

# DynaTorque Inc.

## Sandwich Declutching Manual Override (SD Type)

### Installation & Operation Instructions

#### Installation Tips:

All DynaTorque operators & accessories have been designed to transmit the rated output torque of the operator with a safety factor. When designing mounting kits, torque transmission devices, or specifying mounting hardware the unit rating should be considered. DynaTorque recommends using grade 5 and higher bolts with lock washers for mounting operators to valve operator mounting flanges or adaptation kits. DynaTorque components should not be installed in areas where those components will be subjected to high temperatures, corrosive atmospheres, or high pressures without prior knowledge by DynaTorque or unless originally designed for that purpose. Doing so may affect the product warranty.

#### Installation:

The DynaTorque model SD manual override operators offer safe and easy positioning of valves when manually overriding a double acting or spring return pneumatic actuator. Each SD operator comes complete with a handwheel and blank drive adapter which can be easily removed for machining to match the pneumatic actuator and valve stem requirements. Before assembly is begun please insure that the driver has been machined correctly.

The following steps should be taken to install the DynaTorque SD override. DynaTorque recommends operator mounting while on the test stand with the valve in the closed position.

1. Check to insure that the valve, the override, and the pneumatic actuator, are in the same position. If the positions do not correspond, rotate the override handwheel either clockwise or counterclockwise until the correct position is achieved.
2. With the drive adapter removed from the override, place the SD on the valve assembly and loosely bolt into place.  
**Note: Mounting holes on some SD overrides break into the housing cavity creating a grease leak path. The use of Teflon tape is recommended for all valve side bolt installations.**
3. Before reinstalling the driver, liberally grease the outside of the driver and the override bore. This will reduce the possibility of corrosion between the two components.
4. Reinstall the drive adapter making sure the end of the driver configured to fit the valve stem is aligned correctly.
5. Tighten the valve to SD mounting bolts.
6. The opposite end of the driver should be configured to match the pneumatic operator output drive. Align the pneumatic actuator drive with the override driver and lower the pneumatic actuator into place on the top flange of the override.
7. Bolt the pneumatic actuator into place.
8. Check the stop adjustment screws on the SD operator to insure that they do not interfere with the valve or pneumatic actuator stops if they exist. To set the override stops, loosen the lock nut on each of the SD stop bolts and back them out several turns. (DT12SD through DT90 SD only) Adjust the valve to the desired position. Turn the stop bolt on the appropriate side in until it comes into contact with the override gear quadrant. Once contact has been made, reverse rotation and back out the bolt ½ to 1 turn. Tighten the lock nut against the housing. Rotate the override to the opposite end and repeat the process.
9. Before operating the pneumatic actuator, make sure that the SD override is in the normal declutched position.

**Safety:**

DynaTorque operators have been designed and manufactured to the highest quality standards. In most cases, operator and handwheel packages have been sized to produce rated torque with a maximum of 80 lbs. of handwheel rim effort. The use of larger handwheels, cheater bars, etc. will void the override warranty and may cause damage to the operator, valve stem, drive shafts, or other torque transmitting devices as well as being dangerous to the user.

**Operation:**

In the event the pneumatic actuator's power supply fails, a double acting pneumatic actuator will remain in its last position, and a spring return actuator will move to its failed position. Make sure that the pneumatic actuator's cylinders have been bled. Using one hand, grab the override engagement handle, squeezing the bottom handle and top handle together. With the handles still squeezed together, rotate the handle from its declutched position upward toward the pneumatic actuator mounting flange until the handle locking tabs are inline with their locking positions. In some cases the override gear teeth will not mesh correctly when rotating the handle upward. If this occurs, rotate the override handwheel slightly to mesh the gears and then rotate the declutch handle upward. Once the override handle is in its locked position, the override is ready to be used. Clockwise rotation of the override handwheel will produce clockwise rotation of the override output, valve, etc. Conversely, counterclockwise rotation of the handwheel will produce counterclockwise rotation of the override output, valve, etc. **Note:** When pneumatic actuator air has been restored, the manual override must be returned to its declutched position. Reversing the procedure above will return the override to the declutched position. Make sure that the handle locking tabs are inserted into their locking position on the override housing. Leaving the declutch engaged will prohibit the pneumatic actuator from cycling the valve and may cause damage to the override as well as drivers linkages, etc. and void the override warranty.

**Normal Position – Dis-engaged:**

The picture (left) shows the DT21SD in the “normal position, dis-engaged” for standard pneumatic operation. As shown, the handle arrangement is pinned in the down position. The handwheel should rotate freely in either the clockwise or counter-clockwise directions.



### **Override Position – Engaged:**

The picture (right) shows the DT21SD in the “override position, engaged” for override operation. As shown, the handle arrangement is pinned in the up position for override. Rotation of the handwheel clockwise will rotate actuator clockwise (generally closed direction); rotation of the handwheel counter-clockwise will rotate actuator counter-clockwise (generally open direction). **Note, air pressure must be relieved and/or air connections to pneumatic operator must be disconnected prior to override.**

### **Please Note:**

When assembling DynaTorque products to a valve or to an automated valve package, standard engineering practices must be utilized to assure proper mounting orientation, configuration, and distribution of weights and forces. Failure to do so could cause product damage and/or malfunction, **and void warranty consideration**. If there are any questions please contact the factory at [info@dynatorque.com](mailto:info@dynatorque.com).