ACTIVITY 1: ELASTIC DEFORMATION

AIM: Investigate elastic deformation

1. Select one of the metal samples (1 – 3). Measure and record its width, and calculate its cross-sectional area. (REMEMBER – sample thickness is always exactly 5 mm here)

2. Click 'USE' to place the chosen sample in the tensile testing machine.

3. Investigate adding small increments of strain to increase the applied stress. Record the strain and load at each point (and calculate the applied stress). Cycle the strain up and down (at low values) to determine:

    a. Young's modulus
    b. Elastic limit
    c. 0.2 % yield strength

    HINT: Try using a 'dummy' sample first to work out the right order of magnitude of strain increments that you should be using.