

**Domain**  
**Title:**  
**Level:2**

**Unit ID: 1388**  
**REPAIRS AND MAINTENANCE**  
**Conduct blacksmithing techniques**

**Credits: 2**

**Purpose**

This unit standard specifies the competencies required to:

- Prepare for blacksmithing
- Conduct blacksmithing
- Complete blacksmithing operations.

This unit standard is intended for people who work in agriculture as well as people in other occupations that work with blacksmiths.

**Special Notes**

1. Entry information:

Prerequisites:

- None
2. This unit standard is to be delivered and assessed in the context of agricultural operations and can be assessed in conjunction with other relevant technical unit standards.
3. The evidence required to demonstrate competency in this unit must be relevant to workplace operations and achievement of the following:
- To demonstrate competence, at a minimum, evidence is required of hammering, bending, and cutting work pieces to requirements using blacksmith equipment.
  - Tasks should be performed ensuring correct identification of requirements and finishing of the tasks, correct selection and use of appropriate processes, tools and equipment and completing all work to specification.
4. Assessment evidence may be collected from a real workplace or an appropriate simulated environment in which agricultural operations are carried out.
5. All inspection, operation and maintenance procedures associated with the use of tools and equipment shall comply with manufacturers' guidelines and instructions.
6. Glossary of terms
- '*Blacksmith tools and equipment*' may include but is not limited to anvil, chisels, hacksaws, handsaws, hammers, mallets, measuring tapes, fullers, tongs, forges, vices, files, scribes, punches, wrenches, swages and workbench.
  - '*Workplace procedures*' may include but are not limited to work notes and plans, product labels, manufacturer's specifications, operator's manuals, workplace

- policies and procedures including, safety plans, waste disposal, recycling, reuse guidelines and supervisors oral or written instructions.
- '*Safety requirements*' may include but are not limited to safe systems and procedures for safe use of blacksmith tools, power tools and equipment, manual handling, hazard and risk control, the handling, application and storage of hazardous substances, outdoor work and the use of personal protective equipment.
- '*Hazards*' may include but are not limited to falling objects, noise, fumes, manual handling, hazardous substances, power tools (electricity), sharp tools, solar radiation, dusts tools and equipment, dusts, hazardous noise.
- '*Personal Protective Equipment (PPE)*' may include but is not limited to boots, rubber boots, hat, overalls, gloves, eye and hearing protection and sun protection.

7. Regulations and legislation relevant to this unit standard include the following:

- Labour Act, No. 11, 2007
- Regulations relating to the Health and Safety of employees at work, 1997
- Environmental Management Act-No: 7 of 2007
- Standards Act, 2005, Standards Regulations: Standards Act, 2005 and relevant Namibian Standards as established

and all subsequent amendments to any of the above.

### **Quality Assurance Requirements**

This unit standard and others within this subfield may be awarded by institutions which meet the accreditation requirements set by the Namibia Qualifications Authority and the Namibia Training Authority and which comply with the national assessment and moderation requirements. Details of specific accreditation requirements and the national assessment arrangements are available from the Namibia Qualifications Authority on [www.namqa.org](http://www.namqa.org) and the Namibia Training Authority on [www.nta.com.na](http://www.nta.com.na).

## **Elements and Performance Criteria**

### **Element 1. Prepare for blacksmithing**

#### **Performance Criteria**

- 1.1 Safety requirements are followed in accordance with safety plans and policies.
- 1.2 Identify and select blacksmith tools according to workplace procedures and job requirements.
- 1.3 Hazards are identified, risk assessed and suitable controls implemented prior to commencing of task.
- 1.4 Cutting instructions are determined using specifications and drawings.
- 1.5 Appropriate Material is cleaned, prepared and positioned using appropriate tools and techniques in accordance with workplace procedures.

- 1.6 Blacksmithing equipment is assembled, inspected and set up safely in accordance with standard operating and workplace procedures.
- 1.7 Blacksmithing requirements are identified from specifications and drawings.
- 1.8 Personal protective clothing and equipment is selected and inspected in accordance with standard operating procedures.
- 1.9 Blacksmithing settings are identified against predetermined specifications and procedures.

## **Element 2. Conduct blacksmithing**

### **Range**

Blacksmith tools may include but are not limited to spanners, wrenches, crow bars, picks, mattocks, shovels, bolt cutters, chisels, hacksaws, handsaws, hammers, mallets, measuring tapes, snips, pliers, sealant gun, spirit level, straight edge, soldering irons, files, scribes, pop riveters, punches.

Work pieces to be welded are limited to steel or wrought iron.

Safety clothing and personal protective equipment are to include cutting goggles, skull caps, leather aprons, leather gloves, leather spats, safety boots and overalls.

### **Performance Criteria**

- 2.1 Locate and hold material in position for blacksmith tool application.
- 2.2 Blacksmith tools are used safely and effectively according to their intended use.
- 2.3 Blacksmith tools are secured in a safe position when not in immediate use.
- 2.4 Appropriate personal safety clothing and personal protective equipment is used in accordance with standard operating procedures.
- 2.5 Start-up procedure is implemented in line with manufacturers' and workplace specifications.
- 2.6 Materials are welded to specifications and in line with job requirements and instructions.
- 2.7 Simple tools and implements are fabricated to specifications and in line with job requirements and instructions.
- 2.8 Equipment shut down procedure is implemented in line with manufacturers' and workplace specifications.

## **Element 3. Complete blacksmithing operations**

### **Performance Criteria**

- 3.1 An understanding of principles of maintenance of blacksmithing equipment is demonstrated.
- 3.2 Blacksmith tools are cleaned, maintained and securely stored according to workplace procedures.
- 3.3 Workshop is maintained as a clean and safe place according to workplace procedures.
- 3.4 Identified faults, defects and maintenance procedures are recorded in the workshop record in accordance with workplace procedures.
- 3.5 Tools used and what needs to be bought are recorded and reported according to workplace procedures.
- 3.6 Work is completed and appropriate personnel is notified in accordance with work site or workshop procedures.
- 3.7 Work area is cleared of waste, cleaned, restored and secured in accordance with worksite or workshop procedures.
- 3.8 Work completion details are finalised in accordance with worksite and workshop procedures.
- 3.9 Welded pieces are visually inspected for correctness and quality in accordance with specified method.
- 3.10 Records are completed and relevant information is documented and reported according to workplace procedures.

### **Registration Data**

<b>Subfield:</b>	Machinery and Equipment
<b>Date first registered:</b>	25 November 2015
<b>Date this version registered:</b>	25 November 2015
<b>Anticipated review:</b>	2020
<b>Body responsible for review:</b>	Namibia Training Authority