

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: ACE95 Series Instruction Manual, form 5667, D102775X012.

P.E.D. Categories

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 TYPE	PRODUCT SIZE	CATEGORIES	FLUID TYPE
ACE95	3/4-inch (DN 20)	SEP	1
	1-inch (DN 25)		
ACE95Sr	2-inch (DN 50)	I	

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 over-

pressured 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 the regulator above the fluid level in the tank with the actuator case horizontal.

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.

Table 1. Outlet (Control) Pressure Ranges

OUTLET (CONTROL) PRESSURE RANGE
-5 to -0.5-inches w.c. (-1,2 to -12 mbar)
-1 to 1-inches w.c. (-2 to 2 mbar)
0.5 to 5-inches w.c. (1,2 to 12 mbar)
4 to 10-inches w.c. (10 to 25 mbar)
8 to 15-inches w.c. (20 to 37 mbar)
0.5 to 1.5 psig (34 to 103 mbar)
1. The second spring is located under the diaphragm assembly.

Table 2. Main Valve Springs

TYPE	VALVE C _v	INLET PRESSURE, PSIG (bar)
ACE95	1 through 4	25 to 50 (1,72 to 3,45)
		51 to 120 (3,52 to 8,27)
		121 to 200 (8,34 to 13,8)
	7.5 and 10	25 to 50 (1,72 to 3,45)
ACE95Sr	20 through 60	51 to 120 (3,52 to 8,27)
		121 to 200 (8,34 to 13,8)
		25 to 50 (1,72 to 3,45)
		51 to 120 (3,52 to 8,27)



ACE95 Series

Specifications

Sizes and End Connection Styles⁽¹⁾

Type ACE95

Angled Body: 3/4-inch (DN 20) NPT
1-inch (DN 25) NPT
1-inch (DN 25) CL150RF
1-inch (DN 25) CL300RF
1-inch (DN 25) PN16/25/40RF
1-inch (DN 25) Sanitary Flange

In-Line Body: 3/4-inch (DN 20) NPT
1-inch (DN 25) NPT
1-inch (DN 25) CL150RF
1-inch (DN 25) CL300RF
1-inch (DN 25) PN16/25/40RF
1-inch (DN 25) Sanitary Flange

Type ACE95Sr

Angled Body: 2-inch (DN 50) NPT
2-inch (DN 50) CL150RF
2-inch (DN 50) CL300RF

Maximum Operating Inlet Pressure⁽¹⁾

200 psig (13,8 bar)

Maximum Emergency Outlet (Casing) Pressure⁽¹⁾

20 psig (1,38 bar)

Maximum Operating Outlet Pressure⁽¹⁾

1.5 psig (103 mbar)

Outlet Pressure Ranges

See table 1

Minimum and Maximum Differential Pressures⁽¹⁾

Minimum: 25 psig (1,72 bar)

Maximum: Up to 200 psig (13,8 bar) depending on main valve spring. See table 2.

Proof Test Pressure

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

Temperature Capabilities⁽¹⁾

Nitrile: -20° to 180°F (-29° to 82°C)

Fluoroelastomer: 0° to 212°F (-18° to 100°C)

Ethylene propylene - FDA: -20° to 212°F (-29° to 100°C)

Perfluoroelastomer: -20° to 212°F (-29° to 100°C)

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

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.

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

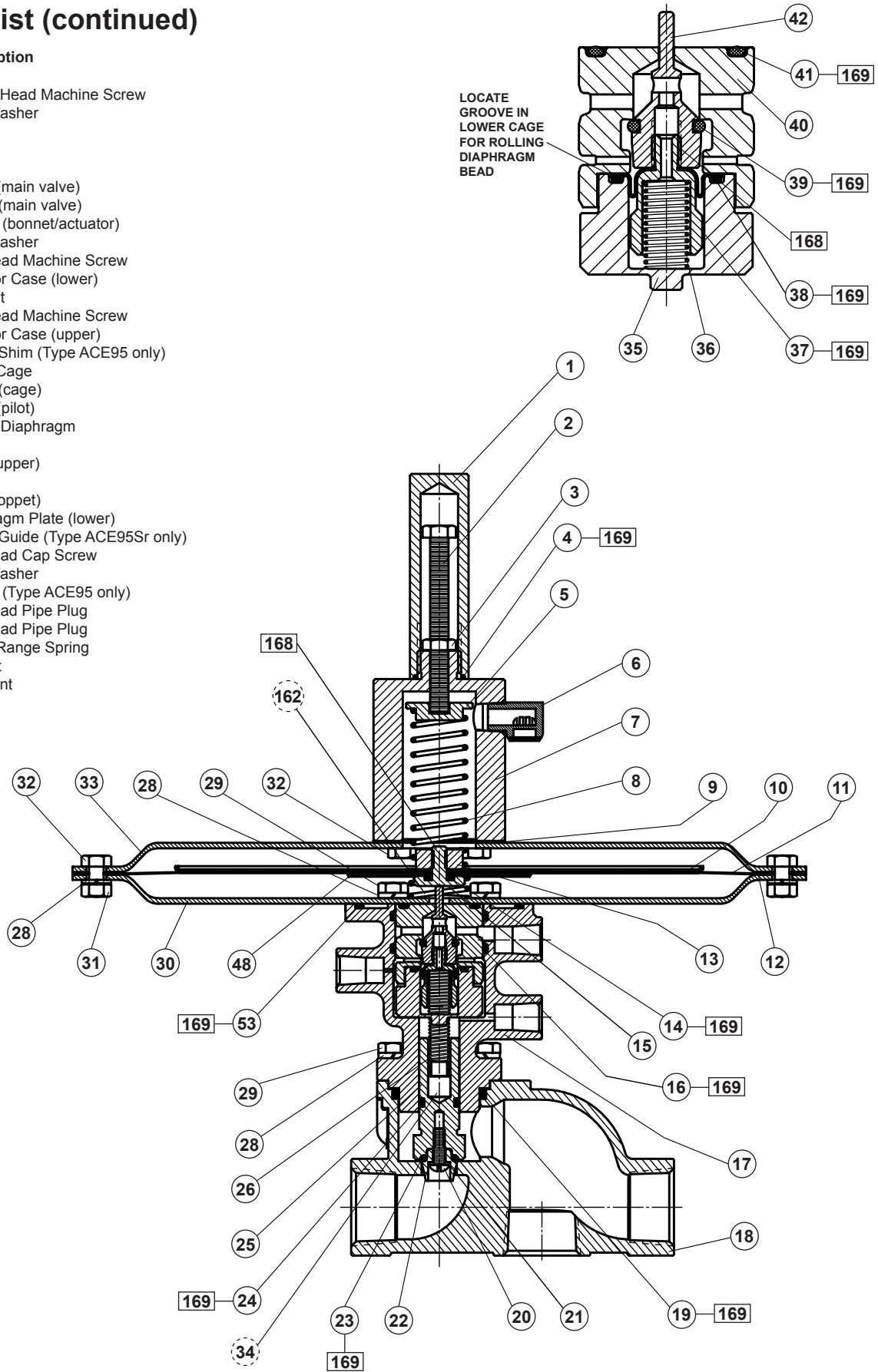
To avoid personal injury resulting from sudden release of pressure, isolate the regulator from all pressure before attempting disassembly.

Parts List

Key	Description
1	Cap
2	Adjusting Screw
3	Lock Nut
4	O-Ring
5	Spring Seat
6	Vent (Y602-A12)
7	Spring Case
8	Range Spring
9	Gasket (spring tower)
10	Diaphragm Plate (upper)
11	Diaphragm (main) - FEP
12	Gasket (actuator)
13	Diaphragm Retaining Nut
14	O-Ring
15	Diaphragm Bolt
16	O-Ring
17	Bonnet
18	Body
19	O-Ring

Parts List (continued)

Key	Description
20	Round-Head Machine Screw
21	Lock Washer
22	Plug
23	O-Ring
24	O-Ring
25	Piston (main valve)
26	Spring (main valve)
27	Gasket (bonnet/actuator)
28	Lock Washer
29	Hex-Head Machine Screw
30	Actuator Case (lower)
31	Hex Nut
32	Hex-Head Machine Screw
33	Actuator Case (upper)
34	Spring Shim (Type ACE95 only)
35	Lower Cage
36	Spring (cage)
37	Piston (pilot)
38	Rolling Diaphragm
39	O-ring
40	Cage (upper)
41	O-Ring
42	Pilot (poppet)
48	Diaphragm Plate (lower)
49	Spring Guide (Type ACE95Sr only)
50	Hex Head Cap Screw
51	Lock Washer
53	O-Ring (Type ACE95 only)
138	Hex Head Pipe Plug
139	Hex Head Pipe Plug
162	Lower Range Spring
168	Sealant
169	Lubricant



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○ NOT REQUIRED IN ALL ASSEMBLIES
□ APPLY LUB/SEALANT

Figure 2. Type ACE95 Assembly

ACE95 Series

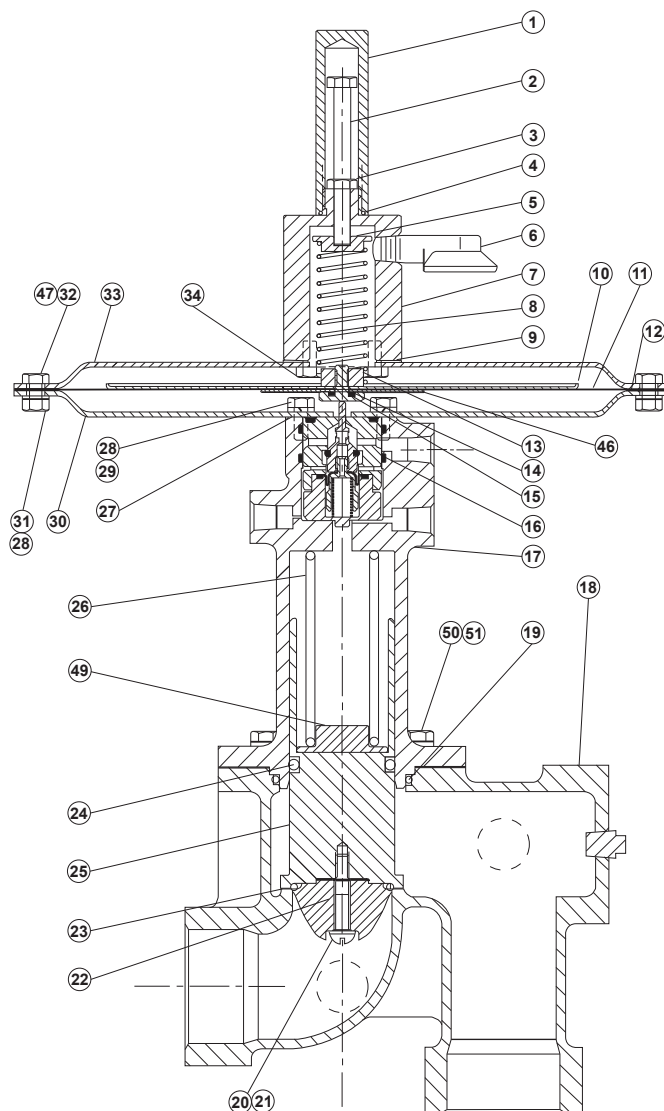


Figure 3. Type ACE95Sr Assembly

Industrial

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For further information visit www.emersonprocess.com/regulators

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