



Australian Government

**Assessment Requirements for AURTTM010
Heat treat, straighten and reclaim engine
components**

Release: 1

Assessment Requirements for AURTTM010 Heat treat, straighten and reclaim engine components

Modification History

Release	Comment
Release 1	New unit of competency.

Performance Evidence

Before competency can be determined, individuals must demonstrate they can perform the following according to the standards defined in this unit's elements, performance criteria, range of conditions and foundation skills:

- heat treat, straighten and machine three different engine components, including one engine cylinder head.

Knowledge Evidence

Individuals must be able to demonstrate knowledge of:

- work health and safety (WHS) and occupational health and safety (OHS) requirements relating to heat treating, straightening and reclaiming engine components, including procedures for:
 - selecting and using personal protective equipment (PPE)
 - using heating torches, ovens, presses and straightening tools
- environmental requirements, including procedures for trapping, storing and disposing of cooling and lubricating fluids released during the machining process
- types, characteristics, uses and limitations of reclamation techniques, including:
 - heat treatment techniques, including:
 - effects of heat on different metals and heating procedures
 - hardening and tempering techniques, including thermal stress relieving to stabilise crankshafts and applying Tuffride and nitride
 - straightening techniques, including:
 - cylinder head straightening
 - crankshaft, camshaft and connecting rod straightening
 - machining surfaces to achieve tolerances and required finish
- requirements of Australian standards relevant to engine reconditioning, including:

- AS 4182 Automotive repairs – Code of practice for reconditioning reciprocating spark ignition engines
- AS 4427 Automotive repairs – Code of practice for reconditioning reciprocating compression ignition engines
- post-repair procedures, including component surface oxidation protection.

Assessment Conditions

Assessors must satisfy NVR/AQTF assessor requirements.

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting.

Assessment must include direct observation of tasks.

Where assessment of competency includes third-party evidence, individuals must provide evidence that links them to the engine components that they have heat treated, straightened and reclaimed, e.g. repair orders.

Assessors must verify performance evidence through questioning on skills and knowledge to ensure correct interpretation and application.

The following resources must be made available:

- automotive repair workplace or simulated workplace
- workplace instructions
- manufacturer engine specifications
- AS 4182 Automotive repairs – Code of practice for reconditioning reciprocating spark ignition engines
- AS 4427 Automotive repairs – Code of practice for reconditioning reciprocating compression ignition engines
- three different engine components, including one engine cylinder head
- heating equipment and tools for heat treating, straightening and reclaiming engine components.

Links

Companion Volume implementation guides are found in VETNet -

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

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