

## Pilot-to-close, spring biased closed, unbalanced poppet logic element with position switch

Capacity:  
300 gpm (1100  
L/min.)

Functional Group:

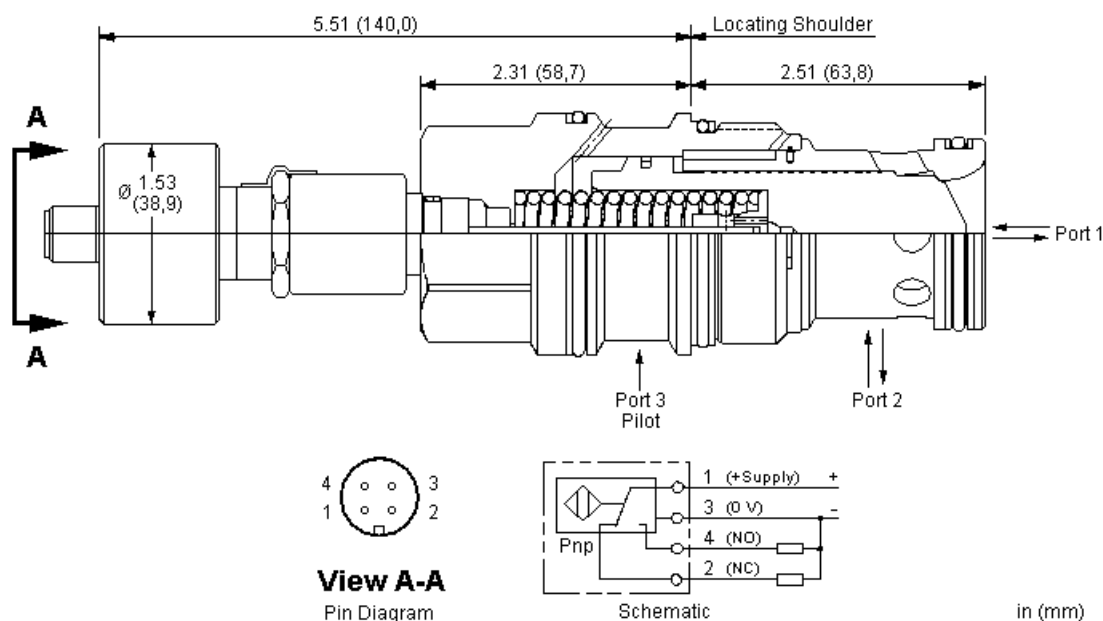
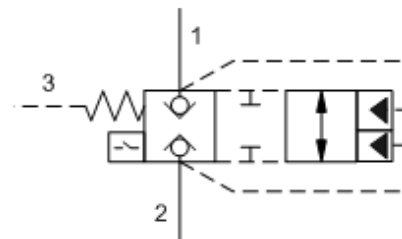
**Products : Cartridges : Logic Element : Unbalanced Poppet : Pilot-to-close, Spring Biased Closed with Position Indicating Switch**

Model:  
**LOK CZ**

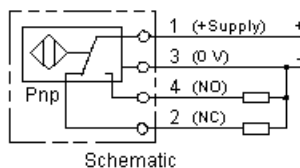
### Product Description

These unbalanced, pilot-to-close logic valves are 2-way switching elements that are spring biased closed. Pressure at either work port 1 or 2 will oppose the spring and tend to open the valve while pressure at port 3 will tend to close it. The force generated by the pressure at port 3, plus the spring force, must be greater than the sum of the forces generated by the pressures at ports 1 and 2 for the valve to remain closed.

This valve incorporates a position switch to provide confirmation that the valve is closed.



**View A-A**  
Pin Diagram



in (mm)

### Technical Features

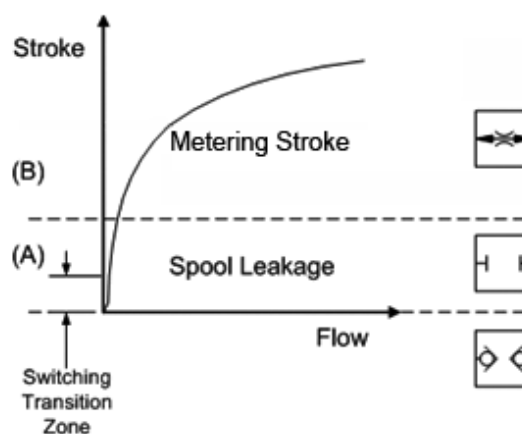
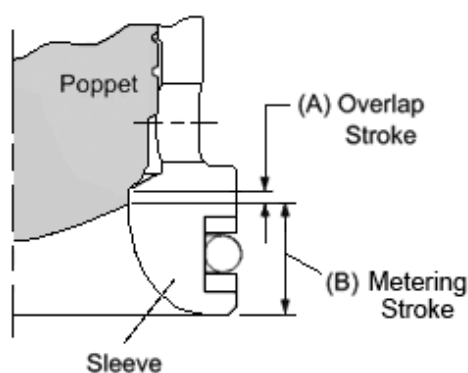
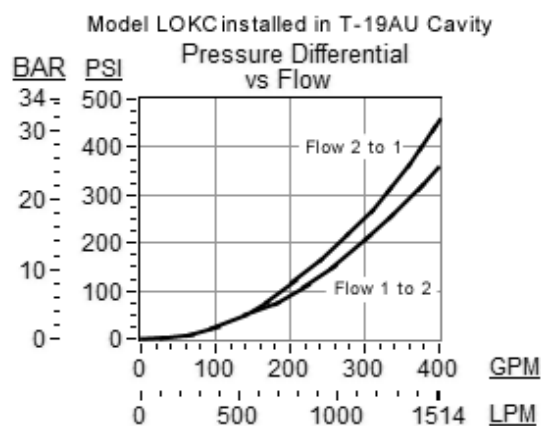
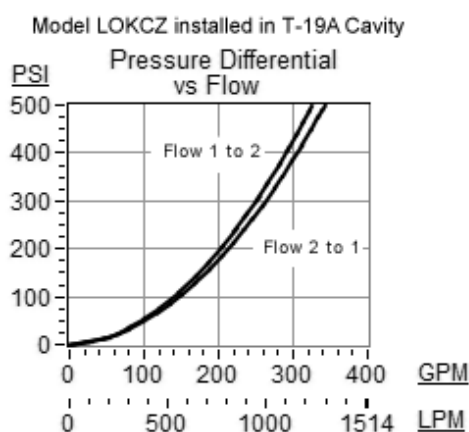
- These valves will work in Sun's standard T-19A cavity at lower capacity. To realize the full stated capacity, the T-19AU cavity should be used.
- The position switch in this valve provides confirmation that the valve is closed.
- These valves have positive seals between port 2 and the pilot area.
- This cartridge is supplied as a sealed, factory set unit and is not field serviceable. Any tampering will violate the product warranty.
- When torquing this cartridge into its cavity, a crow's foot wrench or similar will be required since the position switch precludes the use of a deep socket wrench.
- Because these valves are unbalanced, operation is pressure dependent. Opening and closing of the poppet are functions of the force balances on three areas: Port 1 = 100%, Port 2 = 80%, and the Pilot Area = 180%.
- These valves are pressure responsive at all ports, therefore it is essential to consider all aspects of system operation through a complete cycle. Pressure changes at any one port may cause a valve to switch from a closed to an open position, or vice versa. All possible pressure changes in the complete circuit must be considered to assure a safe, functional system design.
- All ports will accept 5000 psi (350 bar).
- Position switch is CE approved.
- Incorporates the Sun floating style construction to minimize the possibility of internal parts binding due to excessive installation torque and/or cavity/cartridge machining variations.

**Technical Data**

|                                           | U.S. Units                       | Metric Units      |
|-------------------------------------------|----------------------------------|-------------------|
| Cavity                                    | T-19AU                           |                   |
| Capacity                                  | 300 gpm                          | 1100 L/min.       |
| Area Ratio, A3 to A1                      | 1.8:1                            |                   |
| Area Ratio, A3 to A2                      | 2.25:1                           |                   |
| Maximum Operating Pressure                | 5000 psi                         | 350 bar           |
| Maximum Valve Leakage at 110 SUS (24 cSt) | 1 drops/min.                     | 0,07 cc/min.      |
| Pilot Passage into Valve                  | .09 in.                          | 2,3 mm            |
| Pilot Volume Displacement                 | .47 in <sup>3</sup>              | 7,7 cc            |
| Series (from Cavity)                      | Series 4                         |                   |
| Transition leakage at 110 SUS (24 cSt)    | 2 in <sup>3</sup> /min.@1000 psi | 30 cc/min.@70 bar |
| Valve Hex Size                            | 1 5/8 in.                        | 41,3 mm           |
| Valve Installation Torque                 | 350 - 375 lbf ft                 | 475 - 500 Nm      |
| Seal Kits - Cartridge                     | Buna: 990-019-007                |                   |
| Seal Kits - Cartridge                     | Viton: 990-019-006               |                   |
| Model Weight                              | 3.50 lb.                         | 1.59 kg.          |

**Switch Specifications**

|                                | U.S. Units                | Metric Units |
|--------------------------------|---------------------------|--------------|
| Maximum Operating Pressure     | 5000 psi                  | 350 bar      |
| Supply Voltage                 | 20-30 VDC                 |              |
| Reverse Polarity Protection    | Yes                       |              |
| Maximum Output Load            | ≤ 400 mA, Duty Ratio 100% |              |
| Short Circuit Protection       | Yes, Load Short Unlimited |              |
| Turn On Time                   | ≤ 25 ms                   |              |
| Hysteresis                     | ≤ .002 in.                |              |
| Operating Temperature Range    | -25 to 80 °C              |              |
| Thermal Shift - 0 to 80 °C ≤ ± | .004 in.                  | 0,1 mm       |
| EMC                            | DIN EN 61000-6-1/2/3/4    |              |
| Connector Environment Rating   | IP65                      |              |
| Vibration                      | ≥ 50g, 0-500 impulses/sec |              |
| Shock                          | >50 g, 1ms                |              |
| Connector                      | M12 X 1 (4) Pin           |              |



## LOKC-ZDN

### Cracking Pressure

#### Standard Options

**D** 50 psi (3,5 bar)

### Seal Material

#### Standard Options

**N** Buna-N

**V** Viton