

Specification of Competency Standards
for the Automotive Industry
Unit of Competency

Functional Area - Vehicle Servicing

Title	Conduct fault diagnosis on electric and hybrid vehicles
Code	108699L3
Range	This unit of competency is applicable in vehicle servicing workshops. Practitioners should be masterly able to conduct fault diagnosis on electric vehicles and conduct or arrange rectification according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environment, occupational safety and health regulations. They should also be able to conduct system tests and providing written report upon completion of work.
Level	3
Credit	3 (For Reference Only)
Competency	<p>Performance Requirements</p> <p>1. Knowledge (Structure and operating principles of electric and hybrid vehicles)</p> <ul style="list-style-type: none"> • Good understanding of the structure and operating principles of various types of electric and hybrid vehicles. • Understand the fault diagnosis procedure for electric and hybrid vehicles with reference to instructions in the vehicle manufacturer's service manual. • Good understanding of the hazards and safety rules of the electric-driven system of electric and hybrid vehicles. • Master the operation of various types of diagnostic and testing instruments and equipment, such as on-board diagnostic systems. • Good understanding of the disposal and recovery procedure for batteries according to the requirements of environmental protection regulations. • Understanding of the relevant legal requirements on road and vehicle safety and environment protection. <p>2. Performance (Conduct fault diagnosis on electric and hybrid vehicles)</p> <ul style="list-style-type: none"> • Conduct fault diagnosis on electric and hybrid vehicles according to the instructions in the vehicle manufacturer's service manual and safety rules as well as the requirements of occupational safety and health and environmental protection, including the use of special equipment and instruments, such as using hand held testers and chassis dynamometers to assist the diagnosis of system components, included: <ul style="list-style-type: none"> ○ Electric systems, ○ Charging systems, ○ Control systems and ○ Mechanical structure • Conduct or arrange rectification of defects found according to diagnostic results. • Test various types of electric and hybrid vehicles accurately and confirm that rectification is done, such as conduct tests by using instruments and equipment. • Conduct performance and safety inspection after the work and provide written report focusing on: <ul style="list-style-type: none"> ○ Abnormalities ○ Measured data ○ Major decisions • Correctly handle the disposal and recovery of battery according to the requirements of environmental protection regulations.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is:

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	<ul style="list-style-type: none">• Capable of accurately conducting fault diagnosis on electric and hybrid vehicles according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environment, occupational safety and health regulations;• Capable of conducting or arranging rectification of defects according to diagnostic results;• Capable of testing various types of electric vehicles accurately and providing written report; and• Capable of handling the disposal and recovery of various types of batteries correctly with compliance to the requirements of environmental protection regulations.
Remark	The credits value of this unit of competency is set on the presumption that the practitioner concerned has already possessed basic knowledge of repairing various types of vehicle mechanical and electric systems.