



High Torque/Small Angle Rotary Incremental Actuator

The Moog High Torque Type 5 rotary incremental actuator is a compact, closely integrated design made up of two key elements: a motor and a multi-stage speed reducer. The motor is the heritage 1.5-degree permanent magnet stepper with a relatively high unpowered holding torque. The multi-stage speed reducer, consisting of an input planetary stage and a harmonic drive, offers a large reduction ratio (320:1), low weight, zero backlash and high torsional stiffness. Coaxial nesting of the motor and transmission drive elements gives the unit an optimized geometry. All of the electrical elements, such as motors and position sensors, can be redundant with little or no change in actuator envelope.



HIGH TORQUE / SMALL ANGLE ACTUATOR

Standard Performance	
Output Step Angle (degree)	0.00469
Steps Revolution	76,800
Transmission Ratio	320
Motor Step Angle (degree)	1.5
Max. Output Step Rate (pps)	300
Max. Output Speed (deg/sec)	1.40625
Torsional Stiffness	175,000 (lb-in/rad) 19,770 (N-m/rad)
Shaft Load Capability Axial	3,000 (lbf) 13,400 (N)
Transverse	2,500 (lbf) 11,000 (N)
Moment	220 (ft-lb) 298 (N-m)
Power Max. (Watts)	17
Inertial Capability	7376 (slug-ft ²) 10,000 (Kg-m ²)
Output Torque	1,200 (lb-in) 136 (N-m)
Unpowered Holding Torque	700 (lb-in) 79 (N-m)
Total Assembly Weight	7.10 (lb) 3.23 (kg)



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