

Introduction

This installation guide provides instructions for installation, startup and adjustment. To receive a copy of the instruction manual, contact your local Sales Office or view a copy at www.fisher.com. For further information refer to: Type SR8 Instruction Manual, D103100X012.

PED Categories

This product may be used as a pressure accessory with pressure equipment in the following Pressure Equipment Directive categories. It may also be used outside of the Pressure Equipment Directive using sound engineering practice (SEP) per table below. For information on the current PED revision see Bulletin: [D103053X012](#).

PRODUCT SIZE	CATEGORIES	FLUID TYPE
DN 15, 20 and 25 / NPS 1/2, 3/4 and 1	SEP	1
DN 40 x 25, 40 and 50 / NPS 1-1/2 x 1, 1-1/2 and 2	I	
DN 80 / NPS 3	II	

Specifications

Body Size, Inlet and Outlet Connection Style

DN 15, 20, 25, 40, 50 and 80 /
NPS 1/2, 3/4, 1, 1-1/2, 2 and 3

End Connection⁽⁴⁾

Tri-Clamp® Sanitary connections

Maximum Operating Pressures⁽¹⁾⁽³⁾

See Table 1

Set Pressure Ranges

See Table 2

Maximum Differential Pressures⁽¹⁾

See Table 3

Pressure-Loaded Spring Case Option

Maximum Loading Pressure

DN 15 through 40 / NPS 1/2 through 1-1/2 body:

8.62 bar / 125 psig

DN 50 and 80 / NPS 2 and 3 body: 4.14 bar / 60 psig

1/4 NPT tapped vent connection

Vacuum Protection Option

Maximum Vacuum Pressure

0.96 bar / 14 psig (vacuum)

Proof Test Pressure

All Pressure Retaining Components have been proof tested per Directive

Tri-Clamp® is a mark owned by Tri-Clover Incorporated.

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

2. Maximum pressure to prevent damage to internal parts and leakage to atmosphere.

3. End connection clamps and gaskets to be supplied by the user.

Temperature Capabilities⁽¹⁾

See Table 4

Installation

WARNING

Only qualified personnel should install or service a backpressure regulator. Backpressure regulators should be installed, operated and maintained in accordance with international and applicable codes and regulations and Emerson Process Management Regulator Technologies Inc. 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 backpressure 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 backpressure regulator could result in personal injury and property damage due to escaping fluid. To avoid such injury and damage, install the backpressure regulator in a safe location.

Clean out all pipelines before installation of the backpressure regulator and check to be sure the valve has not been damaged or has collected foreign material during shipping. Use suitable line gaskets and approved piping and bolting practices. Install the backpressure regulator in desired position. However, to ensure self-draining (from inlet to outlet) the valve should be installed with the spring case in the upright vertical position. The arrow on the body indicates flow direction.

Type SR8

Table 1. Maximum Operating Pressures

BODY SIZE		MAXIMUM TEMPERATURE		MAXIMUM INLET PRESSURE		MAXIMUM OUTLET PRESSURE	
DN	NPS	°C	°F	bar	psig	bar	psig
15, 20, 25 and 40	1/2, 3/4, 1 and 1-1/2	65	150	14.5	210	14.5	210
		135	275	12.4	180	12.4	180
		204	400	11	160	11	160
50 and 80	2 and 3	65	150	10.3	150	10.3	150
		135	275	8.62	125	8.62	125
		204	400	7.58	110	7.58	110

Table 2. Set Pressure Ranges and Control Spring Data

BODY SIZE		SET PRESSURE RANGE		COLOR
DN	NPS	bar	psig	
15, 20	1/2, 3/4	0.2 to 0.5 ⁽¹⁾	2 to 8 ⁽¹⁾	Blue
		0.4 to 1.7	5 to 25	Silver
		0.7 to 3.4	10 to 50	Green
		2.4 to 6.9	35 to 100	Red
		5.2 to 8.6	75 to 125	Red Yellow
25, 40 full port 40 x 25	1, 1-1/2 full port 1-1/2 x 1	0.2 to 0.5 ⁽¹⁾	2 to 8 ⁽¹⁾	Blue
		0.4 to 1.7	5 to 25	Silver
		1.0 to 4.8	15 to 70	Green
		1.7 to 6.2	25 to 90	Red
		2.4 to 6.9	35 to 100	Green Yellow
50 and 80	2 and 3	0.7 to 1.7	10 to 25	Red Yellow
		1.0 to 3.4	15 to 50	Silver
		1.7 to 4.1	25 to 60	Green

1. The 0.14 to 0.55 bar / 2 to 8 psig spring is not available with the metal diaphragm.

Note

It is important that the backpressure regulator be installed so that the vent hole in the spring case is unobstructed at all times.

Overpressure Protection

The recommended pressure limitations are stamped on the nameplate. **Fisher™ backpressure regulators are NOT ASME safety backpressure regulators. The valve should be inspected for damage after any overpressure condition.**

Startup

The backpressure regulator is factory set at approximately the midpoint of the spring range or the set pressure requested, so an initial adjustment may be required to give the desired results. With proper installation completed, slowly open the upstream and downstream shutoff valves.

Adjustment

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

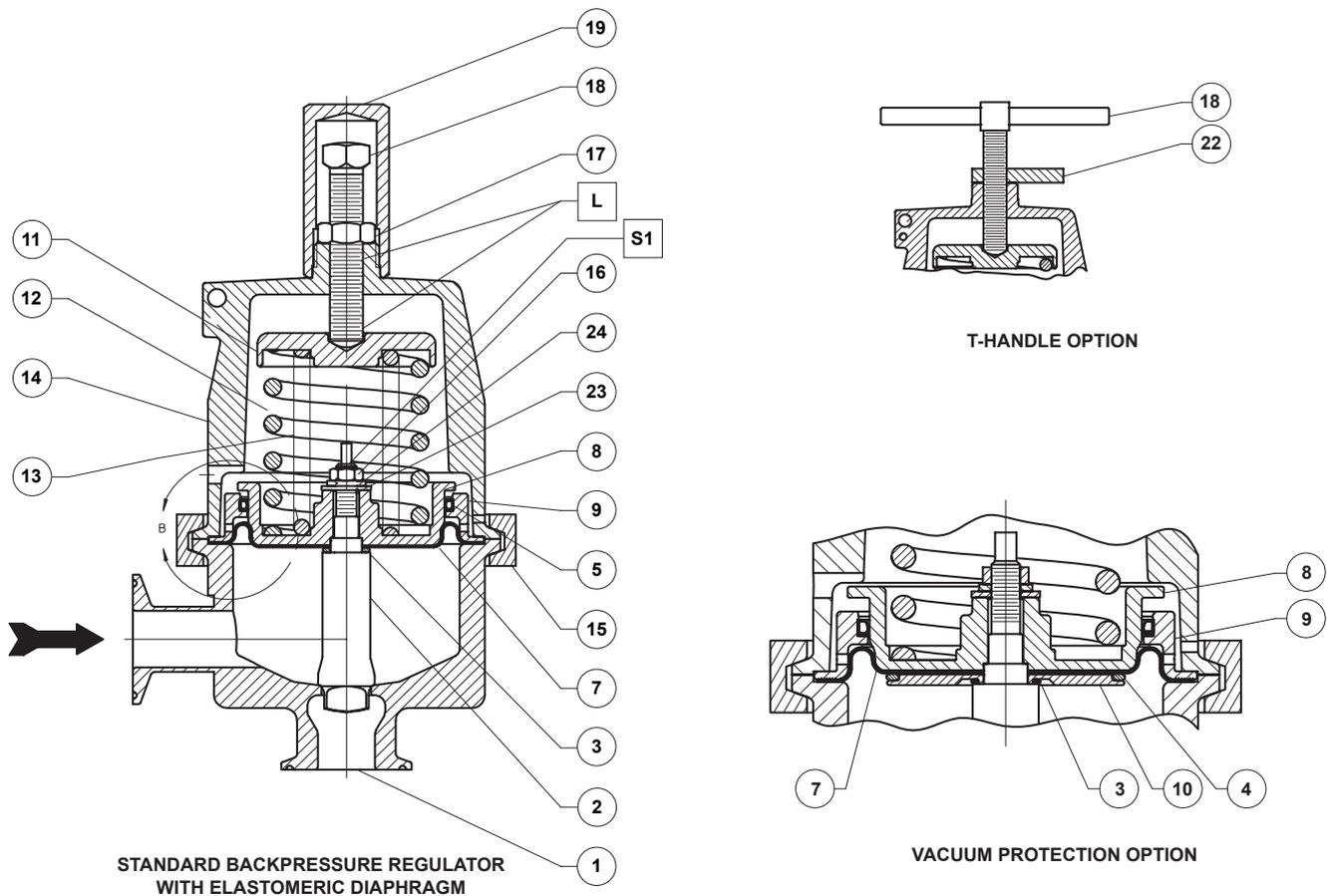
Pressure-Loaded Construction

The spring case can be pressure loaded to adjust set pressure. An optional tapped spring case, guide ring seal and sealing washer on the adjusting screw must be used for these applications. The loading pressure is connected to the 1/4 NPT connection in the spring case allowing registration on the spring side of the diaphragm. Adjusting loading pressure will proportionally change the pressure setting of the regulator. A small amount of mechanical spring load, in addition to the pressure load, is recommended. Regulator set pressure achieved from the combination of spring load and pressure load should not exceed the set pressure ranges listed on Table 2.

Taking Out of Service (Shutdown)



To avoid personal injury resulting from sudden release of pressure, isolate the backpressure regulator from all pressure before attempting disassembly. Relieve all spring compression and isolate regulator from the pressurized system prior to removing the clamp (key 15, Figure 1).



STANDARD BACKPRESSURE REGULATOR WITH ELASTOMERIC DIAPHRAGM

T-HANDLE OPTION

VACUUM PROTECTION OPTION

□ APPLY LUBRICANT (L) AND SEALANT (S)⁽¹⁾:

L = ANTI-SEIZE LUBRICANT

S1 = THREADLOCKER MEDIUM/HIGH STRENGTH SEALANT

1. Lubricant and sealant must be selected such that they meet the temperature requirements.

Figure 1. Type SR8 Sanitary Regulator Assembly Drawing

Table 3. Maximum Differential Pressures

BODY SIZE		OUTLET PRESSURE RANGE		COLOR	MAXIMUM DIFFERENTIAL PRESSURE	
DN	NPS	bar	psig		bar d	psid
15, 20	1/2, 3/4	0.2 to 0.5	2 to 8	Blue	1.0	15
		0.4 to 1.7	5 to 25	Silver	2.7	40
		0.7 to 3.4	10 to 50	Green	6.9	100
		2.4 to 6.9	35 to 100	Red	9.6	140
		5.2 to 8.6	75 to 125	Red/Yellow	11	160
25, 40 full port 40 x 25	1, 1-1/2 full port 1-1/2 x 1	0.2 to 0.5	2 to 8	Blue	1.0	15
		0.4 to 1.7	5 to 25	Silver	2.7	40
		1.0 to 4.8	15 to 70	Green	6.9	100
		1.7 to 6.2	25 to 90	Red	8.6	125
		2.4 to 6.9	35 to 100	Green/Yellow	9.6	140
50 and 80	2 and 3	5.2 to 8.6	75 to 125	Red/Yellow	11	160
		0.7 to 1.7	10 to 25	Silver	3.4	50
		1.0 to 3.4	15 to 50	Green	5.2	75
		1.7 to 4.1	25 to 60	Red	5.2	75

Table 4. Temperature Capabilities

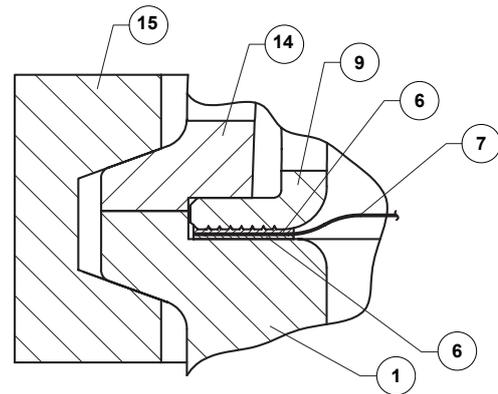
SEAT TYPE	DIAPHRAGM MATERIAL	O-RING MATERIAL	TEMPERATURE RANGE	
			°C	°F
Metal (Stainless Steel)	Ethylene Propylene (EPDM)	EPDM	-28 to 135	-20 to 275
	SST	Polytetrafluoroethylene (PTFE)/Fluorocarbon (FKM) ⁽¹⁾	-6 to 204	20 to 400
	PTFE/Fluorocarbon (FKM)	PTFE/Fluorocarbon (FKM)	-6 to 204	20 to 400
Soft (PTFE/Stainless Steel)	EPDM	EPDM	-28 to 65	-20 to 150
	SST	PTFE/Fluorocarbon (FKM) ⁽¹⁾	-6 to 65	20 to 150
	PTFE/Fluorocarbon (FKM)	PTFE/Fluorocarbon (FKM)	-6 to 65	20 to 150
Soft (Polyether Ether Ketone (PEEK)/Stainless Steel)	EPDM	EPDM	-28 to 135	-20 to 275
	SST	PTFE/Fluorocarbon (FKM) ⁽¹⁾	-6 to 204	20 to 400
	PTFE/Fluorocarbon (FKM)	PTFE/Fluorocarbon (FKM)	-6 to 204	20 to 400

1. O-ring material is PTFE for the DN 15 and 20 / NPS 1/2 and 3/4 sizes. Temperature range is the same.

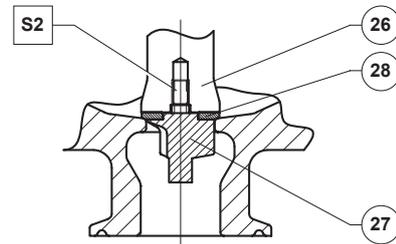
Type SR8

Parts List

Key	Description
1	Body
2	Plug (metal seat)
3	Plug O-ring
4	Diaphragm Plate O-ring
5	Piston Ring
6	Diaphragm Gasket
7	Diaphragm
8	Lower Spring Seat
9	Guide Ring
10	Diaphragm Plate
11	Upper Spring Seat
12	Spring
13	Spring
14	Spring Case
15	Bolted Clamp
16	Hex Nut
17	Hex Nut
18	Adjusting Screw
19	Closing Cap
20	Flow Arrow (not shown)
21	Nameplate (not shown)
22	Locking Lever
23	Flat Washer
24	Lock Washer
25	Sealing Washer
26	Upper Plug
27	Lower Plug
28	Soft Seat
29	Drive Screw (not shown)
32	Guide Ring Seal



VIEW B – METAL DIAPHRAGM STANDARD REGULATOR



SOFT SEAT OPTION

APPLY SEALANT (S)⁽¹⁾:
S2 = HIGH TEMPERATURE AND MEDIUM STRENGTH THREADLOCKER SEALANT
 1. Lubricant and sealant must be selected such that they meet the temperature requirements.

Figure 1. Type SR8 Sanitary Regulator Assembly Drawing (continued)

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