Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Conduct fault diagnosis and repair on the low-voltage battery, charging and starting systems of combustion engine vehicles
Code	111704L3
Range	This unit of competency is applicable in vehicle service workshops. Practitioners should be able to check the condition of the low-voltage vehicle battery, conduct diagnoses on vehicle charging and starting systems and repair associated faults according to the instructions in the vehicle manufacturer's servicing manual and the relevant requirements on environment, occupational safety and health regulations. They should also be able to conduct system tests and evaluations, and provide work report upon completion of work.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and operating principles of low-voltage vehicle battery, charging and starting systems) • Good understanding of the structure and operating principles of battery, charging and starting systems. • Good understanding of electrical and electronic theories and also the principles of electric power transfer and electric power generation. • Good understanding of general electrical/electronic tools and instruments. • Good understanding of the handling procedure for low-voltage vehicle batteries, their possible impact and danger on occupational safety and health as well as environmental protection. • Master the inspection and maintenance procedures for low-voltage vehicle battery, charging and starting systems according to the requirements stated in the vehicle manufacturer's servicing manual. 2. Performance (Conduct fault diagnosis and repair on low-voltage vehicle battery, charging and starting systems) • Independently check and repair the faults found in the vehicle battery, charging and starting systems according to the information in the vehicle manufacturer's service manual and the requirements of occupational safety and health as well as environmental protection. • Select appropriate tools and instruments to accurately inspect and measure the vehicle battery, charging and starting systems; analyse and evaluate the faults found in the systems according to the relevant data. • Subject to different faults, conduct checking and repairing work, including dismantling, replacing, reassembling and fine-tuning relevant system components and accessories. • Accurately assess the efficiency of relevant systems upon completion of the checking and repairing work and conduct appropriate follow-up action. • Compare the efficiencies of the low-voltage vehicle battery, charging systems and starting systems upon completion of rectification with the data stated in the vehicle manufacturer's service manual. • Provide work report after confirming that rectification is done.
Assessment Criteria	The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is:

	• Capable of masterfully conducting fault diagnosis on vehicle battery, charging and starting systems according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations; • Capable of conducting or arranging rectification work for relevant systems according to diagnostic results; • Capable of conducting tests of components for comparing with specific specifications upon the completion of rectification; and • Capable of conducting system tests and providing work report upon completion of work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned already possesses a good knowledge of vehicle electrical system servicing. (This UoC replaced108703L3)