

# Type 449

Flanged Safety Relief Valve  
– spring loaded

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Type 449  
Screwed cap H2  
Bonnet closed

## Application range

Type 449 is a type-tested safety valve for protection against toxic media, often also in connection with corrosion.

Type 449 is characterised by:

- A duct system for flushing with protective gas.
- Balanced bellows for back pressure compensation and protection of the bonnet space.

- Manufacture of the body components as well as most inner components of rod or forged material in order to realise customer-specific material requirements, nominal pressure ratings, flange drillings and facings, and centre to face dimensions. Please use the "Specification Sheet" on page 59 and 60 for this.

Naturally, LESER will advise you on the configuration of Type 449 for your application.

## Protective gas flushing design

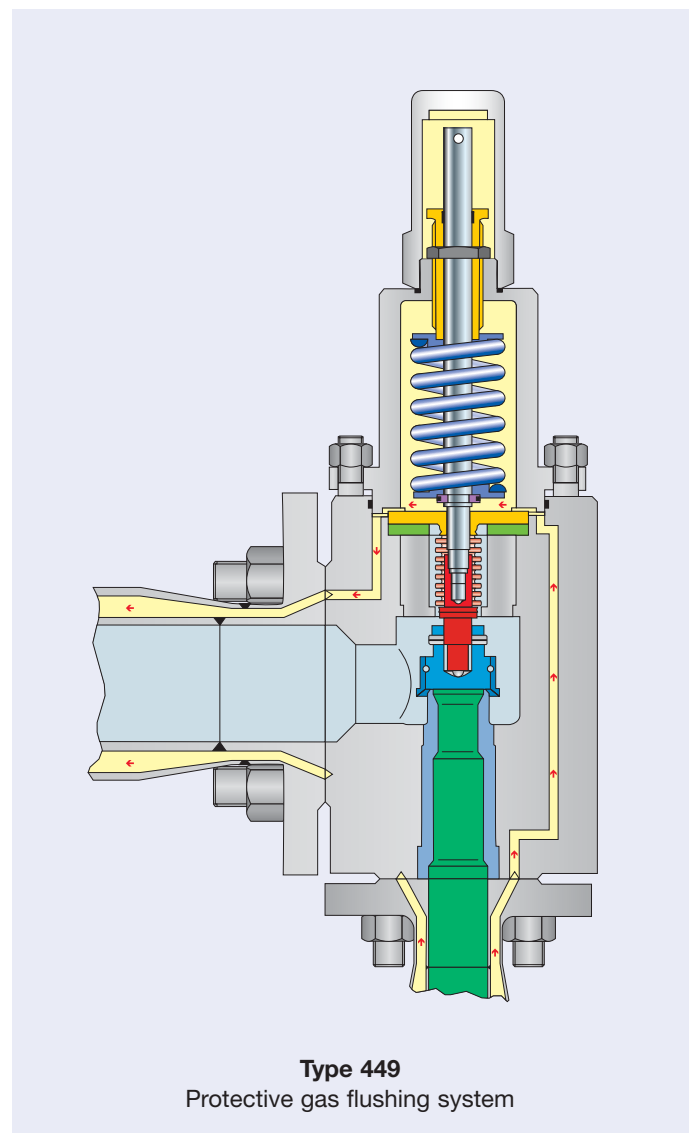
If highly toxic media form in systems, then suitable measures must be taken so that neither people nor the environment are endangered by that media.

One way to avoid any endangering is the installation of a duct system for flushing protective gas.

Here, a duct system is built around all safety valve components that carry highly toxic media. A protective gas flows through this duct system, which has the following task:

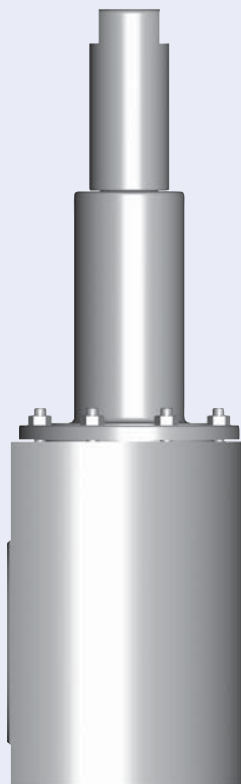
- Neutralisation of the highly toxic medium in the event of a leak.
- Residue from the neutralisation reaction is detected by detectors in the protective gas duct system and communicated to the control room where any necessary steps can be initiated.

Type 449 can be directly integrated into these duct systems. Through the appropriate connection flange and a special duct system, the protective gas is channelled from the inlet to the outlet side. The duct system design ensures that all possible leakage points are contacted by the protective gas.

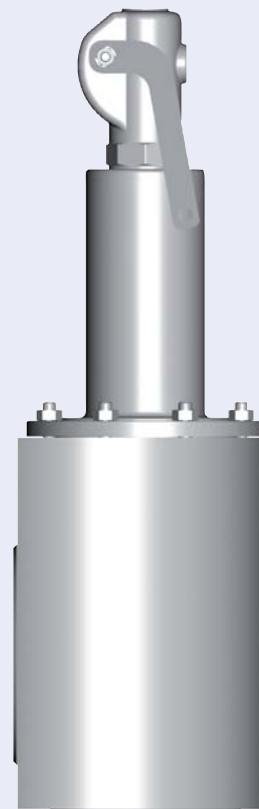


## Article numbers

Article numbers						
	DN <sub>i</sub>		25	50	80	100
	DN <sub>o</sub>		50	80	100	150
	Valve size		1" x 2"	2" x 3"	3" x 4"	4" x 6"
	Actual Orifice diameter d <sub>0</sub> [mm]		23	46	60	92
	Actual Orifice area A <sub>0</sub> [mm <sup>2</sup> ]		416	1662	2827	6648
<b>Bonnet closed</b>	<b>H2</b>	<b>Art.-No. 4494.</b>	<b>3362</b>	<b>3372</b>	<b>3382</b>	<b>3392</b>
	<b>H4</b>	<b>Art.-No. 4494.</b>	<b>3364</b>	<b>3374</b>	<b>3384</b>	<b>3394</b>



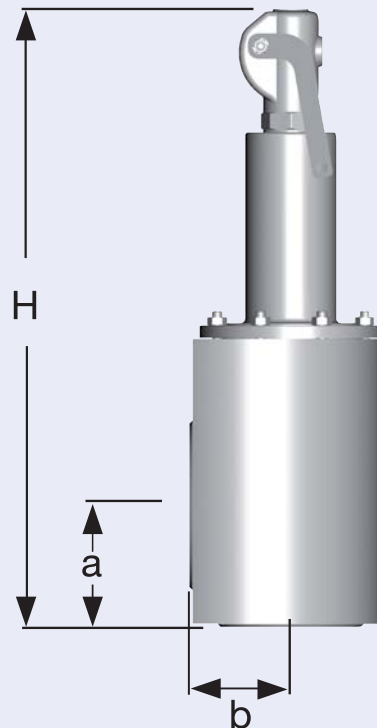
**Type 449**  
Cap H2  
Bonnet closed  
Conventional design



**Type 449**  
Packed lever H4  
Bonnet closed  
Conventional design

## Dimensions and weights

Metric units		25	50	80	100
	DN <sub>i</sub>	25	50	80	100
	DN <sub>o</sub>	50	80	100	150
	Valve size	1" x 2"	2" x 3"	3" x 4"	4" x 6"
	Actual Orifice diameter d <sub>0</sub> [mm]	23	46	60	92
	Actual Orifice area A <sub>0</sub> [mm <sup>2</sup> ]	415	1662	2827	6648
<b>Weight</b> [kg]		Specifications dependent on customer specification			
<b>Centre to face</b> [mm]	Inlet a				
	Outlet b				
<b>Height (H4)</b> [mm]	H max.				
<b>DIN Flange</b>	PN Inlet	Specifications dependent on customer specification			
	PN Outlet				
<b>ASME B16.5 Flange</b>	Class Inlet				
	Class Outlet				



Conventional design

## How to Order – Specification Sheet

Company:	Phone:	Fax:	E-mail:
Name:	Date:	Sheet 1 of:	Rev.:
Contract/Reference:	Spec.-No.:	Rev.:	Request:

General	
1	Quantity: _____ of _____
2	Item-no.:
3	Tag-no.:
4	Service:
5	Line no./Vessel no.:
6	VALVESTAR calc. Area:
7	Selected area:
8	Orifice designation:

Service conditions	
9	Fluid and state
10	Oper. pressure _____ bar
11	Set pressure _____ bar
12	Oper. temperature _____ °C
13	Rel. temperature _____ °C
14	Back pressure total _____ bar
15	Allowable overpress. _____ %
16	Inert gas pressure _____ bar

Connections	
17	<b>Inlet</b> _____ Size _____ DN _____
18	_____ Pressure rating _____ PN _____
19	_____ Type of facing _____
20	_____ Centre to face a _____ mm _____
21	<b>Outlet</b> _____ Size _____ DN _____
22	_____ Pressure rating _____ PN _____
23	_____ Type of facing _____
24	_____ Centre to face b _____ mm _____

Duct System	
25	Duct system _____ yes <input type="checkbox"/> no <input type="checkbox"/>
26	Inert gas pressure _____ bar
27	Jacketed flange comply with _____
28	<input type="checkbox"/> BAYER Standard 594 edition 02.2003
29	<input type="checkbox"/> Other: _____

Additional design data	

Required approvals	

## How to Order – Specification Sheet

### Material Specification

	Item	Description	Qty.	Material specification	MTC
	30	<b>1</b> Body	1		* <input type="checkbox"/>
	31	<b>5</b> Nozzle	1		* <input type="checkbox"/>
	32	<b>7</b> Disc, metal to metal	1		* <input type="checkbox"/>
	33	<b>8</b> Guide	1		- -
	34	<b>9</b> Bonnet	1		* <input type="checkbox"/>
	35	<b>12</b> Spindle	1		- -
	36	<b>14</b> Split ring	2		* <input type="checkbox"/>
	37	<b>15</b> Ballanced bellows	1		- -
	38	<b>16</b> Upper spring plate	1		- -
	39	<b>17</b> Lower spring plate	1		- -
	40	<b>18</b> Adjusting screw	1		- -
	41	<b>19</b> Lock nut	1		- -
	42	<b>22</b> Lift stopper	1		- -
	43	<b>40</b> Cap H2	1		* <input type="checkbox"/>
	44	<b>54</b> Spring	1		* <input type="checkbox"/>
	45	<b>55</b> Stud	4		* <input type="checkbox"/>
	46	<b>56</b> Nut	4		* <input type="checkbox"/>
	47	<b>57</b> Pin	1		- -
	48	<b>60</b> Gasket	1		- -
	49	<b>61</b> Ball	1		- -
	50	<b>63</b> O-ring	1		- -
51	<b>75</b> O-ring	1		- -	

MTC: Material Test Certificate 3.1 acc. DIN EN 10204

\* = Default is 3.1

- = Not available

= Editable is 3.2

### Dimensions and weights

You receive the complete technical specification sheet together with the LESER order confirmation.