



Australian Government

**Assessment Requirements for MEM27021
Maintain, fault find and repair stationary
plant gas turbine engines**

Release: 1

Assessment Requirements for MEM27021 Maintain, fault find and repair stationary plant gas turbine engines

Modification History

Release 1: New unit

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 other applicable reference documents to perform engine repair or replacement
- testing of turbine engine operation with and without fuel
- checking gas turbine engine performance against specifications for conformance
- purging of gas turbine and associated equipment
- checking components and parts for abnormal wear or defects and identifying whether to reuse, repair or replace components and parts
- replacing worn or faulty parts
- cleaning parts using appropriate solutions and safety precautions and rack and setting out engine parts according to their original position in readiness for reassembly
- obtaining and recording measurements and interpreting readings for replacement or reuse as being under or over size
- assembly and disassembly of gas turbine 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)
- tools, techniques and equipment to be used and reasons for selection
- characteristics of surface finishes and wear patterns as applied to gas turbine engine components
- criteria for identifying the components for reuse or replacement
- gas turbine engine layout and operation, including:
 - types of gas turbine
 - operating principles and power output
 - gas path
 - intakes

- compressors
- combustion chambers
- turbine blades
- air intake path
- exhaust path
- bearings and seals
- lubrication system
- starting system
- ignition system
- safety systems, including safety shut off systems, leak detection systems and vents
- controls and instrumentation, including systems and controls for remote operation and monitoring
- action to be taken when abnormal wear or defects are observed in the engine components
- test instruments and tools used for gas turbine service and maintenance
- purging procedure for the stationary gas turbine and associated equipment
- gas turbine engine fuel types, properties and applications
- relevant standards and regulations including AS 3814:2015 Industrial and commercial gas-fired appliances and AS/NZS 5601 Gas installation
- concept of under/over size of replacement parts and the reasons for identifying replacement parts as under or over size
- tools, techniques and equipment required to correct faults.

Assessment Conditions

- Assessors must:
 - have vocational competency in maintaining, fault finding and repairing stationary plant gas turbine 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>