DATA SHEET

T 2626 EN

Type 44-1 B Pressure Reducing Valve · Type 44-6 B Excess Pressure Valve

Series 44 Self-operated Pressure Regulators

CE

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** · Pressure rating **PN 25** · Suitable for air up to **150 °C**, nitrogen and steam up to **200 °C** [1], other gases up to **80 °C** and liquids up to **150 °C**

Type 44-1 B Pressure Reducing Valve · The valve **closes** when the **downstream** pressure rises

Type 44-6 B Excess Pressure Valve · The valve **opens** when the **upstream** 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
- Any mounting position possible
- Valve body made of red brass, spheroidal graphite iron or stainless steel
- Meets fugitive emissions requirements based on VDI 2440

Versions

Pressure regulator with actuator for 0.2 to 20 bar set point ranges · Red brass or stainless steel body with screwed ends G ½, G ¾ and G 1 (female thread) · Stainless steel flanged body DN 15 and 25 · Spheroidal graphite iron flanged body DN 15, 25, 40 and 50

Type 44-1 B Pressure Reducing Valve (Fig. 1 and Fig. 3) · Regulator with valve PN 25 for liquids up to 150 °C, air up to 150 °C, nitrogen up to 150 °C and other gases up to 80 °C

Type 44-6 B Excess Pressure Valve (Fig. 2) · Regulator with valve PN 25 for liquids up to 150 °C, air up to 150 °C, nitrogen up to 200 °C, other gases up to 80 °C and steam up to 200 °C

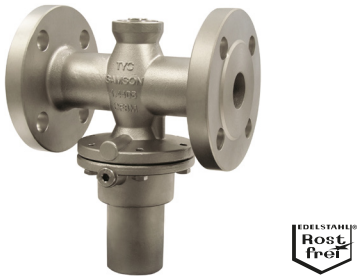

Fig. 1: *Type 44-1 B Pressure Reducing Valve, flanged body made of stainless steel*

Fig. 2: *Type 44-6 B Excess Pressure Valve, red brass body with screwed ends*

Fig. 3: *Type 44-1 B Pressure Reducing Valve, flanged body made of spheroidal graphite iron*

[1] Type 44-6 B only

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Special versions

- With internal parts made of FKM, e.g. for use with mineral oils
- Spheroidal graphite iron body with wetted parts free of non-ferrous metal
- Version free of PTFE
- Version for flammable gases on request
- Regulator prepared for pressure gauge or external control line connection (connecting thread G ⅛)
- FDA version [1)]
- 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)
- Type 44-6 B for steam

1) This version is not suitable for direct contact with products manufactured in the food and pharmaceutical industries. It can only be used close to the product.

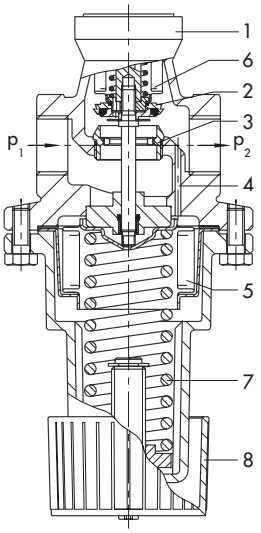
Principle of operation (see Fig. 4)

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).

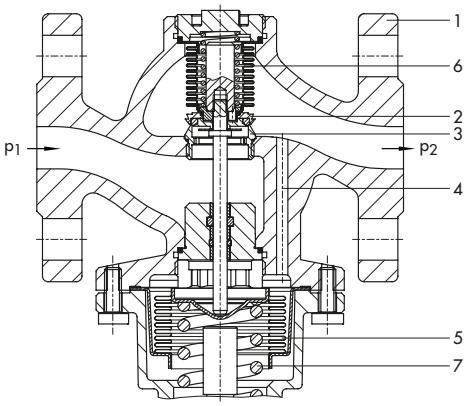
The Type 44-1 B Pressure Reducing Valve is open when relieved of pressure. The valve closes when the downstream pressure (p_2) rises above the adjusted set point.

The Type 44-6 B Excess Pressure Valve is closed when it is relieved of pressure. The valve opens when the upstream pressure rises above the adjusted set point.

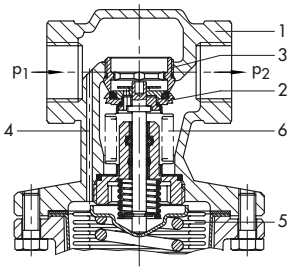
In both versions, the pressure to be kept constant is transmitted through a borehole (4) in the valve body (1) to the operating bellows (5) where it is converted into a positioning force. It moves the valve plug depending on the spring rate of the set point springs (7) and the set point adjuster (8) 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).



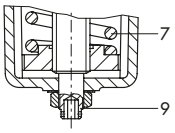
Type 44-1 B Pressure Reducing Valve · Body with screwed ends (female thread)



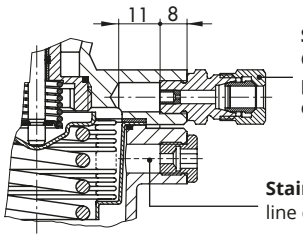
Type 44-1 B Pressure Reducing Valve · Flanged body made of spheroidal graphite iron



Type 44-6 B Excess Pressure Valve · Body with screwed ends (female thread)



Stainless steel/spheroidal graphite iron version (DN 40/50 only) and 8 to 20 bar set point range · Set point adjustment at hexagonal socket head screw



Special version
Connecting thread G ⅛ A for a pressure gauge or external control line · Dimensions in mm

Stainless steel version · Leakage line connection (standard)

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)*

Valve		Type 44-1 B Pressure Reducing Valve	Type 44-6 B Excess Pressure Valve
Pressure rating		PN 25	
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	
Max. permissible temperature [1]	Liquids	–10 to +150 °C	
	Non-flammable gases	–10 to +80 °C · (–10 to +150 °C) [4] · (–10 to +200 °C) [5]	
	Steam	–	200 °C
Max. perm. differential pressure Δp	G ½, G ¾, G 1 | DN 15, DN 25	10 [3]/16 bar	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) FDA version: Max. permissible temperature 60 °C
2) Set point range **not** for DN 40 and 50
3) With K_{VS} 1.0 and 2.5
4) Air as process medium and FKM seal material
5) Only for Type 44-6 B · Nitrogen as process medium and FKM seal material

Table 2: *K_{VS} coefficients and x_{FZ} values*

Type 44-1 B Pressure Reducing Valve		Thread size · Screwed ends			Nominal size (flange)			
		G ½	G ¾	G 1	DN 15	DN 25	DN 40	DN 50
K_{VS} coefficients	Standard version [1]	3.2	4.0	5.0	3.2	5.0	16.0	20.0
	Special version, unbalanced	0.25 [1] · 1.0 [1] · 2.5 [1]					8.0 [2]	
Type 44-6 B Excess Pressure Valve		**Thread size · Screwed ends**			**Nominal size (flange)**			
		G ½	**G ¾**	**G 1**	**DN 15**	**DN 25**	**DN 40**	**DN 50**
K_{VS} coefficients	Standard version [1]	3.2	4.0	5.0	3.2	5.0	16.0	20.0
	Special version, unbalanced	0.4 [2] · 1.0 [1] · 2.5					–	
x_{FZ} values · Type 44-1 B · Type 44-6 B		0.60		0.55	0.60	0.55	0.40	

1) Soft seal. Seal material: EPDM or FKM. Additionally Type 44-6 B: PTFE gasket material
2) Metal seal

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	Type 44-1 B · Type 44-6 B	Brass (free of dezincification), soft seal [1]		1.4404 metal or soft seal [2]
	Type 44-6 B (steam regulator)	Brass (resistant to dezincification) with PTFE soft seal or metal seal [1]		1.4404 with EPDM/FKM/PTFE soft seal or metal seal
Balancing bellows		1.4571		1.4571
Plug spring		1.4310		1.4310
Set point spring		1.7104 (55SiCr6)		1.4310
Operating bellows		1.4571		1.4571
Spring housing		EN AC-44300-DF (die-cast aluminum)		1.4408
Spring housing screws		8.8		A4-70
Set point adjuster		Manual adjuster made of PTFE with 30 % glass fiber [3]		Hexagonal socket head screw made of 1.4571

1) For spheroidal graphite iron valves with internal parts free of non-ferrous metal: plug made of 1.4404, metal or soft seal
2) EPDM, FKM or PTFE
3) 8 to 20 bar set point range: hexagonal socket head screw made of 1.4571

Table 4: *Versions and K_{VS} coefficients*

Version with …		Plug with soft seal		Plug with metal seal
	Type	EPDM/FKM	PTFE	
K_{VS} coefficients	Type 44-1 B	0.25 · 1.0 · 2.5 · 3.2 · 4.0 · 5.0 · 16.0 · 20.0	–	8.0
	Type 44-6 B	1.0 · 2.5 · 3.2 · 4.0 · 5.0 · 16.0 · 20.0	1.0 · 3.2 · 4.0 · 5.0	0.4

Table 5: *Seal materials and max. medium temperatures*

Plug seal	Process medium	Max. temperature [2]
EPDM	Water	Up to 150 °C
	Oil-free air	Up to 80 °C
	Nitrogen	Up to 80 °C
FKM	Mineral oil	Up to 150 °C
	Air	Up to 150 °C
	Nitrogen [1]	Up to 200 °C
PTFE [1]	Steam	Up to 200 °C

[1] Type 44-6 B only
[2] FDA version: Max. permissible temperature 60 °C

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 and ▶ EB 2626-2.

Flow rate diagram for water

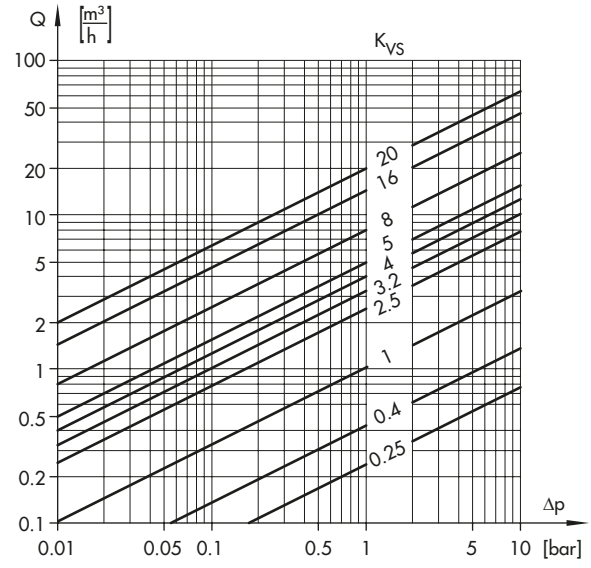
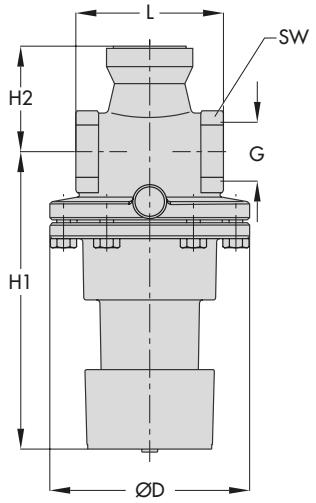


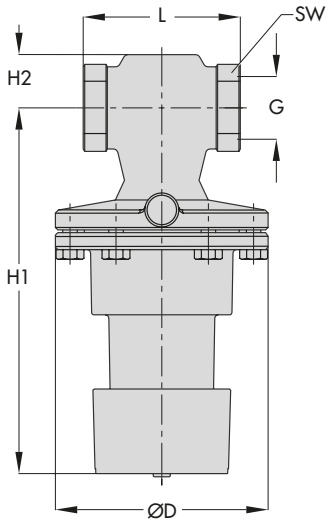
Fig. 5: *Flow rate diagram for water*

Dimensions of the regulators with body with screwed ends

Body: **red brass**



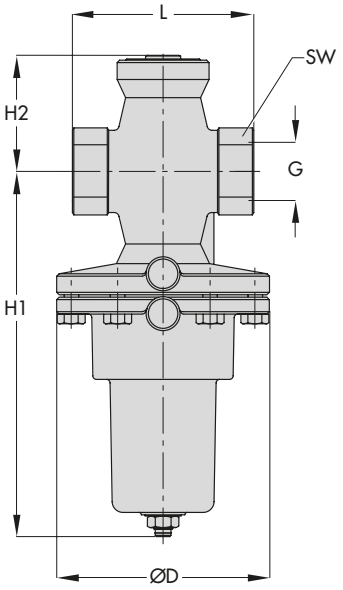
Type 44-1 B Pressure Reducing Valve



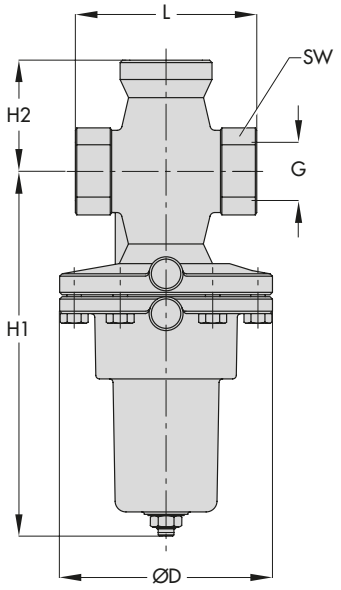
Type 44-6 B Excess Pressure Valve

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

Body: **stainless steel**



Type 44-1 B Pressure Reducing Valve



Type 44-6 B Excess Pressure Valve

Fig. 6: *Dimensions in mm · Type 44-1 B Pressure Reducing Valve · Type 44-6 B Excess Pressure Valve*

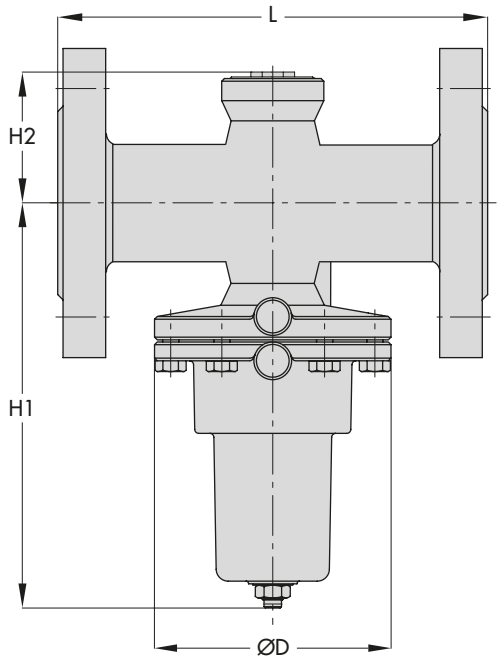
Table 6: *Dimensions and weights* ***· Regulator with red brass CC499K · Stainless steel 1.4408***

Thread size · Body with 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 (A/F)		34 mm	34 mm	46 mm
Height H1	Red brass CC499K	130 · 170 [1) 2)]		
	Stainless steel 1.4408 [2)]	155 · 205 [1)]		
Height H2	Red brass CC499K	25		
	Stainless steel 1.4408	46		
ØD		89		
Weight, approx.	Stainless steel/red brass	1.0 kg	1.1 kg	1.5 kg

1) Dimensions apply to regulators with 8 to 20 bar set point range
2) Set point adjustment at hexagonal socket head screw

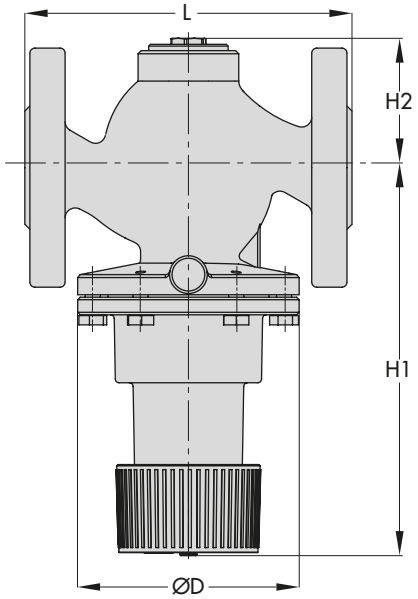
Dimensions of the regulators with flanged valve body

Body: **stainless steel 1.4408**



DN 40/50 and 8 to 20 bar set point range with adjusting screw

Body: **spheroidal graphite iron EN-GJS-400-18-LT**



DN 15/25 version with manual adjuster

Type 44-1 B Pressure Reducing Valve and Type 44-6 B Excess Pressure Valve

Fig. 7: *Dimensions in mm*

Table 7: *Dimensions and weights* ***· Regulator with flanged body · Spheroidal graphite iron EN-GJS-400-18-LT · Stainless steel 1.4408***

Nominal size · Flanged body	**DN 15**	**DN 25**	**DN 40**	**DN 50**
Overall length L	130 mm	160 mm	200 mm	230 mm
Height H1	155 mm		245 mm	
Height H2	46 mm		95 mm	
ØD	89 mm			
Weight, approx.	2.6 kg	4.2 kg	7 kg	8 kg

Ordering text

Pressure reducing valve
For gases and liquids **(Type 44-1 B)** or

Excess pressure valve
For gases, liquids and steam **(Type 44-6 B)**

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 ...,

Plug seal: EPDM, FKM, PTFE, metal seal, version for steam (special version of Type 44-6 B)

Special version