



Theory of Machines

TM1002

Static and Dynamic Balancing

For experiments in balancing a rotating mass system, statically and dynamically



- Self-contained bench or desktop mounting unit, suitable for student use and for classroom demonstrations
- Demonstrates balancing a horizontal shaft with two, three or four rotating masses
- Independent analysis of static and dynamic balancing
- Includes four removeable rotating masses (balance blocks) with different inserts for a range of moments
- Protractor, horizontal scale and sliding indicator to help accurately position the rotating masses
- Flexible mountings allow test shaft assembly to vibrate in dynamic balancing tests
- Fully interlocked transparent safety cover

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- An ISO 9001 certified company

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Static and Dynamic Balancing

Description

This product allows students to do experiments in balancing a rotating mass system and check their results against accepted theory.

A sturdy base unit holds a test assembly on four flexible mounts. The test assembly includes a balanced steel shaft mounted horizontally on low friction bearings. The equipment includes a set of four rotating masses (balance blocks). The balance blocks fix in any horizontal position and relative angle on the shaft. Each block contains a different (and removable) circular insert, allowing students to create four blocks of different mass and moment. Without the inserts, the blocks become four identical masses for simple balancing tests.

Students fit an extension shaft and pulley (supplied) to the end of the balance shaft. They then add weights (supplied) to a cord wound round the pulley to measure accurately the moment of each balance block.

The test assembly includes a protractor at the end of the shaft and a linear scale with slider under the shaft. These allow accurate measurement of balance block angles and horizontal positions.

An electric motor and belt turns the shaft to test for dynamic balancing. The flexible mounts allow the assembly to vibrate, showing imbalance during dynamic balancing tests. Students remove the belt to check for static balance (the shaft should remain static at any angular position).

A transparent safety dome covers the whole rotating assembly. An interlock shuts off power to the motor when the dome is not fitted.

Standard Features

- Supplied with comprehensive user guide
- Five-year warranty
- Manufactured in accordance with the latest European Union directives

Experiments

- Demonstration of simple static and dynamic balancing of two, three and four rotating masses
- Dynamic balancing of rotating mass systems by calculation and vector diagrams (triangle and polygon)

Essential Services

Bench space needed:

A solid bench or desktop of around 600 mm front to back

Electrical supply:

Single phase

90 VAC to 250 VAC 50 Hz to 60 Hz

Operating Conditions

Operating environment:

Laboratory environment

Storage temperature range:

-25°C to +55°C (when packed for transport)

Operating temperature range:

+5°C to +40°C

Operating relative humidity range:

80% at temperatures < 31°C decreasing linearly to 50% at 40°C

Sound Levels

Less than 70 dB(A)

Specifications

Nett dimensions and Weight

600 mm wide x 600 mm front to back x 360 mm high and 18 kg

Approximate Packed dimensions and Weight:

0.25 m³ and 24 kg

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infoWERK is a leading expert in the development of eLearning courseware, learning system solutions, teaching and AV equipment.

Furthermore infoWERK is the representative and system integrator of "TecQuipment".

TecQuipment is one of the global leaders in technical teaching equipment for engineering. If you are interested in one of TecQuipment's products feel free to contact us at:



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