

**Level:** L3/4 (Ofqual) or equivalent.  
**Suitable for:** Individuals who work on electric vehicles and would be responsible for removing and replacing high voltage electrical components following production where faults have been identified  
**Prerequisites:** Individuals will already have appropriate vehicle assembly and repair knowledge and skills at level 2 and must have first completed the programme *Carry out the isolation/lockout and re-energising of Automotive Electric Vehicles*

**Credit Size** TBC  
**Indicative Learning Hours** 25 - 40 (depending on AO units used)  
**Indicative Contact Hrs** 30 (estimate)  
**Indicative Self-Directed Study Hrs.** 5 (estimate)

**Version:** 1  
**Created:** 01/02/2021  
**Revised:**

**Learning Outcomes (LO):**

On completion of unit learners will:

1. Know how to carry out repairs on high energy electrical systems (K)
2. Be able to select and use appropriate information, tools and equipment to carry out the task (S)
3. Demonstrates the ability to work safely on an electric/hybrid vehicle (S)
4. Carry out repairs on high energy electrical systems correctly (S)
5. Be able to record information detailing the repair in line with company processes (S)
6. Understand the required safety protocols when working with high voltage systems. (derived from 45) (K) (MF) Identify high voltage components and assemble these into a high voltage systems (46) (S) (MF)

**Assessment**

Knowledge and skills, with a workplace observation

**Suggested format**

Critical for this programme is skills assessment, via observation, of the isolation and re-energising procedure, ahead of component replacement, which needs to be observed in a controlled environment (and is also contained within the pre-requisite programme). Following isolation, the learner would replace a high voltage component in line with manufacturer procedures and re-energise the vehicle. 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)

Core Subjects	Potential Curriculum Coverage (initial mapping shows some matches to high level statements)	Currently Delivered By
How to carry out repairs/replacement on non live systems	IMI - Level 3 Award in Electric/Hybrid Vehicle System Repair and Replacement	IMI Centres
	ABC -Service and Repair of Electric and Hybrid Vehicles	ABC Centres
	This is partially covered by the <b>retired EAL unit QMVEDS2/013</b> which is contained within Level 2 Diploma in Manufacture of vehicles with electric drive systems, and will require some adaptations	Not currently delivered

**Additional information and recommendations**

Although the qualifications offered by IMI and ABC cover much 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.