

AERO NAV LABORATORIES SHOCK TESTING EQUIPMENT

PURPOSE OF SHOCK TESTING:

To determine the ability of equipment to withstand the dynamic stresses and deformations produced by the high impact shock test.

LIGHTWEIGHT HIGH IMPACT SHOCK MACHINE

Application: To simulate high shock environments on lightweight equipment.

Size Limitation: 24 in. x 30 in. x 12 in. high

Weight Limitation: 550 lbs. limit (including mounting fixture)

MEDIUMWEIGHT HIGH IMPACT SHOCK MACHINE

Application: To simulate high shock environments on mediumweight equipment.

Size Limitation: 60 in. x 60 in. x 72 in. high

Weight Limitation: 7400 lbs. limit (including mounting fixture)

HEAVYWEIGHT HIGH IMPACT SHOCK BARGE

Application: To simulate high shock environments on heavyweight equipment where the weight exceeds 7400 lbs. Size and weight limitations are a function of the equipment configuration, weight and the barge capability. (Contact Aero Nav Laboratories for details)

NOTE:

The above equipment is normally used, but is not limited to, shipboard mounted equipment.

CUSTOM TAILORED SHOCK RESPONSE MACHINES

The lab has available a number of smaller machines which are capable of generating specific responses such as 1/2 sine, sawtooth and trapezoidal pulses. In addition custom tailored responses can be generated to simulate actual field conditions.

NOTE:

The electrodynamic shaker, usually used for vibration testing, can be used for shock testing up to 20,000 force pounds.



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RELIABILITY THROUGH TESTING

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Information Sheet 120

AERO NAV LABORATORIES VIBRATION TESTING EQUIPMENT

PURPOSE OF VIBRATION TESTING:

To determine the ability of equipment to withstand the dynamic stresses and deformations produced by the vibration test.

Application:

The laboratory's vibration simulation equipment produces sine, random, sine on random, random on random, and can be tailored to simulate other vibration environments. The equipment can be classified in two categories:

LOW FREQUENCY

Low frequency is defined as vibration frequencies below 100 HZ. The equipment is of the mechanical shaker type which allows for single frequency vibration. Custom tailoring cannot be done. The weight and size limits of the available equipment are as follows:

WEIGHT LIMIT	SIZE LIMIT *
500 LBS	30 IN. X 30 IN.
1000 LBS	36 IN. X 36 IN.
5000 LBS	72 IN. X 72 IN.
20 000 LBS	120 IN. X 120 IN.

* FOOTPRINT

HIGH FREQUENCY

High Frequency is defined as vibration frequencies from 100 HZ and up. The equipment is of the electrodynamic type which allows for custom tailoring of the applied vibration environment.

Custom tailoring is accomplished through the use of multichannel real-time computer control and data acquisition.

The vibration limit is 20,000 force lbs.

The equipment incorporates a 16 in. diameter mounting hole pattern.

NOTE: The laboratory will select the most economical machine to meet the required force levels and vibration environment.



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