

T 2723 EN

Type 44-7 Excess Pressure Valve · Type 44-8 Safety Excess Pressure Valve (SEV)

Series 44 Self-operated Pressure Regulators



Application

Type 44-7 Excess Pressure Valve for set points from **1 to 11 bar** · Type 44-8 Safety Excess Valve for set points from **2 to 11 bar**
Valves in **DN 15 to 50 · PN 25** · Suitable for liquids, air and nitrogen up to **150 °C** Excess pressure valve and safety excess pressure valve (SEV) for protecting district heating plants

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

The **Type 44-7 Excess Pressure Valve** consists of a valve and an actuator with operating diaphragm.

The **Type 44-8 Safety Excess Pressure Valve (SEV)** 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 district heating systems. This regulator version continues to operate even after the operating diaphragm ruptures. In the event of a ruptured operating diaphragm in the actuator, the **Type 44-8 (SEV)** continues to operate. An indicator at the actuator shows that the actuator is damaged when the upstream pressure rises above 1.5 bar.

Special features

- Suitable for water and other liquids, provided these do not cause the materials used to corrode.
- Single-seated valve with balanced plug
- Type 44-8 (SEV) continues to operate in the event of an operating diaphragm rupture.
- The regulators comply with requirements of FW 506 published by AGFW (German District Heating Association).

Versions (see Fig. 1 and Fig. 3)

Valve sizes DN 15 to 50 with welding ends and DN 32 to 50 with flanged valve body

Type 44-7 Excess Pressure Valve with one operating diaphragm · Set point range from 1 to 11 bar

Type 44-8 Safety Excess Pressure Valve (SEV) with two operating diaphragms · Set point ranges from 2 to 11 bar · In the event of a ruptured operating diaphragm in the actuator, the regulator continues to operate. · **Typetested according to AGFW document FW 506**

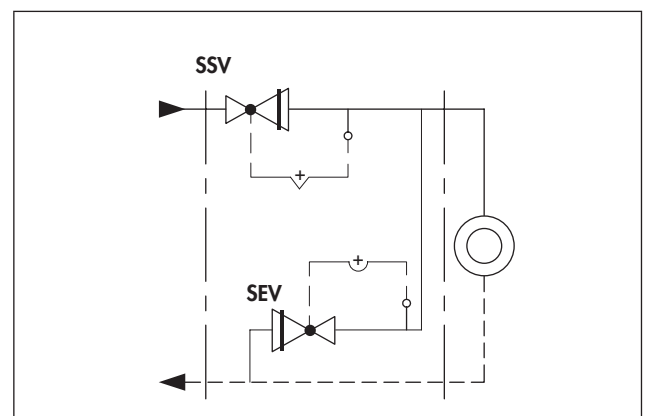


Fig. 1: Protection of a house substation with an SSV and SEV



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

Special version

- Restricted flow cross-section with lower K_{VS} coefficient for DN 15
- With internal parts made of FKM, e.g. for use with mineral oils

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 opens when the upstream pressure rises and closes 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) which responds at an upstream pressure of 1.5 bar 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). The test mark is available on request.

Installation

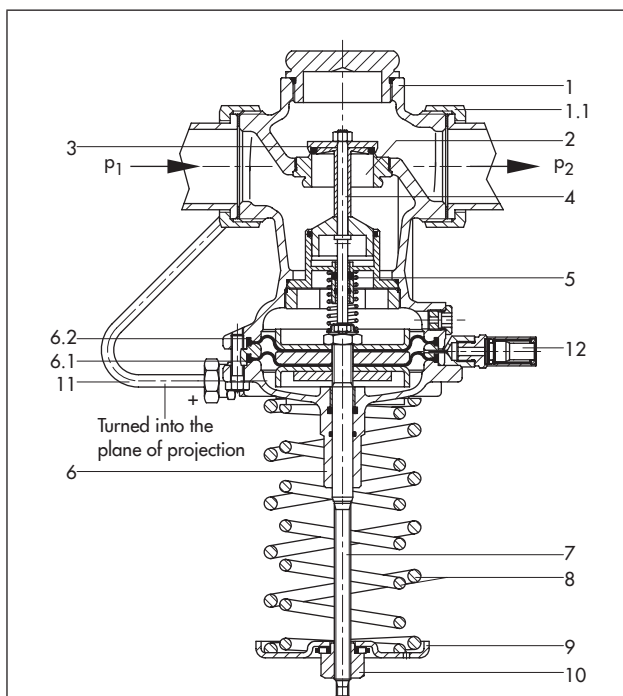
Install the regulator in horizontal pipelines.

The following points must be observed:

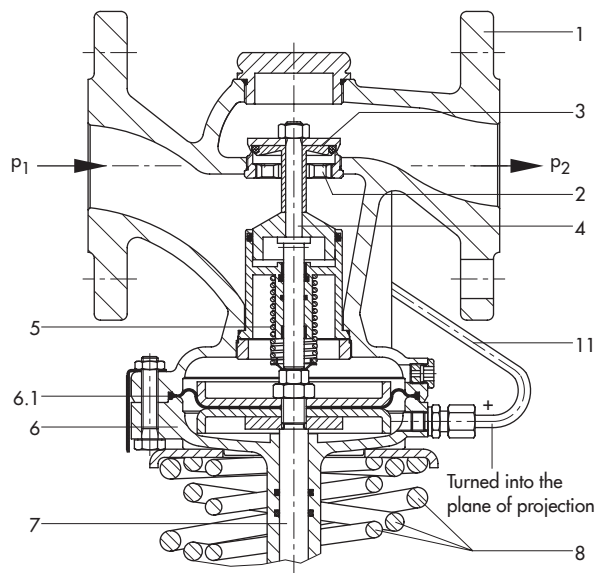
- The direction of flow must match the direction indicated by the arrow on the body
- The actuator must be suspended downwards.



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)

Valve size	DN	15	20	25	32	40	50
K _{Vs} coefficient	Standard version	4	6.3	8	12.5	16	20
	Special version	1 · 2.5	–	–	–	–	–
	Flanged body	–	–	–	12.5	20	25
x _{FZ} value		0.6		0.55		0.5	0.45
Pressure rating		PN 25					
Max. perm. differential pressure Δp		11 bar					
Max. permissible temperature		150 °C ¹⁾					
Leakage class according to IEC 60534-4		≤ 0.05 % of K _{Vs} coefficient					
Set point ranges, continuously adjustable		1 to 4 bar · 2 to 4.4 bar · 2.4 to 6.6 bar · 6 to 11 bar					
	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 ²⁾ · 2 to 4.4 bar · 2.4 to 6.6 bar · 6 to 11 bar					
Compliance		CE · EAC					

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

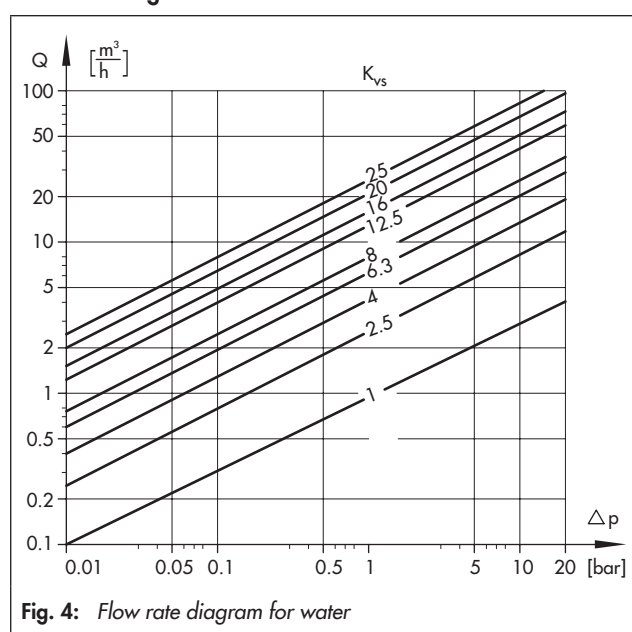
²⁾ Special version, without type test

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 ¹⁾
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 ²⁾
Valve spring	Stainless steel 1.4310
Operating diaphragm	EPDM with fabric reinforcement ²⁾
Seals	EPDM ²⁾

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

²⁾ Special version, e.g. for mineral oils: FKM

Flow rate diagram for water

Dimensional drawings

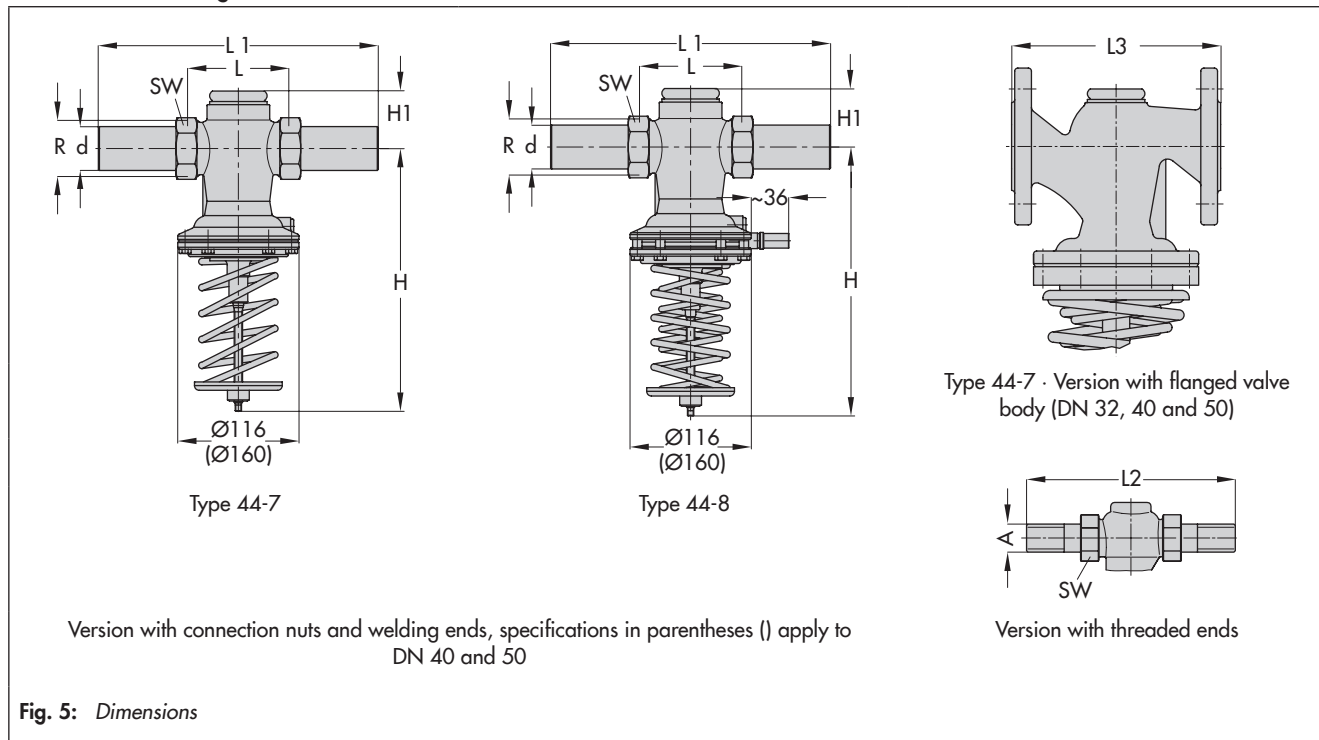


Table 3: Dimensions in mm and weights

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
Special versions							
With threaded ends (male thread)							
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
With flanged valve body (DN 32 to 50)							
L3		-	-	-	180	200	230
Weight, approx. kg		-	-	-	11.7	13	14.5

Ordering text

Type 44-7 Excess Pressure Valve or

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 ...