

Machine workshop practical

Session 1

Location

This work was carried out in the University of Wales Trinity Saint David Workshops.

Instructors- Tibot and Dave

Aims of the session

A piece of bright mild steel 115x76x6mm was given to each individual and had to carry out methods of measuring and use of machinery to meet the specifications and dimensions given by the supervisor.

Health and safety

Machine workshops are dangerous therefore safety around machinery must be taken seriously. Not wearing eye protection during workshop sessions for example when using the pillar drill swarf can get into the eye and can cause a lot of damage.

Limp accident are mainly caused by machinery either due entanglement of clothing when loading/unloading components, to avoid entanglement stay clear and tie up any loose clothing.

PPE

It is mandatory and against the workshop rules to not use safety boots with steel toe caps, dust coat and safety glasses.

Stepped profile task

Material used bright mild steel 155x76x6mm

Equipment needed;

- Files
- Centre punch
- Square
- Drills – centre drill, 5mm and 6mm
- Pillar drill
- Taps
- Grease

First needed to find which two sides will be best fit for the datum. To do this a square is used however, if no sides are square then would need to file or use the milling machine to make the two sides square.

Secondly, a digital height gauge is used to mark out 20, 40 and 65mm on the face. Then mark horizontally, 45, 80 and 110 mm across the face. Mark out the two relief holes with a 6mm drill holes and use a centre punch. And repeat with the two threaded holes of M6x1mm.

Pillar drill setup

The pillar drill is mounted on the work bench and allowing to drill the four holes. The pillar drill has two emergency stop buttons, one is located on top of the pillar drill and the other is by the operator's knee. And one button to activate the device. First of all the work piece must be clamped down to ensure the piece will not move allowing the operator to have accurate results. Once fitted the 6mm drill bit, the operator then is able to move the bed which the work piece will rest on. This allows all different shapes of materials to be drilled. For safety fit the screen in front of the drill and work piece. To ensure good results first line up the drill bit with the centre punch imprint, then reset and begin drilling.

End of session

It is important to clean up all the swarf and put tools back in their place. This is important for workshop safety because accidents can be caused by debris lying around. After each session it is essential to wash your hands.

I feel the first session went well learning to use the pillar drill and digital height measure.