



Level 3 NVQ Diploma in Plant Installations – Tower Crane (Construction)

Qualification Specification

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Introduction

The ProQual Level 3 NVQ Diploma in Plant Installations – Tower Crane (Construction) qualification provides a nationally recognised qualification for those working in the construction and the built environment sector in the specialised area of tower cranes. It is designed to assess occupational competence in the workplace where candidates are required to demonstrate skills and knowledge to a level required in the construction industry.

The awarding body for this qualification is ProQual Awarding Body (www.proqualab.com) and the regulatory body is the Office of Qualifications and Examinations Regulation (Ofqual); It is also endorsed by the sector body for construction - CITB.

The qualification has been accredited onto the Regulated Qualifications Framework (RQF) and is published on Ofqual's Register of Qualifications.

Qualification Profile

Level 3 NVQ Diploma in Plant Installations – Tower Crane (Construction)

Qualification title	ProQual Level 3 NVQ Diploma in Plant Installations – Tower Crane (Construction)
Ofqual qualification number	603/0345/1
Level	3
Total Qualification Time	1800 hours (624 GLH)
Assessment	Pass or fail Internally assessed and verified by centre staff External quality assurance by ProQual verifiers
Qualification start date	29/08/16
Qualification end date	

Entry Requirements

There are no formal entry requirements for this qualification.

Centres should carry out an **initial assessment** of candidate skills and knowledge to identify any gaps and help plan the assessment.

Qualification Structure

To achieve the qualification candidates must complete the ten Mandatory units.

CITB references and credit values are provided in this document for information only.

Mandatory Units			<i>CITB reference provided for information only</i>
Unit Ref.	Title	Level	<i>CITB Internal Unit Ref.</i>
M/615/1896	Dismantling pre-installed tower cranes in the workplace	2	<i>P26B</i>
R/615/1891	Carrying out basic maintenance on installed plant and equipment in the workplace	2	<i>P27</i>
F/615/1983	Supervising and co-ordinating plant installation and dismantling activities in the workplace	3	<i>P28v2</i>
T/615/1897	Preparing and operating tower cranes during installation activities in the workplace	2	<i>384B</i>
A/508/6525	Slings and hand signalling the movement of suspended loads in the workplace	2	<i>402Av1</i>
M/508/6537	Conforming to general health, safety and welfare in the workplace	1	<i>641</i>
Y/508/6533	Moving, handling and storing resources in the workplace	2	<i>643</i>
D/615/1893	Inspecting plant or machinery for operational serviceability in the workplace	2	<i>663v2</i>
L/615/1887	Installing plant or machinery for operational activities in the workplace	3	<i>667</i>
D/615/1988	Configuring tower cranes for operation during installation activities in the workplace	3	<i>669B</i>

Additional Units

Candidates may complete any of the Additional Units but these will not count towards the qualification.

Mandatory Units			<i>CITB reference provided for information only</i>
Unit Ref.	Title	Level	<i>CITB Internal Unit Ref.</i>
H/615/1894	Diagnosing faults in plant or machinery systems or components in the workplace	3	<i>664</i>
Y/615/1987	Providing technical information, advice and guidance to users of plant or machinery in the workplace	3	<i>673</i>

Centre Requirements

Centres must be approved to offer this qualification. If your centre is not approved please complete and submit form **ProQual Additional Qualification Approval Application**.

Staff

Staff delivering this qualification must be appropriately qualified and/or occupationally competent.

Assessors/Internal Quality Assurance

Assessors for each unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy.

Assessors and internal quality assurance verifiers for competence-based units or qualifications will normally need to hold appropriate assessor or internal quality assurance qualifications.

Support for Candidates

Materials produced by centres to support candidates should:

- enable them to track their achievements as they progress through the learning outcomes and assessment criteria;
- provide information on where ProQual's policies and procedures can be viewed;
- provide a means of enabling Internal and External Quality Assurance staff to authenticate evidence

Links to National Standards / NOS mapping

National Occupational Standards (NOS) are owned by a Sector Skills Council or Standard Setting Body and they describe the skills, knowledge and understanding needed to undertake a particular task or job at different levels of competence.

The structure and units of this qualification are based on NOS for the construction sector developed by CITB.

Assessment

This qualification is competence-based, candidates must demonstrate the level of competence described in the units. Assessment is the process of measuring a candidate's skill, knowledge and understanding against the standards set in the qualification.

The qualifications must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment, and it must be internally assessed by an appropriately experienced and qualified assessor.

Each candidate is required to produce a portfolio of evidence which demonstrates their achievement of all of the learning outcomes and assessment criteria for each unit.

- Evidence can include:
- observation report by assessor
 - assignments/projects/reports
 - professional discussion
 - witness testimony
 - candidate product
 - worksheets
 - record of oral and written questioning
 - Recognition of Prior Learning

Learning outcomes set out what a candidate is expected to know, understand or be able to do.

Assessment criteria specify the standard a candidate must meet to show the learning outcome has been achieved.

Learning outcomes and assessment criteria can be found from page 8.

Additional information for assessment and requirements for unit **endorsements** where relevant is included after all of the learning outcomes and assessment criteria for each unit.

Internal Quality Assurance

An internal quality assurance verifier confirms that assessment decisions made in centres are made by competent and qualified assessors, that they are the result of sound and fair assessment practice and that they are recorded accurately and appropriately.

Adjustments to Assessment

Adjustments to standard assessment arrangements are made on the individual needs of candidates. ProQual's Reasonable Adjustments Policy and Special Consideration Policy sets out the steps to follow when implementing reasonable adjustments and special considerations and the service that ProQual provides for some of these arrangements.

Centres should contact ProQual for further information or queries about the contents of the policy.

Results Enquiries and Appeals

All enquiries relating to assessment or other decisions should be dealt with by centres, with reference to ProQual's Enquiries and Appeals Procedures.

Certification

Candidates who achieve the requirements for this qualification will be awarded:

- A certificate listing all units achieved, and
- A certificate giving the full qualification title -

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Claiming certificates

Centres may claim certificates for candidates who have been registered with ProQual and who have successfully achieved the qualification. All certificates will be issued to the centre for successful candidates.

Unit certificates

If a candidate does not achieve all of the units required for a qualification, the centre may claim a unit certificate for the candidate which will list all of the units achieved.

Replacement certificates

If a replacement certificate is required a request must be made to ProQual in writing. Replacement certificates are labelled as such and are only provided when the claim has been authenticated. Refer to the Fee Schedule for details of charges for replacement certificates.

Units – Learning Outcomes and Assessment Criteria

Title:	Dismantling pre-installed tower cranes in the workplace	
Unit Number:	M/615/1896	
Learning outcomes <i>The learner will be able to:</i>	Assessment criteria <i>The learner can:</i>	
1 Work safely at all times when dismantling installed tower cranes.	1.1	Comply with current health and safety legislation and other relevant regulations and guidelines applicable to the dismantling of installed tower cranes.
	1.2	Use personal protective equipment (PPE) relevant to tower crane dismantling activities.
	1.3	Describe health and safety legislation, regulations, safe working practices and procedures and company health and safety policies and workplace procedures that apply when dismantling installed tower cranes.
	1.4	State health and safety issues and describe reasons for possible injuries when dismantling installed tower cranes at height, in confined spaces and below ground level.
2 Carry out preparation activities in order to dismantle pre-installed tower cranes and/or components.	2.1	Identify and extract applicable information from relevant information sources when dismantling installed tower cranes.
	2.2	Establish and, where appropriate, mark components to aid re-assembly.
	2.3	Ensure that any stored energy or substances are released safely and correctly.
	2.4	Follow relevant dismantling instructions, disassembly drawings and any other relevant specifications to aid dismantling.
	2.5	Describe different sources of information and technical literature to aid the dismantling of tower cranes and/or components.
	2.6	Make all isolations and disconnections to installed tower cranes in line with approved procedures.
	2.7	Give reasons for the importance of dismantling installed tower cranes in the correct sequence and explain the possible consequences should procedures not be followed.

Units – Learning Outcomes and Assessment Criteria

Title:	Dismantling pre-installed tower cranes in the workplace	
Learning outcomes <i>The learner will be able to:</i>	Assessment criteria <i>The learner can:</i>	
3 Dismantle a range of relevant pre-installed tower cranes in the workplace following safe systems of work.	3.1	Carry out dismantling operations on installed tower cranes, relevant to the occupational area on sites and/or client's premises, whilst conforming to given level of responsibility.
	3.2	Disassemble installed tower cranes using correct tools and techniques and following clearly defined procedures.
	3.3	Describe the type or types of approved dismantling methods, techniques, procedures, and tools and equipment needed to dismantle installed tower cranes relevant to the occupational area.
	3.4	Take suitable precautions to prevent damage to components, tools and equipment during dismantling operations.
	3.5	Outline the safe manual handling methods, safe removal procedures of components, and safe use requirements of lifting equipment during dismantling operations on installed tower cranes.
	3.6	Describe ways of protecting tools, accessories and equipment when dismantling relevant installed tower cranes, how to use lifting equipment and lifting aids, and how to store and keep secure specialist tools and equipment.
	3.7	Describe the possible types of damage that can occur to tower cranes and their components, when dismantling installed units.
4 Segregate and sort parts and components from dismantled tower cranes for disposal and/or reuse.	4.1	Label and store parts, components and sub-assemblies from dismantled tower cranes for reuse in approved locations.
	4.2	Discard unwanted dismantled components, parts, sub-assemblies or substances in accordance with approved procedures.
	4.3	State the organisational instructions and procedures for dealing with damages and defects, and the disposing of hazardous and non-hazardous waste substances.
5 Comply with organisational communication procedures when dismantling installed tower cranes.	5.1	Demonstrate dealing promptly and effectively with problems within given control and report those that cannot be solved to other designated personnel.
	5.2	State the organisations reporting lines and procedures associated with the dismantling of installed tower cranes.

Units – Learning Outcomes and Assessment Criteria

Title:	Dismantling pre-installed tower cranes in the workplace
Additional information about this unit	
Assessment Guidance	<p>This unit must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment.</p> <p>Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy.</p> <p>Workplace evidence of skills cannot be simulated.</p> <p>This unit must be assessed against the endorsements detailed within the relevant NVQ Structure.</p> <p><u>ProQual Level 3 NVQ Diploma in Plant Installations – Tower Crane (Construction):</u></p> <p>One of the following endorsements required:</p> <p>Tower crane – self erect Tower crane – assisted erect</p>
Sector subject area	05.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	27

Units – Learning Outcomes and Assessment Criteria

Title:	Carrying out basic maintenance on installed plant and equipment in the workplace	
Unit Number:	R/615/1891	
Learning outcomes <i>The learner will be able to:</i>	Assessment criteria <i>The learner can:</i>	
1 Work safely at all times when carrying out basic maintenance on installed plant and equipment.	1.1	Comply with current health and safety legislation, and other relevant regulations and guidelines applicable to the basic maintenance of installed plant and equipment.
	1.2	Use personal protective equipment (PPE) relevant to installed plant and equipment maintenance activities.
	1.3	Describe health and safety legislation, regulations, codes of practice, official guidance, safe working practices and procedures and company health and safety policies and workplace procedures that apply to basic maintenance activities.
	1.4	Describe the safe and correct use of personal protective equipment (PPE) and manual handling procedures when carrying out basic maintenance activities on installed plant and equipment to the occupational area.
	1.5	State reasons for the care and protection of surrounding areas and persons affected by the work, and possible injuries through: <ul style="list-style-type: none"> – the release of substances – slipping on wet/greasy surfaces – working at height.
2 Follow the relevant maintenance schedules to carry out the required work.	2.1	Identify and extract applicable maintenance schedule and related specifications from relevant information sources.
	2.2	Outline maintenance schedules and durations for typical plant and equipment within the occupational area.
	2.3	Describe typical information contained within manufacturers operation and maintenance manuals.
3 Maintain a range of plant and equipment used in the construction and allied industries in both operational and non-operational situations.	3.1	Carry out typical basic maintenance activities according to manufacturer's specifications and organisational procedures within the limits of their personal authority.
	3.2	Maintain to a basic level, typical plant and equipment relevant to the occupational area on construction sites and/or client's premises.
	3.3	Describe the routine maintenance methods and procedures required by manufacturers, and the organisational instructions and procedures when maintaining plant and equipment.

Units – Learning Outcomes and Assessment Criteria

Title:	Carrying out basic maintenance on installed plant and equipment in the workplace	
Learning outcomes <i>The learner will be able to:</i>	Assessment criteria <i>The learner can:</i>	
3 Continued	3.4	Outline the types of available resources, tools and equipment and their suitability for different maintenance tasks, and the different application techniques for applying and replenishing lubricants.
	3.5	Carry out basic maintenance activities in the specified sequence and complete the activities within the agreed timescale.
	3.6	Describe how to carry out sensory, functional and safety checks on the plant and equipment prior to, during and on completion of basic maintenance tasks as specified by the manufacturers.
4 Comply with the procedures for non-planned occurrences when carrying out basic maintenance on plant and equipment.	4.1	Demonstrate following procedures where the maintenance activities cannot be fully met, or where there are identified defect outside of the planned schedule.
	4.2	Describe typical problems that can occur during basic maintenance tasks on plant and equipment within the occupational area, and how recognised problems can be rectified.
5 Comply with organisational maintenance records documentation procedures and waste disposal procedures when carrying out basic maintenance on plant and equipment.	5.1	Complete relevant maintenance records accurately and pass them onto the appropriate person.
	5.2	Dispose of waste materials and substances in accordance with safe working practices and approved procedures.
	5.3	Outline the type of maintenance records kept by the organisation and the service history of individual machines.
	5.4	Describe the importance of keeping servicing and maintenance records, organisational and statutory requirements for record keeping, operational efficiency in keeping records and customer requirements (where applicable) of requiring accurate records.
	5.5	State the organisational procedures for handling and disposing of waste materials and substances.
	5.6	Describe the maintenance authorisation procedures as specified by the manufacturer and the organisation (applicable to customer requirements).
	5.7	Outline the organisation's reporting lines and communication procedures associated with maintaining plant and equipment.

Units – Learning Outcomes and Assessment Criteria

Title:	Carrying out basic maintenance on installed plant and equipment in the workplace
Additional information about this unit	
Assessment Guidance	<p>This unit must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment.</p> <p>Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy.</p> <p>Workplace evidence of skills cannot be simulated.</p> <p>This unit must be assessed against the endorsements detailed within the relevant NVQ Structure.</p> <p><u>ProQual Level 3 NVQ Diploma in Plant Installations – Tower Crane (Construction):</u></p> <p>One of the following endorsements required:</p> <p>Tower crane – self erect Tower crane – assisted erect</p>
Sector subject area	05.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	27

Units – Learning Outcomes and Assessment Criteria

Title:	Supervising and co-ordinating plant installation and dismantling activities in the workplace	
Unit Number:	F/615/1983	
Learning outcomes <i>The learner will be able to:</i>	Assessment criteria <i>The learner can:</i>	
1 Plan plant installation and dismantling work activities in accordance with given instructions.	1.1	Identify work methods and activities relevant to the occupational area to make optimum use of resources.
	1.2	Extract relevant information from a range of technical documents that establishes the installation and dismantling procedures
	1.3	Prioritise designated work activities to achieve given objectives in a cost-effective and efficient manner.
	1.4	Agree and record individual roles and group responsibilities.
	1.5	Record agreed work activities and plans following organisational procedures.
	1.6	Describe current health and safety legislation, regulations, safe working practices and procedures, and company health and safety policies and workplace procedures that apply to the occupational workplace.
	1.7	Describe types of planning methods and techniques that allow work to be carried out effectively.
2 Co-ordinate given plant installation and dismantling work activities from given criteria according to the level of responsibility.	2.1	Organise the work activity for installing and dismantling plant against given criteria and organisational procedures.
	2.2	Demonstrate procedures for seeking appropriate assistance and advice in order to resolve typical problems.
	2.3	Establish and maintain effective working relationships that follow organisation procedures.
	2.4	Respond to requests for help or information following organisational expectations.
	2.5	Describe the types of organisational information systems and procedures.
3 Communicate plant installation and dismantling work activities to relevant people.	3.1	Communicate agreed work plans and activities on a regular basis to all involved using the following methods: <ul style="list-style-type: none"> – spoken – written – electronic.
	3.2	Describe the effectiveness of different styles of communication when working with others on typical installation and dismantling activities

Units – Learning Outcomes and Assessment Criteria

Title:	Supervising and co-ordinating plant installation and dismantling activities in the workplace	
Learning outcomes The learner will be able to:	Assessment criteria The learner can:	
3 Continued	3.3	Describe the types of people that would be communicated with, relevant to the occupational area and level of responsibility.
	3.4	Describe the organisational communication procedures when installing and dismantling plant.
4 Check the progress of plant installation and dismantling activities against given schedules.	4.1	Carry out regular checks during installation and dismantling work to quantify any deviations from planned progress which can or may have occurred.
	4.2	Confirm the circumstances of any deviation, agree with others if relevant, and implement appropriate corrective actions.
	4.3	Inform decision makers about progress, changes to the operational programme and changes to resource needs.
	4.4	Describe any deviations that have or could occur when installing and dismantling plant.
	4.5	Explain corrective actions that may have or may need to be undertaken during plant installation and dismantling.
	4.6	Explain who may need to be informed when deviations from the installation/dismantling specification may have occurred.
5 Confirm that the work meets given quality standards when installing and dismantling plant.	5.1	Identify the required quality standards from relevant information sources.
	5.2	Regularly check that installation and dismantling work conforms to the specified standards.
	5.3	Identify work that fails to meet the specified standard and implement corrective actions.
	5.4	Explain why installation and dismantling work should conform to the specified quality standards and the consequences if they do not.
	5.5	Explain typical types of corrective actions that may need to be taken when installing and dismantling plant.

Units – Learning Outcomes and Assessment Criteria

Title:	Supervising and co-ordinating plant installation and dismantling activities in the workplace	
Learning outcomes	Assessment criteria	
The learner will be able to:	The learner can:	
6 Implement and maintain Health, Safety and Welfare requirements when installing and dismantling plant.	6.1	Ensure correct allocation of health, safety and welfare equipment relevant to the work activity.
	6.2	Induct people and check they are suitably competent and monitored during installation and dismantling activities.
	6.3	Monitor health, safety and welfare in accordance with statutory requirements.
	6.4	Identify and record workplace conditions that do not comply with relevant regulations.
	6.5	Describe the types, function and special procedures relating to specialist safety equipment specific to plant installation and dismantling activities.
	6.6	Explain the organisational induction procedures for those carrying out plant installation and dismantling.
	6.7	Explain the organisational procedures for the monitoring, identification and recording of workplace health, safety and welfare conditions.
7 Understand effective work relationship issues when installing and dismantling plant.	7.1	Describe the importance of maintaining working relations.
	7.2	Explain the meaning of effective working relationships.
	7.3	Describe typical issues that can affect effective working relationships.
	7.4	Explain different ways of avoiding conflict with other colleagues, customers, other workers and managers.
	7.5	Describe how to create and maintain good working relationships when installing and dismantling plant.
	7.6	Give reasons why it is important to keep people informed about the work.
	7.7	Describe the organisational lines of communication and responsibilities, and the procedures for work when installing and dismantling plant.

Units – Learning Outcomes and Assessment Criteria

Title:	Supervising and co-ordinating plant installation and dismantling activities in the workplace
Additional information about this unit	
Assessment Guidance	<p>This unit must be assessed in a work environment, in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment.</p> <p>Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy.</p> <p>Workplace evidence of skills cannot be simulated.</p> <p>This unit must be assessed against the endorsements detailed within the relevant NVQ structure.</p> <p><u>ProQual Level 3 NVQ Diploma in Plant Installations – Tower Crane (Construction):</u></p> <p>One of the following endorsements required:</p> <p>Tower crane – self erect Tower crane – assisted erect</p>
Sector Subject Areas	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	117

Units – Learning Outcomes and Assessment Criteria

Title:	Preparing and operating tower cranes during installation activities in the workplace	
Unit Number:	T/615/1897	
Learning outcomes <i>The learner will be able to:</i>	Assessment criteria <i>The learner can:</i>	
1 Interpret the given information relating to the use of tower cranes during installation activities.	1.1	Interpret and extract information from drawings, specifications, schedules and manufacturers' information.
	1.2	Comply with information and/or instructions derived from risk assessments and method statement.
	1.3	State the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4	Describe different types of information, their source and how they are interpreted in relation to: <ul style="list-style-type: none"> – drawings, specifications, schedules, manufacturers' information, method statements, risk assessments and guidance applicable to tower crane operations.
2 Know how to comply with relevant legislation and official guidance when operating tower cranes during installation activities.	2.1	Describe their responsibilities under current legislation and official guidance whilst working: <ul style="list-style-type: none"> – in the workplace, below ground level, at height, with tools and equipment, with materials and substances, with movement/storage of materials and by manual handling and mechanical lifting.
	2.2	Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	2.3	State what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe working practices when operating tower cranes during installation activities.	3.1	Use personal protective equipment (PPE) safely and carry out the activity in accordance with legislation and organisational requirements.
	3.2	Explain why and when personal protective equipment (PPE) should be used, relating to tower crane installation operations, and the types, purpose and limitations of each types
	3.3	State how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other particular task-related hazards.

Units – Learning Outcomes and Assessment Criteria

Title:	Preparing and operating tower cranes during installation activities in the workplace	
Learning outcomes <i>The learner will be able to:</i>	Assessment criteria <i>The learner can:</i>	
4 Comply with the given contract information to prepare and operate tower cranes during installation activities to the required specification.	4.1	Demonstrate the following work skills when preparing and operating tower cranes during installation activities: <ul style="list-style-type: none"> – checking, adjusting, operating, communicating, manoeuvring and positioning.
	4.2	Prepare and operate tower cranes in the workplace to given working instructions whilst engaging in installation activities.
	4.3	Describe how to apply safe work practices, the typical hazards, follow procedures, how problems are reported and the authority needed to rectify, to: <ul style="list-style-type: none"> – identify the characteristics of the tower crane that is to be installed, erected, altered or dismantled – carry out pre-use checks – prepare, set up, check and adjust for operational requirements, safety and security – carry out functional and operational checks – confirm tower crane and equipment stability and security – shut down and secure the tower crane.
	4.4	Use ancillary equipment and machinery.
	4.5	State the needs of other occupations and how to communicate within a team when preparing for and operating tower cranes during installation activities.

Units – Learning Outcomes and Assessment Criteria

Title:	Preparing and operating tower cranes during installation activities in the workplace
Additional information about this unit	
Assessment Guidance	<p>This unit must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment.</p> <p>Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy.</p> <p>Workplace evidence of skills cannot be simulated.</p> <p>This unit must be assessed against the endorsements detailed within the relevant NVQ structure.</p> <p><u>ProQual Level 3 NVQ Diploma in Plant Installations – Tower Crane (Construction):</u></p> <p>One of the following endorsements required:</p> <p>Tower crane – self erect Tower crane – assisted erect</p>
Sector Subject Area	05.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	80

Units – Learning Outcomes and Assessment Criteria

Title:	Slinging and hand signalling the movement of suspended loads in the workplace	
Unit Number:	A/508/6525	
Learning outcomes <i>The learner will be able to:</i>	Assessment criteria <i>The learner can:</i>	
1 Interpret the given information relating to the preparation for and the slinging and signalling of loads.	1.1	Interpret and extract relevant information from drawings, specifications, schedules, risk assessments, method statements (lift plans) and manufacturers' information.
	1.2	Comply with information and/or instructions derived from risk assessments and method statements.
	1.3	Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4	Describe different types of information, their source and how they are interpreted in relation to: <ul style="list-style-type: none"> – drawings, specifications, schedules, method statements, risk assessments, lift plans, work instructions, manufacturers' information, approved procedures and Codes of Practice.
2 Organise with others the sequence and operation in which the slinging and signalling of loads is to be carried out.	2.1	Organise the work according to given information or instructions.
	2.2	Describe how to communicate ideas between team members.
	2.3	Organise and communicate with team members and other associated occupations.
	2.4	Describe how to organise resources prior to and when slinging and signalling of loads.
3 Know how to comply with relevant legislation and official guidance to carry out slinging and signalling of loads.	3.1	Describe their responsibilities regarding potential accidents, health hazards and the environment whilst working: <ul style="list-style-type: none"> – in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement/storage of materials and by manual handling and mechanical lifting.
	3.2	Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	3.3	Explain what the accident reporting procedures are and who is responsible for making reports.

Units – Learning Outcomes and Assessment Criteria

Title:	Slinging and hand signalling the movement of suspended loads in the workplace	
Learning outcomes	Assessment criteria	
<i>The learner will be able to:</i>	<i>The learner can:</i>	
4 Maintain safe and healthy working practices when preparing for and slinging and signalling loads.	4.1	Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with legislation and organisational requirements when slinging and signalling loads.
	4.2	Demonstrate compliance with given information and relevant legislation when carrying out the slinging and signalling of loads in relation to at least three of the following: <ul style="list-style-type: none"> – safe use and storage of tools and equipment – safe use, storage and handling of lifting accessories – safe use of access equipment – specific risks to health.
	4.3	Explain why and when health and safety control equipment, identified by the principles of protection, should be used, relating to slinging and signalling of loads, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: <ul style="list-style-type: none"> – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV).
	4.4	Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	4.5	Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.
5 Select the required quantity and quality of resources to prepare for and when slinging and signalling loads.	5.1	Select resources associated with slinging/signalling in relation to lifting accessories/aids, hand tools and ancillary equipment.
	5.2	Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources, and how they should be used correctly, relating to: <ul style="list-style-type: none"> – lifting accessories – signalling and communication equipment – hand tools and ancillary equipment.
	5.3	Describe how the resources should be used correctly, and how problems associated with the resources are reported.

Units – Learning Outcomes and Assessment Criteria

Title:	Slinging and hand signalling the movement of suspended loads in the workplace	
Learning outcomes <i>The learner will be able to:</i>	Assessment criteria <i>The learner can:</i>	
5 Continued	5.4	Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	5.5	Describe any potential hazards associated with the resources and methods of work.
	5.6	Describe how to identify weight, quantity, length and area associated with the method/procedures to carry out slinging/signalling.
6 Minimise the risk of damage to the work and surrounding area when preparing to and slinging and signalling loads.	6.1	Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	6.2	Prevent damage and maintain a clean work space.
	6.3	Dispose of waste in accordance with current legislation.
	6.4	Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	6.5	Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
7 Complete the work within the allocated time when preparing to and slinging and signalling loads.	7.1	Demonstrate completion of the work within the allocated time.
	7.2	Describe the purpose of the work programme and describe why deadlines should be kept in relation to: <ul style="list-style-type: none"> – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.

Units – Learning Outcomes and Assessment Criteria

Title:	Slinging and hand signalling the movement of suspended loads in the workplace	
Learning outcomes <i>The learner will be able to:</i>	Assessment criteria <i>The learner can:</i>	
8 Comply with the given contract information to prepare to and sling and signal suspended loads for movement to the required specification.	8.1	Demonstrate the following work skills when preparing to and slinging and signalling loads: <ul style="list-style-type: none"> – measuring, gauging, estimating, calculating, fitting, fixing, testing, balancing, interpreting, inspecting, judging, explaining, preparing, indicating, informing, instructing, signing, positioning, adjusting, configuring, moving, securing, signalling and relaying.
	8.2	Use and maintain lifting accessories, lifting aids and equipment.
	8.3	Inspect and prepare lifting accessories prior to slinging.
	8.4	Prepare to and attach suspended loads to lifting equipment, using appropriate lifting accessories and load securing methods, to given working instructions for three of the following: <ul style="list-style-type: none"> – balanced – unbalanced – loose – bundled – container – drum – a load where the machine operator cannot observe its full movement path.
	8.5	Guide, move and place suspended loads to specified destinations, using hand signals, to given working instructions for three of the following: <ul style="list-style-type: none"> – balanced – unbalanced – loose – bundled – container – drum – a load where the machine operator cannot observe its full movement path.
	8.6	Describe how to apply safe and healthy work practices, follow procedures, report problems and establish authority needed to rectify, to: <ul style="list-style-type: none"> – identify the differences between: slinging and signalling, directing and guiding movement of vehicles, plant and machinery, and directing and guiding operations of plant and machinery not being used for lifting operations – confirm the authority, duties and responsibilities allocated – identify characteristics of lifting equipment and lifting accessories – identify and interpret valid certification for maintenance, inspection and thorough examination

Units – Learning Outcomes and Assessment Criteria

Title:	Slinging and hand signalling the movement of suspended loads in the workplace	
Learning outcomes <i>The learner will be able to:</i>	Assessment criteria <i>The learner can:</i>	
8 Continued	8.7	<ul style="list-style-type: none"> – lift and transfer people – sling balanced, unbalanced, loose, live, bundled, container drum loads and loads that are blind to the equipment operator – communicate using hand signals, hand signalling equipment (lights, wands, fluorescent gloves, flags) and electronic communication equipment (loud hailers, radios) – confirm methods of communication – recognise blind-spots, potential crush zones and other limitations to driver visibility – consider the load characteristics including centre of gravity and lifting points to determine the method of slinging – determine and check the route of the load before and during the lift including distances, clearances and landing position
	8.8	<ul style="list-style-type: none"> – select, handle, inspect and use (assemble, set up and adjust) lifting accessories and aids – identify rejection criteria for removing lifting accessories from service – recognise and determine when specific skills and knowledge are required and report accordingly – attach lifting accessories and sling loads securely – ensure balance and stability of loads – attach and use load guidance equipment (tag lines) – guide and place suspended loads by recognised methods of communication and agreed operational procedures – land and position loads safely and securely – remove and store lifting accessories – use hand tools and ancillary equipment.
	8.9	Describe the needs of other occupations and how to communicate within a team when preparing to and slinging and signalling loads.
	8.10	Describe how to maintain the lifting accessories, lifting aids and signalling and communication equipment used to sling and signal loads.

Units – Learning Outcomes and Assessment Criteria

Title:	Slinging and hand signalling the movement of suspended loads in the workplace
Additional information about this unit	
Assessment Guidance	<p>This unit must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment.</p> <p>Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy.</p> <p>Workplace evidence of skills cannot be simulated.</p> <p>This unit must be assessed against the endorsements detailed within the relevant NVQ Structure.</p> <p><u>ProQual Level 3 NVQ Diploma in Plant Installations – Tower Crane (Construction):</u></p> <p>The following endorsement required (i.e. own area of work):</p> <p>Slinger signaller – plant installations (tower cranes) only</p>
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	33

Units – Learning Outcomes and Assessment Criteria

Title:	Conforming to general health, safety and welfare in the workplace.	
Unit Number:	M/508/6537	
Learning outcomes <i>The learner will be able to:</i>	Assessment criteria <i>The learner can:</i>	
1 Comply with all workplace health, safety and welfare legislation requirements.	1.1	Comply with information from workplace inductions and any health, safety and welfare briefings attended relevant to the occupational area.
	1.2	Use health and safety control equipment safely to carry out the activity in accordance with legislation and organisational requirements.
	1.3	Comply with statutory requirements, safety notices and warning notices displayed within the workplace and/or on equipment.
	1.4	State why and when health and safety control equipment, identified by the principles of protection, should be used relating to types, purpose and limitations of each type, the work situation, occupational use and the general work environment, in relation to: <ul style="list-style-type: none"> – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV).
	1.5	State how the health and safety control equipment relevant to the work should be used in accordance with the given instructions.
	1.6	State which types of health, safety and welfare legislation, notices and warning signs are relevant to the occupational area and associated equipment.
	1.7	State why health, safety and welfare legislation, notices and warning signs are relevant to the occupational area.
	1.8	State how to comply with control measures that have been identified by risk assessments and safe systems of work.
2 Recognise hazards associated with the workplace that have not been previously controlled and report them in accordance with organisational procedures.	2.1	Report any hazards created by changing circumstances within the workplace in accordance with organisational procedures.
	2.2	List typical hazards associated with the work environment and occupational area in relation to resources, substances, asbestos, equipment, obstructions, storage, services and work activities.
	2.3	List the current Health and Safety Executive top ten safety risks.

Units – Learning Outcomes and Assessment Criteria

Title:	Conforming to general health, safety and welfare in the workplace.	
Learning outcomes <i>The learner will be able to:</i>	Assessment criteria <i>The learner can:</i>	
2 continued	2.4	List the current Health and Safety Executive top five health risks.
	2.5	State how changing circumstances within the workplace could cause hazards.
	2.6	State the methods used for reporting changed circumstances, hazards and incidents in the workplace.
3 Comply with organisational policies and procedures to contribute to health, safety and welfare.	3.1	Interpret and comply with given instructions to maintain safe systems of work and quality working practices.
	3.2	Contribute to discussions by offering/providing feedback relating to health, safety and welfare.
	3.3	Contribute to the maintenance of workplace welfare facilities in accordance with workplace welfare procedures.
	3.4	Safely store health and safety control equipment in accordance with given instructions.
	3.5	Dispose of waste and/or consumable items in accordance with legislation.
	3.6	State the organisational policies and procedures for health, safety and welfare, in relation to: <ul style="list-style-type: none"> – dealing with accidents and emergencies associated with the work and environment – methods of receiving or sourcing information – reporting – stopping work – evacuation – fire risks and safe exit procedures – consultation and feedback.
	3.7	State the appropriate types of fire extinguishers relevant to the work.
	3.8	State how and when the different types of fire extinguishers are used in accordance with legislation and official guidance.

Units – Learning Outcomes and Assessment Criteria

Title:	Conforming to general health, safety and welfare in the workplace.	
Learning outcomes	Assessment criteria	
<i>The learner will be able to:</i>	<i>The learner can:</i>	
4 Work responsibly to contribute to workplace health, safety and welfare whilst carrying out work in the relevant occupational area.	4.1	Demonstrate behaviour which shows personal responsibility for general workplace health, safety and welfare.
	4.2	State how personal behaviour demonstrates responsibility for general workplace health, safety and welfare, in relation to: <ul style="list-style-type: none"> – recognising when to stop work in the face of serious and imminent danger to self and/or others – contributing to discussions and providing feedback – reporting changed circumstances and incidents in the workplace – complying with the environmental requirements of the workplace.
	4.3	Give examples of how the behaviour and actions of individuals could affect others within the workplace.
5 Comply with and support all organisational security arrangements and approved procedures.	5.1	Provide appropriate support for security arrangements in accordance with approved procedures: <ul style="list-style-type: none"> – during the working day – on completion of the day’s work – for unauthorised personnel (other operatives and the general public) – for theft.
	5.2	State how security arrangements are implemented in relation to the workplace, the general public, site personnel and resources.

Units – Learning Outcomes and Assessment Criteria

Title:	Conforming to general health, safety and welfare in the workplace.
Additional information about this unit	
Assessment Guidance	<p>This unit must be assessed in a work environment, in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment.</p> <p>Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy.</p> <p>Workplace evidence of skills cannot be simulated.</p>
Sector Subject Area	05.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	7

Units – Learning Outcomes and Assessment Criteria

Title:	Moving, handling and storing resources in the workplace	
Unit Number	Y/508/6533	
Learning outcomes <i>The learner will be able to:</i>	Assessment criteria <i>The learner can:</i>	
1 Comply with given information when moving, handling and/or storing resources.	1.1	Interpret the given information relating to moving, handling and/or storing resources, relevant to the given occupation.
	1.2	Interpret the given information relating to the use and storage of lifting aids and equipment.
	1.3	Describe the different types of technical, product and regulatory information, their source and how they are interpreted.
	1.4	State the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.5	Describe how to obtain information relating to using and storing lifting aids and equipment.
2 Know how to comply with relevant legislation and official guidance when moving, handling and/or storing resources.	2.1	Describe their responsibilities under current legislation and official guidance whilst working: <ul style="list-style-type: none"> – in the workplace, in confined spaces, below ground level, at height, with tools and equipment, with materials and substances, with movement/storage of materials and by manual handling and mechanical lifting.
	2.2	Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	2.3	Explain what the accident reporting procedures are and who is responsible for making the reports.
	2.4	State the appropriate types of fire extinguishers relevant to the work.
	2.5	Describe how and when the different types of fire extinguishers, relevant to the given occupation, are used in accordance with legislation and official guidance.
3 Maintain safe working practices when moving, handling and/or storing resources.	3.1	Use health and safety control equipment safely to carry out the activity in accordance with legislation and organisational requirements when moving, handling and/or storing resources.
	3.2	Use lifting aids safely as appropriate to the work.

Units – Learning Outcomes and Assessment Criteria

Title:	Moving, handling and storing resources in the workplace	
Learning outcomes <i>The learner will be able to:</i>	Assessment criteria <i>The learner can:</i>	
3 continued	3.3	Protect the environment in accordance with safe working practices as appropriate to the work.
	3.4	Explain why and when health and safety control equipment, identified by the principles of protection, should be used, relating to moving, handling and/or storing resources, and the types, purpose and limitations of each type, the work situation, occupational use and the general work environment, in relation to: <ul style="list-style-type: none"> – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV).
	3.5	Describe how the health and safety control equipment relevant to the work should be used in accordance with the given instructions.
	3.6	State how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related hazards.
4 Select the required quantity and quality of resources for the methods of work to move, handle and/or store occupational resources.	4.1	Select the relevant resources to be moved, handled and/or stored, associated with own work.
	4.2	Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the occupational resources in relation to: <ul style="list-style-type: none"> – lifting and handling aids – container(s) – fixing, holding and securing systems.
	4.3	Describe how the resources should be handled and how any problems associated with the resources are reported.
	4.4	Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5	Describe any potential hazards associated with the resources and methods of work.
5 Prevent the risk of damage to occupational resources and surrounding environment when moving, handling and/or storing resources.	5.1	Protect occupational resources and their surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2	Dispose of waste and packaging in accordance with legislation.

Units – Learning Outcomes and Assessment Criteria

Title:	Moving, handling and storing resources in the workplace	
Learning outcomes <i>The learner will be able to:</i>	Assessment criteria <i>The learner can:</i>	
5 continued	5.3	Maintain a clean work space when moving, handling or storing resources.
	5.4	Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5	Explain why the disposal of waste should be carried safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when moving, handling and/or storing resources.	6.1	Demonstrate completion of the work within the allocated time.
	6.2	State the purpose of the work programme and explain why deadlines should be kept in relation to: <ul style="list-style-type: none"> – progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given occupational resource information to move, handle and/or store resources to the required guidance.	7.1	Demonstrate the following work skills when moving, handling and/or storing occupational resources: <ul style="list-style-type: none"> – moving, positioning, storing, securing and/or using lifting aids and kinetic lifting techniques.
	7.2	Move, handle and/or store occupational resources to meet product information and organisational requirements relating to three of the following: <ul style="list-style-type: none"> – sheet material – loose material – bagged or wrapped material – fragile material – tools and equipment – components – liquids.
	7.3	Describe how to apply safe work practices, follow procedures, report problems and establish the authority needed to rectify them when moving, handling and/or storing occupational resources.
	7.4	Describe the needs of other occupations when moving, handling and/or storing resources.

Units – Learning Outcomes and Assessment Criteria

Title:	Moving, handling and storing resources in the workplace
Additional information about this unit	
Assessment Guidance	<p>This unit must be assessed in a work environment, in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment.</p> <p>Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy.</p> <p>Workplace evidence of skills cannot be simulated.</p>
Sector Subject Areas	05.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	17

Units – Learning Outcomes and Assessment Criteria

Title:	Inspecting plant or machinery for operational serviceability in the workplace	
Unit Number:	D/615/1893	
Learning outcomes The learner will be able to:	Assessment criteria The learner can:	
1 Interpret the given information relating to the work and resources when inspecting plant or machinery for operational serviceability.	1.1	Interpret and extract relevant information from drawings, specifications, schedules, method statements, risk assessments, workshop manuals, technical service bulletins, parts manuals and manufacturers' information.
	1.2	Comply with information and/or instructions derived from risk assessments and method statements.
	1.3	Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4	Describe different types of information, their source and how they are interpreted in relation to: <ul style="list-style-type: none"> – drawings, specifications, schedules, method statements, risk assessments, workshop manuals, technical service bulletins, parts manuals, manufacturers' information and current regulations associated with the inspection, examination and test of plant and machinery.
2 Know how to comply with relevant legislation and official guidance when inspecting plant or machinery for operational serviceability.	2.1	Describe their responsibilities regarding potential accidents and health hazards, whilst working: <ul style="list-style-type: none"> – in the workplace, below ground level, at height, in confined spaces, with tools and equipment, with materials and substances, with movement/storage of materials and by manual handling and mechanical lifting.
	2.2	Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	2.3	Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when inspecting plant or machinery for operational serviceability.	3.1	Use health and safety control equipment and access equipment (if applicable) safely to carry out the activity in accordance with current legislation and organisational requirements when inspecting plant or machinery for operational serviceability.
	3.2	Comply with information relating to specific risks to health when inspecting plant or machinery for operational serviceability.

Units – Learning Outcomes and Assessment Criteria

Title:	Inspecting plant or machinery for operational serviceability in the workplace	
Learning outcomes The learner will be able to:	Assessment criteria The learner can:	
3 Continued	3.3	Explain why and when health and safety control equipment, identified by the principles of protection, should be used, relating inspecting plant or machinery for operational serviceability and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: <ul style="list-style-type: none"> – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV).
	3.4	Describe how the relevant health and safety control equipment should be used in accordance with the given instructions.
	3.5	Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related hazards.
4 Select the required quantity and quality of resources for the methods of work to inspect plant or machinery for operational serviceability.	4.1	Select resources associated with own work in relation to materials, components, fixings, tools, equipment and consumables.
	4.2	Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: <ul style="list-style-type: none"> – consumables – inspection equipment – fixings – hand tools, portable powered tools, specialist tools and equipment.
	4.3	Describe how the resources should be used correctly and how problems associated with the resources are reported.
	4.4	Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5	Describe any potential hazards associated with the resources and methods of work.
	4.6	Describe how to calculate quantity, length, area and wastage associated with the method/procedure to inspect plant and machinery for operational serviceability.

Units – Learning Outcomes and Assessment Criteria

Title:	Inspecting plant or machinery for operational serviceability in the workplace	
Learning outcomes	Assessment criteria	
The learner will be able to:	The learner can:	
5 Minimise the risk of damage to the work and surrounding area when inspecting plant or machinery for operational serviceability.	5.1	Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2	Minimise damage and maintain a clean work space.
	5.3	Dispose of waste in accordance with current legislation.
	5.4	Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5	Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when inspecting plant or machinery for operational serviceability.	6.1	Demonstrate completion of the work within the allocated time.
	6.2	Describe the purpose of the work programme and explain why deadlines should be kept in relation to: <ul style="list-style-type: none"> – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to inspect plant or machinery for operational serviceability to the required specification.	7.1	Demonstrate the following work skills when inspecting plant or machinery for operational serviceability: <ul style="list-style-type: none"> – inspecting, checking, recording and reporting.
	7.2	Complete the following inspections to given working instructions: <ul style="list-style-type: none"> – routine checks, daily, weekly – periodic e.g. monthly, annual, number, hours run – pre-use, delivery – post-use, return, off hire.
	7.3	Record and report results and findings of inspection using the appropriate method, in accordance with given working instructions.
	7.4	Safely use and handle materials, hand tools, specialist tools, portable power tools and ancillary equipment.
	7.5	Safely store the materials, tools and equipment used when inspecting plant or machinery for operational serviceability.

Units – Learning Outcomes and Assessment Criteria

Title:	Inspecting plant or machinery for operational serviceability in the workplace	
Learning outcomes The learner will be able to:	Assessment criteria The learner can:	
7 Continued	7.6	Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: <ul style="list-style-type: none"> – identify inspection criteria – conduct inspections, daily/weekly, periodic (monthly, annual, number and hours run), pre-use and post-use and returned items – identify the difference between test, inspection and thorough examination – check the calibration of inspection tools and equipment – use specialist inspection equipment and test and diagnostic aids – identify deterioration, damage, excess wear and leaks – identify non-critical defects – identify critical defects – classify the serviceability of plant and machinery – consider plant and machinery life expectancy – report findings – use hand tools, portable power tools, specialist tools and equipment – work at height – use access equipment – complete and maintain records.
	7.7	Describe the needs of other occupations and how to effectively communicate within a team inspecting plant or machinery for operational serviceability.
	7.8	Describe how to maintain the tools and equipment used when inspecting plant or machinery for operational serviceability.

Units – Learning Outcomes and Assessment Criteria

Title:	Inspecting plant or machinery for operational serviceability in the workplace
Additional information about this unit	
Assessment Guidance	<p>This unit must be assessed in a work environment, in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment.</p> <p>Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy.</p> <p>Workplace evidence of skills cannot be simulated.</p> <p>This unit must be assessed against the endorsements detailed within the relevant NVQ Structure.</p> <p><u>ProQual Level 3 NVQ Diploma in Plant Installations – Tower Crane (Construction):</u></p> <p>One of the following endorsements required:</p> <p>Tower crane – self erect Tower crane – assisted erect</p>
Sector Subject Areas	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	110

Units – Learning Outcomes and Assessment Criteria

Title:	Installing plant or machinery for operational activities in the workplace	
Unit Number:	L/615/1887	
Learning outcomes The learner will be able to:	Assessment criteria The learner can:	
1 Interpret the given information relating to the work and resources when installing plant or machinery for operational activities.	1.1	Interpret and extract relevant information from drawings, specifications, schedules, method statements, risk assessments, installation manuals and manufacturers' information.
	1.2	Comply with information and/or instructions derived from risk assessments and method statements.
	1.3	Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4	Describe different types of information, their source and how they are interpreted in relation to: <ul style="list-style-type: none"> – drawings, specifications, schedules, method statements, risk assessments, installation manuals manufacturers' information and current regulations associated with the installation of plant and machinery.
2 Know how to comply with relevant legislation and official guidance when installing plant or machinery for operational activities.	2.1	Describe their responsibilities regarding potential accidents and health hazards, whilst working: <ul style="list-style-type: none"> – in the workplace, below ground level, at height, in confined spaces, with tools and equipment, with materials and substances, with movement/storage of materials and by manual handling and mechanical lifting.
	2.2	Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	2.3	Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when installing plant or machinery for operational activities.	3.1	Use health and safety control equipment and access equipment (if applicable) safely to carry out the activity in accordance with current legislation and organisational requirements when installing plant or machinery for operational activities.
	3.2	Comply with information relating to specific risks to health when installing plant or machinery for operational activities.

Units – Learning Outcomes and Assessment Criteria

Title:	Installing plant or machinery for operational activities in the workplace	
Learning outcomes	Assessment criteria	
The learner will be able to:	The learner can:	
3 continued	3.3	Explain why and when health and safety control equipment, identified by the principles of protection, should be used, relating to installing plant or machinery for operational activities and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: <ul style="list-style-type: none"> – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV).
	3.4	Describe how the relevant health and safety control equipment should be used in accordance with the given instructions.
	3.5	Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related hazards.
4 Select the required quantity and quality of resources for the methods of work to install plant or machinery for operational activities.	4.1	Select resources associated with own work in relation to materials, components, fixings, tools, equipment and consumables.
	4.2	Describe the characteristics, quality, uses, sustainability limitations and defects associated with the resources in relation to: <ul style="list-style-type: none"> – lifting accessories – fastening, ties, anchors and fixings – consumables – measuring and levelling equipment – hand tools, portable powered tools and equipment.
	4.3	Describe how the resources should be used correctly and how problems associated with the resources are reported.
	4.4	Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5	Describe any potential hazards associated with the resources and methods of work.
	4.6	Describe how to calculate quantity, length, volume, area and wastage associated with the method/procedure to install plant or machinery for operational activities.

Units – Learning Outcomes and Assessment Criteria

Title:	Installing plant or machinery for operational activities in the workplace	
Learning outcomes The learner will be able to:	Assessment criteria The learner can:	
5 Minimise the risk of damage to the work and surrounding area when installing plant or machinery for operational activities.	5.1	Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2	Minimise damage and maintain a clean work space.
	5.3	Dispose of waste in accordance with current legislation.
	5.4	Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5	Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when installing plant or machinery for operational activities.	6.1	Demonstrate completion of the work within the allocated time.
	6.2	Describe the purpose of the work programme and explain why deadlines should be kept in relation to: <ul style="list-style-type: none"> – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to install plant or machinery for operational activities to the required specification.	7.1	Demonstrate the following work skills when installing plant or machinery for operational activities: <ul style="list-style-type: none"> – measuring, marking, aligning, laying, levelling, plumbing, adjusting, fitting, connecting, fixing, fastening and securing.
	7.2	Install plant or machinery to given working instructions for one of the following types: <ul style="list-style-type: none"> – crane (mobile or ringer) – tower crane – hoist (passenger, goods or building maintenance units) – rig (demolition, piling or drilling) – excavation or vacuum plant or machinery – batching, mixing or blending plants – crushing or screening plants – power generation equipment – pump – climate management machines – concrete placing boom.

Units – Learning Outcomes and Assessment Criteria

Title:	Installing plant or machinery for operational activities in the workplace	
Learning outcomes	Assessment criteria	
The learner will be able to:	The learner can:	
7 continued	7.3	Complete functional, operational and safety checks on plant or machinery, to given working instructions.
	7.4	Complete and maintain records when installing plant or machinery for operational activities.
	7.5	Safely use and handle materials, hand tools, portable power tools, measuring instruments and ancillary equipment.
	7.6	Safely store the materials, tools and equipment used when installing plant or machinery for operational activities.
	7.7	Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: <ul style="list-style-type: none"> – install plant and machinery; mobile and ringer cranes, tower cranes, passenger and goods hoists, piling and drilling rigs, excavation plant or machinery, batching plants, crushing and screening plants, power generation equipment, pumps, climate management machines – assess suitability of conditions for installation requirements (site layout, location, availability of space, levels, prevailing weather conditions) – operate and control lifting equipment and lifting aids – confirm the integrity of lifting accessories – consider the resources required for the installation of plant and machinery – confirm parts, components, attachments, accessories are available to complete the installation – secure plant and machinery parts and components for movement and lifting into position – align, attach and secure plant and machinery parts and components (tied in, pinned, clamped, bolted and screwed) – fixing plant or machinery to load bearing structures – install and test anchors and ties – route, lay, connect and secure cables, pipes and hoses – connect power supplies – make adjustments to ensure optimum operational function – liaise with client, customer or their representatives – deal with damages and defects that can occur during installation, misaligned components, cracked casings and housings, leaks, scoring and marking of parts and components and breakages

Units – Learning Outcomes and Assessment Criteria

Title:	Installing plant or machinery for operational activities in the workplace	
Learning outcomes	Assessment criteria	
The learner will be able to:	The learner can:	
7 Continued	7.7	<ul style="list-style-type: none"> – confirm installation functionality meets quality expectations – complete functional operational and safety checks – use hand tools, portable power tools and equipment – work at height – use access equipment – complete and maintain records.
	7.8	Describe the needs of other occupations and how to effectively communicate within a team when installing plant or machinery for operational activities.
	7.9	Describe how to maintain the tools and equipment used when installing plant or machinery for operational activities.

Units – Learning Outcomes and Assessment Criteria

Title:	Installing plant or machinery for operational activities in the workplace
Additional information about this unit	
Assessment Guidance	<p>This unit must be assessed in a work environment, in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment.</p> <p>Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy.</p> <p>Workplace evidence of skills cannot be simulated.</p> <p>This unit must be assessed against the endorsements detailed within the relevant NVQ structure.</p> <p><u>ProQual Level 3 NVQ Diploma in Plant Installations – Tower Crane (Construction):</u></p> <p>One of the following endorsements required:</p> <p>Tower crane – self erect Tower crane – assisted erect</p>
Sector Subject Area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	180

Units – Learning Outcomes and Assessment Criteria

Title:	Configuring tower cranes for operation during installation activities in the workplace	
Unit Number:	D/615/1988	
Learning outcomes The learner will be able to:	Assessment criteria The learner can:	
1 Interpret the given information relating to the work and resources when configuring tower cranes for operation during Installation activities.	1.1	Interpret and extract relevant information from drawings, specifications, schedules, method statements, risk assessments, workshop manuals, technical service bulletins, parts manuals and manufacturers' information.
	1.2	Comply with information and/or instructions derived from risk assessments and method statements.
	1.3	Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4	Describe different types of information, their source and how they are interpreted in relation to: <ul style="list-style-type: none"> – drawings, specifications, schedules, method statements, risk assessments, workshop manuals, technical service bulletins, parts manuals, manufacturers' information and current regulations associated with the configuration of tower cranes.
2 Know how to comply with relevant legislation and official guidance when configuring tower cranes for operation during Installation activities.	2.1	Describe their responsibilities regarding potential accidents and health hazards, whilst working: <ul style="list-style-type: none"> – in the workplace, below ground level, at height, in confined spaces, with tools and equipment, with materials and substances, with movement/storage of materials and by manual handling and mechanical lifting.
	2.2	Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	2.3	Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when configuring tower cranes for operation during Installation activities.	3.1	Use health and safety control equipment and access equipment (if applicable) safely to carry out the activity in accordance with current legislation and organisational requirements when configuring tower cranes for operation during Installation activities.
	3.2	Comply with information relating to specific risks to health when configuring tower cranes for operation during Installation activities.

Units – Learning Outcomes and Assessment Criteria

Title:	Configuring tower cranes for operation during installation activities in the workplace	
Learning outcomes	Assessment criteria	
The learner will be able to:	The learner can:	
3 Continued	3.3	Explain why and when health and safety control equipment, identified by the principles of protection, should be used, relating to configuring tower cranes for operation during Installation activities and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: <ul style="list-style-type: none"> – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV).
	3.4	Describe how the relevant health and safety control equipment should be used in accordance with the given instructions.
	3.5	Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related hazards.
4 Select the required quantity and quality of resources for the methods of work to configure tower cranes for operation during Installation activities.	4.1	Select resources associated with own work in relation to materials, components, fixings, tools, equipment and consumables.
	4.2	Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: <ul style="list-style-type: none"> – consumables – fixings and fittings – hand tools, portable powered tools and ancillary equipment.
	4.3	Describe how the resources should be used correctly and how problems associated with the resources are reported.
	4.4	Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5	Describe any potential hazards associated with the resources and methods of work.
	4.6	Describe how to calculate quantity, length, volume, area and wastage associated with the method/procedure to configure tower cranes for operation during Installation activities.

Units – Learning Outcomes and Assessment Criteria

Title:	Configuring tower cranes for operation during installation activities in the workplace	
Learning outcomes	Assessment criteria	
The learner will be able to:	The learner can:	
5 Minimise the risk of damage to the work and surrounding area when configuring tower cranes for operation during Installation activities.	5.1	Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2	Minimise damage and maintain a clean work space.
	5.3	Dispose of waste in accordance with current legislation.
	5.4	Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5	Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when configuring tower cranes for operation during Installation activities.	6.1	Demonstrate completion of the work within the allocated time.
	6.2	Describe the purpose of the work programme and explain why deadlines should be kept in relation to: <ul style="list-style-type: none"> – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to configure tower cranes for operation during Installation activities to the required specification.	7.1	Demonstrate the following work skills when configuring tower cranes for operation during Installation activities: <ul style="list-style-type: none"> – measuring, marking, aligning, fitting, adjusting, fixing, fastening and securing.
	7.2	Configure tower cranes for operation during Installation activities to given working instructions for two of the following: <ul style="list-style-type: none"> – attachments – ancillaries – fire prevention (spark arrestors) – structural support (anchors and ties) – safety (restricted movement, passage or access, warning alarms, notices, lights or governors) – contaminant reduction (noise, gases, fluids) – carriage of ancillaries or additional equipment – rail and trackside – cutting equipment (blade or teeth angles and aspects) – additions (publicity boards, notices, lights) – machine control (laser measurement or guidance, global positioning system) – productivity measurement (weigh load sensors, compaction sensors).

Units – Learning Outcomes and Assessment Criteria

Title:	Configuring tower cranes for operation during installation activities in the workplace	
Learning outcomes The learner will be able to:	Assessment criteria The learner can:	
7 Continued	7.3	Complete functional, operational and safety checks on plant or machinery, to given working instructions.
	7.4	Complete and maintain records when configuring tower cranes for operation during Installation activities.
	7.5	Safely use materials, hand tools, portable power tools and ancillary equipment.
	7.6	Safely store the materials, tools and equipment used when configuring tower cranes for operation during Installation activities.
	7.7	Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: <ul style="list-style-type: none"> – assess requirements for configuration – validate appropriate ways in which the work should be carried out – configure tower cranes for the following: attachments, ancillaries, fire prevention (spark arrestors), structural support (anchors and ties), safety (restricted movement, passage or access, warning alarms, notices, lights or governors), contaminant reduction (noise, gases, fluids), carriage of ancillaries or additional equipment, rail and trackside work, cutting equipment (blade or teeth angles, coatings, dressings and aspects), additions (publicity boards, notices, lights), machine control (laser measurement and guidance, global positioning system), productivity measurement (weigh load sensors, compaction sensors) – ensure the required parameters are achieved for the specific operational activity – liaise with operators, customers, clients and their representatives – use hand tools, portable power tools and ancillary equipment – work at height – use access equipment – complete and maintain records.
	7.8	Describe the needs of other occupations and how to effectively communicate within a team when configuring tower cranes for operation during Installation activities.
7.9	Describe how to maintain the tools and equipment used when configuring tower cranes for operation during Installation activities.	

Units – Learning Outcomes and Assessment Criteria

Title:	Configuring tower cranes for operation during installation activities in the workplace	
Learning outcomes The learner will be able to:	Assessment criteria The learner can:	
8 Determine the cause of faults and/or difficulties encountered when configuring tower cranes for operation during Installation activities.	8.1	Identify faults and/or difficulties encountered when configuring tower cranes for operation during Installation activities, using diagnostic tools, methods or techniques.
	8.2	Establish the nature and likely causes of faults or difficulties during configuring activities.
	8.3	Establish the type and nature of remedial work required to correct encountered faults or difficulties.
	8.4	Explain typical routine and non-routine faults or difficulties that may occur during configuring activities.
	8.5	Explain the implications of faults or difficulties that could affect efficient work and safety.

Units – Learning Outcomes and Assessment Criteria

Title:	Configuring plant or machinery for specific operational activities in the workplace
Additional information about this unit	
Assessment Guidance	<p>This unit must be assessed in a work environment, in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment.</p> <p>Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy.</p> <p>Workplace evidence of skills cannot be simulated.</p> <p>This unit must be assessed against the endorsements detailed within the relevant NVQ structure.</p> <p><u>ProQual Level 3 NVQ Diploma In Plant Installations – Tower Crane (Construction):</u></p> <p>Two of the following endorsements required:</p> <ul style="list-style-type: none"> Attachments Ancillaries Fire prevention Structural support Safety measures Contaminant reduction Carriage of ancillaries/additional equipment Rail and trackside Cutting equipment Additions (e.g. publicity boards, notices, lights) Machine control Productivity measurement
Sector Subject Area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	87

Units – Learning Outcomes and Assessment Criteria

Title:	Diagnosing faults in plant or machinery systems or components in the workplace	
Unit Number:	H/615/1894	
Learning outcomes The learner will be able to:	Assessment criteria The learner can:	
1 Interpret the given information relating to the work and resources when diagnosing faults in plant or machinery systems or components.	1.1	Interpret and extract relevant information from drawings, specifications, schedules, method statements, risk assessments, workshop manuals, technical service bulletins, parts manuals and manufacturers' information.
	1.2	Comply with information and/or instructions derived from risk assessments and method statements.
	1.3	Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4	Describe different types of information, their source and how they are interpreted in relation to: <ul style="list-style-type: none"> – drawings, specifications, schedules, method statements, risk assessments, manufacturers' information and current regulations associated with diagnosing faults in plant or machinery systems or components.
2 Know how to comply with relevant legislation and official guidance when diagnosing faults in plant or machinery systems or components.	2.1	Describe their responsibilities regarding potential accidents and health hazards, whilst working: <ul style="list-style-type: none"> – in the workplace, below ground level, at height, in confined spaces, with tools and equipment, with materials and substances, with movement/storage of materials and by manual handling and mechanical lifting.
	2.2	Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	2.3	Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when diagnosing faults in plant or machinery systems or components.	3.1	Use health and safety control equipment and access equipment (if applicable) safely to carry out the activity in accordance with current legislation and organisational requirements when diagnosing faults in plant or machinery systems or components.
	3.2	Comply with information relating to specific risks to health when diagnosing faults in plant or machinery systems or components.

Units – Learning Outcomes and Assessment Criteria

Title:	Diagnosing faults in plant or machinery systems or components in the workplace	
Learning outcomes The learner will be able to:	Assessment criteria The learner can:	
3 continued	3.3	Explain why and when health and safety control equipment, identified by the principles of protection, should be used, relating to diagnosing faults in plant or machinery systems or components, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: <ul style="list-style-type: none"> – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV).
	3.4	Describe how the relevant health and safety control equipment should be used in accordance with the given instructions.
	3.5	Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related hazards.
4 Select the required quantity and quality of resources for the methods of work to diagnose faults in plant or machinery systems or components.	4.1	Select resources associated with own work in relation to materials, components, fixings, tools, equipment and consumables.
	4.2	Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: <ul style="list-style-type: none"> – hand tools, portable powered tools, specialist diagnostic and testing tools and ancillary equipment.
	4.3	Describe how the resources should be used correctly and how problems associated with the resources are reported.
	4.4	Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5	Describe any potential hazards associated with the resources and methods of work.
	4.6	Describe how to calculate quantity, length, area, volume and wastage associated with the method/procedure to diagnose faults in plant and machinery systems and components.

Units – Learning Outcomes and Assessment Criteria

Title:	Diagnosing faults in plant or machinery systems or components in the workplace	
Learning outcomes	Assessment criteria	
The learner will be able to:	The learner can:	
5 Minimise the risk of damage to the work and surrounding area when diagnosing faults in plant or machinery systems or components.	5.1	Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2	Minimise damage and maintain a clean work space.
	5.3	Dispose of waste in accordance with current legislation.
	5.4	Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5	Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when diagnosing faults in plant or machinery systems or components.	6.1	Demonstrate completion of the work within the allocated time.
	6.2	Describe the purpose of the work programme and explain why deadlines should be kept in relation to: <ul style="list-style-type: none"> – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to diagnose faults in plant or machinery systems or components to the required specification.	7.1	Demonstrate the following work skills when diagnosing faults in plant or machinery systems or components: <ul style="list-style-type: none"> – selecting, investigating, interrogating, observing, listening, smelling, feeling, applying, identifying, collecting, analysing, interpreting, diagnosing and reporting.
	7.2	Identify and diagnose functional and operational faults in plant or machinery, systems or components to given working instructions for four of the following: <ul style="list-style-type: none"> – power unit – transmission – steering – hydraulics – pump – brakes – pneumatics – electrical – electronic – operating ancillaries or attachments.

Units – Learning Outcomes and Assessment Criteria

Title:	Diagnosing faults in plant or machinery systems or components in the workplace
Learning outcomes The learner will be able to:	Assessment criteria The learner can:
7 Continued	7.3 Complete functional, operational and safety checks on plant or machinery systems or components, to given working instructions.
	7.4 Complete and maintain records when diagnosing faults in plant or machinery systems or components.
	7.5 Safely use and handle materials, hand tools, portable power tools, specialist diagnostic and testing tools and ancillary equipment.
	7.6 Safely store the materials, tools and equipment used when diagnosing faults in plant or machinery systems or components.
	7.7 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: <ul style="list-style-type: none"> – collect and collate information from operators and users on symptoms and problems – consider information from existing records – analyse information to define the diagnosis start point – investigate and establish the most likely causes of the faults – observe the operational functions of plant and machinery components and systems – interpret sounds and smells – collect and analyse data from diagnostic aids; multi-meters, pressure and flow gauges, computers, test lamps, portable appliance testing equipment and other specialist tools and equipment – identify faults and determine the cause – determine and suggest repair requirements for faults in power units, transmissions, steering, hydraulic systems, pumps, brakes, pneumatic systems, electrical systems, electronic components and operating ancillaries and attachments – categorise faults by type (continual, intermittent or breakdown) – apply situational awareness to select routine and non-routine fault diagnosis procedures – determine the implications of faults for other work and the operational safety of the plant or machinery – report, mark, tag and place notices on plant and machinery systems and components deemed hazardous – use hand tools, specialist diagnostic and testing tools, portable power tools and equipment – work at height – use access equipment – complete and maintain records.

Units – Learning Outcomes and Assessment Criteria

Title:	Diagnosing faults in plant or machinery systems or components in the workplace	
Learning outcomes The learner will be able to:	Assessment criteria The learner can:	
7 continued	7.8	Describe the needs of other occupations and how to effectively communicate within a team when diagnosing faults in plant or machinery systems or components.
	7.9	Describe how to maintain the tools and equipment used when diagnosing faults in plant or machinery systems or components.

Units – Learning Outcomes and Assessment Criteria

Title:	Diagnosing faults in plant or machinery systems or components in the workplace
Additional information about this unit	
Assessment Guidance	<p>This unit must be assessed in a work environment, in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment.</p> <p>Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy.</p> <p>Workplace evidence of skills cannot be simulated.</p> <p>This unit must be assessed against the endorsements detailed within the relevant NVQ structure.</p> <p>ProQual Level 3 NVQ Diploma in Plant Installations – Tower Crane (Construction):</p> <p>Four of the following endorsements required:</p> <ul style="list-style-type: none"> Power unit Transmission Steering Hydraulic Pump Brake Pneumatic Electrical Electronic Operating ancillaries and attachments
Sector Subject Areas	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	110

Units – Learning Outcomes and Assessment Criteria

Title:	Providing technical information, advice and guidance to users of plant or machinery in the workplace	
Unit Number:	Y/615/1987	
Learning outcomes The learner will be able to:	Assessment criteria The learner can:	
1 Interpret the given information relating to the work and resources when providing technical information, advice and guidance to users of plant or machinery.	1.1	Interpret and extract relevant information from drawings, specifications, schedules, method statements, risk assessments and manufacturers' information.
	1.2	Comply with information and/or instructions derived from risk assessments and method statements.
	1.3	Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4	Describe different types of information, their source and how they are interpreted in relation to: <ul style="list-style-type: none"> – drawings, specifications, schedules, method statements, risk assessments, manufacturers' information and current regulations associated with the operation and use of plant and machinery.
2 Know how to comply with relevant legislation and official guidance when providing technical information, advice and guidance to users of plant or machinery.	2.1	Describe their responsibilities regarding potential accidents and health hazards, whilst working: <ul style="list-style-type: none"> – in the workplace, below ground level, at height, in confined spaces, with tools and equipment, with materials and substances, with movement/storage of materials and by manual handling and mechanical lifting.
	2.2	Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	2.3	Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when providing technical information, advice and guidance to users of plant or machinery.	3.1	Use health and safety control equipment and access equipment (if applicable) safely to carry out the activity in accordance with current legislation and organisational requirements when providing technical information, advice and guidance to users of plant or machinery.
	3.2	Comply with information relating to specific risks to health when providing technical information, advice and guidance to users of plant or machinery.

Units – Learning Outcomes and Assessment Criteria

Title:	Providing technical information, advice and guidance to users of plant or machinery in the workplace	
Learning outcomes The learner will be able to:	Assessment criteria The learner can:	
3 Continued	3.3	Explain why and when health and safety control equipment, identified by the principles of protection, should be used, relating to providing technical information, advice and guidance to users of plant or machinery, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: <ul style="list-style-type: none"> – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV).
	3.4	Describe how the relevant health and safety control equipment should be used in accordance with the given instructions.
	3.5	Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related hazards.
4 Select the required quantity and quality of resources for the methods of work to provide technical information, advice and guidance to users of plant or machinery.	4.1	Select resources associated with own work in relation to materials, components, tools, equipment and consumables.
	4.2	Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: <ul style="list-style-type: none"> – consumables – literature, forms and documents – hand and/or portable powered tools and equipment.
	4.3	Describe how the resources should be used correctly and how problems associated with the resources are reported.
	4.4	Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5	Describe any potential hazards associated with the resources and methods of work.
	4.6	Describe how to calculate quantity, length, area and wastage associated with the method/procedure to provide technical information, advice and guidance to users of plant and machinery.

Units – Learning Outcomes and Assessment Criteria

Title:	Providing technical information, advice and guidance to users of plant or machinery in the workplace	
Learning outcomes	Assessment criteria	
The learner will be able to:	The learner can:	
5 Minimise the risk of damage to the work and surrounding area when providing technical information, advice and guidance to users of plant or machinery.	5.1	Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2	Minimise damage and maintain a clean work space.
	5.3	Dispose of waste in accordance with current legislation.
	5.4	Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5	Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when providing technical information, advice and guidance to users of plant or machinery.	6.1	Demonstrate completion of the work within the allocated time.
	6.2	Describe the purpose of the work programme and explain why deadlines should be kept in relation to: <ul style="list-style-type: none"> – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to provide technical information, advice and guidance to users of plant or machinery to the required specification.	7.1	Demonstrate the following work skills when providing technical information, advice and guidance to users of plant or machinery: <ul style="list-style-type: none"> – interpreting, analysing, explaining, advising, confirming, answering, replacing, referring and informing.
	7.2	Provide technical information and advice to given working instructions for operators of plant or machinery for two of the following: <ul style="list-style-type: none"> – at breakdown – on handover – on request – under terms of contract, guarantee, warranty or hire agreement – on recall – modification or alteration.

Units – Learning Outcomes and Assessment Criteria

Title:	Providing technical information, advice and guidance to users of plant or machinery in the workplace	
Learning outcomes The learner will be able to:	Assessment criteria The learner can:	
7 Continued	7.3	Complete and maintain records when providing technical information, advice and guidance to users of plant or machinery.
	7.4	Safely use and handle materials, hand tools, portable power tools and ancillary equipment.
	7.6	Safely store the materials, tools and equipment used when providing technical information, advice and guidance to users of plant or machinery.
	7.6	Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: <ul style="list-style-type: none"> – provide information advice and guidance to users and operators: on handover, at breakdowns, on request, under terms of contract, guarantee, warranty or hire agreement and for manufacturers' recall – explain the information, advice and guidance available – use situational awareness to interpret the information and advice required – analyse the information available to provide answers – refer to other sources of information: colleagues, multi media – source and supply replacement literature and documentation – inform on progress – provide information, advice and guidance in a manner that maintains goodwill – confirm the information, advice and guidance given is appropriate – use hand tools, portable power tools and equipment – work at height – use access equipment – complete and maintain records.
	7.7	Describe the needs of other occupations and how to effectively communicate within a team when providing technical information, advice and guidance to users of plant or machinery.
	7.8	Describe how to maintain the tools and equipment used when providing technical information, advice and guidance to users of plant or machinery.

Units – Learning Outcomes and Assessment Criteria

Title:	Providing technical information, advice and guidance to users of plant or machinery in the workplace
Additional information about this unit	
Assessment Guidance	<p>This unit must be assessed in a work environment, in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment.</p> <p>Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy.</p> <p>Workplace evidence of skills cannot be simulated.</p> <p>This unit must be assessed against the endorsements detailed within the relevant NVQ structure.</p> <p><u>ProQual Level 3 NVQ Diploma in Plant Installations – Tower Crane (Construction):</u></p> <p>Two of the following endorsements required:</p> <ul style="list-style-type: none"> Breakdown Handover Request Contract/guarantee/warranty/hire agreement Recall Modification/alteration
Sector Subject Areas	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	63



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