

# PA 2000 High Performance Positioning System for Servotrack Writers



## Resolution

4.68 nanoradians

## Accuracy

35 nanoradians rms

## Stroke

40 degrees

The PA 2000 positioning system will improve the performance of servotrack writers by enabling increased track density and higher HDD manufacturing throughput.

The PA2000 is an integrated positioner containing an asymmetrical rotary actuator and a shaft mounted MicroE Systems encoder. Designed for speed and stiffness, the actuator produces high torque through a stiff bearing/shaft assembly. The position encoder uses MicroE systems' patented diffractive technique to achieve 4.68 nanoradian resolution [when used with MC2000]. The actuator/encoder assembly delivers fast, solid motion with extremely fine resolution.

### Specifications

Stroke	40 Degrees
Size	W: 82.6 mm 3.250" L: 93.7 mm 3.688" H: 73.0 mm 2.875"
Accuracy	35 nrad rms w/MicroE motion board
Resolution [14 bit interp.]	4.68 nanoradians 0.001 arc second
Inertia	$4.74 \times 10^{-3}$ oz-in-s <sup>2</sup> 334.75 gram-cm <sup>2</sup>
Inertially Balanced	No

### Torque Specifications

Torque Constant	17.5 in-oz/amp $\pm 10\%$ @ 70 °F
Maximum Continuous Operating Torque	8.75 in-oz $\pm 10\%$ continuous operation @ 0.5 amps

### Motor Properties

Coil Inductance	1.7 mH $\pm 0.2$ mH
Coil Impedance	8.0 $\Omega$ $\pm 0.2$ $\Omega$
Power Input	1.0 amp maximum for 1 minute 0.5 amp continuous input

### Environmental Conditions

Humidity	10% to 90% (non-condensing)
Operating Temp.	5 °C to 35 °C (41 °F to 95 °F)
Storage Temp.	-20 °C to 50 °C (-4 °F to 122 °F)
Cleanroom Specifications	Class 100K or better

