1 Scope
1.1 This specification covers the design, manufacture, and testing of quarter-turn worm gear actuators for use with AWWA butterfly, ball, and eccentric plug valves.

2 Standards, Approvals, and Verification
2.1 The actuators shall be designed, manufactured, and tested in accordance with the applicable requirements of AWWA C504, C507, and C517.

2.2 The manufacturer shall have a quality management system that is certified to ISO 9001 by an accredited, certifying body.

3 Design
3.1 Actuators shall be designed to provide smooth quarter-turn operation of valves and equipped with a 2 in. square nut requiring a maximum input torque of 150 ft-lbs or a handwheel requiring a maximum of 80 lbs rim pull.

3.2 Actuators shall be mounted to the valve actuator flange with alloy bolting and coupled to the valve stem with a precision bore and square key.

3.3 The actuator shall OPEN LEFT (counter-clockwise) unless otherwise specified.

3.4 Externally adjustable Open and Closed external stops shall be provided.

3.5 For above-ground operation, an indicator arrow and "open" and "close" markings shall be provided on the cover.

3.6 When required to reduce input torque, a spur gear assembly shall be provided.

4 Materials
4.1 The actuator housing shall be fully sealed and constructed of gray or ductile iron. The actuator mechanism shall include a ductile iron or bronze worm gear, alloy steel worm. Buried service units shall be packed 90% with grease.

5 Options
5.1 When specified, a Limit Switch and Position Indicator Assembly shall be mounted to the actuator cover and coupled to the valve stem with a dowel pin and flexible coupling. Four (4) SPDT 10-amp micro switches limit shall be pre-wired to numbered terminals and provided in an aluminum NEMA 4X housing with a ¾” NPT conduit connection.

6 Manufacture
6.1 The exterior of the actuator shall be coated with primer with a dry film thickness of 3 mils.

6.2 Worm Gear actuators shall be Series WG as manufactured by Val-Matic Valve & Mfg. Corp., Elmhurst, IL USA or approved equal.