

TECHNICAL MANUAL

MODEL D86 OVERTORQUE PROTECTOR

STOP VALVE BREAKAGE

THE MODEL D86 VALVE OVERTORQUE PROTECTOR™ PREVENTS VALVE DAMAGE CAUSED BY EXCESSIVE OPERATING TORQUE.

Description

The Model D86 *Valve Overtorque Protector*™ is permanently mounted on the valve operating nut. No special tools or valve modifications are required. It's easily mounted on direct buried valves without excavation. Operating torque is applied to the 2-inch AWWA nut on the Model D86 then transmitted through the D86 to the valve. The Model D86 will transmit sufficient torque to free up and operate the valve. If excessive torque is applied, the drive will disengage and prevent valve damage. The drive will automatically re-engage at the original setting with further rotation in either direction.

Features

- Operates buried and submerged
- Zero maintenance
- Permanently lubricated hermetically sealed mechanism
- Corrosion protected with fusion-bonded epoxy

Mounting

Place the Model D86 *Valve Overtorque Protector*™ on the valve operating nut and tighten the two mounting screws. To mount on buried valve, hook into the drain hole in the side of the D86 nut then lower the unit onto the valve nut. The mounting screws need not be tightened.

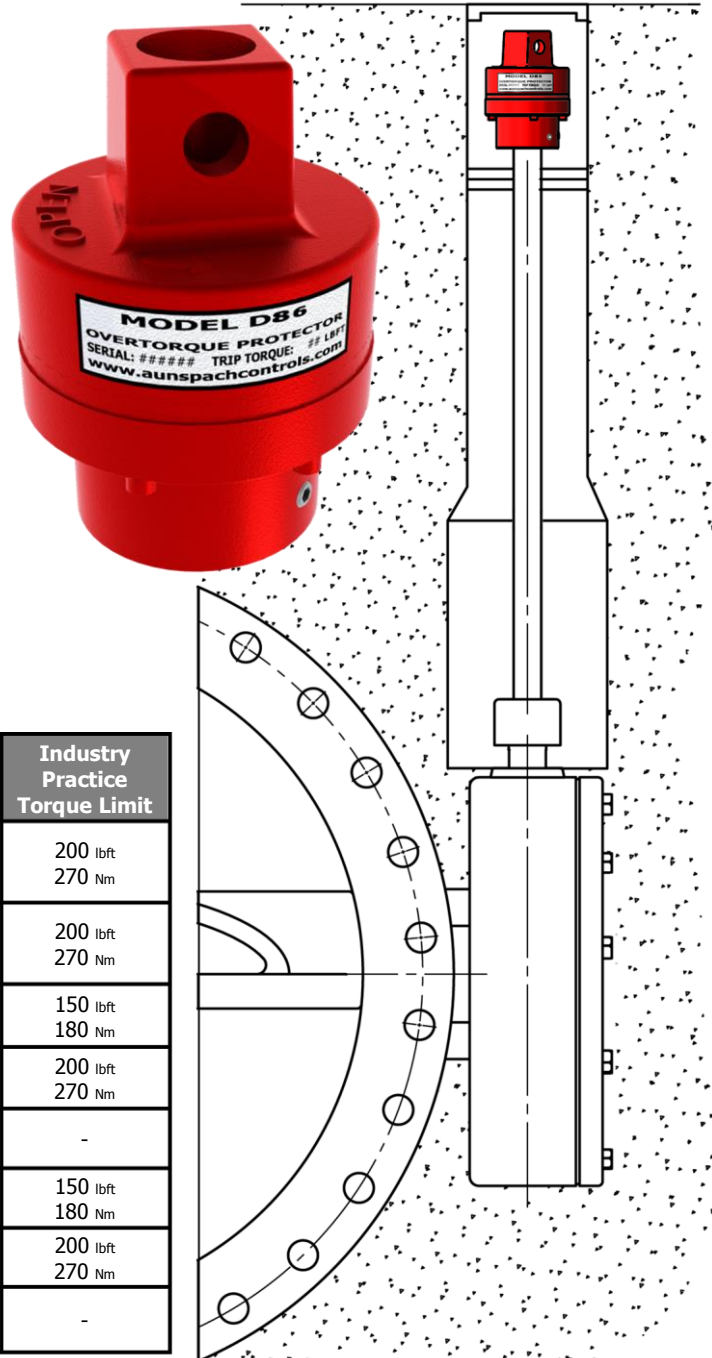
Trip Torques

Model	Standard Trip Torques	Trip Torque Capacities
D86-250	200 lbft	25 to 250 lbft
D86-500	400 lbft	50 to 500 lbft

Other trip-torques are available

AWWA Valve Torque Reference Data

Valve Style	AWWA Reference	Valve Size	Max Torque Allowable	Industry Practice Torque Limit
Butterfly	C504-15 4.2.8.3.2 A.7.2	3 thru 72 inch	300 lbft	200 lbft
		75 thru 1800 mm	400 Nm	270 Nm
Ball	C507-15 4.3.10.3.3 A.7.2	6 thru 60 inch	300 lbft	200 lbft
		150 thru 1500 mm	400 Nm	270 Nm
Resilient Seat Gate	C509-09 A.5.5.7	3 thru 4 inch	200 lbft	150 lbft
		75 thru 100 mm	270 Nm	180 Nm
		6 thru 12 inch	300 lbft	200 lbft
		150 thru 300 mm	400 Nm	270 Nm
		14 thru 36 inch	Consult Valve Manufacturer	-
		350 thru 900 mm		
Metal Seat Gate	C500-09 A.5.7.6	3 thru 4 inch	200 lbft	150 lbft
		75 thru 100 mm	270 Nm	180 Nm
		6 thru 12 inch	300 lbft	200 lbft
		150 thru 300 mm	400 Nm	270 Nm
		14 thru 36 inch	Consult Valve Manufacturer	-
		350 thru 900 mm		



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Submerged Operation

The mechanism is permanently lubricated and hermetically sealed to exceed IP 68 water ingress standard IEC 60529 Ed 2.2 2013. Units have been tested water tight under 230 feet (70 meters) water pressure.

Corrosion Protection

All units are coated inside and outside with AWWA C-213 compliant fusion-bonded epoxy and enamel top-coat. All fasteners are austenitic stainless steel.

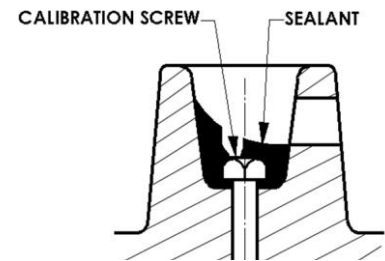
Lubrication

All units are permanently lubricated with molydisulfide-bearing, water-resistant, high-pressure synthetic grease.

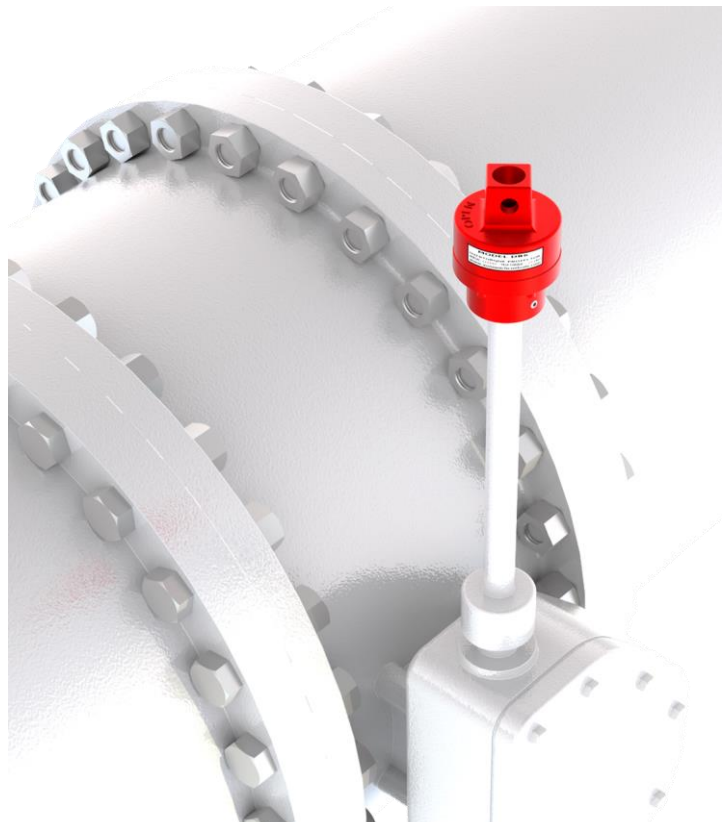
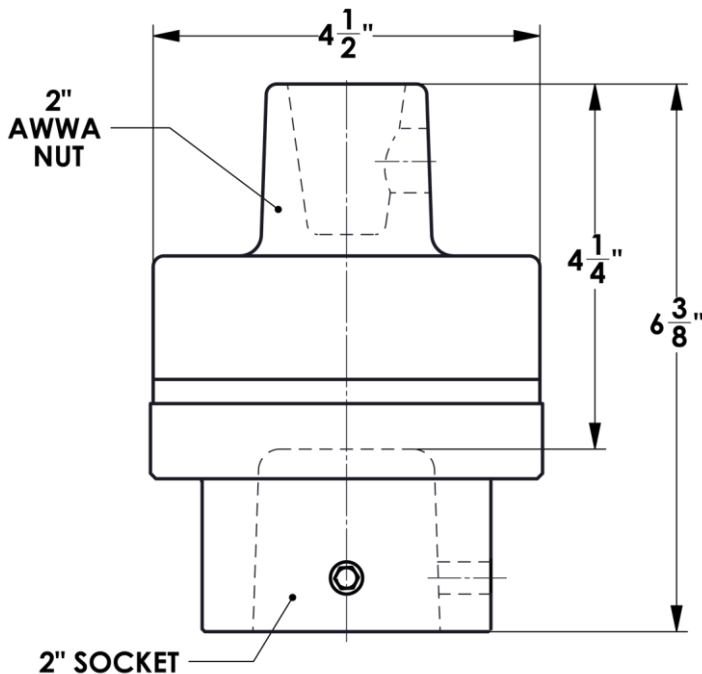
Trip Torque Calibration

Model D86's are shipped pre-calibrated to end-user specification and ready to install. The trip torque calibration screws are sealed and concealed to prevent tampering. They may be re-calibrated by the following procedure:

1. Remove polyurethane sealant from bonnet nut cavity to expose the calibration screw.
2. Rotate the adjusting screw inward (clockwise) to increase trip torque or outward (counterclockwise) to decrease. 1/16 revolution will change the trip torque approximately 12 pounds feet for D86-250, and 24 pounds feet for D86-500. For more precise calibration use a torque wrench to verify setting.
3. After adjustment, fill nut cavity with Devcon Flexane 94 liquid polyurethane up to the lower edge of the drain hole in the side of the D86 nut.



Envelope Dimensions



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