

AWWA C504, Proof of Design Cycle Test Certification

LSG-8A Quarter-Turn Manual Lead Screw Actuator

1. ITEMS TESTED:

<u>Model</u>	<u>1/4-Turn Actuator Description</u>	Test Summary / Result (Sat. or Unsat.)		
		<u>Torque Rating</u>	<u>No. of Cycles</u>	<u>Input Stops</u> ^[1]
LSG-8A	Link & Lever w/ 25:1 Spur Gear	180,000 ft-lbs	200/Sat.	450 ft-lbs/Sat. Sat.

Notes:

^[1] AWWA C504 only requires a 300 ft-lbs input stop test.

^[2] Materials: In accordance with drawing LSG-8A Rev 0.

2. PURPOSE:

Perform the Proof-of-Design cycle test requirements given in AWWA Standard C504-15 Rubber Seated Butterfly Valves, section 5.1.4.5.

3. RECORD OF TEST:

The actuator was assembled and connected to a torque test stand brake. Output torque was controlled by the resistance hydraulic pressure supplied to the brake cylinder.

The actuator was subjected to a torque test equal to or greater than twice the rated torque for one full open and close cycle in accordance with paragraph 5.1.4.5.2.

The actuator was tested with an input torque of 300 and 450 ft-lbs (exceeding AWWA C504) while the actuator components were against the open and the closed stop-limiting devices, referred to in Sec. 4.2.8.3.2, in accordance with paragraph 5.1.4.5.3.

The actuator was verified by cycle testing through a full quarter-turn (90°) cycle with at least the full rated actuator torque at the point of unseating and at least 30 percent of the rated torque during the remainder of the cycle in accordance with paragraph 5.1.4.5.6. The number of cycles was 212 or 6% greater than the 200 required in Table 6.

After the cycle testing, the actuator was completely disassembled and visually inspected and determined that no excessive wear or permanent deformation affecting its function occurred in accordance with paragraph 5.1.4.5.7.


The successful completion of this proof-of-design cycle test verifies the design methods used in this series of actuators within the torque range listed in Table 6 (50,001 ft-lbs and greater) as suitable in accordance with paragraph 5.1.4.5.8, including the LSG-7A rated at 90,000 ft-lbs.

4. CERTIFICATION:

Based on the above Test Record, we hereby certify that the subject LSG-8A actuators have satisfactorily met all of the Proof of Design Test Requirements given in AWWA C504-15.


TESTED BY: 
John R. Holstrom, Engineering Project Manager, Val-Matic Valve & Manufacturing Corp.

DATE: August 22, 2016

WITNESSED BY: 
Steve Dalton, P. E., Chief Engineer, Val-Matic Valve & Manufacturing Corp.

DATE: August 22, 2016

Rev. 1

QUARTER TURN MANUAL (LSG-7A & 8A) ACTUATOR TEST CERTIFICATION	DATE 8-31-2016
 VAL-MATIC ® VALVE AND MANUFACTURING CORP.	DRWG. NO. SS-3645