

Self-operated Pressure Regulators

Series 44

SAMSON

Type 44-0B · **Type 44-1 B** · Pressure Reducing Valve

Type 44-6 B · Excess Pressure Valve

Application

Set points from 0.1 bar to 10 bar with valves G 1/2 to G 1
Nominal pressure PN 25 · For non-flammable gases up to 80 °C, liquids up to 150 °C and steam up to 200 °C

Types 44-0 B, 44-1 B Pressure Reducing Valves:

The valve closes when the downstream pressure rises.

Type 44-6 B Excess Pressure Valves:

The valve opens when the upstream pressure rises.

The regulators consist of a valve and an actuator with a positioning bellows and a set point adjustment.

Special features include:

- Low-maintenance P regulators requiring no auxiliary energy
- Wide set point range and easy set point adjustment
- Spring-loaded, single-seated valve; pressure balanced by a metal bellows
- Stainless steel positioning bellows acting as operating element
- Compact design with especially low overall height
- Arbitrary mounting position (Types 44-1 B, 44-6 B)
- Set point adjustment can be lead-sealed

Versions

Pressure regulators with actuator for set point ranges up to 1, 4, 6 or 10 bar and control valve with G 1/2, G 3/4, or G 1 female thread

Type 44-1 B Pressure Reducing Valve · Valve PN 25 for liquids up to 150 °C and gases up to 80 °C · Pressure-balanced

Type 44-0 B Pressure Reducing Valve (Fig. 1) · With valve PN 25 for steam up to 200 °C · Pressure-balanced

Type 44-6 B Excess Pressure Valve · Valve PN 25 for liquids up to 150 °C, gases up to 80 °C and steam up to 200 °C · Pressure-balanced¹⁾

Special versions

- Special Kvs value for G 1/2
- Oil-resistant internal parts in Types 44-1 B/44-6 B

¹⁾ Not pressure-balanced in set point range 0.2 to 2 bar



Fig. 1 · Type 44-0 B Pressure Reducing Valve

Principle of operation

The medium flows through the valve in the direction indicated by the arrow. The position of the valve plug determines the flow across the cross-sectional area released between the plug (2) and seat (3).

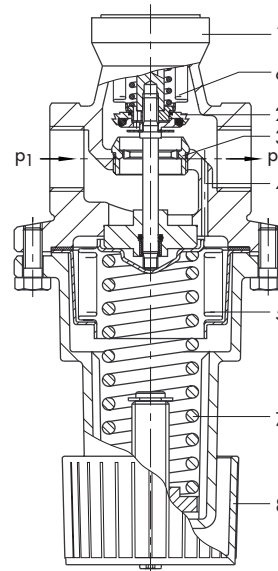
The **Type 44-0 B, Type 44-1 B Pressure Reducing Valves** are open when relieved of pressure ($p_1 = p_2$). The valve closes when the downstream pressure (p_2) rises above the adjusted set point.

The **Type 44-6 B Excess Pressure Valves** are closed when relieved of pressure. The valve opens when the upstream pressure rises above the adjusted set point.

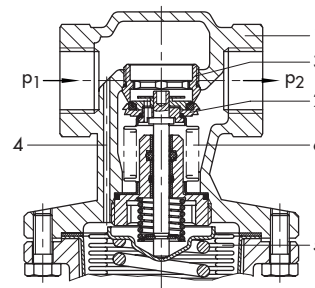
In both versions, the pressure to be maintained is transmitted through a bore hole (4) in the valve body (1) onto the positioning bellows (5) where it is converted into a positioning force. This force is used to adjust the valve plug as a function of the spring rate of the positioning spring(s) (7) and the set point adjustment (8).

The **Type 44-0 B, Type 44-1 B** and the **Type 44-6 B¹⁾** Regulators are pressure-balanced by a balancing bellows (6).

¹⁾ Type 44-6 B is not pressure-balanced in set point range 0.2 to 2 bar.



Type 44-0 B/ Type 44-1 B Pressure Reducing Valve



Type 44-6 B Excess Pressure Valve

Fig. 2 · Principle of operation

- | | | | |
|---|--------------------------------|---|----------------------|
| 1 | Valve body | 5 | Positioning bellows |
| 2 | Plug | 6 | Balancing bellows |
| 3 | Seat | 7 | Positioning spring |
| 4 | Bore hole for control pressure | 8 | Set point adjustment |

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

Regulator	Type	Pressure Reducing Valve		Excess Pressure Valve
		44-0B	44-1 B	44-6B
Thread size		G 1/2, G 3/4, G 1 · Female thread		
Nominal pressure		PN 25		
Max. permissible temperature	Liquids	–	150 °C	150 °C
	Non-flammable gases	80 °C	80 °C	80 °C
	Steam	200 °C	–	200 °C
Max. perm. differential pressure Δp		16 bar		10 bar
Set point ranges, continuously adjustable		0.2 to 2 · 1 to 4 · 2 to 6 · 4 to 10 bar		
Leakage rate		$\leq 0.05\%$ of Kvs value		
Max. perm. ambient temperature		60 °C		

Table 2 · Kvs values and z values

Type 44-0B · Type 44-1 B · Type 44-6B Regulators				
Connection		G 1/2	G 3/4	G 1
Kvs values	Type 44-1 B, Type 44-6B	2.5 · 3.2	2.5 · 4	2.5 · 5
	Type 44-0B	3.2	4	5
z values		0.60	0.60	0.55

Table 3 · Materials (WN = material no. according to DIN EN)

Type 44-0B · Type 44-1 B · Type 44-6 B Regulators		
Body	Red casting brass CC491K (G-CuSn5ZnPb; Rg 5)	
Seat	Stainless steel 1.4305	
Plug	Type 44-1 B/Type 44-6 B	Brass, free of dezincification with EPDM ¹⁾ soft sealing
	Type 44-0 B	Brass, free of dezincification with PTFE soft sealing
Balancing bellows	Stainless steel 1.4571	
Positioning spring	Stainless steel 1.4310	
Operating bellows	Stainless steel 1.4571	
Bonnet	GD-ALSi12	
Set point adjustment	PETP with 30 % of glass fiber	

¹⁾ Special version for oil (ASTM I, II, III): FPM (fluoroelastomer) - (Viton) · Special version for steam (44-6 B only): PTFE

Flow diagram for water

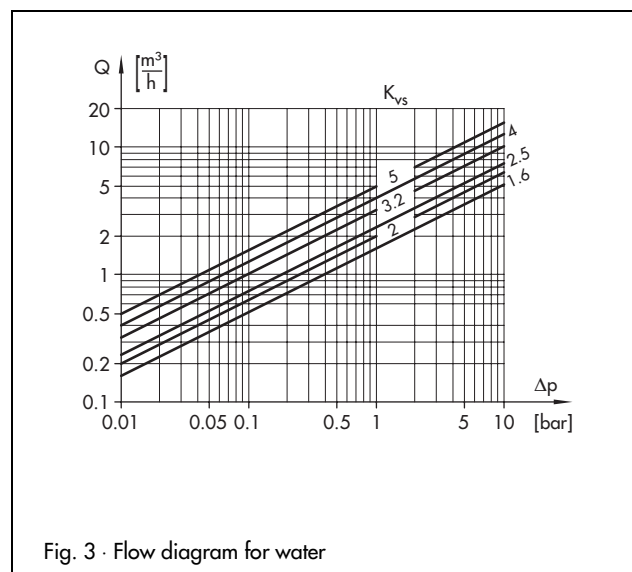


Fig. 3 · Flow diagram for water

Pressure-temperature diagram

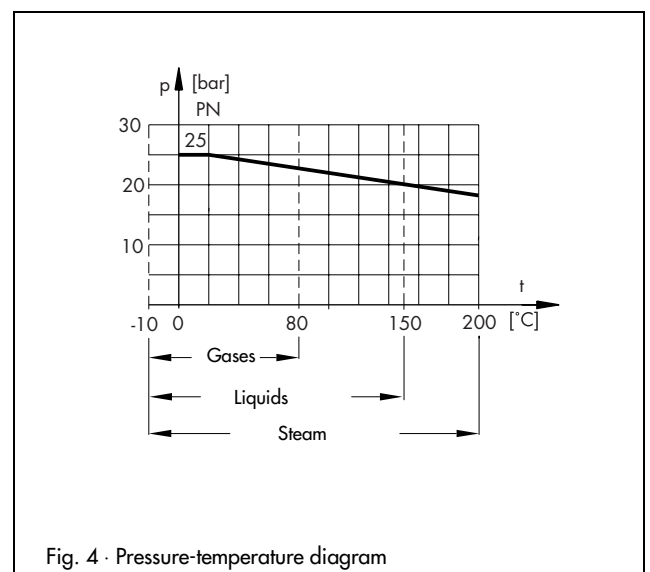


Fig. 4 · Pressure-temperature diagram

Table 3 · Dimensions in mm and weights

Type 44-0 B · Type 44-1 B · Type 44-6 B Regulators			
Thread size	G 1/2	G 3/4	G 1
Female thread G	1/2"	3/4"	1"
Overall length L	65	75	90
Width across flats SW	30	37	46
Weight in kg (approx.)	1.0	1.1	1.5

Ordering text

Installation

The following applies to **all types**:

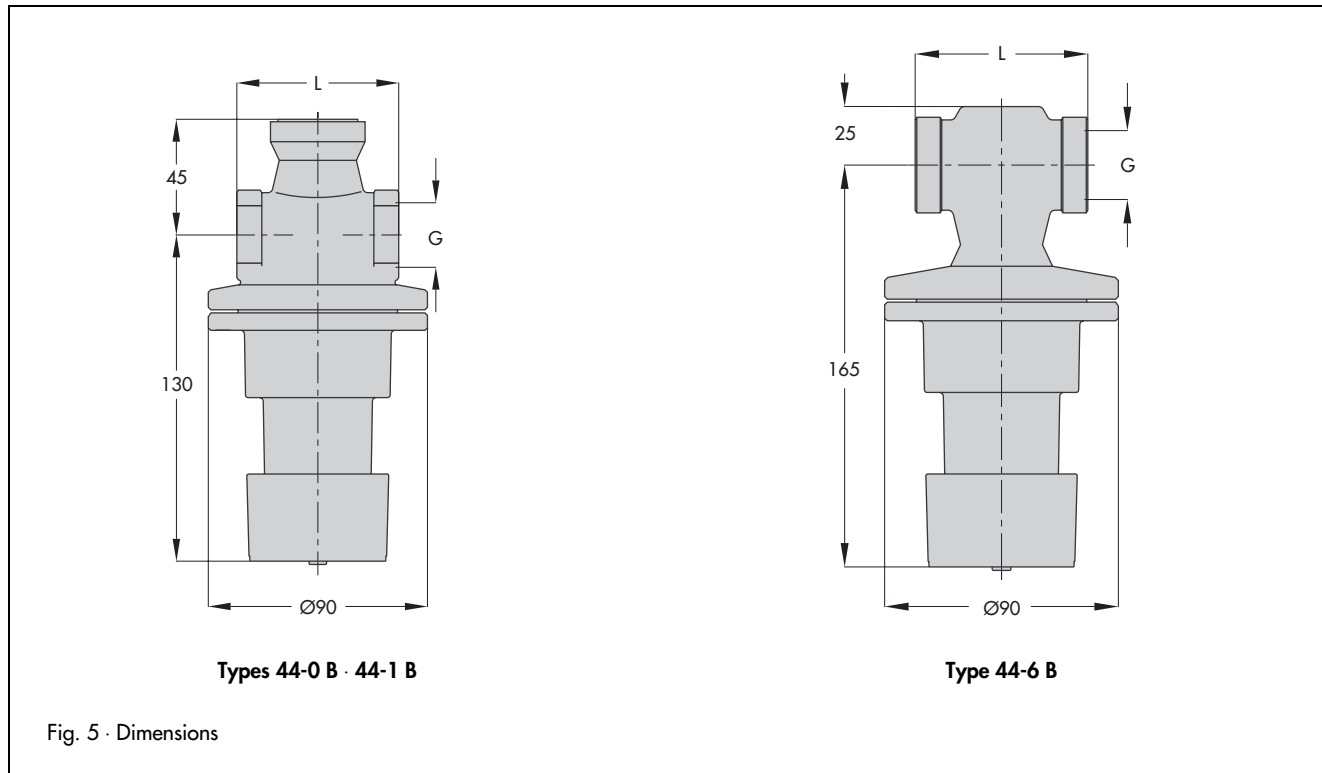
- The direction of flow must correspond to the arrow on the body.

Type 44-1 B, Type 44-6 B:

- The regulators can be installed in any desired mounting position.

Type 44-0 B:

- The regulator must be installed in a horizontal pipeline with the actuator suspended downwards.



Type 44-0 B Pressure Reducing Valve for Steam or
Type 44-1 B Pressure Reducing Valve for Liquids and Gases
Type 44-6 B Excess Pressure Valve for Liquids, Steams, Gases
 Thread size G ...
 Set point range ... bar
 Optionally, special version

Specifications subject to change without notice.

