

City University London

School of Engineering and Mathematical Sciences

Engineering Drawing and Design, ME1110

Exercise code: DrE-4a

Exercise Title: Orthogonal Projections and Dimensioning

Exercise Assignment:

Generate detailed drawing of the helicopter blade grip shown in Figure 1. This is two week exercise. Perform task 1 in week 1 of this exercise and task 2 in the second week of exercise DrE-4, as follows:

- 1) Prepare drawing in 3rd angle projection of the component shown overleaf.

Do not proceed to task (2) until your drawings have been approved by your tutor and any necessary amendments have been made.

- 2) Add all essential dimensions to your drawings, including any required tolerances and surface finish where you think these would apply.

Exercise Tips:

Study the component and attached notes carefully.

Choose a suitable scale and use as many views as you think are required to show all important details. You should include at least one section or partial section through the centre of the threaded hole C.

Your drawings should be to scale and made carefully and accurately using drawing instruments and pencils (NOT freehand sketching).

When completing task (1) remember to leave plenty space (eg 80mm) between views to allow for dimensions and other drawing elements to be added later in task (2).

Ensure drawings, dimensions, screw thread, spline and all other details are drawn in accordance with the conventions of BS8888.

Submit the exercise solution in A3 to U/G Mechanical & Aeronautical office, C108, in week 8 (check the deadline on web). Please NOTE:

Dimensioning should not start before the layout of drawing is approved and confirmed by the tutor signature.

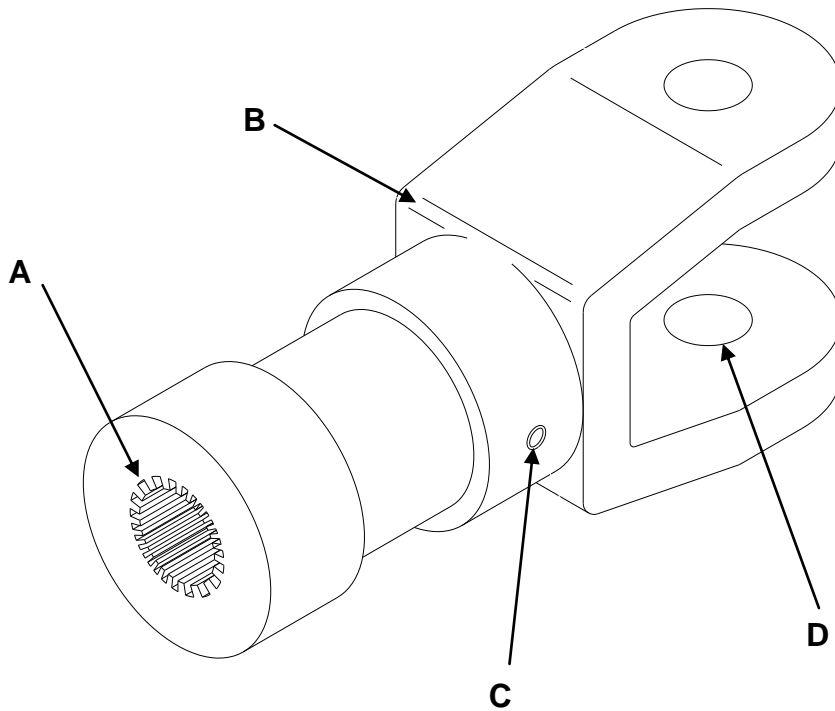


Figure 1 Helicopter blade grip

The isometric drawing in Figure 1 shows a blade grip, part of a helicopter rotor assembly. Some principle dimensions are:

- Overall Length 200 mm,
- Overall Shaft Length 100 mm,
- Large shaft diameters 60mm.

Use these to determine dimensions of other features on the object

Note also:

- Spline (A) is 70 mm deep, OD 30mm, ID 24mm
- Fillets (B) are 5mm radius,
- Hole (C) is 5mm diameter x 15mm deep with M6 thread to depth of 12mm
- Holes (D) are 20mm diameter and go all the way through.