

Measure All Mass Properties

Space Electronics, a Raptor Scientific company, designs and manufactures the POI Series of spin balance machines, able to measure multiple mass properties on one machine. Our POI7000 is a vertical two-plane spin balance machine. Our POI systems are the only instruments in the world that measure all mass properties: center of gravity (CG), moment of inertia (MOI), product of inertia (POI), and dynamic unbalance.

By eliminating the need for multiple machines, the time required to make measurements is reduced, as well as the risks associated with handling the payloads. Alignment errors that occur during setup on difference machines are eliminated.

Our POI Series are the most accurate instruments in the world for mass properties measurement. They are particularly recommended for determining mass properties of rockets, satellites, and ballistic objects.



POI7000 Spin Balance Machines

Global Provider of Test & Measurement Solutions



Unsurpassed Accuracy

Key Features

- Only instrument to measure both dynamic unbalance and moment of inertia on a single machine.
- Only instrument with true static CG measurement capability, which eliminates errors due to air turbulence on irregularly shaped objects such as spacecraft.
- Slow spin speed minimizes centrifugal forces on payload.
- Two plane concept allows simultaneous measurement of CG offset and product of inertia.
- Largest payload range available - the same instrument can measure payloads weighing only 2% of the machine capacity.
- Use of gas bearing - fully compatible with cleanrooms, no contamination risk, no high pressure, no danger of explosion.
- Enormous stiffness to overturning moment - remains stable when tall objects with high CGs are measured.
- Fully automated operation - metric & imperial units.
- User defined coordinate system - mass properties results are reported directly in the payload coordinate system.
- Optional weight platform and CMM device allow direct acquisition of test part weight and coordinate system into the POI system.

General Specifications

Measurements in 1 setup	2 CG coordinates, 1 MOI value, and 2 plane POI
Payload weight range	From 50 lb to 7,000 lb
Spin speed range	30 rpm to 250 rpm
CG & MOI measurement accuracy	0.1% of measured value
Unbalance Reduction Ratio	95%
Electrical power requirements	115 VAC single phase 208 VAC three phase, 60 Hz
Pneumatic requirements	Clean source of dry air or nitrogen, 80 psi, 3 CFM
Facility requirements	Isolated concrete pad - mass of 20 times the maximum weight capacity.

*Please note: Calibration hardware is provided with all our instruments, traceable to NIST