



**Australian Government**

# **AURVNA007 Apply automotive mechanical and electrical knowledge to vehicle loss assessments**

**Release: 1**

## AURVNA007 Apply automotive mechanical and electrical knowledge to vehicle loss assessments

### Modification History

| Release   | Comment                |
|-----------|------------------------|
| Release 1 | New unit of competency |

### Application

This unit describes the performance outcomes required to apply automotive mechanical and electrical knowledge to identify mechanical and electrical damage resulting from a vehicular accident.

It applies to those applying specialist automotive knowledge to a vehicle loss assessment in the loss assessment environment. Loss assessment may relate to light vehicles, commercial vehicles, heavy vehicles, agricultural and plant equipment, recreational vehicles and motorcycles.

Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.

### Competency Field

Vehicle Body

### Unit Sector

Loss Assessment and Repair Quoting

### Elements and Performance Criteria

| ELEMENTS                                                                 | PERFORMANCE CRITERIA                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Elements describe the essential outcomes                                 | Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section                                                                                                                                       |
| 1. Develop and apply an understanding of automotive mechanical knowledge | 1.1 Knowledge of the operating principles of <b><i>suspension and steering systems, brake systems, transmission and driveline assembly</i></b> , and <b><i>engine and fuel systems</i></b> is developed<br>1.2 Knowledge of suspension and steering systems, brake systems, transmission and driveline assembly, and engine and fuel systems |

| ELEMENTS                                                                       | PERFORMANCE CRITERIA                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
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|                                                                                | <p>is applied to loss assessment processes, procedures and policies</p> <p>1.3 Mechanical damage is identified</p>                                                                                                                                                                                                                                                                                                                                                                             |
| 2. Develop and apply an understanding of automotive electrical knowledge       | <p>2.1 Knowledge of the operating principles of <b>electrical and electronic systems</b> is developed</p> <p>2.2 Knowledge of electrical and electronic systems is applied to loss assessment processes, procedures and policies</p> <p>2.3 Electrical damage is identified</p>                                                                                                                                                                                                                |
| 3. Develop and apply an understanding of advanced specialist vehicle knowledge | <p>3.1 Knowledge of specific vehicle types is developed, clarified where necessary, and applied to loss assessment processes, procedures and policies</p> <p>3.2 Knowledge of <b>latest technology</b> relating to automotive mechanical and electrical systems is developed, clarified where necessary, and applied to loss assessment processes, procedures and policies</p> <p>3.3 <b>Research techniques</b> and advanced specialist knowledge are employed to identify vehicle damage</p> |

## Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance and are not explicit in the performance criteria.

| Skills                        | Description                                                                                                                                                                                                                                                                                                    |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reading skills to:            | <ul style="list-style-type: none"> <li>• apply loss assessment processes, procedures and policies</li> <li>• research, interpret and apply automotive mechanical, electrical and advanced specialist vehicle knowledge.</li> </ul>                                                                             |
| Oral Communication skills to: | <ul style="list-style-type: none"> <li>• engage with repairers and specialist providers.</li> </ul>                                                                                                                                                                                                            |
| Numeracy skills to:           | <ul style="list-style-type: none"> <li>• interpret technical measurements.</li> </ul>                                                                                                                                                                                                                          |
| Digital Literacy skills to:   | <ul style="list-style-type: none"> <li>• use communication devices and computerised equipment to research advanced specialist vehicle information.</li> </ul>                                                                                                                                                  |
| Problem Solving skills to:    | <ul style="list-style-type: none"> <li>• clarify problems relating to: <ul style="list-style-type: none"> <li>• brake systems</li> <li>• engine and fuel systems</li> <li>• electrical and electronic systems</li> <li>• latest automotive technology</li> <li>• specific vehicle types</li> </ul> </li> </ul> |

|  |                                                                                                                                                                                                                                                                            |
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|  | <ul style="list-style-type: none"> <li>• suspension and steering systems</li> <li>• transmission and driveline assembly</li> <li>• clarify knowledge of specific vehicle types and latest technology relating to automotive mechanical and electrical problems.</li> </ul> |
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## Range of Conditions

This section specifies work environments and conditions that may affect performance.

Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Bold italicised wording, if used in the performance criteria, is detailed below.

|                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b><i>Suspension and steering systems</i></b> must include at least two of the following: | <ul style="list-style-type: none"> <li>• dependant suspension</li> <li>• double wishbone suspension</li> <li>• independent suspension</li> <li>• McPherson strut suspension.</li> </ul>                                                                                                                                                                                                   |
| <b><i>Brake systems</i></b> must include at least two of the following:                   | <ul style="list-style-type: none"> <li>• air braking system</li> <li>• anti-lock braking system (ABS)</li> <li>• autonomous braking system</li> <li>• hydraulic braking system</li> <li>• stability control.</li> </ul>                                                                                                                                                                   |
| <b><i>Transmission and driveline assembly</i></b> must include:                           | <ul style="list-style-type: none"> <li>• automatic and manual transmission</li> <li>• clutch assembly</li> <li>• driveline</li> <li>• final drive assembly.</li> </ul>                                                                                                                                                                                                                    |
| <b><i>Engine and fuel systems</i></b> must include:                                       | <ul style="list-style-type: none"> <li>• cooling system</li> <li>• emission control system</li> <li>• engine components</li> <li>• fuel system.</li> </ul>                                                                                                                                                                                                                                |
| <b><i>Electrical and electronic systems</i></b> must include:                             | <ul style="list-style-type: none"> <li>• batteries</li> <li>• charging systems</li> <li>• electrical circuits</li> <li>• electronic body management systems</li> <li>• electronic drive management systems</li> <li>• electronic spark ignition engine management system</li> <li>• ignition systems</li> <li>• lights</li> <li>• starting systems</li> <li>• vehicle sensors.</li> </ul> |
| <b><i>Latest technology</i></b> must                                                      | <ul style="list-style-type: none"> <li>• battery electric vehicle</li> <li>• hybrid vehicle.</li> </ul>                                                                                                                                                                                                                                                                                   |

|                                          |                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| include:                                 |                                                                                                                                                                                                                                                                                                                      |
| <b>Research techniques</b> must include: | <ul style="list-style-type: none"><li>• internet</li><li>• reference material, including:<ul style="list-style-type: none"><li>• original equipment manufacturer (OEM) or authorised agencies repair guides</li><li>• repair guides</li><li>• workshop manuals</li></ul></li><li>• subject matter experts.</li></ul> |

## Unit Mapping Information

No equivalent unit.

## Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=b4278d82-d487-4070-a8c4-78045ec695b1>