

PERFORM LATHE OPERATIONS

UNIT CODE : 0715 351 03A

TVET CDACC UNIT CODE: ENG/OS/MMO/CR/03/4/MA

UNIT DESCRIPTION

This unit describes the competencies required by a Mechanical Production Technician in order to perform lathe operations. It includes interpreting working drawings, setting work piece and tool(s) on lathe machine, setting up lathe machine, performing lathe machine operations and carrying out lathe maintenance.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
These describe the key outcomes which make up workplace functions	These are assessable statements which specify the required level of performance for each of the elements <i>(Bold and italicized terms are elaborated in the range)</i>
1. Interpret working drawings	1.1 Job card is signed for and interpreted 1.2 Working drawing is interpreted as per drawing standards 1.3 Work plan is prepared as per the working drawing 1.4 Materials are selected as per work plan 1.5 Tools are identified and selected as per work plan 1.6 Accessories are identified and selected as per work plan
2. Set work piece and tool(s) on lathe machine	2.1 Work piece is mounted as per task requirements 2.2 Tools are prepared as per set standards 2.3 Tools and accessories are mounted as per task requirements 2.4 True running of work piece is checked
3. Set up lathe machine	3.1 Speeds and feeds are selected as per manufacturer's specifications 3.2 Cutting fluid is identified as per task requirements 3.3 <i>Mode of operation</i> is identified as per task requirements

4. Perform <i>lathe machine operations</i>	4.1 Safety is observed as per OSHA standards 4.2 Housekeeping is observed as per workplace regulations 4.3 Trial test is performed 4.4 Machining is carried out as per task requirements 4.5 Dimensions are checked and adjusted as per task specifications 4.6 Quality of surface finish is checked as per product specifications
5. Carry out lathe maintenance	5.1 Maintenance requirements are identified as per workplace procedures 5.2 Preventive maintenance is carried out as per machine manual 5.3 Corrective maintenance is carried out as per machine manual

RANGE

This section provides work environment and conditions to which the performance criteria apply. It allows for different work environment and situations that will affect performance.

Variable	Range
1. <i>Mode of operation</i>	• Semi-Automatic • Manual
2. <i>Lathe machine operations</i>	May include but not limited to; • Turning • Drilling • Facing • Chamfering • Threading • Parting • Knurling • Boring • Forming

REQUIRED KNOWLEDGE AND SKILLS

This section describes the knowledge and skills required for this unit of competency.

Required knowledge

The individual needs to demonstrate knowledge of:

- OSHA and WIBA 2007
- Hand tools
- Marking out, measuring and cutting tools
- Repair and maintenance
- Job card and drawing Interpretation

Required skills

The individual needs to demonstrate the following skills:

- Technical drawing skills
- Communication skills
- Problem solving skills
- Time management
- Numeracy skills
- Creativity
- Organizational skills

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills range.

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Interpreted working drawing as per drawing standards 1.2 Selected materials as per task requirements 1.3 Identified and selected tool as per the working drawing 1.4 Identified and selected accessories per working drawing 1.5 Mounted work piece as per task requirements 1.6 Selected speeds and feeds as per manufacturer's specifications 1.7 Observed safety as per OSHA standards 1.8 Carried out machining as per task requirements
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	1.9 Checked and adjusted dimensions as per task requirements 1.10 Checked quality of surface finish as per products specifications
2. Resource implications	The following resources should be provided: 2.1 Appropriate working environment where assessment can take place 3.2 Resources relevant to the proposed activities or tasks
3. Methods of assessment	Competency in this unit may be assessed through: 3.1 Project work 3.2 Observation 3.3 Oral questioning 3.4 Portfolio of evidence 3.5 Third party report 3.6 Written tests
4. Context of assessment	Competency may be assessed in workplace or a simulated workplace environment.
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace job role is recommended.