EDIBON

Free and Forced Vibration Equipment

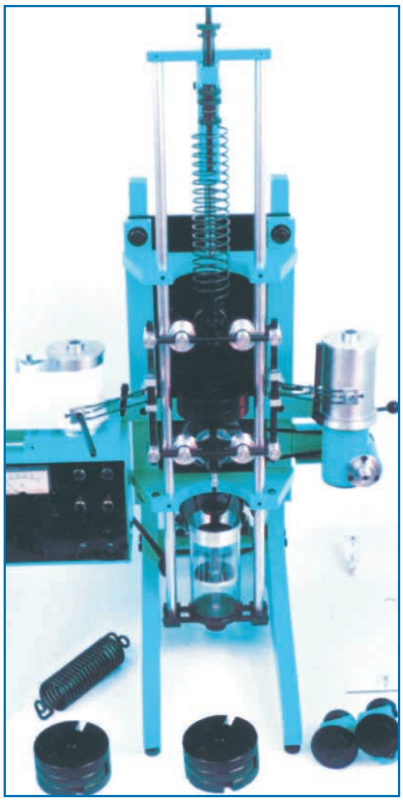
MVLF

MECHANICS & MATERIALS

Free and Forced Vibration Apparatus has been developed to extend the range of demonstrations and experiments which may be carried out to include the free and forced vibrations of a single degree of freedom with viscous damping.

Simple adjustments can be made to the apparatus and the motion of the mass can be readily observed and recorded on the two pen recorders provided. The use of so called "Black Boxes" has been avoided, a feature welcomed by most teachers.

Adopting the well tried features of the simple Vibration Apparatus, the mass carriage is constrained by rollers on vertical guide ways to provide minimum uncontrolled damping. Variable viscous damping is provided by an oil dashpot.



Two methods of exciting forced vibration are adopted; either by oscillating the upper spring mounting with SHM at variable frequency or by applying a rotating out balance force at variable frequency to the vibrating mass.

Two pen recorders are provided, a continuous paper recorder for amplitude and frequency measurements and a rotating drum recorder for amplitude and phase measurements.

Experiments

To investigate the relationship between the mass of the body, the stiffness of the spring and the periodic time or frequency of the oscillation of a smiple spring-mass system having one degree of freedom.

To investigate the relationship between the amplitude of the steady state vibration of the vibrating mass and the forcing frequency for varying damping ratios.

To investigate the phase relationship between the vibrating mass and the periodic displacement of the spring support for varying damping ratios.

To investigate the effect of viscous damping on the free vibration of a simple spring-mass-damper system.

To determine the damping ratio or factor for a given spring-mass-damper system.

Note: **New catalogue available soon**

* Specifications subject to change without previous notice, due to continuous improvements of the product.

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TEACHING EQUIPMENTS

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