

Level 3 Engineering Fitter

Apprenticeship overview

Engineering fitters produce complex, high-value, low-volume components or assemblies in full or in part, using machines, equipment, or systems to the required specification.

To produce or refurbish the components, Engineering Fitters will interpret drawings or specifications and plan their work, for example, ensuring they have the right tools, equipment, and resources to complete the task to the required specification.

Engineering Fitters are required to check their work against quality standards and make adjustments as required based on their knowledge. On completion of the task an Engineering Fitter will hand over the product and prepare the work area for the next task by checking equipment meets the standards required to operate.



Training location

Transport links

- Warblington train station (15-minute walk)
- Havant train station (10-minute walk)
- Havant bus station (15-minute walk)
- Free onsite parking

Key programme facts

- **Qualification level:** Level 3
- **Total duration:** 45 Months
- **Practical period:** 42 Months
- **End point assessment:** 3 Months
- **Training Days:** 1 day per week
- **Awarding body:** EAL, Pearson and City & Guilds

Entry requirements

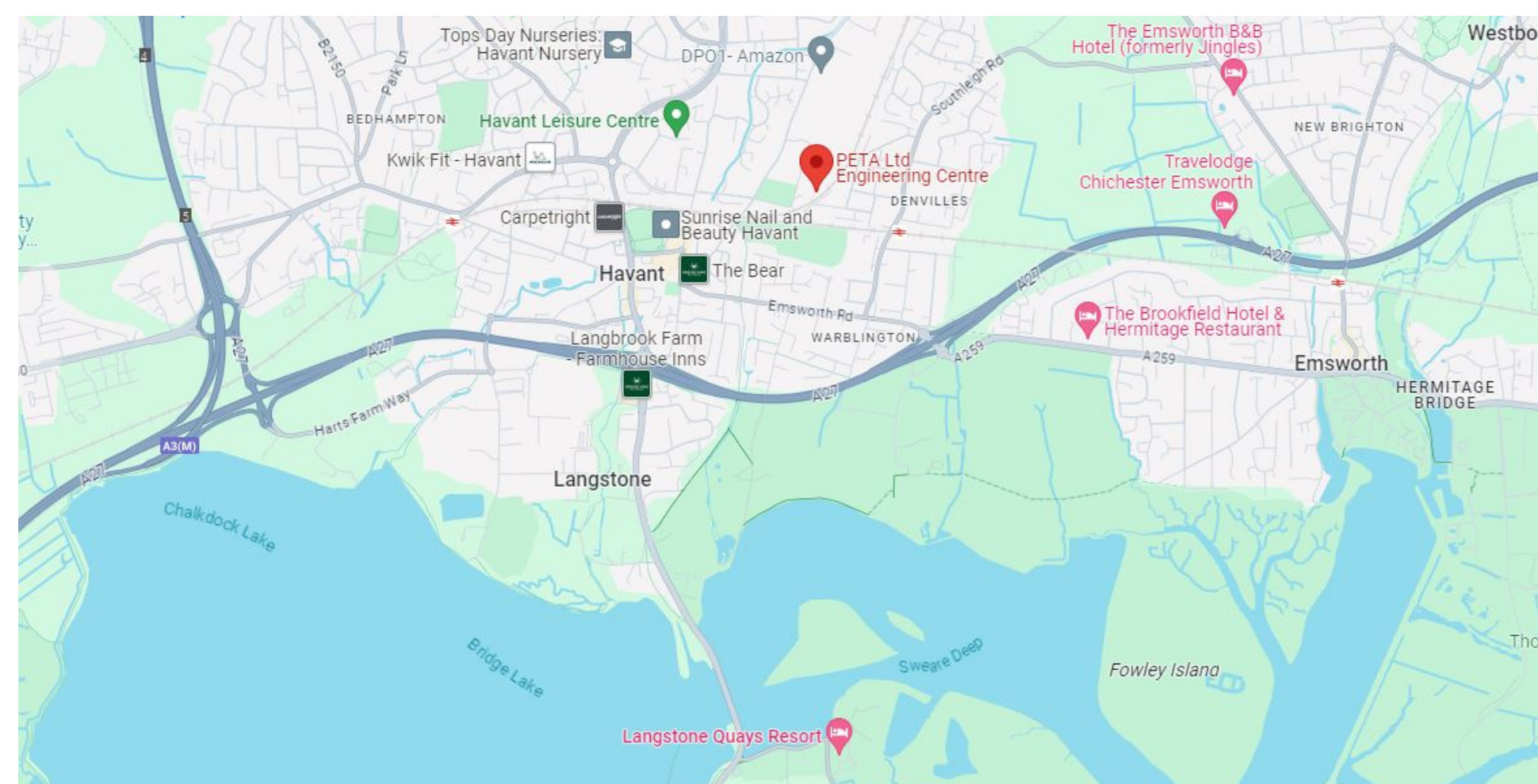
- Maths & English GCSE at Grade 4 or an equivalent qualification
- An active interest in engineering, production and assembly

Potential job roles

- Engineering Manufacturing Technician
- Electrical Fitter
- Mechanical Fitter
- Fitter / Repairs Technician

Qualifications to achieve

- Level 3 Engineering Fitter Apprenticeship
- Level 3 Diploma in Advanced Manufacturing Engineering
- Level 3 Diploma in Mechanical Manufacturing Engineering



PETA Engineering Training Centre

5 Kenwood Business Park, New Lane, Havant, PO9 2NT

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How you will learn

As an Engineering Fitter Apprentice, you will attend PETA's training centre one day per week.

While at our training centre, you will cover a range of different units that will help to develop your knowledge of engineering theory and give you the chance to gain practical hands-on experience in our workshop.

These will include producing components using hand fitting techniques, maintaining electrical and mechanical equipment and carrying out engineering activities efficiently and effectively.

Throughout your apprenticeship, you will be supported by a learning and development coach who will visit you every 6-8 weeks in your workplace. They will work closely with you and your employer to set learning objectives, undertake practical observations, and provide you with feedback on your apprenticeship progress.

Alongside the training delivered by PETA, your employer will be providing you with a rigorous training schedule to support you in the workplace.



How you will be assessed

Throughout your apprenticeship, you will be working towards your end point assessment (EPA). Your end point assessment will be conducted by an external examining body and will be made up of three key elements. For the Engineering Fitter these are:

4-week project
followed by 60 min
technical discussion

Online multiple choice
knowledge test

Professional interview
based on showcase
portfolio (3 reports)

These three key elements have been designed to enable you to demonstrate the key knowledge, skills and behaviours you have developed during your training. The possible outcomes of your EPA are Pass or Distinction.

Progression routes

Upon completion of this apprenticeship you may be offered the chance for promotion within your current organisation. You could also progress via the apprenticeship route by completing a higher level apprenticeship in a specialist area or a Higher National Diploma (HND).

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Apprenticeships are all about developing new Knowledge, Skills and Behaviours (KSB). These KSBs form the foundation of the core competencies and attributes you need in order to be successful as an Engineering Fitter Apprentice.

These KSBs are the basis for your end point assessment.

Knowledge

K1: Materials used in components or assemblies, for example; mild steel, aluminium, composites, copper. Their use and application considerations, for example machinability, hardness, conductivity, cost, availability, compatibility.

K2: Principles of design and operation, for example; design for cost, minimising waste, productivity (speed), health and safety, reverse engineering.

K3: Manufacturing and assembly processes for example; filing, sawing, scraping, drilling, soldering, bolting, wire cutting, threading.

K4: Safe use of tools and equipment (hand and power tools); right tool for the job, requirements for machinery checks, adjustments, operation and shut down.

K5: Component or assembly specifications, for example; electrical loading, load charts, torque settings, tolerances. What they are and how to use them.

K6: Techniques for measuring, marking, cutting and drilling materials to the required size and shape, accurately, safely and economically during manufacturing processes.

K7: Engineering mathematical and scientific principles; methods, techniques, graphical expressions, symbols, formulae and calculations.

K8: Engineering data, for example; electrical readings, vibration, speed and calibration. What they are and how to interpret and use.

K9: Component or assembly documentation. For example, bill of materials, standard operating procedures, inspection records, assembly instructions, electrical, pneumatic, hydraulic circuit diagrams. What they are and how to interpret and use.

K10: Quality standards for components or assembly for example, drawing, calibration of equipment, materials specification. How to ensure they have been met and assured.

Application of ISO9001 (Quality Management Standard) in the workplace.

K11: Health and safety, including Health and Safety at Work Act, personal protective equipment (PPE), manual handling, Control of Substances Hazardous to Health (COSHH), Provision and Use of Work Equipment Regulations (PUWER), Noise at Work Regulations, Electricity at Work regulations, risk assessments; how they must be applied in the workplace.

K12: Environmental considerations; safe disposal of waste, minimizing waste, re-use and re-cycle, energy efficiency.

K13: Who they need to communicate with and when, and communication techniques - verbal and written.

K14: Planning techniques – resources, tools, equipment, people; time management.

K15: Component or assembly quality checks for example; checking tolerances, threads, voltages. Types of faults that occur and problem solving techniques, for example; cause and effect, 5 Whys, flow process analysis.

K16: Improvement techniques, for example; 5S techniques, problem solving techniques, value stream mapping, kaizen, contributing to effective team working, total productive maintenance.

K17: Fitters' role in wider operation. Limits of autonomy; reporting channels. Other functions that fitters could interact with for example health & safety, quality assurance, business improvement and excellence, their purpose and interdependencies. Internal and external customers.

K18: Commercial considerations including contractual arrangements, for example, penalty clauses, targets. How the role contributes to commercial operations.

Skills

S1: Reading, interpreting and understanding the component or assembly specification, diagrams, drawings and work instructions.

S2: Planning component or assembly task – materials, tools and equipment.

S3: Preparing work area for component or assembly task; sourcing required resources, tools and equipment.

S4: Carry out relevant planning and preparation activities before commencing work activity and know how to source required resources and interpret detailed drawings, specifications and job instructions.

S5: Checking tools during and after task completion; identifying and reporting defects.

S6: Measuring and testing, checking or inspecting component or assembly for example; use of micrometers, verniers, multimeters, voltmeter.

S7: Problem solving; analysing the issue and fixing the issue where appropriate.

S8: Applying improvement techniques; recommending or implementing solutions where appropriate.

S9: Communicating with colleagues or customers (internal or external).

S10: Completing component or assembly documentation for example job instructions, drawings, quality control documentation.

S11: Reporting work outcomes or issues.

S12: Restoring the work area on completion of the activity; returning any resources and consumables to the appropriate location and house-keeping.

S13: Disposing of waste in accordance with waste streams; re-cycling, re-using where appropriate.

S14: Operating within limits of responsibility.

S15: Operating in line with quality, health and safety and environmental policy and procedures; identifying risks and hazards and identifying control measures where applicable.

Behaviours

B1: Take personal responsibility and be resilient.

B2: Works effectively in teams.

B3: Effective communicator and personable.

B4: Focuses on quality and problem solving.

B5: Committed to continuous personal development.