Australian Government

AURTTW3003 Carry out machining operations

Release 1

INDUSTRY SKILLS COUNCILS
Creating Australia's Future

AURTTW3003 Carry out machining operations

Modification History

Release	Comment
Release 1	Replaces AURT335108A Carry out machining operations 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 carry out machining operations to a range of components to specific tolerances. 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	The unit includes identification the competence required to set up and machine components to specifications using a lathe, drilling and cutting machines. This unit of competence applies to reconditioning of automotive components to restore surface finishes, working clearances and component alignment. It applies to turning and/or grinding and/or cutting operations. Work requires individuals to demonstrate judgement and problem-solving skills in managing own work activities and contributing to a productive team environment.

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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.

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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Set up machinery prior to machining	1.1. Machinery set-up is completed without causing damage to any components or systems. 1.2. Correct information is accessed and interpreted from appropriate manufacturer specifications 1.3. Material to be machined is positioned and clamped. 1.4. Correct speed and feed is selected to suit materials 1.5. Personal safety requirements including machine guards are worn and correctly positioned. 1.6. Setting up of components for machining/cutting is carried out in accordance with industry standards and manufacturer current specifications for methods, equipment used and tolerances relative to the component. 1.7. All machinery set-up activities are carried out according to industry regulations/guidelines, WHS legislation, statutory legislation and enterprise procedures/policies
2. Machine components	2.1. Components are machined without causing damage to any components or equipment. 2.2. Correct information is accessed and interpreted from appropriate manufacturer specifications 2.3. Component are measured for size and finish 2.4. Size and finish are compared with specification. 2.5. Area is cleaned prior to removal from machine 2.6. Machining/cutting of components is carried out in accordance with vehicle/system manufacturer current specifications for methods, equipment used and tolerances relative to the component being machine/cut. 2.7. All machining/cutting activities are carried out according to industry regulations/guidelines, WHS legislation, statutory legislation and enterprise procedures/policies

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Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills
Required knowledge
A working knowledge of: • WHS regulations/requirements, equipment, material and personal safety requirements • Industry Codes of Practice • Australian Standards • types of measuring instruments, application and procedures • machining procedures • grinding procedures • facing procedures • cleaning/lubricating agents • enterprise quality procedures • work organisation and planning processes

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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 is fully observed and there is ability to transfer competence to changing circumstances and to respond to unusual situations 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 • interpreting measurements in accordance with workplace requirements • machining work is done within workplace timeframes • work presentation to customer or for storage in compliance with workplace requirements
Context of, and specific resources for assessment	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 carrying out grinding and facing operations • equipment, hand and power tooling appropriate to carrying out grinding and facing operations • activities covering mandatory task requirements • specifications and work instructions
Method of assessment	Assessment must satisfy the endorsed assessment

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EVIDENCE GUIDE	
	guidelines 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

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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.	
Methods	Methods include lathe turning, grinding, cutting, drilling Methods should be applied under normal operating conditions
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/regulation/codes of practice and workplace policies and practices
Safe operating procedures	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
Emergency procedures	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
Environmental Requirements	Environmental requirements are to include but are not limited to waste management, noise, dust and clean-up management

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RANGE STATEMENT	
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, lifting equipment, lathes, drills and power hacksaws or cut off saw, grinding equipment, measuring equipment and safety equipment
Materials	Materials may include ferrous and non ferrous materials including alloys, cooling, cleaning and lubricating materials
Communications	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
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 carrying out machining operations • regulatory/legislative requirements pertaining to automotive industry, including Australian Design Rules • vehicle manufacture specifications • engineer's design specifications and instructions • organisation work specifications and requirements • instructions issued by authorised enterprise or external persons

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RANGE STATEMENT	
	• Australian Standards

Unit Sector(s)

Unit sector	Mechanical Miscellaneous

Co-requisite units

Not applicable.

Competency field

Competency field	Technical - Welding, Grinding, Machining and Soldering

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