

DYNATORQUE

VALVE ACTUATORS AND ACCESSORIES

D-Lock™ *Valve Locking Device*

The DynaTorque D-Lock is for use with automated valves (pneumatic, hydraulic or electric) that require “lock out” capability to prevent valve rotation.

The unique feature of the D-Lock is its ability to hold a valve in the open or closed position while compensating for hysteresis and machining tolerances, ideal for torque-seated valves such as Triple Offset Butterfly Valves, but applicable for almost any rotating device.

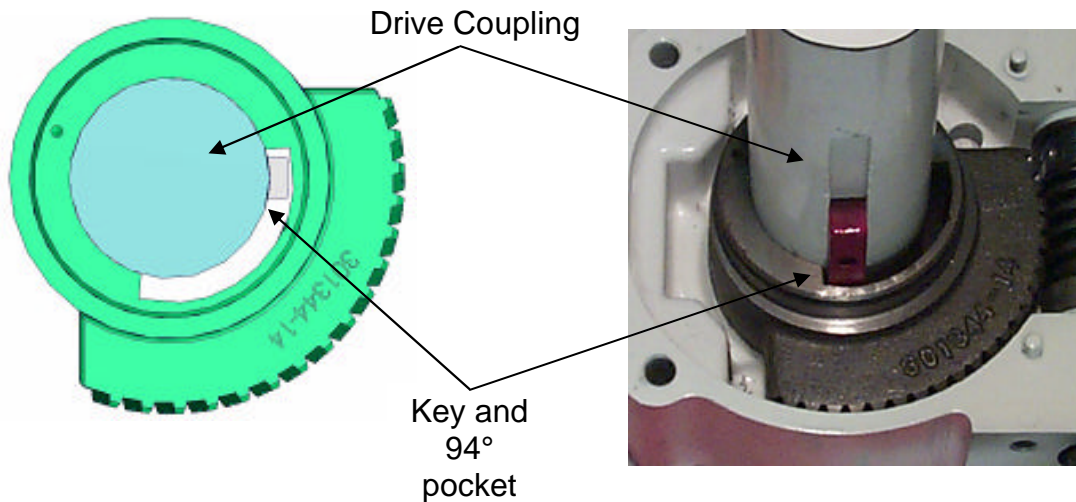
The D-Lock is designed to mount “sandwich style” between the valve and actuator.

Materials: Unit housings and covers are cast iron (stainless steel is available on select sizes), worms are heat treated carbon steel, worm wheels are cast ductile iron, input shafts are stainless steel, shaft and worm wheel seals are Buna-N, covers are sealed with Loctite 51580, bushings are oil impregnated copper-nickel steel alloy and all D-Locks have one coat of black epoxy paint. D-Locks are totally enclosed, weatherproof and permanently lubricated (padlocks are not supplied by DynaTorque).



How it Works

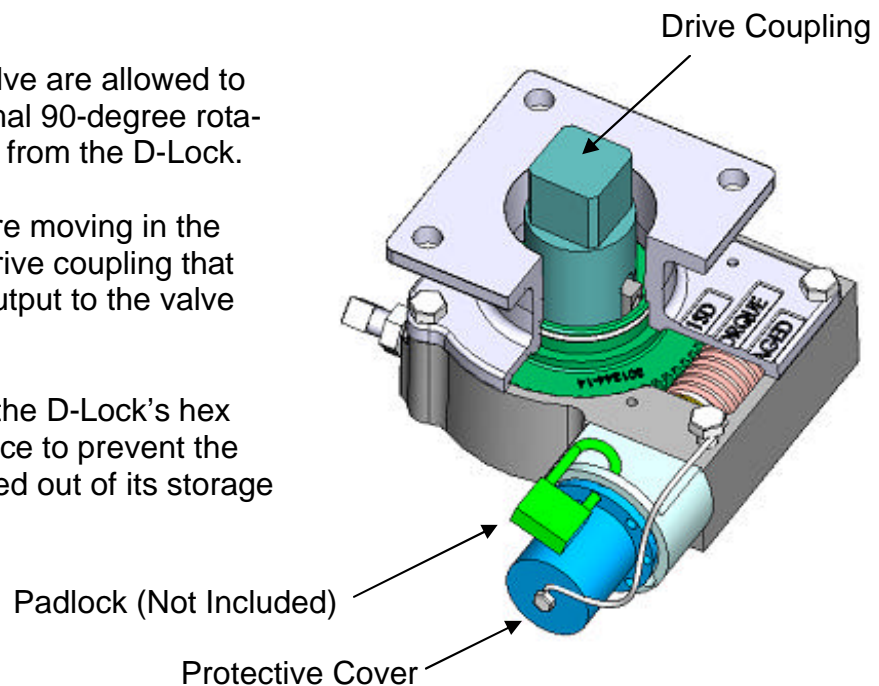
Inside the D-Lock is a worm wheel with a 94° “pocket” or keyway. Until the D-Lock is engaged, the drive coupling and key are free to rotate within the device. So the D-Lock is “transparent” to the operation of the valve and actuator while disengaged.



The actuator and the valve are allowed to travel through their normal 90-degree rotation without interference from the D-Lock.

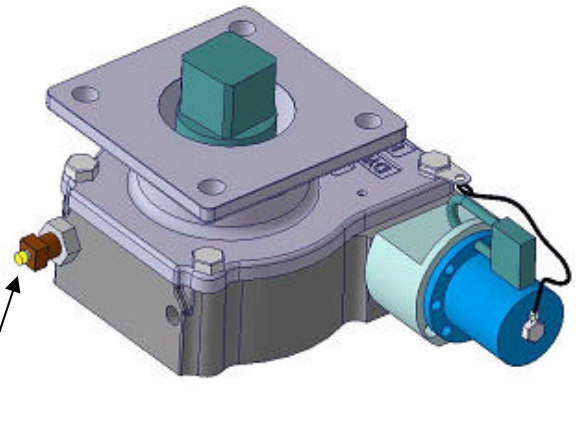
In this mode, no parts are moving in the D-Lock other than the drive coupling that connects the actuator output to the valve stem.

The protective cover of the D-Lock’s hex drive is padlocked in place to prevent the D-Lock from being rotated out of its storage position.



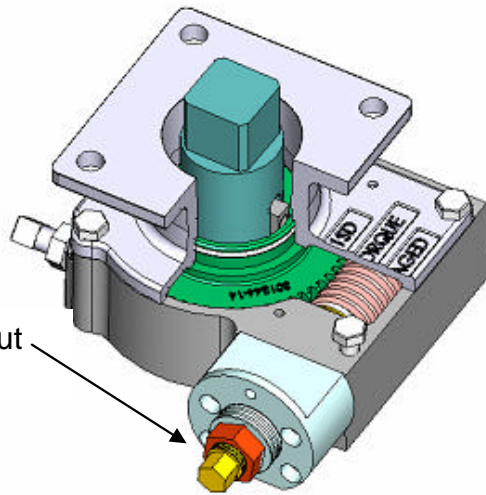
NOTE: The D-Lock position indicating stop-bolt verifies the device is fully disengaged.

A button indicator extends out of the head of the stop bolt approximately ¼” when the D-Lock is in the disengaged or “storage” position. As the D-Lock moves toward the engaged position, the button will retract into the stop bolt head indicating the device is no longer fully disengaged.



Button Indicator

After the actuator and valve have been moved to the desired lockout position the padlock and hex drive protective cover are removed. This will expose the D-Lock hex drive and lock nut.



Hex Drive and Lock Nut



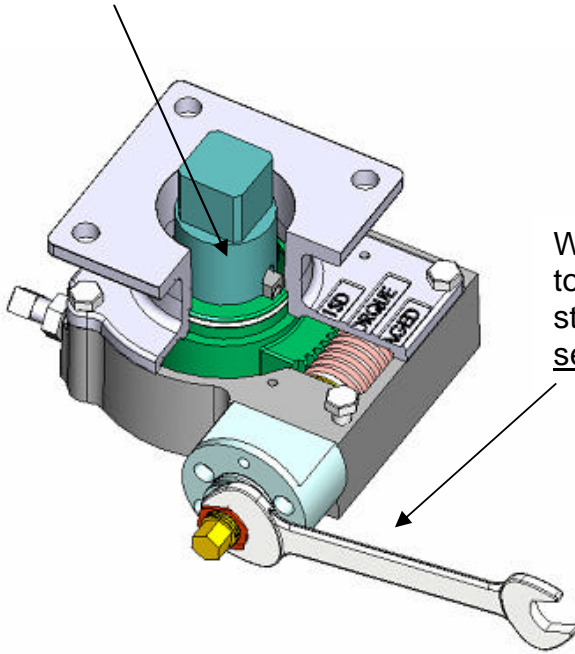
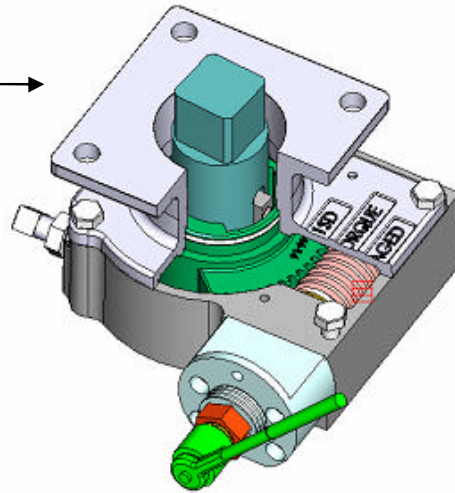
Model	Unit Wgt. Lbs.	Output Torque Lbs.-in	Turns For 90 Deg.
DT12D-Lock	43	12,000	14.25
DT21D-Lock	61	21,000	11
DT36D-Lock	126	63,000	13.25
DT60D-Lock	149	140,000	15

Continue to last page for operation

The D-Lock hex drive is rotated 90° using a ¾" socket.



The D-Lock is now "engaged" and in its locked position.



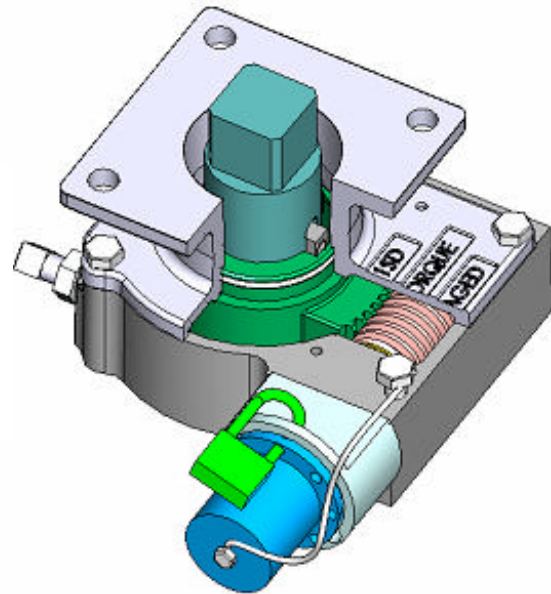
When the lock nut is tightened the rotational tolerance in the Actuator, D-Lock, and Valve stack are collected and the valve is torque seated and locked into position

When the protective cover and padlock are reinstalled, the D-Lock is secured in the lock-out position. If the actuator receives a signal to energize, the D-lock will prevent actuator and valve rotation.

- Padlock key is returned to the plant lock box.

D-Locks provide full clockwise or counter-clockwise locking capability; specify at time or order entry.

For more information contact the factory or your authorized DynaTorque Representative.



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