

# AHTR Series

## Mechanical-Bearing, Direct-Drive, High-Torque Rotary Stage

High-torque output – 600 N·m peak, 143 N·m continuous

Rotational accuracy to  $\pm 9.7 \mu\text{rad}$  ( $\pm 2$  arc sec)

Ideal for large payload motion simulation applications

Payloads to 475 kg

Variety of tabletop, encoder, and travel options



AHTR rotary stage shown with electroless-nickel plating.

Aerotech's AHTR direct-drive rotary stages feature a precision mechanical design coupled with a direct-drive, high-torque rotary motor. The AHTR excels in applications where high-torque, high-acceleration, and accurate rotary positioning are essential.

### High-Torque Brushless Motor

Rapid acceleration and high torque are key features of the AHTR stage. Users can command rapid incremental or continuous rotary motion with the high-torque, direct-drive, brushless motor. With the direct-drive motor and precision structural design, the AHTR enables high-bandwidth motion for contouring or point-to-point positioning. It is the ideal rotary stage for motion simulation, laser steering applications, electro-optic sensor testing, resolver or optical encoder accuracy testing, antenna testing, and inertial navigation device testing where high-payloads are required.

To maximize stage lifetime, the AHTR series uses brushless motors. This motor design has the advantage of low-maintenance coupled with high acceleration and accurate positioning performance.

### High Payload Capacity and Large Moment-Load Stiffness

The AHTR is designed with a large payload capacity and high moment stiffness to handle a variety of applications and unique payload mounting arrangements. Payloads up to 475 kg and moment loads up to 1600 N·m can easily be handled by the large angular contact bearings and structural design of this rotary stage.

### Flexible Design Options

The AHTR is available with a variety of options and configurations. Incremental or absolute optical encoders are available as well as a variety of tabletop mounting configurations and limited travel designs.

## AHTR Series SPECIFICATIONS

Mechanical Specifications		AHTR400
Travel		Continuous (limited travel optional)
Accuracy <sup>(1)</sup>	Standard	±97 µrad (±20 arc sec)
	HALAR	±9.7 µrad (±2 arc sec)
Bidirectional Repeatability <sup>(1)</sup>		±2.4 µrad (±0.5 arc sec)
Tilt Error Motion		14.6 µrad (3 arc sec)
Maximum Speed <sup>(2)</sup>		300 rpm
Maximum Acceleration (Unloaded) <sup>(2)</sup>		500 rad/s <sup>2</sup>
Maximum Torque (Continuous)		143 N·m
Load Capacity	Axial	475 kg
	Radial	475 kg
	Moment	1600 N·m
Stage Mass		90 kg

Notes:

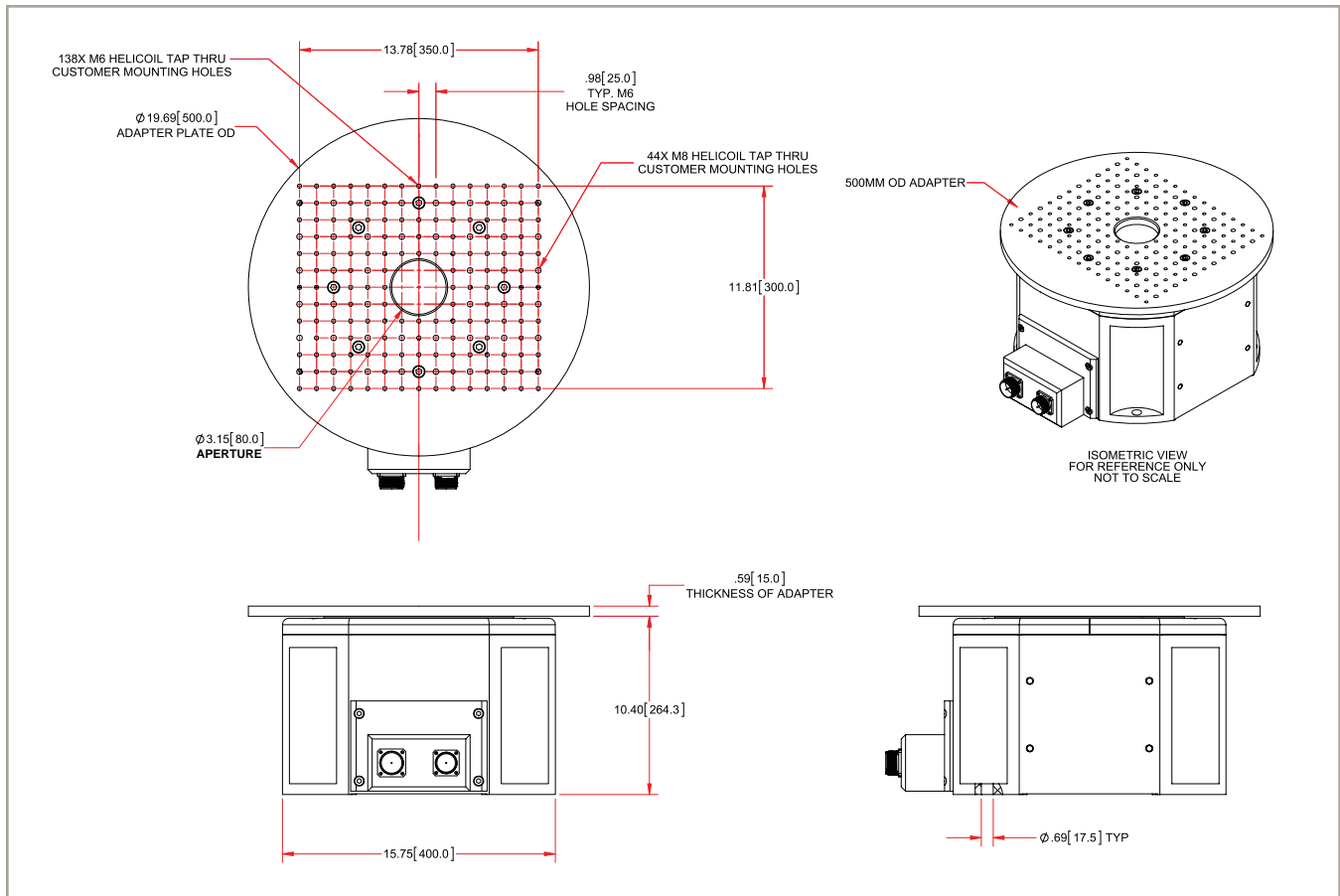
1. Certified with every stage.

2. Requires the selection of an appropriate amplifier with sufficient voltage and current.

Electrical Specifications		AHTR400
Drive System		Direct-drive torque motor 143 N·m continuous torque, 600 N·m peak torque
Feedback		Noncontact Incremental and absolute options
Maximum Bus Voltage		320 VDC

Recommended Controller		AHTR400
A3200		Ndrive HPe/Ndrive CP/Ndrive HLe/Npaq
Ensemble		Ensemble HPe/Ensemble CP/Ensemble HLe

## AHTR Series DIMENSIONS and ORDERING INFORMATION



## AHTR Series ORDERING INFORMATION

The AHTR is available with the following options:

- Incremental or absolute encoders
- English, metric, custom tabletops
- Limited or continuous travel

Please contact an Aerotech Applications Engineer to discuss your requirements.