

Domain AUTOMOTIVE MECHATRONICS**Title: Maintain chassis and suspension systems****Level: 3****Credits: 8****Purpose**

This unit standard is intended for those who maintain chassis and suspension systems. People credited with this unit standard are able to describe construction of different types of chassis, describe different types of suspension systems, inspect chassis and suspension system, replace shock absorbers and dampers, replace springs, service electronically controlled suspension, service McPherson suspensions, service air suspensions system, and service maintain independent front and rear suspensions

This unit standard is intended for those who work in automotive mechatronics environment.

Special Notes

1. Entry information

Prerequisite

- *none*

2. This unit standard is to be assessed in the context of industrial safety operations and should be assessed in conjunction with other relevant technical unit standards selected from this domain.

3. Assessment evidence may be collected at a real workplace or simulated workplace in which safety operations are carried out.

4. Glossary of terms:

- '*specifications*' refers to any, or all the following: manufacturers' specifications and recommendations, workplace specific requirements, national and international standards and legislations
- '*ISO*' refers to *International Organization for Standards*
- '*McPherson suspension system*' refers to suspension system used as the front suspension system in the passenger cars.

5. Performance of all elements in this unit standard must comply with industry standards and workplace requirements.

6. Regulations and legislation relevant to this unit standard include the following:

- Labour Act No. 11 of 2007
- Regulations relating to the health and safety of employees at work under Schedule 1 (2) of the Labour Act No.11 of 2007
- ISO 14001 (Environmental Management Standard) and all subsequent amendments to any of the above.

Quality Assurance Requirements

This unit standard and others within this subfield may be awarded by institutions which meet the accreditation requirements set by the Namibia Qualifications Authority and the Namibia Training Authority and which comply with the national assessment and moderation requirements. Details of specific accreditation requirements and the national assessment arrangements are available from the Namibia Qualifications Authority on www.namqa.org and the Namibia Training Authority on www.nta.com.na.

Elements and Performance Criteria

Element 1: Describe construction of different types of chassis

Performance Criteria

- 1.1 Different types of motor vehicle chassis are identified and explained.
- 1.2 Construction of different chassis are explained.
- 1.3 Advantages and disadvantages of different chassis are explained.

Element 2: Describe different types of suspension systems

Performance Criteria

- 2.1. Types of motor vehicle suspension system and their components are identified and explained.
- 2.2. Construction of different types of suspension components are explained.
- 2.3. Advantages and disadvantages of different types of suspension system are explained.

Element 3: Inspect chassis and suspension system

Performance Criteria

- 3.1. Chassis is checked for cracks and bends according to manufacturer's procedures.
- 3.2. Control arms and mountings are checked for wear and tear according to manufacturer's procedures.

Element 4: Replace shock absorbers and dampers

Performance Criteria

- 4.1 Faulty shock absorbers and dampers are identified according to vehicle manufacturers' procedures.
- 4.2 Faulty shock absorbers are removed according to vehicle manufacturers' procedures.
- 4.3 Faulty dampers are removed according to vehicle manufacturers' procedures.
- 4.4 Replacement of shock absorbers are fitted according to vehicle manufacturers' procedures.
- 4.5 Replacement of dampers are fitted according to vehicle manufacturers' procedures.

Element 5: Replace springs

Range

Springs include and are not limited to coil springs and leaf springs.

Performance Criteria

- 5.1 Faulty or broken springs are identified according to vehicle manufacturers' procedures.
- 5.2 Faulty or broken springs are removed according to vehicle manufacturers' procedures.
- 5.3 Replacement of springs is done according to vehicle manufacturers' procedures.
- 5.4 Causes of spring damage are explained.

Element 6: Service electronically controlled suspension

Performance Criteria

- 6.1. Faulty electronically controlled suspension components are identified.
- 6.2. Faulty electronically controlled suspension components are removed according to vehicle manufacturers' procedures.
- 6.3. Replacement of components is done according to vehicle manufacturers' procedures.

Element 7: Service McPherson suspensions

Performance Criteria

- 7.1 Operating principle of the McPherson suspension system is explained.
- 7.2 Components of the suspension system are dismantled and cleaned according to manufacturer's procedures.
- 7.3 Faulty and worn components are identified and replaced according to vehicle manufacturers' procedures.
- 7.4 Moving parts are lubricated according to vehicle manufacturers' procedures.

Element 8: Service air suspension system

Performance Criteria

- 8.1 Operation principle of air suspension system is explained.
- 8.2 Components of the suspension system are dismantled and cleaned.
- 8.3 Faulty and worn components are identified and replaced according to vehicle manufacturers' procedures.
- 8.4 Moving parts are lubricated according to vehicle manufacturers' procedures.

Element 9: Service maintain independent front and rear suspensions

Performance Criteria

- 9.1 Operation principle of independent suspension system is explained.
- 9.2 Components of the independent rear axle are dismantled and cleaned according to vehicle manufacturers' procedures.
- 9.3 Moving parts are lubricated according to vehicle manufacturers' procedures.

Registration Data

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