

1621C Series Single Axis Precision Position and Rate Table System

STANDARD FEATURES

- Position Accuracy: ± 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 LN₂, CO₂ 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

Range of Motion, Degrees	± 370 or Unlimited
Positioning	
• 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
Rate	
• 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
Acceleration/Bandwidth	
• 2 Second Peak, deg/sec ² (Peak Acceleration is for 2 second period of sinusoidal movement with standard 14 inch tabletop)	13,900 deg/sec ²
• Bandwidth, -3dB, 14" tabletop	100 Hz*
Axis Wobble	10 arc sec (0.0028 deg)

*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 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
Test Load Capacity	200 lb. (91 Kg) Centered (Vertical Axis) 18 inch (457 mm) maximum height
Slipping Package Options (Availability of slipping packages vary with options.)	Standard: 34, 64, or 108 lines Larger or custom slipping packages are available. Please consult Ideal.
Test Table	
• 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
Controller	Consult AERO 3500 COMMANDER Data Sheet for detailed information
Analog Input	Axis position or velocity proportional to analog voltage input reference
• Input Range: ± 10 V	Resolution: 0.31 mV
Analog Output	Analog voltage output proportional to axis position, acceleration, rate and position error
• Output Range: ± 10 V	Resolution: 0.31 mV
Power Requirement	
• 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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