

Self-operated Pressure Regulators



Series 44

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

Type 44-6 B · Excess Pressure Valve

ANSI version

Application

Set points from **3 to 290 psi**¹⁾ (0.2 to 20 bar) · Valve sizes $\frac{1}{2}$ NPT to 1 NPT · Pressure rating **Class 250** · Suitable for non-flammable gases up to **175 °F** (80 °C), liquids up to **300 °F** (150 °C) and steam up to **390 °F** (200 °C)

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

The valve closes when the downstream pressure rises.

Type 44-6 B Excess Pressure Valve:

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

- Low-maintenance proportional regulators requiring no auxiliary energy
- Wide set point range which is easy to adjust
- Spring-loaded, single-seated valve with plug balanced by a metal bellows
- Stainless steel positioning bellows acting as an 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
- Body made of red brass or stainless steel

Versions

Pressure regulators with actuators for set point ranges up to 15, 60, 90, 150 or 290 psi (1, 4, 6, 10 or 20 bar) and valves with threaded connection $\frac{1}{2}$ NPT, $\frac{3}{4}$ NPT, or 1 NPT female thread · Body made of red brass (C83600) or stainless steel (A351 CF8M)

Type 44-1 B Pressure Reducing Valve (Fig. 2) · Valves in Class 250 for liquids up to 300 °F (150 °C) and gases up to 150 °F (80 °C) · Pressure-balanced

Type 44-0 B Pressure Reducing Valve (Fig. 1) · Valves in Class 250 for steam up to 390 °F (200 °C) · Pressure-balanced

Type 44-6 B Excess Pressure Valve · Valves in Class 250 for liquids up to 300 °F (150 °C), gases up to 175 °F (80 °C) and steam up to 390 °F (200 °C) · Pressure-balanced²⁾

Special versions

- Special C_v (K_{VS}) coefficient with $\frac{1}{2}$ NPT
- With oil-resistant internal parts for Type 44-1 B/44-6 B

¹⁾ Set point range 120 to 290 psi (8 to 20 bar): Pressure rating Class 125

²⁾ Unbalanced in set point range 3 to 30 psi (0.2 to 2 bar)



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



Fig. 2 · Type 44-1 B Pressure Reducing Valve in stainless steel version

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 rate across the cross-sectional area between the plug (2) and the seat (3).

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

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

In both versions, the pressure to be maintained is transmitted through a 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 set point spring(s) (7) and the set point adjustment (8) or the set point adjusting screw (9) for regulators in the set point range 120 to 290 psi (8 to 20 bar) or in versions with a stainless steel valve body.

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

Installation

The following applies to all versions:

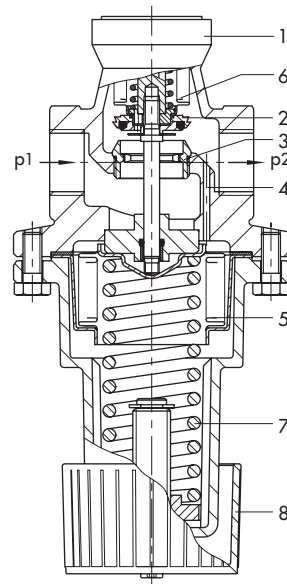
- The medium must flow through the valve in the direction indicated by the arrow on the body

Type 44-1 B and Type 44-6 B:

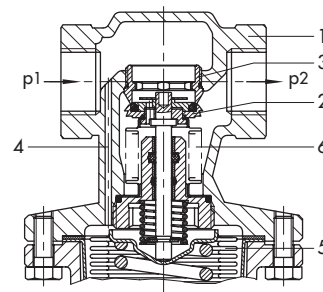
- Arbitrary mounting position

Type 44-0 B:

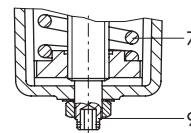
- Installation in horizontal pipes with the actuator suspended downwards (set point adjustment pointing downwards).



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



Type 44-6 B Excess Pressure Valve



Stainless steel version and 120 to 290 psi set point range:
set point adjustment by a hexagon socket screw (SW 4)

- 1 Valve body
- 2 Plug
- 3 Seat
- 4 Hole for control pressure
- 5 Positioning bellows
- 6 Balancing bellows
- 7 Set point spring
- 8 Set point adjustment (plastic handwheel)
- 9 Set point adjusting screw (SW 4 hexagon socket screw)

¹⁾ Type 44-6 B: Unbalanced in set point range 3 to 30 psi (0.2 to 2 bar)

Fig. 3 · Sectional drawings

Table 1 · Technical data · All pressures stated as gauge pressures

Regulator	Type	Pressure Reducing Valve		Excess Pressure Valve
		44-0 B	44-1 B	44-6 B
Connection		Female thread ½ NPT, ¾ NPT, 1 NPT		
Pressure rating		Class 250		
Max. perm. temperature	Liquids	–	300 °F · 150 °C	300 °F · 150 °C
	Non-flammable gases	175 °F · 80 °C	175 °F · 80 °C	175 °F · 80 °C
	Steam	390 °F · 200 °C	–	390 °F · 200 °C
Max. perm. differential pressure Δp		230 psi · 16 bar		. 1)
Set point ranges, continuously adjustable	ANSI	3 to 30 · 15 to 60 · 30 to 90 · 60 to 150 · 120 to 290 psi		
	DIN	0.2 to 2 · 1 to 4 · 2 to 6 · 4 to 10 · 8 to 20 bar		
Leakage rate		≤ 0.05 % of C_V (K_{VS})		
Max. perm. ambient temperature		140 °F · 60 °C		

¹⁾ The maximum permissible differential pressure for excess pressure valves in the 3 to 150 psi (0.2 to 10 bar) set point range is consistent with the max. set point pressure. The max. permissible differential pressure = 240 psi (16 bar), however applies for 120 to 290 psi (8 to 20 bar) set point range

Table 2 · C_V and K_{VS} coefficients and z values

Connection		½ NPT	¾ NPT	1 NPT
C_V	Type 44-1 B, C_V	1.2 · 4	1.2 · 5	1.2 · 6
	Type 44-6 B, K_{VS}	1 · 3.2	1 · 4	1 · 5
K_{VS}	Type 44-0 B, C_V	1.2 · 4	1.2 · 5	1.2 · 6
	Type 44-0 B, K_{VS}	1 · 3.2	1 · 4	1 · 5
z values		0.60	0.60	0.55

Table 3 · Materials · Material numbers acc. to ASTM and DIN EN

Type 44-0 B · 44-1 B · 44-6 B Regulators	Red brass	Stainless steel	
Body	C83600 (red brass CC491K)	A351 CF8M (1.4408)	
Seat	Stainless steel 1.4305	A479 316L (1.4404)	
Plug	Type 44-1 B/44-6 B	Brass, free of dezincification, with EPDM soft sealing	A479 316L (1.4404)
	Type 44-0 B	Brass, free of dezincification, with PTFE soft sealing	A479 316L (1.4404)
Balancing bellows	Stainless steel A479 316Ti (1.4571)	A479 316L (1.4404)	
Set point spring	Stainless steel A479 302 (1.4310)	A479 302 (1.4310)	
Positioning bellows	Stainless steel A479 316Ti (1.4571)	A479 316L (1.4404)	
Spring housing	GD-ALSi12	A351 CF8M (1.4408)	
Set point adjustment	PTEP with 30 % glass fiber ¹⁾	Stainless steel (hexagon socket screw SW 4)	

¹⁾ Version with 120 to 290 psi (8 to 20 bar) set point range: Hexagon socket screw made of A479 316Ti (1.4571)

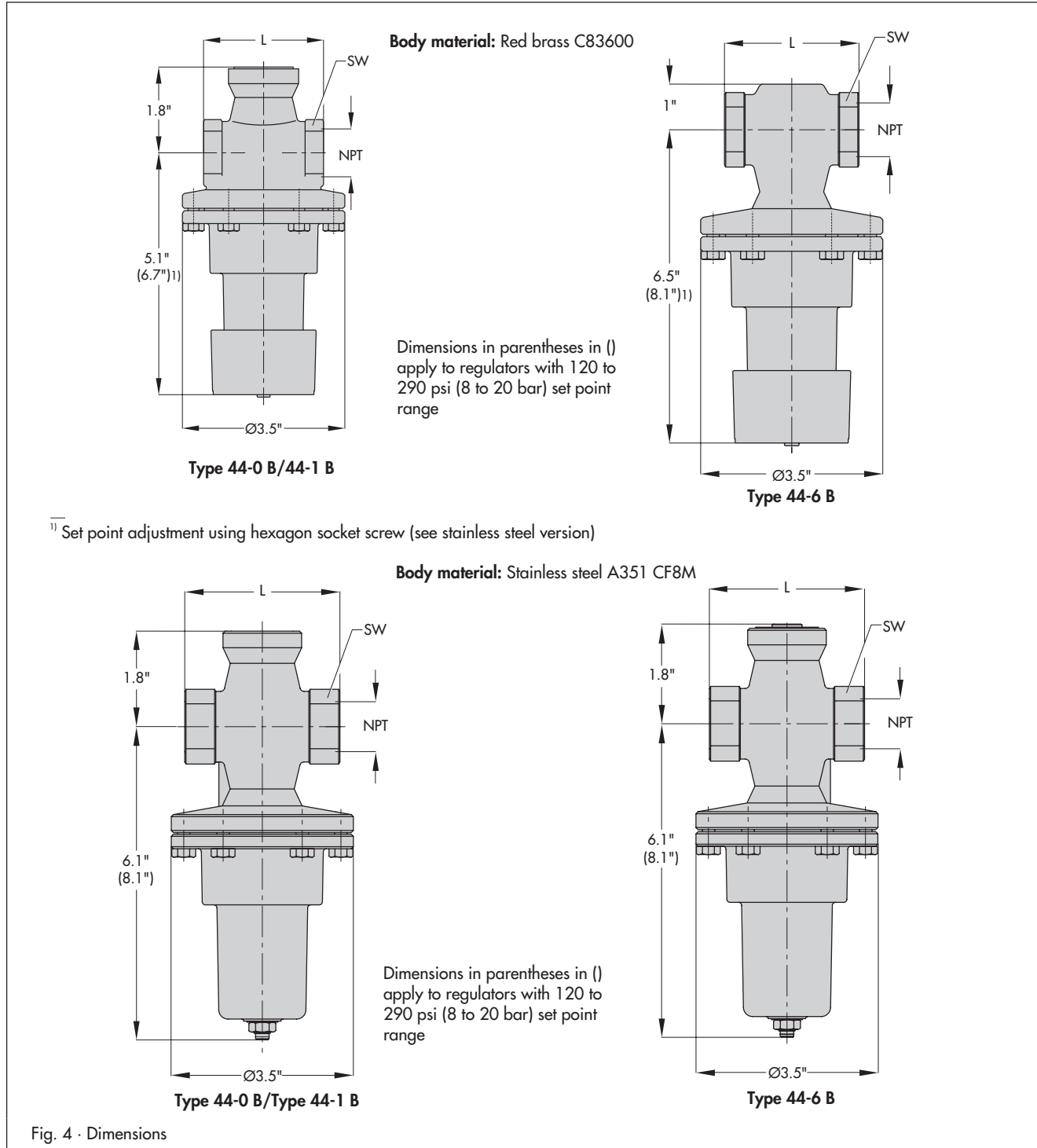
Ordering text

Pressure Reducing Valve **Type 44-0 B** for steam or
 Pressure Reducing Valve **Type 44-1 B** for liquids and gases
 Excess Pressure Valve **Type 44-6 B** for liquids, gases and steam
 Body material ...
 Nominal size ... NPT
 Set point range ... psi (bar)
 C_V (K_{VS}) coefficient ...
 Optionally, special version

Table 4 · Dimensions and weights

Connection		½ NPT	¾ NPT	1 NPT
Female thread		½"	¾"	1"
Length L	inch	2.56	2.95	3.54
	mm	65	75	90
Width across flats SW	inch	1.34	1.34	1.81
	mm	34	34	46
Weight, approx.	lbs	2.2	2.4	3.3
	kg	1.0	1.1	1.5

Dimensional drawings



Specifications subject to change without notice.

