

LAURENCE INSTRUCTIONS

3-Way Laurence Rotary Shaft Type Soli-Con® Valves

Series: 3300SC, 3350SC, 3500SC & 3550SC

INSTALLATION:

Install the valve with the actuator in an **upright** position in pipe line. Allow sufficient headroom to remove the actuator. **Do not** loosen the valve body-bonnet bolts, unless absolutely necessary to re-orient the valve body with respect to the actuator. When re-tightening, care must be taken to tighten the bolts gradually and evenly, to maintain perfect alignment of the inner parts. Check to be sure that all bolts are **equally** and **fully** tightened.

PIPE CONNECTION:

Make sure the pipe line is clean, free from dirt, metal chips, slag, etc. before connecting the valve to the line to prevent damage to the valve seat or clogging of the valve. **Do not** strain the valve body or use the actuator for leverage when connecting pipes. See operations for flow form chart.

Screwed – Use the proper paste or liquid type sealer. **Do not** use tape sealers, as this material shreds and gets into the valve. **Do not** seal weld or braze threaded pipe connections at the valve body, as this may distort the seat and cause leakage.

Flanged – Use the proper flange gasket material. Tighten the flange bolts gradually and evenly, so as not to strain the valve body. Check to be sure that all bolts are **equally and fully** tightened before applying pressure.

ELECTRICAL CONNECTIONS:

Connect actuator **directly** across the line through the control switch. Use a proper external box (watertight or explosion-proof, as applicable), for making connections. **Do not** remove sleeving from the actuator leads when making connections, as this protects the leads from damage. The green wire is to be connected to ground. The valve is rated for continuous, 24-hour energization. The actuator will become **hot to the touch** if repeatedly cycled. All enclosures have ½ NPT conduit connection. Control switch contacts should be sized accordingly and electrical wire size should be adequate to avoid excessive voltage drop when the valve operates. Full inrush current at rated voltage must be delivered to the valve to insure that it operates properly against the rated pressure. This **valve is rated for a continuous maximum number of cycles** (Open/Closed) per minute. Exceeding this rating could lead to premature failure of the actuator unit.

Soli-Con® CURRENT: (Approx.)				
SCA	0.1 Amps holding	4.7 Amps inrush	6 cycles per minute	120 Volts, 60 Hertz
SCA	0.1 Amps holding	4.7 Amps inrush	6 cycles per minute	220 Volts, 60 Hertz
SCD	.01 Amps holding	5.3 Amps inrush	4 cycles per minute	125 Volts, Direct Current
SCD	.16 Amps holding	2.5 Amps inrush	3 cycles per minute	250 Volts, Direct Current
SCB	0.2 Amps holding	14.2 Amps inrush	3 cycles per minute	120 Volts, 60 Hertz
SCB	.17 Amps holding	7.5 Amps inrush	3 cycles per minute	220 Volts, 60 Hertz
SCE	.04 Amps holding	13.5 Amps inrush	3 cycles per minute	125 Volts, Direct Current
SCE	.04 Amps holding	6.4 Amps inrush	3 cycles per minute	250 Volts, Direct Current
SCG	.8 Amps holding	14.0 Amps inrush	2 cycles per minute	24 Volts, Direct Current
SCH	Covers the following:			
“ “	.7 Amps holding	10.0 Amps inrush	2 cycles per minute	48 Volts, 50 Hertz
“ “	.5 Amps holding	7.0 Amps inrush	2 cycles per minute	120 Volts, 50 Hertz
“ “	.35 Amps holding	6.0 Amps inrush	2 cycles per minute	220 Volts, 50 Hertz
“ “	.5 Amps holding	10.0 Amps inrush	2 cycles per minute	48 Volts, Direct Current
“ “	.3 Amps holding	6.0 Amps inrush	2 cycles per minute	125 Volts, Direct Current
“ “	.25 Amps holding	5.0 Amps inrush	2 cycles per minute	250 Volts, Direct Current

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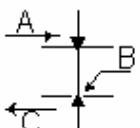
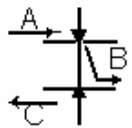
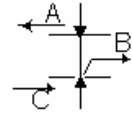
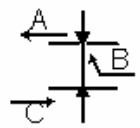
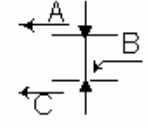
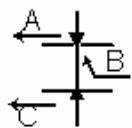
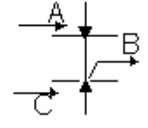
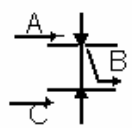
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*****CAUTION: DO NOT USE FULL WAVE RECTIFIED AC FOR DC VOLTAGE ON SCD OR SCE*****
IMPORTANT for DC: Connect RED LEAD TO (+) POSITIVE SUPPLY VOLTAGE. Connect BLACK LEAD TO (-) NEGATIVE SUPPLY VOLTAGE.

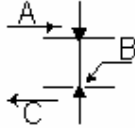
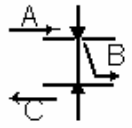
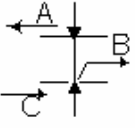
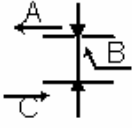
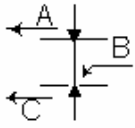
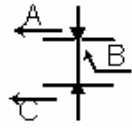
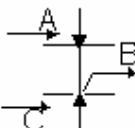
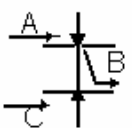
ACTUATOR ENCLOSURE:

NEMA 4 – Watertight or

“FM” Approved, Explosion-Proof – Class I, Group B, C, D & Class II, Group E, F, G, Division I. *If actuator is rated “FM” Approved, Explosion Proof, also refer to the additional instructions enclosed.

FULLY AUTOMATIC OPERATION	Actuator De-Energized / Un-Latched	Actuator Energized / Latched
<p>Flow Form M Supply Normally Closed, Energize to open inlet port De-Energize to vent</p>	<p>Inlet A Closed Outlet B Open to Vent C</p> 	<p>Inlet A Open to Outlet B Vent C Closed</p> 
<p>Flow Form N Supply Normally Open Energize to vent, De-Energize to open inlet port</p>	<p>Inlet C Open to Outlet B Vent A Closed</p> 	<p>Inlet C Closed Outlet B Open to Vent A</p> 
<p>Flow Form O Diverting One Inlet, Two Outlets Energize to open normally closed outlet close normally open outlet.</p>	<p>Inlet @ B Open to Outlet C Outlet @ A Closed</p> 	<p>Inlet B Open to Outlet A Outlet C Closed</p> 
<p>Flow Form P Selecting Two Inlets One Outlet, Energize to open normally closed inlet, close normally open inlet.</p>	<p>Inlet C Open to Outlet B Inlet A Closed</p> 	<p>Inlet A Open to Outlet B Inlet C Closed</p> 

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MANUALLY RESET OPERATION	Actuator Energized / Un-Latched	Actuator De-Energized / Latched
Flow Form M Piloting Supply Normally Closed Latch to open inlet port Trip to vent	Inlet A Closed Outlet B Open to Vent C 	Inlet A Open to Outlet B Vent C Closed 
Flow Form N Piloting Supply Normally Open Latch to vent, Trip to open inlet port	Inlet C Open to Outlet B Vent A Closed 	Inlet C Closed Outlet B Open to Vent A 
Flow Form O Diverting One Inlet, Two Outlets Latch to open normally closed outlet close normally open outlet	Inlet @ B Open to Outlet C Outlet @ A Closed 	Inlet B Open to Outlet A Outlet C Closed 
Flow Form P Selecting Two Inlets One Outlet Latch to Open normally closed inlet close normally open inlet	Inlet C Open to Outlet B Inlet A Closed 	Inlet A Open to Outlet B Inlet C Closed 

MAINTENANCE:

The valve should be kept relatively clean and free from accumulations of foreign matter such as dirt, salt, insulation dust, coal dust, etc. **Do not** paint any moving parts, especially the actuator plunger. After any general overhaul or cleaning, apply a coating of *Never-Seez*, or equal, anti-seize compound to all internal moving parts, and any external sliding or rolling surfaces.

- Notes:** - Pilot Switch(es) – Optional – See separate instruction sheet. Connection markings are on cover of, or inside, switch enclosure.
 - Model No. & Serial No. – Are located on the aluminum label on all valves.