

## **1621C Series Single Axis Precision Position and Rate Table System**

### **STANDARD FEATURES**

- Position Accuracy:  $\pm 15$  arc sec
- Rate Accuracy:  $\pm 0.001\%$
- Max Rate: 1080 deg/sec (standard)  
or 3000 deg/sec (optional)
- Direct-drive, brushless servo system
- Precision-ground anodized aluminum tabletop
- 14-inch diameter tabletop
- Fail-safe brake
- Slipping lines for unlimited rotation
- Rack-mounted AERO 3500 Commander Controller
- RS-232, IEEE-488 and Ethernet interfaces
- 2 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
- Profile mode controlled over Ethernet using .NET; profiles stored locally on the AERO 3500 Controller
- Analog position and velocity input
- Analog axis position, rate, acceleration and position error output
- Absolute Optical Encoders
- Capable of querying the current position, velocity, and acceleration
- CE Mark

### **DESCRIPTION**

The 1621C Series Automatic Position 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.



### **1621C Series Tables**

The 1621C test table is a servo-controlled system featuring a direct-drive brushless torque motor, precision absolute optical encoder and a microprocessor that provides accurate and reliable motion control. The table can be operated from the AERO 3500 Commander Controller front panel for local control or remotely through a host PC via the Ideal Aerosmith Table Language (ATL) over an RS-232, IEEE-488 or Ethernet communication interface.

### **OPTIONS**

- Integral Thermal Chamber with electric heating and LN<sub>2</sub>, CO<sub>2</sub> or mechanical cooling  
Testing range: -65 to +150 deg C
- Custom tabletop
- 3000 deg/sec Max Rate
- Various slipping packages
- RF and Fiber Optic Rotary Joints
- Wire-wrap option available for limited rotation applications
- Vacuum Chamber System
- Horizontal axis configuration
- On-site service: Installation, training, field calibration
- *For special requirements, please contact Ideal Aerosmith regarding system customization.*

***For much more detailed information, contact Ideal to request a 1621C Series Specification Document or AERO 3500 Commander Controller Data Sheet***

1621C Series Performance Specifications	
<b>Range of Motion, Degrees</b>	± 370 or Unlimited
<b>Positioning</b>	
• Accuracy (absolute), arc sec (deg)	± 15 (0.00417); ±8 (0.00222) Optional
• Repeatability, arc sec (deg)	± 3 (0.00083)
• Command/Display Resolution, deg	0.0001
<b>Rate</b>	
• Maximum, deg/sec	Standard:1080 Optional: 3000
• Command/Display Resolution, deg/sec	0.0001
• System Resolution (approx.)	0.000172
• Accuracy, (average of 10 readings measured over 1 rev)	± 0.001%of commanded rate ± resolution
• Stability (measured over 1 revolution)	0.001% of commanded rate up to 1080 deg/sec 0.005% of commanded rate above 1080 deg/sec
<b>Acceleration/Bandwidth</b>	
• 2 Second Peak, deg/sec <sup>2</sup> (Peak Acceleration is for 2 second period of sinusoidal movement with standard 14 inch tabletop)	13,900 deg/sec <sup>2</sup>
• Bandwidth, -3dB, 14" tabletop	100 Hz*
<b>Axis Wobble</b>	10 arc sec (0.0028 deg)

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

System Physical Configuration	
<b>Table Surface Characteristics</b>	
• 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 36 inches.
• Face Flatness	0.005 inches (.127 mm) TIR (for 14 inch diameter tabletop)
• Face Runout	0.002 inches (.051 mm) @ 6 inch (152.4 mm) Radius
• Material & Surface Finish	Aluminum with 32 RMS Surface Finish
<b>Test Load Capacity</b>	200 lb. (91 Kg) Centered (Vertical Axis) 18 inch (457 mm) maximum height
<b>Slipping Package Options</b> (Availability of slipping packages vary with options.)	Standard: 34, 64, or 108 lines Larger or custom slipping packages are available. Please consult Ideal.
<b>Test Table</b>	
• Height – Tabletop to Floor	40.8 inches (1036 mm) nominal
• Overall Dimensions	20.5 W x 23.5 D x 42.2 H inches (Varies w/ tabletop dia.) (521 W x 597 D x 1072 H mm)
• Weight	500 lbs (227 Kg) with 14 inch tabletop
<b>Controller</b>	Refer to AERO 3500 Data Sheet for more detailed information
• Type and Configuration	AERO 3500 Commander configured in a console
• Communications Interface	RS-232, IEEE-488 and Ethernet ports available to user
• Operating System	Windows Embedded Standard 7
<b>Analog Input</b>	Axis position or velocity proportional to analog voltage input reference
• Input Range: ± 10 V	Resolution: 0.31 mV
<b>Analog Output</b>	Analog voltage output proportional to axis position, acceleration, rate and position error
• Output Range: ± 10 V	Resolution: 0.31 mV
<b>Power Requirement</b>	
• AERO 3500 Commander Controller	230 VAC ±10%, 50/60 Hz, 15 A breaker, 1Φ
• Table	Powered by AERO 3500 Commander Controller

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

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