

# THE IDEAL WAY



## AUTOMATIC POSITIONING AND RATE TEST TABLES (1530 Series)

The 1530 series test tables are designed for performance testing and calibration of inertial navigation systems and their components.

- *Two or three-axis systems*
- *High torque, direct-drive, brushless servo system*
- *Front panel local control and remote operation via computer interface*
- *User-friendly Ideal Aerosmith Table Language (ATL)*
- *High-accuracy digital motion control system*
- *Front panel display of status and data*
- *Rack-mounted control instrumentation*
- *Digital filtering to optimize mechanical system structural bandwidth*
- *Precision ground aluminum testing platform with anodized finish*
- *Limit switches and fail-safe brakes*
- *Trapezoidal motion profiles with programmable velocity and acceleration*
- *Wide variety of wire wrap systems and slip ring packages available*

### DESCRIPTION

The 1530 series test tables consist of two standard models, 1532 and 1533, with various options. These test tables are designed to be easily customized to meet your specific requirements. The reverse side of this brochure describes the standard specifications and options available.

The 1532 and 1533 are two and three-axis test tables, respectively. These tables have wire wrap allowance for limited rotation applications. This provides an economical alternative to using slip rings. Wire wrap test tables are designed for high reliability, minimal electrical noise, and low maintenance. All of these test tables use high precision ball or cross roller mechanical bearings which are preloaded to minimize axis wobble and friction characteristics. Each test table has a hard, anodized aluminum table platform for mounting the units under test (UUT).

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### Model 1533 Three-Axis Rate and Positioning System

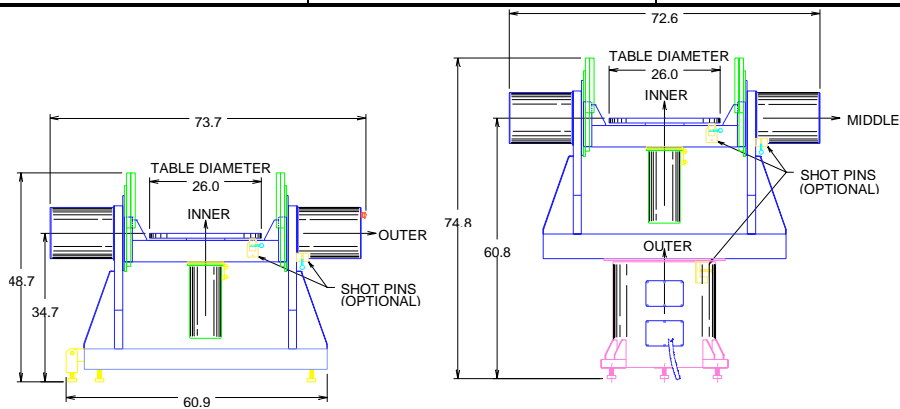
All 1530 series test tables are servo controlled systems that feature direct-drive brushless motors and the Ideal Aerosmith digital motion control system. The field proven digital motion control system provides accurate and reliable axis motion control. These test tables may be operated from a front panel keypad for local control or remotely via the selected computer interface. The remote computer interface standard is IEEE-488, RS-232 is optional. Each table is designed for ease of operation and programmed with the Ideal Aerosmith Table Language (ATL) for remote operation. Available commands include changing position, rate, acceleration, and controller parameters. The position and rate are continuously displayed on the controller monitor and may be sampled by a remote computer at any time.

### OPTIONS

- RS-232 communications interface
- Shot pins for manual positioning
- High-quality, low-noise slip rings for unlimited rotation applications
- Various table top diameters
- Controller available in rack mount units or packaged in customer specified cabinets
- Azimuth adjustment
- Custom interconnect cables for transferring UUT signals through the test table
- High speed rates up to 1000°/sec.
- Thermal shroud for temperature testing
- Integral temperature chamber system with LN<sub>2</sub> or mechanical refrigeration cooling system
- Various power requirements
- *Special requirements or custom specifications available upon request*

## SPECIFICATIONS (all dimensions are displayed in both inches and millimeters)

Standard Parameters	Model 1532	Model 1533
Number of axes	2	3
Table top diameter	20-32 in. (26 in. shown below) 508-813 mm (660 mm shown below)	20-32 in. (26 in. shown below) 508-813 mm (660 mm shown below)
Test load capacity	150 lbs. (68 kg)	150 lbs. (68 kg)
UUT envelope	Ø26 x 23.7 H in. (Ø660 x 602 mm)	Ø26 x 23.7 H in. (Ø660 x 602 mm)
Overall dimensions	73.7 L x 26 W x 48.7 H in. (1872L x 660W x 1237H mm)	72.6L x 30.2 W x 74.8 H in. (1844L x 767W x 1900H mm)
Axis orthogonality	±10 arc sec (.0028°)	±10 arc sec (.0028°)
Coning angle	±10 arc sec (.0028°)	±10 arc sec (.0028°)
Leveling range	± 1°	± 1°
Rotational limits	± 540°, wire wrap model Unlimited, slip ring model	± 540°, wire wrap model Unlimited, slip ring model
Digital readout resolution	XXXX.XXX	XXXX.XXX
Operating temperature range	50 to 95° F (10° to 35° C)	50 to 95° F (10° to 35° C)
Power requirements *(See optional parameters)	100 -120 V	100 -120 V
	50/60 Hz	50/60 Hz
	15 A	20 A
Encoder output	614,400 cts/rev	614,400 cts/rev
Position accuracy, absolute *(See optional parameters)	± 30 arc sec (.0083°)	± 30 arc sec (.0083°)
Position resolution	2.1 arc sec (.00058°)	2.1 arc sec (.00058°)
Position repeatability	± 5 arc sec (.0014°)	± 5 arc sec (.0014°)
Position accuracy, calibrated	± 5 arc sec (.0014°)	± 5 arc sec (.0014°)
Rate-maximum, all axes *(See optional parameters)	350°/sec	350°/sec
Rate-minimum, all axes	0.001°/sec	0.001°/sec
Rate accuracy, average measured over 360° at speeds above 5°/sec	.01%	.01%
Rate accuracy, average measured over 360° at speeds less than 5°/sec	0.0015 deg/sec	0.0015 deg/sec
Absolute homing resolution	2.1 arc sec (.00058°)	2.1 arc sec (.00058°)
<b>* Optional Parameters</b>		
Position accuracy, calibrated at cardinal points	±5 arc sec (.0014°)	±5 arc sec (.0014°)
Rate, maximum inner axis	1000°/sec	1000°/sec
Manual shot pin increments	Every 45° or 90°	Every 45° or 90°
Manual shot pin accuracy	± 10 arc sec (.0028°)	± 10 arc sec (.0028°)
Manual shot pin repeatability	± 10 arc sec (.0028°)	± 10 arc sec (.0028°)
Slip rings, standard (more available for special applications)	Up to 100 rings at 3 amps each	Up to 100 rings at 3 amps each
Azimuth adjustment range	± 1.5°	± 1.5°
Power requirements	220-240 V	220-240 V
	50/60 Hz	50/60 Hz
	7.5 A	10 A



MODEL 1532-26

MODEL 1533-26

↗ For special requirements or custom specifications, contact Ideal Aerosmith

\* Revision C