

Answers and marking guidance

Award one mark per correct, developed point unless stated. Other valid answers should be credited.

2 Outline how the holes could be drilled to the correct depth.

- Set the depth stop on the pillar drill
- Wrap masking tape round the drill bit at the required depth

No marks for: "Measure the depth"; "Set the drill"; Using a steel rule

3 Quick check

- a) Coping saw
- b) Set the depth stop
- c) Knurling
- d) Centre punch

4 Key terms

- 1 – E
- 2 – C
- 3 – D
- 4 – F
- 5 – B
- 6 – A

5 State two safety checks that should be made on the centre lathe before turning.

- Workpiece secured tightly in the chuck
- Chuck key removed
- Material running true
- Cutting tool set at centre height and secure
- Guard in position
- Correct spindle speed set

No marks for: Goggles, apron or any PPE (checks must be on the machine); "The guard" on its own

6 Describe how the bracket would be bent.

- Clamp in bending bars in the engineer's vice with the bend line at the edge of the bars
- Strike close to the bend with a mallet (hide or rubber) to avoid marking
- Use a former or jig to check the angle is 90°
- Alternatively use a box folder, setting the bend line and raising the handle

No marks for: "Bend it"; Any reference to heating aluminium; Hitting directly with a steel hammer (dents the metal)

7 Describe two ways of making sure a good quality internal thread is produced.

- Drill the correct tapping-size hole first
- Use cutting compound to lubricate
- Keep the tap square/aligned to the hole
- Turn half a turn forward, quarter turn back to break the swarf
- Use the taper, second and plug taps in order

No marks for: "Tap the hole"; Checking with a screw afterwards