



**Australian Government**

# **MEM21019 Service and repair clock striking mechanisms**

**Release: 1**

# MEM21019 Service and repair clock striking mechanisms

## Modification History

Release 1. Supersedes and is equivalent to MEM21019A Service and repair clock striking mechanisms

## Application

This unit of competency defines the skills and knowledge required to service and repair mechanical floor, wall and shelf clocks fitted with rack or count wheel striking mechanisms.

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

Band: A

Unit weight: 4

## Pre-requisite Unit

MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006	Organise and communicate information
MEM21017	Service and repair clock timepieces

## Competency Field

Horology

## Elements and Performance Criteria

Elements describe the essential outcomes.

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

1	<b>Determine servicing requirements and liaise with customer</b>	1.1	Follow standard operating procedures (SOPs)
		1.2	Comply with work health and safety (WHS) requirements at all times
		1.3	Identify function and type of striking mechanism
		1.4	Verify clock condition and performance concerns with customer

Elements describe the essential outcomes.

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

- 1.5 Prepare written and verbal quotations
  - 1.6 Agree with customer on recommended service procedures
  - 1.7 Prepare clock for handover
  - 1.8 Record and document repair process
  - 1.9 Source replacement parts from industry suppliers
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- 2 **Service and repair strike mechanisms**
    - 2.1 Establish an appropriate clean and safe work environment
    - 2.2 Select and use appropriate personal protective equipment (PPE) in accordance with SOPs
    - 2.3 Remove and replace movement from case, considering case design and strike mechanism employed
    - 2.4 Handle components without damaging and marking
    - 2.5 Use appropriate hand, bench tools and equipment in a safe and correct manner
    - 2.6 Confirm operation of strike mechanism
    - 2.7 Dismantle and reassemble strike components in correct sequence
    - 2.8 Verify orientation of gear trains and strike detents
    - 2.9 Inspect strike release, activation and sound generation and identify wear, condition and faults
    - 2.10 Confirm servicing and repair requirements
    - 2.11 Repair and rectify faults in strike components
    - 2.12 Clean and reassemble mechanism and verify correct set-up, operation and performance
    - 2.13 Select and apply lubricants to strike components

Elements describe the essential outcomes.

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

- |   |   |     |   |
|---|---|-----|---|
| 3 | <b>Bench test and adjust striking mechanism</b> | 3.1 | Verify correct operation and function of striking mechanism |
|   |   | 3.2 | Verify clock operation over 24-hour period                  |
|   |   | 3.3 | Determine and rectify striking faults                       |

## 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.

**Function and type of striking mechanism includes one (1) or more of the following:**

- motive force (mainspring or weight driven)
- gear train (transmits power)
- ways of producing striking sound (metal gongs, chime rods, bells or air bellows)
- count wheel striking movements (European or American manufacture)
- rack striking movements (European or American manufacture)

**Record and document repair process includes one (1) or more of the following:**

- date and extent of repair
- cost of replacement parts
- time spent on procedure

**Operation of strike mechanism includes one (1) or more of the following:**

- hour struck corresponds with hands
- release mechanism synchronised with hands
- warning set-up correctly
- function of release mechanism
- sound generation (gongs, rods or hammer engagement)

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**Striking mechanism components include one (1) or more of the following:**

- release mechanism
- gathering pallet
- detents
- counting mechanism (snail or count wheel)
- rack
- gongs, chime rods and bells
- hammers

**Faults in striking mechanism components include one (1) or more of the following:**

- incorrect striking
- continuous striking
- striking mechanism stops clock or impacts on timekeeping
- warning set-up
- gong security
- pin security
- gathering pallet engagement with rack teeth, tightness and positioning
- rack tail engagement position with snail
- hammer inserts (condition - worn or aged)
- security of gongs, rods and attachment to case

**Correct set-up includes one (1) or more of the following:**

- synchronised strike release with hands
- amount of warning
- correct sequence
- sound of strike

**Lubricants to striking mechanism components include the following:**

- correct lubricants for cams and detents
- techniques for lubricating

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**Hand and bench tools and equipment includes one (1) or more of the following:**

- clock repairers' hand tools:
  - tweezers
  - screwdrivers
  - eyeglasses
- universal shifter, sockets and spanners
- pliers, end cutters and files
- stakes for supporting removal or replacement of gathering pallet and cannon pinions
- oilers and oil pots and greases
- cleaning brushes, peg wood, solutions, rinses and solvents

**Appropriate working environment includes the following:**

- clean bench and working area
- adequate lighting and ventilation
- tools and equipment organised and in good condition
- ergonomic seating, including bench height

## Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM21019A Service and repair clock striking mechanisms

## Links

Companion Volume implementation guides are found in VETNet -

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