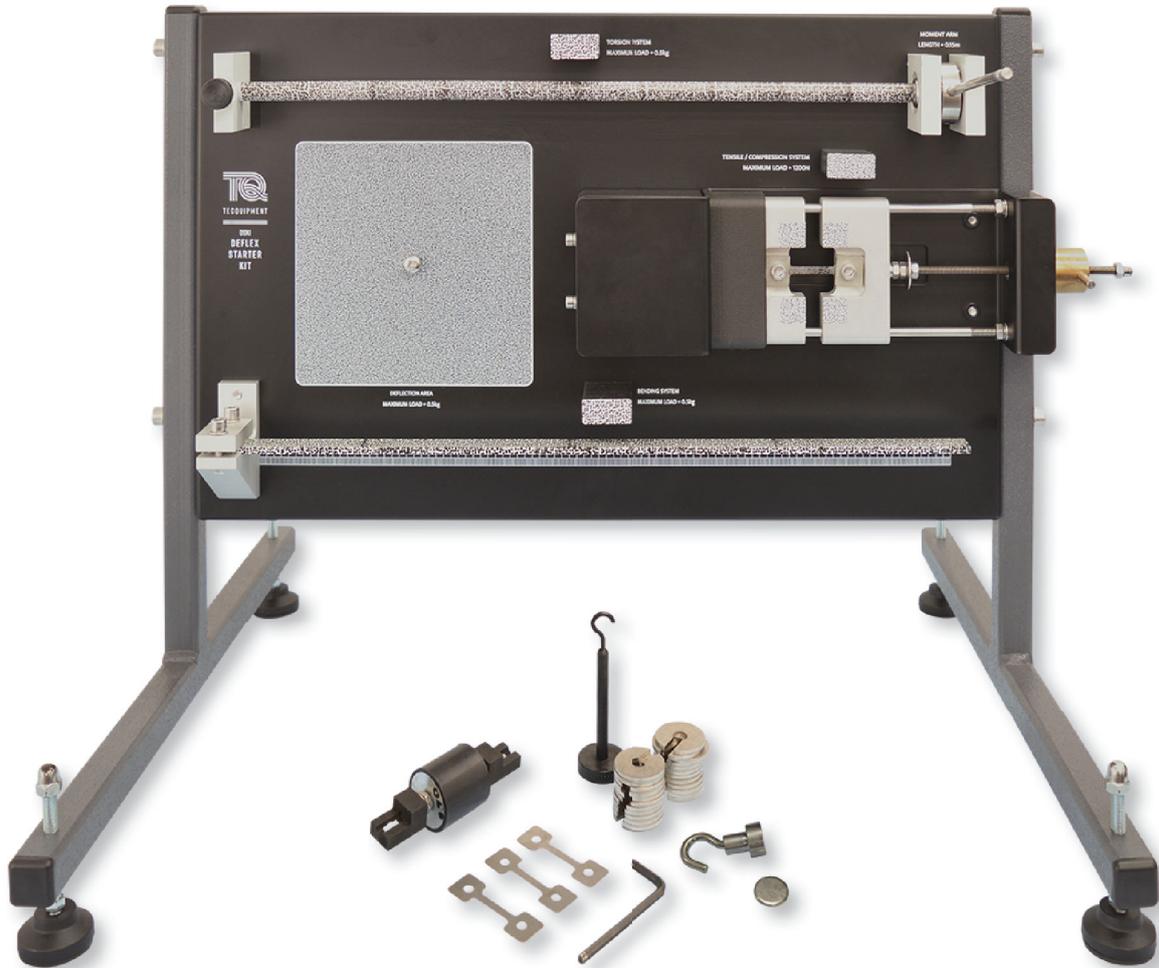




DEFLEX® STARTER KIT

DSKI

A simple system for introducing students to the concept of digital image correlation (DIC).



KEY FEATURES

- Torsion testing
- Horizontal beam bending
- Destructive tensile testing
- Non-destructive tensile testing
- Non-destructive compression testing
- Screen-printed DIC information
- Weights to provide a range of stresses
- Panel deflection demonstration

LEARNING OUTCOMES

- Introduces students to the process of using DefleX® to conduct digital image correlation (DIC) measurements
- Demonstrates calibrating a DIC system
- Demonstrates a set of standard-use cases for DIC measurement in material testing
- Tensile, torsion, bending and panel deflection



DEFLEX® STARTER KIT

DSK1

DESCRIPTION

The Deflex® Starter Kit (DSK1) is designed to familiarise and teach students how to easily take basic measurements using digital image correlation with Deflex®-2D and Deflex®-3D.

It is perfectly suited as both a teaching aid and demonstration unit for any mechanical, material science, structures or civil engineering course, as it will help students visually understand what happens to materials as they undergo various loading conditions.

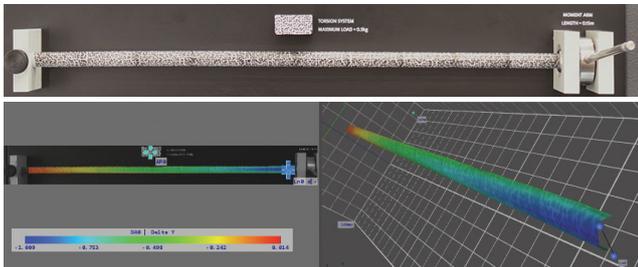
The DSK1 provides several typical-use cases for DIC measurements in mechanical and materials testing such as tensile, bending, torsional testing and plate deflection. The system features a wide and unobstructed open-plan design, making it ideal for performing a wide range of 2D and 3D DIC measurements.

The DSK1 is a DIC sandbox designed to guide students through various practical scenarios, enabling them to conduct a number of experiments as part of an engineering course.

TYPES OF 2D AND 3D DIC EXPERIMENTS AVAILABLE

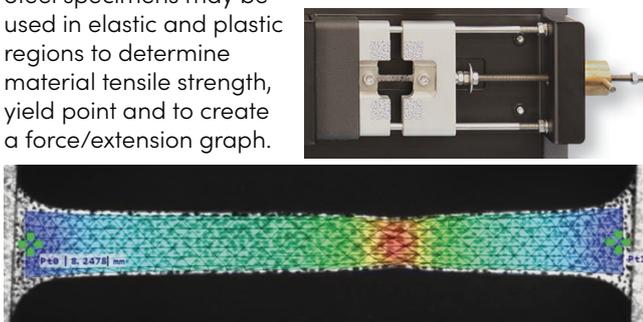
TORSION TESTING:

Can be used with both Deflex®-3D and Deflex®-2D, where a weight is applied on the end of a torque bar, forcing the torsion bar to twist.



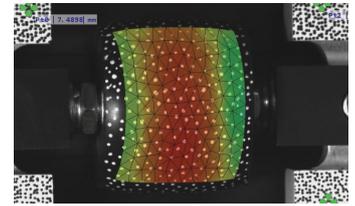
TENSILE TESTING:

Steel specimens may be used in elastic and plastic regions to determine material tensile strength, yield point and to create a force/extension graph.



EXTENSION AND COMPRESSION:

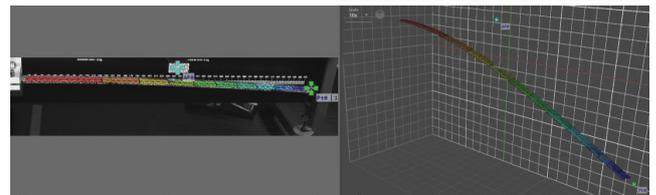
A specifically designed thick rubber specimen is used to explore the elastic region of rubber for extension and compression.



CANTILEVER BEAM BENDING:

This is a simple experiment that can help students to validate Deflex®-2D and Deflex®-3D readings thanks to predictable steel properties.

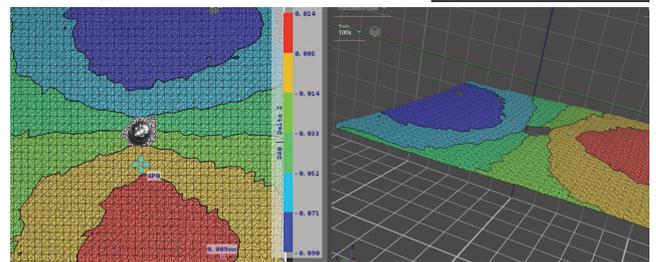
Deflex® enables students to analyse bending of moments, strain distribution and the deflection profile of a cantilever under load.



3D DIC ONLY EXPERIMENTS AVAILABLE

THIN PLATE DEFLECTION:

This is an ideal experiment to demonstrate the real power of the Deflex®-3D capabilities, such as measuring the smallest changes in displacements not visible to the naked eye.



As digital image correlation is a standard technology widely used in research and industry, the DSK1 is a great starting point for introducing engineering students to the concept of this technique to help understand how to evaluate performance, strength and resilience of components. This, in turn, can inform product design and thus optimise product performance.

DEFLEX® STARTER KIT

DSKI

STANDARD FEATURES

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

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

SOUND LEVEL

Less than 70 dB(A)

ESSENTIAL BASE UNIT

- DefleX®-2D
- DefleX®-3D

RECOMMENDED ANCILLARIES

- Speckling Kit (SPK1)

ESSENTIAL SERVICES

- Minimum desk space required: 800 mm x 500 mm

SPECIFICATIONS

- 20 x Steel tensile specimens
- 1 x Rubber tensile/compression specimen
- DefleX® Starter Kit assembly includes tensile, torsion, beam bending and plate deflection experiments

DIMENSIONS AND WEIGHT:

- Assembled ready to work:
735 mm wide x 500 mm high x 510 mm front to back;
11.5 kg
- Shipping dimensions (pallet box):
820 mm wide x 620 mm long x 860 mm high;
20 kg