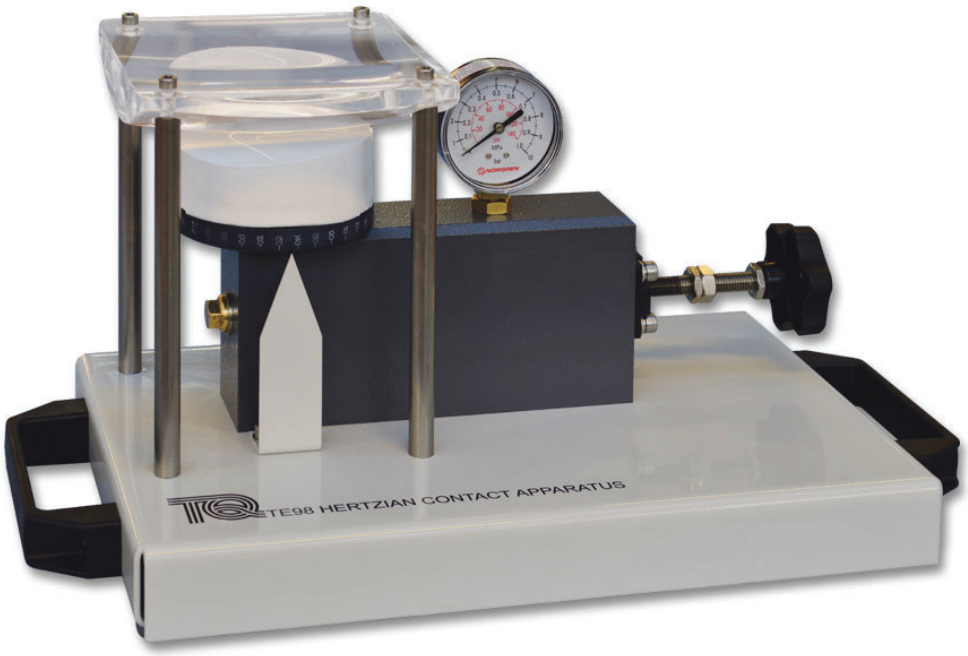
HERTZIAN CONTACT APPARATUS

TE98

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



KEY FEATURES

- Helps engineers to study and predict contact shapes between common machined surfaces and materials
- Compact, self-contained unit that needs no electricity or external services
- Uses flexible material to produce magnified and easily viewed results
- Controllable hydraulic pressure system with gauge for repeatable results
- Simple design for ease of use
- Variable relative contact angles and pressures for a range of experiments

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TECQUIPMENT

HERTZIAN CONTACT APPARATUS

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DESCRIPTION

The Hertzian Contact Apparatus is a self-contained and easy-to-use unit that shows the nature of contact between two surfaces. It compares experiment results with predictions based on Hertz's original theories. This helps engineers to predict contact areas between common machined surfaces and materials, for example different types of bearings.

The apparatus has two pads with curved contact surfaces. The upper pad (made of a transparent plastic material) has a compound radius. The lower pad (made of an opaque flexible material) has a simple radius. A hand-operated hydraulic pump and cylinder force the two pads together. Students may rotate the lower pad, a pointer shows the angle of rotation. This allows a study of the effect of different relative curvatures.

A contact shape (or 'zone') forms between the pads. The contact zone may be circular or elliptical, depending on the relative angular position of the two pads. Supplied is a transparent scale to measure the contact shape and angle.

Locknuts on the threads of the pump work to limit the maximum pressure, preventing damage to the equipment.

STANDARD FEATURES

- Supplied with comprehensive user guide
- Five-year warranty
- Manufactured in accordance with the latest European Union directives
- ISO9001 certified manufacturer

LEARNING OUTCOMES

- The effect of varied pressure with constant angle
- The effect of varied angle (different relative curvature) with constant pressure

ESSENTIAL SERVICES

BENCH SPACE NEEDED:

800 mm x 400 mm

OPERATING CONDITIONS

OPERATING ENVIRONMENT:

Laboratory

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

LABORATORY

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SOUND LEVELS

Less than 70 dB(A)

SPECIFICATIONS

TecQuipment is committed to a programme of continuous improvement; hence we reserve the right to alter the design and product specification without prior notice.

NETT DIMENSIONS AND WEIGHT:

Length 460 mm x width 230 mm x height 230 mm and 8 kg plus 500 mL (roughly 500 g) oil

APPROXIMATE PACKED DIMENSIONS AND WEIGHT:

0.07 m^3 and 10 kg