

Series 44 Self-operated Pressure Regulators

Type 44-0 B · Steam Pressure Reducing Valve



ANSI version

Application

Set points from **3 to 290 psi** (0.2 to 20 bar) · Valves in **½ NPT**, **¾ NPT** and **1 NPT** or **NPS ½** and **NPS 1** · Pressure rating **Class 150, 250** and **300** · Suitable for steam up to **390 °F** (200°C)

Type 44-0 B Steam Pressure Reducing Valve:

The valve closes when the downstream pressure rises.

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

Special features

- Low-maintenance proportional regulators requiring no auxiliary energy
- Wide set point ranges and easy set point adjustment
- Spring-loaded, single-seated valve without pressure balancing or balanced by a metal bellows
- Stainless steel operating bellows acting as an operating element
- Compact design with particularly low overall height
- Valve body made of red brass or stainless steel

Versions

Type 44-0 B Steam Pressure Reducing Valve (Fig. 1) with actuator for set points from **3 to 290 psi** (0.2 to 20 bar) · Pressure rating **Class 150, 250** and **300** · Suitable for steam up to **390 °F** (200 °C) · Valve body made of **red brass** (C83600) or **stainless steel** (A351 CF8M) with **½ NPT**, **¾ NPT** and **1 NPT** female thread · Flanged body made of stainless steel **NPS ½** and **NPS 1**

Special versions

Type 44-0 B

- Regulator prepared for connection of a pressure gauge or external control line (**⅛ NPT** thread)
- With electric set point adjustment for set points up to 150 psi (10 bar)
- With pneumatic set point adjuster



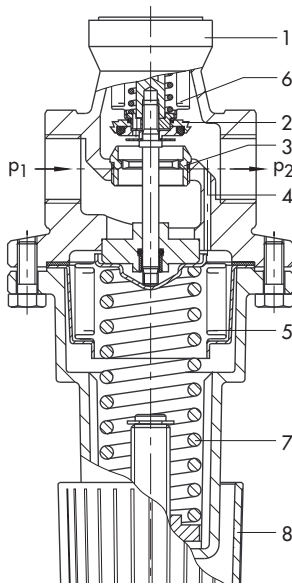
Fig. 1 · Type 44-0 B Steam Pressure Reducing Valve, body made of red brass (version with screwed ends)

Principle of operation

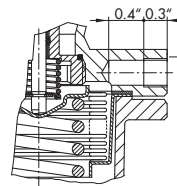
The medium flows through the valve in the direction indicated by the arrow. The position of the valve plug determines the flow rate across the cross-sectional area between the plug (2) and the seat (3).

The Type 44-0 B 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 maintained is transmitted through a hole (4) in the valve body (1) onto the operating 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 setting made at the set point adjuster (8) or the set point screw (9) (regulators with 120 to 290 psi set point range as well as for stainless steel bodies).

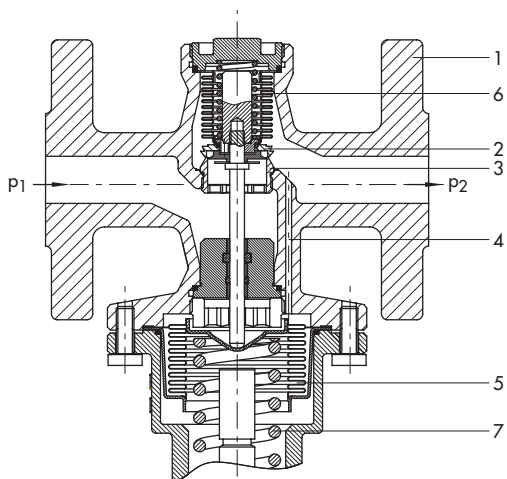


Type 44-0 B Pressure Reducing Valve · Body with screwed ends

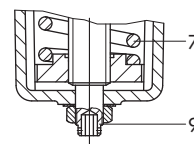


Special version
 $\frac{1}{8}$ NPT thread for connection
of a pressure gauge or an
external control line

Special version · Regulators prepared for connection of a
pressure gauge or external control line



Type 44-0 B Pressure Reducing Valve
Stainless steel flanged body



Stainless steel version · Set point adjustment
using hexagon socket screw

- | | | | |
|---|---------------------------|---|---|
| 1 | Valve body | 6 | Balancing bellows |
| 2 | Plug | 7 | Set point spring |
| 3 | Seat | 8 | Set point adjuster
(manual adjuster) |
| 4 | Hole for control pressure | 9 | Set point screw |
| 5 | Operating bellows | | |

Fig. 2 · Sectional drawings

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

Type 44-0 B Steam Pressure Reducing Valve		
Body with end connections	C83600/A351 CF8M	Female thread ½ NPT, ¾ NPT, 1 NPT
	A351 CF8M	Flanged body NPS ½ and NPS 1
Pressure rating	C83600	Class 250
	A351 CF8M	Class 150 (flanged body) · Class 300 (body with screwed ends)
Max. permissible medium temperature		390 °F (200 °C)
Max. permissible differential pressure Δp		230 psi (16 bar)
Set point range, continuously adjustable	ANSI	3 to 30 psi · 15 to 60 psi · 30 to 90 psi · 60 to 150 psi · 120 to 290 psi
	DIN	0.2 to 2 bar · 1 to 4 bar · 2 to 6 bar · 4 to 10 bar · 8 to 20 bar
Leakage rate according to ANSI/FCI 70-2		≤ 0.05 % of C_V (K_{VS})
Max. permissible ambient temperature		140 °F (60 °C)

Table 2 · C_V and K_{VS} coefficients

Connection size			½ NPT/NPS ½	¾ NPT/-	1 NPT/NPS 1
C_V (K_{VS}) coefficients	Standard version	C_V	1.9 ¹⁾ · 4	2.4 ¹⁾ · 5	2.9 ¹⁾ · 6
		K_{VS}	1.6 ¹⁾ · 3.2	2 ¹⁾ · 4	2.5 ¹⁾ · 5
	Special version (not balanced)	C_V	0.3 ²⁾ · 0.5 ²⁾ · 1.2 ²⁾		
		K_{VS}	0.25 ²⁾ · 0.4 ²⁾ · 1 ²⁾		

¹⁾ Not balanced

²⁾ Metal sealing

Table 3 · Materials

Type 44-0 B Steam Pressure Reducing Valve		
Body	C83600 (red brass CC491K/CC499K)	Stainless steel A351 CF8M (1.4408)
Seat	Stainless steel 1.4305	A479 316L (1.4404)
Plug	Brass, free of dezincification, with PTFE soft seal	A479 316L (1.4404) with PTFE soft seal
	1.4404 metal seal	
Balancing bellows	A479 316Ti (1.4571)	A479 316Ti (1.4571)
Set point spring	1.7104 (55SiCr6)	A479 302 (1.4310)
Plug spring	A479 302 (1.4310)	A479 302 (1.4310)
Operating bellows	A479 316Ti (1.4571)	A479 316Ti (1.4571)
Spring housing	EN AC-44300-DF (die-cast aluminum)	A351 CF8M (1.4408)
Set point adjustment	Manual adjuster made of PETP with 30 % glass fiber ¹⁾	Hexagon socket screw made of A479 316Ti (1.4571)

¹⁾ Set point range 120 to 290 psi (8 to 20 bar): hexagon socket screw made of A479 316Ti (1.4571)

Installation

The following applies to Type 44-0 B:

- The medium must flow through the valve in the direction indicated by the arrow on the body
- Install the regulator in horizontal pipelines with the actuator housing suspended downwards (set point adjuster pointing downwards)

Refer to EB 2626-1 EN for more details.

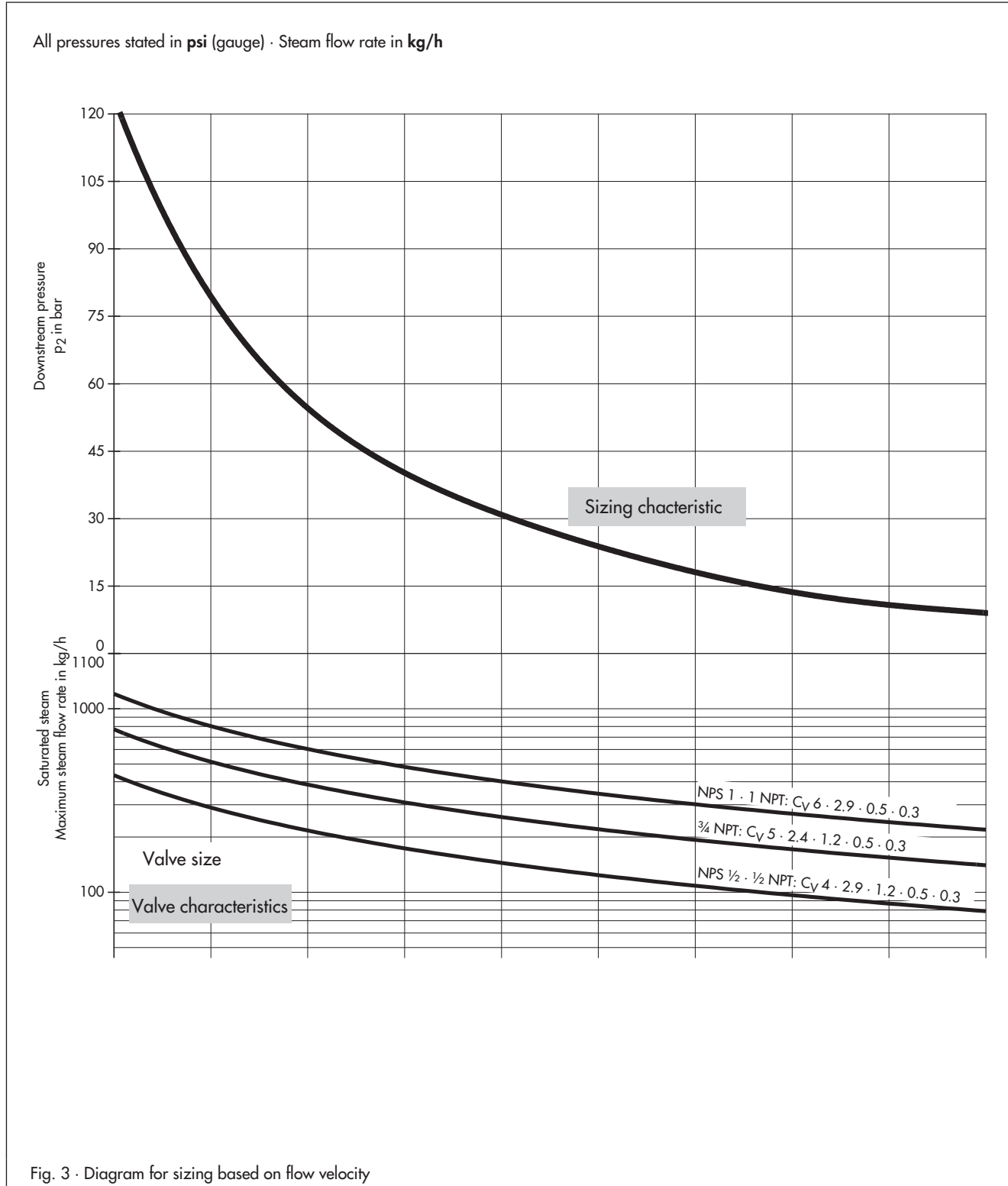
Sizing the Type 44-0 B Steam Pressure Reducing Valve

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**

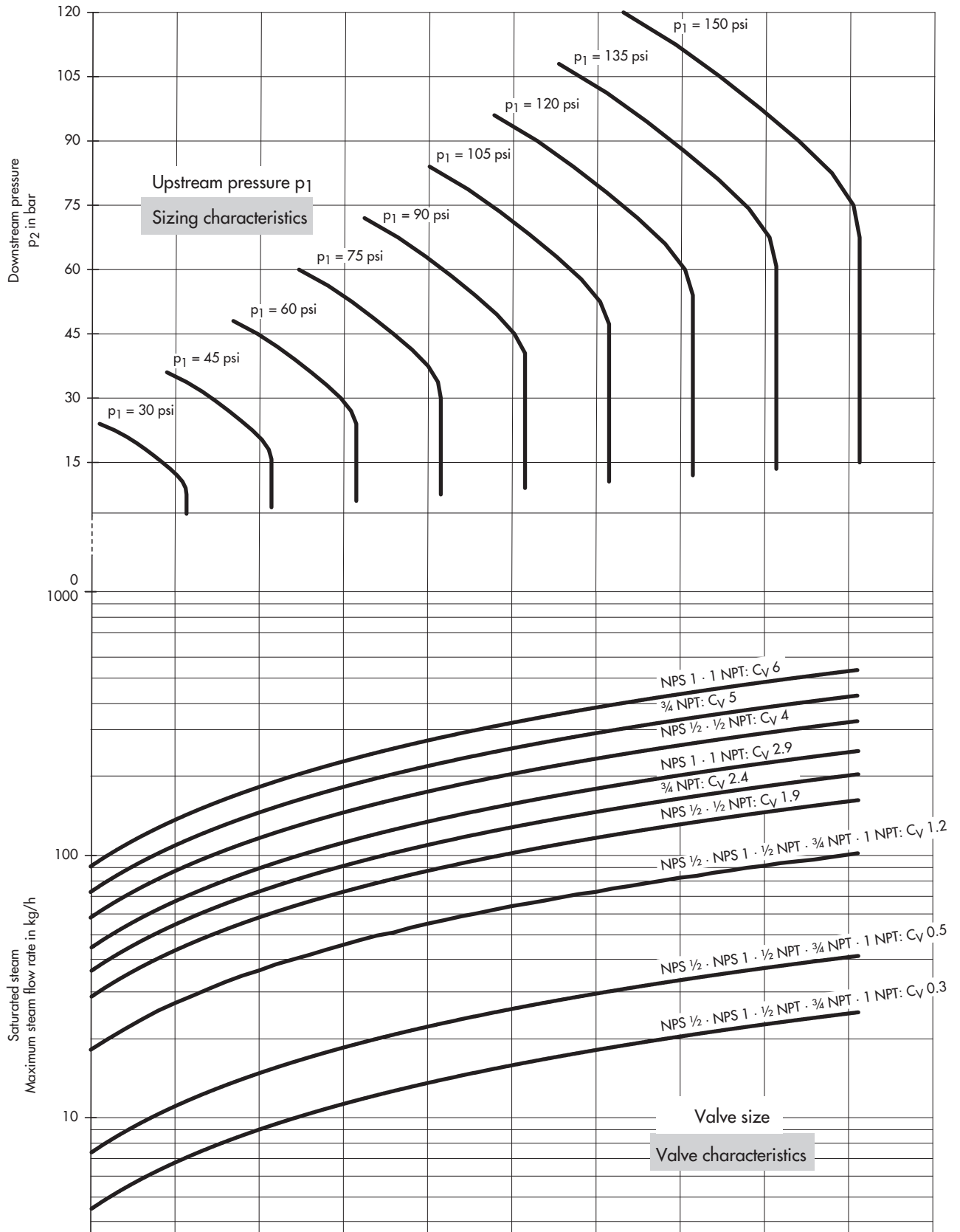


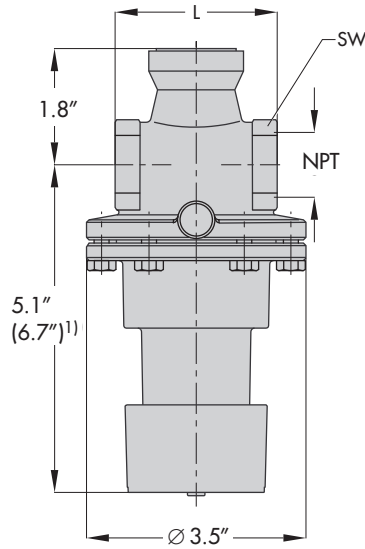
Fig. 4 · Diagram for sizing based on valve load

Table 4 · Dimensions and weights
Regulator with screwed ends · Red brass CC83600 and stainless steel A351 CF8M

Thread size		½ NPT	¾ NPT	1 NPT
Female thread		½"	¾"	1"
Length L	ANSI	2.6"	3"	3.5"
	DIN	65 mm	75 mm	90 mm
Width across flats SW	ANSI	1.3"	1.3"	1.8"
	DIN	34 mm	34 mm	46 mm
Approx. weight	ANSI	2.2 lb	2.4 lb	3.3 lb
	DIN	1.0 kg	1.1 kg	1.5 kg

Dimensions of regulator with screwed ends

Body material: red brass C83600



¹⁾ Set point range 120 to 290 psi (8 to 20 bar); set point adjusted using hexagon socket screw

Body material: stainless steel A351 CF8M

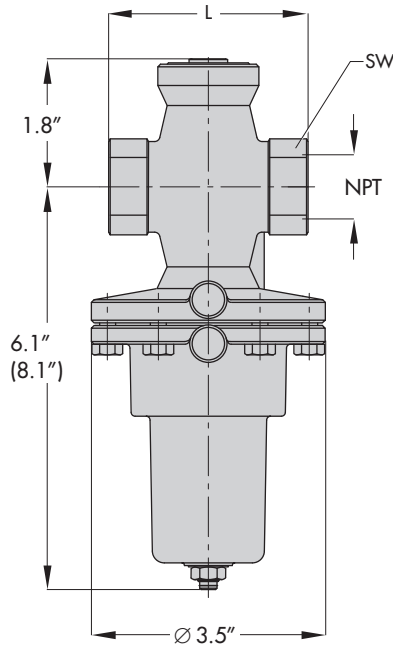


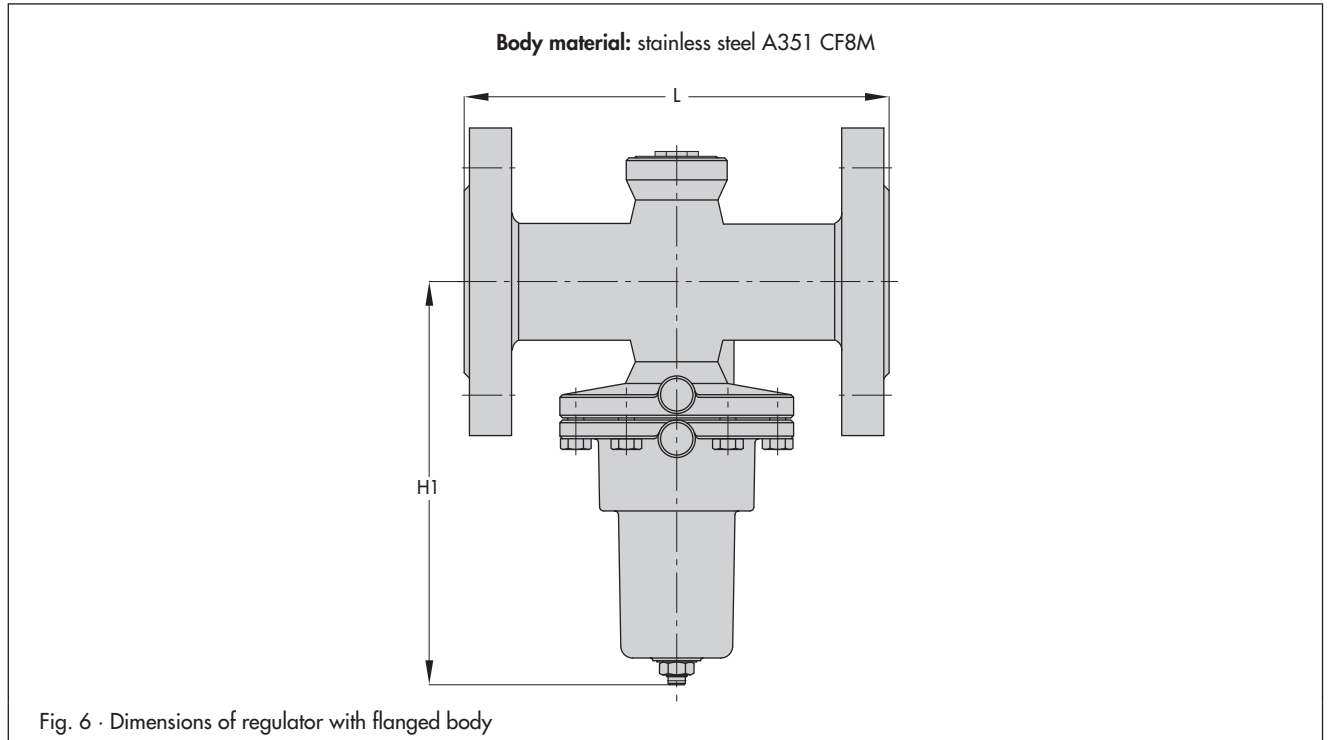
Fig. 5 · Dimensions of regulator with screwed ends

Values in parentheses for regulator with 120 to 290 psi set point range

Table 5 · Dimensions and weights
Regulator with flanged body · Stainless steel A351 CF8M

Valve size	NPS ½	NPS 1
Length L	7.2"	
	184 mm	
Height H1	6.1"	
	155 mm	
Approx. weight	5.7 lb	9.3 lb
	2.6 kg	4.2 kg

Dimensions of regulator with flanged body



Ordering text

Type 44-0 B Steam Pressure Reducing Valve

Body material: red brass or stainless steel

Version with screwed ends ... NPT or flanged body NPS ...

Set point range ... psi, C_v coefficient ...

Optionally, special version

Specifications subject to change without notice



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