

## **MODEL 2103HT THREE-AXIS POSITIONING AND RATE TABLE SYSTEM**

### **FEATURES**

- 10 or 14 inch diameter tabletop
- Unlimited rotation available on all axes
- Rate Accuracy:
  - 0.5%  $\pm 0.0005$  deg/sec (limited rotation axis)
  - 0.01%  $\pm 0.0005$  deg/sec (unlimited rotation axis)
- Position Accuracy:  $\pm 30$  arc sec (all axes)
- Position Repeatability:  $\pm 5$  arc sec (all axes)
- Closed loop servo control
- IEEE-488 and RS-232 Communication Interfaces
- User-friendly Ideal Aerosmith Table Language (ATL)
- Front panel display of status and data
- Precision-ground anodized aluminum tabletop
- Trapezoidal motion profiles with programmable velocity and acceleration
- Sinusoidal Motion
- Position Profile Mode for simulation of complex motions

### **DESCRIPTION**

The Model 2103HT Three-Axis Positioning and Rate Table System is designed to provide precise position, rate, and acceleration motion for the development and/or production testing of military and/or commercial antenna stabilization systems and/or heading sensors.

Accurate and reliable motion control of the 2103HT test table is achieved with a servo-controlled system consisting of direct-drive DC



torque motors, precision optical encoders, and the Ideal Aerosmith AERO 832 microprocessor-based three-axis motion controller. Positions, rates, and accelerations are commanded locally from the front panel keypad or remotely through the standard IEEE-488 and RS-232 computer interface. This test table system is designed for ease of operation and is programmed with the Ideal Aerosmith Table Language (ATL) for remote operation.

### **OPTIONS**

- Enhanced analog velocity output update rate (8 kHz – standard is 1 kHz)
- Rack-mount cabinet for controller
- Custom tabletop mounting hole pattern
- *For special requirements, accuracies, or custom specifications, please contact Ideal Aerosmith, Inc.*

<b>Performance Specifications</b>			
<b>Rotational Freedom (standard)*</b>	<b>Inner Axis</b>	<b>Middle Axis</b>	<b>Outer Axis</b>
		Unlimited	± 185 deg or Unlimited
<b>Position</b>			
• Accuracy, arc sec	±30	±30	±30
• Resolution, deg	0.00025	0.00025	0.00025
• Repeatability, arc sec	±5	±5	±5
<b>Rate</b>			
• Maximum, deg/sec	±1000	±150 (350 for unl)*	±150 (350 for unl)*
• Minimum, deg/sec	±0.0005	±0.0005	±0.0005
• Resolution, deg/sec	0.0005	0.0005	0.0005
• Accuracy (measured over discrete angle)	0.01% ±0.0005	0.5% ±0.0005**	0.5% ±0.0005**
<b>Peak Sinusoidal Acceleration, deg/sec<sup>2</sup></b> (with 10 inch diameter tabletop)	10000	1000	200

\* With a limited rotation axis, the max rate may be limited by the accel. rating and range of motion, thus the max rate may not be achievable

\*\* Rate Accuracy improves to 0.01% for unlimited rotation systems

<b>System Physical Configuration</b>	
<b>Table Surface Characteristics</b>	
• Diameter	Standard: 10 inches (254mm) Optional: 14 inches (356mm)
• Hole Pattern	10 inch table top: 1/4-20 threaded holes on a one inch (25 mm) grid pattern. 14 inch table top: 1/4-20 threaded holes on a two inch (51 mm) grid pattern. (Other interface patterns available upon request.)
• Face Flatness; Material; Finish	0.003 TIR (.076); Aluminum; 32 RMS
<b>Test Load Capacity</b>	15 lbs (6.8 Kg) (Centered) Height: 12.5 inches (318 mm) for 10 inch table top Height: 12 inches (305 mm) for 14 inch table top Center of Gravity: less than 6 inches (152mm) above tabletop
<b>Electrical Access to the UUT</b>	
• Number of User Lines	34 lines @ 2A each, 17 twisted shielded pair
<b>Table Configuration</b>	
• Dimensions	34 W x 28.25 D x 50.6 H inches (864 W x 718 D x 1285 H mm)
• Weight	500 lbs. (226 Kg)
<b>Axis Lock</b>	Fail-Safe Electric Brake (all axes)
<b>Leveling</b>	
• Range	± 1 degree
<b>Controller</b>	
• Type	AERO 832 Three-Axis Motion Controller
• Configuration	19 inch Rack-Mountable Chassis
• Communication Interface	IEEE-488 and RS-232 ports available
<b>Operating Environment</b>	
• Temperature	50 to 95° F (10 to 35° C)
• Relative Humidity	20% to 85% non-condensing

For special requirements or custom specifications, contact Ideal Aerosmith. Specifications subject to change without notice. Please call for pricing.

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