

Domain
Title:
Level: 3

CRANE OPERATION
Lift and place loads with tower crane

Unit ID: 1092

Credits: 20

Purpose

This unit standard is intended for those who carry out crane operations. People holding credit for this unit standard are able to: Plan and prepare for work; demonstrate knowledge of the functions of a tower crane; start and shutdown tower crane; operate tower crane; perform maintenance and authorised service operations on the tower crane; complete work related documents; and clean up work area.

Special Notes

1. Entry information:

Prerequisite

- Unit 1079 – *Comply with health, safety and environmental rules and regulations pertaining to crane operations.*

2. This unit standard refers to tower cranes with standardised fittings and a rated capacity of up to 50 Tons.

3. Expected worksite production target are to be met.

4. Assessment evidence may be collected from a real workplace or a simulated workplace in which crane operations are carried out.

5. Maintenance may include but is not limited to cleaning, authorised servicing and the monitoring, recording and reporting of faults. It may also include the conduct of authorised minor replacements and the provision of assistance to maintenance and repair activities.

6. Safe working practices include but are not limited to day-to-day observation of safety policies and procedures, and compliance with emergency procedures.

7. Performance of all elements in this unit standard must comply with all relevant legal and workplace requirements, contractual agreement and/or manufacturers' specifications.

8. Regulations and legislation, including subsequent amendments, relevant to this unit standard may include but are not limited to the following:

- Labour Act, No. 11 of 2007
- Regulations relating to the Health and Safety of employees at work, 1997
- Road Traffic and Transport Regulations No. 52, 1999 and Government Notice No 53 Road Traffic and Transport Regulations

and all industry specific regulations, legislations, code of practice, or code of conduct.

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 and the Namibia Training Authority. All approved unit standards, qualifications and national assessment arrangements are available on the Namibia Training Authority website www.nta.com.na.

Elements and Performance Criteria

Element 1: Plan and prepare for work

Range

Inspection and preparation of work area and equipment may include but is not limited to levelling ground; checking soil conditions; proximity of other machines and personnel; stability and suitability of crane; operational capability of lifting equipment such as correct safe working load of slings; and compliance with statutory regulations.

Performance Criteria

- 1.1 Work instructions, including plans, specifications, quality requirements and operational details are obtained, explained, clarified and applied to the allocated task.
- 1.2 Safety requirements, including personal protective clothing and equipment are obtained from the site safety plan, workplace policies and procedures, and applied to the allocated task.
- 1.3 Traffic control requirements are obtained and implemented according to workplace requirements.
- 1.4 Plant, tools, fuel, lubricants, equipment, attachments and accessories selected to carry out tasks are checked for consistency with the requirements of the job, their usability and any faults rectified or reported prior to commencement of work.
- 1.5 Environmental protection requirements are identified from the project environmental management plan and applied to the allocated task.
- 1.6 Work area and equipment is inspected and prepared according to workplace procedures.

Element 2: Demonstrate knowledge of the functions of a tower crane

Range

Major components may include but is not limited to chassis; tower and jib; counter weight; hoist; jib and cab; hoist and slew systems; brakes and transmission; trolley and hook block.

Performance Criteria

- 2.1 The main functions of tower cranes are explained in terms of manufacturer's specifications.
- 2.2 The operation of all major components is explained in terms of their functions.
- 2.3 Safety features and warning devices on the tower crane are identified, and their purposes explained in accordance with manufacturer's specifications.
- 2.4 The maximum operating capacities and efficiencies are explained in terms of the specific tower crane capabilities in accordance with manufacturer's specifications.
- 2.5 Warnings from tower crane indicators and gauges are explained according to manufacturer's specifications.
- 2.6 Corrective actions are described or demonstrated in terms of responses to warnings received.

Element 3: Start and shutdown tower crane

Range

Appropriate checklist may include but is not limited to manufacturer's checklist; pre-operational checklist; site-specific checklist; daily checklist; and weekly checklist.

Performance Criteria

- 3.1 Pre-operational checks are carried out according to appropriate checklist and workplace procedures.
- 3.2 Start-up and shutdown procedures are followed according to manufacturer's specifications.
- 3.3 Tower crane operation hours are recorded, if required, in accordance with workplace requirements.

Element 4: Operate tower crane

Performance Criteria

- 4.1 Functions of the various controls are demonstrated in accordance with manufacturer's specifications.
- 4.2 Temporary safety signs are explained in relation to their use and placement and are used as required.

- 4.3 Controls are used to efficiently lift and place loads within workplace requirements and manufacturer's specifications.
- 4.4 Tower crane performance is monitored and corrective action is taken when necessary, in accordance with manufacturer's specifications.

Element 5: Perform maintenance and authorised service operations on the tower crane

Performance Criteria

- 5.1 Daily and weekly operator maintenance is performed according to the appropriate post-operational checklist and recordkeeping using a logbook.
- 5.2 Tower crane maintenance and faults are reported in accordance with workplace requirements.

Element 6: Complete work related documents

Performance Criteria

- 6.1 Work related documents are completed in accordance with contract and workplace requirements.
- 6.2 Maintenance and service related documents are completed in accordance with manufacturer and workplace requirements.
- 6.3 Documents related to accidents or other incidents are completed in accordance with workplace requirements.

Element 7: Clean up work area

Performance Criteria

- 7.1 Work area is cleared and materials disposed of or recycled in accordance with project environment management plan.
- 7.2 Plant, tools and equipments are cleaned, checked, maintained, serviced and stored in accordance with manufacturers' recommendations and standard work practices.
- 7.3 Inspection, faultfinding, and reporting is carried out according to manufacturer's requirements and workplace procedures.

Registration Data

Subfield:	Lifting, shifting, securing loads
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Body responsible for review:	Namibia Training Authority