

## Type 44-7 Excess Pressure Valve

## Type 44-8 Safety Excess Pressure Valve (SEV)

Typetested for water by TÜV

### Application

Pressure regulators for set points from **1 to 11 bar** · Valves in **DN 15 to 50** · **PN 25** · Suitable for liquids, air, and nitrogen up to **150 °C**

The valve **opens** when the upstream pressure rises.

Typetested by TÜV

**Type 44-8 Safety Excess Pressure Valve (SEV)** for protecting district heating plants.

The **Type 44-7 Excess Pressure Valve** consists of a valve and an actuator with operating diaphragm. In contrast, the **Type 44-8 Safety Excess Pressure Valve** is designed with an actuator with two diaphragms.

The version with two independent operating diaphragm complies with AGFW (German District Heating Association) regulations concerning components in house substations according to DIN 4747-1. This regulator version continues to operate even after the operating diaphragm ruptures.

In the event of a ruptured operating diaphragm in the actuator, the regulator continues to operate. An indicator at the actuator shows that the actuator is damaged.

### Special features

- Suitable for water and other liquids, provided these do not cause the materials used to corrode.
- Single-seated valve with balanced plug

**Versions** (see Fig. 2 and Fig. 3)

Series 44 Pressure Regulators with actuators for set point ranges from 1 to 11 bar · Valves in nominal sizes DN 15 to 50 · With welding ends · With flanged valve body (DN 32, 40, and 50 only)

**Type 44-7 Excess Pressure Valve:** with one operating diaphragm

**Type 44-8 Safety Excess Pressure Valve (SEV)** with two operating diaphragms. In the event of a ruptured operating diaphragm in the actuator, the regulator continues to operate.

### Special version

- Restricted flow cross-section with lower  $K_{VS}$  coefficient for DN 15
- With internal parts made of FPM (FKM), e.g. for use with mineral oils.
- ANSI version on request

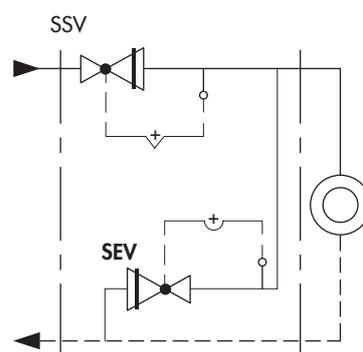


Fig. 1: Protection of a house substation with SSV and SEV



Fig. 2: Type 44-8 Safety Excess Pressure Valve (SEV)

## Principle of operation

The medium flows through the valve (1) as indicated by the arrow. The position of the plug determines the flow rate across the area released between plug (3) and seat (2).

The valve closes when the downstream pressure rises and opens again when this pressure drops.

The valve has a balanced plug (3). As a result, the forces generated by the upstream pressure which act on the valve plug are eliminated.

The pressure to be controlled is transmitted to the diaphragm (6) over a control line (11) and converted into a positioning force. This force moves the valve plug depending on the spring rate of the spring assembly (8) which can be adjusted at the set point adjuster (10).

In the event that the operating diaphragm (6.1) ruptures, the valve (SEV only) continues to function since the backup diaphragm (6.2) takes over the control task. To recognize a ruptured diaphragm, an optical diaphragm rupture indicator (12) is installed in the intermediate ring or optionally, a pressure switch can be used to issue a signal, e.g., to a control room.

## Type test

The Type 44-8 Safety Excess Pressure Valve (SEV) for  $K_{VS}$  2.5 and higher has been typetested for water by the German Technical Inspectorate (TÜV).

## Installation

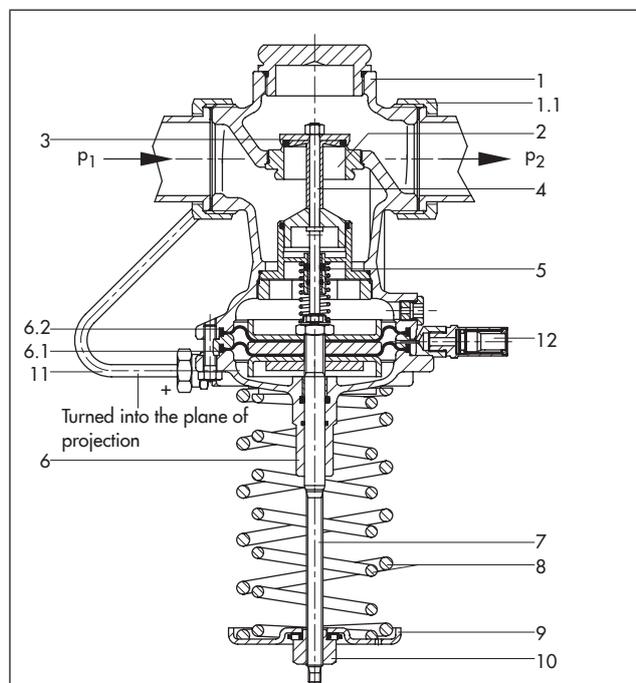
Install the regulator in horizontal pipelines.

The following points must be observed:

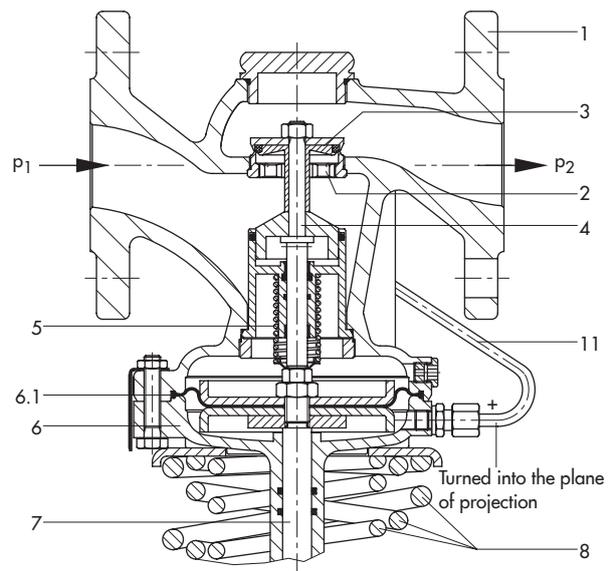
- The direction of flow must match the direction indicated by the arrow on the body
- The actuator must be suspended downwards.



Further details can be found in ► EB 2723.



Type 44-8 Safety Excess Pressure Valve (SEV)



Type 44-7 Excess Pressure Valve, with flanged valve body (DN 40)

- |                              |                                |
|------------------------------|--------------------------------|
| 1 Valve body                 | 7 Actuator stem                |
| 1.1 Connection nut with seal | 8 Spring assembly              |
| 2 Seat (exchangeable)        | 9 Spring plate                 |
| 3 Plug (balanced)            | 10 Set point adjuster          |
| 4 Plug stem                  | 11 Control line                |
| 5 Plug spring                | 12 Diaphragm rupture indicator |
| 6 Actuator                   |                                |
| 6.1 Operating diaphragm      |                                |
| 6.2 Backup diaphragm         |                                |

Fig. 3: Functional diagram of Type 44-7 and Type 44-8

**Table 1:** Technical data · All pressures in bar (gauge)

Nominal size	DN	15	20	25	32	40	50
K <sub>Vs</sub> coefficient	Standard version	4	6.3	8	12.5	16	20
	Special version	1 · 2.5	–	–	–	–	–
	Flanged body	–	–	–	12.5	20	25
x <sub>Fz</sub> value		0.6		0.55		0.5	0.45
Nominal pressure		PN 25					
Max. perm. differential pressure Δp		11 bar					
Max. permissible temperature		150 °C <sup>1)</sup>					
Leakage class according to IEC 60534-4		≤0.05 % of K <sub>Vs</sub> coefficient <sup>2)</sup>					
Set point ranges, continuously adjustable							
	Type 44-7	1 to 4 bar · 2 to 4.4 bar · 2.4 to 6.6 bar · 6 to 11 bar					
	Type 44-8 (SEV)	1 to 4 bar <sup>3)</sup> · 2 to 4.4 bar · 2.4 to 6.6 bar · 6 to 11 bar					
Compliance		<b>CE · EAC</b>					

<sup>1)</sup> Only the version for mineral oils can be used when air or nitrogen are used.

<sup>2)</sup> Leakage rate = 1/bubble-tight applies to EPDM/FPM soft seal.

<sup>3)</sup> Special version, without type test

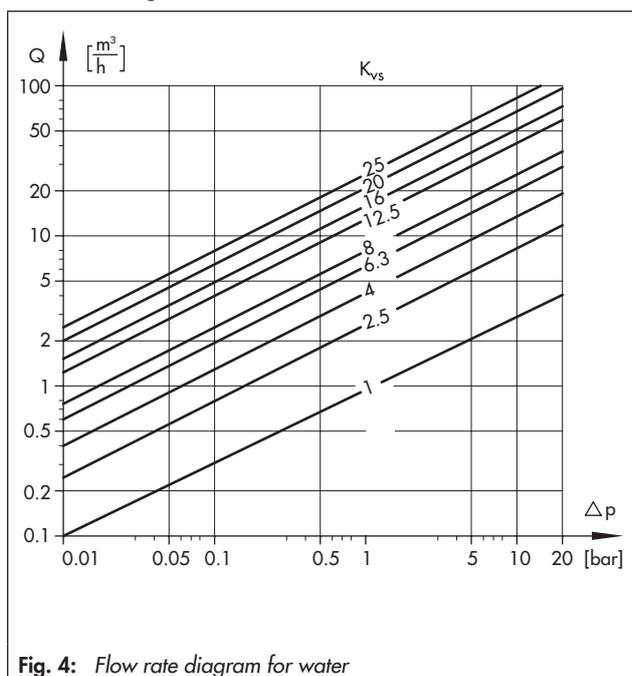
**Table 2:** Materials · Material numbers according to DIN EN

Type 44-7 and Type 44-8 (SEV) Pressure Regulators	
Valve body	Red brass CC499K · Spheroidal graphite iron EN-JS1049 <sup>1)</sup>
Actuator housing/intermediate ring	Red brass CC499K
Seat	Stainless steel 1.4305
Plug	Brass 2.0402 and stainless steel 1.4305 with EPDM soft seal <sup>2)</sup>
Valve spring	Stainless steel 1.4310
Operating diaphragm	EPDM with fabric reinforcement <sup>2)</sup>
Seals	EPDM <sup>2)</sup>

<sup>1)</sup> Additional version for DN 32, 40 and 50: valve with flanged body made of spheroidal graphite iron

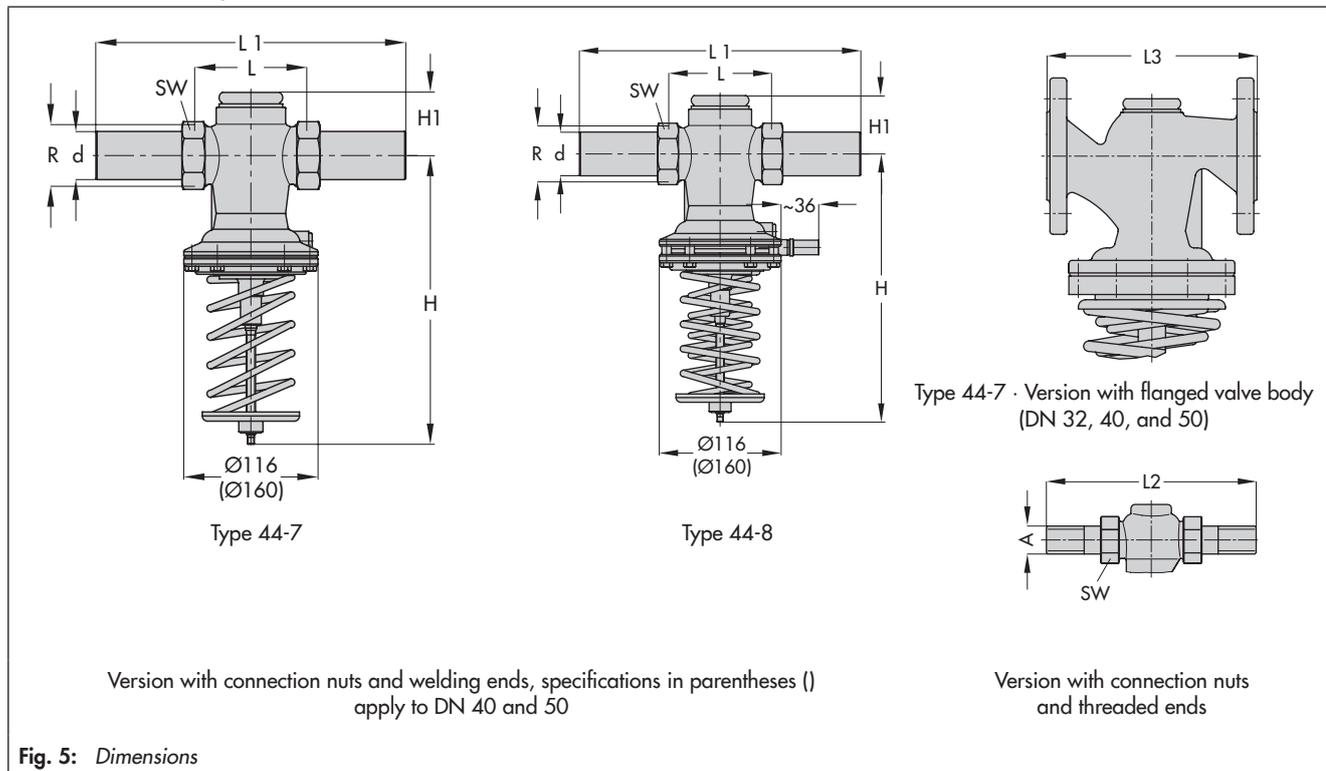
<sup>2)</sup> Special version, e.g. for mineral oils: FPM (FKM)

**Flow rate diagram for water**



**Fig. 4:** Flow rate diagram for water

## Dimensional drawings



**Table 3: Dimensions in mm and weights**

Valve size	DN	15	20	25	32	40	50
Pipe Ød		21.3	26.9	33.7	42.4	48.3	60.3
Connection R		G ¾	G 1	G 1¼	G 1¾	G 2	G 2½
Width across flats SW		30	36	46	59	65	82
L		65	70	75	100	110	130
L1 with welding ends		210	234	244	268	294	330
H	Type 44-7	230			250	390	
	Type 44-8	235			250	395	
H1	Type 44-7	41			58		
	Type 44-8						
Weight, approx. kg		2.0	2.1	2.2	8.5	9.0	9.5
<b>Special versions</b>							
<b>With threaded ends (male thread)</b>							
L2		129	144	159	192	206	228
Male thread A		G ½	G ¾	G 1	G 1¼	G 1½	G 2
Weight, approx. kg		2.0	2.1	2.2	3.5	9.0	9.5
<b>With flanged valve body (DN 32 to 50)</b>							
L3		-	-	-	180	200	230
Weight, approx. kg		-	-	-	11.7	13	14.5

## Ordering text

**Type 44-7 Excess Pressure Valve**

**Type 44-8 Safety Excess Pressure Valve (SEV)**

DN ... with welding ends, threaded ends or with flanged body (DN 32, 40, and 50 only)

Set point range ... bar

Special version ...

Specifications subject to change without notice