

# AWWA Proof of Design Cycle Test Certification

AWWA C541 Hydraulic and Pneumatic Cylinder and Vane-Type Actuators for Valves and Slide Gates  
Quarter Turn Cylinder Actuators

## 1. Items Tested:

### 1BS06:

- 6" Cylinder with LS-1AC actuator
- 3 5/8" stroke
- 10,000 cycles
- Rated torque 3,000 in-lbs ( 250 ft-lbs)
- 2x torque test required use of 8" bore cylinder

### 1CS10:

- 10" Cylinder with LS-2AC actuator
- 4 7/8" stroke
- 10,000 cycles
- Rated torque 7,500 in-lbs ( 625 ft-lbs)

### 1DS12:

- 12" Cylinder with LS-3AC actuator
- 8 3/8" stroke
- 10,000 cycles
- Rated torque 15,300 in-lbs ( 1,275 ft-lbs)

### 1ES14:

- 14" Cylinder with LS-4AC actuator
- 12" stroke
- 5,000 cycles
- Rated torque 45,120 in-lbs ( 3,760 ft-lbs)

## 2. Test and Results:

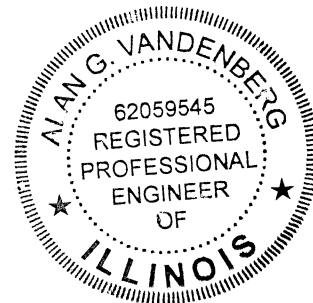
The above items were cycled tested through the listed full open-close cycles with the full rated torque applied at the unseating position and a 30% torque applied for the remainder of travel. A two times rated torque test was conducted through one complete open-close cycle. Finally, a three times hydrostatic test was performed on each cylinder for five minutes. There were no signs of permanent deformation or leakage during or after the tests.

## 3. Certification:

Based on the above Test Record, we hereby certify that the subject actuator has successfully met all of the Proof of Design requirements given in AWWA C541.

CERTIFIED BY: Alan Vandenberg

Alan Vandenberg  
Project Engineer  
Valmatic Valve & Manufacturing Corp.



QUARTER TURN CYLINDER ACTUATOR TEST CERTIFICATE

DATE : 4-21-11

**VALMATIC**

VALVE AND MANUFACTURING CORP.

SSC-2769