

### Model 1571 Single-Axis High Speed Positioning and Rate Table Systems

#### FEATURES

- Position Accuracy:  $\pm 36$  arc sec
- Rate Accuracy: 0.01%
- Maximum Rate: 18,000 deg/sec (50 Hz)
- Direct-drive, DC brushless servo system
- Aerodynamic/safety enclosure around tabletop
- Precision-ground anodized aluminum tabletop
- 10 to 24 inch diameter tabletop options
- Fail-safe brake
- 48 slipping lines
- 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 1571 Series High Speed Rate Table Systems are designed to provide a precision high velocity testing solution for the development and/or production testing of inertial packages or their components. A typical application is for missile or projectile programs.

The 1571 test table is a servo-controlled system that features a direct-drive DC brushless motor, precision optical encoder and a microprocessor that provides accurate and reliable motion control.



**Test Table  
Configuration**



**Spin Fixture  
Configuration**

The table can be operated from the AERO 812 Controller front 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 1571 Table System comes standard with two remote computer interfaces, IEEE-488 and RS-232.

#### OPTIONS

- Integral Thermal Chamber (LN2, LCO2)
- Various Tabletop sizes
- Enhanced analog velocity output module (output at 8 KHz - standard is 1 KHz)
- Rack-mount cabinet for controller and servo amplifier chassis
- Custom slip package
- Lower maximum rate to result in higher rate resolution.
- Drive assembly available separately as a spin fixture or as a "roll drive" for use on existing tables
- Horizontal axis configuration

*For special requirements, please contact Ideal Aerosmith regarding system customization.*

## Model 1571 Performance Specifications

Positioning			
• Accuracy	± 36 arc sec (0.01 deg)		
• Repeatability	± 18 arc sec (0.005 deg)		
• Display resolution	0.0025 deg		
Rate			
• Maximum	18,000 deg/sec (3000 RPM or 50 Hz)		
• Minimum	0.005 deg/sec		
• Display Resolution	0.005 deg/sec		
• Accuracy (measured over 360 deg), %	± 0.01 ± 0.005 deg/sec		
Acceleration			
Tabletop diameter Inches	Peak Acceleration deg/sec <sup>2</sup> 2 second maximum, no payload	Continuous Acceleration deg/sec <sup>2</sup> no payload	Tare Inertia lbm-in <sup>2</sup> (Kg-m <sup>2</sup> )
10	12100	7550	223 (0.065)
14	5650	3500	475 (0.139)
18	2450	1525	1090 (0.319)
24	850	525	3165 (0.926)
<b>Axis Wobble, arc sec</b>	10		

## System Physical Configuration

Table Surface Characteristics	
• Diameter, inch (mm)	Standard size: 14 (356) Options: 10 (254), 18 (457), and 24 (610) 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) @ 6 inch (152.4 mm) Radius
• Material & Surface Finish	Aluminum with 32 RMS Surface Finish
Test Load Capacity	50 lb. (22.68 Kg) Centered (Vertical Axis) 18 inch (457 mm) maximum height
Slipping package	48 lines rated at 5A each. Custom slipping packages are available. Please consult Ideal.
Test Table	
• Height - Tabletop to Floor	38.8 inches (985 mm) nominal
• Overall Dimensions	37.3 (947) W x 31.5 (800) D x 67.4 (1712) H for test table, vertical axis configuration
• Weight	1300 lbs (590 Kg) for test table, vertical axis configuration
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             Scaling: User selectable
Analog Output	Analog voltage output proportional to axis velocity.
• Output Range: ±10 V	Resolution: 0.31 mV             Scaling: User selectable

For additional information or special requirements contact Ideal Aerosmith. Specification and pricing subject to change without notice.

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