Compact Performance

Safety Relief Valves
Series 437
Series 459

CATALOG

LESER

The-Safety-Valve.com

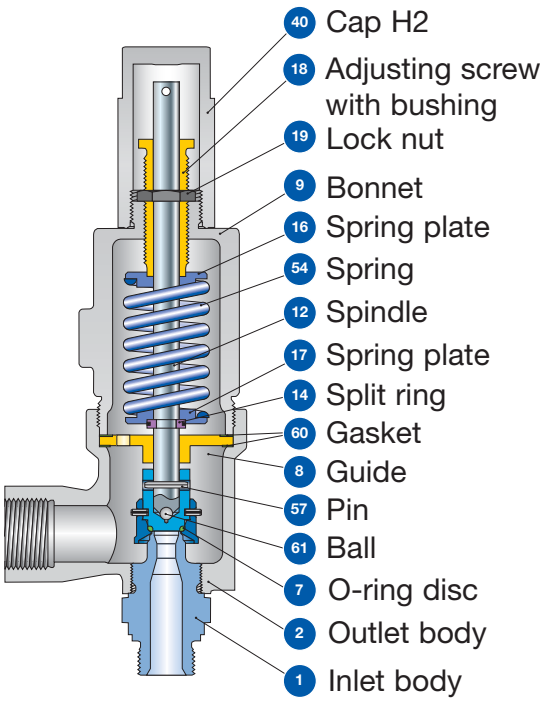
Type 462
Plain lever H3

Type 462
Safety Relief Valves

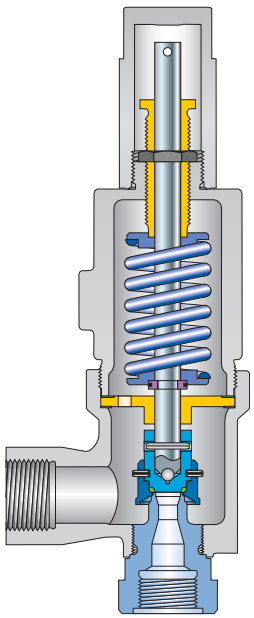
Type 462
Cap H2

Type 462
Refrigeration technology

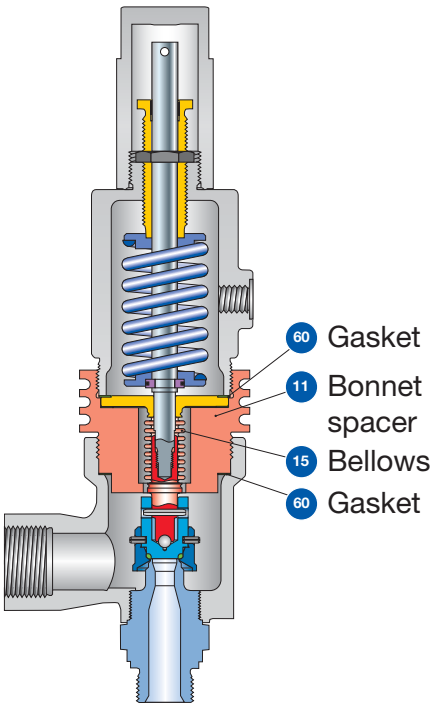
Type 462
Designs



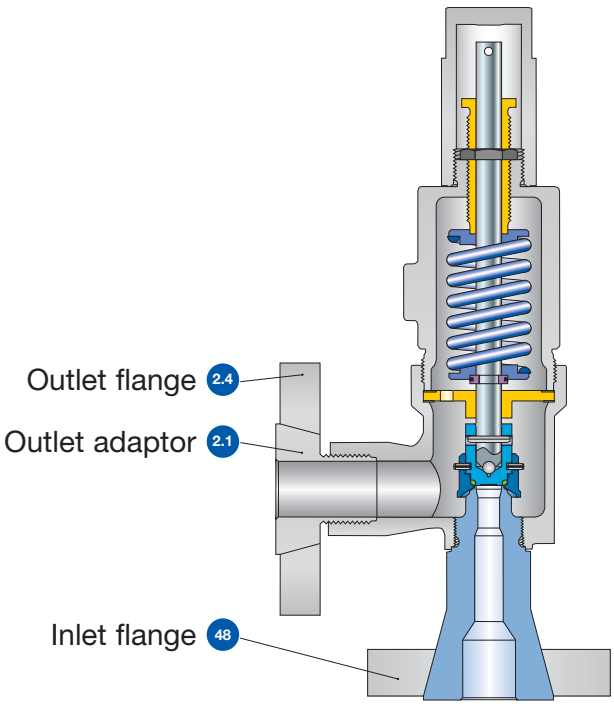
Conventional design
Threaded connection



Conventional design
Threaded connection



Balanced bellows
Threaded connection



Conventional design
Flange connection

Type 462
Materials

Item	Component	Design	Type 4623	Type 4622	Type 4624
1	Base / Inlet body	Threaded connection	1.4104[1], 1.4404 SA 479 430[1], SA 479 316L	1.4404 SA 479 316L	1.4404 SA 479 316L
		Flange connection	1.4404 SA 479 316L	1.4404 SA 479 316L	1.4404 SA 479 316L
2	Outlet body		1.0619 WCB	1.0619 WCB	1.4408 CF8M
2.1	Outlet adaptor	Flange connection	1.4404 316L	1.4404 316L	1.4404 316L
2.4	Outlet flange	Flange connection	1.4404 316L	1.4404 316L	1.4404 316L
7	O-ring disc		1.4404 SA 479 316L	1.4404 SA 479 316L	1.4404 SA 479 316L
7.4	Soft seal O-ring	"N"[2]	NBR Nitrile-Butadiene	NBR Nitrile-Butadiene	NBR Nitrile-Butadiene
		"K"[2]	CR Chloroprene	CR Chloroprene	CR Chloroprene
		"D"[2]	EPDM Ethylen-Propylene-Diene	EPDM Ethylen-Propylene-Diene	EPDM Ethylen-Propylene-Diene
		"L"[2]	FKM Fluorocarbon	FKM Fluorocarbon	FKM Fluorocarbon
		"C"[3]	FFKM Perfluor	FFKM Perfluor	FFKM Perfluor
8	Guide		1.4104 tenifer Chrome steel tenifer	1.4104 tenifer Chrome steel tenifer	1.4404 316L
		Balanced bellows design	1.4404 / SA 316L Upper connection of balanced bellows	1.4404 / SA 316L Upper connection of balanced bellows	1.4404 / SA 316L Upper connection of balanced bellows
9	Bonnet		0.7043 Ductile Gr. 60-40-18	1.0619 WCB	1.4408 CF8M
		Balanced bellows design	1.0619 WCB	1.0619 WCB	1.4408 CF8M
11	Bonnet spacer	Balanced bellows design	1.4404 316L	1.4404 316L	1.4404 316L
12	Spindle		1.4021 420	1.4404 316L	1.4404 316L
		Balanced bellows design	1.4404 316L	1.4404 316L	1.4404 316L
14	Split ring		1.4104 Chrome steel	1.4104 Chrome steel	1.4404 316L
15	Bellows	Balanced bellows design	1.4571 316Ti	1.4571 316Ti	1.4571 316Ti
16/17	Spring plate		1.0718 Steel	1.0718 Steel	1.4404 316L
18	Adjusting screw with bushing		1.4104 / PTFE Chrome steel / PTFE	1.4104 / PTFE Chrome steel / PTFE	1.4104 / PTFE Chrome steel / PTFE
19	Lock nut		1.4104 430	1.4104 430	1.4404 316L
40	Cap H2		1.0460 SA 105	1.0460 SA 105	1.4404 316L
48	Inlet flange	Flange connection	1.4404 316L	1.4404 316L	1.4404 316L
54	Spring	Standard	1.1200 / 1.8159 / 1.7107 Carbon steel	1.1200 / 1.8159 / 1.7107 Carbon steel	1.4310 Stainless steel
		Optional	1.4310 Stainless steel	1.4310 Stainless steel	– –
57	Pin		1.4310 Stainless steel	1.4310 Stainless steel	1.4310 Stainless steel
60	Gasket		Graphite / 1.4401 Graphite / 316	Graphite / 1.4401 Graphite / 316	Graphite / 1.4401 Graphite / 316
61	Ball		1.3541 Hardened stainless steel	1.3541 Hardened stainless steel	1.4401 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.
- The materials shall meet the requirements of the relevant regulations (Pressure Equipment Directive (PED), acc. to PED applied harmonized standards, AD 2000-Merkblätter, VdTÜV (Werkstoffblätter) as well as further materials listed in Section 8 of the Type-Examination.

[1] only valid for male thread DIN ISO 228-1 G¾ G1, G1½ (Option codes V55, V56, V57) (please note availability regarding d_0)
[2] d_0 9 + 13: O-ring 90 Shore for set pressure > 100 bar
[3] d_0 9 + 13: O-ring 90 Shore for set pressure > 40 bar

Type 462
Article numbers

Type 462

			Actual Orifice diameter d_0 [mm]	9	13	17.5
			Actual Orifice area A_0 [mm²]	63.6	133	241
			Actual Orifice diameter d_0 [inch]	0.354	0.512	0.689
			Actual Orifice area A_0 [inch²]	0.099	0.206	0.374
O-ring material					NBR "N" J30[2]	
					CR "K" J21[2]	
					EPDM "D" J22[2]	
					FKM "L" J23[2]	
					FFKM "C" J20[3]	
Outlet body casted						
Inlet body	**1.4104**	**H2**	Art. No. **4623.**	**2902**	**2912**	**2922**
Outlet body	**1.0619 WCB**	**H3**	Art. No. **4623.**	**2903**	**2913**	**2923**
Bonnet	**0.7043**	**H4**	Art. No. **4623.**	**2904**	**2914**	**2924**
	p [bar_g]		S/G/L	**0.5 – 250[1]**	**0.5 – 180[1]**	**0.5 – 92.5[1]**
	p [psig]			**7.3 – 3625[1]**	**7.3 – 2610[1]**	**7.3 – 1342[1]**
Outlet body investment casted						
Inlet body	**1.4404**	**H2**	Art. No. **4622.**	**3772**	**3782**	**3792**
Outlet body	**1.0619 WCB**	**H3**	Art. No. **4622.**	**3773**	**3783**	**3793**
Bonnet	**1.0619**	**H4**	Art. No. **4622.**	**3774**	**3784**	**3794**
	p [bar_g]		S/G/L	**0.5 – 250**	**0.5 – 180**	**0.5 – 92.5**
	p [psig]			**7.3 – 3625**	**7.3 – 2610**	**7.3 – 1342**
Outlet body investment casted						
Inlet body	**1.4404**					
Outlet body	**1.4408 CF8M**	**H2**	Art. No. **4624.**	**2192**	**2202**	**2212**
Bonnet	**1.4408**	**H4**	Art. No. **4624.**	**2194**	**2204**	**2214**
	p [bar_g]		S/G/L	**0.5 – 250**	**0.5 – 180**	**0.5 – 92.5**
	p [psig]			**7.3 – 3625**	**7.3 – 2610**	**7.3 – 1342**

Type 462 Refrigeration technology

			DN_E	15, 20	15, 20, 25	25
			DN_A	20	25	32
			Actual Orifice diameter d_0 [mm]	13	13	17,5
			Actual Orifice area A_0 [mm²]	133	133	241
			Weight [kg]	3.1	3.1	3.9
O-ring material					NBR "N" J30	
					CR "K" J21	
					EPDM "D" J22	
Outlet body investment casted						
					Inlet + Outlet PN 40	
Inlet body	**1.4404**	**H2**	Art. No. **4622.**	**3882**	**3982**	**3892**
Outlet body	**1.0619 WCB**					
Bonnet	**1.0619**					
		p [bar_g]	D/G/F **0,5 –**	**40**	**40**	**40**

Also all other LESER valve types can be designed for refrigeration technology.

[1] Max. set pressure 69 bar / 1000 psig for Type 4623 acc. to ASME-Code Sec. VIII, Div. 1 with UV-Stamp.
The design of Type 4623 is permitted with limitations acc. to ASME-Code Sec. VIII, Div. 1, UCD-2, UCD-3.
Type 4623 shall not be used for lethal substances, irrespective of their state of aggregation.
[2] d_0 9 + 13: O-ring 90 Shore for set pressure > 100 bar
[3] d_0 9 + 13: O-ring 90 Shore for set pressure > 40 bar

Type 462
Dimensions and weights
Threaded connections [Metric units]

Size Outlet body			1/2" x 1"	3/4" x 1"	1" x 1"	1/2" x 1"	3/4" x 1"	1" x 1"	3/4" x 1 1/2"	1" x 1 1/2"	1 1/4" x 1 1/2"	1 1/2" x 1 1/2"
Actual Orifice diameter d_0 [mm]			9	9	9	13	13	13	17.5	17.5	17.5	17.5
Actual Orifice area A_0 [mm²]			63.6	63.6	63.6	133	133	133	241	241	241	241
Weight		[kg]	3.1	3.1	3.1	3.1	3.1	3.1	3.9	3.9	3.9	3.9
	Balanced bellows	[kg]	3.9	3.9	3.9	3.9	3.9	3.9	4.7	4.7	4.7	4.7
Required installation diameter d		[mm]	165	165	165	165	165	165	165	165	165	165

Inlet thread female

Size Outlet body			1/2" x 1"	3/4" x 1"	1" x 1"	1/2" x 1"	3/4" x 1"	1" x 1"	3/4" x 1 1/2"	1" x 1 1/2"	1 1/4" x 1 1/2"	1 1/2" x 1 1/2"
Actual Orifice diameter d_0 [mm]			9	9	9	13	13	13	17.5	17.5	17.5	17.5
Center to face / Height												
DIN ISO 228-1 / **ASME B1.20.1**	**G** / **NPT**	Inlet a	53	56	62	53	56	62	60	66	67	73
Center to face [mm]		Outlet b	75	75	75	75	75	75	75	75	75	75
Height [mm]		H max.	283	286	292	283	286	292	287	293	294	300
	Balanced bellows	H max.	315	318	324	315	318	324	319	325	326	332
ISO 7-1/BS 21	**Rc**	Inlet a	53	56	64	53	56	64	60	68	–	77
Center to face [mm]		Outlet b	75	75	75	75	75	75	75	75	–	75
Height [mm]		H max.	283	286	294	283	286	294	287	295	–	304
	Balanced bellows	H max.	315	318	326	315	318	326	319	327	–	336

Inlet thread male

Size outlet body			1" – 1 1/2"	1" – 1 1/2"	1 1/2"	2"
Actual Orifice diameter d_0 [mm]			9	13	17.5	17.5
Center to face [mm]						
DIN ISO 228-1	**G**	Inlet 1/2" – 1" a	52	52	–	–
		Inlet 1"– 1 1/2" a	–	–	56	–
		Outlet b	75	75	75	–
ISO 7-1/BS 21	**R**	Inlet 1/2" – 1" a	49	49	–	–
ASME B1.20.1	**NPT**	Inlet 1" – 2" a[1)]	–	–	53	53
		Outlet b	75	75	75	100

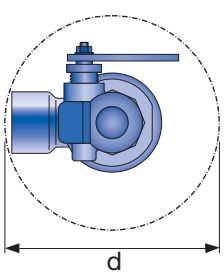
Height [mm]

			Conventional design						Balanced bellows					
Size inlet thread			1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
DIN ISO 228-1	**G**	H max.	296	298	301	303	305	–	328	330	333	335	337	–
ISO 7-1/BS 21	**R**	H max.	298	299	303	–	305	–	330	331	335	–	337	–
ASME B1.20.1	**NPT**	H max.	301	301	307	307	308	309	333	333	339	340	340	341

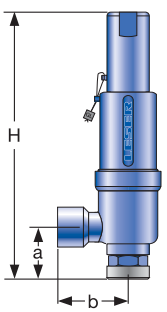
Length of screwed end c [mm]

Size inlet thread		1/2"	3/"	1"	1 1/4"	1 1/2"	2"
DIN ISO 228-1	**G**	14	16	18	20	22	24
ISO 7-1/BS 21	**R**	19	20	23	25	25	–
ASME B1.20.1	**NPT**	22	22	27	28	28	29

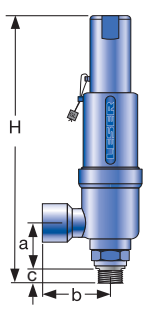
[1)] Inlet thread R only up to 1 1/2".



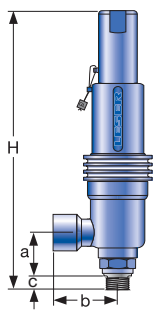
Required installation diameter



Conventional design – Female thread



Conventional design – Male thread



Balanced bellows

Type 462
Dimensions and weights
Threaded connections [US units]

Size Outlet body			1/2" x 1"	3/4" x 1"	1" x 1"	1/2" x 1"	3/4" x 1"	1" x 1"	3/4" x 1 1/2"	1" x 1 1/2"	1 1/4" x 1 1/2"	1 1/2" x 1 1/2"
Actual Orifice diameter d_0 [inch]			0.354	0.354	0.354	0.512	0.512	0.512	0.689	0.689	0.689	0.689
Actual Orifice area A_0 [inch²]			0.099	0.099	0.099	0.206	0.206	0.206	0.374	0.374	0.374	0.374
Weight		[lbs]	6.8	6.8	6.8	6.8	6.8	6.8	8.6	8.6	8.6	8.6
Balanced bellows		[lbs]	8.6	8.6	8.6	8.6	8.6	8.6	10.4	10.4	10.4	10.4
Required installation diameter d		[inch]	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2

Inlet thread female

Size Outlet body			1/2" x 1"	3/4" x 1"	1" x 1"	1/2" x 1"	3/4" x 1"	1" x 1"	3/4" x 1 1/2"	1" x 1 1/2"	1 1/4" x 1 1/2"	1 1/2" x 1 1/2"
Actual Orifice diameter d_0 [inch]			0.354	0.354	0.354	0.512	0.512	0.512	0.689	0.689	0.689	0.689
Center to face / Height												
DIN ISO 228-1 / **ASME B1.20.1**	**G** / **NPT**	Inlet a	2 3/32	2 7/32	2 7/16	2 3/32	2 7/32	2 7/16	2 3/8	2 19/32	2 5/8	2 7/8
Center to face [inch]		Outlet b	2 15/16	2 15/16	2 15/16	2 15/16	2 15/16	2 15/16	2 15/16	2 15/16	2 15/16	2 15/16
Height [inch]		H max.	11 5/32	11 1/14	11 1/2	11 5/32	11 1/4	11 1/2	11 5/16	11 17/32	11 9/16	11 13/16
Balanced bellows		H max.	12 13/32	12 17/32	12 3/4	12 13/32	12 17/32	12 3/4	12 9/16	12 25/32	12 27/32	13 1/16
ISO 7-1/BS 21	**Rc**	Inlet a	2 3/32	2 7/32	2 17/32	2 3/32	2 7/32	2 17/32	2 3/8	2 11/16	–	3 1/32
Center to face [inch]		Outlet b	2 15/16	2 15/16	2 15/16	2 15/16	2 15/16	2 15/16	2 15/16	2 15/16	–	2 15/16
Height [inch]		H max.	11 5/32	11 1/14	11 9/16	11 5/32	11 1/14	11 9/16	11 5/16	11 5/8	–	11 31/32
Balanced bellows		H max.	12 13/32	12 17/32	12 27/32	12 13/32	12 17/32	12 27/32	12 9/16	12 7/8	–	13 7/32

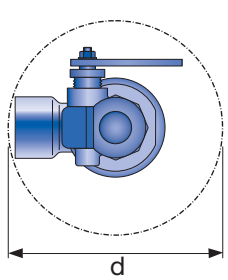
Inlet thread male

Size outlet body			1" – 1 1/2"	1" – 1 1/2"	1 1/2"	2"
Actual Orifice diameter d_0 [mm]			0.354	0.512	0.689	0.689
Center to face [inch]						
DIN ISO 228-1	**G**	Inlet 1/2" – 1" a	2 1/16	2 1/16	–	–
		Inlet 1"– 1 1/2" a	–	–	2 7/32	–
		Outlet b	2 15/16	2 15/16	2 15/16	–
ISO 7-1/BS 21	**R**	Inlet 1/2" – 1" a	1 15/16	1 15/16	–	–
ASME B1.20.1	**NPT**	Inlet 1" – 2" a[1)]	–	–	2 3/32	2 3/32
		Outlet b	2 15/16	2 15/16	2 15/16	4

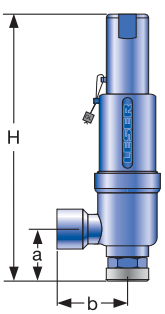
Height [inch]			**Conventional design**						**Balanced bellows**				
Size inlet thread			1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
DIN ISO 228-1	**G**	H max.	11 21/32	11 23/32	11 27/32	11 15/16	12	–	12 29/32	13	13 1/8	13 3/16	13 9/32	–
ISO 7-1/BS 21	**R**	H max.	11 23/32	11 25/32	11 15/16	–	12	–	13	13 1/32	13 3/16	–	13 9/32	–
ASME B1.20.1	**NPT**	H max.	11 27/32	11 27/32	12 3/32	12 1/8	12 1/8	12 5/32	13 1/8	13 1/8	13 11/32	13 3/8	13 3/8	13 7/16

Length of screwed end c [inch]								
Size inlet thread			1/2"	3/"	1"	1 1/4"	1 1/2"	2"
DIN ISO 228-1	**G**		9/16	5/8	23/32	25/32	7/8	15/16
ISO 7-1/BS 21	**R**		3/4	25/32	29/32	31/32	31/32	–
ASME B1.20.1	**NPT**		7/8	7/8	1 1/16	1 3/32	1 3/32	1 5/32

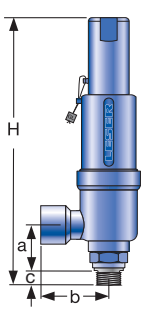
[1)] Inlet thread R only up to 1 1/2".



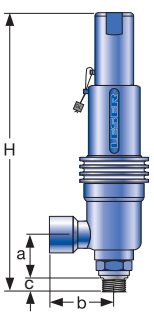
Required installation diameter



Conventional design – Female thread



Conventional design – Male thread



Balanced bellows

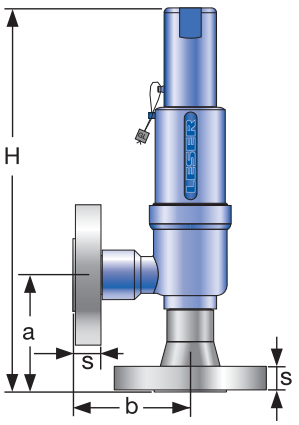
Type 462
Dimensions and weights
Flanged connections [Metric units]

			Conventional design			Balanced bellows		
Actual Orifice diameter d_0 [mm]			9	13	17.5	9	13	17.5
Actual Orifice area A_0 [mm²]			63.6	133	241	63.6	133	241
DIN EN 1092-1								
			Flange rating PN 40 – 400					
Center to face	[mm]	Inlet a	100	100	105	100	100	105
		Outlet b	100	100	100	100	100	100
Height	[mm]	H max.	330	330	333	375	375	378
ASME B 16.5								
			Flange rating class 150 – 2500					
Center to face	[mm]	Inlet a	100	100	105	100	100	105
		Outlet b	100	100	100	100	100	100
Height	[mm]	H max.	330	330	333	375	375	378

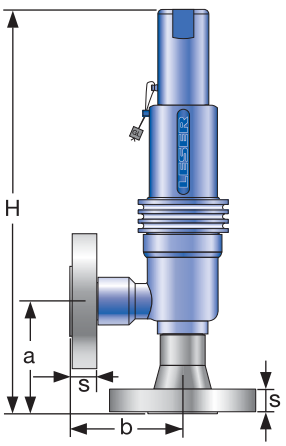
Note The outlet dimension b can differ at special combinations of nominal diameter and pressure range if flanged connections are used at the inlet and outlet. Special dimensions are possible. More information at sales@leser.com.

Weight								
For the calculation of the total weight please use the Formular: $W_T = W_N + W_F$ (Inlet) + W_F (Outlet)								
Weight net (without inlet and outlet flange)	[kg]	m_N	3.1	3.1	3.5	4.3	4.3	4.7

Flange dimensions															
			DIN EN 1092-1 / Flange rating PN						**ASME B16.5 / Flange rating class**						
		Size	40	100	160	250	320	400	**Size**	150	300	600	900	1500	2500
DN 15									**NPS ½"**						
Flange thickness	[mm]	s	18	–	22	28	28	30		14	18	18	26	26	30.2
Weight slip on flange	[kg]	m_F	0.8	–	1.2	2.5	2.5	3.6		0.6	0.9	0.9	2.1	2.1	3
DN 20									**NPS ¾"**						
Flange thickness	[mm]	s	20	22	–	–	–	–		15	18	18	25.4	25.4	32
Weight slip on flange	[kg]	m_F	1.1	1.3	–	–	–	–		0.8	1.4	1.4	2.3	2.3	3.5
DN 25									**NPS 1"**						
Flange thickness	[mm]	s	22	–	26	30	36	40		17	21.5	21.5	32.5	32.5	40
Weight slip on flange	[kg]	m_F	1.3	–	2.6	3.5	5	7.5		1	2.1	2.1	4.1	4.1	5.1
DN 40									**NPS 1½"**						
Flange thickness	[mm]	s	21	–	23	32	–	–		22	24	24	32	–	–
Weight slip on flange	[kg]	m_F	2.1	–	2.9	4.3	–	–		1.4	2.2	2.2	3.9	–	–



Conventional design



Balanced bellows

Type 462
Dimensions and weights
Flanged connections [US units]

			Conventional design			Balanced bellows		
Actual Orifice diameter d_0 [inch]			0.354	0.512	0.689	0.354	0.512	0.689
Actual Orifice area A_0 [inch²]			0.099	0.206	0.374	0.099	0.206	0.374
DIN EN 1092-1								
			Flange rating PN 40 – 400					
Center to face	[inch]	Inlet a	$3^{15}/_{16}$	$3^{15}/_{16}$	$4^{1}/_{8}$	$3^{15}/_{16}$	$3^{15}/_{16}$	$4^{1}/_{8}$
		Outlet b	$3^{15}/_{16}$	$3^{15}/_{16}$	$3^{15}/_{16}$	$3^{15}/_{16}$	$3^{15}/_{16}$	$3^{15}/_{16}$
Height	[inch]	H max.	13	13	$13^{1}/_{8}$	$14^{3}/_{4}$	$14^{3}/_{4}$	$14^{7}/_{8}$
ASME B 16.5								
			Flange rating class 150 – 2500					
Center to face	[inch]	Inlet a	$3^{15}/_{16}$	$3^{15}/_{16}$	$4^{1}/_{8}$	$3^{15}/_{16}$	$3^{15}/_{16}$	$4^{1}/_{8}$
		Outlet b	$3^{15}/_{16}$	$3^{15}/_{16}$	$3^{15}/_{16}$	$3^{15}/_{16}$	$3^{15}/_{16}$	$3^{15}/_{16}$
Height	[inch]	H max.	13	13	$13^{1}/_{8}$	$14^{3}/_{4}$	$14^{3}/_{4}$	$14^{7}/_{8}$

Note The outlet dimension b can differ at special combinations of nominal diameter and pressure range if flanged connections are used at the inlet and outlet. Special dimensions are possible. More information at sales@leser.com.

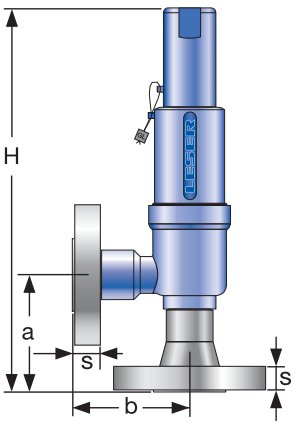
Weight

For the calculation of the total weight please use the Formular: $W_T = W_N + W_F$ (Inlet) + W_F (Outlet)

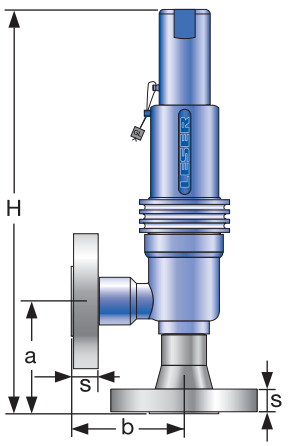
Weight net (without inlet and outlet flange)	[lbs]	m_N	6.8	6.8	7.7	9.5	9.5	10.4

Flange dimensions

			DIN EN 1092-1 / Flange rating PN						ASME B16.5 / Flange rating class						
		Size	40	100	160	250	320	400	Size	150	300	600	900	1500	2500
		DN 15							**NPS $^{1}/_{2}$"**						
Flange thickness	[mm]	s	$^{23}/_{32}$	–	$^{7}/_{8}$	$1^{3}/_{32}$	$1^{3}/_{32}$	$1^{3}/_{16}$		$^{9}/_{16}$	$^{23}/_{32}$	$^{23}/_{32}$	$1^{1}/_{32}$	$1^{1}/_{32}$	$1^{3}/_{16}$
Weight slip on flange	[lbs]	m_F	1.8	–	2.6	5.5	5.5	7.9		1.3	2.0	2.0	4.6	4.6	6.6
		DN 20							**NPS $^{3}/_{4}$"**						
Flange thickness	[mm]	s	$^{25}/_{32}$	$^{7}/_{8}$	–	–	–	–		$^{19}/_{32}$	$^{23}/_{32}$	$^{23}/_{32}$	1	1	$1^{1}/_{4}$
Weight slip on flange	[lbs]	m_F	2.4	2.9	–	–	–	–		1.8	3.1	3.1	5.1	5.1	7.7
		DN 25							**NPS 1"**						
Flange thickness	[mm]	s	$^{7}/_{8}$	–	$1^{1}/_{32}$	$1^{3}/_{16}$	$1^{3}/_{32}$	$1^{9}/_{16}$		$^{21}/_{32}$	$^{27}/_{32}$	$^{27}/_{32}$	$1^{9}/_{32}$	$1^{9}/_{32}$	$1^{9}/_{16}$
Weight slip on flange	[lbs]	m_F	2.9	–	5.7	7.7	11.0	16.5		2.2	4.6	4.6	9.0	9.0	11.2
		DN 40							**NPS $1^{1}/_{2}$"**						
Flange thickness	[mm]	s	$^{13}/_{16}$	–	$^{29}/_{32}$	$1^{1}/_{4}$	–	–		$^{7}/_{8}$	$^{15}/_{16}$	$^{15}/_{16}$	$1^{1}/_{4}$	–	–
Weight slip on flange	[lbs]	m_F	4.5	–	6.3	9.5	–	–		3.2	4.8	4.8	8.6	–	–



Conventional design



Balanced bellows

Type 462
Pressure/temperature ratings
Metric units

Actual Orifice diameter d_0 [mm]		9			13			17.5				
Actual Orifice Area A_0 [mm²]		63.6			133			241				
Body material: 1.4104 (430F)					**Type 4623**							
Base / Inlet Body	Connection size	1/2"	3/4"	1"	1/2"	3/4"	1"	3/4"	1"	1 1/4"	1 1/2"	2"
	Pressure rating	PN 400			PN 250			PN 160				
Outlet body	Pressure rating	PN 40			PN 40			PN 40				
Minimum set pressure	p [bar_g] S/G/L	0.5			0.5			0.5				
Min. set pressure standard bellows	p [bar_g] S/G/L	3			3			3				
Min. set pressure[1] high press. bellows	p [bar_g] S/G/L	40			40			40				
Maximum set pressure	p [bar_g] S/G/L	250			180			92.5				
Temperature acc. to DIN EN[3]	min. [°C]	-10[2]										
	max. [°C]	+150										
Temperature acc. to ASME[3]	min. [°C]	-29										
	max. [°C]	+150										
Body material: 1.4404 (316L)					**Type 4622**							
Base / Inlet Body	Connection size	1/2"	3/4"	1"	1/2"	3/4"	1"	3/4"	1"	1 1/4"	1 1/2"	2"
	Pressure rating	PN 250			PN 160			PN 160				
Outlet Body	Pressure rating	PN 160			PN 160			PN 160				
Minimum set pressure	p [bar_g] S/G/L	0.5			0.5			0.5				
Min. set pressure standard bellows	p [bar_g] S/G/L	3			3			3				
Min. set pressure[1] high press. bellows	p [bar_g] S/G/L	40			40			40				
Maximum set pressure	p [bar_g] S/G/L	250			180			92.5				
Temperature acc. to DIN EN[3]	min. [°C]	-45										
	max. [°C]	+150										
Temperature acc. to ASME[3]	min. [°C]	-29										
	max. [°C]	+150										
Body material: 1.4404 (316L)					**Type 4624**							
Base / Inlet Body	Connection size	1/2"	3/4"	1"	1/2"	3/4"	1"	3/4"	1"	1 1/4"	1 1/2"	2"
	Pressure rating	PN 250			PN 160			PN 160				
Outlet Body	Pressure rating	PN 160			PN 160			PN 160				
Minimum set pressure	p [bar_g] S/G/L	0.5			0.5			0.5				
Min. set pressure standard bellows	p [bar_g] S/G/L	3			3			3				
Min. set pressure[1] high press. bellows	p [bar_g] S/G/L	40			40			40				
Maximum set pressure	p [bar_g] S/G/L	250			180			92.5				
Temperature acc. to DIN EN[3]	min. [°C]	-45										
	max. [°C]	+150										
Temperature acc. to ASME[3]	min. [°C]	-45										
	max. [°C]	+150										

[1] Min. set pressure high pressure bellows = Max. pressure standard bellows.

[2] For DIN EN applications at temperatures under -10°C please proceed according to AD 2000-Merkblatt W10.

[3] The temperature is limited by the soft seal material. The stated values are valid for EPDM.

Type 462
Pressure/temperature ratings
US units

Actual Orifice diameter d_0 [inch]		0.354			0.512			0.689				
Actual Orifice Area A_0 [inch^2]		0.099			0.206			0.374				
Body material: 1.4104 (430F)		**Type 4623**										
Base / Inlet body	Connection size	1/2"	3/4"	1"	1/2"	3/4"	1"	3/4"	1"	1 1/4"	1 1/2"	2"
Minimum set pressure	p [psig] S/G/L	7.3			7.3			7.3				
Min. set pressure standard bellows	p [psig] S/G/L	43.5			43.5			43.5				
Min. set pressure[1] high press. bellows	p [psig] S/G/L	580			580			580				
Maximum set pressure	p [psig] S/G/L	3625			2610			1342				
Temperature acc. to DIN EN[3]	min. [°F]	+14[2]										
	max. [°F]	+302										
Temperature acc. to ASME[3]	min. [°F]	-20										
	max. [°F]	+302										
Body material: 1.4404 (316L)		**Type 4622**										
Base / Inlet body	Connection size	1/2"	3/4"	1"	1/2"	3/4"	1"	3/4"	1"	1 1/4"	1 1/2"	2"
Minimum set pressure	p [psig] S/G/L	7.3			7.3			7.3				
Min. set pressure standard bellows	p [psig] S/G/L	43.5			43.5			43.5				
Min. set pressure[1] high press. bellows	p [psig] S/G/L	580			580			580				
Maximum set pressure	p [psig] S/G/L	3625			2610			1342				
Temperature acc. to DIN EN[3]	min. [°F]	-49										
	max. [°F]	+302										
Temperature acc. to ASME[3]	min. [°F]	-20										
	max. [°F]	+302										
Body material: 1.4404 (316L)		**Type 4624**										
Base / Inlet body	Connection size	1/2"	3/4"	1"	1/2"	3/4"	1"	3/4"	1"	1 1/4"	1 1/2"	2"
Minimum set pressure	p [psig] S/G/L	7.3			7.3			7.3				
Min. set pressure standard bellows	p [psig] S/G/L	43.5			43.5			43.5				
Min. set pressure[1] high press. bellows	p [psig] S/G/L	580			580			580				
Maximum set pressure	p [psig] S/G/L	3625			2610			1342				
Temperature acc. to DIN EN[3]	min. [°F]	-49										
	max. [°F]	+302										
Temperature acc. to ASME[3]	min. [°F]	-49										
	max. [°F]	+302										

[1] Min. set pressure high pressure bellows = Max. pressure standard bellows.
[2] For DIN EN applications at temperatures under -10°C please proceed according to AD 2000-Merkblatt W10.
[3] The temperature is limited by the soft seal material. The stated values are valid for EPDM.

Type 462
Approvals

Actual Orifice diameter d_0 [mm]		9	13	17.5
Actual Orifice area A_0 [mm²]		63.6	133	241
Actual Orifice diameter d_0 [inch]		0.354	0.512	0.689
Actual Orifice area A_0 [inch²]		0.099	0.206	0.374
Europe			**Coefficient of discharge K_{dr}**	
	Approval No.		072021409Z0022/15/D/0135	
PED / DIN EN ISO 4126-1	S/G	0.83	0.81	0.79
	L	0.61	0.61	0.52
Germany			**Coefficient of discharge α_w**	
	Approval No.		TÜV SV 909	
PED / AD 2000-Merkblatt A2	S/G	0.83	0.81	0.79
	L	0.61	0.61	0.52
United States			**Coefficient of discharge K**	
	Approval No.		M 37112	
	S/G		0.811	
ASME Sec. VIII Div. 1	Approval No.		M 37101	
	L		0.566	
Canada			**Coefficient of discharge K**	
	Approval No.		The current approval no. can be found at www.leser.com	
CRN	S/G		0.811	
	L		0.566	
China			**Coefficient of discharge α_w**	
	Approval No.		The current approval no. can be found at www.leser.com	
AQSIQ	S/G	0.83	0.81	0.79
	L	0.61	0.61	0.52
Eurasian Custom Union			**Coefficient of discharge α_w**	
	Approval No.		The current approval no. can be found at www.leser.com	
EAC	S/G	0.83	0.81	0.79
	L	0.61	0.61	0.52

Classification societies		**Homepage**	
Bureau Veritas	BV	www.bureauveritas.com	The valid certification number is changed with every reneval. A sample certificate including the valid certification number can be found at www.leser.com
DNV GL	DNV	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	