Australian Government

AURVTN3028 Identify and repair high strength steel components

Release 1

INDUSTRY SKILLS COUNCILS
Creating Australia's Future

AURVTN3028 Identify and repair high strength steel components

Modification History

Release	Comment
Release 1	New unit of competency

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes required to locate, identify and repair high strength steel (HSS), including advanced and ultra-high strength steel components in motor vehicles. Work involves identifying HSS components, confirming recommended repair procedure of original equipment manufacturer (OEM), selecting repair procedures and recommended welding method, removing and replacing HSS components, completing and testing processes, and clean-up and documentation. 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 applies to repair technicians who apply repair techniques to damaged vehicles in line with OEM-recommended procedures and industry codes of practice. Work is carried out according to OEM and industry codes of practice.

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 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.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Locate, interpret and understand OEM-recommended repair processes for HSS	1.1. OEM repair processes and those of other recommended industry agencies are sourced using the internet or repair manuals 1.2. OEM repair processes and specifications are read and incorporated into the development of a repair plan 1.3. OEM-recommended ***repair procedures*** and workplace and industry codes of practice are followed 1.4. Personal protective equipment (PPE) is located and used correctly 1.5. Recommended repair ***equipment*** is located and checked for correct operation
2. Repair or replace HSS components	2.1. Sections not subject to repair are protected, using approved methods and equipment 2.2. HSS sections to be repaired are removed using recommended removal methods and equipment 2.3. Damaged surfaces are restored to a condition suitable for the fitting of replacement HSS components 2.4. Vehicle measuring and jigging equipment is used to locate the replacement HSS component correctly according to OEM specifications 2.5. Protection of OEM surface coatings is maintained or reapplied 2.6. Replacement HSS components are aligned and secured within OEM tolerances 2.7. HSS components are repaired according to industry regulations, ***statutory and regulatory authority*** guidelines, ***Workplace Health and Safety (WHS) requirements*** and workplace procedures and policies
3. Weld HSS components	3.1. Recommended welding equipment is located and checked for correct operation in a repair environment 3.2. Sample welds are conducted, inspected and destruction tested 3.3. HSS components are refitted using recommended repair methods, materials and equipment 3.4. Recommended welding techniques are used and welds are inspected for defects 3.5. HSS repairs are completed without causing damage to other components or systems 3.6. Grinding procedures are followed according to OEM and weld material specifications

4. Clean up work area and maintain equipment	4.1. Work area is cleaned and tidied according to workplace procedures 4.2. Waste and scrap materials are removed following workplace and ***environmental requirements*** and procedures 4.3. Tools and equipment are checked and faulty items are identified and tagged 4.4. Equipment maintenance activities are completed according to workplace and manufacturer specifications
5. Finalise HSS repair processes	5.1. Repair ***information and documents*** are completed and filed according to workplace policy 5.2. Repair and welding ***quality requirements*** are checked against OEM specifications and workplace quality standards

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- communication skills to:
  - follow recommended repair procedure
  - follow workplace verbal instructions
- literacy skills to:
  - understand quality procedures
  - read and follow information in written job instructions, specifications, standard operating procedures, charts, lists, drawings and other reference documents
  - obtain and record required OEM repair procedures and parts
- numeracy skills to interpret vehicle repair measuring equipment
- planning and organising skills to:
  - plan repair requirements and follow OEM repair specification
  - identify risk factors and take action to minimise them
  - follow workplace verbal instructions
- self-management skills to:
  - select and use appropriate repair equipment, materials, processes and procedures
  - recognise own limitations and seek advice
  - follow workplace policies and documentation, such as OEM repair procedures and industry codes of practice
- teamwork skills to apply knowledge of own role to complete activities efficiently to support team activities and tasks
- technical skills to use workplace tools and equipment relating to identifying and repairing HSS, including removal, alignment and welding methods
- technology skills to use the internet to collect information on OEM repair processes

Required knowledge

- WHS regulations and requirements relevant to HSS repair and replacement
- OEM recommended repair procedures and quality processes
- HSS recommended tools and equipment, including welding equipment
- personal protective equipment
- types and location of HSS components
- manufacturer and vehicle specifications and measurements
- body and panel alignment methods, techniques and procedures
- bonding, riveting and welding methods and procedures
- manual-handling techniques
- work organisation and planning 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, the 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	The evidence required to demonstrate competency in this unit must be relevant to workplace operations and satisfy all of the requirements of the performance criteria and required skills and knowledge. A person who demonstrates competency in this unit must be able to: • identify and repair HSS components • observe safety procedures and requirements • communicate effectively with others involved • select OEM-recommended repair methods and techniques • complete HSS repairs in a systematic manner • apply vehicle protection methods • conduct recommended welding, bonding and riveting procedures • inspect and test welds • complete quality and workplace documentation.
Context of, and specific resources for assessment	Competency is to be assessed in the workplace or a simulated workplace environment that accurately reflects performance in a real workplace setting. Assessment is to occur: • using standard workplace practices and procedures • following safety requirements • applying environmental constraints. Assessment is to comply with relevant: • regulatory requirements • Australian standards • industry codes of practice. The following resources must be made available for the assessment of this unit: • workplace location or simulated workplace • materials and information relevant to HSS repairs • equipment, and hand and power tools appropriate to HSS

EVIDENCE GUIDE	
The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, required Skills and Knowledge, the Range Statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
	repairs • OEM specifications • work instructions.
Method of assessment	Assessment must satisfy the endorsed Assessment Guidelines of this Training Package. Assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with the application of required skills and knowledge. Assessment methods must be by direct observation of tasks and include questioning on required skills and knowledge to ensure correct interpretation and application. Competence in this unit may be assessed in conjunction with other units which together form part of a holistic work role. Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate the needs of diverse clients. Assessment processes and techniques must be culturally sensitive and appropriate to the language, literacy and numeracy capacity of the candidate and the work being performed.

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, 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.	
Repair procedures may include:	• under-body or frame measurements • alignment equipment • jigging systems • pre-repair activities • hydraulic reforming • sectional repair (other than at factory seams) • partial replacement at factory seams • visual and physical examination • panel beating • use of heat monitoring equipment • spot welding • MIG brazing • MIG welding • mechanical fastening • riveting • metal cutting • bonding • removing and replacing mechanical units • removing and replacing suspension, steering, transmissions and other assemblies and components.
Equipment may include:	• vehicle alignment and jigging systems • hand tools • power tools • heating equipment • heat monitoring equipment • welding equipment • lifting equipment • hydraulic push and pull equipment • measuring systems • clamping and anchoring systems.
Statutory and regulatory authorities may include:	• federal, state or territory, and local authorities administering Acts • Australian Design Rules • codes of practice

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, 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.	
	• Australian standards.
Workplace health and safety requirements may include:	• workplace and personal safety • first aid equipment • equipment safety • safe handling of material • safe use of tools and equipment • hazard control, including control of hazardous materials and toxic substances • use of personal protective clothing • use of fire-fighting equipment.
Environmental requirements may include:	• measures to reduce pollution • waste management • noise control • dust control • clean-up management.
Information and documents may include:	• verbal and written documents • graphical instructions • OEM specifications • work bulletins • material safety data sheets (MSDS) • diagrams and sketches • safe work procedures • regulatory and legislative requirements • Australian Design Rules • engineer's design specifications and instructions • workplace specifications and requirements • instructions issued by authorised workplace or external persons • Australian standards.
Quality requirements may include:	• OEM-recommended repair procedures and regulations • Australian standards • internal workplace quality policies • workplace operational policies and procedures.

Unit Sector(s)

Competency field	Vehicle Body
Unit sector	Technical – Body

Custom Content Section

Not applicable.