

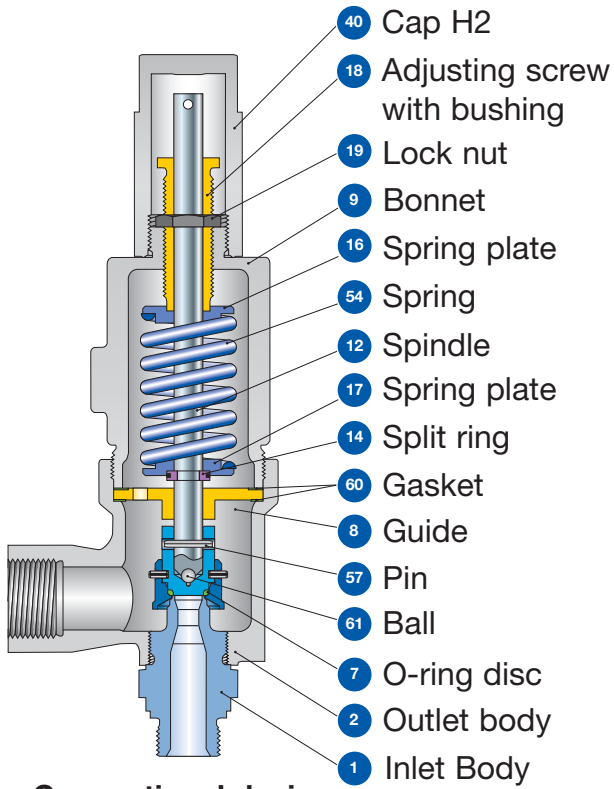


Type 462 HDD  
Cap H2

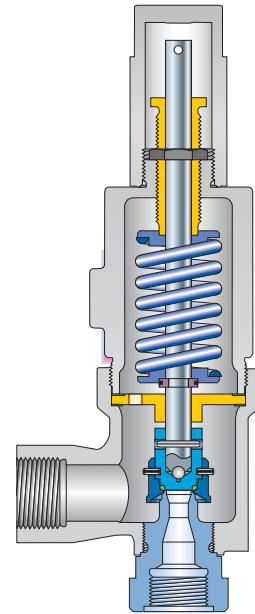
## Type 462 HDD Safety Relief Valves

Contents	Page
Designs	74
Materials	75
Article numbers	76
Dimensions and weights	
• Threaded connections	77
• Flanged connections	79
Pressure / temperature ratings	81
Approvals	82
<b>Series 459</b>	
Available options	83
Available connections	
• Threaded connections	84
• Flanged connections	85
LESER Original Spare Parts Kits	86

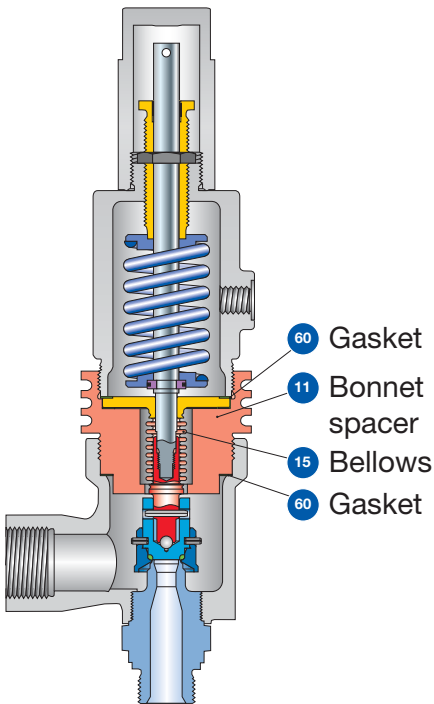
**Type 462 HDD**  
**Designs**



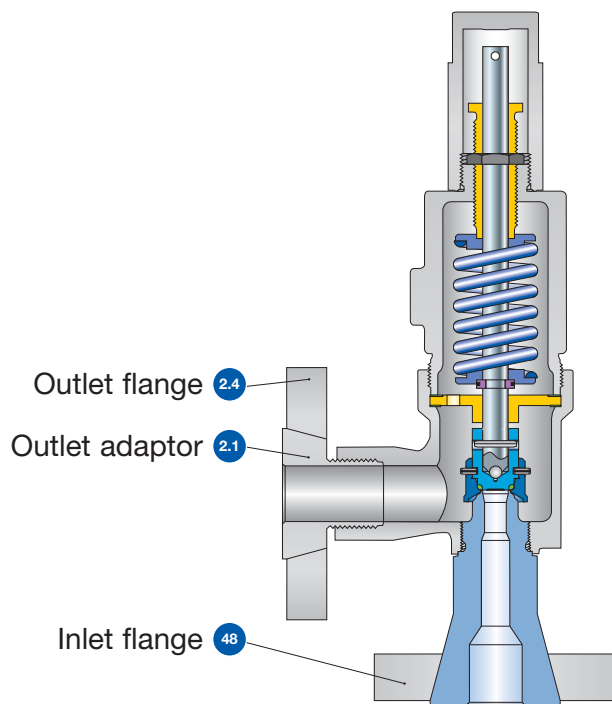
**Conventional design**  
Threaded connection



**Conventional design**  
Threaded connection



**Balanced bellows**  
Threaded connection



**Conventional design**  
Flange connection

## Type 462 HDD

### Materials

Item	Component	Design	Type 4624 HDD
1	Base / Inlet body	Threaded connection	1.4404 SA 479 316L
		Flange connection	1.4404 SA 479 316L
2	Outlet body		1.4408 CF8M
2.1	Outlet adaptor	Flange connection	1.4404 316L
2.4	Outlet flange	Flange connection	1.4404 316L
7	O-ring disc		1.4404 SA 479 316L
			NBR Nitrile-Butadiene
7.4	Soft seal O-ring	"N" <sup>1)</sup>	CR Chloroprene
		"K" <sup>1)</sup>	EPDM Ethylen-Propylene-Diene
		"D" <sup>1)</sup>	FKM Fluorocarbon
		"L" <sup>1)</sup>	FFKM Perfluor
		"C" <sup>2)</sup>	
8	Guide		1.4404 316L
		Balanced bellows design	1.4404 / SA 316L Upper conn. part of balanced bellows
9	Bonnet		1.4408 CF8M
		Balanced bellows design	1.4408 CF8M
11	Bonnet spacer		1.4404 316L
		Balanced bellows design	
12	Spindle		1.4404 316L
		Balanced bellows design	1.4404 316L
14	Split ring		1.4404 316L
15	Bellows		1.4571 316Ti
		Balanced bellows design	
16/17	Spring plate		1.4404 316L
18	Adjusting screw with bushing		1.4404 / PTFE 316L / PTFE
19	Lock nut		1.4404 316L
40	Cap H2		1.4404 316L
48	Inlet flange	Flange connection	1.4404 316L
54	Spring	Standard	1.4310 Stainless steel
57	Pin		1.4310 Stainless steel
60	Gasket		Graphite / 1.4301 Graphite / 316L
61	Ball		1.4401 316

**Please notice:**

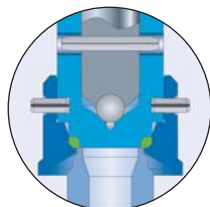
- Modifications reserved by LESER.
- LESER can upgrade materials without notice.
- Every part can be replaced by other material acc. to customer specification.
- The materials shall meet the requirements of the relevant regulations (Pressure Equipment Directive (PED), acc. to PED applied harmonized standards, AD 2000-Merkblätter, VdTÜV (Werkstoffblätter) as well as further materials listed in Section 8 of the Type-Examination.

<sup>1)</sup> O-ring 90 Shore for set pressures > 100 bar

<sup>2)</sup> O-ring 90 Shore for set pressures > 40 bar

## Type 462 HDD

### Article numbers



O-ring disc

Actual Orifice diameter $d_0$ [mm]				9
Actual Orifice area $A_0$ [mm <sup>2</sup> ]				63,9
Actual Orifice diameter $d_0$ [inch]				0.354
Actual Orifice area $A_0$ [inch <sup>2</sup> ]				0.099
<b>O-ring material</b>				NBR "N" J30 <sup>1)</sup>
				CR "K" J21 <sup>1)</sup>
				EPDM "D" J22 <sup>1)</sup>
				FKM "L" J23 <sup>1)</sup>
				FFKM "C" J20 <sup>2)</sup>
<b>Body material: 1.4404 (316L)</b>				
<b>Outlet body</b>	<b>1.4408 CF8M</b>	<b>H2</b>	<b>Art. No. 4624.</b>	<b>2152</b>
<b>Bonnet</b>	<b>1.4404 1.4408</b>	<b>H4</b>	<b>Art. No. 4624.</b>	<b>2154</b>
$p$ [bar <sub>g</sub> ]	S/G/L			<b>250.01 – 350</b>
$p$ [psig]				<b>3625 – 5076</b>

<sup>1)</sup> O-ring 90 Shore for set pressures > 100 bar

<sup>2)</sup> O-ring 90 Shore for set pressures > 40 bar

## Type 462 HDD

### Dimensions and weights

Threaded connections [Metric units]

		1/2" x 1"	3/4" x 1"	1" x 1"
Size Outlet body		1/2" x 1"	3/4" x 1"	1" x 1"
Actual Orifice diameter d <sub>0</sub> [mm]		9	9	9
Actual Orifice area A <sub>0</sub> [mm <sup>2</sup> ]		63.6	63.6	63.6
Weight	[kg]	3.1	3.1	3.1
Balanced bellows	[kg]	3.9	3.9	3.9
Required installation diameter d	[mm]	165	165	165

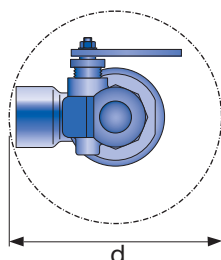
#### Inlet thread female

		1/2" x 1"	3/4" x 1"	1" x 1"
Size Outlet body		1/2" x 1"	3/4" x 1"	1" x 1"
Actual Orifice diameter d <sub>0</sub> [mm]		9	9	9
<b>Center to face / Height</b>				
<b>DIN ISO 228-1 G</b>	Inlet a	53	56	62
<b>ASME B1.20.1 NPT</b>	Outlet b	75	75	75
Center to face [mm]	H max.	283	286	292
Height [mm]	Balanced bellows H max.	315	318	324
<b>ISO 7-1/BS 21 Rc</b>	Inlet a	53	56	64
Center to face [mm]	Outlet b	75	75	75
Height [mm]	H max.	283	286	294
Balanced bellows	H max.	315	318	326

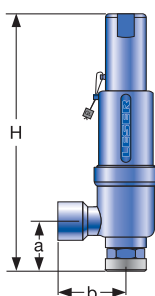
#### Inlet thread male

		1"					
Size outlet body		1"					
Actual Orifice diameter d <sub>0</sub> [mm]		9					
<b>Center to face [mm]</b>							
<b>DIN ISO 228-1 G</b>	Inlet a	52					
	Outlet b	75					
<b>ISO 7-1/BS 21 R</b>	Inlet a	49					
<b>ASME B1.20.1 NPT</b>	Outlet b	75					
<b>Height [mm]</b>							
	Size inlet thread	<b>Conventional design</b>	<b>Balanced bellows</b>				
		1/2"	3/4"	1"			
<b>DIN ISO 228-1 G</b>	H max.	296	298	301	328	330	333
<b>ISO 7-1/BS 21 R</b>	H max.	298	299	303	330	331	335
<b>ASME B1.20.1 NPT</b>	H max.	301	301	307	333	333	339

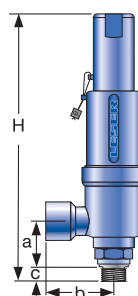
<b>Length of screwed end c [mm]</b>				
		1/2"	3/4"	1"
<b>DIN ISO 228-1 G</b>		14	16	18
<b>ISO 7-1/BS 21 R</b>		19	20	23
<b>ASME B1.20.1 NPT</b>		22	22	27



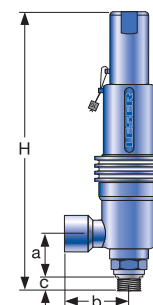
Required installation diameter



Conventional design – female thread



Conventional design – male thread



Balanced bellows

## Type 462 HDD

### Dimensions and weights

Threaded connections [US units]

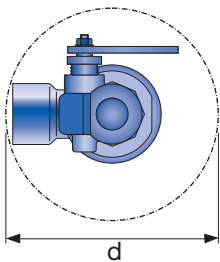
Size Outlet body		1/2" x 1"	3/4" x 1"	1" x 1"
Actual Orifice diameter d <sub>0</sub> [inch]		0.354	0.354	0.354
Actual Orifice area A <sub>0</sub> [inch <sup>2</sup> ]		0.099	0.099	0.099
Weight	[lbs]	6.8	6.8	6.8
Balanced bellows	[lbs]	8.6	8.6	8.6
Required installation diameter d	[inch]	6 1/2	6 1/2	6 1/2

#### Inlet thread female

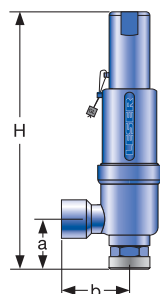
Size Outlet body		1/2" x 1"	3/4" x 1"	1" x 1"
Actual Orifice diameter d <sub>0</sub> [inch]		0.354	0.354	0.354
<b>Center to face / Height</b>				
<b>DIN ISO 228-1 G</b>	<b>Inlet a</b>	2 <sup>3</sup> / <sub>32</sub>	2 <sup>7</sup> / <sub>32</sub>	2 <sup>7</sup> / <sub>16</sub>
<b>ASME B1.20.1 NPT</b>	<b>Outlet b</b>	2 <sup>15</sup> / <sub>16</sub>	2 <sup>15</sup> / <sub>16</sub>	2 <sup>15</sup> / <sub>16</sub>
Center to face [inch]	H max.	11 <sup>5</sup> / <sub>32</sub>	11 <sup>1</sup> / <sub>14</sub>	11 <sup>1</sup> / <sub>2</sub>
Height [inch]	Balanced bellows H max.	12 <sup>13</sup> / <sub>32</sub>	12 <sup>17</sup> / <sub>32</sub>	12 <sup>3</sup> / <sub>4</sub>
<b>ISO 7-1/BS 21 Rc</b>	<b>Inlet a</b>	2 <sup>3</sup> / <sub>32</sub>	2 <sup>7</sup> / <sub>32</sub>	2 <sup>7</sup> / <sub>32</sub>
Center to face [inch]	<b>Outlet b</b>	2 <sup>15</sup> / <sub>16</sub>	2 <sup>15</sup> / <sub>16</sub>	2 <sup>15</sup> / <sub>16</sub>
Height [inch]	H max.	11 <sup>5</sup> / <sub>32</sub>	11 <sup>1</sup> / <sub>14</sub>	11 <sup>9</sup> / <sub>16</sub>
	Balanced bellows H max.	12 <sup>13</sup> / <sub>32</sub>	12 <sup>17</sup> / <sub>32</sub>	12 <sup>27</sup> / <sub>32</sub>

#### Inlet thread male

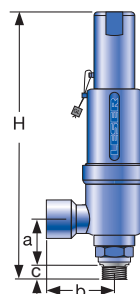
Size outlet body		1"	
Actual Orifice diameter d <sub>0</sub> [inch]		0.354	
<b>Center to face [inch]</b>			
<b>DIN ISO 228-1 G</b>	<b>Inlet a</b>	2 <sup>1</sup> / <sub>16</sub>	
	<b>Outlet b</b>	2 <sup>15</sup> / <sub>16</sub>	
<b>ISO 7-1/BS 21 R</b>	<b>Inlet a</b>	1 <sup>15</sup> / <sub>16</sub>	
<b>ASME B1.20.1 NPT</b>	<b>Outlet b</b>	2 <sup>15</sup> / <sub>16</sub>	
<b>Height [inch]</b>			
Size inlet thread	<b>Conventional design</b>	<b>Balanced bellows</b>	
	3/8"      1/2"      3/8"	1/2"      3/8"      1/2"	
<b>DIN ISO 228-1 G</b>	H max.	11 <sup>21</sup> / <sub>32</sub> 11 <sup>23</sup> / <sub>32</sub> 11 <sup>27</sup> / <sub>32</sub> 12 <sup>29</sup> / <sub>32</sub> 13      13 <sup>1</sup> / <sub>8</sub>	
<b>ISO 7-1/BS 21 R</b>	H max.	11 <sup>23</sup> / <sub>32</sub> 11 <sup>25</sup> / <sub>32</sub> 11 <sup>15</sup> / <sub>16</sub> 13      13 <sup>1</sup> / <sub>32</sub> 13 <sup>3</sup> / <sub>16</sub>	
<b>ASME B1.20.1 NPT</b>	H max.	11 <sup>27</sup> / <sub>32</sub> 11 <sup>27</sup> / <sub>32</sub> 12 <sup>3</sup> / <sub>32</sub> 13 <sup>1</sup> / <sub>8</sub> 13 <sup>1</sup> / <sub>8</sub> 13 <sup>11</sup> / <sub>32</sub>	
<b>Length of screwed end "c" [inch]</b>			
Size inlet thread	1/2"	3/4"	1"
<b>DIN ISO 228-1 G</b>	9/16	5/8	23/32
<b>ISO 7-1/BS 21 R</b>	3/4	25/32	29/32
<b>ASME B1.20.1 NPT</b>	7/8	7/8	11/16



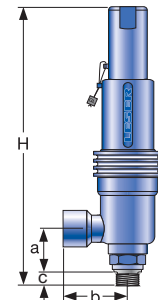
Required installation diameter



Conventional design – female thread



Conventional design – male thread



Balanced bellows

## Type 462 HDD

### Dimensions and weights

Flanged connections [Metric units]

	Conventional design	Balanced bellows
Actual Orifice diameter $d_0$ [mm]	9	9
Actual Orifice area $A_0$ [mm <sup>2</sup> ]	63.6	63.6

#### DIN EN 1092-1

##### Flange rating PN 40 – 400

<b>Center to face</b> [mm]	Inlet a	100	100
	Outlet b	100	100
<b>Height</b> [mm]	H max.	330	375

#### ASME B 16.5

##### Flange rating class 150 – 2500

<b>Center to face</b> [mm]	Inlet a	100	100
	Outlet b	100	100
<b>Height</b> [mm]	H max.	330	375

**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.

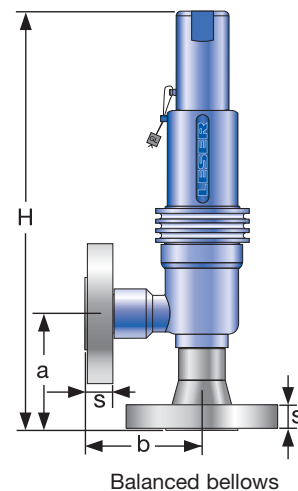
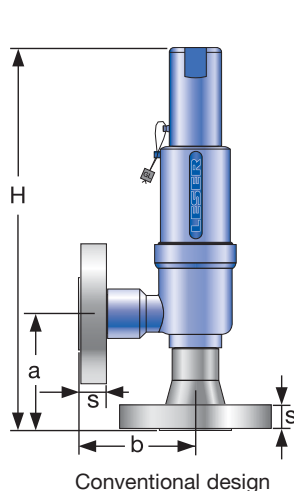
#### Weight

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

<b>Weight net</b> [kg] (without inlet and outlet flange) $m_N$	3.1	4.3
---	-----	-----

#### Flange dimensions

	Size	DIN EN 1092-1 / Flange rating PN						ASME B16.5 / Flange rating class							
		40	100	160	250	320	400	Size	150	300	600	900	1500	2500	
<b>DN 15</b>		<b>NPS 1/2"</b>													
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	
<b>DN 20</b>		<b>NPS 3/4"</b>													
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	
<b>DN 25</b>		<b>NPS 1"</b>													
Flange thickness [mm]	$s$	22	–	26	30	36	40		17	21.5	21.5	32.5	32.5	40	
Flange thickness [kg]	$m_F$	1.3	–	2.6	3.5	5	7.5		1	2.1	2.1	4.1	4.1	5.1	
<b>DN 40</b>		<b>NPS 1 1/2"</b>													
Flanschblattdicke [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	–	–	



## Type 462 HDD

### Dimensions and weights

Flanged connections [US units]

	Conventional design	Balanced bellows
Actual Orifice diameter $d_0$ [inch]	0.354	0.354
Actual Orifice area $A_0$ [inch <sup>2</sup> ]	0.099	0.099

#### DIN EN 1092-1

			Flange rating PN 40 – 400	
<b>Center to face</b>	[inch]	Inlet a	$3^{15}/_{16}$	$3^{15}/_{16}$
		Outlet b	$3^{15}/_{16}$	$3^{15}/_{16}$
<b>Height</b>	[inch]	H max.	13	$14^{3}/_{4}$

#### ASME B 16.5

			Flange rating class 150 – 2500	
<b>Center to face</b>	[inch]	Inlet a	$3^{15}/_{16}$	$3^{15}/_{16}$
		Outlet b	$3^{15}/_{16}$	$3^{15}/_{16}$
<b>Height</b>	[inch]	H max.	13	$14^{3}/_{4}$

**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.

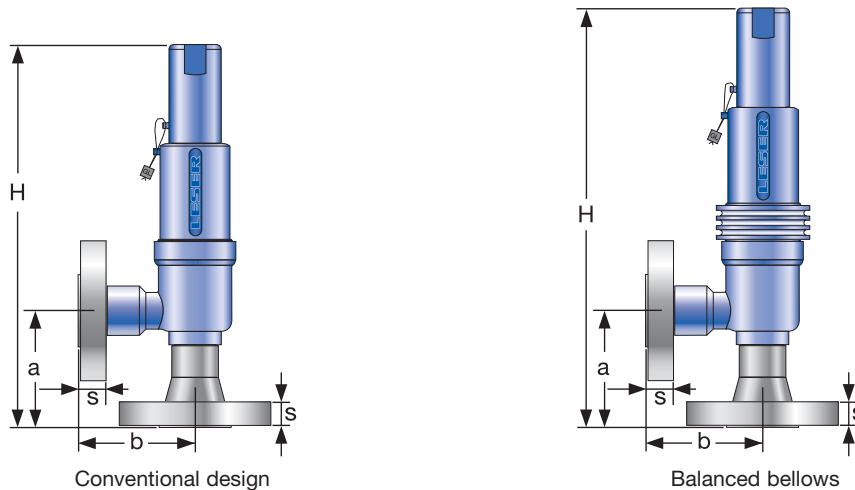
#### Weight

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

<b>Weight net</b>	[lbs]		6.8	9.5
(without inlet and outlet flange)	$m_N$			

#### Flange dimensions

		DIN EN 1092-1 / Flange rating PN						ASME B16.5 / Flange rating class					
		Size						Size					
		40	100	160	250	320	400	150	300	600	900	1500	2500
<b>DN 15</b>		<b>NPS 1/2"</b>											
Flange thickness	[inch] s	$2^{3}/_{32}$	–	$7/8$	$1^{3}/_{32}$	$1^{3}/_{32}$	$1^{3}/_{16}$	$9/_{16}$	$2^{3}/_{32}$	$2^{3}/_{32}$	$1^{1}/_{32}$	$1^{1}/_{32}$	$1^{3}/_{16}$
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
<b>DN 20</b>		<b>NPS 3/4"</b>											
Flange thickness	[inch] s	$2^{5}/_{32}$	$7/8$	–	–	–	–	$1^{9}/_{32}$	$2^{3}/_{32}$	$2^{3}/_{32}$	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
<b>DN 25</b>		<b>NPS 1"</b>											
Flange thickness	[inch] s	$7/8$	–	$1^{1}/_{32}$	$1^{3}/_{16}$	$1^{3}/_{32}$	$1^{9}/_{16}$	$2^{1}/_{32}$	$2^{7}/_{32}$	$2^{7}/_{32}$	$1^{9}/_{32}$	$1^{9}/_{32}$	$1^{9}/_{16}$
Flange thickness	[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
<b>DN 40</b>		<b>NPS 1 1/2"</b>											
Flanschblattdicke	[inch] s	$1^{3}/_{16}$	–	$2^{9}/_{32}$	$1^{1}/_{4}$	–	–	$7/8$	$1^{5}/_{16}$	$1^{5}/_{16}$	$1^{1}/_{4}$	–	–
Weight slip on flange	[lbs] $m_F$	4.5	–	6.3	9.5	–	–	3.2	4.8	4.8	8.6	–	–





## Type 462 HDD

### Pressure temperature ratings

[Metric units + US units]

#### Metric units

Actual Orifice diameter $d_0$ [mm]		9		
Actual Orifice Area $A_0$ [mm <sup>2</sup> ]		63.6		
<b>Body material 1.4404 (316L)</b>		<b>Type 4624</b>		
<b>Base / Inlet Body</b>	Connection size	1/2"	3/4"	1"
	Pressure rating	PN 500		
<b>Outlet body</b>	Pressure rating	PN 160		
<b>Minimum set pressure</b>	$p$ [bar <sub>g</sub> ] S/G/L	250.01		
<b>Maximum set pressure</b>	$p$ [bar <sub>g</sub> ] S/G/L	350		
<b>Temperature</b> acc. to DIN EN <sup>1)</sup>	min. [°C]	-45		
	max. [°C]	+150		
<b>Temperature</b> acc. to ASME <sup>1)</sup>	min. [°C]	-45		
	max. [°C]	+150		

#### US units

Actual Orifice diameter $d_0$ [inch]		0.354		
Actual Orifice Area $A_0$ [inch <sup>2</sup> ]		0.099		
<b>Body material 1.4404 (316L)</b>		<b>Type 4624</b>		
<b>Base / Inlet Body</b>	Connection size	1/2"	3/4"	1"
	Pressure rating	3625		
<b>Minimum set pressure</b>	$p$ [psig] S/G/L	3625		
<b>Maximum set pressure</b>	$p$ [psig] S/G/L	5076		
<b>Temperature</b> acc. to DIN EN <sup>1)</sup>	min. [°F]	-49		
	max. [°F]	+302		
<b>Temperature</b> acc. to ASME <sup>1)</sup>	min. [°F]	-49		
	max. [°F]	+302		

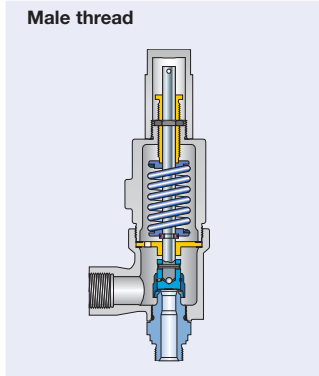
<sup>1)</sup> The temperature is limited by soft seal material. The stated values are valid for EPDM.

## Type 462 HDD

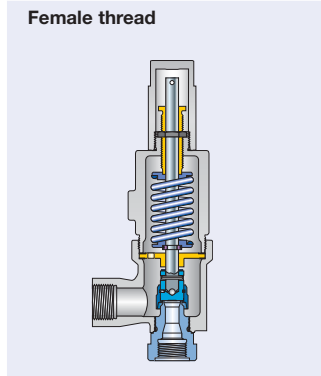
### Approvals

Actual Orifice diameter $d_0$ [mm]		9
Actual Orifice area $A_0$ [mm <sup>2</sup> ]		63.6
Actual Orifice diameter $d_0$ [inch]		0.354
Actual Orifice area $A_0$ [inch <sup>2</sup> ]		0.099
<b>Europe</b>		<b>Coefficient of discharge <math>K_{dr}</math></b>
	Approval No.	072021409Z0022/15/D/0135
PED / DIN EN ISO 4126-1	S/G	0.83
	L	0.61
<b>Germany</b>		<b>Coefficient of discharge <math>\alpha_w</math></b>
	Approval No.	TÜV SV 909
PED / AD 2000-Merkblatt A2	S/G	0.83
	L	0.61
<b>United States</b>		<b>Coefficient of discharge K</b>
	Approval No.	M 37112
ASME Sec. VIII Div. 1	S/G	0.811
	Approval No.	M 37101
	L	0.566
<b>Canada</b>		<b>Coefficient of discharge K</b>
	Approval No.	The current approval no. can be found at <a href="http://www.leser.com">www.leser.com</a>
CRN	S/G	0.811
	L	0.566
<b>China</b>		<b>Coefficient of discharge <math>\alpha_w</math></b>
	Approval No.	The current approval no. can be found at <a href="http://www.leser.com">www.leser.com</a>
AQSIQ	S/G	0.83
	L	0.61
<b>Eurasian Custom Union</b>		<b>Coefficient of discharge <math>\alpha_w</math></b>
	Approval No.	The current approval no. can be found at <a href="http://www.leser.com">www.leser.com</a>
EAC	S/G	0.83
	L	0.61
<b>Classification societies</b>		<b>Homepage</b>
Bureau Veritas	BV	<a href="http://www.bureauveritas.com">www.bureauveritas.com</a>
DNV GL		<a href="http://www.dnvgl.com">www.dnvgl.com</a>
Lloyd's Register EMEA	LREMEA	<a href="http://www.lr.org">www.lr.org</a>
Registro Italiano Navale	RINA	<a href="http://www.rina.org">www.rina.org</a>
U.S. Coast Guard	U.S.C.G	<a href="http://www.uscg.org">www.uscg.org</a>
		The valid certification number is changed with every renewal.
		A sample certificate including the valid certification number can be found at <a href="http://www.leser.com">www.leser.com</a>

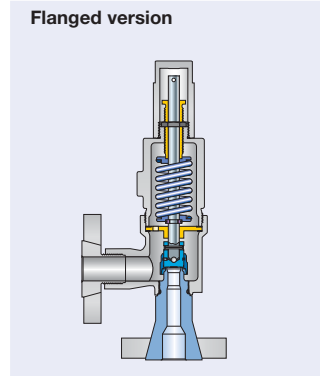
## Series 459 Available Options



**Type 459**



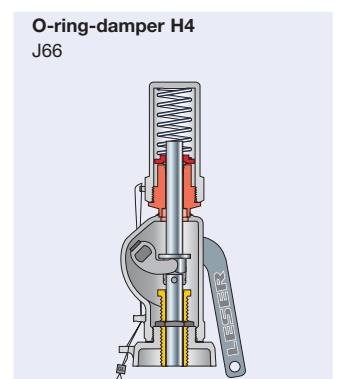
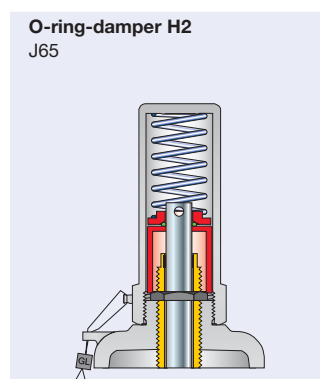
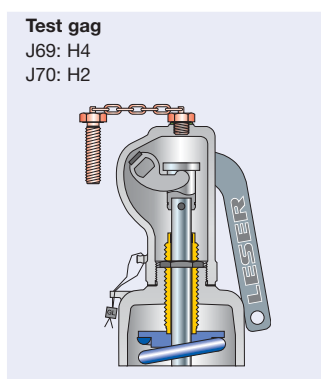
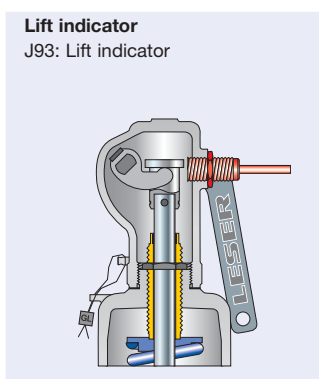
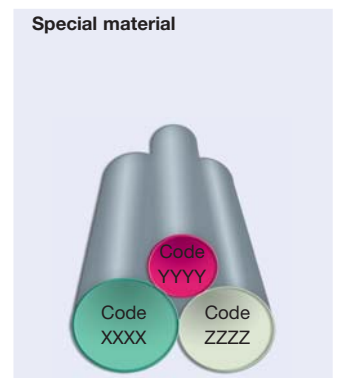
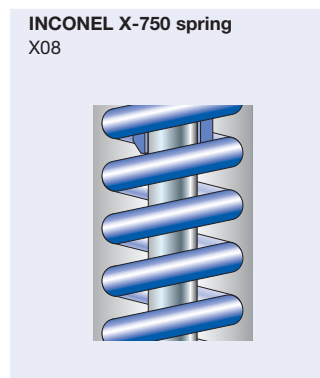
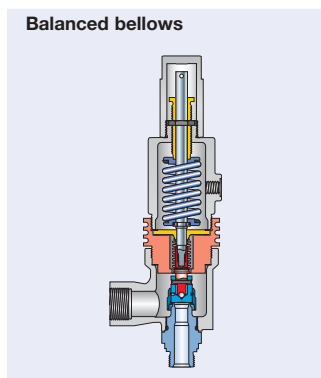
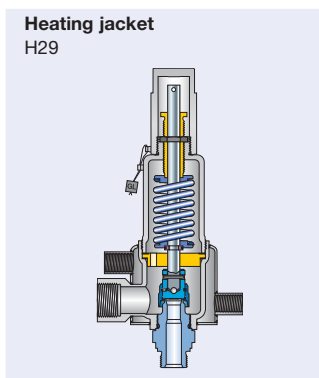
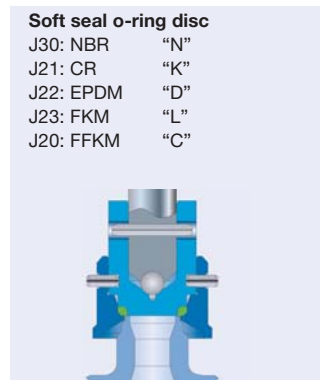
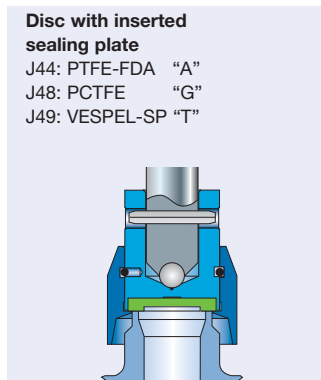
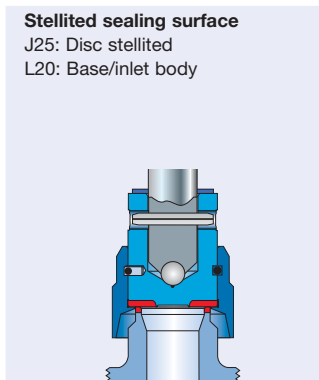
**Type 459**



**Type 462**



**Type 462**



## Series 459

### Available connections

#### Threaded connections

Actual Orifice diameter $d_0$ [mm]	6		9 / 13		17.5		
Actual Orifice area $A_0$ [mm <sup>2</sup> ]	28.3		63.9 / 133		241		
Actual Orifice diameter $d_0$ [inch]	0.236		0.345 / 0.512		0.689		
Actual Orifice area $A_0$ [inch <sup>2</sup> ]	0.044		0.099 / 0.206		0.374		
	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	
<b>Male thread DIN ISO 228-1</b>							
<b>G</b>	1/2"	V54 <sup>5)</sup>	–	V54 <sup>1)</sup>	–	–	
	3/4"	V55 <sup>5)</sup>	–	V55	–	–	
	1"	V56 <sup>5)</sup>	–	V56	V68	V56	
	1 1/4"	–	–	–	–	V83	
	1 1/2"	–	V69	–	V69	V57	V69
<b>Female thread DIN ISO 228-1</b>							
<b>G</b>	1/2"	V50 <sup>5)</sup>	–	V50	–	–	
	3/4"	V51 <sup>5)</sup>	–	V51	–	V51	
	1"	–	V66	V52 <sup>2)</sup>	V66	V52	
	1 1/4"	–	V81	–	V81	V84	
	1 1/2"	–	V67	–	V67	V53	V67
<b>Male thread ISO 7-1/BS 21</b>							
<b>R/BSPT</b>	1/2"	V30 <sup>3) 5)</sup>	–	V30 <sup>6)</sup>	–	–	
	3/4"	V31 <sup>5)</sup>	–	V31	–	–	
	1"	V32 <sup>5)</sup>	–	V32	V42	V32	
	1 1/2"	–	V43	–	V43	V33	V43
<b>Female thread ISO 7-1/BS 21</b>							
<b>Rc/BSPT</b>	1/2"	V38 <sup>5)</sup>	–	V38	–	–	
	3/4"	V39 <sup>5)</sup>	–	V39	–	V39	
	1"	V40 <sup>5)</sup>	–	V40	V36	V40	
	1 1/2"	–	V37	–	V37	V41	V37
<b>Male thread ANSI/ASME B1.20.1</b>							
<b>NPT</b>	1/2"	V61 <sup>5)</sup>	–	V61 <sup>4)</sup>	–	–	
	3/4"	V62 <sup>5)</sup>	–	V62	–	–	
	1"	V63 <sup>5)</sup>	–	V63	V73	V63	
	1 1/4"	–	–	–	–	V85	
	1 1/2"	–	V74	–	V74	V64	V74
	2"	–	–	–	–	–	V86
<b>Female thread ANSI/ASME B1.20.1</b>							
<b>NPT</b>	1/2"	V58 <sup>5)</sup>	–	V58	–	–	
	3/4"	V59 <sup>5)</sup>	–	V59	–	V59	
	1"	V60 <sup>5)</sup>	V71	V60	V71	V60	
	1 1/4"	–	V80	–	V80	V87	
	1 1/2"	–	V72	–	V72	V75	V72
	2"	–	–	–	–	–	V88

Flanged and threaded connections can be combined.

Threads according to other standards are available. Please specify in writing (diameter, pressure rating, standard).

<sup>1)</sup> Only for  $d_0$  9 mm

<sup>2)</sup>  $d_0$  9 mm: up to PN 420

<sup>3)</sup> Only as special design

<sup>4)</sup>  $d_0$  13 mm: up to 125 bar and 455 °C

<sup>5)</sup> max. PN 700: For higher set pressures a special inlet body is required (see LDeS 3001.19)

<sup>6)</sup> V30  $d_0$  9 mm

## Series 459

### Available connections

#### Flanged connections

Nominal diameter		Pressure rating	d <sub>0</sub> 6 mm		d <sub>0</sub> 9 mm		d <sub>0</sub> 13 mm		d <sub>0</sub> 17.5 mm	
<b>DIN EN 1092-1</b>										
<b>DN</b>		<b>PN</b>	<b>Option code</b>		<b>Option code</b>		<b>Option code</b>		<b>Option code</b>	
			<b>Inlet</b>	<b>Outlet</b>	<b>Inlet</b>	<b>Outlet</b>	<b>Inlet</b>	<b>Outlet</b>	<b>Inlet</b>	<b>Outlet</b>
15		40	I21	–	I21	–	I21	–	–	–
		160	I22	–	I22	–	I22	–	–	–
		250	I23	–	I23	–	I23	–	–	–
		320	I24	–	I24	–	I24	–	–	–
		400	I25	–	I25	–	I25	–	–	–
20		40	I26	–	I26	–	I26	–	I26	–
		160	I27	–	I27	–	I27	–	I27	–
25		40	I31	I46	I31	I46	I31	I46	I31	–
		160	I32	I47	I32	I47	I32	I47	I32	–
		250	I33	I48 <sup>2)</sup>	I33	I48 <sup>1)</sup>	I33	I48 <sup>1)</sup>	I33	–
		320	I34	–	I34	–	I34	–	I34	–
		400	I35	–	I35	–	I35	–	I35	–
40		40	–	–	–	I49	–	I49	–	I49
		160	–	–	–	I50	–	I50	–	I50
		250	–	–	–	I51 <sup>1)</sup>	–	I51 <sup>1)</sup>	–	I51 <sup>1)</sup>
<b>ANSI/ASME B 16.5</b>										
<b>NPS</b>		<b>CL</b>	<b>Inlet</b>	<b>Outlet</b>	<b>Inlet</b>	<b>Outlet</b>	<b>Inlet</b>	<b>Outlet</b>	<b>Inlet</b>	<b>Outlet</b>
1/2"		150	V01	–	V01	–	V01	–	–	–
		300	V02	–	V02	–	V02	–	–	–
		600	V02	–	V02	–	V02	–	–	–
		900	V03	–	V03	–	V03	–	–	–
		1500	V03	–	V03	–	V03	–	–	–
		2500	V04	–	V04	–	V04	–	–	–
3/4"		150	V05	–	V05	–	V05	–	V05	–
		300	V06	–	V06	–	V06	–	V06	–
		600	V06	–	V06	–	V06	–	V06	–
		900	V07	–	V07	–	V07	–	V07	–
		1500	V07	–	V07	–	V07	–	V07	–
		2500	V08	–	V08	–	V08	–	V08	–
1"		150	V09	–	V09	V18	V09	V18	V09	–
		300	V10	V19	V10	V19	V10	V19	V10	–
		600	V10	V19	V10	V19	V10	V19	V10	–
		900	V11	–	V11	–	V11	–	V11	–
		1500	V11	–	V11	–	V11	–	V11	–
		2500	V12	–	V12	–	V12	–	V12	–
1 1/2"		150	–	–	–	V21	–	V21	–	V21
		300	–	–	–	V22	–	V22	–	V22
		600	–	–	–	V22	–	V22	–	V22

Type 462 Refrigeration technology – Flange facings DIN EN 1092, groove face D

Nominal diameter		Center to face [mm]		d <sub>0</sub> 13 mm		d <sub>0</sub> 13 mm		d <sub>0</sub> 17.5 mm	
<b>DIN EN 1092-1</b>									
<b>DN</b>		<b>a</b>	<b>b</b>	<b>Option code</b>		<b>Option code</b>		<b>Option code</b>	
<b>Inlet</b>	<b>Outlet</b>	<b>Inlet</b>	<b>Outlet</b>	<b>Inlet</b>	<b>Outlet</b>	<b>Inlet</b>	<b>Outlet</b>	<b>Inlet</b>	<b>Outlet</b>
15	20	90	80	I1C	I1J	–	–	–	–
20	20	90	80	I1D	I1J	–	–	–	–
15	25	100	100	–	–	I1A	I1H	–	–
15	25	95	95	–	–	I1F	I1L	–	–
20	25	90	80	–	–	I1D	I1K	–	–
20	25	95	95	–	–	I1G	I51	–	–
25	25	100	100	–	–	I1B	I1H	–	–
25	25	90	80	–	–	I1E	I1K	–	–
25	32	100	100	–	–	–	–	I1B	I1M

Flanged and threaded connections can be combined. Flanges according to other standards, e.g. JIS are available. Please specify in writing (diameter, pressure rating and standard).

<sup>1)</sup> Caution! Only connecting dimensions correspond to PN 250, outlet body and bonnet are designed for PN 160.

## Series 459

### LESER Original Spare Parts Kits Type 459

#### Article numbers

	<b>d<sub>0</sub></b>	<b>9</b>	<b>13</b>	<b>17,5</b>
<b>Art. No.</b>				
Type 459	<b>5012.</b>	<b>1230</b>	<b>1231</b>	<b>1232</b>

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



#### Contents – Type 459

Item	Component	Material	Quantity
<b>7</b>	Disc	1.4404 / 316L	1
<b>14</b>	Split ring	1.4404 / 316L	2
<b>40.3</b>	Spacer	1.4571 / 316Ti	3
<b>57</b>	Pin	1.4310 / Stainless steel	1
<b>59</b>	Securing ring (split ring)	1.4571 / 316Ti	1
<b>60</b>	Gasket	Graphite / 1.4401 Graphite / 316	2
<b>61</b>	Ball	1.4401 / 316	1
<b>63</b>	Gasket	Graphite / 1.4401 Graphite / 316	1

## Series 459

### LESER Original Spare Parts Kits Type 462, 462 HDD

#### Article numbers

	d <sub>0</sub>	9	13	17,5
Art. No.				
Type 462	5012.	1233	1234	1235
Type 462 HDD	5012.	1233	-	-

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



#### Contents – Type 462, 462 HDD

Item	Component	Material	Quantity
7.1	O-ring disc body	1.4404 / 316L	1
7.2	Lifting aid	1.4404 / 316L	1
7.4	O-ring	FKM 70/75 Shore A, FKM 90 Shore A EPDM 70 Shore A, EPDM 90 Shore A	4
7.5	Pin	1.4310 / Stainless steel	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	2
61	Ball	1.4401 / 316	1
63	Gasket	Graphite / 1.4401 Graphite / 316	1

The Compact Performance Type 462 Original Spare Parts Kit is equipped with four O-rings (Item 7.4) in the two most commonly used materials – FKM and EPDM – with different shore hardness. The correct O-ring should be selected depending on the set pressure.