

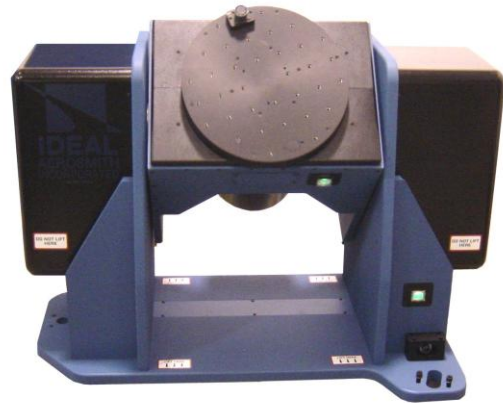
2102 SERIES TWO-AXIS POSITIONING AND RATE TABLE SYSTEM

FEATURES

- Position Accuracy: ± 20 arc seconds (both axes)
- Rate Accuracy: $\pm 0.01\%$
- Max Rate (varies depending on axis configuration):
 - Inner Axis: 1,000 deg/sec
 - Outer Axis: 300 deg/sec
- Direct-drive, DC brush-type servo system
- Precision-ground anodized aluminum tabletop
- 14 or 18 inch diameter tabletop
- Fail-safe brakes (both axes)
- Rotational freedom option of $\pm 370^\circ$ or unlimited for each axis.
- Rack-mountable AERO 822 Digital Controller
- RS-232 and IEEE-488 interface
- 1 KHz servo update rate
- Front panel display of status and data
- Local and remote operation
- User-friendly Ideal Aerosmith Table Language (ATL)
- Trapezoidal velocity profiles with programmable velocity and acceleration
- Sinusoidal motion profiles with variable amplitude and frequency
- Position Profile, Velocity Profile, and Flight Profile modes for simulating complex motion profiles
- Analog position and velocity input
- Analog velocity output

DESCRIPTION

The Model 2102 Two-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 rate and position sensors. The Model 2102 test table is designed



Model 2102

to be easily customized with a wide range of options to meet your specific requirements. Accurate and reliable motion control of the 2102 Test Table is achieved with a servo-controlled system consisting of direct-drive DC torque motors, precision optical encoders, and the Ideal Aerosmith AERO 822 microprocessor based two-axis motion controller. This test table system is designed for ease of operation and is programmed with the Ideal Aerosmith Table Language (ATL) for remote operation. The AERO 822 Controller comes standard with two remote interfaces: RS-232 and IEEE-488.

OPTIONS

- Higher torque motors
- Customer user line or slip ring packages
- Vacuum/pressure line routed through the axis
- Vacuum chamber system
- Rack-mount cabinet for controller and servo amplifier chassis
- For special requirements, please contact Ideal Aerosmith regarding system customization.

For much more detailed information, contact Ideal to request a Specification Document.

Performance Specifications

	Configuration 1 (Limited rotation on inner and outer axis)	Configuration 2 (Unlimited rotation on inner axis, limited rotation on outer axis)	Configuration 3 (Unlimited rotation on inner and outer axis)
Rotational Freedom, deg	Inner: ± 370 Outer: ± 370	Inner: Unlimited Outer: ± 370	Inner: Unlimited Outer: Unlimited
Positioning			
• Accuracy, arc sec (deg)	± 20 (0.00555)	± 20 (0.00555)	± 20 (0.00555)
• Repeatability, arc sec (deg)	± 10 (0.00278)	± 10 (0.00278)	± 10 (0.00278)
• Display Resolution, deg	0.00025 deg	0.00025 deg	0.00025 deg
Rate			
• Maximum, deg/sec	Inner: 300 Outer: 100	Inner: 1,000 Outer: 100	Inner: 1,000 Outer: 300
• Minimum, deg/sec	0.0005	0.0005	0.0005
• Display Resolution, deg/sec	0.0005	0.0005	0.0005
• Accuracy, % \pm Resolution (measured over 360 deg of travel)	$\pm 0.01\%$	$\pm 0.01\%$	$\pm 0.01\%$
• Stability, %	$\pm 0.01\%$	$\pm 0.01\%$	$\pm 0.01\%$

Motor Options	Peak Acceleration and Tare Inertia (Peak Acceleration is for a 2 second period of sinusoidal movement, aluminum tabletop, no payload)	
	14 inch Tabletop	18 inch Tabletop
-T5 Motor (5 lbf-ft)		
• Inner	3,400 deg/sec ² & 310 lbm*in ² (0.09 kg*m ²)	1,500 deg/sec ² & 700 lbm*in ² (0.21 kg*m ²)
• Outer	150 deg/sec ² & 6,850 lbm*in ² (2.01 kg*m ²)	140 deg/sec ² & 7,451 lbm*in ² (2.18 kg*m ²)
-T20 Motor (20 lbf-ft)		
• Inner	15,000 deg/sec ² & 325 lbm*in ² (0.07 kg*m ²)	6,700 deg/sec ² & 715 lbm*in ² (0.21 kg*m ²)
• Outer	650 deg/sec ² & 7,000 lbm*in ² (1.51kg*m ²)	630 deg/sec ² & 7,633 lbm*in ² (2.23kg*m ²)

Model 2102 System Physical Configuration

Table Surface Characteristics	
• Diameter	Standard sizes: 14 and 18 inches (356 and 457mm) Test load mounting provisions are 1/4-20 threaded holes on a two-inch (50 mm) grid pattern. Custom tabletop and interface patterns available upon request.
• Face Flatness	0.005 inches (0.127 mm) TIR (for 14 inch diameter tabletop)
• Face Runout	0.002 inches (0.051 mm) @ 3.5 inch (89 mm) Radius
• Material & Surface Finish	Aluminum with 32 RMS Surface Finish
Test Load Capacity	40 lb. (18.1 Kg) centered. Maximum height 8 inches (203 mm) Center of Gravity must be less than 4 inches (102 mm) above tabletop
User Harness/Slip Ring Options	54 lines at 5A each for configuration 1 34 lines at 2A each or 48 lines at 3A each for configuration 2 34 lines at 2A each or 46 lines at 2A each for configuration 3 Custom user harnesses are available. Please consult Ideal Aerosmith.
Vacuum/Pressure Line	Standard on configuration 1, optional on configuration 2 with 48 line slip ring.
• Minimum Pressure, Milli-Torr	100
• Maximum Pressure, psig	15
• Table Top Connector Port	1/8-27 Female NPT located on periphery of tabletop opposite connector
• Table Base Connector Port	1/4-18 Male NPT
Test Table	
• Dimensions, in (cm)	44.5 Wide x 27.2 Deep x 31.6 High (1,130 Wide x 691 Deep x 803 High)
• Weight, lb (kg)	420 (190)
Controller	Consult AERO 8x2 Data Sheet for more detailed information
• Type and Configuration	AERO 822 in a 19 inch Rack Mountable Chassis
• Communication Interface	RS-232 and IEEE-488

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

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