

## DESCRIPTION

The BLRA (Bottom Loaded Reverse Acting) and TLDA (Top Loaded Direct Action) positioners incorporate a stabilizing action in the pneumatic control circuit and are recommended for applications where stem positioning is critical or where hysteresis should be minimized.

### Input Signal

The standard control air span is 12 psig (0.2...1.0 bar). The opening or closing point can be set with the zero adjustment.

### Stroke

Stem travel to signal ratio is determined by the range spring directly under the positioner in the actuator housing. Range springs are available to produce 0.437 inches of travel for the 1/4" valve or 0.563 inches of travel for the 1/2" and 1" valves. Optional range springs are available for signals of 6 and 24 psi. Special range springs are available on special order for other instrument signals.

### Supply Air

Normal supply air pressure should be 22 psig minimum of CLEAN DRY FILTERED AIR. When required, a supply pressure of up to 60 psig can be used. To keep bleed to a minimum, use only enough pressure to obtain proper function.

### Zero Adjustment—BLRA Positioner (Air To Open Action)

- For a 3...15 psi range, set the input signal at 3.25 psi.
- Turn the zero adjusting screw back and forth to find the position where the valve is seated.

### Zero Adjustment—TLDA Positioner (Air To Close Action)

- For a 3...15 psi range, set the input signal at 14.75 psi.
- Turn the zero adjusting screw back and forth to find the position where the valve is seated.

**NOTE:** Factory zero adjustments are made using up to 90 psig pressure piped to the upstream side of the valve. A rubber tube is connected to the downstream side of the valve and immersed in water to detect the point where the valve is seated.

## SERVICING THE POSITIONERS

The positioners are very durable and accurate positioning devices that will provide years of dependable service. However, as with any fine instruments, if not installed and maintained properly, malfunctions can occur.

The main cause for non-functioning positioners is a stuck pilot spool. The clearance between the spool and the brass positioner sleeve is very close to reduce bleed. The close clearance is, however, susceptible to plugging. Most instances of stuck pilots can be traced to debris in the air line or shreds of TFE tape, frequently used on air line fittings.

If your positioner does not respond to an increase in instrument signal, take the following steps:

- Make sure both the supply and instrument signals feeding the positioner are functioning properly.
- Make sure the port marked "Valve" is plugged with a pipe plug or gauge.
- Make sure the ports marked "Load" and "Aux Load" are vented to the atmosphere. The unit is shipped with vented pipe plugs. DO NOT use these ports unless directed by specific instructions.

If the unit does not respond to an increasing instrument signal, take the following steps:

- With the supply pressure at 22 psi (not more than 60) and a mid-range instrument signal of approximately 9 psi, place your finger over the exhaust port on the side of the upper portion of the positioner housing.
- If the valve moves, the pilot may be stuck. In this case, follow the cleaning instructions.
- If the valve does not move, the problem may be within the positioner diaphragm assembly or the valve body/bonnet assembly. In this case, consult the factory for assistance.
- If the valve strokes to the full open position upon the introduction of supply air and will not respond to a decreasing signal, it is likely that the spool is stuck. In this case, follow the cleaning instructions.

If you do not wish to attempt cleaning the positioner or if cleaning the spool does not solve the problem, return it to the factory for servicing.

## CLEANING THE PILOT SPOOL

**NOTE:** See the BLRA illustration below for part identification.

1. Shut off the air supply to positioner.
2. Remove the protector cap from the top of the positioner.
3. Remove the brass hex plug.
4. Using a small stiff wire about the size of a paper clip, bend the wire at a 45 degree angle about 1/16" from its end.

**NOTE:** A pair of small snap ring pliers can also be used. However, DO NOT clamp onto the spool on its O.D. Any scratches on the spool will damage it.

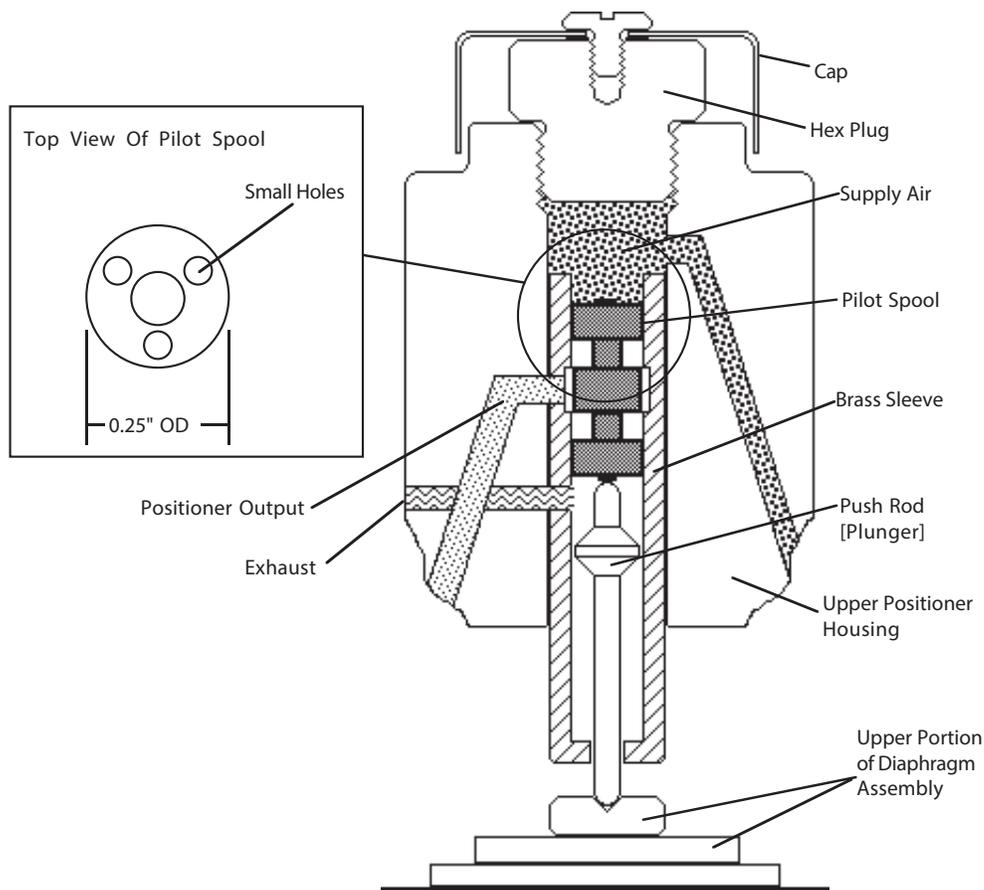
5. Insert the wire into one of the three holes in the top of the spool and pull straight up. The pilot should slide out of the brass sleeve without a great deal of force.

6. Using a piece of cloth wetted with solvent, swab out the brass sleeve. Check inside the sleeve for foreign matter and blow out with clean air.
7. Inspect the spool for burrs or scratches. If there are none, clean the spool with solvent and dry. If there are burrs, gently rotate the spool on a piece of emery cloth until the burrs are gone. DO NOT use sand paper.
8. Gently slip the spool back into the brass sleeve without forcing or twisting it.

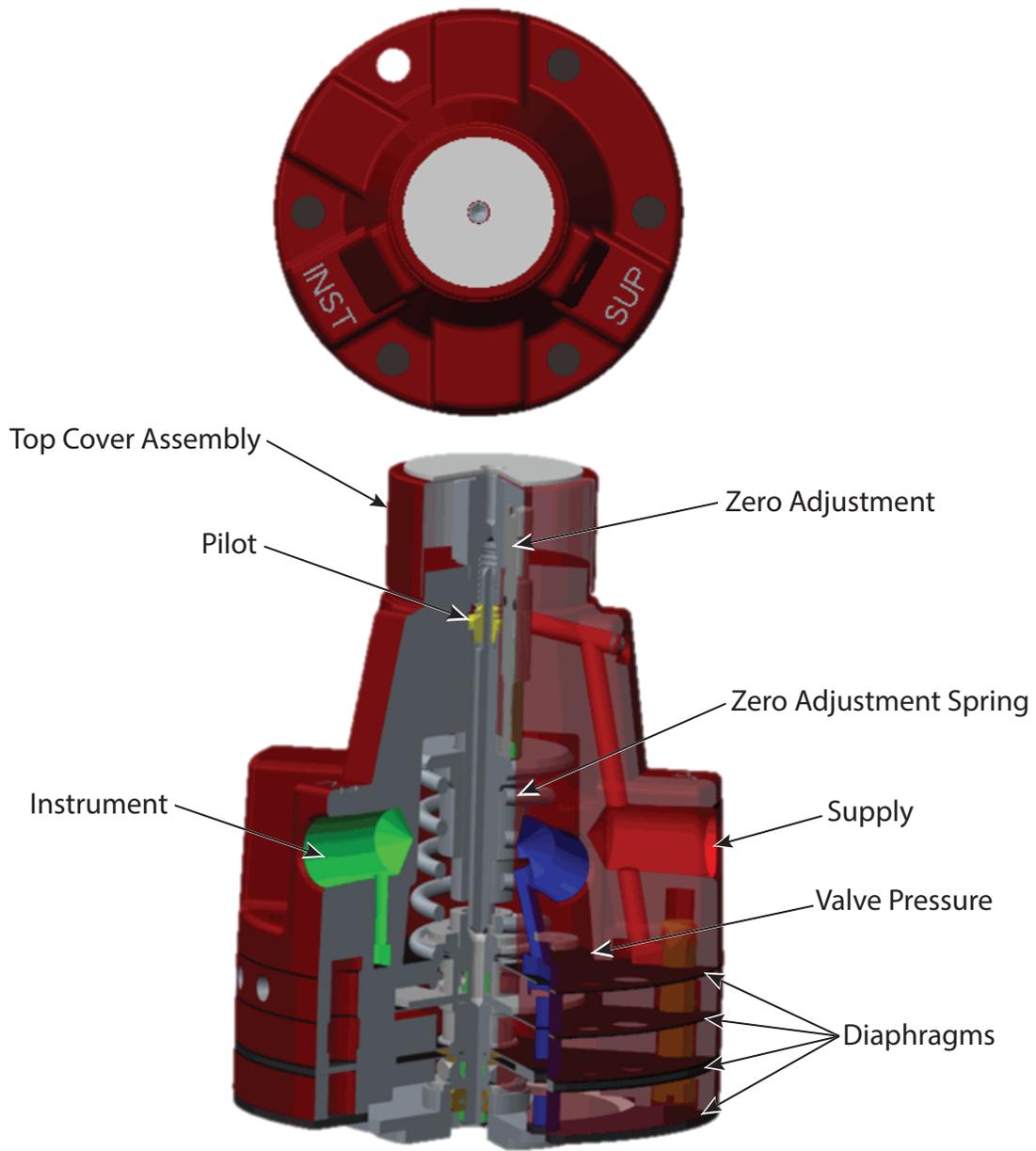
**NOTE:** Both ends of the spool are the same. It is designed to work regardless of orientation.

9. Replace the brass hex plug (just snug).
10. Reconnect air lines and make any zero adjustments.
11. Replace the protector cap.

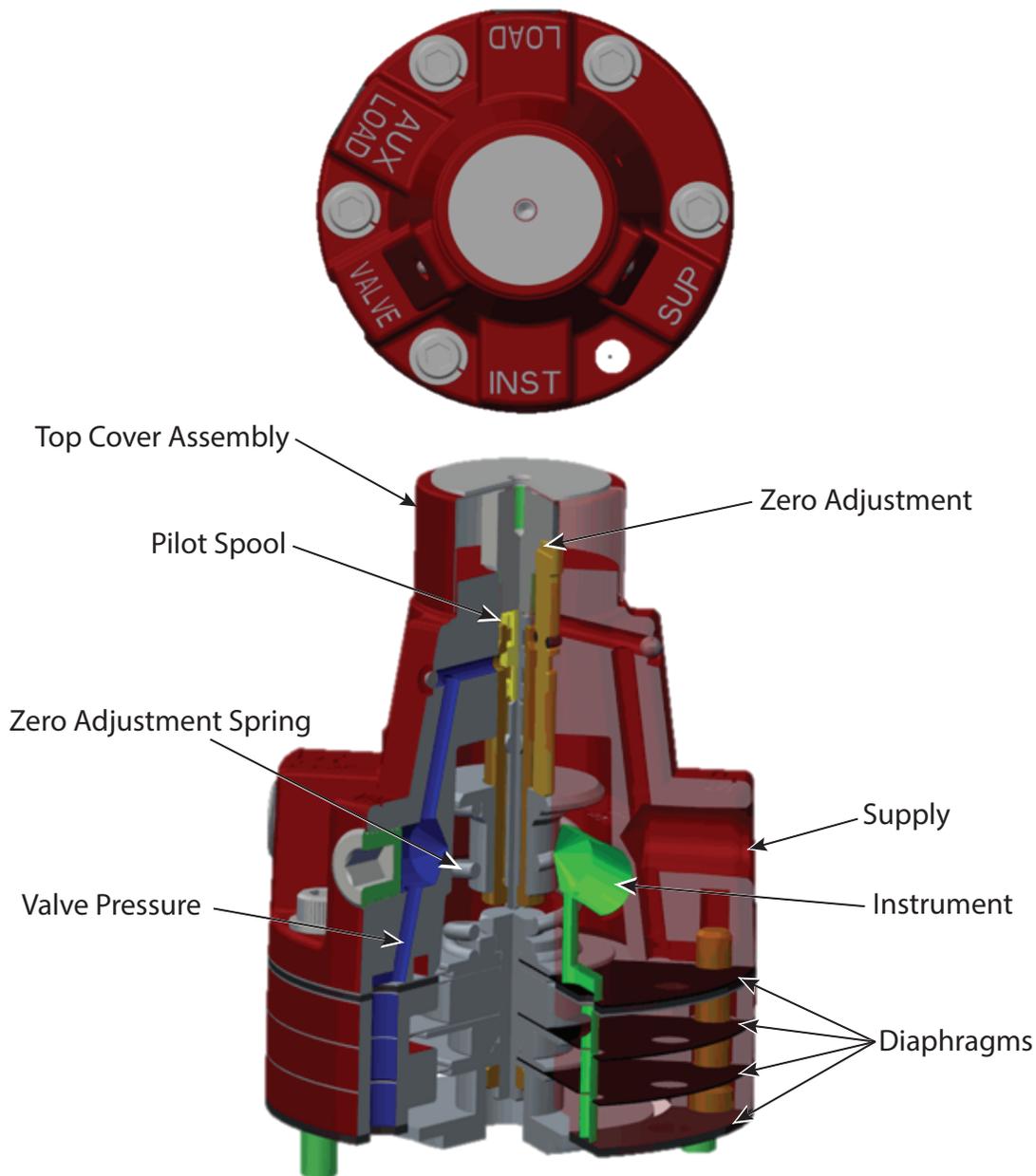
Do NOT attempt to disassemble the positioner unless you are familiar with its design. Consult the factory if this procedure does not correct the problem.



# TLDA CUTAWAY DRAWING



## BLRA CUTAWAY DRAWING



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[www.badgermeter.com](http://www.badgermeter.com)

The Americas | Badger Meter | 4545 West Brown Deer Rd | PO Box 245036 | Milwaukee, WI 53224-9536 | 800-876-3837 | 414-355-0400  
México | Badger Meter de las Americas, S.A. de C.V. | Pedro Luis Ogazón N°32 | Esq. Angelina N°24 | Colonia Guadalupe Inn | CP 01050 | México, DF | México | +52-55-5662-0882  
Europe, Middle East and Africa | Badger Meter Europa GmbH | Nurtlinger Str 76 | 72639 Neuffen | Germany | +49-7025-9208-0  
Europe, Middle East Branch Office | Badger Meter Europe | PO Box 341442 | Dubai Silicon Oasis, Head Quarter Building, Wing C, Office #C209 | Dubai / UAE | +971-4-371 2503  
Czech Republic | Badger Meter Czech Republic s.r.o. | Mařikova 2082/26 | 621 00 Brno, Czech Republic | +420-5-41420411  
Slovakia | Badger Meter Slovakia s.r.o. | Racianska 109/B | 831 02 Bratislava, Slovakia | +421-2-44 63 83 01  
Asia Pacific | Badger Meter | 80 Marine Parade Rd | 21-06 Parkway Parade | Singapore 449269 | +65-63464836  
China | Badger Meter | 7-1202 | 99 Hangzhong Road | Minhang District | Shanghai | China 201101 | +86-21-5763 5412