



**Australian Government**

# **AURTTX2004 Service transmissions (hydrostatic)**

**Release 1**

## AURTTX2004 Service transmissions (hydrostatic)

### Modification History

| Release   | Comment                                                                                                                                                                                                                     |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Release 1 | Replaces AURT208170A Service transmissions (hydrostatic)<br>Unit code updated to meet policy requirements<br>Reference to OHS legislation replaced with new WHS legislation<br>Licensing statement added to unit descriptor |

### Unit Descriptor

|                        |                                                                                                                                                                                                                                                                                                                                                                                   |
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| <b>Unit descriptor</b> | <p>This unit covers the competence required to carry out the service of hydrostatic transmissions and/or associated components for heavy vehicle, plant and outdoor power equipment.</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

|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
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| <b>Application of the unit</b> | <p>This unit of competence applies to heavy vehicle transmissions (hydrostatic), outdoor power equipment and plant.</p> <p>The unit includes identification and confirmation of work requirement, preparation for work, servicing of hydrostatic transmissions and associated components and completion of work finalisation processes, including clean-up and documentation.</p> <p>Work requires individuals to demonstrate 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

|                             |                                          |
|-----------------------------|------------------------------------------|
| <b>Employability skills</b> | This unit contains employability skills. |
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## Elements and Performance Criteria Pre-Content

|                                                                   |                                                                                                                                                                                                                                                                                                                  |
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| 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1. Prepare to service hydrostatic transmission</b>                   | 1.1. Nature and scope of work requirements are identified and confirmed<br>1.2. WHS requirements, including individual State/Territory regulatory requirements and personal protection needs are observed throughout the work<br>1.3. Procedures and information such as workshop manuals and specifications, and tooling required, are sourced<br>1.4. Method options are analysed and those most appropriate to the circumstances are selected and prepared<br>1.5. Technical and/or calibration requirements for servicing are sourced and support equipment is identified and prepared                         |
| <b>2. Service hydrostatic transmission and/or associated components</b> | 2.1. Correct information is accessed and interpreted from manufacturer/component supplier specifications<br>2.2. Services to system components are carried out in accordance with manufacturer/component supplier specifications for methods and equipment<br>2.3. Transmission system service activities are carried out according to industry regulations/guidelines, WHS legislation and enterprise procedures/policies<br>2.4. Hydrostatic transmission is serviced without causing damage to any component or system<br>2.5. Workplace documentation is completed and dealt with relevant to service outcomes |
| <b>3. Prepare vehicle/equipment for customer use</b>                    | 3.1. Service schedule documentation is completed<br>3.2. Final inspection is made to ensure protective guards, safety features and cowlings are in place<br>3.3. Final inspection is made to ensure work is to workplace expectations<br>3.4. Job card is processed in accordance with workplace procedures                                                                                                                                                                                                                                                                                                        |

## 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 one's 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
- establish safe and effective work processes which anticipate and/or resolve problems and downtime, to systematically develop solutions to avoid or minimise reworking and avoid wastage
- use mathematical ideas and techniques to correctly calculate time, assess tolerances, apply accurate measurements, calculate material requirements and establish quality checks
- use workplace technology related to servicing hydrostatic transmissions, including the use of servicing tooling and equipment, measuring equipment, computerised technology and communication devices and the reporting/documenting of results

#### Required knowledge

A working knowledge of:

- WHS regulations/requirements, equipment, material and personal safety requirements
- operating principles of hydrostatic transmissions and their applications
- types and layout of service/repair manuals (hard copy and electronic)
- servicing procedures
- hydraulic fluids and their application
- enterprise quality procedures
- work organisation and planning processes



## Evidence Guide

| <b>EVIDENCE GUIDE</b>                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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| 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. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Overview of assessment</b>                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b>                                                                                                                    | <p>It is essential that competence is fully observed and there is ability to transfer competence to changing circumstances and to respond to unusual situations in the critical aspects of:</p> <ul style="list-style-type: none"> <li>• observing safety procedures and requirements</li> <li>• communicating effectively with others involved in or affected by the work</li> <li>• selecting methods and techniques appropriate to the circumstances</li> <li>• completing preparatory activity in a systematic manner</li> <li>• conducting the service of a range of transmissions in accordance with workplace and manufacturer/component supplier requirements</li> <li>• completing servicing of transmission and associated components within workplace timeframes</li> <li>• vehicle/equipment is presented to customer in compliance with workplace requirements</li> </ul> |
| <b>Context of, and specific resources for assessment</b>                                                                                                                                                               | <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"> <li>• workplace location or simulated workplace</li> <li>• material relevant to servicing hydrostatic transmissions</li> <li>• equipment, hand and power tooling appropriate to servicing hydrostatic transmissions</li> <li>• activities covering mandatory task requirements</li> <li>• specifications and work instructions</li> </ul>                                                                                                                              |
| <b>Method of assessment</b>                                                                                                                                                                                            | <p>Assessment must satisfy the endorsed assessment guidelines of the automotive industry's RS&amp;R Training Package</p> <p>Assessment methods must confirm consistency and accuracy of performance together with application of underpinning</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

**EVIDENCE GUIDE**

knowledge

Assessment must be by direct observation of tasks, with questioning on underpinning knowledge and it must also reinforce the integration of key competencies

Assessment may be applied under project related conditions and require evidence of process

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

It is preferable that assessment reflects a process rather than an event and occurs over a period of time to cover varying quality circumstances. Evidence of performance may be provided by customers, team leaders/members or other 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

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.

#### Systems and components

Systems and components may include:

- variable displacement and fixed displacement hydraulic pumps
- variable displacement and fixed displacement hydraulic motors
- radial piston, axial piston, vane, rotor and gear type pumps and motors
- closed and replenishing systems
- charge pumps
- positive and non-positive displacement hydraulic pumps

#### Methods

Methods are to include visual, aural and functional assessment, including fluid leakage

#### WHS

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 material, use of fire fighting equipment, enterprise first aid, hazard control and hazardous materials and substances

#### Personal protective equipment

Personal protective equipment is to include that prescribed under legislation/regulations/codes of 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

| <b>RANGE STATEMENT</b>                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Emergency procedures</b>             | 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                                                                                                                                                                                                                                                                            |
| <b>Environmental requirements</b>       | Environmental requirements are to include but are not limited to waste management, noise, dust and clean-up management                                                                                                                                                                                                                                                                                                                                                               |
| <b>Quality requirements</b>             | 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                                                                                                                                                                                                                                                                                      |
| <b>Statutory/regulatory authorities</b> | Statutory/regulatory authorities may include Federal, State/Territory and local authorities administering acts, regulations and codes of practice                                                                                                                                                                                                                                                                                                                                    |
| <b>Tooling and equipment</b>            | Tooling and equipment may include hand tooling, hydraulic pressure gauges, hydraulic flow meters and dispensing equipment                                                                                                                                                                                                                                                                                                                                                            |
| <b>Materials</b>                        | Materials may include hydraulic fluids, lubricants, minor spare parts and cleaning materials                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Communications</b>                   | 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 pagers                                                                                                                                                                                                                                          |
| <b>Information/documents</b>            | <p>Sources of information/documents may include:</p> <ul style="list-style-type: none"> <li>• verbal or written and graphical instructions, signage, work schedules/plans/specifications, work bulletins, memos, material safety data sheets, diagrams or sketches</li> <li>• safe work procedures related to servicing hydrostatic transmissions</li> <li>• regulatory/legislative requirements pertaining to the automotive industry, including Australian Design Rules</li> </ul> |

**RANGE STATEMENT**

|  |                                                                                                                                                                                                                                                                           |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <ul style="list-style-type: none"><li>• engineer's design specifications and instructions</li><li>• organisation work specifications and requirements</li><li>• instructions issued by authorised enterprise or external persons</li><li>• Australian Standards</li></ul> |
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**Unit Sector(s)**

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| <b>Unit sector</b> | Mechanical Miscellaneous |
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**Co-requisite units**

Not applicable.

**Competency field**

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|-------------------------|--------------------------|
| <b>Competency field</b> | Technical - Transmission |
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