

## **Model 1421 Scorsby Motion Test Table**

### **STANDARD FEATURES**

- Variable speed from 1 to 10 Cycles/Minute
- RS-232 Interface
- Automatic homing
- LCD shows current speed, number of cycles, and shaft position (Mode dependent)
- Easy-to-adjust tilting head with engraved markings
- Positive stop allows quick setting of the tilt head to frequently used positions
- Oscillation reversing with electronic cycle counter provides testing versatility from 1 to 99 cycles
- Integral bubble level on table top and screws on base plate provide quick, easy leveling
- Motor and drive train designed for reliability and long life
- Small and lightweight for easy bench top mounting
- Approved for many aircraft gyroscopic instrument tests
- Anodized aluminum mounting platform for durability and corrosion resistance
- Designed with ball bearings for smooth motion and long life
- Flat, precision-ground table top mounting surface

### **DESCRIPTION**

The Model 1421 Scorsby Motion Test Table is designed to simulate the roll, pitch, and yaw motions of an aircraft during flight. Primarily used for shop, production, qualification testing, and exercising of gyroscopic aircraft instruments, the Ideal Aerosmith Scorsby table is a standard in the aircraft industry.

The Model 1421 is an enhanced version of the 1411E/1412E Series Scorsby Table. The Scorsby table can be operated through the front panel controls or the remote communications interface. The front panel consists of a power



switch, LCD display, and four keys: run/menu, increase, decrease, and enter. Full computer controlled automation can be accomplished with an RS-232 (standard) or IEEE-488 (optional) interface.

The closed-loop motion control system consists of a DC servo gearmotor, a controller, and an optical encoder. The encoder is located on the high speed shaft of the gearmotor to provide high resolution feedback for smooth Scorsby motion with a constant frequency.

The pitch, roll and yaw motions are achieved with a single rotating shaft and Ideal Aerosmith's patented head design. The sinusoidal motion of each of the axes is related to the shaft motion and can not be controlled independently.

### **OPTIONS**

- Pedestal for floor mounting
- IEEE-488 (GPIB) Communication Interface, via external converter harness
- High speed – up to 20 Cycles/Minute
- Various Mounting Brackets are available. Refer to the Mounting Bracket & Adapter Plate data sheet.
- *For special requirements, please contact Ideal Aerosmith regarding system customization.*

<b>Model 1421 Specifications</b>	
<b>Control Modes</b>	Off, Left, Right, Oscillate
<b>Tilt Angle Range</b>	0 to 30 Degrees, Infinitely Adjustable
<b>Tilt Angle Markings</b>	0, 1½, 5, 7½, 10, 15, 20, 25, and 30 Degrees
<b>Test Load Capacity, lbs (kg)</b>	
• Standard (10 Cycles/Minute)	Up to 40 (18) Centered Loading Up to 25 (11) Eccentric Loading
• Optional (20 Cycles/Minute)	Up to 20 (9) Centered Loading Up to 10 (5) Eccentric Loading
<b>Operating Temperature Range</b>	32 to 130° F (0 to 54° C)
<b>Electrical Power Requirements</b>	
• Standard	115 Volts, 50/60 Hz
• Optional	230 Volts, 50/60 Hz
<b>Mounting Platform Dimensions, in (mm)</b>	10 x 10 (254 x 254) with Square Pattern 10-32 UNF Threaded Holes, 2 inch (50.8mm) Centers
<b>Overall Dimensions, in (mm)</b>	14.5 Wide x 16.5 Deep x 12 High (368 x 417 x 304)
<b>Shipping Weight</b>	Approximately 70 lbs (31.8 kg)

<b>Feature Comparison Chart</b>		
<b>Feature</b>	<b>Model 1411E or 1412E</b>	<b>Model 1421</b>
Rate of Motion	6 Cycles/Minute (fixed)	1-10 Cycles/Minute, Variable (Std.) 1-20 Cycles/Minute, Variable (Opt.)
Tilt Angle	0-15°	0-30°
Cycles in Oscillate Mode	1-9	1-99
Remote Interface	None	RS-232 (Standard) IEEE-488 (Optional)
Automatic Homing	No	Yes
Position/Speed Display	No	Yes
Acceleration	Fixed	Variable

<b>Buyer's Guide</b>		
<b>Model Number</b>	<b>Part Number</b>	<b>Description</b>
1421	230010-1	115Vac, 50/60 Hz, 10 Cycles/Minute
1421-230	230010-3	230Vac, 50/60 Hz, 10 Cycles/Minute
1421-20	230010-13	115Vac, 50/60 Hz, 20 Cycles/Minute
1421-230-20		230Vac, 50/60 Hz, 20 Cycles/Minute
1421-230-20 w/Pedestal	230010-12	230Vac, 50/60 Hz, 20 Cycles/Minute, Pedestal
GPIB Converter	230005-51	GPIB (IEEE-488) – RS-232 Converter
Pedestal	230005-907	Pedestal

For special requirements or custom specifications, contact Ideal Aerosmith. Specifications are subject to change without notice. Please call for pricing.

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