Title: Identify the general locations and functions of motor vehicle systems and main components

Level: 2
Credits: 4

Purpose:
This theory-based unit standard is for people who wish to enter or are employed in the motor industry. People credited with this unit standard are able to identify the locations and layouts of systems and main components on motor vehicles, and demonstrate knowledge of the functions of motor vehicle systems and their main components.

Classification:
Motor Industry > Automotive Preventive Maintenance

Available grade:
Achieved

Explanatory notes:
1. Evidence presented for assessment against this unit standard must be consistent with safe working practices and be in accordance with applicable manufacturer’s specifications, service information, company and legislative requirements (this includes the knowledge and/or use of suitable tools and equipment).

2. Definitions
   - *Company requirements* refer to instructions to staff on policy and procedures which are documented in memo or manual format and are available in the workplace. These requirements include but are not limited to – company specifications and procedures, work instructions, manufacturer specifications, product quality specifications and legislative requirements.
   - *Service information* may include but is not limited to – technical information of a vehicle, machine, or product detailing operation; installation and servicing procedures; manufacturer instructions and specifications; technical terms and descriptions; and detailed illustrations. This may be accessed from the manufacturer.
   - *Suitable tools and equipment* means industry approved tools and equipment that are recognised within the industry as being the most suited to complete the task in a professional and competent manner with due regard to safe working practices.

Outcomes and evidence requirements

Outcome 1

Identify the locations and layout of systems and main components on motor vehicles.

Range: car, heavy commercial vehicle, motorcycle.
Evidence requirements

1.1 Layout of the engine’s main components is identified.

Range cylinder block and/or barrel, cylinder head.

1.2 Locations of the drive train and transmission systems on vehicles and layout of its main components are identified.

Range manual clutch assembly, manual transmission, torque converter (car, heavy commercial vehicle only), automatic transmission (car, heavy commercial vehicle only), driveline, final drive assembly.

1.3 Layouts of body and chassis components on vehicles are identified.

Range sub-frames, chassis members, seats and interior trim, bumpers, body panels, (car, heavy commercial vehicle only).

1.4 Layout of braking system components on vehicles is identified.

Range brake pedal assembly, master cylinder, brake booster, brake lines, disc and drum brake assemblies.

1.5 Location of steering system assemblies on vehicles and layout of their main components are identified.

Range steering column assembly (car, heavy commercial vehicle only) front fork assembly (motorcycle only), steering box (car, heavy commercial vehicle only), steering rack (car, heavy commercial vehicle only), steering linkage assembly, wheel hubs.

1.6 Location of suspension systems on vehicles and layout of their main components are identified.

Range springs, pivots and ball joints, shock absorbers, stabilisers.

1.7 Locations of electrical systems components on vehicles are identified.

Range battery, wiring loom, alternator, starter motor, headlights, sidelights, tail lights, stop lights, indicator lights.

1.8 Location and layout of fuel system components on vehicles are identified.

Range carburettor, intake manifold, fuel pump, fuel injection pump assembly, injectors, fuel filters, air filter.

1.9 Locations of engine cooling system components on vehicles are identified.

Range direct air – air ducting, fan assembly; indirect air – radiator, thermostat, water pump, fan assembly.

Outcome 2
Demonstrate knowledge of the functions of motor vehicle systems and their main components.

**Evidence requirements**

2.1 The function of the engine and each of its main components are described.

Range cylinder block and/or barrel, cylinder head.

2.2 The function of the drive train and transmission and each of their main components are described.

Range manual clutch assembly, manual transmission, torque converter, automatic transmission, driveshaft (propeller shaft), axle, final drive assembly.

2.3 Functions of braking system components are described.

Range master cylinder, brake booster, disc and drum brake assemblies, parking brake.

2.4 Functions of steering system components are identified.

Range steering column assembly, steering box, steering rack, steering linkage assembly, wheel hubs.

2.5 Functions of suspension system components are identified.

Range springs, pivots and ball joints, shock absorbers, stabilisers.

2.6 Functions of electrical system components are identified.

Range battery, wiring loom, alternator, starter motor, headlights, sidelights, tail lights, stop lights, indicator lights.

2.7 Functions of fuel system components are identified.

Range carburettor, fuel injection pump, fuel pump, injector, fuel filter, air filter.

2.8 Functions of engine cooling system components are identified.

Range radiator, thermostat, water pump, fan.

2.9 Functions of body and chassis components on vehicles are identified.

Range sub-frames, chassis members, seats and interior trim, bumpers, glass, body panels (car, heavy commercial vehicle only).
Planned review date | 31 December 2021

Status information and last date for assessment for superseded versions

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Consent and Moderation Requirements (CMR) reference | 0014


Please note

Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMRs). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

Comments on this unit standard

Please contact the MITO New Zealand Incorporated info@mito.org.nz if you wish to suggest changes to the content of this unit standard.