

## **OPERATING PROCEDURES FOR O-SERIES VALVE CHANGING TOOLS**

The O-Series Valve Changing Tools are used to replace full flow valves when system is pressurized. The maximum operating pressure for each size tool is listed in the chart below. The O-Series tools are designed for standard wall (schedule 40) pipe have an operating temperature of 150°F maximum. Contact EST Customer Service directly for information on higher pressure and temperature tools.

1. Close existing valve to be replaced and remove piping from valve on opposite end of system pressure.
2. Thread O-Series Tool Assembly Tube (7) into valve leak tight and fully retract Shaft (1).
3. Firmly hand-tighten the Gland Nut (3).

**WARNING! DO NOT STAND BEHIND TOOL DURING THIS STEP AS THE PRESSURE DIFFERENTIAL MAY CAUSE THE SHAFT TO BE THRUST BACKWARD WHEN THE VALVE IS OPENED.**

4. Slowly rotate valve into the full open position. Should any leakage become evident the Assembly Tube (7) or the Gland Nut (3) may need to be tightened further.
5. Push the Shaft (1) toward the valve so that seal is positioned beyond the valve. While holding Shaft (1) in position tighten the Hex Nut (13) to the installation torque indicated in the chart below.
6. Slowly loosen the Gland Nut (3) to release internal pressure from the Assembly Tube (7). After pressure has been released, loosen the Gland Nut (3) further to fully relax the Gland Seal (5)
7. Slowly unthread the Assembly Tube (7) from valve. Note that the Shaft (1) and Compression Tube (2) should be independent of the Assembly Tube (7) movement. Disengage the Assembly Tube (7) from the valve and remove Assembly Tube (7) from the installed tool Shaft (1).

**CAUTION: DO NOT ATTEMPT TO ADJUST INSTALLED TOOL SHAFT WHEN SYSTEM IS PRESSURIZED.**

8. The valve can now be replaced or repaired as required.
9. With new or repaired valve properly installed onto pressurized system, install the assembly tube over the installed tool Shaft (1) and into the valve leak tight.
10. Firmly hand-tighten the Gland Nut (3).

**WARNING! DO NOT STAND BEHIND TOOL DURING THIS STEP AS THE PRESSURE DIFFERENTIAL MAY CAUSE THE SHAFT TO BE THRUST BACKWARD WHEN THE HEX NUT IS LOOSENED.**

11. Fully loosen the Hex Nut (13) to retract the seal.
12. Pull Shaft (1) back through the valve and into the fully retracted position.
13. Fully close the valve.
14. Slowly loosen the Gland Nut (3) to release internal pressure form the Assembly Tube (7). After pressure has been released, loosen the Gland Nut (3) further to fully relax the Gland Seal (5).
15. Slowly unthread the Assembly Tube (7) from valve and remove tool.

**Questions?** Contact EST Group Customer Service at any of the following locations.

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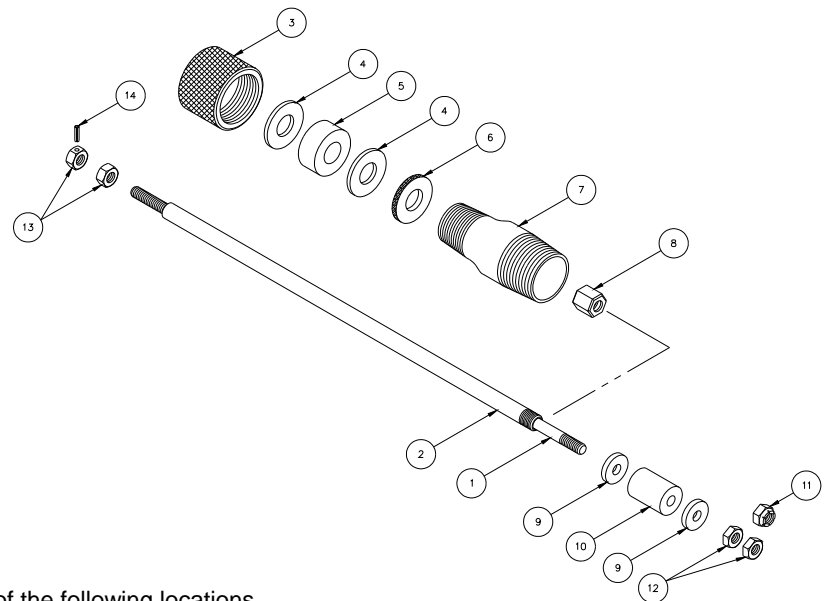
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INSTALLATION TORQUES AND OPERATING PRESSURES						
SIZE	PART NUMBER ♦ NEOPRENE SEALS	OLD PART NUMBER	INSTALLATION TORQUE FT-LBS (KG-CM OR M)		PRESSURE PSI (BAR)	
1/2	OSR-0050-N	O-1	10 IN-LBS	11.5 KG-CM	200 PSI	13.7 BAR
3/4	OSR-0075-N	O-2	2.5 FT-LBS	35 KG-CM	175 PSI	12.0 BAR
1"	OSR-0100-N	O-3	12 FT-LBS	1.7 KG-M	175 PSI	12.0 BAR
1-1/4	OSR-0125-N	O-4	12 FT-LBS	1.7 KG-M	150 PSI	10.3 BAR
1-1/2	OSR-0150-N	O-5	12 FT-LBS	1.7 KG-M	125 PSI	8.6 BAR
2"	OSR-0200-N	O-6	12 FT-LBS	1.7 KG-M	100 PSI	6.9 BAR
2-1/2	OSR-0250-N	O-7	12 FT-LBS	1.7 KG-M	80 PSI	5.5 BAR
3"	OSR-0300-N	O-8	12 FT-LBS	1.7 KG-M	70 PSI	4.8 BAR
4"	OSR-0400-N	O-9	20 FT-LBS	2.8 KG-M	30 PSI	2.1 BAR

♦ OPERATING TRMPERATURE TO 150 DEG F (65.5 DEG C)

PARTS LIST			
ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	SHAFT	
2	1	COMPRESSION TUBE	
3	1	GLAND NUT	
4	2	GLAND SEAL WASHER	
5	1	GLAND SEAL	CONTACT CUSTOMER SERVICE FOR REPLACEMENT P/N
6	1	URETHANE SEAL	CONTACT CUSTOMER SERVICE FOR REPLACEMENT P/N
7	1	ASSEMBLY TUBE	
8	1	PACKING GLAND	
9	2 (1/2" – 2") 3 (2-1/2" – 4")	TOOL WASHER	
10	1 (1/2" – 2") 2 (2-1/2" – 4")	TOOL SEAL	OSR-XXXX-M-RS
11	1	LOCKNUT (1/2" – 1")	
12	2	JAMNUT (1-1/4" – 4")	
13	2	HEX NUT	
14	1	PIN	
15	3	PACKING (NOT SHOWN) SUPPLIED AS PART OF ITEM 8	CONTACT CUSTOMER SERVICE FOR REPLACEMENT P/N

"XXXX" PIPE SIZE ROUNDED TO (2) DECIMAL PLACES  
 "M" DESIGNATES SEAL MATERIAL  
 N - NEOPRENE  
 V - FLUOROELASTOMER (VITON OR EQUIVALENT)



EST Group is a business unit of Curtiss-Wright.  
 EST Group provides a complete range of repair products, services and replacement parts covering the life cycle of heat exchangers and condensers; additionally EST Group provides products and services to facilitate pressure testing pipe, piping systems, pressure vessels and their components. Visit EST Group on the Internet at [www.cw-estgroup.com/](http://www.cw-estgroup.com/)

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