v.certs

External Assessment

NCFE Level 2 Certificate in Engineering Studies (601/4532/8)

Unit 02 Introduction to engineering drawing (L/506/3766)

Paper number: P000348

Assessment window: 29 February 2016 – 11 March 2016

Task 2

Centre number		**Learner number**	
Surname			
Other names			

Learner declaration:
I confirm that the work contained in this external assessment is all my own work.
I have not copied work from anyone else.
I have not copied work directly from handouts/internet/textbooks or any other publication.
If I have used a quote, then I have referenced this appropriately.

Learner's signature: ..... **Date:** .....

Grade achieved To be completed by the Examiner	

ncfe.

Time allowed:
2 hours to complete Task 2.

Instructions for learners

- Complete your personal details on the first page
- You have 2 hours to complete Task 2 part A and part B
- Write your responses to the tasks in the spaces provided. If you need more space you may use extra paper. Make sure that any extra paper is labelled clearly with your name, centre number and learner number and is securely attached to the appropriate answer booklet
- If you write your answers using a word processor, you must make sure that any printouts are labelled clearly with your name, centre number and learner number and are securely attached to the appropriate answer booklet
- If you write your answers using a word processor, you must make sure that you clearly record the relevant task along with your answer to ensure that the Examiner is able to grade it
- You MUST attempt all of the questions to address all assessment criteria fully. You cannot achieve a pass grade unless you meet the required standard in all the questions
- Your 2D drawing completed for Task 2 may be hand drawn or produced using a computer. If you produce your drawings on a computer, you should print out a hard copy. You should submit the hard copy only
- Your drawing must be clearly identified with your name, your centre number and your learner number. These should be written on the **back** of your drawing
- All of the work you submit must be your own
- You must sign the learner declaration on the front page of this assessment paper to declare that the work produced is your own.
- At the end of the assessment hand all documents over to your Invigilator.

Guidance for learners

- Make sure you're familiar with the assessment criteria and grading descriptors for this unit. These are included at the end of this external assessment. If you're aiming for a Merit or Distinction it's particularly important that you're familiar with what these grades require, as you work through Task 2
- Read Task 2 carefully and make sure that you understand:
  - what you need to do to complete Task 2 in full
  - what you need to submit

Resources

- You may use all of the material given within the external assessment paper but no other resources should be taken into the examination room
- You're not allowed to use the internet during the external assessment
- All the evidence you submit must be your own work
- Make sure that all your work is clearly identified with your name, centre number and learner number.

This is a list of the equipment you will need for this external assessment

Essential:

- 2H and 4H pencils
- A3/A4 blank paper
- ruler
- set square/T-square
- compass
- protractor
- eraser

Optional (this list is not exhaustive)**:**

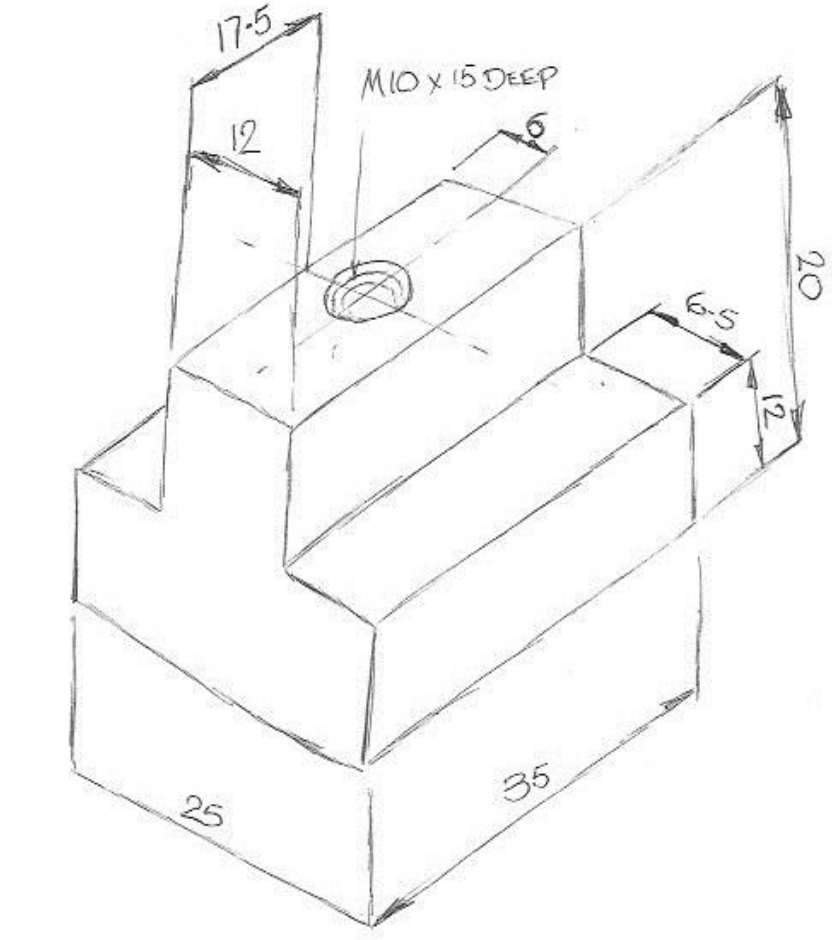
- drawing board
- clutch pencil
- templates
- French curves
- CAD software.

Scenario

You work for a machining company. It produces components using a range of machining equipment such as lathes and milling machines.

The Workshop Supervisor requires some replacement “T slot nuts” for the milling machines. You have been given a sketch which you are to use to produce engineering drawings. The T slot nuts can then be manufactured within the machining company.

The hand drawn sketch you have been given is shown below.



T. SLOT CLAMP NUT
MATERIAL – MILD STEEL
ALL DIMENSIONS IN MILLIMETRES

Task 2

You must ensure your work in Task 2 addresses assessment criteria 1.3, 2.1, 2.2, 2.3 and 2.4. You can refer to the assessment criteria within the grading descriptors at the end of this document.

Look at the sketch on page 4.

Your task is to produce a **2D** drawing which will be used to make the T slot nut. The drawing must be:

- 2D
- correctly laid out on A4 or A3 paper
- drawn to scale. You should choose the scale you think is most appropriate
- drawn using appropriate drawing tools and equipment. You can decide whether to draw by hand or use a computer

Part A
As you plan your work, answer the following questions.

1. Which paper size will you use? Give your reasons.

……

……

……

……

……

……

2. What scale will you use? Give your reasons.

……

……

……

……

……

……

3. How will you decide on the positioning of the component on your paper?

……

……

……

……

……

……

4. Apart from the T slot nut itself, what layout features and other information should you include on your drawing paper?

……

……

……

……

……

……

5. Will you use a computer or draw by hand? What are the advantages and disadvantages of using a computer or hand drawing for producing an engineering drawing?

……

……

……

……

……

……

Part B

Now produce your 2D drawing for Task 2.

If you produce your drawing on a computer, it should be printed out and submitted as a **hard copy only**.

Assessment criteria

The assessment criteria 1.3, 2.1, 2.2, 2.3 and 2.4 are detailed below. If you're aiming for a Merit or Distinction it's particularly important that you're familiar with what these grades require, as you work through the tasks.

Assessment criteria	Pass	Merit	Distinction
1.3 Describe the purpose of scale and proportion in engineering drawing	Learners will describe the purpose of scale and proportion in engineering drawing	Learners will coherently describe the purpose of scale and proportion in engineering drawing	Learners will describe the purpose of scale and proportion in engineering drawing showing critical judgement
2.1 Demonstrate the correct layout of a design sheet for 2D and 3D engineering drawings	Learners will demonstrate the correct layout of a basic design sheet for 2D and 3D engineering drawings	Learners will demonstrate the correct layout of a detailed design sheet for 2D and 3D engineering drawings	Learners will skilfully demonstrate the correct layout of a sophisticated design sheet for 2D and 3D engineering drawings
2.2 Apply appropriate scales to all drawings	Learners will apply appropriate scales to all drawings	Learners will apply appropriate and realistic scales to all drawings	Learners will skilfully apply appropriate and realistic scales to all drawings
2.3 Demonstrate the accurate use of drawing tools and equipment	Learners will demonstrate the accurate use of drawing tools and equipment	Learners will demonstrate the accurate use of drawing tools and equipment showing experimentation	Learners will skilfully demonstrate the accurate use of drawing tools and equipment showing experimentation
2.4 Present their final 2D and 3D engineering drawings showing evidence of the process involved in its production	Learners will present their final 2D and 3D engineering drawings showing evidence of the process involved in its production	Learners will present their final 2D and 3D engineering drawings showing evidence of the process involved in its production, justifying their choices	Learners will present their final 2D and 3D engineering drawings showing evidence of the process involved in its production showing critical judgement

What you need to hand in after your external assessment

At the end of the timed external assessment you'll hand in the following work to your Invigilator:

- this external assessment paper
- any extra paper you have used and securely attached
- your 2D drawing.

Make sure

- that all your work, including any extra paper, is clearly identified with your name, your centre number and your learner number
- sure you've signed the learner declaration on the front page of this external assessment paper.

Any remaining time left can be spent checking your responses to Task 2.

This is the end of the assessment.