

071506T4MTM

MECHANICAL TECHNOLOGY AND MAINTENANCE TECHNICIAN LEVEL 6

ENG/OS/MEM/CR/04/06

Perform Lathe Operations

July/Aug 2025.



**TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION
COUNCIL (TVET CDACC)**

PRACTICAL ASSESSMENT

INSTRUCTIONS TO ASSESSOR

1. You are required to guide the candidate on duration of this assessment as per the department's practical assessment schedule for this unit as the assessment is to be done continuously during training.
2. Assess the candidate as the practical progresses observing the critical areas
3. You are required to mark practical as the candidate perform tasks
4. You are required to take videos clips at critical points
5. Ensure the candidate has a name tag and registration code at the back and front

OBSERVATION AND PRODUCT CHECKLIST

Candidate's name			
Registration No.			
Assessor's name			
Registration code			
Unit(s) of Competency			
Items to be evaluated: <i>Please award marks as appropriate. Give a brief comment on your observation.</i>	Marks allocated	Marks obtained	Comments
Exercise 1			
TASK 1: PRODUCE MAIN SHAFT AS PER WORKING DRAWING			
OBSERVATION CHECKLIST			
1. Adhered to safety precautions and regulations. Wore personal protective gear <ul style="list-style-type: none"> • Safety boot • Overall/dustcoat • Safety goggles <i>(Award marks as indicated or zero)</i>	1 1 1		
2. Developed an operation procedure sheet as shown in appendix 2 in the assessor's guide. <i>(Award 1 mark for each tool identified and 1 mark for each operation)</i>	14		
3. Selected the tools and equipment for the operations to be carried out as per the prepared procedure sheet. <i>(Award marks as indicated or zero)</i>	2		
4. Measured and marked out dimensions on the work piece as per the operation plan <i>(Award marks as indicated or zero)</i>	2		
5. Mounted the work piece <ul style="list-style-type: none"> • Properly secured the work piece • Observed true running of work piece <i>(Award marks as indicated or zero)</i>	2 2		

6. Mounted cutting tool securely <ul style="list-style-type: none"> • selected tools as per the operation plan. • Aligned tool with the work piece. (Award marks as indicated or zero)	2 2		
7. Inspected and filled in the candidate's inspection checklist appendix 1 on the candidate tool. <i>(Award 1 mark for correctly measured dimensions)</i>	9		
Sub total 1	38		
PRODUCT CHECKLIST			
Items to be evaluated: <i>Please award marks appropriately. Give a brief comment on your observation</i> Note: All dimensions are in mm Tolerance ± 0.02 ALL chamfers: C2\times 45$^\circ$	Marks Available	Marks Obtained	
8. Linear dimensions <ul style="list-style-type: none"> • 15 • 35 • 20 • 5 • 15 <i>(Award 2 marks for each correct dimension or zero)</i>	2 2 2 2 2		
9. Diameters <ul style="list-style-type: none"> • 22 • 15 • 12 • 6 <i>(Award 2 marks for each correct dimension or zero)</i>	2 2 2 2		
10. Quality of knurling <ul style="list-style-type: none"> • Uniformity of knurls • No tool mark on knurled surface 	2 2		

<i>(Award 2 marks for each correct knurl or zero)</i>			
11. Finished surface			
<ul style="list-style-type: none"> No clamping marks on the surface of the workpiece 	1		
<ul style="list-style-type: none"> No tool marks on the surface of the workpiece 	1		
<i>(Award 1 mark for each correct dimension or zero)</i>			
Sub Total 2	24		
HOUSE KEEPING			
12. Carried out house keeping			
i. Organized the equipment and materials correctly.	1		
ii. Correct disposal of waste	1		
iii. Cleaned the working area	1		
iv. Returned the tools and equipment	1		
<i>(Award marks as indicated or zero)</i>			
Sub Total 3	4		
TASK 2: PRODUCE PART 1 AS PER THE WORKING DRAWING			
OBSERVATION CHECKLIST			
13. Adhered to safety precautions and regulations.			
Wore personal protective gear			
<ul style="list-style-type: none"> Safety boot 	1		
<ul style="list-style-type: none"> Overall/dustcoat 	1		
<ul style="list-style-type: none"> Safety goggles 	1		
<i>(Award marks as indicated or zero)</i>			
14. Developed an operation procedure sheet as shown in appendix 2 in the assessor's guide.			
<i>(Award $\frac{1}{2}$ mark for each tool identified and $\frac{1}{2}$ mark for each operation)</i>	9		
15. Selected the tools and equipment for the operations to be carried out as per the prepared procedure			

sheet. <i>(Award marks as indicated or zero)</i>	2		
16. Measured and marked out dimensions on the work piece as per the operation plan <i>(Award marks as indicated or zero)</i>	2		
17. Mounted the work piece <ul style="list-style-type: none"> • Properly secured the work piece • Observed true running of tool/work <i>(Award marks as indicated or zero)</i>	2 2		
18. Mounted cutting tool securely <ul style="list-style-type: none"> • selected tools as per the operation plan. • Aligned tool with the work piece. <i>(Award marks as indicated or zero)</i>	2 2		
19. Inspected and filled in the candidate's inspection checklist appendix 1 on the candidate tool. <i>(Award 1 mark for correctly measured dimensions)</i>	5		
Subtotal 1	29		
PRODUCT CHECKLIST			
Performed machine operations as per the operation plan. All dimensions are in mm Tolerance ± 0.02	Marks Available	Marks Obtained	Comment
20. Diameter dimensions <ul style="list-style-type: none"> • 48 • 40 <i>(Award Marks as indicated or zero)</i>	3 3		
21. Linear dimensions <ul style="list-style-type: none"> • 20 x 2 • 5 <i>(Award Marks as indicated or zero)</i>	2 2		
22. Quality of square threads M20 x 4			

<ul style="list-style-type: none"> No tool markings 	2		
<ul style="list-style-type: none"> Uniform thread profile <p><i>(Award Marks as indicated or zero)</i></p>	2		
23. Quality of taper			
<ul style="list-style-type: none"> Uniform decrease of diameter 	2		
<ul style="list-style-type: none"> No tool marks <p><i>(Award Marks as indicated or zero)</i></p>	2		
24. Quality of radius			
<ul style="list-style-type: none"> Uniform radiused profile R3 mm 	2		
<ul style="list-style-type: none"> No tool markings <p><i>(Award Marks as indicated or zero)</i></p>	2		
Subtotal 2	22		
HOUSE KEEPING			
25. Carried out house keeping			
v. Organized the equipment and materials correctly.	1		
vi. Correct disposal of waste	1		
vii. Cleaned the working area	1		
viii. Returned the tools and equipment	1		
<i>(Award marks as indicated or zero)</i>			
Subtotal 3	4		
TASK 3: PRODUCE PART 2 AS PER THE WORKING DRAWING			
OBSERVATION CHECKLIST			
26. Adhered to safety precautions and regulations.			
Wore personal protective gear			
<ul style="list-style-type: none"> Safety boot 	1		
<ul style="list-style-type: none"> Overall/dustcoat 	1		
<ul style="list-style-type: none"> Safety goggles <p><i>(Award marks as indicated or zero)</i></p>	1		

27. Developed an operation procedure sheet as shown in appendix 2 in the assessor's guide. <i>(Award $\frac{1}{2}$ mark for each tool identified and $\frac{1}{2}$ mark for each operation)</i>	10		
28. Selected the tools and equipment for the operations to be carried out as per the prepared procedure sheet. <i>(Award marks as indicated or zero)</i>	2		
29. Measured and marked out dimensions on the work piece as per the operation plan <i>(Award marks as indicated or zero)</i>	2		
30. Mounted the work piece <ul style="list-style-type: none"> • Properly secured the work piece • Observed true running of work <i>(Award marks as indicated or zero)</i>	2 2		
31. Mounted cutting tool securely <ul style="list-style-type: none"> • selected tools as per the operation plan. • Aligned tool with the work piece. <i>(Award marks as indicated or zero)</i>	2 2		
32. Inspected and filled in the candidate's inspection checklist appendix 1 on the candidate tool. <i>(Award 1 mark for correctly measured dimensions)</i>	4		
Subtotal	29		
PRODUCT CHECKLIST			
33. Linear dimensions <ul style="list-style-type: none"> • 66 • 16 • 15 <i>(Award marks as indicated or zero)</i>	2 2 2		
34. Quality of taper			

<ul style="list-style-type: none"> • Uniform decrease of diameter • No tool marks <p><i>(Award marks as indicated or zero)</i></p>	2 2		
<p>35. Quality of square threads M20 × 4</p> <ul style="list-style-type: none"> • No tool markings • Uniform thread profile <p><i>(Award marks as indicated or zero)</i></p>	2 2		
<p>36. Quality of knurl</p> <ul style="list-style-type: none"> • No tool markings/clamp marks • Uniformly raised knurled profile <p><i>(Award marks as indicated or zero)</i></p>	2 2		
<p>37. Quality of chamfer C2× 45°</p> <ul style="list-style-type: none"> • 6× 1 <p><i>(Award marks as indicated or zero)</i></p>	2		
<p>38. Assembled the components</p> <ul style="list-style-type: none"> • Fitting part No.2 to part No.1 • Overall linear measurement <ul style="list-style-type: none"> ○ 81 • Proportionality <p><i>(Award marks as indicated or zero)</i></p>	2 2 2		
Sub total	26		
HOUSEKEEPING			
<p>39. Carried out house keeping</p> <ul style="list-style-type: none"> • Organized the equipment and materials correctly. • Correct disposal of waste • Cleaned the working area • Returned the tools and equipment <p><i>(Award marks as indicated or zero)</i></p>	1 1 1 1		
Sub total	4		

GRAND TOTAL	180		
$\frac{X}{180} \times 100$			
ASSESSMENT OUTCOMES			
<p>The candidate was found to be:</p> <p style="text-align: center;">Competent <input type="checkbox"/> Not yet competent <input type="checkbox"/></p> <p><i>(Please tick as appropriate)</i></p> <p>40. <i>(The candidate is competent if s/he gets 50% or higher)</i></p>			
Feedback from candidate:			
Feedback to candidate:			
Candidate's signature:	Date:		
Assessor's signature:	Date:		

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Appendix 1**Operation procedure sheet for Exercise 1**

No	OPERATION	TOOL
1.	Facing	Facing tool
2.	Parallel Turning	Turning tool
3.	Knurling	Knurling tool
4.	Drilling	Drilling bits
5.	Boring	Boring tool
6.	Grooving	Grooving tool
7.	Chamfering	Chamfering tool

Appendix 2**Operation procedure sheet for Exercise 2: Part 1**

No.	Operation Description	Tools and equipment required
1.	Facing	Facing tool
2.	Turning	Turning tool
3.	Grooving	Parting tool
4.	Drilling	Drill bit
5.	Boring	Boring tool
6.	Threading	Thread cutting tool
7.	Step Turning	Turning tool
8.	Taper turning	Turning tool
9.	Chamfering	Turning tool

Appendix 3**Operation procedure sheet for Exercise 2: Part 2**

No.	Operation Description	Tools and equipment required
1.	Facing	Facing tool
2.	Turning	Turning tool

3.	Drilling	Drill bit
4.	Boring	Boring tool
5.	Threading	Thread cutting tool
6.	Step Turning	Turning tool
7.	Taper turning	Turning tool
8.	knurling	knurling tool
9.	Chamfering	Turning tool
10.	Knurling	Knurling tool

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