# Specification of Competency Standards
# for the Automotive
# Unit of Competency

**Functional Area - Vehicle Servicing**

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| **Title** | Diagnose and rectify vehicle drivetrain faults |
| **Code** | 111722L3 |
| **Range** | This unit of competency is applicable in vehicle servicing workshops. Practitioners should be able to conduct complicated fault diagnosis on the vehicle drivetrains 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 functional tests and fill in simple fault record and provide work report upon completion of work. |
| **Level** | 3 |
| **Credit** | 3 *(For Reference Only)* |
| **Competency** | **Performance Requirements**<br><br>1. Knowledge (Structure and operating principles of various types of vehicle drivetrain)<br>• Master the structure and operating principles of vehicle drivetrains, including mechanical, electrical, hydraulic and pneumatic powered units, their controls and actuation components:<br>◦ Manual and automatic gearbox (including gear and continuously variable transmission)<br>◦ Hubs and bearings<br>◦ Drive shafts and joints<br>◦ Clutch<br>◦ Power take-off (for commercial vehicles only)<br>◦ Differentials (including regular, limited slip and lock types)<br>• Familiar with the functions and applications of diagnostic equipment and special service tools for the vehicle drivetrain and component services<br>• Master the fault diagnosis process for vehicle drivetrains with reference to the instructions in the vehicle manufacturer's service manual, including the faults occur within:<br>◦ Mechanical systems<br>◦ Electrical/electronic control and actuation systems<br>◦ Hydraulic control and actuation systems<br>◦ Pneumatic control and actuation system (for commercial vehicles only)<br>• Identify the types of lubricant and working fluids applied to the systems<br>• Understand relevant legal requirements on road traffic, safety and environmental protection. |

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| | 2. Performance (Diagnose and rectify vehicle drivetrain faults)<br>• Correctly choose and apply the diagnostic equipment and special service tools for the services of the vehicle drivetrain.<br>• Accurately conduct complicated fault diagnosis on vehicle drivetrain, according to the instructions in the manufacturer's service manual and the requirements concerning occupational health and safety and that of environmental protection.<br>• Perform the rectification process for the faulty system / components according to the diagnostic result.<br>• Conduct functional tests and complete a simple fault report.<br>• Conduct performance and safety inspection after work and provide work report, focusing on:<br>  ◦ Abnormalities<br>  ◦ Measuring data<br>  ◦ Major decisions |
| **Assessment Criteria** | The integrated outcome requirements of this unit of competency are that the practitioner being assessed shall prove that he/she is:<br>• Capable of selecting and applying the suitable diagnostic equipment and special service tools for locating the faulty functions and rectifying the faulty system/components of vehicle drivetrains, respectively;<br>• Capable of executing complicated fault diagnosis on vehicle drivetrain faults, including but not limited to traction power loss, abnormal operating noise and vibrations, abnormal gear shifting quality, inaccurate torque and driving speed distributions, according to the instructions in the manufacturer's service manual and the relevant requirements on environmental protection, occupational safety and health regulations;<br>• Capable of conducting rectification according to diagnostic results; and<br>• Capable of executing functional tests and providing work report incorporated with fault record 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 good knowledge of vehicle drivetrains.<br>The major legislation/codes involved in this unit of competency are as follows:<br>• Road Traffic (Construction and Maintenance of Vehicles) Regulations.<br>(This UoC replaced 108700L3 and 108724L3) |