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Cutting-edge teaching products for materials study

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Designed by engineers for engineers

Materials study forms a key aspect of student learning in their first year as an engineering student. There are key concepts and principles that can be greatly enhanced by visualisation and experimentation, which positively impacts the learning process and therefore, pass marks.

PA Hilton's world-leading range enables clear and comprehensive learning of materials and their properties covering a variety of theories and topics.



Stress and strain

HSM58 Universal Testing Machine

- Modular, flexible, compact and safe materials tester allowing students to conduct up to eight experiments on four different materials types.
- Also suitable for testing laws of compression, tensile strength and hardness, shear and bending.



Moments

HST10 Bending Moment in a Beam

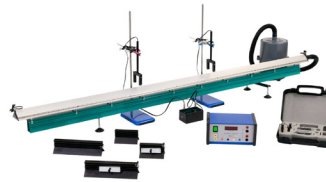
- Takes the internal forces from inside the unit to the outside so that students can see clearly how the beam reacts.



Forces

HST9 Shear Force in a Beam

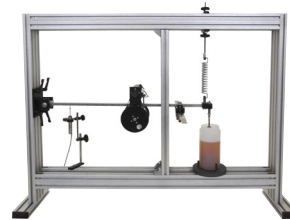
- Brings internal forces from inside the beam to outside the beam so students can observe the beam deflecting and shear forces acting.



Laws of Motion

HFC33 Conservation of Linear Momentum

- Creates a near frictionless 'cushion' of air on to which two trolleys can be moved which is crucial in preserving momentum in the Conservation of Momentum theory.



Free vibration and mass

HVT12 Universal Vibration Apparatus

- A spring is attached to the free end of a beam to enable the beam to vibrate. The horizontal position of the spring can be adjusted using the integral adjustment system.



Frequency

HVT13 Torsional Vibration Apparatus

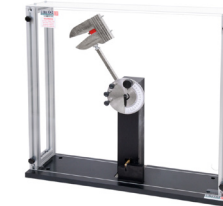
- Vibrations are transmitted into the torsion specimen by means of an exciter, which is electronically speed controlled from the main control unit.



Fatigue

HSM19 Rotating Fatigue Machine

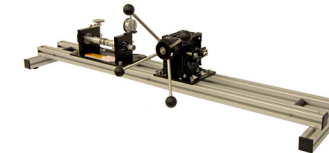
- Designed to introduce students to the effects of fatigue, a motor rotates a specimen through a gear and pulley arrangement which can be adjusted.



Failure

HSM41 Pendulum Impact Tester

- Bench top mounted unit for the study of notched bar (Charpy) impact strength tests.



Fracture

HSM31 Torsion Testing Machine

- A bench mounted unit for studying applied torque against angle of twist, specimen failure and test graphs.



Creep

HSM34 Creep Testing Machine

- A bench top mounted unit for studying the effect of creep on different material test specimens.