

# DynaQuip®



**DynaQuip**  
MODEL **DE153**  
TORQUE 150 IN. LBS.  
VOLTAGE 115 VAC 60Hz  
CURRENT 0.49 AMP LOCK ROTOR  
SERIAL NO. 1010101010101  
www.dynaquip.com 800.545.3638  
Made in USA of U.S. & Imported Parts

## DE SERIES

DynaQuip Electric Actuator Manual

# DynaQuip

## DE Series

### Electric Actuator

#### INSTALLATION, MAINTENANCE AND OPERATION MANUAL

#### FEATURES

- Can be wired in parallel with other DynaQuip DE actuators
- Easy access for cam adjustment
- Type 316 stainless output shaft
- 50% Duty cycle at ambient temperature and rated torque
- Thermal overload protection to guard motor against overheating
- Manual overrides on all standard models
- Rotates clockwise to close valve and counter-clockwise to open valve
- Operates mounted in any position

#### WARNING

DO NOT APPLY ELECTRIC POWER UNLESS UNIT IS FULLY ASSEMBLED AND MOUNTED.

ALWAYS DISCONNECT ELECTRIC POWER SOURCE AND RELIEVE PRESSURE IN THE SYSTEM PRIOR TO MAINTENANCE.

IT IS RECOMMENDED THAT EYE PROTECTION BE WORN WHILE SERVICING THE SYSTEM.

FAILURE TO COMPLY WITH ABOVE WARNINGS COULD RESULT IN PERSONAL INJURY AND/OR DAMAGE TO THIS PRODUCT.

#### MANUAL OVERRIDE

In the event of power failure, the DynaQuip actuator may be cycled manually. To manually cycle the actuator apply a wrench to the exposed flats on upper end of the shaft and turn it in the desired direction. Actuators rotate clockwise to close valve and counter-clockwise to open valve. Failure to rotate in the proper direction will cause limit switches to malfunction.

#### INSPECTION UPON RECEIPT

1. Visually inspect to be sure actuator

- has not been damaged in transit.
2. Verify that the manual override is in working condition.
3. Verify that Model Number is correct as ordered.
4. Verify that electrical supply voltage is the same as specified on the actuator label.
5. Verify that NEMA rating on label is as required: Weatherproof/Corrosion Resistant (NEMA 4, 4X) or Explosion proof (NEMA 7 or 9).
6. Check that mounting bolt pattern and output shaft/adaptor configurations are as required.

#### INSTALLATION

1. Before mounting the actuator, verify that the valve torque requirement is less than the rated output torque of the actuator.
2. Check that the output shaft adapter fits the stem of valve or damper before inserting into the actuator (Model DE150 adapter sleeve has F03 mounting on one end and F04 mounting on the other end.)
3. Insert output shaft adapter into actuator. Make sure fit is satisfactory.
4. Determine that actuator position, open or closed, matches position of equipment with which it is to be mounted. Use manual override to change position, if necessary.
5. Mount to top plate of valve, valve bracket or damper. Be sure that base of actuator is flush with top plate.
6. Insert bolts but do not tighten.
7. Use manual override to move stem of valve or damper slightly to correct side thrust or misalignment.
8. Manually place valve to either full travel position.
9. Tighten bolts using a cross pattern and equally drawing bolts down to finish.

#### ELECTRICAL INSTALLATION

Verify that the electrical supply voltage is the same as the required actuator voltage.

Follow the wiring diagram on the back page. Use the wiring diagram inside actuator cover for voltages other than 115VAC.

Electric power to terminals 1 & 2 will cause the camshaft to rotate counterclockwise.

Electric power to terminals 1 & 3 will cause the camshaft to rotate clockwise.

NOTE: DE series actuators may be wired in parallel with other DE actuators to simplify multiple installations.

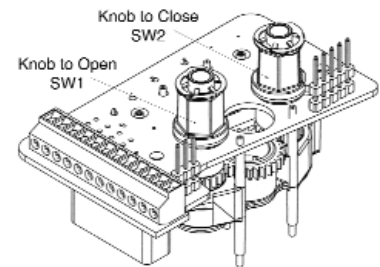
#### CAM ADJUSTMENT

The cams are preset at the factory. When additional adjustments are needed, follow steps described below.

#### TO SET OPEN POSITION

NOTE: "OPEN" (Cam indicator) is printed on the edge of circuit board opposite the "open" adjustment knob.

1. Turn power off.
2. Use manual override to turn valve counter clockwise to the fully open position
3. With the power turned off, remove cover.
4. Turn cam adjusting knob (open position) counter clockwise until the notch at the base of the board aligns with the "SW1" on the circuit board. Then turn knob clockwise until you hear a soft click of the switch.
5. Release knob.



#### TO SET CLOSED POSITION

NOTE: "CLOSE" (Cam indicator) is printed on the edge of circuit board opposite the "close" adjustment knob.

1. Turn power off.
2. Use manual override to turn valve clockwise to the fully closed position.
3. With the power turned off, remove cover.
4. Turn cam adjusting knob (closed position) clockwise until the notch at the base of the board aligns with

the "SW2" on the circuit board. Then turn knob counter clockwise until you hear a soft click of the switch.

5. Release knob.

**NOTE:** To adjust auxiliary limit switches, insert a small screw-driver through the hole in the adjusting knob and follow instructions 4 and 5 above with power turned off.

**MAINTENANCE**

Under normal operation, DynaQuip electric actuators require no formal maintenance program.

Regularly scheduled inspections should be performed to check for:

- Actuator-to-valve misalignment
- Damaged housing or mounting hardware
- Worn, loose or shifted parts due to shock, vibration, etc.

**STORAGE**

Store in clean, dry place and protect from severe temperature changes and vibration.

**NOTE**

After Installation it is the customers responsibility to be certain that all set screws, terminal screws, housing bolts and mounting bolts are tight and that all limit switches, potentiometers and position transmitters are calibrated to the individual settings required for their specific application.

Problem	Cause / Corrective Action
Actuator Stops Operating	<ul style="list-style-type: none"> <li>· Interrupted power. Check for broken or loose wires. Blown fuses or tripped breaker. Check switches.</li> <li>· Tripped thermal overload caused by overheating (see overheating below).</li> <li>· Motor burnout. Check to insure that correct voltage type is in use. Check all wiring against installation wiring diagrams.</li> <li>· Malfunctioning valve. Check that valve is operating properly.</li> </ul>
Overheating	<ul style="list-style-type: none"> <li>· Excessive duty cycle. Check duty cycle (frequency of operation). DynaQuip electric actuators have a duty cycle of 50% (actuator is energized no more than 50% of the time).</li> <li>· Low voltage "brown out". Measure line voltage to insure that actuator is receiving full rated voltage.</li> <li>· Ambient temperature too high and/or heat being conducted through mounting hardware.</li> <li>· Motor stall. Check for foreign obstruction. Check valve for proper operation. Check for increased torque load due to line pressure, etc.</li> </ul>
Low Torque Output	<ul style="list-style-type: none"> <li>· Low voltage or current. Check to insure that power supply is within listed specifications.</li> <li>· Overheating. See overheating above.</li> </ul>
Incorrect Travel or Operation	<ul style="list-style-type: none"> <li>· Refer to "Cam Adjustment" in this manual.</li> <li>· Circuit not energized for full duration of cycle. Malfunction in control device (relay, switch,etc.), inspect and correct or replace.</li> </ul>

**SAFETY FIRST**

In the maintenance and operation of mechanical equipment, safety is a basic factor that must be considered at all times. By using proper clothing, tools and procedures, serious accidents to you and your fellow workers can be prevented.

After inspecting the DynaQuip actuator keep the following information for future reference.

Electric Actuator Model Number \_\_\_\_\_

Output Torque \_\_\_\_\_

Voltage \_\_\_\_\_

Serial Number \_\_\_\_\_

Date of Installation \_\_\_\_\_

Location \_\_\_\_\_

Valve / Line Tag Number \_\_\_\_\_

**Thank you for selecting DynaQuip electric actuators for your valve automation requirements.**

# Wiring Diagram

