

**TRAVELING NUT ACTUATOR
Val-Matic Specification**

1 Scope

1.1 This specification is intended to cover the design, manufacture, and testing of quarter-turn traveling nut actuators for use with AWWA butterfly valves and AWWA ball valves.

2 Standards, Approvals and Verification

2.1 The actuators shall be designed, manufactured and tested in accordance with the applicable requirements of American Water Works Association Standards AWWA C504, AWWA C507, and AWWA C540.

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

3 Design

3.1 Actuators with output torque ratings less than 18,600 ft-lbs shall be of the slotted lever design using centralizing ACME threads.

3.2 Actuators with output torque ratings greater than or equal to 18,600 ft-lbs shall be of the link and lever design.

3.3 Actuators of the link and lever design shall be able to be equipped with a bevel gear unit mounted on the main housing with at least a 3:1 mechanical ratio to reduce input torque. Actuators with output torque ratings greater than 18,600 ft-lbs shall always be equipped with such a bevel gear unit. The bevel gear shall provide for change of rotation in the field by inverting the internal gear and shall not affect the open and closed stop settings.

3.4 Actuators of the link and lever design shall be equipped with adjustable threaded stops secured to the stem with spring pins. Closed stops shall be externally adjustable. External stop covers shall be sealed with o-rings.

3.5 The actuator shall be equipped with a 2 in. cast iron nut requiring a maximum input torque of 150 ft-lbs, a handwheel requiring a maximum of 80 lbs rim pull, or a chainwheel requiring a maximum of 80 lbs chain pull.

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

3.7 For above ground indication, an indicator arrow shall rotate over "OPEN" and "CLOSE" markings on the actuator cover.

3.8 Actuators of the link and lever design shall have provisions for installing a lifting eye bolt.

3.9 Actuators shall be equipped with position stops capable of withstanding 450 ft-lbs of input torque.

4 Materials

4.1 The actuator housing shall be fully sealed and constructed of ASTM A48 Class 40 gray iron or ASTM A536 Grade 65-45-12 ductile iron. Mounting shall use blind tapped holes to prevent leakage of grease. All fasteners shall be type 316 stainless steel.

4.2 The lever shall be ductile iron to prevent fracture from valve vibration.

4.3 The crosshead shall be bronze or aluminum-bronze and the stem shall be alloy steel to prevent galling.

4.4 Moving parts shall be lubricated with water resistant, extreme pressure (EP), NLGI No. 2 grease.

4.5 The actuator shall be equipped with Teflon-lined, fiberglass-backed sleeve bearings to reduce friction. Link and lever designs shall be equipped with thrust ball bearings to absorb the crosshead thrust.

4.6 For buried service, the input shaft shall be stainless steel or electroless nickel-plated and the housing shall be 90% grease-packed.

5 Options

5.1 In addition to the standard mounting position, optional mounting positions are 90, 180, and 270 degrees when specified. Additionally, when a bevel gear is supplied, the input shaft shall be able to be oriented in alternate positions in 90-degree increments.

5.2 Actuators of the slotted lever design shall be equipped with externally adjustable, plated steel stop bolts on both the open and closed ends of travel. These stops shall be secured with a lock nut, and shall be sealed with a thread seal washer to prevent leakage of grease. Additionally, actuators of this type with output torque ratings greater than or equal to 1275 ft-lbs shall be equipped with tapered roller bearings to absorb side loads and the crosshead thrust.

5.3 A 4-7/8 in. diameter flange with drilling per MSS SP-102 FA10 shall be integral to the input side end cap or bevel gear input stem boss. For buried service, this flange may be used for alignment of 5 in. soil pipe valve boxes. For electric motor applications, this flange may be used for the attachment of a multi-turn motor actuator to the input stem of the traveling nut actuator, which is provided with a keyway to accommodate a 1/4 in. square key. This feature is optional for actuators of the slotted lever design, but standard for actuators of the link and lever design.

6 Manufacture

6.1 The exterior of the actuator shall be coated with an acrylic polymer coating for plant service, or a 2-part epoxy coating for buried service.

6.2 Traveling nut actuators shall be Series LS as manufactured by Val-Matic Valve & Mfg. Corporation, Elmhurst, IL, USA. or approved equal.

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 VAL-MATIC® VALVE AND MANUFACTURING CORP.

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