Australian Government

AURKTB003 Diagnose complex faults in mobile plant braking systems

Release: 1

AURKTB003 Diagnose complex faults in mobile plant braking systems

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to diagnose complex faults in mobile plant braking systems and determine the repair action necessary to restore system performance. It involves confirming the existence of a fault, choosing the diagnostic procedure and tools, applying the diagnostic procedure, reporting conclusions and making repair recommendations.

Complex faults are outside the normal scope of a technician's diagnosis and repair work. They include intermittent faults, multi-system faults, faults introduced as a result of system repairs, and indirect faults caused by the influence of external systems, requiring the application of complex diagnostic processes to resolve.

It applies to those working in the automotive service and repair industry. The braking systems include those of agricultural machinery or mobile plant machinery, which may be wheeled or track type machinery.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Competency Field

Mechanical - Mobile Plant

Unit Sector

Technical - Brakes

Elements and Performance Criteria

Elements Elements describe the essential outcomes.	**Performance Criteria** Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold and italicised text is used, further information is detailed in the range of conditions section.
1. Identify and confirm the work requirement	1.1 Nature and objective of diagnostic requirements are determined from workplace instructions 1.2 Existence of fault in ***mobile plant braking system*** is confirmed from direct or indirect evidence 1.3 Hazards associated with the work are identified and risks are managed according to workplace procedures and ***safety and environmental requirements***
2. Prepare to carry out diagnosis	2.1 Manufacturer specifications and other technical information for braking system are accessed and interpreted 2.2 Diagnostic procedures and options are identified 2.3 Diagnostic method sequence, tests and testing processes are identified and selected from the range of available options 2.4 ***Testing equipment*** is obtained and prepared according to manufacturer specifications and workplace procedures 2.5 Tools, equipment and materials required to support the diagnostic process are identified, selected and prepared for use
3. Apply diagnostic procedures	3.1 Selected diagnostic process is followed and testing is carried out according to manufacturer specifications, workplace procedures and safety and environmental requirements 3.2 Diagnostic findings are verified, as required, by using reliable alternative or optional process according to manufacturer specifications and workplace procedures 3.3 Conclusions are drawn from findings and documented according to workplace procedures, including recommendations for necessary repairs 3.4 Conclusions are provided to appropriate personnel or customer to confirm further action to be taken
4. Complete work processes	4.1 Mobile plant is presented ready to be repaired or returned to the customer 4.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 4.3 Tools and equipment are checked and stored according to workplace procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

Skills	Description
Learning skills to:	• locate and evaluate appropriate sources of information efficiently • apply diagnostic skills to different mobile plant.
Reading skills to:	• research, organise and interpret technical information from manufacturer and workshop literature when seeking mobile plant braking system specifications and procedures.
Writing skills to:	• legibly and accurately fill out workplace documentation when reporting diagnostic findings, making repair recommendations, and recording parts and material used.
Oral communication skills to:	• clarify instructions, gain information from customers and supervisors, report diagnostic findings and make repair recommendations.
Numeracy skills to:	• measure braking system components and use basic mathematical operations, including addition and subtraction, to calculate tolerances and deviations from manufacturer specifications. • use gauges and interpret units, such as kilopascals and pounds per square inch (PSI).
Planning and organising skills to:	• plan own work requirements and prioritise and sequence actions to achieve required outcomes and ensure tasks are completed within workplace timeframes.

Technology skills to:	• use precision measuring equipment, such as micrometers
	• use specialised diagnostic equipment, such as:
	  • scan tools
	  • brake performance test equipment
	  • oil pressure gauges.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

Mobile plant braking system must include:	• hydraulic pressurised • spring applied hydraulically released • braking systems, including: • multi-disc wet braking systems

	• disc braking systems • parking brake systems.

Safety and environmental requirements must include:	• work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for:
	  • managing stored energy in springs and accumulators
	  • working with high pressure fluid hazards
	  • tagging out and isolating machines, and wheel chocking
	• environmental requirements, including procedures for trapping, storing and disposing of hazardous materials and substances released from braking systems, including hydraulic fluid, brake fluid and brake fibres.

Testing equipment must include:	• scan tools • brake performance test equipment • oil pressure gauge • accumulator pressure gauge • component wear gauge • temperature gauge.

Unit Mapping Information

Equivalent to AURKTB4003 Diagnose complex faults in mobile plant braking systems

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1