1621V SERIES SINGLE AXIS PRECISION POSITION AND RATE TABLE SYSTEM

STANDARD FEATURES

- **Position Accuracy**: ±15 arc sec
- **Rate Accuracy**: ±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
- Slipring lines for unlimited rotation
- Rack-mounted AERO 5 Controller
- RS-232, IEEE-488 and Ethernet interfaces
- 20 kHz Servo update rate
- Optional rack-mount kit with 19-inch rack, display, keyboard and mouse
- 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; profiles stored locally on the AERO 5 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 1621V 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.

OPTIONS

- Integral Thermal Chamber Systems (LN2,CO2, or mechanically cooled)
- Custom tabletop
- 3000 deg/sec Max Rate
- Various slipring 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

1621V SERIES

The 1621V 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.

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

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1621V 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
Slipring Package Options (Availability of slipring packages vary with options.)	Standard: 34, 64, or 108 lines Larger or custom slipring 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 5 Data Sheet for detailed information
Type and Configuration	AERO 5 Controller
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 5 Controller	230 VAC ±10%, 50/60 Hz, 15 A breaker, 1Φ
• Table	Powered by AERO 5 Controller

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