

Week 3: Problem Solving Hand Skills (Metal Block) Exercise

What is it?

A hand skill exercise to reinforce the concept of using hand tools in an engineering environment in preparation for following an SOP and working in an engineering workplace.

Why do it?

This exercise helps engineering students practice effectively the skills they have developed and their ability to follow basic instructions to produce a set product.

Time Needed

30-40 minutes

Number of Participants

This exercise should be carried out as an individual.

Supplies Needed

- SOP - Standard Operating Procedure
- Visual Image of Block
- Metal Blocks
- Selection of Bolts
- Selection of Nuts
- Split pin
- Screw driver
- 4mm Allen Key
- Torque screwdriver
- Torque bits
- Pliers
- Spare tooling

Process Steps

All the bolded items are provided below.

1. Read the SOP and follow the instructions in the correct order.
2. Each student will produce a fully fitted block in the allocated time to the correct standard.
3. When the block is complete the learner will show it to the instructor. If it is not to the correct standard it will be returned to the learner.
4. After the exercise the students will strip the block and return the parts to the box along with any tooling used.

The Scenario

You are a newly recruited team member in an engineering company. You now have a number of hand skill tasks to complete before you can be put into your teams on the main production line. The metal block that you need to produce has been designed to use some of the tooling and parts you will use and see on a day-to-day basis on the shop floor. You will be given a SOP to follow and will be marked on your use of tools and equipment together with your ability to follow the steps correctly.

The Marking Worksheet

[illegible]

Achievement level

You must score at least 15 out of 20 to successfully complete the task.

The Scores

- 0-5 You must repeat the metal block assessment at a later date after more training.
- 5-10 You must complete the assessment again within five working days.
- 10-15 Borderline referred/pass more work is needed to follow instructions correctly.
- 15-20 Congratulations, you have successfully passed this skills test and can move onto the next test.

Debrief

When all the scores are returned to the front of the class the students will be asked how they feel the exercise went and any results will be given to the students. If there are any retests to be done they will be informed of when they will be carried out. If students have been successful they will be given feedback on how they have done.

As a group they will be told why this is done and what can be expected from them moving forward in their training.