

Introduction

This installation guide provides instructions for installation, startup, and adjustment. To receive a copy of the instruction manual, contact your local Fisher Sales Office or Sales Representative or view a copy at www.FISHERregulators.com. For further information refer to:

Types S100K and S102K Instruction Manual (form 5624, D102690X012).

The Types S100K and S102K direct-operated, spring loaded regulators provide economical pressure reducing control in a variety of applications. The Type S102K regulator has internal relief across the diaphragm to help minimize overpressure.

P.E.D. Category

This product may be used as a safety accessory with pressure equipment in the following Pressure Equipment Directive 97/23/EC categories. It may also be used outside of the Pressure Equipment Directive using sound engineering practice (SEP) per table below.

PRODUCT SIZE	CATEGORIES	FLUID TYPE
DN 20-25 (3/4-1-inch)	SEP	1

Specifications

Body Sizes and End Connection Styles

DN 20 x 20 (3/4 x 3/4), DN 20 x 25 (3/4 x 1), DN 25 x 25 (1 x 1), DN 25 x 32 (1 x 1-1/4), DN 25 x 40 (1 x 1-1/2), DN 32 x 32 (1-1/4 x 1-1/4), or DN 40 x 40 (1-1/2 x 1-1/2) NPT screwed

Maximum Allowable Inlet Pressures⁽¹⁾

See table 1

Outlet Pressure Ranges⁽¹⁾

8,5 to 13,7 mbar (3.5 to 5.5-in. w.c.), 13,7 to 21,3 mbar (5.5 to 8.5-in. w.c.), 20 to 38 mbar (8 to 15-in. w.c.), 35 to 70 mbar (14 to 28-in. w.c.), and 103 to 172 mbar (1.5 to 2.5 psig)

Maximum Emergency Outlet Pressure (casing)⁽¹⁾

1,7 bar (25 psig)

Maximum Operating Pressure to Avoid Internal Part Damage⁽¹⁾

0,21 bar differential (3 psi) over outlet pressure setting

Proof Test Pressure

All Pressure Retaining Components have been proof tested per Directive 97/23/EC - Annex 1, Section 7.4

Temperature Capabilities⁽¹⁾

-29 to 71°C (-20 to 160°F)

Installation



WARNING

Only qualified personnel should install or service a regulator. Regulators should be installed,

1. The pressure/temperature limits in this installation guide and any applicable standard or code limitation should not be exceeded.

operated, and maintained in accordance with international and applicable codes and regulations, and Fisher instructions.

If the regulator vents fluid or a leak develops in the system, it indicates that service is required. Failure to take the regulator out of service immediately may create a hazardous condition.

Personal injury, equipment damage, or leakage due to escaping fluid or bursting of pressure-containing parts may result if this regulator is overpressured or is installed where service conditions could exceed the limits given in the Specifications section, or where conditions exceed any ratings of the adjacent piping or piping connections.

To avoid such injury or damage, provide pressure-relieving or pressure-limiting devices (as required by the appropriate code, regulation, or standard) to prevent service conditions from exceeding limits.

Additionally, physical damage to the regulator could result in personal injury and property damage due to escaping fluid. To avoid such injury and damage, install the regulator in a safe location.

Clean out all pipelines before installation of the regulator and check to be sure the regulator has not been damaged or has collected foreign material during shipping. For NPT bodies, apply pipe compound to the male pipe threads. For flanged bodies, use suitable line gaskets and approved piping and bolting practices. Install the regulator in any position desired, unless otherwise specified, but be sure flow through the body is in the direction indicated by the arrow on the body.

Note

It is important that the regulator be installed so that the vent hole in the spring case is unobstructed at all times. For outdoor installations, the regulator should be located away from vehicular traffic and positioned so that water, ice, and other foreign materials cannot enter the spring case through the vent. Avoid placing the regulator beneath eaves or downspouts, and be sure it is above the probable snow level.

Overpressure Protection

The recommended pressure limitations are stamped on the regulator nameplate. Some type of overpressure protection is needed if the actual inlet pressure exceeds the maximum operating outlet pressure rating. Overpressure protection should also be provided if the regulator inlet pressure is greater than the safe working pressure of the downstream equipment.

Regulator operation below the maximum pressure limitations does not preclude the possibility of damage from external sources or debris in the line. The regulator should be inspected for damage after any overpressure condition.

Startup

The regulator is factory set at approximately the midpoint of the spring range or the pressure requested, so an initial adjustment may be required to give the desired results. With



Types S100K and 102K

proper installation completed and relief valves properly adjusted, slowly open the upstream and downstream shutoff valves.

Adjustment

To change the outlet pressure, remove the closing cap or loosen the locknut and turn the adjusting screw clockwise to increase outlet pressure or counterclockwise to decrease pressure. Monitor the outlet pressure with a test gauge during the adjustment. Replace the closing cap or tighten the locknut to maintain the desired setting.

Taking Out of Service (Shutdown)



WARNING

To avoid personal injury resulting from sudden release of pressure, isolate the regulator from all pressure before attempting disassembly.

Table 1. Maximum Inlet Pressures

ORIFICE SIZE, mm (inch)	MAXIMUM OPERATING INLET PRESSURE TO OBTAIN GOOD REGULATING PERFORMANCE ⁽¹⁾			
	With White Standard-Boost Stem Guide T80344T0012		With Black Low-Boost Stem Guide T80368T0012, bar (psig)	With White No-Boost Stem Guide T80370T0012, bar (psig)
	3.5 to 28-in. w.c. (9 to 70 mbar) spring ranges bar (psig)	1.0 to 2.5 psig (69 to 172 mbar) spring ranges bar (psig)		
3,2 (1/8)	125 (8,6)	125 (8,6)	8,6 (125)	125 (8,6)
4,8 (3/16)	60 (4,1)	60 (4,1)	4,1 (60)	100 (6,9)
6,4 (1/4)	20 (1,4)	40 (2,8)	4,1 ⁽¹⁾ (60)	60 (4,1)
7,9 (5/16)	15 (1,0)	20 (1,4)	2,8 (40)	40 (2,8)
9,5 (3/8)	10 (0,69)	15 (1,0)	15 (1,0)	1,0 (15)
12,7 (1/2)	5 (0,34)	10 (0,69)	10 (0,69)	0,69 (10)
Restricted Orifice Sizes				
4,8 x 3,2 (3/16 x 1/8)	60 (4,1)	60 (4,1)	60 (4,1)	100 (6,9)
14,3 x 15,9 (9/16 x 5/8)	5 (0,34)	10 (0,69)	10 (0,69)	10 (0,69)

1. Relief capacity may restrict maximum operating inlet pressure for some vent size, stem guide, and orifice combinations to meet ANSI B109.4.

Parts List

Key Description

- 1 Spring Case Assembly
- 2 Control Spring
- 3 Adjusting Screw
- 4 Closing Cap
- 6 Lower Spring Seat
- 7 Diaphragm
- 8 Pusher Post
- 10A Lever
- 10B Stem
- 11 Lever Pivot Pin
- 16 Disk
- 19 Gasket
- 20 Orifice
- 22 Vent Screen
- 24 Spring Retainer
- 25 Relief Valve Spring
- 74 Stem Guide

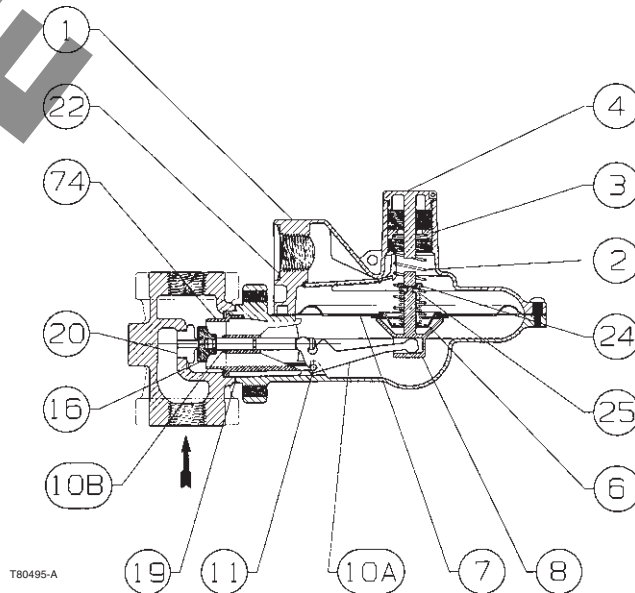


Figure 1. Type S102K Regulator Assembly

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