Specification of Competency Standards
for the Automotive
Unit of Competency

Functional Area - Vehicle Servicing

Title	Check and repair vehicle air-conditioning system components
Code	111730L3
Range	This unit of competency is applicable in vehicle service workshops. Practitioners should be able to independently check and repair the vehicle air-conditioning system components safely according to relevant legislative provisions of Hong Kong and the instructions in the vehicle manufacturer's service manual. They should also be capable of conducting functional tests on components and providing written report upon completion of work.
Level	3
Credit	3 *(For Reference Only)*
Competency	**Performance Requirements** 1. Knowledge (Structure and operating principles of the vehicle air-conditioning system components) • Understand the characteristics of refrigerants for vehicle applications, the relevant handling procedure, safety rules and regulations. • Master the structure and operating principles of vehicle air-conditioning systems, including the major system components. • Good understanding of the refrigerant and heated water circuits of vehicle air-conditioning systems. • With reference to the relevant legislative provisions of Hong Kong and the instructions in the vehicle manufacturer's service manual, a good understanding of the checking and repairing procedures for the vehicle air-conditioning systems and associated components. • Understand the environmental protection regulations and requirements on the recovery of refrigerant. • Understand the relevant legal requirements on occupational safety and health, and environmental protection.

	2. Performance (Check and repair the major components of vehicle air-conditioning systems) • According to the relevant legislative provisions of Hong Kong, the instructions in the vehicle manufacturer's service manual and the requirements of occupational safety and health as well as that of environmental protection, safely check, repair and test the vehicle air-conditioning systems, including: ◦ Apply specific tools and instruments to identify the serviceability of vehicle air-conditioning system components, including condenser, air blower, dryer and flow control components ◦ Identify the problems with the major components, such as compressors and motors, magnetic clutches, expansion valves, dryers, and etc. of the vehicle air-conditioning systems ◦ Rectify or recondition the faulty components of the vehicle air-conditioning system ◦ Use prescribed tools or instruments to accurately test refrigerant leakage in the systems upon the completion of the refrigerant recharging process • Conduct performance and safety inspection after the work and provide written report focusing on: ◦ Abnormalities ◦ Measured data ◦ Major decisions and the effectiveness ◦ Suggestions on the preventive measures and improvement
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 checking and repairing the vehicle air-conditioning system components, such as the compressor, motor, magnetic clutch, air flow control, etc., safely according to the instructions in the vehicle manufacturer's service manual; • Capable of conducting functional tests on the vehicle air-conditioning system and associated components upon completion of rectification; • Capable of checking any refrigerant leakage in vehicle air-conditioning system upon the completion of the refrigerant recharging process, and • Capable of compiling reports covering the inspection results and decisions made to resume normal service conditions, the preventive measures proposal and suggestions for improvement, according to the specific defects found in the respective vehicle air-conditioning system components.
Remark	The credit value of this unit of competency is set on the presumption that the practitioner concerned already possesses comprehensive knowledge of vehicle air-conditioning system servicing as well as refrigerant handling. If the practitioner is serving on electrified vehicles, he/she shall be a recognised competent person in electrified vehicles, such as a registered vehicle mechanic who has completed an electric vehicle – low-voltage training course, or equivalent; the servicing process shall be under the high-voltage system power-down condition and confirmed by the checking result of special service tools/authorised competent person. In the case that the diagnosis or rectification is conducted under the live electric power of high voltage, the practitioner shall possess a recognised competency/qualification, such as the electric vehicle – high voltage training course, or equivalent. (This UoC replaced 108656L2)