# DATA SHEET

**T 2628 EN**

## Type 44-0 B Steam Pressure Reducing Valve

Series 44 Self-operated Pressure Regulators

### Application

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

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

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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. 3) · Spheroidal graphite iron flanged body DN 15, 25, 40 and 50 (Fig. 2)

### Special versions

– Regulator prepared for pressure gauge or external control line connection (connecting thread G ⅛)

– 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)



**Fig. 1:** *Red brass body with screwed ends*



**Fig. 2:** *Flanged body made of spheroidal graphite iron*



**Fig. 3:** *Flanged valve body made of stainless steel*

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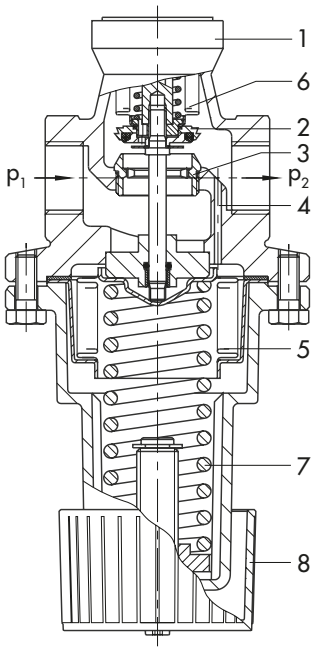
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**Principle of operation** (see Fig. 4)

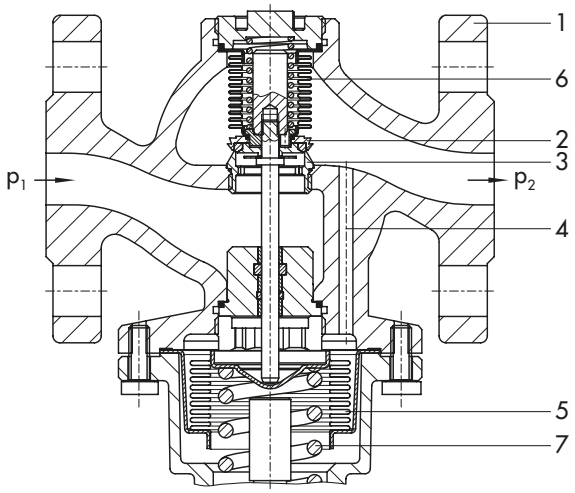
The medium flows through the valve in the direction indicated by the arrow. The position of the plug determines the flow rate across the area released between plug (2) and valve seat (3).

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.

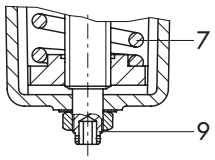
The pressure to be kept constant is transmitted through a borehole (4) in the valve body (1) to the operating bellows (5) where it is converted into a positioning force. It moves the valve plug depending on the spring rate of the set point springs (7) and the set point adjuster (8) or set point adjusting screw (9) (8 to 20 bar set point range and for version with stainless steel or spheroidal graphite iron body in DN 40/50).



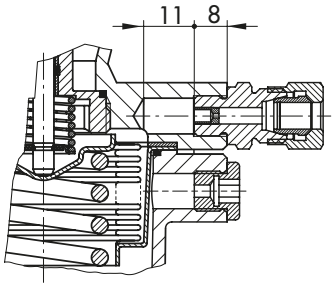

Type 44-0 B Pressure Reducing Valve · Body with screwed ends (female thread)




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




**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 ⅛ A for a pressure gauge or external control line · Dimensions in mm

| | | | |
|---|---|---|---|
| 1 | Valve body | 7 | Set point spring |
| 2 | Plug | 8 | Set point adjuster (handwheel) |
| 3 | Seat | 9 | Set point screw |
| 4 | Borehole for control pressure | | |
| 5 | Operating bellows | | |
| 6 | Balancing 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 |
| Pressure rating | | 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 |
| Conformity | | CE |
| 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 $K_{VS}$ 1.0, 1.6, 2.0 and 2.5
[2] Set point range **not** for DN 40 and 50

**Table 2:** *$K_{VS}$ coefficients*

| **Thread size · Screwed ends** | | **G ½** | **G ¾** | **G 1** |
|---|---|---|---|---|
| $K_{VS}$ coefficients [1] | Standard version | 1.6 [2] · 3.2 [3] | 2.0 [2] · 4.0 [3] | 2.5 [2] · 5.0 [3] |
| | Special version | 1.0 [3] | | |

| **Nominal size (flange)** | | **DN 15** | **DN 25** | **DN 40** | **DN 50** |
|---|---|---|---|---|---|
| $K_{VS}$ coefficients | Standard version | 1.6 [1] [2] · 3.2 [3] | 2.5 [1] [2] · 5.0 [3] | 16.0 [3] | 20.0 [3] |
| | Special version [1] | 1.0 [3] | | 8.0 [2] | |

[1] Unbalanced [2] Metal seal [3] Soft seal. Seal material: PTFE

**Table 3:** *Materials · Material numbers according to DIN EN*

| **Body** | **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 · Regulators with body with screwed ends*

**Red brass CC499K · Stainless steel 1.4408**

| **Thread size · Screwed ends** | | **G ½** | **G ¾** | **G 1** |
|---|---|---|---|---|
| Female thread G | | ½" | ¾" | 1" |
| Overall length L | | 65 mm | 75 mm | 90 mm |
| Width across flats (SW) | | 34 mm | | 46 mm |
| Height H1 [2] | Red brass CC499K | 132 mm · 199 mm [1] | | |
| | Stainless steel 1.4408 | 155 mm · 222 mm [1] | | |
| Height H2 | Red brass CC499K | 48 mm | | |
| | Stainless steel 1.4408 | 46 mm | | |
| ØD | | 89 mm | | |
| Weight, approx. | Red brass CC499K | 1.7 kg | | 2 kg |
| | Stainless steel 1.4408 | 2.2 kg | | 2.5 kg |

[1] Dimensions for regulators with 8 to 20 bar set point range or stainless steel body; set point adjustment at hexagonal socket head screw
[2] + min. 50 mm distance for set point adjustment

**Table 5:** *Dimensions and weights · Regulators with flanged valve body*

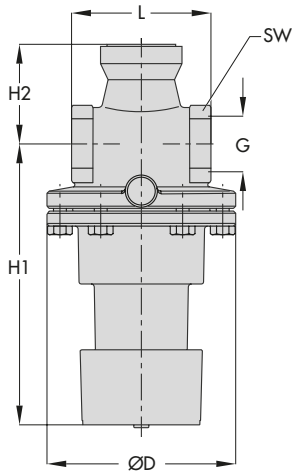
**Spheroidal graphite iron EN-GJS-400-18-LT · Stainless steel 1.4408**

| **Nominal size (flange)** | | **DN 15** | **DN 25** | **DN 40** | **DN 50** |
|---|---|---|---|---|---|
| Overall length L | | 130 mm | 160 mm | 200 mm | 230 mm |
| Height H1 [1] | | 155 mm | | 245 mm | |
| Height H2 | | 46 mm | | 95 mm | |
| ØD | | 89 mm | | | |
| Weight, approx. | EN-GJS-400-18-LT | 3.6 kg | 4.3 kg | 11.9 kg | 13.5 kg |
| | Stainless steel 1.4408 | 3.9 kg | 5.3 kg | – | |

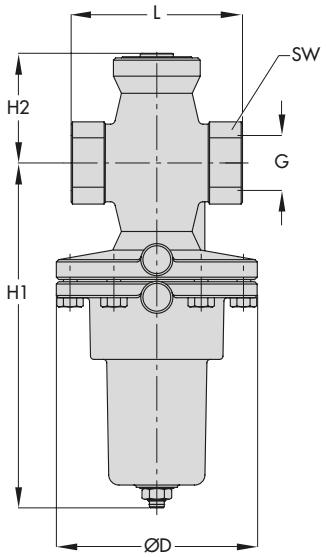
[1] + min. 50 mm distance for set point adjustment

## Dimensions of the regulators in mm

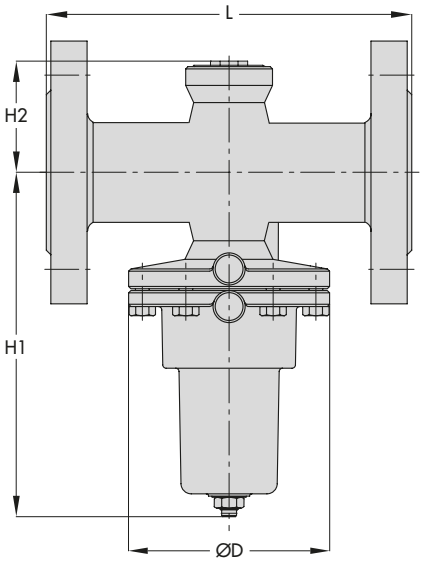
Body with screwed ends: **red brass CC499K**




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

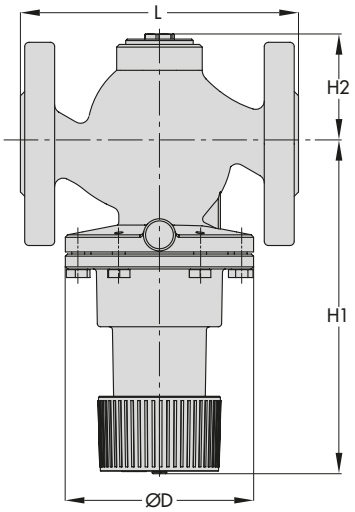



Flanged valve body: **stainless steel 1.4408**




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

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

**Fig. 6:** *Dimensions*

## 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.

## Flow rate diagram for water

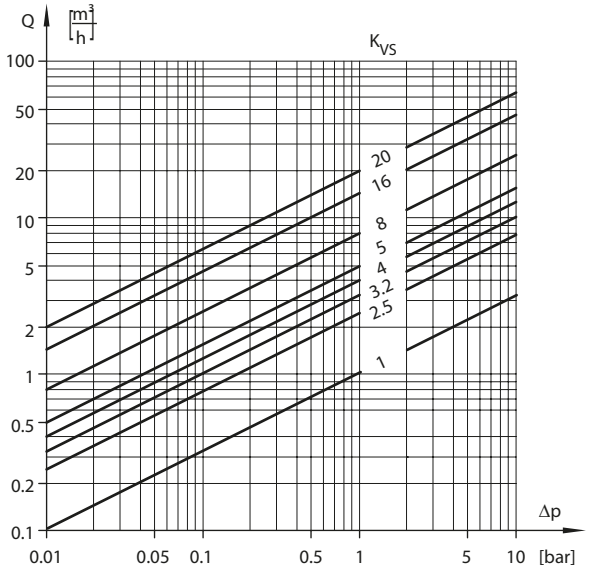



**Fig. 5:** *Flow rate diagram for water*

## 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

**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 nominal size for the Type 44-0 B Regulator.

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

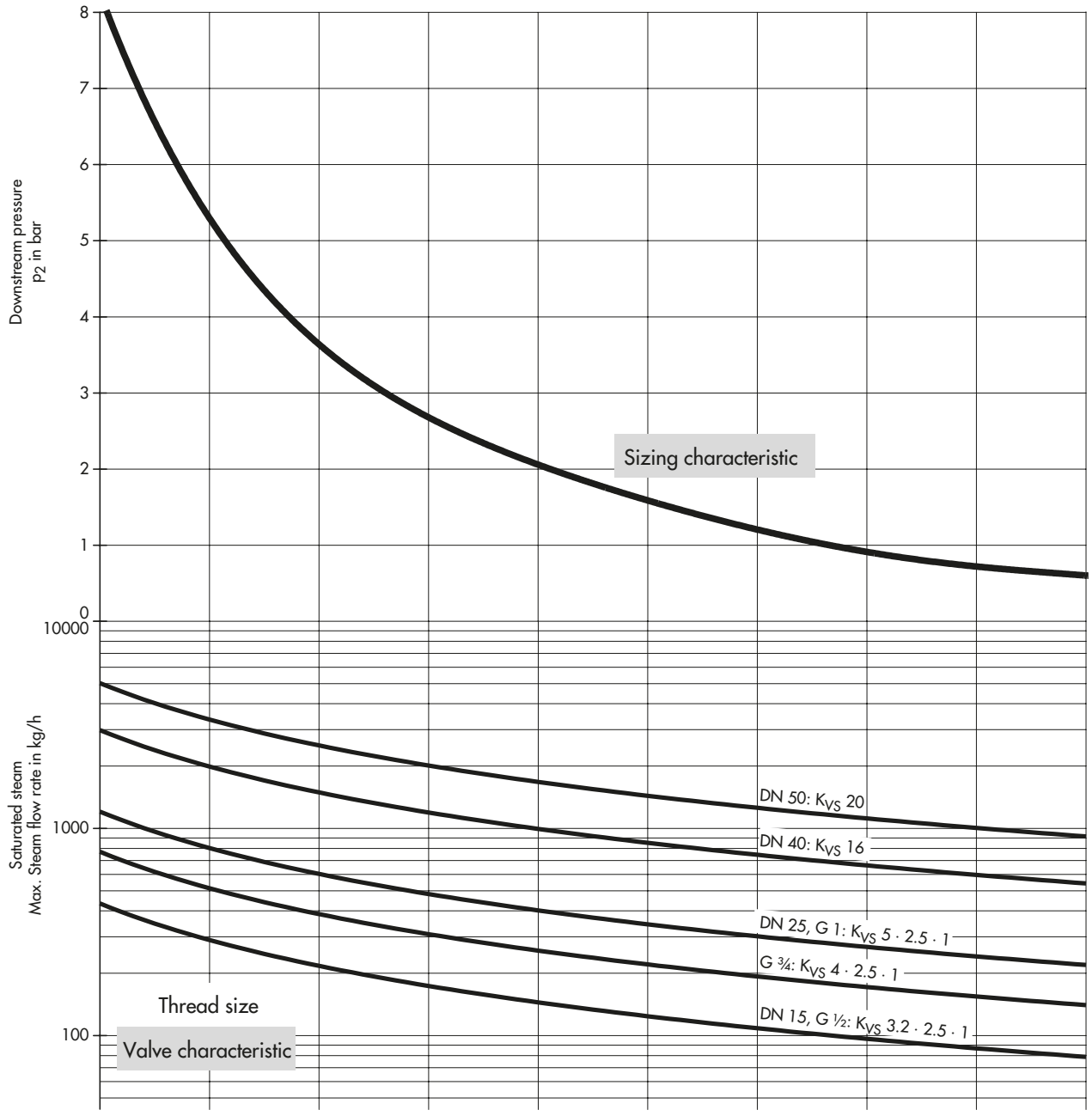



**Fig. 7:** *Diagram for sizing based on flow velocity*

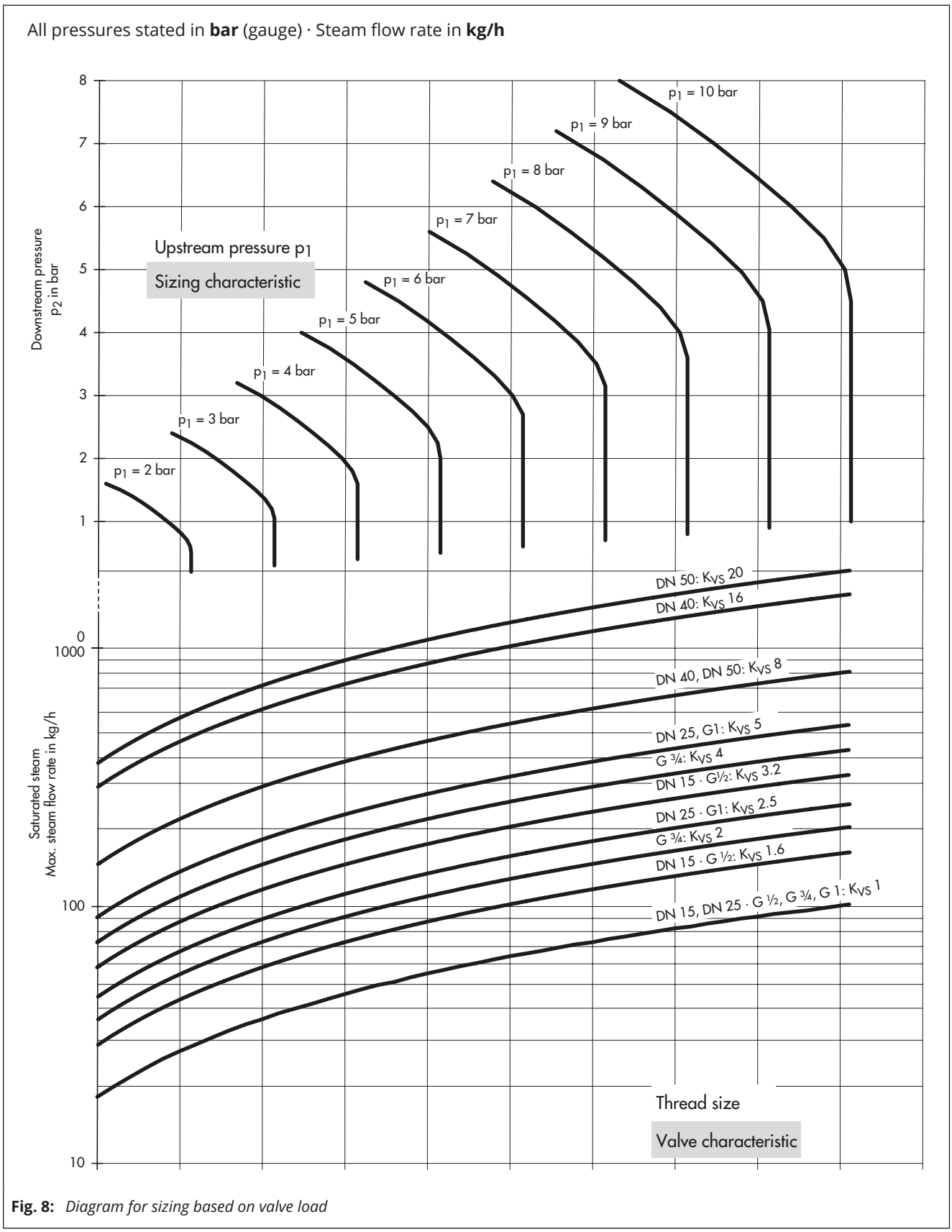



**Fig. 8:** *Diagram for sizing based on valve load*