TECQUIPMENT

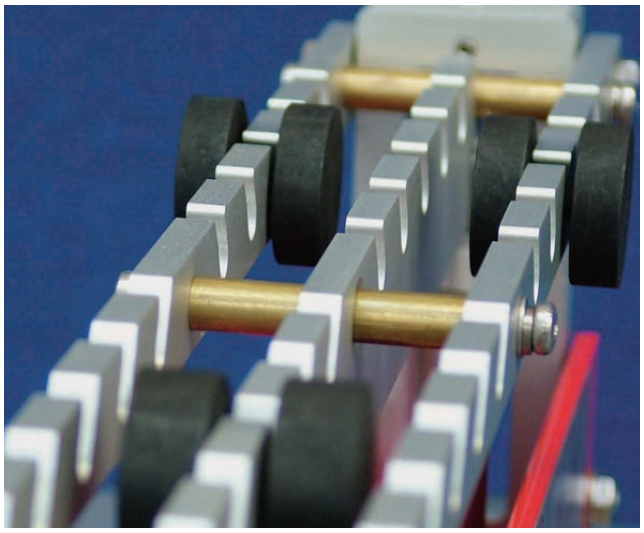
THEORY OF MACHINES

The Theory of Machines range offers teaching equipment for the basics of machine engineering, such as motion, to more advanced studies of free and forced vibration, friction in bearings, geared systems and governors.

SAFE YET HIGHLY VISUAL

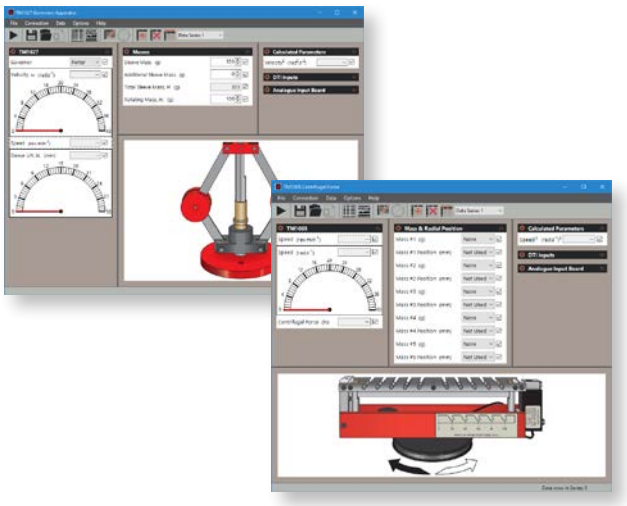
Due to the amount of fast moving parts in this range, extra safety features have been incorporated. Interlocked guards prevent accidents, while care has been taken in the design process not to compromise the visibility.

YouTube **THEORY OF MACHINES PLAY LIST**



FEATURES AND BENEFITS:

- **BASIC TO ADVANCED TEACHING:** To suit all your laboratory needs.
- **SAFETY BY DESIGN:** Interlocked guards where required prevent accidents.
- **AUTOMATIC DATA ACQUISITION:** Fast moving equipment often requires multiple fast measurements, making data acquisition a powerful tool.



AIR BEARING APPARATUS VDAS®

TE96

Benchtop, self-contained air bearing apparatus to demonstrate the performance of self-acting, gas-lubricated journal bearings, including the phenomenon of half-speed whirl.

HERTZIAN CONTACT APPARATUS

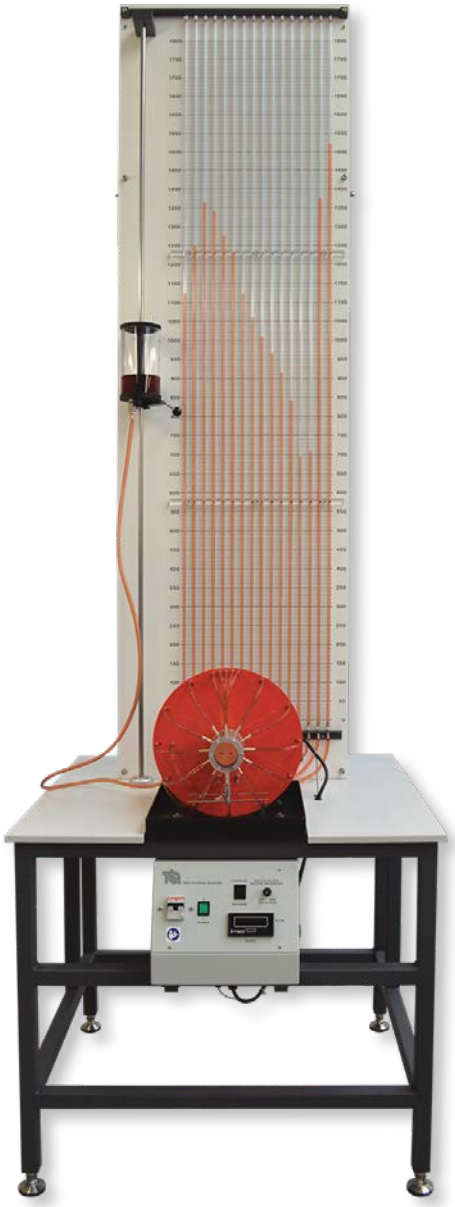
TE98

Benchtop, self-contained unit that allows a practical examination of Hertz's theories of contact between materials.

MICHELL PAD APPARATUS

TE99

A benchtop, self-contained apparatus to demonstrate the pressure distribution across the film of oil in a Michell tilting pad slider bearing. Helps to prove Reynold's equation for pressure gradient in fluid film.

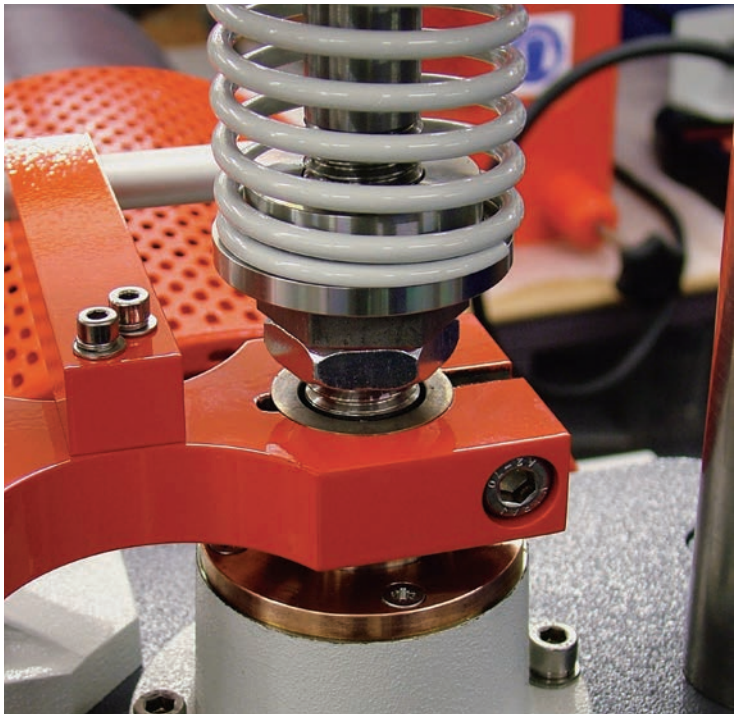


JOURNAL BEARING DEMONSTRATION

TM25

Floor-standing apparatus for demonstrating the pressures around a journal bearing at different speeds.

PDF



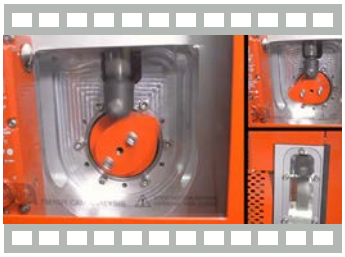
CAM ANALYSIS MACHINE

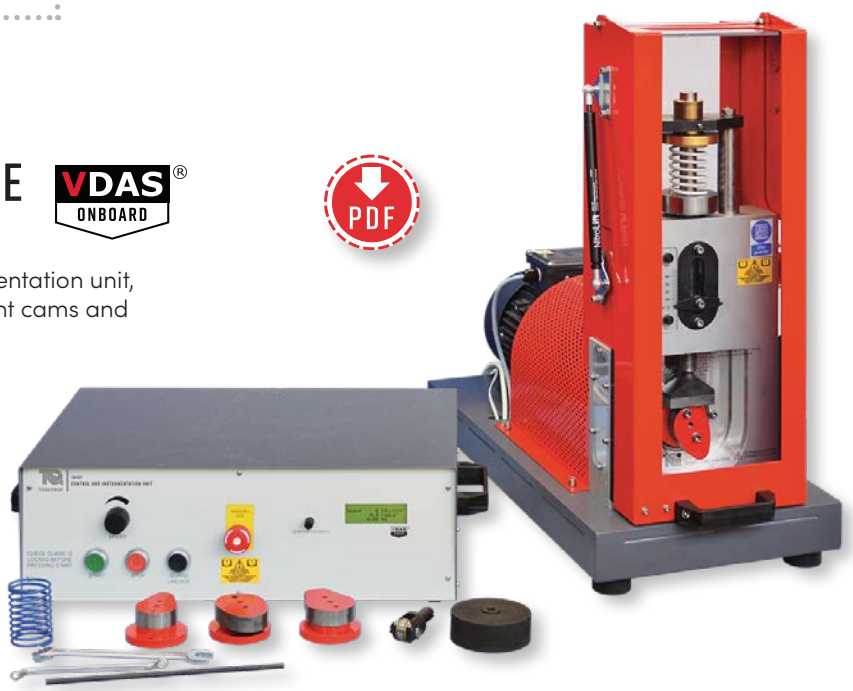
VDAS® ONBOARD

TM102IV

PDF

Benchtop apparatus and control and instrumentation unit, for studying the dynamic behaviour of different cams and followers and their 'bounce' speed.

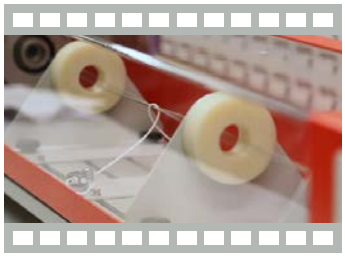


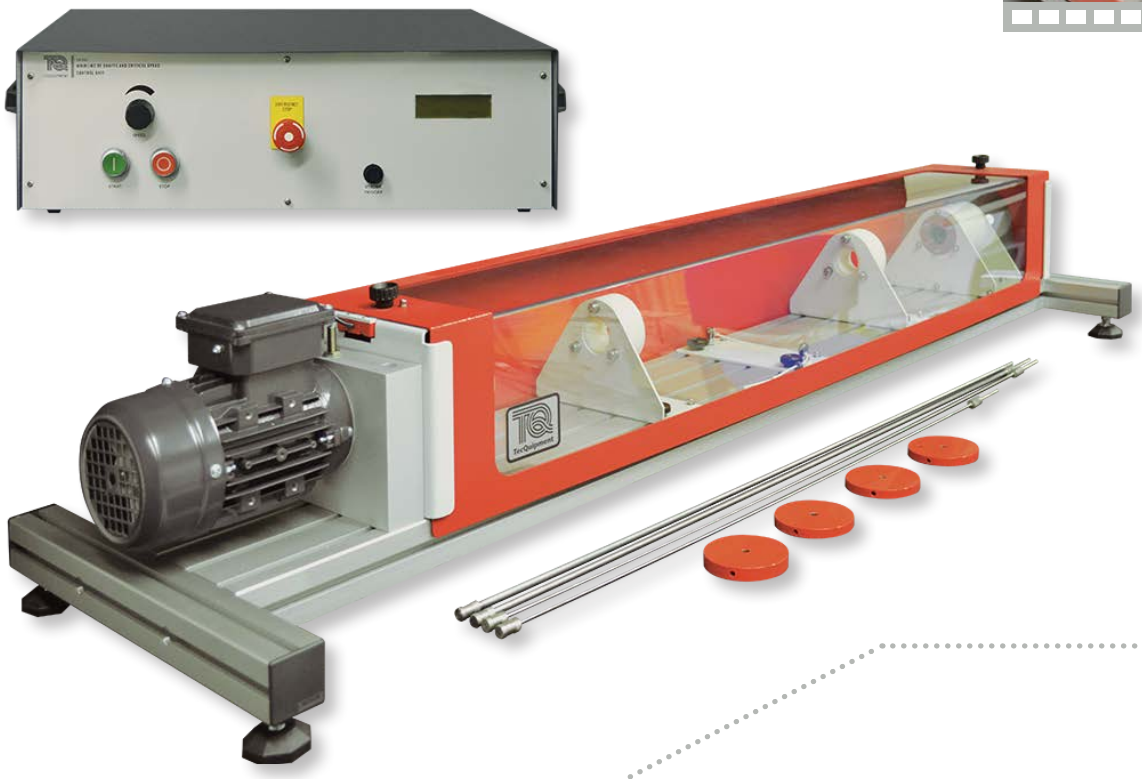


WHIRLING OF SHAFTS AND CRITICAL SPEED

TM1001

Benchtop apparatus that demonstrates 'whirling' in different horizontal shafts with a variety of fixings (end conditions), loaded and unloaded.





PDF

GEARED SYSTEMS VDAS®

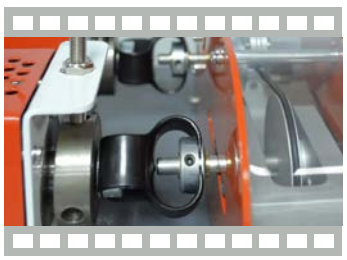
TM1018

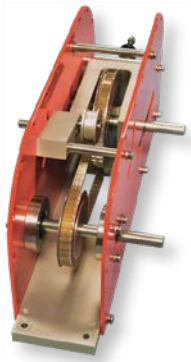
PDF

Benchtop apparatus for dynamic and static experiments on geared and other drive systems. This base unit requires at least one of the optional drive units: toothed belt drive, round belt drive, chain drive and helical gear drive.

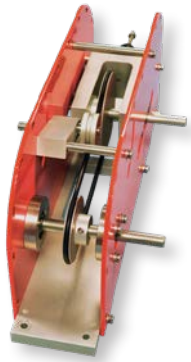
EXPERIMENT MODULES:

- Toothed Belt Drive
- Round Belt Drive
- Chain Drive
- Helical Gear Drive

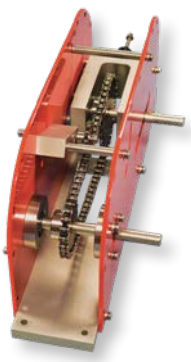




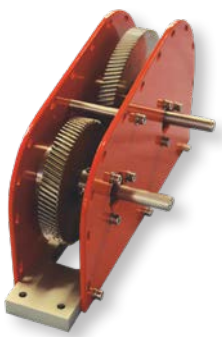
TOOTHED BELT DRIVE



ROUND BELT DRIVE



CHAIN DRIVE



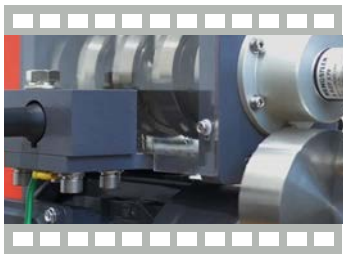
HELICAL GEAR DRIVE

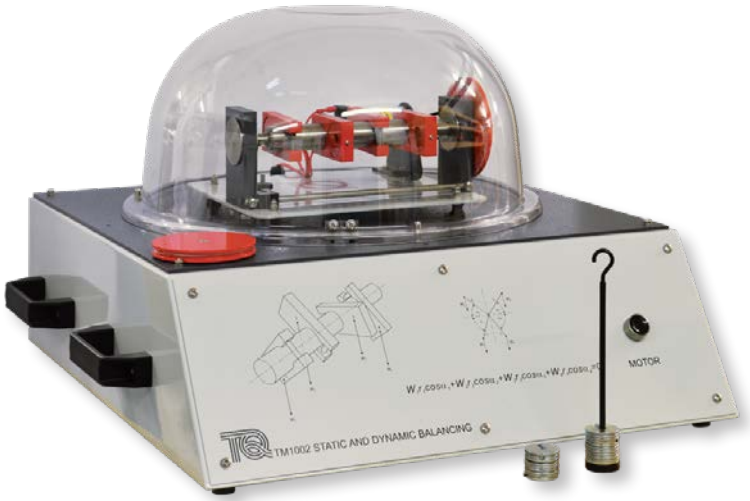
BALANCE OF RECIPROCATING MASSES VDAS® ONBOARD

TM1022V

Bench-mounted model four-cylinder engine with control and instrumentation unit that demonstrates the primary and secondary forces and moments when balancing reciprocating masses.

PDF

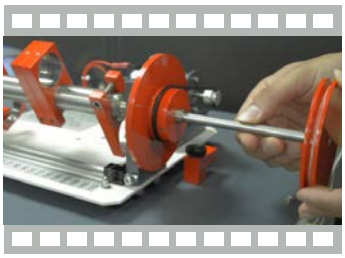




STATIC AND DYNAMIC BALANCING

TM1002

Benchtop apparatus for experiments in balancing a rotating mass system, statically and dynamically.

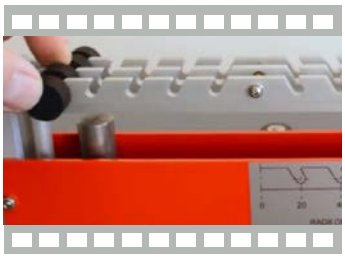


PDF

CENTRIFUGAL FORCE VDAS®

TM1005

Benchtop apparatus for experiments in centrifugal force and angular velocity.



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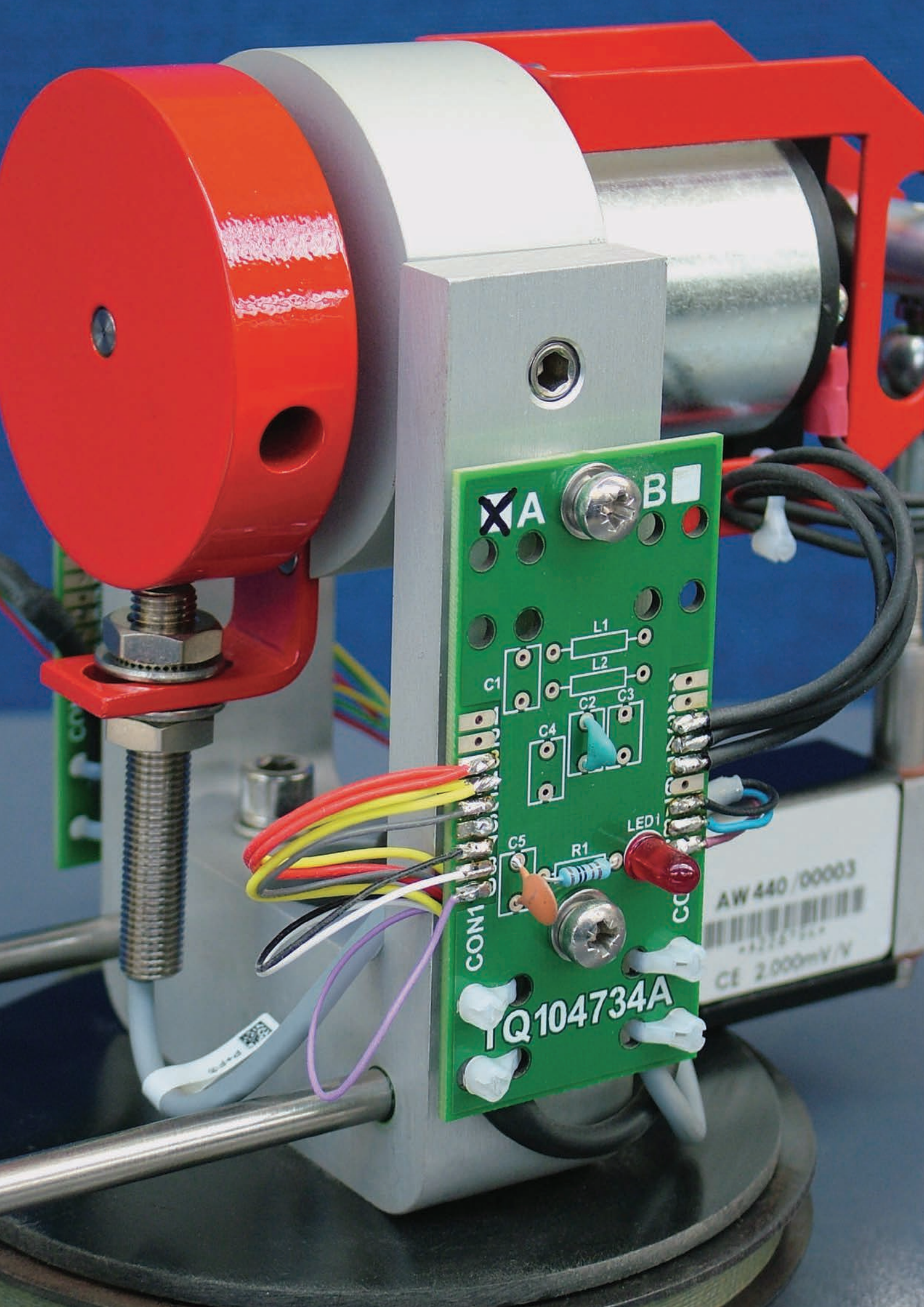
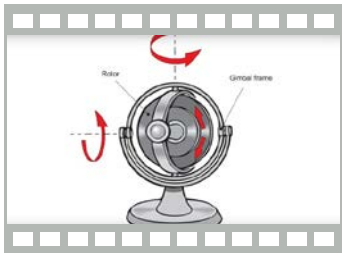

A
B
L1
L2
C1
C2
C3
C4
C5
R1
LED1
CON1
Q104734A
AW 440 / 00003

GYROSCOPE VDAS®

TM1004

Benchtop apparatus for experiments in gyroscopic couple and velocities of rotor and precision.

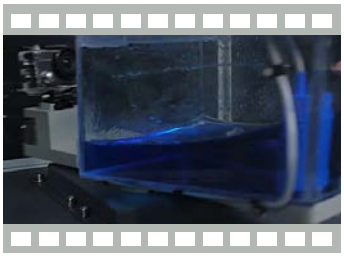


PDF

CORIOLIS FORCE

TM1017

Benchtop apparatus for demonstrations and experiments in Coriolis force.



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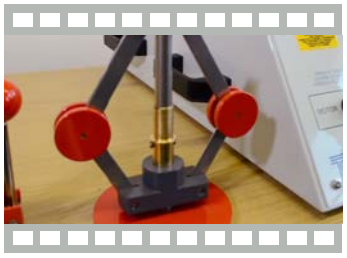
GOVERNORS VDAS®

TM1027

Benchtop apparatus for demonstrating how different governors work, including Hartnell, Porter and Proell governors.

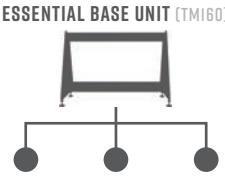


PDF

FREE VIBRATIONS TEST FRAME

TM160

A sturdy benchtop frame for use with the Free Vibrations experiment modules.

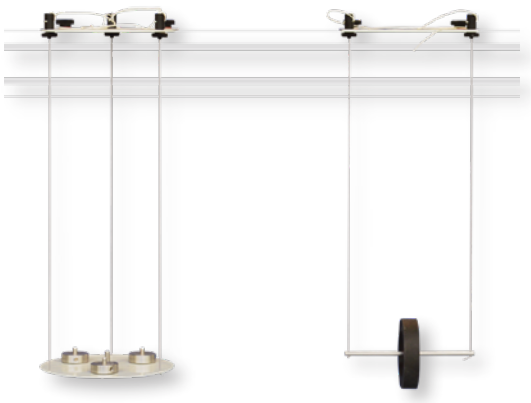


EXPERIMENT MODULES POSTER

SIMPLE AND COMPOUND PENDULUMS

EXPERIMENT MODULES:

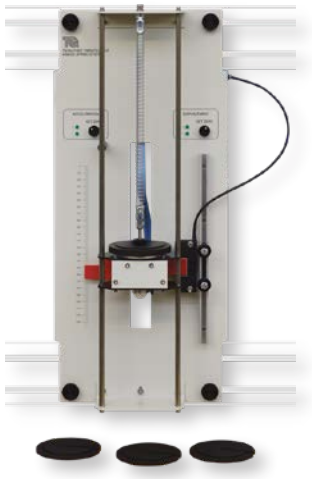
- Simple and Compound Pendulums
- Filar Pendulums
- Centre of Percussion
- Free Vibrations of a Mass Spring System VDAS®
- Free Torsional Vibrations VDAS®
- Free Vibrations of a Cantilever VDAS®
- Free Vibrations of a Beam and Spring VDAS®



PILAR PENDULUMS

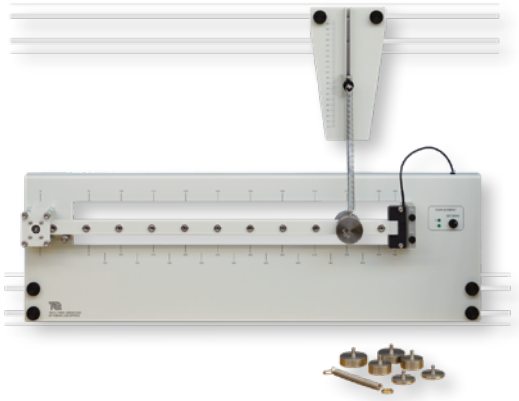
FREE VIBRATIONS OF A CANTILEVER

CENTRE OF PERCUSSION



FREE VIBRATIONS OF A MASS SPRING SYSTEM

FREE TORSIONAL VIBRATIONS



FREE VIBRATIONS OF A BEAM AND SPRING

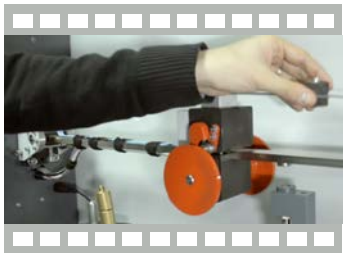
FREE AND FORCED VIBRATIONS

VDAS® ONBOARD

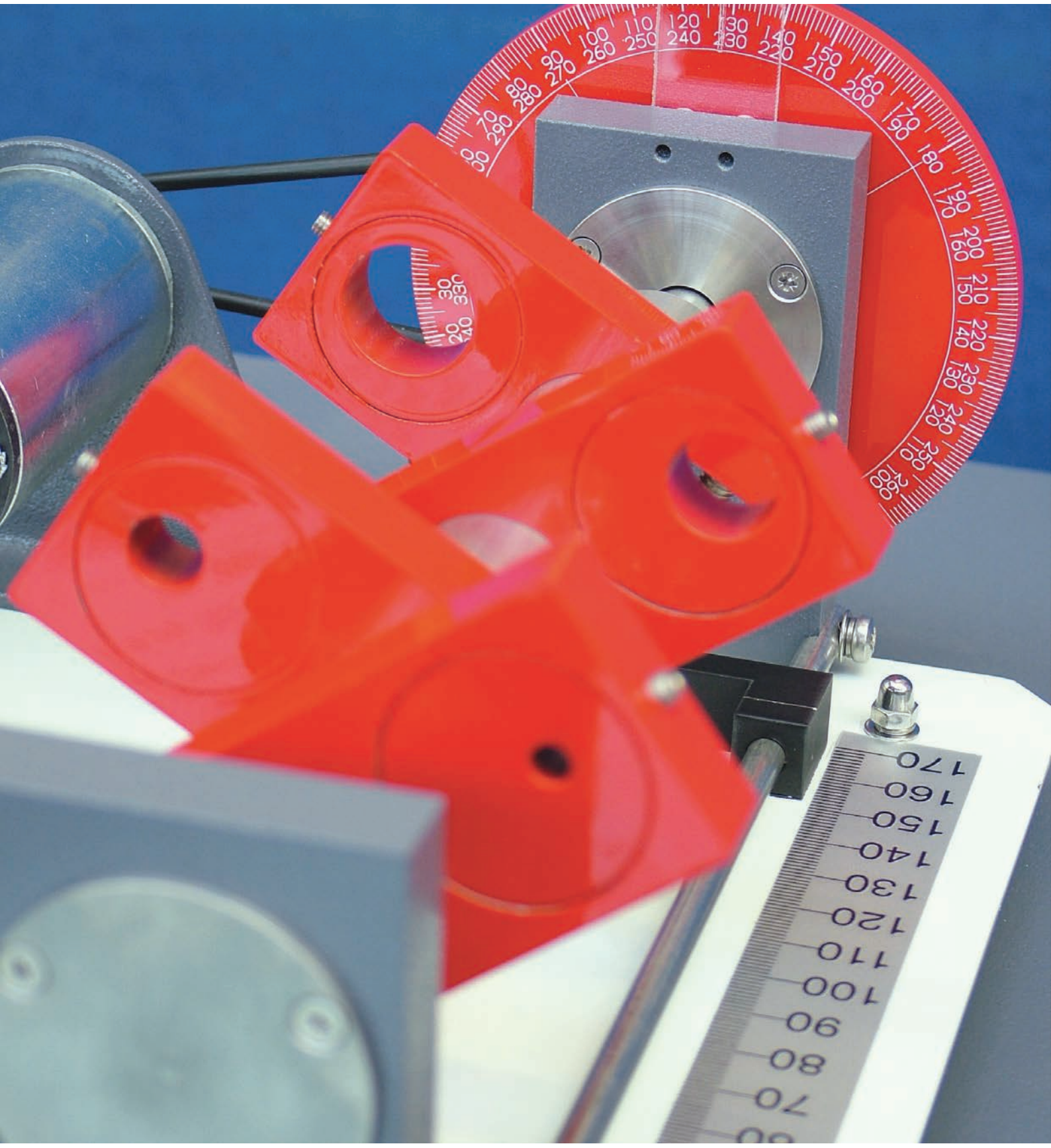
TM1016V

Investigates the free and forced vibrations of a rigid beam with a spring, and a simply supported beam. Demonstrates Rayleigh's approximation and Dunkerley's method.

PDF



TECQUIPMENT



TecQuipment Ltd, Bonsall Street, Long Eaton, Nottingham NG10 2AN, UK