



Australian Government

Assessment Requirements for MEM27005 Tune diesel engines

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MEM18029B Tune diesel engines

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria on at least two (2) occasions and include:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- identifying and interpreting specifications, charts, lists, drawings and service documents for tuning diesel engines
- removing injectors from each cylinder, isolating fuel system and fitting appropriate adaptors to each of the cylinders
- obtaining, recording and correcting compression readings for adaptor used
- determining firing pressures and adjusting to specifications
- performing tune up of diesel engine using appropriate tools, equipment and techniques.

Knowledge Evidence

Evidence required to demonstrate the required knowledge for this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include knowledge of:

- safe work practices and procedures and use of personal protective equipment (PPE)
- procedures for:
 - removing injectors from cylinders and reasons for isolating the fuel system
 - fitting adaptors to the cylinders
 - compression testing diesel engines and recording compression readings
 - comparing the compression readings with specifications and identifying any deviations
 - adjusting firing pressures
 - starting, operating, loading and shutting down diesel engines
 - recording test results
 - determining exhaust smoke density and equipment and techniques
 - adjusting valve clearances and/or timing
 - adjusting injector pump and injector timing
 - adjusting the governor rack travel, torque spring load limit, over speed trips, aneroid or fuel ratio control
 - adjusting injector opening pressure
- appropriate adaptors and reasons for using adaptors
- likely causes of any detected deviations from specification

- corrections required for compression readings to take account of the adaptor used
- test equipment and procedures to be used in the tuning of diesel engines
- manufacturer's recommended tests and reasons for conducting the tests
- timing and pressures to be achieved
- governor specifications.

Assessment Conditions

- Assessors must:
 - have vocational competency in tuning diesel engines at least to the level being assessed with relevant industry knowledge and experience
 - satisfy the assessor requirements in the *Standards for Registered Training Organisations 2015* or its replacement and comply with the *National Vocational Education and Training Regulator Act 2011*, its replacement or equivalent legislation covering VET regulation in a non-referring state/territory as the case requires
- Where possible assessment must occur in operational workplace situations. Where this is not possible or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment that reflects realistic operational workplace conditions. This must cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills
- Conditions for assessment must include access to all tools, equipment, materials and documentation required, including relevant workplace procedures, product and manufacturing specifications
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>