

BTEC Nationals

IVA – LEARNER INSTRUCTIONS

Edexcel Level 3 BTEC National Award

Engineering

Unit 1 - Communications for Technicians

**IMPORTANT: THIS SECOND EDITION REPLACES THE
LEARNER INSTRUCTIONS THAT WERE POSTED ON THE
WEBSITE AT THE START OF JULY. PLEASE DESTROY
PREVIOUS VERSION**

Issued June 2004 – Second Version

For use during the remainder of the duration of operation
of the specification issued January 2003 and
amendments published on Edexcel website June 2004

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INSTRUCTIONS FOR LEARNERS COMPLETING IVAs

1. The Integrated Vocational Assignment (IVA) is a compulsory part of your qualification. If you do not complete the IVA you may not receive your certificate.
2. Your tutor(s) will tell you how long you have to complete the IVA and the access you may have to resources.
3. Read the IVA carefully and make sure that you understand the work you should hand in and what is required of you. If you are uncertain, discuss it with your tutor(s).
4. The IVA requires you to work by yourself and to produce original work. You should not share your work with any other learners. For example, if you produce an illustration or diagram electronically, you should not give it to another learner. Similarly, you should not accept and use such information from others. You are required to sign that the work submitted is your own.
5. If you work in a group at any stage, you must present your own responses to each task for assessment.
6. Information taken from sources for research, e.g. internet and textbooks, must be identified and not presented as your own work. You should list the sources used.
7. Some tasks may require Observation Records/Witness Statements. Your tutor(s) will organise for these to be completed and you must attach these to your submitted work.
8. In presenting your final work, you should not include draft work or reference materials such as handouts, notes and leaflets, unless the tasks specifically ask you to do so.
9. Presentation of your work:
 - Check that you have completed all tasks.
 - Label work with the appropriate task/sub task number.
 - Present tasks in the correct order.
 - Label each page with your name and page number.
 - Submit all electronic materials in paper format
 - Clearly label video or audio tapes submitted as part of your assignment.
 - All papers should be securely bound.
 - The completed IVA should NOT be presented in plastic envelopes, a box file or a lever arch file.

YOUR ASSIGNMENT TASKS

Scenario

Fixings are simple, but essential components of engineering equipment. In this assignment you will be asked to consider drawings, and then to create a drawing, use ICT and other resources to research your recommendations for appropriate materials, and then present your findings and evaluate ICT communication methods suitable for this purpose.

Task 1

Look at the attached component drawing entitled 'Sealing Washer for Keel Bolts'

- a) Explain why there are letters and numbers printed in the border.
- b) State the overall dimensions of the component.
- c) State the meaning of the broken lines.
- d) State the purpose of the line which runs through the middle of both views of the component.
- e) Produce an isometric sketch of the component on A4 paper.

Assessment Criteria covered by this task:

Unit 1: P1 (part) , P2 (part)

Task 2

For this task you should use the 'Pictorial View of Keel Nut' drawing.

- a) Using a suitable drawing package, produce a fully dimensioned third angle engineering drawing of the fixing. Incorporate into your drawing a sectioned view of the component. Your drawing should be drawn in accordance with BS8888:2002.
- b) Explain the advantages and disadvantages of using scaled third angle drawings and freehand sketches for communicating information about engineering components.
- c) List alternative methods for communicating details of the component in task 2A for manufacture.
- d) Select the most appropriate method, justifying your choice and giving reasons for not using the alternatives.

(Note: details of the keel nut are provided on the 'Pictorial View of Keel Nut' drawing)

Assessment Criteria covered by this task:

Unit 1: P1 (part), P2 (part), P3, M1 (part), M3, D1

Task 3

The drawing entitled 'Sealing Washer for Keel Bolts' states that the washer is required to be made from a "good quality rubber". It also quotes an obsolete reference to a specific material "DTD 625".

- a) Investigate a range of suitable materials from which the component could be made. You should use at least 3 different sources of information, for example, electronic (Internet, CD-ROM), paper based and 'expert' recommendation. Identify what information you found from each source. Outline the differences between the suggested materials and the reason for your choices, including their appropriateness for making the component. Produce this information as a set of informal notes, including references to your sources.
- b) Select two suitable materials, and justify your preference for the one most suitable material by comparing it with the alternative. Present these results to your supervisor/assessor:
 - (i) informally in writing, and verbally, including the notes produced in task 3A
 - (ii) formally using an appropriate form of ICT
- c) Produce a written evaluation of your presentation. Include an evaluation of your use of the software packages.
- d) Identify alternative presentation methods you could have used.

Assessment Criteria covered by this task:

Unit 1: P4, P5, P6, M1 (part), M2, D2

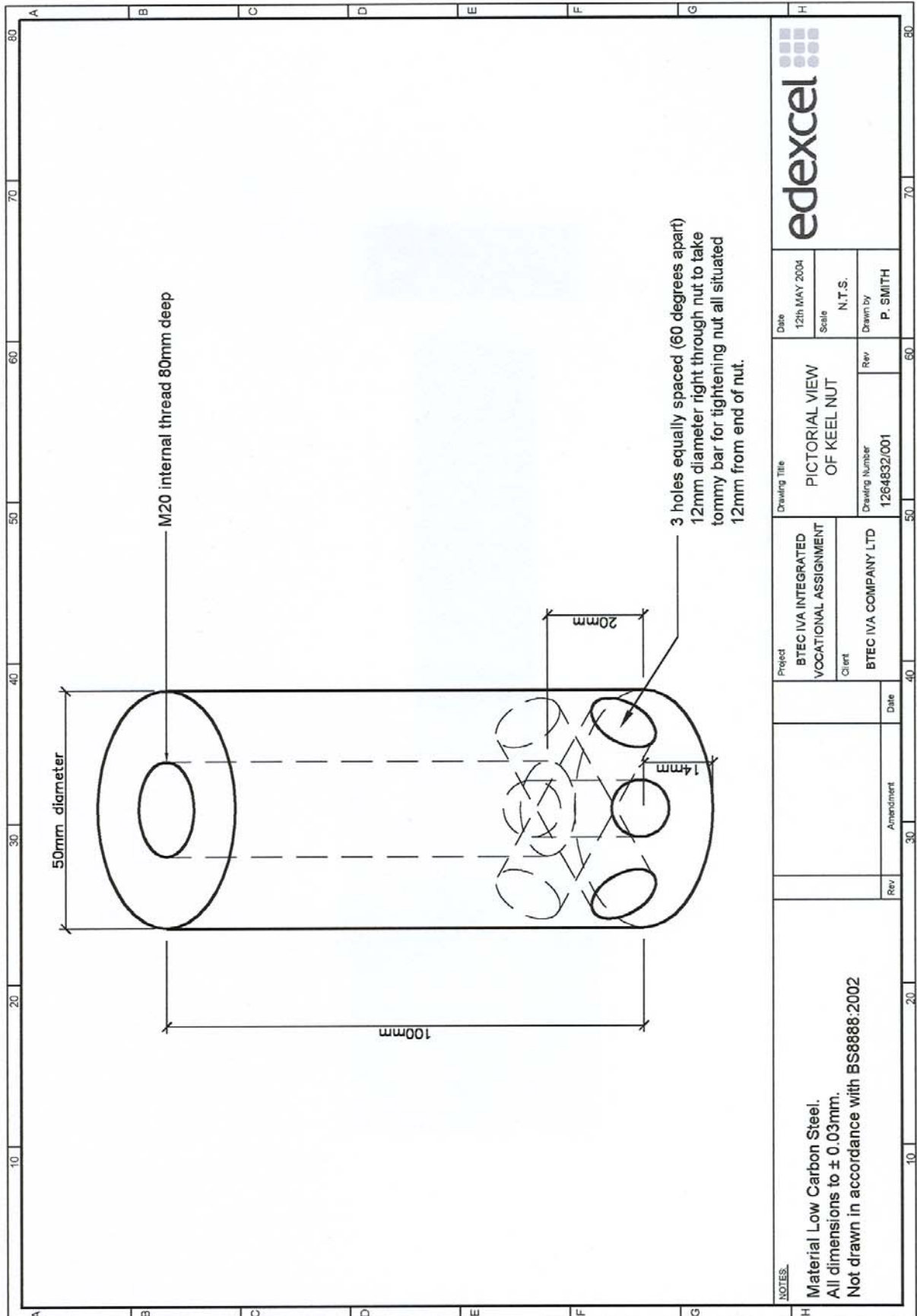
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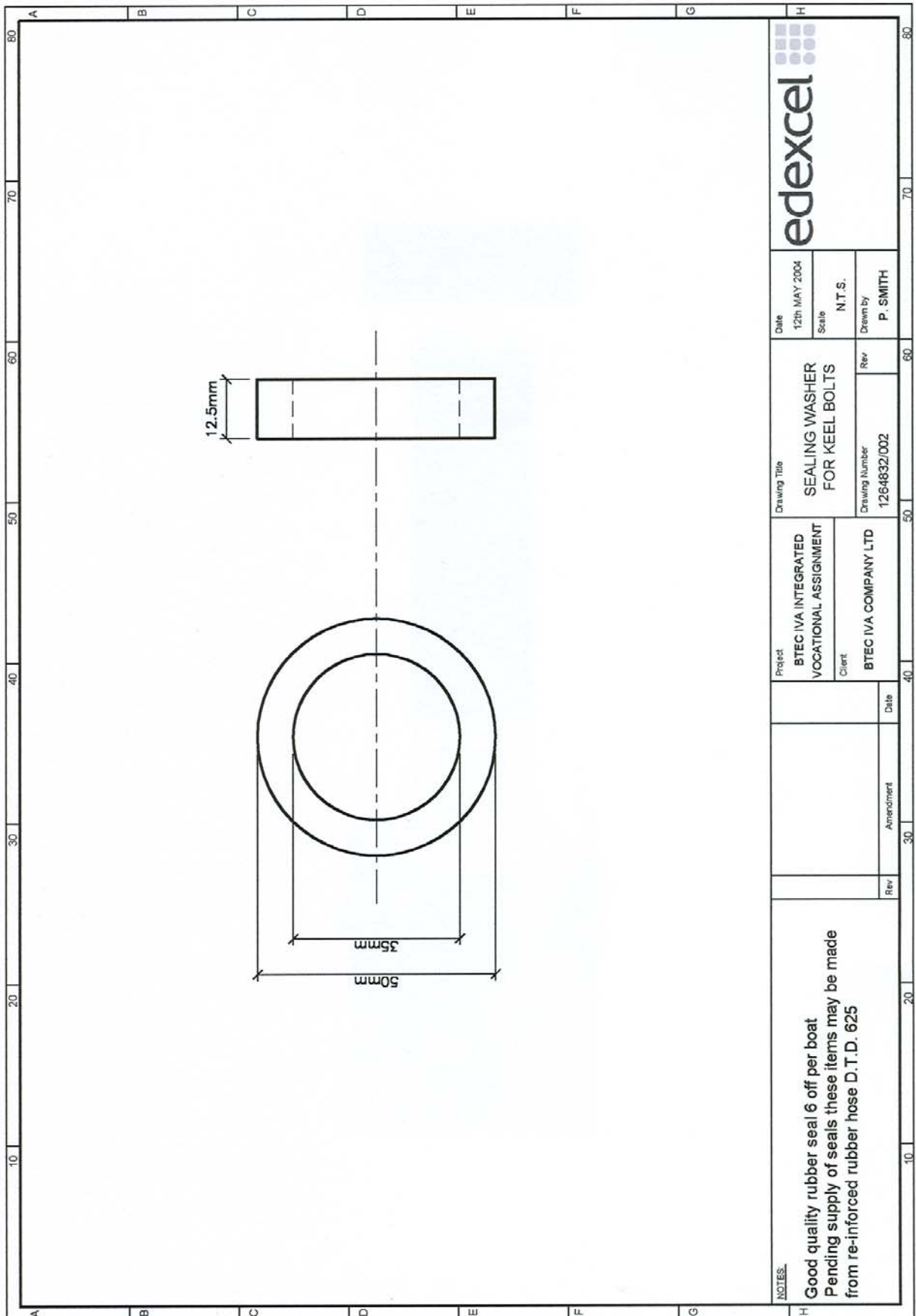
ASSESSMENT CRITERIA MAPPING

Criteria	Task 1	Task 2	Task 3
P1	✓*	✓*	
P2	✓*	✓*	
P3		✓	
P4			✓
P5			✓
P6			✓
M1		✓*	✓*
M2			✓
M3		✓	
D1		✓	
D2			✓

✓* – denotes part criteria



Appendix 2



NOTES: Good quality rubber seal 6 off per boat Pending supply of seals these items may be made from re-inforced rubber hose D.T.D. 625		Project BTEC IVA INTEGRATED VOCATIONAL ASSIGNMENT	Drawing Title SEALING WASHER FOR KEEL BOLTS	Date 12th MAY 2004	
Client BTEC IVA COMPANY LTD	Drawing Number 1264832/002	Scale N.T.S.	Drawn by P. SMITH		
Rev Amendment Date	Rev Amendment Date	Rev Amendment Date	Rev Amendment Date	Rev Amendment Date	Rev Amendment Date

ASSESSMENT CRITERIA

For ease of reference, the assessment criteria from the unit specifications that are relevant to assessing and grading this IVA are repeated below. You should refer to the full unit specification for information on unit content.

Assessment Evidence Unit

Unit 1: Communications for Technicians		
To achieve a pass grade the evidence must show that the learner is able to:	To achieve a merit grade the evidence must show that the learner is able to:	To achieve a distinction grade the evidence must show that the learner is able to:
<ul style="list-style-type: none"> • interpret simple engineering drawings/circuit diagrams and sketches • produce simple engineering drawings/diagrams and sketches • identify and use appropriate standards, symbols, and conventions in the production of engineering drawings • communicate information effectively in written work and through verbal methods • identify and use appropriate information sources to solve simple engineering tasks • select and use appropriate information and communication technology to present information. 	<ul style="list-style-type: none"> • evaluate the communication methods used and identify alternative approaches • analyse the data obtained from a range of sources and validate choice • present information concisely and coherently to standards used in industry. 	<ul style="list-style-type: none"> • justify their choice of communication methods and the reasons for not using the possible alternatives • critically evaluate their use of information and communication technology and identify alternative approaches.