

## 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.fisherregulators.com](http://www.fisherregulators.com). For further information refer to: Type EZR Instruction Manual, form 5476, D102629X012.

## P.E.D. Categories

This product may be used as a pressure 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 GROUP
DN 25 (NPS 1)	SEP	1
DN 50, 80, 100, and 150 (NPS 2, 3, 4, and 6)	I, II, II	

## Specifications

### Main Valve Body Size, End Connection Styles, and Body Ratings<sup>(1)</sup>

See Table 1

### Maximum Control Pressure<sup>(1)</sup>

See Tables 2 and 5

### Minimum Set Pressure<sup>(1)</sup>

1,4 bar (20 psig)

### Set Pressure or Backpressure Control Ranges<sup>(1)</sup>

See Table 2

### Temperature Capabilities<sup>(1)</sup>

See Table 4

## Installation

### WARNING

**Only qualified personnel should install or service a backpressure regulator. Backpressure regulator should be installed, operated, and maintained in accordance with international and applicable codes and regulations, and Emerson Process Management Regulator Technologies, Inc. instructions.**

**If using a backpressure regulator on a hazardous or flammable fluid service, personal injury and property damage could occur due to fire or explosion of vented fluid that may have accumulated. To prevent such injury or damage, provide piping or tubing to vent the fluid to a safe, well-ventilated area or containment vessel. Also, when venting a hazardous fluid, the piping or tubing should be located far enough away from any buildings or windows so to not create a further hazard, and the vent opening should be protected against anything that could clog it.**

**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**

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

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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 backpressure regulator has not been damaged or has collected foreign material during shipping. For NPT bodies, apply pipe compound to the external pipe threads. For flanged bodies, use suitable line gaskets and approved piping and bolting practices. Install the backpressure 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 backpressure regulator be installed so that the vent hole in the spring case is unobstructed at all times. For outdoor installations, the backpressure 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 backpressure regulator beneath eaves or downspouts, and be sure it is above the probable snow level.



## CAUTION

When installing Type EZR trim in an existing Fisher® E-body, damage can result if flow is not in the correct direction. Look at the body web to confirm that flow is in the correct direction—up through the center of the cage and down through the cage slots. Change the existing flow arrow if necessary.

**Table 1.** Main Valve Body Sizes, End Connection Styles, and Body Ratings

MAIN VALVE BODY SIZE, DN (NPS)	MAIN VALVE BODY MATERIAL	END CONNECTION STYLES	STRUCTURAL DESIGN RATING, bar (PSIG)	PROOF TEST PRESSURE, bar (PSIG)
25, 50, 80, 100, and 150 (1, 2, 3, 4, and 6)	WCB Steel	NPT or SWE	102 (1480)	153 (2220)
		CL150 RF	19,6 (285)	29,5 (428)
		CL300 RF	51,0 (740)	76,5 (1110)
		CL600 or BWE	102 (1480)	153 (2220)

**Table 2.** Set Pressure Ranges, Pilot Pressure Ratings, and Pilot Information<sup>(1)</sup>

PILOT TYPE	RELIEF SET PRESSURE RANGE, bar (PSIG)	PILOT CONTROL INFORMATION		
		Color Code	Minimum Operating Pressure, bar (PSIG)	Maximum Emergency Pressure, bar (PSIG)
6358 and 6358B	1,4 to 2,8 (20 to 40) 2,4 to 8,6 (35 to 125)	Yellow Red	10,3 (150)	10,3 (150)
6358EB	5,2 to 9,7 (75 to 140) 9,0 to 13,8 (130 to 200) 12,4 to 24,1 (180 to 350)	Green Blue Red	44,8 (650)	51,7 (750)
6358EBH	17,3 to 31,0 (250 to 450) 27,6 to 41,4 (400 to 600) <sup>(1)</sup>	Blue Red		

1. Fluorocarbon (FKM) diaphragms are limited to 31,1 bar (450 psig).

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**Table 3. Main Valve Minimum Differential Pressures**

MAIN VALVE BODY SIZE, DN (NPS)	MAIN SPRING PART NUMBER AND COLOR CODE	MINIMUM DIFFERENTIAL, PERCENT OF CAGE CAPACITY, bar d (PSID)					
		For 90% Capacity			For 100% Capacity		
		100% Trim	60% Trim	30% Trim	100% Trim	60% Trim	30% Trim
25 and 50 x 25 (1 and 2 x 1)	19B2399X012, White <sup>(1)</sup>	1,3 (19)	1,3 (19)	1,5 (22)	1,3 (19)	1,4 (20)	1,7 (24)
	19B2400X012, Light Blue	1,9 (28)	1,9 (28)	2,4 (35)	1,9 (28)	1,9 (28)	2,8 (41)
	19B2401X012, Black <sup>(2)</sup>	2,8 (40)	2,8 (41)	3,2 (47)	2,8 (40)	2,9 (42)	4,8 (70)
50 (2)	19B0951X012, Yellow <sup>(1)</sup>	0,9 (13)	1,2 (17)	1,7 (24)	0,9 (13)	1,2 (17)	1,7 (24)
	18B2126X012, Green	1,1 (16)	1,5 (21)	2,0 (29)	1,4 (20)	1,7 (25)	2,1 (30)
	18B5955X012, Red <sup>(2)</sup>	1,6 (23)	1,9 (28)	2,1 (30)	2,1 (30)	2,1 (31)	2,2 (32)
80 (3)	T14184T0012, Yellow <sup>(1)</sup>	0,97 (14)	0,97 (14)	1,2 (17)	1,2 (18)	1,2 (18)	1,3 (19)
	19B0781X012, Light Blue	1,0 (15)	1,0 (15)	1,2 (18)	1,4 (21)	1,4 (21)	1,5 (22)
	19B0782X012, Black <sup>(2)</sup>	1,8 (26)	1,8 (26)	1,8 (27)	2,3 (33)	2,3 (33)	2,3 (33)
100 (4)	T14184T0012, Yellow <sup>(1)</sup>	0,69 (10)	0,76 (11)	0,83 (12)	1,2 (18)	1,4 (20)	1,4 (20)
	18B8501X012, Green	0,9 (14)	1,0 (15)	1,2 (17)	1,5 (22)	1,7 (24)	1,7 (24)
	18B8502X012, Red <sup>(2)</sup>	1,4 (20)	1,7 (24)	2,0 (29)	2,1 (30)	2,1 (30)	2,1 (30)
150 and 200 x 150 (6 and 8 x 6)	19B0364X012, Yellow <sup>(1)</sup>	0,6 (8)	0,6 (8)	0,69 (10)	0,69 (10)	0,69 (10)	0,9 (13)
	19B0366X012, Green	1,0 (15)	1,0 (15)	1,1 (16)	1,2 (17)	1,3 (19)	1,4 (20)
	19B0365X012, Red <sup>(2)</sup>	1,1 (16)	1,2 (18)	1,3 (19)	1,4 (20)	1,7 (24)	1,7 (24)

1. The white and yellow springs are only recommended for inlet pressures under 6,9 bar (100 psig).  
2. The red and black springs are only recommended for inlet pressures over 34,5 bar (500 psig).

**Table 4. Temperature Capabilities**

17E67 NITRILE (NBR)	17E68 NITRILE (NBR)	17E97 NITRILE (NBR)	17E88 FLUOROCARBON (FKM)
-17° to 66°C (0° to 150°F)	-28° to 66°C (-20° to 150°F)	-17° to 66°C (0° to 150°F)	-17° to 121°C (0° to 250°F)

**Table 5. Main Valve Maximum Pressures**

MAIN SPRING COLOR CODE	BODY SIZE, DN (NPS)	MAXIMUM OPERATING INLET PRESSURE, bar (PSIG)	MAXIMUM OPERATING DIFFERENTIAL PRESSURE, bar (PSIG)	MAXIMUM EMERGENCY INLET AND DIFFERENTIAL PRESSURES <sup>(2)</sup> , bar d (PSID)
White/Yellow	All	6,9 (100)	6,9 (100)	6,9 (100)
Light Blue/Green	All	34,5 (500)	34,5 (500)	51,7 (750)
Black/Red <sup>(1)</sup>	All	72,4 (1050)	55,2 (800)	72,4 (1050)
DIAPHRAGM MATERIAL	BODY SIZE, DN (NPS)	MAXIMUM OPERATING INLET PRESSURE, bar (PSIG)	MAXIMUM OPERATING DIFFERENTIAL PRESSURE, bar (PSIG)	MAXIMUM EMERGENCY INLET AND DIFFERENTIAL PRESSURES, bar d (PSID)
17E67 Nitrile (NBR)	50 (2)	34,5 (500)	34,5 (500)	51,7 (750)
	100 (4)	24,8 (360)	20,7 (300)	51,7 (750)
17E68 Nitrile (NBR)	25 and 50 (1 and 2)	31,7 (460)	27,6 (400)	31,7 (460)
	80, 100, and 150 (3, 4, and 6)	24,8 (360)	20,7 (300)	34,5 (500)
17E97 Nitrile (NBR)	All	72,4 (1050)	55,2 (800)	72,4 (1050)
17E88 Fluorocarbon (FKM)	All	51,7 (750)	34,5 (500)	51,7 (750)

1. The red and black springs are only recommended for inlet pressures over 34,5 bar (500 psig).  
2. For differential pressures above 27,6 bar d (400 psid) Fluorocarbon (FKM) diaphragm temperatures are limited to 66°C (150°F).

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## Overpressure

Maximum inlet pressures depend upon body materials and temperatures. Refer to the nameplate for the maximum inlet pressure of the valve. The valve should be inspected for damage after any overpressure condition. **Fisher® backpressure regulators are NOT ASME safety relief valves.**

## Startup

The backpressure 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 (if applicable).

## Adjustment

To change the outlet pressure, remove 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 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 backpressure regulator from all pressure before attempting disassembly.**

**If pressure is introduced first to the main valve before the pilot, the main valve may go wide-open and subject the downstream system to full inlet pressure.**

## Parts List

### 6358 Series

Key	Description
1	Pilot Body
2	Spring Case
3	Body Plug
4	Valve Plug
5	Diaphragm Assembly
6	Connector Cap
7	Control Spring
8	Spring Seat
9	Stem Guide
10	Adjusting Screw
11	Locknut
12	Closing Cap
13	Body Plug O-ring
14	Valve Spring
15	O-Ring
16	Vent Assembly
18	O-Ring
19	Closing Cap Gasket
20	Restriction or Restriction Plug
36	Gasket or O-Ring
37	Stem O-Ring
38	Lower Spring Seat
40	Diaphragm Limiter

### Main Valve

Key	Description
1	Valve Body
2	Bonnet Assembly
4	Hex Nut
5	Top Plug
6	O-Ring
7	Cage
8	Cage O-Ring
9	Diaphragm
10	O-Ring
11	Bottom Plug
12	Main Spring
13	Flanged Locknut
14	Top Plug O-Ring
15	Stem
16	Backup Ring
17	Upper Spring Seat
18	O-Ring
19	Indicator Fitting
20	Indicator Washer
21	Indicator Cover
22	Indicator Protector
23	Inlet Strainer
28	O-Ring
63	Pilot Supply Pipe Plug
64	Bonnet Pipe Plug
66	O-Ring
67	O-Ring
70	O-Ring
71	Restrictor Plate
72	E-Ring
79	Washer
83	Machine Screw
121	O-Ring
126	Cap Screw
129	Socket Head Screw
130	Lock Washer

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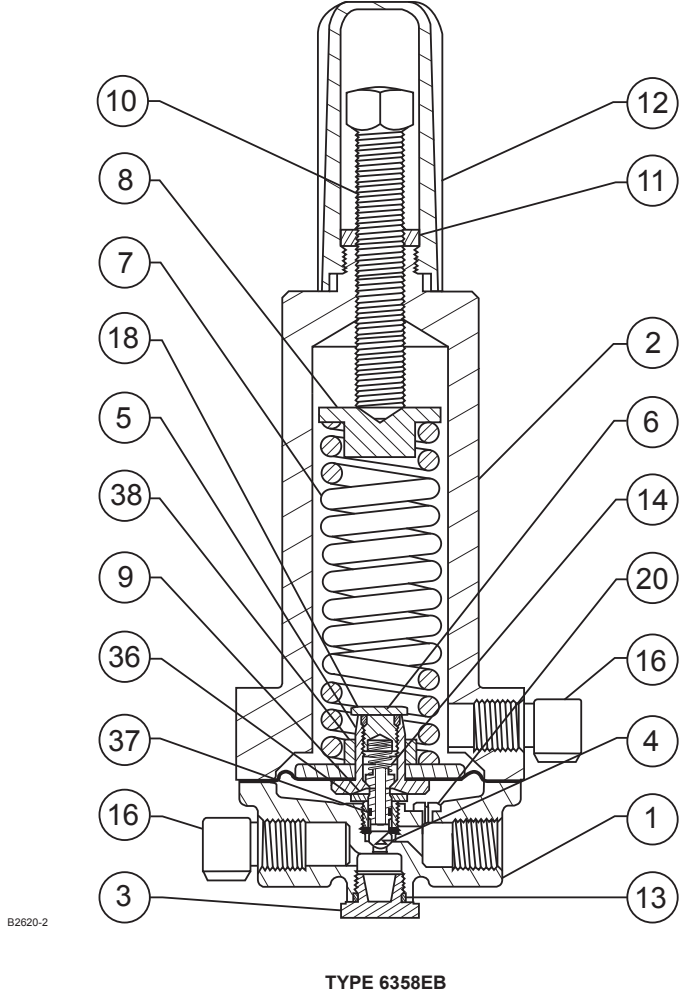
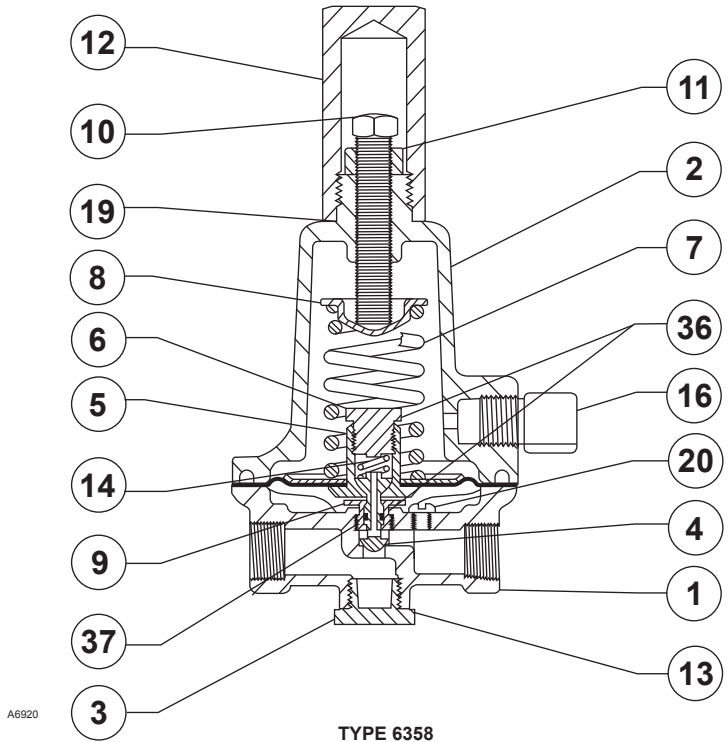
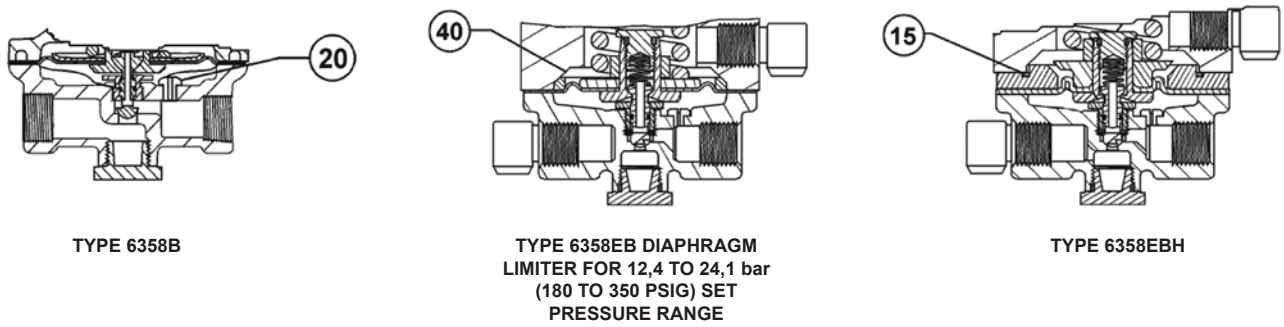


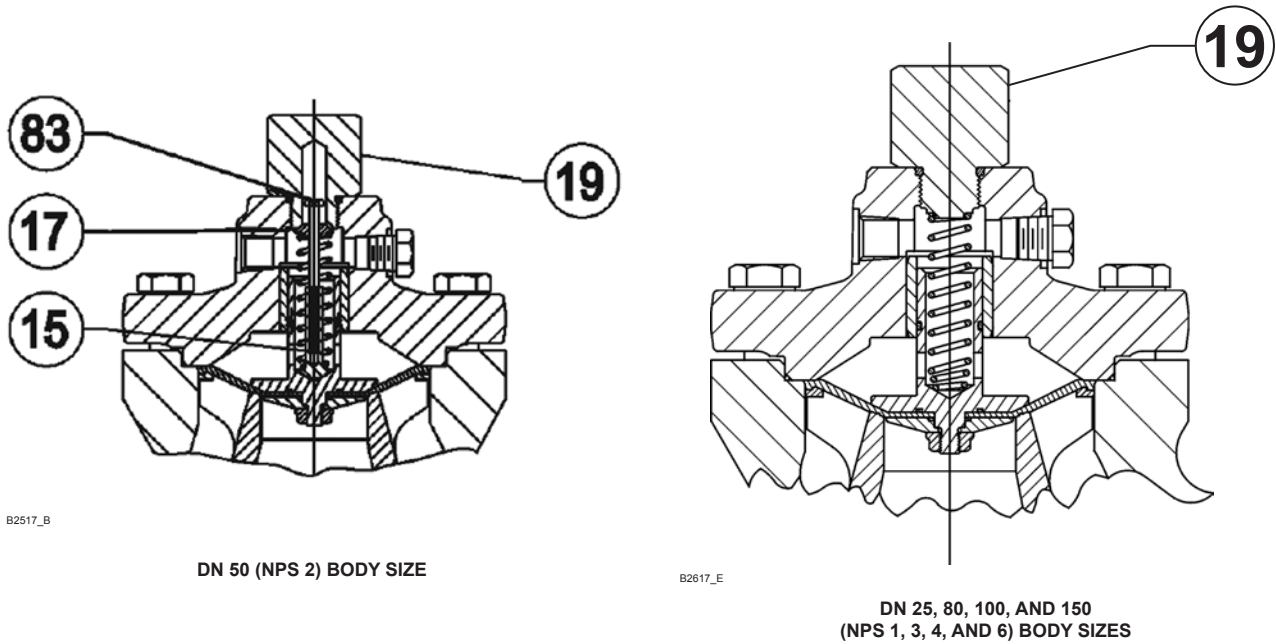
Figure 1. 6358 Series Assemblies

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Figure 1. 6358 Series Assemblies (continued)

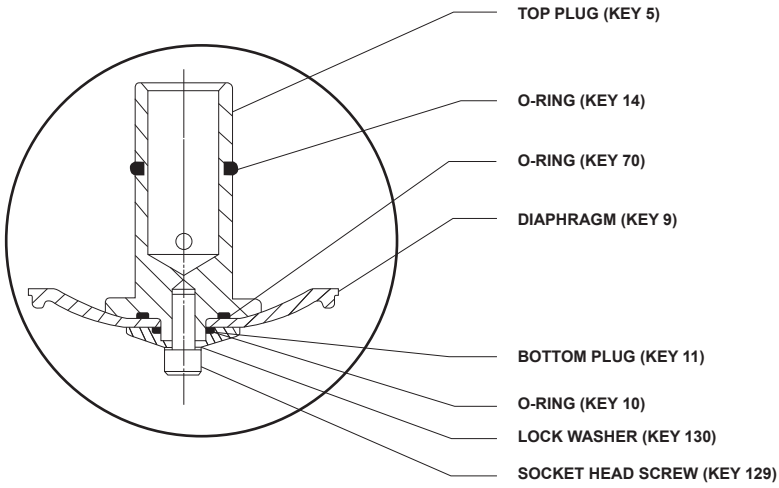


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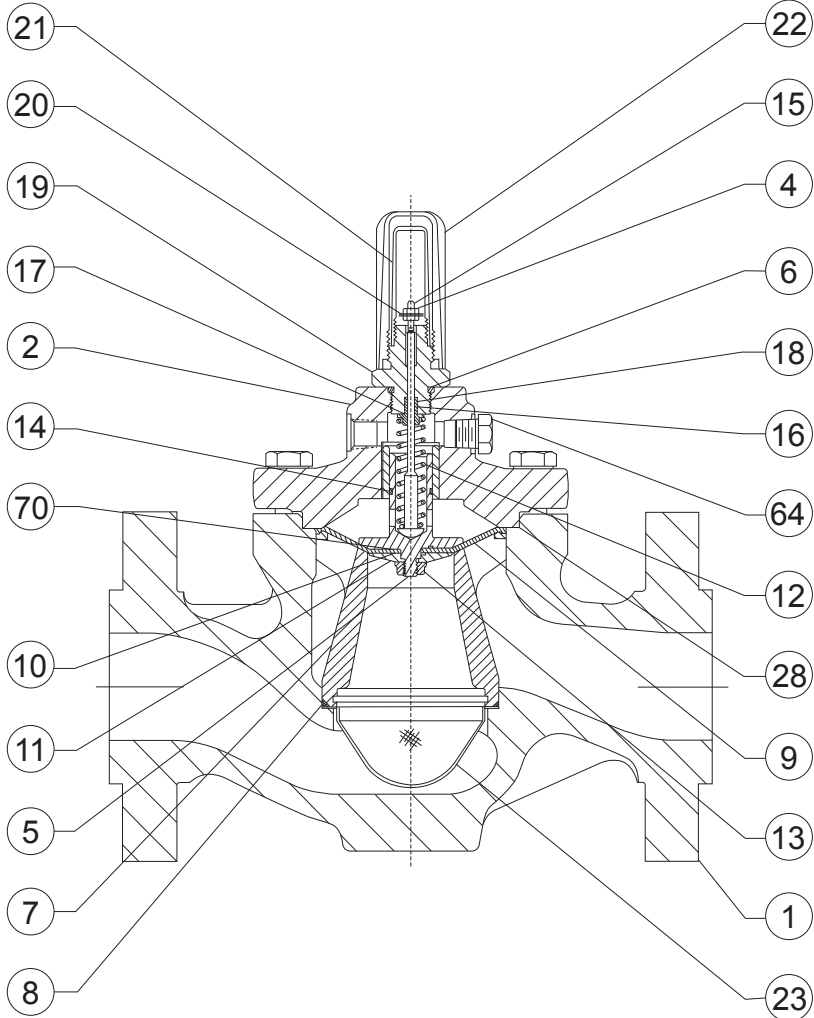
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Figure 2. Type EZR Main Valve Assembly

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DN 25 AND 50 x 25 (NPS 1 AND 2 x 1)  
DIAPHRAGM ASSEMBLY



MAIN VALVE ASSEMBLY

Figure 2. Type EZR Main Valve Assembly (continued)

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