Direct-Drive Rotary Stages Ideal for Rotary Testing

Aerotech's APR series rotary stages employ precision-machined and ground stage parts coupled with high-precision angular contact bearings and an Aerotech direct-drive motor to produce exceptionally low error motions, accuracy errors, and repeatability errors. The addition of high-resolution optical encoders provides excellent pointing capability with low-jitter velocity tracking.
APR stages are ideal for rotary testing, pointing, optical calibration systems, and metrology systems in applications including single and multi-axis electro-optic sensor testing, resolver or optical encoder accuracy testing, missile seeker testing, antenna testing, inertial navigation device testing, photonic component alignment, high-accuracy laser machining, and precision wafer inspection. Multiple APR stages can be combined for high-accuracy azimuth/elevation or azimuth/roll systems. Vacuum-prepared and other customized versions are available for specialized applications.

Flexibility is assured with high-resolution absolute or incremental optical encoders. The absolute encoder option allows instant initialization upon power-up and eliminates the need for a home cycle. Incremental encoders are available for a cost-effective, accurate, high resolution, high dynamic performance alternative. Both incremental and absolute encoders provide exceptional accuracy and fine stepping capability.

Standard APR stages mount the payload directly to the precision-ground stage shaft via an eight-bolt hole pattern on the top of the shaft. The top surface and the aperture of the shaft are precision-machined for minimal surface runout with respect to stage motion. Precision-ground tabletop options provide more traditional

metric or English hole-patterns while maintaining low surface runout of the tabletop mounting surface and aperture.

Users can command rapid incremental or continuous rotary motion with the APR's high-torque brushless motor. The direct-drive motor and high stage stiffness provide high-bandwidth motion for oscillations, motion profiling, and rapid position or velocity tracking.

Sturdy stage construction and separated angular contact bearings result in large load capacity and high moment stiffness. APRs can excel in applications where the rotation axis is parallel or perpendicular to gravity and the payload center of gravity is cantilevered away from the stage.

Aerotech manufactures a wide range of positioning stages, drives and controls to provide a fully integrated and optimized motion solution.

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