



INSTITUTE OF THE
MOTOR INDUSTRY



Training Organisation Guidance

Land-based Service Engineering Technician

Level 3 Apprenticeship Standard

ST0243/AP03

2018 IMI

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Introduction

Employers have designed a new Apprenticeship Standard for technicians who service and repair machinery and equipment within land-based engineering occupations. The machinery and equipment within these occupations varies can include:

Agricultural:

Tractors, equipment for cutting, mowing, harvesting, processing, soil preparation, plant establishment, transport handling and storage.

Construction Plant:

Machinery for excavating, compacting, transporting, lifting, piling plant and equipment, drilling, blasting and pumps.

Technicians work in a large range of environments including dealerships that focus on specific brand(s) and independent companies that maintain and repair all makes of machinery.

It is anticipated around 750 apprentices will graduate from Level 3 Land-based Engineering Apprenticeship Programmes every year. There are around 3,000 workshops managed by companies that range from multi-million pound trans-national dealer groups through to an owner-manager employing a handful of people.

In addition to the above complexities, there are several different training models, including residential block release programmes devised and operated by global land-based machinery manufacturers and day release courses provided by local colleges and training organisations.

Accountability for assessing the competence of the apprentice in the workplace will transfer from the training organisation to employers. Employers will have primary responsibility for monitoring and analysing the apprentice's progress and deciding when the apprentice is ready to take the End Point Assessment, with support from the training and assessment organisations.

All formal qualifications have been removed, however employers may request that their apprentice completes a Level 3 diploma in Land-based Technology during the course of the Apprenticeship Standard.

This document is to be used as a guide and will provide you with an overview of what is to be expected throughout the duration of the apprenticeship.

Roles and Responsibilities

Employer

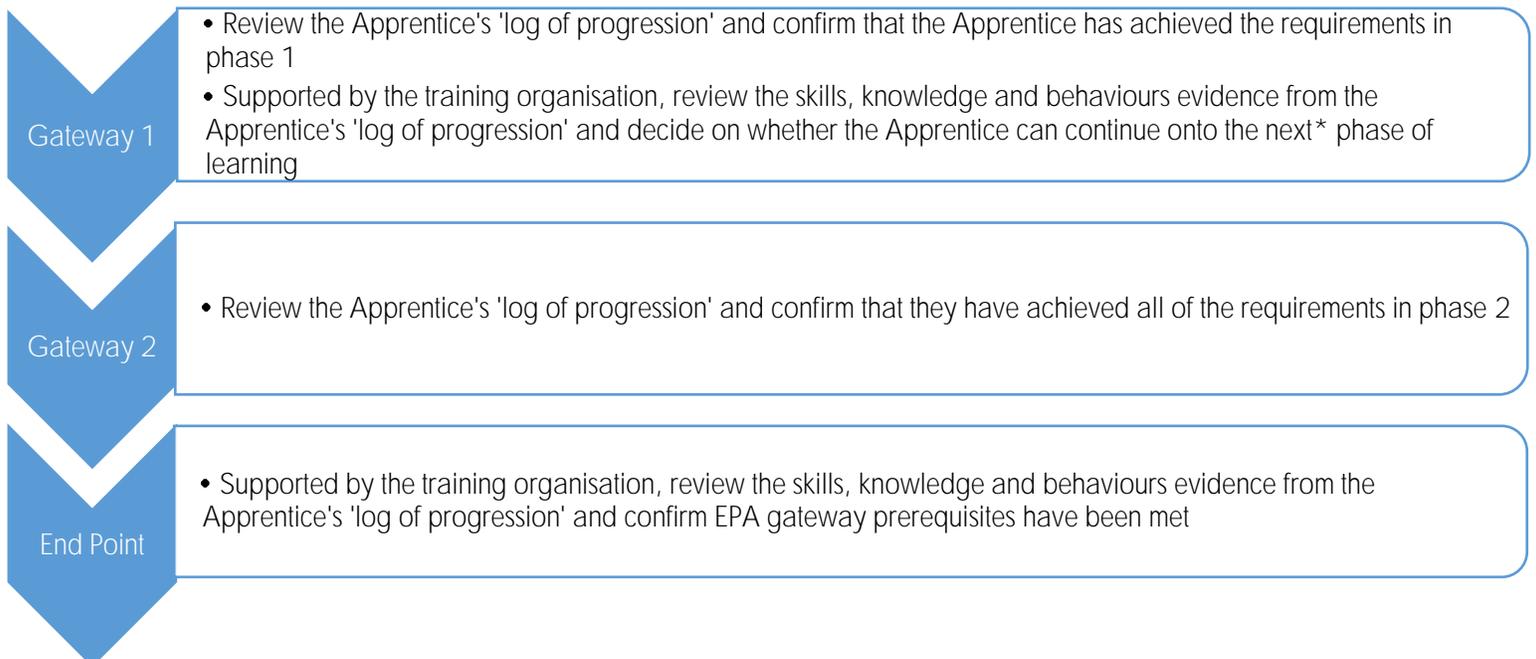
Employers will be responsible for ensuring that their business and the employment of their apprentice meets all required Health and Safety and employment law legislation.

In some cases for smaller businesses, the employer and the workplace mentor may be the same person.

The employer will coordinate with the training organisation to review the apprentice's 'log of progression' and sign off all gateways for the apprentice to continue onto the next phase.

Workplace Mentor

As part of the allocation of roles, the training organisation will advise the employer to set each apprentice up with a mentor in the workplace. The role of the mentor is make judgements on the progress of their apprentice(s) which will enable them to formally review the apprentice's progress at each gateway. It is the responsibility of the mentor to confirm that the apprentice has fulfilled all of the criteria required to proceed onto the next phase.



*Please note: If the apprentice has made insufficient progress towards gateway targets during mentor and training organisation reviews, the apprentice should be provided with detailed and specific feedback and actions.

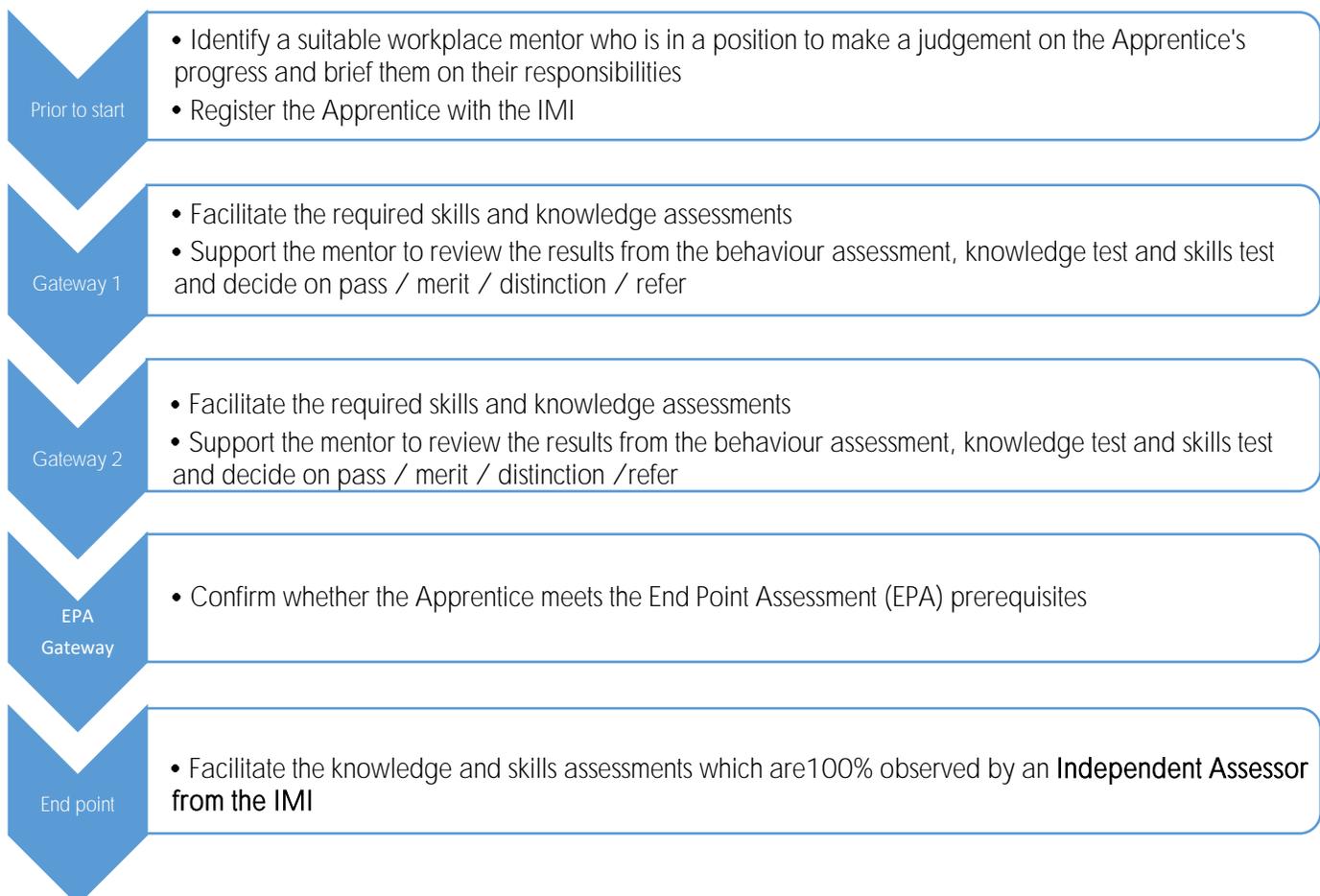
Training Organisation

The training organisation must ensure that they are set up to deliver and, where required, assess the apprentice. Guidance sections on centre set up, assessor requirements, rules and procedures can be found within this document.

In order to receive funding and permissions to deliver the new Apprenticeship Standards, training organisations must be on the 'register of training organisations'. Information and an up-to-date register can be found using this link: <https://www.gov.uk/government/publications/register-of-training-organisations>

Training organisations must:

- Provide and manage the 'off the job' learning elements of the apprenticeship
- Provide assessors to implement the on-programme assessment requirements (where applicable)
- Carry out workplace visits with the apprentice and employer to establish that the apprentice's workplace learning and off the job learning is aligned and on track with the Standards
- Carry out regular apprentice performance reviews to be included in the apprentice's log of progression
- Advise the employer of remedial actions to be taken to ensure that the skills and knowledge are in place
- Support the employer in deciding the timing and arrangement of the End Point Assessment process



End Point Assessment Organisation (EPAO)

The IMI is registered on the published 'register of Assessment Organisations', which can be found using this link:
<https://www.gov.uk/government/publications/register-of-apprentice-assessment-organisations>

The IMI must ensure training organisations are prepared and set up for delivery and assessment of the apprenticeship. This covers all areas including centre set up, assessor requirements, internal and external quality assurance, and assessment documentation and processes. Information on this can be found within this document and should be used by training organisations as guidance for centre set up, assessment and quality assurance processes.

In addition to ensuring training organisation compliance, the IMI is also responsible for the following:

Publications

- Advise assessment centres of the tooling, machinery and resources required to conduct the assessments
- Establish, maintain and publish a written procedure for the investigation and actions to take in the event of suspected or alleged malpractice or maladministration
- Provide notification of the EPA results and confirm apprentice's competence and awarded grading to the relevant parties

Quality Assurance

- Enforce criteria for approved assessment centres by defining staff, resources, processes and procedures required to undertake the EPA
- Provide and manage a network of Independent Assessors to undertake marking and scoring of the practical task and professional interview at EPA
- Organise meetings of Independent Assessors to undertake moderation of the assessment practices and processes once per year
- Develop, manage and maintain an online knowledge test based on a question bank that facilitates random examinations to test the knowledge of apprentices
- Develop assessment procedures for apprentices with special requirements to remove barriers to participation and ensuring reasonable adjustments are made in line with the Equality Act where appropriate
- Provide Land-based Service Engineering standardisation events and assessor training workshops to ensure uniform judgements across assessors and assessment centres
- Ensure that assessors have experience and professional competence in the role of assessment with relevance to the expertise associated with the roles in the Standard being assessed
- Provide standardised grading matrixes and grading descriptors to assessors
- Liaise with employer representatives / bodies to ensure that the EPA contents and parameters are current and fit for purpose

The IMI is responsible for maintaining high quality systems and processes, and validating and continuously reviewing an Independent Assessor's experience, skills and competence. The IMI also maintains a system that allows individual End Point Assessments, and an Independent Assessor's decision, to be externally quality assured and verified by an external quality assurance organisation.

End Point Assessment

- Supply Independent Technical Observers who:
 - Have had no previous contact with the delivery of the apprenticeship to make an impartial judgement of the apprentice's competence
 - Have experience and professional competence in the role of assessment with relevance to the expertise associated with the roles in the Standard being assessed
 - Participate in standardisation events and assessor training workshops and maintain a record of continual professional development relevant to land-based service engineering Standards
 - Declare to the IMI any factors that might compromise impartiality
 - Make impartial decisions on the apprentice's competence and awards grading of the individual EPA elements
 - Are responsible for the final decision on assessment judgement

The Independent Assessor (IA)

The requirements for Independent Assessors are that they must have:

- An understanding of the sector and the assessment requirements for the Standard
- The expertise to operate and administer the assessment tools required
- Technical/occupational competence at or above the Apprenticeship Standard for Land-based Service Engineering Technicians
- No previous contact with the delivery of the apprenticeship to make an impartial judgement of the apprentice's competence
- Declared to the Independent Assessment Organisation any factors that might compromise impartiality
- Participated in standardisation events and assessor training workshops and maintained a record of continual professional development relevant to Land-based Service Engineering Standards

The approved ratio of apprentices to End Point Assessor when carrying out skills assessments is 3:1.

Training Organisation Centre Requirements

In order to use the IMI assessments for this new Apprenticeship Standard you will need to be an 'IMI approved training organisation'. If you are already an IMI approved centre then you can check your status and permissions by logging into the online portal. You will also need to be on the Register of Apprenticeship Training Providers (RoATP).

If you are not currently an approved centre please follow this link and complete all of the necessary steps to gain approval:

<http://awarding.theimi.org.uk/Centres/Become-a-Centre>



Registration, Certification, Booking Assessments (including IMI packages)

An up-to-date list of all available registration packages can be found here: <http://awarding.theimi.org.uk/Centres/Fees-and-Charges>

All registrations, certification and booking of assessments are completed via the IMI online portal. In order to access the online system you will need:

- IMI PIN number
- Password
- Centre number
- A valid email address

Access to Assessments

Gateways 1 & 2

Online tests and skills assessments (dependent on the package purchased) will be made available once an apprentice has been registered. It is the responsibility of the training organisation to ensure sufficient evidence has been gathered and reviewed before the apprentice may proceed from Gateway 1 to Gateway 2.

End Point Assessment Gateway

The IMI offers practice test materials that are made available through its eLogbook (dependent on the package purchased) to support apprentices in preparing for their EPA. The eLogbook has sections for the apprentice to be able to store the prerequisite and supporting evidence required for the EPA assessment gateway and professional interview.

End Point Assessment (EPA)

It is the responsibility of the training organisation to ensure sufficient evidence has been gathered and reviewed before the apprentice may proceed from gateway 2 to End Point Assessment gateway.

Practical assessments for the EPA will be released to the training organisation **3 weeks** prior to the booked assessment days. The method for booking an Independent Assessor is outlined within the IMI online portal.

Apprentice Resits/Retakes

In the event of an apprentice being referred as part of gateways 1 & 2 the following applies:

- Skills tests can be retaken as required without additional charge from the IMI
- Online assessments can be retaken once without additional charge from the IMI

In the event of the apprentice being referred at the EPA gateway it is recommended that the employer, training organisation and apprentice have a discussion about further training and development required. The apprentice will only pass the EPA gateway if they have met all of the prerequisites and have confirmation from their employer that they are ready.

In the event of an apprentice being referred as part of the knowledge or skills tests for the EPA, the following applies:

- Skills tests can be retaken but there will be an additional charge from the IMI for the attendance of an Independent Assessor
- Knowledge assessment can be retaken

Apprentices who fail one or more of any assessment will be offered the opportunity to take a resit/retake. A resit does not require further learning, a retake does.

The apprentice's employer will need to agree that a resit/retake is an appropriate course of action. Apprentices should have a supportive action plan to prepare for the resit/retake.

Online Knowledge Test Access and Invigilation

As an approved IMI centre you will be in possession of all guidance relating to online testing, centre requirements and invigilation.

Should you require any further information, brief guidance documents will be placed onto the secure area of the website for you to view.

Quality Assurance

There will be independent reviews on a sample basis of the training organisation's **assessment processes** to ensure quality and enable comparisons of outcomes across the sector. Please discuss with your External Quality Assurer (EQA) should you require any further information.

Mandatory Qualifications

Apprentices who start this Apprenticeship Standard without English and Maths at GCSE Grade C/Grade 4 or above, or Functional Skills Level 2, must achieve this before applying for their End Point Assessment.

Note: Registration and Certification of these qualifications are not included in the IMI package prices. These qualifications will be charged separately. Please use this link to view the latest fees information:

<http://awarding.theimi.org.uk/Centres/Fees-and-Charges>

Apprenticeship Structure



The image above shows the structure of the Apprenticeship Programme and further information on each group is listed below.

Group 1 – This group sets out the soft skills and behaviours and provides the framework that will provide the basis for the approach to assessment.

Group 2 – This group enables the apprentice to develop the understanding, knowledge and skills in routine maintenance and cleaning of the land-based engineering environment. They will develop the skills in identifying and dealing with risks of within in the land-based engineering environment

Group 3 – This group enables the apprentice to work with tools and equipment safely and efficiently to achieve fabrication and basic maintenance tasks.

Group 4 – This group enables the apprentice to work with others and maintain effective working relationships using appropriate communication and information sources.

Group 5 – This group enables the apprentice to complete a range of routine services and identify the difference between good and possibly faulty components.

Group 6 – This group enables the apprentice to identify the function and operation of land-based engine mechanical components and systems. The apprentice will identify broken or heavily worn components and remove and replace these as part of daily maintenance activities.

Group 7 – This group enables the apprentice to identify the function and operation of land-based fuel, ignition, air and exhaust components and systems. The apprentice will identify broken or heavily worn components and remove and replace these as part of daily maintenance activities.

Group 8 – This group enables the apprentice to identify the function and operation of land-based heating and cooling components and systems. The apprentice will identify broken or heavily worn components and remove and replace these as part of daily maintenance activities.

Group 9 – This group enables the apprentice to identify the function and operation of land-based electrical components and systems. The apprentice will identify broken or heavily worn components and remove and replace these as part of daily maintenance activities.

Group 10 – This group enables the apprentice to identify the function and operation of land-based hydraulic components and systems. The apprentice will identify broken or heavily worn components and remove and replace these as part of daily maintenance activities.

Group 11 – This group enables the apprentice to identify the function and operation of advanced land-based engine system components and systems. The apprentice will diagnose and rectify complex faults as part of their daily activities.

Group 12 – This group enables the apprentice to identify the function and operation of advanced land-based electrical system components and systems. The apprentice will diagnose and rectify complex faults as part of their daily activities.

Group 13 – This group enables the apprentice to identify the function and operation of advanced land-based hydraulic system components and systems. The apprentice will diagnose and rectify complex faults as part of their daily activities.



Phases and Gateways

Phase - A phase is the timeframe between the major assessment points or Gateways. The IMI have provided gateways to support and assess Apprentices to check their progress throughout the apprenticeship.

- Phase 1 – From Apprenticeship start to Gateway 1
- Phase 2 – From Gateway 1 to Gateway 2
- Phase 3 – From Gateway 2 to End Point Assessment

During these phases the apprentice will be required to keep a log of progression throughout to evidence their journey. This will be reviewed and assessed by the workplace mentor and training organisation before the EPA Gateway can be taken.

Gateways -

There are three gateways within this Apprenticeship Standard:

- Gateway 1 – Following completion of phase 1
- Gateway 2 – Following completion of phase 2
- EPA Gateway – Eligibility check to enable the apprentice to enter EPA

Assessments will be carried out on knowledge, skills and behaviour and soft skills as delivered by the training organisation during the prior phase.

Gateway Skills and Knowledge Tests

At each of the gateways specified earlier in this document, the apprentice can undertake assessments to ensure readiness to progress onto the next stage.

The skills assessments will be carried out at either the training organisation or in the workplace (if previously agreed).

Skills Assessment Specification:

Gateway 1 Skills Tests	Gateway 2 Skills Tests
Conduct a routine pre or post-delivery inspection Engineering assessment task: <ol style="list-style-type: none"> make a 'P' clip for a hydraulic pipe thread a blind hole in a metal bar remove a 'snapped' bolt from a metal bar 	Remove and replace components from each machine system listed below. <ol style="list-style-type: none"> engine system (either: cooling, fuel, lubrication or exhaust) electrical system (either: starting, charging, auxiliary) hydraulic system (hose, ram, piping)

The knowledge assessments will be in the form of invigilated timed online tests. These will include questions from each of the groups that have been covered during the prior phase.

IMI provides and marks these timed online tests through its website, www.theimi.org.uk/awarding. In the Centres section of the website, there is a section that provides a demonstration assessment for apprentices.

Online test specification for Gateways:

Test reference	Test description	Number of questions	Duration	Pass mark	Merit	Distinction
STO243-LBTGW1K	Gateway 1 Knowledge Assessment (covering groups 2-5)	40	60 minutes	65%	75%	90%
STO243-LBTGW2K	Gateway 2 Knowledge Assessment (covering groups 6-10)	40	60 minutes	65%	75%	90%

*NOTE: Group 1 Soft Skills and Behaviours will not form part of the Gateway knowledge assessments. It is recommended that reviews take place between the apprentice, training provider and mentor at Gateways, using a soft skills and behaviour assessment tool to ensure the requirements are met.

EPA Gateway Requirements

Once an employer is satisfied that the apprentice has demonstrated full competence and that all criteria of the Standard have been met, the apprentice can progress to the End Point Assessment via the apprenticeship gateway, which is a decision point.

Before an apprentice can pass through the gateway (decision point) for End Point Assessment, they must have achieved:

- English and Maths at GCSE Grade C/Grade 4 or above, or Functional Skills Level 2
- A log of progression
- A formal Gateway meeting between the apprentice and the employer to determine the apprentice's readiness for End Point Assessment

eLogbook

The eLogbook is a tool that is provided by the IMI for the apprentice to record their workplace evidence as outlined in this document. It is their responsibility to upload this evidence and the responsibility of their workplace mentor and employer to confirm that this evidence is valid and authentic.

The types of evidence that can be uploaded include (but are not exclusive to):

- completed workplace job cards
- completed service schedules / inspection sheets
- written procedures
- technical drawings / images
- diagnostic readouts and reports
- machinery testing related data
- technical data specifications
- pictures
- video clips
- audio clips
- witness statements / testimonies

The IMI's eLogbook will ensure access to assessments and personal information is only viewed by the appropriate parties.

Further tutorials and sample evidence can be found online within the eLogbook system in addition to the information provided within this document. The links for these tutorials will be provided on registration.

Soft Skills and Behaviour Assessment

The soft skills and behaviour assessment is a tool that is provided by the IMI to score and assess the apprentice against the soft skills assessment criteria as outlined in Group 1.

This will enable the apprentice to collect key evidence to support their professional interview which will take place during the EPA.

Responsibilities for completion and review of this assessment are outlined in the “Roles and Responsibilities” section of this document.

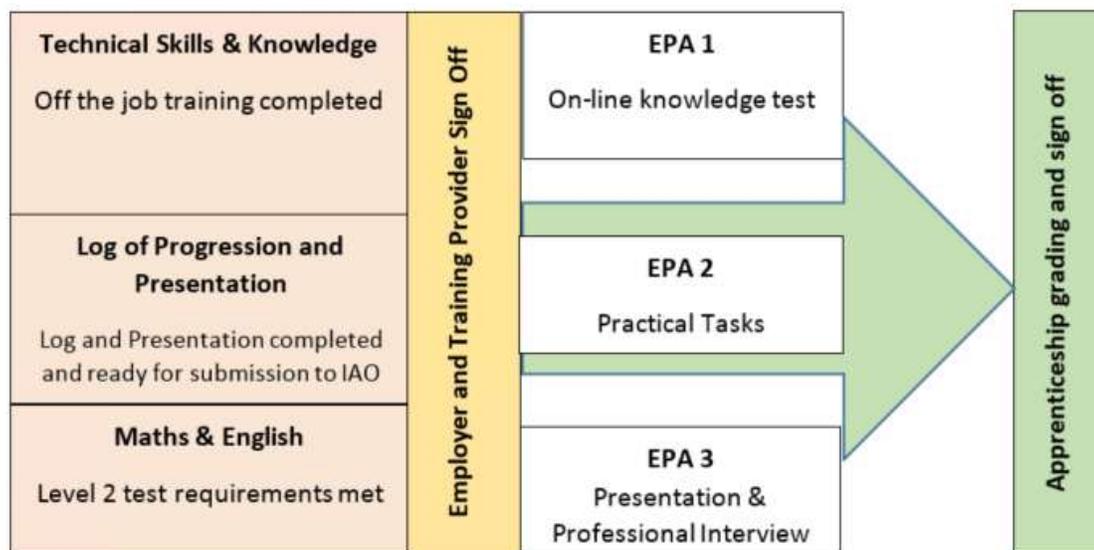
End Point Assessment (EPA)

The EPA consists of the following three distinct elements which are equally weighted and to be completed in the sequence below.

1. Online Knowledge Test
2. Practical Tasks
3. Presentation and Professional Interview

All three elements of the assessment are to be undertaken within six months of the achievement of the gateway within the apprenticeship. A minimum of a ‘pass’ is to be achieved before progressing to the next element of the EPA.

The Gateway to Assessment



The End Point skills assessment, presentation and professional interview will be directly observed by an Independent Assessor provided by the IMI.

The overall grading will be overseen and assigned by the IMI.

Online Knowledge Test

The online knowledge test takes the form of one invigilated online test. This test will include questions from each land-based machinery system group that has been taught during each phase. The test consists of:

- Six multiple choice questions – each question offers a choice of four responses with only one answer being correct
- Twelve short answer questions – each question requires a short written response at the same level of difficulty
- Twelve structured answer questions – each question requires a short written response that has two levels of difficulty

The online knowledge test is a test each apprentice has to undertake and comprises the following:

Test reference	Test description	Number of questions	Duration	Pass mark	Merit	Distinction
STO243/03EPA1K	Knowledge End Point Assessment	30	90 minutes	65%	75%	90%
Note: The online test covers content from Groups 2-13 under the topics of:						
Health, Safety and legislation						
Tools and Equipment						
Information, Reporting and Communication						
Inspection and Maintenance						
Fault Diagnosis and Repair						
Fabrication and Repair						
Preparation and Handover						

In the **Centres** section of the IMI's website www.theimi.org.uk/awarding you will find an **online assessment section**. This section provides a demonstration test for an apprentice. They will require a password from an assessor to be able to try this demonstration test.

Practical Tasks

The practical tasks (skills assessments) will be carried out at either the training organisation premises or in the workplace by an approved Independent Assessor allocated by the IMI.

There are three practical task observations that must be completed during the practical task section of the EPA.

Mandatory Observation A: requires the apprentice to demonstrate their competence in carrying out a technical condition inspection on a self-propelled machine and to report their findings; this activity will last 105 minutes.

Selected Observation B: the two remaining observations will be selected by the IMI from two of the following:

- a. Engine systems
- b. Electrical systems
- c. Hydraulic systems

Both observations will last up to 105 minutes each and will require the apprentice to demonstrate competence in either inspection, maintenance and repair or diagnosis of engine, electrical or hydraulic systems.

The apprentice will also be required to answer 'standardised' questions relating to both observations selected which will be asked and recorded by the EPA further demonstrating the apprentice's underpinning knowledge of the task completed.

Presentation

The apprentice is required to deliver a presentation for up to a maximum of 15 minutes related to the industry sector they work within. The presentation is to be based on achieving the optimum performance from a machine of their choice and may encompass the machine's working principles, analysis of factors influencing performance and how to achieve verification of performance.

The apprentice will be required to deliver the presentation immediately before the professional interview takes place and they may choose to deliver the presentation with or without the aid of PowerPoint or a flip chart.

Professional Interview

The structured professional interview is based around the contents of the apprentice's 'log of progression' and presentation which takes place between the apprentice and the Independent Assessor. It is essential therefore that arrangements are made to ensure that the log of progression is made available to the IMI at least two weeks prior to the professional interview EPA.

Wherever possible the Independent Assessor will be the same person who conducted the observations.

The Independent Assessor will ask the apprentice questions in relation to:

- the presentation
- behaviours
- the period of learning, development and continuous assessment (log of progression)
- coverage of the Standard
- personal development and reflection
- continuous professional development
- customer interaction

The apprentice will be informed of the requirements prior to the interview, and will refer to any relevant workplace evidence as requested by the Independent Assessor, which must be provided at least 10 days in advance.

Detailed assessment documentation will be provided by the training organisation on registration of the apprentice.

End Point Assessment Grading

This Apprenticeship Standard is graded: Fail / Pass / Merit / Distinction.

Independent Assessors will review the results of the following assessment types and issue a grade according to the scores highlighted in the table below.

Individual EPA element grade achieved	Points awarded
Pass	1
Merit	2
Distinction	3
Apprenticeship Grading	Final grading points
Pass	3-5
Merit	6-7
Distinction	8-9

Final grading score boundaries:

Examples of final grading calculation:

Online Knowledge Test	Practical Tasks	Professional Interview	Total Points	Final Grading
Pass = 1	Pass = 1	Merit = 2	4	Pass
Distinction = 3	Merit = 2	Pass = 1	6	Merit
Distinction = 3	Distinction = 3	Merit = 2	8	Distinction