



**Australian Government**

# **AURTTB3005 Assemble and fit braking systems and components**

**Release 1**

## AURTTB3005 Assemble and fit braking systems and components

### Modification History

Release	Comment
Release 1	<p>Replaces AURT310104A Assemble and fit braking systems/components</p> <p>Unit code updated to meet policy requirements</p> <p>Minor changes to unit title</p> <p>Reference to OHS legislation replaced with new WHS legislation</p> <p>Licensing statement added to unit descriptor</p>

### Unit Descriptor

<b>Unit descriptor</b>	<p>This unit covers the competence required to assemble, fit and test braking systems and associated components, including hydraulic, pneumatic, electrical and mechanical operating systems.</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

<b>Application of the unit</b>	<p>The unit includes identification and confirmation of work requirement, preparation for work, assembly, fitting and testing of braking systems and completion of work finalisation processes, including clean-up and documentation.</p> <p>Work involved includes braking components fitted to light vehicle, heavy vehicle, motorcycle and small engine equipment.</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

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 assemble and fit braking system components	1.1.Nature and scope of 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 and specifications, and tooling, are sourced 1.4.Method options are analysed and those most appropriate to the circumstances are selected and prepared 1.5.Technical requirements for work to be performed are sourced and support equipment is identified and prepared
2. Assemble and fit braking system/components	2.1.Braking system component assembly and fitting procedures are completed in accordance with manufacturer/component supplier specifications and tolerances 2.2.Legislation, industry guidelines and enterprise policies/procedures are followed 2.3.Undue damage to equipment or machinery is avoided
3. Test braking system components and analyse results	3.1.Information for testing is accessed from manufacturer/ component supplier specifications and correctly interpreted 3.2.Tests are carried out in accordance with manufacturer/ component supplier specifications and tolerances 3.3.Testing is completed without causing damage to any component or system 3.4.Test results are analysed against manufacturer/component supplier specifications 3.5.Determination is made as to the serviceability of system components 3.6.Failed components are tagged for further work 3.7.Test results are documented in accordance with workplace requirements
4. Prepare braking system components for use or storage	4.1.Inspection is made to ensure safety features are satisfied 4.2.Final inspection is made to ensure work is to workplace expectations

ELEMENT	PERFORMANCE CRITERIA
	<p>4.3.Components are cleaned and/or stored to workplace expectations</p> <p>4.4.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 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
- 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 the assembly, fitting and testing of braking systems and associated components, including the use of specialist tooling and equipment, measuring equipment, computerised technology and communication devices and the documenting/recording of results)

#### Required knowledge

A working knowledge of:

- WHS regulations/requirements, equipment, material and personal safety requirements
- operating principles different types of braking systems
- construction of different types of braking systems
- types and layout of service/repair manuals (hard copy and electronic)
- assembly procedures and techniques
- fitting procedures and techniques
- braking system testing techniques
- enterprise quality procedures
- work organisation and planning processes



## Evidence Guide

<b>EVIDENCE GUIDE</b>	
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 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"> <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 component assembly fitting and testing in accordance with workplace and manufacturer/ component supplier requirements</li> <li>• interpreting test results</li> <li>• completing assembly and fitting of braking components within workplace timeframes</li> <li>• presentation of components 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 the assembly, fitting and testing of braking systems and associated components</li> <li>• equipment, hand and power tooling appropriate to the assembly, fitting and testing of braking systems and associated components</li> <li>• activities covering mandatory task requirements</li> <li>• specifications and work instructions</li> </ul>
<b>Method of assessment</b>	Assessment must satisfy the endorsed assessment guidelines



**EVIDENCE GUIDE**

	<p>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 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 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 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</p> <p>Competence in this unit may be assessed in conjunction with other functional units which together form part of the holistic work role</p>
<b>Guidance information for assessment</b>	

**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.

**Braking components**

May include hydraulic, pneumatic over hydraulic, vacuum over hydraulic, electric, electric over hydraulic and pneumatic braking systems

<b>RANGE STATEMENT</b>	
<b>WHS</b>	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
<b>Personal protective equipment</b>	Personal protective equipment is to include that prescribed under legislation/regulation/codes of practice and workplace policies and practices
<b>Safe operating procedures</b>	Safe operating procedures are to include, but are not limited to 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>WHS</b>	Emergency procedures related to this unit are to include but may not be 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, power tooling, cutting equipment, measuring equipment, lifting equipment, brake bleeding

<b>RANGE STATEMENT</b>	
	equipment, testing equipment and pipe bending and flaring equipment
<b>Materials</b>	Materials may include spare parts, lubricants and cleaning materials
<b>Communications</b>	Communications are to include, but are not limited to verbal and visual instructions and fault documenting 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 assembling, fitting and testing of braking systems and associated components</li> <li>• regulatory/legislative requirements pertaining to automotive industry, including Australian Design Rules</li> <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>

## Unit Sector(s)

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

Not applicable.

## Competency field

Competency field	Technical - Brakes
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