SMT

SERVICES MACHINERY TRUCKS

LEVEL 3 LAND-BASED SERVICE ENGINEERING APPRENTICESHIP SCHEME

THE ROAD TO A SUCCESSFUL CAREER STARTS HERE

At SMT GB we are committed to offering the very best customer support in the industry. Our nation wide depots require the best service engineer technicians, in order to service and maintain our customers' machines to the highest level.

As you start your career in one of our nationwide Customer Support Centres you will be given specialist training on Volvo Construction Equipment products. SMT GB and Reaseheath College, have worked together to develop a collaborative IMI land-based service engineering technician programme to support SMT's Customer Support Centre's located throughout Great Britain. As an apprentice you will have an amazing opportunity to train on the latest Volvo Construction Equipment.

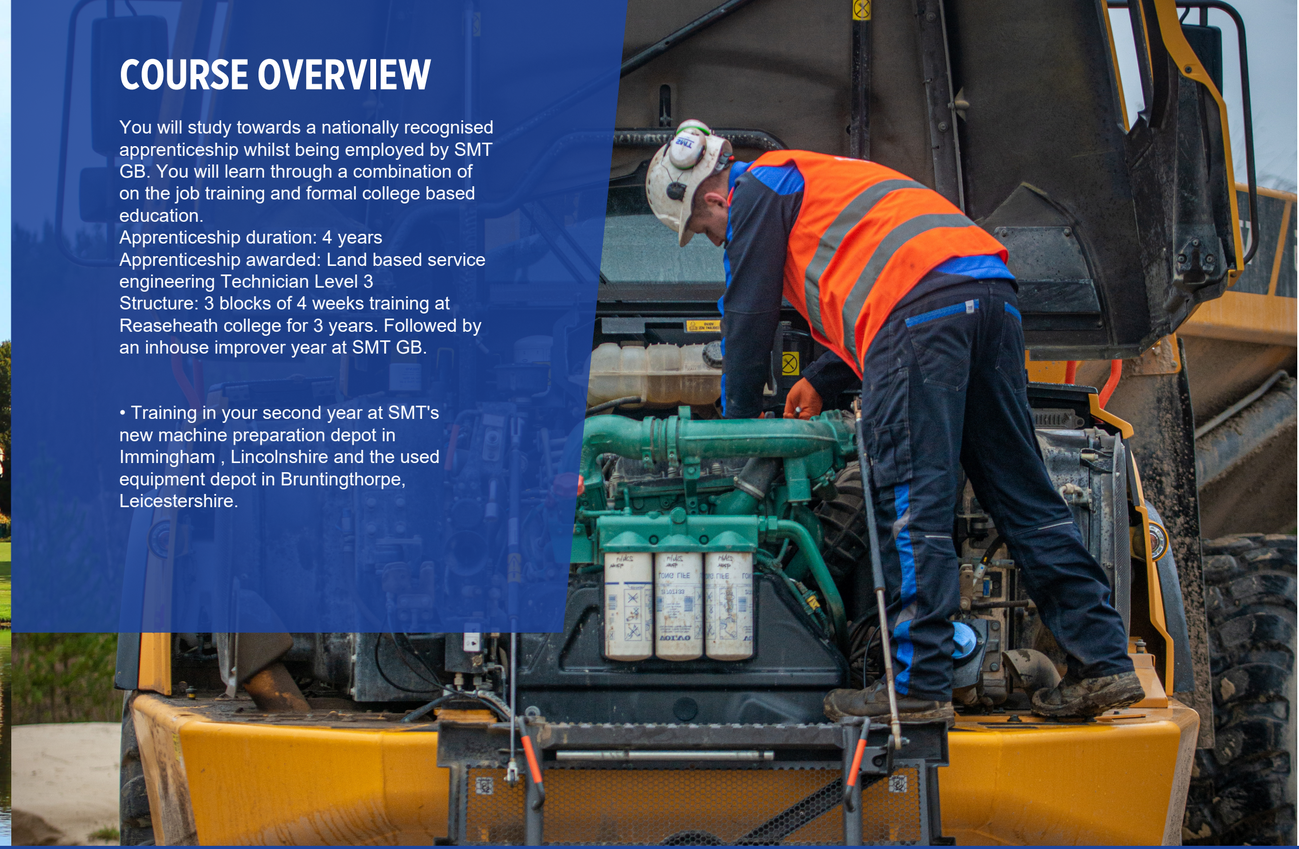
REASEHEATH COLLEGE

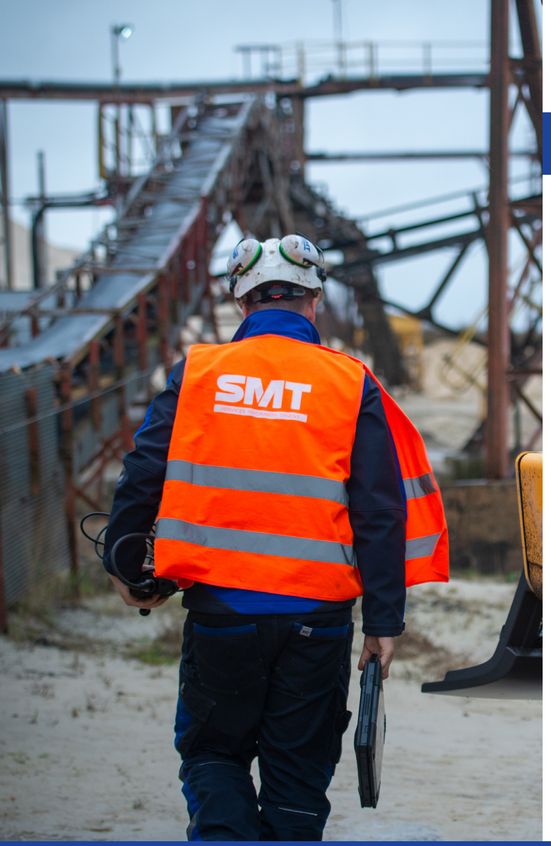
Reaseheath College is one of the UK's leading specialist land-based colleges based in Nantwich, Cheshire. This college has an excellent reputation for its construction plant engineering courses. It is the perfect partner for SMT GB in delivering the SMT apprenticeship scheme and the perfect place for you to develop your career. Reaseheath College has recently invested £8 million into a brand new Advanced Engineering and Agri-Tech Centre which is one of the most sophisticated education centres of its type in Britain.

COURSE OVERVIEW

You will study towards a nationally recognised apprenticeship whilst being employed by SMT GB. You will learn through a combination of on the job training and formal college based education.
Apprenticeship duration: 4 years
Apprenticeship awarded: Land based service engineering Technician Level 3
Structure: 3 blocks of 4 weeks training at Reaseheath college for 3 years. Followed by an inhouse improver year at SMT GB.

• Training in your second year at SMT's new machine preparation depot in Immingham , Lincolnshire and the used equipment depot in Bruntingthorpe, Leicestershire.





YEAR ONE

Block One

Reaseheath College

- Health & Safety
- Introduction to equipment
- Fundamentals of electrics and electrical principles
- Machine servicing and daily checks
- Introduction to compression ignition engines.

SMT GB Training Academy

- Introduction to SMT
- Welcome to the apprentice programme
- Duxford depot tour
- Machine familiarisation and overview of Volvo CE products.

Block Two

Reaseheath College

- Engine lubrication systems
- Engine cooling systems
- Introduction to common rail fuel systems
- Engine compression and cylinder leakage testing
- PDI process and use of dynometer to test engine performance
- Introduction to hydraulic control valves
- Principles of electric motors.

Block Three

Reaseheath College

- Vehicle transmissions and drivelines
- Mechanical transmissions systems
- Axles
- Axle repair, set-up and adjustment
- Introduction to hydraulic systems
- Electrical schematics
- Electrical and electronic components.

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YEAR TWO

Block Four

Reaseheath College

- Welding and fabrication exercises
- Engineering materials
- Principles of steering systems
- Introduction to hydraulic schematics
- Hydraulic pressure relief valves
- Load sensing hydraulic system
- Suspension systems
- Principles of CAN bus systems.

SMT GB Training Academy

- Introduction to Volvo hydraulic systems
- Principles of hydraulic systems used on Volvo machines
- Volvo hydraulic schematics and symbols
- Function and operation of volvo hydraulic components.

Block Five

Reaseheath College

- Transmission systems
- Semi and full power-shift gearboxes
- Volvo transmission disassemble, setup and rebuild
- Continuously Variable Transmission (CTV) systems
- Hydrostatic transmissions
- Braking systems
- Oil immersed braking systems
- Welding and fabrication exercises.

SMT GB Training Academy

- Introduction to Volvo electrics
- Principles of basic electrical circuits
- Function of:
- Batteries
- Starting circuits
- Charging circuits
- Volvo CAN bus systems.
- ECU fault finding
- Use of Volvo diagnostic equipment
- Use of Volvo wiring diagrams to fault find basic electrical circuits.

Block Six

Reaseheath College

- Electrical and electronic systems
- Service department procedures and practices, e.g. warranty reporting and customer service skills
- Application machinery
- Thermal cutting
- Arc and MIG welding.

SMT GB Training Academy

- Volvo engine introduction
- Overview of Volvo engine range
- Principles of diesel engines
- Dismantle and rebuild Volvo engines
- Introduction to engine emission control
- Exhaust gas recirculation systems
- Variable geometery turbochargers
- Engine After Treatment Systems.

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YEAR THREE

Block Seven

Reaseheath College

- Identify the function and operation fuel, ignition, air and exhaust components and systems.
- identify broken or heavily worn components, remove and replace.

SMT GB Training Academy

- Describe the engine features specific for the crawler excavator
- Principles of machine type electrical and electronic systems
- Function of the swing and travel system
- Design and structure of excavator frames Function and operation of A/C-systems
- Describe the Volvo hydraulic systems and relevant components
- Investigate the Volvo smart view system.

Block Eight

Reaseheath College

- GPS auto guidance setup and use
- Electronic system operation and fault finding
- Hydraulic system diagnostics and fault finding
- CAN bus fault finding
- Electro-hydraulic systems
- Common rail fuel system fault finding.

SMT GB Training Academy

- Introduction to Volvo transmissions
- Principles of Volvo drivetrains and components
- Function of torque convertors
- Synchro shuttle and power-shift gearboxes, Volvo axles
- Dismantle and rebuild Volvo gearboxes
- Transmission stall testing
- Hydraulic clutch pack pressure testing
- Disassemble, rebuild and setup of Volvo axles.

Block Nine

Reaseheath College

- Preparation assessments
- End-point assessments.

SMT GB Training Academy

- Principles of emission regulation on Volvo diesel engines
- Selective Catalyst Reduction (SCR) system DEF dosing system operation and testing
- Engine de-rate regulations
- Use of Volvo TechTool to monitor and diagnose emission system faults.

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