

Electrification Skills Plan 2021
Automotive Manufacture

Unit 2: Carry out the Isolation / Lockout and Re-energising of Automotive Electric Vehicles

Includes essential knowledge of the hazards associated with electric and hybrid vehicles, the precautions to follow to avoid these hazards and an understanding of the operating principles of these vehicles. It enables the learner to understand how to safely isolate and reinstate the high voltage system.

Level: L2/3 (Ofqual) or equivalent.	Credit Size TBC	Version: 1
Suitable for: People who work on, or near, electric vehicles and would be involved in commissioning (making live) vehicles following production or for the isolation of vehicles, such as assembly technicians, vehicle inspectors, and body refinishers	Indicative Learning Hours 35	Created: 01/02/2021
Prerequisites: Individuals will already have appropriate vehicle assembly knowledge and skills at level 2	Indicative Contact Hrs 25	Revised:
	Indicative Self-Directed Study Hrs. TBC	

Learning Outcomes (LO):
 On completion of unit learners will:

1. Be aware of and complies with safety procedures and policies (26 &52) (K&S)
2. Know and understand the different types of electric and electric/hybrid light vehicle, associated technology, components and operating principles (K)
3. Know, and be able to recognise, high voltage components as used in vehicle high voltage systems (46) (K) (MF)
4. Correctly state how to isolate/lockout and re-energise electric/hybrid light vehicles (K)
5. Demonstrate safe isolation/lockout and re-energising of electric/hybrid light vehicles (S)

Assessment
 Knowledge and skills

Suggested format
 Critical for this programme is skills assessment, via observation, of the isolation and re-energising procedure which needs to be closely observed in a controlled environment. The knowledge would be assessed through e-assessment multiple choice questions, with some consideration given to whether contextualisation is needed to ensure specific safety requirements of a manufacturer (if this is the case, this could be included via oral questioning as part of the skills assessment as this is likely to be completed on manufacturer specific product). The Lucas Nuelle training rig also allows the skills assessment for isolation and re-energising procedure to be completed following the same steps that you would on an actual vehicle.

Core Subjects	Potential Curriculum Coverage (initial mapping shows some matches to high level statements)	Currently Delivered By
Safety policy and procedures	Likely to be specific to the manufacturer and could be included for delivery within the qualifications below.	Manufacturer training, and via the qualifications below
Understanding the risks, types of electric vehicle, understanding isolation and re-energise processes and demonstration of skills	IMI - Level 2 Award in Electric/Hybrid Vehicle Routine Maintenance Activities	IMI Centres
	IMI - Level 2 Award in Preparing Heavy Electric/Hybrid Vehicles for Repair	IMI Centres
	ABC - Level 2 Award in the Service and Repair of Electrically Propelled Light Vehicles	ABC Centres
	ABC - Level 2 Award in the Service and Repair of Electrically Propelled Buses and Coaches	ABC Centres
	ABC - Level 2 Award in the Service and Repair of Electrically Propelled Commercial HGV Vehicles	ABC Centres
	This is covered by the retired EAL unit QMVEDS2/001 which is contained within Level 2 Diploma in Manufacture of vehicles with electric drive systems	Not currently delivered
	Lucas Nuelle - 'Diagnostics and maintenance for high- voltage vehicle batteries' - Safe Handling of High Voltage Systems	Delivered globally as part of the LN electric vehicle offer

Additional information and recommendations
 Although the qualifications offered by IMI and ABC cover many of the requirements, these should be updated and contextualised to meet the requirements of the manufacturing sector. This would involve a review of the terminology used and the suitability of the assessment criteria, indicative content and associated assessments. EAL have a qualification unit with similar LOs (but with a manufacturing context), however this is a retired qualification. EAL may consider updating this unit and submitting to the Ofqual register.