

1621-200A Series Single-Axis Precision Positioning and Rate Table System

FEATURES

- Position Accuracy: ± 15 arc sec
- Rate Accuracy: $\pm 0.01\%$
- Max Rate: 1,000 deg/sec (standard)
or 3,000 deg/sec (optional)
- Direct-drive, DC brush-type servo system
- Precision-ground anodized aluminum tabletop
- 14-inch diameter tabletop
- Fail-safe brake
- Slip ring lines for unlimited rotation
- Rack-mountable AERO 812 Digital Controller
- 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 1621-200A Series Automatic Positioning and Rate Table Systems are designed to provide precise position, rate and acceleration motion for the development and/or production testing of navigation sensor systems such as Fiber Optic Gyros (FOG), Ring Laser Gyros (RLG), Inertial Navigation Systems (INS) and accelerometers. The 1621-200A test table is a servo-controlled system featuring a direct-drive DC brush-type motor, precision optical encoder and a microprocessor that provides accurate and reliable motion control. The table can be operated from the AERO 812 Controller front



1621-200A Series Tables

panel for local control or through a computer interface for remote control. 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 812 Controller comes standard with two remote interfaces: RS-232 and IEEE-488.

OPTIONS

- Integral Thermal Chamber with electric heating and LN₂, CO₂ or mechanical cooling
Testing range: -65 to +150 deg C
- Custom tabletop
- Higher torque motor
- Various slip ring packages
- RF Rotary Joint
- Fiber Optic Rotary Joint
- Wire-wrap option available for limited rotation applications
- Vacuum Chamber System
- Horizontal axis configuration
- Enhanced analog velocity output module (output at 8 KHz - standard is 1 KHz)
- 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 1621-200A Series Specification Document or AERO 812 Controller Data Sheet

Performance Specifications		
Model	1621-200A	1621-200A-HS (High Speed)
Positioning		
• Accuracy, arc sec (deg)	± 15 (0.00417)	± 15 (0.00417)
• Repeatability, arc sec (deg)	± 5 (0.00139)	±5 (0.00139)
• Display Resolution, deg	0.00025	0.0005
Rate		
• Maximum, deg/sec	1,000	3,000
• Minimum, deg/sec	0.0005	0.001
• Display Resolution, deg/sec	0.0005	0.001
• Accuracy (measured over 360 deg), % ± Resolution	± 0.01	±0.01
• Stability, %	± 0.01	± 0.01
Motor Options	Peak Acceleration & Tare Inertia (Peak Acceleration is for 2 second period of sinusoidal movement with 14 inch tabletop; Tare Inertia is for standard 14 inch aluminum tabletop)	
• -T5 Motor (Torque: 5 lbf-ft)	3,000 deg/sec ² 306 lbm*in ² (0.0897 kg m ²)	3,000 deg/sec ² 306 lbm*in ² (0.0897 kg m ²)
• -T20 Motor (Torque: 20 lbf-ft)	12,500 deg/ sec ² 325 lbm*in ² (0.0951 kg m ²)	Option Not Available
Bandwidth, -3dB, all motors, 14" tabletop	75 Hz*	50Hz

*Other factors may affect bandwidth performance including larger tabletops and/or Thermal Chamber options

System Physical Configuration		
Table Surface Characteristics		
• Diameter	Standard size: 14 inch (356 mm) Optional: 18, 22, and 24 inch (457, 559, 610 mm) 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. Maximum tabletop size is 24 inches for the -T5 motor and 36 in. for the -T20 motor.	
• Face Flatness	.005 inches (.127 mm) TIR (for 14 inch diameter tabletop)	
• Face Runout	.002 inches (.051 mm) @ 6 inch (152.4 mm) Radius	
• Material & Surface Finish	Aluminum with 32 RMS Surface Finish	
Test Load Capacity	200 lb. (91 Kg) Centered (Vertical Axis) 18 inch (457 mm) maximum height	
Slip ring Package Options (Availability of slipring package varies with options.)	Standard: 34, 64, or 108 lines Larger or custom slip ring packages are available. Please consult Ideal.	
Test Table		
• Height – Tabletop to Floor	40.6 inches (1,031 mm) nominal	
• Overall Dimensions	20.5 W x 20.5 D x 41.9 H inches (Varies w/ tabletop dia.) (521 W x 521 D x 1,064 H mm)	
• Weight	535 lbs (243 Kg) with 14 inch tabletop	
Controller		
• Type and Configuration	AERO 812 in a 19 inch Rack-Mountable Chassis	
• Communications Interface	IEEE-488 and RS-232 ports available to user	
Analog Input	Axis position or velocity proportional to analog voltage input reference	
• Input Range: ± 10 V	Resolution: 4.88 mV	Resolution: 4.88 mV
Analog Output	Analog voltage output proportional to axis velocity.	
• Output Range: ± 10 V	Resolution: 0.31 mV	Resolution: 0.31 mV

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

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