

# Self-operated Regulators

## Accessories · Differential Pressure and Flow Regulators



Compression-type fittings · Needle valves · Compensation chambers  
Orifice plates · Welding neck flanges · Control lines

### Application

Accessories for differential pressure and flow regulators  
(Series 42)



### Screw fittings

#### Compression-type fitting

Straight stud ends with parallel thread according to DIN 2353 to connect control lines to the valve

- G 1/4 threaded connection for tube with 8, 10 or 12 mm outside diameter.

#### Screw joint with restriction

Pipe screw fitting with restriction to dampen vibrations in the control line.

Various cross-sections available depending on the volume of the diaphragm actuator.

### Needle valve

To shut off the control lines and also to dampen any vibration.

- Steel body (stainless steel on request)
- G 1/4 female thread

### Compensation chamber

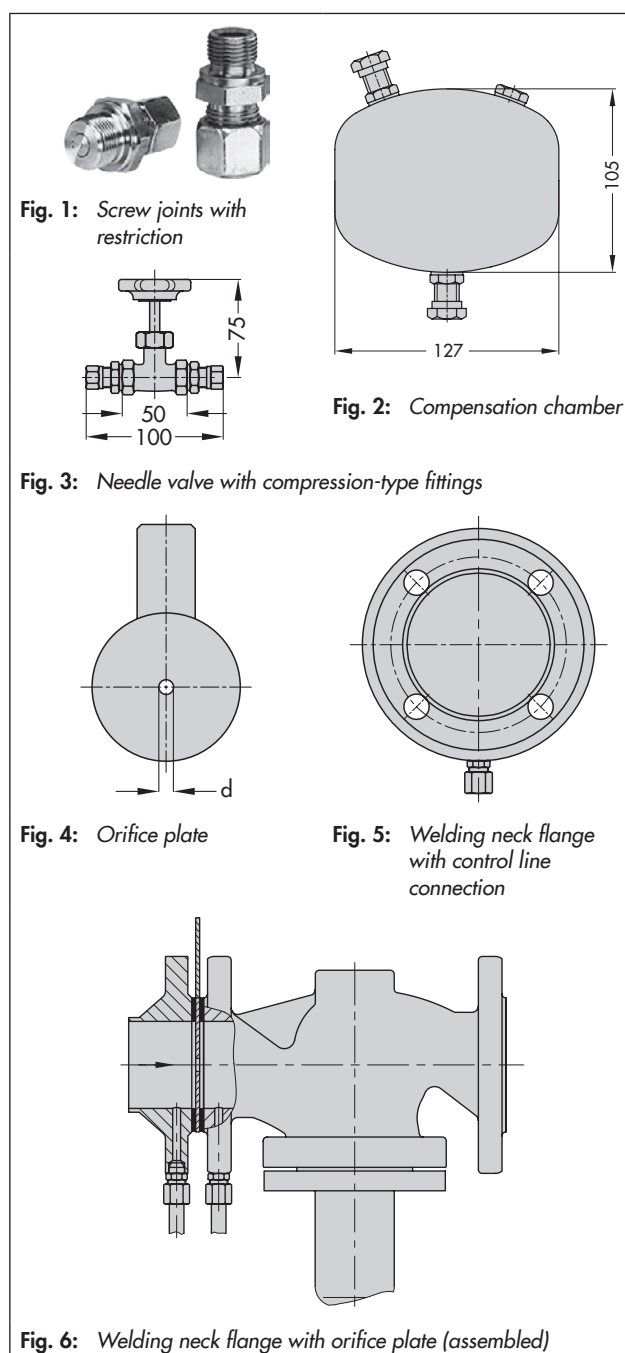
To protect the operating diaphragm in the actuator against high temperatures.

Required for medium temperatures above 150 °C.

- Max. permissible pressure 40 bar (gauge)
- Case made of sheet steel S235JR (1.0037)

Two assembled compensation chambers with mounting brackets form a cool-down battery.

- Control line connections with two compression-type fittings for tubes with an outside diameter of 8 mm (special version: for tube with an outside diameter of 10 or 12 mm).



### Orifice plate

To create a differential pressure  $\Delta p$

Required when using a differential pressure regulator as a flow regulator.

- Available for DN 15 to 300
- Material: stainless steel 1.4571

The orifice bore diameter ( $d$ ) is calculated based on the technical data.

The orifice plate is mounted between the inlet flange of the differential pressure regulator and an additional welding neck flange (see Fig. 1 to Fig. 6).

### Welding neck flange

For flow control with an orifice plate.

- Nominal size DN 15 to 300
- Nominal pressure PN 16, 25 and 40
- Control line connection: compression-type fitting for tube with 8 mm outside diameter
- The dimensions correspond with DIN EN 1092-1, flange type 11.

For simultaneous measurement and indication of the flow rate, the use of an orifice plate (orifice flange) and a flow meter must be used.

### Double adapter

For connection of a second control thermostat or a second actuator.

The double adapter is mounted between the bellows housing and the actuator to apply a second controlled variable, e.g. to limit the temperature (see Data Sheet ► T 3019 for details about the double adapter). The overall height of the regulator increases correspondingly.

### Ready-mounted control lines with accessories

For transmitting the pressure to the diaphragm of the regulator.

We recommend using a stainless steel 8x1 mm tube as a control line.

Optionally, we offer various regulator models with ready-mounted control lines, needle valves and compensation chambers. The drawings in Fig. 8 show the various options and configurations.

Control lines with accessories: arrangement according to drawing 1120-1180-x. The designation in brackets (x) applies to valves balanced by a diaphragm.

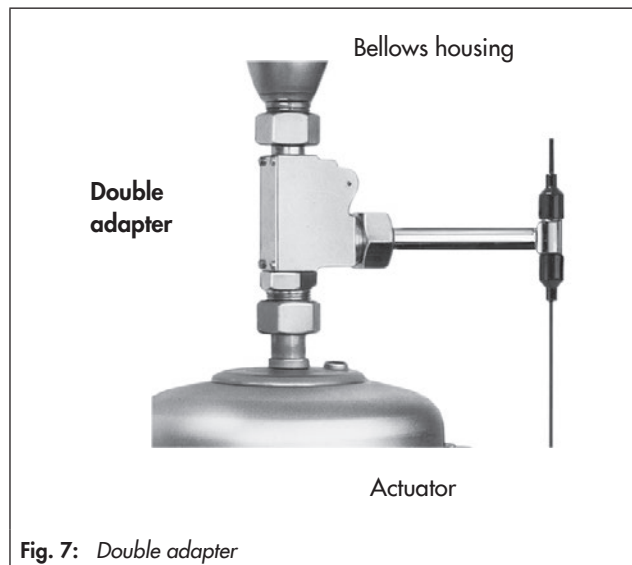


Fig. 7: Double adapter

Differential pressure regulators for installation in the return flow pipe · Type 2421/2422 Valve

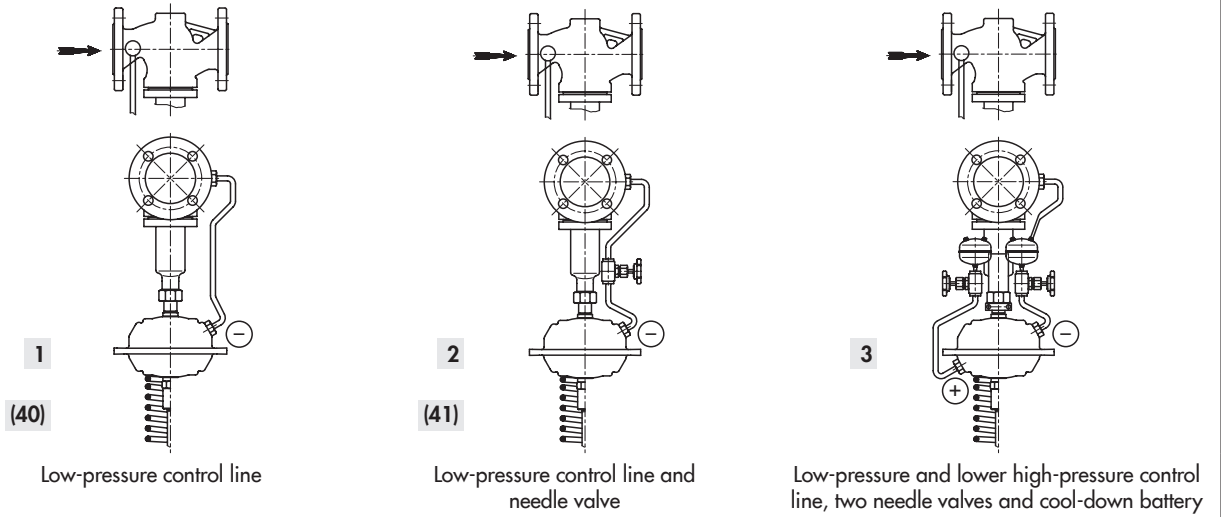
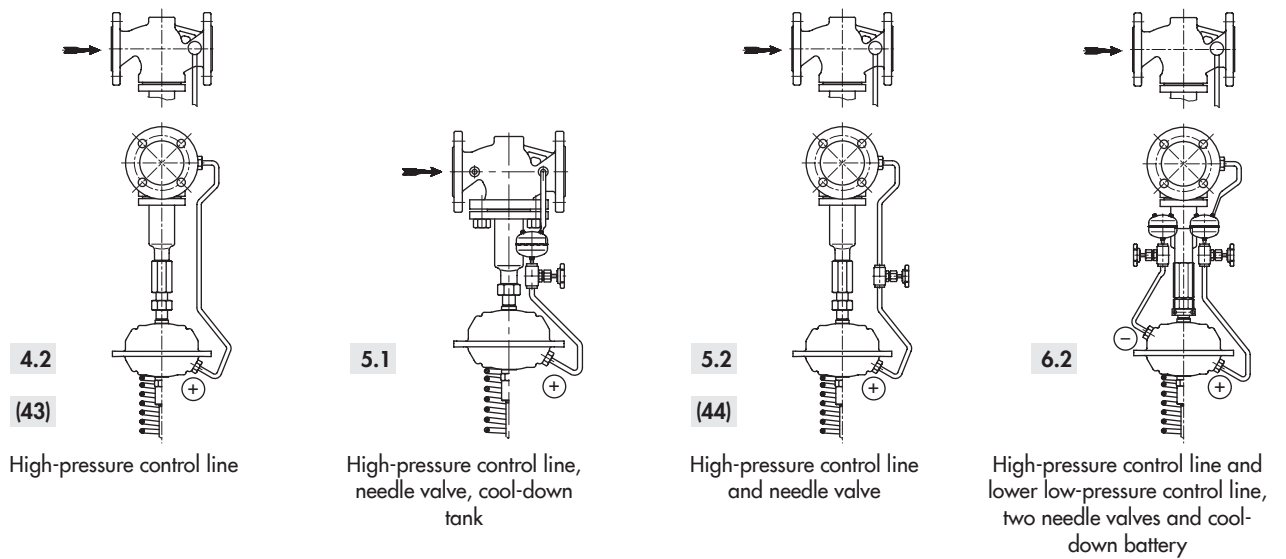


Fig. 8.1: Ready-mounted control lines for Type 42-24 and Type 42-28 for installation in the return flow pipe

Differential pressure regulators for installation in the flow pipe · Type 2421/2422 Valve



**Note:** the distance piece is no longer needed for regulators manufactured after July 2010.

Fig. 8.2: Ready-mounted control lines for Type 42-14, Type 42-18, Type 42-24, Type 42-28 for installation in the flow pipe

Fig. 8: Control lines with accessories

Differential pressure regulators (opening) · Type 2421/2422 Valve

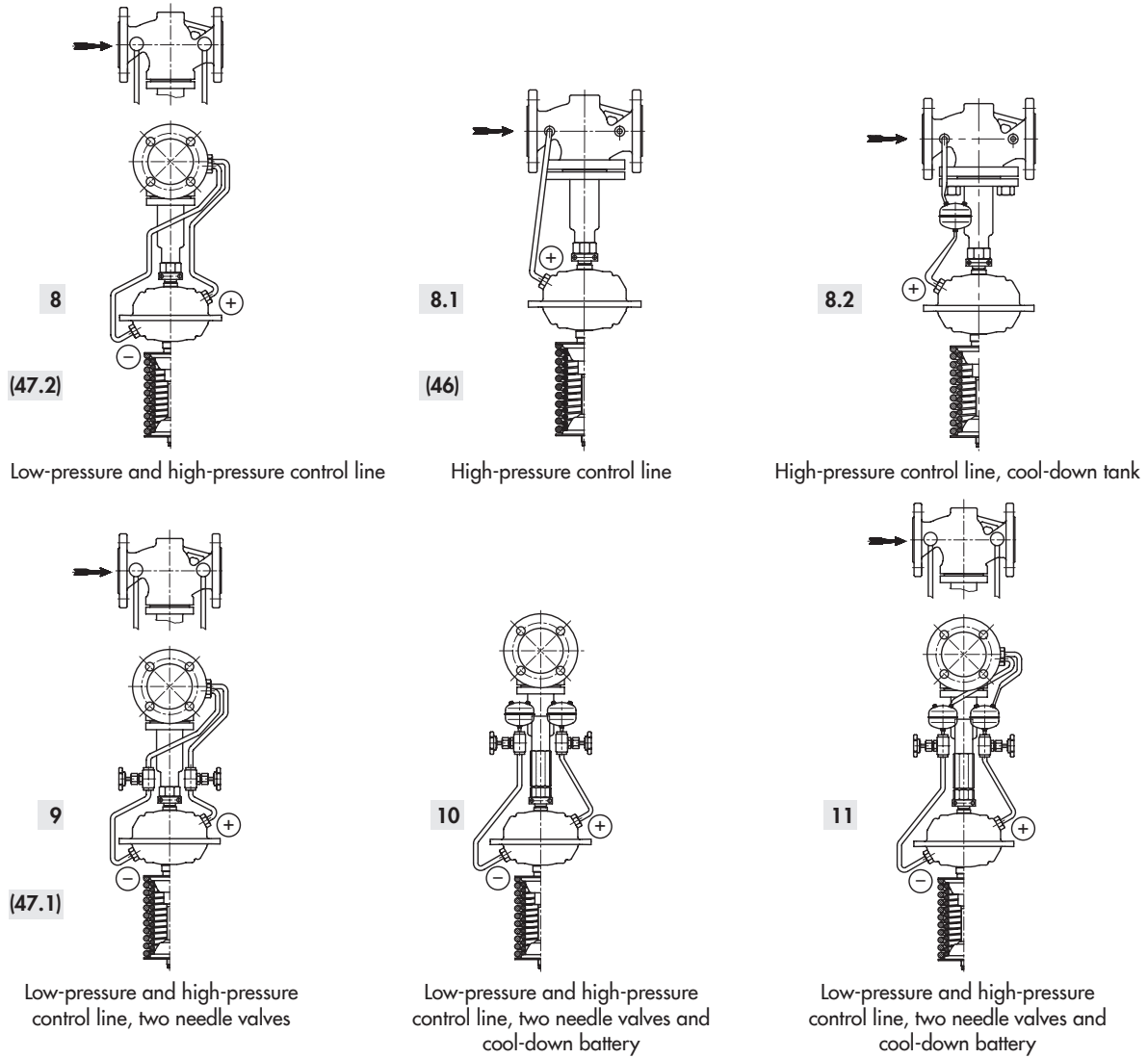


Fig. 8.3: Ready-mounted control lines for Type 42-10, Type 42-15, Type 42-20, Type 42-25

Type 2423 and Type 2423 E Valves

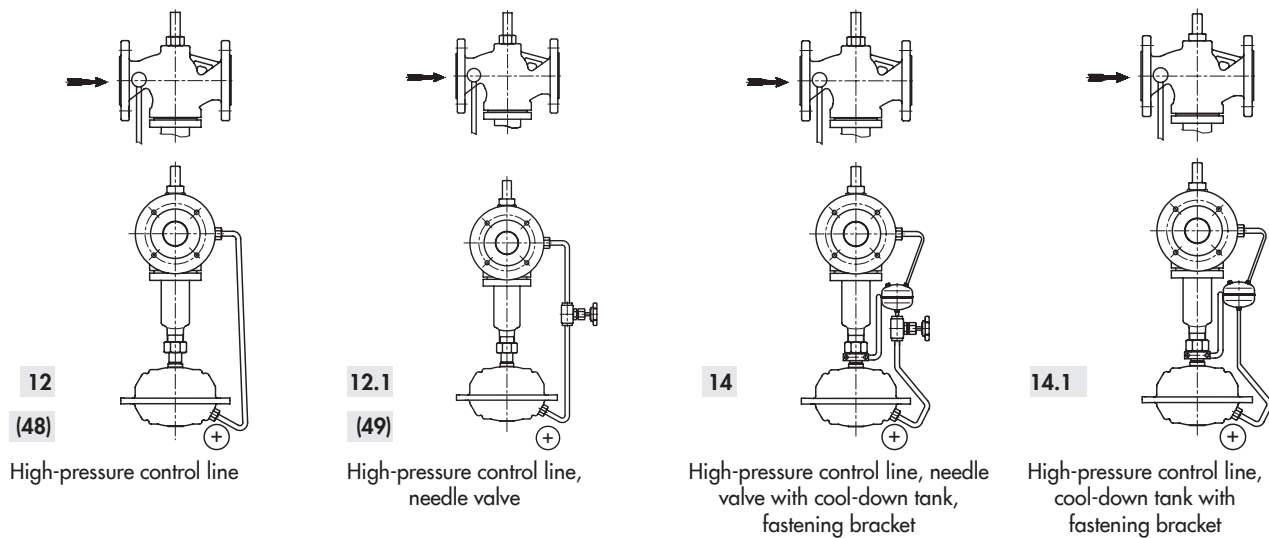
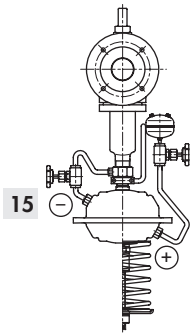


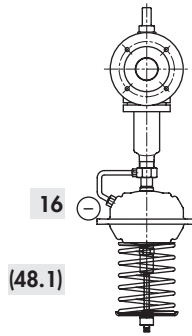
Fig. 8.4: Ready-mounted control lines for Type 42-36

Fig. 8 Control lines with accessories

Differential pressure and flow regulators/flow limiters for installation in the return flow pipe

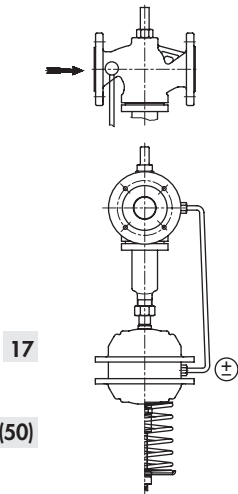


15  
Adapter with external control line connection, low-pressure control line and lower high-pressure control line, two needle valves, cool-down tank with fastening bracket

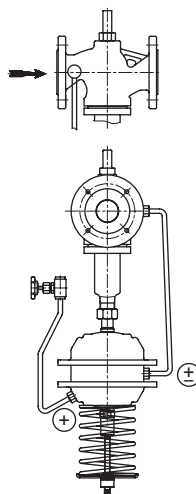


16  
(48.1)  
Adapter with external control line connection and low-pressure control line

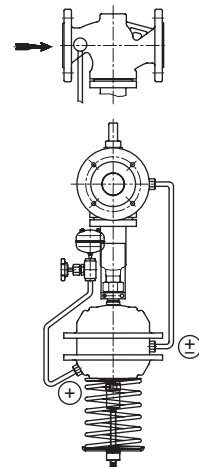
Fig. 8.5: Ready-mounted control lines for **Type 42-34** and **Type 42-38** for installation in the return flow pipe



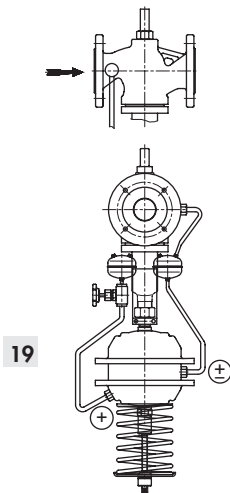
17  
(50)  
Low-pressure/high-pressure control line



18  
(51)  
Low-pressure/high-pressure control line, lower high-pressure control line, needle valve



18.1  
Low-pressure/high-pressure control line, lower high-pressure control line, needle valve, cool-down tank with fastening bracket



19  
Low-pressure/high-pressure control line, lower high-pressure control line, needle valve, cool-down battery

Fig. 8.6: Ready-mounted control lines for **Type 42-37** for installation in the return flow pipe

Fig. 8 Control lines with accessories

Differential pressure and flow regulators for installation in the flow pipe

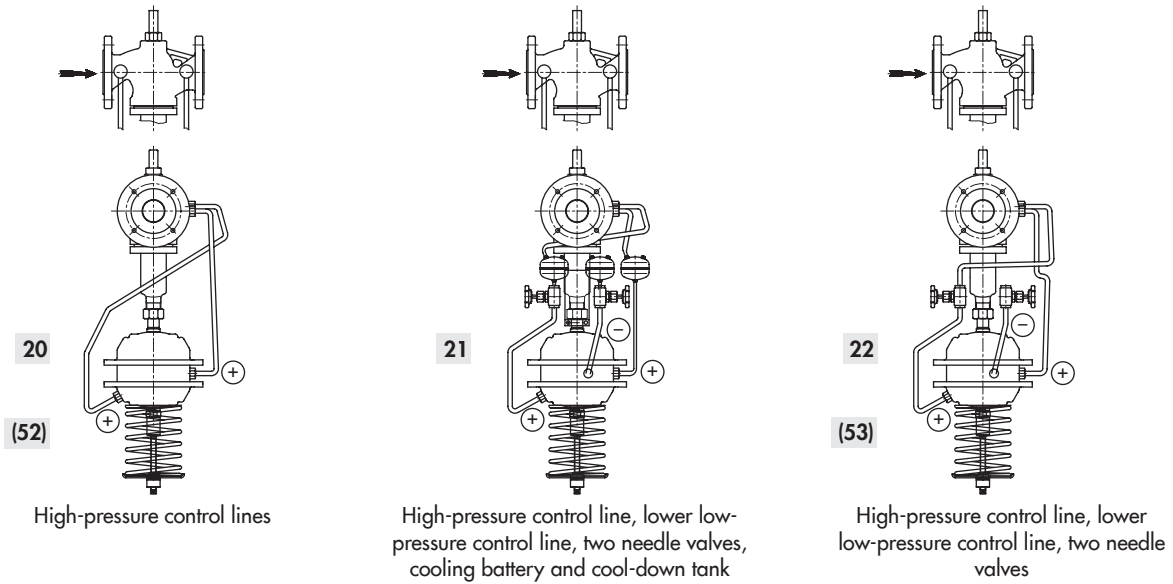


Fig. 8.7: Ready-mounted control lines for **Type 42-39** for installation in the flow pipe

Flow regulators/flow limiters with double adapter

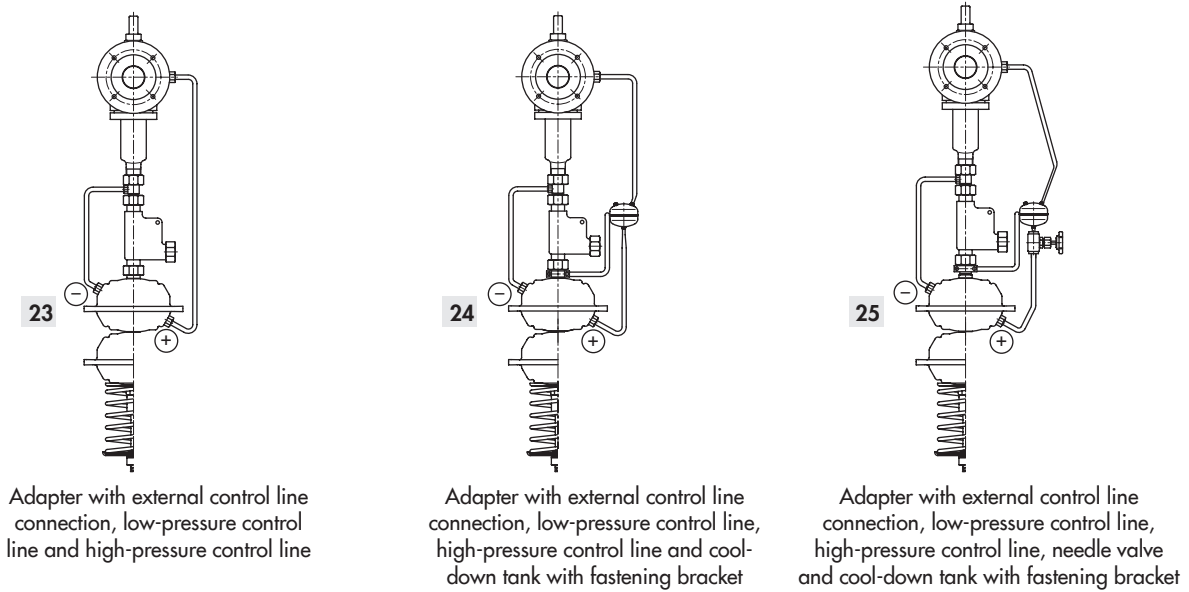


Fig. 8.8: Ready-mounted control lines for **Type 42-36 DoT** and **Type 42-37 DoT**

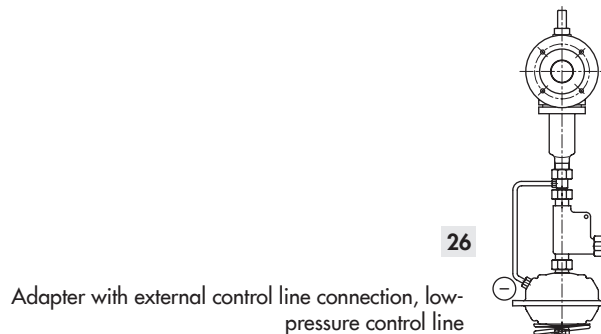


Fig. 8.9: Ready-mounted control lines for **Type 42-34 DoT** and **Type 42-38 DoT** for installation in the return flow pipe

**Fig. 8** Control lines with accessories

Temperature and differential pressure regulators for installation in the flow pipe/return flow pipe

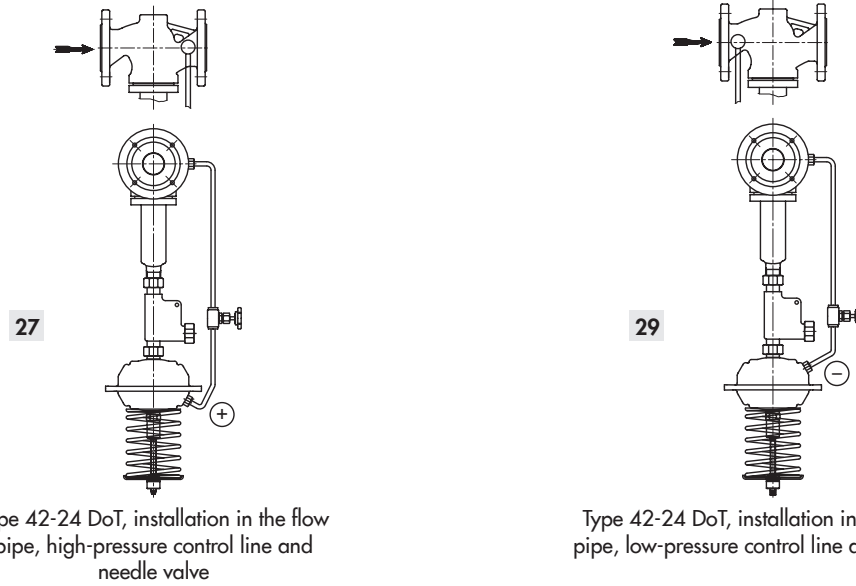


Fig. 8.10: Ready-mounted control lines for **Type 42-24 DoT** and **Type 42-24 DoT**

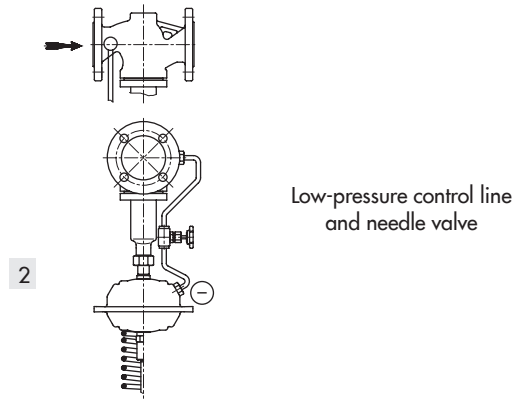
**Fig. 8** Control lines with accessories

## Ordering control lines with accessories

### Example 1:

**Type 42-24** Regulator for temperatures up to 150 °C, control line with needle valve, **Type 2422** Valve in the return flow pipe, according to Fig. 8.1

Low-pressure control line and needle valve according to drawing 1120-1180, arrangement **2**



### Example 2:

**Type 42-37** Regulator for temperatures up to 150 °C, control line without needle valve, **Type 2423** Valve in the return flow pipe, according to Fig. 8.6

Low-pressure/high-pressure control line according to 1120-1180, arrangement **17**

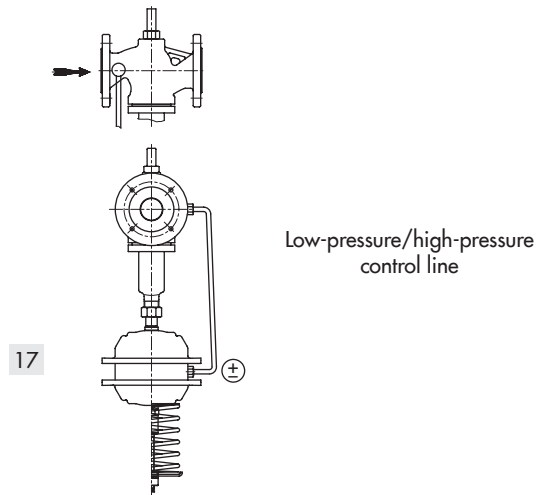


Fig. 9: Ordering examples

## Ordering text

### Separate accessories

G 1/4 compression-type fitting

Screw joint with restriction G 1/4

G 1/4 steel needle valve · Steel

Compensation chamber with compression-type fitting

Double adapter for regulator ..., DN ...

Orifice plate for DN ...

Welding neck flange with G 1/4 compression-type fitting with control line connection DN ..., PN ...

### Ready-mounted control line with accessories (control line kits)

For Type ... Regulator, DN ..., PN ...,

According to drawing 1120-1180- x (see Fig. 8: Control lines with accessories)

For installation in the flow pipe/return flow pipe

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 3095 EN

2017-11-09 · English