

Standard

L3: Lift Truck and Powered Access Engineering Technician

UOS reference number

ST0387

Title of occupation

Lift Truck and Powered Access Engineering Technician

Core and options

No

Resubmission

No

Level of occupation

Level 3

Route

Engineering and Manufacturing

Typical duration of apprenticeship

48 months

Target date for approval

29 March 2019

Occupational profile

Summary

Fork Lift and Powered Access Engineers can be found in many sectors, wherever businesses need to lift and move products, equipment and people safely. This is vital to a huge range of industries including: engineering, manufacturing and construction, food manufacturing and the storage & logistics industries.

The broad purpose of the occupation is to service, repair and maintain lift trucks and powered access vehicles. This can include manual, electric, diesel, LPG, and hybrid powered machines both tracked and wheeled, vertical mast type machines both static and self-propelled along with equipment mounted on vehicles. This can take place in a range of locations such as at a workshop, repair centre, warehouse, foundry, cold-store, manufacturing plant, engineering, construction site, storage & logistics site or any field service environment including customer's premises, so some Fork Lift and Powered Access Engineers work from their own mobile units. Many companies require staff to work shifts, which can mean that their weekly hours involve working nights, weekends, and bank holidays.

In their daily work, an employee in this occupation interacts with supervisors, warehouse staff, colleagues and customers.

An employee in this occupation will be responsible for inspecting and maintaining vehicles/equipment as well as diagnosing and repairing faults. They are in direct contact with customers and are required to understand and meet customer requirements, providing a high

standard of customer care.

Typical job titles

Typical job titles include Fork Lift Truck Engineer, Powered Access Equipment Engineer.

Duty	Criteria for measuring performance	Knowledge	Skills	Behaviours
D1: Repair or replace faulty electrical / electronic, mechanical, and hydraulic parts.	<ul style="list-style-type: none"> Delivered in line with specification, timescales and cost, to industry standard. 	K1, K2, K3, K4, K5, K6, K7, K8, K9, K10, K11, K13	S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S11, S12, S13, S14, S15, S16, S17	B1, B2, B3, B4, B5, B6, B7, B8
D2: Carry out scheduled servicing/safety checks on all vehicle/unit applications where applicable.	<ul style="list-style-type: none"> Delivered in line with specification, timescales and cost, to industry standard. 	K1, K2, K3, K4, K5, K6, K7, K8, K9, K10, K11, K13	S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S11, S12, S13, S14, S15, S16, S17	B1, B2, B3, B4, B5, B6, B7, B8
D3: Carrying out pre-delivery inspections, test and make any final adjustments in accordance with manufacturers recommendations , identifying problems, or fine-tuning performance, using a laptop or hand-held diagnostic equipment.	<ul style="list-style-type: none"> Delivered in line with specification,timescales and cost, to industry standard. 	K1, K2, K3, K4, K5, K6, K7, K8, K9, K10, K11, K13	S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S11, S12, S13, S14, S15, S17	B1, B2, B3, B4, B5, B6, B7, B8
D4: Maintain, diagnose, and repair internal combustion engines, engine management systems and fuel systems to include liquid petroleum, gas (lpg) and diesel fuel injection.	<ul style="list-style-type: none"> Delivered in line with specification, timescales and cost, to industry standard. Equipment maintained to good working order Issues correctly diagnosed 	K1, K2, K3, K4, K5, K6, K7, K8, K9, K10, K11, K13	S1, S2, S3, S4, S5, S6, S7, S8, S10, S11, S12, S13, S14, S15, S16, S17	B1, B2, B3, B4, B5, B6, B7, B8
D5: Maintain, repair, and diagnose drive trains, including, hydrostatic transmissions, final drive units and ac/dc drive motors, drive controllers and battery systems.	<ul style="list-style-type: none"> Delivered in line with specification, timescales and cost, to industry standard. 	K1, K2, K3, K4, K5, K6, K7, K8, K9, K10, K11, K13	S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S11, S12, S13, S14, S15, S16, S17	B1, B2, B3, B4, B5, B6, B7, B8
D6: Maintain, adjust, and repair complex mast/ boom configurations including lift chains, in accordance with manufacturers recommendations and relevant legislation.	<ul style="list-style-type: none"> Delivered in line with specification, timescales and cost, to industry standard. 	K1, K2, K3, K4, K5, K6, K7, K8, K9, K10, K11, K13	S1, S2, S3, S4, S5, S7, S11, S12, S13, S14, S15, S17	B1, B2, B3, B4, B5, B6, B7, B8
D7: Maintain and test emergency descent functions in accordance with the manufacturers recommendations.	<ul style="list-style-type: none"> Delivered in line with specification, timescales and cost, to industry standard. 	K1, K2, K3, K4, K5, K6, K7, K8, K9, K10, K11, K13	S1, S3, S4, S11, S12, S13, S14, S15, S17	B1, B2, B3, B4, B5, B6, B7, B8
D8: Respond to breakdowns, diagnose faults and carry out regular services.	<ul style="list-style-type: none"> Delivered in line with specification, timescales and cost, to industry standard. 	K1, K2, K3, K4, K5, K6, K7, K8, K9, K10, K11, K13	S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S11, S12, S13, S14, S15, S16, S17	B1, B2, B3, B4, B5, B6, B7, B8

Duty	Criteria for measuring performance	Knowledge	Skills	Behaviours
D9: Complete all paperwork (hard copy or electronic) with the relevant and required information and within the specified timescale using all support including it as necessary. this will include clear identification of part numbers, order numbers, times and dates, recommended further action and customer commentary.	<ul style="list-style-type: none"> Paperwork completed in accordance with company policy and within agreed timescales. Records are accurately maintained. 	K1, K9, K11, K13	S15, S17	B1, B2, B3, B5, B6, B7, B8
D10: Maintain stock levels to maximise efficiency and communicate additional requirements in a clear manner to the staff responsible for ordering parts.	<ul style="list-style-type: none"> Stock levels are maintained to appropriate level and within budget (no shortage of stock, but no over-stocking). 	K2, K11, K12, K13	S14, S15, S16, S17	B2, B3, B6, B7, B8
D11: Ensuring health & safety policy and procedures are adhered to.	<ul style="list-style-type: none"> In compliance with appropriate procedures, guidance and legislation. Health and safety rules applied. Any incidents / risks identified, reported and recorded correctly. 	K1, K2, K3, K4, K5, K6, K7, K8, K9, K10, K11, K13	S1, S2, S4, S5, S6, S7, S8, S9, S10, S11, S12, S13, S14, S15, S17	B1, B2, B3, B4, B6, B7, B8
D12: Keep manager updated with progress and notify them of potential problems with customers and their future requirements in a timely manner, using appropriate methods e.g. email, telephone.	<ul style="list-style-type: none"> Delivered in line with company expectations. 	K1, K8, K9, K11, K13	S14, S15, S17	B1, B2, B3, B4, B7, B8
D13: Keep the customer and colleagues informed about the progress of the service or repair and any follow-up work required.	<ul style="list-style-type: none"> Timely communications in line with company policy. Language and tone is appropriate to the target audience. 	K1, K3, K5, K8, K9, K11, K13	S15, S17	B1, B2, B3, B4, B7, B8
D14: Maintain the company image, be polite and courteous to all customers. keep equipment and appearance/uniform clean and in good order. always attend site well presented to project a professional image.	<ul style="list-style-type: none"> Language and tone are appropriate for target audience. Delivered in line with company expectations. 	K1, K2, K8, K9, K11, K13	S15, S17	B1, B2, B3, B5, B6, B7, B8

Knowledge

K1: K1. Company and customer policies, rules, and safe working procedures when working in different environments.

K2: K2. Tools and equipment required for each application within the Lift Truck and Powered Access profession. e.g. jacks and blocks, spanners, socket sets, hammer, screwdrivers (various), pliers, multi-meter, oscilloscope, chain gauge, soldering iron, hacksaw, files, taps, vernier, allen keys, torx bits, straps, torque wrench, oil and lubricants, crimps, stanley knife, drill, goggles, ear protectors, safety boots, gloves and overalls.

K3: K3. Fabrication techniques: Soldering / electric & gas welding, electrical, mechanical hydraulic connections & fixings, metal composition, filing, hacksawing, drilling, thread tapping, grinding, and crack detection techniques.

K4: K4. The safety aspects of mechanical, electric, and pneumatic tools, lubricants, and specialist equipment.

K5: K5. The maintenance, testing and maneuvering purposes of Lift Truck and Powered Access machines for operational purposes

K6: K6. Methodical and systematic techniques for logical fault-finding diagnosis and the verification of functionality and performances of complex Lift Truck and Powered Access machines.

K7: K7. Lift Truck and Powered Access machines on-board diagnostics and communication systems and how to set the machine characteristics to meet customer specific requirements within the machines working parameters.

K8: K8. The relevant Health and Safety legislation and regulations relating to diagnostics, repair, maintenance and operation of Lift Truck and Powered Access machinery and equipment.

K9: K9. Manufacturers' specifications and customers' requirements and the process to access, interpret and apply the information gained from them.

K10: K10. Principles of electrical, electronic, mechanical, and hydraulic engineering and components and how to apply them to the operation, repair and diagnostics procedures on all types of complex Lift Truck and Powered Access machines.

K11: K11. Methods of communication and when and how to apply them appropriately, including customer care techniques.

K12: K12. Principles of stock control.

K13: K13. How to maintain clear and accurate records, and why this is important.

Skills

S1: S1. Carry out safe jacking and blocking procedures; correctly selecting and using lifting and blocking equipment (toe / hydraulic jacks & blocks).

S2: S2. Use correct lifting equipment when removing heavy Lift Truck and Powered Access machine components (chains, slings, shackles) and follow working at height procedures in compliance with appropriate health & safety legislation.

S3: S3. Interpret Lift Truck and Powered Access machine electrical, mechanical, and hydraulic

schematic diagrams, flow charts and manufacturers' technical data to verify correct systems functionality.

S4: S4. Perform detailed preventative maintenance activities on complex Lift Truck and Powered Access machines in compliance with manufacturers' specifications.

S5: S5. Check, diagnose and repair electrical/electronic, mechanical, and hydraulic systems, including: 12/24/48/-volt lead acid and lithium-ion batteries.

S6: S6. Diagnose and rectify machine charging systems, electrical / electronic wiring / safety circuits.

S7: S7. Diagnose and rectify motor control circuits, drive circuits, lift and steer circuits.

S8: S8. Test and interpret Control Area Network (CAN Bus) diagnosis.

S9: S9. Check diagnose and repair braking and steering systems.

S10: S10. Maintain, install & repair machine telematics.

S11: S11. Check, repair and diagnose hydraulics components using schematics, pressure gauges, flow meters and on-board computer / laptop programmes.

S12: S12. Diagnose and repair hydraulic/electrical proportional control valves and perform breakout calibration of individual valves.

S13: S13. Calibrate electronic controllers and recognise the importance of safety devices and systems.

S14: S14. Make the required parameter adjustments in compliance with manufacturers' specifications, customer requirements, industry directives and relevant health & safety legislation.

S15: S15. Prepare and maintain accurate records of all work undertaken in accordance with company and manufacturer's requirements.

S16: S16. Check and maintain stock to there are no shortages of parts and equipment and no surplus causing undue cost to the business.

S17: S17. Politely, keep customers and colleagues informed of progress and any difficulties in relation to work on hand, using the level of technical language appropriate to the audience, offering alternative solutions where required.

Behaviours

B1: B1. Safety Culture Conscious: Recognises this is a hazardous industry and adheres to a disciplined approach in maintaining a safe environment.

B2: B2. Work Ethic: Positive work principles, reliable, flexible, diligent, and trustworthy.

B3: B3. Commitment to industry values: Committed to complying with employer and industry standards.

B4: B4. Willingness to learn: Actively involved in undertaking continuous professional development (CPD).

B5: B5. Motivation: Thrives on challenges, uses own initiative, sets targets and achieves goals.

B6: B6. Adaptability: Positive to changing situations, technologies and working environments.

B7: B7. Personal Responsibility: Driven to succeed, motivated to complete a task.

Knowledge, skills and behaviours (continued)

B8: B8. Adheres to Codes of Conduct: Company ambassador, polite; wears corporate work clothing; good personal hygiene; maintains company property; keeps vehicle clean; leads by example, demonstrates 'can do!' attitude.

Duty	Training requirement	Method of delivery	Provider type	OTJ days
D1: Repair or replace faulty electrical / electronic, mechanical, and hydraulic parts.				0
D2: Carry out scheduled servicing/safety checks on all vehicle/unit applications where applicable.				0
D3: Carrying out pre-delivery inspections, test and make any final adjustments in accordance with manufacturers recommendations , identifying problems, or fine-tuning performance, using a laptop or hand-held diagnostic equipment.				0
D4: Maintain, diagnose, and repair internal combustion engines, engine management systems and fuel systems to include liquid petroleum, gas (lpg) and diesel fuel injection.				0
D5: Maintain, repair, and diagnose drive trains, including, hydrostatic transmissions, final drive units and ac/dc drive motors, drive controllers and battery systems.				0
D6: Maintain, adjust, and repair complex mast/boom configurations including lift chains, in accordance with manufacturers recommendations and relevant legislation.				0
D7: Maintain and test emergency descent functions in accordance with the manufacturers recommendations.				0
D8: Respond to breakdowns, diagnose faults and carry out regular services.				0
D9: Complete all paperwork (hard copy or electronic) with the relevant and required information and within the specified timescale using all support including it as necessary. this will include clear identification of part numbers, order numbers, times and dates, recommended further action and customer commentary.				0

Example training specification (continued)

Duty	Training requirement	Method of delivery	Provider type	OTJ days
D10:	Maintain stock levels to maximise efficiency and communicate additional requirements in a clear manner to the staff responsible for ordering parts.			0
D11:	Ensuring health & safety policy and procedures are adhered to.			0
D12:	Keep manager updated with progress and notify them of potential problems with customers and their future requirements in a timely manner, using appropriate methods e.g. email, telephone.			0
D13:	Keep the customer and colleagues informed about the progress of the service or repair and any follow-up work required.			0
D14:	Maintain the company image, be polite and courteous to all customers. keep equipment and appearance/uniform clean and in good order. always attend site well presented to project a professional image.			0

Additional information

Entry requirements

No entry requirements specified

Professional recognition

Professional body	Level
Institute of the Motor Industry	Level 3 recognition
Institute of Engineering and Technology (IET)	Engineering Technician
Institute of Mechanical Engineers (IMechE)	Engineering Technician