

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:

Type 66, 66Z, and 66ZZ Instruction Manual (form 1056, D100247X012).

The Type 66 self-operated regulator maintains a reduced outlet pressure while satisfying the downstream flow demands. The Type 66Z and 66ZZ self-operated regulators also control a reduced outlet pressure; however, both have springs sensitive to negative pressures and can be used for vacuum regulation.

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 50-100 (2-4-inch)	SEP	1

Specifications

Body Sizes and Styles

See table 1

Maximum Allowable Pressures⁽¹⁾

Maximum Safe Inlet Pressure to Avoid Internal Part Damage: 0,69 bar (10 psig) for Type 66, 0,34 bar (5 psig) for Type 66Z, and 0,14 bar (2 psig) for Type 66ZZ

Maximum Operating Inlet Pressure⁽¹⁾ Recommended for Good Performance: 0,34 bar (5 psig) for Types 66 and 66Z, and 0,14 bar (2 psig) for Type 66ZZ

Emergency Inlet: 1,7 bar (25 psig)

Emergency Outlet: 0,6 bar (8 psig)

Proof Test Pressure

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

Outlet Pressure Ranges⁽¹⁾

See table 2

Temperature Capabilities⁽¹⁾

-29 to 82°C (-20 to 180°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.

Install Type 66, 66Z, and 66ZZ regulators horizontally with the spring case vertically above the valve 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.

With steel bodies, an external control line is required. Connect DN 20 (3/4-inch) NPT control line to the lower diaphragm casing connection from the point where the downstream pressure is to be sensed.

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



Types 66, 66Z, and 66ZZ

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.

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

Key Description

- 1 Valve Body
- 2 Upper Diaphragm Casing
- 3 Lower Diaphragm Casing
- 4 Diaphragm Plate
- 5 Diaphragm
- 6 Spring
- 7 Bottom Flange
- 8 O-ring
- 9 Disk Retainer
- 10 Valve Plug Skirt
- 11 Seat Ring
- 12 Pitot Tube
- 13 Valve Plug Stem
- 14 Balancing Diaphragm
- 15 Sealing Diaphragm
- 17 Lower Spring Seat
- 18 Stem Gasket
- 19 Bottom Flange Gasket
- 20 Cap Screw
- 21 Cap Screw
- 22 Hex Nut
- 23 Stop Nut
- 24 Upper Spring Seat
- 25 Adjusting Screw
- 26 Closing Cap Gasket
- 27 Closing Cap
- 28 Flapper Valve
- 29 Snap Ring
- 30 Y602-10 Vent Assembly
- 32 Nameplate
- 33 Nameplate
- 34 Washer
- 35 Gasket

Key Description

- 36 Washer
- 37 Sealing Washer
- 38 Counter Spring
- 43 Spring Retainer
- 44 Set Screw
- 45 Hex Nut
- 46 Adjusting Screw Cap
- 47 Adjusting Cap Gasket
- 48 Upper Travel Stop
- 49 Lower Travel Stop
- 50 Lock Washer
- 51 Plug
- 52 Spring Case Coupling
- 53 Spring Case Extension
- 54 Ball
- 57 Retaining Ring
- 66 Casing Gasket
- 68 Flow Arrow
- 69 Drive Screw

Table 1. Body Sizes and End Connection Styles

BODY SIZE DN (INCHES)	BODY MATERIAL	
	Cast Iron	Steel
50 (2)	screwed, flat-face Class 125 flanged	screwed, raised-face and flat-face Class 150 flanged, and raised- face Class 300 flanged
80, 100 (3, 4)	flat-face Class 125 flanged	raised-face Class 150 flanged

Table 2. Outlet Pressure Ranges

OUTLET PRESSURE RANGES		
Type	mbar	inches w.c. / psig
66	10 to 27 mbar 20 to 70 mbar 5 to 12 mbar 10 to 20 mbar	4 to 11-in. w.c. 8 to 28-in. w.c. 2 to 5-in. w.c. 4 to 8-in. w.c.
	17 to 30 mbar 25 to 42 mbar 35 to 70 mbar 52 to 103 mbar	7 to 12-in. w.c. 10 to 17-in. w.c. 14 to 28-in. w.c. 0.75 to 1.5 psig
	69 to 138 mbar 103 to 207 mbar 207 to 345 mbar	1 to 2 psig 1.5 to 3 psig 3 to 5 psig
66Z	-2.5 to 5 mbar	-1 to 2-in. w.c.
66ZZ	-0.6 to 0.6 mbar	-0.25 to 0.25-in. w.c.
66 Series vacuum regulators or breakers	0 to -5 mbar -0.7 to -2 mbar -5 to -15 mbar 0 to 3.7 mbar	0 to -2-in. w.c. -0.3 to -0.8-in. w.c. -2 to -6-in. w.c. 0 to 1.5-in. w.c.

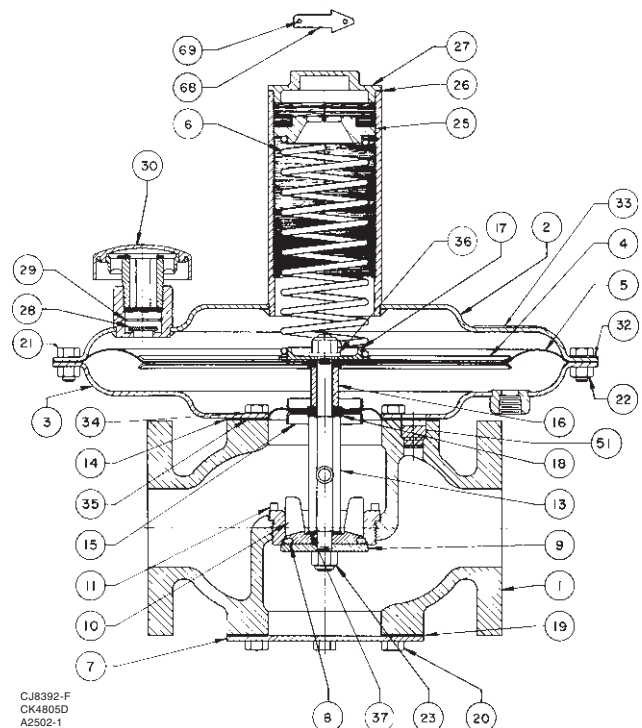
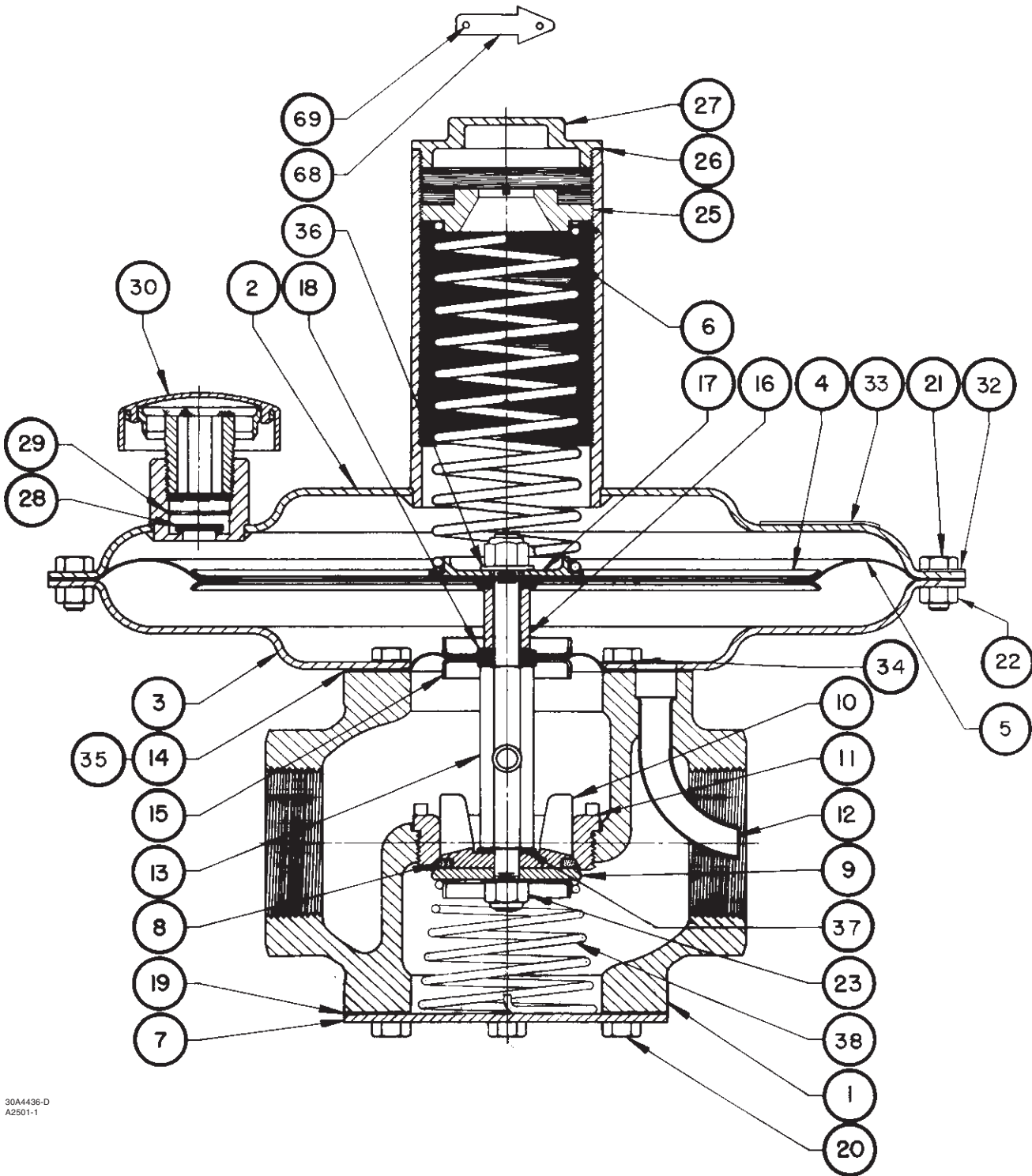


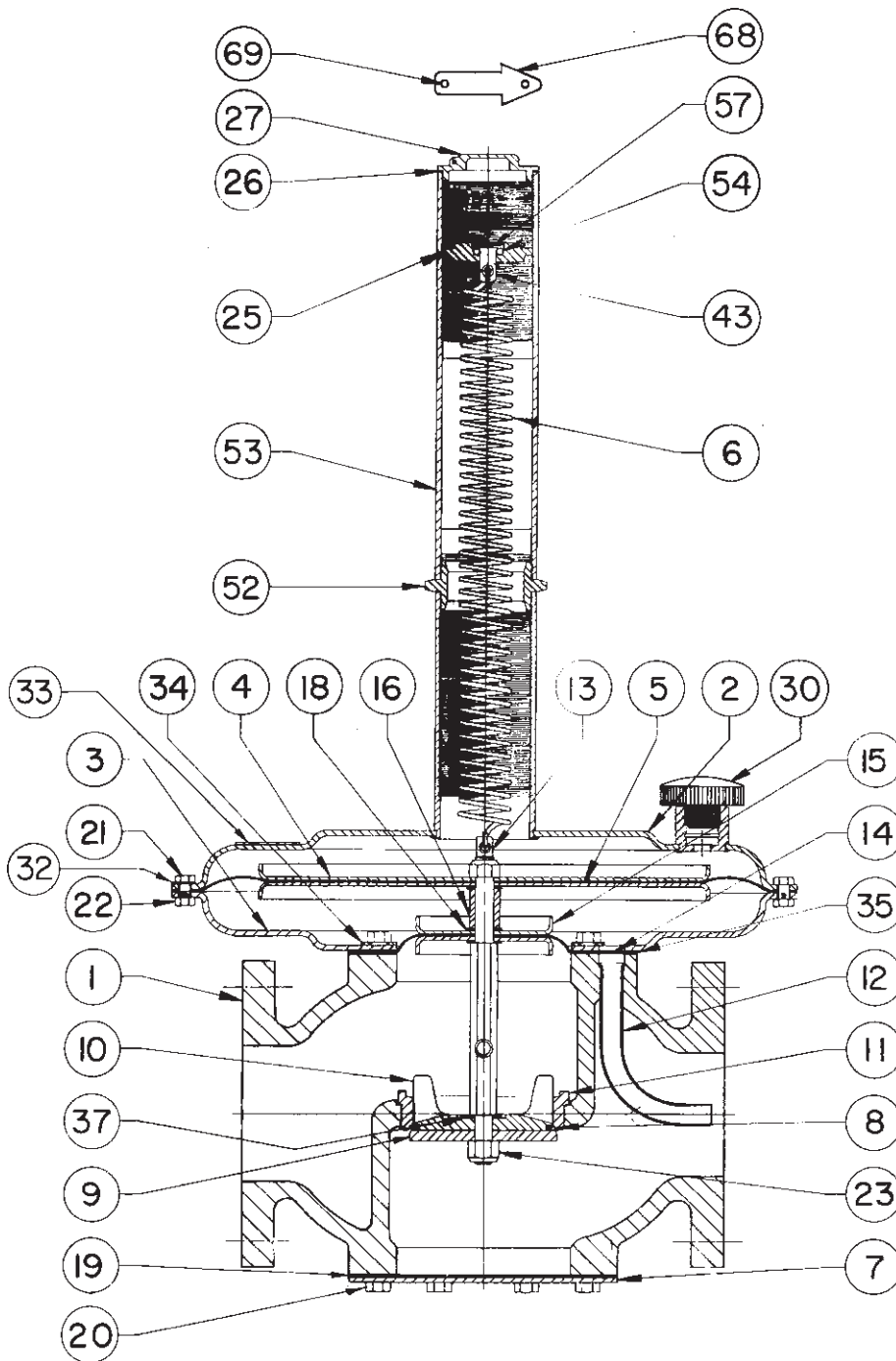
Figure 1. Soft-Seated Type 66 Regulator



30A4436-D
A2501-1

Figure 2. Type 66Z Regulator

Types 66, 66Z, and 66ZZ



30A6347-D

Figure 3. Type 66ZZ Regulator

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