

English – June 2020

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 310A Instruction Manual, D102068X012.

PED/PE(S)R Categories

This product may be used as a safety accessory with pressure equipment in the following categories. It may also be used outside of these Directives using Sound Engineering Practice (SEP) per table below. For information on the current PED/PE(S)R revision, see Bulletin: [D103053X012](#).

PRODUCT SIZE	CATEGORY	FLUID TYPE
DN 25 / 1 in.	SEP	1
DN 50, 80, 100, 100 x 150 / 2, 3, 4, 4 x 6 in.	III	

Specifications

Body Size and End Connection Style

DN 25 / 1 in. body with NPT ends; and DN 50, 80, 100 and 100 x 150 / 2, 3, 4 or 4 x 6 in. body with CL300 RF or CL600 RF flanged ends

Maximum Inlet and Pilot Supply Pressures⁽¹⁾

NPT and CL600 RF: 103 bar / 1500 psig
CL300 RF: 51.7 bar / 750 psig

Maximum Pressure Drop⁽¹⁾

NPT and CL600 RF: 98.3 bar / 1425 psig
CL300 RF: 49.6 bar / 720 psig

Maximum Outlet Pressure⁽¹⁾

Operating: 48.3 bar / 700 psig
To Avoid Internal Part Damage: 55.2 bar / 800 psig
Exceeding this pressure may result in gas venting from pilot spring case.
Emergency (Casing): 103 bar / 1500 psig or maximum inlet pressure whichever is lower.

Outlet Pressure Ranges

See Table 1

Minimum Differential Pressure⁽¹⁾

1.0 bar / 15 psig

Maximum Temperature Capabilities⁽¹⁾

Nitrile (NBR) with wiper ring:
-29 to 66°C / -20 to 150°F
Fluorocarbon (FKM) with wiper ring:
-18 to 66°C / 0 to 150°F
Fluorocarbon (FKM) without wiper ring⁽²⁾:
-18 to 149°C / 0 to 300°F

Installation

WARNING

Only qualified personnel should install or service a regulator. Regulators should be installed, 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 down spouts and be sure it is above the probable snow level.

Type 310A

Table 1. Outlet Pressure Ranges

OUTLET PRESSURE RANGE	
bar	psig
0.69 to 1.4 0.69 to 6.9	10 to 20 10 to 100
6.9 to 17.2 17.2 to 41.4 27.6 to 48.3 ⁽¹⁾	100 to 250 250 to 600 400 to 700 ⁽¹⁾

1. Available with Nitrile (NBR) pilot diaphragm only.

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



CAUTION

Pilot supply pressure must be introduced into the regulator before introduction of any downstream pressure or internal damage may occur due to reverse pressurization of the pilot and main valve components.

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.

Parts List

Type 310A Main Valve Parts List

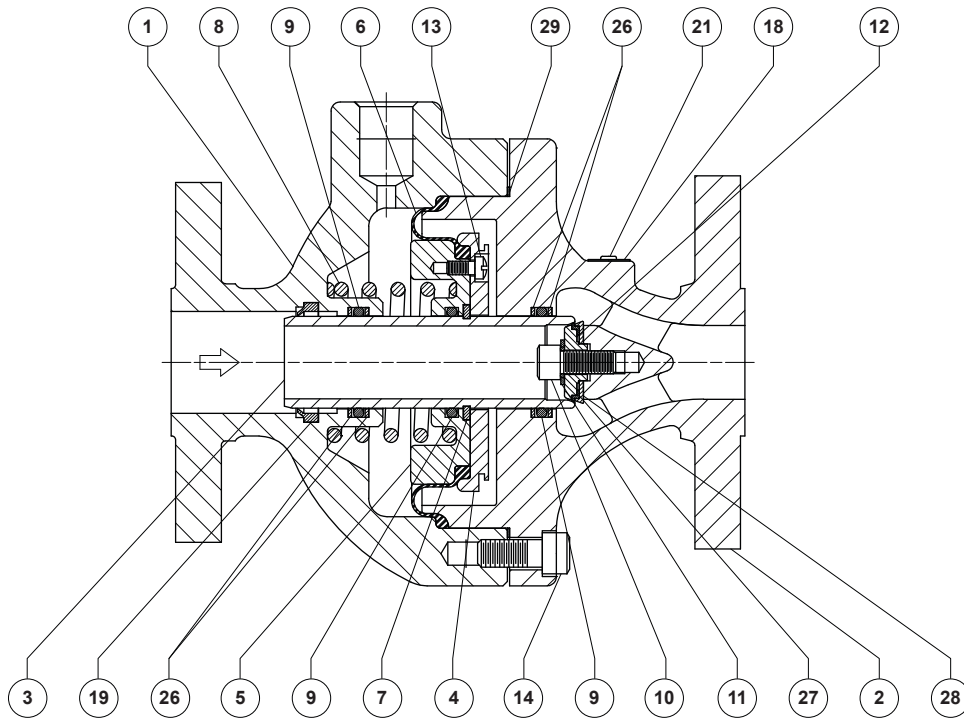
Key Description

1	Case Body
2	Base Body
3	Sleeve
4	Diaphragm Plate
5	Lower Diaphragm Plate
6	Diaphragm
7	Split Ring
8	Spring
9	O-ring
10	Cap Screw
11	Washer
12	Disk Retainer
13	Screw
14	Cap Screw
15	Travel Indicator Rod
16	Bushing
17	O-ring
18	Travel Indicator Scale
19	Wiper Ring
20	Indicator Cap
21	Screw
24	Pipe Plug
26	Backup Ring
27	Disk
28	Disk Holder
29	Body Gasket
38	Drive Screw

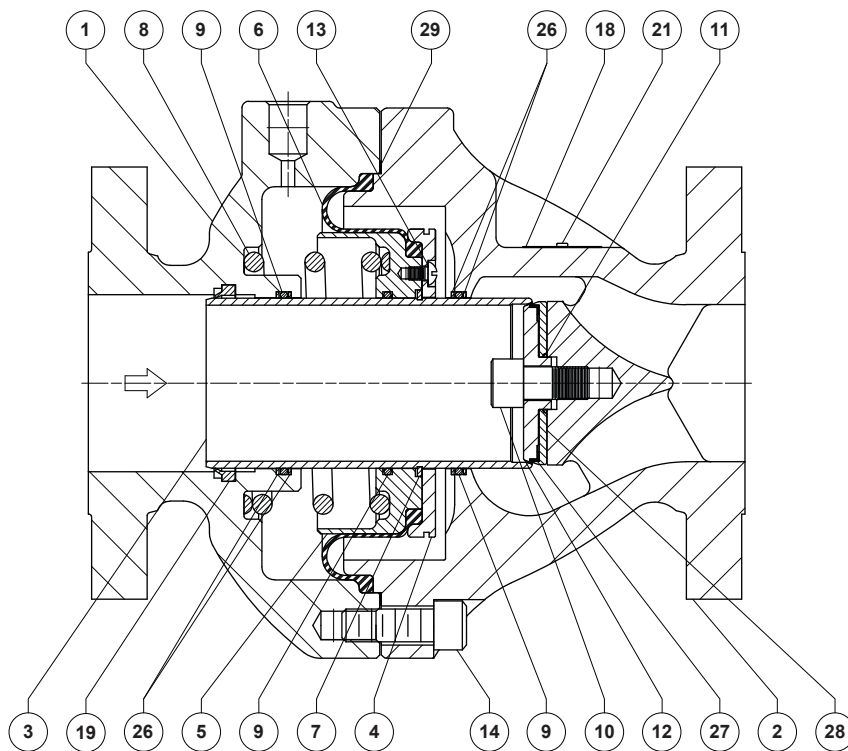
Type 32A Pilot Parts List

Key Description

1	Spring Case
2	Spring Case Cap
3	Adjusting Screw
4	Locknut
5	Spring Seat
6	Cap Screw
7	Gasket
8	Diaphragm Plate
9	Diaphragm
10	Cap Nut
11	Diaphragm Spacer
12	Orifice Assembly
13	O-ring
14	O-ring
15	Washer
16	Yoke
17	Adaptor
18	Valve Disk Assembly
19	Bleed Orifice
20	Bleed Valve
21	Nut
22	Pilot Body
23	Piston Guide
25	O-ring
26	O-ring
27	Retaining Ring
28	Piston Seat Assembly
29	Piston
30	O-ring
33	Bushing
34	O-ring
35	Spring
36	Spring
37	Control Spring
38	Connector
39	Type Y602-1 Vent Assembly
40	Nameplate
41	Drive Screw
52	Plug
53	Spacer
66	Sealing Washer
70	Pipe Bushing
71	Pipe Nipple



DN 25 / NPS 1 BODY SIZE TYPE 310A MAIN VALVE ASSEMBLY



DN 50, 80 AND 100 / NPS 2, 3 AND 4 BODY SIZE TYPE 310A MAIN VALVE ASSEMBLY

Figure 1. Type 310A Main Valve Assembly

Type 310A

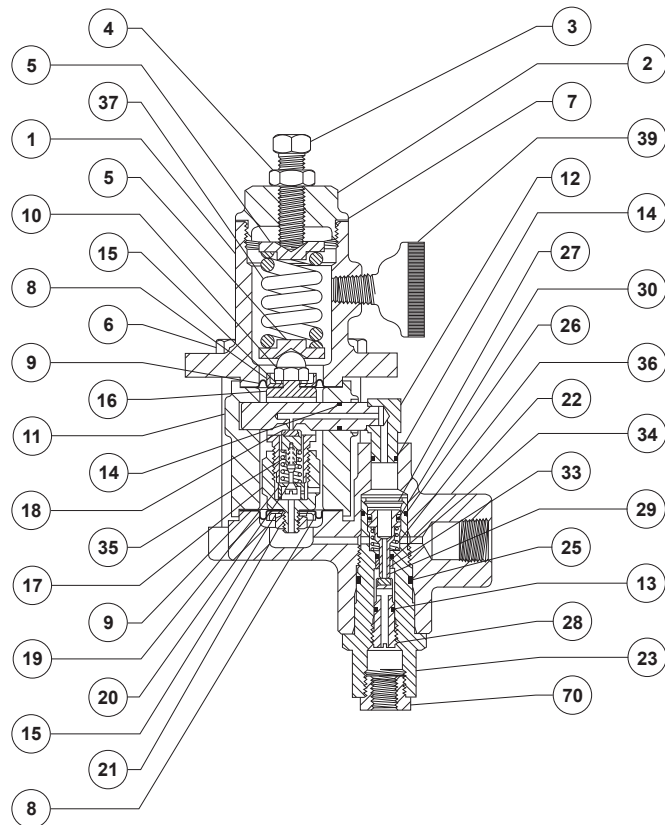


Figure 2. Type 32A Pilot Assembly

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For further information on the current PED revision see Bulletin: [D103053X012](#) or scan the QR code.

