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Specification

Edexcel NVQ/competence-based qualifications

Edexcel Level 1 NVQ Certificate in Plant Maintenance (Construction) (QCF)

Edexcel Level 2 NVQ Diploma in Plant Maintenance (Construction) (QCF)

For first registration October 2010

A PEARSON COMPANY

Edexcel, a Pearson company, is the UK's largest awarding organisation offering vocational and academic qualifications and testing, to employers, training providers, colleges, schools, and other places of learning in the UK, and in over 85 countries worldwide.

Our specialist suite of qualifications include NVQs, Apprenticeships, WorkSkills, Functional Skills, Foundation Learning, as well as our exclusive range of BTECs, from entry level right through to Higher National Diplomas.

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Contents

Qualification titles covered by this specification

This specification gives you the information you need to offer the Edexcel NVQs in Plant Maintenance:

Qualification title	Qualification Accreditation Number (QAN)	Accreditation start date
Edexcel Level 1 NVQ Certificate in Plant Maintenance (Construction) (QCF)	500/9160/8	01/08/2010
Edexcel Level 2 NVQ Diploma in Plant Maintenance (Construction) (QCF)	500/9161/X	01/08/2010

These qualifications have been accredited within the Qualifications and Credit Framework (QCF) and are eligible for public funding as determined by the Department for Education (DfE) under Sections 96 and 97 of the Learning and Skills Act 2000.

The qualification titles listed above feature in the funding lists published annually by the DfE and the regularly updated website. They will also appear on the Learning Aims Database (LAD), where relevant.

You should use the QCF Qualification Accreditation Number (QAN), when you wish to seek public funding for your learners. Each unit within a qualification will also have a unique QCF reference number, which is listed in this specification.

The QCF qualification title and unit reference numbers will appear on the learners' final certification document. Learners need to be made aware of this when they are recruited by the centre and registered with Edexcel.

These titles replace the following qualifications from 1st August 2010:

Qualification title	Qualification Accreditation Number (QAN)	Accreditation start date	Accreditation end date
Edexcel Level 2 NVQ in Plant Maintenance	100/5586/1	01/09/2005	31/12/2010

Key features of the Edexcel NVQs in Plant Maintenance

These qualifications:

- are nationally recognised
- are based on the ConstructionSkills National Occupational Standards (NOS). The NOS, Assessment Requirements/strategy and qualification structure(s) are owned by ConstructionSkills.

The Edexcel Level 2 NVQ Diploma in Plant Maintenance (Construction) (QCF) has been approved as a component for the ConstructionSkills Apprenticeship framework.

What is the purpose of these qualifications?

These qualifications are appropriate for employees in the construction and the built environment sector working across a broad range of areas. They are designed to assess occupational competence in the workplace where learners are required to demonstrate skills and knowledge to a level required in the construction industry.

Who are these qualifications for?

These qualifications are for all learners aged 16 and above who are capable of reaching the required standards.

Edexcel's policy is that the qualifications should:

- be free from any barriers that restrict access and progression
- ensure equality of opportunity for all wishing to access the qualifications.

What are the benefits of these qualifications to the learner and employer?

These qualifications allow learners to demonstrate competence against National Occupational Standards which are based on the needs of the construction and the built environment industry as defined by ConstructionSkills, the Sector Skills Council. As such they contribute to the development of skilled labour in the sector. The Edexcel Level 2 NVQ Diploma in Plant Maintenance (Construction) (QCF) may contribute towards the competence element of an Apprenticeship.

What are the potential job roles for those working towards these qualifications?

- Plant operator.

What progression opportunities are available to learners who achieve these qualifications?

These qualifications allow learners to demonstrate competence in plant maintenance at a level required by the construction and the built environment industry. Learners can progress across the level and size of the construction and the built environment competence and knowledge qualifications and into other occupational areas such as team leading and Management.

Further information is available in *Annexe A*.

What is the qualification structure for the Edexcel Level 1 NVQ Certificate in Plant Maintenance (Construction) (QCF)?

Individual units can be found in the *Units* section. The QCF level and credit value are given on the first page of each unit.

Learners must complete all units in Group A. A total of 24 credits.

A - Mandatory units

Learners must complete all units in Group A.

Credit value required: minimum 24.

L/600/8292 - Contributing to a safe working environment for plant maintenance activities in the workplace

D/600/8295 - Carrying out basic maintenance of plant and equipment in the workplace

H/600/8301 - Carrying out bench fitting activities to maintain plant or equipment in the workplace

F/600/8306 - Operating plant for no load conditions in the workplace

What is the qualification structure for the Edexcel Level 2 NVQ Diploma in Plant Maintenance (Construction) (QCF)?

Individual units can be found in the *Units* section. The QCF level and credit value are given on the first page of each unit.

Learners must complete all units in Group A and a minimum of three units from Group B. A total of 95 credits (minimum).

A - Mandatory units

Learners must complete all units in Group A.

Credit value required: minimum 62.

J/600/8310 - Carrying out the servicing and maintenance of plant and equipment in the workplace

Y/600/8313 - Removing and replacing plant and equipment components in the workplace

K/600/8316 - Dismantling and assembling plant and equipment components in the workplace

A/600/8319 - Maintaining the work area for plant maintenance and repair activities in the workplace

A/600/8322 - Carrying out routine inspections on plant and equipment to ensure operational serviceability in the workplace

M/600/8334 - Diagnosing faults in plant or equipment systems and components in the workplace

B - Optional units

Learners must complete a minimum of three units in Group B.

Credit value required: minimum 33.

A/600/8336 - Repairing plant and equipment by soldering and welding ferrous and non-ferrous materials in the workplace

F/600/8340 - Producing or modifying one-off components for use with plant or equipment in the workplace

L/600/8390 - Moving plant related loads by manual lifting and using manually operated load handling equipment in the workplace

Y/600/8392 - Installing plant or equipment for operational activities in the workplace

H/600/8394 - Carrying out specific tests on plant and equipment to determine operational serviceability in the workplace

M/600/8396 - Configuring plant or equipment for operational activities in the workplace

Y/600/8411 - Carrying out familiarisation or handover activities to users of plant and equipment in the workplace

How are the qualifications graded and assessed?

The overall grade for each qualification is a 'pass'. The learner must achieve all the required units within the specified qualification structure.

To pass a unit the learner must:

- achieve **all** the specified learning outcomes
- satisfy **all** the assessment criteria by providing sufficient and valid evidence for each criterion
- show that the evidence is their own.

The qualifications are designed to be assessed:

- in the workplace or
- in conditions resembling the workplace, as specified in the Assessment Requirements/strategy for the sector, or
- as part of a training programme.

Assessment Requirements/Strategy

The Assessment Requirements/Strategy for these qualifications have/has been included in *Annexe E*. They have been developed by ConstructionSkills in partnership with employers, training providers, awarding organisations and the regulatory authorities. The assessment strategy includes details on:

- criteria for defining realistic working environments
- roles and occupational competence of assessors, expert witnesses, internal verifiers and standards verifiers
- quality control of assessment
- evidence requirements.

Evidence of competence may come from:

- **current practice** where evidence is generated from a current job role
- a **programme of development** where evidence comes from assessment opportunities built into a learning/training programme whether at or away from the workplace
- the **Recognition of Prior Learning (RPL)** where a learner can demonstrate that they can meet the assessment criteria within a unit through knowledge, understanding or skills they already possess without undertaking a course of learning. They must submit sufficient, reliable and valid evidence for internal and standards verification purposes. RPL is acceptable for accrediting a unit, several units or a whole qualification
- a **combination** of these.

It is important that the evidence is:

Valid	relevant to the standards for which competence is claimed
Authentic	produced by the learner
Current	sufficiently recent to create confidence that the same skill, understanding or knowledge persist at the time of the claim
Reliable	indicates that the learner can consistently perform at this level
Sufficient	fully meets the requirements of the standards.

Types of evidence

To successfully achieve a unit the learner must gather evidence which shows that they have met the required standard in the assessment criteria. Evidence can take a variety of different forms including the following examples:

- direct observation of the learner's performance by their assessor
- outcomes from oral or written questioning
- products of the learner's work
- personal statements and/or reflective accounts
- outcomes from simulation, where permitted by the assessment strategy
- professional discussion
- assignment, project/case studies
- authentic statements/witness testimony
- expert witness testimony
- reflective accounts
- evidence of Recognition of Prior Learning.

Learners can use one piece of evidence to prove their knowledge, skills and understanding across different assessment criteria and/or across different units. It is, therefore, not necessary for learners to have each assessment criterion assessed separately. Learners should be encouraged to reference the assessment criteria to which the evidence relates.

Evidence must be made available to the assessor, internal verifier and Edexcel standards verifier. A range of recording documents is available on the Edexcel website (www.edexcel.com). Alternatively, centres may develop their own.

Additional Requirements

The Joint Awarding Body and the SSC Working Practices Group have identified additional requirements that are needed to assess and quality assure qualifications placed on the QCF that use NVQ within their title. These requirements are shown in *Annexe D: Additional Requirements for Qualifications that use the title NVQ within the QCF.*

What do you need to offer these qualifications?

Centre recognition

Centres that have not previously offered Edexcel qualifications need to apply for and be granted centre recognition as part of the process for approval to offer individual qualifications. New centres must complete both a centre recognition approval application and a qualification approval application.

Existing centres will be given 'automatic approval' for a new qualification if they are already approved for a qualification that is being replaced by the new qualification and the conditions for automatic approval are met. Centres already holding Edexcel approval are able to gain qualification approval for a different level or different sector via Edexcel online.

Approvals agreement

All centres are required to enter into an approvals agreement which is a formal commitment by the head or principal of a centre to meet all the requirements of the specification and any linked codes or regulations. Edexcel will act to protect the integrity of the awarding of qualifications, if centres do not comply with the agreement. This could result in the suspension of certification or withdrawal of approval.

Quality assurance

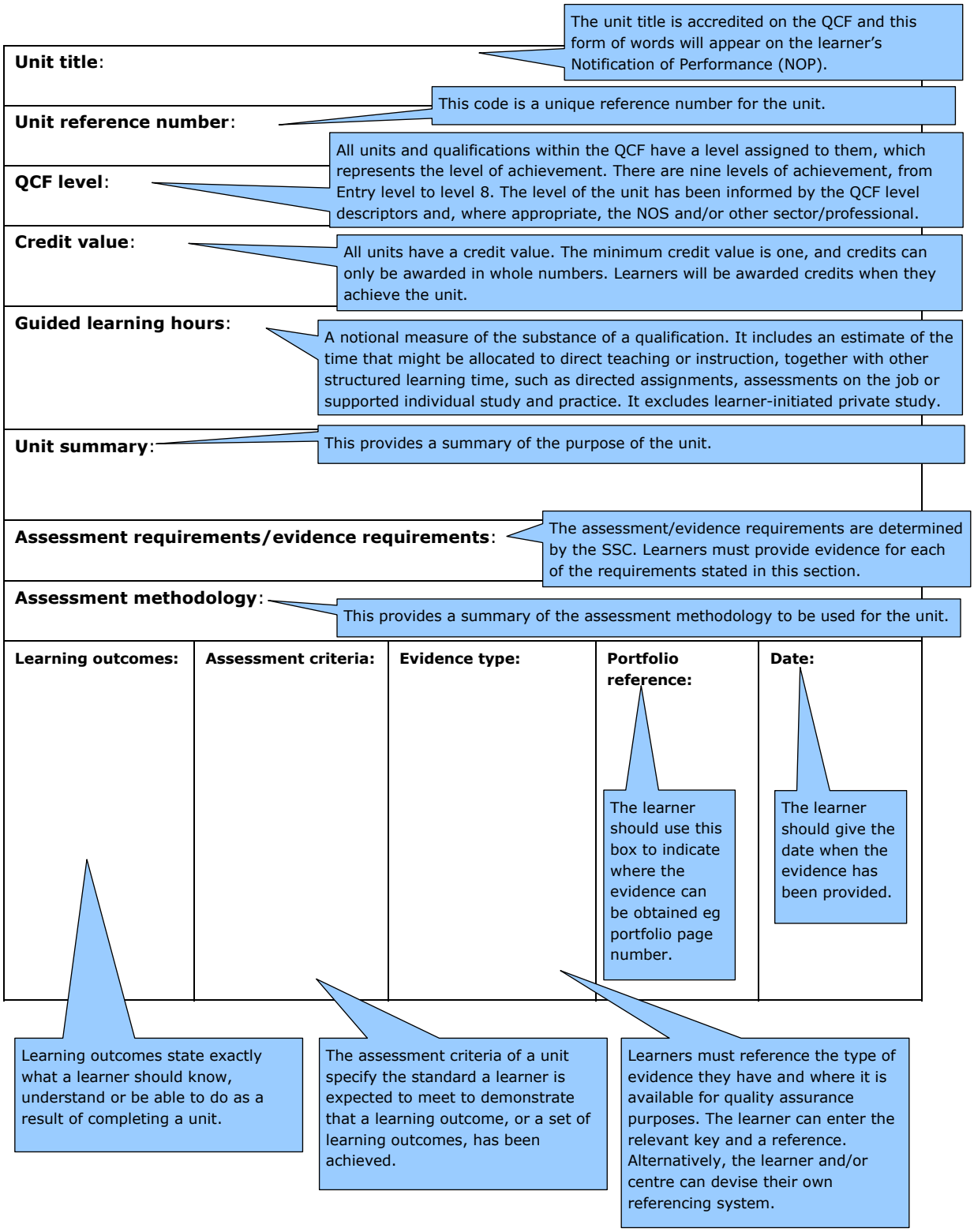
Detailed information on Edexcel's quality assurance processes is given in *Annexe B*.

What resources are required to deliver these qualifications?

Each qualification is designed to support learners working in the Construction and the Built Environment sector. Physical resources need to support the delivery of the qualifications and the assessment of the learning outcomes and must be of industry standard. Centres must meet any specific resource requirements outlined in *Annexe E: Assessment Requirements/strategy*. Staff assessing the learner must meet the requirements within the overarching assessment strategy for the sector.

Unit format

Each unit in this specification contains the following sections.



Units

Unit 1: Contributing to a safe working environment for plant maintenance activities in the workplace

Unit reference number: L/600/8292

QCF level: 1

Credit value: 4

Guided learning hours: 14

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in contributing to a safe working environment for plant maintenance in the workplace within the relevant sector of industry.

Assessment Requirements/evidence requirements

This unit must be assessed in a work environment and in accordance with:

- the Additional Requirements for Qualifications using the title NVQ in QCF
- the ConstructionSkills Consolidated Assessment Strategy for Construction and the Built Environment – Craft, Supervisory, Technical, Managerial and Professional Units and Qualifications with NVQ in the Qualification and Credit Framework (QCF) title and SVQs.

Assessors for this unit must use a combination of the following assessment methods:

- observation of normal work activities within the workplace that clearly confirms the required skills
- questioning the learner on knowledge criteria that clearly confirms the required understanding
- review other forms of evidence that can clearly confirm industry required skills, knowledge and understanding.

Assessors for this unit must have verifiable, current industry experience and a sufficient depth of occupational expertise and knowledge of contributing to a safe working environment for plant maintenance to be effective and reliable when confirming a learner's competence.

Workplace evidence of skills cannot be simulated.

Assessment methodology

Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Identify and deal with hazards in the work area when maintaining plant.	1.1 comply with current health and safety legislation, and other relevant regulations and guidelines applicable to plant maintenance activities 1.2 identify industrial processes, environmental, tools, plant, equipment, substances and materials that have the potential to cause harm in line with agreed and approved procedures 1.3 take appropriate action to minimize risks from identified plant maintenance hazards by isolating the hazard or stopping work activities following given level of responsibility, and report hazards identified and actions taken to the appropriate person 1.4 describe health and safety legislation, regulations, safe working practices and procedures, and the use of personal protective equipment (PPE) relevant to plant maintenance activities 1.5 state hazard spotting and safety assessment methods, and techniques, the procedures to be followed to identify hazards, and reasons for contributing and assisting in carrying out assessments			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	1.6 name the types of hazards involving processes, tools, equipment, materials and personal hygiene applicable to plant maintenance activities and state the effects that hazards can have on people, property and the environment 1.7 state the organisational safety reporting procedures and instructions, how to report health and safety issues relating to workplace hazards and to whom the issues should be reported to			
2 Respond to emergencies in the work area when maintaining plant.	2.1 demonstrate calling for expert help in events resulting in injury to self or others, plant or equipment faults or hazards arising within the work area 2.2 demonstrate following organisational shut down and evacuation procedures promptly 2.3 demonstrate taking prompt and appropriate action to minimise risks to personal and third-party injury, and damage to property and equipment whist prioritising the actions. Actions will include: – shutting down plant and machinery, – using relevant fire extinguishers and methods suitable for plant maintenance operations, – preventing further injury and damage to equipment , property and structures, – reporting the emergency following organisational procedures			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	2.4 list the classifications of fire types and causes and state how to deal with each type 2.5 state the organisational evacuation procedures for the workplace, responsibilities and limitations in dealing with emergencies and evacuations, how to raise the alarm, where the fire points are and how to deal with them 2.6 state the organisational procedures for dealing with first aid, who the approved first aiders are, and location of first aid equipment in the workplace 2.7 state the organisational procedures for reporting and recording accidents, incidents and near misses, procedures for reporting emergencies and evacuations, and when to inform others			
3 Reinstate the work area after plant maintenance activities.	3.1 separate equipment, components and materials from waste items and materials associated with plant maintenance activities and store reusable materials, parts, components, fuels, coolants, fluids and equipment in an appropriate location 3.2 restore work areas to a safe and tidy condition following given directions in accordance with agreed requirements and schedules 3.3 dispose of hazardous and non-hazardous waste materials from plant maintenance activities following organisational and environmentally safe procedures			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	3.4 demonstrating dealing promptly and effectively with problems and report those that cannot be solved 3.5 state organisational required standards of cleanliness and tidiness, the types of requirements for users of the work area, and types of and how to use cleaning equipment and spillage materials to restore the work area 3.6 describe the types of waste materials generated when maintaining plant and how to remove hazards from oil, grease, sand, earth, fuel, fluids etc 3.7 state typical plant parts, equipment and materials that can be reused, the ways and methods of storing re-useable items, and organisational procedures for returning unused materials, tools and components back to storage 3.8 state the organisational procedures for disposing of hazardous and non-hazardous materials and substances, and procedures for reporting problems with reinstating the work area following plant maintenance activities			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 2: Carrying out basic maintenance of plant and equipment in the workplace

Unit reference number: D/600/8295

QCF level: 1

Credit value: 4

Guided learning hours: 14

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in carrying out basic maintenance of plant and equipment in the workplace within the relevant sector of industry.

Assessment Requirements/evidence requirements

This unit must be assessed in a work environment and in accordance with:

- the Additional Requirements for Qualifications using the title NVQ in QCF
- the ConstructionSkills Consolidated Assessment Strategy for Construction and the Built Environment – Craft, Supervisory, Technical, Managerial and Professional Units and Qualifications with NVQ in the Qualification and Credit Framework (QCF) title and SVQs.

Assessors for this unit must use a combination of the following assessment methods:

- observation of normal work activities within the workplace that clearly confirms the required skills
- questioning the learner on knowledge criteria that clearly confirms the required understanding
- review other forms of evidence that can clearly confirm industry required skills, knowledge and understanding.

Assessors for this unit must have verifiable, current industry experience and a sufficient depth of occupational expertise and knowledge of carrying out basic maintenance of plant and equipment to be effective and reliable when confirming a learner's competence.

Workplace evidence of skills cannot be simulated.

This unit must be assessed against one of the following endorsements:

- heavy earthmoving plant and equipment
- cranes and lifting equipment
- building and associated plant
- civil engineering plant
- road building plant
- small plant and tools
- powered access equipment (electric)
- powered access equipment (diesel)
- powered access equipment (bi-energy)
- piling equipment
- tunnelling equipment
- lift trucks (electric)
- lift trucks (diesel)
- lift trucks (gas)
- plant electrics (dc auto)
- plant electrics (ac)
- engine and transmission reconditioning
- road/rail plant
- hydraulic attachments.

Assessment methodology

Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Work safely at all times when carrying out basic maintenance on plant and equipment.	1.1 comply with current health and safety legislation, and other relevant regulations and guidelines applicable to basic maintenance activities of plant and equipment 1.2 use personal protective equipment (PPE) relevant to plant basic maintenance 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 to plant maintenance activities 1.4 describe the safe and correct use of personal protective equipment (PPE), manual handling procedures and typical safety checks on specific items of plant and equipment 1.5 state reasons for the care and protection of surrounding areas and persons affected by the work, and possible injuries through the release of substances and slipping on wet/greasy surfaces			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
2 Follow the relevant maintenance schedules to carry out the required work.	2.1 identify and extract applicable maintenance schedules and related specifications from relevant information sources 2.2 outline basic maintenance schedules and durations for typical plant and equipment within the occupational area 2.3 describe typical information contained within manufacturer operator manuals			
3 Maintain a range of plant and equipment 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 within maintenance workshops, and on 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 3.4 outline the types of available resources, tools and equipment and their suitability for different maintenance tasks, and the different application techniques for fuels, lubricants and coolants			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	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 on 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			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
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 organisations' reporting lines and communication procedures associated with maintaining plant and equipment			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 3: Carrying out bench fitting activities to maintain plant or equipment in the workplace

Unit reference number: H/600/8301

QCF level: 1

Credit value: 12

Guided learning hours: 40

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in carrying out bench fitting activities to maintain plant or equipment in the workplace within the relevant sector of industry.

Assessment Requirements/evidence requirements

This unit must be assessed in a work environment and in accordance with:

- the Additional Requirements for Qualifications using the title NVQ in QCF
- the ConstructionSkills Consolidated Assessment Strategy for Construction and the Built Environment – Craft, Supervisory, Technical, Managerial and Professional Units and Qualifications with NVQ in the Qualification and Credit Framework (QCF) title and SVQs.

Assessors for this unit must use a combination of the following assessment methods:

- observation of normal work activities within the workplace that clearly confirms the required skills
- questioning the learner on knowledge criteria that clearly confirms the required understanding
- review other forms of evidence that can clearly confirm industry required skills, knowledge and understanding.

Assessors for this unit must have verifiable, current industry experience and a sufficient depth of occupational expertise and knowledge of carrying out bench fitting activities to maintain plant or equipment to be effective and reliable when confirming a learner's competence.

Workplace evidence of skills cannot be simulated.

This unit must be assessed against one of the following endorsements:

- oxyacetylene gas
- manual arc
- manual inert arc.

Assessment methodology

Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Work safely and at all times when carrying out bench fitting activities to maintain plant or equipment.	1.1 comply with current health and safety legislation, and other relevant regulations and guidelines applicable to bench fitting activities 1.2 use personal protective equipment (PPE) relevant to bench fitting 1.3 describe health and safety legislation, regulations and safe working practices, and company health and safety policies and workplace procedures that apply to bench fitting and shaping activities including: – hand and power tool use – removing and replacing tooling and guarding – types, purpose and limitations of each types of personal protective equipment (PPE) relating to bench fitting			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
2 Interpret specifications when carrying out bench fitting activities to maintain plant or equipment.	2.1 follow all relevant drawings, sketches, specifications, work pieces or working from a pattern to produce and shape components to maintain plant 2.2 describe different sources of information on specifications and how to interpret: – engineering drawings – free-hand sketches – specification sheets/drawings – representative work pieces			
3 Prepare to carry out bench fitting activities to produce components to maintain plant or equipment.	3.1 obtain the appropriate tools and equipment for shaping operations and check they are in a safe and usable condition 3.2 mark out ferrous and non-ferrous materials from given specifications using measuring and marking equipment 3.3 state the types and uses of various marking out equipment and methods of marking out materials prior to shaping, cutting, filing and drilling 3.4 state how to handle and secure ferrous and non-ferrous materials and the safety precautions to be taken			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
3	Prepare to carry out bench fitting activities to produce components to maintain plant or equipment.	3.5	list typical ferrous and non-ferrous materials used in components to maintain plant, state the characteristics and limitations of each, and typical standard sizes and lengths of stock material			
		3.6	state how to select, prepare, check, sharpen (where relevant), set up, care for, use and store the following hand, power and marking out tools and equipment: – drills, files, saws, taps, dies, chisels, reamers and hand drills – portable power and pedestal drills and grinders, both electric and pneumatic – scribers, centre punches, squares and rules			
		3.7	state the reasons, components and methods of carrying out safety checks prior to using electrical powered tools			
4	Carry out shaping operations to produce a range of components using a range of materials, to maintain plant or equipment.	4.1	shape ferrous and non-ferrous materials to form components that conform to given tolerances. Components must be shaped using the following forms: – straight – curved – angled – chamfered – bevelled			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.2 use hand tools, power tools and work holding equipment relevant to bench fitting activities 4.3 demonstrate the following work skills when shaping and producing components to maintain plant: – filing – sawing – grinding (off-hand) – drilling – chiselling – cutting – tapping and threading – reaming 4.4 check that the finished components have been completed to the required specification, are fit for purpose and within specified tolerances 4.5 state typical hand tool shaping methods, techniques, processes and procedures to remove and shape materials and produce holes to size and tolerance when using: – hacksaws, files and chisels for removing and shaping materials – drills, dies, taps and reamers 4.6 outline the different processes for shaping, forming, cutting and producing surface finishes on materials			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
5 Know how to deal with problems promptly and effectively and report those that cannot be solved.	5.1 state the organisations' reporting lines and procedures associated with bench fitting activities			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 4: Operating plant for no load conditions in the workplace

Unit reference number: F/600/8306

QCF level: 1

Credit value: 4

Guided learning hours: 14

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in operating plant for no load conditions in the workplace within the relevant sector of industry.

Assessment Requirements/evidence requirements

This unit must be assessed in a work environment and in accordance with:

- the Additional Requirements for Qualifications using the title NVQ in QCF
- the ConstructionSkills Consolidated Assessment Strategy for Construction and the Built Environment – Craft, Supervisory, Technical, Managerial and Professional Units and Qualifications with NVQ in the Qualification and Credit Framework (QCF) title and SVQs.

Assessors for this unit must use a combination of the following assessment methods:

- observation of normal work activities within the workplace that clearly confirms the required skills
- questioning the learner on knowledge criteria that clearly confirms the required understanding
- review other forms of evidence that can clearly confirm industry required skills, knowledge and understanding.

Assessors for this unit must have verifiable, current industry experience and a sufficient depth of occupational expertise and knowledge of operating plant for no load conditions to be effective and reliable when confirming a learner's competence.

Workplace evidence of skills cannot be simulated.

This unit must be assessed against one of the following endorsements:

- heavy earthmoving plant and equipment
- cranes and lifting equipment
- building and associated plant
- civil engineering plant
- road building plant
- small plant and tools
- powered access equipment (electric)
- powered access equipment (diesel)
- powered access equipment (bi-energy)
- piling equipment
- tunnelling equipment
- lift trucks (electric)
- lift trucks (diesel)
- lift trucks (gas)
- plant electrics (dc auto)
- plant electrics (ac)
- engine and transmission reconditioning
- road/rail plant
- hydraulic attachments.

Assessment methodology

Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Identify and prepare plant for no load condition operations.	1.1 confirm the operations for which the plant is to be used and comply with work instructions and procedures 1.2 carry out pre-start checks on the plant in accordance with manufacturers' approved procedures, organisational practices and statutory requirements and confirm ready and safe for functional checks 1.3 identify and record defects found during preparation activities and, if applicable, take appropriate actions to correct defects, in accordance with supervisor/authorised person directions 1.4 describe health and safety legislation, regulations, safe working practices and procedures, company health and safety policies, workplace procedures and use personal protective equipment (PPE) that apply to safe operations of plant 1.5 describe the type, purpose and characteristics of plant and equipment being used within the occupational area, and the type of work that can be carried out and how the equipment is to be used			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	1.6 describe the different types of power supply that can be used on plant within the occupational area. 1.7 Outline the manufacturers and organisational pre-operational checks, and recommendations for routine checks			
2 Operate plant to carry out no load functional checks and check for defects.	2.1 carry out starting and stopping procedures, including emergency-stops, and confirm functional in accordance with manufacturers' instructions and statutory requirements 2.2 run and operate plant to carry out no load functional checks on all relevant components and functions as directed by a supervisor/authorised person 2.3 describe the organisational procedures, manufacturers' instructions and statutory requirements for the starting, stopping and use of controls and safety devices on plant and equipment 2.4 outline the handling techniques of the plant 2.5 describe the methods, procedures and precautions to be carried out before and during functional checks to identify defects			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
3 Carry out stopping and shut down procedures on plant.	3.1 stop and shut down plant according to manufacturers' instructions and organisational procedures 3.2 carry out post-stop checks in accordance with organisational and operational procedures 3.3 leave plant safe and secure in accordance with organisational procedures, and manufacturers' and statutory requirements 3.4 describe the post-stop check procedures and precautions on plant applicable to the occupational area			
4 Identify and record operating defects and confirm the plant is ready for use should no defects be found.	4.1 identify defects in performance during pre-use and functional checks, record noted defects and report to the appropriate person 4.2 confirm that the plant is safe, correct and ready for operational use in accordance with work, manufacturers', organisational and statutory requirements 4.3 refer problems and conditions outside of their responsibility to an authorised person 4.4 describe the types of surface damage to plant and recognise what parts or components are worn or damaged			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.5 describe what consumables and components can be replaced by them as allowed by organisational requirements 4.6 describe the organisational procedures and practices for identifying and reporting defects in plant and the monitoring and maintenance checks that are required 4.7 ensure all work is carried out to approved procedures and practices in accordance with statutory requirements			
5 Know the approved procedures and practices to be followed when carrying out functional no load checks on plant.	5.1 state the organisations' reporting lines and communication instructions and procedures for the checking of plant 5.2 outline the organisational authorisation procedures for the use and operation of plant			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 5: Carrying out the servicing and maintenance of plant and equipment in the workplace

Unit reference number: J/600/8310

QCF level: 2

Credit value: 8

Guided learning hours: 27

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in carrying out the servicing and maintenance of plant and equipment in the workplace within the relevant sector of industry.

Assessment Requirements/evidence requirements

This unit must be assessed in a work environment and in accordance with:

- the Additional Requirements for Qualifications using the title NVQ in QCF
- the ConstructionSkills Consolidated Assessment Strategy for Construction and the Built Environment – Craft, Supervisory, Technical, Managerial and Professional Units and Qualifications with NVQ in the Qualification and Credit Framework (QCF) title and SVQs.

Assessors for this unit must use a combination of the following assessment methods:

- observation of normal work activities within the workplace that clearly confirms the required skills
- questioning the learner on knowledge criteria that clearly confirms the required understanding
- review other forms of evidence that can clearly confirm industry required skills, knowledge and understanding.

Assessors for this unit must have verifiable, current industry experience and a sufficient depth of occupational expertise and knowledge of carrying out the servicing and maintenance of plant and equipment to be effective and reliable when confirming a learner's competence.

Workplace evidence of skills cannot be simulated.

This unit must be assessed against one of the following endorsements:

- heavy earthmoving plant and equipment
- cranes and lifting equipment
- building and associated plant
- civil engineering plant
- road building plant
- small plant and tools
- powered access equipment (electric)
- powered access equipment (diesel)
- powered access equipment (bi-energy)
- piling equipment
- tunnelling equipment
- lift trucks (electric)
- lift trucks (diesel)
- lift trucks (gas)
- plant electrics (dc auto)
- plant electrics (ac)
- engine and transmission reconditioning
- road/rail plant
- hydraulic attachments.

Assessment methodology

Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Work safely at all times when servicing and maintaining plant and equipment.	1.1 comply with current health and safety legislation, and other relevant regulations and guidelines applicable to the servicing and maintenance of plant and equipment 1.2 use personal protective equipment (PPE) relevant to plant servicing and maintenance 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 to the servicing and maintenance activities 1.4 describe the safe and correct use of personal protective equipment (PPE), manual handling procedures and typical safety checks on specific items of plant and equipment 1.5 state reasons for the care and protection of surrounding areas and persons affected by the work, and possible injuries through the release of substances and slipping on wet/greasy surfaces			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
2 Follow the relevant maintenance and servicing schedules to carry out the required work.	2.1 identify and extract applicable servicing and maintenance schedule information from relevant information sources 2.2 outline servicing and maintenance schedules and durations for typical plant and equipment with the occupational area 2.3 describe typical information contained within workshop manuals, parts manuals, cross-reference guides and technical servicing bulletins			
3 Service and maintain a range of plant and equipment in both operational and non-operational situations.	3.1 carry out typical servicing and maintenance activities according to manufacturer's specifications and organisational procedures within the limits of their personal authority 3.2 service and maintain typical plant and equipment relevant to the occupational area within maintenance workshops, and on sites and/or client's premises 3.3 describe the routine and non-routine maintenance methods and procedures required by the manufacturer, the periodic servicing methods and servicing schedules, and the organisational instructions and procedures when servicing and maintaining plant and equipment 3.4 outline the types of available resources, tools and equipment and their suitability for different servicing and maintenance tasks, and the different application techniques for fuels, lubricants and coolants			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	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 servicing and maintaining plant and equipment.	4.1 demonstrate following procedures where the servicing and 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 servicing and maintenance tasks on plant and equipment within the occupational area, and how recognised problems can be rectified			
5 Comply with organisational servicing and maintenance records documentation procedures and waste disposal procedures when servicing and maintaining 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			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	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 organisations' reporting lines and communication procedures associated with servicing and maintaining plant and equipment			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 6: Removing and replacing plant and equipment components in the workplace

Unit reference number: Y/600/8313

QCF level: 2

Credit value: 12

Guided learning hours: 40

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in removing and replacing plant and equipment components in the workplace within the relevant sector of industry.

Assessment Requirements/evidence requirements

This unit must be assessed in a work environment and in accordance with:

- the Additional Requirements for Qualifications using the title NVQ in QCF
- the ConstructionSkills Consolidated Assessment Strategy for Construction and the Built Environment
- Craft, Supervisory, Technical, Managerial and Professional Units and Qualifications with NVQ in the Qualification and Credit Framework (QCF) title and SVQs.

Assessors for this unit must use a combination of the following assessment methods:

- observation of normal work activities within the workplace that clearly confirms the required skills
- questioning the learner on knowledge criteria that clearly confirms the required understanding
- review other forms of evidence that can clearly confirm industry required skills, knowledge and understanding.

Assessors for this unit must have verifiable, current industry experience and a sufficient depth of occupational expertise and knowledge of removing and replacing plant and equipment components to be effective and reliable when confirming a learner's competence.

Workplace evidence of skills cannot be simulated.

This unit must be assessed against one of the following endorsements:

- heavy earthmoving plant and equipment
- cranes and lifting equipment
- building and associated plant
- civil engineering plant
- road building plant
- small plant and tools
- powered access equipment (electric)
- powered access equipment (diesel)
- powered access equipment (bi-energy)
- piling equipment
- tunnelling equipment
- lift trucks (electric)
- lift trucks (diesel)
- lift trucks (gas)
- plant electrics (dc auto)
- plant electrics (ac)
- engine and transmission reconditioning
- road/rail plant
- hydraulic attachments.

Assessment methodology

Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Work safely at all times when removing and replacing plant and equipment components.	1.1 comply with current health and safety legislation and other relevant regulations and guidelines applicable to the removing and replacing plant and equipment components 1.2 use personal protective equipment (PPE) relevant to plant maintaining 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 removing and replacing plant and equipment components 1.4 state health and safety issues and describe reasons for possible injuries when removing and replacing plant components			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
2 Carry out preparation activities in order to remove plant and equipment components.	2.1 identify and extract applicable information from relevant information sources to aid the removal and replacement of plant and equipment components 2.2 establish and, where appropriate, mark component orientation to aid re-assembly 2.3 ensure that any stored energy or substances are released safely and correctly 2.4 describe different sources of information and technical literature to aid the removal and replacement of components from various items of plant and equipment 2.5 outline types of marking which need to be made to components prior to removal 2.6 describe the materials handling methods, preparation methods and techniques required to remove components and the types of isolation and disconnection that have to be made when removing components on plant and equipment			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
3 Remove components from a range of plant and equipment used in construction and allied industries in both operational and non-operational situations.	3.1 unfasten and remove various types of components using approved tools and techniques and demonstrate the following removal techniques or procedures: – unplugging – de-soldering – lubricating – freeing off corroded components – using a hydraulic press – using specialist tools – filing and dressing 3.2 remove components from typical plant and equipment conforming to given level of responsibility and relevant to the occupational area within maintenance workshops, and on sites and/or client's premises 3.3 describe the types of component removal methods relevant to plant and equipment used in the occupational area 3.4 take suitable precautions to prevent damage to components, tools and equipment during removal 3.5 describe ways of protecting tools and equipment when removing components from plant and equipment, how to keep components clean and protected and how to prevent damage to seals etc.			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
4	Establish the condition of removed components from plant and equipment and store for reuse.	4.1	check the condition of removed components and record those that need replacing			
		4.2	label and store removed components in an appropriate location			
		4.3	store and discard remove components in accordance with approved procedures			
		4.4	describe how to identify component defects, the methods used and sources of information			
		4.5	state the organisational instructions and procedures for the labelling and storage of components for reuse and the disposing of waste substances and unwanted parts			
5	Prepare components for replacement to plant and equipment.	5.1	obtain the required components and ensure they are in a suitable condition for replacement and fit for purpose			
		5.2	ensure that any replacement components meet the required specification			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
6 Replace components on a range of plant and equipment in both operational and non-operational situations in the workplace.	6.1 fit and secure components on typical plant and equipment conforming to given level of responsibility and manufacturers guidelines and specifications, relevant to the occupational area within maintenance workshops, and on sites and/or client's premises 6.2 fit and secure various types of components in the correct sequence using approved tools and techniques and demonstrate the following replacement techniques or procedures: – lifting – positioning – adjusting using hand tools and equipment following manufacturers' guidelines 6.3 make any necessary settings or adjustments to the components and ensure they function according to manufacturers' guidelines and specifications 6.4 describe the types of component replacement methods and techniques, examples of push/press fit and soldering, the type of connections that have to be made and typical securing methods 6.5 describe typical hand, power and specialist tools and equipment that can be used to replace a variety of specific components in and on plant and equipment			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	6.6 state the methods, procedures and techniques used in the organisation for mechanical handling, manual handling and protection of components when re-fitting			
7 Comply with organisational documentation and communication procedures when removing and replacing components on plant and equipment.	7.1 maintain documentation in accordance with organisational requirements when removing, storing and replacing components of plant and equipment 7.2 demonstrate dealing promptly and effectively with problems within given control and report those that cannot be solved to other designated personnel 7.3 state the organisations procedures for the care, security and controls of tools and equipment 7.4 outline the organisations' reporting lines and communication procedures associated with component removing and replacing			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 7: Dismantling and assembling plant and equipment components in the workplace

Unit reference number: K/600/8316

QCF level: 2

Credit value: 15

Guided learning hours: 50

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in dismantling and assembling plant and equipment components in the workplace within the relevant sector of industry.

Assessment Requirements/evidence requirements

This unit must be assessed in a work environment and in accordance with:

- the Additional Requirements for Qualifications using the title NVQ in QCF
- the ConstructionSkills Consolidated Assessment Strategy for Construction and the Built Environment, Craft, Supervisory, Technical, Managerial and Professional Units and Qualifications with NVQ in the Qualification and Credit Framework (QCF) title and SVQs.

Assessors for this unit must use a combination of the following assessment methods:

- observation of normal work activities within the workplace that clearly confirms the required skills
- questioning the learner on knowledge criteria that clearly confirms the required understanding
- review other forms of evidence that can clearly confirm industry required skills, knowledge and understanding.

Assessors for this unit must have verifiable, current industry experience and a sufficient depth of occupational expertise and knowledge of dismantling and assembling plant and equipment components to be effective and reliable when confirming a learner's competence.

Workplace evidence of skills cannot be simulated.

This unit must be assessed against one of the following endorsements:

- heavy earthmoving plant and equipment
- cranes and lifting equipment
- building and associated plant
- civil engineering plant
- road building plant
- small plant and tools
- powered access equipment (electric)
- powered access equipment (diesel)
- powered access equipment (bi-energy)
- piling equipment
- tunnelling equipment
- lift trucks (electric)
- lift trucks (diesel)
- lift trucks (gas)
- plant electrics (dc auto)
- plant electrics (ac)
- engine and transmission reconditioning
- road/rail plant
- hydraulic attachments.

Assessment methodology

Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Work safely at all times when dismantling and assembling plant and equipment components.	1.1 comply with current health and safety legislation and other relevant regulations and guidelines applicable to the dismantling and assembling of plant and equipment components 1.2 use personal protective equipment (PPE) relevant to plant maintaining 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 and assembling plant and equipment components 1.4 state health and safety issues and describe reasons for possible injuries when dismantling and assembling plant components			
2 Carry out preparation activities in order to dismantle and assemble plant and equipment components.	2.1 identify and extract applicable information from relevant information sources when dismantling and assembling plant and equipment components 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 instructions, assembly and disassembly drawings and any other relevant specifications to aid dismantling and assembly			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	2.5 describe different sources of information and technical literature to aid the dismantling and assembly of components from various items of plant and equipment 2.6 make all isolations and disconnections to the equipment in line with approved procedures 2.7 describe the types of hazardous and non-hazardous isolation and disconnections that have to be made when dismantling components on plant and equipment and why isolations need to be made in the correct sequence 2.8 state when typical dismantling of components would occur and where			
3 Dismantle components in operational and/or non-operational situations associated with a range of plant and equipment in the workplace.	3.1 strip down various types of components using correct tools and techniques following clearly defined procedures 3.2 disassemble components from typical plant and equipment conforming to given level of responsibility, working within detailed specifications, and relevant to the occupational area within maintenance workshops and/or on sites and/or client's premises 3.3 describe the types of dismantling methods and techniques, and the hand, power and specialist tools, equipment and method used to dismantle components relevant to plant and equipment components used in the occupational area			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	3.4 take suitable precautions to prevent damage to components, tools and equipment during removal 3.5 describe ways of protecting tools and equipment when dismantling specific components, how to use lifting equipment and lifting aids, and how to store and keep secure specialist tools and equipment 3.6 describe the possible types of damage that can occur to equipment and components when dismantling			
4 Segregate and sort parts from dismantled components for disposal and/or reuse.	4.1 label and store parts and sub-assemblies from dismantled components for re-use in approved locations 4.2 discard unwanted dismantled components, parts, sub-assemblies or substances in accordance with approved procedures 4.3 describe how to identify component defects, the methods used and sources of information 4.4 state the organisational instructions and procedures for the labelling and storage of components for reuse and the disposing of hazardous and non-hazardous waste substances and unwanted parts			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
5 Prepare components for assembly to plant and equipment.	5.1 ensure the specified components are available and are in a usable condition 5.2 describe the manufacturers' and organisations procedures and preparation methods and techniques for full and sub assemblies, parts and components, the methods of cleaning and lubricating components, and how to protect threads during assembly 5.3 state reasons for keeping areas clean and tidy prior to and during assembly of components			
6 Assemble and build components in operational and non-operational situations associated with a range of plant and equipment in the workplace.	6.1 assemble components to manufacturer's tolerances and specifications relevant to the occupational area within maintenance workshops and/or on sites and/or client's premises and produce: – full assemblies – sub assemblies – robust components – fragile components			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	6.2 assemble components in their correct position using appropriate assembly methods and techniques, and demonstrate the following assembly methods and techniques: – use of fastenings and retainers – connecting mating surfaces – drifting/pressing into position – positioning and securing – shimming and adjusting – using adhesives 6.3 check the completed assembly to ensure that all operations have been completed and the finished assembly meet the required specification 6.4 describe assembly methods for a variety of components applicable to the occupational area and the types of measuring and specialist tools that may be used 6.5 describe how to identify assembly defects, how to check components and sub-assemblies before, during and after re-assembly, typical defects and variations that arise and the inherent defects that could be found in parts and materials 6.6 state the methods, procedures and techniques used in the organisation for mechanical handling, manual handling and protection of components when re-fitting			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
7 Comply with communication procedures when dismantling and assembling components on plant and equipment.	7.1 demonstrate dealing promptly and effectively with problems within given control and report those that cannot be solved to other designated personnel 7.2 state the organisations reporting lines and procedures associated with the dismantling of installed plant and equipment 7.3 state the organisations' procedures for the care, security and controls of tools and equipment			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 8: Maintaining the work area for plant maintenance and repair activities in the workplace

Unit reference number: A/600/8319

QCF level: 2

Credit value: 5

Guided learning hours: 16

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in maintaining the work area for plant maintenance and repair activities in the workplace within the relevant sector of industry.

Assessment Requirements/evidence requirements

This unit must be assessed in a work environment and in accordance with:

- the Additional Requirements for Qualifications using the title NVQ in QCF
- the ConstructionSkills Consolidated Assessment Strategy for Construction and the Built Environment, Craft, Supervisory, Technical, Managerial and Professional Units and Qualifications with NVQ in the Qualification and Credit Framework (QCF) title and SVQs.

Assessors for this unit must use a combination of the following assessment methods:

- observation of normal work activities within the workplace that clearly confirms the required skills
- questioning the learner on knowledge criteria that clearly confirms the required understanding
- review other forms of evidence that can clearly confirm industry required skills, knowledge and understanding.

Assessors for this unit must have verifiable, current industry experience and a sufficient depth of occupational expertise and knowledge of maintaining the work area for plant maintenance and repair activities to be effective and reliable when confirming a learner's competence.

Workplace evidence of skills cannot be simulated.

Assessment methodology

Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Work safely at all times when dismantling and assembling plant and equipment components.	1.1 comply with current health and safety legislation and other relevant regulations and guidelines applicable to the preparing and reinstating of working areas, and the using and storing of hazardous and non-hazardous resources/materials 1.2 use personal protective equipment (PPE) relevant to plant maintenance 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 maintaining and repairing plant 1.4 ensure that the required safety arrangements are in place to protect other workers 1.5 describe the types of, and safe and correct use of personal protective equipment (PPE) relevant to plant maintenance activities			
2 Prepare work areas for plant maintenance and repair activities.	2.1 ensure that the work environment is safe, clean and tidy and suitable for the work activities, and inform the appropriate people when preparations are complete 2.2 ensure that all necessary service supplies are connected and ready to use			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	2.3 describe typical types of work area for plant maintenance and the requisite standards and cleanliness required for each, when preparing and reinstating the work area 2.4 describe the organisational procedures to be followed in relation to cleaning, tidying, removing hazardous and non-hazardous materials, substances, fluid, and fixed and portable equipment 2.5 list the types of obstructions and disruptions that can affect the setting up of the work area 2.6 outline the types of requirements of users of the work area			
3 Prepare tools, equipment and materials for plant maintenance activities.	3.1 prepare the work area to store materials and finished products 3.2 obtain the required materials, tools and equipment and ensure they are suitably prepared for the relevant activities 3.3 state the different methods of identifying parts and materials and how to check them for serviceability and defects 3.4 describe typical services, service supplies, tools and equipment needed for plant maintenance and repair activities, and how to check that services, tools and equipment are ready for use			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	3.5 describe how to handle a range of typical maintenance parts and equipment, hand and power tools, and lifting equipment and lifting aids			
4 Reinstate the work area following completion of plant maintenance and repair activities.	4.1 separate equipment, components and materials for re-use from waste items and materials 4.2 remove and dispose of waste hazardous and non-hazardous materials and packaging in line with organisational, legislative and environmentally safe procedures 4.3 dispose of waste oils, fuels, greases, coolants, chemicals and solvents in accordance with organisational, legislative and environmentally safe procedures 4.4 restore the work area to a safe condition in accordance with agreed requirements and schedules 4.5 explain the types of manual and powered cleaning equipment, chemicals and materials used to restore work areas, and typical uses and applications of each 4.6 describe typical methods to remove hazards from fluids, dirt, sands etc., how to deal with spilt fluid, oils etc., and how to dispose of them 4.7 state the organisational instructions and procedures for the disposing of hazardous and non-hazardous waste materials, substances and unwanted components			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
5 Store tools and equipment, and store materials and resources for further use.	5.1 determine how the materials, resources, tools and equipment are to be stored 5.2 store reusable materials, resources, tools and equipment in an appropriate location using correct safe handling techniques 5.3 store resources, materials, tools and equipment safely in a suitable position in appropriate locations 5.4 identify stored materials and resources and complete any necessary documentation 5.5 list typical plant maintenance equipment, components, parts and materials that can be reused 5.6 describe the storage procedures for flammable, explosive, corrosive and degradable materials and substances 5.7 outline the storage positions and ways used to store typical resources within a given location or structure			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 9: Carrying out routine inspections on plant and equipment to ensure operational serviceability in the workplace

Unit reference number: A/600/8322

QCF level: 2

Credit value: 12

Guided learning hours: 40

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in carrying out routine inspections on plant and equipment to ensure operational serviceability in the workplace within the relevant sector of industry.

Assessment Requirements/evidence requirements

This unit must be assessed in a work environment and in accordance with:

- the Additional Requirements for Qualifications using the title NVQ in QCF
- the ConstructionSkills Consolidated Assessment Strategy for Construction and the Built Environment, Craft, Supervisory, Technical, Managerial and Professional Units and Qualifications with NVQ in the Qualification and Credit Framework (QCF) title and SVQs.

Assessors for this unit must use a combination of the following assessment methods:

- observation of normal work activities within the workplace that clearly confirms the required skills
- questioning the learner on knowledge criteria that clearly confirms the required understanding
- review other forms of evidence that can clearly confirm industry required skills, knowledge and understanding.

Assessors for this unit must have verifiable, current industry experience and a sufficient depth of occupational expertise and knowledge of carrying out routine inspections on plant and equipment to ensure operational serviceability to be effective and reliable when confirming a learner's competence.

Workplace evidence of skills cannot be simulated.

This unit must be assessed against one of the following endorsements:

- heavy earthmoving plant and equipment
- cranes and lifting equipment
- building and associated plant
- civil engineering plant
- road building plant
- small plant and tools
- powered access equipment (electric)
- powered access equipment (diesel)
- powered access equipment (bi-energy)
- piling equipment
- tunnelling equipment
- lift trucks (electric)
- lift trucks (diesel)
- lift trucks (gas)
- plant electrics (dc auto)
- plant electrics (ac)
- engine and transmission reconditioning
- road/rail plant
- hydraulic attachments.

Assessment methodology

Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Work safely at all times when inspecting plant and equipment for operational serviceability.	1.1 comply with current health and safety legislation and other relevant regulations and guidelines applicable to the inspecting of plant and equipment 1.2 use personal protective equipment (PPE) relevant to plant inspection 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 inspecting plant and equipment			
2 Carry out preparation activities to inspect plant and equipment for operational serviceability.	2.1 identify and follow the correct specification for the plant product or equipment to be inspected 2.2 identify and use the correct equipment needed to carry out typical inspections on plant or equipment 2.3 identify and confirm the type of inspection checks to be made and acceptance criteria to be used 2.4 outline the sources and types of information needed to carry out inspections 2.5 describe the types of inspections methods and techniques that can be used on a variety of plant and equipment relevant to the occupational area			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	2.6 describe how to conduct routine inspections, periodical inspections, pre-delivery inspections, and off-hire inspections or inspections on returned items of plant and equipment 2.7 outline the organisations' instructions and procedures for the calibrating of equipment and gaining authorisation for using relevant equipment			
3 Inspect a range of plant or equipment in the workplace or on site to ensure that the plant or equipment is fit for work activities.	3.1 carry out the required inspections using hand and/or specialist tools and equipment, on a range of plant or equipment undertaking at least two of the following types: – periodical/routine – pre-delivery – post repair – functional/operational testing – off-hire – returned items of plant or equipment 3.2 carry out inspection activities following defined procedures whilst maintaining manufacturers' or organisational standards and accuracy 3.3 identify any defects or variations from relevant specifications 3.4 record the results of inspections in the appropriate format			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	3.5 outline the organisation's instructions and procedures for the use and care of specialist inspection equipment, and test and diagnostic aids 3.6 describe typical defects that could occur with specific items of plant or equipment relevant to the occupational area and describe what constitutes critical and non-critical defects 3.7 describe the organisation's quality control systems, documentation procedures, types of organisational forms and/or checklists, and the procedures for carrying out further detailed inspections and examinations			
4 Know how to deal with problems promptly and effectively and report those that cannot be solved.	4.1 describe the organisations' reporting lines and procedures for recording findings from inspections 4.2 state who should be informed with the results of inspections and/or if further detailed inspections and examinations are required			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 10: Diagnosing faults in plant or equipment systems and components in the workplace

Unit reference number: M/600/8334

QCF level: 2

Credit value: 10

Guided learning hours: 33

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in diagnosing faults in plant or equipment systems and components in the workplace within the relevant sector of industry.

Assessment Requirements/evidence requirements

This unit must be assessed in a work environment and in accordance with:

- the Additional Requirements for Qualifications using the title NVQ in QCF
- the ConstructionSkills Consolidated Assessment Strategy for Construction and the Built Environment, Craft, Supervisory, Technical, Managerial and Professional Units and Qualifications with NVQ in the Qualification and Credit Framework (QCF) title and SVQs.

Assessors for this unit must use a combination of the following assessment methods:

- observation of normal work activities within the workplace that clearly confirms the required skills
- questioning the learner on knowledge criteria that clearly confirms the required understanding
- review other forms of evidence that can clearly confirm industry required skills, knowledge and understanding.

Assessors for this unit must have verifiable, current industry experience and a sufficient depth of occupational expertise and knowledge of diagnosing faults in plant or equipment systems and components to be effective and reliable when confirming a learner's competence.

Workplace evidence of skills cannot be simulated.

This unit must be assessed against one of the following endorsements:

- heavy earthmoving plant and equipment
- cranes and lifting equipment
- building and associated plant
- civil engineering plant
- road building plant
- small plant and tools
- powered access equipment (electric)
- powered access equipment (diesel)
- powered access equipment (bi-energy)
- piling equipment
- tunnelling equipment
- lift trucks (electric)
- lift trucks (diesel)
- lift trucks (gas)
- plant electrics (dc auto)
- plant electrics (ac)
- engine and transmission reconditioning
- road/rail plant
- hydraulic attachments.

Assessment methodology

Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Work safely at all times when diagnosing faults in plant or equipment systems and components.	1.1 comply with current health and safety legislation and other relevant regulations and guidelines applicable to plant or equipment fault finding activities 1.2 use personal protective equipment (PPE) relevant to plant fault-finding 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 to plant fault finding activities 1.4 describe the types of, and safe and correct use of personal protective equipment (PPE) relevant to plant fault finding activities			
2 Carry out preparation activities in order to diagnose faults in plant or equipment systems and components.	2.1 identify, review and use all relevant information on the symptoms and problems associated with the relevant plant or equipment 2.2 select and prepare for use, the correct fault diagnostic tools and aids to locate suspected faults 2.3 describe the types, function or functions and proper use of typical fault finding diagnostic tools and aids used on plant or equipment, relevant to the occupational area 2.4 describe how to care, clean and store specialist diagnostic test equipment			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
3 Diagnose routine and non-routine faults and breakdowns in the workplace by selecting the relevant procedure on a range of plant or equipment.	3.1 investigate and establish likely causes of fault or faults on a range of plant or equipment, relevant to the occupational area, on at least two of the following components or systems: – power unit – hydraulic – pneumatic – electrical/electronic – steering – braking – chassis/frames – transmission 3.2 identify routine and non-routine faults on plant or equipment components or systems using at least two of the following diagnostic tools, methods or techniques: – sensory – electronic – electrical – mechanical – hydraulic – extracting information from users – functional testing			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	3.3 describe the types of and how to effectively use personal senses to diagnose typical plant or equipment faults			
4 Analyse and record faults and range of faults found on plant or equipment.	4.1 complete the fault diagnosis within agreed time scales 4.2 draw valid conclusions about the nature and probable cause or causes of faults found using relevant evidence gained 4.3 determine the implications of faults found for efficient work and safety 4.4 record details on the extent and location of faults in an appropriate format 4.5 describe the organisations' documentation control procedures, and reporting lines and procedures for recording findings from fault finding activities 4.6 describe possible safety, legal and economic risks that can arise when diagnosing faults in plant or equipment			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)

Unit 11: Repairing plant and equipment by soldering and welding ferrous and non-ferrous materials in the workplace

Unit reference number: A/600/8336

QCF level: 2

Credit value: 16

Guided learning hours: 53

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in repairing plant and equipment by soldering and welding ferrous and non-ferrous materials in the workplace within the relevant sector of industry.

Assessment Requirements/evidence requirements

This unit must be assessed in a work environment and in accordance with:

- the Additional Requirements for Qualifications using the title NVQ in QCF
- the ConstructionSkills Consolidated Assessment Strategy for Construction and the Built Environment, Craft, Supervisory, Technical, Managerial and Professional Units and Qualifications with NVQ in the Qualification and Credit Framework (QCF) title and SVQs.

Assessors for this unit must use a combination of the following assessment methods:

- observation of normal work activities within the workplace that clearly confirms the required skills
- questioning the learner on knowledge criteria that clearly confirms the required understanding
- review other forms of evidence that can clearly confirm industry required skills, knowledge and understanding.

Assessors for this unit must have verifiable, current industry experience and a sufficient depth of occupational expertise and knowledge of repairing plant and equipment by soldering and welding ferrous and non-ferrous materials to be effective and reliable when confirming a learner's competence.

Workplace evidence of skills cannot be simulated.

Assessment methodology

Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Work safely at all times when soldering and welding plant or equipment ferrous and non-ferrous components or parts.	1.1 comply with current health and safety legislation and other relevant regulations and guidelines applicable to welding and soldering activities on plant or equipment parts or components 1.2 use personal protective equipment (PPE) relevant to welding and soldering activities on ferrous and non-ferrous materials 1.3 describe health and safety legislation, regulations, safe working practices and procedures and company health and safety policies and workplace procedures that apply to welding and soldering activities 1.4 describe the types of, and safe and correct use of personal protective equipment (PPE) relevant to the welding and soldering of ferrous and non ferrous materials 1.5 outline how to safely handle or deal with sharp and/or and hot materials and fluxes, and when cutting steel materials to size and shape			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	1.6 describe the types and dangers of fumes produced by the thermal joining of ferrous and non-ferrous materials and how effective fume extraction is instigated 1.7 state typical causes of fire and explosions, methods to minimise the risk of fire and explosions, and the organisational fire precautions and procedures			
2 Carry out soldering and welding preparation activities on materials and thermal joining equipment.	2.1 follow the relevant joining procedure and job instructions 2.2 check that the joints preparation complies with the given specifications 2.3 check that the joining equipment and consumables are specified and fit for purpose 2.4 describe the specifications, preparation and joining procedures for the fusion welding of steel sheet and plate materials by butt and fillet welds using high temperature techniques 2.5 describe the specifications, preparation and joining procedures for soft soldering and different types of joint			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	2.6 describe the main components of, the setting up procedures, and types of consumables needed for oxyacetylene and manual/gas flow metal arc equipment when joining a range of ferrous and non-ferrous materials 2.7 describe the methods and techniques to prepare ferrous and non ferrous materials for thermal joining			
3 Join ferrous and non ferrous materials by welding and soldering in the workplace on a range of plant or equipment components or parts using thermal joining equipment.	3.1 join ferrous materials (up to 6 mm thick) by welding in a flat position and 'in position' on a range of plant or equipment parts or components using at least one of the following thermal joining equipment: – oxyacetylene gas – manual metal arc – manual inert arc 3.2 join non ferrous materials by soldering in a flat position and 'in position' on a range of plant or equipment parts or components using at least one of the following thermal joining equipment: – oxyacetylene gas – electrical soldering tools – soldering coppers (irons)			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	3.3 produce fillet, butt and lap joints to the quality and specified dimensional accuracy 3.4 describe the joining characteristics of ferrous and non-ferrous materials using fusion and non-fusion techniques 3.5 describe the joining processes on ferrous and non-ferrous materials using a range of thermal joining equipment 3.6 describe the operating and care procedures for oxyacetylene and manual/gas flow metal arc equipment 3.7 describe the hazards to themselves and others when using oxyacetylene and manual/gas flow metal arc equipment 3.8 describe the methods and procedures for checking and testing different types of soldered and welded joints			
4 Carry out shut down and cleaning procedures following welding and soldering joining activities.	4.1 shut down the thermal joining equipment to a safe condition on completion of joining activities 4.2 comply with organisational procedures to store or dispose of excess and waste materials, and temporary attachments			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.3 describe the shut down and clean up procedures for the following thermal joining equipment: – oxyacetylene gas – manual metal arc – manual inert arc – electrical soldering tools – soldering coppers (irons) 4.4 describe how flammable and non-flammable gas cylinders and unused consumables should be stored and kept safe			
5 Know how to deal with problems promptly and effectively and report those that cannot be solved.	5.1 state the organisations' reporting lines and procedures associated with welding and soldering activities			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____

(*if sampled*)

Unit 12: Producing or modifying one-off components for use with plant or equipment in the workplace

Unit reference number: F/600/8340

QCF level: 2

Credit value: 14

Guided learning hours: 47

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in producing or modifying one-off components for use with plant or equipment in the workplace within the relevant sector of industry.

Assessment Requirements/evidence requirements

This unit must be assessed in a work environment and in accordance with:

- the Additional Requirements for Qualifications using the title NVQ in QCF
- the ConstructionSkills Consolidated Assessment Strategy for Construction and the Built Environment, Craft, Supervisory, Technical, Managerial and Professional Units and Qualifications with NVQ in the Qualification and Credit Framework (QCF) title and SVQs.

Assessors for this unit must use a combination of the following assessment methods:

- observation of normal work activities within the workplace that clearly confirms the required skills
- questioning the learner on knowledge criteria that clearly confirms the required understanding
- review other forms of evidence that can clearly confirm industry required skills, knowledge and understanding.

Assessors for this unit must have verifiable, current industry experience and a sufficient depth of occupational expertise and knowledge of producing or modifying one-off components for use with plant or equipment to be effective and reliable when confirming a learner's competence.

Workplace evidence of skills cannot be simulated.

Assessment methodology

Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Work safely and at all times when producing or modifying one-off components.	1.1 comply with current health and safety legislation, and other relevant regulations and guidelines applicable to manufacturing or fabrication activities 1.2 use personal protective equipment (PPE) relevant to manufacturing/fabrication work 1.3 describe health and safety legislation, regulations and safe working practices and procedures, and company health and safety policies and workplace procedures that apply to manufacturing/fabrication activities 1.4 describe the types of, and safe and correct use of personal protective equipment (PPE) relevant to the manufacturing/fabrication of one-off components			
2 Interpret specifications when producing or modifying one-off components for use with plant or equipment.	2.1 follow all relevant drawings, sketches, specifications, work pieces or working from a pattern to produce or modify or modify one-off components to use with plant or equipment 2.2 describe how to interpret information from: – workshop manuals – parts manuals – manufacturers' specifications – representative work pieces/templates			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	2.3 give reasons for and the factors that make it appropriate to produce or modify or modify one-off components 2.4 describe the factors, information needed, limitations and how to produce or modify components in the absence of specifications			
3 Prepare to carry out fabrication activities to produce or modify one-off components.	3.1 identify and select a range of materials to produce or modify a selection of one-off components 3.2 mark out ferrous and non-ferrous materials from given specifications using measuring and marking equipment 3.3 prepare hand and powered tools and other work equipment needed to manufacture/fabricate one-off components from given specifications 3.4 describe typical types of materials used, and how they are selected when producing or modifying one-off components 3.5 outline the organisation's procedures for the protection, security and storage of materials, tools and equipment 3.6 state the organisational procedures for the disposal, of waste materials, and recovering and storing re-usable materials produce or modify by the manufacturing process			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
4 Carry out manufacturing or fabrication operations in the workplace to produce or modify a range of one-off components to use on plant or equipment.	4.1 produce or modify a range of components using ferrous and non-ferrous materials from given specifications to form one-off components that comply with given tolerances 4.2 use hand tools and power tools relevant to producing or modifying one-off components 4.3 demonstrate at least three of the following work skills when producing or modifying one-off components to use on plant or equipment: – filing – welding – machining – assembling – cutting – fitting – drilling – cutting and tapping threads 4.4 check that the finished components have been completed to the required specification, are fit for purpose and within specified tolerances, and adjustments made as necessary 4.5 state typical manufacturing methods and techniques when producing or modifying typical plant or equipment components			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.6 describe the types of problems that can occur when producing or modifying one-off components and how they can be rectified 4.7 list typical plant or equipment components to which one-off components can be fitted to 4.8 describe methods of securing one-off components to other components and how they should be applied			
5 Know how to deal with problems promptly and effectively and report those that cannot be solved.	5.1 state the organisations' reporting lines and procedures associated with manufacturing/fabrication activities 5.2 state typical contacts that can be used for advice when carrying out manufacturing/fabrication activities			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 13: Moving plant related loads by manual lifting and using manually operated load handling equipment in the workplace

Unit reference number: L/600/8390

QCF level: 2

Credit value: 12

Guided learning hours: 40

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in moving plant related loads by manual lifting and using manually operated load handling equipment in the workplace within the relevant sector of industry.

Assessment Requirements/evidence requirements

This unit must be assessed in a work environment and in accordance with:

- the Additional Requirements for Qualifications using the title NVQ in QCF
- the ConstructionSkills Consolidated Assessment Strategy for Construction and the Built Environment, Craft, Supervisory, Technical, Managerial and Professional Units and Qualifications with NVQ in the Qualification and Credit Framework (QCF) title and SVQs.

Assessors for this unit must use a combination of the following assessment methods:

- observation of normal work activities within the workplace that clearly confirms the required skills
- questioning the learner on knowledge criteria that clearly confirms the required understanding
- review other forms of evidence that can clearly confirm industry required skills, knowledge and understanding.

Assessors for this unit must have verifiable, current industry experience and a sufficient depth of occupational expertise and knowledge of moving plant related loads by manual lifting and using manually operated load handling equipment to be effective and reliable when confirming a learner's competence.

Workplace evidence of skills cannot be simulated.

This unit must be assessed against one of the following endorsements:

- heavy earthmoving plant and equipment
- cranes and lifting equipment
- building and associated plant
- civil engineering plant
- road building plant
- small plant and tools
- powered access equipment (electric)
- powered access equipment (diesel)
- powered access equipment (bi-energy)
- piling equipment
- tunnelling equipment
- lift trucks (electric)
- lift trucks (diesel)
- lift trucks (gas)
- plant electrics (dc auto)
- plant electrics (ac)
- engine and transmission reconditioning
- road/rail plant
- hydraulic attachments.

Assessment methodology

Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Work safely and at all times when moving plant related loads manually and using load handling equipment.	1.1 comply with current health and safety legislation, and other relevant regulations and guidelines applicable to the moving of loads 1.2 use personal protective equipment (PPE) relevant to the moving of loads and when using load handling equipment 1.3 describe health and safety legislation, regulations and safe working practices and procedures, and company health and safety policies and workplace procedures that apply to the moving of loads and load handling equipment 1.4 describe the types of, and safe and correct use of personal protective equipment (PPE) relevant to the moving of loads 1.5 outline the specific hazards that can occur to structures, other equipment or people when lifting loads manually and using load handling equipment			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
2 Identify the characteristics on a range of loads relevant to the occupational area.	2.1 establish the weight and characteristics of the relevant plant related loads that need to be moved 2.2 determine the safest and effective method of movement for the relevant load 2.3 outline the factors that determine when it is not appropriate to move a load manually 2.4 list typical types of load handling equipment suitable for loads relevant to the occupational area and the advantages and disadvantages of each listed type for the occupational loads 2.5 describe relevant sources of information, how to establish the weight and balance of relevant loads, and how to estimate load weights in the absence of relevant data			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
3 Prepare loads, the working area and load handling equipment for load movement.	3.1 select suitable load handling and/or lifting equipment for the relevant load 3.2 check that the equipment to be used is capable of moving the load safely 3.3 establish a route to move the load that minimises risks to people and property 3.4 describe how to plan safe routes for moving equipment and components in the occupational workplace or workplaces and typical hazards that need to be controlled 3.5 describe the slinging and lifting method and techniques for typical loads relevant to the occupational area 3.6 describe the checks that should be undertaken on typical load handling/lifting equipment, the requirements for certification and the organisation's procedures for defective or non-certificated equipment 3.7 outline how to determine the SWL/WLL of load handling/lifting equipment and limitations of use to a typical range of equipment 3.8 ensure that loads are secured and protected before moving operations start			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
4 Move a variety of plant related loads to various destinations in the workplace by manual handling and using load handling equipment.	4.1 position the relevant load handling equipment to ensure that the weight of the load is evenly distributed 4.2 attach the appropriate handling equipment securely to the load, using approved methods to eliminate slippage and confirm that the load is secure before moving 4.3 lift and move a range of loads relevant to the occupational area by manual handling, to the required location following the selected route and safe systems of work 4.4 lift and move a range of loads relevant to the occupational area to the required location, following the selected route and safe systems of work, using at least two of the following load handling equipment: – trolleys (powered and/or manual) – rollers – winches – hoists – pulleys and/or chain blocks – skids – jacks (mechanical and/or powered) – ropes (wire and/or fabric) – cranes (powered and/or manual) – pull lifts			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.5 describe the methods and techniques of moving various loads manually and with relevant load handling equipment 4.6 outline the various methods of protecting typical loads relevant to the occupational area during movement and how load slippage can be prevented 4.7 state the reason for carrying out trial lifts and dummy runs and the possible consequences should these actions not take place			
5 Place and leave loads safely at the required destination.	5.1 position and release the relevant load at the intended location ensuring it is positioned not to cause an obstruction 5.2 detach and/or remove load handling equipment and ensure the load is safe and secure to leave 5.3 describe the organisation's procedures for the storage and security of load handling equipment			
6 Know how to deal with problems promptly and effectively and report those that cannot be solved.	6.1 state the organisations' reporting lines and procedures associated with the moving of loads			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 14: Installing plant or equipment for operational activities in the workplace

Unit reference number: Y/600/8392

QCF level: 2

Credit value: 12

Guided learning hours: 40

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in installing plant or equipment for operational activities in the workplace within the relevant sector of industry.

Assessment Requirements/evidence requirements

This unit must be assessed in a work environment and in accordance with:

- the Additional Requirements for Qualifications using the title NVQ in QCF
- the ConstructionSkills Consolidated Assessment Strategy for Construction and the Built Environment, Craft, Supervisory, Technical, Managerial and Professional Units and Qualifications with NVQ in the Qualification and Credit Framework (QCF) title and SVQs.

Assessors for this unit must use a combination of the following assessment methods:

- observation of normal work activities within the workplace that clearly confirms the required skills
- questioning the learner on knowledge criteria that clearly confirms the required understanding
- review other forms of evidence that can clearly confirm industry required skills, knowledge and understanding.

Assessors for this unit must have verifiable, current industry experience and a sufficient depth of occupational expertise and knowledge of installing plant or equipment for operational activities to be effective and reliable when confirming a learner's competence.

Workplace evidence of skills cannot be simulated.

This unit must be assessed against one of the following endorsements:

- heavy earthmoving plant and equipment
- cranes and lifting equipment
- building and associated plant
- civil engineering plant
- road building plant
- small plant and tools
- powered access equipment (electric)
- powered access equipment (diesel)
- powered access equipment (bi-energy)
- piling equipment
- tunnelling equipment
- lift trucks (electric)
- lift trucks (diesel)
- lift trucks (gas)
- plant electrics (dc auto)
- plant electrics (ac)
- engine and transmission reconditioning
- road/rail plant
- hydraulic attachments.

Assessment methodology

Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Work safely at all times when installing plant or equipment for operational purposes.	1.1 comply with current health and safety legislation and other relevant regulations and guidelines applicable to the installing of plant or equipment 1.2 use personal protective equipment (PPE) relevant to the installing of plant or equipment 1.3 describe health and safety legislation, regulations, safe working practices and procedures and company health and safety policies and workplace procedures that apply to the installing of plant or equipment and including: – working at height – working in confined spaces – working underground – working in inclement weather 1.4 describe the types of, and safe and correct use of personal protective equipment (PPE) relevant to the installing of plant or equipment 1.5 state possible personal injuries that could be attained when installing plant or equipment			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
2 Carry out preparation activities on the area and relevant plant or equipment prior to carrying out installation activities.	2.1 identify and follow all relevant instructions, drawings and specifications for the installation being carried out 2.2 check tools and equipment for safe use and serviceability 2.3 list the sources of instructions and related specifications to safely install plant or equipment and describe how to extract the information from each type 2.4 prepare the site area and ensure that it is clear of hazards during the installation process 2.5 check that all relevant tools, parts, components, equipment, attachments and accessories are available to complete the installation process 2.6 list typical lifting equipment, specialist tools and equipment and/or machinery needed to install plant or equipment relevant to the occupational area, and describe typical applications for each 2.7 describe the requirements for preparing the area, and how to locate and site the plant or equipment to be installed			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
3 Install a range of types of plant or equipment in the workplace relevant to the occupational area.	3.1 install, position and secure various types of plant or equipment in accordance with given specifications 3.2 demonstrate at least two of the following work methods when installing plant or equipment: – drilling – fixing – tying into structures – securing – rigging – making male to female plug in connectors – using threaded fasteners – routing cable and/or pipe work – erecting and dismantling hoist or crane sections 3.3 connect related components and/or services to the installed plant or equipment and ensure connections are complete 3.4 describe different ways that plant or equipment and any associated components, relevant to the occupational area can be secured and the advantages and disadvantages of each method 3.5 outline different power supply requirements for relevant types of plant or equipment being installed			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
		3.6	describe the types of damage or defects that may occur to tools, specialist installation equipment and lifting equipment and to the installed plant or equipment itself			
4	Undertake necessary checks to ensure the installed plant or equipment meets the required specifications.	4.1	check that the installation of the plant or equipment is complete and complies with the given specifications			
		4.2	carry out any required adjustments and check that components are free from damage			
		4.3	describe the methods, techniques, tools and equipment which can be used for checking compliance with relevant specifications			
		4.4	outline what functional checks may need to be carried out on a range of plant or equipment relevant to the occupational area			
		4.5	describe the organisation's procedures for the care and storage of tools and equipment in the workplace or workplaces			
5	Know how to deal with problems promptly and effectively and report those that cannot be solved.	5.1	state the organisations' reporting lines and procedures associated with the installing of plant			
		5.2	describe the organisation's procedures for dealing with defects and damage to the installed plant or equipment, and to damaged tools and equipment			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 15: Carrying out specific tests on plant and equipment to determine operational serviceability in the workplace

Unit reference number: H/600/8394

QCF level: 2

Credit value: 14

Guided learning hours: 47

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in carrying out specific tests on plant and equipment to determine operational serviceability in the workplace within the relevant sector of industry.

Assessment Requirements/evidence requirements

This unit must be assessed in a work environment and in accordance with:

- the Additional Requirements for Qualifications using the title NVQ in QCF
- the ConstructionSkills Consolidated Assessment Strategy for Construction and the Built Environment, Craft, Supervisory, Technical, Managerial and Professional Units and Qualifications with NVQ in the Qualification and Credit Framework (QCF) title and SVQs.

Assessors for this unit must use a combination of the following assessment methods:

- observation of normal work activities within the workplace that clearly confirms the required skills
- questioning the learner on knowledge criteria that clearly confirms the required understanding
- review other forms of evidence that can clearly confirm industry required skills, knowledge and understanding.

Assessors for this unit must have verifiable, current industry experience and a sufficient depth of occupational expertise and knowledge of carrying out specific tests on plant and equipment to determine operational serviceability to be effective and reliable when confirming a learner's competence.

Workplace evidence of skills cannot be simulated.

This unit must be assessed against one of the following endorsements:

- heavy earthmoving plant and equipment
- cranes and lifting equipment
- building and associated plant
- civil engineering plant
- road building plant
- small plant and tools
- powered access equipment (electric)
- powered access equipment (diesel)
- powered access equipment (bi-energy)
- piling equipment
- tunnelling equipment
- lift trucks (electric)
- lift trucks (diesel)
- lift trucks (gas)
- plant electrics (dc auto)
- plant electrics (ac)
- engine and transmission reconditioning
- road/rail plant
- hydraulic attachments.

Assessment methodology

Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Work safely at all times when testing plant and equipment.	1.1 comply with current health and safety legislation and other relevant regulations and guidelines applicable to the testing of plant and equipment 1.2 use personal protective equipment (PPE) relevant to the testing of plant and equipment 1.3 describe health and safety legislation, regulations, safe working practices and procedures and company health and safety policies and workplace procedures that apply to the testing of plant and equipment 1.4 describe the types of, and safe and correct use of personal protective equipment (PPE) relevant to the testing of plant and equipment			
2 Carry out preparation activities to test plant and equipment.	2.1 identify and follow all relevant procedures for the use of tools and equipment to carry out the required tests 2.2 set up testing tools and equipment and prepare the relevant item of plant and equipment for testing 2.3 list the sources of test specifications, the types of detail contained in the specifications, and how to extract the information from each type			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	2.4 describe the various types of test equipment and their application which would be used on typical plant and equipment relevant to the occupational area 2.5 describe calibration methods for various types of test equipment relevant to the occupational area			
3 Undertake a range of tests on a range of plant and equipment relevant to the occupational area, in the workplace.	3.1 carry out specific tests on a range of plant and equipment using at least three of the following: – hand and/or power tools – mechanical test equipment – electrical test equipment – electronic test equipment on at least two of the following components or systems: – power unit – hydraulic – pneumatic – electrical/electronic – steering – braking – chassis/frames – transmission			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	3.2 test plant and equipment using standard tools and substitutions and elimination techniques in the workplace or places whilst following manufacturer's specifications, statutory requirements and relevant Codes of Practice 3.3 describe the different methods and reasons for performing typical diagnostic, operational and functional tests on plant and equipment relevant to the occupational area			
4 Analyse results from the tests.	4.1 record the results of the tests in the appropriate format 4.2 review the results and carry out further tests if necessary 4.3 describe which analysis methods and procedures can be applied to typical test results, and the types of fault that can be identified by carrying out tests on plant and equipment relevant to the occupational area 4.4 outline the environmental considerations and control methods that should be implemented when testing plant and equipment			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.5 describe the types of test reporting documentation and procedures 4.6 state the organisation's instructions and procedures associated with the testing of plant and equipment			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 16: Configuring plant or equipment for operational activities in the workplace

Unit reference number: M/600/8396

QCF level: 2

Credit value: 15

Guided learning hours: 50

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in configuring plant or equipment for operational activities in the workplace within the relevant sector of industry.

Assessment Requirements/evidence requirements

This unit must be assessed in a work environment and in accordance with:

- the Additional Requirements for Qualifications using the title NVQ in QCF
- the ConstructionSkills Consolidated Assessment Strategy for Construction and the Built Environment, Craft, Supervisory, Technical, Managerial and Professional Units and Qualifications with NVQ in the Qualification and Credit Framework (QCF) title and SVQs.

Assessors for this unit must use a combination of the following assessment methods:

- observation of normal work activities within the workplace that clearly confirms the required skills
- questioning the learner on knowledge criteria that clearly confirms the required understanding
- review other forms of evidence that can clearly confirm industry required skills, knowledge and understanding.

Assessors for this unit must have verifiable, current industry experience and a sufficient depth of occupational expertise and knowledge of configuring plant or equipment for operational activities to be effective and reliable when confirming a learner's competence.

Workplace evidence of skills cannot be simulated.

This unit must be assessed against one of the following endorsements:

- heavy earthmoving plant and equipment
- cranes and lifting equipment
- building and associated plant
- civil engineering plant
- road building plant
- small plant and tools
- powered access equipment (electric)
- powered access equipment (diesel)
- powered access equipment (bi-energy)
- piling equipment
- tunnelling equipment
- lift trucks (electric)
- lift trucks (diesel)
- lift trucks (gas)
- plant electrics (dc auto)
- plant electrics (ac)
- engine and transmission reconditioning
- road/rail plant
- hydraulic attachments.

Assessment methodology

Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Work safely at all times when configuring plant or equipment.	1.1 comply with current health and safety legislation and other relevant regulations and guidelines applicable to the configuring of plant 1.2 use personal protective equipment (PPE) relevant to the configuring of plant 1.3 describe health and safety legislation, regulations, safe working practices and procedures and company health and safety policies and workplace procedures that apply to the configuring of plant 1.4 describe the types of, and safe and correct use of personal protective equipment (PPE) relevant to the configuring of plant			
2 Carry out preparation activities to configure plant or equipment.	2.1 identify and follow all relevant setting up and operating specifications to carry out the required configuration work 2.2 identify and select relevant tools and equipment and prepare for the configuration activity 2.3 list the sources of configuration and operating specifications, the types of detail contained in the specifications, and describe how to extract the information from each type			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
3	Configure or re-configure a range of plant or equipment relevant to the occupational area, in the workplace	3.1	set and configure a range of plant for operational activities using following defined procedures, manufacturers' and statutory requirements			
		3.2	configure or reconfigure a plant using at least three of the following methods/procedures: – removing and replacing components – positioning equipment – fitting, securing and repositioning sections and attachments – assembling and dismantling components – carrying out settings and adjustments – liaising with operators and/or end users			
		3.3	describe configuration methods, techniques and procedures on a range of occupationally relevant plant or equipment			
		3.4	outline the organisational configuration procedures and the factors that determine those procedures			
4	Carry out functional checks to ensure the configured plant or equipment operates to specification.	4.1	check that the configuration is complete and that the plant or equipment performs to the required manufacturer's specifications and statutory requirements			
		4.2	complete all relevant documentation accurately and legibly			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
	4.3 describe the organisation's procedures and instructions for operating relevant items of plant for the occupational area, and reasons for methods of work 4.4 outline the organisation's recording and documentation procedures, describe what records are kept and why they are kept			
5 Know how to deal with problems promptly and effectively and report those that cannot be solved.	5.1 state the organisations' reporting lines and procedures associated with manufacturing/fabrication activities 5.2 state typical contacts that can be used for advice when carrying out manufacturing/fabrication activities 5.3 describe which analysis methods and procedures can be applied to typical test results, and the types of fault that can be identified by carrying out tests on plant relevant to the occupational area 5.4 outline the environmental considerations and control methods that should be implemented when testing plant 5.5 describe the types of test reporting documentation and procedures 5.6 state the organisations' instructions and procedures associated with the testing of plant			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Unit 17: Carrying out familiarisation or handover activities to users of plant and equipment in the workplace

Unit reference number: Y/600/8411

QCF level: 2

Credit value: 9

Guided learning hours: 30

Unit summary

The aim of this unit is to illustrate the skills, knowledge and understanding required to confirm competence in carrying out familiarisation or handover activities to users of plant and equipment in the workplace within the relevant sector of industry.

Assessment Requirements/evidence requirements

This unit must be assessed in a work environment and in accordance with:

- the Additional Requirements for Qualifications using the title NVQ in QCF
- the ConstructionSkills Consolidated Assessment Strategy for Construction and the Built Environment, Craft, Supervisory, Technical, Managerial and Professional Units and Qualifications with NVQ in the Qualification and Credit Framework (QCF) title and SVQs.

Assessors for this unit must use a combination of the following assessment methods:

- observation of normal work activities within the workplace that clearly confirms the required skills
- questioning the learner on knowledge criteria that clearly confirms the required understanding
- review other forms of evidence that can clearly confirm industry required skills, knowledge and understanding.

Assessors for this unit must have verifiable, current industry experience and a sufficient depth of occupational expertise and knowledge of carrying out familiarisation or handover activities to users of plant and equipment to be effective and reliable when confirming a learner's competence.

Workplace evidence of skills cannot be simulated.

This unit must be assessed against one of the following endorsements:

- heavy earthmoving plant and equipment
- cranes and lifting equipment
- building and associated plant
- civil engineering plant
- road building plant
- small plant and tools
- powered access equipment (electric)
- powered access equipment (diesel)
- powered access equipment (bi-energy)
- piling equipment
- tunnelling equipment
- lift trucks (electric)
- lift trucks (diesel)
- lift trucks (gas)
- plant electrics (dc auto)
- plant electrics (ac)
- engine and transmission reconditioning
- road/rail plant
- hydraulic attachments.

Assessment methodology

Learners can enter the types of evidence they are presenting for assessment and the submission date against each assessment criterion. Alternatively, centre documentation should be used to record this information.

Learning outcomes and assessment criteria

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
1 Work safely at all times when carrying out familiarisation/handover activities.	1.1 comply with current health and safety legislation and other relevant regulations and guidelines applicable to the familiarisation and demonstration of plant and equipment 1.2 use personal protective equipment (PPE) relevant to plant-specific familiarisation and demonstration 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 demonstrating and using plant and equipment			
2 Establish the relevant operating and using procedures on plant or equipment relevant to the occupational area.	2.1 identify and extract information relating to correct operating and use procedures for relevant types of plant and equipment 2.2 confirm and define the condition of relevant plant and equipment in accordance with specifications 2.3 describe the types of information sources that identify safe operating and using aspects of relevant plant and equipment			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
3 Familiarise users with the operating and safe use of a range of plant or equipment relevant to the occupational area.	3.1 demonstrate and explain to users, relevant pre-use checks and functional (non-operational) aspects on a range of plant or equipment relevant to the occupational area 3.2 demonstrate and explain to users, safety, PPE and emergency shutdown requirements on a range of plant or equipment relevant to the occupational area 3.3 conduct familiarisation/handover activities in accordance with organisational and statutory requirements 3.4 explain different methods of familiarising users with plant or equipment 3.5 give reasons why users of plant and equipment should be familiarised with the relevant plant or equipment before use and the possible consequences should this not be undertaken effectively			

Learning outcomes	Assessment criteria	Evidence type	Portfolio reference	Date
4 Record successful completion of the familiarisation process and handover the use of plant or equipment to others.	4.1 ensure that users are familiar with the operating requirements for relevant items of plant or equipment 4.2 define and agree when familiarisation/handover activities have been completed and agreed and control is transferred to the user 4.3 produce and maintain records of the familiarisation/handover activity in accordance with organisational procedures 4.4 describe the organisational record and documentation system for familiarisation/handover activities 4.5 describe the necessary documentation for relevant types of plant or equipment involved in the handover procedure 4.6 give reasons why the documentation process and keeping records is an important and integral part of the handover procedure 4.7 explain why good working relationships are established and maintained prior to, during and after handover procedures are undertaken			
5 Know how to deal with problems promptly and effectively and report those that cannot be solved.	5.1 describe the organisations' reporting lines and procedures or the familiarisation/handover of plant or equipment to end users			

Learner name: _____ Date:_____

Learner signature: _____ Date:_____

Assessor signature: _____ Date:_____

Internal verifier signature: _____ Date:_____
(*if sampled*)

Further information

Our customer service numbers are:

BTEC and NVQ	0844 576 0026
GCSE	0844 576 0027
GCE	0844 576 0025
The Diploma	0844 576 0028
DiDA and other qualifications	0844 576 0031

Calls may be recorded for training purposes.

Useful publications

Related information and publications include:

- Centre Handbook for Edexcel QCF NVQs and Competence-based Qualifications published annually
- functional skills publications – specifications, tutor support materials and question papers
- *Regulatory Arrangements for the Qualification and Credit Framework* (published by Ofqual, August 2008)
- the current Edexcel publications catalogue and update catalogue.

Edexcel publications concerning the Quality Assurance System and the internal and standards verification of vocationally related programmes can be found on the Edexcel website.

NB: Some of our publications are priced. There is also a charge for postage and packing. Please check the cost when you order.

How to obtain National Occupational Standards

CITB-ConstructionSkills
Bircham Newton
King's Lynn
Norfolk PE31 6RH

Telephone: 01485 577577
Fax: 01485 577793
Email: call.centre@cskills.org

Professional development and training

Edexcel supports UK and international customers with training related to NVQ and BTEC qualifications. This support is available through a choice of training options offered in our published training directory or through customised training at your centre.

The support we offer focuses on a range of issues including:

- planning for the delivery of a new programme
- planning for assessment and grading
- developing effective assignments
- building your team and teamwork skills
- developing student-centred learning and teaching approaches
- building functional skills into your programme
- building effective and efficient quality assurance systems.

The national programme of training we offer can be viewed on our website (www.edexcel.com/training). You can request customised training through the website or by contacting one of our advisers in the Training from Edexcel team via Customer Services to discuss your training needs.

The training we provide:

- is active
- is designed to be supportive and thought provoking
- builds on best practice
- may be suitable for those seeking evidence for their continuing professional development.

Annexe A: Progression pathways

The Edexcel qualification framework for the Construction and the Built Environment sector

Level	General qualifications	Diplomas	BTEC vocationally-related qualifications	BTEC specialist qualification/ professional	NVQ/competence
8					
7					
6					We have too many qualifications to list in this space. Please go to www.edexcel.com
5			Edexcel BTEC Level 5 HND Diploma in Construction		We have too many qualifications to list in this space. Please go to www.edexcel.com
4			Edexcel BTEC Level 4 HND Certificate in Construction		We have too many qualifications to list in this space. Please go to www.edexcel.com
3		Edexcel Level 3 Diploma in Construction and the Built Environment	Edexcel BTEC Level 3 Certificate, Subsidiary Diploma, Diploma Extended Diploma in Construction and the Built Environment	Edexcel BTEC Level 3 Award, Extended Certificate and Diploma in Construction and the Built Environment	We have too many qualifications to list in this space. Please go to www.edexcel.com

Level	General qualifications		Diplomas	BTEC vocationally-related qualifications	BTEC specialist qualification/ professional	NVQ/competence
2			Edexcel Level 2 Diploma in Construction and the Built Environment	Edexcel BTEC Level 2 Certificate, Extended Certificate and Diploma in Construction	Edexcel BTEC Level 2 Award, Certificate and Extended Certificate in Construction and the Built Environment (Craft) and Construction and the Built Environment (Technician)	We have too many qualifications to list in this space. Please go to www.edexcel.com
1			Edexcel Level 1 Diploma in Construction and the Built Environment	Edexcel BTEC Level 1 Award, Certificate, Diploma in Construction (QCF)	Edexcel BTEC Level 1 Award, Certificate, Extended Certificate in Construction and the Built Environment	We have too many qualifications to list in this space. Please go to www.edexcel.com
Entry				Edexcel Entry Level BTEC Award in Construction (Entry 3) (QCF)		

Annexe B: Quality assurance

Key principles of quality assurance

- A centre delivering Edexcel qualifications must be an Edexcel recognised centre and must have approval for qualifications that it is offering.
- The centre agrees as part of gaining recognition to abide by specific terms and conditions around the effective delivery and quality assurance of assessment; the centre must abide by these conditions throughout the period of delivery.
- Edexcel makes available to approved centres a range of materials and opportunities to exemplify the processes required for effective assessment and provide examples of effective standards. Approved centres must use the guidance on assessment to ensure that staff who are delivering Edexcel qualifications are applying consistent standards.
- An approved centre must follow agreed protocols for: standardisation of assessors; planning, monitoring and recording of assessment processes; internal verification and recording of internal verification processes; and for dealing with special circumstances, appeals and malpractice.

Quality assurance processes

The approach to quality assured assessment is made through a partnership between a recognised centre and Edexcel. Edexcel is committed to ensuring that it follows best practice and employs appropriate technology to support quality assurance process where practicable. Therefore, the specific arrangements for working with centres will vary. Edexcel seeks to ensure that the quality assurance processes that it uses do not place undue bureaucratic processes on centres and works to support centres in providing robust quality assurance processes.

The learning outcomes and assessment criteria in each unit within this specification set out the standard to be achieved by each learner in order to gain each qualification. Edexcel operates a quality assurance process, which is designed to ensure that these standards are maintained by all assessors and verifiers.

For the purposes of quality assurance all individual qualifications and units are considered as a whole. Centres offering these qualifications must be committed to ensuring the quality of the units and qualifications they offer, through effective standardisation of assessors and internal verification of assessor decisions. Centre quality assurance and assessment processes are monitored by Edexcel.

The Edexcel quality assurance processes will involve:

- gaining centre recognition and qualification approval if a centre is not currently approved to offer Edexcel qualifications
- annual visits to centres by Edexcel for quality review and development of overarching processes and quality standards. Quality review and development visits will be conducted by an Edexcel quality development reviewer
- annual visits by occupationally competent and qualified Edexcel Standards Verifiers for sampling of internal verification and assessor decisions for the occupational sector
- the provision of support, advice and guidance towards the achievement of National Occupational Standards.

Centres are required to declare their commitment to ensuring quality and appropriate opportunities for learners that lead to valid and accurate assessment outcomes. In addition, centres will commit to undertaking defined training and online standardisation activities.

Annexe C: Centre certification and registration

Edexcel Standards Verifiers will provide support, advice and guidance to centres to achieve Direct Claims Status (DCS). Edexcel will maintain the integrity of Edexcel QCF NVQs through ensuring that the awarding of these qualifications is secure. Where there are quality issues identified in the delivery of programmes, Edexcel will exercise the right to:

- direct centres to take actions
- limit or suspend certification
- suspend registration.

The approach of Edexcel in such circumstances is to work with the centre to overcome the problems identified. If additional training is required, Edexcel will aim to secure the appropriate expertise to provide this.

What are the access arrangements and special considerations for the qualifications in this specification?

Centres are required to recruit learners to Edexcel qualifications with integrity.

Appropriate steps should be taken to assess each applicant's potential and a professional judgement made about their ability to successfully complete the programme of study and achieve the qualification. This assessment will need to take account of the support available to the learner within the centre during their programme of study and any specific support that might be necessary to allow the learner to access the assessment for the qualification. Centres should consult Edexcel's policy on learners with particular requirements.

Edexcel's policy on access arrangements and special considerations for Edexcel qualifications aims to enhance access to the qualifications for learners with disabilities and other difficulties (as defined by the 1995 Disability Discrimination Act and the amendments to the Act) without compromising the assessment of skills, knowledge, understanding or competence. Please refer to *Access Arrangements and Special Considerations for BTEC and Edexcel NVQ Qualifications* for further details. www.edexcel.com.

Annexe D: Additional requirements for qualifications that use the title NVQ within the QCF

Contents

Purpose of document

1 The purpose of this document is to make clear what additional requirements are needed to assess and quality assure qualifications that use the title NVQ within the QCF.

2 When an SSC/SSB and awarding organisation wants to use the title NVQ in the naming of a qualification within the QCF, the awarding organisation is required to make sure this qualification is assessed and quality assured in accordance with these additional requirements and other requirements described in the SSC/SSB assessment strategy.

3 The aims of these additional requirements are to

- ensure that all competence based qualifications that use the title NVQ within the QCF are
  - assessed consistently
  - quality assured consistently
- maintain the integrity of qualifications that use the title NVQ within the QCF
- establish the NVQ brand within the QCF
- keep bureaucracy associated with assessment and quality assurance of qualifications that use the title NVQ within the QCF to a minimum.

Background

4 [1] "At the heart of an NVQ is the concept of occupational competence; the ability to perform to the standards required in employment across a range of circumstances and to meet changing demands. NVQs are first and foremost about what people can do. They go beyond technical skills to include planning, problem solving, dealing with unexpected occurrences, working with other people and applying the knowledge and understanding that underpins overall competence".

5 NVQs are based entirely on National Occupational Standards (NOS) developed by an SSC/SSB, which describe the competence needed in an occupational role.

6 Qualifications that use the title NVQ within the QCF must comply with the rules of combination determined by the SSC/SSB. Awarding organisations are not allowed to develop another qualification that does not use the title NVQ within the QCF, if it uses the same rules of combination as a qualification that does use the title NVQ within the QCF.

7 The QCF offers increased flexibility in the way occupational competence can be assessed and demonstrated. Qualifications that use the title NVQ in the title within the QCF are just one way of assessing and demonstrating occupational competence. SSCs/SSBs are free to work with their awarding organisations to agree what qualifications will be used to assess occupational competence. Qualifications that use the title NVQ within the QCF, are not a preferred method for assessing occupational competence and all qualifications accredited through the QCF have equal status.

8 When developing a qualification for the QCF, including qualifications that use the title NVQ within the QCF, an awarding organisation must be a recognised awarding organisation and must meet the Qualification Requirements in the Regulatory Arrangements for the Qualifications and Credit Framework, published by The Office of the Qualifications and Examinations Regulator (Ofqual) in August 2008.

9 The qualification regulators confirmed that a group of SSCs and SSBs would be free to develop specific, additional requirements about the way in which qualifications that use the title NVQ within the QCF will be assessed and quality assured. For those recognised awarding organisations that want to assess occupational competence through the use of qualifications that use the title NVQ within the QCF, it has been agreed by SSCs and SSBs that the following additional requirements must be met.

[1] NCVQ's NVQ Criteria and Guidance 1995.

Additional requirements for qualifications that use the title NVQ within the QCF

Introduction

10 Qualifications that use the title NVQ within the QCF must be assessed and quality assured in accordance with the following additional requirements.

Assessment requirements

11 When a qualification uses the title NVQ within the QCF, awarding organisations are required to make sure their recognised assessment centres understand how learners are to be assessed.

12 Assessment methodologies must meet the assessment strategy developed in partnership between the relevant SSC or SSB and awarding organisations for the qualification. The assessment strategy must be published and made available separately and will include the requirements for assessment of qualifications that use the title NVQ within the QCF. The assessment criteria for each unit will be part of the units that make up the qualification.

13 Learners must complete real work activities in order to produce evidence to demonstrate they have met the NOS and are occupationally competent.

14 When a learner cannot complete a real work activity, simulation is allowed.

15 Simulation is allowed when

- a learner is required to complete a work activity that does not occur on a regular basis and therefore opportunities to complete a particular work activity do not easily arise
- a learner is required to respond to a situation that rarely occurs, such as responding to an emergency situation
- the safety of a learner, other individuals and/or resources will be put at risk.

16 When simulation is used, assessors must be confident that the simulation replicates the workplace to such an extent that learners will be able to fully transfer their occupational competence to the workplace and real situations.

17 Units that must not be assessed by simulation must be identified by the SSC/SSB in the assessment strategy for the qualification or family of qualifications.

18 Learners must be assessed by assessors:

- who are occupationally competent in the occupational areas they are assessing where they have sufficient and relevant technical/occupational competence in the unit, at or above the level of the unit being assessed and as defined by the assessment strategy for that qualification
- [2]who must hold or be working towards a suitable assessor qualification to confirm they understand assessment and how to assess learners
- must be fully conversant with the unit(s) against which the assessments and verification are to be undertaken.

19 All assessors must carry out assessment to the standards specified in the A units.

20 All assessment decisions made by a trainee assessor must be checked by a qualified assessor or an assessor recognised by an awarding organisation.

21 Trainee assessors must have a plan, which is overseen by the recognised assessment centre, to achieve the relevant assessor qualification(s) within an agreed timescale.

[2] Currently an assessor could hold unit A1 and/or unit A2. Or from the past unit D32 and/or unit D33. SSCs also identify other suitable equivalent qualifications.

Quality assurance requirements

22 When a qualification uses the title NVQ within the QCF, awarding organisations are required to make sure their recognised assessment centres understand how the qualification will be quality assured.

23 Qualifications that use the title NVQ within the QCF, must be verified:

- internally by an internal verifier, who is accountable to the assessment centre
- externally by an external verifier, who is accountable to the awarding organisation or an agent of the awarding organisation.

24 With reference to internal verification, internal verifiers must:

- [3]hold or be working towards a suitable internal verifier qualification to confirm they understand how to internally verify assessments
- have sufficient and relevant technical/occupational familiarity in the unit(s) being verified
- be fully conversant with the standards and assessment criteria in the units to be assessed
- understand the awarding organisation's quality assurance systems and requirements for this qualification.

25 Trainee internal verifiers must have a plan, which is overseen by the recognised assessment centre, to achieve the internal verifier qualification within an agreed timescale.

26 With reference to external verification, external verifiers must:

- [4]hold or be working towards a suitable external verification qualification to confirm they understand and are able to carry out external verification
- have no connections with the assessment centre, in order to maintain objectivity
- have sufficient and relevant technical/occupational understanding in the unit(s) being verified
- be fully conversant with the standards and performance criteria in the units to be assessed
- understand the awarding organisation's quality assurance systems for this qualification.

27 Trainee external verifiers must have a plan, which is overseen by the awarding organisation, to achieve the external verifier qualification within an agreed timescale.

[3] Currently an internal verifier needs to hold unit V1. Or from the past unit D34. SSCs also identify other suitable equivalent qualifications.

[4] Currently an external verifier needs to hold unit V2. Or from the past unit D35.

28 Awarding organisations must decide the frequency of external monitoring activities. Any decision must be based on:

- the risks associated with a qualification that is designed to help a learner demonstrate occupational competence
- an evaluation of the centre's performance and past record.

29 Awarding organisations will have in place suitably constituted audit processes, which are supported by naturally occurring quality assurance and monitoring systems that already exist in workplace assessment environments.

Annexe E: Assessment Requirements/Strategy

The ConstructionSkills Assessment Strategy will be available on the Edexcel website, along side the full specification on the construction NVQ/competence page.

Llywodraeth Cynulliad Cymru
Welsh Assembly Government

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For more information on Edexcel and BTEC qualifications please visit our website: www.edexcel.com