

Metal Lathe

Metal Lathe - Sample Piece - Level 1

You should expect this whole task to take up to 3 hours. The first part is to explain the operations you are going to do. Before the test starts write the steps down, in order, on the back of this piece of paper. The manual (`\\ephesus\tool\Metal Lathe\Metal Lathe.pdf`), will help with operation names. Include all the measurements, you may also find it useful to illustrate some details with sketches.



Figure 45: A Plumb bob

The goal of this test is to create an aluminium plumb bob. This consists of two parts, the body and the top.

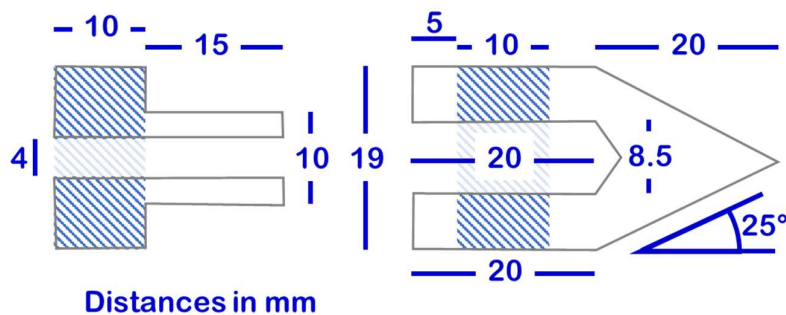


Figure 46: The measurements

The starting stock is 19mm diameter aluminium rod. The top will require a piece 25mm long (after facing) and the body will need to be 40mm in length. The following processes will need to be carried out: the ends must be faced; both pieces need to be knurled; the body needs to have a point; a 8.5 mm diameter hole needs to be drilled into the body for a depth of 20mm; the M10 tap will be used to add the thread into the body; the pieces must be parted; the top needs to be stepped down to a diameter of 10mm for a distance of 15mm; the M10 die will put a thread onto the top; and a 4 mm hole needs to be drilled through the top.

After you have completed those steps demonstrate that the lathe is correctly turned off, made safe and its switch is secured. If you want to make a similar piece in brass, the necessary stock can be purchased from the MakerSpace for £5.

