

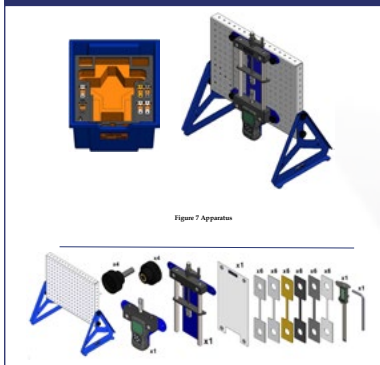
The Engineering Fundamentals range enables students to gain an understanding of the principles of engineering by the process of learning via experimentation.

The modular tray-based system is supplied in conjunction with a multifunctional work panel enabling the student to conduct their own experiments in subjects such as Statics, Dynamics, Mechanisms, Kinematics and Strength of Materials.

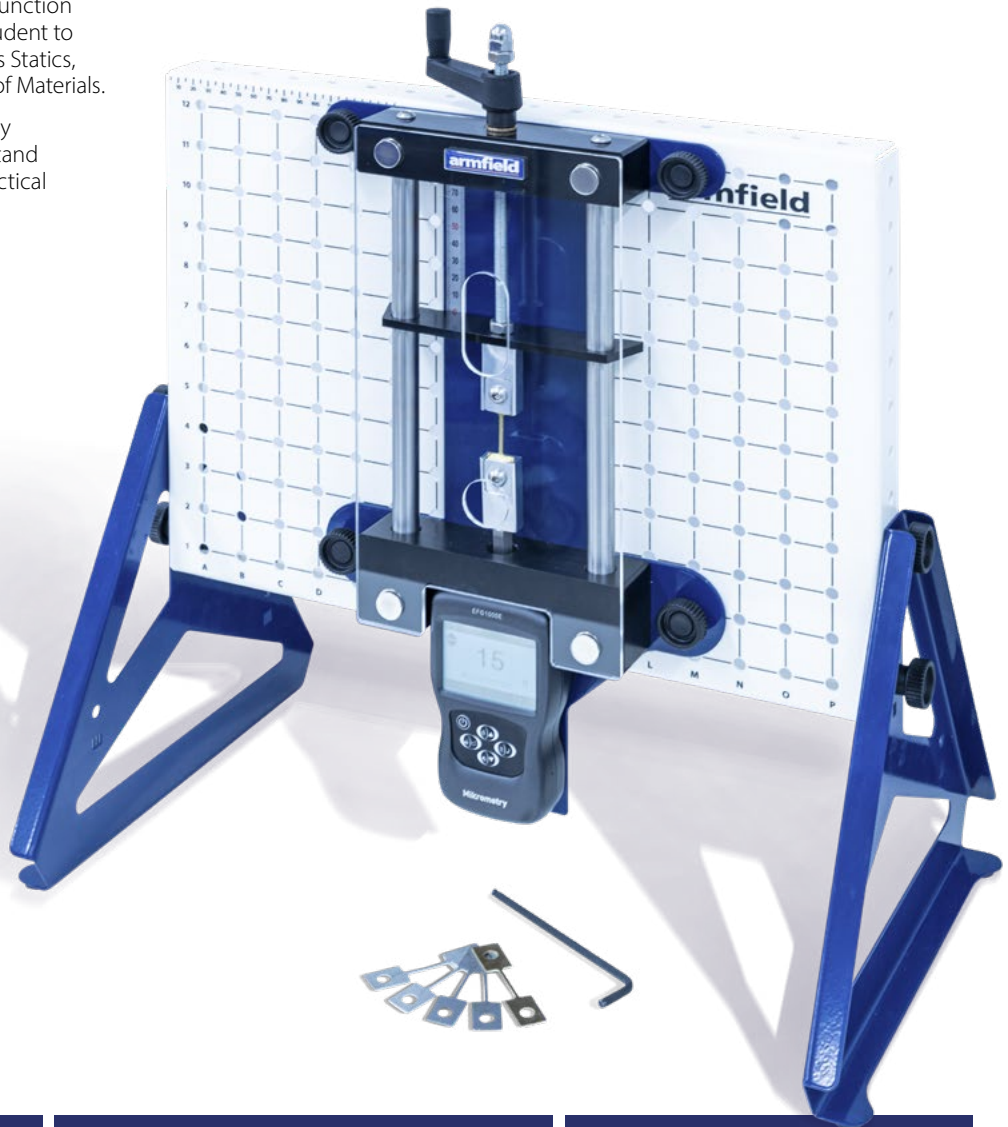
Each kit is supplied with a highly visual user-friendly operational guide, allowing the student to understand the theory of the subject by the application of practical experimentation.

**AN INNOVATIVE HANDS ON MODULAR SYSTEM DESIGNED TO ENABLE INVESTIGATION AND THE UNDERSTANDING OF ENGINEERING PRINCIPLES DATALOGGING CAPABILITY**

**Easy to follow instructions**



1 tray supplied with EF-5.1



**Includes Force Meter with data logging capability**



**Datalogging screen**



**Tensile test sample**



## Engineering fundamentals system

The Armfield EF-5.1 Tensile Tester apparatus is an addition to the EF range of accessories for Engineering Fundamentals.

The unit is designed to demonstrate the tensile strength of test samples of different materials.

In addition to the destruction of a test specimen, the key relationship between force vs elongation can be easily determined and visualised by the students.

### Requirements

### Scale

EF-BU PC

Experiment tray scale EF-BU scale EF-WS scale

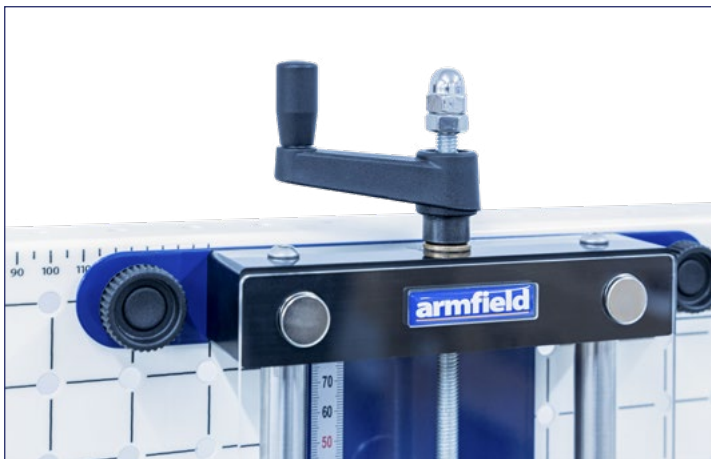
- ▶ EF-BU on which to build the experiment from the tray components
- ▶ Level and stable work surface to mount the EF-BU upon  
The optional EF-WS is ideal for this if no suitable desk or bench is available
- ▶ A Windows PC (not supplied) running Windows 7 or later, with USB port is required if running the data logging software

### Essential accessories / equipment

- ▶ EF-BU Base Unit
- ▶ EF-5.1-1 Test Specimens

### Experimental content

- ▶ Tensile tests (to destruction) of different materials
- ▶ Finding the tensile strength of a material
- ▶ Material behaviour in the elastic and plastic region
- ▶ Creating a force and extension chart



### Overall dimensions

Tray	
Length	0.430m
Width	0.312m
Height	0.160m
Packed and crated shipping specifications	
Volume	0.02m <sup>3</sup>
Gross weight	10Kg

## Features / benefits

### Features

- ▶ Neatly presented in an easily identifiable and durable storage tray
- ▶ Trays have clear lids making it easy to see their contents
- ▶ Pictorial tray contents list to identify missing components easily
- ▶ Accompanied by a detailed manual with various practical exercises
- ▶ Clear and concise assembly instructions for each experiment
- ▶ Multiple experiments per kit
- ▶ Toolless assembly (samples secured with supplied hex key)

### Benefits

- ▶ Datalogging capability
- ▶ Hands-on understanding from lessons
- ▶ Improve the student's dexterity by self-assembly with the instructions provided

### Related products

- ▶ EF-BU Base Unit

### Statics Experiments

- ▶ EF-1.1 Forces
- ▶ EF-1.2 Moments
- ▶ EF-1.3a Beams
- ▶ EF-1.3b Trusses
- ▶ EF-1.4 Springs
- ▶ EF-1.5 Torsion

### Dynamics Experiments

- ▶ EF-2.1 Friction
- ▶ EF-2.2 Simple Harmonic Motion
- ▶ EF-2.3 Rotational Friction
- ▶ EF-2.4 Potential and Kinetic Energy
- ▶ EF-2.5 Centrifugal and Centripetal Force

### Mechanisms Experiments

- ▶ EF-3.1 Cam, Crank and Toggle
- ▶ EF-3.2 Simple Mechanisms
- ▶ EF-3.3 Additional Mechanisms
- ▶ EF-3.4 Bar Linkages

### Kinematics

- ▶ EF-4.1 Pulleys
- ▶ EF-4.2 Gears
- ▶ EF-4.3 Drive Systems

### Strength of Materials

- ▶ EF-5.1 Tensile Tester

### Options

- ▶ EF-WS Workstation

### Ordering specification

- ▶ Digital Force Meter: Maximum Load = 1000N
- ▶ Digital Vernier Calliper: Accuracy  $\pm 0.03\text{mm}$
- ▶ Tensile test materials include 5 of each material:
  - EN3B Mild Steel
  - Aluminium 2073
  - Brass
  - PVC
  - Perspex
  - C40 Rubber

### Ordering codes

- ▶ EF-5.1 - Tensile Tester
- ▶ EF-5.1-1 - Test Specimens
- ▶ EF-BU - Base Unit
- ▶ EF-WS - Workstation (optional)

Armfield standard warranty applies with this product

## Knowledge base

- > 28 years expertise in research & development technology
- > 50 years providing engaging engineering teaching equipment

Benefit from our experience, just call or email to discuss your laboratory needs, latest project or application.

An ISO 9001:2015 Company



armfield.co.uk

## Aftercare

Installation  
Commissioning  
Training  
Service and maintenance  
Support: [armfieldassist.com](mailto:armfieldassist.com)