⅞
D						1
E						
Body material: 1.0619 (WCB)						
ANSI Flange¹⁾ Class	Inlet	CL150 or CL300				
	Outlet	CL150				
Body material: 1.4408 (CF8M)						
ANSI Flange¹⁾ Class	Inlet	CL150 or CL300	-	CL150 or CL300		
	Outlet	CL150	-	CL150		

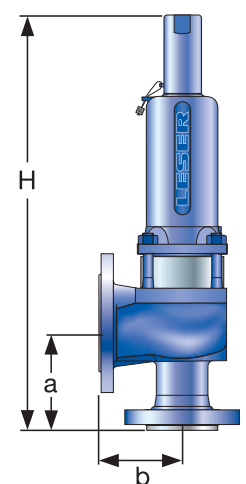
¹⁾ Standard flange rating. For other flange drillings please refer to page 46.



Conventional design



Support brackets



Balanced bellows design

Type 441, 442 Full nozzle DIN

Pressure temperature ratings

Metric Units

 Type 441, 442
Full nozzle

		DN _i	25	40	50
		DN _o	50	65	80
		Actual Orifice diameter d _o [mm]	23	37	46
		Actual Orifice area A _o [mm ²]	416	1075	1662
Body material: 1.0619 (WCB)					
DIN Flange	Inlet	PN 40 or 16			
	Outlet	PN 16			
Minimum set pressure	p [bar _g] S/G/L	0.1	0.1	0.1	0.1
Min. set pressure¹⁾ standard bellows	p [bar _g] S/G/L	3	3	3	3
Min. set pressure low press. bellows	p [bar _g] S/G/L	0.98	1.11	1.81	1.81
Maximum set pressure	p [bar _g] S/G/L	40	40	40	40
Max. set pressure with special spring	p [bar _g] S/G/L	40	40	40	40
Temperature²⁾ acc. to DIN EN	min. [°C]	-85			
	max. [°C]	+450			
Temperature²⁾ acc. to ASME	min. [°C]	-29			
	max. [°C]	+427			

Body material: 1.4408 (CF8M)					
DIN Flange	Inlet	PN 40 or 16			
	Outlet	PN 16			
Minimum set pressure	p [bar _g] S/G/L	0.1	0.1	0.1	0.1
Min. set pressure¹⁾ standard bellows	p [bar _g] S/G/L	3	3	3	3
Min. set pressure low press. bellows	p [bar _g] S/G/L	0.98	1.11	1.81	1.81
Maximum set pressure	p [bar _g] S/G/L	40	40	33	33
Max. set pressure with special spring	p [bar _g] S/G/L	40	40	37	37
Temperature²⁾ acc. to DIN EN	min. [°C]	-270			
	max. [°C]	+400			
Temperature²⁾ acc. to ASME	min. [°C]	-268			
	max. [°C]	+538			

¹⁾ Min. set pressure standard bellows = Max. set pressure low pressure bellows.

²⁾ Between -10 °C and lowest temperature indicated „AD 2000-Merkblatt“ W10 shall be taken into account.

Type 441, 442 Full nozzle DIN

Pressure temperature ratings

US Units

	DN _E	25	40	50
	DN _A	50	65	80
	Actual Orifice diameter d ₀ [inch]	0.91	1.46	1.81
	Actual Orifice area A ₀ [inch ²]	0.644	1.667	2.576
Body material: 1.0619 (WCB)				
DIN Flange	Inlet	PN 40 or 16		
	Outlet	PN 16		
Minimum set pressure	p [psig] S/G/L	1.5	1.5	1.5
Min. set pressure¹⁾ standard bellows	p [psig] S/G/L	43.5	43.5	43.5
Min. set pressure low press. bellows	p [psig] S/G/L	14	16	26
Maximum set pressure	p [psig] S/G/L	580	580	580
Max. set pressure with special spring	p [psig] S/G/L	580	580	580
Temperature²⁾ acc. to DIN EN	min. [°F]	-121		
	max. [°F]	+842		
Temperature²⁾ acc. to ASME	min. [°F]	-20		
	max. [°F]	+800		

Body material: 1.4408 (CF8M)				
DIN Flange	Inlet	PN 40 or 16		
	Outlet	PN 16		
Minimum set pressure	p [psig] S/G/L	1.5	1.5	1.5
Min. set pressure¹⁾ standard bellows	p [psig] S/G/L	43.5	43.5	43.5
Min. set pressure low press. bellows	p [psig] S/G/L	14	16	26
Maximum set pressure	p [psig] S/G/L	580	580	479
Max. set pressure with special spring	p [psig] S/G/L	580	580	537
Temperature²⁾ acc. to DIN EN	min. [°F]	-454		
	max. [°F]	+752		
Temperature²⁾ acc. to ASME	min. [°F]	-450		
	max. [°F]	+1000		

¹⁾ Min. set pressure standard bellows = Max. set pressure low pressure bellows.

²⁾ Between -10 °C and lowest temperature indicated „AD 2000-Merkblatt“ W10 shall be taken into account.

Type 441, 442 Full nozzle ANSI

Pressure temperature ratings

Metric Units

 Type 441, 442
Full nozzle

Valve size		1" x 2"	1½" x 2"	1½" x 2½"	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)							
ANSI Flange Class¹⁾	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 pressure²⁾ standard bellows	p [bar _g] S/G/L	3	3	3	3	3	3
Min. set pressure 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	40 ³⁾	40	34
Max. set pressure with special spring	p [bar _g] S/G/L	51	48	46	40 ³⁾	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 Class¹⁾	Inlet	CL 150 or CL 300	-	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 pressure²⁾ standard bellows	p [bar _g] S/G/L	3	-	3	3	3	3
Min. set pressure 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
Max. set pressure 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.

³⁾ For applications with CE marking. Maximum set pressure for ASME application 49 bar.

Type 441, 442 Full nozzle ANSI

Pressure temperature ratings

US Units

Valve size		1" x 2"	1½" x 2"	1½" x 2½"	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
Body material: 1.0619 (WCB)							
ANSI Flange Class¹⁾	Inlet	CL150 or CL300					
	Outlet	CL150					
Minimum set pressure	p [psig] S/G/L	1.5	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	43.5
Min. set pressure low press. bellows	p [psig] S/G/L	14	20	16	26	22	17
Maximum set pressure	p [psig] S/G/L	711	696	667	580 ³⁾	580	493
Max. set pressure with special spring	p [psig] S/G/L	740	696	667	580 ³⁾	580	493
Temperature acc. to DIN EN	min. [°F]	-121					
	max. [°F]	+842					
Temperature acc. to ASME	min. [°F]	-20					
	max. [°F]	+800					

Type 441, 442 Full nozzle

Body material: 1.4408 (CF8M)							
ANSI Flange Class¹⁾	Inlet	CL 150 or CL 300	-	CL150 or CL300			
	Outlet	CL150	-	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	-	16	26	22	17
Maximum set pressure	p [psig] S/G/L	616	-	392	363	392	218
Max. set pressure 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 B16.34 apply.

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

³⁾ For applications with CE marking. Maximum set pressure for ASME application 711 psig.

Type 441, 442 Full nozzle DIN, ANSI Flange drillings

Type 441, 442 Full nozzle DIN

	DN _i	25	40	50	
	DN _o	50	65	80	
	Actual Orifice diameter d ₀ [mm]	23	37	46	
	Actual Orifice area A ₀ [mm ²]	416	1075	1662	
Body material: 1.0619 (WCB), 1.4408 (CF8M)					
Inlet	DIN EN 1092	PN 10	*	*	*
		PN 16	*	*	*
		PN 25	*	*	*
		PN 40	*	*	*
	ASME B16.5	CL150	H64	H64	H64
		CL300	-	-	[H65]
Outlet	DIN EN 1092	PN 10	*	*	*
		PN 16	*	*	*
		PN 25	*	(H15)	(*)
		PN 40	*	(H15)	(*)
	ASME B16.5	CL150	H 79	H 79	H 79
		CL300	-	-	-

Type 441, 442 Full nozzle

Type 441, 442 Full nozzle ANSI

Valve size	1" x 2"	1½" x 2"	1½" x 2½"	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), 1.4408 (CF8M)							
Inlet	DIN EN 1092	PN 25	Please use 441, 442 Full nozzle DIN			H47	H47
		PN 40	Please use 441, 442 Full nozzle DIN			H47	H47
	ASME B16.5	CL150	H64	H64	H64	H64	[H64]
		CL300	*	*	*	*	*
Outlet	DIN EN 1092	PN 10	Please use 441, 442 Full nozzle DIN			H51	H51
		PN 16	Please use 441, 442 Full nozzle DIN			H51	H51
	ASME B16.5	CL150	*	*	*	*	*
		CL300	-	-	-	-	-

Type 441, 442 Full nozzle DIN, ANSI Flange facings

Indication	Standard	Inlet	Outlet	Remark						
General										
Flange undrilled	–	H38	H39							
Linde-V-Nut, Type V48	Linde Standard 420-08 LDeS 3313.36	–	J08	Groove: Rz 16						
Linde-V-Nut, Type V48A		–	J06	Groove: Rz 4, e.g. with hydrogen						
Lens seal form L (without sealing lens)	DIN 2696 LDeS 3313.35	–	J12							
Acc. to DIN EN 1092										
Flange facing (see LDeS 3313.40)		PN 10 – PN 40	PN 10 – PN 40	Rz-data according to DIN EN 1092 in µm						
Raised face	Type B1	*	*	Facing: Rz = 12.5 – 50						
	Type B2	-	L38	Facing: Rz = 3.2 – 12.5						
Tongue face C ¹⁾		L56	H92	Steel flange only						
Groove face D ¹⁾		L55	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							
Acc. to ASME B16.5										
Body material	Inlet	Outlet	Smooth finish ²⁾		Serrated finish		RTJ-groove			
			Inlet	Outlet	Inlet	Outlet	Inlet		Outlet	
			Option code		Option code		RTJ- Class	Option code	RTJ- Class	Option code
1.0619, 1.4408	all	all	L52	L53	*	*	CL150, CL300	L58	CL150	H63

¹⁾ 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".

²⁾ 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.

Series 441, Series 441 Full nozzle

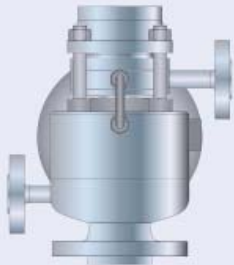
Approvals

DN _i	20	25	32	40	50	65	80	100	125	150	200
Valve size	–	1" x 2"	1½" x 2"	1½" x 2½"	2" x 3"	3" x 4"	–	4" x 6"	–	–	–
Actual Orifice diameter d ₀ [mm]		23	29	37	46	60	74	92	98	125	165
Actual Orifice area A ₀ [mm ²]	254	416	661	1075	1662	2827	4301	6648	7543	12272	21382
Europe			Coefficient of discharge K_{dr}								
PED / DIN EN ISO 4126-1 12/2013	Approval No.	072020111Z0008/0/08 Rev.3									
	S/G	0.7									
	L	0.45									
Germany			Coefficient of discharge α_w								
PED / AD 2000-Merkblatt A2 07/2012	Approval No.	TÜV SV 576									
	S/G	0.7									
	L	0.45									
United States			Coefficient of discharge K								
ASME Sec. VIII Div. 1	Approval No.	M37044									
	S/G	0.699									
	Approval No.	M37055									
	L	0.521									
Canada			Coefficient of discharge K								
CRN	Approval No.	For current approval no. see www.leser.com									
	S/G	0.699									
	L	0.521									
China			Coefficient of discharge α_w								
AQSIQ	Approval No.	For current approval no. see www.leser.com									
	S/G	0.7									
	L	0.45									
Eurasian Custom Union			Coefficient of discharge α_w								
EAC	Approval No.	For current approval no. see www.leser.com									
	S/G	0.7									
	L	0.45									
Classification societies		Homepage									
Bureau Veritas	BV	www.bureauveritas.com									The valid certification number is changed with every renewal. For a sample certificate including the valid certification number see www.leser.com
DNV GL		www.dnvgl.com									
Lloyd' s Register EMEA	LREMEA	www.lr.org									
Registro Italiano Navale	RINA	www.rina.org									
U.S. Coast Guard	U.S.C.G.	www.uscg.org									
ClassNK NIPPON Kaiji Kyokai (Japan)		www.classnk.or.jp									

Series 441, Series 441 Full nozzle Available options

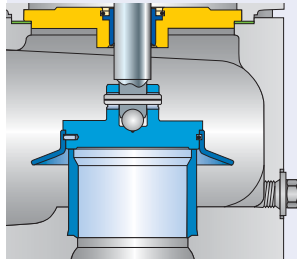
Heating jacket

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 article number

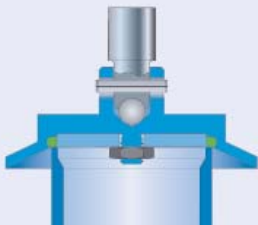


Change of nominal diameter with welding flange

I28: DN 40, 1 1/2" – Inlet
I29: DN 80, 3" – Outlet
I30: DN 150, 6" – Outlet

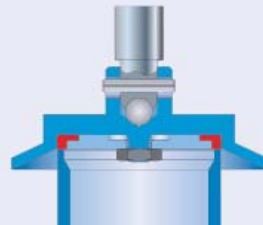
O-ring disc

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



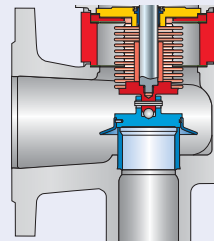
Disc with inserted sealing plate

J44: PTFE-FDA
J48: PCTFE
J49: SP

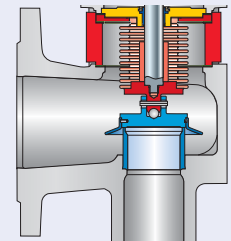


Stainless steel bellows

J68: Open bonnet
J78: Closed bonnet

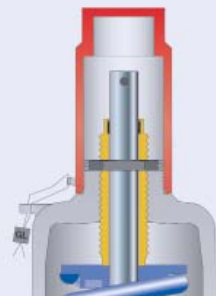


Conversion kit for stainless steel bellows



Screwed cap H2

H2



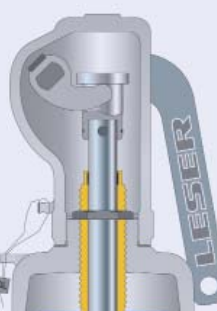
Plain lever H3

H3



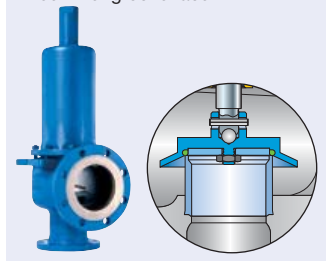
Packed lever H4

H4



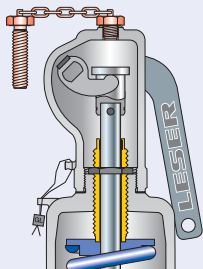
Type 441 for industrial refrigeration

H91: Outlet groove face D
H93: Inlet groove face D



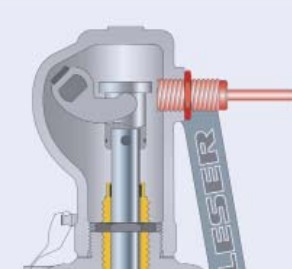
Test gag

J69: H4
J70: H2



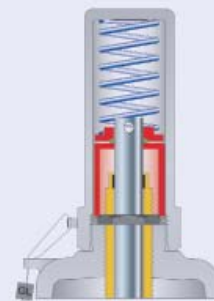
Lift indicator

J39: Adaptor H4
J93: Lift indicator



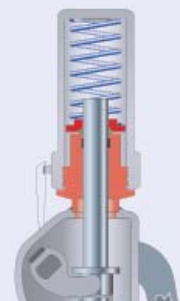
O-ring damper H2

J65



O-ring damper H4

J66



Serie 441, Serie 441 Full nozzle
LESER Original Spare Parts Kits



The LESER Spare Parts Kits contain all the parts recommended for the regular maintenance of a LESER safety valve

Contents

Item	Component	Material	Quantity
7.5	Securing ring (Disc)	1.4571 / 316Ti	1
8.4	Securing ring (Guide)	1.4571 / 316Ti	1
14	Split ring	1.4404 / 316L	2
40.3	Spacer	1.4571 / 316Ti	3
57	Pin	1.4310 / Stainless steel	1
59	Securing ring (Split ring)	1.4571 / 316Ti	1
60	Gasket	Graphite / 1.4401 Graphite / 316	3
61	Ball	1.4401 / 316	1
1.9	O-ring (Lifting device H4)	FKM	1

Article numbers

DN	20	25	32	40	50	65	80	100	125	150	200
Valve size	-	1" x 2"	1½" x 2"	1½" x 2½"	2" x 3"	3" x 4"	-	4" x 6"	-	-	-
Art. No. 5012.	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211

For further spare parts of your individually configured safety valve, please use the spare part finder www.leser.com/en/services/spare-part-finder.html

Series 441,
441 Full nozzle