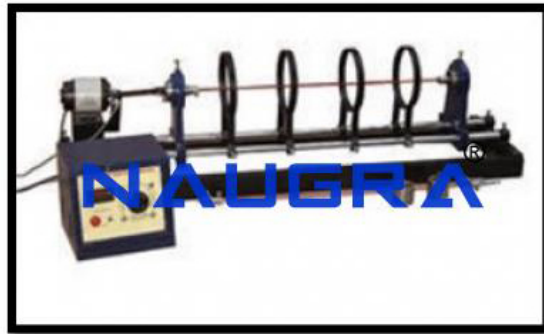


Product Name :
Elastic Shafts

Product Code :
TN492



Description :

Elastic Shafts

Technical Specification :

Elastic Shafts

The unit is perform the following experiments and investigations:

Learning Objectives / Experiments:

Investigation of a Laval rotor

Critical speed

Self-alignment

Natural modes on a shaft with continuous mass distribution with

Different bearing clearances

Different shaft diameters

Different shaft lengths

To be supplied with;

System for data acquisition

PC1 Computer-System with 21" TFT-Monitor Win 10 engl.

Specification:

Experimental unit for determining critical speeds and investigating the natural modes of a shaft

6 high-tensile steel shafts

Up to 4 self-aligning ball bearings, each moveable to any point as a shaft bearing

1 mass for constructing a laval rotor

3 safety bearings and transparent protective cover for safe operation
Three-phase motor: 2 pre-selectable speed ranges; speed electronically controlled and continuously adjustable
Digital speed display
System for data acquisition

Technical Data:

6 shafts

- \tilde{A} 3mm, 6mm, 7mm

- L: 600mm, 900mm

- high-tensile steel

Mass, disk-shaped

- \tilde{A} 80mm

- m: 965g

- high-tensile steel

Motor

- power: 0,25kW

- max. speed: 6000rpm

- speed electronically controlled

Shaft bearing

- 4x self-aligning ball bearings

- 3x safety bearings

Measuring ranges

Speed: 0...6000rpm

Scale for clearance measurement: 0...1000mm

230V, 50Hz, 1 phase

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

Dimensions and Weight

Length x Width x Height: 1550x380x450mm

Weight: 65kg

1. System for Data Acquisition

In conjunction with the Elastic shafts unit

Investigation and representation of the vibration amplitude of a rotating shaft

Recording of signals over time

Investigation of how amplitude depends on speed and location

Representation of the orbit.

Specification:

Data acquisition and analysis of Elastic shafts

2 inductive, non-contact displacement sensors

Measuring amplifier and A-D converter for signal processing

Software for data acquisition via USB under Windows 7, 8.1, 10

Including PC1 Computer-System with 21" TFT-Monitor Win 10 engl.

Technical Data:

2 displacement sensors

Measuring principle: inductive, non-contact

Output signal: analogue 1...9v

Measuring distance: 5...10mm

Measuring velocity:

Dimensions and Weight

Length x Width x Height: 230x200x80mm

Weight: 2kg

Naugralabequipments

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