

# AWWA C517, Proof of Design Cycle Test Certification (24" Rectangular Ported Eccentric Plug Valve)

## 1. ITEM TESTED:

24"-125# Val-Matic Model 5824R.2 Eccentric Plug Valve  
Cast Iron Construction, Robotically Welded Overlay Nickel Seat  
Buna-N Plug, 316 SS Bearings, Buna-N V-Packing  
EIM Motor Actuator MGN4-3, 30 Second Operation  
Valve Serial No. M670660, Issued 01/31/96

## 2. PURPOSE:

To perform the Proof of Design Cycle Test requirements given in American Water Works Association Standard AWWA C517 (Resilient-Seated Cast-Iron Eccentric Plug Valves). Tests were witnessed by Professional Service Industries, Inc., an independent inspection company.

## 3. RECORD OF TEST:

The subject valve was tested with the "Seat Side" oriented upwards and sealed with ANSI Class 150# steel blind flanges. Prior to the test, the valve was leak tested to 150 psig in both the Direct and Reverse directions and found to be drop tight.

An adjustable water piston pump was set at 150 psig and connected to the bottom of the valve. The valve was rotated closed by the motor actuator. The closed limit switch energized the pump which supplied a pressure of 150 psig across the closed plug. The valve was then signaled to the full open position which relieved the pressure. The process was repeated through 5000 cycles over an 8 day period.


After 5000 cycles, the valve was pressure tested at 150 psig in both the Direct and Reverse directions for 10 minutes and found to be drop tight. No adjustment for wear was required. The valve was then hydrostatically tested to twice the rated pressure (300 psig) for 10 minutes in the Reverse, Direct, and Open positions.

The valve was cycled to verify operation, disassembled, and examined for wear. Wear on the plug was noted but not significant enough to affect the sealability of the valve. No packing or shaft surface wear was observed. The metal bearings surfaces were measured before and after the test with no wear found. No permanent deformation was measured in the plug or body.

## 4. CERTIFICATION:

Based on the above Test Record, we hereby certify that the subject valve has successfully met the Proof of Design Cycle Test Requirements given in AWWA C517. Therefore, it qualifies similar valves in the 24"-42" size range, full port 5600F series and standard port 5800R series, of equal or lesser pressure classes to the same standards.

CERTIFIED BY:



Jim G. Gower, P.E.  
Val-Matic Valve & Manufacturing Corp.

DATE: 4-12-23

REVISED 4-12-23

24" PLUG VALVE PROOF OF DESIGN CERTIFICATION

DATE 3-28-96

**VAL-MATIC**<sup>®</sup>  
VALVE AND MANUFACTURING CORP.

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