



Australian Government

AURTTB2002 Attach friction materials and radius grind

Release 1

AURTTB2002 Attach friction materials and radius grind

Modification History

Release	Comment
Release 1	Replaces AURT210605A Attach friction materials and radius grind 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	This unit covers the competence required to attach brake and clutch frictional materials using bonding, riveting or screwing methods. Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.
------------------------	---

Application of the Unit

Application of the unit	Work involved includes: • preparation and selection of material • attachment of brake and clutch frictional materials by either bonding, riveting or screwing methods • radius grinding of brake shoes. The unit includes identification and confirmation of work requirement, preparation for work, selection of friction materials and attachment methods, attachment of friction material to brake shoes/pads and/or clutch plates, radius grinding of brake shoes and completion of work finalisation processes, including clean-up and documentation. Work requires individuals to demonstrate judgement and problem-solving skills in managing own work activities and contributing to a productive team environment.
--------------------------------	--

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability skills	This unit contains employability skills.
-----------------------------	--

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.
---	--

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to attach friction materials to brake shoes and/or disc pads and/or clutch plates	1.1.The 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 manufacturer/component supplier procedures and specifications, and tooling required, are sourced 1.4.Method options are analysed and those most appropriate to the circumstances are selected and prepared 1.5.Warnings in relation to working with hazardous materials are observed
2. Select and attach friction materials	2.1.Brake shoes/pads and/or clutch plates are prepared for bonding/riveting 2.2.Materials to be attached are selected and prepared in accordance with site procedures 2.3.Friction material attachment procedures are carried out in accordance with legislation, industry and enterprise policies/procedures and guidelines
3. Radius grind brake shoes	3.1.Information required for radius grinding is accessed from manufacturer/component supplier specifications and correctly interpreted 3.2.Radius grinding procedures are carried out in accordance with legislation, industry and enterprise policies/procedures and guidelines 3.3.Brake shoes are tested in accordance with site procedures prior to being placed into service 3.4.Work is completed without causing damage to any component or system 3.5.Workplace documents are completed in accordance with enterprise procedures
4. Prepare brake shoes/pads and/or clutch plate for use or storage	4.1.Work schedule documentation is completed 4.2.Final inspection is made to ensure work is to workplace expectations 4.3.Brake shoes/pads and/or clutch plates are prepared for use or stored to workplace expectations 4.4.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 attaching friction materials and radius grinding brake and clutch components, including the use of bonding and grinding tooling and equipment, measuring equipment, and communication devices and the reporting/documenting of results

Required knowledge

A working knowledge of:

- WHS regulations/requirements, equipment, material and personal safety requirements
- general knowledge of common automotive terminology and vehicle safety requirements
- dangers of working with hazardous material
- coefficient of friction as related to the different material used in brake and clutch applications
- bonding agents

REQUIRED SKILLS AND KNOWLEDGE

- material selection procedures
- bonding/riveting procedures
- enterprise quality procedures
- work organisation and planning processes
- site reporting procedures

Evidence Guide

EVIDENCE GUIDE	
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.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	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: • 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 • selecting and attaching friction material to brake shoes/clutch pads in accordance with workplace and manufacturer/component supplier requirements • carrying out radius grinding of brake shoes to specification • completing work within workplace timeframes • brake and/or clutch components is presented to customer in compliance with workplace requirements
Context of, and specific resources for assessment	The application of competence is to be assessed in the workplace or simulated worksite Assessment is to occur using standard and authorised work practices, safety requirements and environmental constraints Assessment is to comply with regulatory requirements, including Australian Standards The following resources should be made available: • workplace location or simulated workplace • material relevant to attaching friction materials and radius grinding brake and clutch components • equipment, hand and power tooling appropriate to attaching friction materials and radius grinding brake and clutch components • activities covering mandatory task requirements • specifications and work instructions
Method of assessment	Assessment must satisfy the endorsed assessment guidelines

EVIDENCE GUIDE

	of the automotive industry's RS&R Training Package Assessment methods must confirm consistency and accuracy of performance together with application of underpinning 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
Guidance information for assessment	

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.

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,

RANGE STATEMENT	
	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
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, power tooling, riveting machines and equipment, radius grinding machines, safety equipment, measuring equipment and specialist equipment, including beating and clamping equipment
Materials	Materials may include bonding material, brake shoes, clutch plates, rivets, bolts and nuts, brake

RANGE STATEMENT	
	and clutch linings 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 pagers
Information/documents	Sources of information/documents may include: • 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 attaching friction materials and radius grinding brake and clutch components • 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
--------------------	--------------------------

Co-requisite units

Not applicable.

Competency field

Competency field	Technical - Brakes
------------------	--------------------