

Specification of Competency Standards
for the Automotive Industry
Unit of Competency

Functional Area - Vehicle Servicing

Title	Master the complicated techniques of steering systems
Code	108736L4
Range	This unit of competency is applicable to technicians working at vehicle servicing and inspection departments. Practitioners should be able to master the effects of steering system, suspension system and wheel alignment on the performance of steering stability, to enhance the efficiency and accuracy of inspection and complicated fault diagnosis.
Level	4
Credit	6 (For Reference Only)
Competency	<p>Performance Requirements</p> <p>1. Knowledge (Relevant steering systems)</p> <ul style="list-style-type: none"> • Master the importance of Ackermann Principle of steering. • Master the structure, functions, operating principles and specification of various types of power-assisted steering systems (including related components). • Understand the structure, functions and operating principles of the steering systems for dual-front axle vehicles, such as the relation between the steered angle of wheels and steering linkages. • Good understanding of the structure, functions and meanings of markings of different types of tyres and rims. • Good understanding of the importance of wheel balance, and the method to balance wheels. • Master the function, importance, special characteristic and application of tread patterns. • Good understanding of the important and related factors affecting the steering stability of vehicle, including the steered angles of wheels. • Master the definition, functions, related factors, operating principle and specification of wheel off-sets. • Good understanding of the apply forces exerted on steered wheels and the impact on steering stability, including neutral steer, oversteer, understeer and side slide of vehicle. • Good understanding of the impacts of suspension systems on steering stability. • Good understanding of the relation between the steered angle of wheels and side slide. <p>2. Performance (Inspection, fault diagnosis and analysis on steering system and driving control)</p> <ul style="list-style-type: none"> • Conduct inspection, fault diagnosis and analysis procedures according to the fault symptoms (including recurrent or intermittent defects) of steering systems and related components. • Conduct inspection, fault diagnosis and analysis procedures according to the respective fault symptoms of wheel alignment. • Conduct inspection or fault diagnosis procedures according to symptoms of instability (including recurrent or intermittent phenomena) when high speed cornering. • Review the causes of defects and diagnostic methods; submit report to seniors covering preventive measures, instructions on inspection and maintenance as well as suggestions for improvement. • Ascertain the applicability of tread pattern and depth according to respective legislative requirements.
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 mastering the structure, functions and operating principles of various types of steering systems (including related components) to enhance the efficiency and accuracy of inspection and complicated fault diagnosis;• Capable of mastering the principle of vehicle steering as well as the impact of suspension systems, tyres and wheel alignment on steering stability to solve the complicated technical problems of abnormal wear of tread pattern and vehicle side slide, etc., effectively and accurately; and• Capable of compiling reports covering preventive measures, instructions on inspection and maintenance as well as providing suggestions for improvement, etc. according to the defects relating to steering stability.
Remark	The credit for this competency unit assumes that the practitioner already has possessed extensive knowledge of automotive, vehicle repair and testing procedures.