



Australian Government

AURTTX4009 Overhaul transmissions (automatic)

Release 1

AURTTX4009 Overhaul transmissions (automatic)

Modification History

Release	Comment
Release 1	Replaces AURT407145A Overhaul transmissions (automatic) Unit code updated to meet policy requirements Reference to OHS legislation replaced with new WHS legislation Licensing statement added to unit descriptor

Unit Descriptor

Unit descriptor	<p>This unit covers the competence required to completely dismantle and rebuild an automatic transmission involving identification and replacement or repair of worn and deteriorated parts, testing and adjustment.</p> <p>Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.</p>
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Application of the Unit

<p>Application of the unit</p>	<p>The unit includes identification and confirmation of the work requirement, preparation for work, the dismantling of automatic transmissions, evaluation of the parts, overhaul, testing of the transmissions and completion of work finalisation processes, including clean-up and documentation.</p> <p>For repairs to electronic control drive management systems refer to AURETR3044 Service and repair electronic drive management systems.</p> <p>This unit of competence applies to the following:</p> <ul style="list-style-type: none"> • automatic, semi-automatic and power shift transmissions fitted to light, heavy vehicles, mobile plant and outdoor power equipment. <p>Work requires individuals to demonstrate discretion, judgement and problem-solving skills in managing own work activities and contributing to a productive team environment.</p>
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to overhaul automatic transmission	1.1. Nature and scope of the work requirements are identified and confirmed 1.2. WHS requirements, including individual State/Territory regulatory requirements and personal protection needs are observed throughout the work 1.3. Procedures and information such as workshop manuals, specifications and tooling, are sourced 1.4. Transmission faults are identified 1.5. Method options are analysed and those most appropriate to the circumstances are selected and prepared 1.6. Technical and/or calibration requirements for overhaul are sourced and support equipment is identified and prepared
2. Dismantle automatic transmission and evaluate parts	2.1. Information is accessed and interpreted from manufacturer/component supplier specifications 2.2. Automatic transmission is dismantled using approved methods and equipment, according to manufacturer/component supplier procedures 2.3. Automatic transmission is dismantled without causing damage to any component or system 2.4. Transmission parts are cleaned in readiness for evaluation 2.5. Parts are checked for serviceability against manufacturer/component supplier specifications 2.6. Unserviceable parts are identified and a replacement parts list raised
3. Overhaul automatic transmission	3.1. Information is accessed and interpreted from manufacturer/component supplier specifications 3.2. Automatic transmission is overhauled using approved methods and equipment, according to specifications and tolerances relative to the component/vehicle/plant manufacturer/component supplier 3.3. Automatic transmission is overhauled without causing damage to any component or system 3.4. Overhauling activities are carried out according to industry regulations/guidelines, WHS legislation and enterprise procedures/policies
4. Conduct	4.1. Methods for the conduct of the test is implemented

ELEMENT	PERFORMANCE CRITERIA
transmission testing	<p>in accordance with workplace procedures and manufacturer/component supplier specifications</p> <p>4.2.Observations are noted during the test</p> <p>4.3.Documentation of observations are completed</p> <p>4.4.Results of test are analysed</p> <p>4.5.Report is processed in accordance with workplace procedures</p>
5. Prepare transmission for installation	<p>5.1.Overhaul schedule documentation is completed</p> <p>5.2.Transmission is cleaned to enterprise requirements</p> <p>5.3.Final inspection is made to ensure work is to workplace expectations</p> <p>5.4.Transmission is presented for installation/storage to workplace expectations</p> <p>5.5.Job card is processed in accordance with workplace procedures</p>

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- apply research and interpretive skills sufficient to locate, interpret and apply manufacturer/component supplier procedures, workplace policies and procedures
- apply analytical skills required for identification and analysis of technical information
- apply plain English literacy and communication skills in relation to dealing with customers and team members
- apply questioning and active listening skills for example when obtaining information from customers
- apply oral communication skills sufficient to convey information and concepts to customers
- apply planning and organising skills to own work activities, including making good use of time and resources, sorting out priorities and monitoring own performance
- interact effectively with other persons both on a one-to-one basis and in groups, including understanding and responding to the needs of a customer and working effectively as a member of a team to achieve a shared goal
- the capacity to apply problem-solving strategies in purposeful ways, both in situations where the problem and desired solution are clearly evident and in situations requiring critical thinking and a creative approach to achieve an outcome
- use mathematical ideas and techniques to calculate time, assess tolerances, apply accurate measurements, calculate material requirements and establish quality checks
- use workplace technology related to overhauling of automatic transmissions, including the use of measuring equipment, computerised technology and communication devices and reporting/documenting of results

Required knowledge

A working knowledge of:

- WHS regulations/requirements, equipment, material and personal safety requirements
- identification of the application, purpose and operation
- identification of component parts to include physical, fluid, gases and heat generation
- identification of wear evaluation methods
- operating principles of constant mesh and/or planetary automatic transmissions
- laws of single and compound planetary gearing
- types and layout of service/repair manuals (hard copy and electronic)
- automatic transmission overhaul procedures

REQUIRED SKILLS AND KNOWLEDGE

- automatic transmission test procedures
- automatic transmission dismantling and assembling procedures
- automatic transmission component adjustment procedures
- enterprise quality procedures
- work organisation and planning processes
- manual handling procedures

Evidence Guide

EVIDENCE GUIDE	
<p>The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.</p>	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	<p>It is essential that competence in this unit signifies ability to transfer competence to changing circumstances and to respond to unusual circumstances in the critical aspects of:</p> <ul style="list-style-type: none"> • observing safety procedures and requirements • communicating effectively with others involved in or affected by the work • selecting methods and techniques appropriate to the circumstances • completing preparatory activity in a systematic manner • identification of the application, purpose and operation • application of the full overhaul sequence as per the Range Statement relative to the qualification being sought • presenting the test results • conducting the overhaul in accordance with workplace manufacturer/component supplier requirements • completing overhaul of transmission and associated components within workplace timeframes • presentation of transmission to customer/stored in compliance with workplace requirements
Context of, and specific resources for assessment	<p>Application of competence is to be assessed in the workplace or simulated worksite</p> <p>Assessment is to occur using standard and authorised work practices, safety requirements and environmental constraints</p> <p>Assessment is to comply with regulatory requirements, including Australian Standards</p> <p>The following resources should be made available:</p> <ul style="list-style-type: none"> • workplace location or simulated workplace • materials relevant to overhauling automatic

EVIDENCE GUIDE	
	<p>transmissions</p> <ul style="list-style-type: none"> • equipment, hand and power tooling appropriate to overhauling automatic transmissions • activities covering the mandatory task requirements • specifications and work instructions
Method of assessment	<p>Assessment must satisfy the endorsed assessment guidelines of the automotive industry's RS&R Training Package</p> <p>Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge</p> <p>Assessment must be by direct observation of tasks, with questioning on underpinning knowledge and it must also reinforce the integration of key competencies</p> <p>Assessment may be applied under project related conditions (real or simulated) and require evidence of process</p> <p>Assessment must confirm a reasonable inference that competence is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances</p> <p>Assessment must satisfy the endorsed assessment guidelines of the automotive industry's RS&R Training Package</p> <p>Assessment methods must confirm consistency and accuracy of performance together with application of underpinning knowledge</p> <p>Assessment must be by direct observation of tasks, with questioning on underpinning knowledge and it must also reinforce the integration of key competencies</p> <p>Assessment may be applied under project related conditions (real or simulated) and require evidence of process</p> <p>Assessment must confirm a reasonable inference that competence is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances</p> <p>It is preferable assessment reflects a process rather than an event and occurs over a period of time to cover the varying quality circumstances. Evidence of performance may be provided by customers, team leaders/members or</p>

EVIDENCE GUIDE

other appropriate persons subject to agreed authentication arrangements

Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role

Range Statement

RANGE STATEMENT	
<p>The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.</p>	
Methods	<p>Methods are to include:</p> <ul style="list-style-type: none"> • pressure testing, electrical testing (including leakage, short circuits, open circuits) • visual, aural and functional assessments (including fluid leaks, wear, damage, corrosion) • dismantling and assembling, testing, adjusting
Specific requirements	<p>Specific requirements may include:</p> <ul style="list-style-type: none"> • planetary or countershaft (constant mesh) transmission • conventional, transaxle, 4WD and overdrive type automatic transmissions • electronically controlled transmissions • torque converter, continuously variable, lock-up
Overhaul methods and sequences	<p>Overhaul methods and sequences 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, performance of functional testing and the completion of records</p>
WHS	<p>WHS requirements are to be in accordance with legislation/regulations/codes of practice and enterprise safety policies and procedures. This may include protective clothing and equipment, use of tooling and equipment, workplace environment and safety, handling of materials, use of fire fighting equipment, enterprise first aid, hazard control and hazardous materials and substances</p>
Personal protective equipment	<p>Personal protective equipment is to include that prescribed under legislation/regulations/codes of</p>

RANGE STATEMENT	
	practice and workplace policies and practices
Safe operating procedures	Safe operating procedures are to include, but are not limited to the conduct of operational risk assessment and treatments associated with vehicular movement, toxic substances, electrical safety, machinery movement and operation, manual and mechanical lifting and shifting, working in proximity to others and site visitors
Emergency procedures	Emergency procedures related to this unit are to include, but are not limited to emergency shutdown and stopping of equipment, extinguishing fires, enterprise first aid requirements and site evacuation
Environmental requirements	Environmental requirements are to include but are not limited to waste management, noise, dust and clean-up management
Quality requirements	Quality requirements are to include, but are not limited to regulations, including Australian Standards, internal company quality policy and standards and enterprise operations and procedures
Statutory/regulatory authorities	Statutory/regulatory authorities may include Federal, State/Territory and local authorities administering acts, regulations and codes of practice
Tooling and equipment	Tooling and equipment may include hand tooling, specialist tooling for disassembly, assembly and adjustment, measuring equipment, lifting equipment, cleaning equipment, testing equipment, including load device and pressure testers, tachometers, multimeters and power tooling
Materials	Materials may include lubricants, spare parts and cleaning materials
Communications	Communications are to include, but are not limited to verbal and visual instructions and fault reporting and may include site specific instructions, written instructions, plans or instructions related to job/task, telephones and

RANGE STATEMENT	
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Information/documents	<p>Sources of information/documents may include:</p> <ul style="list-style-type: none"> • verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, memos, material safety data sheets, diagrams or sketches • safe work procedures related to overhauling automatic transmissions • regulatory/legislative requirements pertaining to the automotive industry, including Australian Design Rules • engineer's design specifications and instructions • organisation work specifications and requirements • instructions issued by authorised enterprise or external persons • Australian Standards

Unit Sector(s)

Unit sector	Mechanical Miscellaneous
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Co-requisite units

Not applicable.

Competency field

Competency field	Technical - Transmission
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