

January 2025

Type 92B Pressure Reducing Valve



WARNING

Failure to follow these instructions or to properly install and maintain this equipment could result in an explosion, fire and/or chemical contamination causing property damage and personal injury or death.

Fisher™ regulators must be installed, operated and maintained in accordance with federal, state and local codes, rules and regulations and Emerson Process Management Regulator Technologies, Inc. (Emerson) instructions.

If the regulator vents gas or a leak develops in the system, service to the unit may be required. Failure to correct trouble could result in a hazardous condition.

Installation, operation and maintenance procedures performed by unqualified personnel may result in improper adjustment and unsafe operation. Either condition may result in equipment damage or personal injury. Use qualified personnel when installing, operating and maintaining the Type 92B regulator.

Introduction

Scope of the Manual

This manual provides instructions for installation, startup, maintenance and parts ordering information for the Type 92B Valve. Instructions and parts lists for other equipment used with these valves are found in separate manuals. The Type 92B is also available with a Type 6492HM or 6492HTM safety override pilot.

Product Description

The Type 92B Pressure Reducing Valve is the standard steam valve for industry. It can withstand



W8264

Figure 1. Type 92B Pressure Reducing Valve

dirty operating environments while providing accurate and stable pressure control. The Type 92B is applied as a main pressure reducing valve in industrial process heating applications such as heat exchangers, evaporators, digesters and reactors. Commercial applications include pressure reducing valves for meter runs found in district energy systems, hot water heat exchangers, absorption chillers and boiler deaerator tanks.

A Type 6492HM safety override pilot is available for the Type 92B. The Type 92B pilot is used in a series installation with the Type 6492HM safety override pilot installed on the upstream valve. The Type 6492HM safety override pilot senses pressure downstream of the second valve and prevents pressure from rising above safe operating pressure in the event the downstream valve fails. This system is approved by ASME B31.1-1989, 122.14.2.A and can replace an ASME safety valve when vent piping is not practical and upstream steam pressure does not exceed 400 psig / 27.6 barg. Local codes and standards may require approval by an appropriate authority prior to installation.

Type 92B

Specifications

Specifications are given for the Type 92B valve on below. Specifications for a given valve as it originally comes from the factory are stamped on the nameplate.

| | |
|--|---|
| <p>Available Configurations Pilot-operated globe-style pressure reducing valve with post guiding and flow-to-close valve plug action</p> <p>Body Sizes and End Connection Styles See Table 1</p> <p>Body Ratings and Maximum Inlet Pressures⁽¹⁾ See Table 3</p> <p>Maximum Outlet (Casing) Pressure Cast iron: 150 psig / 10.3 bar or body rating limit, whichever is lower Steel/Stainless steel: 300 psig / 20.7 barg or body rating limit, whichever is lower</p> <p>Outlet Pressure Ranges⁽¹⁾ See Table 2</p> | <p>Minimum Differential Pressure Required for Full Stroke⁽¹⁾ 20 psig / 1.4 barg with stainless steel spring; 10 psig / 0.69 barg with Inconel® spring</p> <p>Pressure Registration External</p> <p>Temperature Capabilities⁽¹⁾ See Table 3</p> <p>Downstream Control Line Connections NPS 1 and 1-1/2 / DN 25 and 40 bodies: 1/4 NPT NPS 2 / DN 50 body: 3/8 NPT NPS 3 and 4 / DN 80 and 100 bodies: 1/2 NPT</p> |
|--|---|

1. The pressure/temperature limits in this Instruction Manual or any applicable standard limitation should not be exceeded.

Table 1. Body Sizes and End Connection Styles

| BODY SIZE | | END CONNECTION STYLE | |
|-------------|------------|----------------------------------|--|
| NPS | DN | CAST IRON BODY | STEEL OR STAINLESS STEEL BODY |
| 1 | 25 | NPT | NPT, SWE ⁽¹⁾ , CL150 RF, CL300 RF and PN 16/25/40 RF |
| 1-1/2 and 2 | 40 and 50 | NPT, CL125 FF and CL250 RF | |
| 3 and 4 | 80 and 100 | CL125 FF and CL250 RF | CL150 RF, CL300 RF, PN 16 RF and PN 25/40 RF |

1. Available in steel bodies only.

Table 2. Outlet Pressure Ranges

| PILOT TYPE | OUTLET PRESSURE | | PART NUMBER | COLOR CODE | SPRING WIRE DIAMETER | | SPRING FREE LENGTH | |
|------------------|-----------------|--------------|-------------|------------|----------------------|------|--------------------|------|
| | psig | barg | | | in. | mm | in. | mm |
| Low Pressure | 2 to 6 | 0.14 to 0.41 | 1E395627022 | Yellow | 0.207 | 5.26 | 2.50 | 63.5 |
| | 5 to 15 | 0.34 to 1.0 | 1D7455T0012 | Green | 0.234 | 5.94 | 2.62 | 66.5 |
| | 13 to 25 | 0.90 to 1.7 | 1E395727192 | Red | 0.283 | 7.19 | 2.44 | 62.0 |
| High Pressure | 15 to 30 | 1.0 to 2.1 | 1E395627022 | Yellow | 0.207 | 5.26 | 2.50 | 63.5 |
| | 25 to 75 | 1.7 to 5.2 | 1D7455T0012 | Green | 0.234 | 5.94 | 2.62 | 66.5 |
| | 70 to 150 | 4.8 to 10.3 | 1E395727192 | Red | 0.283 | 7.19 | 2.44 | 62.0 |
| High Temperature | 15 to 100 | 1.0 to 6.9 | 14B9943X012 | Unpainted | 0.282 | 7.16 | 2.50 | 63.5 |
| | 80 to 250 | 5.5 to 17.2 | 14B9942X022 | Unpainted | 0.375 | 9.53 | 2.50 | 63.5 |



WARNING

The Type 92B safety override system does not provide positive shutoff in dead end service. It is intended for large distribution systems where steam

leakage will condense before steam pressure builds up. Downstream piping and components must be rated for maximum upstream steam pressure for dead end service. Failure to do so could cause personal injury or death.

Inconel® is a mark owned by Special Metals Corporation.

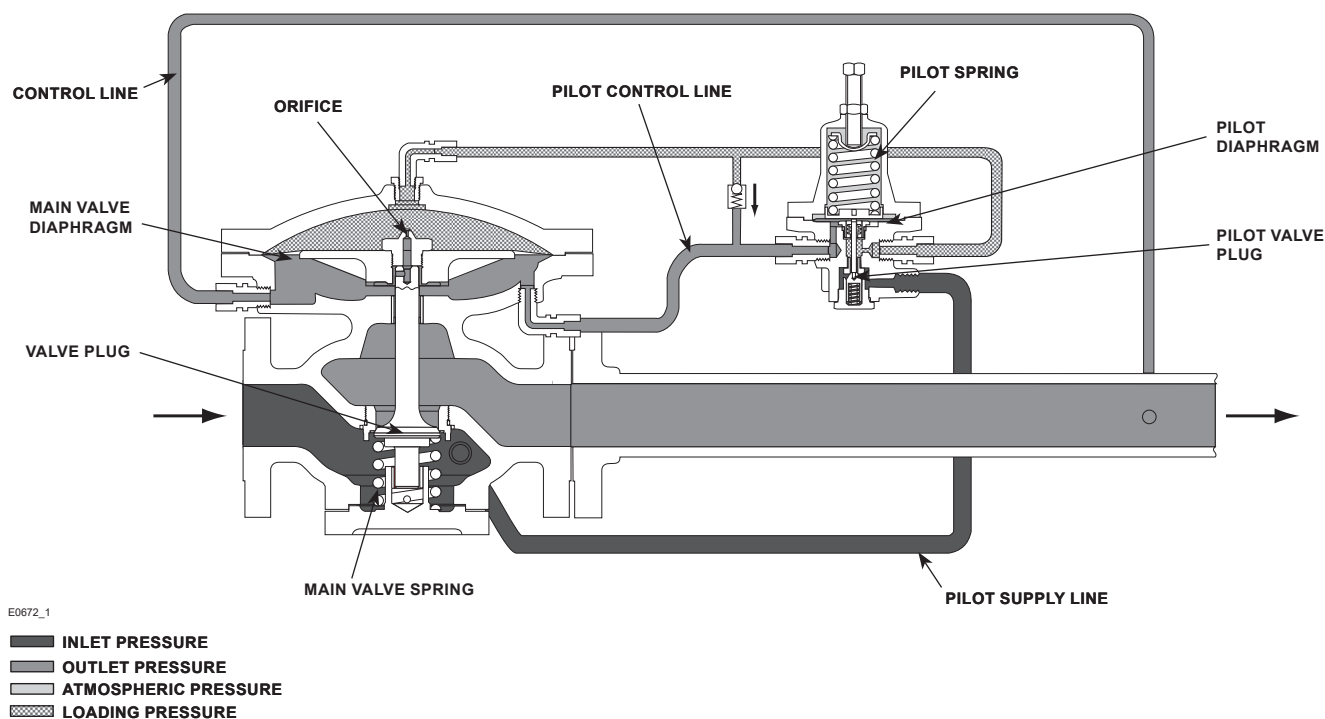


Figure 2. Type 92B Operational Schematic

Principle of Operation

Refer to the operational schematic in Figure 2. Compression of the pilot spring pushes the diaphragm down and holds the pilot valve plug open. Outlet pressure is changed by varying the amount of pilot spring compression.

When steam enters the inlet of the valve, it also enters the pilot supply line and flows through the open pilot valve to the top of the main diaphragm. The force created by this steam pressure on the diaphragm overcomes the force of the main valve spring opening the valve plug and allowing steam to flow downstream. Downstream pressure registers under the main diaphragm through the control line and tends to balance the diaphragm. Steam from the downstream system also registers under the pilot diaphragm through line. Pressure forces the diaphragm upward, permitting the pilot valve plug to move toward the closed position. Flow of steam to the top of the main diaphragm is thereby reduced and the pressure on main diaphragm drops due to the bleed through the orifice. The main valve moves toward the closed position, allowing only enough steam flow to satisfy downstream requirements.

When steam demand increases, the downstream pressure decreases below the setting of the pilot

spring. The pilot opens to increase the pressure on the main diaphragm. The main valve opens to increase the flow downstream. Conversely, if the steam demand decreases, the downstream pressure increases and the pilot reacts to decrease the pressure on top of the main diaphragm. The main valve throttles toward the closed position and the steam flow decreases. Thus, through the combination of pilot and main valve operation, control of the downstream steam pressure is maintained.

A check valve is included in all Type 92B pilots to limit differential pressure on the main valve diaphragm. In the event of a large decrease in downstream pressure, the check valve opens to relieve diaphragm loading pressure to the downstream system. The check valve cartridge assembly has a factory setting to limit differential pressure across the diaphragm to approximately 40 psid / 2.8 bard. If diaphragm differential pressure exceeds 40 psid / 2.8 bard, the check valve opens to relieve diaphragm loading pressure into the downstream system, thereby preventing a high differential across the diaphragm which might otherwise cause diaphragm damage. The check valve closes and normal operation resumes when the differential pressure across the diaphragm is reduced to the proper level.

Type 92B

Table 3. Maximum Inlet Pressures and Temperatures

| BODY MATERIAL | END CONNECTION | MAXIMUM INLET PRESSURE | | MAXIMUM TEMPERATURE | |
|-----------------|--|------------------------|------|---------------------|--------------------|
| | | psig | barg | °F | °C |
| Cast iron | NPT | 250 | 17.2 | 406 | 208 |
| | CL125 FF | 125 | 8.6 | 353 | 178 |
| | CL250 RF | 250 | 17.2 | 406 | 208 |
| Steel | NPT | 300 | 20.7 | 450 | 232 |
| | SWE | 300 | 20.7 | 450 | 232 |
| | CL150 RF | 185 | 12.8 | 450 | 232 |
| | CL300 RF | 300 | 20.7 | 600 | 316 ⁽¹⁾ |
| | PN 16/25/40 (NPS 1, 1-1/2, 2 and 3 / DN 25, 40, 50 and 80) | 300 | 20.7 | 450 | 232 |
| | PN 16 (NPS 4 / DN 100) | 185 | 12.8 | 450 | 232 |
| | PN 25/40 (NPS 4 / DN 100) | 300 | 20.7 | 450 | 232 |
| Stainless steel | NPT | 300 | 20.7 | 450 | 232 |
| | CL150 RF | 175 | 12.1 | 450 | 232 |
| | CL300 RF | 300 | 20.7 | 450 | 232 |
| | PN 16/25/40 (NPS 1, 1-1/2, 2 and 3 / DN 25, 40, 50 and 80) | 300 | 20.7 | 450 | 232 |
| | PN 16 (NPS 3 and 4 / DN 80 and 100) | 175 | 12.1 | 450 | 232 |
| | PN 25/40 (NPS 3 and 4 / DN 80 and 100) | 300 | 20.7 | 450 | 232 |

1. 450°F / 232°C with standard seat ring, 600°F / 316°C with seal weld option.

Type 6492HM Safety Override System

Refer to Figure 3. Once placed in operation, the upstream Type 92B (B) pilot senses the intermediate pressure between both valves, and the Type 6492HM (A) pilot senses downstream pressure of the second valve. As demand for flow increases, intermediate pressure will fall causing the Type 92B pilot to open. As the Type 92B pilot opens, loading pressure to the main valve increases, opening the main valve.

The Type 6492HM (A) safety override pilot remains open because its setpoint is above the setpoint of the downstream valve. In the unlikely event that the downstream valve fails open, downstream pressure will rise above the downstream valve's setpoint. This pressure is sensed by the Type 6492HM (A) safety override pilot. As downstream pressure increases the Type 6492HM (A) safety override pilot closes, reducing loading pressure to the upstream main valve, which positions the main valve to maintain desired downstream override pressure.

In the event that the upstream valve fails, the downstream valve will prevent downstream pressure from rising above safe operating levels.

It is recommended to install some type of warning system, such as a sentinel relief valve, to warn the operator that a valve has failed in the system. This will prevent prolonged operation with one valve, which could cause valve trim wear and noise associated with operation at high differential pressures.

Installation



WARNING

Regulators should be installed, operated and maintained in accordance with federal, state and local codes, rules and regulations and Emerson instructions. If the regulator vents steam 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.

Call a service man in case of trouble. Only a qualified person must install or service the regulator.



CAUTION

Be sure to install Type 92B pilot above the pipeline with the adjusting screw pointing up and the control line sloped at a downward pitch to the main line to ensure proper condensate drainage.

The following points should be kept in mind when installing this pressure reducing valve. See Figure 4 for a schematic drawing of a typical installation.

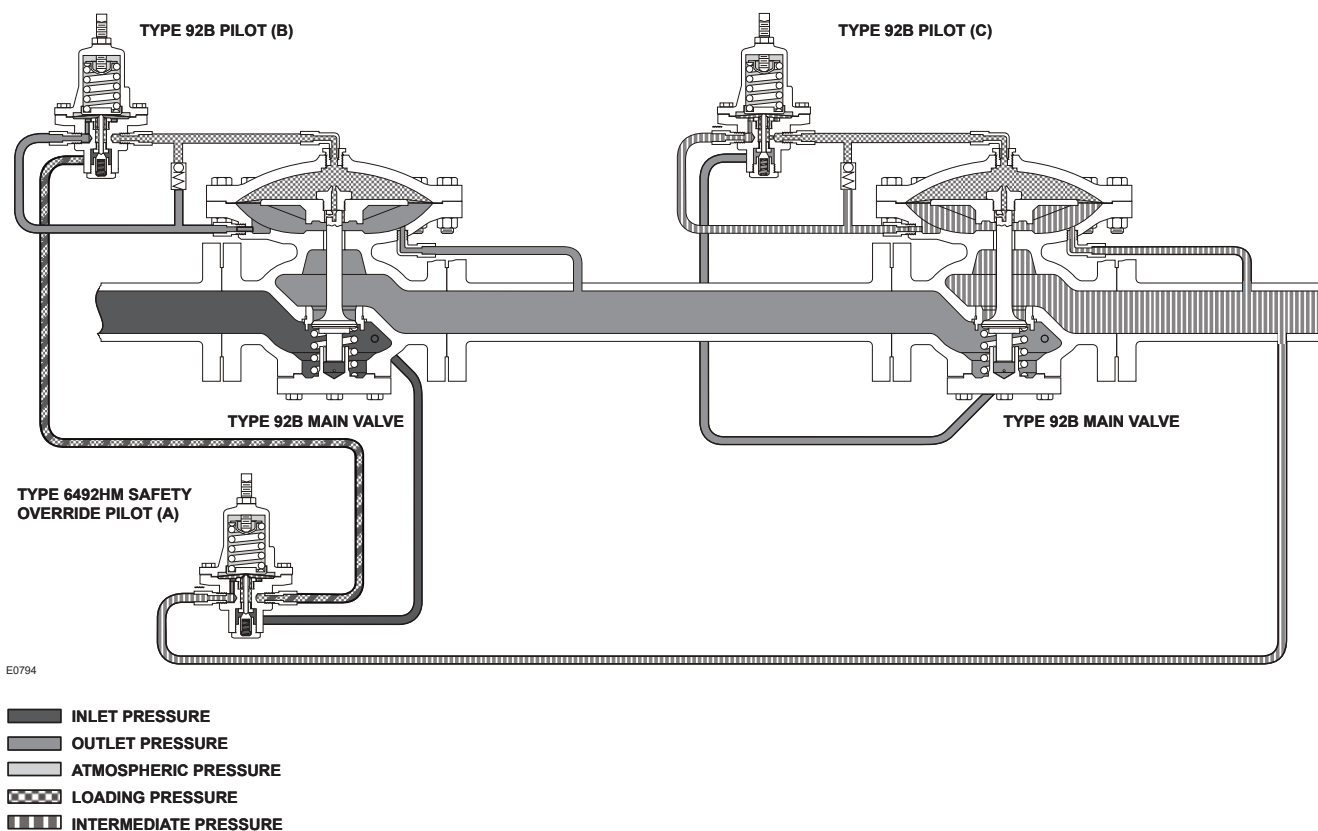


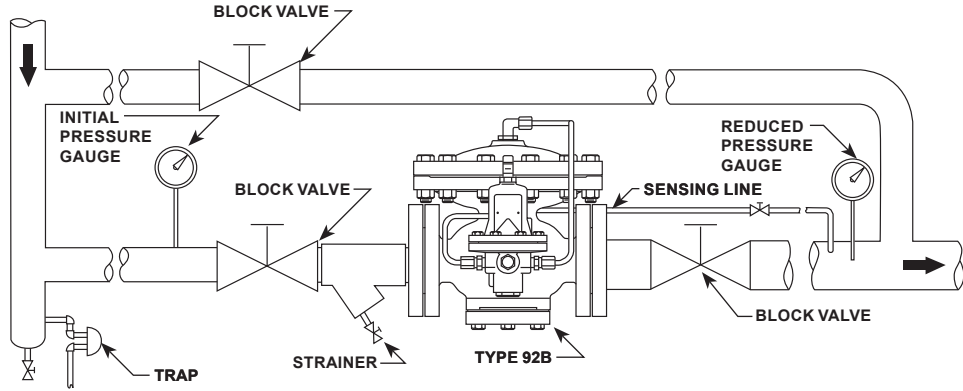
Figure 3. Safety Override System Schematic

Table 4. Minimum Differential Pressures for Safety Override System

| TYPE | SPRING RANGE | | SPRING COLOR | MINIMUM PRESSURE AT WHICH MONITORING PILOT CAN BE SET, psig / bar |
|---------|--------------|-------------|--------------|---|
| | psig | bar | | |
| 6492HM | 10 to 30 | 0.69 to 2.1 | Yellow | 10 / 0.69 over normal downstream pressure |
| | 25 to 75 | 1.7 to 5.17 | Green | 10 / 0.69 over normal downstream pressure |
| | 70 to 150 | 4.8 to 10.3 | Red | 15 / 1.0 over normal downstream pressure |
| 6492HTM | 15 to 100 | 1.0 to 6.9 | Unpainted | 10 / 0.69 over normal downstream pressure |
| | 80 to 250 | 5.5 to 17.2 | Unpainted | 25 / 1.7 over normal downstream pressure |

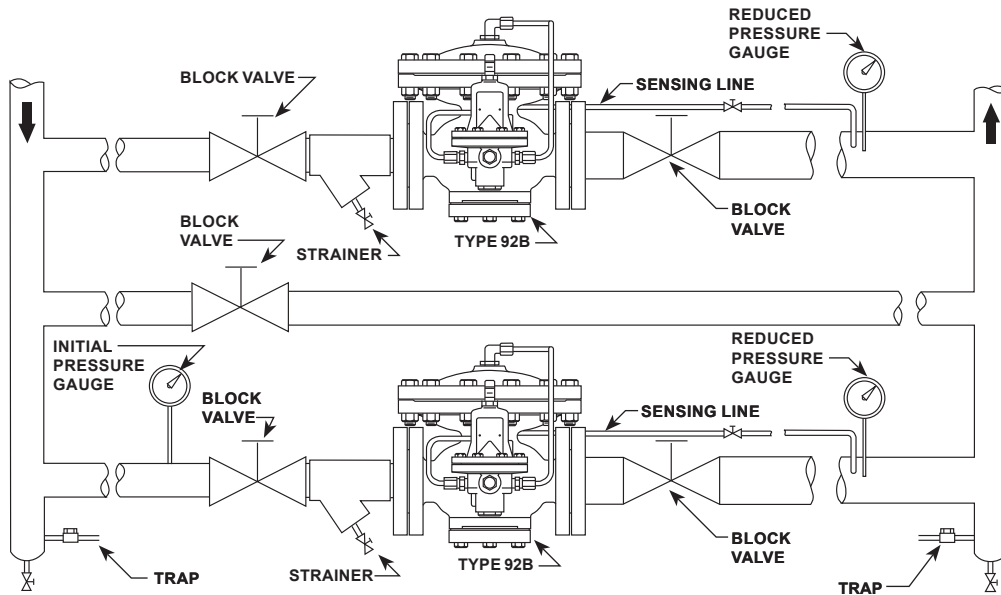
1. Inspect the Type 92B for any shipment damage. Remove any foreign materials that may have collected in the valve during shipment.
2. Blow down the pipeline as required.
3. Install a strainer ahead of the Type 92B to protect the internal parts of the valve.
4. Install an upstream block valve ahead of the Type 92B and a downstream block valve, if required, so that the valve can be isolated and serviced. If continuous operation is necessary during maintenance or inspection, install bypass piping and valve around the Type 92B.
5. This Type 92B is intended to be installed with the diaphragm case above the pipeline so that condensate will not collect in the case.
6. Install the Type 92B in the pipeline so that the flow will be in the direction indicated by the arrow cast on the body. Follow normal piping procedures when installing the screwed or flanged control valve.
7. Install the external control line as follows:
 - a. Connect one end of the control line to the Type 92B body tapping. This tapping is 1/4 NPT for NPS 1 and 1-1/2 / DN 25 and 40 bodies, 3/8 NPT for NPS 2 / DN 50 body and 1/2 NPT for NPS 3 and 4 / DN 80 and 100 bodies.

Type 92B



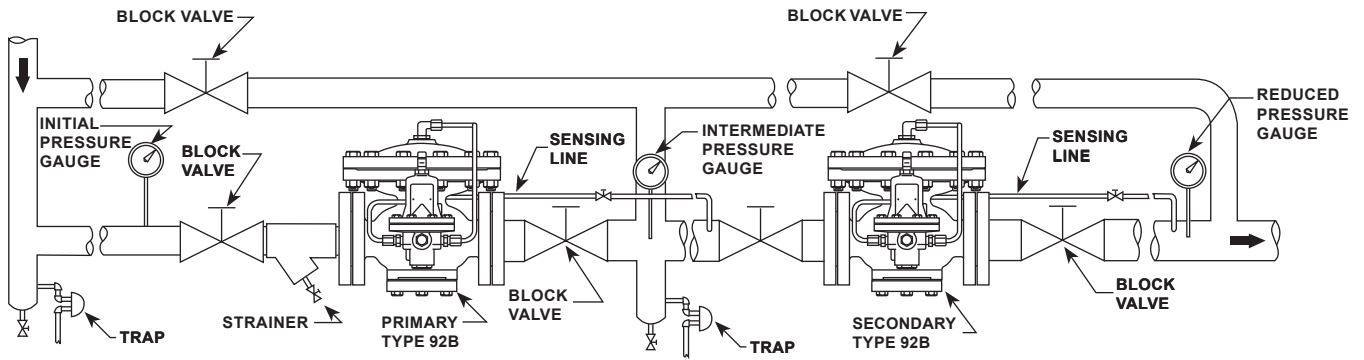
E0706

TYPE 92B SINGLE-STAGE INSTALLATION



E0707

TYPE 92B SINGLE-STAGE PARALLEL INSTALLATION



E0708

TYPE 92B TWO-STAGE INSTALLATION

Figure 4. Type 92B Typical Installations

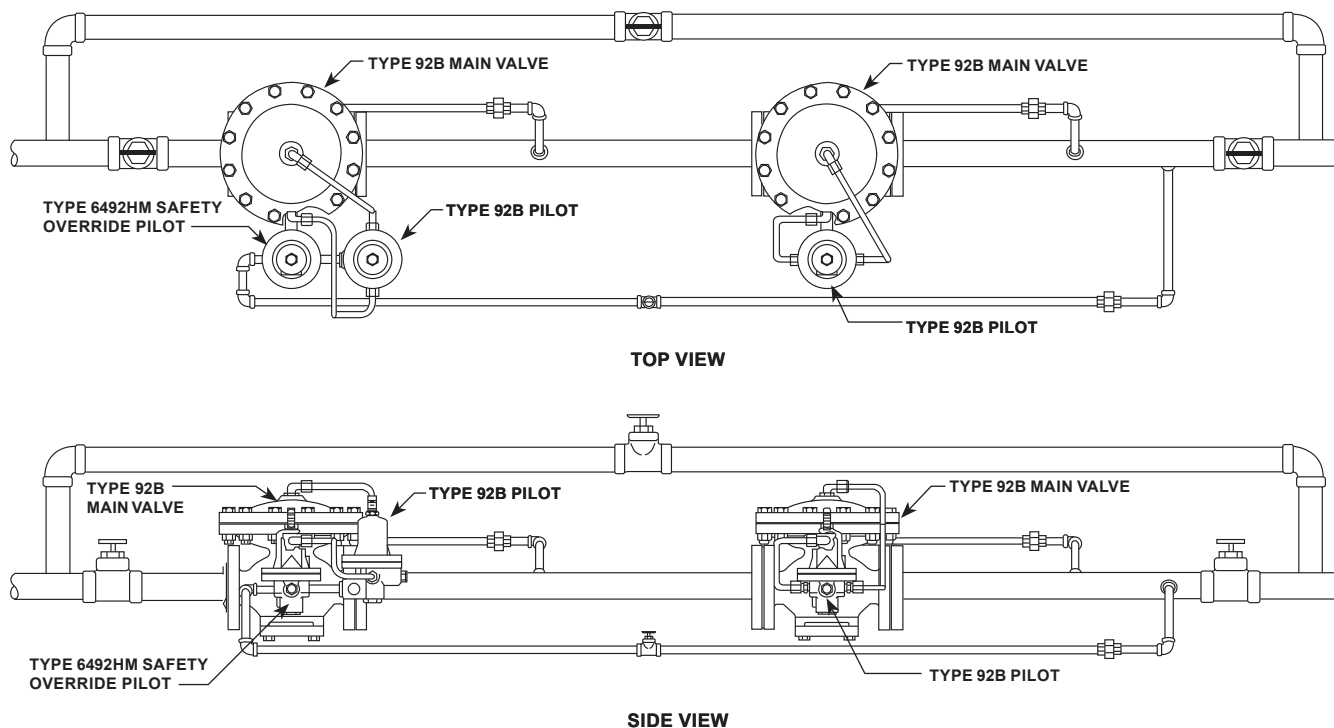


Figure 5. Safety Override System Installation

Note

The control line should be as large as the tapped hole in the Type 92B.

- b. The other end of the control line is connected to the downstream system. Place the tapped hole for this connection in a straight run of pipe 3 to 5 ft. / 0.91 to 1.52 m from the control valve when the valve body is the same size as the pipeline. If the valve body is smaller than the pipeline and requires swage nipples, place the tapped hole at a distance from the swage connection equal to 10 times the pipe diameter.
- c. Do not locate the control line tap in an elbow, swage or other changes in configuration of the pipeline where turbulence or abnormal velocities may occur.
- d. Do not locate the control line tap in a vessel (such as a deaerator) located immediately downstream of the control valve. Locate the tap in the pipeline leading to the vessel.
- e. Slope the control line away from the Type 92B so that condensate can drain back into the pipeline.

- f. Install a shutoff valve (not a needle valve) in the control line.
- g. Install a pressure gauge in the control line or near the outlet of the Type 92B to aid in setting the outlet pressure.

CAUTION

The maximum inlet and outlet pressures for which this Type 92B has been manufactured should not be exceeded. These pressures are stamped on the nameplates attached to the main valve and pilot.

Startup and Adjustment

WARNING

Failure to remove accumulated condensate may result in severe condensation induced water hammer which can result in personal injury or death.

Type 92B

Prior to Valve Startup

New Installations

Blow down inlet steam piping to remove any debris such as weld beads by opening the drain valve of the inlet strainer to the control valve. Close the isolation valve and disassemble strainer to remove accumulate debris. Repeat as necessary until strainer basket is free of debris.

Old Installations

Open all upstream and downstream drain valves at drip legs and strainers to drain condensate that may have accumulated during the shutdown period. Crack the inlet isolation valve to the pressure reducing stations to flush any residual condensate. Close the drain valves once the drain is free of condensate.

Pilot Adjustment

Loosen hex nut on screw before adjustment. To adjust the downstream reduced pressure setting, turn the set screw clockwise into the spring case to increase the downstream pressure setting. Turn it counterclockwise out of the spring case to decrease the setting. Tighten it once adjustment is made.

Type 92B

To put the valve into operation after installation or after disassembly for inspection or repairs, proceed as follows, referring to Figures 4, 9 and 10 as necessary.

1. Relieve all spring compression on the pilot spring by loosening hex nut (key 16) and turning set screw (key 15) counterclockwise (out of the spring case).
2. Open the upstream block valve.
3. Open the downstream block valve slowly.
4. Close the bypass valve.
5. Slowly turn the set screw of the pilot clockwise into the spring case until the downstream pressure reaches the required setting. Tighten hex nut on the set screw.

Safety Override System

Use the following procedure to put the system into operation, referring to Figure 3 as necessary:

1. Remove all pilot control spring compression from the Type 6492HM safety override pilot by turning the adjusting screw out of the spring case (counterclockwise).
2. Adjust the Type 92B upstream working pilot's and Type 92B downstream working pilot's adjusting screws into the spring case (clockwise) to their maximum adjustment.
3. Slowly open the upstream block valve to introduce inlet pressure to the system.
4. Open the downstream block valve and control line block valves, if used.

Note

Some flow is needed to make pressure settings accurate.

5. If a bypass is used, slowly close the bypass line block valve.
6. Adjust the Type 6492HM safety override pilot to the desired downstream override pressure. The safety override pilot's setpoint must be higher than the downstream working pilot's setpoint by the amounts listed in Table 4.

Note

The normal pressure and maximum override pressure should be set at or below the safe working pressure of the equipment and piping system downstream. (Reference applicable codes and/or standards for maximum allowable or safe working pressures for equipment and piping systems served.)

7. Adjust the Type 92B downstream working pilot to the desired normal downstream control pressure.
8. Adjust the Type 92B upstream working pilot to the desired intermediate control pressure (typically 50% of inlet pressure).
9. Readjust the Type 92B downstream working pilot to the desired normal downstream control pressure, if necessary.
10. Tighten the lock nuts on all pilots to lock the adjusting screws in position.

Shutdown

To take the regulator out of operation:

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.

Troubleshooting

Operating difficulties may be experienced with this valve as a result of improper installation, improper valve sizing, damage to internal parts, trim wear or an accumulation of dirt, boiler compound or other foreign materials on internal parts. When trouble occurs, check the following:

Type 92B

Build-up of Downstream Pressure

1. Check for plugged bleed fitting (key 61, Figure 8).
2. Check the screen (key 77, Figure 9 or 10) for clogging and the other pilot internal parts for accumulation of dirt, boiler compound or other materials.

Failure to Maintain Downstream Pressure

1. Check for ruptured diaphragm (key 60, Figure 8).
2. Check to see that the valve is not undersized.

Cycling or Hunting

Check to see that the valve is not oversized. A cycling Type 92B might possibly control the downstream pressure within acceptable limits but the life of the diaphragms, guide bushings, seat ring and valve plug could be greatly reduced.

If cycling occurs, as a result of oversizing or other causes, it can frequently be minimized by reducing the gain of the Type 92B. This can be accomplished by installing a suitable reducing regulator such as

a Type MR95H in the Type 92B pilot supply line. Adjust the pilot supply line regulator to reduce pilot supply pressure to about 30 psig / 2.1 barg above the outlet pressure setting of the Type 92B valve. This arrangement can minimize cycling and still provide adequate pilot supply pressure to ensure full opening of the main valve plug, if required.

Note

The 30 psig / 2.1 barg is suggested for units which include the standard 17-7 PH stainless steel main spring. This spring requires approximately 20 psig / 1.4 barg diaphragm differential pressure to fully stroke the main valve. If the lighter rate Inconel® spring is used, only about 10 psig / 0.69 barg diaphragm differential pressure is required to fully stroke the unit. Therefore, the pilot supply pressure can be reduced to about 20 psig / 1.4 barg above the outlet pressure setting of the control valve without loss of control capability.

Maintenance



Before disassembly or removing the control valve from the line, isolate it from the pressure system and release all the pressure from the control valve.

Due to normal wear, parts must be periodically inspected and replaced if necessary. The frequency of inspection depends on the severity of the service.

Main Valve Disassembly

Type 92B

Key numbers listed are shown on the body assembly drawing, Figure 8.

1. Remove all tubing.
2. Mark the outside edge of the body and diaphragm case flanges with assembly marks to ensure proper assembly. Remove bolts from diaphragm case and lift off the case. On cast iron body sizes NPS 1-1/2 through 4 / DN 40 to 100, first remove the loading tubing compression coupling fitting from the pipe nipple.

Type 92B

3. Take out the diaphragm assembly which consists of two metal diaphragms (key 60), bleed fitting (key 61) and diaphragm plate (key 59). Separate these parts by unscrewing the bleed fitting from the diaphragm plate.
4. Remove cap screws from bottom flange (key 52). Take off bottom flange. The valve plug (key 56) and spring (key 57) will drop out.
5. If the seat ring (key 58) shows signs of wear, lap the seat ring to remove imperfections.

Pilot Disassembly

Type 92B Pilot Only

Key numbers listed are shown on the appropriate pilot assembly drawing, Figure 9, 10, 11 or 12.

1. Remove pilot from main valve by unscrewing it from the mounting nipple or unscrewing the nipple from main valve.
2. Relieve the spring compression by turning the set screw (key 15) counterclockwise after loosening hex nut (key 16).
3. Remove the casing cap screws. Take off the spring case and remove upper spring seat, spring, lower spring seat, two diaphragms and the diaphragm gasket. Note that in a low-pressure pilot (Figure 9), the lower spring seat and the diaphragm plate are both parts of the diaphragm plate assembly (key 24) and are pinned together.
4. Unscrew the bellows retainer (key 8) from the pilot body. Take out the bellows and the valve stem (keys 9 and 7).
5. Unscrew the valve plug guide (key 2). The valve plug (key 4), the valve plug spring (key 3) and the strainer screen (key 77) will come out with the guide.
6. Unscrew the orifice (key 5), if necessary.
7. Remove the check valve assembly (key 75) with a screwdriver after having removed the pipe plug (key 74). Be sure the check valve is not clogged. Replace the entire check valve assembly, if necessary. The check valve assembly should not be disassembled in the field, because its setting is made at the factory and will be lost by disassembling.

Main Valve Reassembly

Type 92B (Figure 8)

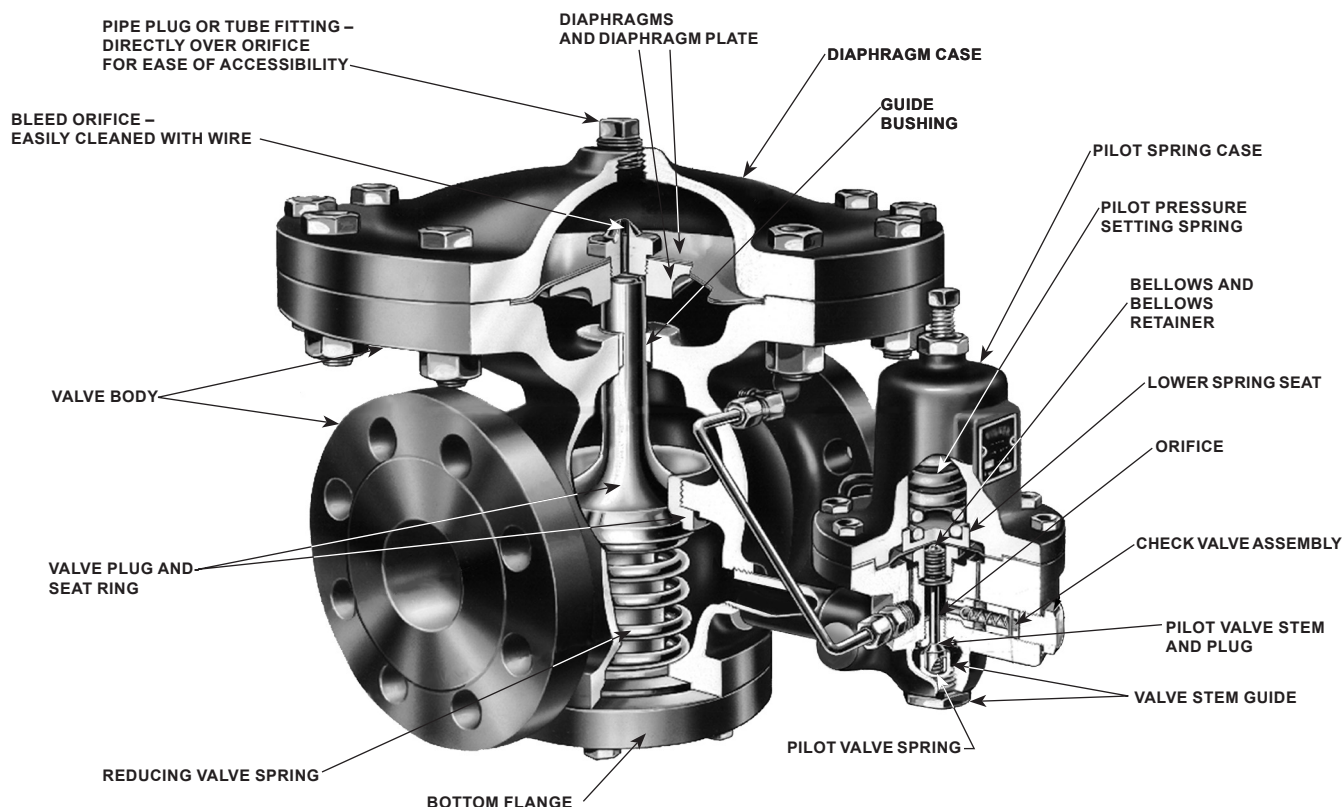
Inspect all internal parts for excessive wear or damage. Use new parts when necessary (see Table 5 for torque values). Reassemble the main valve as follows:

1. Install valve plug (key 56) and its spring (key 57).
2. Use new bottom flange gasket (key 54) and replace the bottom flange (key 52). Lubricate and replace cap screws (key 55) (see Table 5 for torque values).
3. Make up the diaphragm assembly by lubricating and then screwing the bleed fitting (key 61) into the diaphragm plate (key 59) (see Table 5 for torque values) and clamping the diaphragm (key 60) in place.
4. Apply a thin layer of anti-seize lubricant onto the sealing surfaces of the diaphragm casing (key 62) and the body (key 51) prior to installing the diaphragm assembly. Place the diaphragm assembly on the body and replace the diaphragm case (key 62). Make sure assembly marks line up. Lubricate and replace cap screws and nuts (keys 63 and 64) (see Table 5 for proper torque values). On cast iron bodies, install the loading tubing compression coupling fitting on the pipe nipple (NPS 1-1/2 through 4 / DN 40 through 100).
5. Reconnect all tubing after the pilot is mounted.

Type 92B Pilot Reassembly (Figure 9 or 10)

Inspect all internal parts for excessive wear or damage. Use new parts wherever necessary. Reassemble the pilot as follows (see Table 6 for torque values):

1. Apply high temperature thread sealant to the orifice threads. Screw in the orifice (key 5) (see Table 6 for torque values).
2. Place valve plug spring (key 3), the valve plug (key 4) and the strainer screen (key 77) in the valve plug guide (key 2). Apply high temperature thread sealant to the plug guide threads. Screw guide into body (key 1) (see Table 6 for torque values).
3. Place valve stem (key 7) in the body, smaller diameter first.



W1322-3A

Figure 6. Typical Type 92B Construction

4. Apply high temperature thread sealant to bellows retainer threads. Place bellows (key 9) in body and secure in place by installing the bellows retainer (key 8) (see Table 6 for torque values).
5. Use new diaphragm gasket (key 18) and put two diaphragms (key 10) in place on the body with raised, preformed centers toward spring case.
6. Stack the lower spring seat (key 11), spring (key 12) and upper spring seat (key 13) on the diaphragm and install the spring case. Note that on the low-pressure pilot, the lower spring seat and diaphragm plate are part of a subassembly.
7. Lubricate and replace casing cap screws (key 17).
8. Mount pilot on main valve and install all tubing.

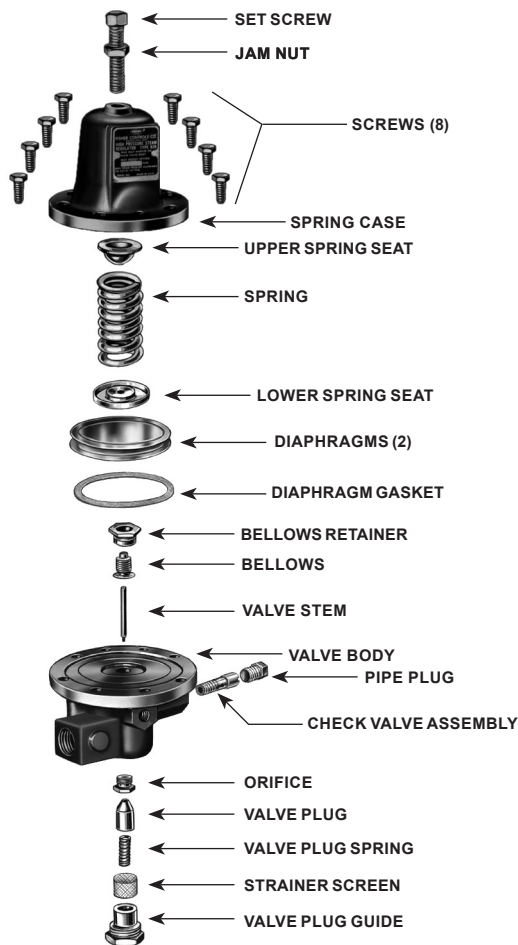
To Clean Pilot Strainer Assembly

Remove the valve plug guide (key 2). The valve plug (key 4), the valve plug spring (key 3) and the strainer screen (key 77) will come out with the guide. Inspect and clean or replace as required. Key numbers are referenced in Figure 9 or 10.

To Clean Bleed Fitting

If the 5/64 in. / 2.0 mm diameter hole in the bleed fitting (key 61) becomes plugged, it can be cleared by running a wire through it. To gain access to this hole, first isolate the valve and relieve all pressure. Then remove either the tubing and fitting or the pipe plug from the top of the diaphragm case. Clear the hole, replace the case fitting and resume normal operation. Key numbers are referenced in Figure 8.

Type 92B



W0070_2_1A

Figure 7. Type 92B High Pressure Pilot Exploded View

Types 6492HM and 6492HTM 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 are referenced in Figure 15.

Note

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

1. Unscrew the valve guide (key 2). Remove the screen (key 77), inner valve (key 4), valve spring (key 3) and stem (key 7). Unscrew the orifice (key 5). Examine the orifice and plug seating surfaces for damage.
2. Clean and replace parts as necessary. Apply high temperature sealant to the orifice threads. Thread the seat ring into place and tighten using 19 to 25 ft-lbs / 26 to 34 N•m of torque.
3. Handle the parts carefully, and place the valve spring (key 3) in the valve guide (key 2). Slide the inner valve (key 4) over the spring and into the valve guide. Place the screen (key 77) onto the valve guide. Place the stem (key 7) in the center hole of the valve guide. Apply sealant to the valve guide threads, and screw the guide plus attached parts into the body (key 1).
4. Remove the pipe plug (key 74). Then remove the pipe plug (key 94). Clean and replace the pipe plugs as necessary.
5. Apply high temperature sealant to the threads of the pipe plug (key 94) and install into the body (key 1).
6. Apply high temperature sealant to the threads of the pipe plug (key 74). Install into the body (key 1).
7. Remove the cap screws (key 17), spring case (key 14), control spring (key 12) and upper spring seat (key 13) from the body (key 1).
8. Remove the lower spring seat (key 11), diaphragms (key 10) and diaphragm gasket (key 18) from the body. Inspect and clean the diaphragm gasket. Replace if necessary.
9. Unscrew the bellows retainer (key 8) and remove the bellows (key 9). Replace worn parts as necessary. Apply high temperature sealant to the bellow retainer threads. Install the bellows and bellows retainer. Tighten the bellows retainer using 19 to 25 ft-lbs / 26 to 34 N•m of torque.
10. Install the diaphragm gasket. Install both diaphragms with their raised performed centers facing toward the spring case.
11. Lubricate the upper spring seat and the exposed threads of the adjusting screw. Install the lower spring seat (key 11), control spring (key 12), upper spring seat (key 13) and spring case (key 14). Insert and tighten the cap screws (key 17) in a crisscross bolting pattern using 12 to 18 ft-lbs / 16 to 24 N•m of torque.

Table 5. Type 92B Main Valve Torques

| BODY MATERIAL | BODY SIZE | | BLEED FITTING (KEY 61) | | DIAPHRAGM CASE CAP SCREW/HEX NUT (KEY 63/64) | | BOTTOM FLANGE CAP SCREW (KEY 55) | |
|------------------------|-----------|-----|------------------------|------------|--|------------|----------------------------------|--------------|
| | NPS | DN | ft-lbs | N•m | ft-lbs | N•m | ft-lbs | N•m |
| Cast Iron | 1 | 25 | 23 to 29 | 30 to 39 | 50 to 70 | 68 to 95 | 24 to 30 | 32.5 to 40.6 |
| | 1-1/2 | 40 | 38 to 46 | 51.5 to 62 | 80 to 100 | 108 to 136 | 46 to 58 | 62 to 78.6 |
| | 2 | 50 | 38 to 46 | 51.5 to 62 | 95 to 110 | 129 to 149 | 46 to 58 | 62 to 78.6 |
| | 3 | 80 | 90 to 120 | 122 to 163 | 110 to 130 | 149 to 176 | 60 to 75 | 81.3 to 102 |
| | 4 | 100 | 100 to 140 | 136 to 190 | 110 to 130 | 149 to 176 | 155 to 190 | 210 to 258 |
| Steel, Stainless steel | 1 | 25 | 23 to 29 | 30 to 39 | 50 to 70 | 68 to 95 | 24 to 30 | 32.5 to 40.6 |
| | 1-1/2 | 40 | 38 to 46 | 51.5 to 62 | 80 to 100 | 108 to 136 | 46 to 58 | 62 to 78.6 |
| | 2 | 50 | 38 to 46 | 51.5 to 62 | 95 to 110 | 129 to 149 | 46 to 58 | 62 to 78.6 |
| | 3 | 80 | 90 to 120 | 122 to 163 | 110 to 130 | 149 to 176 | 60 to 75 | 81.3 to 102 |
| | 4 | 100 | 100 to 140 | 136 to 190 | 110 to 130 | 149 to 176 | 155 to 190 | 210 to 258 |

Table 6. Type 92B Pilot Torques

| VALVE GUIDE (KEY 2) | | ORIFICE (KEY 5) | | BELLOWS RETAINER (KEY 8) | | CHECK VALVE ASSEMBLY (KEY 75) | | PIPE PLUG (KEY 74) | | CAP SCREW (KEY 17) | |
|---------------------|------------|-----------------|------------|--------------------------|------------|-------------------------------|-----------|--------------------|------------|--------------------|--------------|
| ft-lbs | N•m | ft-lbs | N•m | ft-lbs | N•m | ft-lbs | N•m | ft-lbs | N•m | ft-lbs | N•m |
| 42 to 58 | 57 to 78.6 | 19 to 25 | 25.8 to 34 | 19 to 25 | 25.8 to 34 | 5 to 15 | 7 to 20.3 | 19 to 25 | 25.8 to 34 | 12 to 18 | 16.3 to 24.4 |

Parts Ordering

Each Type 92B valve is assigned an FS or serial number. It can be found stamped on the nameplate attached to the spring case of the pilot.

Refer to the FS or serial number and the complete part number when ordering spare parts or requesting technical advice from your local Sales Office.

Parts List

Type 92B Main Valve (Figure 8)

| Key | Description | Part Number |
|-----|---|-------------|
| | Parts Kits (includes keys: 54, 56 and 60) | |
| | Cast Iron | |
| | NPS 1 / DN 25 | R92BX000022 |
| | NPS 1-1/2 / DN 40 | R92BX000032 |
| | NPS 2 / DN 50 | R92BX000042 |
| | NPS 3 / DN 80 | R92BX000062 |
| | NPS 4 / DN 100 | R92BX000072 |
| | Steel or Stainless steel | |
| | NPS 1 / DN 25 | R92BX000092 |
| | NPS 1-1/2 / DN 40 | R92BX000102 |
| | NPS 2 / DN 50 | R92BX000112 |
| | NPS 3 / DN 80 | R92BX000062 |
| | NPS 4 / DN 100 | R92BX000122 |

| Key | Description | Part Number |
|-----|---|-------------|
| 19 | Drive Screw, Stainless steel | |
| | Cast Iron Body (5 required) | 1A368228982 |
| | Steel Body (3 required) | 1A368228982 |
| 20 | Warning Label (Cast Iron body only) | 1F137018992 |
| 21 | Nameplate | ----- |
| 51 | Valve Body Assembly (includes body with seat ring - key 58 and guide bushing) | |
| | Cast Iron | |
| | NPT | |
| | 1 NPT | 3H5846000B2 |
| | 1-1/2 NPT | 3H2748000B2 |
| | 2 NPT | 3F2497000B2 |
| | CL125 FF flanged | |
| | NPS 1-1/2 / DN 40 | 3H2750000A2 |
| | NPS 2 / DN 50 | 3F2498000B2 |
| | NPS 3 / DN 80 | 3H3064000A2 |
| | NPS 4 / DN 100 | 3H3146000A2 |
| | CL250 RF flanged | |
| | NPS 1-1/2 / DN 40 | 3H2751000A2 |
| | NPS 2 / DN 50 | 3F2499000B2 |
| | NPS 3 / DN 80 | 3H3065000A2 |
| | NPS 4 / DN 100 | 3H3147000A2 |
| | Steel | |
| | NPT | |
| | 1 NPT | T20895X0012 |
| | 1-1/2 NPT | T20895X0042 |
| | 2 NPT | T20895X0072 |
| | SWE | |
| | 1 SWE | 30C3810X012 |
| | 1-1/2 SWE | 30C3810X022 |
| | 2 SWE | GG01694X012 |

Type 92B

| Key | Description | Part Number | Key | Description | Part Number |
|-----|--|-------------|-----|--|-------------|
| 51 | Valve Body Assembly (continued) | | 54* | Gasket (continued) | |
| | CL150 RF flanged | | | Steel and Stainless steel Body, Graphite | |
| | NPS 1 / DN 25 | T20895X0022 | | NPS 1 / DN 25 | 0U0200X0012 |
| | NPS 1-1/2 / DN 40 | T20895X0052 | | NPS 1-1/2 / DN 40 | 0U0247X0012 |
| | NPS 2 / DN 50 | T20895X0082 | | NPS 2 / DN 50 | 0T0681X0012 |
| | NPS 3 / DN 80 | T20895X0102 | | NPS 3 / DN 80 | 0U0365X0032 |
| | NPS 4 / DN 100 | T20895X0122 | | NPS 4 / DN 100 | 0T0788X0012 |
| | CL300 RF flanged | | 55 | Cap Screw, For Cast Iron and Steel Bodies | |
| | NPS 1 / DN 25 | T20895X0032 | | NPS 1 / DN 25 (6 required) | 1A336924052 |
| | NPS 1-1/2 / DN 40 | T20895X0062 | | NPS 1-1/2 / DN 40 (6 required) | 1A337524052 |
| | NPS 2 / DN 50 | T20895X0092 | | NPS 2 / DN 50 (6 required) | 1A418524052 |
| | NPS 3 / DN 80 | T20895X0112 | | NPS 3 / DN 80 (8 required) | 1A344424052 |
| | NPS 4 / DN 100 | T20895X0132 | | NPS 4 / DN 100 (8 required) | 1A430224052 |
| | PN16/25/40 RF | | | Cap Screw, For Stainless steel Bodies | |
| | NPS 1 / DN 25 | T21162X0012 | | NPS 1 / DN 25 (6 required) | 1A3369X0032 |
| | NPS 1-1/2 / DN 40 | T21162X0022 | | NPS 1-1/2 / DN 40 (6 required) | 1A3375X0022 |
| | NPS 2 / DN 50 | T21162X0032 | | NPS 2 / DN 50 (6 required) | 1A4185X0022 |
| | NPS 3 / DN 80 | T21162X0052 | | NPS 3 / DN 80 (8 required) | 1A3444X0012 |
| | PN16 RF | | | NPS 4 / DN 100 (8 required) | 1A4302X0022 |
| | NPS 4 / DN 100 | T21162X0042 | 56 | Valve Plug, Stainless steel | |
| | PN25/40 RF | | | NPS 1 / DN 25 | 2P979646172 |
| | NPS 4 / DN 100 | GG01701X012 | | NPS 1-1/2 / DN 40 | 2P979746172 |
| | Stainless steel | | | NPS 2 / DN 50 | 2P979846172 |
| | NPT | | | NPS 3 / DN 80 | 39B4698X012 |
| | 1 NPT | T21160X0012 | | NPS 4 / DN 100 | 39B4699X012 |
| | 1-1/2 NPT | T21160X0042 | 57 | Spring | |
| | 2 NPT | T21160X0072 | | 17-7 PH Stainless steel | |
| | CL150 RF flanged | | | Standard for 20 psi / 1.4 bar pressure drop | |
| | NPS 1 / DN 25 | T21160X0022 | | or greater | |
| | NPS 1-1/2 / DN 40 | T21160X0052 | | NPS 1 / DN 25 | 1R151337052 |
| | NPS 2 / DN 50 | T21160X0082 | | NPS 1-1/2 / DN 40 | 1R151437052 |
| | NPS 3 / DN 80 | T21160X0102 | | NPS 2 / DN 50 | 1R151537052 |
| | NPS 4 / DN 100 | T21160X0122 | | NPS 3 / DN 80 | 1R151737052 |
| | CL300 RF flanged | | | NPS 4 / DN 100 | 1R151837052 |
| | NPS 1 / DN 25 | T21160X0032 | | Inconel® | |
| | NPS 1-1/2 / DN 40 | T21160X0062 | | 10 to 20 psi / 0.69 to 1.4 bar minimum pressure drop | |
| | NPS 2 / DN 50 | T21160X0092 | | NPS 1 / DN 25 | 0U020242012 |
| | NPS 3 / DN 80 | T21160X0112 | | NPS 1-1/2 / DN 40 | 0U023742012 |
| | NPS 4 / DN 100 | T21160X0132 | | NPS 2 / DN 50 | 0T086042012 |
| 52 | Bottom Flange Assembly | | | NPS 3 / DN 80 | 0U035942012 |
| | Cast iron | | | NPS 4 / DN 100 | 0T085842012 |
| | NPS 1 / DN 25 | 1J3024000A2 | 58 | Seat Ring, Stainless steel | |
| | NPS 1-1/2 / DN 40 | 1J3026000A2 | | NPS 1 / DN 25 | 2P980346172 |
| | NPS 2 / DN 50 | 1J4339000A2 | | NPS 1-1/2 / DN 40 | 2P980446172 |
| | NPS 3 / DN 80 | 0U0357000A2 | | NPS 2 / DN 50 | 2P896746192 |
| | NPS 4 / DN 100 | 0T0786000A2 | | NPS 3 / DN 80 | 2P898046192 |
| | Steel | | | NPS 4 / DN 100 | 2P980546192 |
| | NPS 1 / DN 25 | 29B468600A2 | 59 | Diaphragm Head | |
| | NPS 1-1/2 / DN 40 | 39B551300A2 | | Cast Iron Body, Cast Iron | |
| | NPS 2 / DN 50 | 39B045200A2 | | NPS 1 / DN 25 | 1F251519012 |
| | NPS 3 / DN 80 | 39B581200A2 | | NPS 1-1/2 / DN 40 | 1F301019012 |
| | NPS 4 / DN 100 | 39B642300A2 | | NPS 2 / DN 50 | 1F250419012 |
| | Stainless steel | | | NPS 3 / DN 80 | GG02112X012 |
| | NPS 1 / DN 25 | 29B468600B2 | | NPS 4 / DN 100 | 1F335619012 |
| | NPS 1-1/2 / DN 40 | 39B551300B2 | | Steel Body, WCC Steel | |
| | NPS 2 / DN 50 | 39B045200B2 | | NPS 1 / DN 25 | 19B4685X012 |
| | NPS 3 / DN 80 | 39B581200B2 | | NPS 1-1/2 / DN 40 | 19B5514X012 |
| | NPS 4 / DN 100 | 39B642300B2 | | NPS 2 / DN 50 | 29B0453X012 |
| 54* | Gasket | | | NPS 3 / DN 80 | 29B5811X012 |
| | Cast iron Body, Composition ⁽¹⁾ | | | NPS 4 / DN 100 | 29B6425X012 |
| | NPS 1 / DN 25 | 0U020004022 | | Stainless steel Body, CF8M Steel | |
| | NPS 1-1/2 / DN 40 | 0U024704022 | | NPS 1 / DN 25 | 19B4685X022 |
| | NPS 2 / DN 50 | 0T068104022 | | NPS 1-1/2 / DN 40 | 19B5514X022 |
| | NPS 3 / DN 80 | 0U0365X0032 | | NPS 2 / DN 50 | 29B0453X022 |
| | NPS 4 / DN 100 | 0T078804022 | | NPS 3 / DN 80 | 29B5811X022 |
| | | | | NPS 4 / DN 100 | 29B6425X022 |

*Recommended spare part.

Inconel® is a mark owned by Special Metals Corporation.

1. For 3 in. / 76 mm units, Key 54 is Graphite for all main valve materials.

Type 92B Main Valve (Figure 8) (continued)

| Key | Description | Part Number |
|-----|--|-------------|
| 60* | Diaphragm, 302 Stainless steel (2 required) | |
| | NPS 1 / DN 25 | 1F251436012 |
| | NPS 1-1/2 / DN 40 | 1F301236012 |
| | NPS 2 / DN 50 | 1F250336012 |
| | NPS 3 / DN 80 | 1F324936012 |
| | NPS 4 / DN 100 | 1F335736012 |
| 61 | Bleed Fitting, 416 Stainless steel | |
| | NPS 1 / DN 25 | 1F251335132 |
| | NPS 1-1/2 and 2 / DN 40 and 50 | 1F250235132 |
| | NPS 3 / DN 80 | 1F325035132 |
| | NPS 4 / DN 100 | 1F335835132 |
| | Cast Iron or Steel | 1F335836012 |
| 62 | Diaphragm Case | |
| | Cast Iron Body, Cast Iron | |
| | NPS 1 / DN 25 | 2L547219012 |
| | NPS 1-1/2 / DN 40 | 2L586319012 |
| | NPS 2 / DN 50 | 2L586619022 |
| | NPS 3 / DN 80 | 2L587219022 |
| | NPS 4 / DN 100 | 2F336019022 |
| | Steel Body, WCC Steel | |
| | NPS 1 / DN 25 | 39B4682X012 |
| | NPS 1-1/2 / DN 40 | 39B4700X012 |
| | NPS 2 / DN 50 | 39B4681X012 |
| | NPS 3 / DN 80 | 39B5813X012 |
| | NPS 4 / DN 100 | 49B6421X012 |
| | Stainless steel Body, CF8M Steel | |
| | NPS 1 / DN 25 | 39B4682X022 |
| | NPS 1-1/2 / DN 40 | 39B4700X022 |
| | NPS 2 / DN 50 | 39B4681X022 |
| | NPS 3 / DN 80 | 39B5813X022 |
| | NPS 4 / DN 100 | 49B6421X022 |
| 63 | Cap Screw, For Cast Iron and Steel Bodies 12 required | |
| | NPS 1 / DN 25 | 1A413024052 |
| | NPS 1-1/2 and 2 / DN 40 and 50 | 1A417524052 |
| | 16 required | |
| | NPS 3 and 4 / DN 80 and 100 | 1A427824052 |
| | Cap Screw, For Stainless steel Bodies 12 required | |
| | NPS 1 / DN 25 | 1A4130X0022 |
| | NPS 1-1/2 and 2 / DN 40 and 50 | 1A4175X0022 |
| | 16 required | |
| | NPS 3 and 4 / DN 80 and 100 | 1A4278X0022 |
| 64 | Hex Nut, For Cast Iron and Steel Bodies 12 required | |
| | NPS 1 / DN 25 | 1A413224122 |
| | NPS 1-1/2 and 2 / DN 40 and 50 | 1A417624122 |
| | 16 required | |
| | NPS 3 and 4 / DN 80 and 100 | 1A420124122 |
| | Hex Nut, For Stainless steel Bodies 12 required | |
| | NPS 1 / DN 25 | 1A413235252 |
| | NPS 1-1/2 and 2 / DN 40 and 50 | 1A4176X0022 |
| | 16 required | |
| | NPS 3 and 4 / DN 80 and 100 | 1A4201X0012 |
| 69 | Pipe Plug | |
| | Steel | 1A369224492 |
| | Stainless steel | 1A369235072 |

Type 92B Pilot (Figures 9, 10, 11 and 12)

| Key | Description | Part Number |
|-----|--|-------------|
| | Parts Kits (includes keys: 4, 5, 7, 8, 9, 10, 18 and 77) | |
| | Low-pressure Pilot (Cast iron and Steel) | R92BLPX0012 |
| | High-pressure Pilot (Cast iron and Steel) | R92BHPX0012 |
| 1 | Pilot Valve Body | |
| | Cast Iron | |
| | Low pressure | 32A0404X012 |
| | High pressure | 22A0403X012 |
| | Ductile Iron | |
| | Low pressure | 32A0404X022 |
| | High pressure | 22A0403X022 |
| | Steel | |
| | Low pressure | 32A0404X052 |
| | High pressure/High temperature | 22A0403X052 |
| | Stainless steel | |
| | Low pressure | 32A0404X062 |
| | High pressure/High temperature | 22A0403X072 |
| 2 | Valve Guide | |
| | Cast Iron, Ductile Iron or Steel, 416 Stainless steel | 1E391835132 |
| | Stainless steel, 316 Stainless steel | 1E391835072 |
| 3 | Valve Spring, 302 Stainless steel | 1E392437022 |
| 4* | Valve Plug | |
| | Cast Iron, Ductile Iron or Steel, 416 Stainless steel | 1F967446172 |
| | Stainless steel, 316 Stainless steel | 1F9674X0012 |
| 5* | Orifice | |
| | Cast Iron, Ductile Iron or Steel, 416 Stainless steel | 1H564446172 |
| | Stainless steel, 316 Stainless steel | 1H5644X0012 |
| 7 | Valve Stem | |
| | Cast Iron, Ductile Iron or Steel, 416 Stainless steel | 1F967835132 |
| | Stainless steel, 316 Stainless steel | 1F9678X0012 |
| 8 | Bellows Retainer | |
| | Cast Iron, Ductile Iron or Steel, Brass | 1F971214012 |
| | Stainless steel, 316 Stainless steel | 1F9712X0012 |
| 9 | Bellows | |
| | Cast Iron, Ductile Iron or Steel, Bronze | 1F971318992 |
| | High Temperature Steel Pilot and Stainless steel, 321 Stainless steel | 1F9713X0012 |
| 10* | Diaphragm, 302 Stainless steel (2 required) | |
| | Low pressure | ERCA00490A0 |
| | High pressure/High temperature | ERCA00459A0 |
| 11 | Lower Spring Seat, Aluminum | |
| | High pressure | 1J9140X0032 |
| | High temperature | 14B9948X012 |
| 12 | Spring, Plated Steel | |
| | Low-pressure pilot | |
| | 2 to 6 psig / 0.14 to 0.41 bar | 1E395627022 |
| | 5 to 15 psig / 0.34 to 1.0 bar | 1D7455T0012 |
| | 13 to 25 psig / 0.90 to 1.7 bar | 1E395727192 |
| | High-pressure pilot | |
| | 15 to 30 psig / 1.0 to 2.1 bar | 1E395627022 |
| | 25 to 75 psig / 1.7 to 5.2 bar | 1D7455T0012 |
| | 70 to 150 psig / 4.8 to 10.3 bar | 1E395727192 |
| | High temperature pilot | |
| | 15 to 100 psig / 1.0 to 6.9 bar | 14B9943X012 |
| | 80 to 250 psig / 5.5 to 17.2 bar | 14B9942X022 |

*Recommended spare part.

Type 92B

Type 92B Pilot (Figures 9, 10, 11 and 12) (continued)

| Key | Description | Part Number |
|-----|--|--|
| 13 | Upper Spring Seat, Plated Steel Low/High pressure High temperature | 1D667125072 14B9951X012 |
| 14 | Spring Case Cast Iron or Ductile Iron, Cast Iron Low pressure High pressure Steel, WCC Steel Low pressure High pressure Stainless steel, 316 Stainless steel Low pressure High pressure | 3J496319012 2J496219012 3L416122012 2L416322012 3L4161X0022 2L416333092 |
| 15 | Set Screw, Plated Steel | 1D995448702 |
| 16 | Hex Nut, Plated Steel | 1A353724122 |
| 17 | Cap Screw Cast Iron, Ductile Iron and Steel, Plated Steel Low pressure (10 required) High pressure (8 required) High temperature (8 required) Stainless steel, Stainless steel Low pressure (10 required) High pressure (8 required) High temperature (8 required) | 1A381624052 1A381624052 1A3816X0242 1A3816X0152 1A3816X0152 1A381635222 |
| 18* | Diaphragm Gasket Cast Iron, Ductile Iron, Steel and Stainless steel Body, Graphite Low pressure High pressure/High Temperature | 1E3970X0012 ERCA00485A1 1A368228982 |
| 19 | Drive Screw (2 required) | ----- |
| 20 | Nameplate | ----- |
| 22 | Pipe Nipple Cast Iron, Ductile Iron and Steel, Plated Steel Low pressure High pressure/High temperature Stainless steel, 316 Stainless Steel Low pressure High pressure/High temperature | 1B825226012 1A473526012 1B8252X0012 1A4735X0012 |
| 24 | Diaphragm Plate Assembly Low pressure only | 1E3967X0012 |
| 34 | Machine Screw | ERAA01670A0 |
| 74 | Pipe Plug Cast Iron, Ductile Iron and Steel, Plated Steel Stainless steel, 316 Stainless steel | 0Z020128992 0Z020135072 |
| 75 | Check Valve Assembly Cast Iron, Ductile Iron and Steel Pilot Body Stainless steel Pilot Body | 12A0405X012 12A0405X022 |
| 77 | Screen | 16A1512X012 |

Optional Handwheel (Figure 11)

| Key | Description | Part Number |
|---------------------------|-----------------------------------|-------------|
| Handwheel Assembly | | |
| 15 | Set Screw, Plated Steel | 1J496428982 |
| 16 | Hex Nut, Plated Steel (not shown) | 1A353724122 |
| 34 | Machine Screw | ERAA01670A0 |
| 38 | Handwheel | 1J496144012 |
| 39 | Lock Washer | ERAA01671A0 |

*Recommended spare part.

Type 92B Pilot (Figures 9, 10, 11 and 12) (continued)

Optional Sealed Adjusting Screw (Figure 12)

| Key | Description | Part Number |
|--|--|----------------------------|
| For Cast Iron Construction | | |
| 14 | Spring Case Low pressure High pressure | 3L324222012 2L324122012 |
| 25 | Stuffing Box | 1L324024092 |
| 26 | Adjusting Screw | 1L449735232 |
| 27 | Packing Follower | 1K884924092 |
| 28 | Stuffing Box Nut | 0P077624102 |
| 29 | Packing (3 required) | ERAA01657A0 |
| 30 | Stuffing Box Gasket | 1N499199202 |
| 31 | Handwheel | 1L369644992 |
| 32 | Female Adaptor | ERAA01666A0 |
| 33 | Male Adaptor | ERAA01667A0 |
| 34 | Machine Screw | ERAA01670A0 |
| 35 | Spring | ERAA01640A0 |
| 36 | Packing Washer | 1H981836042 |
| 37 | Lock Washer | 1L323928982 |
| For Steel or Stainless Steel Construction | | |
| 14 | Spring Case Steel Construction Only, WCC Steel Low pressure High pressure | 3L442222012 2L442022012 |
| 15 | Set Screw, Plated Steel | 1D995448702 |
| 16 | Hex Nut, Plated Steel | 1A353724122 |
| 87 | Sealing Washer | 1V205699012 |

Type 92B Pilot Mounting Parts (Figures 13 and 14)

| Key | Description | Part Number |
|-----|---|-------------|
| 22 | Pipe Nipple (For NPS 1-1/2, 2, 3 and 4 / DN 40, 50, 80 and 100) Cast Iron Construction Only) | ----- |
| 65 | Loading Tubing | ----- |
| 66 | Pipe Bushing, Plated Steel Plated Steel Stainless steel | ----- |
| 67 | Pipe Plug, Steel (For NPS 1-1/2, 2, 3 and 4 / DN 40, 50, 80 and 100) Cast Iron Construction Only) | ----- |
| 70 | Control Tubing | ----- |
| 71 | Male Connector Cast Iron Body, Brass Steel Body NPS 1, 1-1/2 and 2 / DN 25, 40 and 50 (3 required) NPS 3 and 4 / DN 80 and 100 (2 required) Stainless steel Body NPS 1, 1-1/2 and 2 / DN 25, 40 and 50 (3 required) NPS 3 and 4 / DN 80 and 100 (2 required) | ----- |
| 72 | Elbow Cast Iron Body NPS 1 / DN 25 (2 required) NPS 1-1/2 to 4 / DN 40 to 100 (1 required) Steel Body NPS 1, 1-1/2 and 2 / DN 25, 40 and 50 (1 required) NPS 3 and 4 / DN 80 and 100 (2 required) Stainless steel Body NPS 1, 1-1/2 and 2 / DN 25, 40 and 50 (1 required) NPS 3 and 4 / DN 80 and 100 (2 required) | ----- |
| 73 | Female Connector, Brass (For NPS 1-1/2, 2, 3 and 4 / DN 40, 50, 80 and 100) Cast Iron Construction Only) | ----- |

Types 6492HM and 6492HTM Pilots (Figure 15)

| Key | Description | Part Number |
|-----|-----------------------------------|-------------|
| 1 | Pilot Valve Body | |
| | Steel | 22A0403X052 |
| | Stainless steel | 22A0403X072 |
| 2 | Valve Guide | |
| | Steel | 1E391835132 |
| | Stainless steel | 1E391835072 |
| 3 | Valve Spring | 1E392437022 |
| 4 | Inner Valve | |
| | Steel | 1F967446172 |
| | Stainless steel | 1F9674X0012 |
| 5 | Orifice | |
| | Steel | 1H564446172 |
| | Stainless steel | 1H5644X0012 |
| 7 | Valve Stem | |
| | Steel | 1F967835132 |
| | Stainless steel | 1F9678X0012 |
| 8 | Bellows Retainer | |
| | Steel | 1F971214012 |
| | Stainless steel | 1F9712X0012 |
| 9 | Bellows | |
| | Steel | 1F971318992 |
| | Stainless steel | 1F9713X0012 |
| 10 | Diaphragm (2 required) | ERCA00459A0 |
| 11 | Lower Spring Seat | |
| | Type 6492HM | 1J9140X0032 |
| | Type 6492HTM | ----- |
| | Steel | 1J9140X0022 |
| | Stainless steel | 14B9948X012 |
| 12 | Spring | |
| | Type 6492HM | |
| | 10 to 30 psig / 0.69 to 2.07 bar | 1E395627022 |
| | 25 to 75 psig / 1.72 to 5.17 bar | 1D7455T0012 |
| | 70 to 150 psig / 4.83 to 10.3 bar | 1E395727192 |
| | Type 6492HTM | |
| | 15 to 100 psig / 1.03 to 6.9 bar | 14B9943X012 |
| | 80 to 250 psig / 5.52 to 17.2 bar | 14B9942X022 |
| 13 | Upper Spring Seat | |
| | Type 6492HM | 1D667125072 |
| | Type 6492HTM | 14B9951X012 |
| 14 | Spring Case | |
| | Steel | |
| | with standard adjusting screw | 2L416322012 |
| | with sealed adjusting screw | 2L442022012 |
| | Stainless steel | |
| | with standard adjusting screw | 2L416333092 |
| | with sealed adjusting screw | 2L4420X0012 |

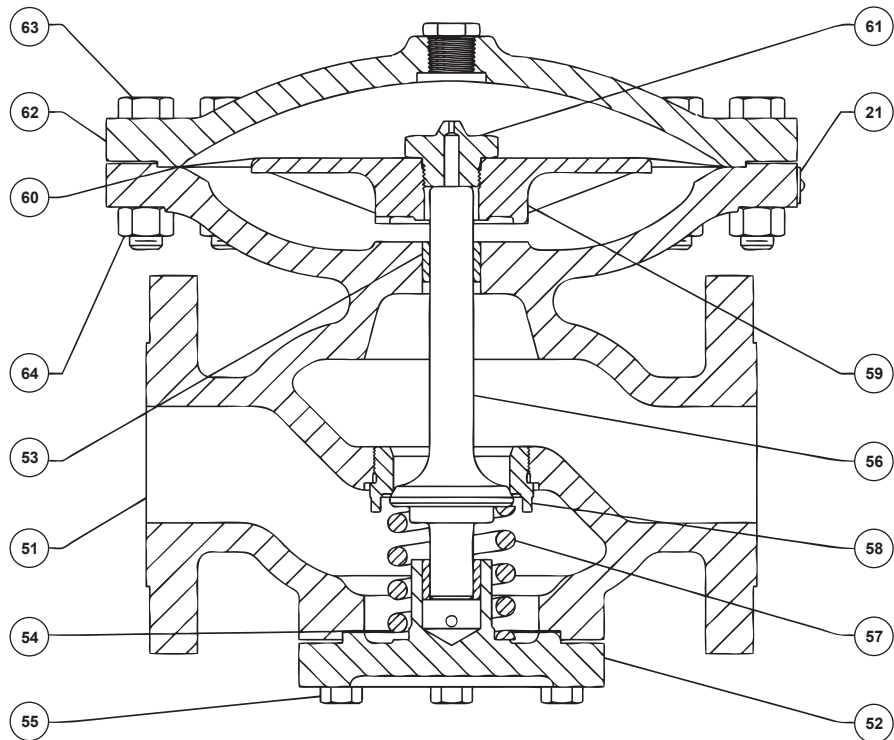
Types 6492HM and 6492HTM Pilots (Figure 15) (continued)

| Key | Description | Part Number |
|-----|---------------------------------------|-------------|
| 15 | Set Screw | |
| | Standard | 1D995448702 |
| | Handwheel | 1J496428982 |
| 16 | Hex Nut | 1A353724122 |
| 17 | Cap Screw (8 required) | |
| | Type 6492HM | |
| | Steel | 1A381624052 |
| | Stainless steel | 1A3816X0152 |
| | Type 6492HTM | |
| | Steel | 1A3816X0242 |
| | Stainless steel | 1A3816X0152 |
| 18 | Diaphragm Gasket | |
| | Type 6492HM | ERCA00485A0 |
| | Type 6492HTM | ERCA00485A1 |
| 19 | Drive Screw (4 required) | 1A368228982 |
| 20 | Nameplate | ----- |
| 34 | Machine Screw for use with Handwheel | ERAA01670A0 |
| 38 | Handwheel | 1J496144012 |
| 39 | Lock Washer for use with Handwheel | ERAA01671A0 |
| 74 | Pipe Plug | |
| | Steel | 0Z020128992 |
| | Stainless steel | 0Z020135072 |
| 77 | Screen | 16A1512X012 |
| 78 | Reducing Bushing | |
| | Steel | 1C379026232 |
| | Stainless steel | 1C3790X0012 |
| 87 | Sealed Adjusting Screw Sealing Washer | 1V205699012 |
| 94 | Pipe Plug | 1E823135042 |
| 95 | Warning Label (Figure 16) | 19B0429X0A2 |

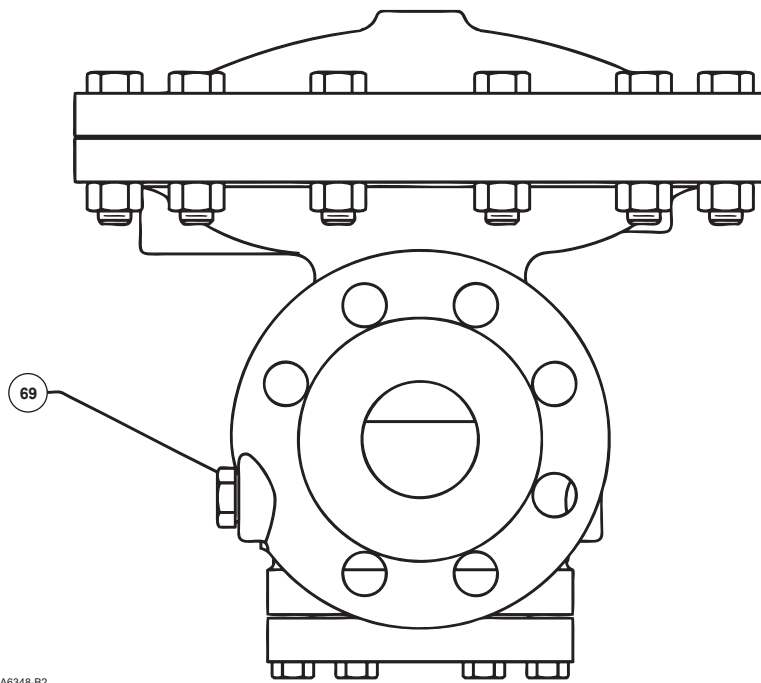
Type 6492HM Pilot Mounting Parts (Figure 17)

| Key | Description | Part Number |
|-----|-----------------|-------------|
| 65 | Loading Tubing | ----- |
| 66 | Pipe Bushing | |
| | Steel | ----- |
| | Stainless steel | ----- |

Type 92B

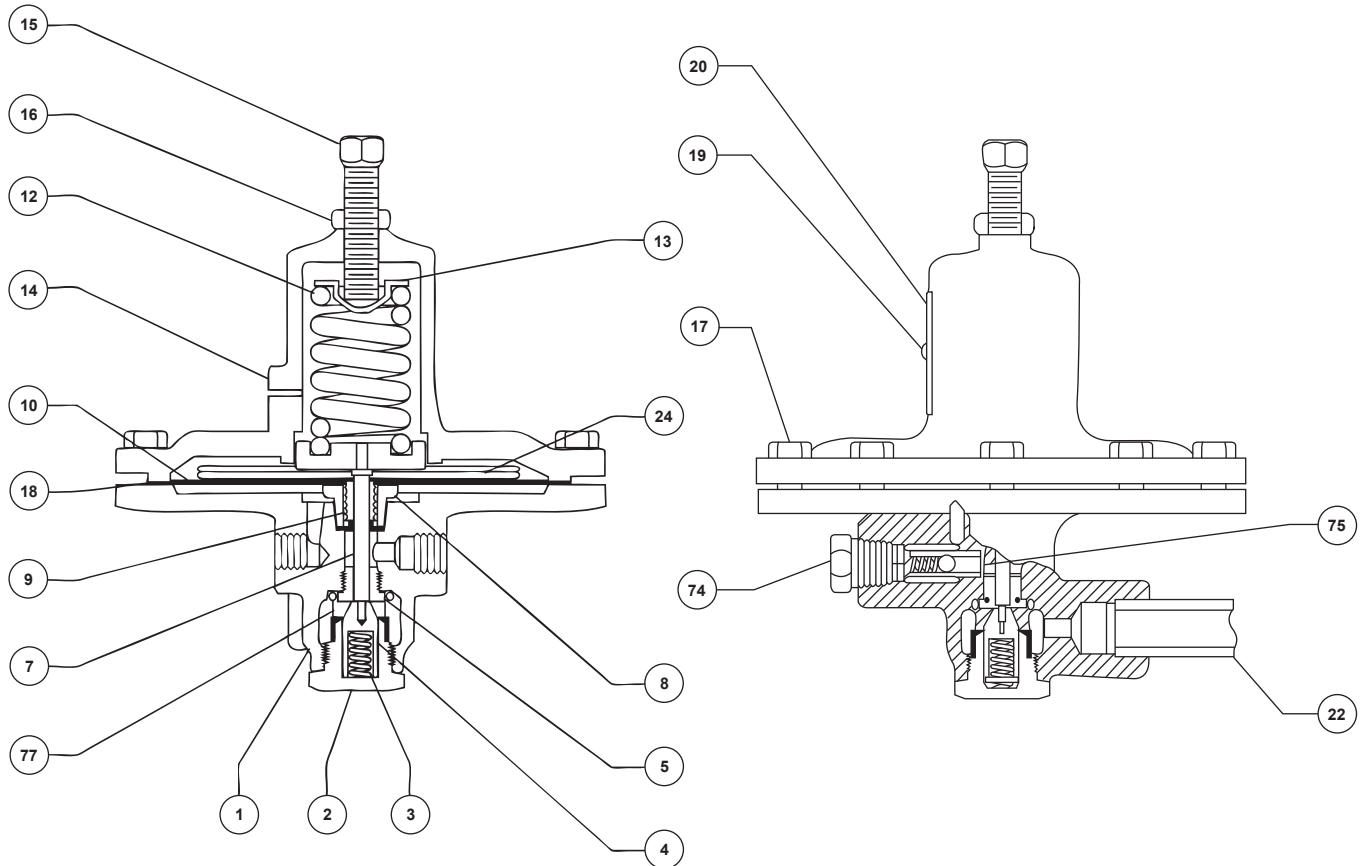


30A6348-B1A



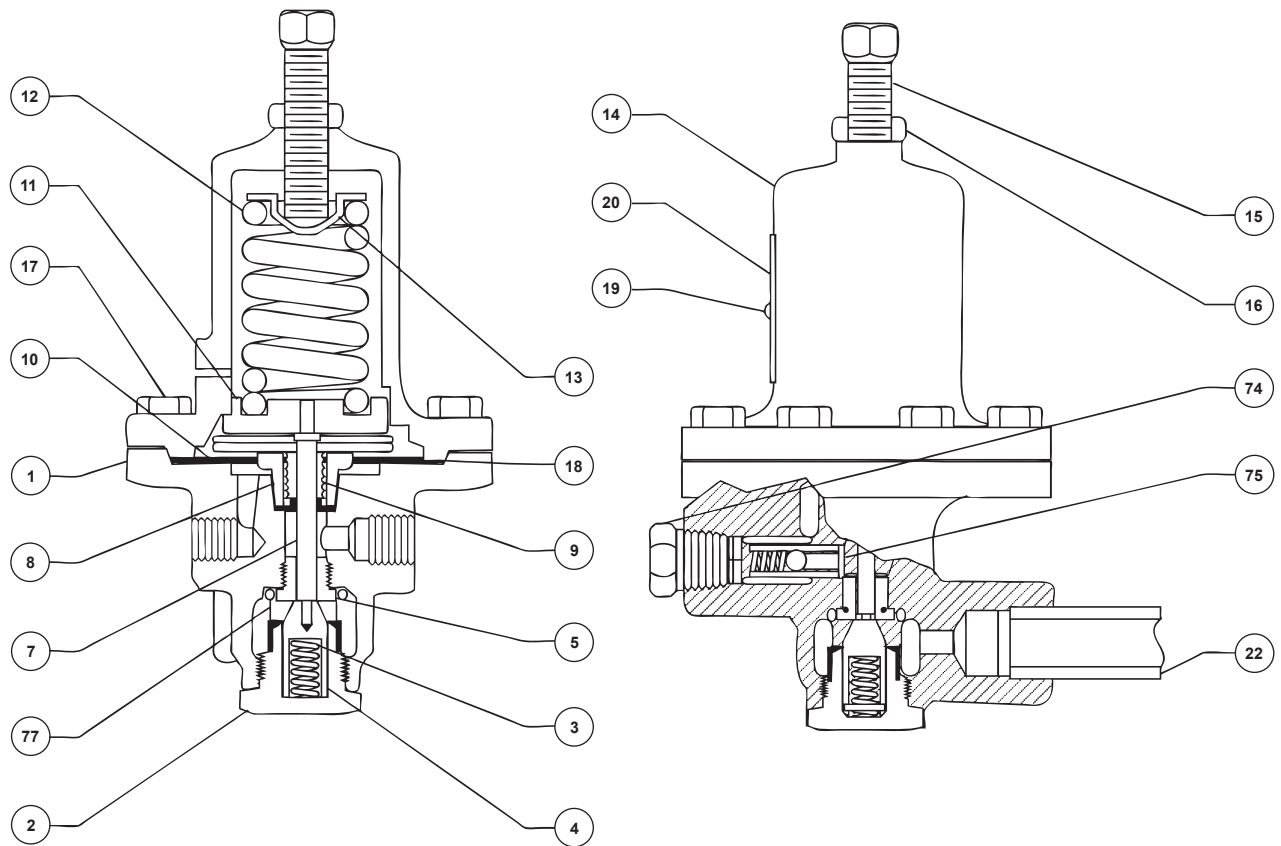
30A6348-B2

Figure 8. Type 92B Main Valve Assembly



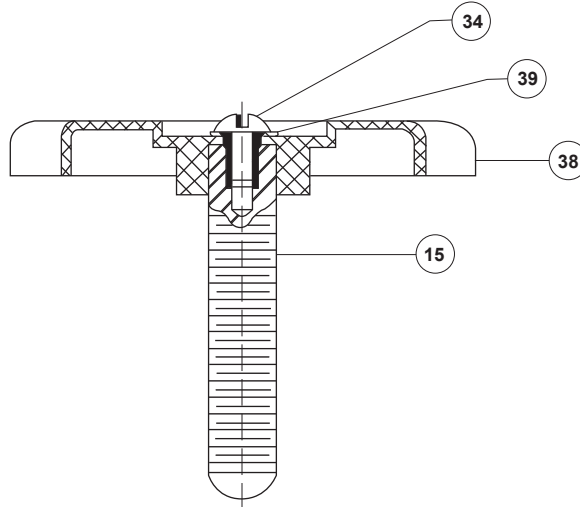
CJ8998-E

Figure 9. Low-Pressure Pilot Assembly



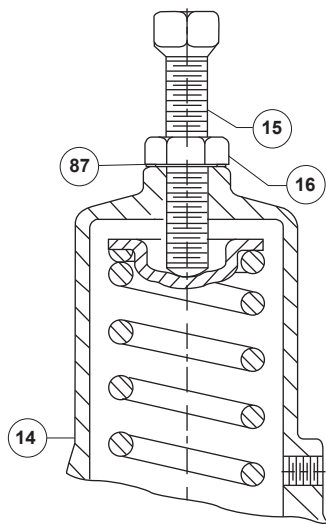
BF9827-G

Figure 10. High-Pressure Pilot Assembly



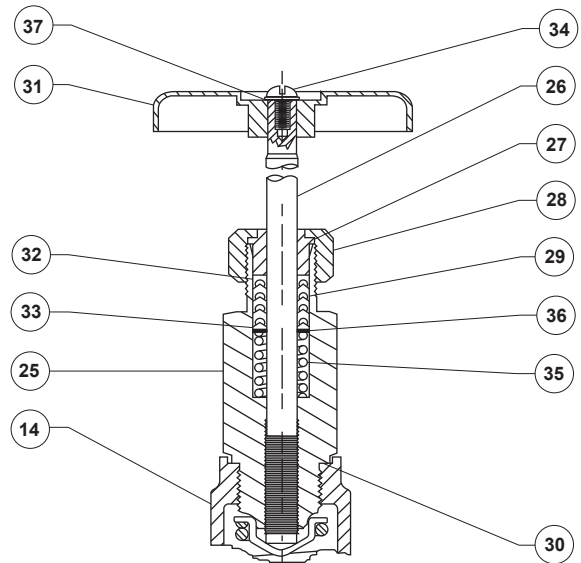
1J4965

Figure 11. Optional Handwheel Assembly



32A4712-A
A3505-1

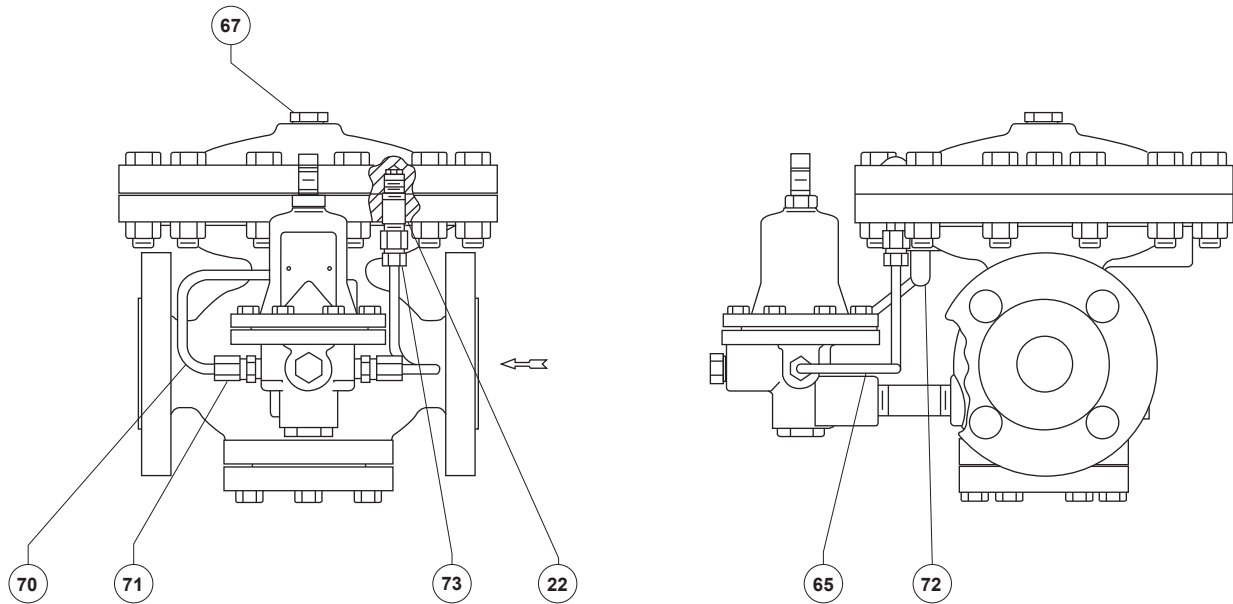
**STEEL AND
STAINLESS STEEL BODY**



CN7100

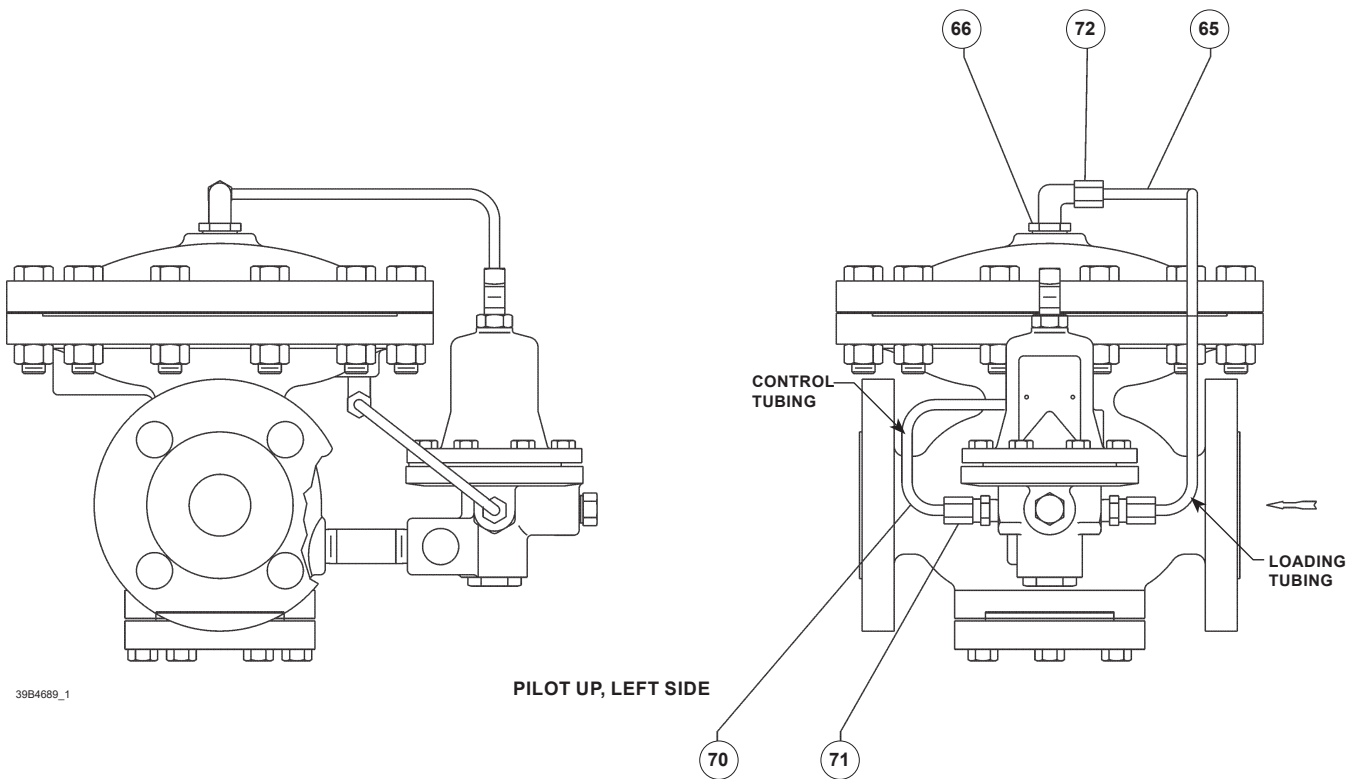
CAST IRON BODY

Figure 12. Optional Sealed Adjusting Screw



2F2573_L

Figure 13. Cast Iron Pilot Assembly (use for NPS 1-1/2 through 4 / DN 40 through 100 assemblies)

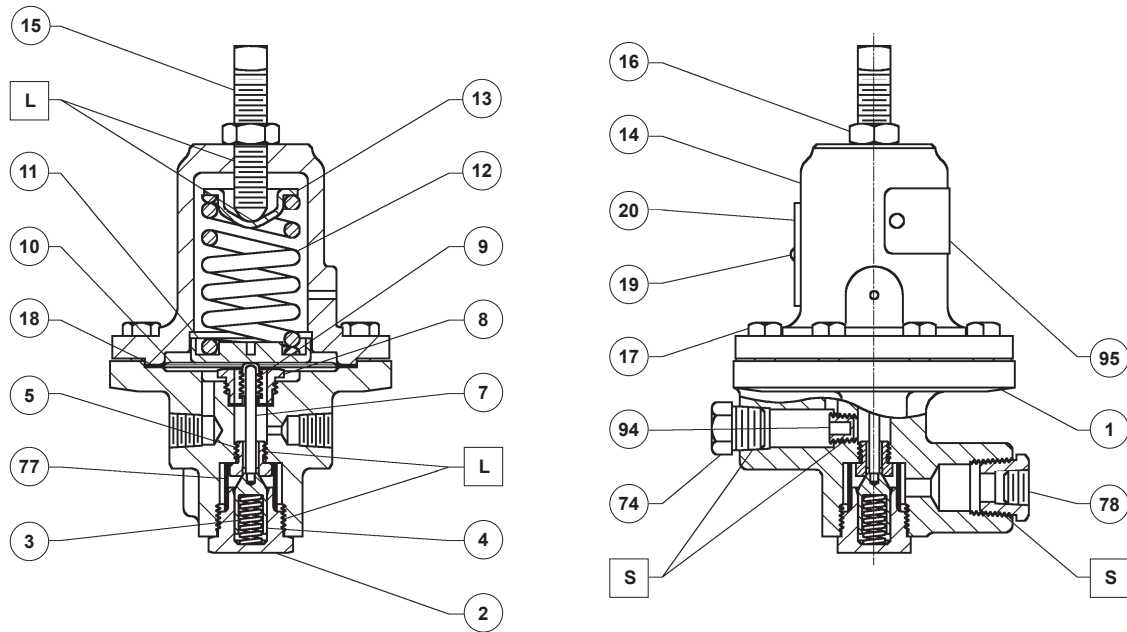


39B4689_1

PILOT UP, LEFT SIDE

Figure 14. Steel Pilot Mounting Assembly (High Pressure Pilot Shown)

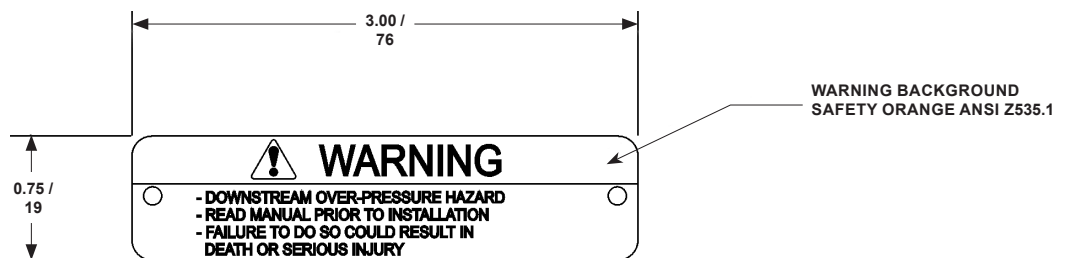
Type 92B



39B3357

□ APPLY LUBRICANT (L) OR SEALANT (S)

Figure 15. Type 6492HM Pilot Assembly



E0661

Figure 16. Safety Override Pilot Warning Label (key 95)

IN. /
mm

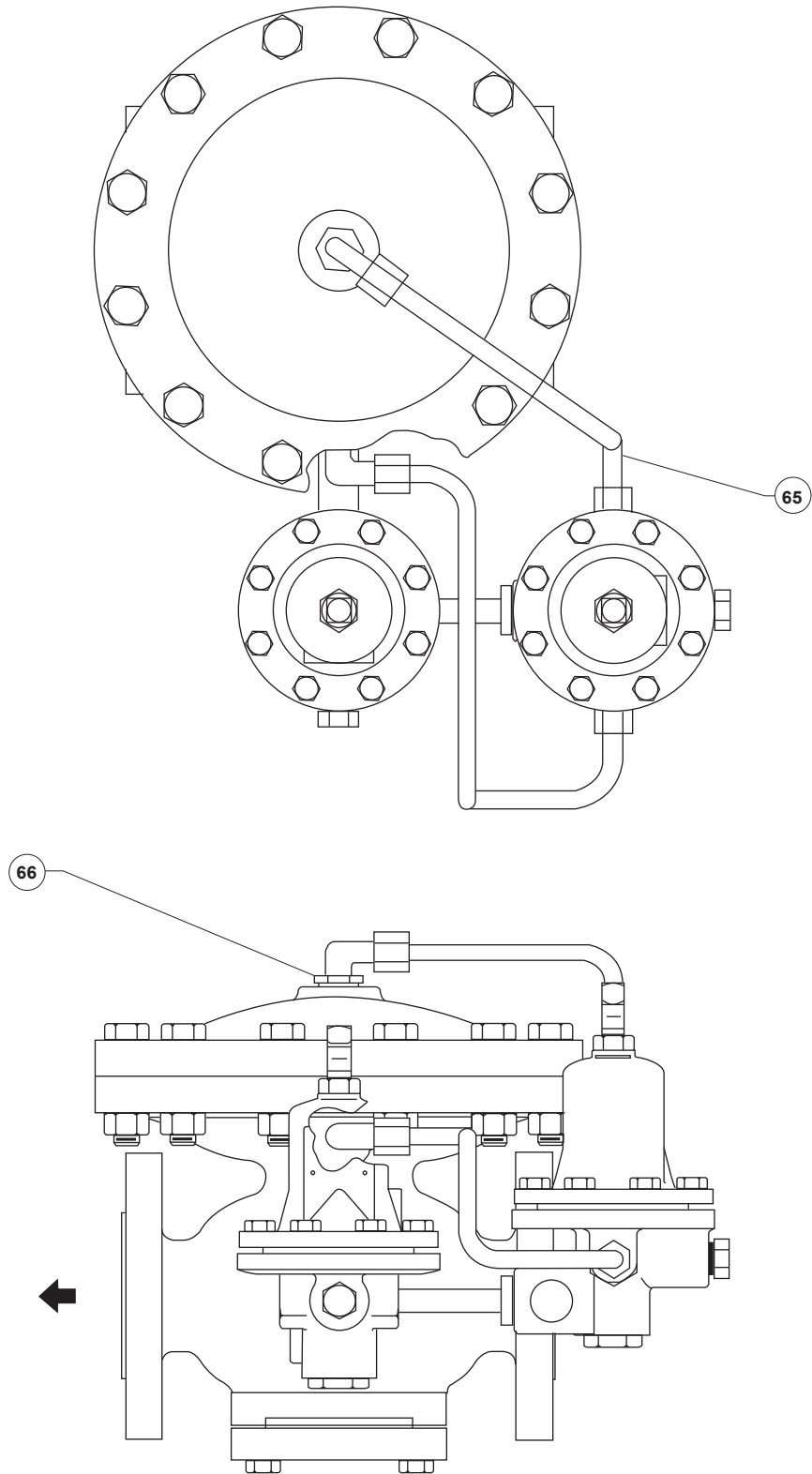


Figure 17. Safety Override Pilot Assembly

Type 92B

✉ Webadmin.Regulators@emerson.com

🔍 Fisher.com

📘 Facebook.com/EmersonAutomationSolutions

🌐 LinkedIn.com/company/emerson-automation-solutions

✂️ X.com/emr_automation

Emerson

Americas

McKinney, Texas 75069 USA
T +1 800 558 5853
+1 972 548 3574

Europe

Bologna 40013, Italy
T +39 051 419 0611

Asia Pacific

Singapore 128461, Singapore
T +65 6777 8211

Middle East and Africa

Dubai, United Arab Emirates
T +971 4 811 8100

D100703X012 © 1993, 2025 Emerson Process Management Regulator Technologies, Inc. All rights reserved. 01/25.

Fisher™ is a mark owned by Fisher Controls International, LLC, an Emerson Company. The Emerson logo is a trademark and service mark of Emerson Electric Co. All other marks are property of their respective owners.

The contents of this publication are presented for informational purposes only, and while every effort has been made to ensure their accuracy, they are not to be construed as warranties or guarantees, express or implied, regarding the products or services described herein or their use or applicability. All sales are governed by our terms and conditions, which are available upon request. We reserve the right to modify or improve the designs or specifications of such products at any time without notice.

Emerson Process Management Regulator Technologies, Inc does not assume responsibility for the selection, use or maintenance of any product. Responsibility for proper selection, use and maintenance of any Emerson Process Management Regulator Technologies, Inc. product remains solely with the purchaser.

