

Application

Set points from **0.2 to 20 bar** with valves **G ½**, **G ¾** and **G 1** as well as **DN 15, 25, 40** and **50** · Nominal pressure **PN 25**
Suitable for steam up to **200 °C**

Type 44-0 B Pressure Reducing Valve

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
- Valve body made of red brass, spheroidal graphite iron or stainless steel

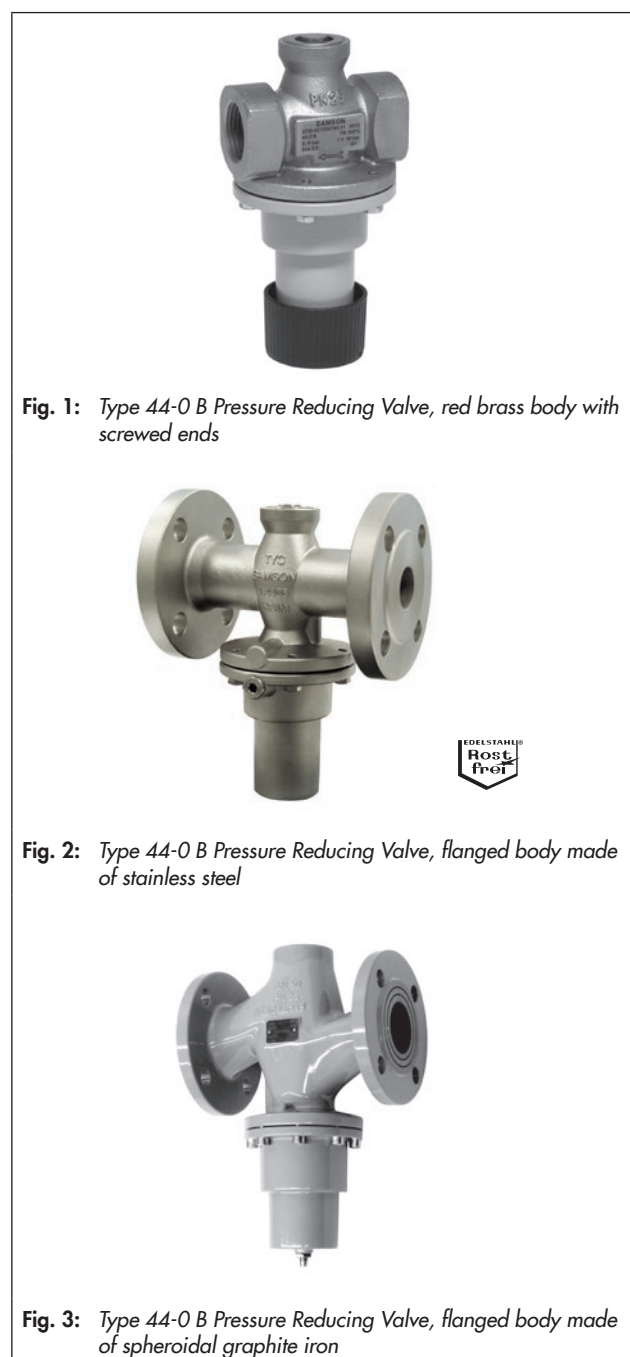
Versions

Pressure regulators for set point ranges from 0.2 to 20 bar and valve body with female thread or flanged connections

Type 44-0 B Pressure Reducing Valve · Regulators with PN 25 valve suitable for steam up to 200 °C · Red brass or stainless steel body with screwed ends G ½, G ¾ and G 1 female thread (Fig. 1) · Stainless steel flanged body DN 15 and 25 (Fig. 2) · Spheroidal graphite iron flanged body DN 15, 25, 40 and 50 (Fig. 3)

Special versions

- Regulator prepared for pressure gauge or external control line connection (connecting thread ⅛ NPT)
- Version with electric set point adjustment (up to G 1 or DN 25) for set points up to 10 bar
- Version with pneumatic set point adjuster (up to G 1 or DN 25)
- Version as differential pressure regulator (up to G 1 or DN 25)

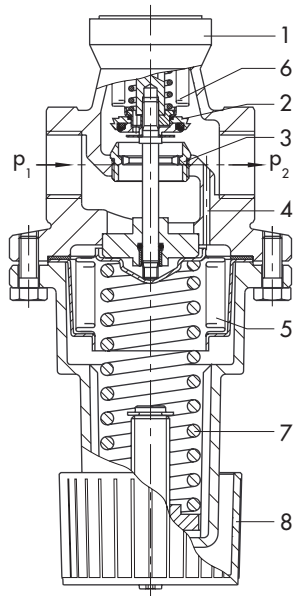


Principle of operation (see Fig. 4)

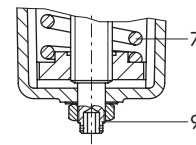
The medium flows through the valve in the direction indicated by the arrow. The position of the plug determines the flow rate across the area released between plug (2) and valve seat (3).

The 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 kept constant is transmitted through a bore-hole (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 set point adjuster (8) or set point adjusting screw (9) (8 to 20 bar set point range and for version with stainless steel or spheroidal graphite iron body in DN 40/50).

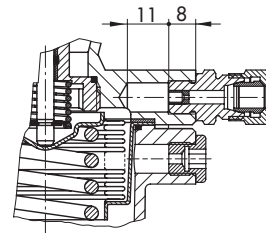


Type 44-0 B Pressure Reducing Valve · Body with screwed ends (female thread)



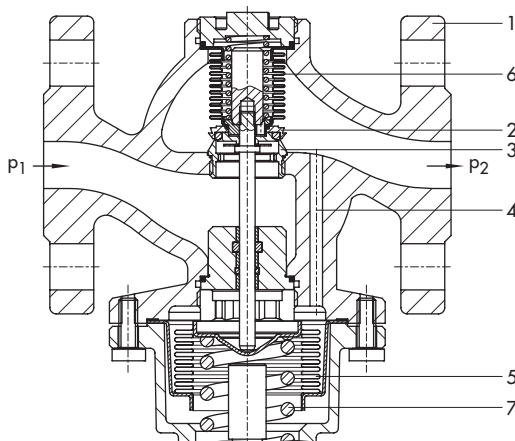
Set point adjustment at hexagonal socket head screw

Stainless steel/spheroidal graphite iron version (DN 40/50 only) and 8 to 20 bar set point range



Special version in stainless steel

Connecting thread G $\frac{1}{8}$ A for a pressure gauge or external control line · Dimensions in mm




Type 44-0 B Pressure Reducing Valve · Flanged body made of spheroidal graphite iron

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

Fig. 4: Functional diagram

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

Type 44-0 B Steam Pressure Reducing Valve		
Connection	Stainless steel/red brass body	Female thread G ½, G ¾, G 1
	Stainless steel body	Flanges DN 15 and 25
	Spheroidal graphite iron body	Flanges DN 15, 25, 40 and 50
Nominal pressure		PN 25
Max. permissible temperature		200 °C
Max. perm. differential pressure Δp	G ½, G ¾, G 1 · DN 15, DN 25	10 ¹⁾ · 16 bar
	DN 40 and 50	8 bar
Leakage class according to IEC 60534-4		≤ 0.05 % of K_{VS} coefficient
Compliance		
Set point range (continuously adjustable)		0.2 to 2 bar · 1 to 4 bar · 2 to 6 bar · 4 to 10 bar · 8 to 20 bar ²⁾
Max. permissible ambient temperature		60 °C

¹⁾ With K_{VS} 0.4 · 1.0 · 1.6 · 2.0 · 2.5

²⁾ Set point range **not** for DN 40 and 50

Table 2: K_{VS} coefficients**Screwed ends**

Connection size		G ½	G ¾	G 1
K_{VS} coefficients	Standard version	1.6 ¹⁾ · 3.2	2.0 ¹⁾ · 4.0	2.5 ¹⁾ · 5.0
	Special version ^{1) 2)}	0.25 · 0.4 · 1.0		

Flanges

Valve size		DN 15	DN 25	DN 40	DN 50
K_{VS} coefficients	Standard version	1.6 ¹⁾ · 3.2	2.5 ¹⁾ · 5.0	16.0	20.0
	Special version ^{1) 2)}	0.25 · 0.4 · 1.0		8.0	

¹⁾ Unbalanced

²⁾ Metal seal

Table 3: Materials · Material numbers according to DIN EN

Enclosure	Red brass CC499K	Spheroidal graphite iron EN-GJS-400-18-LT	Stainless steel 1.4408
Seat	1.4305		1.4404
Plug	Brass (resistant to dezincification) with PTFE soft seal or metal seal (1.4404)		1.4404 with PTFE soft seal
Balancing bellows	1.4571		
Plug spring	1.4310		
Set point spring	1.7104 (55SiCr6)		1.4310
Operating bellows	1.4571		
Spring housing	EN AC-44300-DF (die-cast aluminum)		1.4408
Set point adjuster	Manual adjuster made of PTFE with 30 % glass fiber ¹⁾		Hexagonal socket head screw made of 1.4571

¹⁾ 8 to 20 bar set point range: hexagonal socket head screw made of 1.4571

Table 4: Dimensions and weights

Regulator with valve body with screwed ends · Red brass CC499K · Stainless steel 1.4408

Connection size	G 1/2	G 3/4	G 1
Female thread G	1/2"	3/4"	1"
Length L	65 mm	75 mm	90 mm
Width across flats SW	34 mm		46 mm
Weight, approx.	1.0 kg	1.1 kg	1.5 kg

Regulator with flanged body · Spheroidal graphite iron EN-GJS-400-18-LT · Stainless steel 1.4408

Valve size	DN 15	DN 25	DN 40	DN 50
Length L	130 mm	160 mm	200 mm	230 mm
Height H1	155 mm		245 mm	
Height H2	-		95 mm	
Weight, approx.	2.6 kg	4.2 kg	7 kg	8 kg

Installation

The following applies:

- The direction of flow must match the direction indicated by the arrow on the body
- Install the valve in horizontal pipelines with the actuator housing suspended downward (set point adjuster facing down)

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

Ordering text

Type 44-0 B Steam Pressure Reducing Valve

Body material: red brass, stainless steel or spheroidal graphite iron

Version with screwed ends G ... or flanged valve body DN ...

Set point range ... bar, K_{VS} coefficient ...

Optionally, special version

Flow rate diagram for water

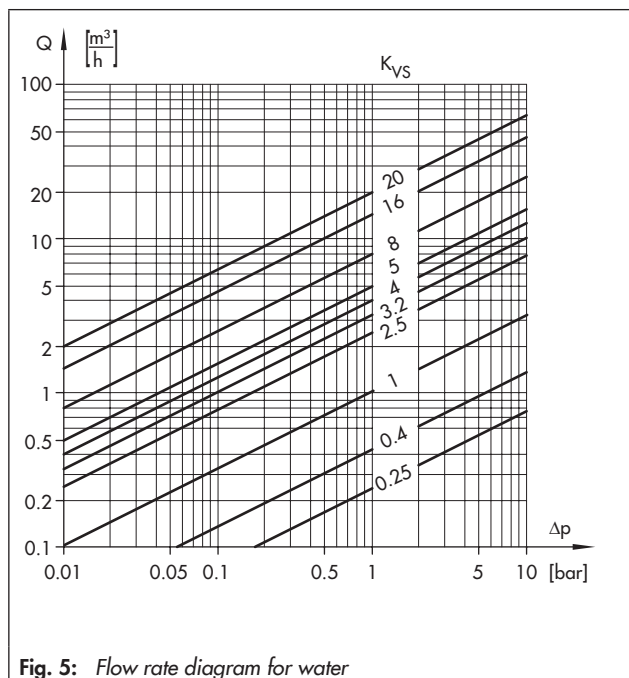
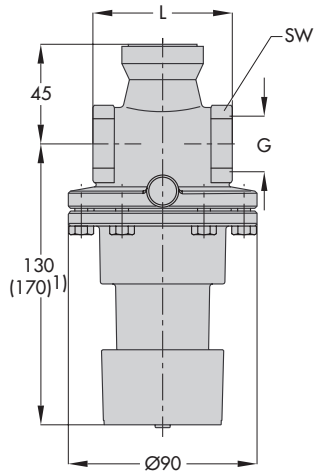


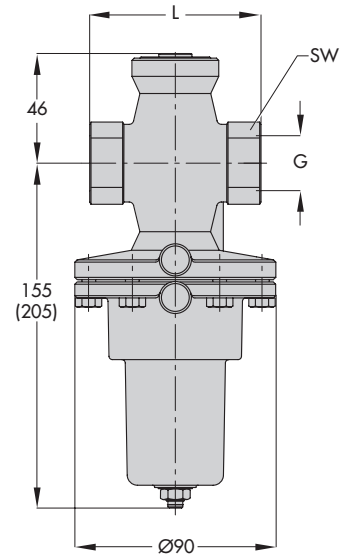
Fig. 5: Flow rate diagram for water

Dimensions of the regulators in mm

Body with screwed ends: **red brass CC499K**

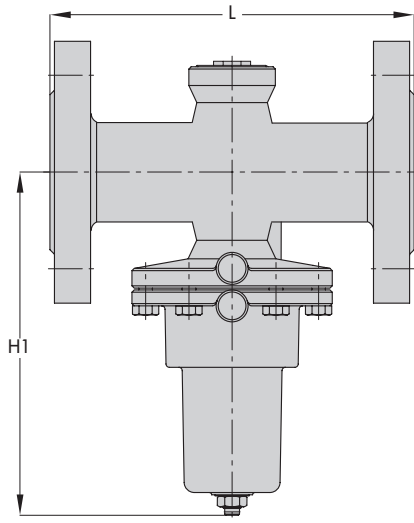


Body with screwed ends: **stainless steel 1.4408**

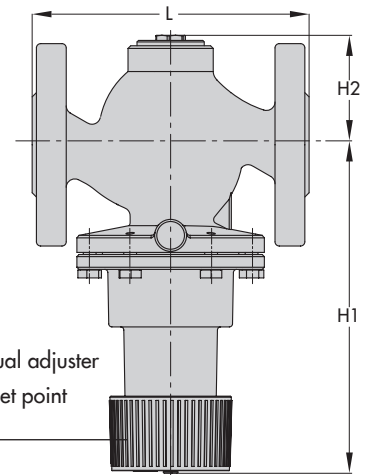


Dimensions in parentheses apply to regulators with 8 to 20 bar set point range

Flanged valve body: **stainless steel 1.4408**



Flanged valve body: **spheroidal graphite iron EN-GJS-400-18-LT**



DN 15/25 version with manual adjuster
DN 40/50 and 8 to 20 bar set point range with adjusting screw

¹⁾ 8 to 20 bar set point range; set point adjustment at hexagonal socket head screw

Fig. 6: Dimensions

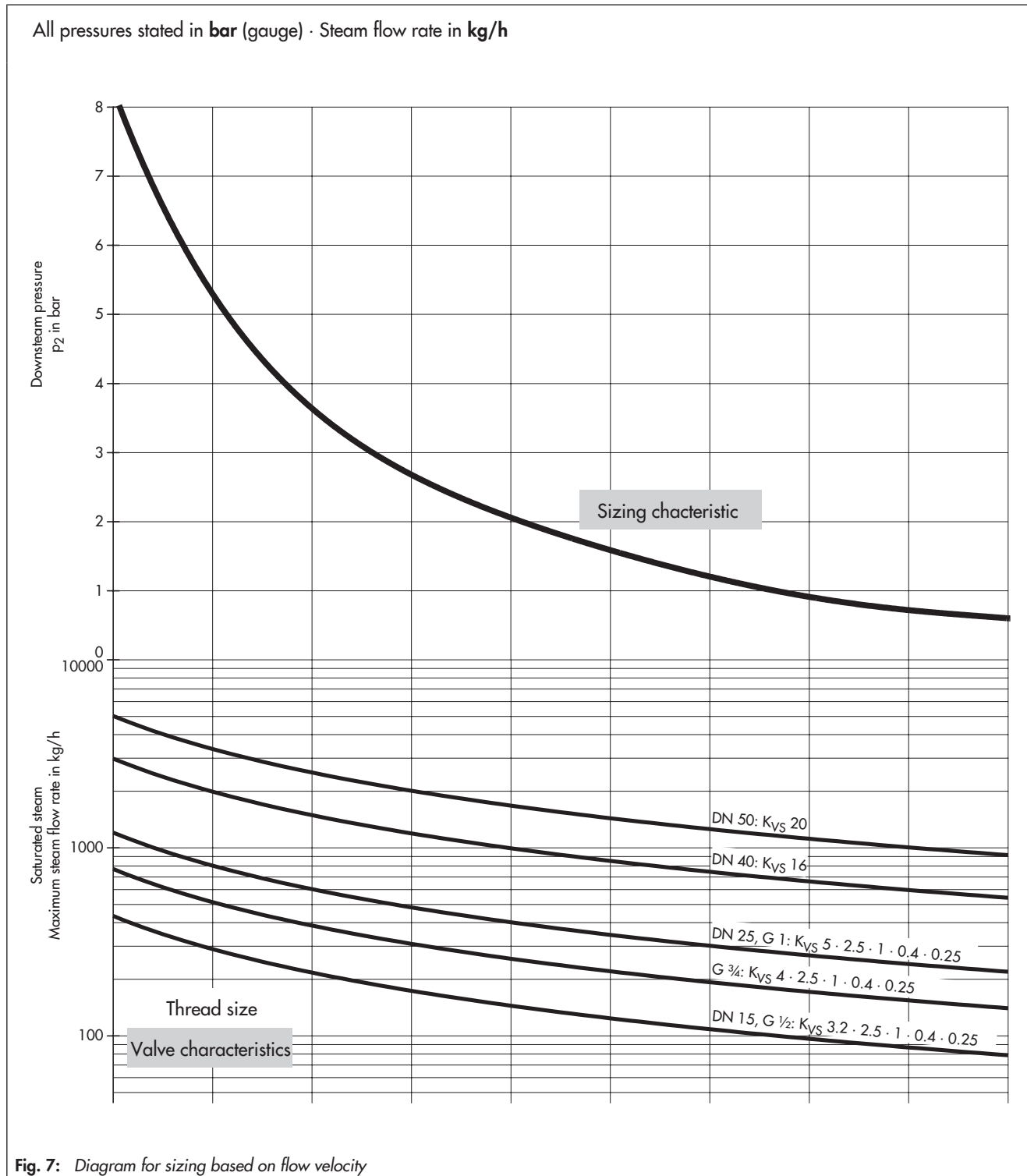
Sizing the Type 44-0 B Steam Pressure Reducing Valve

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. 7) and valve load (Fig. 8).

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



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

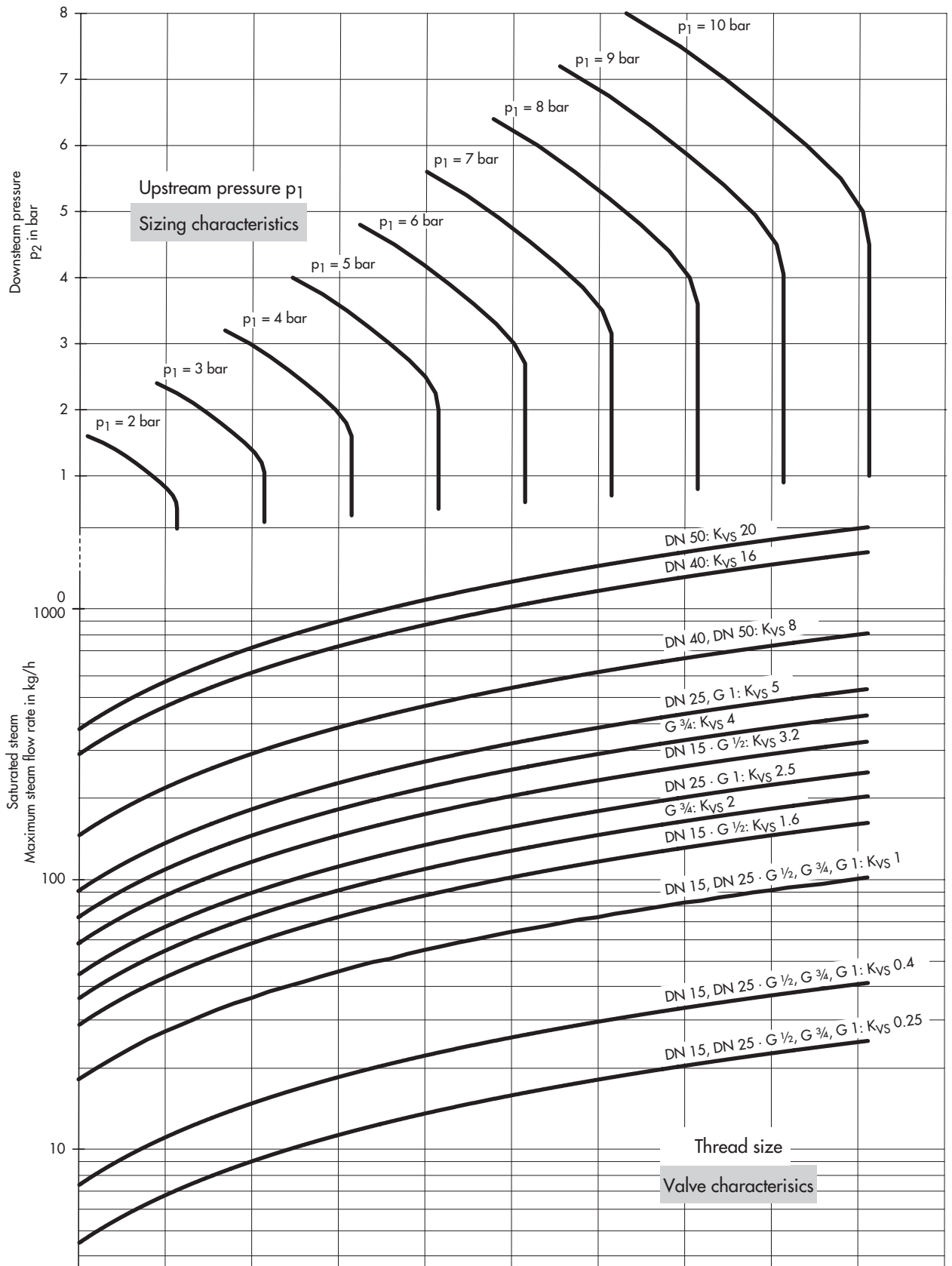


Fig. 8: Diagram for sizing based on valve load

Specifications subject to change without notice



SAMSON AG · MESS- UND REGELTECHNIK
Weismüllerstraße 3 · 60314 Frankfurt am Main, Germany
Phone: +49 69 4009-0 · Fax: +49 69 4009-1507
samson@samson.de · www.samson.de

T 2628 EN

2018-04-27 · English