

## **Gear-motor Mounting Instructions**

**IMPORTANT ELECTRICAL NOTE:** Please read Table 'A' on Page 5, for ½ HP motors, of your Gear-motor Manual, "Dayton Single-Phase and Three-Phase Fractional AC Gear-motors". Make sure your wire gauge conforms to the requirements for the ½ HP SINGLE PHASE Gear-motor before running wire. (If you have a commercial service with 3-phase power, you should follow the guidelines of Table-B).

Insufficient wire gauge will result in 'voltage drop', which will greatly reduce the power and torque output of the Gear-motor. Even a 10% drop in the voltage (while under load) could diminish the torque to unworkable levels, and could also cause your motor to become damaged due to combination of lower voltage and a greater amp draw ( $E=IR$ ; R is limited and fixed so  $I$ /Amps must increase to compensate for Voltage drop, thus creating spiral of electrical problems).

### **INSTALLATION STEPS:**

1. **If you have an existing Acme Screw System** for manual cranking, clamp the Folding Plates closed (so the tower would be vertical), and make sure the Folding Plates have an alternative clamp (8-10" bolt or cable/rope) fastening them together. Go to Step 2.

**If you are installing a new Acme Screw System along with your Gear-motor**, position the Large Threaded Nut and The Large Unthreaded Nut so they will be approximately the same distance apart as the ¾" holes on your Folding Plate front forks. Screw the two ¾" Pivot bolts through the top plate forks into the large Threaded Nut. Now go to Step 2.

2. Attaching the entire Screw System:
  - a. Position Gear-motor Mount on sides of bottom Folding Plate by sliding it's two short-angle 'arms' over the sides of the front Plates (which is welded to the front stub). It may appear that the mount will now look like an upside-down or inverted "L" when looking at it from the side; it will actually look much like the number "7" when looking at it from the side; the motor will seem to be somewhat upside-down also in this position when the tower folds over. If the mount resemble an "F" shape when you look at it from the side (without the smaller horizontal member of 'F'), that indicates that you have put the mount on backwards and it should be reversed. If not turned around and put on in the '7' direction, you will not be able to align the motor between the mount and the Screw System and it will break when attempting to align or operate!
  - b. Thread the two upper ¾" x 1" shoulder bolts into the sides of the upper plates (bolted to the tower section) and into the threads of the Traveler Nut block. IF the threaded holes do not line up (and they may not on the first attempt), then you need to loosen the Retaining

Nuts holding the Yoke Nut below and rotate the Retaining Nuts a small amount, like a couple turns or less, to allow the Traveler Nut to move into alignment. See Step #4 below for detailed steps on this process.

3. Make sure the Gear-motor-to-Screw System COUPLER is attached to the Gear-motor axle. Then, take the Gear-motor and attempt to fasten it on to the Mount legs by fastening the four 3/8" dia. Bolts and nuts to the four holes of the two Gear-motor feet. Any washers that are provided are not to come between the Mount surface and the motor's feet; washers are to be directly flush w/ bolt hex-head or nut on extreme end of bolts. Bolts and nuts should be only 'snugged' on until the installation and motor alignment process is complete, then tighten them.
4. Continue to attach Gear-motor onto the Mount legs by snugging the four 3/8" dia. Bolts and nuts. Any washers that are provided are not to come between the Mount surface and the motor's feet; washers are to be directly flush w/ bolt hex-head or nut on extreme end of bolts.
5. Next, loosen set-screws in Retaining Nuts on Acme Screw. Turn the Acme Threaded Rod so that it will enter the open end of the motor coupler when motor axle is axially aligned with the Screw (swing the Motor and Mount up with one arm while turning the Screw with the other hand). Be sure the Coupler is completely slid onto the Gearmotor axle before sliding the Screw end in. When the Screw is entered into the coupler, align both holes of the coupler with the Screw hole and insert bolt; if there is blockage, rotate the screw or coupler 180 degrees and try again. Insert 3/8" dia. bolt and tighten its nut.
6. After bolting Screw to Coupler, make sure the coupler is also completely seated onto the motor axle, about an inch in depth over the motor axle. The Coupler should have been set in place before the Screw was attached to the Coupler. If it has moved, slide it downward again and re-tighten the set-screw on the Coupler so that it tightens onto the axle.
7. ***Remember to re-tighten the set-screws in the Retaining Nuts so that they firmly tighten onto the Screw. If you forget this important step, the Screw system nuts will gradually spread apart along the vertical axis and eventually uncouple from the Gear-motor! It could also cause the gear-motor axle to stress and crack or other problems.***
8. Your Gear-motor and Mount should now be properly attached. If you have alternative clamp on the Folding Plates, unfasten it now. Your Gear-motor will be ready to fold the tower over, once you completely wire it to a 115 Volt circuit as diagramed with the Drum Switch/Gear-motor Wiring Diagram. Also make sure Acme Screw System is completely greased as instructed in the Acme Screw System instructions.

If questions, please call or write:

Heights Tower Systems, Inc.  
1529 Gulf Beach Hwy.  
Pensacola, FL 32507  
Phone: 1-850-455-1210  
Fax: 1-850-455-4355  
[info@heightstowers.com](mailto:info@heightstowers.com)