

# Self-operated Pressure Regulators

## Series 44



**Type 44-0 · Type 44-1 · Type 44-5** · Pressure Reducing Valves (PRV)

**Type 44-6** · Excess Pressure Valve (EPV)

### ANSI version

#### Application

Set points from 3 to 145 psi (0.2 to 10 bar) · Valves NPT 1/2 to 1 · Nominal sizes DN 1/2" to 1" · Nominal pressure Class 250 (PN 16 or PN 25) · For gases up to 175 °F (80 °C), liquids up to 230 °F (110 °C) and steam up to 390 °F (200 °C)

**Types 44-0, 44-1 and 44-5 Pressure Reducing Valve:**  
Valve closes when the downstream pressure rises

**Type 44-6 Excess Pressure Valve:**  
Valve opens when the upstream pressure rises

The regulators consist of a globe valve and an actuator with a spring-loaded operating diaphragm and a setpoint adjustment.

#### Special features

- Low-maintenance P-regulators requiring no auxiliary energy
- Wide set point range which is easy to adjust
- Single-seated valve; pressure balanced by a metal bellows
- Compact design with especially low overall height

#### Versions (Figs. 1 to 4)

Pressure regulators with actuator for set point values up to 30, 60, 90 or 145 psi (2, 4, 6 or 10 bar) · Globe valve with NPT (G) 1/2, 3/4 or 1 female thread.

**Type 44-1 Pressure Reducing Valve (Fig. 1)** · Globe valve, max. nominal pressure 200 psi (PN 16) · Body of brass · For liquids up to 230 °F (110 °C) and gases up to 175 °F (80 °C).

**Type 44-0 Pressure Reducing Valve (Fig. 2)** · Globe valve, nominal pressure Class 150 (PN 25) · Body of red brass · For steam up to 390 °F (200 °C).

**Type 44-6 Excess Pressure Valve (Fig. 3)** · Globe valve, max. nominal pressure 200 psi (PN 16) · Body of brass · For liquids up to 230 °F (110 °C) and gases up to 175 °F (80 °C).

Pressure regulators with actuator for set point values up to 30, 60, 90 or 145 psi (2, 4, 6 or 10 bar) · Globe valve in nominal sizes DN 1/2, 3/4 or 1" (DN 15, 20 or 25) with connection nuts and weld-on fittings (special version with threaded ends).

**Type 44-5 Pressure Reducing Valve (Fig. 4)** · Globe valve, nominal pressure Class 250 (PN 25) · Body of red brass · For steam up to 390 °F (200 °C).

#### Special versions

- Reduced  $C_v$  ( $K_{vs}$ ) value with DN 1/2" (15) or NPT (G) 1/2
- Oil-resistant internal parts in Type 44-1



Fig. 1 · Type 44-1

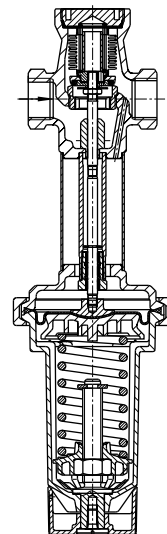


Fig. 2 · Type 44-0

### Principle of operation

The pressure to be maintained at a constant value is transmitted to the operating diaphragm (7) via an internal bore in the valve body (1), 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 spring(s) (8) and the set point adjustment (9).

### Installation

- The direction of flow must coincide with the arrow on the body.
- For steam service, only install the valves in horizontal pipelines. The valve-actuator extension, including actuator, must be vertically suspended.
- For liquid and gas service, the mounting position is arbitrary.

### Pressure-Temperature Diagram

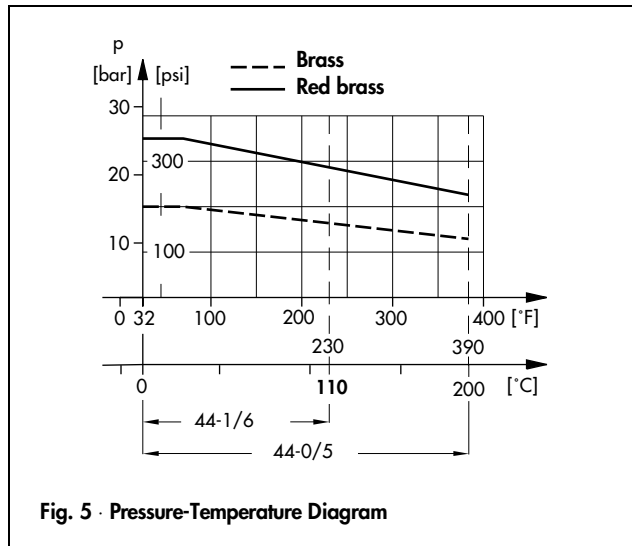


Fig. 5 · Pressure-Temperature Diagram

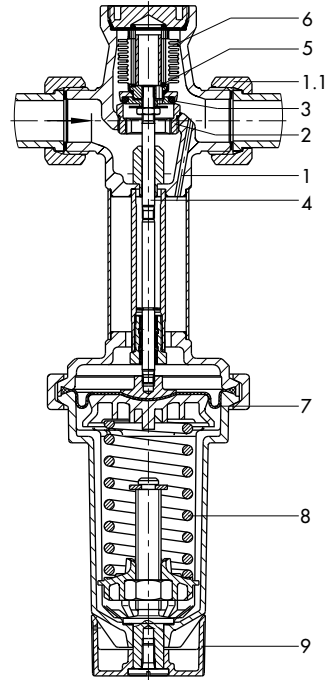


Fig. 3 · Type 44-5

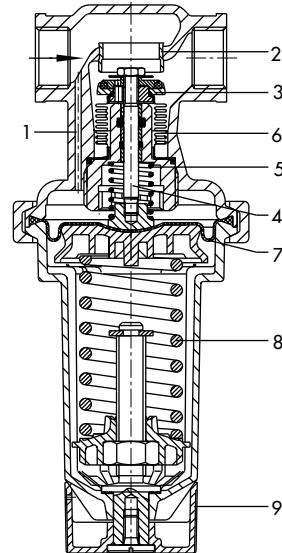


Fig. 4 · Type 44-6

- |  |                        |
|--|------------------------|
| 1 Valve body with hole                                 | 5 Valve spring         |
| 1.1 Coupling nut with sealing ring and weld-on fitting | 6 Balancing bellows    |
| 2 Seat (exchangeable)                                  | 7 Operating diaphragm  |
| 3 Plug   | 8 Spring(s)            |
| 4 Plug stem  | 9 Set point adjustment |

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

Pressure Regulator	Type	44-1	44-6	44-0	44-5
Valve	Type	2441	2446	2440	2445
Thread size		NPT (G) 1/2 to 1 · Female thread			Connection nuts (male thread)
Nominal size		-			DN 1/2" to 1"
		-			DN 15 to 25
Nominal pressure		200 psi		Class 250	
		PN 16		PN 25	
Max. perm. temperature		230 °F <sup>1)</sup>		390 °F <sup>1)</sup>	
		110 °C <sup>1)</sup>		200 °C <sup>1)</sup>	
Max. perm. pressure		Version with stainless steel bellows: 200 psi (14 bar)			
Set point ranges		Continuously adjustable 3 to 30 psi; 15 to 60 psi; 30 to 90 psi or 60 to 145 psi			
		Continuously adjustable 0.2 to 2 bar; 1 to 4 bar; 2 to 6 bar or 4 to 10 bar			
Leakage rate		≤ 0.05% of the C <sub>v</sub> (K <sub>vs</sub> ) value			
Max. perm. ambient temperature		140 °F (60 °C)			

C <sub>v</sub> (K <sub>vs</sub> ) values and z values for:			
Thread size	NPT (G) 1/2	NPT (G) 3/4	NPT (G) 1
Nominal size <sup>2)</sup>	DN 1/2" (15)	DN 3/4" (20)	DN 1" (25)
C <sub>v</sub> values	3.7	5	6
Special version	3	-	-
K <sub>vs</sub> values	3.2	4	5
Special version	2.5	-	-
z values	0.60	0.60	0.55

<sup>1)</sup> Gases, max. 175 °F (80 °C)

<sup>2)</sup> Only applies to Type 44-5 Pressure Reducing Valve

**Table 2 · Materials** (WN = Material Number according to DIN )

Pressure Regulator	Type	44-1	44-6	44-0	44-5
Body		Brass CuZn37Pb (WN 2.0332)		Red brass	
Seat		Stainless steel WN 1.4104 <sup>2)</sup>			
Plug		CuZn40Pb2 with EPDM soft sealing <sup>1)</sup>		WN 1.4104 with PTFE soft sealing	
Balancing bellows		Stainless steel WN 1.4571			
Valve spring		Stainless steel WN 1.4310			
Operating diaphragm		EPDM <sup>1)</sup> (Ethylene Propylene Dimeterpolymer) with fabric insert			
Set point adjustment		Polyamide reinforced with glass fiber			

<sup>1)</sup> Special version for oil (ASTM I, II, III): FKM (fluorcaoutchouc) - (Viton)

<sup>2)</sup> Type 44-1 and Type 44-6 Pressure Regulators: WN 1.4301

**Conversion of valve sizing coefficients:**

$$C_v \text{ (in U.S.-gallons/min)} = 1.17 \cdot K_{vs} \text{ (in m}^3\text{/h)}$$

$$K_{vs} \text{ (in m}^3\text{/h)} = 0.86 \cdot C_v \text{ (in U.S.-gallons/min)}$$

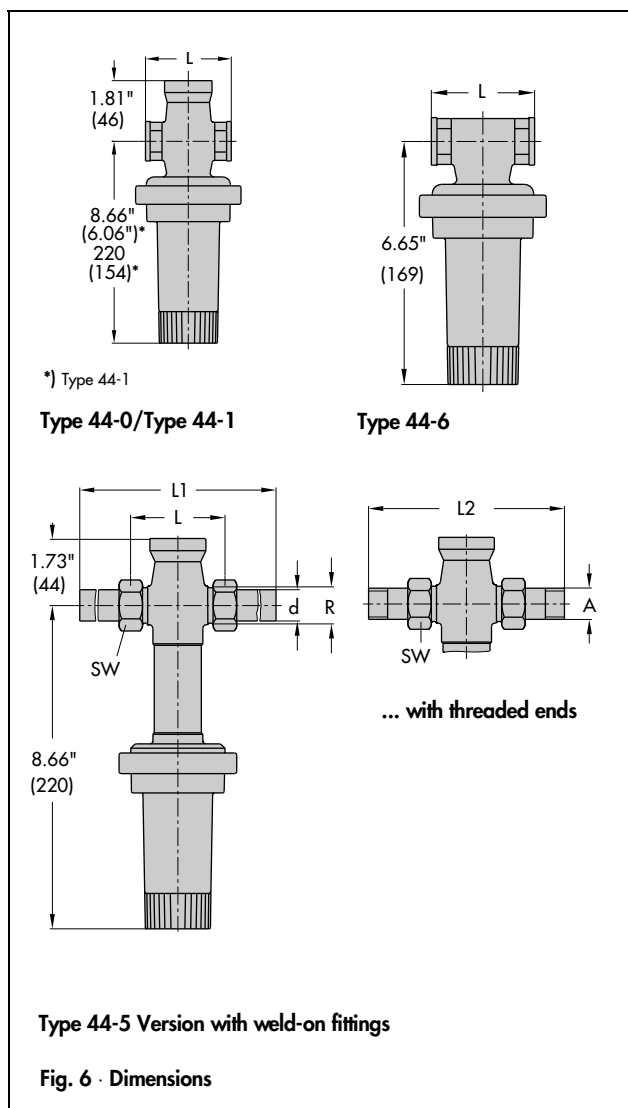
## Dimensions and weights

### Types 44-0, 44-1 and 44-6

Thread size	NPT (G) 1/2	NPT (G) 3/4	NPT (G) 1
Overall length L	2.56"	2.95"	3.54"
	65 mm	75 mm	90 mm
Approx. weight	Type 44-0	2.21 lb	2.43 lb
		1.0 kg	1.1 kg
	Type 44-1	1.98 lb	2.21 lb
		0.9 kg	1 kg
	Type 44-6	1.76 lb	1.98 lb
		0.8 kg	0.9 kg

### Type 44-5

Nominal size	DN	1/2" (15)	3/4" (20)	1" (25)
Pipe $\varnothing$ d	inch	0.84	1.05	1.29
	mm	21.3	26.8	32.7
R		G 3/4	G 1	G 1 1/4
Width across flats SW	inch	1.18	1.42	1.81
	mm	30	36	46
Length L	inch	2.56	2.76	2.95
	mm	65	70	75
L1 with weld-on fittings	inch	8.27	9.22	9.61
	mm	210	234	244
Approx. weight	lb	4.4	4.6	5.5
	kg	2.0	2.1	2.5
Special versions				
... with threaded ends (male thread)				
Length L2	inch	5.1	5.67	6.26
	mm	129	144	159
Male thread A		NPT (G) 1/2	NPT (G) 3/4	NPT (G) 1
Approx. weight	lb	4.4	4.6	5.5
	kg	2.0	2.1	2.5



### Ordering text

Pressure Reducing Valve/Excess Pressure Valve Type 44- ...

DN ... or NPT (G) ...

Set point range ... psi (bar)

Optional special version

For Type 44-5 Pressure Reducing Valve: with connections nuts and weld-on fittings/threaded ends

Specifications subject to change without notice.



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