

## Model 1571P Single Axis High Speed Position and Rate Table Systems

### FEATURES

- Position Accuracy:  $\pm 10$  arc sec
- Rate Accuracy:  $0.01\% \pm$  Resolution
- 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 slipring lines
- Electronics Console for AERO 4000 Controller and Servo Amplifiers

### AERO 4000 CONTROLLER FEATURES

- .NET interface over Ethernet
- Front panel display of status and data
- Local and remote operation
- Trapezoidal velocity profiles with programmable velocity and acceleration
- Sinusoidal motion profiles with variable amplitude and frequency
- Profile Modes for simulating complex motion

### DESCRIPTION

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



**Spin Fixture**

The table can be operated from the AERO 4000 Controller front panel for local control or through a computer interface for remote control.

### EASE OF INTEGRATION

- LabVIEW™ Virtual Instrument (.vi) driver included
- GPIB and 100base-T Ethernet interfaces standard
- Available control languages: ATL (Aerosmith Table Language) and MPACS (Legacy Carco and Contraves Controllers)

### OPTIONS

- Integral Thermal Chamber with electric heating and LN<sub>2</sub> or CO<sub>2</sub>. Testing range: -65 to 150 deg C.
- Various Tabletop sizes
- Custom slip package
- 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 1571P Performance Specifications

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<b>Positioning</b>			
• Accuracy		± 10 arc sec (0.0028 deg)	
• Repeatability		± 5 arc sec (0.0014 deg)	
• Command/Display resolution		0.0001 deg	
• System resolution		0.00002 deg	
<b>Rate</b>			
• Maximum		18,000 deg/sec (3000 RPM or 50 Hz)	
• Command/Display Resolution		0.00001 deg/sec	
• System Resolution		0.00001 deg/sec	
• Accuracy (avg. 10 readings measured over 1 rev), %		0.01% ± resolution	
• Stability (avg. 10 readings measured over 1 rev), %		0.01%	
<b>Acceleration</b>			
<b>Tabletop diameter</b> Inches	<b>Peak Acceleration</b> deg/sec <sup>2</sup> 2 second maximum, no payload	<b>Continuous Acceleration</b> deg/sec <sup>2</sup> no payload	<b>Tare Inertia</b> 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)
22	1150	740	2275 (0.665)
24	850	525	3165 (0.926)
<b>Axis Wobble, arc sec</b>	10		

## System Physical Configuration

<b>Table Surface Characteristics</b>	
• Diameter, inch (mm)	Standard size: 14 (356) Options: 10 (254), 18 (457), 22 (559) and 24 (610)
• Hole Pattern, inch (mm)	3/8-24 UNF tapped holes. Eight holes spaced equally on each of the following applicable bolt circles: 7 (177.8), 9 (228.6), 11 (279.4), 13 (330.2), 15 (381), 17 (431.8), 19 (482.6), 21 (533) and 23 inch (584.2). 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
<b>Test Load Capacity</b>	50 lb. (22.68 Kg) Centered (Vertical Axis) 18 inch (457 mm) maximum height
<b>Slipping package</b>	48 lines rated at 5A each. Custom slipping packages are available. Consult Ideal.
<b>Test Table</b>	
• 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 configuration
• Weight	1300 lbs (590 Kg) for test table configuration
<b>Controller</b>	
Refer to AERO 4000 Data Sheet for more detailed information.	
• Type & Configuration	AERO 4000 Test Table Controller configured in a 19 inch Cabinet
• Communication Interfaces	IEEE-488, RS-232, Ethernet
• Architecture	DSP based Motion Control installed on a PCI bus with distributed processing
• Servo Update frequency	5 kHz
• Control Modes	Position, Rate, Profile, Stop
• Miscellaneous Features	<ul style="list-style-type: none"> <li>• 19 inch flat panel monitor with powerful, user-friendly GUI</li> <li>• Digital capture, display and logging of data variables</li> <li>• Multiple control options including local, ATL, MPACS emulation, real-time reflective memory, analog and a .NET interface.</li> </ul>

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

Rev A