

Installation Instructions

Repair Kit for Cemco- & Invalco-Style



WARNING

User must isolate the control from signal pressure prior to disassembly and installation of this product. Failure to do so may result in free flow of gas during installation, property damage and/or personal injury. Always employ upstream and downstream pressure gauges to monitor startup pressures.

Application

This repair kit is designed to repair/replace damaged components within the Model 1110-111 Mizer for Cemco Controller.

Disassembly

Shut off supply pressure and process pressure to the controller. Loosen and remove **Jam Nut (5)** and **O-Ring (11)**, remove the MIZER® pilot valve and blow out the supply line to remove any debris.

WARNING: Proceed very carefully with the disassembly and re-assembly steps, as there are several extremely small parts, some of which are spring-loaded, which may become easily lost.

Unscrew and remove the **Spring Retainer Cap (7)** from the bottom of the **Pilot Valve Body (3)**. Remove the **Spring (4)** and Internal Poppet Assembly (6) from the Pilot Valve Body.

Carefully, unscrew and remove the **Nozzle Tip (2)** from the top of the Pilot Valve Body taking care not to damage it. Remove the **External Poppet Assembly (1)**.

Remove **O-Rings (8, 9, 10)** from the Spring Retainer, Nozzle Tip and Pilot Valve Body.

Clean and blow dry the Pilot Valve Body, Nozzle Tip and Spring Retainer.

Re-assembly

Replace O-Rings with new ones and position them within their proper grooves on the Pilot Valve Body, Nozzle Tip and Spring Retainer, utilizing a light coat of lubricant on each O-Ring.

Locate the new External Poppet Assembly. **CAUTION: Prior to installation, assure that the cone-shaped portion of the seal is installed downward on the External Poppet.** Insert the new External Poppet Assembly into the top end of the Poppet Valve Body.

Install the Nozzle Tip over the External Poppet Assembly and screw it into the top of the Pilot Valve Body.

Turn the assembly over and push the External Poppet Assembly into the Nozzle Tip until it stops. Insert the new Internal Poppet Assembly into the rear of the Pilot Valve Body, making sure that the "wire" end

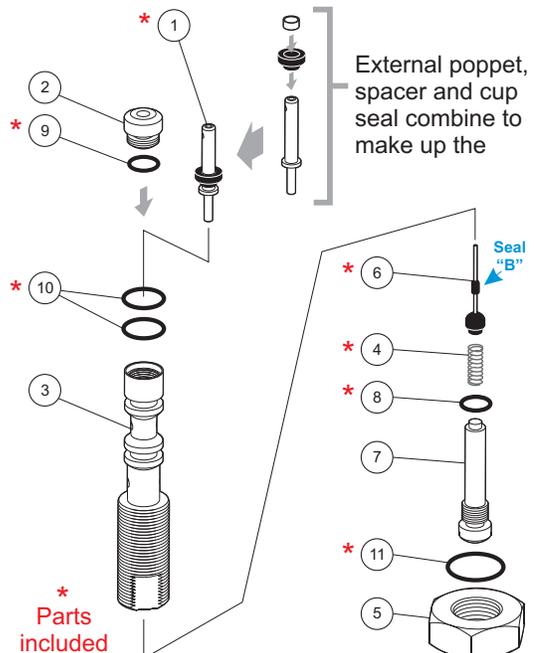
goes in first. **Seal "B"** (see illustration below) should drop cleanly through the seating area and the wire should insert into the External Poppet Assembly.

CAUTION! If you do not believe the Internal Poppet Assembly properly engaged the External Poppet Assembly, DO NOT FORCE IT, as damage may occur. Also, DO NOT STRETCH the spring, as it is designed to work properly with a precise free height. Stretching the spring will negatively affect the proper function of the unit.

Insert the new Spring. Install the Spring Retainer Cap and screw it down until the O-Ring makes up tightly.

To assure proper assembly, push down on External Poppet Assembly. The Poppet should move freely up and down. If the Poppet hangs **DO NOT FORCE IT!** Disassemble the unit and reinstall until proper free travel is achieved. Although the External Poppet Assembly may exhibit a tendency to spring back, it is not necessary for proper function. It is only necessary that the Poppet move freely, regardless of whether there is spring action.

Reinstall the repaired MIZER® Pilot Valve into the controller head as directed on Page 2. **NOTE: There are two different Item 11 o-rings, one for Cemco-style and one for Invalco-style. Use the appropriate o-ring for your control and discard the other.**



Installation and Calibration Instructions

for MIZER® Pilot Valve

WARNING

User must isolate the control from signal pressure prior to disassembly and installation of this product. Failure to do so may result in free flow of gas during installation, property damage and/or personal injury. Always employ upstream and downstream pressure gauges to monitor startup pressures.

Application

The Model 1110 Retrofit Kit is designed to convert an existing continuous-bleed Cemco Model 6900 Level Control to a non-continuous-bleed configuration. This reconfiguration results in significant gas savings, as well as providing a much cleaner and safer environment.

The MIZER® Pilot Valve will operate in both Snap-Acting and Throttling applications. User must realize that liquid level control performance is a function of the efficiency of both the control AND the valve, as some valves flow more efficiently than others.

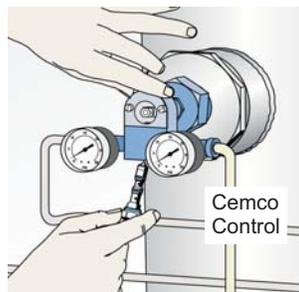
This device can be installed without shutting down or draining the unit, thereby eliminating concerns about spills or lost production. However, since the control will be inactive during the retrofit, and to avert any possibility of overflow during this procedure, it is recommended that installation take place while the vessel is in a low liquid condition.

Installation and Calibration

Shut off supply pressure and process pressure to the controller. Remove the controller adjustment screw and blow out the supply line to remove any debris.

Lubricate the MIZER® O-rings with a multi-purpose grease and insert the MIZER® Pilot Valve, screwing it clockwise until the tip reaches the nozzle seat.

Turn on supply pressure to the controller. Adjust the MIZER® Pilot Valve in and out until the desired pressure is achieved.

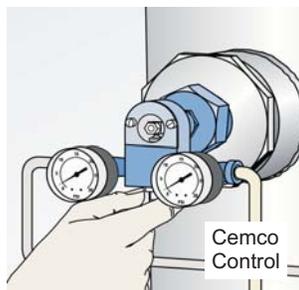


NOTE:

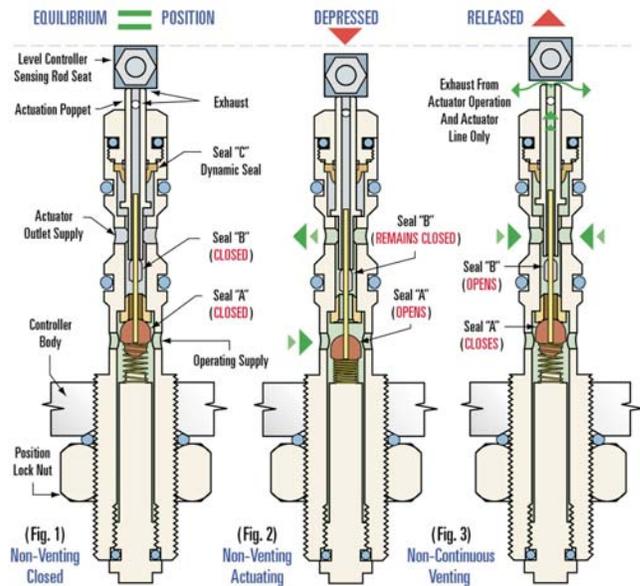
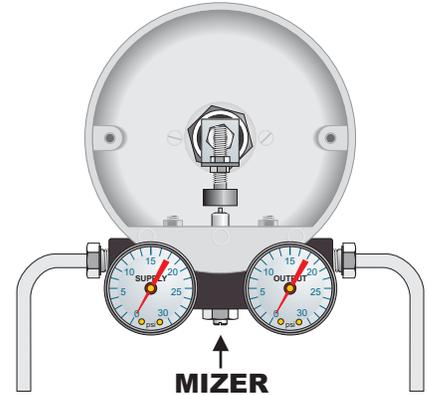
Clockwise adjustment will LOWER the fluid level.

Counter-clockwise adjustment will RAISE the fluid level.

Once set, lock the MIZER® Pilot Valve in place by tightening the supplied jam nut



Invalco Control



How the MIZER® Pilot Valve Operates

Equilibrium Position (Non-Venting Closed)

When the MIZER® Pilot Valve is in "Steady State", both Seal "A" and Seal "B" are closed and the control's Nozzle Seat is in a neutral position (See Fig. 1).

Depressed Position (Non-Venting Actuating)

When the Nozzle Seat depresses the Actuation Poppet, Seal "A" is opened, supplying gas to the process valve. Seal "B" is closed, preventing gas from bleeding or venting through the vent port. The MIZER® Pilot Valve is designed so that the gas flow is related to the position of the Nozzle Seat (See Fig. 2).

Released Position (Non-Continuous Venting)

When the Nozzle Seat is released it closes Seal "A" and opens Seal "B", allowing gas to vent. Venting occurs ONLY when the control valve calls for it, and then, ONLY the gas in the process line and actuator is released (See Fig. 3).