

**Product Name :**  
Free and Forced Vibration Apparatus

**Product Code :**  
Dynamics0009



### Description :

Free and Forced Vibration Apparatus

### Technical Specification :

The experimental unit clearly demonstrates the fundamentals needed to deal with free and forced vibrations. The central element of the experimental unit is a sturdy aluminum profile frame to which the different experimental setups are attached.

The differences between the two main types of excitation for forced vibrations can be shown on a simple vibration model.

A bar-type oscillator is used as the vibration system.

This offers easy and flexible configuration.

The spring, damper and vibration exciter can be mounted in any position.

An imbalance exciter and a displacement exciter are available for spring base-point excitation.

The excitation frequency is set and displayed on a control unit.

An oil hydraulic damper allows damped vibrations with adjustable damping level.

A mechanical drum recorder offers the option of recording the vibrations.

The measured values can be displayed and analyzed on a PC using the optional unit for data acquisition.

### FEATURES:

Demonstration of basic fundamentals of mechanical vibration theory

Free vibrations

Damped vibrations

Inertia force and displacement excitation

Forced vibrations

Resonance

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Amplitude response and phase response

**SPECIFICATION:**

Fundamentals of mechanical vibration theory; free, damped and forced

Bar-type oscillator: LxWxH: 700x25x12mm, 1,6kg

Damper constant: 5...15Ns/m, oil-filled

Coil springs :

0,75N/mm

1,5N/mm

3,0N/mm

Exciter :

Frequency: 0...50Hz, electronically controlled

Imbalance of the imbalance exciter: 0...1000mmg

Stroke of the displacement exciter: 20mm

Mechanical drum recorder :

Feed: 20mm/s

Paper width: 100mm

Required for operation :

230V, 50Hz, 1 phase

230V, 60Hz, 1 phase; 120V, 60Hz, 1 phase

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