

Job description

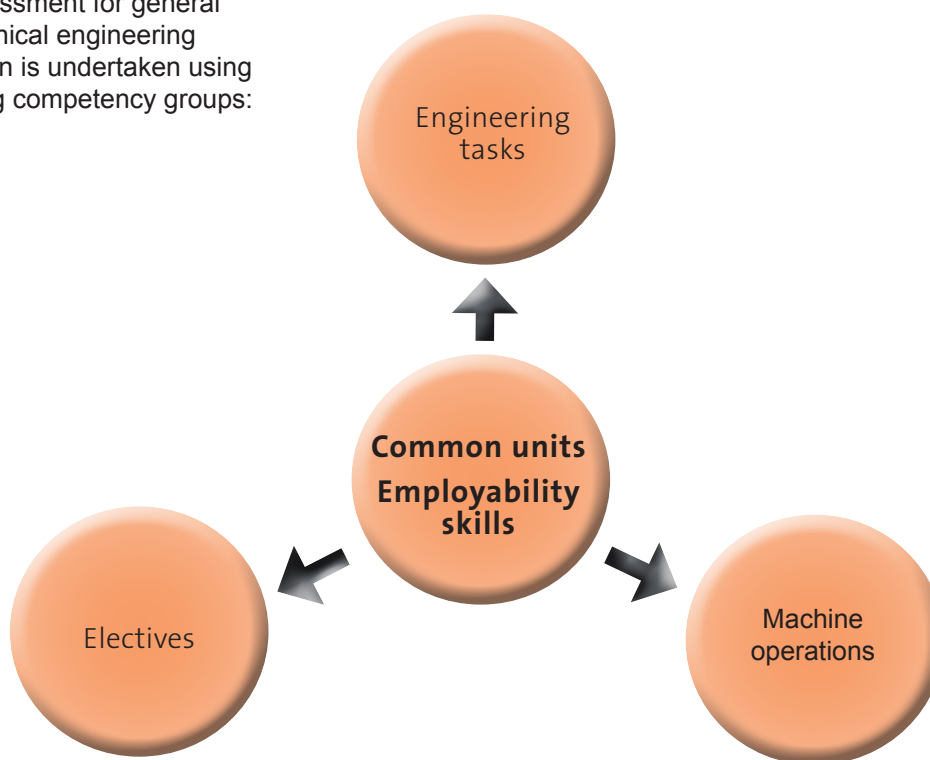
The work of a metal fitter and machinist generally encompasses; studying drawings and specifications to determine suitable material, method and sequence of operations, and machine settings; fitting fabricated metal parts into products and assembling metal parts and subassemblies to produce machines and equipment; checking fabricated and assembled metal parts for accuracy, clearance and fit using precision measuring instruments; setting guides, stops and other controls on machining tools, setting up prescribed cutting and shaping tools and dies in machines and presses; forming metal stock and castings to fine tolerances using machining tools to press, cut, grind, plane, bore and drill metal; cutting, threading, bending and installing hydraulic and pneumatic pipes and lines; diagnosing faults and performing operational maintenance of machines, and overhauling and repairing mechanical parts and fluid power equipment; and may erect machines and equipment on-site.

Competency assessment

The VETASSESS assessment uses competency groups. These groups consist of units of competency for the Certificate III in Engineering - Mechanical Trade qualification (MEM30205). They represent groups of tasks, skills and knowledge that are used to assess an applicant's competence in an occupation and are from the Metals, Engineering and Manufacturing Training Package (MEM05).

The minimum requirement for achievement of the Australian qualification is to demonstrate competence (employment and training evidence) in all of the units of competency. Please read the [Portfolio Builder](#) document for more information about how to complete a competency assessment for an Australian qualification.

The assessment for general mechanical engineering tradesperson is undertaken using the following competency groups:



Common units

Units of competency covering common skills and knowledge will be assessed with each of the competency groups. These common units relate to the workplace occupational health and safety requirements, work processes and procedures, engineering industry standards and requirements to work as a general mechanical engineering tradesperson in Australia.

Employability skills

The assessment includes the following employability skills: teamwork; communication; problem solving; planning & organising; learning; technology; self-management; initiative & enterprise. Competency units contain employability skills that will be assessed with each competency group.

Competency groups

The following is a breakdown of the competency groups shown in the diagram on page 1.

Common units

The following units of competency are common in all groups for assessment purposes.

MEM13014A	Apply principles of occupational health and safety in the work environment
MEM16007A	Work with others in a manufacturing, engineering or related environment
MEM16006A	Organise and communicate information
MEM15002A	Apply quality systems
MEM15024A	Apply quality procedures
MEM17003A	Assist in the provision of on the job training

Note: The tasks, skills, knowledge and employability skills required for the common units are assessed with the following competency groups.

Engineering tasks

Be able to perform and plan a range of operations such as interpreting technical drawings, measurements, manual handling and use of tools.

MEM14004A	Plan to undertake a routine task
MEM14005A	Plan a complete activity
MEM16008A	Interact with computing technology
MEM09002B	Interpret technical drawing
MEM12023A	Perform engineering measurements
MEM12024A	Perform computations
MEM11011B	Undertake manual handling
MEM18001C	Use hand tools
MEM18002B	Use power tools/hand held operations

Machine operations

Be able to operate, maintain and monitor machines in an engineering environment.

MEM07032B	Use workshop machines for basic operations
MEM07003B	Perform machine setting (routine)
MEM07024B	Operate and monitor machine/process
MEM07001B	Perform operational maintenance of machines/equipment
MEM18003C	Use hand tools for precision work
MEM12003B	Perform precision mechanical measurements

Elective Areas

Elective areas are comprised of units that represent the work context or environment in which a general engineering mechanical tradesperson works. They are included specifically to meet particular work organisation and skill requirements of the general engineering mechanical tradesperson qualification.

You are required to provide evidence of your skills, knowledge and experience in the following elective areas as part of the assessment process.

Machine operation - NC/CNC (Computer Numerical Control)

Be able to operate and monitor machines in an engineering workshop.

MEM07015B	Set computer controlled machines/processes
MEM07028B	Operate computer controlled machines/processes
MEM07016C	Set and edit computer controlled machines/processes
MEM07018C	Write basic NC/CNC programs
MEM07019C	Program NC/CNC machining centre
MEM07020C	Program multiple spindle and/or multiple axis NC/CNC machining centre
MEM07022C	Program CNC wire cut machines
MEM07023C	Program and set up CNC manufacturing cell
MEM07024B	Operate and monitor machine/process

Machining tasks

Be able to perform general machining, lathe, milling, grinding and boring operations.

MEM07005B	Perform general machining
MEM07002C	Perform precision shaping/planning/slotting operations
MEM07006B	Perform lathe operations
MEM07007B	Perform milling operations
MEM07008C	Perform grinding operations
MEM07013B	Perform machining operations using horizontal and/or vertical boring machines
MEM07014B	Perform electro-discharge (EDM) machining operations
MEM07029B	Perform routine sharpening/maintenance of production tools and cutters

Lathe operations

Be able to perform advanced lathe operations.

MEM07004B	Perform machine setting (complex)
MEM07021B	Perform complex lathe operations
MEM07025B	Perform advanced machine/process operation

Milling operations

Be able to perform advanced milling operations.

MEM07004B	Perform machine setting (complex)
MEM07011B	Perform complex milling operations
MEM07025B	Perform advanced machine/process operation

Boring operations

Be able to perform advanced boring operations.

MEM07004B	Perform machine setting (complex)
MEM07009B	Perform precision jig boring operations
MEM07025B	Perform advanced machine/process operation

Grinding operations

Be able to perform advanced grinding operations.

MEM07004B	Perform machine setting (complex)
MEM07012B	Perform complex grinding operations
MEM07025B	Perform advanced machine/process operation

Mechanical service and repair

Be able to maintain and repair mechanical equipment.

MEM18004B	Maintain and overhaul mechanical equipment
MEM18005B	Perform fault diagnosis, installation and removal of bearings
MEM18007B	Maintain and repair mechanical drives and mechanical transmission assemblies
MEM18009B	Levelling and alignment of machines and engineering components
MEM18012B	Perform installation and removal of mechanical seals
MEM18013B	Perform gland packing

Engineering maintenance

Be able to diagnose, repair and maintain mechanical equipment.

MEM07001B	Perform operational maintenance of machines/equipment
MEM18010C	Perform equipment condition monitoring and recording
MEM18011C	Shut down and isolate machines/equipment
MEM18006C	Repair and fit engineering components
MEM18055B	Dismantle, replace and assemble engineering components

Welding

Be able to perform metal arc, gas metal arc and gas tungsten welding.

MEM05051A	Select welding processes
MEM05052A	Apply safe welding practices
MEM13003B	Work safely with industrial chemicals and materials
MEM05012C	Perform routine manual metal arc welding
MEM05050B	Perform routine gas metal arc welding
MEM05049B	Perform routine gas tungsten arc welding

Fabrication

Be able to fabricate using a range of fabrication techniques.

MEM12007C	Mark off/out structural fabrications and shapes
MEM05005B	Carry out mechanical cutting
MEM03003B	Perform sheet and plate assembly

Hydraulic and pneumatic

Be able to maintain, repair and manufacture hydraulic and/or pneumatic systems.

MEM18019B	Maintain pneumatic system components
MEM18020B	Maintain hydraulic system components
MEM18052B	Inspect, test and maintain the operational function of components
MEM18071B	Connect/disconnect fluid conveying system components
MEM18072B	Manufacture fluid conveying conductor assemblies

Technical drawing

Be able to develop and modify technical drawings for computer assisted drafting (CAD).

MEM09003B	Prepare basic engineering drawings (CAD)
MEM09022A	Create 2D code files using CAM systems

Assessment outcome

If you **successfully** complete the assessment process you will receive the following:

- an **Australian Certificate III** qualification that lists the units of competency you successfully achieved.

If you are **unsuccessful** in the assessment process you will be issued:

- a **Statement of Attainment** that lists units of competency you have successfully achieved and those that were not achieved.

Licensing and industry information

A licence, registration or certification may be required for this occupation.

For further information regarding any licensing requirements refer to:

- Department of Immigration and Citizenship (DIAC) - Australian Skills Recognition Information (ASRI):
www.immi.gov.au/asri
- Mutual recognition for occupational licences in Australia:
www.licencerecognition.gov.au

Additional industry information that may assist you can be found at:

- The myfuture website is Australia's national career information and exploration service, helping people to make career decisions, plan career pathways and manage work transitions:
<http://www.myfuture.edu.au>

Qualification information

If you would like detailed information about the units of competency that make up this qualification please refer to the National Training Information Service (NTIS) website:

<http://www.ntis.gov.au>