



Australian Government

AURVTN3018 Repair and replace structural damage by welding

Release 1

AURVTN3018 Repair and replace structural damage by welding

Modification History

Release	Comment
Release 1	Replaces AURV326366AB Repair and replace structural damage (welding) Unit code updated to meet policy requirements Minor changes to unit title 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 structural repairs using straightening and realigning, welded panel replacement and body panel manual measuring procedures. Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.
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Application of the Unit

Application of the unit	The unit includes identification and confirmation of work requirement, preparation for work, application of structural straightening and realigning and welded panel replacement procedures and techniques, inspection and measuring of outcomes 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.
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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 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 for work	1.1. Work instructions are used to determine the job requirements, including method, materials and equipment. 1.2. Job specifications are read and interpreted. 1.3. WHS requirements, including dust and fume collection, breathing apparatus, eye and ear personal protection needs are observed throughout the work. 1.4. Material for repair is selected. 1.5. Equipment and tooling are identified and checked for safe and effective operation. 1.6. Procedures are determined to minimise waste material. 1.7. Procedures are identified for maximising energy efficiency while completing the job.
2. Carry out structural straightening and realigning procedures	2.1. Information is accessed and interpreted from manufacturer/component supplier specifications. 2.2. Protective equipment appropriate to repair activities is used. 2.3. Components are straightened and realigned using approved methods and equipment in accordance with manufacturer/ component supplier specification. 2.4. Where straightening and realigning of components includes disturbance to electrical, mechanical, air conditioning systems or trim, authorised assistance is sought. 2.5. Repair activities are carried out according to industry regulations/guidelines, WHS legislation, and enterprise procedures/policies.
3. Carry out welded panel replacement procedures	3.1. Information is accessed and interpreted from manufacturer/component supplier specifications. 3.2. Protective equipment appropriate to repair activities are used. 3.3. Components are replaced using approved methods and equipment in accordance with manufacturer/component supplier specification. 3.4. Where replacement of components includes disturbance to electrical, mechanical, air conditioning systems or trim, authorised assistance is sought. 3.5. Replacement activities are carried out according to industry regulations/guidelines, WHS legislation, and

ELEMENT	PERFORMANCE CRITERIA
	enterprise procedures/policies.
4. Carry out body panel measuring procedures	4.1.Information is accessed and interpreted from manufacturer/component supplier specifications. 4.2.Components are measured using approved methods and equipment in accordance with manufacturer/component supplier specification. 4.3.Measuring activities are carried out according to industry regulations/guidelines, WHS legislation, and enterprise procedures/policies. 4.4.Workplace/equipment documentation is completed and dealt with relevant to repair outcomes.
5. Clean up work area and maintain equipment	5.1.Material that can be reused is collected and stored. 5.2.Waste and scrap is removed following workplace and environmental procedure. 5.3.Equipment and work area are cleaned and inspected for serviceable condition in accordance with workplace procedures. 5.4.Unserviceable equipment is tagged and faults identified in accordance with workplace requirements. 5.5.Operator maintenance is completed in accordance with manufacturer/component supplier specifications and worksite procedures. 5.6.Tooling is maintained 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

- collect, organise and understand information related to work orders, plans and safety procedures for repairing/replacing structurally damaged components
- communicate ideas and information to enable confirmation of work requirements and specifications, coordination of work with worksite supervisor, other workers and customers, and the reporting of work outcomes and problems
- plan and organise activities, including preparation and layout of worksite and obtaining of equipment and materials to avoid backtracking, workflow interruptions or wastage
- work with others and in a team by recognising dependencies and using cooperative approaches to optimise workflow and productivity
- 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 calculate time, assess tolerances, apply accurate measurements, calculate material requirements and establish quality checks
- use workplace technology related to repair and replacement of structurally damaged panels, including the use of specialist tooling, measuring equipment, computerised technology and communication devices and the reporting/recording of results

Required knowledge

A working knowledge of:

- WHS regulations/requirements, equipment, material and personal safety requirements
- technical information
- hydraulic straightening and realigning procedures and techniques
- body panel measuring procedures and techniques
- panel replacement procedures and techniques
- manual handling procedures
- work organisation and planning processes
- enterprise quality processes

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
- applying vehicle protection procedures
- completing hydraulic straightening and aligning procedures to manufacturer/component supplier and workplace requirements
- completing repair/replacement operations for a minimum of three different jobs, which are to include one door skin and one quarter panel
- completing workplace/equipment documentation.

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 repair and replacement of structurally damaged panels
- equipment, hand and power tooling appropriate to repair and replacement of structurally damaged panels
- activities covering 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

EVIDENCE GUIDE

	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.

Structural damage

Structural damage to rails and skirts, boot floors, chassis rails, inner wheel arches, turrets, bulkheads / fire wall, front & rear hinge pillars, combination inner and outer sill/pillar panels.

RANGE STATEMENT	
Repair/replacement methods	Repair/replacement methods are to include: • welding (oxy acetylene, MIG, TIG and spot) • heat shrinking, panel split repair, metal finishing, body filling • hydraulic forming, minor sectional repair, welded panel replacement, measuring and alignment techniques.
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/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 worksite 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 worksite 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.

RANGE STATEMENT	
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 and equipment, including hydraulic push-pull, templates, welding equipment (which may include arc, oxy acetylene, MIG and TIG), measuring equipment/devices (tape measures, trammel gauges, mechanical/electronic underbody and jiggling), vehicle protection, specialist tooling and equipment.
Materials	Materials may include welding consumables and cleaning materials.
Communications	Communications are to include, but are not limited to verbal and visual instructions and fault reporting and may include worksite 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, repair quotations, signage, work schedules/plans/specifications, work bulletins, memos, material safety data sheets, diagrams or sketches • safe work procedures related to repair and replacement of structurally damaged panels • regulatory/legislative requirements pertaining to 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	Vehicle body
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Co-requisite units

Not applicable.

Competency field

Competency field	Technical - Body
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