



Australian Government

AURTTD005 Overhaul steering system components

Release: 1

AURTTD005 Overhaul steering system components

Modification History

Release	Comment
Release 1	New unit of competency.

Application

This unit describes the performance outcomes required to return steering system components to original manufacturer tolerances and clearances. It involves preparing for the task, dismantling and evaluating the steering system components, carrying out the overhaul procedures, reassembling and testing the components, and completing workplace processes and documentation.

It applies to those working in the automotive service and repair industry. The steering systems include those of agricultural machinery, heavy commercial vehicles, light vehicles, mobile plant machinery or outdoor power equipment. The unit does not apply to the steering systems of motorcycles.

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

Competency Field

Mechanical Miscellaneous

Unit Sector

Technical - Steering and Suspension

Elements and Performance Criteria

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Elements describe the essential outcomes.	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.

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1. Prepare to dismantle steering system components	1.1 Job requirements are determined from workplace instructions 1.2 Dismantling information is sourced and interpreted 1.3 Dismantling options are analysed and those most appropriate to the circumstances are selected 1.4 Hazards associated with the work are identified and risks are managed 1.5 Dismantling tools and equipment are selected and checked for serviceability
2. Dismantle and evaluate steering system components	2.1 Components are dismantled in a logical sequence according to manufacturer and workplace procedures, and <i>safety and environmental requirements</i> , and without causing unnecessary damage to components or systems 2.2 Component is cleaned for evaluation according to workplace procedures and safety and environmental requirements 2.3 Component is measured and compared with manufacturer specifications and serviceability is determined 2.4 Component repair method is determined 2.5 serviceable parts are identified and replacement parts sourced
3. Carry out overhaul	3.1 Overhaul information is sourced and interpreted 3.2 Overhaul options are analysed and those most appropriate to the circumstances are selected 3.3 Overhaul tools and equipment are selected and checked for serviceability 3.4 Components are machined, repaired and replaced as required, and adjustments are carried out according to manufacturer specifications, workplace procedures, and safety and environmental requirements, and without causing damage to components or systems
4. Assemble components	4.1 Components are assembled according to manufacturer specifications, workplace procedures, and safety and environmental requirements 4.2 Tolerances and clearances are measured against manufacturer specifications and necessary adjustments are made 4.3 Assembly of components is completed within workplace timeframes and without causing damage to other components or systems 4.4 Post-assembly testing is carried out according to workplace procedures and safety and environmental requirements, and any

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	problems detected as having been introduced during the assembly process are rectified
5. Complete work processes	5.1 Final inspection is made to ensure work is to workplace expectations and components are presented ready for use or storage 5.2 Work area is cleaned, waste and non-recyclable materials are disposed of, and recyclable material is collected 5.3 Tools and equipment are checked and stored according to workplace procedures 5.4 Workplace documentation is processed 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 sources of information for steering systems components efficiently.
Reading skills to:	interpret and assess information from manufacturer and workshop literature when seeking steering system component 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, report evaluation findings and make overhaul recommendations.
Numeracy skills to:	measure steering system components and use basic mathematical operations, including addition, subtraction, multiplication and division, to calculate distances, areas, volumes, tolerances and

Skills	Description
	deviations from manufacturer specifications.
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 vernier calipers and micrometers.

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.

<i>Safety and environmental requirements</i> must include:	- work health and safety (WHS) and occupational health and safety (OHS) requirements, including procedures for using: - specialised steering system component overhaul tools, equipment and machinery - chemicals and toxic substances - environmental requirements, including procedures for trapping, storing and disposing of fluids released from steering systems.
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Unit Mapping Information

Equivalent to AURTTD4005 Overhaul steering system components

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>

Assessment Requirements for AURTTD005 Overhaul steering system components

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Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- overhaul the following steering system components:
 - two different power steering pumps
 - one of the following components:
 - power rack and pinion steering box
 - steering column
 - recirculating ball steering box.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to overhauling steering system components, including procedures for using:
 - specialised steering system component overhaul tools, equipment and machinery
 - chemicals and toxic substances
- environmental requirements, including procedures for trapping, storing and disposing of fluids released from steering systems
- types, characteristics and operating principles of steering systems and associated components
- steering system component overhaul procedures, including:
 - methods for cleaning and preparing steering system components for overhaul
 - steering system component dismantling procedures
 - steering system component inspection, measuring and evaluation procedures, including methods for measuring and calculating tolerances and clearances

- steering system component repair and adjustment procedures, including:
 - power steering pumps
 - power rack and pinion steering boxes
 - steering columns
 - recirculating ball steering boxes
- steering system component assembly procedures, including procedures for measuring and calculating tolerances, and adjusting components
- post-overhaul testing procedures for steering system components.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the steering system components that they have worked on, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- mechanical repair workplace or simulated workplace
- workplace instructions
- manufacturer steering system component specifications
- steering system components specified in the performance evidence and requiring overhaul
- tools, equipment and materials appropriate for overhauling and adjusting steering system components.

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