Type 92W Liquid Regulator

Introduction

Scope of the Manual

This instruction manual provides installation, maintenance, and parts ordering information for the Type 92W liquid pressure-reducing regulator, which includes the Type 6492H or 6492L pilot. Accessories used with this regulator, including any pressure-loading device for a Type 6492H or 6492L pilot with tapped spring case, are covered in other manuals for those accessories.

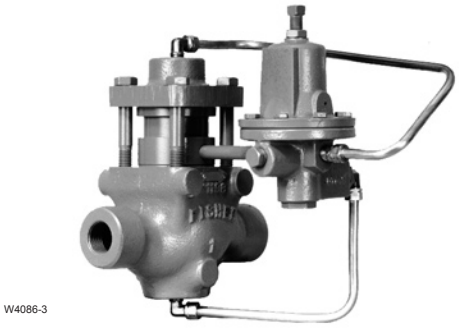
Product Description

The Type 92W pressure-reducing regulator for liquid service includes either a Type 6492H or a Type 6492L pilot (Figure 1). Both pilots have a friction-reducing bellows seal on the stem. They offer precise pressure-setting adjustment plus high sensitivity to downstream pressure changes.

These pilots are available in either a standard version with a drilled spring case vent, or an optional version with a tapped spring case vent and a sealed adjusting screw for pressure-loading service. A Fisher® 67 or 1301 Series regulator or a 670 Series panel-mounted regulator may be used to load the pilot of a version for pressure-loading service.

Specifications

Specifications for the Type 92W regulator are found in the Specifications section.



NPS 1, NPT
STEEL MAIN VALVE WITH TYPE 6492H PILOT

NPS 3 (DN 80), FLANGED
CAST IRON MAIN VALVE WITH TYPE 6492L PILOT

Figure 1. *Typical Connections*

Installation

WARNING

Personal injury, equipment damage, or leakage due to escaping liquid 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 and on the appropriate nameplates, or where conditions exceed any ratings of the adjacent piping or piping connections.

D101268X012

Specifications

Main Valve Body Sizes and End Connection Styles

BODY SIZE, NPS (DN)	END CONNECTION STYLE AND RATING(1)	
	Cast Iron Body	Steel Body
1, 1-1/2, and 2	NPT	NPT
1, 1-1/2, 2, 2-1/2, 3, and 4 (25, 40, 50, 65, 80, and 100)	Flat-faced CL125B or raised-faced CL250B flanged	Raised-faced CL150, CL300, or CL600 flanged

Maximum Inlet and Pilot Supply Pressure(1)

Cast Iron Main Valve and Pilot: 250 psig (17,2 bar) or body rating limit, whichever is lower

Steel Main Valve and Pilot: 300 psig (20,7 bar) or body rating limit, whichever is lower

Maximum Differential Pressure(1)

150 psig (10,3 bar) or body rating limit, whichever is lower

Minumum Differential Pressure(1)

20 psig (1,4 bar)

Outlet (Control) Pressure Ranges

See Table 1

Maximum Outlet Pressures(1)

See Table 2

Maximum Allowable Loading Pressure for Pilot with Tapped Spring Case(1)

Combination of pilot control spring setting and spring case loading pressure must not exceed 150 psig (10,3 bar) for Type 6492H pilot or 25 psig (1,7 bar) for Type 6492L pilot

Main Valve Port Diameters and Flow Coefficients

BODY SIZE, NPS (DN)	PORT DIAMETER		REGULATING CAPACITIES	K_m
	Inches	mm		
1 (25)	7/8	22,2	10	0.62
1-1/2 (40)	1-1/8	28,6	20	0.62
2 (50)	1-29/64	36,9	35	0.62
2-1/2 (65)	1-5/8	41,3	48	0.71
3 (80)	2-1/16	52,4	66	0.71
4 (100)	2-3/8	60,3	78	0.71

Maximum Material Temperature Capabilities(1)

Cast Iron Construction: 406°F (208°C)

Steel Construction: 500°F (260°C)

Pressure Registration

External through downstream control line

Downstream Control Line Connection

NPS 1, 1-1/2, or 2 (DN 25, 40, or 50) Body Size: 1/4 NPT female in main valve cylinder spacer

NPS 2-1/2, 3, or 4 (DN 65, 80, or 100) Body Size: 1/4 NPT female in pilot body

Pilot Spring Case Vent

1/8-inch (3,18 mm) drilled hole (**standard** pilot) or 1/4 NPT female tapping for pressure loading service (optional pilot)

Approximate Weights

BODY SIZE, NPS (DN)	END CONNECTION	APPROXIMATE WEIGHTS	
		Pounds	kg
1 (25)	NPT or flanged	32	14
1-1/2 (40)	NPT or flanged	44	20
2 (50)	NPT	55	25
	Flanged	67	30
2-1/2 (65)	Flanged	90	41
3 (80)	Flanged	115	52
4 (100)	Flanged	165	75

1. The pressure/temperature limits in this Instruction Manual, or any applicable code or standard limitations, must not be exceeded.

To avoid such injury or damage, provide pressure-relieving or pressure-limiting devices to prevent service conditions from exceeding those limits.

Additionally, the pilot could be broken off the main valve by physical damage, causing personal injury and property damage due to escaping liquid. To avoid such injury and damage, install the regulator in a safe location where it is protected from physical damage.

CAUTION

Liquid pressure control systems should be designed using good engineering practices to eliminate quick starting or stopping of the flow stream, which can produce water hammer.

1. Only personnel qualified through training and experience should install, operate, and maintain a Type 92W regulator. Before installation, make sure that there is no damage to, or debris in, the regulator. Also make sure that all tubing and piping are clean and unobstructed.

Table 1. *Outlet (Control) Pressure Ranges*

OUTLET (CONTROL) PRESSURE RANGES				PILOT CONTROL SPRING COLOR CODE (SEE PARTS LIST FOR PART NUMBER)
Psig		bar		
Type 6492L Pilot	Type 6492H Pilot	Type 6492L Pilot	Type 6492H Pilot	
2 to 6 5 to 15 13 to 25	10 to 30 25 to 75 70 to 150	0,14 to 0,41 0,34 to 1,0 0,90 to 1,7	0,69 to 2,1 1,7 to 5,2 4,8 to 10,3	Yellow Green Red

Table 2. *Maximum Outlet Pressures*

CONSTRUCTION	MAXIMUM OPERATING OUTLET PRESSURE	MAXIMUM EMERGENCY OUTLET PRESSURE (IF EXCEEDED, PRESSURE VESSEL INTEGRITY MAY NOT BE RETAINED AND PERSONAL INJURY OR PROPERTY DAMAGE COULD RESULT)	
		Cast Iron Main Valve and Pilot Body	Steel Main Valve and Pilot Body
With Type 6492H pilot	150 psig (10,3 bar)	250 psig (17,2 bar) or main valve body rating limit, whichever is lower	300 psig (20,7 bar) or main valve body rating limit, whichever is lower
With Type 6492L pilot	25 psig (1,7 bar)	50 psig (3,4 bar)	125 psig (8,6 bar)

2. A Type 92W regulator may be installed in any orientation, as long as flow through the regulator matches the direction of the arrow on the main valve body.

3. Apply liquid-compatible pipe compound to the male pipeline threads for an NPT body, or use suitable line gaskets for a flanged body. Use acceptable piping procedures when installing the regulator.

4. If continuous operation of the system is required during inspection and maintenance, install a three-valve bypass around the regulator. If the flowing medium contains solids, install a properly sized strainer upstream of the regulator.

Note

A regulator that has the Type 6492H or 6492L pilot with a 1/8-inch (3,2 mm) drilled hole in the spring case may function improperly if this spring case vent hole becomes clogged. Install and maintain such regulator so that the spring case vent hole stays clear.

5. As shown in Figure 2, connect a control line as large as possible but no smaller than 3/8-inch (9,5 mm) diameter bushed down to the 1/4 NPT connection in the cylinder spacer (NPS 1, 1-1/2, or 2 body size) (DN 25, 40, or 50) or the pilot body (NPS 2-1/2, 3, or 4 body size) (DN 65, 80, or 100). With the NPS 2-1/2, 3, or 4 (DN 65, 80, or 100 body size, the pilot may be mounted as shown in Figure 6 so that the control line connection faces either upstream or downstream.

6. Locate the control line connection at least 10 pipe diameters away from the regulator or swage and in a section of straight pipe.

7. Do not locate the control line connection in a gate, plug, or check valve; or in an elbow, swage, or other area of the pipeline where turbulence or abnormal velocities may occur; or in a large-volume vessel that can cause noticeable control lag.

8. Install a shutoff valve (not a needle valve) in the control line to isolate the pilot during maintenance.

9. Install a pressure gauge in the control line, or near the regulator, to aid in setting the outlet pressure.

10. With a pressure-loaded or on-off pilot, connect the pressure-loading or on-off piping or tubing to the 1/4 NPT connection in the tapped pilot spring case.

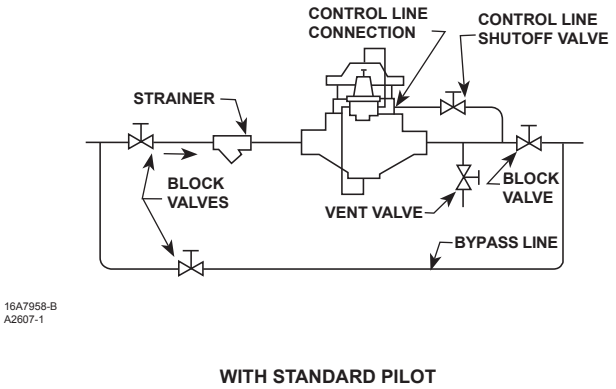
11. The pressure setting of the regulator is determined by:

    - The pilot control spring adjustment on a standard pilot, or
    - The pressure-loading device in conjunction with the control spring adjustment on a pressure-loaded pilot. In both cases, check these settings to make sure they are correct for the application.

Startup and Adjustment

Note

The maximum inlet pressure for a specific construction is stamped on the main valve nameplate. Use pressure gauges to monitor upstream and downstream pressures during startup.



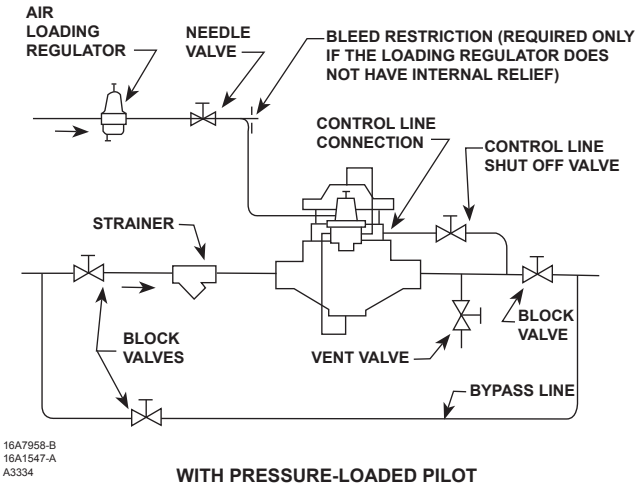


Figure 2. *Typical Installations*

Adjustment

On a regulator with a standard or pressure-loaded Type 6492H or 6492L pilot, loosen the hex nut (key 16, Figure 4). Turn the adjusting screw (key 15, Figure 4) into the spring case to increase the downstream pressure. Turn the adjusting screw out of the spring case to decrease the downstream pressure. When the required downstream pressure is maintained for several minutes, tighten the hex nut to lock the adjusting screw in position.

On a regulator with a pressure-loaded Type 6492H or 6492L pilot, also refer to the instruction manual of the pressure-loading device for downstream pressure adjustment procedures. Make sure that the combined pilot control spring setting pressure and spring case loading pressure does not exceed 150 psig (10,3 bar) for the Type 6492H pilot or 25 psig (1,7 bar) for the Type 6492L pilot. For example, combining a 5 psig (0,34 bar) spring setting pressure and a 10 psig (0,69 bar) spring case loading pressure results in a regulator pressure of 15 psig (1,0 bar).

Startup with New Regulator Installation

1. Remove all pilot control spring compression by turning the adjusting screw out of the spring case according to the adjustment procedure.
2. Slowly open the upstream block valve.
3. Open the downstream block valve.
4. Open the control line shutoff valve.
5. If a bypass is used, slowly close the bypass line block valve.
6. Perform the adjustment procedure until the downstream pressure reaches the desired setting.

Startup with Existing Regulator Installation After Normal Shutdown

1. Open the upstream and downstream block valves and let the regulator take over control at the existing pilot control spring setting.
2. If a bypass line is used, slowly control the bypass line block valve.

Shutdown

1. If a bypass line is used, slowly open the bypass line block valve while monitoring the downstream pressure.
2. Close the control line shutoff valve.
3. Close the downstream block valve.
4. Close the upstream block valve.
5. If a pressure-loaded or on-off pilot is used, close the needle valve to the pilot.
6. Vent the regulator and control line to release any trapped pressure.

Principle of Operation

Pilot supply pressure is piped from the main valve inlet (Figure 3) to the pilot inlet connection. Downstream pressure registers on the main valve pistons through the downstream control line and then on the pilot diaphragm.

When increased downstream demand lowers the downstream pressure to a value below the setting of the pilot control spring, this spring forces the pilot valve plug open to increase the loading pressure on the main valve

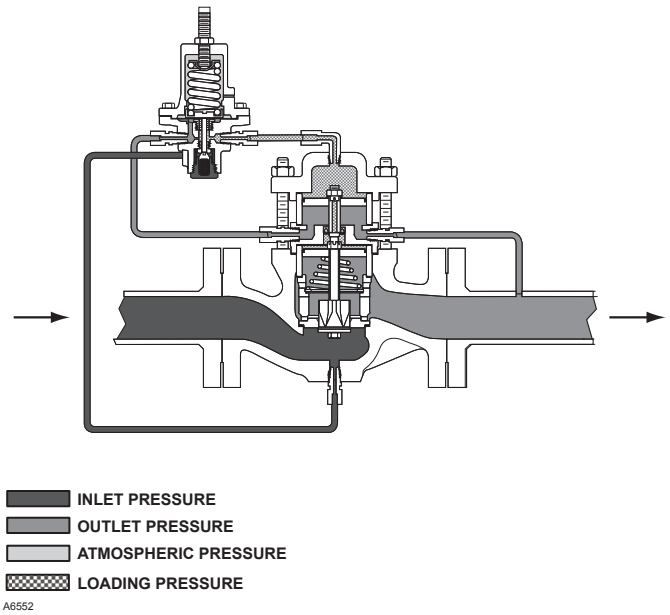


Figure 3. *Operational Schematics*

pistons. At the same time, the increased demand lowers the downstream pressure on the main valve piston(s). This opens the main valve plug, increasing flow to the downstream system to satisfy the increased demand and to restore downstream pressure to the setting of the pilot control spring.

Decreased downstream demand increases the downstream pressure registered on the pilot diaphragm. The increased pressure overcomes the force of the pilot control spring and allows the pilot valve plug spring to close the pilot valve plug. As the pilot valve plug closes, excess loading pressure bleeds to the downstream system through the pilot bleed restriction. At the same time, decreased downstream demand increases the downstream pressure registered on the main valve piston(s). This allows the main valve spring to close the main valve plug, reducing flow to the downstream system in response to the decreased demand.

With a pressure-loaded or on-off pilot, the operation is the same as for a standard pilot except that the pilot control spring force on the pilot valve plug is aided by pneumatic pressure from the loading device or solenoid valve.

Maintenance

Regulator parts are subject to normal wear and must be inspected periodically and replaced as necessary. The frequency of inspection and replacement depends upon the severity of service conditions and upon applicable codes and government regulations.

WARNING

Avoid personal injury or damage to property from sudden release of pressure or uncontrolled process fluid. Before starting to disassemble:

- **Isolate the regulator from the process,**
- **Release process pressure, and**
- **Vent the pilot supply and main valve loading pressures.**

Types 6492H and 6492L Pilots

These procedures are to be performed if inspecting, cleaning, or replacing any pilot parts, or if cycling, erratic control, or too high or too low an outlet (control) pressure is noted. Perform only those procedures in this section required to correct the problem. Key numbers refer to Figure 4 unless otherwise noted.

Note

Before performing any maintenance, loosen the hex nut (key 16), if used, and turn the adjusting screw (key 15) counterclockwise until all compression is removed from the control spring (key 12). Remove the pilot from the pipe nipple and connectors (keys 82 and 83, Figure 6).

1. Unscrew the plug guide (key 2). Remove the screen (key 77), plug (key 4), plug spring (key 3), and stem (key 7). Unscrew the seat ring (key 5). Examine the seat ring and plug seating surfaces for damage.
2. Clean and replace parts as necessary. Apply Led-Plate Number 250[1] sealant or equivalent to the seat ring threads. Thread the seat ring into place and tighten it to between 19 and 25 foot-pounds (26 and 34 N•m) of torque.
3. Handle the parts carefully, and place the plug spring (key 3) in the plug guide (key 2). Slide the plug (key 4) over the spring and into the plug guide. Place the screen (key 77) onto the plug guide. Place the stem (key 7) in the center hole of the plug guide. Apply Led-Plate Number 250 sealant or equivalent to the plug guide threads, and screw the guide plus attached parts into the body (key 1).
4. Remove the pipe plug and bleed restriction (keys 74 and 76). Clean or replace the restriction as necessary.
5. Sparingly apply Led-Plate Number 250 sealant or equivalent to the threads of the restriction, and thread the restriction into place.
6. Apply Led-Plate Number 250 sealant or equivalent to the threads of the pipe plug. Thread the pipe plug into place and tighten it to between 5 and 15 foot-pounds (7,0 and 20 N•m) of torque.
7. Remove the cap screws (key 17), spring case (key 14), control spring (key 12), and upper spring seat (key 13) from the body.
8. Remove the lower spring seat (key 11, Type 6492H pilot only) or diaphragm assembly (key 24, Type 6492L pilot only), diaphragms (key 10), and diaphragm gasket (key 18) from the body. Inspect and clean the diaphragm gasket, and replace it if necessary.
9. Unscrew the bellows retainer (key 8) and remove the bellows (key 9). Replace worn parts as necessary, and install the bellows and bellows retainer. Tighten the bellows retainer to between 19 and 25 foot-pounds (26 and 34 N•m).
10. Install the diaphragm gasket. Install both diaphragms with their raised preformed centers facing toward the spring case.
11. Lubricate the upper spring seat and the exposed threads of the adjusting screw with Never-Seez[2] lubricant or equivalent. Install the lower spring seat (key 11, Type 6492H pilot only) or diaphragm assembly (key 24, Type 6492L pilot only), control spring (key 12), upper spring seat (key 13), and spring case (key 14). Insert and tighten the cap screws (key 17) to between 12 and 18 foot-pounds (16,0 and 24,00 N•m) of torque, using a crisscross bolting pattern.
12. When pilot maintenance is complete, refer to the startup and adjustment procedure to put the regulator back in operation and adjust the pressure setting.

1. Trademark of Armite Laboratories.
2. Trademark of Never-Seez Corp.

Type 92W Main Valve

Perform these procedures if replacing the piston(s), cylinder(s), stem(s), seals, valve plug, or seat ring. All key numbers are referenced in Figure 5 except where otherwise indicated. Instructions are given for complete disassembly and assembly. Disassemble the main valve only as far as necessary to complete the required maintenance. Then, begin the assembly procedure at the appropriate step.

Note

The regulator may remain in the pipeline during maintenance procedures unless the main valve body is replaced or removed for repairs.

Whenever a gasket seal is disturbed by removing or shifting gasketed parts, a new gasket should be installed upon reassembly. This is necessary to ensure a good gasket seal.

Disassembly

1. Disconnect all tubing and remove the pilot from the main valve.
2. Remove the cap screws (key 3, not shown) from a cast iron body, or stud nuts (key 4) from a steel body, and lift off the body flange.
3. For the NPS 1, 1-1/2, and 2 sizes (DN 25, 40, and 50), remove the top cylinder (key 17), and pull out the top piston with attached stem and other parts. Remove the hex nut (key 41), lock washer (key 40), top ring retainer (key 26), and top piston ring (key 25) from the top piston (key 24).
4. For the NPS 1, 1-1/2, and 2 sizes (DN 25, 40, and 50), lift off the cylinder spacer (key 21), and remove the stem seal retainer (key 23) and stem seal (key 22) from the spacer.
5. Remove the cylinder (key 17), piston (key 24) with attached parts, and spiral wound gasket (key 8).
6. Remove the cotter pin (key 16, NPS 1, 1-1/2, and 2 sizes only) (DN 25, 40, and 50), stem nut (key 15), bottom stem (key 9) with hex head, valve plug (key 6), piston ring retainer (key 26), piston ring (key 25), bottom piston ring retainer (key 26, NPS 1, 1-1/2, and 2 sizes only) (DN 25, 40, and 50), piston (key 24), spring (key 12), piston spacer (key 11), cage (key 5), and seat ring (key 7).

7. Either remove the retaining ring (key 14), or, if it is necessary to remove the baffle (key 13), remove the spring seat, washer, and O-ring (keys 32, 34, and 38). With an NPS 2-1/2 through 4 (DN 65 through 100) sizes only, also remove the plug spacer (key 33).

Assembly

1. Inspect and replace parts as necessary, making sure that the hollow passage in the top stem (NPS 1, 1-1/2, and 2 sizes only) (DN 25, 40, and 50) is free from debris.
2. Install a spiral wound gasket (key 8) into the body (key 1).
3. If installing a new valve plug and/or a new seat ring, lap the seating surfaces together outside the body. Use a commercial lapping compound or a mixture of solidified vegetable oil and 600-grit or finer silicon carbide or aluminum oxide.
4. Install the baffle (key 13), plug spacer (key 33) if used, and either the retaining ring (key 14) or the O-ring, washer, and spring seat (keys 38, 34, and 32), and then install the seat ring (key 7), valve plug (key 6), and stem (key 9) into the cage (key 5). Then, install the piston spacer (key 11) down through the baffle until it contacts the valve plug. Install the spring (key 12), and secure with the piston (key 24), piston ring (key 25) with its open end pointing out, piston ring retainer (key 26), and stem nut (key 15).

   For the NPS 1, 1-1/2, and 2 sizes (DN 25, 40, and 50), lock the stem nut in place with a cotter pin (key 16), but do not fold the pin ends up on top of the stem since this can interfere with loading pressure registration through the top stem passage.
5. Install the main piston cage assembly with attached parts into the body. Coat one of the serrated edges of the main cylinder (key 17) with Led-Plate Number 250 sealant or equivalent, install a new cylinder gasket (key 18) onto this edge, and install the cylinder gasket-side-up on the cage.
6. Install a new body gasket (key 19) onto the appropriate edge of the body.
7. For NPS 1, 1-1/2, and 2 sizes (DN 25, 40, and 50), install the stem seal (key 22) onto the cylinder spacer (key 21) in the orientation shown in Figure 5, and secure with the stem seal retainer (key 23). Coat the serrated edge of the spacer with Led-Plate Number 250 sealant or equivalent, and install the spacer edge-side-down over the bottom cylinder.
8. For NPS 1, 1-1/2, and 2 sizes (DN 25, 40, and 50), install the top piston ring (key 25) with its open end pointing out, ring retainer (key 26), and stem (key 20) on the top piston. Secure these parts with the lock washer and hex nut (keys 40 and 41). Install the top piston plus attached parts stem-first through the stem seal until the top stem contacts the bottom stem.
9. For NPS 1, 1-1/2, and 2 sizes (DN 25, 40, and 50), coat both serrated edges of the top cylinder (key 17) with Led-Plate Number 250 sealant or equivalent, install new cylinder gaskets (key 18) on these edges, and install the cylinder down over the top piston into the cylinder spacer.
10. Install the body flange (key 2) on the body, and secure with the cap screws (key 3, not shown) for a cast iron body or with the stud nuts (key 4) for a steel body.
11. Install the pilot and connect all tubing as shown in Figure 6.
12. When all maintenance is complete, refer to the startup and adjustment procedure to put the regulator back into operation and adjust the pressure setting.

Parts Ordering

When corresponding with a local Sales Office about this equipment, always reference the equipment serial number as found on the regulator nameplates.

When ordering replacement parts, reference the complete 11-character part number of each needed part as found in the following parts list.

Parts List

Types 6492L and 6492H Pilots (Figure 4)

Key	Description	Part Number
	Repair Kits (included are keys 4, 5, 7 8, 9, 10, and 18)	
	Type 6492L pilot	R6492LX0012
	Type 6492H pilot	R6492HX0012
1	Body	
	Cast Iron	
	Type 6492L pilot	32A0404X012
	Type 6492H pilot	22A0403X012
	Steel	
	Type 6492L pilot	32A0404X052
	Type 6492H pilot	22A0403X052
2	Plug Guide, Stainless steel	1E391835132
3	Plug Spring, 302 Stainless steel	1E392437022
4*	Plug, 302 Stainless steel	1F967446172
5*	Seat Ring, 416 Stainless steel	1H564446172
7*	Stem, 416 Stainless steel	1F967835132
8*	Bellows Retainer, Brass	1F971214012
9*	Bellows, Brass	1F971318992
10*	Diaphragm, 302 Stainless steel (2 required)	
	Type 6492L pilot	1E396936012
	Type 6492H pilot	1E395836012

*Recommended spare part.

Key	Description	Part Number
11	Lower Spring Seat, Aluminum (Type 6492H pilot only)	1E395408012
12	Control Spring, Steel, Cadmium Plate (see Table 1 for outlet pressure ranges)	
	Yellow color code	1E395627022
	Green color code	1D745527142
	Red color code	1E395727192
13	Upper Spring Seat Steel, Cadmium Plate	1D667125072
14	Spring Case	
	Standard cast iron	
	Type 6492L pilot	3J496319012
	Type 6492H pilot	2J496219012
	Tapped cast iron	
	Type 6492L pilot	3L442119012
	Type 6492H pilot	2L441919012
	Standard steel	
	Type 6492L pilot	3L416122012
	Type 6492H pilot	2L416322012
	Tapped steel	
	Type 6492L pilot	3L442222012
	Type 6492H pilot	2L442022012
15	Adjusting Screw (standard spring case only) steel, Cadmium Plate	1D995448702
16	Hex Nut (standard spring case only), steel, Cadmium Plate	1A353724122
17	Cap Screw, steel, plate (10 required for Type 6492L pilot and 8 required for Type 6492H pilot)	1A381624052
18*	Diaphragm Gasket, Encapsulated Fiber Asbestos	
	Type 6492L pilot	1E397004022
	Type 6492H pilot	1E396104022
19	Drive Screw, SST (2 required)	1A368228982
20	Nameplate, Aluminum	19A3510X0A2
24	Diaphragm Plate Assembly, Aluminum/Steel/Stainless steel (Type 6492L pilot only)	1E3967X0012
74	Pipe Plug, Steel	0Z020128992
76	Bleed Restriction, 304 Stainless steel	19A2612X012
77	Screen, 304 Stainless steel	16A1512X012
78	Reducing Bushing, Carbon steel	1C379026232
79	Never-Seez Lubricant, 1 gallon (3,8 L) can (not furnished)	1M523906992
80	Led-Plate No. 250 Sealant, 5 pounds (2 kg) can (not furnished)	1M524006992
87	Sealing Washer, Carbon steel (tapped spring case only)	1V205699012

Type 92W Main Valve (Figure 5)

	Repair Kits (included are keys 8, 16, 18, 19, 25, and 38)	
	NPS 1 (DN 25) body	R92SX000052
	NPS 1-1/2 (DN 40) body	R92SX000062
	NPS 2 (DN 50) body	R92SX000072
	NPS 2-1/2 (DN 65) body	R92EX0000B2
	NPS 3 (DN 80) body	R92EX000032
	NPS 4 (DN 100) body	R92EX000042
1	Body	See following Table
2	Body Flange	
	Cast iron	
	NPS 1 (DN 25) body	26A7837X012
	NPS 1-1/2 (DN 40) body	26A7900X012
	NPS 2 (DN 50) body	26A7869X012
	NPS 2-1/2 (DN 65) body	27A1548X012
	NPS 3 (DN 80) body	27A1576X012
	NPS 4 (DN 100) body	27A1600X012
	WCC steel	
	NPS 1 (DN 25) body	26A7838X012
	NPS 1-1/2 (DN 40) body	26A7901X012

Key	Description	Part Number
2	Body Flange	
	WCC steel (continued)	
	NPS 2 (DN 50) body	26A7870X012
	NPS 2-1/2 (DN 65) body	27A1549X012
	NPS 3 (DN 80) body	27A1577X012
	NPS 4 (DN 100) body	27A1601X012
3	Cap Screw (not shown), Plate steel (for cast iron body)	
	NPS 1 (DN 25) body (4 required)	16A7839X012
	NPS 1-1/2 or 2 (DN 40 or 50) body (8 required)	1U625631192
	NPS 2-1/2 (DN 65) body (8 required)	1R281124052
	NPS 3 (DN 80) body (8 required)	1A454124052
	NPS 4 (DN 100) body (8 required)	1A440224052
3	Stud Bolt, B7 Steel (for steel body)	
	NPS 1 (DN 25) body (4 required)	1V5426X0012
	NPS 1-1/2 or 2 body (DN 40 or 50) (8 required)	16A7902X012
	NPS 2-1/2 (DN 65) body (8 required)	1R284831012
	NPS 3 (DN 80) body (8 required)	1A378131012
	NPS 4 (DN 100) body (8 required)	1R369031012
4	Stud Nut, Steel (for steel body)	
	NPS 1 (DN 25) body (4 required)	1C330624072
	NPS 1-1/2 or 2 (DN 40 or 50) body (8 required)	1A377224072
	NPS 2-1/2 (DN 65) body (8 required)	1C330624072
	NPS 3 (DN 80) body (8 required)	1A376024072
	NPS 4 (DN 100) body (8 required)	1A352024072
5	Cage, Cast Iron	
	NPS 1 (DN 25) body	29A1379X012
	NPS 1-1/2 (DN 40) body	26A7903X012
	NPS 2 (DN 50) body	26A7872X012
	NPS 2-1/2 (DN 65) body	27A1550X012
	NPS 3 (DN 80) body	27A1578X012
	NPS 4 (DN 100) body	27A1602X012
6	Valve Plug, 17-4PH Stainless steel	
	NPS 1 (DN 25) body	16A7842X012
	NPS 1-1/2 (DN 40) body	16A7904X012
	NPS 2 (DN 50) body	16A7873X012
	NPS 2-1/2 (DN 65) body	27A1552X012
	NPS 3 (DN 80) body	27A1580X012
	NPS 4 (DN 100) body	27A1604X012
7	Seat Ring, 416 Stainless steel	
	NPS 1 (DN 25) body	16A7844X012
	NPS 1-1/2 (DN 40) body	16A7906X012
	NPS 2 (DN 50) body	16A7875X012
	NPS 2-1/2 (DN 65) body	27A1553X012
	NPS 3 (DN 80) body	27A1581X012
	NPS 4 (DN 100) body	27A1605X012
8*	Spiral Wound Gasket, 316L Stainless steel and Graphite	
	NPS 1 (DN 25) body	16A7845X012
	NPS 1-1/2 (DN 40) body	16A7907X012
	NPS 2 (DN 50) body	16A7876X012
	NPS 2-1/2 (DN 65) body	17A1554X012
	NPS 3 (DN 80) body	17A1582X012
	NPS 4 (DN 100) body	17A1606X012
9	Bottom Stem, Plate steel	
	NPS 1 (DN 25) body	16A7846X012
	NPS 1-1/2 (DN 40) body	16A7908X012
	NPS 2 (DN 50) body	16A7877X012
	NPS 2-1/2 (DN 65) body	17A1556X012
	NPS 3 (DN 80) body	17A1584X012
	NPS 4 (DN 100) body	17A1608X012
11	Piston Spacer, Steel	
	NPS 1 (DN 25) body	16A7848X012
	NPS 1-1/2 (DN 40) body	16A7910X012
	NPS 2 (DN 50) body	16A7879X012
	NPS 2-1/2 (DN 65) body	17A1558X012
	NPS 3 (DN 80) body	17A1585X012
	NPS 4 (DN 100) body	17A1610X012

*Recommended spare part.

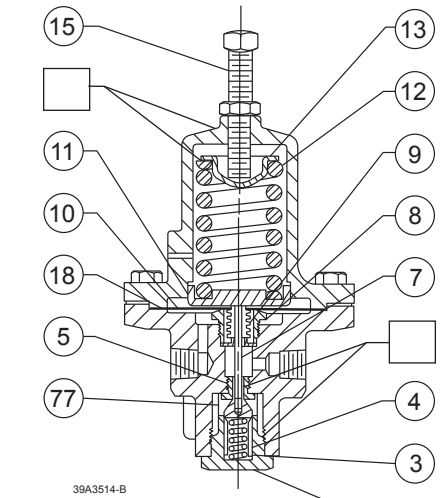
Key 1 Body

BODY MATERIAL	END CONNECTION STYLE	BODY SIZE, NPS (DN)					
		1 (25)	1-1/2 (40)	2 (50)	2-1/2 (65)	3 (80)	4 (100)
Cast iron	NPT	26A7830X012	26A7893X012	26A7862X012	- - - -	- - - -	- - - -
	CL125 FF	26A7831X012	26A7894X012	26A7863X012	37A1543X012	37A1571X012	37A1595X012
	CL250 RF	26A7832X012	26A7895X012	26A7864X012	37A1544X012	37A1572X012	37A1596X012
WCC steel	NPT	26A7833X012	26A7896X012	26A7865X012	- - - -	- - - -	- - - -
	CL150 RF	26A7834X012	26A7897X012	26A7866X012	37A1545X012	37A1573X012	37A1597X012
	CL300 RF	26A7835X012	26A7898X012	26A7867X012	37A1546X012	37A1574X012	37A1598X012
	CL600 RF	26A7836X012	26A7899X012	26A7868X012	37A1547X012	37A1575X012	37A1599X012

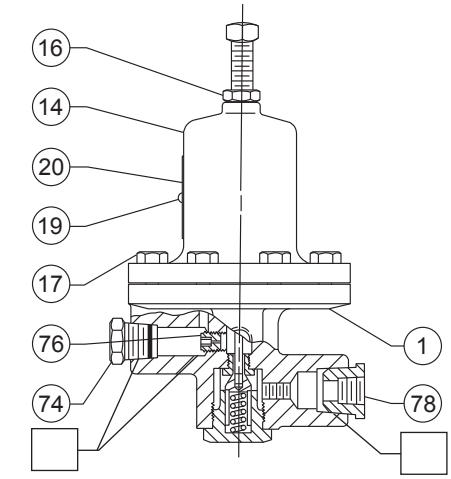
Key	Description	Part Number
12	Spring, Spring Wire	
	NPS 1 (DN 25) body	16A7849X012
	NPS 1-1/2 (DN 40) body	16A7911X012
	NPS 2 (DN 50) body	16A7880X012
	NPS 2-1/2 (DN 65) body	17A1559X012
	NPS 3 (DN 80) body	17A1586X012
	NPS 4 (DN 100) body	17A1611X012
13	Baffle, Stainless steel	
	NPS 1 (DN 25) body	19A1378X012
	NPS 1-1/2 (DN 40) body	16A7912X012
	NPS 2 (DN 50) body	16A7881X012
	NPS 2-1/2 (DN 65) body	17A1560X012
	NPS 3 (DN 80) body	17A1587X012
	NPS 4 (DN 100) body	17A1612X012
14	Retaining Ring, Steel	
	NPS 1 (DN 25) body	16A7851X012
	NPS 1-1/2 (DN 40) body	16A7913X012
	NPS 2 (DN 50) body	16A7882X012
15	Stem Nut, Steel	
	NPS 1 (DN 25) body	16A7852X012
	NPS 1-1/2 or 2 (DN 40 or 50) body	16A7914X012
	NPS 2-1/2 or 3 (DN 65 or 80) body	1A413224122
	NPS 4 (DN 100) body	1A420124122
16	Cotter Pin, Stainless steel	
	NPS 1 (DN 25) body	16A7930X012
	NPS 1-1/2 or 2 (DN 40 or 50) body	17A5574X012
17	Cylinder, 416 Stainless steel	
	NPS 1 (DN 25) body (2 required)	16A7853X012
	NPS 1-1/2 body (DN 40) (2 required)	16A7915X012
	NPS 2 (DN 50) body (2 required)	16A7884X012
	NPS 2-1/2 (DN 65) body (1 required)	17A1561X012
	NPS 3 (DN 80) body (1 required)	17A1588X012
	NPS 4 (DN 100) body (1 required)	17A1613X012
18*	Cylinder Gasket, Copper	
	NPS 1 (DN 25) body (3 required)	16A7854X012
	NPS 1-1/2 (DN 40) body (3 required)	16A7916X012
	NPS 2 (DN 50) body (3 required)	16A7885X012
	NPS 2-1/2 (DN 65) body (1 required)	14A5685X022
	NPS 3 (DN 80) body (1 required)	17A1589X012
	NPS 4 (DN 100) body (1 required)	17A1614X012
19*	Body Gasket, Copper	
	NPS 1 (DN 25) body	14A6785X022
	NPS 1-1/2 (DN 40) body	14A3384X022
	NPS 2 (DN 50) body	14A5685X022
	NPS 2-1/2 (DN 65) body	17A1563X012
	NPS 3 (DN 80) body	13A0354X022
	NPS 4 (DN 100) body	14A5650X022
20	Top Stem, Stainless steel	
	NPS 1 (DN 25) body	16A7855X012
	NPS 1-1/2 or 2 (DN 40 or 50) body	16A7886X012
21	Cylinder Spacer, Steel	
	NPS 1 (DN 25) body	26A7856X012
	NPS 1-1/2 (DN 40) body	26A7918X012
	NPS 2 (DN 50) body	26A7887X012
22	Stem Seal, Polytetrafluoroethylene (PTFE)/glass	
	NPS 1 (DN 25) body	16A7962X012
	NPS 1-1/2 or 2 (DN 40 or 50) body	16A7963X012

Key	Description	Part Number
23	Stem Seal Retainer, Stainless steel	
	NPS 1 (DN 25) body	16A7857X012
	NPS 1-1/2 or 2 (DN 40 or 50) body	16A7888X012
24	Piston, 416 Stainless steel	
	NPS 1 (DN 25) body (2 required)	19A6005X012
	NPS 1-1/2 (DN 40) body (2 required)	19A6006X012
	NPS 2 (DN 50) body (2 required)	19A6007X012
	NPS 2-1/2 (DN 65) body (1 required)	17A1564X012
	NPS 3 (DN 80) body (1 required)	17A1590X012
	NPS 4 (DN 100) body (1 required)	17A1615X012
25	Piston Ring, PTFE	
	NPS 1 (DN 25) body (2 required)	19A6010X012
	NPS 1-1/2 (DN 40) body (2 required)	19A6011X012
	NPS 2 (DN 50) body (2 required)	19A6012X012
	NPS 2-1/2 (DN 65) body (1 required)	17A1565X012
	NPS 3 (DN 80) body (1 required)	17A1591X012
	NPS 4 (DN 100) body (1 required)	17A1616X012
26	Ring Retainer, 302 Stainless steel	
	NPS 1 (DN 25) body (2 required)	16A7860X012
	NPS 1-1/2 (DN 40) body (2 required)	16A7922X012
	NPS 2 (DN 50) body (2 required)	16A7891X012
	NPS 2-1/2 (DN 65) body (1 required)	17A1566X012
	NPS 3 (DN 80) body (1 required)	17A1592X012
	NPS 4 (DN 100) body (1 required)	17A1617X012
28	Nameplate, Stainless steel	16A7917X0A2
29	Flow Arrow, Stainless steel	
	NPS 1 (DN 25) body	1V105938982
	NPS 1-1/2, 2, 2-1/2, 3, or 4 (DN 40, 50, 65, 80, or 100) body	1V106038982
30	Drive Screw, Stainless steel (4 required)	1A368228982
31	Led-Plate Number 250 Sealant, 5 pounds (2 kg) can (not furnished with regulator)	1M524006992
32	Spring Seat, Carbon steel	
	NPS 2-1/2 (DN 65) body	17A1567X012
	NPS 3 (DN 80) body	17A1593X012
	NPS 4 (DN 100) body	17A1618X012
33	Plug Spacer, steel	
	NPS 2-1/2 (DN 65) body	17A1568X012
	NPS 3 (DN 80) body	17A1594X012
	NPS 4 (DN 100) body	17A1619X012
34	Washer, Carbon steel	
	NPS 2-1/2 or 3 (DN 65 or 80) body	17A1569X012
	NPS 4 (DN 100) body	17A1620X012
35	Groove Pin, Stainless steel	
	NPS 2-1/2 (DN 65) or larger body	1C8989X0012
38*	O-Ring, PTFE	
	NPS 2-1/2 or 3 (DN 65 or 80) body	17A7396X012
	NPS 4 (DN 100) body	17A7397X012
40	Lockwasher, Stainless steel	
	NPS 1 (DN 25) body	1F128035022
	NPS 1-1/2 or 2 (DN 40 or 50) body	1A505638992
41	Hex Nut	
	NPS 1 (DN 25) body, 316 Stainless steel	1A391535252
	NPS 1-1/2 or 2 (DN 40 or 50) body, Zinc-plated steel	1A346524122

*Recommended spare part.

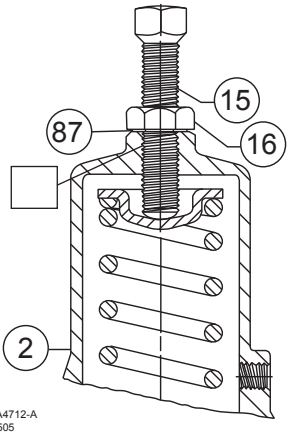


☐ APPLY LUB/SEALANT

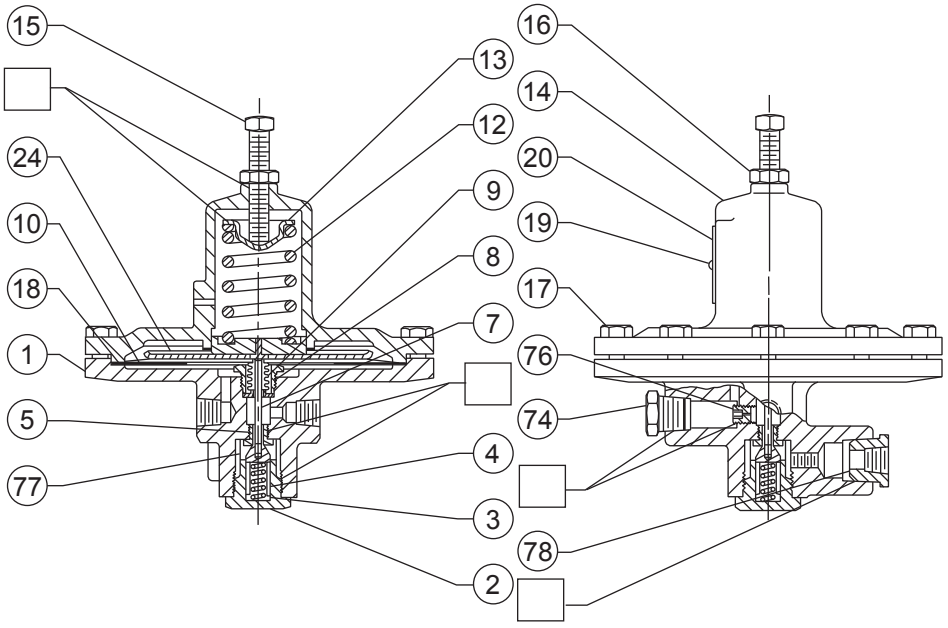


☐ APPLY LUB/SEALANT

COMPLETE TYPE 6492H PILOT



DETAIL OF TAPPED SPRING CASE WITH SEALED ADJUSTING SCREW



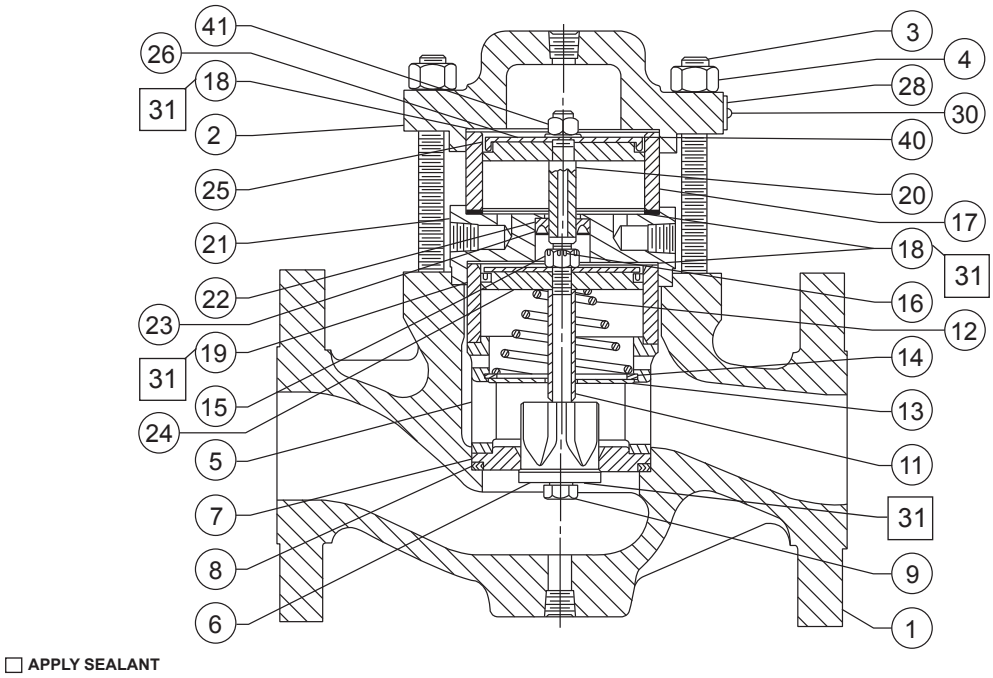
☐ APPLY LUB/SEALANT

COMPLETE TYPE 6492L PILOT

Figure 4. *Pilot Assemblies*

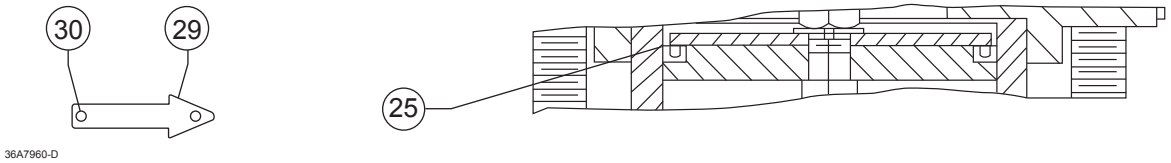
Pilot Mounting Parts (Figure 6)

Key	Description	Part Number
81	Loading Tubing, Copper	0500201701W
82	Pipe Nipple, Steel	1U264426232
83	Connector, Brass	15A6002X202
84	Elbow, brass (3 required for NPS 1, 1-1/2, or 2 body size and 1 required for larger sizes) (DN 25, 40, or 50)	15A6002X162
85	Inlet Tubing, copper (NPS 1, 1-1/2, or 2 body only) (DN 25, 40, or 50)	0500201701W
86	Elbow, carbon steel (NPS 2-1/2 through 4 body only) (DN 65 thru 100)	1B8608X0012

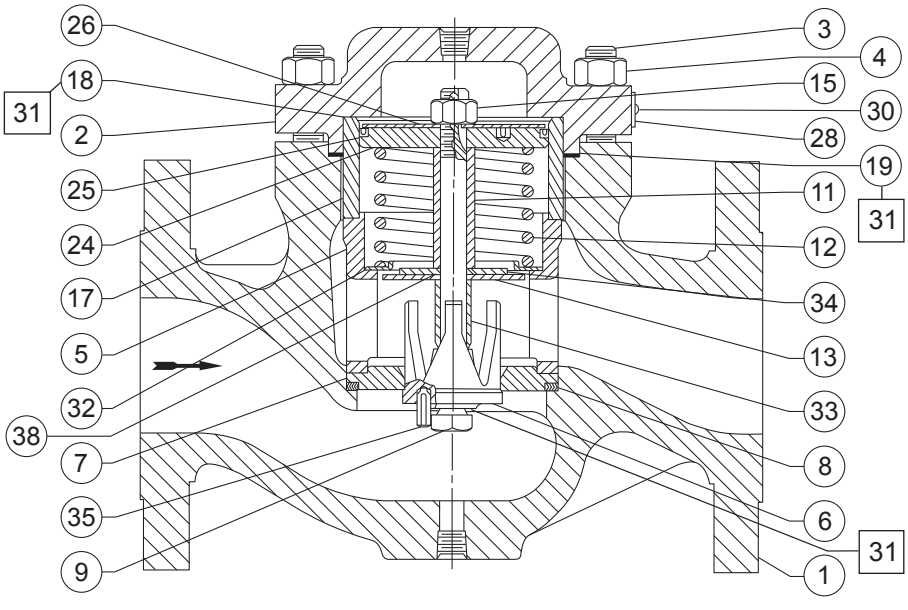


□ APPLY SEALANT

NPS 1, 1-1/2, OR 2 (DN 25, 40, OR 50) BODY SIZE

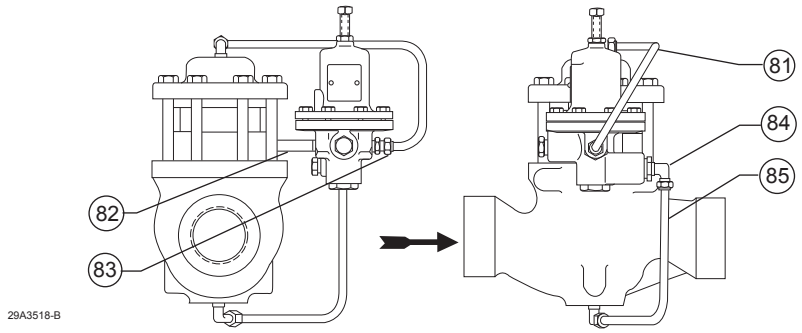


CORRECT ORIENTATION OF PISTON RING (KEY 25)

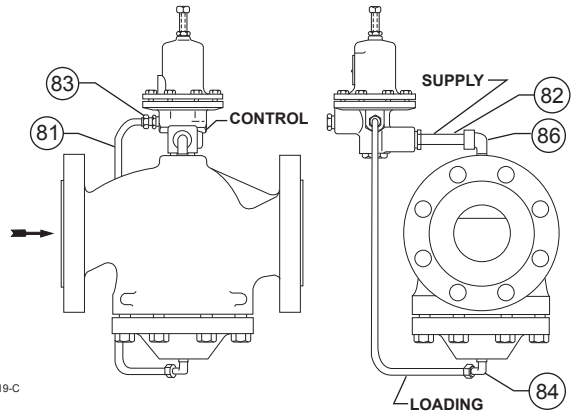


NPS 2-1/2, 3, OR 4 (DN 65, 80, OR 100) BODY SIZE

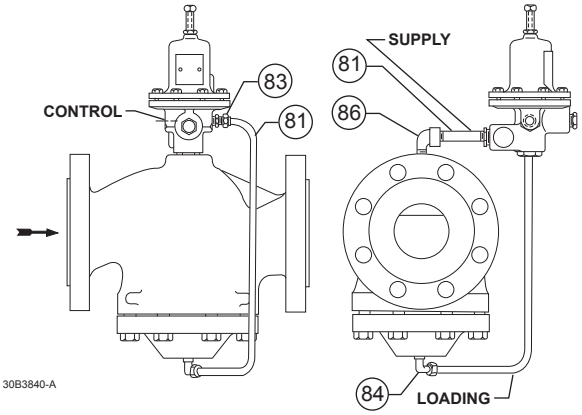
Figure 5. *Type 92W Main Valve Assemblies*



NPS 1, 1-1/2, OR 2 (DN 25, 40, OR 50) BODY SIZE



WITH PILOT MOUNTED IN STANDARD POSITION SO CONTROL LINE CONNECTION FACES DOWNSTREAM



WITH PILOT MOUNTED IN OPTIONAL POSITION SO CONTROL LINE CONNECTION FACES UPSTREAM

NPS 2-1/2, 3, OR 4 (DN 65, 80, OR 100) BODY SIZE

Figure 6. *Pilot Mounting Parts*

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