

Series 44 Self-operated Pressure Regulators



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

Application

Set points from **0.2 to 20 bar** with valves **G ½**, **G ¾**, and **G 1** as well as **DN 15**, **DN 25**, **DN 40**, and **DN 50** · Nominal pressure **PN 25** · Suitable for air up to **150 °C**, nitrogen up to **200 °C**, 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.



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 by balanced 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 TA Luft requirements concerning fugitive emissions based on VDI 2440

Versions

Pressure regulators 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 200 °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

Special versions

With internal parts made of FKM (FPM), e.g. for use of mineral oils · Spheroidal graphite iron body with wetted parts free of non-ferrous metal · PTFE-free version · Version for flammable gases on request · Regulator prepared for pressure gauge or external control line connection (connecting thread G ⅛) · Version with FFKM (FFPM) internal parts with stainless steel body · FDA-compliant materials (max. 60 °C medium temperature) · 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 as differential pressure regulators up to G 1 or DN 25 · Type 44-6 B for steam



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

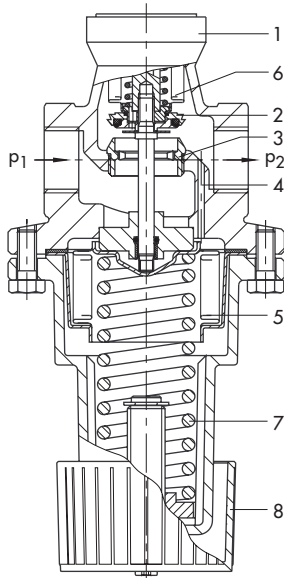
Principle of operation (see Fig. 4)

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).

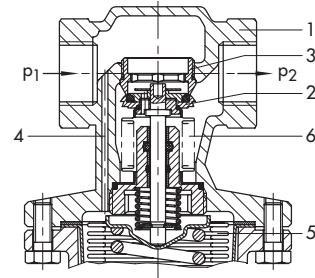
The Type 44-1 B Pressure Reducing Valve is open when relieved of pressure. The valve closes when the downstream pressure (p_2) rises above the adjusted set point.

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.

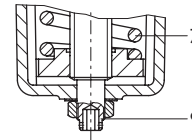
In both versions, the pressure to be kept constant is transmitted through a hole (4) in the valve body (1) to the operating bellows (5) where it is converted into a positioning force. It moves the valve plug depending on the spring rate of the set point springs (7) and the set point adjuster (8) or set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



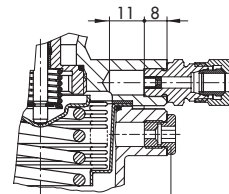
Type 44-1 B Pressure Reducing Valve
Body with screwed ends (female thread)



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



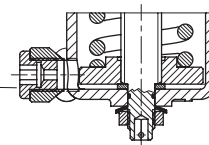
Stainless steel/spheroidal graphite iron version (DN 40/50 only) and 8 to 20 bar set point range · Set point adjustment at hexagonal socket head screw



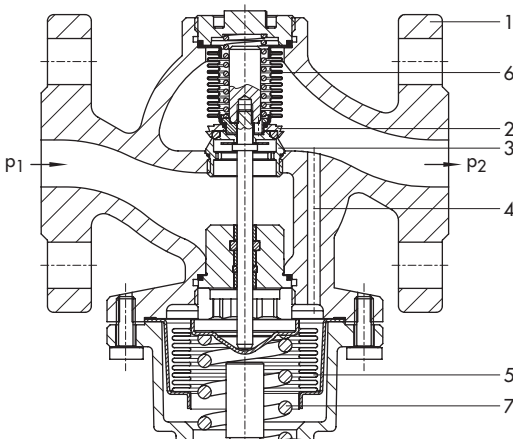
Special version
Connecting thread G 1/8 A for a pressure gauge or external control line · Dimensions in mm

Stainless steel version · Leakage line connection

Stainless steel version · Cleaning connection (special version)



Special versions



Type 44-1 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 diagrams

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

Valve	Type 44-1 B Pressure Reducing Valve	Type 44-6 B Excess Pressure Valve	
Nominal pressure	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	Liquids ¹⁾	150 °C	
	Air and non-flammable gases ¹⁾	80 °C	
	Steam ¹⁾	–	200 °C
	Nitrogen ¹⁾	200 °C	
Max. perm. differential pressure Δp	G ½, G ¾, G 1 DN 15, DN 20	16 bar	
	DN 40 and 50	8 bar	
Leakage class according to IEC 60534-4	≤0.05 % of K _{V5} coefficient		
Compliance	CE · ENEC		
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⁾ The maximum permissible temperature is limited to 60 °C with FDA compliance.

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

Table 2: Max. permissible pressure at actuator**Screwed ends**

Connection size	G ½	G ¾	G 1	
K _{V5} coefficients	Standard version	3.2 ¹⁾	4 ¹⁾	5 ¹⁾
	Special version, unbalanced	0.25 ²⁾ · 0.4 · 1 ¹⁾ · 2.5		
x _{Fz} values	0.60	0.60	0.55	

Flanges

Nominal size	DN 15	DN 25	DN 40	DN 50	
K _{V5} coefficients	Standard version	3.2 ¹⁾	5 ¹⁾	16	20
	Special version, unbalanced	0.25 ²⁾ · 0.4 · 1 ¹⁾ · 2.5		8 ²⁾	
x _{Fz} values	0.60	0.55	0.4		

¹⁾ Also available as special version for regulators with stainless steel body and FKM (FPM) soft seal

²⁾ Only with Type 44-1 B, metal seal

Table 3: Materials · Material numbers according to DIN EN

Body	Red brass CC499K	Spheroidal graphite iron EN-JS1049	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 FKM (FPM)/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
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, FFKM (FFPM) 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
	EPDM/FKM (FPM)	Stainless steel with FFKM (FFPM)	PTFE		
K_{VS} coefficients Type 44-1 B	0.25 · 1 · 2.5 · 3.2 · 4 · 5	1 · 3.2 · 4 · 5	–		0.25 · 0.4 · 1
Type 44-6 B	1 · 2.5 · 3.2 · 4 · 5	1 · 3.2 · 4 · 5	3.2 · 4 · 5		0.4 · 1

Table 5: Seal materials and max. medium temperatures

Plug seal	Medium · max. temperature ²⁾
EPDM	Water · Up to 150 °C Oil-free air · Up to 80 °C Nitrogen · Up to 80 °C
FKM (FPM)	Mineral oil · Up to 150 °C Air · Up to 150 °C Nitrogen · Up to 200 °C
PTFE ¹⁾	Steam · Up to 200 °C
FFKM (FFPM)	Liquids · Up to 150 °C Gases · Up to 80 °C

¹⁾ Only for Type 44-6 B

²⁾ Limited to 60 °C with FDA compliance

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

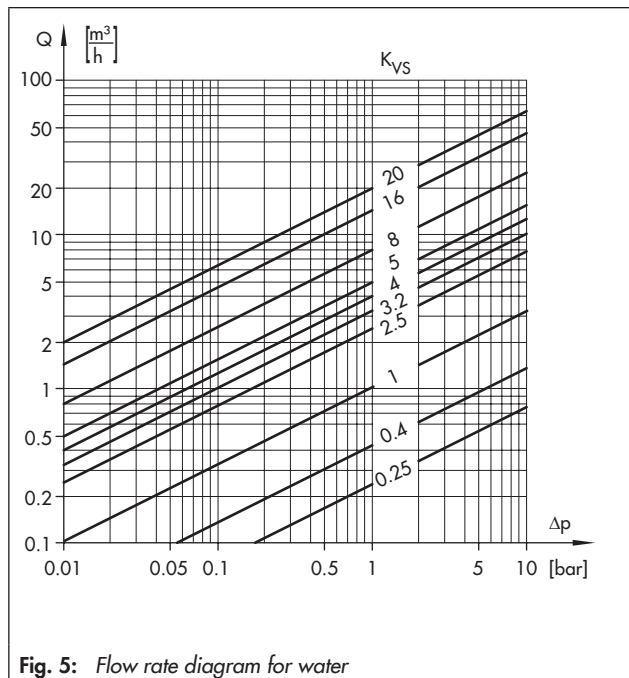


Fig. 5: Flow rate diagram for water

Table 6: Dimensions and weights

Regulator with body with screwed ends · Red brass · 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	34 mm	46 mm
Weight, approx.	Stainless steel/red brass		
	1.0 kg	1.1 kg	1.5 kg

Dimensions of the regulators with body with screwed ends

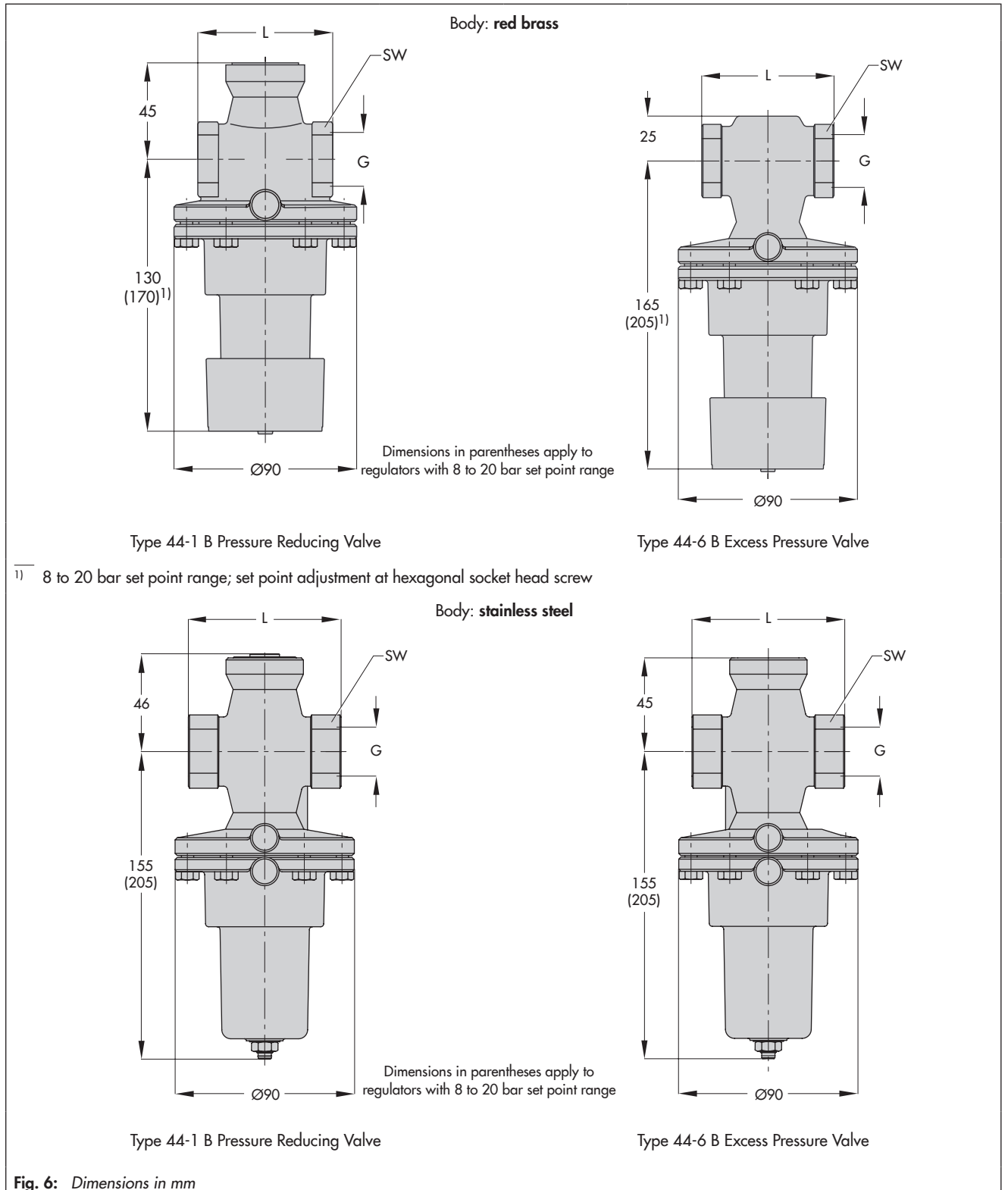


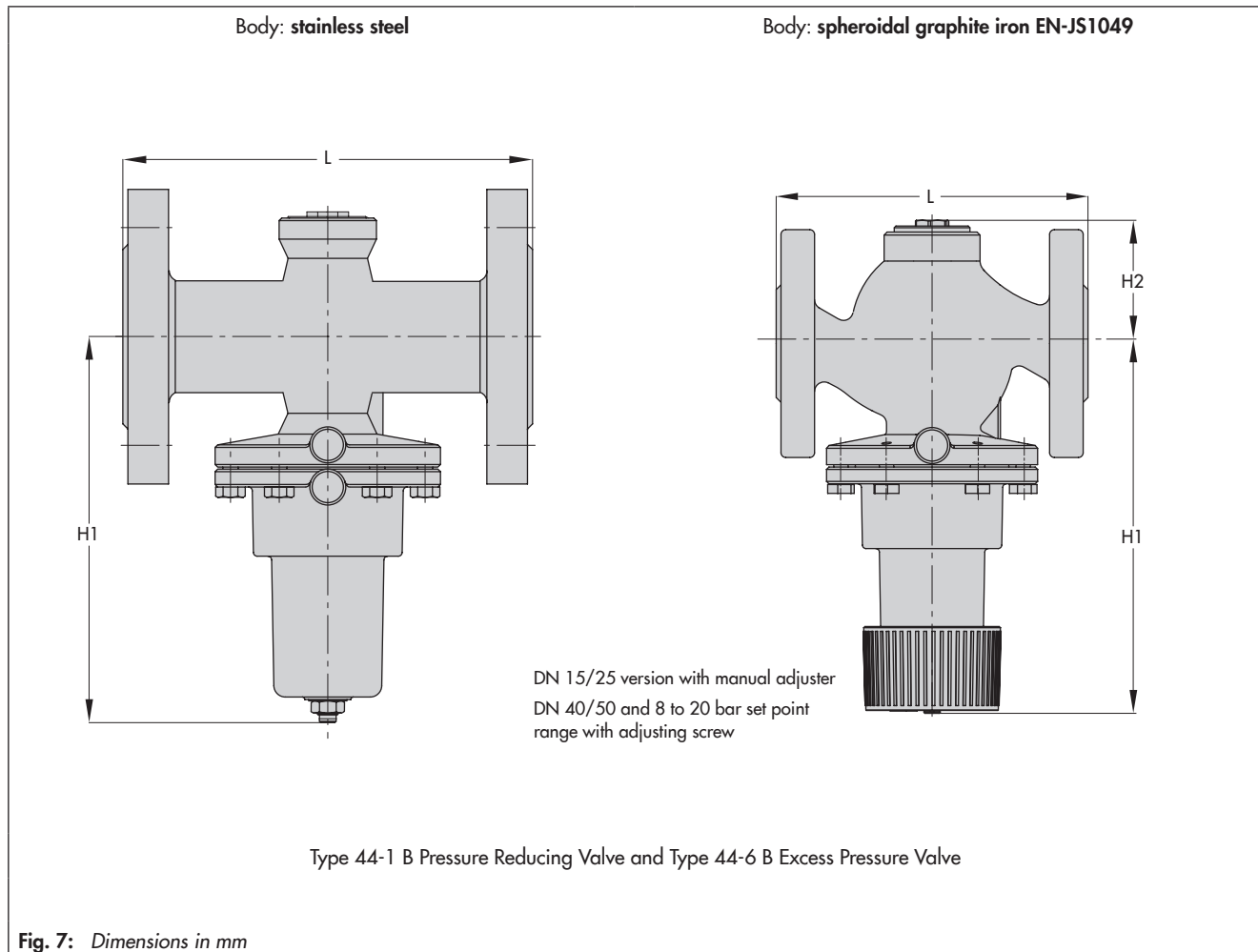
Fig. 6: Dimensions in mm

Table 7: Dimensions and weights

Regulator with flanged body · Spheroidal graphite iron EN-JS1049 · Stainless steel 1.4408

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

Dimensions of the regulators with body with screwed ends



Ordering text

Type 44-1 B Pressure Reducing Valve for liquids and gases

or

Type 44-6 B Excess Pressure Valve for liquids, gases, and steam

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 (FPM), FFKM (FFPM), PTFE, metal seal, steam version (special version of Type 44-6 B)

Special version

Specifications subject to change without notice



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