

## TOUGH, RELIABLE COMPONENTS TO GO THE DISTANCE



### Valve Actuators & Gearboxes

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## 900 Series Legacy Actuators

Tri-Tec Manufacturing produces the most rugged DOD spec electric actuators in the industry. Our MOV Valve Actuator is designed specifically to meet the requirements of the U.S. Navy for a high performance electric drive suitable for installation in all applications and environments. The actuators are constructed to allow for range of maintenance-free bronze construction for general applications to high-tech alloys for applications that require particular attention to the overall weight. The actuators are made from maintenance-free bronze construction.



### 900 Series Electric Valve Actuator Design & Materials

#### Housing

MOV Actuators are available with cast housings in **Bronze**.

#### Motors

All motors are furnished to MIL-M-17059 Service A for frame size 48 and 56 for Type II Quarter Turn Valves, Type I may require a larger motor to MIL-M-17060 depending upon the torque requirements. Motor options are as follows:

- **Sealed Insulation Systems** – Motors are available from qualified suppliers to meet the Sealed Systems specification in MIL-M-17060.
- **Thermal Sensor Monitor** – When specified, the motors are furnished with 3 Positive Temperature Coefficient Thermal Sensors (Thermistors) embedded in the windings to have an increase in resistance of 15% per degree at the thermal rating of the insulation system. The sensors are matched and calibrated with an over-temperature controller which is a calibrated solid-state device with a Triac output to disconnect the power to the reversing contactor in the event of an over-temperature condition.

#### Limit Switches

Our legacy electric actuators are furnished with 6 independently adjustable limit switches to indicate the precise position.

#### Specifications & Testing

MOV Valve Actuators are designed, built and tested to meet the requirements of DOD-V-24657(SH)

#### Type

- **Type I** Actuators for multi-turn Valves (Gate, Globe, Non-return, etc.), with torque ranges up to 250 ft/lbs
- **Type II** for Quarter turn Valves, (Butterfly, Ball, Plug, etc.), with torque ranges up to 50,000 in/lbs

#### Class

- **Class I** – for general applications
- **Class II** – for non-magnetic & corrosive environments
- **Class III** – for lightweight requirements

#### Service

- **Service I** – submersible
- **Service II** – explosion proof
- **Service III** – submersible & explosion proof

#### Testing

**First Article** to DOD-V-24657(SH)

- **Shock** – MIL-S-901 Grade A, Class 1, hull mounted
- **Vibration** – MIL-STD-167-1 mounted on the valve
- **Airborne Noise** – Mil-STD-740
- **Life cycle** testing for 20,000 cycles at rated torque and simulated load
- **Fire Test** – 30 Mins at 1500 degrees
- **Humidity** – MIL-STD-202, tested at 100% humidity at 65°C
- **Electromagnetic Interference** – MIL-STD-461 and tested per MIL-STD-462
- **Stalled motor heat rise** – Locked rotor
- **Thrust and Torque test** - validation of performance
- **Submersion** – enclosure MIL-STD-108 and tested to 15 meters
- **Overload test** – Both open and closed positions with the limit switches and the torque switches bypassed

### Legacy Valve Actuator Series:

993 Actuator – ¼ turn, multiple schematics for all classes of surface combatants. Torques up to 35000 inch lbs. Weight 125 pounds

901 Actuator – Our simplest, heavy duty multi-turn with multiple schematics for all classes of surface combatants. Gate and globe valves up to 14 inch, Weight 160 pounds

906 Actuator – multi-turn, multiple schematics for all classes of surface combatants. Gate and globe valves up to 6 inch. Pushbutton controls, weight 150 pounds

924 Actuator - Linear electric actuator used in the chilled water system for Sea Wolf and Virginia Class Submarines

To learn more about 900 Series Legacy Electric Valve Actuators, please [contact us](#) or [request a quote](#) today!



MOVI  
ELECTRIC VALVE ACTUATOR  
[Illegible text and wiring diagram]

REMOTE  
OPEN SHUT  
STOP  
LOCAL

