



## **Level 2 NVQ Diploma in Plant Maintenance (Construction)**

### **Qualification Specification**

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## Introduction

The aim of this qualification is to recognise the knowledge, skills and competence demonstrated by an individual in the workplace. This Level 2 NVQ Diploma in Plant Maintenance provides the opportunity for individuals who specialise in the maintenance and repair of construction plant and equipment to demonstrate their competence.

The awarding body for these qualifications is ProQual Awarding Body and the regulatory body is the Office of Qualifications and Examinations Regulation (Ofqual). The specification for these qualifications has been approved by the Welsh Government for use by centres in Wales and by the Council for the Curriculum Examinations and Assessment (CCEA) for use by centres in Northern Ireland.

This qualification has been accredited onto the Regulated Qualifications Framework (RQF) and it provides a progression route to discipline related qualifications in the construction sector.

## Qualification Profile Level 2 NVQ Diploma in Plant Maintenance (Construction)

Qualification title	ProQual Level 2 NVQ Diploma in Plant Maintenance (Construction)
Ofqual qualification number	600/4274/6
Level	Level 2
Total qualification time	450 hours
Guided learning hours	316
Assessment	Pass or fail Internally assessed and verified by centre staff External quality assurance by ProQual verifiers
Qualification start date	1/1/12
Qualification end date	

## Entry Requirements

There are no formal entry requirements for this qualification.

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

## Qualification Structure

Candidates must complete all of the Mandatory Units plus a minimum of THREE Optional Units.

Mandatory Units			
Unit Reference Number	Unit Title	Unit Level	GLH
J/600/8310	Carrying Out the Servicing and Maintenance of Plant and Equipment in the Workplace	2	27
Y/600/8313	Removing and Replacing Plant and Equipment Components in the Workplace	2	40
K/600/8316	Dismantling and Assembling Plant and Equipment Components in the Workplace	2	50
A/600/8319	Maintaining the Work Area for Plant Maintenance and Repair Activities in the Workplace	2	16
A/600/8322	Carrying Out Routine Inspections on Plant and Equipment to Ensure Operational Serviceability in the Workplace	2	40
M/600/8334	Diagnosing Faults in Plant or Equipment Systems and Components in the Workplace	2	33
Optional Units			
Unit Reference Number	Unit Title	Unit Level	GLH
A/600/8336	Repairing Plant and Equipment by Soldering and Welding Ferrous and Non-ferrous Materials in the Workplace	2	53
F/600/8340	Producing or Modifying One-off Components for use with Plant or Equipment in the Workplace	2	47
L/600/8390	Moving Plant Related Loads by Manual Lifting and Using Manually Operated Load Handling Equipment in the Workplace	2	40
Y/600/8392	Installing Plant or Equipment for Operational Activities in the Workplace	2	40
H/600/8394	Carrying Out Specific Tests on Plant and Equipment to Determine Operational Serviceability in the Workplace	2	47
M/600/8396	Configuring Plant or Equipment for Operational Activities in the Workplace	2	50
Y/600/8411	Carrying Out Familiarisation or Handover Activities to Users of Plant and Equipment in the Workplace	2	30

## Centre Requirements

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

### Staff

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

### Assessors/Internal Quality Assurance

For each competence-based unit centres must be able to provide at least one assessor and one internal quality assurance verifier who are suitably qualified for the specific occupational area. Assessors and internal quality assurance verifiers for competence-based units or qualifications will normally need to hold appropriate assessor or verifier qualifications, such as:

- Award in Assessing Competence in the Work Environment
- Award in Assessing Vocationally Related Achievement
- Certificate in Assessing Vocational Achievement
- Award in the Internal Quality Assurance of Assessment Processes and Practices
- Certificate in Leading the Internal Quality Assurance of Assessment Processes and Practices

## Support for Candidates

Materials produced by centres to support candidates should:

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

## Assessment

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

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

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

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

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

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

## Internal Quality Assurance

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

## Adjustments to Assessment

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

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

## Results Enquiries and Appeals

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

## Certification

Candidates who achieve the requirements for qualifications will be awarded:

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

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### Claiming certificates

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

### Unit certificates

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

### Replacement certificates

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

## Learning Outcomes and Assessment Criteria

### Unit J/600/8310

## Carrying Out the Servicing and Maintenance of Plant and Equipment in the Workplace

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
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.
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.



Learning Outcome - The learner will:	Assessment Criterion - The learner can:
<p>3 Service and maintain a range of plant and equipment in both operational and non-operational situations.</p>	<p>3.1 Carry out typical servicing and maintenance activities according to manufacturer's specifications and organisational procedures within the limits of their personal authority.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>3.5 Carry out servicing and maintenance activities in the specified sequence and complete the activities within the agreed timescale.</p> <p>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 servicing and maintenance tasks as specified by the manufacturers.</p>
<p>4 Comply with the procedures for non-planned occurrences when servicing and maintaining plant and equipment.</p>	<p>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.</p> <p>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.</p>

**Learning Outcome - The learner will:****Assessment Criterion - The learner can:**

- |   |   |     |   |
|---|---|-----|---|
| 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.  |
|   |   | 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.  |

## Unit A/600/8319

# Maintaining the Work Area for Plant Maintenance and Repair Activities in the Workplace

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
1 Work safely at all times when dismantling and assembling plant and equipment components.	<p>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.</p> <p>1.2 Use personal protective equipment (PPE) relevant to plant maintenance activities.</p> <p>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.</p> <p>1.4 Ensure that the required safety arrangements are in place to protect other workers.</p> <p>1.5 Describe the types of, and safe and correct use of personal protective equipment (PPE) relevant to plant maintenance activities.</p>
2 Prepare work areas for plant maintenance and repair activities.	<p>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.</p> <p>2.2 Ensure that all necessary service supplies are connected and ready to use.</p> <p>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.</p> <p>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.</p> <p>2.5 List the types of obstructions and disruptions that can affect the setting up of the work area.</p>

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
3 Prepare tools, equipment and materials for plant maintenance activities.	2.6 Outline the types of requirements of users of the work area.
	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.
4 Reinststate the work area following completion of plant maintenance and repair activities.	3.5 Describe how to handle a range of typical maintenance parts and equipment, hand and power tools, and lifting equipment and lifting aids.
	4.1 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.	

**Learning Outcome - The learner will:**

**Assessment Criterion - The learner can:**

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|---|-----|--|
|   | 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. |
| 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.   |

## Unit Y/600/8313

# Removing and Replacing Plant and Equipment Components in the Workplace

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
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.
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

**Learning Outcome - The learner will:****Assessment Criterion - The learner can:**

- 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.
- 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 removed components in accordance with approved procedures.

**Learning Outcome - The learner will:****Assessment Criterion - The learner can:**

	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.
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 Outcome - The learner will:****Assessment Criterion - The learner can:**

- |   |  |     |  |
|---|--|-----|--|
| 7 | Comply with organisational documentation and communication procedures when removing and replacing components on plant and equipment. | 6.6 | State the methods, procedures and techniques used in the organisation for mechanical handling, manual handling and protection of components when re-fitting. |
|   |  | 7.1 | 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.                                    |

## Unit K/600/8316

# Dismantling and Assembling Plant and Equipment Components in the Workplace

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
<p>1 Work safely at all times when dismantling and assembling plant and equipment components.</p>	<p>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.</p> <p>1.2 Use personal protective equipment (PPE) relevant to plant maintaining activities.</p> <p>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.</p> <p>1.4 State health and safety issues and describe reasons for possible injuries when dismantling and assembling plant components.</p>
<p>2 Carry out preparation activities in order to dismantle and assemble plant and equipment components.</p>	<p>2.1 Identify and extract applicable information from relevant information sources when dismantling and assembling plant and equipment components.</p> <p>2.2 Establish and, where appropriate, mark components to aid re-assembly.</p> <p>2.3 Ensure that any stored energy or substances are released safely and correctly.</p> <p>2.4 Follow relevant instructions, assembly and disassembly drawings and any other relevant specifications to aid dismantling and assembly.</p> <p>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.</p>

**Learning Outcome - The learner will:**

**Assessment Criterion - The learner can:**

- |   |  |     |  |
|---|--|-----|--|
| 3 | Dismantle components in operational and/or non-operational situations associated with a range of plant and equipment in the workplace. | 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.  |
|   |  | 3.1 | 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 is 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.                              |
|   |  | 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.   |

<b>Learning Outcome - The learner will:</b>	<b>Assessment Criterion - The learner can:</b>
<p>4 Segregate and sort parts from dismantled components for disposal and/or reuse.</p>	<p>4.1 Label and store parts and sub-assemblies from dismantled components for re-use in approved locations.</p> <p>4.2 Discard unwanted dismantled components, parts, sub-assemblies or substances in accordance with approved procedures.</p> <p>4.3 Describe how to identify component defects, the methods used and sources of information.</p> <p>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.</p>
<p>5 Prepare components for assembly to plant and equipment.</p>	<p>5.1 Ensure the specified components are available and are in a usable condition.</p> <p>5.2 Describe the manufacturers' and organisations procedures and preparation methods and techniques for full and subassemblies, parts and components, the methods of cleaning and lubricating components, and how to protect threads during assembly.</p> <p>5.3 State reasons for keeping areas clean and tidy prior to and during assembly of components.</p>
<p>6 Assemble and build components in operational and non-operational situations associated with a range of plant and equipment in the workplace.</p>	<p>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:</p> <ul style="list-style-type: none"> <li>– full assemblies</li> <li>– sub assemblies</li> <li>– robust components</li> <li>– fragile components.</li> </ul> <p>6.2 Assemble components in their correct position using appropriate assembly methods and techniques, and demonstrate the following assembly methods and techniques:</p>

**Learning Outcome - The learner will:**

**Assessment Criterion - The learner can:**

- 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.
- 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.

## Unit A/600/8319

# Maintaining the Work Area for Plant Maintenance and Repair Activities in the Workplace

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
1 Work safely at all times when dismantling and assembling plant and equipment components.	<p>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.</p> <p>1.2 Use personal protective equipment (PPE) relevant to plant maintenance activities.</p> <p>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.</p> <p>1.4 Ensure that the required safety arrangements are in place to protect other workers.</p> <p>1.5 Describe the types of, and safe and correct use of personal protective equipment (PPE) relevant to plant maintenance activities.</p>
2 Prepare work areas for plant maintenance and repair activities.	<p>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.</p> <p>2.2 Ensure that all necessary service supplies are connected and ready to use.</p> <p>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.</p> <p>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.</p> <p>2.5 List the types of obstructions and disruptions that can affect the setting up of the work area.</p>

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
<p>3 Prepare tools, equipment and materials for plant maintenance activities.</p>	<p>2.6 Outline the types of requirements of users of the work area.</p> <p>3.1 Prepare the work area to store materials and finished products.</p> <p>3.2 Obtain the required materials, tools and equipment and ensure they are suitably prepared for the relevant activities.</p> <p>3.3 State the different methods of identifying parts and materials and how to check them for serviceability and defects.</p> <p>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.</p> <p>3.5 Describe how to handle a range of typical maintenance parts and equipment, hand and power tools, and lifting equipment and lifting aids.</p>
<p>4 Reinststate the work area following completion of plant maintenance and repair activities.</p>	<p>4.1 Separate equipment, components and materials for re-use from waste items and materials.</p> <p>4.2 Remove and dispose of waste hazardous and non-hazardous materials and packaging in line with organisational, legislative and environmentally safe procedures.</p> <p>4.3 Dispose of waste oils, fuels, greases, coolants, chemicals and solvents in accordance with organisational, legislative and environmentally safe procedures.</p> <p>4.4 Restore the work area to a safe condition in accordance with agreed requirements and schedules.</p> <p>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.</p>

**Learning Outcome - The learner will:**

**Assessment Criterion - The learner can:**

- |   |     |  |
|---|-----|--|
|   | 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. |
| 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.   |



## Unit A/600/8322

# Carrying Out Routine Inspections on Plant and Equipment to Ensure Operational Serviceability in the Workplace

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
1 Work safely at all times when inspecting plant and equipment for operational serviceability.	<p>1.1 Comply with current health and safety legislation and other relevant regulations and guidelines applicable to the inspecting of plant and equipment.</p> <p>1.2 Use personal protective equipment (PPE) relevant to plant inspection activities.</p> <p>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.</p>
2 Carry out preparation activities to inspect plant and equipment for operational serviceability.	<p>2.1 Identify and follow the correct specification for the plant product or equipment to be inspected.</p> <p>2.2 Identify and use the correct equipment needed to carry out typical inspections on plant or equipment.</p> <p>2.3 Identify and confirm the type of inspection checks to be made and acceptance criteria to be used.</p> <p>2.4 Outline the sources and types of information needed to carry out inspections.</p> <p>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.</p> <p>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.</p> <p>2.7 Outline the organisations' instructions and procedures for the calibrating of equipment and gaining authorisation for using relevant equipment.</p>

**Learning Outcome - The learner will:**

**Assessment Criterion - The learner can:**

- |  |   |
|--|---|
| <p>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.</p> | <p>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:</p> <ul style="list-style-type: none"><li>– periodical/routine</li><li>– pre-delivery</li><li>– post repair</li><li>– functional/operational testing</li><li>– off-hire</li><li>– returned items of plant or equipment.</li></ul> <p>3.2 Carry out inspection activities following defined procedures whilst maintaining manufacturers' or organisational standards and accuracy.</p> <p>3.3 Identify any defects or variations from relevant specifications</p> <p>3.4 Record the results of inspections in the appropriate format.</p> <p>3.5 Outline the organisation's instructions and procedures for the use and care of specialist inspection equipment, and test and diagnostic aids.</p> <p>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.</p> <p>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.</p> |
| <p>4 Know how to deal with problems promptly and</p>   | <p>4.1 Describe the organisations' reporting lines and procedures for recording findings from inspections.</p>  |

**Learning Outcome - The learner will:**

effectively and report those that cannot be solved.

**Assessment Criterion - The learner can:**

4.2 State who should be informed with the results of inspections and/or if further detailed inspections and examinations are required.

## Unit M/600/8334

# Diagnosing Faults in Plant or Equipment Systems and Components in the Workplace

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
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.
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

**Learning Outcome - The learner will:****Assessment Criterion - The learner can:**

- 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.
  - 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.



## Unit A/600/8336

# Repairing Plant and Equipment by Soldering and Welding Ferrous and Non-ferrous Materials in the Workplace

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
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 hot materials and fluxes, and when cutting steel materials to size and shape.  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.

**Learning Outcome - The learner will:****Assessment Criterion - The learner can:**

- |   |  |     |  |
|---|--|-----|--|
| 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. | 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.   |
|   |  | 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.  |
|   |  | 3.1 | 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:<br>– oxyacetylene gas<br>– manual metal arc<br>– 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:<br>– oxyacetylene gas<br>– electrical soldering tools<br>– soldering coppers (irons). |
|   |  | 3.3 | Produce fillet, butt and lap joints to the quality and specified dimensional accuracy.   |



Learning Outcome - The learner will:	Assessment Criterion - The learner can:
	<p>3.4 Describe the joining characteristics of ferrous and non-ferrous materials using fusion and non-fusion techniques.</p> <p>3.5 Describe the joining processes on ferrous and non-ferrous materials using a range of thermal joining equipment.</p> <p>3.6 Describe the operating and care procedures for oxyacetylene and manual/gas flow metal arc equipment.</p> <p>3.7 Describe the hazards to themselves and others when using oxyacetylene and manual/gas flow metal arc equipment.</p> <p>3.8 Describe the methods and procedures for checking and testing different types of soldered and welded joints.</p>
<p>4 Carry out shut down and cleaning procedures following welding and soldering joining activities.</p>	<p>4.1 Shut down the thermal joining equipment to a safe condition on completion of joining activities.</p> <p>4.2 Comply with organisational procedures to store or dispose of excess and waste materials, and temporary attachments.</p> <p>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).</p> <p>4.4 Describe how flammable and non-flammable gas cylinders and unused consumables should be stored and kept safe.</p>
<p>5 Know how to deal with problems promptly and effectively and report those that cannot be solved.</p>	<p>5.1 State the organisations' reporting lines and procedures associated with welding and soldering activities.</p>

## Unit F/600/8340

# Producing or Modifying One-off Components for use with Plant or Equipment in the Workplace

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
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.
	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.

**Learning Outcome - The learner will:**

**Assessment Criterion - The learner can:**

- |   |   |     |  |
|---|---|-----|--|
| 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 manufacturing/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  |
| 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: <ul style="list-style-type: none"><li>– filing</li><li>– welding</li><li>– machining</li><li>– assembling</li><li>– cutting</li><li>– fitting</li><li>– drilling</li><li>– cutting and tapping threads.</li></ul> |

**Learning Outcome - The learner will:**

**Assessment Criterion - The learner can:**

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|-----|---|
| 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.   |
| 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.  |

## Unit L/600/8390

# Moving Plant Related Loads by Manual Lifting and Using Manually Operated Load Handling Equipment in the Workplace

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
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.
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

**Learning Outcome - The learner will:**

**Assessment Criterion - The learner can:**

- loads, and how to estimate load weights in the absence of relevant data.
- 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.
- 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

**Learning Outcome - The learner will:**

**Assessment Criterion - The learner can:**

- 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.
- 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.

**Learning Outcome - The learner will:**

**Assessment Criterion - The learner can:**

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.



## Unit Y/600/8392

# Installing Plant or Equipment for Operational Activities in the Workplace

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
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: <ul style="list-style-type: none"><li>– working at height</li><li>– working in confined spaces</li><li>– working underground</li><li>– working in inclement weather.</li></ul> 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.
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.

**Learning Outcome - The learner will:**

**Assessment Criterion - The learner can:**

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|---|--|-----|---|
| 3 | Install a range of types of plant or equipment in the workplace relevant to the occupational area. | 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.  |
|   |  | 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: <ul style="list-style-type: none"><li>– drilling</li><li>– fixing</li><li>– tying into structures</li><li>– securing</li><li>– rigging</li><li>– making male to female plug in connectors</li><li>– using threaded fasteners</li><li>– routing cable and/or pipework</li><li>– erecting and dismantling hoist or crane sections.</li></ul> |
|   |  | 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 Outcome - The learner will:**

**Assessment Criterion - The learner can:**

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|---|--|-----|--|
|   |  | 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.                      |

## Unit H/600/8394

# Carrying Out Specific Tests on Plant and Equipment to Determine Operational Serviceability in the Workplace

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
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.
	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	3.1 Carry out specific tests on a range of plant and equipment using at least three of the following: <ul style="list-style-type: none"><li>– hand and/or power tools</li><li>– mechanical test equipment</li></ul>

**Learning Outcome - The learner will:**

**Assessment Criterion - The learner can:**

occupational area, in the workplace.

- 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.

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.

4.5 Describe the types of test reporting documentation and procedures.

**Learning Outcome - The learner will:**

**Assessment Criterion - The learner can:**

- 4.6 State the organisation's instructions and procedures associated with the testing of plant and equipment.

## Unit M/600/8396 Configuring Plant or Equipment for Operational Activities in the Workplace

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
<p>1 Work safely at all times when configuring plant or equipment.</p>	<p>1.1 Comply with current health and safety legislation and other relevant regulations and guidelines applicable to the configuring of plant.</p> <p>1.2 Use personal protective equipment (PPE) relevant to the configuring of plant.</p> <p>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.</p> <p>1.4 Describe the types of, and safe and correct use of personal protective equipment (PPE) relevant to the configuring of plant.</p>
<p>2 Carry out preparation activities to configure plant or equipment.</p>	<p>2.1 Identify and follow all relevant setting up and operating specifications to carry out the required configuration work.</p> <p>2.2 Identify and select relevant tools and equipment and prepare for the configuration activity.</p> <p>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.</p>
<p>3 Configure or re-configure a range of plant or equipment relevant to the occupational area, in the workplace</p>	<p>3.1 Set and configure range of plant for operational activities using following defined procedures, manufacturers' and statutory requirements.</p> <p>3.2 Configure or reconfigure a plant using at three of the following methods/procedures:</p> <ul style="list-style-type: none"> <li>– removing and replacing components</li> <li>– positioning equipment</li> <li>– fitting, securing and repositioning sections and attachments</li> <li>– assembling and dismantling components</li> <li>– carrying out settings and adjustments</li> </ul>

**Learning Outcome - The learner will:**

**Assessment Criterion - The learner can:**

- 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.
    - 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.



**Learning Outcome - The learner will:**

**Assessment Criterion - The learner can:**

- 5.6 State the organisations' instructions and procedures associated with the testing of plant.

## **Unit Y/600/8411**

### **Carrying out Familiarisation or Handover Activities to Users of Plant and Equipment in the Workplace**

**Learning Outcome - The learner will:**

**Assessment Criterion - The learner can:**

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|---|---|-----|---|
| 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.   |
| 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  |

**Learning Outcome - The learner will:****Assessment Criterion - The learner can:**

		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.
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 undertake.

**Learning Outcome - The learner will:****Assessment Criterion - The learner can:**

5 Know how to deal with problems promptly and effectively and report those that cannot be solved.

5.1 Describe the organisation's reporting lines and procedures or the familiarisation/handover of plant or equipment to end users.



ProQual Awarding Body  
ProQual House  
Westbridge Court  
Annie Med Lane  
South Cave  
HU15 2HG

Tel: 01430 423822

[www.proqualab.com](http://www.proqualab.com)

[enquiries@proqualab.com](mailto:enquiries@proqualab.com)