

# Geared Motors for Solar Tracking

Dare to capture every ray of sun!!

## Features

- Available in Single phase AC, DC Stepper, Brushed DC and BLDC Motor Versions
- Very Low Power Consumption (**Just 1.2W for 30Nm Torque**)
- Very Low Current Consumption
- Very Low Speeds also possible (eg. 1Hr./rev, 1 Day/Rev.....)
- 12Series Gearheads with a Gear Torque range from **0.3Nm to 30Nm**
- Wide range of Transmission Ratios from **2:1 to 3,780,000:1**
- Efficiency of Geared Motor approximately 70%
- All Gears are permanently lubricated
- Motor and gear are coupled by Snap-on Clips, Screw Clips or Screw Mountings
- Variety of Output Shafts available as standard
- Optional Mounting position (O/P Shaft preferably Horizontal)
- Life of Gearhead greater than **10,000Hrs.** In rated conditions
- Quiet Operation
- Compact Geared Motor Size and Robust Product Design
- Sturdy and maintenance free spur gearbox
- Eliminating Wasteful Maintenance
- Increased equipment uptime
- Better Accuracy, precision and control



## An example of how it works?

### Speed of Sun

Sun covers **360° in 24Hrs.**  
 i.e. 15°/Hr or 0.25°/min  
 Hence, it takes 4Min. To cover 1° of rotation



## Illustrative example which is one way of Selection of Geared Motor for Solar Tracking Application

e.g if we select a **Brushed DC Geared Motor** as follows  
 6min/rev (ratio required = 15000 approx)  
 i.e. 360sec/Rev. which is 1°/sec  
 This means we have to power motor for just 1 second every 4 minutes to track the solar movement.  
 Since ratio is 3000 or greater, we can use a very low strength motor to attain the torque required. So current consumption remains very low.  
 Lower Speeds also possible.

e.g if we select a **DC Geared Stepper Motor** as follows  
 Assuming we give 50Pulses every 5 Minutes and we use stepper motor with step angle of 7.5°  
 We will get step resolution of 0.025° each (ratio required = 300 approx)  
 Which will be 14400 micro steps for 360° rotation

e.g if we select a **BLDC Geared Motor** as follows  
 6min/rev (Ratio required = 17000 approx)  
 i.e. 360sec/Rev. which is 1°/sec  
 This means we have to power motor for just 1 second every 4 minutes to track the solar movement.  
 Since ratio is 3000 or greater, we can use a very low strength motor to attain the torque required. So current consumption remains very low.  
 Lower Speeds also possible.



**If it's a Multi-Axis Solar Tracking System, or if more than one Geared Motors are being used, please send us the specifications of each Geared Motor and we will suggest you the optimum solution for the same.**

