

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 ACE97 Instruction Manual, form 5665, D102773X012.

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 SIZE	CATEGORIES	FLUID TYPE
DN 15, 25, 50 (1/2, 1, 2-inch)	I	1

Specifications

Pad Specifications

Pad Body Size

DN 15, 25, and 50 (1/2, 1, and 2-inch)

Pad Connection Style

NPT or ANSI Class 150RF

Maximum Operating Inlet Pressure

10 bar (145 psig)

Maximum Main Valve Inlet Pressure

10 bar (145 psig)

Controlled Pressure Ranges

See figure 2

Differential Pressures

Minimum

1/2-inch: 0 bar (0 psig)

1 and 2-inch: 1,7 bar (25 psig)

Maximum

10 bar (145 psig)

Depad Specifications

Depad Body Size

DN 25, 50, 80, and 100 (1, 2, 3, and 4-inch)

Depad Connection Style

ANSI Class 150RF

Depad Pressure Ranges

See figure 2

General ACE97 Specifications

Proof Test Pressure

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

Temperature Capabilities

Nitrile (NBR): -20° to 180°F (-29° to 82°C)

Fluoroelastomer (FKM): 0° to 212°F (-17° to 100°C)

Ethylene propylene (EPDM - FDA): -40° to 212°F (-40° to 100°C)

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

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 valve 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.

The regulator must be mounted so the actuator case is horizontal. The regulator should be mounted above the tank. For connections are required: a) blanketing gas supply to the regulator, b) vapor recovery/process connection (vent), c) system tank connection, and d) sensing line to the tank.

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.

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



Type ACE97

Startup

Slowly open the tank and sensing line shutoff valves (between the Type ACE97 and the tank). A tank vapor space pressure gauge should be installed and visible. Slowly open the inlet shutoff valve (to the pad valve) and leave it fully open.

Adjustment

The setpoint of this unit is factory set. If an adjustment is to be made, it should be made in small increments while the unit is controlling tank pressure. It is difficult to make field adjustments due to the slow changes in tank pressure.

Taking Out of Service (Shutdown)



WARNING

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

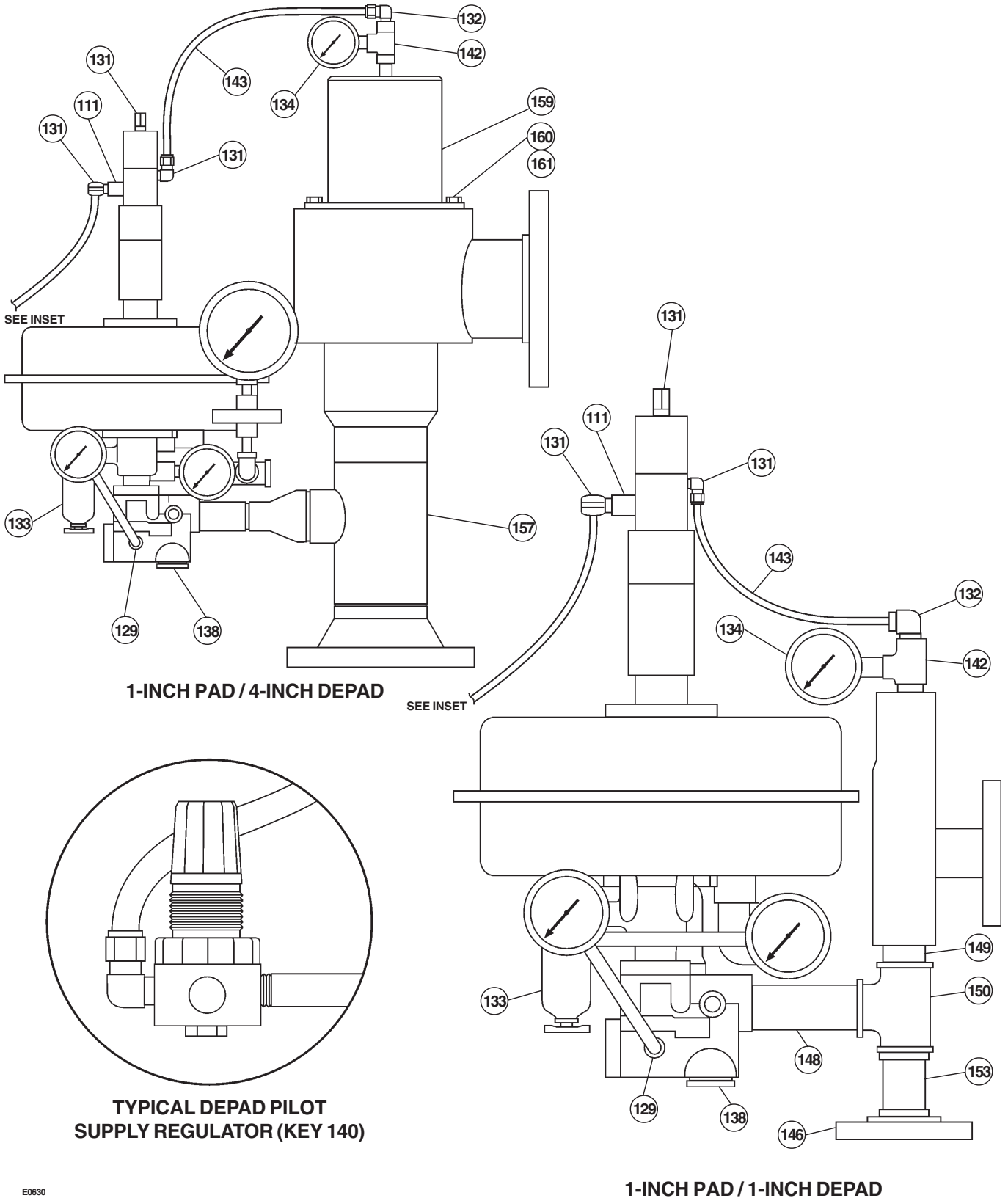
Parts List

Key Description

16 O-Ring
17 Bonnet (pad valve)
18 Body (pad valve)
19 O-Ring (1 and 2-inch pad valves)
20 Round-Head Machine Screw (1 and 2-inch pad valves)
21 Lock Washer (1 and 2-inch pad valves)
22 Plug (1 and 2-inch pad valves)
23 O-Ring (1 and 2-inch pad valves)
24 O-Ring (1 and 2-inch pad valves)
25 Piston (main valve, 1 and 2-inch pad valves)
26 Spring
28 Lock Washer
29 Hex-Head Machine Screw
31 Hex Nut
34 Spring Shim (1-inch pad valve)
35 Cage (lower, 1 and 2-inch pad valves)
36 Spring (cage, pad valve)
37 Piston (pad valve)
38 Diaphragm (pad and depad pilot valves)
39 O-ring
40 Cage (upper, 1 and 2-inch pad valves)
41 O-ring
42 Poppet (pad valve)
46 Seal (bushing)
49 Spring Guide (pad valve)
50 Hex Head Cap Screw
51 Lock Washer
52 Cage (1/2-inch pad valve)
75 Stem
76 O-ring
77 Cage (depad main valve)
78 Hex-Head Machine Screw
79 Lock Washer

Key Description

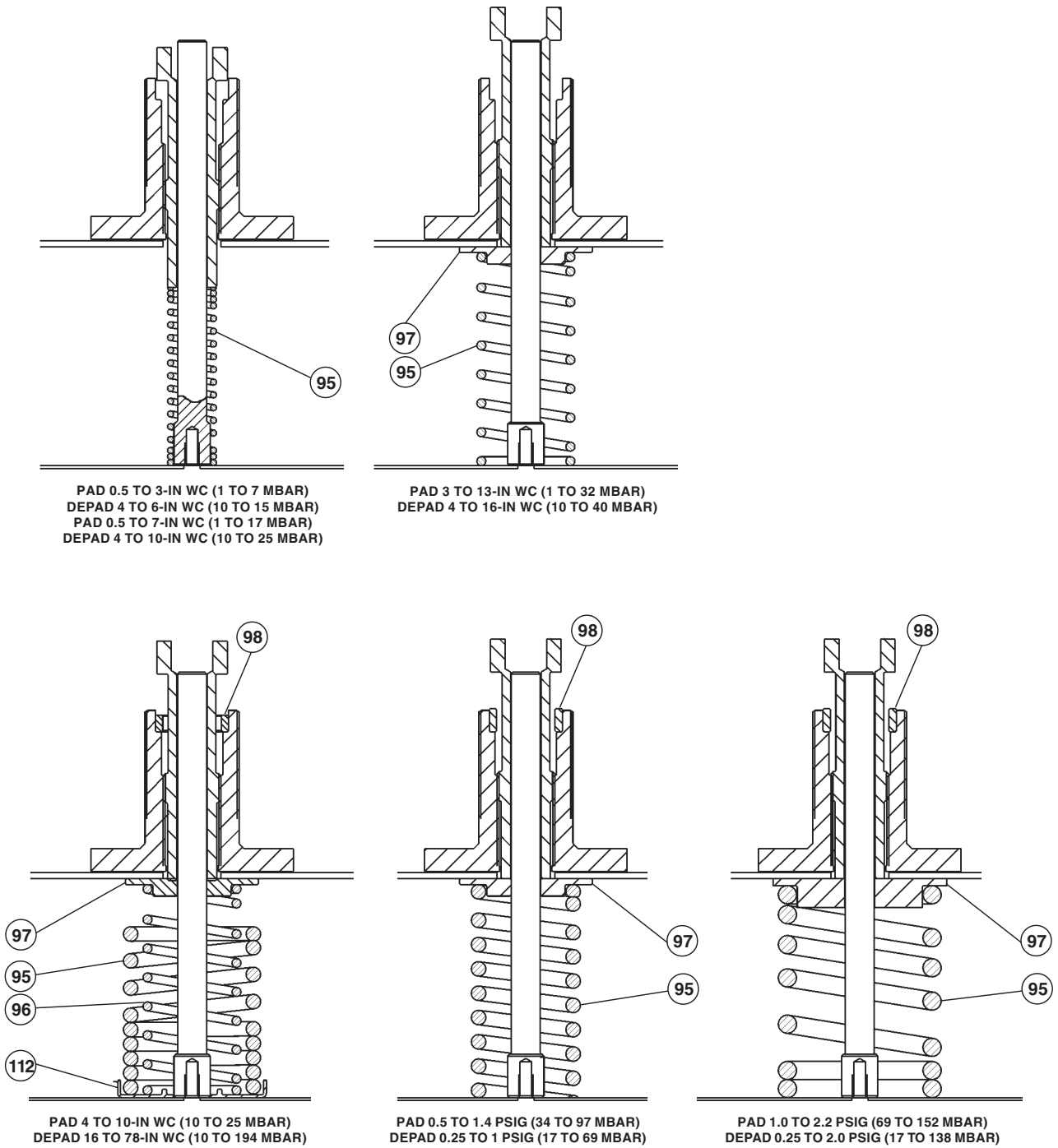
80 Seal Retainer
81 Seal (stem)
82 O-ring
83 Plate (seal retaining)
84 Spring (depad main valve)
85 Spring Guide (depad main valve)
86 Retaining Ring (1 and 2-inch depad main valve)
87 Bonnet
88 O-ring (1-inch depad main valve)
89 Retaining Ring
90 Cap (1-inch depad main valve)
91 Body (depad main valve)
93 Hex-Head Machine Screw
94 Stem (actuator)
95 Spring
96 Spring
97 Spring Guide (range)
98 Spacer
99 Lock Nut (depad pilot valve)
100 Adjuster (spring)
101 Spring (return)
102 Gasket
103 Follower
104 O-Ring
105 Poppet
106 Cage (upper)
107 Coupling
108 Cage (center)
109 Rain Cap
110 Cage (lower)
111 Orifice
112 Spring Seat
113 Actuator Case (lower)
114 Actuator Case (upper)
116 Diaphragm Plate (lower)
117 Bolt (diaphragm)
118 O-ring
119 Diaphragm Plate (upper)
120 Spring Case
121 Gasket (spring case)
126 Hex-Head Tap Bolt
127 Seal Retainer (depad pilot valve)
129 Connector
131 Elbow
132 Elbow
133 Filter (pilot, 1 and 2-inch)
134 Gauge (pressure, depad main valve)
135 Insert (tubing)
138 Pipe Plug
140 Regulator (pilot supply)
143 Tubing
145 Elbow
146 Flange
148 Nipple
149 Nipple
150 Tee (pipe)
151 Bushing
152 S.A.M. (Single Array Manifold)
153 Nipple (1-inch depad valve only)
154 Bushing
157 Body/Piping Weld
160 Hex-Head Machine Screw
161 Lock Washer
163 Diaphragm (actuator)
164 Tag (caution, depad adjustment)
165 Nipple
166 Filter
167 Element



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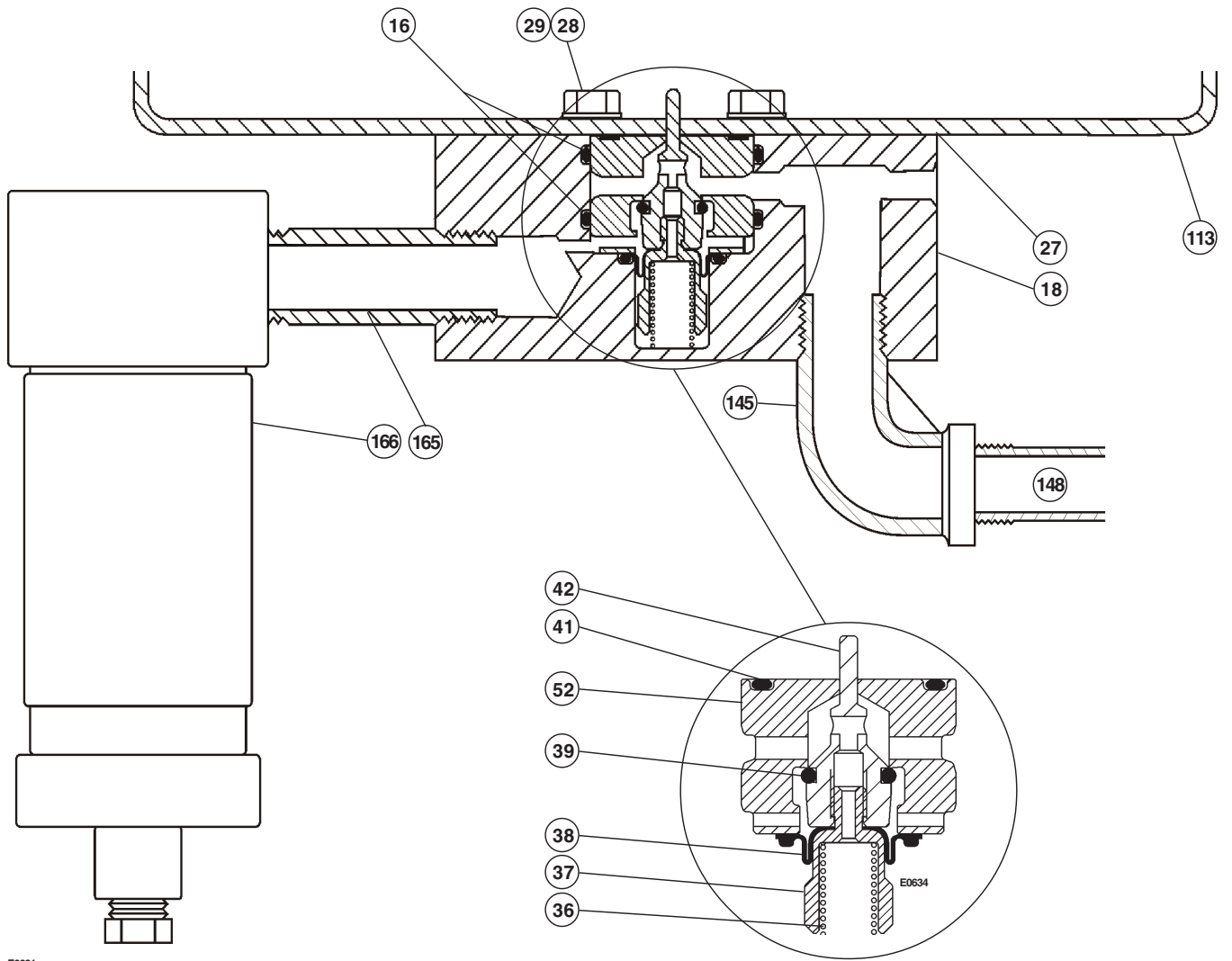
Figure 1. Type ACE97 Pad-Depad Valve Exterior

Type ACE97



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Figure 2. Actuator Spring Ranges



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Figure 3. Type ACE97 1/2-inch Pad Valve

Type ACE97

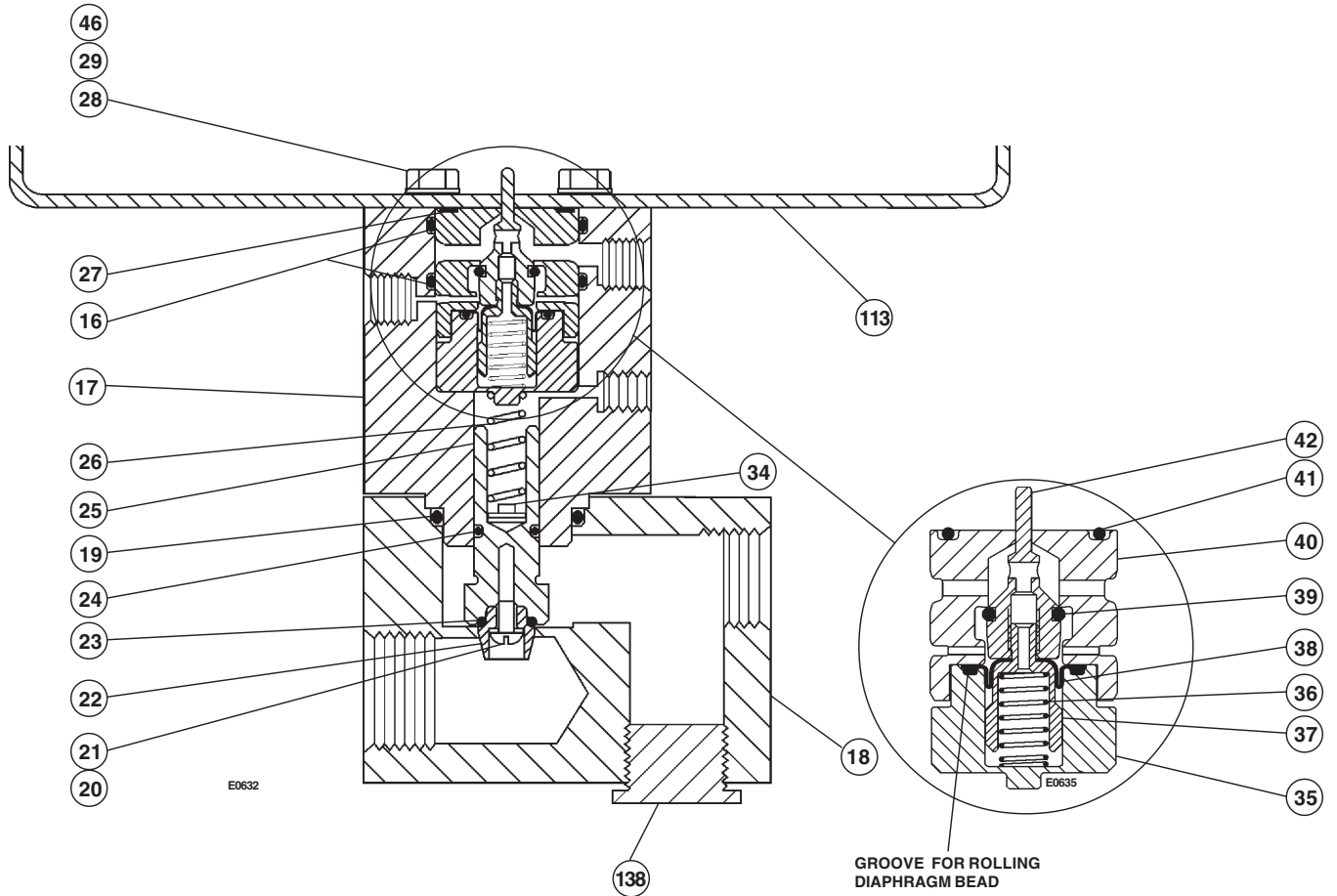


Figure 4. Type ACE97 1-inch Pad Valve

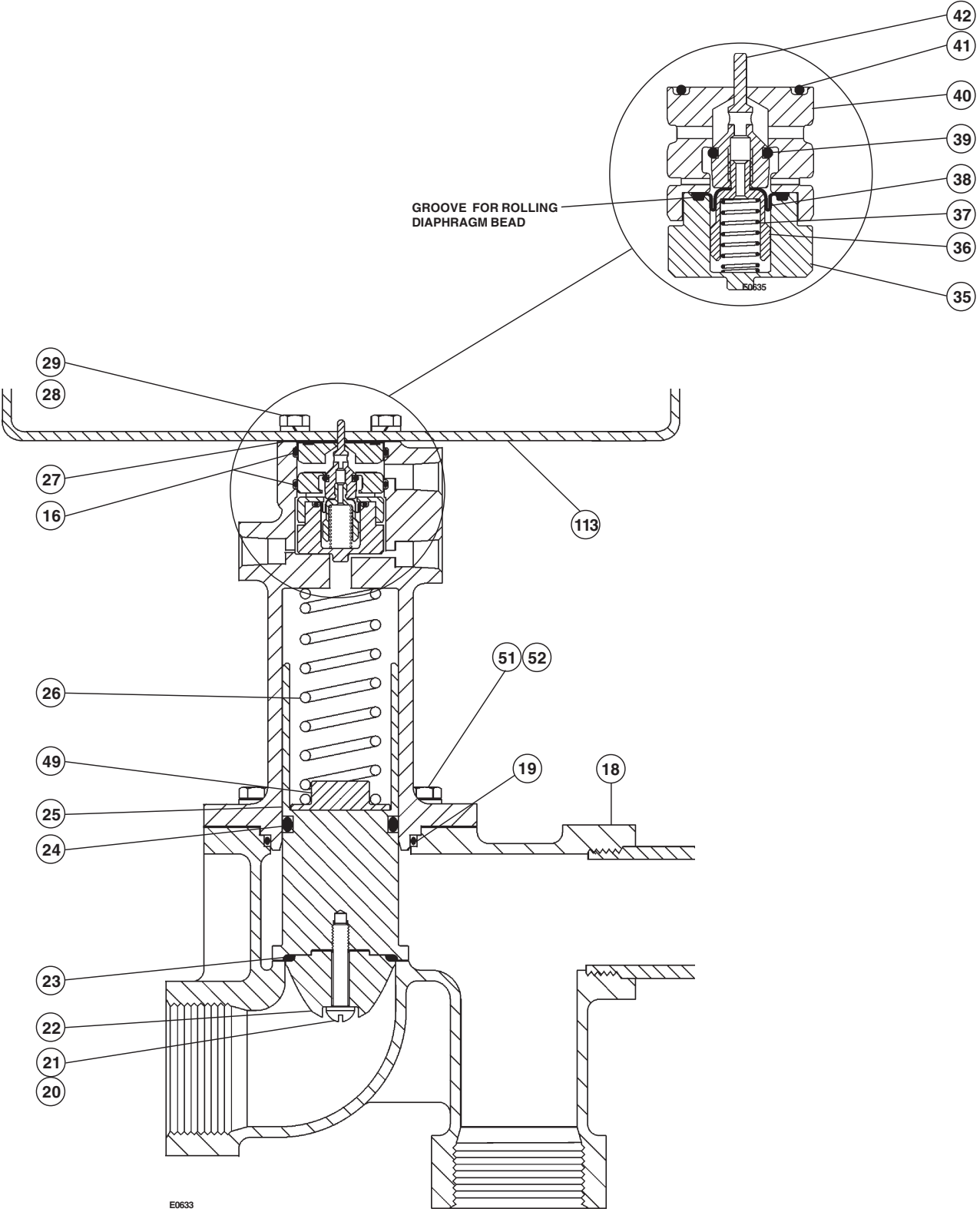


Figure 5. Type ACE97 2-inch Pad Valve

Type ACE97

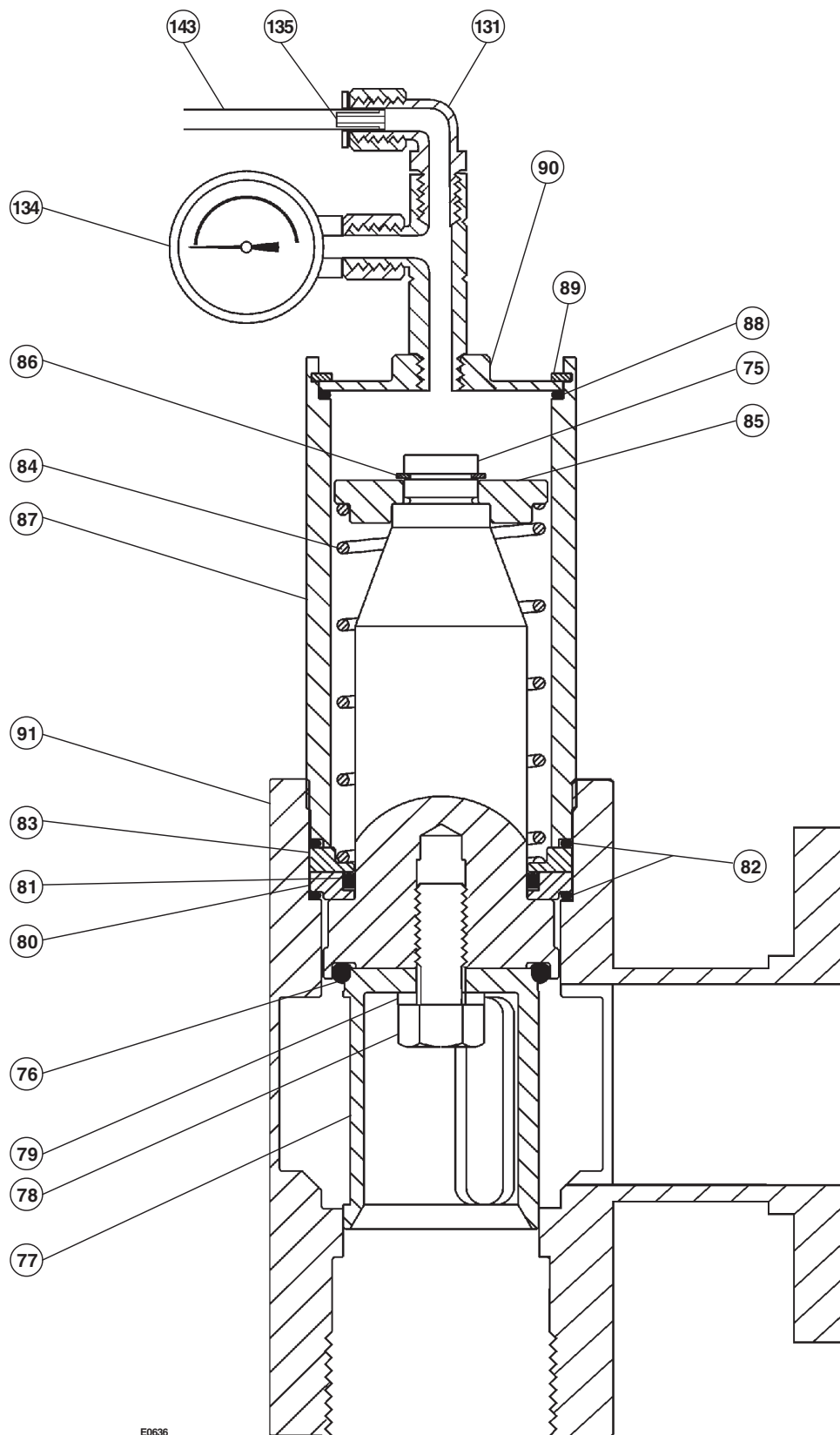
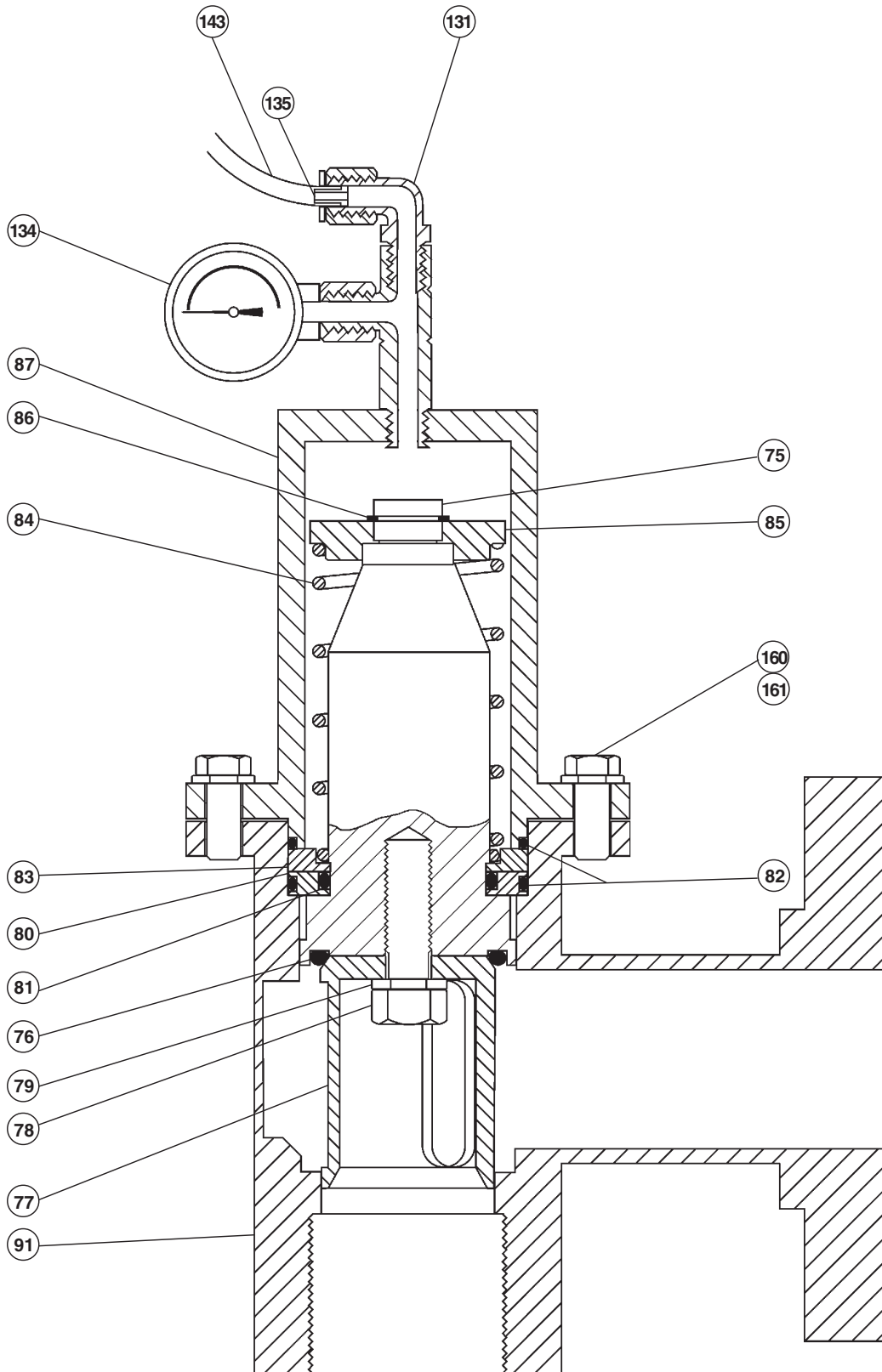


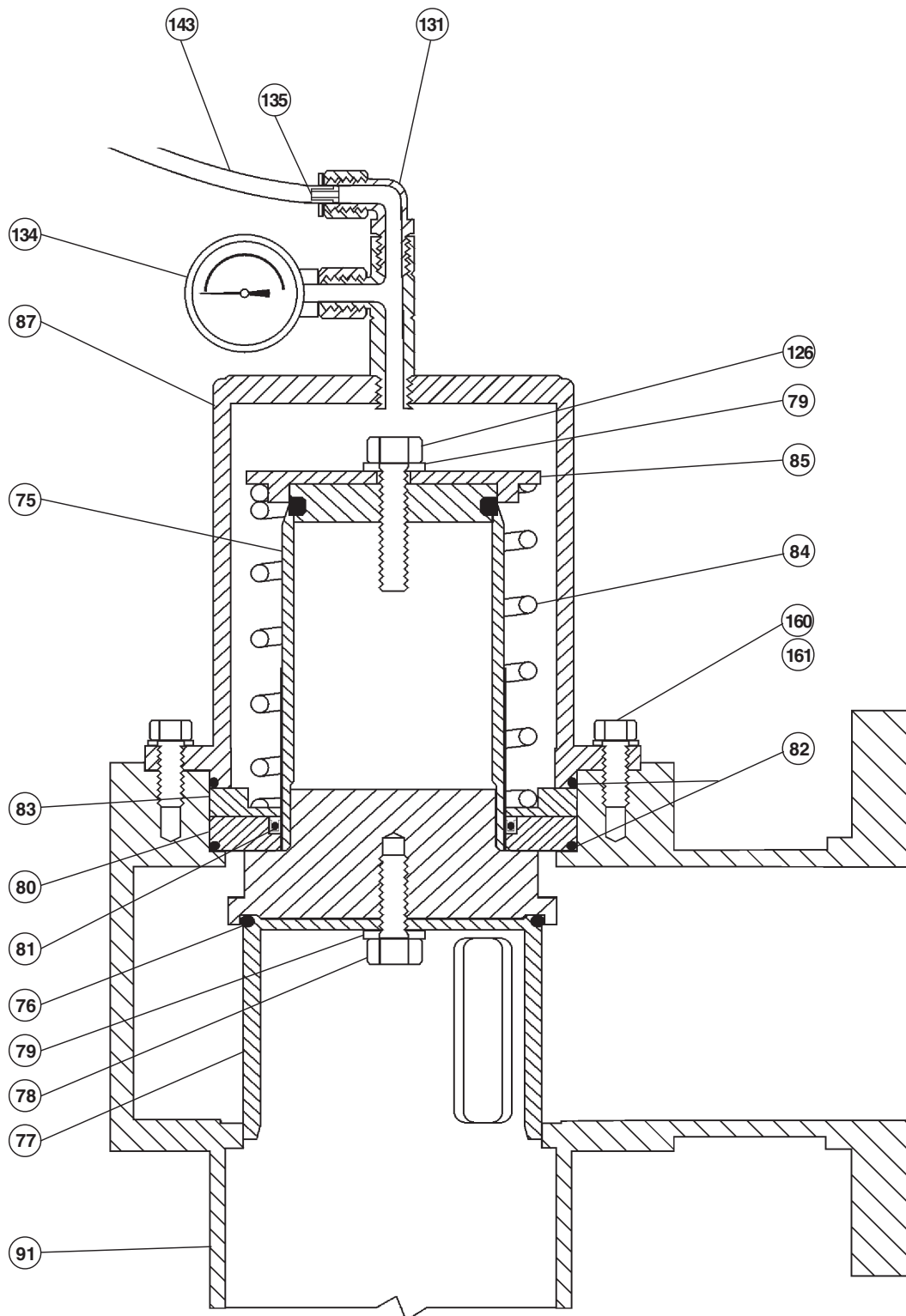
Figure 6. Depad Main Valve (1-inch)



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Figure 7. Depad Main Valve (2-inch)

Type ACE97



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Figure 8. Depad Main Valve (3 and 4-inch)

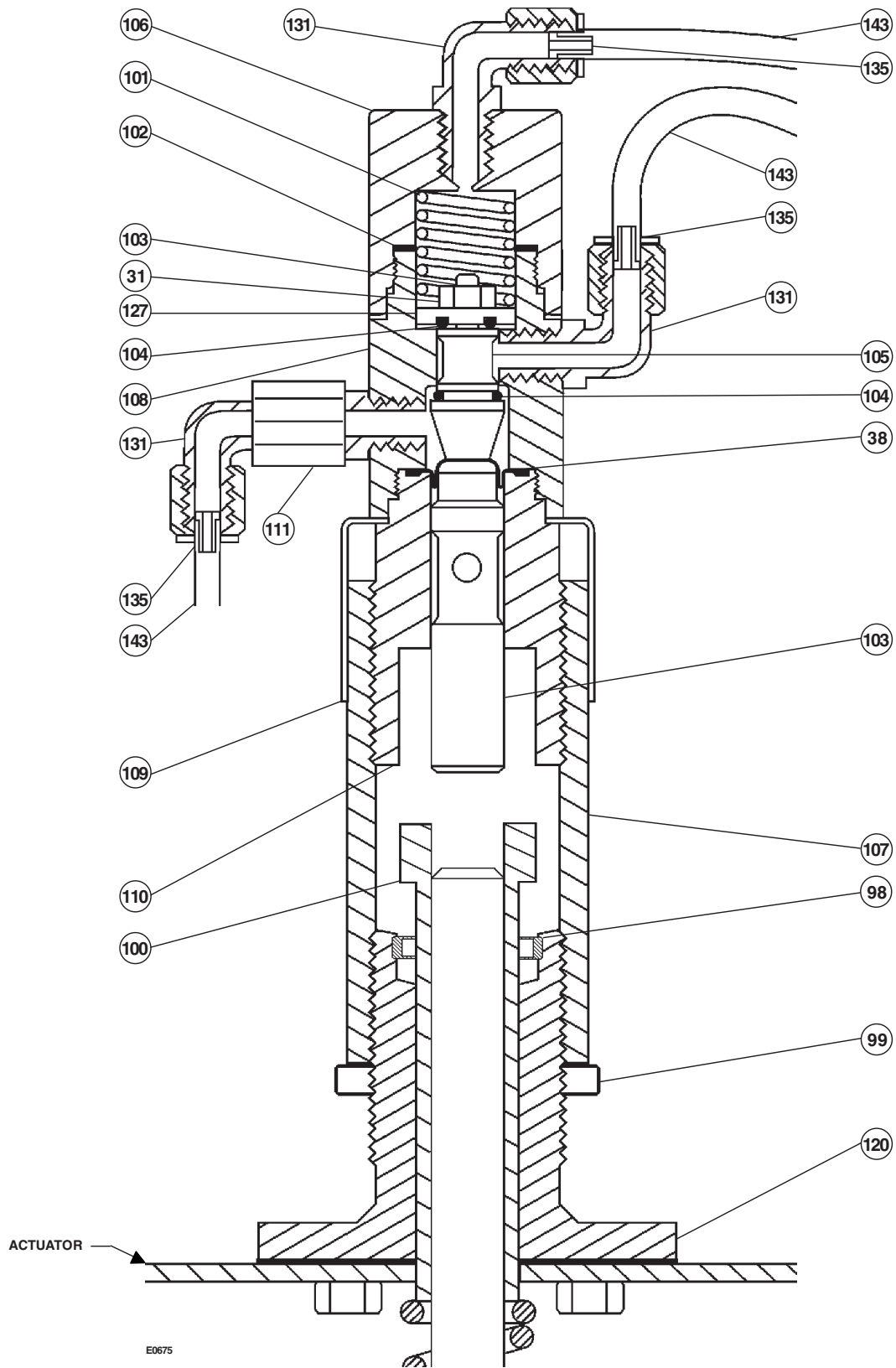


Figure 9. Depad Pilot Valve Parts

Type ACE97

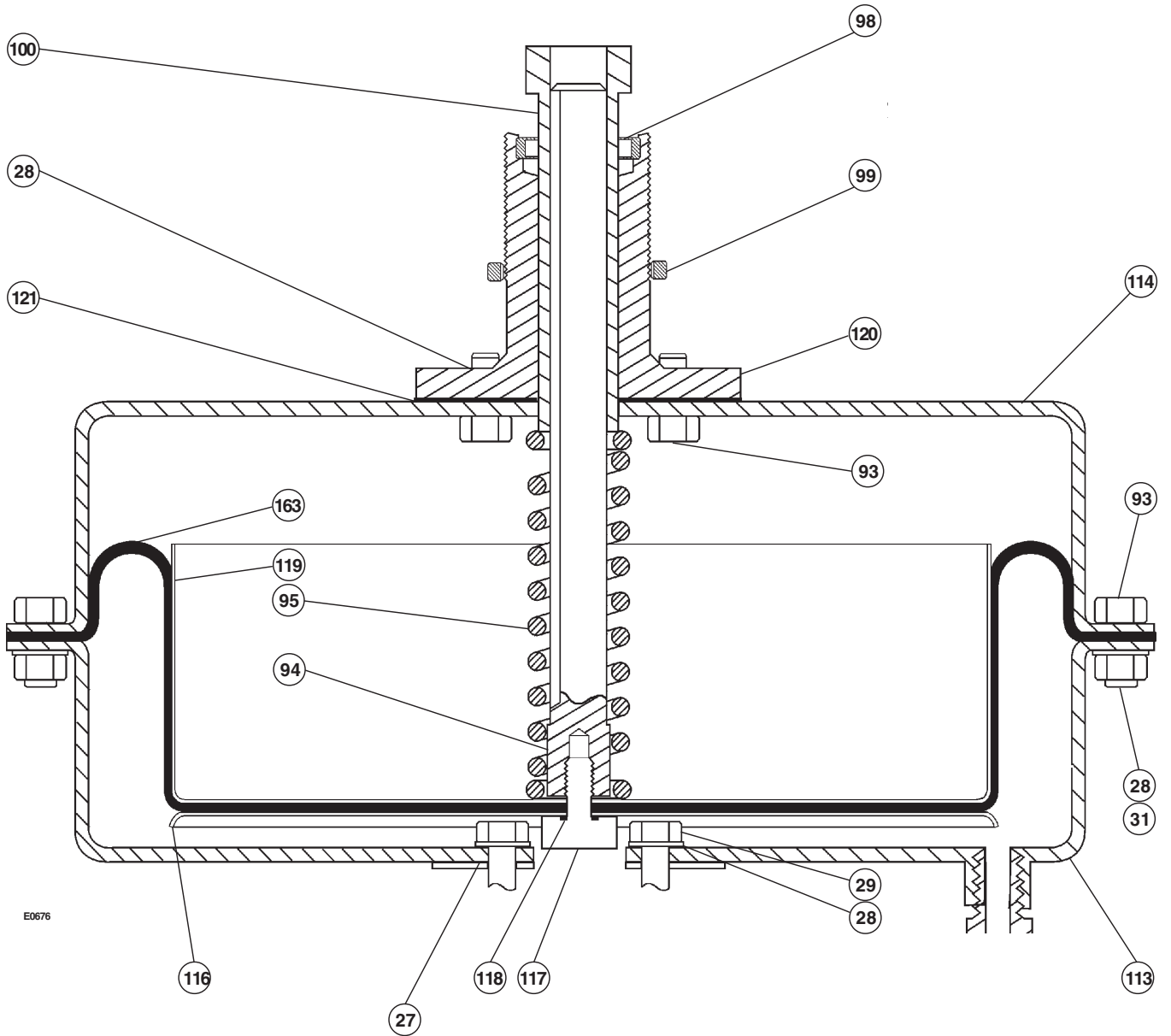


Figure 10. Actuator Parts

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