

T 2629 EN

Type 44-0 B Pressure Reducing Valve

Series 44 Self-operated Pressure Regulators · ANSI version



Application

Set points from **3 to 290 psi** (0.2 to 20 bar) with valves $\frac{1}{2}$ NPT to 1 NPT as well as NPS $\frac{1}{2}$ and 1
Pressure rating **Class 150 and 300** · Suitable for **steam** up to **390 °F** (200 °C)

The valve **closes** when the **downstream** pressure rises.

The regulators consist of a valve and an integrated actuator with an operating bellows and a set point adjuster.

Special features

- Low-maintenance proportional regulators requiring no auxiliary energy
- Wide set point range and convenient set point adjustment
- Spring-loaded, single-seated valve without pressure balancing or plug balanced by a bellows
- Stainless steel operating bellows as operating element
- Compact design with particularly low overall height
- Any mounting position possible
- Stainless steel body

Versions

Type 44-0 B Steam Pressure Reducing Valve (Fig. 1)

- Pressure regulators for set point ranges from 3 to 290 psi (0.2 to 20 bar)
- Body made of stainless steel (A351 CF8M) with screwed ends ($\frac{1}{2}$ NPT, $\frac{3}{4}$ NPT and 1 NPT female thread)
- Flanged valve body made of stainless steel (A351 CF8M) NPS $\frac{1}{2}$ and 1
- Regulator with valve Class 150/300 for steam up to 390 °F (200 °C)

Special versions

- Regulator prepared for pressure gauge or external control line connection (connecting thread $\frac{1}{8}$ NPT)
- Version with electric set point adjustment for set points up to 150 psi (10 bar)
- Version with pneumatic set point adjuster
- Version functioning as differential pressure regulator



Principle of operation (see Fig. 2)

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

The steam pressure reducing valve is open when relieved of pressure. The valve closes when the downstream pressure (p_2) rises above the adjusted set point.

The pressure to be kept constant is transmitted through a borehole (4) in the valve body (1) to the operating bellows (5) where it is converted into a positioning force. It moves the valve plug depending on the spring rate of the set point springs (7) and the setting of the set point screw (9).

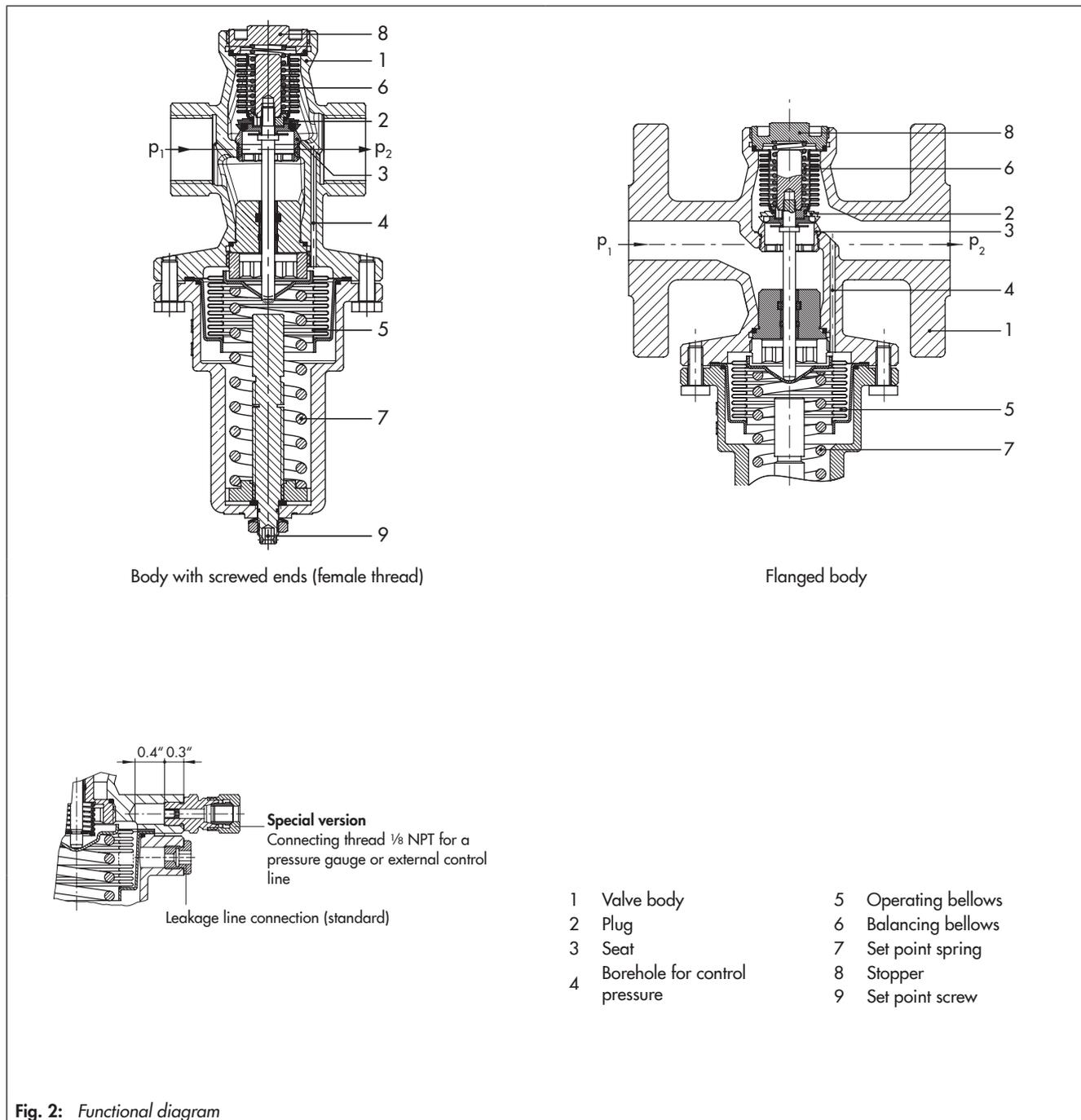


Table 1: Technical data · All pressures in bar (gauge)

Valve	Type 44-0 B Steam Pressure Reducing Valve
Pressure rating	Class 300 (body with screwed ends) ¹⁾ Class 150 (flanged body)
Connection	½ NPT, ¾ NPT, 1 NPT female thread
	Flanges NPS ½ and 1
Max. permissible temperature ¹⁾	390 °F (200 °C)
Max. perm. differential pressure Δp	230 psi (16 bar)
Leakage class according to IEC 60534-4	≤ 0.05 % of K_{VS} coefficient
Compliance	CE · ENEC
Set point range (continuously adjustable)	3 to 30 psi · 15 to 60 psi · 30 to 90 psi · 60 to 150 psi · 120 to 290 psi
	0.2 to 2 bar · 1 to 4 bar · 2 to 6 bar · 4 to 10 bar · 8 to 20 bar
Max. permissible ambient temperature	140 °F (60 °C)

¹⁾ Max. input pressure 275 psi (19 bar)

Table 2: Max. perm. pressure at actuator**Body with screwed ends and flanged body**

Connection			½ NPT · NPS ½	¾ NPT · –	1 NPT · NPS 1
C _v and K _{VS} coefficients	Standard version	C _v	1.9 ¹⁾ · 4.0 ²⁾	2.4 ¹⁾ · 5.0 ²⁾	2.9 ¹⁾ · 6.0 ²⁾
		K _{VS}	1.6 ¹⁾ · 3.2 ²⁾	2.0 ¹⁾ · 4.0 ²⁾	2.5 ¹⁾ · 5.0 ²⁾
	Special version	C _v	1.2		
		K _{VS}	1.0		

¹⁾ Unbalanced

²⁾ Soft PTFE seal

Table 3: Materials · Material numbers according to ASTM and DIN EN

Body	Stainless steel A351 CF8M (1.4408)
Seat	A479 316L (1.4404)
Plug	A479 316L (1.4404) with PTFE soft seal
Balancing bellows	A4793 316Ti (1.4571)
Set point spring	A479 302 (1.4310)
Operating bellows	A4793 316Ti (1.4571)
Spring housing	A351 CF8M (1.4408)
Set point screw	Hexagonal socket head screw made of stainless steel A479 316Ti (1.4571)

Installation

The following applies:

- The direction of flow must match the direction indicated by the arrow on the body
- Any mounting position possible

Further details can be found in ► EB 2626-1.

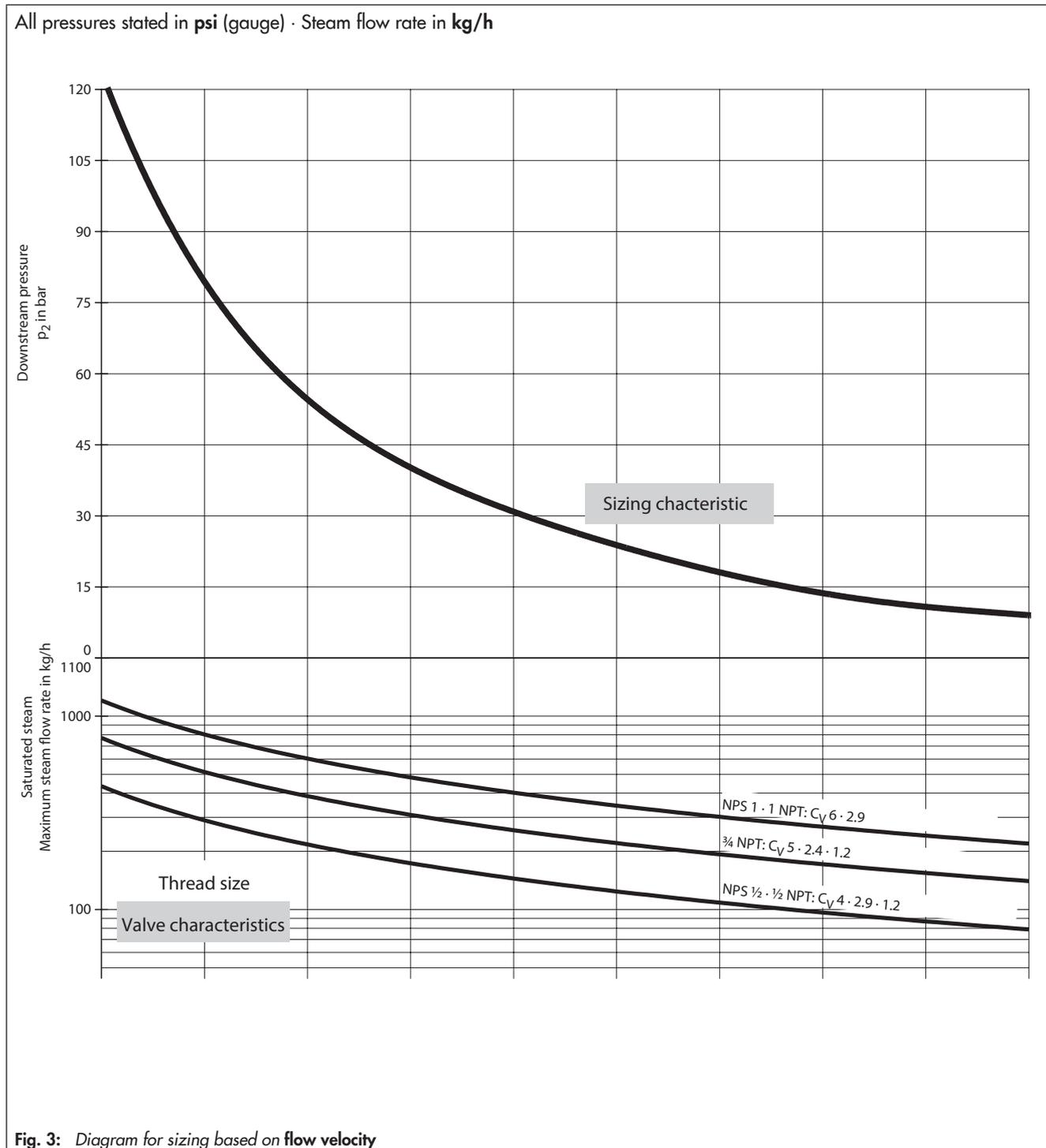
Sizing of Type 44-0 B Steam Pressure Reducing Valve

To size the Type 44-0 B Steam Pressure Reducing Valve, the steam charts (sizing characteristics with valve characteristics) for saturated steam are provided.

This chart together with the additional specifications on the upstream pressure p_1 , downstream pressure p_2 and the required steam flow rate can be used to find the right valve for the Type 44-0 B Regulator using the valve characteristics in the graph.

To find the right valve, observe the diagrams on flow velocity (Fig. 3) and valve load (Fig. 4).

Select the largest of the determined values as the valve size for the Type 44-0 B Regulator.



All pressures stated in psi (gauge) · Steam flow rate in kg/h

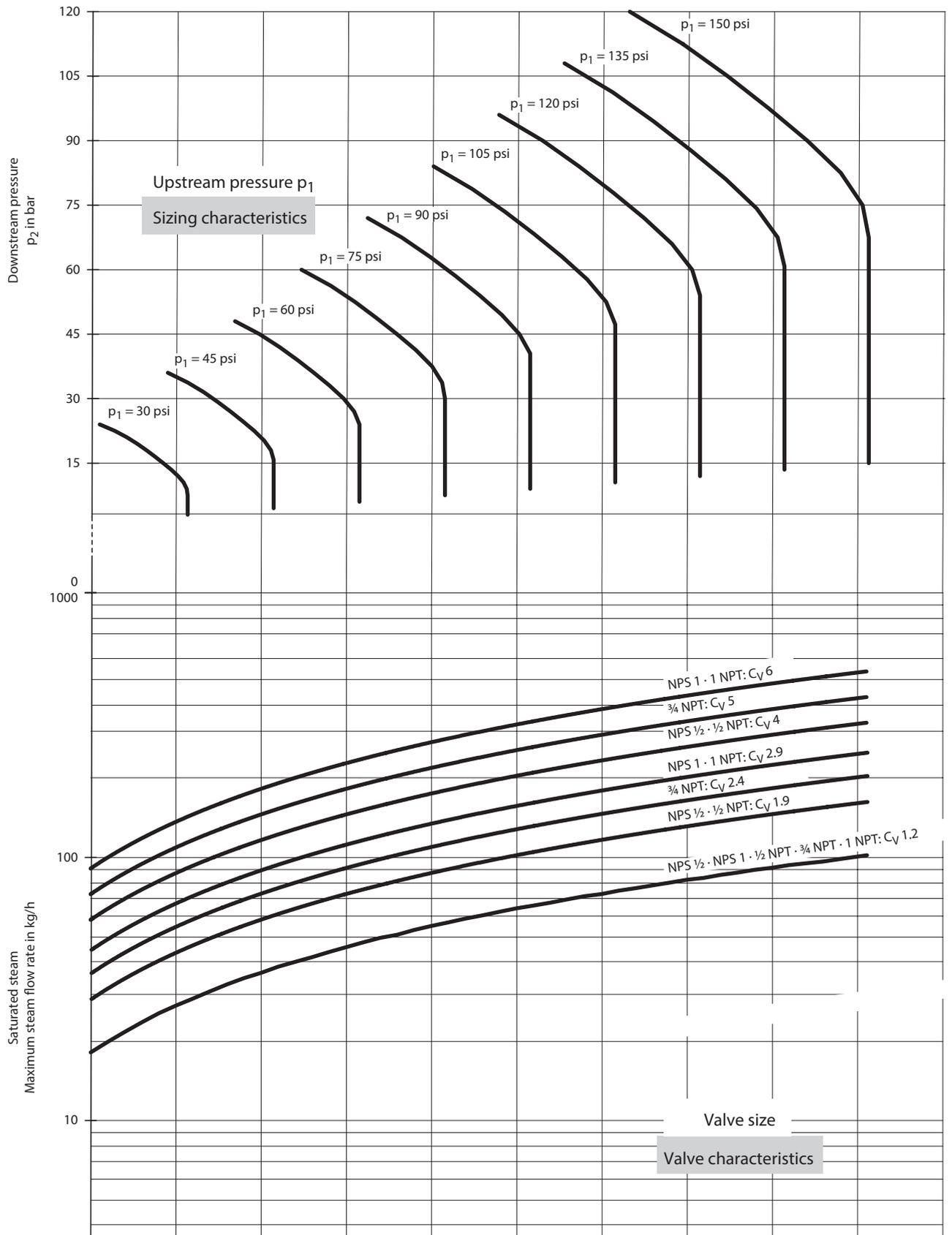


Fig. 4: Diagram for sizing based on valve load

Table 4: Dimensions and weights

Regulators with screwed ends or flanged body · A351 CF8M (1.4408)

Connection size		½ NPT · G ½	¾ NPT · G ¾	1 NPT · G 1	NPS ½ · DN 15	NPS 1 · DN 25
Female thread	in	½	¾	1	–	–
	G	½	¾	1	–	–
Length L	in	2.6	3.0	3.5	7.2	–
	mm	65	75	90	184	–
Width across flats SW	in	1.3	1.3	1.8	–	–
	mm	34	34	46	–	–
Height H1	in	6.1 (8.1) ¹⁾				–
	mm	155 (205) ¹⁾				–
Height H2	in	1.8				–
	mm	46				–
D	in	3.5				–
	mm	89				–
Weight, approx.	lb	2.2	2.4	3.3	5.7	9.3
	kg	1.0	1.1	1.5	2.6	4.2

¹⁾ Dimensions in parentheses apply to regulators with 120 to 290 psi (8 to 20 bar) set point range

Dimensions of the regulators

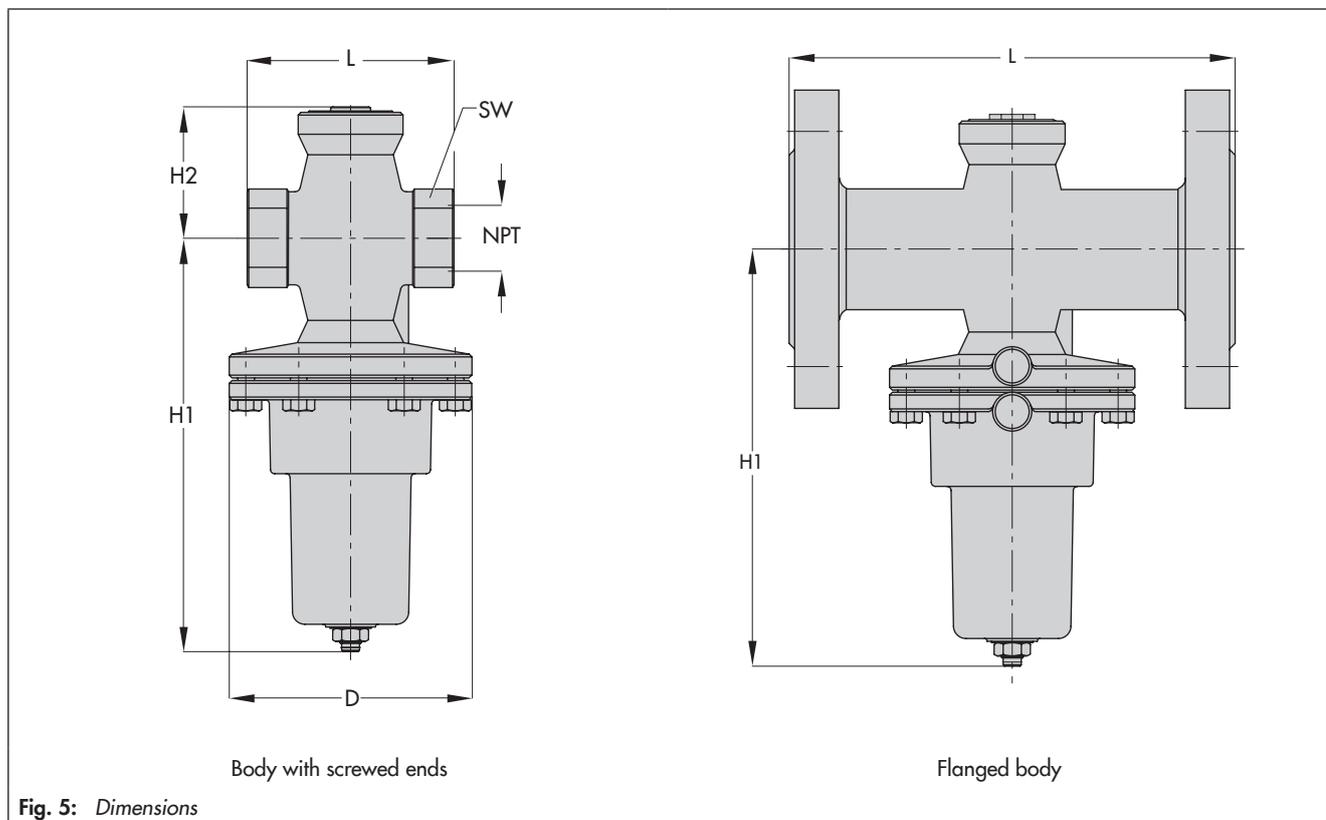


Fig. 5: Dimensions

Ordering text

Type 44-0 B Steam Pressure Reducing Valve

Body material: stainless steel (A351 CF8M)

Version with screwed ends ... NPT female thread or flanged valve body NPS ...

Set point range ... psi (bar), C_v (K_{vS}) coefficient ...

Plug seal: PTFE or with metal seal

Optionally, special version

