

Open Awards Level 3 End-point Assessment for

ST0671

Construction

Equipment

Maintenance

Technician V1.1

Ofqual: 610/7713/6

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Version History

Version	Date	Change(s) made	Section(s)	Publication source(s)
1		New document.	All	Development Team

This EPA Handbook is for apprentices, employers and providers. It provides an overview of the end-point assessment, the assessment methods, the grading criteria etc. It is a reference document which will guide you through each stage of the process.

For further information about apprenticeship standards and Trailblazers please contact enquiries@openawards.org.uk

Please note: Version 1.1 (updated on 17th June 2025) now replaces version 1.0 of this standard in full. The update was the re-naming of the ‘observation with questions’ assessment method to ‘practical assessment with questioning’ which is to be completed for three set tasks within a simulated environment. There is no requirement to offer both versions of this standard, due to this change being a replacement before this was live. Therefore, it is only V1.1 that will be offered.

Occupational Overview

This occupation is found in the construction and allied sectors, these may include manufacturers, plant hire companies, construction contractors, industry employers, or an independent maintenance or inspection organisation in employers such as within the construction, demolition, rail-plant, extractives or mineral products sectors. The broad purpose of the occupation is to ensure that construction and allied-based plant and equipment, through technical and diagnostic activities, has been made fully functional, safe and efficient where problems occur. The technician will also complete important activities around installing, decommissioning, upgrading, modifying or adapting. They will deal with a wide range of construction-based equipment including static and mobile plant which has a high level of complexity for operational efficiencies. This complexity may include dealing with stringent engine emission requirements, where the understanding of complex programmable electronic systems together with a mechanical and a chemical conversion process is required. With the advent of mechatronic-based operations, hybrid and clean-technology equipment, the technician must be able to adapt to new and changing technologies for zero-carbon equipment. The occupation is a key role in keeping construction and allied based equipment fully functional and efficient, which can affect the delivery of national infrastructure and housing build programmes. In their daily work, an employee in this occupation interacts with customer or client representatives, site managers or site supervisors, site safety representatives, plant operatives, other site workers, sales staff, hire controllers, direct line manager or supervisor, technical advisors, manufacturing staff, co-worker and administrators.

An employee in this occupation will be responsible for ensuring the safe and efficient operation of construction and allied-based static and mobile plant and equipment through activities such as examinations, inspections, diagnostics, analytical, reporting and prevention activities. This applies where the machine or equipment operation is either not fully functional or requires upgrades and adaptations. The construction equipment maintenance technician must have a strong understanding of the specific as well as generic technical aspects of each machine type, have strong problem-solving skills and able to source, interpret, diagnose and apply technical information from a wide range of electronic sources. They will also be at the forefront of dealing with new and emerging technologies such as battery-operated or high voltage mobile equipment and hydrogen-driven mobile equipment which have high levels of risks during maintenance activities if procedural requirements are not followed. They will work independently, and in many cases remotely, but will also play an active part in both planning the work of others and mentor or guide other co-workers. They must work to and specify and apply a high level of health, safety and welfare awareness as they work in challenging environments within high-risk sectors in all hours. Their role is safety critical in that both co-workers and members of the public could be placed at risk. At this level, their behavioural skills are highly important as they will be the forefront in terms of meeting and organising the work with customers, both internal and external and

ultimately responsible for ensuring that any work undertaken by them or colleagues has been completed to the highest standard and within given timescales as failure to complete activities within their scope can mean that their customer or employer could be burdened with very high-penalty costs for project overruns for example overnight roadworks due to nonfunctioning equipment.

Further details on the knowledge, skills and behaviours associated within the occupational standard are accessible on the Skills England website:

<https://skillsengland.education.gov.uk/apprenticeship-standards/st0671>

and in the Assessment Specification section in this document.

Standard Information

Level: 3

Reference: ST0671

Approved for delivery: 20th February 2025 (updated to V1.1 on 17th June 2025)

Route: Engineering and manufacturing

Minimum duration to gateway: 12 months (this does not include the EPA period). Typically duration to Gateway is 36 months

Employers involved in creating the standard:

G F Tomlinson, CRH Plant, BAM, A J Hargreaves, Ainscough Crane Hire, Speedy Services, Liebherr GB Ltd, Eagle Platforms, GGR Group, Flannery Plant Hire, SMT GB Ltd, Clee Hill Plant, Falcon Cranes, JCB, Finning UK, HSS

Professional recognition:

This apprenticeship aligns with:

- Society of Operations Engineers (SOE) for Engineering Technician
- Society of Operations Engineers (SOE) for Graduate

External Quality Assurance Provider: Ofqual

Entry Requirements

There are no set entry requirements to become a Construction Equipment Maintenance Technician. Employers usually expect good literacy, numeracy, and IT skills, along with good communication and customer service skills, as well as an aptitude for problem solving.

End-point Assessment Documents Overview

An overview of the main documents and supporting materials you will encounter during this end-point assessment is in the table below.

Document Name	Brief Description	Who Should Read this Document	When To Use this Document	Additional Information
Skills Scan	This document is designed to support employers and providers to ensure that an apprentice's job role meets the requirements of the standard.	Employers Providers	Use this during the decision making process when considering whether the EPA is appropriate for the apprentice.	This allows employers and providers to ensure that the EPA is a good fit for the skills and aspirations of the apprentice.
Apprentice EPA Journey	A one page visual overview of the different milestones the apprentice will reach within their EPA journey.	Apprentices Employers Providers	Before committing to the course to make sure it is the right fit for you. Throughout the EPA journey.	This roadmap will help you to understand what has been achieved so far and what still needs to be completed.
EPA Handbook	This provides an overview of the end-point assessment, the assessment methods, the grading criteria etc. It is a reference document which will guide you through each stage of the	Apprentices Employers Providers	During the apprenticeship as a reminder of the expectations, assessment methods and grading.	This is a key document which will help you to navigate your way through each step of the end-point assessment. Refer back to this frequently.

	process.			
Progression Tracker	This allows the employer to compile and record an evidence base to prove that the apprentice has demonstrated competence against each KSB specified in the assessment plan.	Apprentices Employers Providers	Throughout the EPA prior to gateway.	This document could be a valuable basis for discussions around progress that the employer may have with the apprentice.
Portfolio Referencing Matrix (also criteria / evidence mapping sheets)	This gives you an overview of the Portfolio of Evidence requirements. It also includes a declaration for the apprentice and the employer to sign.	Apprentices Employers Providers	When you submit the Portfolio of Evidence to support the Interview at gateway.	If this document is not signed and submitted the apprentice will not be able to enter gateway.
Preparation for the Practical assessment with questioning	This gives you a brief reminder of how to prepare for the Practical assessment with questioning and the KSBs that will be assessed through this assessment method.	Apprentices Employers Providers	When preparing for your Practical assessment.	The grading descriptors will help apprentices to identify areas you may need to work on.
Preparation for the Interview underpinned by a portfolio of evidence	This gives you a brief reminder of how to prepare for the Interview underpinned by a portfolio of evidence and the knowledge and behaviours that will be	Apprentices Employers Providers	When preparing for your Interview.	The grading descriptors may help you to complete a self-assessment whilst preparing for the Interview

	assessed			
Gateway Authenticity and Declaration form	This form declares that the apprentice is ready for gateway, the gateway conditions have been met and the evidence submitted has been produced by the apprentice.	Apprentices Employers Providers	At gateway.	This form needs to be signed by employers, providers and the apprentice. The apprentice is unable to enter gateway until this form has been completed and submitted.
Practical Assessment – Machinery Specification form	The form specifies the machine used for each task in the Practical assessment (manufacturer's model, specification and year of manufacture)	Apprentices Employers Providers	At gateway.	This reflects the practice in industry that the individual would be aware of the machine type prior to commencing work.

Gateway Requirements

The training provider must provide Open Awards with the following evidence to enable us to approve the gateway.

- Apprentices must have completed the minimum apprenticeship practical period duration (8 months from the start date).
- Achievement of English and mathematics qualifications in line with the apprenticeship funding rules.
- Fully completed and signed Portfolio Referencing Matrix form
- Portfolio of evidence typically containing 10 discrete pieces of evidence, mapped against the KSBs.
- Fully completed and signed Gateway Authenticity Declaration form.
- Fully completed Machinery Specification form for Practical assessment.

Assessment

The ST0671 EPA consists of 2 assessment methods:

- Practical Assessment with Questioning
- Interview underpinned by a Portfolio of Evidence

Assessment Preparation

Support materials are available on the Open Awards portal to help prepare apprentices for their assessments. These materials will also support training providers and employers post-gateway to ensure apprentices are well prepared for their EPA experience. They are not intended to be used to measure proficiency pre-gateway or to support gateway decisions. Training providers can access these materials through the Secure Portal.

Order of Assessments and scheduling

The assessment methods can be delivered in any order. The result of one assessment method does not need to be known before starting the next.

The assessment components should be booked and confirmed with the IA in advance, via Open Awards. Any adaptations required to plans for the assessment should be agreed with Open Awards at Gateway.

Providers are required to schedule their apprentices no later than 10 working days prior to the desired date and time of the assessment. Assessments are scheduled via Open Awards secure Portal.

Assessment Window and result notification

Both assessments must be passed within a period of three (3) months from Open Awards approving the gateway.

Result notification will be after internal quality assurance activities have been completed, and normally 10 working days of the assessment taking place via the EPA Section of Open Awards' Secure Portal.

Notification may be delayed to enable additional internal quality assurance checks, such as malpractice investigation.

Practical Assessment with Questioning

In this assessment method, an Independent Assessor (IA) observes the apprentice completing three (3) set tasks decided by Open Awards, in a simulated environment. This physical simulated assessment environment must closely relate to the apprentice's natural working environment. It gives the apprentice the opportunity to demonstrate the KSBs mapped to this assessment method. It must therefore be conducted in one of the following locations: A training provider's premises, the employer's premises (or a training facility within this), or a test centre (or similar simulated environment). It is assumed that this will be the employer's premises in the first instance because the venue must be fully equipped for a Construction Equipment Maintenance Mechanic environment and include a range of tools, equipment and PPE to support the above tasks.

Apprentices will be provided with both written and verbal information on the tasks they must complete, including the timescales they will be working to, before the start of the practical assessment. This will be on the Machinery Specification form, issued to the Apprentice five (5) working days before the assessment.

The use of Artificial Intelligence (AI) is not permitted within the practical assessment with questioning. There should not be a reason to use this anyway (due to the nature of this assessment method). Apprentices are assessed under controlled conditions and are not permitted to use the internet for any reason. Apprentices must answer from their own knowledge, skills and behaviours gained during the apprenticeship. Where AI has been used as part of their on-programme learning/assessment, and the evidence is presented as part of the portfolio of evidence, this must be clearly identified through the apprentice's authenticity statement.

Delivery

The practical assessment with questioning must be structured to give the apprentice the opportunity to demonstrate the KSBs mapped to this EPA method to the highest available grade. The IA must only observe one apprentice to ensure quality and rigour, and they must be as unobtrusive as possible.

Open Awards will give an apprentice two (2) weeks' notice of the observation.

A Machinery Specification form stating the machinery & equipment the apprentice will be using during their practical assessment, will be issued to the apprentice five (5) days prior to their practical assessment. This has been completed by the employer / provider and agreed with Open Awards at the gateway.

The practical assessment with questioning is held over a maximum of one (1) working day only (a working day is typically considered to be 7.5 hours). It cannot be split, other than for comfort breaks or to allow apprentices to move from one location to another.

The IA will manage invigilation of apprentices at all times, including breaks and moving between locations.

The IA will explain to the apprentice the format and timescales of the practical assessment before it begins. This does not count towards the assessment time. There are three set tasks that will be observed by the IA during the practical assessment:

Task 1:

The apprentice is required to carry out system testing on a selected piece of construction plant equipment to assess its operational condition. The apprentice must:

- prepare the equipment and work area for testing, ensuring all safety protocols and manufacturer guidelines are followed, completing an appropriate risk assessment
- conduct a series of functional tests to evaluate system performance
- compare test results against manufacturer specifications to determine the condition of the system and identify any faults or areas of concern
- the apprentice will make sure that all documentation has been completed

Task 2:

The apprentice is required to disassemble, inspect, assemble, and provide recommendations for a component with a reported failure in one of the following areas: engine, hydraulic, electrical, powertrain, brakes, or ancillaries. The apprentice must:

- disassemble the selected component, ensuring all parts are handled correctly and safely, selecting the appropriate tooling
- the apprentice will thoroughly inspect each part for wear, damage, or defects, using appropriate tools and techniques
- the apprentice will reassemble the component, ensuring it is rebuilt to the manufacturer's specifications and standards, ensuring all tooling used is calibrated
- the apprentice will provide detailed recommendations for any repairs, replacements, or maintenance needed based on their inspection findings

Task 3:

The apprentice is required to diagnose and report repair recommendations of a complex fault using diagnostic aids or tools in one of the following areas: engine, hydraulic, electrical, powertrain, brakes, or ancillaries. The apprentice must:

- use diagnostic tools and aids to identify and diagnose complex faults within the selected component or system
- analyse the diagnostic data to pinpoint the root cause of the fault, considering various potential issues
- the apprentice will propose and report solutions to rectify the fault
- restore the work area and handover the equipment explaining the outcome of the diagnostic activity

- the apprentice will document the diagnostic process, findings, and proposed solutions in line with organisational requirements

Assessment Timings

The practical assessment with questioning must take **four (4) hours**, with the timings divided across the three (3) tasks as follows:

Task 1 – 1 hour 15 minutes

Task 2 – 1 hour 15 minutes

Task 3 – 1 hour 30 mins

The IA will ask at least six (6) questions during the practical assessment – this is two (2) questions per task. The time for questioning is included in the overall assessment time.

The IA has the discretion to increase the 4-hour timing of the practical assessment with questioning by up to 10% to allow the apprentice to complete a task or respond to a question.

The apprentice may choose to end this assessment method early. In this scenario they must be confident that they have demonstrated the KSBs allocated to the interview. The IA must ensure the apprentice is fully aware of all the assessment requirements and confirm and document that the apprentice understands the implications of ending the assessment early. Whether the apprentice chooses to finish early or to the time allocated, it will not be indicative of the grade they will receive. For example, if an apprentice finishes early, it will not necessarily restrict their grade to a pass. Nor if they complete within the time allocation of the task will they necessarily gain a higher grade. Grading is based on the apprentice's performance during the presentation with questions and their coverage of KSBs in this.

The IA will not suggest or choose to end the assessment method early, unless there is an emergency. However, the IA may suggest that the assessment continues where there is no danger to the health, safety or wellbeing of either themselves or the apprentice, but to ensure that the apprentice has the opportunity to complete the assessment and is not disadvantaged in the assessment method ending early.

Pass criteria for the practical assessment with questioning are in the following table.

A fail grade would be given where the apprentice does not meet all the pass criteria.

Practical Assessment with Questioning - Grading Descriptors

Theme KSBs	Pass Grading Descriptors
Interpreting information K28 S13	Obtains, reads, and interprets task related documentation to meet the needs of the task in line with organisational procedures. (K28, S13)
Planning work and resources K7 K19 K21 S6 S16	Identifies and agrees work goals and plans work in line with business operation considerations to meet the task requirements. (K19, K21, S6) Identifies, organises and uses resources to complete tasks with consideration for cost, time, quality, safety, security and environmental impact in line with organisational procedures and manufacturer guidelines. (K7, S16)
Selecting and checking plant, equipment and hand tools K17 S15	Selects and checks construction plant equipment and hand tools to meet the task requirements including calibration and diagnostic equipment. (K17, S15)
Working safely K9 S9 S10 B3	Prioritises health and safety and applies health and safety procedures and safe systems of work in compliance with regulations and standards. Identifies and documents hazards and risks and applies control measures. (K9, S9, S10, B3)
Fault finding and assessing conditions K15 S12 S14 S20 B5	Applies fault finding and diagnostic techniques to identify causes in line with the task requirements. Identifies solutions to problems in line with organisational procedures. (K15, S12, B5) Assesses the condition of, and tests and checks components and equipment in line with task, organisational and manufacturer requirements. Identifies actions required in line with organisational procedures. (S14, S20)
Recording information K23 S8	Records or enters information in line with organisational and manufacturer requirements. (K23, S8)
Restoring the work area K18 S24 B4	Acts in a professional manner when restoring the workplace and completing a return of resources and consumables, and handover of equipment to the process owner on completion of the fault-finding activity in line with organisational policies and procedures. (K18, S24, B4)

Practical Assessment with Questioning - Knowledge, Skills and Behaviours

Ref	Criteria
Knowledge	
K7	Engineering materials: characteristics, properties and impact on use.
K9	Awareness of health and safety regulations, relevance to the occupation and the technician's responsibilities: Health and Safety at Work Act (HASWA), CDM regulations, COSHH, DSE, electrical, WAH, PUWER, LOLER, RIDDOR and near miss reporting, confined spaces, noise, management systems of occupational health and safety, emergency evacuation procedures, isolation and emergency stop procedures, lone working, manual handling, risk assessments and safe systems of work, accident and incident management and mitigation methods. safety equipment: PPE, guards, signage, fire extinguishers, situational awareness, slips, trips and falls, types of hazards.
K15	Fault finding and problem-solving techniques.
K17	Construction plant equipment and tools: types, application and operation. Maintenance, commissioning, repair, carriage and storage requirements. Calibrated equipment requirements.
K18	Principles of restoring the work area.
K19	Business operation considerations: efficiency, customer satisfaction, competitiveness, minimising risks to operation, ethical issues.
K21	Work planning, prioritising, work scheduling, work costings and evaluations, work and time management techniques. Work management systems. Work categorisation systems.
K23	Documentation: methods and requirements - electronic and paper.
K28	Principles of reading and interpreting construction equipment engineering drawings and documentation.
Ref	Criteria
Skills	
S6	Identify and agree work goals. Plan work.
S8	Record or enter information - paper based or electronic, for example job sheets, risk assessments, method statements, equipment service records, test results, handover documents and manufacturers' documentation, asset management records, work sheets, checklists, organisational reporting requirements.
S9	Identify and document hazards and risks in the workplace. Apply control measures.
S10	Apply health and safety procedures and safe systems of work in compliance with regulations and standards.
S12	Investigate problems using fault-finding and diagnostic techniques to identify underlying causes. Identify solutions to problems.
S13	Read and interpret information, for example text, data, engineering drawings, job card, work instructions, risk assessments, method

	statements, operation manuals, permits to work, instructions.
S14	Select techniques, procedures and methods to undertake tasks.
S15	Select and check construction plant equipment and hand tools including calibration and diagnostic equipment.
S16	Identify, organise and use resources to complete tasks, with consideration for cost, time, quality, safety, security and environmental impact.
S20	Assess condition of components and equipment. Test and check equipment or systems. Identify actions required.
S24	Restore the work area on completion of the activity.
Ref	Criteria
	Behaviours
B3	Prioritise health and safety.
B4	Act in a professional manner.
B5	Take responsibility for completing work.

Interview underpinned by a Portfolio of Evidence

In this assessment method, the apprentice and the Independent Assessor (IA) will have a two-way interview dialogue, allowing the apprentice to evidence the KSBs assigned to this assessment method and draw on appropriate evidence from their portfolio to underpin the discussion. Apprentices can refer to and illustrate their answers with evidence from their portfolio of evidence, however the portfolio of evidence is not directly assessed.

Apprentices will be provided with both written and verbal information about the interview process, before the start of the assessment.

The use of Artificial Intelligence (AI) is not permitted within the interview. Apprentices are assessed under controlled conditions and are not permitted to use the internet, other than for video conferencing. Apprentices must answer from their own knowledge, skills and behaviours gained during the apprenticeship. Where AI has been used as part of their on-programme learning/assessment, and the evidence is presented as part of the portfolio of evidence, this must be clearly identified through the apprentice's authenticity statement.

Delivery

The assessment must be structured to give the apprentice the opportunity to demonstrate the KSBs mapped to this EPA method to the highest available grade.

Open Awards must give an apprentice two (2) weeks' notice of the interview. The IA must have at least two (2) weeks to review the supporting documentation.

The interview underpinned by a portfolio of evidence will be delivered in a strictly controlled environment by one of Open Awards' IAs. This will be undertaken remotely (using video conferencing e.g., MS Teams / Zoom – where the assessment will be recorded under the controlled conditions).

This assessment cannot be split, other than for a comfort break which will not count towards the total end point assessment time. Open Awards must manage invigilation of apprentices during breaks in order to maintain security of the assessment in line with their malpractice policy (refer to guidance due to this being a remote assessment).

The IA must ask a minimum of nine (9) open competence-based questions. The purpose is to assess the apprentice's competence against the following themes:

- communication and teamwork
- construction equipment maintenance industry and professional behaviours
- sustainability
- digital
- maintenance
- repair
- installation and removal
- continuous improvement, quality and inspection

The IA can ask follow-up questions to clarify answers given by the apprentice. These questions are in addition to the above set number of questions for the interview underpinned by a portfolio of evidence.

Assessment Timing

The interview underpinned by a portfolio of evidence will last for **75 minutes**. The IA has the discretion to increase the timing of the interview by up to 10% to allow the apprentice to complete their response to a question.

The apprentice may choose to end this assessment method early. In this scenario they must be confident that they have demonstrated the KSBs allocated to the interview. The IA must ensure the apprentice is fully aware of all the assessment requirements and confirm and document that the apprentice understands the implications of ending the assessment early. Whether the apprentice chooses to finish early or to the time allocated, it will not be indicative of the grade they will receive. For example, if an apprentice finishes early, it will not necessarily restrict their grade to a pass. Nor if they complete within the time allocation of the task will they necessarily gain a higher grade. Grading is based on the apprentice's performance during the presentation with questions and their coverage of KSBs in this.

The IA will not suggest or choose to end the assessment method early, unless there is an emergency. However, the IA may suggest that the assessment continues where there is no danger to the health, safety or wellbeing of either themselves or the apprentice, but to ensure that the apprentice has the opportunity to complete the assessment and is not disadvantaged in the assessment method ending early.

Pass and Distinction grading criteria for the interview underpinned by a portfolio of evidence are in the following table. A fail grade would be given where the apprentice does not meet all the pass criteria.

Interview underpinned by a Portfolio of Evidence - Grading Descriptors

Theme KSBs	Pass Grading Descriptors	Distinction Grading Descriptors
Communication and teamwork K1 K2 K24 K27 K29 S1 S2 S3 S4 S5	Explains how they use verbal and non-verbal communication techniques to negotiate with colleagues or stakeholders, adapting style and use of industry terminology to suit the audience. (K1, K2, S1, S2) Explains how they create, maintain and enhance productive working relationships and how they apply team working principles to meet work goals. (K24, S4) Explains how they prepare and write technical reports to meet the needs of the audience in line with organisational requirements. (K27, S5) Explains how they provide information, advice, guidance or instruction to colleagues or stakeholders in line with organisational requirements. (K29, S3)	Outlines the impact and the benefits of teamwork to the organisation and the wider team. (K24, S4)
Construction equipment maintenance	Explains how they follow equality, diversity, and inclusion procedures. (K26,	Outlines the benefits of supporting a diverse and inclusive culture for the

Theme KSBs	Pass Grading Descriptors	Distinction Grading Descriptors
industry and professional behaviours K20 K25 K26 S27 S28 B1 B6	S27, B6) Explains how they complete continued professional development to maintain and enhance competence in own area of practice in line with organisational and professional requirements. (K25, S28, B1) Describes the types of organisations, products and customers that can be found within the construction equipment industry. (K20)	business. (K26, S27)
Sustainability K8 S11 B2	Explains how they apply environmental and sustainability procedures in compliance with regulations and standards. (K8, S11, B2)	
Digital K10 S7	Explains how they use information and digital technology in line with organisational requirements. Explains how they comply with GDPR and cyber security regulations and policies. (K10, S7)	Outlines the benefits of digital technologies on their role. (K10, S7)
Maintenance K3 K13 K16 S17	Explains how they perform maintenance tasks on construction equipment in line with manufacturer's guidelines and organisational policies. (K3, K13, K16, S17)	Outlines the benefits to the organisation of effective maintenance schedules. (K13, S17)
Repair K4 K5 K6 K14 S18	Explains how they perform mechanical, electrical, and mechatronics repairs on construction equipment in line with organisational procedures and manufacturer's guidelines. (K4, K5, K6, K14, S18)	Explains the benefits to the organisation of successful repairs. (K14, S18)

Theme KSBs	Pass Grading Descriptors	Distinction Grading Descriptors
Installation and removal K11 K12 S19 S21 S22 S23	Explains how they apply contamination control techniques and how they carry out decommissioning, removal and disassembly of components and equipment from construction plant. (K11, S19, S22) Explains how they carry out assembly and installations of components and equipment from construction plant including alterations through design and fabrication activities, and how they carry out commissioning checks post installation in line with manufacturer's guidelines and organisational procedures. (K12, S21, S23)	Explains the impact to the organisation of commissioning checks not being completed in line with requirements. (S23)
Continuous improvement, quality, and inspection K22 K30 K31 S25 S26 S29	Explains how they apply continuous improvement techniques and how they devise suggestions for improvement. (K22, S25) Explains how they apply quality assurance procedures to construction equipment maintenance activities. (K30, S26) Explains how they complete checks, inspections and examinations in line with organisational, legal and regulatory requirements. (K31, S29)	Outlines the benefits to the organisation of continuous improvement. (K22, S25)

Interview underpinned by a Portfolio of Evidence - Knowledge, Skills and Behaviours

Ref	Criteria
Knowledge	
K1	Verbal communication techniques. Giving and receiving information. Matching style to audience. Barriers in communication and how to overcome them. Construction engineering terminology.
K2	Non-verbal communication techniques: gestures, facial expressions, tone of voice, eye contact, body language.
K3	Construction equipment maintenance mathematical and scientific principles: calculations, conversions, flow rates.
K4	Construction equipment maintenance mechanical principles: motion and mechanics, storage and transfer of forces and energy in operation, motors and pumps.
K5	Construction equipment maintenance electrical and electronic principles: principles of electricity and electronics, electric circuit theory, motors.
K6	Construction equipment maintenance mechatronics principles: key components of integrated mechanical and electrical systems; their design and operation.
K8	Environmental and sustainability regulations and guidance. Environmental hazards that can arise from construction maintenance operations. Environmental protection and management systems, environmental signage and notices. Types of pollution and control measures: noise, smells, spills, and waste. Environmental permits. Waste Electrical and Electronic Equipment Directive (WEEE). Hazardous waste regulations. Data logging to optimise equipment performance. Industry Carbon Reduction initiatives.
K10	Principles of digital devices and construction machine performance aids and monitoring, application of digital technologies and information systems: connected technologies, virtual and augmented reality.
K11	Construction equipment removal and decommissioning practices and techniques.
K12	Construction equipment commissioning and installation practices and techniques.
K13	Construction equipment maintenance practices and techniques: planned, preventative, predictive and reactive methods and their frequency.
K14	Construction equipment repair practices and techniques.
K16	Construction equipment manufacturers' instructions: what they are and how to use them. Warranties: what they are and impact on engineering work.
K20	The construction equipment maintenance sector and industry. Types of organisations, types of products and equipment. Supply chain. Customers. Customer requirements. Impacts on product demand. Customer specifications: purpose and consequences of non-compliance.
K22	Continuous improvement techniques.

K24	Team working principles.
K25	Workplace training and development techniques.
K26	Equality Act. Equality, diversity and inclusion in the workplace. Unconscious bias.
K27	Written communication techniques. Written communication techniques. Plain English principles. Report writing.
K29	How to pass on knowledge and provide guidance to customers or stakeholders.
K30	Quality management standards. Quality assurance principles and practice. Record keeping.
K31	Principles of organisational checks, inspections and examinations for compliance with legal and regulatory requirements.
Ref	Criteria
Skills	
S1	Communicate with others verbally for example, colleagues and stakeholders.
S2	Negotiate with colleagues or stakeholders. For example, to access equipment or work areas.
S3	Provide information, advice, guidance or instruction to colleagues or stakeholders.
S4	Create, maintain and enhance productive working relationships.
S5	Prepare and write technical reports, for example incident reports, technical investigations or outcomes, equipment appraisals and specifications, improvement suggestions.
S7	Use information and digital technology. Comply with GDPR and cyber security regulations and policies.
S11	Apply environmental and sustainability procedures in compliance with regulations and standards for example, segregate resources for reuse, recycling and disposal.
S17	Perform maintenance tasks on construction equipment.
S18	Perform repair tasks on construction equipment.
S19	Carry out de-commissioning, removal and disassembly of components and equipment from construction plant.
S21	Carry out assembly and installation of components and equipment from construction equipment including alterations through design and fabrication activities.
S22	Apply contamination control techniques.
S23	Complete commissioning checks following maintenance and repair activities.
S25	Apply continuous improvement techniques. Devise suggestions for improvement.
S26	Apply quality assurance procedures.
S27	Follow equality, diversity and inclusion procedures.
S28	Carry out and record planned and unplanned learning and development activities.
S29	Perform legal, regulatory and organisational checks, inspections and examinations.
Ref	Criteria
Behaviours	

B1	Committed to CPD to maintain and enhance competence in their own area of practice.
B2	Take personal responsibility for their own sustainable working practices.
B6	Take account of diversity and inclusion requirements.

Grading

Practical Assessment with Questioning

- If one or more pass grading descriptors are not met, the assessment will be graded as a fail.
- To achieve a pass **all** pass criteria must be met.

Interview underpinned by a Portfolio of Evidence

- If one or more pass grading descriptors are not met, the assessment will be graded as a fail.
- To achieve a pass **all** pass criteria must be met.
- To achieve a distinction all pass criteria **and** all distinction criteria must be met.

Overall grade

The grades from individual assessment methods will be combined in the following way to determine the overall grade:

Practical Assessment with Questioning	Interview underpinned by a Portfolio of evidence	Overall grading
Fail	Any Grade	Fail
Any Grade	Fail	Fail
Pass	Pass	Pass
Pass	Distinction	Distinction

Resits and Retakes

Apprentices who fail one or more assessment method will be offered the opportunity to take a resit or a retake. Open Awards will provide feedback alongside the result notification to all apprentices who fail an assessment method. This feedback will be provided via the training provider, normally **within ten (10) working days** of the assessment taking place.

Resits or retakes are only to be taken in the event that the original assessment grade is a fail. A resit or retake cannot be taken with the intention of increasing the original grade if an apprentice has passed their EPA. Therefore, feedback will not normally be provided to apprentices who achieve a pass or higher.

The maximum grade that can be achieved for a resit or retake is a pass. Where an apprentice believes exceptional circumstances impacted on their initial assessment attempt, they must submit a formal request with supporting evidence for exceptional circumstances to be considered, directly to Open Awards **within five (5) working days** of receiving the assessment decision.

- Re-take and re-sit grade cap: Pass
- Re-sit timeframe: typically 2 months
- Re-take timeframe: typically 4 months

Resits and retakes must be completed within six (6) months of the original assessment otherwise the entire EPA will need to be taken again.

Quality assurance

Independent Assessor Standard Requirements

IAs must meet the following criteria:

- have recent relevant experience of the occupation or sector to at least one level above the occupation gained in the last three years or significant experience of the occupation or sector

and meet the following minimum requirements:

- be competent to deliver the end point assessment and meet the minimum requirement to have heavy road transport or land-based mobile equipment experience and knowledge

Internal quality assurance

Open Awards will complete quality assurance on assessments before results are released. Quality assurance is completed through observations and examination of documentation on a risk-based sampling model.

External quality assurance

External quality assurance for this apprenticeship standard is undertaken by Ofqual.

Assessment Specification

The assessment specification can be found on our website and on Skills England's website in the published assessment plan for the standard. Details of which elements of the apprenticeship standard will be tested by each test are given below.

Mapping of Knowledge, Skills, and Behaviours

Key:	
Practical Assessment with Questioning	PAQ
Interview underpinned by a Portfolio of Evidence	IPE

Ref	KSB to be assessed	Assessment Method
Knowledge		
K1	Verbal communication techniques. Giving and receiving information. Matching style to audience. Barriers in communication and how to overcome them. Construction engineering terminology.	IPE
The apprentice will have learnt and understood the principles of effective verbal interaction. This includes knowing how to articulate thoughts clearly, ask open and closed questions, actively listen to understand messages, and provide constructive feedback. The apprentice will also understand how to explain technical information in varying levels of complexity depending on the audience, such as using layman's terms for clients and technical language for fellow technicians. This also involves identifying common communication barriers (e.g., noise, jargon, emotional state, assumptions) and strategies to mitigate them. A key component is familiarity with and correct usage of standard construction engineering terminology to ensure clear and unambiguous technical discussions.		
K2	Non-verbal communication techniques: gestures, facial expressions, tone of voice, eye contact, body language.	IPE
The apprentice will have learnt and understood interpretation of unspoken cues in communication. It includes recognising how gestures, facial expressions, tone of voice, eye contact, and body language can convey meaning, reinforce or contradict verbal messages, and influence perceptions. The technician should be aware of their own non-verbal signals and be able to interpret those of others to enhance understanding and build rapport during interactions with colleagues and stakeholders. This includes recognising cultural variations in non-verbal communication and their impact on interpretation. Examples: 1. Understanding the meaning conveyed by body posture in technical discussions 2. Identifying how tone of voice can reinforce or contradict spoken instructions 3. Identifying how eye contact varies in effectiveness based on audience or context.		
K3	Construction equipment maintenance mathematical and scientific principles: calculations, conversions, flow rates.	IPE
The apprentice will have learnt and understood the mathematical and scientific concepts relevant to construction equipment. This includes performing various calculations such as		

area, volume, force, pressure, and power. It also covers the ability to perform unit conversions (e.g., imperial to metric) and calculate essential parameters like flow rates in hydraulic systems, torque values, or gear ratios. This knowledge underpins diagnostic work, component sizing, and performance analysis. The apprentice will also understand how to select and apply appropriate mathematical principles to solve engineering-related problems. Examples:

1. Understanding the formula for calculating pressure in hydraulic cylinders and when to use it
2. Understanding unit conversions (e.g., bar to psi) and how errors in this affect equipment performance
3. The apprentice will have a clear and concise knowledge of how flow rate affects hydraulic system efficiency and diagnosing common related issues

K4	Construction equipment maintenance mechanical principles: motion and mechanics, storage and transfer of forces and energy in operation, motors and pumps.	IP
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The apprentice will have learnt and understood the fundamental laws and concepts governing the operation of mechanical systems in construction equipment. This includes understanding motion and mechanics (e.g., levers, gears, linkages, friction), the storage and transfer of forces and energy in operation (e.g., potential and kinetic energy, hydraulic pressure, pneumatic force). The apprentice will have specific knowledge of the principles of operation for various types of motors (e.g., internal combustion, electric) and pumps (e.g., hydraulic, water) which are essential, including how they generate and transmit power within machinery. The apprentice will also understand how mechanical concepts underpin force transfer, motion control, and energy storage in systems. Examples:

1. Understanding how torque is affected by gear ratios in construction plant machinery
2. Knowing how levers and linkages influence mechanical advantage in lifting systems
3. Explaining the relationship between friction and component wear over time

K5	Construction equipment maintenance electrical and electronic principles: principles of electricity and electronics, electric circuit theory, motors.	IP
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The apprentice will have learnt and understood the basic concepts of electrical and electronic systems found in modern construction equipment. This includes understanding the fundamental principles and theories of electricity and electronics (e.g., voltage, current, resistance, Ohm's Law, capacitance, inductance). It also covers electric circuit theory, including series and parallel circuits, AC and DC circuits, and common electronic components (e.g., resistors, capacitors, diodes, transistors). Knowledge of the operation and control of electric motors (e.g., starting, stopping, speed control) is also key. Examples:

1. Understanding how resistance affects current flow in diagnostic testing
2. Understanding the function of a relay
3. Concise knowledge on the impact of incorrect voltage levels on circuit performance

K6	Construction equipment maintenance mechatronics principles: key components of integrated mechanical and electrical systems; their design and operation.	IP
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The apprentice will have learnt and understood the interdisciplinary nature of modern construction equipment, which integrates mechanical, electrical, and electronic systems with computer control. It focuses on the key components of integrated mechanical and electrical systems (e.g., sensors, actuators, microcontrollers, programmable logic controllers (PLCs)) and how they interact. Knowledge of their design and operation allows for comprehensive troubleshooting and maintenance of sophisticated, automated machinery. The apprentice will understand how mechatronic systems support automation, accuracy, and efficiency in modern equipment. Examples: 1. Understanding how a PLC interfaces with hydraulic actuators to control machine movement 2. Understanding the role of sensors in feedback systems and their impact on performance monitoring 3. Will be able to identify how microcontrollers process inputs and control outputs in maintenance systems		
K7	Engineering materials: characteristics, properties and impact on use.	PAQ
The apprentice will have learnt about and shown familiarity with the various materials used in construction equipment manufacturing and repair. This includes understanding their characteristics (e.g., metallic, non-metallic, composites) and properties (e.g., strength, hardness, ductility, conductivity, corrosion resistance, fatigue resistance). Crucially, it involves knowing the impact of these properties on their use, such as selecting the right material for a specific component's function, understanding why a material might fail, or choosing appropriate welding or joining techniques. Examples: 1. Understand how hardness influences material wear resistance in high-friction environments 2. Identify ductile materials and why they are preferred for components subject to impact or vibration 3. Understand the impact of corrosion resistance when selecting materials for outdoor equipment		
K8	Environmental and sustainability regulations and guidance. Environmental hazards that can arise from construction maintenance operations. Environmental protection and management systems, environmental signage and notices. Types of pollution and control measures: noise, smells, spills, and waste. Environmental permits. Waste Electrical and Electronic Equipment Directive (WEEE). Hazardous waste regulations. Data logging to optimise equipment performance. Industry Carbon Reduction initiatives.	IPE
The apprentice will have learnt and understood environmental responsibility in maintenance, which is a comprehensive area. This includes understanding relevant environmental and sustainability regulations and guidance (e.g., local, national, international). It requires knowing about common environmental hazards (e.g., oil spills, air emissions, hazardous waste) that arise from maintenance operations and the principles of environmental protection and management systems. Familiarity with environmental signage and notices is also important. The technician must understand different types of pollution (e.g., noise, smells, fluid spills, general waste) and effective control measures. Knowledge		

of specific legal instruments such as Environmental Permits, the Waste Electrical and Electronic Equipment Directive (WEEE), and Hazardous Waste Regulations is crucial. Additionally, awareness of how data logging can be used to optimise equipment performance (e.g., reduce fuel consumption, emissions) and broader Industry Carbon Reduction initiatives demonstrates a commitment to sustainability. The apprentice will also understand how environmental performance can be improved through maintenance planning and equipment optimisation. Examples:

1. Understanding how waste segregation reduces environmental risk and meets compliance
2. Identify which types of maintenance activity pose risk to water or air quality
3. Understand how digital monitoring tools contribute to emission reduction strategies

K9	Awareness of health and safety regulations, relevance to the occupation and the technician's responsibilities: Health and Safety at Work Act (HASWA), CDM regulations, COSHH, DSE, electrical, WAH, PUWER, LOLER, RIDDOR and near miss reporting, confined spaces, noise, management systems of occupational health and safety, emergency evacuation procedures, isolation and emergency stop procedures, lone working, manual handling, risk assessments and safe systems of work, accident and incident management and mitigation methods. safety equipment: PPE, guards, signage, fire extinguishers, situational awareness, slips, trips and falls, types of hazards.	PAQ
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The apprentice will have learnt and understood that this critical knowledge area encompasses a broad understanding of health and safety legislation, responsibilities, and best practices relevant to the construction equipment maintenance sector. It includes specific knowledge of acts and regulations such as the Health and Safety at Work Act (HASWA), Construction (Design and Management) (CDM) regulations, Control of Substances Hazardous to Health (COSHH), Display Screen Equipment (DSE), Electrical Safety, Work at Height (WAH), Provision and Use of Work Equipment Regulations (PUWER), Lifting Operations and Lifting Equipment Regulations (LOLER), and Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR), including near miss reporting. It covers awareness of risks in confined spaces, noise hazards, and principles of management systems of occupational health and safety. Essential practical knowledge includes emergency evacuation procedures, isolation and emergency stop procedures, practices for lone working, safe manual handling techniques, how to conduct risk assessments and implement safe systems of work. It also covers accident and incident management and mitigation methods, familiarity with various safety equipment such as PPE (Personal Protective Equipment), guards, signage, and fire extinguishers. Furthermore, it involves developing situational awareness to identify and prevent common workplace hazards like slips, trips and falls, and a general understanding of types of hazards (e.g., mechanical, electrical, chemical, ergonomic). The apprentice will also understand how to apply legislation in practical scenarios and how different regulations interlink. Examples:

1. Understanding how LOLER requirements affect lifting operation planning
2. Knowing what makes a confined space entry legally compliant and safe
3. Explaining the role of RIDDOR in incident investigation and reporting

K10	Principles of digital devices and construction machine performance aids and monitoring, application of digital technologies and information systems: connected technologies, virtual and augmented reality.	IPE
The apprentice will have learnt and understood the rapidly evolving digital landscape within construction equipment. This includes understanding the principles of digital devices (e.g., sensors, microcontrollers, embedded systems) and how they function as construction machine performance aids and monitoring systems (e.g., telematics, GPS, engine management systems). It covers the application of digital technologies and information systems in maintenance, such as diagnostic software, remote monitoring platforms, and data analytics. Furthermore, it includes awareness of emerging technologies like connected technologies (IoT in machinery) and the potential of virtual and augmented reality for training, diagnostics, or remote assistance. The apprentice will also understand how these technologies improve fault prediction, reduce downtime, and support efficient decision-making. Examples: 1. Understanding how telematics data informs maintenance scheduling 2. Understanding the role of sensors in automated fault detection systems 3. Explaining the application of augmented reality in remote diagnostics		
K11	Construction equipment removal and decommissioning practices and techniques.	IPE
The apprentice will have learnt and understood the detailed procedures and methodologies for safely and effectively taking construction equipment or its major components out of service. This includes understanding processes for de-commissioning (e.g., fluid draining, power isolation, hazardous material handling), safe removal methods (e.g., rigging, lifting, securing), and systematic disassembly practices and techniques (e.g., sequential dismantling, component identification, secure storage of removed parts). The apprentice will have learnt and understood that environmental considerations and waste disposal protocols specific to decommissioning is also vital. Examples: 1. Understanding the environmental impact of residual hydraulic fluids and the science behind safe fluid containment to prevent soil contamination during decommissioning 2. Applying principles of mechanical stress and load distribution to safely rig and remove heavy components without causing structural damage 3. Recognising legal regulations such as COSHH (Control of Substances Hazardous to Health) and their implications for handling hazardous materials during equipment removal.		
K12	Construction equipment commissioning and installation practices and techniques.	IPE
The apprentice will have learnt and understood the systematic steps required to bring new, repaired, or overhauled construction equipment or systems into operational readiness. Installation practices and techniques cover the correct assembly, mounting, alignment, and connection of components according to manufacturer specifications and engineering drawings. Commissioning practices and techniques involve a series of pre-start checks, functional tests, calibration, and performance verification to ensure the equipment operates safely and efficiently before being handed over for use. The apprentice will also show understanding of the risks of improper installation, such as misalignment of shafts or		

incorrect hydraulic line routing. Examples:		
1. Identify engineering tolerances involved in alignment of mechanical components and how misalignment can cause premature wear or failure 2. Understanding the theory behind functional testing procedures, including hydraulic pressure thresholds and electrical system load balancing during commissioning 3. Show good understanding in the importance of calibration in ensuring sensor accuracy and control responsiveness within hydraulic or electronic systems.		
K13	Construction equipment maintenance practices and techniques: planned, preventative, predictive and reactive methods and their frequency.	IPE
The apprentice will have learnt and understood the different strategies employed in managing the upkeep of construction equipment. It includes understanding planned maintenance (scheduled activities regardless of condition), preventative maintenance (regular servicing to prevent breakdowns), and predictive maintenance (using data and condition monitoring to forecast failures). It also covers reactive maintenance (repairing equipment after a breakdown). The apprentice will also understand how to interpret service schedules and apply data from condition monitoring tools as well as understand the rationale behind each method and determining their appropriate frequency based on equipment type, usage, and criticality is essential. Example: 1. Identify the difference between planned, preventive, predictive, and reactive maintenance strategies and the rationale for selecting each based on failure modes 2. Identify wear patterns and fatigue mechanisms to interpret maintenance data and schedule servicing accordingly 3. Understanding how condition monitoring tools (e.g., thermal imaging, vibration analysis) detect early fault indicators before actual equipment failure.		
K14	Construction equipment repair practices and techniques.	IPE
The apprentice will have learnt and understood the methodologies and skilled actions required to restore faulty or damaged construction equipment to its operational state. It encompasses a wide range of repair practices and techniques, including diagnosis, dismantling, component replacement, fabrication (if necessary), reassembly, adjustment, and testing. It requires detailed understanding of mechanical, hydraulic, electrical, and electronic repair procedures specific to various equipment types. Examples: 1. Understand common mechanical failure causes such as fatigue, cracking, corrosion, or improper lubrication to diagnose repair 2. Understanding metallurgical properties relevant to welding repairs, including heat-affected zones and material compatibility 3. Understand electrical theory to troubleshoot circuit faults, (including voltage drop, resistance changes, and continuity tests)		
K15	Fault finding and problem-solving techniques.	PAQ
The apprentice will have learnt and understood the systematic approaches to identify the root cause of equipment malfunctions. This includes knowledge of various fault finding techniques such as logical deduction, half-split method, input/output analysis, sensory inspection, and using fault-findings and software. It also covers structured problem-solving		

techniques (e.g., 5 Whys, Fishbone diagrams) to analyse complex issues, evaluate potential solutions, and implement corrective actions effectively. Examples: 1. Knowledge on how to use logical deduction and systematic troubleshooting frameworks (e.g., divide-and-conquer, input/output analysis) to isolate faults effectively. 2. Understanding the purpose and application of diagnostic protocols such as OBD-II or CAN bus communication standards in modern equipment. 3. Using root cause analysis tools (e.g., Fishbone diagrams, 5 Whys) to not just fix symptoms but address underlying issues for long-term reliability.		
K16	Construction equipment manufacturers' instructions: what they are and how to use them. Warranties: what they are and impact on engineering work.	IPE
The apprentice will have learnt and understood the importance and effective use of official documentation provided by equipment manufacturers. This includes understanding the contents of manufacturers' instructions (e.g., operation manuals, service manuals, parts catalogues, technical bulletins) and knowing how to interpret and apply the information for safe operation, maintenance, and repair. It also involves understanding what warranties are (e.g., terms, coverage, duration) and their impact on engineering work, particularly regarding unauthorised repairs or modifications that could void a warranty. The apprentice will also be able to explain where these documents can be sourced. Examples: 1. Understand how ignoring torque settings in service documentation could lead to component failure and warranty voidance. 2. Identify the process for confirming whether a repair falls under manufacturer warranty. 3. Understand how to navigate a technical bulletin to identify relevant service updates.		
K17	Construction plant equipment and tools: types, application and operation. Maintenance, commissioning, repair, carriage and storage requirements. Calibrated equipment requirements.	PAQ
The apprentice will have learnt and understood the diverse range of construction plant equipment and tools used in maintenance, and will have comprehensive knowledge of these. This includes understanding their different types (e.g., hand tools, power tools, diagnostic tools, lifting equipment, specialist plant), their correct application, and safe operation. It also involves knowing the specific maintenance, commissioning, repair, carriage (transportation), and storage requirements for each. A key aspect is understanding when and why calibrated equipment requirements are necessary for accuracy and compliance. Examples: 1. Understand why calibrated torque wrenches are necessary for critical fasteners and explain how calibration affects outcomes. 2. Identify correct storage conditions for electronic diagnostic tools to prevent sensor degradation. 3. Understand how misuse of lifting equipment can compromise workplace safety.		

K18	Principles of restoring the work area.	PAQ
The apprentice will understand how to return the workspace to a safe, clean, and functional condition after maintenance. This includes tool accountability, waste segregation, cleaning protocols, and maintaining clear access and egress routes. These actions support safety, professionalism, and environmental responsibility to include principles of waste segregation and disposal, tool accountability, cleaning procedures, and ensuring clear access and egress routes. This contributes to safety, efficiency, and professional presentation. Examples: 1. Identify how proper waste categorisation supports compliance with environmental legislation 2. Understand the theoretical reasoning behind tool accountability and how it mitigates safety risks. 3. Identify the principles of maintaining clear access routes and their relevance to emergency egress protocols.		
K19	Business operation considerations: efficiency, customer satisfaction, competitiveness, minimising risks to operation, ethical issues.	PAQ
The apprentice will have learnt and understood the broader business context in which construction equipment maintenance operates. This includes understanding the importance of efficiency in operations (e.g., time, resource use), aiming for high customer satisfaction to build reputation, maintaining competitiveness in the market, and proactively minimising risks to operation (e.g., downtime, safety incidents, financial losses). It also includes an understanding of ethical issues such as honesty, integrity, and avoiding conflicts of interest in all business dealings. Examples: 1. Identify how downtime affects operational efficiency and the business's bottom line. 2. Understand how ethical behaviour underpins trust and long-term customer relationships in a competitive market. 3. Understand how risk mitigation planning reduces potential financial and operational disruptions.		
K20	The construction equipment maintenance sector and industry. Types of organisations, types of products and equipment. Supply chain. Customers. Customer requirements. Impacts on product demand. Customer specifications: purpose and consequences of non-compliance.	IPE
The apprentice will have learnt and understood a contextual overview of the industry. This includes knowing about the various types of organisations involved in construction equipment maintenance (e.g., dealerships, rental companies, independent workshops, internal fleet departments) and the diverse types of products and equipment they handle. It covers understanding the supply chain for parts and services, identifying typical customers (e.g., construction companies, individual contractors), and understanding their varying customer requirements. Knowledge of factors that impact on product demand (e.g., economic climate, infrastructure projects) and the purpose and consequences of non-compliance with customer specifications (e.g., contractual penalties, reputation damage) is also important. Examples:		

	1. Identify how customer specification compliance supports contractual fulfilment and reputation. 2. Understand the influence of economic trends and infrastructure investment on equipment demand. 3. Understand the supply chain's role in timely maintenance and how it affects service provision.	
K21	Work planning, prioritising, work scheduling, work costings and evaluations, work and time management techniques. Work management systems. Work categorisation systems.	PAQ
The apprentice will have learnt and understood the systematic organisation and execution of maintenance tasks. It includes understanding principles of work planning (defining objectives, outlining steps), prioritising tasks based on urgency and importance, and work scheduling (allocating time and resources). It also covers basic principles of work costings and evaluations (estimating materials and labour, reviewing actual costs), and various work and time management techniques (e.g., SMART goals, Eisenhower Matrix). Familiarity with different work management systems (e.g., CMMS software) and work categorisation systems (e.g., by type of maintenance, asset criticality) is also essential. Examples: 1. Identify how time management techniques such as the Eisenhower Matrix help prioritise urgent vs important tasks. 2. Understand how estimating labour and materials contributes to accurate work costings. 3. Describe the function of Computerised Maintenance Management Systems (CMMS) in managing workflows.		
K22	Continuous improvement techniques.	IPE
The apprentice will have learnt and understood methodologies and philosophies aimed at ongoing enhancement of processes, products, and services. This includes knowledge of techniques such as Lean principles (e.g., waste reduction), Kaizen (small, continuous changes), root cause analysis, and benchmarking. It's about fostering a mindset of always seeking better ways to work and actively contributing to organisational development. Examples: 1. Explain how Lean principles reduce waste and increase operational efficiency. 2. Describe how root cause analysis supports ongoing improvement in repair outcomes. 3. Identify how benchmarking helps measure performance against industry standards.		
K23	Documentation: methods and requirements - electronic and paper.	PAQ
The apprentice will have learnt and understood the various approaches and standards for creating, maintaining, and storing records related to maintenance activities. It includes understanding the requirements for both electronic documentation (e.g., digital forms, databases, CMMS entries) and paper-based documentation (e.g., logbooks, job cards). This encompasses knowing what information needs to be recorded, how it should be formatted, how long it needs to be retained, and ensuring accuracy and legibility for		

traceability, compliance, and auditing purposes. Examples:		
1. Understand how digital documentation improves traceability and audit compliance. 2. Describe the legal implications of incorrect or incomplete maintenance records. 3. Identify the differences between job cards, service logs, and inspection reports in technical documentation.		
K24	Team working principles.	IPE
The apprentice will have learnt and understood the dynamics and best practices for effective collaboration within a team. It includes knowing how to contribute positively to a team environment, share responsibilities, support colleagues, resolve conflicts constructively, and communicate effectively to achieve shared goals. It also covers understanding different team roles and how to leverage individual strengths. Examples: 1. Identify how understanding how team roles contributes to effective collaboration. 2. Understand conflict resolution models used to maintain a productive team dynamic. 3. Understand how effective communication enhances team performance in a maintenance environment.		
K25	Workplace training and development techniques.	IPE
The apprentice will have learnt and understood various approaches used to enhance skills and knowledge within the workplace. It includes familiarity with formal training methods (e.g., classroom, e-learning), on-the-job training, mentoring, coaching, and peer learning. It also covers the importance of continuous professional development and how to identify personal learning needs. Examples: 1. Identify the effectiveness of on-the-job learning versus formal training methods. 2. Understand how mentoring supports individual skill progression within technical roles. 3. Understand how CPD (Continuing Professional Development) frameworks maintain industry competence		
K26	Equality Act. Equality, diversity and inclusion in the workplace. Unconscious bias.	IPE
The apprentice will have learnt and understood the legal obligations and ethical principles related to fair treatment in the workplace. This includes specific knowledge of the Equality Act and its protected characteristics. It encompasses a broad understanding of equality, diversity, and inclusion (EDI) in the workplace, recognising the value of a diverse workforce and promoting an inclusive environment where everyone feels respected and valued. It also includes awareness of unconscious bias and how it can affect decisions and interactions, with strategies to mitigate its impact. Examples: 1. Show sound knowledge of the protected characteristics under the Equality Act and their relevance to the workplace.		

	2. Understand how unconscious bias can affect hiring or team dynamics and how to mitigate it. 3. Identify strategies to create an inclusive workplace culture that promotes respect and diversity.	
K27	Written communication techniques. Written communication techniques. Plain English principles. Report writing.	IPE
The apprentice will have learnt and understood the skills required to produce clear, concise, and accurate written documents. It includes understanding various written communication techniques (e.g., structuring information, using appropriate tone, grammar, punctuation, spelling). A key aspect is applying Plain English principles to ensure technical information is easily understood by diverse audiences. It also specifically covers the structure and content requirements for effective report writing, including incident reports, technical findings, and recommendations. Examples: 1. Understand how Plain English principles help make technical content accessible to varied audiences. 2. Identify key components of an effective incident report and their purpose. 3. Understand the structure and tone appropriate for writing a professional maintenance summary.		
K28	Principles of reading and interpreting construction equipment engineering drawings and documentation.	PAQ
The apprentice will have learnt and understood the conventions, symbols, and standards used in various types of construction equipment engineering drawings (e.g., mechanical drawings, hydraulic schematics, electrical diagrams, assembly drawings). It also includes interpreting other forms of documentation such as parts lists, wiring diagrams, and technical specifications. This knowledge enables the technician to accurately visualise components, understand their relationships, and extract critical information for assembly, maintenance, and troubleshooting. Examples: 1. Identify common hydraulic symbols and their function in system schematics. 2. Explain how to interpret scale and tolerances in mechanical engineering drawings. 3. Understand how technical documentation supports fault diagnosis and component replacement.		
K29	How to pass on knowledge and provide guidance to customers or stakeholders.	IPE
The apprentice will have learnt and understood the effective transfer of technical information and advice to non-technical audiences. It involves understanding how to explain complex concepts in simple terms, answer questions clearly and patiently, and tailor information to the specific needs and understanding of the customer or stakeholder. It also covers demonstrating practical aspects and providing relevant resources or follow-up information. Examples: 1. Identify how tailoring communication to a stakeholder's level of understanding enhances clarity. 2. Understand the importance of active listening and feedback when guiding non-technical users.		

3. Identify ways to use visual aids or demonstrations to reinforce complex concepts		
K30	Quality management standards. Quality assurance principles and practice. Record keeping.	IPE
The apprentice will have learnt and understood the systematic approaches to ensuring the quality of maintenance work and services. This includes knowledge of common quality management standards (e.g., ISO 9001, though specific to context). It covers the fundamental quality assurance principles and practice, such as planning for quality, performing inspections, using control measures, and continuous improvement. Accurate and thorough record keeping is a crucial component of quality assurance, providing evidence of compliance and traceability. Examples: 1. Understand how ISO 9001 supports consistent maintenance quality and customer satisfaction. 2. Understand the role of inspection checklists in quality assurance practices. 3. Identify how effective record keeping contributes to traceability and continual improvement.		
K31	Principles of organisational checks, inspections and examinations for compliance with legal and regulatory requirements.	IPE
The apprentice will have learnt and understood the systematic processes used by organisations to ensure their equipment and operations meet statutory and internal requirements. It includes understanding the principles behind various checks, inspections, and examinations (e.g., pre-use checks, daily checks, weekly checks, statutory inspections, independent examinations). It encompasses knowing the legal and regulatory requirements (e.g., LOLER, PUWER, emissions regulations) that mandate these checks, their frequency, the responsibilities for conducting them, and the importance of accurate documentation for demonstrating compliance and maintaining safety. Examples: 1. Understand the legal basis for LOLER and PUWER inspections in plant maintenance. 2. Identify the types and frequency of checks required to ensure compliance with workplace safety standards. 3. Describe how accurate inspection documentation supports regulatory audits and operational safety.		

Ref	KSB to be assessed	Assessment Method
Skills		
S1	Communicate with others verbally for example, colleagues and stakeholders.	IPE
The apprentice will be able to demonstrate how they effectively convey information, ideas, and instructions to a range of individuals, including fellow technicians, supervisors, clients, and suppliers. This includes active listening to understand questions, concerns, and requirements, and adapting communication style and technical language to suit the		

audience. The apprentice will be able to demonstrate (for example), explaining a complex repair to a client in simple terms or provide clear instructions to a junior colleague. This also covers asking clarifying questions, providing concise updates, and participating in team discussions and briefings. Examples:

1. The apprentice will have learnt and understood how to convey technical details clearly and concisely to a range of individuals, adapting language to suit varied levels of understanding
2. The apprentice will be able to interpret a supervisor's instructions and relay those into actionable steps during a team briefing for scheduled service tasks
3. The apprentice will be able to demonstrate the correct way to explain a hydraulic fault to a client by referencing system pressures and component interactions using simplified language without compromising technical accuracy

S2	Negotiate with colleagues or stakeholders. For example, to access equipment or work areas.	IPE
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The apprentice will be able to demonstrate their ability to discuss and reach mutually agreeable solutions in situations where there might be competing needs or limited resources. This could involve negotiating access to specific equipment or a workshop bay with another team, agreeing on timelines for a repair with a client, or discussing the best approach to a complex problem with colleagues. The apprentice will be able to demonstrate understanding of different perspectives, clearly articulating their own needs, and finding compromises that work for all parties involved. Examples:

1. The apprentice will be able to demonstrate the correct way to engage with another maintenance team to rearrange equipment inspection schedules, presenting downtime risks and repair efficiencies to support the case
2. The apprentice will have learnt and understood key negotiation tactics used in operational settings to resolve conflicts over access to shared resources or deadlines
3. The apprentice will be able to interpret competing priorities between departments and propose adjustments to timelines that satisfy both operational needs and resource constraints

S3	Provide information, advice, guidance or instruction to colleagues or stakeholders.	IPE
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The apprentice will be able to demonstrate sharing knowledge and expertise in a clear and helpful manner. This could include advising a client on routine maintenance schedules, guiding a less experienced colleague through a diagnostic procedure, or providing clear instructions on the safe operation of a piece of equipment. The apprentice will be able to demonstrate an understanding of their audience's knowledge level and the ability to explain technical concepts effectively, ensuring the information is understood and can be acted upon. Examples:

1. The apprentice will have learnt and understood how to provide technical guidance based on audience expertise, whether for clients, suppliers, or junior colleagues
2. The apprentice will be able to interpret service history and fault patterns to advise a technician on proper filter change intervals and contamination risks
3. The apprentice will be able to demonstrate the correct way to instruct a

trainee on conducting diagnostic routines using live-data analysis, referencing OEM parameters and correct sensor interpretation		
S4	Create, maintain and enhance productive working relationships.	IPE
The apprentice will be able to demonstrate building and sustaining positive and effective relationships with colleagues, supervisors, clients, and suppliers. This involves demonstrating professionalism, respect, and a cooperative attitude. The apprentice will be able to demonstrate collaborating effectively on tasks, offering support to team members, resolving conflicts constructively, and contributing positively to the work environment. A technician who excels in this area fosters trust and open communication, leading to more efficient and harmonious teamwork. Examples: 1. The apprentice will be able to interpret a colleague's need for support during a complex rebuild and proactively offer assistance and technical insight 2. The apprentice will be able to demonstrate the correct way to collaborate with parts suppliers by maintaining consistent and respectful communication during urgent order requests and backorder resolution 3. The apprentice will have learnt and understood the importance of trust, communication, and professionalism in forming effective relationships across teams and departments		
S5	Prepare and write technical reports, for example incident reports, technical investigations or outcomes, equipment appraisals and specifications, improvement suggestions.	IPE
The apprentice will be able to demonstrate their ability to produce clear, accurate, and comprehensive written documentation for various purposes. This could involve drafting an incident report detailing an equipment breakdown, writing a technical investigation report explaining the root cause of a recurring fault, or compiling an equipment appraisal outlining the condition and estimated lifespan of machinery. The apprentice will be able to demonstrate preparing specifications for new parts or equipment, and writing improvement suggestions for maintenance processes or equipment modifications. This requires strong written communication skills, attention to detail, and the ability to present technical information in a structured and understandable format. Examples: 1. The apprentice will have learnt and understood how to document faults, repairs, and technical insights in a manner that supports traceability and ongoing operational analysis 2. The apprentice will be able to interpret component failure modes and performance data to produce a report outlining root causes and future preventative recommendations 3. The apprentice will be able to demonstrate the correct way to compile a formal appraisal of a machine, detailing wear rates, fluid conditions, and projected service intervals using clear, structured headings and technical terminology		
S6	Identify and agree work goals. Plan work.	PAQ
The apprentice will be able to demonstrate their understanding of the objectives of a task or project and then be able to develop a systematic approach to achieve them. This includes clarifying what needs to be done, by who, when, and to what standard, often		

given in consultation with supervisors or clients. The apprentice will be able to demonstrate that planning work involves breaking down complex tasks into manageable steps, allocating resources (tools, parts, time), and anticipating potential challenges or roadblocks. It also includes prioritising tasks based on urgency and importance. Examples: 1. The apprentice will have learnt and understood how to evaluate project objectives and define task outcomes that meet technical, safety, and time constraints 2. The apprentice will be able to interpret the client's expectations from a repair job and convert them into clearly sequenced steps within the maintenance plan 3. The apprentice will be able to demonstrate the correct way to scope out a full-service activity for a machine, detailing the order of operations, required parts, inspection points, and contingency measures		
S7	Use information and digital technology. Comply with GDPR and cyber security regulations and policies.	IPE
The apprentice will be able to demonstrate their proficient and secure use of various digital tools and information systems relevant to equipment maintenance. This includes using diagnostic software, accessing online technical manuals, utilising maintenance management systems for job tracking, and communicating via email or messaging platforms. The apprentice will be able to demonstrate their understanding and adhering to General Data Protection Regulation (GDPR) principles when handling personal or sensitive information, and following cyber security policies, to protect data and systems from unauthorised access or breaches. Examples: 1. The apprentice will have learnt and understood the importance of secure digital practices when accessing service platforms, client records, or diagnostic tools 2. The apprentice will be able to interpret system alerts from onboard software to identify underlying faults and cross-reference those with updated technical bulletins stored in encrypted formats 3. The apprentice will be able to demonstrate the correct way to interact with a job tracking system using a mobile device—completing digital job cards, uploading service evidence, and maintaining compliance with data protection protocols.		
S8	Record or enter information - paper based or electronic, for example job sheets, risk assessments, method statements, equipment service records, test results, handover documents and manufacturers' documentation, asset management records, work sheets, checklists, organisational reporting requirements.	PAQ
The apprentice will be able to demonstrate their accurate documenting of a wide range of information, whether using traditional paper forms or electronic systems. This could include completing job sheets with details of work performed, filling out risk assessments to identify potential hazards, creating method statements outlining safe work procedures, and updating equipment service records with maintenance history. The apprentice will be able to demonstrate recording test results, preparing handover documents, accessing and understanding manufacturers' documentation, maintaining asset management records, completing work sheets and checklists, and fulfilling other organisational reporting		

requirements such as logging time or material usage. Accuracy and completeness are paramount for traceability, compliance, and future reference. Examples: 1. The apprentice will have learnt and understood documentation processes critical to maintenance work, from initial risk assessments to final inspection logs 2. The apprentice will be able to interpret a manufacturer's checklist template and transcribe key parameters such as torque values, fluid capacities, and operational tolerances into the service record 3. The apprentice will be able to demonstrate the correct way to complete a digital handover form for a machine, including test results, replaced parts, checklist signatures, and service remarks		
S9	Identify and document hazards and risks in the workplace. Apply control measures.	PAQ
The apprentice will be able to demonstrate proactively recognising potential dangers in the work environment and understanding the likelihood and severity of harm they could cause. This involves conducting risk assessments to identify hazards associated with equipment, work procedures, or the work area itself. The apprentice will be able to demonstrate effective documenting of these identified risks and then implementing appropriate control measures to eliminate or reduce them to an acceptable level. Examples of control measures include implementing safe operating procedures, using personal protective equipment (PPE), guarding machinery, or establishing exclusion zones. Examples: 1. The apprentice will have learnt and understood how to assess operational environments for hazards like pinch points, airborne contaminants, or unstable terrain, and record mitigations in line with regulatory expectations 2. The apprentice will be able to interpret visual cues and site conditions to flag risks such as fluid leakage or unsecured loads, and take informed actions based on documented guidelines 3. The apprentice will be able to demonstrate the correct way to complete a hazard report during maintenance of a hydraulic circuit, identifying exposure to high-pressure fluid and applying controls like PPE, signage, and exclusion zones		
S10	Apply health and safety procedures and safe systems of work in compliance with regulations and standards.	PAQ
The apprentice will be able to demonstrate their ability to strictly adhere to all relevant health and safety legislation, industry standards, and organisational policies. This encompasses understanding and following safe systems of work (SSOW), such as lockout/tagout procedures for energy isolation, working at height protocols, and confined space entry procedures. The apprentice will be able to demonstrate a proactive approach to safety, ensuring all tasks are performed in a manner that minimises risk to oneself and others, and knowing when to stop work if conditions are unsafe. Examples: 1. The apprentice will have learnt and understood the legal and operational framework around health and safety, including equipment isolation procedures, PPE requirements, and task-specific SSOW 2. The apprentice will be able to interpret a written SSOW for electrical fault tracing and apply it step-by-step—from initial isolation, through verification testing, to final reactivation protocols		

3. The apprentice will be able to demonstrate the correct way to carry out confined space entry on a fuel tank system by completing the permit, checking oxygen levels, and using spotters and tripods as per the safe system of work		
S11	Apply environmental and sustainability procedures in compliance with regulations and standards for example, segregate resources for reuse, recycling and disposal.	IPE
The apprentice will be able to demonstrate working in an environmentally responsible manner, in line with relevant legislation and organisational policies. This includes minimising waste, preventing pollution, and optimising resource use. Specific examples include the proper segregation of resources for reuse, recycling, and disposal (e.g., separating scrap metal, oil, and general waste), responsible handling and storage of hazardous materials, and conserving energy and water. The apprentice will be able to demonstrate their understanding of the environmental impact of maintenance activities and therefore seeking ways to reduce it. Examples: 1. The apprentice will have learnt and understood the principles of environmental stewardship, including efficient resource use, waste segregation, and pollution prevention across maintenance tasks 2. The apprentice will be able to interpret site-specific disposal guidelines and environmental signage to ensure used fluids, filters, and components are correctly handled 3. The apprentice will be able to demonstrate the correct way to manage oil filter replacement by capturing drained fluids, bagging contaminated elements, and transferring both to designated recycling points		
S12	Investigate problems using fault-finding and diagnostic techniques to identify underlying causes. Identify solutions to problems.	PAQ
The apprentice will be able to demonstrate their ability to use this core technical skill - involving the systematic process of troubleshooting equipment issues. This requires the ability to use a range of fault-finding and diagnostic techniques, such as visual inspections, listening for unusual noises, using diagnostic software to read error codes, performing circuit checks, and conducting functional tests. The apprentice will be able to demonstrate accurately pinpointing the underlying cause of a problem, rather than just addressing symptoms. Once the cause is identified, the skill extends to brainstorming and selecting the most effective and efficient solutions to problems, considering factors like cost, time, and long-term reliability. Examples: 1. The apprentice will have learnt and understood structured diagnostic approaches, from initial symptom logging to targeted inspection and component testing 2. The apprentice will be able to interpret live telemetry data from a telehandler's onboard diagnostics to isolate irregular voltage readings linked to actuator faults 3. The apprentice will be able to demonstrate the correct way to identify overheating in a tracked dumper by correlating temperature sensor spikes with cooling system inefficiencies and recommending replacement of the faulty thermostat and fan assembly		
S13	Read and interpret information, for example text, data, engineering	PAQ

	drawings, job card, work instructions, risk assessments, method statements, operation manuals, permits to work, instructions.	
The apprentice will be able to demonstrate accurately understanding and extracting relevant information from a variety of sources essential for maintenance work. This includes comprehending written text (e.g., emails, reports), analysing data (e.g., sensor readings, test results), interpreting engineering drawings (e.g., schematics, assembly diagrams), understanding job cards and work instructions, familiarising oneself with risk assessments and method statements, referring to operation manuals for equipment specifics, and adhering to permits to work conditions. The apprentice will be able to demonstrate their strong literacy and analytical skills to correctly apply the information to the task at hand. Examples: 1. The apprentice will have learnt and understood how to use reference materials — including engineering drawings, job cards, risk assessments, and OEM guides — to support safe and accurate execution of maintenance tasks 2. The apprentice will be able to interpret hydraulic circuit diagrams for a concrete pump and trace line pressures to pinpoint areas of restriction or blockage 3. The apprentice will be able to demonstrate the correct way to apply assembly instructions for a planetary gearbox rebuild, referencing torque specifications, bearing tolerances, and alignment charts		
S14	Select techniques, procedures and methods to undertake tasks.	PAQ
The apprentice will be able to demonstrate choosing the most appropriate and efficient approach to carry out a given maintenance or repair task. This requires a comprehensive understanding of various technical techniques (e.g., welding, hydraulic system flushing), established procedures (e.g., engine overhaul sequence), and recognised methods (e.g., lean manufacturing principles in maintenance). The apprentice will be able to demonstrate their awareness that the selection process considers factors such as the type of equipment, the nature of the fault, available tools, safety requirements, and desired outcomes (e.g., speed, quality, cost). Examples: 1. The apprentice will have learnt and understood how to assess task requirements and select the most appropriate method — whether for repair, inspection, or component fabrication — based on cost, safety, and equipment constraints 2. The apprentice will be able to interpret service records and machine usage profiles to determine whether a fastener should be re-torqued, replaced, or chemically locked 3. The apprentice will be able to demonstrate the correct way to choose hydraulic hose crimping over mechanical clamp repair, considering system pressures and OEM standards		
S15	Select and check construction plant equipment and hand tools including calibration and diagnostic equipment.	PAQ
The apprentice will be able to demonstrate their ability to choose the correct tools and equipment for a specific job and to ensure they are in a safe, functional, and accurate condition. This includes selecting appropriate construction plant equipment (e.g., lifting gear, specialist machinery) and a wide range of hand tools. The apprentice will be able to demonstrate their awareness of crucial checking of the calibration of measurement tools		

(e.g., torque wrenches, multi-meters) and verifying the functionality and accuracy of diagnostic equipment before use. This pre-task check is essential for safety, efficiency, and accurate results. Examples: 1. The apprentice will have learnt and understood selection criteria for tools and diagnostic devices, including calibration status, compatibility, and task-specific precision requirements 2. The apprentice will be able to interpret calibration certificates to verify torque wrench accuracy before commencing a gearbox reinstallation procedure 3. The apprentice will be able to demonstrate the correct way to check multi-meter function, inspecting leads and test ranges prior to isolating and confirming battery charge faults in lifting equipment		
S16	Identify, organise and use resources to complete tasks, with consideration for cost, time, quality, safety, security and environmental impact.	PAQ
The apprentice will be able to demonstrate their comprehensive planning and execution skills. These involve recognising all necessary resources for a task, which can include spare parts, consumables, tools, equipment, personnel, and information. The apprentice will be able to demonstrate how they effectively organise these resources, ensuring they are available when needed. Their use of these resources must be mindful of several critical factors: cost-effectiveness, efficient time management, maintaining quality standards, ensuring safety throughout the process, securing tools and materials to prevent loss or theft, and minimising environmental impact. Examples: 1. The apprentice will have learnt and understood how to evaluate required resources for repair and maintenance and plan their use with minimal waste and maximum efficiency 2. The apprentice will be able to interpret job specifications and timeline constraints to prioritise parts ordering and tool selection for equipment servicing 3. The apprentice will be able to demonstrate the correct way to organise tools, PPE, service kits and documentation for a hydraulic system overhaul, balancing speed, safety protocols, and environmental handling of fluids		
S17	Perform maintenance tasks on construction equipment.	IPE
The apprentice will be able to demonstrate how this core practical skill involves carrying out routine and preventative maintenance activities to ensure the optimal performance and longevity of construction equipment. This includes tasks such as fluid checks and changes (oil, coolant, hydraulic fluid), filter replacements (oil, fuel, air), lubrication of moving parts, adjustments (e.g., belt tension, brake clearances), and visual inspections for wear and damage. The apprentice will be able to demonstrate how each task requires adherence to manufacturer specifications and maintenance schedules. Examples: 1. The apprentice will have learnt and understood scheduled maintenance procedures including lubrication plans, fluid top-ups, filter changes and wear component inspection aligned to OEM service intervals 2. The apprentice will be able to interpret equipment hour logs and usage profiles to trigger appropriate preventative maintenance actions 3. The apprentice will be able to demonstrate the correct way to carry out a 500-hour service on a wheeled excavator — replacing hydraulic filters, checking		

track tension, and documenting outcomes against the maintenance checklist		
S18	Perform repair tasks on construction equipment.	IPE
The apprentice will be able to demonstrate how this advanced practical skill involves rectifying faults and restoring damaged or malfunctioning construction equipment to full working order. This encompasses a wide range of activities, from replacing worn components (e.g., hoses, seals, bearings) to addressing complex mechanical, hydraulic, pneumatic, or electrical issues. The apprentice will be able to demonstrate that they can follow a diagnostic process (as in S12) that requires the precise application of technical knowledge and practical skills to dismantle, repair, and reassemble components. Examples: 1. The apprentice will have learnt and understood corrective repair processes involving diagnosis, disassembly, replacement, and system testing across mechanical, electrical, and hydraulic systems 2. The apprentice will be able to interpret fault codes and service reports to identify worn or failed components requiring replacement 3. The apprentice will be able to demonstrate the correct way to repair a leaking control valve by removing the faulty spool, fitting a new seal kit, torquing retaining bolts, and verifying function via pressure testing		
S19	Carry out de-commissioning, removal and disassembly of components and equipment from construction plant.	IPE
The apprentice will be able to demonstrate the systematic and safe process of taking equipment or specific components out of service. De-commissioning might involve draining fluids, safely isolating power, or preparing equipment for long-term storage or disposal. The apprentice will be able to demonstrate their awareness that removal refers to detaching a component or piece of equipment from its operational location, and disassembly involves carefully taking apart components into their constituent parts, often for inspection, repair, or replacement. The apprentice will be able to demonstrate their awareness that all these actions require understanding of correct procedures, use of appropriate tools, and adherence to safety protocols. Examples: 1. The apprentice will have learnt and understood procedures for isolating, draining, and safely removing equipment or components in preparation for disposal, storage, or overhaul 2. The apprentice will be able to interpret disassembly instructions and operational status indicators to confirm the equipment is ready for shutdown and removal 3. The apprentice will be able to demonstrate the correct way to de-commission a mobile air compressor unit — draining oil and coolant, disconnecting wiring harnesses, and transporting the unit under site lifting protocols		
S20	Assess condition of components and equipment. Test and check equipment or systems. Identify actions required.	PAQ
The apprentice will be able to demonstrate evaluating the state of individual parts or entire equipment systems to determine their functionality, wear, and potential for failure. This includes visual inspections, physical checks for movement or play, and the use of measurement tools or diagnostic equipment to test and check performance parameters (e.g., pressure, voltage, temperature, flow rates). The apprentice will be able to		

demonstrate that (based on the assessment and test results), they can then accurately identify the actions required, such as repair, replacement, adjustment, or further investigation. Examples: 1. The apprentice will have learnt and understood methods of condition assessment including visual inspection, measurement testing, and functional system checks aligned to service tolerances 2. The apprentice will be able to interpret vibration analysis and temperature data from live system monitoring to assess bearing wear in rotating assemblies 3. The apprentice will be able to demonstrate the correct way to evaluate the condition of a slew ring on a crawler crane by checking backlash, wear indicators, and conducting load cycle simulations to determine replacement needs		
S21	Carry out assembly and installation of components and equipment from construction equipment including alterations through design and fabrication activities.	IPE
The apprentice will be able to demonstrate the precise and correct reassembly of components and the installation of new or repaired parts onto construction equipment. This includes following specific sequences, torquing specifications, and connection procedures. The apprentice will be able to demonstrate performing alterations through design and fabrication activities, which might involve modifying existing parts, fabricating new brackets or mounts, or adapting components to improve performance or meet specific operational needs. This requires attention to detail, precision, and often, skills in metalwork or other fabrication techniques. Examples: 1. The apprentice will have learnt and understood how to assemble components to manufacturer specifications, including correct torque values, alignment procedures, and sealing techniques 2. The apprentice will be able to interpret fabrication drawings and modification notes to implement bracket redesigns or install retrofit systems 3. The apprentice will be able to demonstrate the correct way to install a hydraulic cylinder by aligning mounts, applying torque to fasteners, routing hoses with protection sleeves, and verifying movement range against system tolerances		
S22	Apply contamination control techniques.	IPE
The apprentice will be able to demonstrate their ability in preventing the introduction or spread of contaminants (e.g., dirt, dust, water, foreign particles) into sensitive systems, particularly hydraulic, fuel, and lubrication systems. The apprentice will be able to demonstrate different practices such as ensuring work areas are clean, using clean tools and equipment, capping open lines, filtering fluids, and properly storing parts – being aware that contamination control is crucial for prolonging component life and ensuring reliable equipment operation. Examples: 1. The apprentice will have learnt and understood the risks of contamination in hydraulic, fuel and lubrication systems, and how control methods protect reliability and prolong component life 2. The apprentice will be able to interpret site protocols and equipment labels to apply appropriate protection methods during component replacement or fluid		

	transfer 3. The apprentice will be able to demonstrate the correct way to fit caps on open hydraulic ports, use filtered fluid transfer systems, and maintain a clean workspace when servicing fuel injection units	
S23	Complete commissioning checks following maintenance and repair activities.	IPE
The apprentice will be able to demonstrate performing a series of systematic tests and inspections after maintenance or repair work to ensure that the equipment or system is functioning correctly, safely, and to specification before being returned to service. This could include running the engine, checking fluid levels, testing controls, verifying system pressures, and ensuring all safety features are operational. It's the final verification step to confirm the work has been completed successfully and the equipment is ready for operation. Examples: 1. The apprentice will have learnt and understood the purpose and steps of post-maintenance commissioning, including functional checks, safety validation and systems verification 2. The apprentice will be able to interpret pre-start checklists and system indicators to determine readiness for reactivation 3. The apprentice will be able to demonstrate the correct way to commission a repaired loader by checking fluid levels, control functions, pressure stability, and confirming error-free operation using onboard diagnostic feedback		
S24	Restore the work area on completion of the activity.	PAQ
The apprentice will be able to demonstrate ensuring that the work area is left clean, tidy, and safe after maintenance or repair tasks are completed. This includes removing all tools, equipment, and unused parts, properly disposing of waste materials (e.g., rags, contaminated fluids), cleaning up any spills, and ensuring clear access and egress. It contributes to a safe working environment for others and demonstrates professionalism. Examples: 1. The apprentice will have learnt and understood the importance of leaving a work area safe, clean, and ready for the next operation, aligning with professional standards and safety expectations 2. The apprentice will be able to interpret site-specific housekeeping requirements for tool returns, spill control, and waste separation 3. The apprentice will be able to demonstrate the correct way to restore a maintenance bay by disposing of rags and fluids, cleaning surfaces, securing loose tools, and logging waste movements according to site protocols		
S25	Apply continuous improvement techniques. Devise suggestions for improvement.	IPE
The apprentice will be able to demonstrate actively looking for ways to enhance efficiency, quality, safety, and productivity within maintenance operations. It means not just completing tasks, but also reflecting on processes and identifying areas where things could be done better. The apprentice will be able to demonstrate applying methodologies like root cause analysis to recurring problems, streamlining workflows, reducing waste, and proactively devising suggestions for improvement related to tools, procedures,		

equipment design, or safety protocols. Examples:

1. The apprentice will have learnt and understood how to identify inefficiencies, recurring faults or workflow bottlenecks and propose solutions using structured methods like root cause analysis or PDCA cycles
2. The apprentice will be able to interpret service logs and failure trends to detect improvement opportunities in scheduling, component selection or tooling
3. The apprentice will be able to demonstrate the correct way to suggest redesigning a service checklist layout to improve technician workflow and data capture accuracy based on feedback and observed delays

S26 Apply quality assurance procedures.

IPE

The apprentice will be able to demonstrate adhering to established quality management systems and procedures to ensure that maintenance work meets required standards and specifications. This includes following checklists, conducting inspections at various stages of a task, ensuring parts meet quality requirements, documenting work accurately, and performing final functional checks. It's about ensuring consistency, reliability, and preventing defects in the work performed. Examples:

1. The apprentice will have learnt and understood quality control techniques including checklist verification, compliance inspections, and post-repair testing
2. The apprentice will be able to interpret part specifications and measurement tolerances to confirm suitability during component replacement
3. The apprentice will be able to demonstrate the correct way to conduct a quality audit of a repaired boom lift — inspecting bolt torque, fluid integrity, and checklist completion against the site's QA standard

S27 Follow equality, diversity and inclusion procedures.

IPE

The apprentice will be able to demonstrate working in a respectful and inclusive manner, adhering to organisational policies and legal requirements related to equality, diversity, and inclusion. The apprentice will be able to demonstrate treating all colleagues, clients, and stakeholders fairly, regardless of their background, gender, ethnicity, disability, or any other characteristic. It involves promoting a work environment free from discrimination, harassment, and bullying, and understanding the benefits of a diverse workforce. Example:

1. The apprentice will have learnt and understood how inclusive practices support fair treatment, psychological safety, and compliance with workplace policies
2. The apprentice will be able to interpret signs of exclusion or bias during team activities and take appropriate action to reinforce respectful communication
3. The apprentice will be able to demonstrate the correct way to contribute to an inclusive briefing by ensuring everyone — including newer or quieter members — is encouraged to voice suggestions, concerns, or safety observations

S28 Carry out and record planned and unplanned learning and development activities.

IPE

The apprentice will be able to demonstrate a commitment to ongoing professional growth,

which involves actively participating in planned learning activities such as formal training courses, workshops, or obtaining new certifications. It also encompasses engaging in unplanned learning, which could involve learning from experiences, seeking advice from experienced colleagues, or researching new technologies. The apprentice will be able to demonstrate recording these activities to track personal development, demonstrate competence, and meet any professional body or organisational requirements. Examples:

1. The apprentice will have learnt and understood the value of professional growth through structured training, informal knowledge sharing, and reflective practice
2. The apprentice will be able to interpret feedback from mentors or supervisors to identify areas for further development and potential certifications
3. The apprentice will be able to demonstrate the correct way to log an informal learning session on diagnostic software, summarising what was learned, where it was applied, and how it will inform future fault analysis

S29	Perform legal, regulatory and organisational checks, inspections and examinations.	IPE
The apprentice will be able to demonstrate conducting mandatory and routine checks, inspections, and examinations of construction equipment to ensure compliance with relevant legislation, industry regulations, and internal organisational policies. This could include pre-use checks, periodic safety inspections (e.g., lifting equipment inspections), emissions tests, or general fitness-for-purpose examinations. The apprentice will be able to demonstrate their awareness that the checks, inspections, tests and examinations require thoroughness, attention to detail, and accurate record-keeping to demonstrate compliance and identify any non-conformities. Examples: 1. The apprentice will have learnt and understood statutory requirements for pre-use checks, emissions testing, lifting inspection, and equipment conformity assessments 2. The apprentice will be able to interpret inspection criteria and regulatory documents to validate equipment fitness prior to deployment 3. The apprentice will be able to demonstrate the correct way to complete a formal lifting equipment inspection — checking load charts, wear indicators, signage visibility and recording non-conformities for escalation and rectification		

Ref	KSB to be assessed	Assessment Method
Behaviours		
B1	Committed to CPD to maintain and enhance competence in their own area of practice.	IPE
The apprentice will be able to demonstrate their goal to consistently maintain and enhance their competence, ensuring their skills and knowledge remain sharp and relevant to their work with construction equipment. This is through attending mandatory training; but also taking initiative to stay current with industry advancements, new technologies, and evolving equipment. This could involve reading technical journals, attending webinars, pursuing certifications, learning from experienced colleagues, or researching complex		

Ref	KSB to be assessed	Assessment Method
	problems.	
B2	Take personal responsibility for their own sustainable working practices.	IPE
	The apprentice will be able to demonstrate how they consider the environmental impact of their actions, looking for ways to reduce waste and contribute to a more sustainable operation. They will be able to personally ensure they follow environmental regulations and company policies, for example, by properly segregating waste for recycling, responsibly handling hazardous materials like oils and coolants, and minimising energy and water consumption	
B3	Prioritise health and safety.	PAQ
	The apprentice will be able to demonstrate an unwavering commitment to safety. They will prioritise health and safety consistently to adhere to all safety procedures and regulations, whether it's wearing the correct Personal Protective Equipment (PPE), following lockout / tagout protocols, or conducting thorough risk assessments before starting a task.	
B4	Act in a professional manner.	PAQ
	The apprentice will be able to demonstrate that they maintain a tidy work area, communicate clearly and courteously, and represent their organisation positively. They will also demonstrate how they manage their emotions effectively, even under pressure, and demonstrate integrity in their work.	
B5	Take responsibility for completing work.	PAQ
	The apprentice will be able to demonstrate that, if challenges arise, they proactively seek solutions, communicate potential delays, and see the job through to completion, demonstrating a strong sense of commitment and reliability and within agreed timescales.	
B6	Take account of diversity and inclusion requirements.	IPE
	The apprentice will be able to demonstrate how they actively work to create and maintain an inclusive and equitable workplace. They treat all colleagues and customers with respect and fairness, regardless of their background, beliefs, or characteristics.	

Open Awards Policies

Current versions of the following Open Awards policies are accessible through the Secure Portal.

These policies include:

- End Point Assessment Pricing Policy
- Reasonable Adjustments and Special Considerations Policy
- Data Protection
- Enquiries and Appeals Policy
- Complaints Policy
- Malpractice and Maladministration Policy
- Equality and Diversity Policy
- Sanctions Policy
- Safeguarding Policy
- Conflict of Interest Policy
- Fair Access Policy

In addition, the current version of the following relevant document may be obtained by training providers, employers or apprentices by contacting Open Awards directly:

- Instructions for Conducting Controlled Assessment Remotely

Support

For information about Open Awards support offer, including information on our policies, quality assurance, re-sits, appeals, complaints and general enquiries, please see our website: www.openawards.org.uk or contact our customer service team on 0151 494 2072 or via email at enquiries@openawards.org.uk.

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