

Self-operated Pressure Regulators



Accessories

Condensation chamber · Screw fitting · Conical expansion piece · Control line kit · Control line

Application

Accessories for Type 39-2, Type 41-23, Type 41-73, Type 2422/2424 and Type 2422/2425 Pressure Regulators

The following accessories are necessary to ensure proper operation of the pressure regulators listed:

- **Condensation chamber**

Required for steam and liquids at temperatures above 150 °C · To collect condensation in applications with steam and for protection of the operating diaphragm against high temperatures

- **Standard screw joint with restriction orifice G $\frac{3}{8}$**

For connection of the control line to the actuator with male thread R $\frac{1}{4}$ to the control line female thread connection G $\frac{3}{8}$ · Other connections for 6 x 1, 8 x 1, 10 x 1 pipes are available. Furthermore, Serto fittings (8 x 1, 10 x 1), Swagelok fittings (\varnothing 12, $\frac{1}{2}$ ") and $\frac{1}{2}$ " NPT screw joints with restriction orifices are available. Refer to page 5.

- **Funnel tube**

For easy filling of the diaphragm chamber, the condensation chamber and the control line with the process medium.

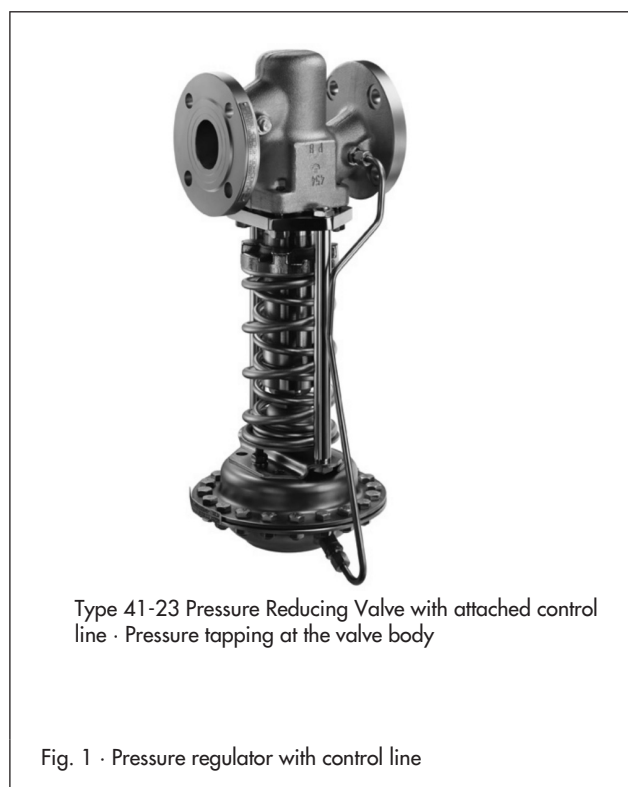
- **Conical expansion piece**

To double the diameter of the outlet pipe in pressure reduction applications involving gases or vapors

- **Control line kit for Type 41-23 Pressure Reducing Valve or Type 41-73 Excess Pressure Valve**

For tapping the pressure directly at the valve body

- Liquids up to 150 °C, non-flammable gases up to 80 °C without condensation chamber
- Steam or liquids up to 350 °C with condensation chamber



Type 41-23 Pressure Reducing Valve with attached control line · Pressure tapping at the valve body

Fig. 1 · Pressure regulator with control line

- **Control line ($\frac{3}{8}$ " pipe with standard screw joint with restriction orifice)**

For transmitting the pressure (actual value) to the operating diaphragm of the regulator. The control line is not included in the scope of delivery and needs to be attached on installing the regulator on site.

Type	Process medium	Accessories
41-23, 2422/2424, 41-73, 2422/2425	Air, non-flammable gases up to max. 80 °C and liquids up to max. 150 °C	Screw joint with restriction orifice G $\frac{3}{8}$ · Control line kit ¹⁾ for tapping the pressure at the valve body, without condensation chamber
39-2	Vapors up to max. 350 °C	Funnel tube, screw joint with restriction orifice G $\frac{3}{8}$, condensation chamber · Control line kit ¹⁾
41-23, 41-73	Vapors up to max. 350 °C and liquids from 150 °C to max. 350 °C	for tapping the pressure at the valve body, with condensation chamber

¹⁾ Type 41-23 or Type 41-73 only

Condensation chamber (Fig. 2)

If a condensation chamber is required, the necessary dimensions and the associated order number must be selected from Table 1 according to the nominal size and dimensions of the actuator (diaphragm area A).

The control line and the connection pipe are welded to the weld connections of the condensation chamber.

Table 1 · Condensation chambers

Actuator A in cm ²	Order number	
	DN 15 to DN 50	DN 65 to DN 250
640	1190-8789	1190-8790
320	1190-8788	1190-8789
160/80/40	1190-8788	

Conical expansion piece (Fig. 3)

The conical expansion pieces are used for applications with vapors and gases. They are fitted to the outlet of the pressure regulator and double the nominal size or quadruple the cross-section of the pipe.

Table 3 · Dimensions and weights of the conical expansion piece

Ø D1	Ø D2	PN	L mm	S mm	Ø D mm	Weight, approx. in kg	Order no.
DN 15	DN 32	16/40	88	2.6	38	0.7	1090-7430
DN 20	DN 40	16/40	104	2.6	44.5	1.2	1090-7431
DN 25	DN 50	16/40	116	2.9	57	1.5	1090-7432
DN 32	DN 65	16/40	132	2.9	76.1	2.2	1090-7433
DN 40	DN 80	16/40	135	3.2	88.9	2.5	1090-7434
DN 50	DN 100	16/40	148	3.6	108	3.5	1090-7435
DN 65	DN 125	16	172	4	133	4.7	1090-7436
DN 65	DN 125	40	179	4	133	5.4	1090-7437
DN 80	DN 150	16/40	198	4.5	159	7.1	1090-7438
DN 100	DN 200	16	204	5.9	219.1	9.4	1090-7439
DN 100	DN 200	40	217	5.9	219.1	11.3	1090-7440
DN 125	DN 250	16	233	6.3	267	13.6	1090-7441
DN 125	DN 250	40	248	6.3	267	16.3	1090-7442
DN 150	DN 300	16	258	7.1	323.9	19	1090-7443
DN 150	DN 300	40	278	7.1	323.9	23	1090-7444

Table 2 · Condensation chamber dimensions in mm

Order no.	1190-8788	1190-8789	1190-8790
Length L	105	195	285
Material	Sheet steel S235JR (St 37-2)		

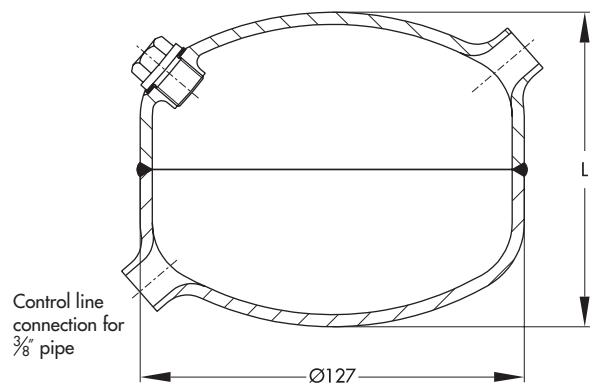


Fig. 2 · Condensation chamber, weldable

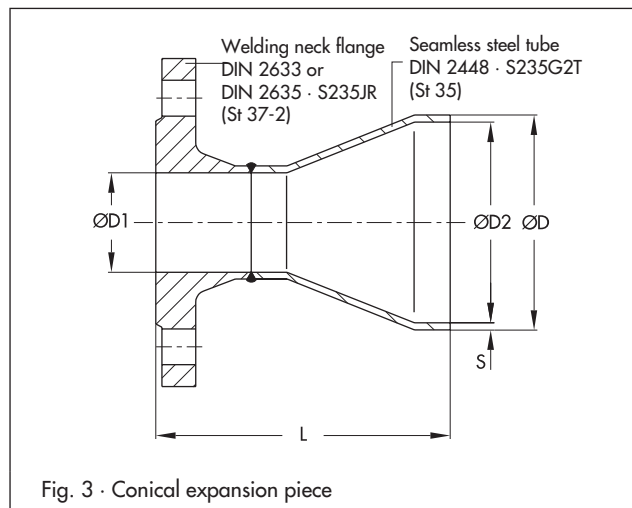


Fig. 3 · Conical expansion piece

Control line kits for Type 41-23 or Type 41-73

- Pressure set points ≥ 0.8 bar

Control line kits without condensation chamber

For tapping the pressure directly at the valve body · Including screw joint with restriction orifice for air and non-flammable gases up to max. 80 °C, liquids up to max. 150 °C

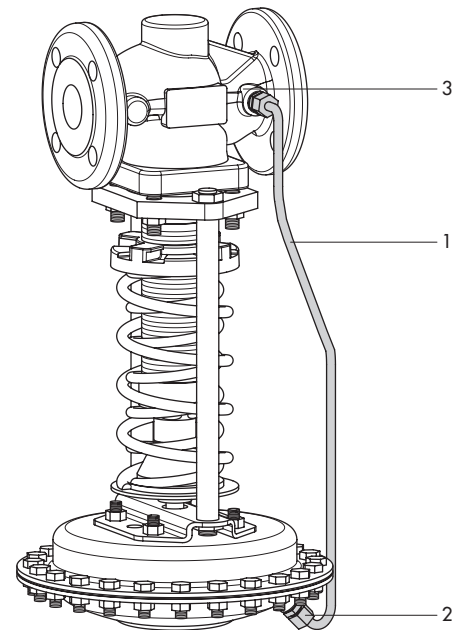
Table 4 · Control line kits without condensation chamber
Type 41-23 Pressure Reducing Valve

Actuator	Effective area A in cm ²		
	33/62	40/80	160
Complete control line (1) + Screw joint with restriction orifice (2)			
Nominal size DN	Order no.		
	Stainless steel 1.4571		
15 to 25	1400-8860	1400-8861	1400-8862
32	1400-8866	1400-8867	1400-8868
40/50	1400-8872	1400-8873	1400-8874
65/80	1400-8878	1400-8879	1400-8880
100	1400-8824	1400-8885	1400-8886

Type 41-73 Excess Pressure Valve ¹⁾

Actuator	Effective area A in cm ²		
	33/62	40/80	160
Complete control line (1) + Screw joint with restriction orifice (2)			
Nominal size DN	Order no.		
	Stainless steel 1.4571		
15 to 25	1400-7480	1400-7481	1400-7482
32	1400-7485	1400-7486	1400-7487
40/50	1400-7490	1400-7491	1400-7492
65/80	1400-7495	1400-7496	1400-7497
100	1400-7500	1400-7501	1400-7502

¹⁾ Control line kits available only fit standard regulator versions



- 1 Complete control line · pipe 6 x 1 mm
Material 1.4571
- 2 Screw joint with restriction orifice · Material 1.4571
- 3 Compression-type fitting · Material 1.4571

Fig. 4 · Control line kits without condensation chamber

Control line kits with condensation chamber

For tapping the pressure directly at the valve body or at the pipeline · Including screw joint with restriction orifice for vapors and liquids up to max. 350 °C

Table 5 · Control line kits with condensation chamber

Type 41-23 Pressure Reducing Valve

Complete control line between valve and condensation chamber (1) + Complete control line between condensation chamber and actuator (3) + Condensation chamber (2) + Screw joint with restriction orifice (4) + Two mounting brackets (5) + Four hex screws M 6 (6) + Welding nipple (7) + Funnel tube

Actuator	Effective area A in cm ²			
	40/80		160	
Nominal size DN	Order no.			
	Stainless steel 1.4571	Steel (standard) S235JR (St 37-2)		Stainless steel 1.4571
15 to 25	1400-8915	1400-8890	1400-8891	1400-8916
32	1400-8920	1400-8895	1400-8896	1400-8921
40/50	1400-8925	1400-8900	1400-8901	1400-8926
65/80	1400-8930	1400-8905	1400-8906	1400-8931
100	1400-8935	1400-8910	1400-8911	1400-8936

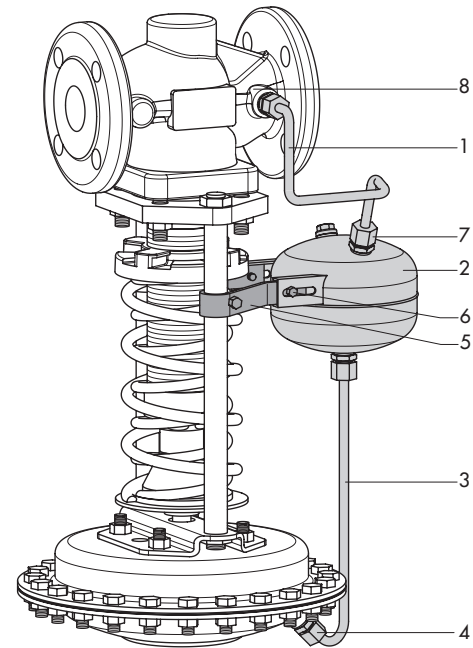
Type 41-73 Excess Pressure Valve ¹⁾

Complete control line between valve and condensation chamber (1) + Complete control line between condensation chamber and actuator (3) + Condensation chamber (2) + Screw joint with restriction orifice (4) + Two mounting brackets (5) + Four hex screws M 6 (6) + Welding nipple (7) + Funnel tube

Actuator	Effective area A in cm ²			
	40/80		160	
Nominal size DN	Order no.			
	Stainless steel 1.4571	Steel (standard) S235JR (St 37-2)		Stainless steel 1.4571
15 to 25	1400-7510	1400-7511	1400-7512	1400-7535
32	1400-7515	1400-7516	1400-7517	1400-7536
40/50	1400-7520	1400-7521	1400-7522	1400-7537
65/80	1400-7525	1400-7526	1400-7527	1400-7538
100	1400-7530	1400-7531	1400-7532	1400-7539

¹⁾ Control line kits available only fit standard regulator versions

Fig. 5 · Control line kit with condensation chamber



- 1 Complete control line between valve and condensation chamber · Pipe 8 x 1 mm · Material 1.4571
- 2 Condensation chamber 0.7 l · Material 1.4571/ S235JR (St 37-2)
- 3 Complete control line between actuator and condensation chamber · Pipe 6 x 1 mm · Material 1.4571
- 4 Screw joint with restriction orifice · Material 1.4571
- 5 Mounting bracket
- 6 Screw M 6 x 10, SK 8.8 · A4-70
- 7 Welding nipple to connect condensation chamber with control line to the valve
- 8 Compression-type fitting · Material 1.4571

Overview of screw joints with restriction orifices

Table 6 · Assignment of nominal size, actuator size and orifice cross-section

Nominal size DN	15 to 250	15 to 50	65 to 250	15 to 50	65 to 250	15 to 80
Actuator size	33 to 160 cm ²	320 cm ²	320 cm ²	640 cm ²	640 cm ²	1200 cm ²
Orifice cross-section	1.7 mm ²		3.1 mm ²		3.1 mm ²	

Table 7 · Restriction orifice versions for Types 2413, 2424 and 2425

Orifice cross-section	Thread x	Order no.	
		Steel	Stainless steel
1.7 mm ²	G 3/8	1490-2175	–
3.1 mm ²		1990-3815	–
1.7 mm ²	1/2 NPT	1990-3804	–
3.1 mm ²		1990-4831	–

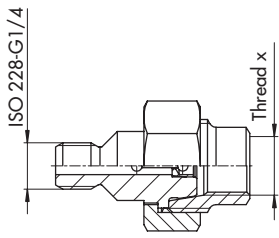
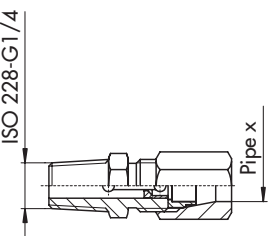


Table 8 · Restriction orifice versions for Types 2413, 2415, 2418, 2424, 2426, 2427, 2428 and 2429

Orifice cross-section	Type	Pipe x	Order no.	
			Steel	Stainless steel
1.7 mm ²	Ermeto	6 x 1 mm pipe	–	1890-8577
3.1 mm ²			–	1890-8578
1.7 mm ²		8 x 1 mm pipe	1790-4681	1991-1723
3.1 mm ²			–	–
1.7 mm ²		10 x 1 mm pipe	1790-5596	1991-1724
3.1 mm ²			–	–
1.7 mm ²	Serto	8 x 1 mm pipe	1990-4834	–
1.7 mm ²		10 x 1 mm pipe	1990-8554	–
1.7 mm ²	Swagelok	∅ 12	–	1990-5751
1.7 mm ²		1/2"	–	1990-5752
3.1 mm ²		∅ 12	–	1990-5928
3.1 mm ²		1/2"	–	1990-5929



Ordering text

- Conical expansion piece, order no. 1090 - ... (see Table 3)
- Condensation chamber, order no. 1190 - ... (see Table 2)
- Screw joint with restriction orifice ... (see Tables 6, 7 and 8)
- Funnel tube
- Control line kit for Type 41-23 or Type 41-73 Pressure Regulators (for pressure set points ≥ 0.8 bar)
For liquids up to 150 °C, air and non-flammable gases up to 80 °C, without condensation chamber (see Table 4)
For vapors and liquids up to 350 °C, pressure tapping at the valve body, with condensation chamber (see Table 5)

Specifications subject to change without notice



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