



Australian Government

MEM19021 Diagnose and service micro-mechanisms

Release: 1

MEM19021 Diagnose and service micro-mechanisms

Modification History

Release 1. Supersedes and is equivalent to MEM19021B Diagnose and service micro-mechanisms

Application

This unit of competency defines the skills and knowledge required to diagnose and service micro-mechanisms of clocks and watches, including the procurement and fitting of replacement parts, adjustment and checking to achieve timekeeping and water resistance of completed timepieces to specification.

Where the manufacturing of parts is required appropriate machining units should also be selected.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Band: A

Unit Weight: 6

Pre-requisite Unit

MEM09002	Interpret technical drawing
MEM11011	Undertake manual handling
MEM12023	Perform engineering measurements
MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006	Organise and communicate information
MEM18001	Use hand tools
MEM18002	Use power tools/hand held operations
MEM18055	Dismantle, replace and assemble engineering components
MEM19020	Fault find and maintain micro-mechanisms

Competency Field

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Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

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| 1 | Determine job requirements | 1.1 | Follow standard operating procedures (SOPs) |
| | | 1.2 | Comply with work health and safety (WHS) requirements at all times |
| | | 1.3 | Use appropriate personal protective equipment (PPE) in accordance with SOPs |
| | | 1.4 | Identify job requirements from specifications, drawings, job sheets or work instructions |
| 2 | Identify performance requirements for servicing | 2.1 | Identify features and performance characteristics of micro-mechanism |
| | | 2.2 | Identify performance problems common to make and model |
| 3 | Diagnose faults and servicing requirements | 3.1 | Assess overall condition of micro-mechanism |
| | | 3.2 | Inspect and check physical condition and operational functioning of components and verify with appropriate persons, as required |
| | | 3.3 | Diagnose performance problems and establish servicing requirements |
| | | 3.4 | Source replacement parts according to SOPs |
| | | 3.5 | Determine overall repair costs for servicing |
| 4 | Service micro-mechanisms | 4.1 | Refinish and replace components, as required |
| | | 4.2 | Assemble components and lubricate to specification |
| | | 4.3 | Finish components and adjust to specification |

Foundation Skills

This section describes those required skills (reading, writing, oral communication and numeracy) that are essential to workplace performance in this unit of competency.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different 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.

Micro-mechanisms include one (1) or more of the following:

- mechanical watches and clocks
- electric watches and clocks
- pieces of recent manufacture
- restoration pieces
- day and date systems
- automatic winding systems
- generating systems
- alarm mechanisms
- striking and chiming mechanisms
- calendar mechanisms

Components include one (1) or more of the following:

- power source
- wheel trains
- mechanical oscillating systems
- motion work
- calendar systems
- casing components
- pivots

Checks include one (1) or more of the following:

- tensioning
- functioning
- cleanliness
- clearances
- tolerances
- wear
- damage
- water resistance

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Inspection includes observations of one (1) or more of the following:

- clearances
- fits and adjustments
- functioning
- systems and performance analysis
- materials
- design
- finish
- movement type
- typical performance problems
- special servicing requirements
- assemblies
- subassemblies
- escapement
- wheel train
- motion work
- power source (mainspring)
- calendar
- winding and setting mechanisms

Faults and damage include one (1) or more of the following:

- wear
- broken parts
- fatigue
- knocking
- contaminants
- rust

Appropriate persons include one (1) or more of the following:

- customers
- supervisors
- managers
- suppliers
- technical experts
- colleagues

Unit Mapping Information

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Links

Companion Volume implementation guides are found in VETNet -

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