

CHAPTER 7 Measurements and marking out

Test your knowledge 7.1

Parts and components are subject to change during the process of design and development and so, before marking out it is essential to have the latest specifications and/or drawings to hand.

Test your knowledge 7.2

Precautions might include any three of the following:

- Not using a steel rule for anything other than measurement and marking out
- Ensuring that the edges of the rule are straight and flat
- Checking that the datum point (at the end of the scale marked on the rule) is accurate and undamaged
- Checking that the engraved marking on the surface of the rule are clearly visible and have not been obscured by any surface deposits, scratches or finger marks.

Test your knowledge 7.4

1. 6.16 mm

2. 9.26 mm.

Test your knowledge 7.5

A try square (for angular measurement other than 90° a protractor must be used).

Test your knowledge 7.8

(a) 25 mm

(b) 25.07 mm

(c) 25.02 mm

(d) 0.05 mm

(e) ± 0.025 mm

(f) 25.045 mm.

Test your knowledge 7.11

Marking blue is a thin layer of coloured dye that can be easily applied and easily removed from the surface to be marked out. The coating obscures any existing surface marks and scratches. Scribe and punch markings show up easily when made on the coated surface because they contrasting well with the dark blue surface coating.

Test your knowledge 7.16

Granite is non-magnetic and therefore will not affect magnetic parts and components. Granite is less susceptible to surface contamination (e.g. rust).

Test your knowledge 7.18

Tolerance errors are 'one-off' errors that occur when a single measurement is made incorrectly. Cumulative errors are incurred when a series of measurements are made based on an incorrect datum point. Since the datum point is not correct all of the measurements made from it will also be incorrect.