



Australian Government

AURETU4007 Overhaul air conditioning system components

Release 1

AURETU4007 Overhaul air conditioning system components

Modification History

Release	Comment
Release 1	<p>Replaces AURT322645A Overhaul air conditioning system components</p> <p>Unit code updated to meet policy requirements</p> <p>Reference to OHS legislation replaced with new WHS legislation</p> <p>Licensing statement added to unit descriptor</p>

Unit Descriptor

Unit descriptor	<p>This unit covers the competence required to overhaul air conditioning system components.</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

Application of the unit	<p>The unit includes identification and confirmation of the work requirement, preparation for work, testing and analysis of systems, dismantling, reassembling and retesting of air conditioning system components and completion of work finalisation processes, including clean-up and documentation.</p> <p>Work involved includes air conditioning components fitted to light vehicles, heavy commercial vehicles and/or plant and equipment.</p> <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 required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or 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 air conditioning components	1.1. Nature and scope of the work requirements are identified and confirmed 1.2. WHS requirements, including individual State/Territory regulatory/licensing 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. Method options are analysed and those most appropriate to the circumstances are selected and prepared 1.5. Technical and/or calibration requirements for overhauling air conditioning components are sourced and support equipment is identified and prepared 1.6. Hazards in relation to working with refrigerants are observed 1.7. Awareness of proper decanting and disposal of ozone depleting substances are recognised
2. Test air conditioning systems and analyse results	2.1. Methods for the conduct of the system tests are implemented in accordance with workplace procedures and manufacturer/component supplier specifications 2.2. Results are compared with manufacturer/component supplier specifications to indicate compliance or non-compliance 2.3. Results are documented with evidence and supporting information and recommendation(s) made 2.4. Report is processed in accordance with workplace procedures
3. Overhaul air conditioning system components	3.1. Information is accessed and interpreted from manufacturer/component supplier specifications 3.2. Air conditioning system components are dismantled, reassembled and tested to manufacturer/component supplier specifications 3.3. Worn, damaged, deteriorated or faulty components are identified and replaced/repared 3.4. Air conditioning system overhaul is completed without causing damage to any component or system 3.5. System components are tested prior to placing into service and results are documented in accordance with enterprise policies and procedures 3.6. Air conditioning system components are overhauled according to industry regulations/guidelines, WHS

ELEMENT	PERFORMANCE CRITERIA
	legislation, legislation and enterprise procedures/policies
4. Prepare air conditioning components and/or system for service or storage	4.1. Work schedule documentation is completed 4.2. Final inspection is made to ensure protective guards, safety features and cowlings are in place 4.3. Final inspection is made to ensure work is to workplace expectations 4.4. Air conditioning system/components are cleaned and/or stored to workplace expectations 4.5. 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 the overhaul of air conditioning systems, including the use of measuring equipment, computerised technology, specialist tooling and communication devices and the reporting/documenting of results

Required knowledge

A working knowledge of:

- WHS and environmental 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
- types and layout of service/repair manuals (hard copy and electronic)
- damage that may occur to electronic control units by the use of poor work practices
- measuring and testing procedures
- nature and characteristics of refrigerant
- component repair/overhauling procedures
- enterprise quality procedures
- work organisation and planning 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
- identification of the application, purpose and operation
- application of the full overhaul sequence as per the Range Statement relative to the qualification being sought
- interpreting the test results
- completing overhaul of the system and associated components within workplace timeframes
- presentation of vehicle to customer 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
- materials relevant to overhauling air conditioning system components
- equipment, hand and power tooling appropriate to overhauling air conditioning system components
- activities covering the mandatory task requirements
- specifications and work instructions

Method of assessment

Assessment must satisfy the endorsed assessment guidelines of the automotive industry's RS&R Training Package

EVIDENCE GUIDE

	<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 other appropriate 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>
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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.

Overhaul methods and sequences	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
Fault finding	Fault finding includes: <ul style="list-style-type: none"> • fault finding with aural, visual and functional assessments (including damage, corrosion, wear, refrigeration leakage) • reading and interpreting manufacturer/component supplier information
Specific requirements	Specific requirements: <ul style="list-style-type: none"> • compressors • evaporators • condensers
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 materials, 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

RANGE STATEMENT	
	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, cleaning equipment, pressure testing equipment, sealing equipment, leak detection equipment, thermometer, evacuation equipment, heating/soldering equipment, refrigerant recovery and/or recycling equipment, and refrigerant regassing equipment
Materials	Materials may include refrigeration oils, refrigerants, 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 pagers
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 air conditioning system 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	Technical
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Co-requisite units

Not applicable.

Competency field

Competency field	Technical - Air Conditioning and HVAC
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