

Domain	AUTOMOTIVE MECHANICS	Unit ID: 208
Title:	Assess and service vehicle hydraulic braking system	
Level: 3		Credits: 6

Purpose

This unit standard specifies the competencies required to assess and service a vehicle hydraulic braking system. It includes conducting braking system wear assessment, servicing braking system and/or associated components and overhauling braking system components and/or sub-assemblies. This unit standard is intended for those who work as automotive mechanics.

Special Notes

1. Entry information:

Prerequisite

- Unit 65 - *Apply safety rules and regulations in an automotive mechanics workshop* or demonstrated equivalent knowledge and skills.

2. To demonstrate competence, at a minimum, evidence is required of conducting one (1) braking system wear assessment, servicing three (3) and overhauling any other three (3) components and/or sub-assemblies of the following:

- disc pads
- master cylinder
- brake shoes
- brake callipers
- brake hoses
- brake lines
- brake actuators
- hydraulic valves
- mechanical devices.

This task includes conducting a final serviceability test on components.

3. Assessment evidence may be collected from a real workplace or a simulated real workplace or an appropriate simulated realistic environment in which automotive mechanics operations are carried out.

4. Glossary of terms:

- '*specifications*' refers to any, or all of the following: manufacturers' specifications and recommendations, workplace specific requirements
- '*service operations*' refers to 'on-vehicle service' where operations can be directly performed on the vehicle and 'component repair' where the operations are done on the workbench after removing the component from the vehicle.

5. Performance of all elements in this unit standard must comply with manufacturers' and reasonable flat rate time.

6. Regulations and legislation relevant to this unit standard include the following:
 - Labour Act, No. 6, 1992

- Occupational Health and Safety Regulations No. 18, 1997
 - Road Traffic and Transport Regulations No. 266, 2000
and all subsequent amendments.
7. This unit standard applies to passenger and light commercial vehicles with a Gross Vehicle Mass $\leq 5\,500$ kg (Petrol & Diesel).

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 and the Namibia Training Authority. All approved unit standards, qualifications and national assessment arrangements are available on the Namibia Training Authority website www.nta.com.na.

Elements and Performance Criteria

Element 1: Plan and prepare for work

Range

Planning and preparation may include but is not limited to workplace inspection, equipment defect identification, assessment of conditions and hazards and determination of work requirements.

Tools and equipment may include but are not limited to standard tool set, power tools, specialist tools for removal and/or adjustment, lifting and supporting equipment, gauges (including dial, verniers and micrometers), bleeding and brake testing devices, dust extraction equipment, and grease gun.

Materials may include but are not limited to spare parts, lubricants, fluids and cleaning materials.

Performance Criteria

- 1.1 Work instructions, including repair order forms, specifications and operational details are obtained, confirmed and applied.
- 1.2 Safety requirements are followed in accordance with safety plans and policies.
- 1.3 Tools and equipment selected to carry out tasks are consistent with the requirements of the job, checked for serviceability and any faults rectified or reported prior to commencement.
- 1.4 Material requirements are identified and obtained in accordance with repair order form and/or specifications.
- 1.5 Materials are safely handled and located ready for use in line with workplace procedures.
- 1.6 Technical and/or calibration requirements for tools and equipment are sourced and implemented in line with workplace procedures.

- 1.7 Environmental protection requirements are identified and applied in line with environmental plans and regulatory obligations.

Element 2: Conduct braking system wear assessment

Range

Measurements may include but are not limited to measurements of pedal travel, free-play, disk run-out, disc thickness, drum wear, pad and lining thickness in line with manufacturers' specifications.

Performance Criteria

- 2.1 Braking system assessment is implemented in accordance with legislative requirements, workplace procedures and manufacturers' specifications.
- 2.2 Brake wear measurement results are compared with manufacturers' specifications.
- 2.3 Results of braking system wear assessment are documented with evidence and supporting information and recommendation(s) is made in line with workplace procedures.
- 2.4 Report on braking system wear assessment is processed according to workplace procedures.

Element 3: Service braking system and/or associated components

Range

Service operations may include but are not limited to isolation of faults, removing and installing, disassembling and assembling, inspection and evaluation, adjustments, operational testing, lubrication, repair, replacement and visual inspections in line with manufacturers' specifications.

System and associated components may include but are not limited to disc pads, master cylinder, brake shoes, brake callipers, brake hoses and lines, brake actuators, mechanical devices, and hydraulic valves.

Performance Criteria

- 3.1 Procedures and information required for servicing a braking system are identified and sourced in line with workplace procedures.
- 3.2 Resources required for servicing a braking system are identified and support equipment is identified and prepared.
- 3.3 Service operations are implemented according to workplace procedures and manufacturers' specifications.
- 3.4 Adjustments made during servicing braking system and/or associated components are made in line with manufacturers' specifications.

Element 4: Overhaul braking system components

Range

Braking system components may include but are not limited to master cylinder, brake callipers, brake hoses and lines, brake actuators, mechanical devices, and hydraulic valves.

Overhaul methods are to include the complete dismantling of component parts, measuring and evaluation of wear, the replacement, repair, rebuilding or reconditioning of parts comparable to original parts, the assembly of parts, and performance of functional testing in line with the manufacturers' specifications.

Performance Criteria

- 4.1 Information required for overhauling braking system components are accessed and interpreted from manufacturers' specifications in line with workplace procedures.
- 4.2 Braking system components are overhauled using approved methods, equipment and materials, according to manufacturers' specifications.
- 4.3 Overhaul of braking system components and/or sub-assemblies is completed without causing damage to any component or system in line with workplace procedures.

Element 5: Conduct serviceability tests on components

Performance Criteria

- 5.1 Test procedures are implemented according to workplace procedures and manufacturers' specifications.
- 5.2 Observations on the performance of the components are noted during the test in line with workplace procedures.
- 5.3 Serviceability of components is determined in line with manufacturers' specifications and workplace procedures.
- 5.4 Failed components are tagged for rework in line with workplace procedures.
- 5.5 Documentation of observations is completed in line with workplace procedures.

Element 6: Complete work and clean up

Range

Work completion details may include but are not limited to repair order form, sign-out form for equipment, service record book and service plan form.

Performance Criteria

- 6.1 Work is completed and appropriate personnel notified in accordance with workplace procedures.
- 6.2 Work area is cleared of waste, cleaned, restored and secured in accordance with workplace procedures.
- 6.3 Reusable material is collected and stored in accordance with workplace procedures.
- 6.4 Equipment used is cleaned, checked, maintained and stored in accordance with workplace procedures.
- 6.5 Work completion details are finalised in accordance with workplace procedures.

Registration Data

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