

## MIZER® No-Bleed Pilot Valve

### Application

The MIZER® No-Bleed Pilot Valve is the most cost-effective solution for converting high-bleed pneumatic controls to low-bleed operation. This device effectively stops continuous bleed operation between dump cycles, thereby reducing environmentally-concerning methane emissions, while allowing previously wasted gas to be sent to the sale line. Conservatively, user can anticipate 90% savings from recaptured gas based upon estimated cycle rates of the controls. 95-98% values may be achieved in some applications.

### Features

- Kits Available For:
  - Cemco Cantilever Level Controls
  - FMC Invalco Flexlever Level Controls
  - Emerson/Fisher 2500 Level Controls
  - Emerson/Fisher 4100Z "Wizard" Pressure Controllers
  - Emerson/Fisher 4150/4160 Pressure Controllers
- Cemco and FMC Invalco kits are field-installable in minutes — unit does not have to be shut down for installation. Installation of pressure controller kits, although more in-depth, are still the most painless and cost-effective solution for converting high-bleed to low-bleed.
- Uses existing tubing and connections — no new plumbing required.
- MIZER® works in either snap acting or throttling application.
- MIZER® solution allows field personnel to continue using control devices that are familiar.
- Conversion from high-bleed to low-bleed may qualify user for Carbon Credits.

### Specifications

Max. Supply Pressure	..... 64 psig
Operating Temperature	..... -20°F to + 200°F
Materials:	..... Stainless Steel with Nitrile and Delrin® seals
Average Bleed Rate	..... Approx. 6.6 scf per day

### Bleed Gas vs. Vent Gas

"Bleed" gas is defined as gas that bleeds to atmosphere between dump cycles. "Vent" gas is that gas which, after energizing the dump or control valve must be released to atmosphere, and is usually a small fraction by comparison to the bleed gas volume. It is because of the high bleed between dump cycles that the EPA discourages the use of high-bleed pneumatic devices to control liquid level and gas pressure. The MIZER® device actually stops the continuous flow of gas from these controllers, only allowing gas to flow to the con-

trolled device (dump valve or control valve) when necessary. Therefore, the amount of potential gas savings is dependent upon (among other things) the initial bleed rate and the frequency of operation of the controller and valve. In other words, a separator unit that fills slowly and dumps infrequently is bleeding substantial amounts of unutilized gas pressure to atmosphere most of the time. All of this gas that is vented to atmosphere between dump cycles would be saved when using a MIZER® retrofitted controller. Likewise, if the controller is very active, dumping fluid frequently, the savings would be less, as more gas is being used to activate the valve.

It should be noted that neither the MIZER® nor any other low-bleed device is capable of saving gas that has been used to energize the valve. This gas will always be lost after the valve cycles and the diaphragm and connection lines vent. If the lines are not allowed to vent the valve will not return to the original (usually closed) position.

### Ease of Installation

The Cemco and FMC Invalco level control versions of the MIZER® pilot valve installation is a simple and painless operation. In fact, unlike installing traditional no-bleed level controllers, which require breaking the process connection, the MIZER® pilot valve is installed by simply removing the operating gas pressure from the controller, installing the MIZER®, blowing out the supply line to keep it clean, reattaching the supply line and adjusting.

Different controllers require different kits—some containing more parts than others. Retrofit kits for pressure controllers such as the Emerson/Fisher 4150 or 4160 are more complex and therefore the procedure is also more complex, possibly requiring shut down. But, no welding of new fittings, no new tubing, no new cabinet refits are required. The MIZER® installs in minutes — not hours or days as is the case with installation of any complete new controller. Last, but not least, the operator continues using the controller they already know and trust — no need to learn the operating quirks of a completely new control.



### MIZER® No-Bleed Pilot Valve

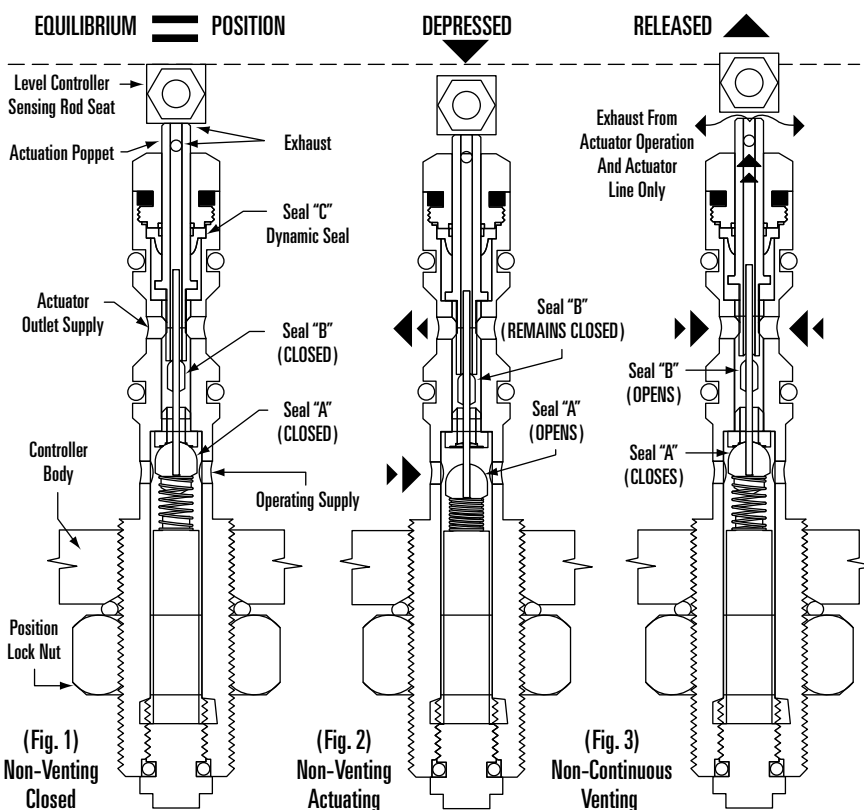
#### Liquid Level Controls & Pressure Controllers • Potential Savings per Control (3 to 15 psig controllers\*)

Based upon typical onshore facility\* supply pressure of 20 psig and \$6.00 gas

Type Control	Manufacturer	Model	Supply Pressure psig	Bleed Rate Air SCFH	Bleed Rate Gas SCFH	Daily Bleed Rate SCFD	Yearly Bleed Rate SCFY	Annual Dollars LOST to Emissions
LIQUID LEVEL	CEMCO	6900	20	19.7	26	614	224,119	\$1,344.72
	EMERSON/FISHER	2500	20	27	35	842	307,169	\$1,843.01
	EMERSON/FISHER	2502	20	27	35	842	307,169	\$1,843.01
	EMERSON/FISHER	2506	20	27	35	842	307,169	\$1,843.01
	FISHER	3570	20	13	17	405	147,896	\$887.38
	FISHER	3582	20	13	17	405	147,896	\$887.38
	FISHER	3660	20	5.2	7	162	59,158	\$354.95
	FMC INVALCO	415	20	23	30	717	261,662	\$1,569.97
	FMC INVALCO	215	20	23	30	717	261,662	\$1,569.97
PRESSURE	FMC INVALCO	402	20	23	30	717	261,662	\$1,569.97
	EMERSON/FISHER	4100Z	20	33	43	1029	375,429	\$2,252.57
	EMERSON/FISHER	4150	20	27	35	842	307,169	\$1,843.01
	EMERSON/FISHER	4160	20	27	35	842	307,169	\$1,843.01

\* Offshore facilities commonly use 6 to 30 psig controllers with average supply pressure of 35 psig. Bleed rates and dollars lost due to emissions would conservatively be 1.5 times those listed above.

### Method of Operation



**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 Flapper is in neutral position. (See Fig. 1)

**Depressed Position: (Non-Venting Actuating)**  
When the Control Flapper 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 controller flapper. (See Fig. 2)

**Released Position: (Non-Continuous Venting)**  
When the Control Flapper 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)

### Conversion Kit Assembly Part Numbers

Type Control	Conversion Kit Model Number	Part Number	Converts
LIQUID LEVEL	1110-111	06500-6905	CEMCO CANTILEVER CONTROL
	4010-111	31066	FMC INVALCO FLEXLEVER CONTROL
	7010-111	06500-7018	EMERSON/FISHER 2500 CONTROL
PRESSURE	5010-111	06500-7093	EMERSON/FISHER 4100Z "WIZARD" CONTROLLER
	8010-111	06500-7019	EMERSON/FISHER 4150/4160 CONTROLLER