

80000 Series Pancake Stepper Motors with very low profiles and high torque



The Haydon™ 80000 Series stepper motor is designed for applications where accurate positioning, high torque and very thin packaging are desirable characteristics. This motor has a maximum diameter of 3.15-in (80 mm) and is less than 1/2-in (12.7 mm) thick.

Typical two-phase can-stack motors have coils mounted alongside each other, requiring a certain minimum thickness.

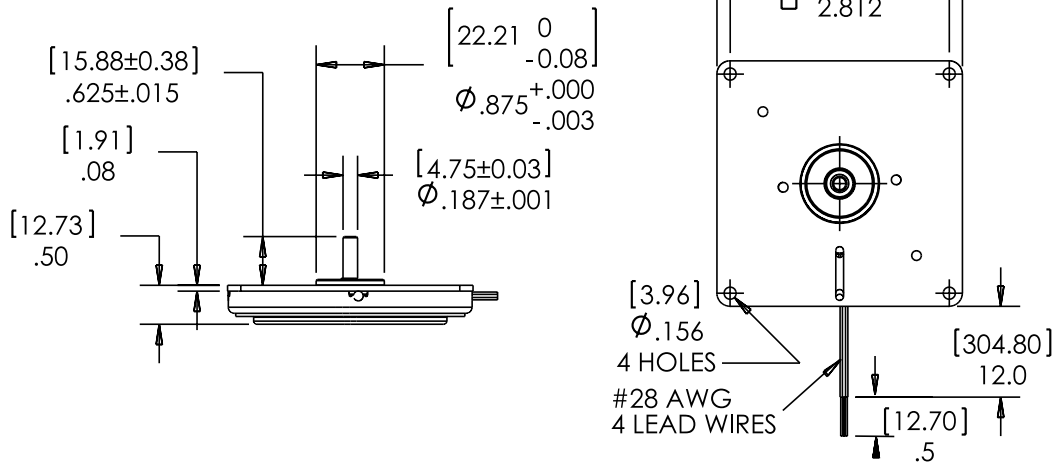
This pancake motor features a patented design, in which one coil is mounted inside the other. The motor's permanent magnet rotor is a ring that is located in between the coils.

Applications include business machines, computer peripherals and industrial equipment and automation. Accommodations can be made for configurations that require unipolar coils, special shafts and other mountings.

Salient Characteristics

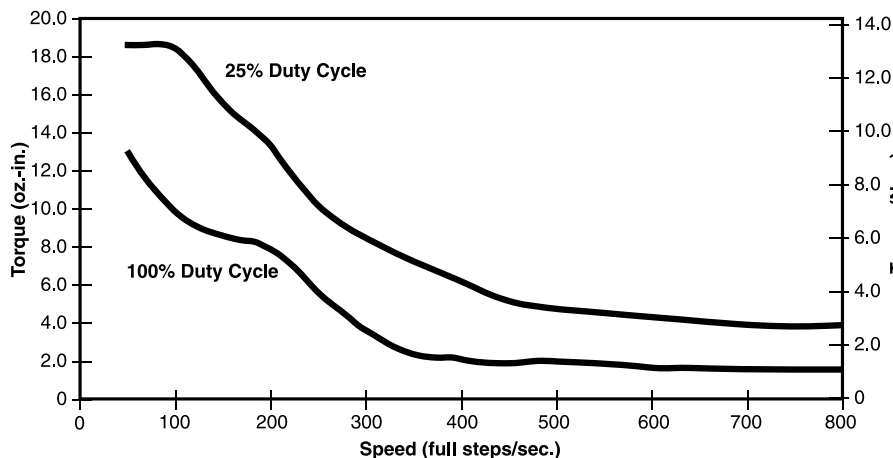
Ø 80 mm (3.15-in) Pancake Stepper	
Part number	80240-12
Wiring	Bipolar (Unipolar optional)
Step angle	3.75°
Winding voltage	12 VDC
Current/phase	.50 A
Resistance/phase	24 Ω
Inductance/phase	24 mH
Hold torque	20 oz-in (14.12 Ncm)
Power consumption	12 W
Rotor Inertia	120 gcm ²
Weight	7.75 oz (220 g)
Insulation resistance	20 MΩ
Temperature rise	90°F Rise (50°C Rise)
Bearings	Radial Ball

80000 Series Dimensional Drawing



Torque vs Full Step per Second

L/R Drive
Bipolar



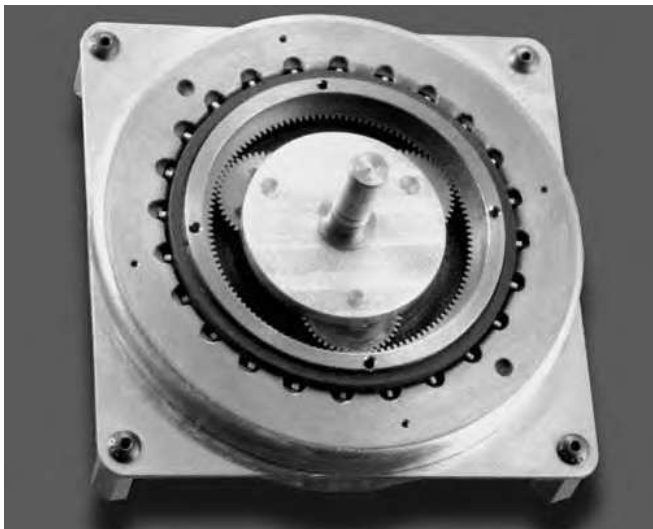
NOTE: Ramping can increase the performance of a motor either by increasing the top speed or getting a heavier load accelerated up to speed faster. Also, deceleration can be used to stop the motor without overshoot.

Pancake Low Profile Planetary Gear Train



Haydon Kerk Motion Solutions, Inc. • www.HaydonKerk.com • Phone: 800.243.2715 • International: 203.756.7441

0.75-in (20 mm) height, 3.15-in (80 mm) sq. and 100 oz.-in. (70 Ncm) of torque



Part modified to illustrate gearing. Actual gears are not exposed in standard packaging.

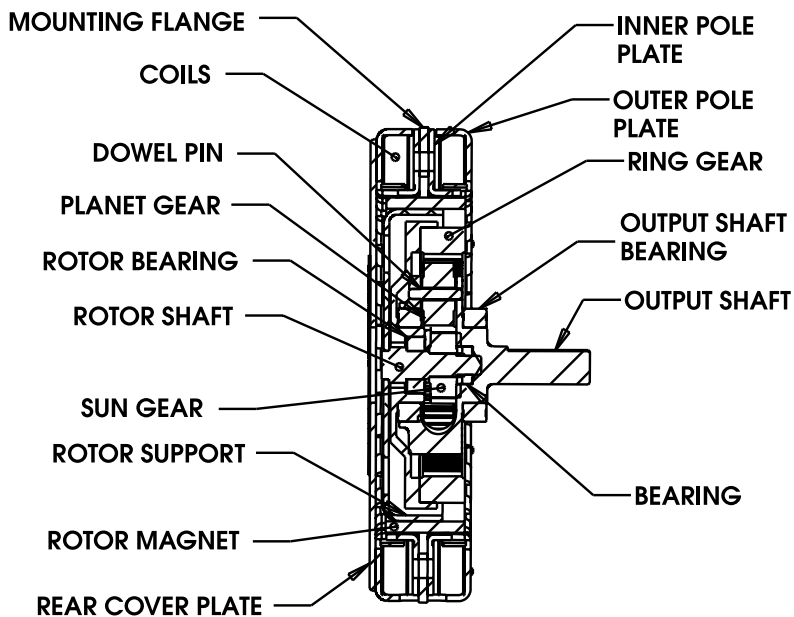
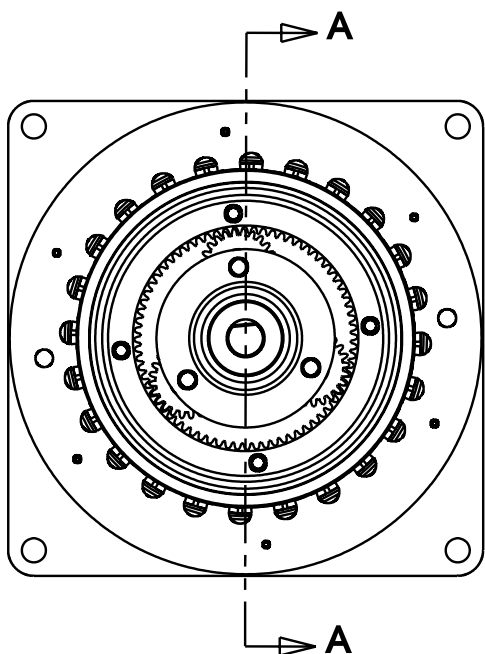
For a given size motor, the larger the rotor the greater the torque. Haydon Kerk Motion Solutions, Inc. provides an advanced, compact, low profile pancake stepper motor with a specially engineered, rotor-embedded, single-stage planetary gear train...designed to meet or exceed your most demanding small space high-torque applications.

Salient Characteristics

Ø 80 mm (3.15-in.) Planetary Gear Train Pancake Stepper Motor			Code
Part number	80GHX - V - Z		
Wiring (Part # code Z)	Bipolar		Z = 42
Gear Ratios/Step angle (Part # code X)	4:1 = 0.9375°		X = 04
Winding voltage (Part # code V)	5 VDC		V = 05
		12 VDC	V = 12
Current/phase	1.4 A	.58 A	
Resistance/phase*	3.6 Ω	20.6 Ω	
Step Angle	3.75		
Insulation resistance	20 mΩ		
Power consumption	14 W		
Weight	12 oz (343 g)		
Temperature rise	90°F Rise (50°C Rise)		
Operating Temperature	32° - 122°F (0 - 50°C)		
Travel direction	Rise) Reversible		
Bearings	Radial Ball		

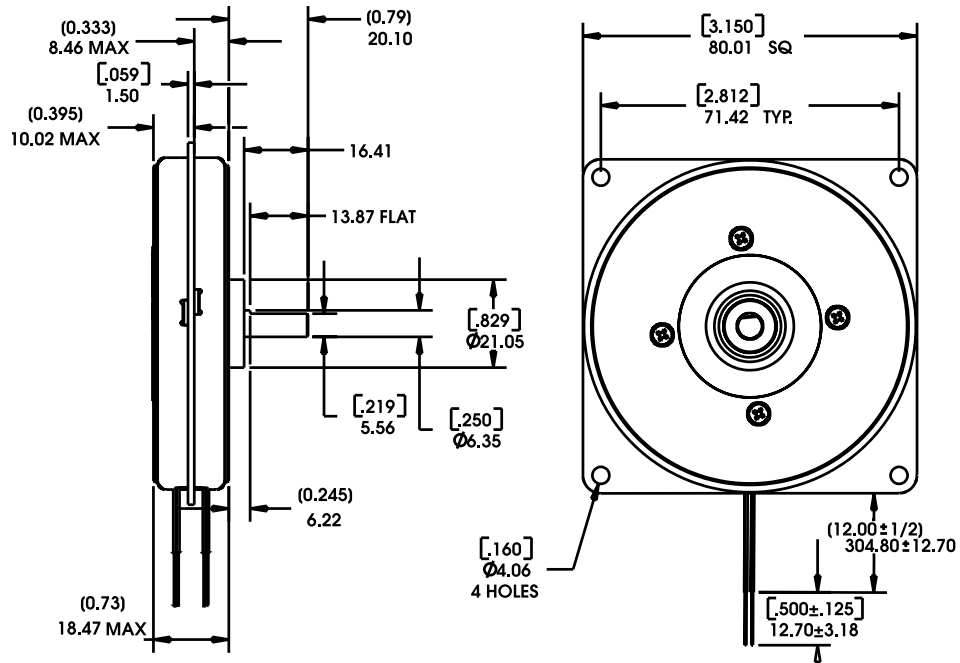
*±10% at 25°C (77°F) ambient

Planetary Gear Train Components



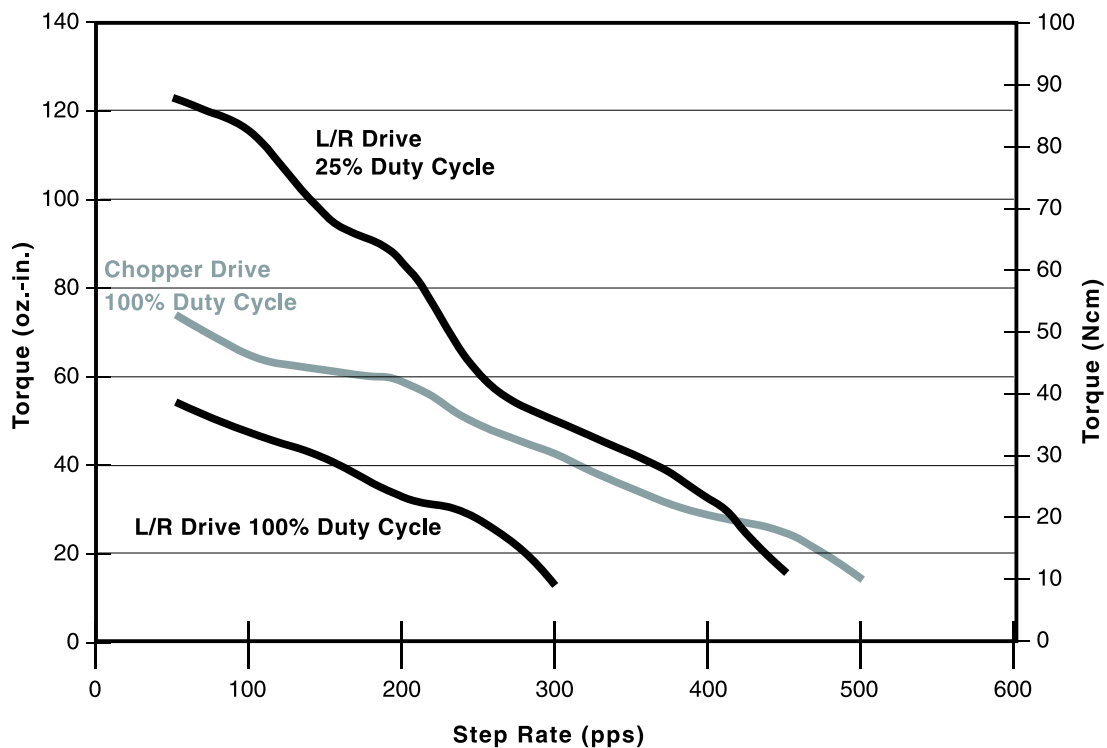
PANCAKE / LOW PROFILE STEPPER MOTORS

80GHX



Planetary Gear Train Performance Curves

Torque vs Full Step/Second • 4:1 Gear Ratio



NOTE: Ramping can increase the performance of a motor either by increasing the top speed or getting a heavier load accelerated up to speed faster. Also, deceleration can be used to stop the motor without overshoot.