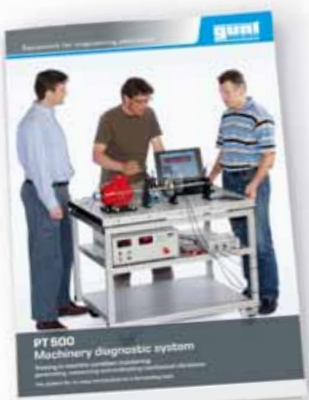


# PT 500 Machinery diagnostic system

The condition of a machine or its parts can be assessed by the nature and extent of the vibrations produced. To do this, vibrations are recorded and analysed by sensors and measuring instruments. The correct interpretation of the measuring signals requires a good understanding of the acting mechanisms and a certain amount of experience.

The PT 500 system from GUNT is a modular training system that addresses these complex issues in engineering education and studies them by experimentation. Using the PT 500 machinery-diagnostic teaching system, you can simulate, measure and evaluate vibration signals of typical malfunctions and damage. The interpretation of measuring signals can be practised extensively.

Professional measuring technology allows the experience gained to be transferred into day-to-day operation.



A complete summary of all options of the modular system can be found in our PT 500 brochure, which is available for download at [www.gunt.de](http://www.gunt.de).

The core element of the training system is the PT 500 base unit. The components of the base unit, together with the PT 500.04 computerised vibration analyser, allow a series of experiments on the topic of machinery diagnostics. In addition, the PT 500.10 – PT 500.19 accessory sets are available to simulate different, reproducible types of damage. In addition to pure measuring exercises on vibration measurement (measuring deflection, velocity and acceleration of the vibration in the time or frequency domain), it is possible to practice field balancing on rigid rotors and the alignment of shafts. Almost any topic in machinery diagnostics can be covered thanks to a wide range of accessories.

The base unit contains a vibration-damped fixing plate, a speed-controlled drive motor with a tachometer, a shaft with two mass disks and two bearing units, a coupling and balancing weights.

Accessories that can be connected to the base unit	
<b>PT 500.10</b> Elastic shaft kit 	Imbalance vibrations of a flexurally elastic shaft, resonance, critical speed, balancing
<b>PT 500.11</b> Crack detection in rotating shaft kit 	Vibration behaviour of a cracked shaft, identification of the crack from the vibration signal
<b>PT 500.12</b> Roller bearing faults kit 	Identification of bearing damage from the running noise, different pre-damaged roller bearings included
<b>PT 500.13</b> Couplings kit 	Properties of different coupling types, influence of axial and radial runout and pitch error on vibration behaviour
<b>PT 500.14</b> Belt drive kit 	Vibrations on belt drives, resonance and critical speeds, influence of belt tension, radial runout and alignment
<b>PT 500.15</b> Damage to gears kit 	Identification of gear damage from the vibration signal, influence of tooth type and lubrication
<b>PT 500.16</b> Crank mechanism kit 	Vibrations in crank mechanisms, free inertia forces, impacts and shocks due to bearing clearance and wear
<b>PT 500.17</b> Cavitation in pumps kit 	Noise and damage due to cavitation, conditions for cavitation
<b>PT 500.18</b> Vibrations in fans kit 	Vibrations in fans, demonstration of vibration excitation by blade passage, influence of gyroscopic effect
<b>PT 500.19</b> Electromechanical vibrations kit 	Interaction in an electro-magnetic-mechanical system, influence of load, air gap geometry and electrical asymmetry