

# ASR1000 Series

## Mechanical-Bearing Direct-Drive Rotary Stage

- High dynamic, precision performance
- Large aperture for product feed-through
- Low inertia shaft for maximum acceleration
- Package design optimized to minimize stage weight
- Direct-drive brushless servomotor
- Direct-coupled rotary encoder
- Precision angular contact bearings

Aerotech's ASR1000 series direct-drive rotary stage was designed to meet the demanding needs of high-performance precision machining. The low-inertia motor and high-accuracy encoder make it the ideal combination of speed and accuracy.

### Brushless Direct Drive

To maximize positioning performance, the ASR1000 series utilizes Aerotech's brushless series of motors. Optimized for production applications, the brushless direct-drive motor of the ASR1000 has the advantage of no brushes to wear and no gear trains to maintain. The low-inertia motor enables the ASR1000 to reach speeds and accelerations that were previously unachievable with earlier generation direct-drive devices or worm-driven stages. Designed for applications requiring frequent direction changes, the ASR1000 offers low inertia and zero backlash in a compact package.

### Compact Packaging

The design of the ASR1000 series direct-drive rotary stage was optimized to minimize stage weight. The resulting product – with a net overall weight under 5 kg (10 lb) – is significantly lighter than previous offerings. When used to replace an existing rotary stage in a multiple axis system, an increase in performance can be expected for all positioning stages carrying the rotary stage.



### Accurate Positioning

To maximize position and contour accuracy, the ASR1000 utilizes a high resolution shaft-mounted rotary encoder. When coupled with Aerotech's MXH series multipliers, final resolutions can be as fine as 0.63 arc sec. The absence of gear trains and mechanical couplings means no position errors caused by hysteresis, windup, or backlash. Absolute repeatabilities of  $\pm 3$  arc-seconds are attainable.

The result is a production-worthy tool that offers higher throughput, lower maintenance, superior final parts, and an outstanding return on investment.

### Flexible Options

A large aperture aids high-volume production by providing the means for continuous product feedthrough. For applications requiring a collet, several shaft options are available to easily interface to existing machine designs.

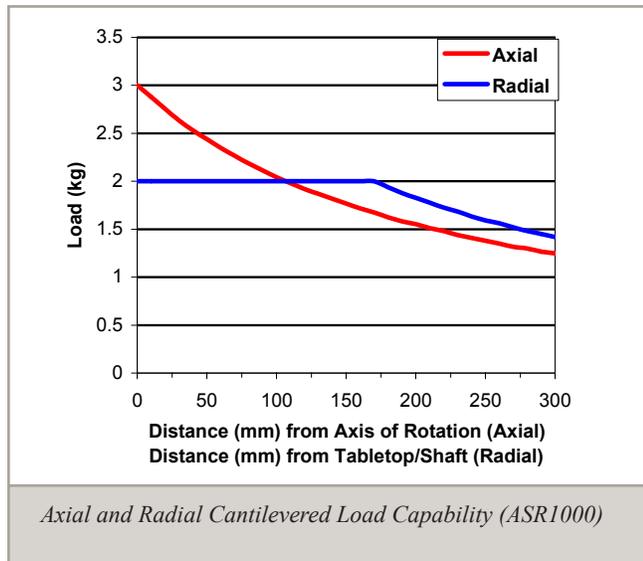
Aerotech manufactures a wide range of matching drives and controls to provide a fully integrated and optimized solution. Aerotech's high-power brushless amplifiers are available in several convenient packages and the controller options range from stand-alone indexers to sophisticated PC-bus-based controllers with unmatched contouring routines and system tools.

# ASR1000 Series SPECIFICATIONS

ASR1000 Series		
Total Travel	±360° Continuous	
Shaft Diameter	19 mm	
Shaft Thread	0.7500-32NS-3	
Maximum Aperture Diameter	14 mm ±0.5 mm	
Drive System	Direct-Drive Brushless Servomotor	
Feedback	8192 cycles/rev; analog output encoder (standard)	
Maximum Rotary Speed <sup>(1)</sup>	2000 rpm	
Accuracy <sup>(1)</sup>	±72.8 μrad (±15 arc sec)	
Repeatability <sup>(1)</sup>	±14.6 μrad (±3 arc sec)	
Inertia	9.0 x 10 <sup>-5</sup> kg-m <sup>2</sup>	
Nominal Stage Weight	4.4 kg	
Maximum Load	Axial	3.0 kg
	Moment	5 N-m
Continuous Current, Stall	A <sub>pk</sub>	10
	A <sub>rms</sub>	7.1
Bus Voltage	Up to 320 VDC	
Axis Error Motion	Axial	2.5 μm
	Radial	5.0 μm
Material	Stage Shaft	Stainless Steel
	Stage Body	Aluminum
Finish	Stage Shaft	Stainless Steel
	Stage Body	Black Anodize

Notes:

1. Maximum speed based on stage capability; maximum application velocity may be limited by system data rate and system resolution.





## ASR1000 Series ORDERING INFORMATION

### Connector (Required)

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-CN1	4-pin HPD motor and 25-pin D feedback connectors
-CN2	25-pin D motor and 25-pin D feedback connectors

### Mounting Plate (Optional)

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-MP	Mounting plate
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### Integration (Required)

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Aerotech offers both standard and custom integration services to help you get your system fully operational as quickly as possible. The following standard integration options are available for this system. Please consult Aerotech if you are unsure what level of integration is required, or if you desire custom integration support with your system.

-TAS	<p>Integration - Test as system</p> <p>Testing, integration, and documentation of a group of components as a complete system that will be used together (ex: drive, controller, and stage). This includes parameter file generation, system tuning, and documentation of the system configuration.</p>
-TAC	<p>Integration - Test as components</p> <p>Testing and integration of individual items as discrete components that ship together. This is typically used for spare parts, replacement parts, or items that will not be used together. These components may or may not be part of a larger system.</p>