Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Conduct fault diagnosis on various liquefied petroleum gas supply and control systems of vehicles
Code	111710L3
Range	This unit of competency is applicable in liquefied petroleum gas vehicle service workshops. Practitioners should be able to masterly conduct complicated fault diagnosis on various liquefied petroleum gas supply and control systems and conduct rectification according to the instructions in the vehicle manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations. They should also be able to conduct system tests and complete simple fault report upon completion of work.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and operating principles of various liquefied petroleum gas (LPG) systems on vehicles) • Comprehend the nature, characteristics, handling and safety precautions of fuel used on LPG vehicles. • Good understanding of the structure and operating principles of various LPG supply and control systems, their sensors and actuators. • With reference to the corresponding vehicle manufacturer's service instructions, understand the fault diagnosis procedures for various fuel supply and control systems, such as using on-board diagnostic tester, exhaust gas analysers, etc., to diagnose system fault. • Master fuel system diagnosis and the operation of testing equipment and instruments, such as gas leakage testers, various types of on-board diagnostic systems, etc. • Good understanding of relevant laws and regulations governing vehicle exhaust emissions. • Good understanding of relevant laws and regulations governing the handling of vehicle LPG, and relevant legal requirements on road and vehicle safety and environmental protection.

	2. Performance (Conduct fault diagnosis on LPG systems on vehicles)
	• Accurately conduct complicated fault diagnosis on various LPG supply and control systems on vehicles according to the instructions in the vehicle manufacturer's service manual and the requirements of occupational health and safety and that of environmental protection, including the use of special equipment and instruments to ensure gas-tightness of the system and assist diagnosis.
	• Conduct or arrange rectification to eliminate the fault according to diagnostic results.
	• Accurately test the fuel systems, including using relevant equipment and instruments to conduct the tests.
	• Conduct performance and safety inspection after the work and provide simple fault report focusing on:
	  ◦ Abnormalities
	  ◦ Measured data
	  ◦ Major decisions
	• Evaluate whether vehicle emissions comply with the local statutory requirements based on measurement results.
	• Safely handle liquefied gas system components according to relevant local statutory requirements.

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 accurately conducting fault diagnosis on various LPG supply and control systems of vehicles, including complicated faults that may lead to rough engine running, degraded power output, emission problems, incorrect fuel injection timing, pressure and metering quantity, etc., with reference 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 rectification according to diagnostic results; • Capable of assessing vehicle emissions correctly according to relevant laws and regulations on vehicle emissions; • Capable of maintaining LPG system components and handling liquefied petroleum gas correctly according to relevant laws and regulations; and • Capable of conducting fuel system tests and completing simple fault report upon completion of work.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned has already possessed comprehensive knowledge of inspecting and repairing various types of LPG supply and control systems of vehicles. The practitioner concerned should be a recognised competent person in liquefied petroleum gas vehicles. The major legislation/rules involved in this unit of competency are as follows: • Road Traffic (Construction and Maintenance of Vehicles) Regulations • Occupational, Health and Safety Ordinance • Gas Safety Ordinance