WCG Series

Weight and Center of Gravity Measurement Instruments

Description

WCG instruments use the multi-point weighing method to simultaneously measure both weight and CG. Less than one minute is required to make a measurement, so these instruments are ideally suited to high volume production.

Measurement Concept

The object is lowered onto the Weight and CG Table and positioned relative to the machine zero (fixturing may be required). The center of gravity location and weight of the object are then determined by the computer which reads the force transducers and performs the necessary algebraic calculations. Weight is calculated by summing the output of the force transducers. CG is calculated using an equation involving the spacing of the transducers, and the distribution of force. For example, if the weight of the test item is applied equally to all transducers, then the CG of the test item is at the midpoint between the transducers. These instruments measure two axis CG. The third CG coordinate may be measured after rolling the object 90°.

Computer and Software

Windows desktop PC and Software for these instruments is provided. All instructions for use are given on screen. The measurement software supplied prompts the operator, reads the transducers, calculates weight and CG location, and prints a report. There is a provision for keying in the description or serial number of the object under test, so that the data report can be used to document a series of tests on different objects. Optional custom software calculates the ballast weights required to shift CG location to meet certain specifications.

Custom Instruments

Weight and CG instruments may be highly customized to meet the needs of specific application. Various technologies are used to meet several levels of accuracy. Several types of interfaces are available. Please consult us with your specific requirements.

Technical Specifications - Standard Dual Axis Instruments for General Purpose (C-Series)

Model	Instrument Type	Payload Weight Capacity	Moment Sensitivity	Weight Sensitivity
WCG75C	Dual axis, standard accuracy	75 lb	0.5 lb-in	0.06 lb
WCG175C	Dual axis, standard accuracy	175 lb	1.25 lb-in	0.1 lb
WCG455C	Dual axis, standard accuracy	455 lb	3.0 lb-in	0.24 lb
WCG1380C	Dual axis, standard accuracy	1,380 lb	8.0 lb-in	0.6 lb
WCG2850C	Dual axis, standard accuracy	2,850 lb	10.0 lb-in	1.2 lb

Custom Instruments with High Accuracy for Dedicated Payloads – A Few Examples

Model	Instrument Type	Payload Weight Capacity	Moment Sensitivity	Weight Sensitivity
WCG500	Dual axis, high accuracy	500 lb	0.5 lb-in	0.5 lb
SE9601	Single axis	200 lb	2.0 lb-in	0.1 lb

Alternate weight capacities and accuracies are available. Custom interfaces are also available. NIST traceable calibration hardware is included with all our instruments.

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