

October 2014

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 bar. 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.

Available Configurations

Pilot-operated globe-style pressure reducing valve with post guiding and flow-to-close valve plug action

Body Sizes and End Connection Styles

See Table 1

Body Ratings and Maximum Inlet Pressures⁽¹⁾

See Table 3

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 bar or body rating limit, whichever is lower

Outlet Pressure Ranges⁽¹⁾

See Table 2

Minimum Differential Pressure Required for Full Stroke⁽¹⁾

20 psig / 1.4 bar with stainless steel spring; 10 psig / 0.69 bar with Inconel® spring

Pressure Registration

External

Temperature Capabilities⁽¹⁾

See Table 3

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

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 SIZES		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	bar			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.

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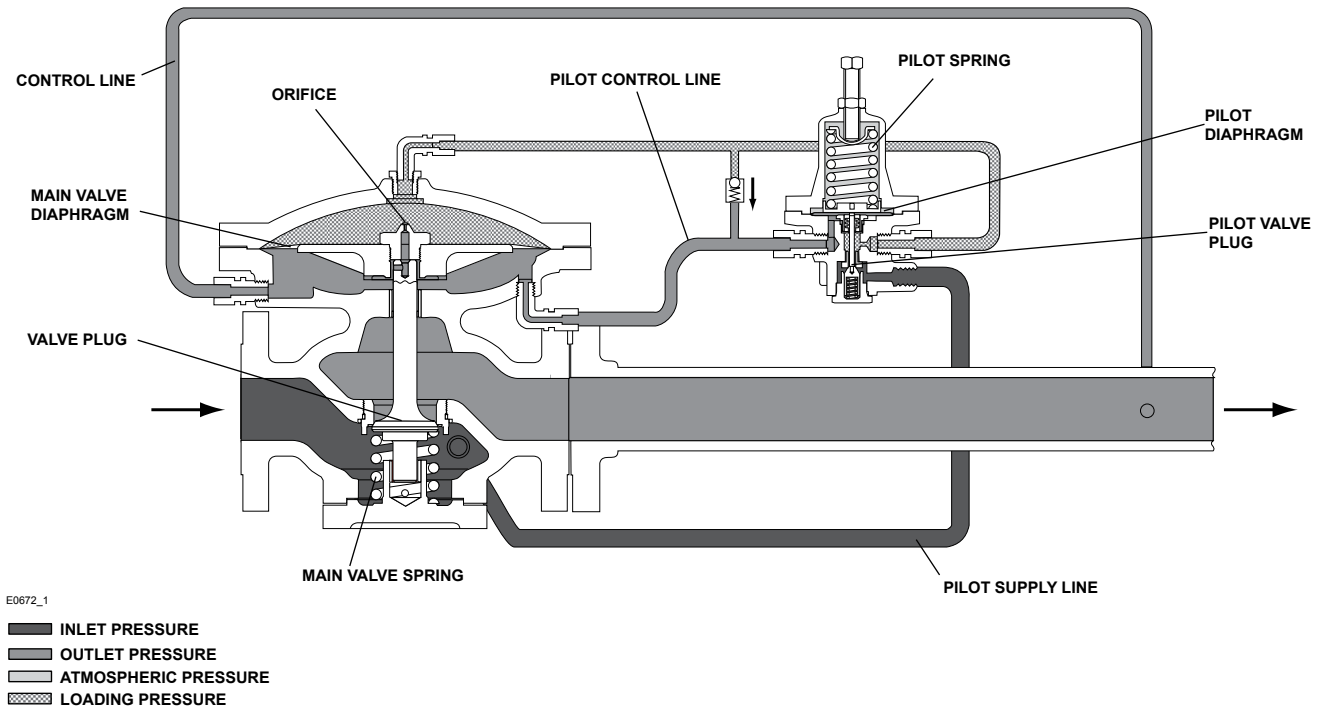


Figure 2. Type 92B Operational Schematic

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 bar d. If diaphragm differential pressure exceeds 40 psid / 2.8 bar d, 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	bar	°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	600	316 ⁽¹⁾
	PN 16 (NPS 4 / DN 100)	185	12.8	450	232
	PN 25/40 (NPS 4 / DN 100)	300	20.7	600	316 ⁽¹⁾
Stainless steel	NPT	300	20.7	450	232
	CL150 RF	175	12.1	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	600	316 ⁽¹⁾
	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	600	316 ⁽¹⁾

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.

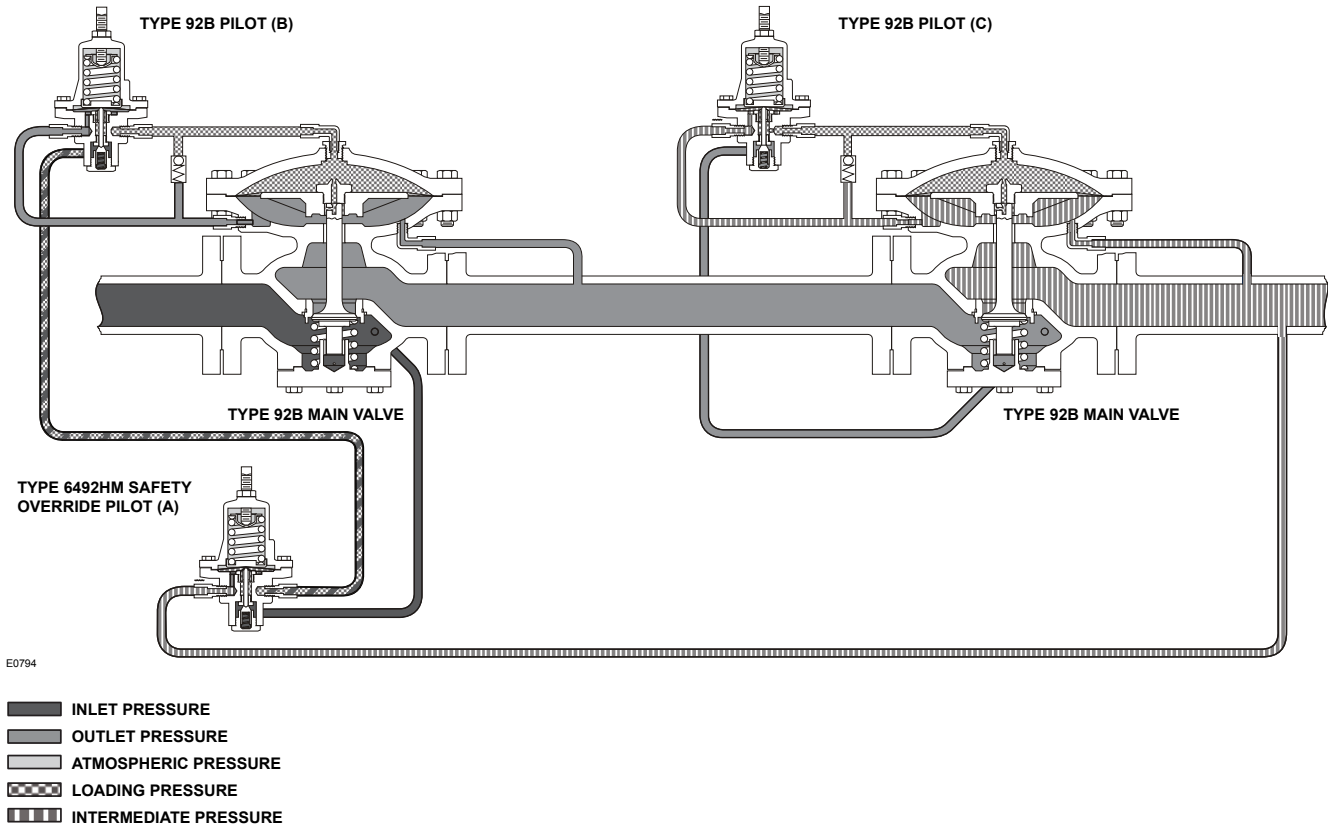


Figure 3. Safety Override System Schematic

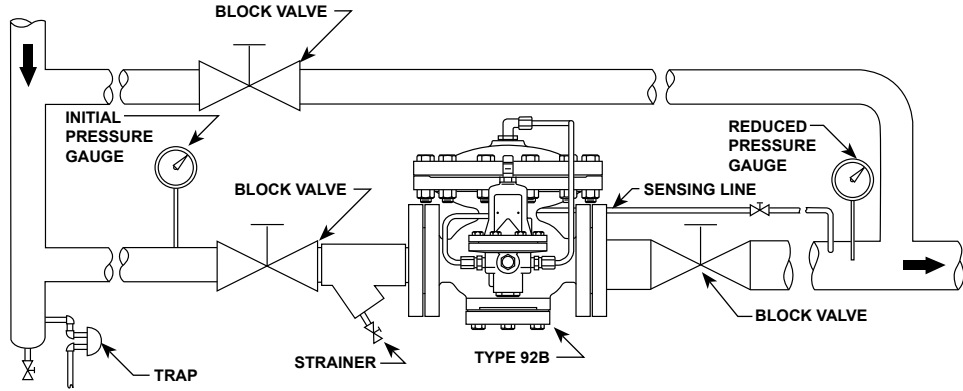
Table 4. Minimum Differential Pressures for Safety Override System

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 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.

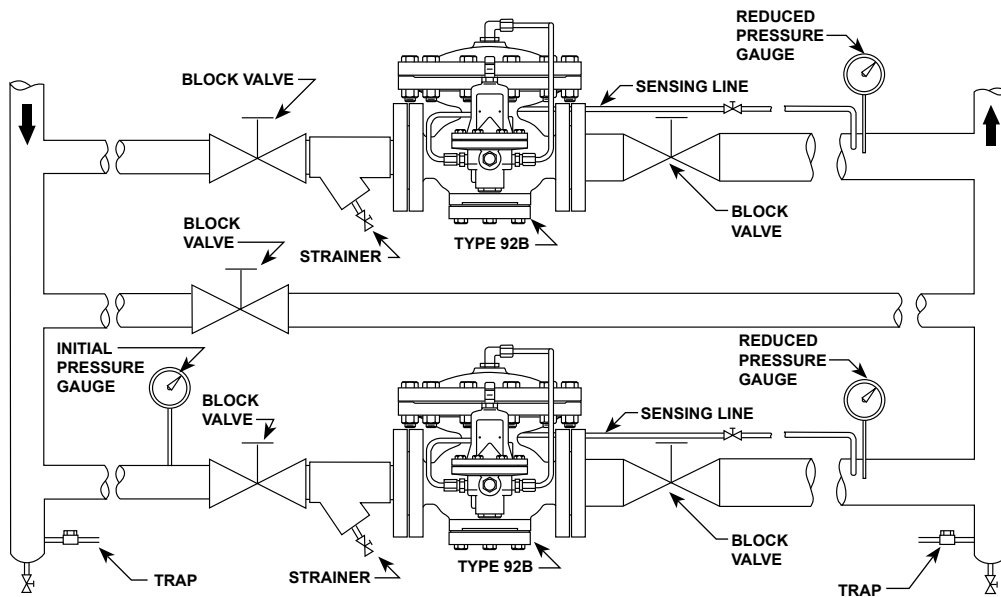
Type 92B

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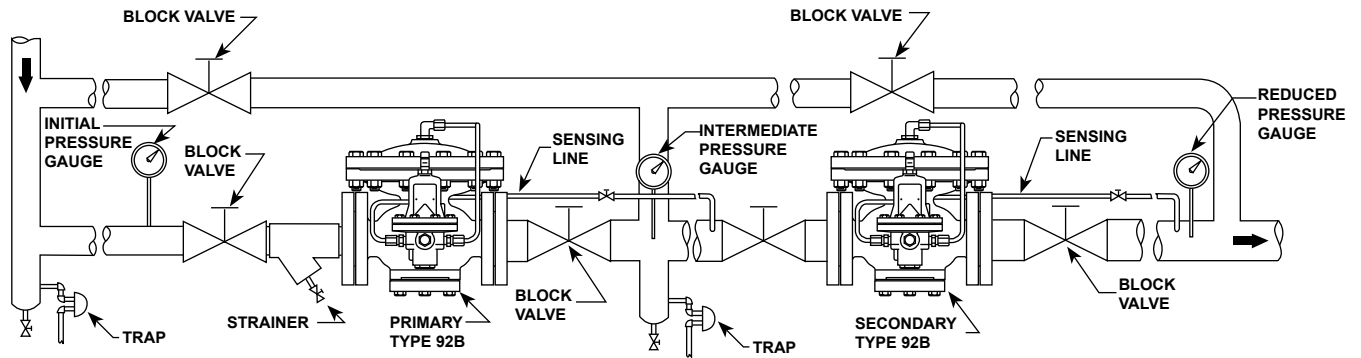
TYPE 92B SINGLE-STAGE INSTALLATION

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TYPE 92B SINGLE-STAGE PARALLEL INSTALLATION

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TYPE 92B TWO-STAGE INSTALLATION

Figure 4. Type 92B Typical Installations

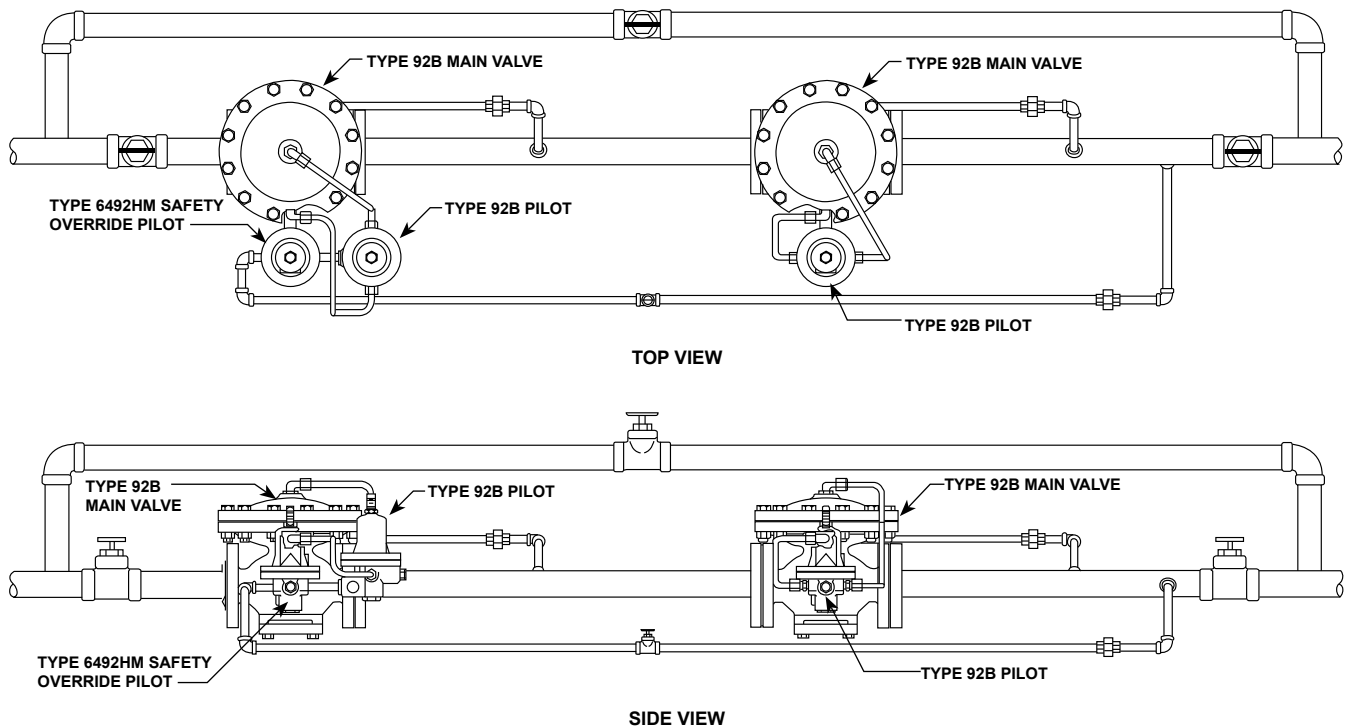


Figure 5. Safety Override System Installation

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:

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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 95H in the Type 92B pilot supply line (Refer to Figure 2). Adjust the pilot supply line regulator to reduce pilot supply pressure to about 30 psig / 2.1 bar 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 bar is suggested for units which include the standard 17-7 PH stainless steel main spring. This spring requires approximately 20 psig / 1.4 bar diaphragm differential pressure to fully stroke the main valve. If the lighter rate Inconel® spring is used, only about 10 psig / 0.69 bar diaphragm differential pressure is required to fully stroke the unit. Therefore, the pilot supply pressure can be reduced to about 20 psig / 1.4 bar 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

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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. Pull the seat ring (key 58), if it shows signs of wear and needs to be replaced. Drive the upper guide bushing (key 53) from the body (key 51) and pull the lower guide bushing from the bottom flange (key 52) if necessary.

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)

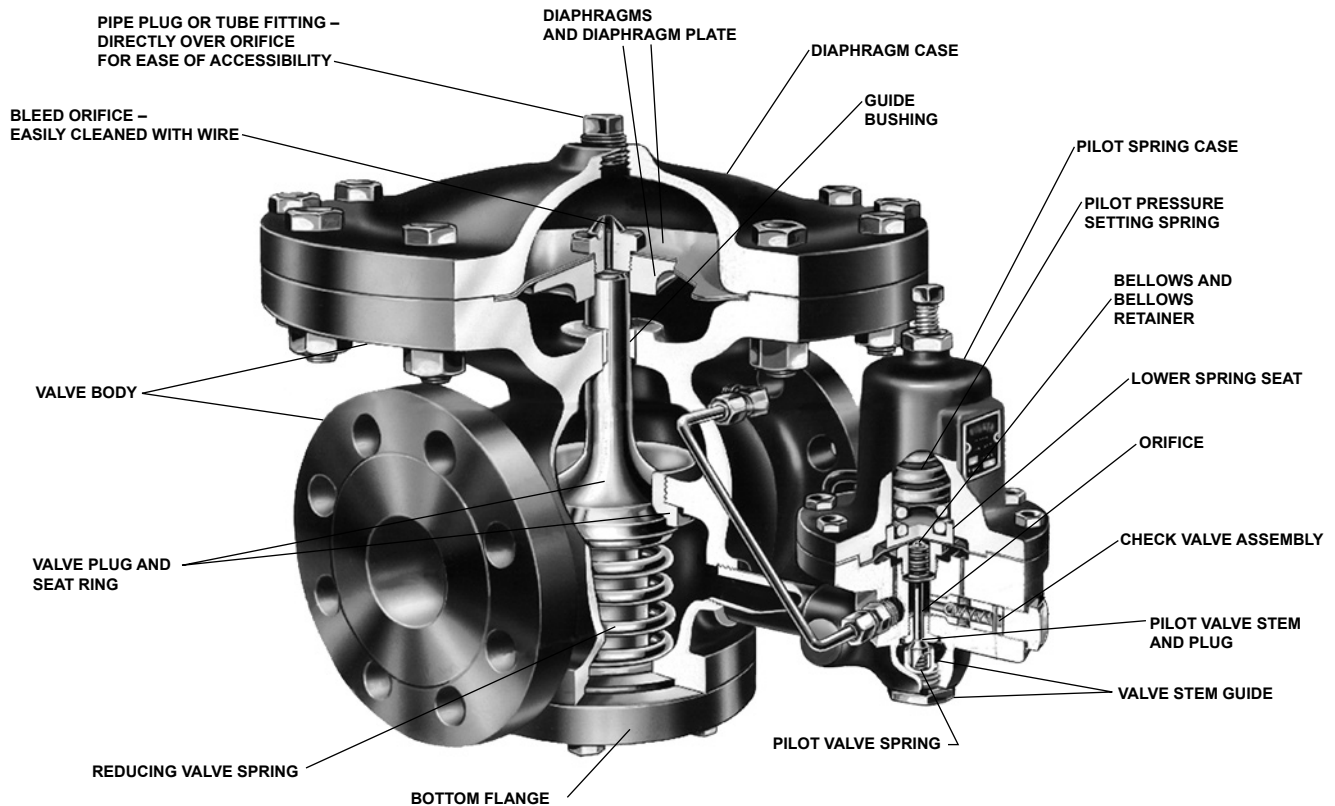
Inspect all internal parts for excessive wear or damage. Use new parts when necessary (see Table 5 for torque values). Reassemble the main valve as follows:

1. If removed, install guide bushings (key 53) in the body (key 51) and bottom flange (key 52).
2. Apply high temperature thread sealant to seat ring threads. Screw in the seat ring (key 58) (see Table 5 for torque values).
3. Install valve plug (key 56) and its spring (key 57).
4. 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).
5. 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.
6. 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).
7. 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.



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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.

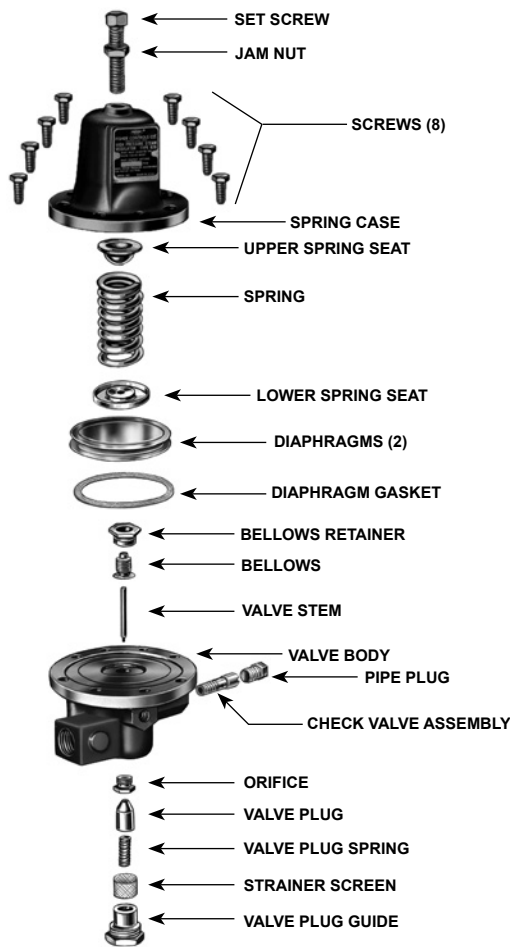
To Clean Pilot Strainer Assembly

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



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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 of 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 bellows 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		SEAT RING (KEY 58)		BLEED FITTING (KEY 61)		DIAPHRAGM CASE CAP SCREWS/HEX NUTS (KEY 63/64)		BOTTOM FLANGE CAP SCREWS (KEY 55)	
	NPS	DN	Ft-lbs	N•m	Ft-lbs	N•m	Ft-lbs	N•m	Ft-lbs	N•m
Cast Iron	1	25	100 to 125	136 to 169	23 to 29	30 to 39	50 to 70	68 to 95	24 to 30	32.5 to 40.6
	1 to 1/2	40	150 to 175	203 to 237	38 to 46	51.5 to 62	80 to 100	108 to 136	46 to 58	62 to 78.6
	2	50	225 to 250	305 to 339	38 to 46	51.5 to 62	95 to 110	129 to 149	46 to 58	62 to 78.6
	3	80	400 to 450	542 to 610	90 to 120	122 to 163	110 to 130	149 to 176	60 to 75	81.3 to 102
	4	100	1000 to 1100	1356 to 1491	100 to 140	136 to 190	110 to 130	149 to 176	155 to 190	210 to 258
Steel, Stainless steel	1	25	200 to 225	271 to 305	23 to 29	30 to 39	50 to 70	68 to 95	24 to 30	32.5 to 40.6
	1 to 1/2	40	250 to 275	339 to 373	38 to 46	51.5 to 62	80 to 100	108 to 136	46 to 58	62 to 78.6
	2	50	350 to 400	475 to 542	38 to 46	51.5 to 62	95 to 110	129 to 149	46 to 58	62 to 78.6
	3	80	600 to 650	813 to 881	90 to 120	122 to 163	110 to 130	149 to 176	60 to 75	81.3 to 102
	4	100	1000 to 1100	1356 to 1491	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 SCREWS (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.

Key	Description	Part Number
19	Drive Screw, Stainless steel Cast Iron Body (5 required) Steel Body (3 required)	1A368228982 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

Parts List

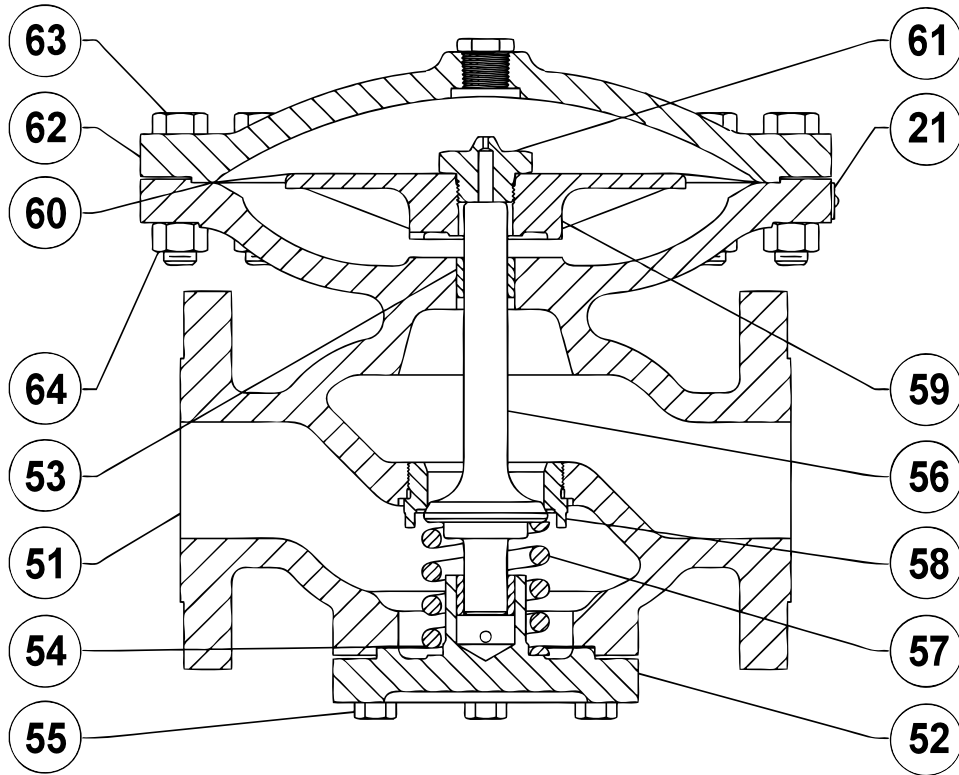
Type 92B Main Valve (Figure 8)

Key	Description	Part Number
	Parts Kits (includes keys: 54, 56, 58 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

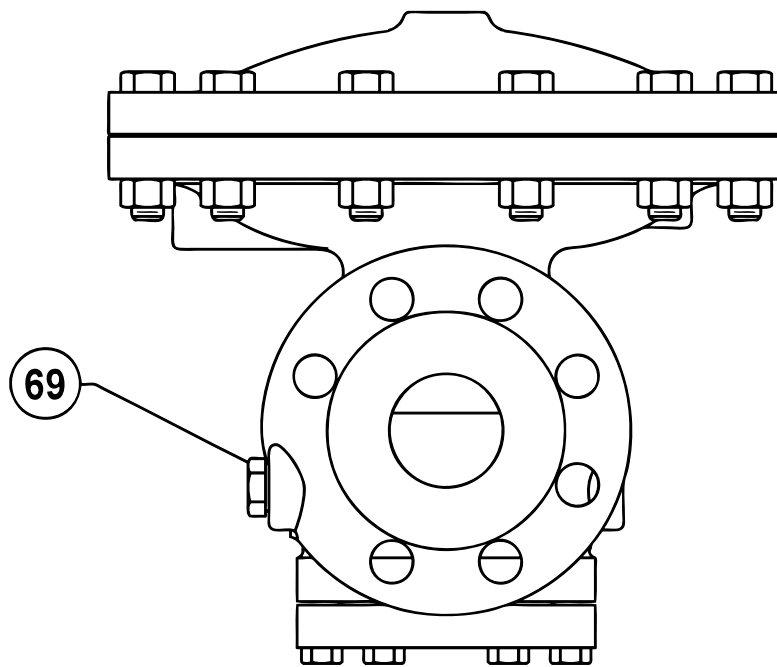
Type 92B

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 2 / DN 50	0T0681X0012
	NPS 1-1/2 / DN 40	T20895X0052		NPS 3 / DN 80	0U0365X0032
	NPS 2 / DN 50	T20895X0082		NPS 4 / DN 100	0T0788X0012
	NPS 3 / DN 80	T20895X0102	55	Cap Screw, For Cast Iron and Steel Bodies	
	NPS 4 / DN 100	T20895X0122		NPS 1 / DN 25 (6 required)	1A336924052
	CL300 RF flanged			NPS 1-1/2 / DN 40 (6 required)	1A337524052
	NPS 1 / DN 25	T20895X0032		NPS 2 / DN 50 (6 required)	1A418524052
	NPS 1-1/2 / DN 40	T20895X0062		NPS 3 / DN 80 (8 required)	1A344424052
	NPS 2 / DN 50	T20895X0092		NPS 4 / DN 100 (8 required)	1A430224052
	NPS 3 / DN 80	T20895X0112		Cap Screw, For Stainless steel Bodies	
	NPS 4 / DN 100	T20895X0132		NPS 1 / DN 25 (6 required)	1A3369X0032
	PN16/25/40 RF			NPS 1-1/2 / DN 40 (6 required)	1A3375X0022
	NPS 1 / DN 25	T21162X0012		NPS 2 / DN 50 (6 required)	1A4185X0022
	NPS 1-1/2 / DN 40	T21162X0022		NPS 3 / DN 80 (8 required)	1A3444X0012
	NPS 2 / DN 50	T21162X0032		NPS 4 / DN 100 (8 required)	1A4302K0022
	NPS 3 / DN 80	T21162X0052	56	Valve Plug, Stainless steel	
	PN16 RF			NPS 1 / DN 25	2P979646172
	NPS 4 / DN 100	T21162X0042		NPS 1-1/2 / DN 40	2P979746172
	PN25/40 RF			NPS 2 / DN 50	2P979846172
	NPS 4 / DN 100	GG01701X012		NPS 3 / DN 80	39B4698X012
	Stainless steel			NPS 4 / DN 100	39B4699X012
	NPT		57	Spring	
	1 NPT	T21160X0012		17-7 PH Stainless Steel	
	1-1/2 NPT	T21160X0042		Standard for 20 psi / 1.4 bar pressure drop	
	2 NPT	T21160X0072		or greater	
	CL150 RF flanged			NPS 1 / DN 25	1R151337052
	NPS 1 / DN 25	T21160X0022		NPS 1-1/2 / DN 40	1R151437052
	NPS 1-1/2 / DN 40	T21160X0052		NPS 2 / DN 50	1R151537052
	NPS 2 / DN 50	T21160X0082		NPS 3 / DN 80	1R151737052
	NPS 3 / DN 80	T21160X0102		NPS 4 / DN 100	1R151837052
	NPS 4 / DN 100	T21160X0122		Inconel®	
	CL300 RF flanged			10 to 20 psi / 0.69 to 1.4 bar minimum pressure drop	
	NPS 1 / DN 25	T21160X0032		NPS 1 / DN 25	0U020242012
	NPS 1-1/2 / DN 40	T21160X0062		NPS 1-1/2 / DN 40	0U023742012
	NPS 2 / DN 50	T21160X0092		NPS 2 / DN 50	0T086042012
	NPS 3 / DN 80	T21160X0112		NPS 3 / DN 80	0U035942012
	NPS 4 / DN 100	T21160X0132		NPS 4 / DN 100	0T085842012
52	Bottom Flange Assembly		58*	Seat Ring, Stainless steel	
	Cast iron			NPS 1 / DN 25	2P980346172
	NPS 1 / DN 25	1J3024000A2		NPS 1-1/2 / DN 40	2P980446172
	NPS 1-1/2 / DN 40	1J3026000A2		NPS 2 / DN 50	2P896746192
	NPS 2 / DN 50	1J4339000A2		NPS 3 / DN 80	2P898046192
	NPS 3 / DN 80	0U0357000A2		NPS 4 / DN 100	2P980546192
	NPS 4 / DN 100	0T0786000A2		Seat Ring Puller Tool	
	Steel			NPS 1 / DN 25	AD5222000A2
	NPS 1 / DN 25	29B468600A2		NPS 1-1/2 / DN 40	AD5222000B2
	NPS 1-1/2 / DN 40	39B551300A2		NPS 2, 3, 4 / DN 50, 80, 100	AD5222000C2
	NPS 2 / DN 50	39B045200A2	59	Diaphragm Head	
	NPS 3 / DN 80	39B581200A2		Cast Iron Body, Cast Iron	
	NPS 4 / DN 100	39B642300A2		NPS 1 / DN 25	1F251519012
	Stainless steel			NPS 1-1/2 / DN 40	1F301019012
	NPS 1 / DN 25	29B468600B2		NPS 2 / DN 50	1F250419012
	NPS 1-1/2 / DN 40	39B551300B2		NPS 3 / DN 80	GG02112X012
	NPS 2 / DN 50	39B045200B2		NPS 4 / DN 100	1F335619012
	NPS 3 / DN 80	39B581200B2		Steel Body, WCC Steel	
	NPS 4 / DN 100	39B642300B2		NPS 1 / DN 25	19B4685X012
54*	Gasket			NPS 1-1/2 / DN 40	19B5514X012
	Cast Iron Body, Composition			NPS 2 / DN 50	29B0453X012
	NPS 1 / DN 25	0U020004022		NPS 3 / DN 80	29B5811X012
	NPS 1-1/2 / DN 40	0U024704022		NPS 4 / DN 100	29B6425X012
	NPS 2 / DN 50	0T068104022		Stainless steel Body, CF8M Steel	
	NPS 3 / DN 80	0U0365X0032		NPS 1 / DN 25	19B4685X022
	NPS 4 / DN 100	0T078804022		NPS 1-1/2 / DN 40	19B5514X022
	Steel and Stainless steel Body, Graphite			NPS 2 / DN 50	29B0453X022
	NPS 1 / DN 25	0U0200X0012		NPS 3 / DN 80	29B5811X022
	NPS 1-1/2 / DN 40	0U0247X0012		NPS 4 / DN 100	29B6425X022

*Recommended spare part
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30A6348-B2

Figure 8. Type 92B Main Valve Assembly

Type 92B

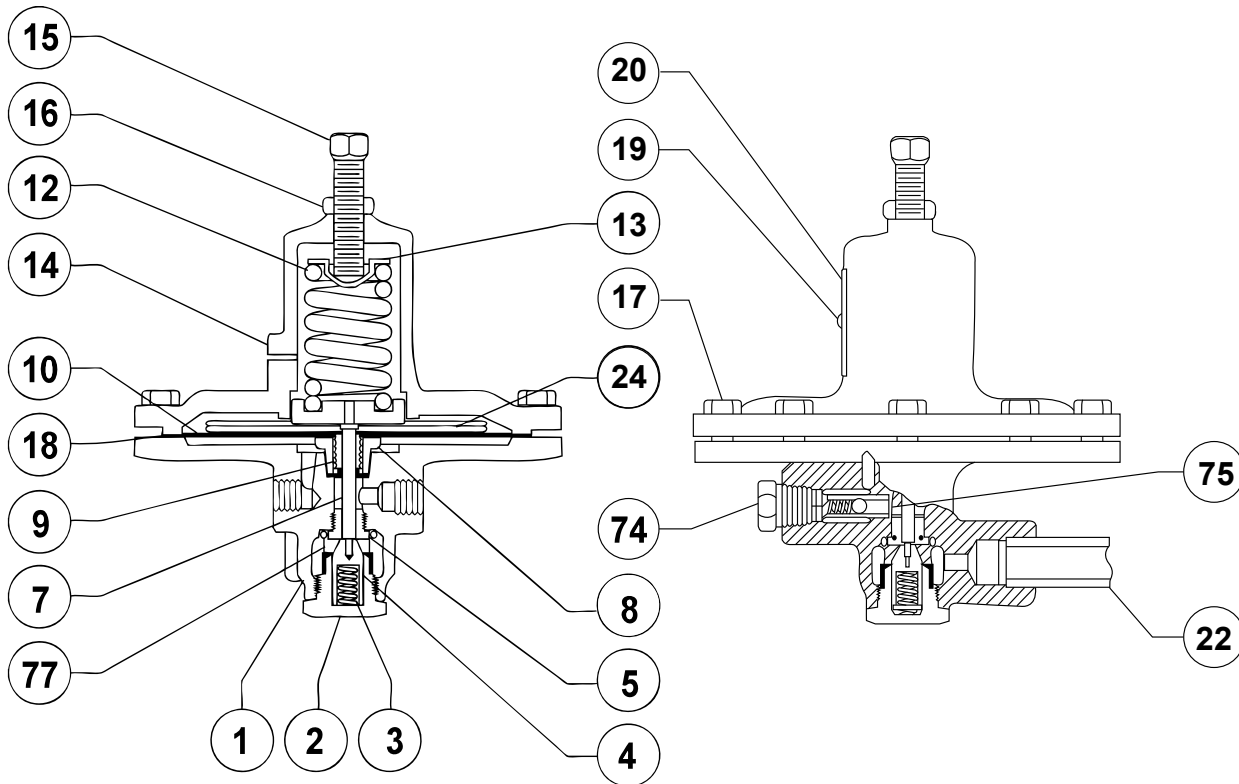
Type 92B Main Valve (Figure 8) (continued)

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	R92BLPX0012
	Steel	R92BLPX0022
	High-pressure Pilot	
	Cast iron	R92BHPX0012
	Steel	R92BHPX0022
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	1E396936012
	High pressure/High temperature	1E395836012
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



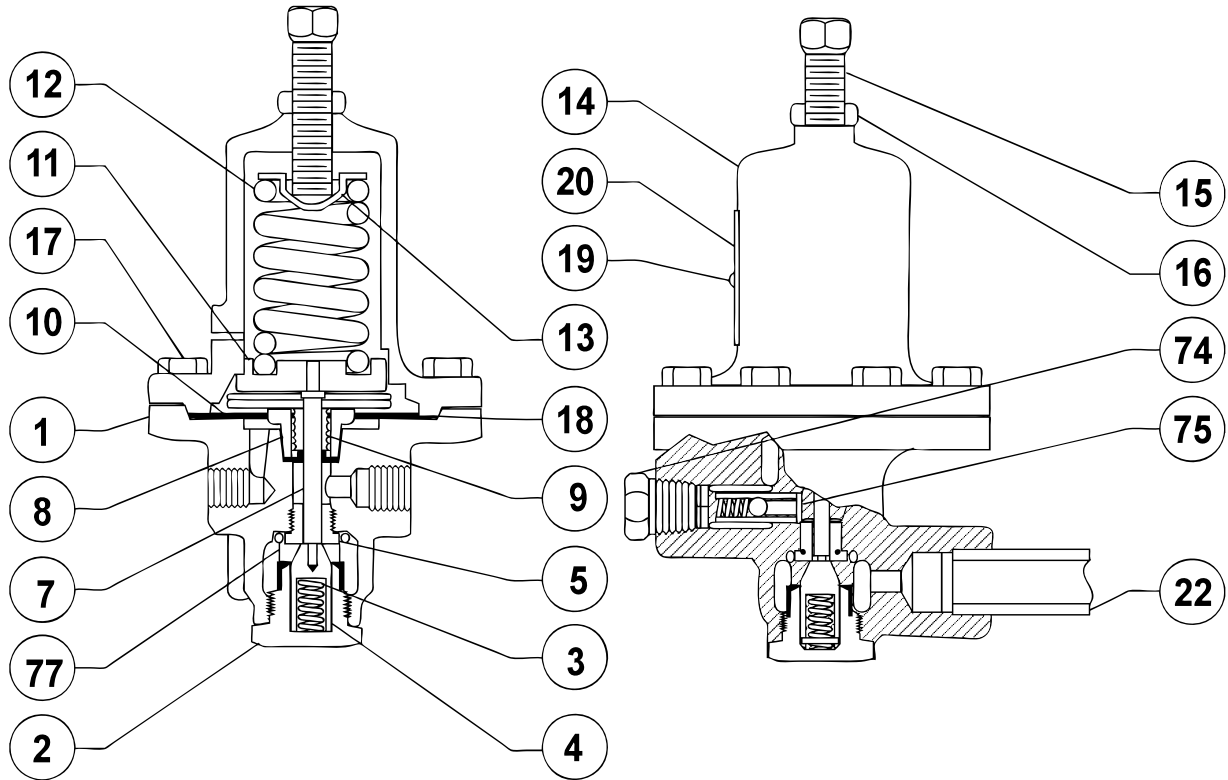
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Figure 9. Low-Pressure Pilot Assembly

Key	Description	Part Number	Key	Description	Part Number
13	Upper Spring Seat, Plated Steel Low/High pressure High temperature	1D667125072 14B9951X012	18*	Diaphragm Gasket Cast Iron and Ductile Iron Body, Composition Low pressure High pressure Steel and Stainless Steel Body, Graphite Low pressure High pressure/High Temperature	1E397004022 1E396104022 1E3970X0012 1E3961X0012
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	19	Drive Screw (2 required)	1A368228982
15	Set Screw, Plated Steel	1D995448702	20	Nameplate	-----
16	Hex Nut, Plated Steel	1A353724122	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
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	24	Diaphragm Plate Assembly Low pressure only	1E3967X0012
			34	Machine Screw	16A5763X012
			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

*Recommended spare part

Type 92B



BF9827-G

Figure 10. High-Pressure Pilot Assembly

Optional Handwheel (Figure 11)

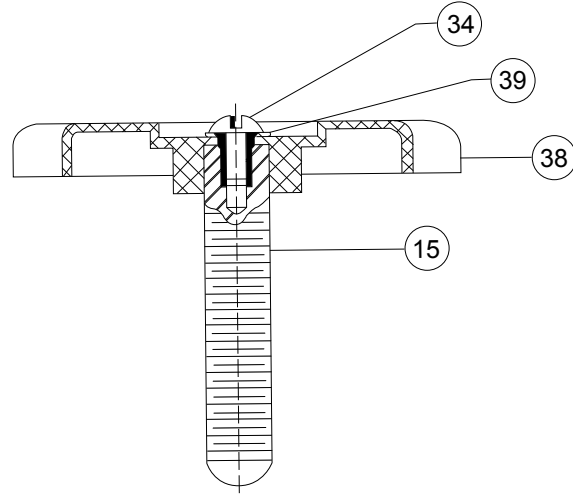
Key	Description	Part Number	Key	Description	Part Number
Handwheel Assembly					
15	Set Screw, Plated Steel	1J496428982	For Steel or Stainless Steel Construction		
16	Hex Nut, Plated Steel (not shown)	1A353724122	14	Spring Case	
34	Machine Screw	16A5763X012		Steel Construction Only, WCC Steel	
38	Handwheel	1J496144012		Low pressure	3L442222012
39	Lock Washer	1A352332992		High pressure	2L442022012
			15	Set Screw, Plated Steel	1D995448702
			16	Hex Nut, Plated Steel	1A353724122
			87	Sealing Washer	1V205699012

Optional Sealed Adjusting Screw (Figure 12)

Key	Description	Part Number
For Cast Iron Construction		
14	Spring Case	
	Low pressure	3L324222012
	High pressure	2L324122012
25	Stuffing Box	1L324024092
26	Adjusting Screw	1L449735232
27	Packing Follower	1K884924092
28	Stuffing Box Nut	0P077624102
29	Packing (3 required)	1H784301012
30	Stuffing Box Gasket	1N499199202
31	Handwheel	1L369644992
32	Female Adaptor	1H784401012
33	Male Adaptor	1H784201012
34	Machine Screw	16A5763X012
35	Spring	1F125437012
36	Packing Washer	1H981836042
37	Lock Washer	1L323928982

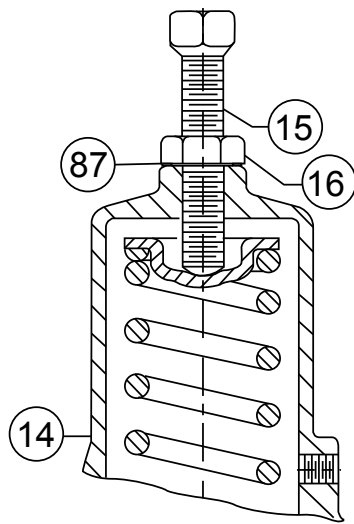
Type 92B Pilot Mounting Parts (Figures 13 and 14)

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	-----



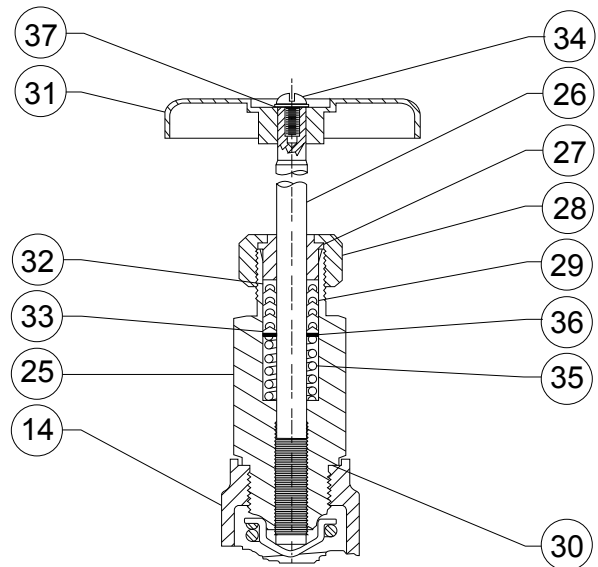
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Figure 11. Optional Handwheel Assembly



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A3505-1

STEEL AND
STAINLESS STEEL BODY

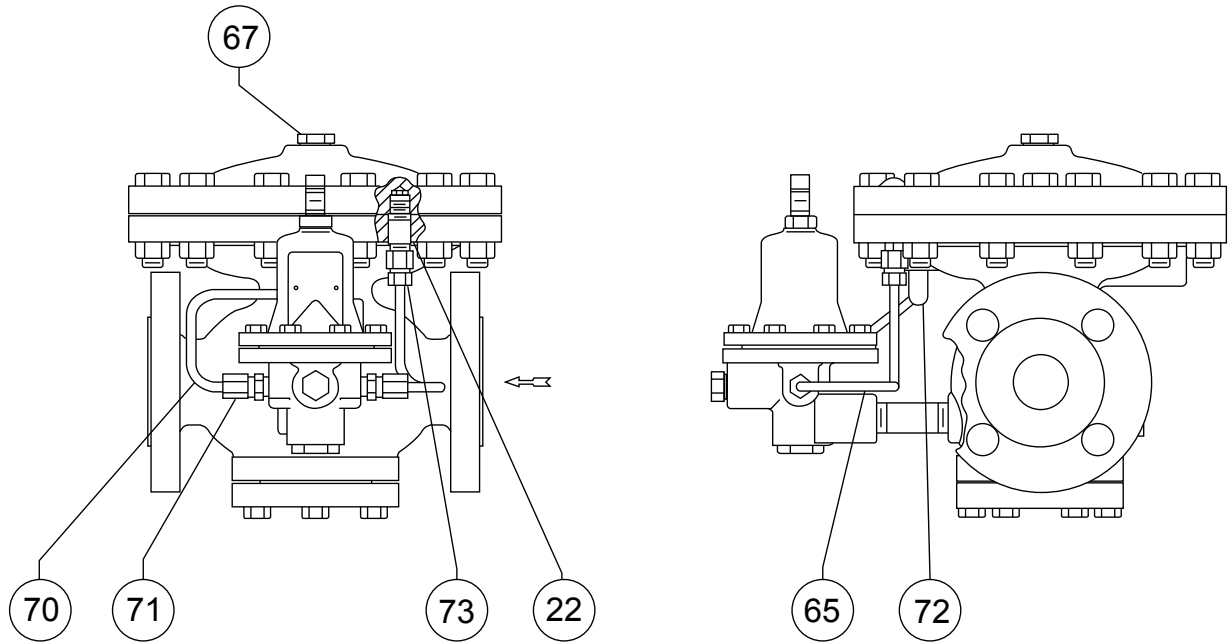


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CAST IRON BODY

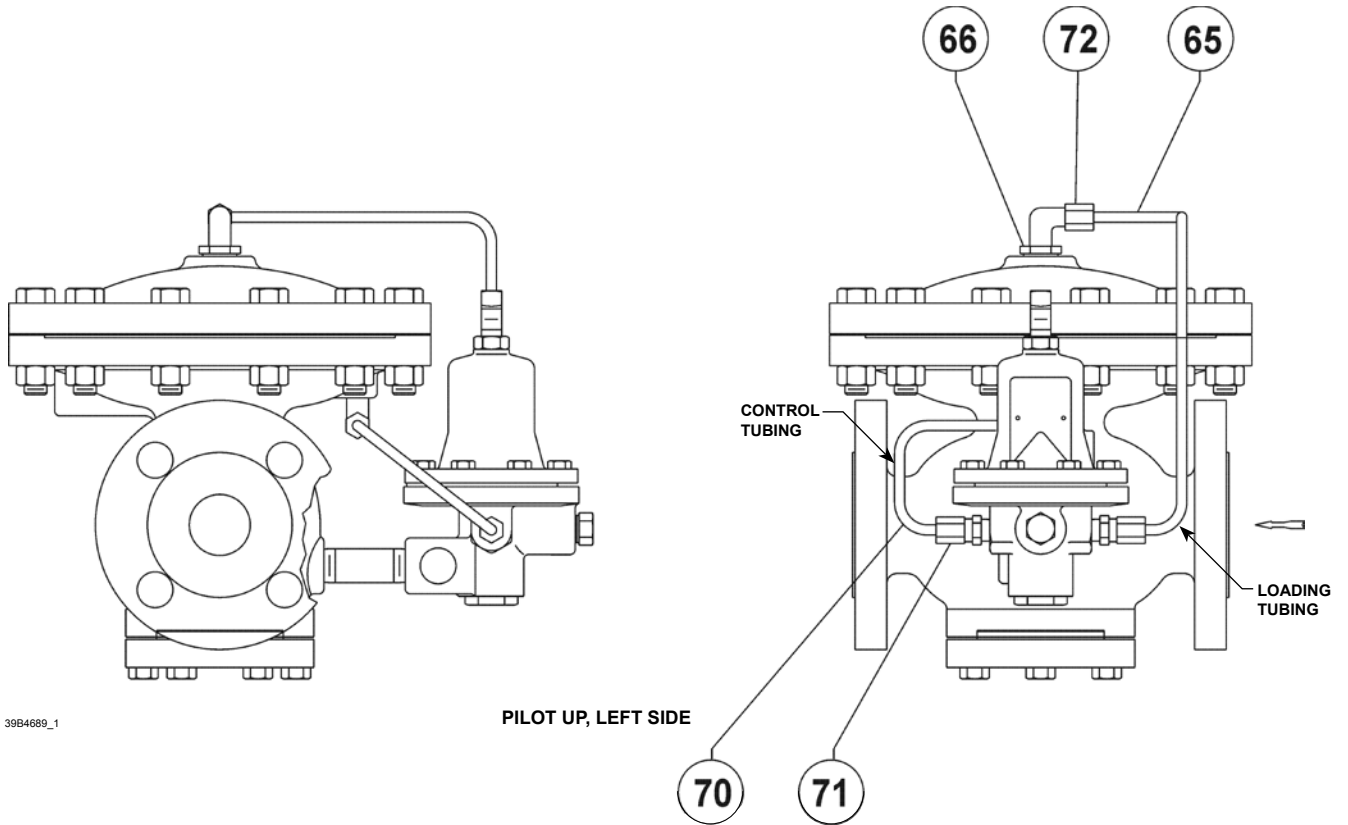
Figure 12. Optional Sealed Adjusting Screw

Type 92B



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



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

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

Key	Description	Part Number
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)

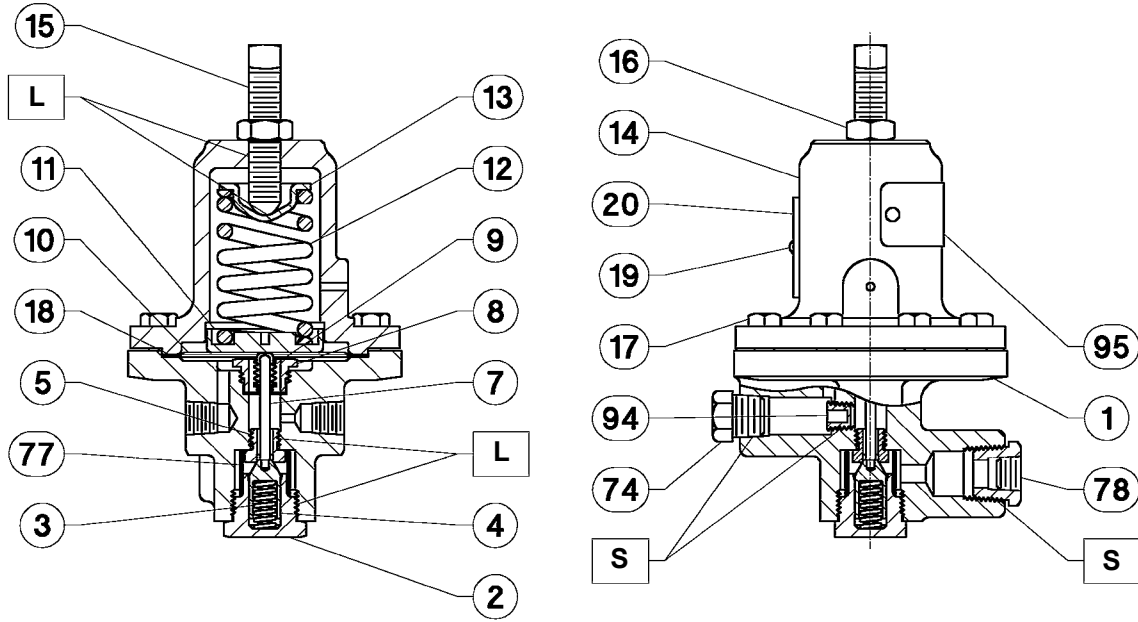
Key	Description	Part Number
1	Pilot Valve Body	
	Steel	22A0403X052
	Stainless steel	22A0403X072
2	Valve Guide	
	Steel	1E391835132
	Stainless steel	1E391835072
3	Valve Spring	1E392437022
4	Inner Valve	
	Steel	1F967446172
	Stainless steel	1F9674X0012
5	Orifice	
	Steel	1H564446172
	Stainless steel	1H5644X0012
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)	1E395836012
11	Lower Spring Seat	
	Type 6492HM	1J9140X0032
	Type 6492HTM	-----
	Steel	1J9140X0022
	Stainless steel	14B9948X012

Key	Description	Part Number
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
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	1E396104022
	Type 6492HTM	1E3961X0012
19	Drive Screw (4 required)	1A368228982
20	Nameplate	-----
34	Machine Screw for use with Handwheel	16A5763X012
38	Handwheel	1J496144012
39	Lock Washer for use with Handwheel	1A352332992
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	-----

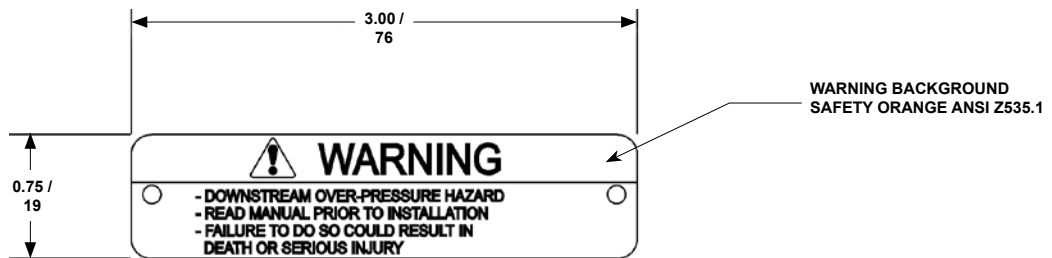
Type 92B



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

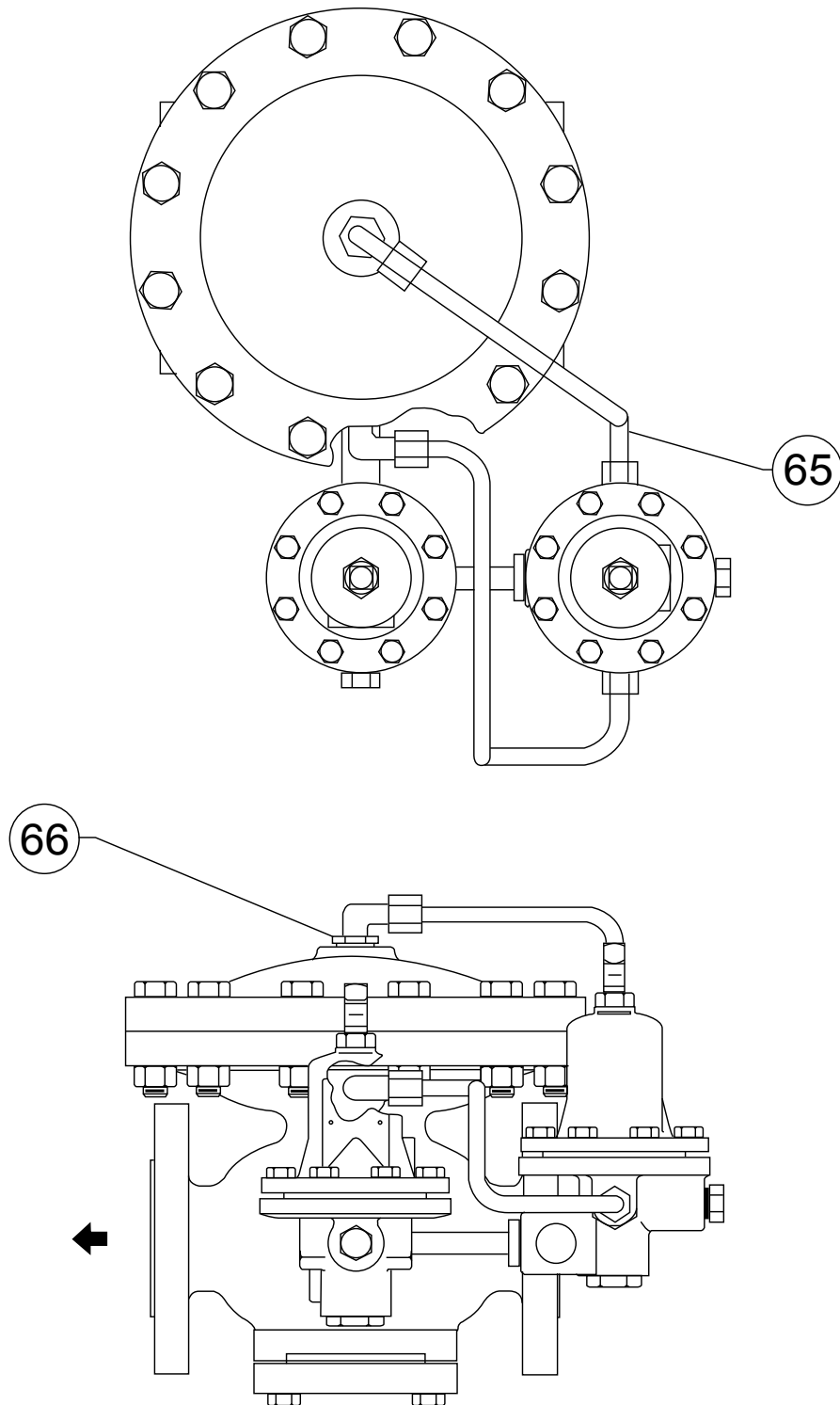


Figure 17. Safety Override Pilot Assembly

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