



Australian Government

MEM21003 Perform watch case servicing, repair and refurbishment

Release: 1

MEM21003 Perform watch case servicing, repair and refurbishment

Modification History

Release 1. Supersedes and is equivalent to MEM21003A Perform watch case servicing, repair and refurbishment

Application

This unit of competency defines the skills and knowledge to service and repair watch cases, including replacement techniques for auxiliary components. It includes refurbishment of watch cases and bands by polishing and graining and water-resistance testing methods and procedures.

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
MEM21001	Replace watch batteries, capacitors and bands
MEM21002	Perform watch movement exchange

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	Determine job requirements	1.1	Follow standard operating procedures (SOPs)
		1.2	Comply with work health and safety (WHS) requirements at all times

Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.	
2	Establish servicing requirements and liaise with customer	1.3	Select and use appropriate personal protective equipment (PPE) in accordance with SOPs
		1.4	Identify job requirements from specifications, job sheets or work instructions
		2.1	Identify watch case type, functions, construction and components
		2.2	Carry out pre-repair tests to verify water-resistance, as required
		2.3	Prepare written quotation and inform customer of watch case condition and outline recommended service procedures
		2.4	Verify and agree on servicing requirements with customer
3	Disassemble watch case and components for servicing	2.5	Prepare watch for handover
		2.6	Record and document repair process
		3.1	Establish an appropriate clean and safe work environment
		3.2	Open and close watch cases
		3.3	Use hand tools and equipment in safe and correct manner
		3.4	Remove watch case, sub-assemblies and components in correct sequence without damaging, marking or leaving fingerprints
4	Repair and refurbish watch case, sub-assemblies	3.5	Verify condition of case gaskets and replace, as required
		4.1	Inspect condition of watch case, including case sub-assemblies and components
		4.2	Replace faulty or damaged or worn watch case, sub-assemblies and components

Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.	
	and components	4.3	Select appropriate media for polishing and graining case and band components
		4.4	Set up and operate machines and equipment safely for polishing and graining
		4.5	Select appropriate case and band cleaning methods
		4.6	Inspect watch case for condition and cleanliness and rectify imperfections and faults
5	Reassemble watch case, sub-assemblies and components	5.1	Reassemble and fit watch case, sub-assemblies and components according to manufacturer specifications
		5.2	Lubricate watch case, including case sub-assemblies and components and sub-assemblies according to manufacturer specifications
		5.3	Verify security, functioning, and operation of watch case, sub-assemblies and components
		5.4	Apply watch case assembly inspections and precautions
6	Perform water-resistance testing for watch cases	6.1	Verify and confirm water-resistance rating of watch case
		6.2	Identify, set up and operate equipment for water-resistance testing and interpret readings
		6.3	Verify watch case performance and repair or replace components and gaskets, as required, to industry standards

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.

Watch case auxiliary components include one (1) or more of the following:

- watch glasses
- pendants
- pushbuttons and correctors
- bezels
- case backs
- gaskets
- crowns and bands
- straps or bracelets

Watch case types include (1) one or more of the following:

- pocket watch
- wrist watch
- ring watch
- necklace
- specialist watches
- non water-resistant (two piece case)
- non water-resistant (three piece case)
- water-resistant (two piece case)
- monocoque (one piece case)

Watch materials include one (1) or more of the following:

- precious metals
- stainless steel
- ceramic
- titanium
- others

Watch construction includes one (1) or more of the following:

- case body
- bezel glass
- case back
- pushbutton
- case ring
- gaskets

Watch case/band condition includes one (1) or more of the following:

- completeness
- scratches, dents and worn plating
- general wear and tear
- water-resistance performance

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.

Recommended service procedures include the following:

- replace worn or damaged components
- repair
- refurbish
- case refurbishment to customer requirements

Record and document repair includes the following:

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

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
- dust extraction

Case components and movement sub-assemblies include one (1) or more of the following:

- glass
- spring fit
- armoured
- mineral and sapphire
- bezel
- case back and gaskets
- crown
- pendant (friction fit or screwed)
- gaskets

Inspect condition includes one (1) or more of the following:

- originality of components
- cleanliness
- wear
- damage
- corrosion

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.

Watch case assembly inspections and precautions include one (1) or more of the following:

- use plastic protection whilst opening and closing
- alignment of components
- security of pendants
- pushbutton operation
- screw crowns and stem length
- damage to stem when securing crown
- cleanliness

Water-resistance rating includes one (1) or more of the following:

- minimum standard of 20 metres, or additionally to 30 metres and 50 metres
- minimum standards for divers watch of 100 metres or up to 3000 metres

Methods to test water-resistance include one (1) or more of the following:

- vacuum
- over pressure
- combined test
- water immersion method
- air leak method
- condensation test

Hand tools and equipment include one (1) or more of the following:

- pin vices and case holders
- case opening and closing tools
- glass press and vigor tool
- adhesives
- polishing machines and various grades of buff wheels
- polishing and graining (3M media in various grades)

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM21003A Perform watch case servicing, repair and refurbishment

Links

Companion Volume implementation guides are found in VETNet -

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

Assessment Requirements for MEM21003 Perform watch case servicing, repair and refurbishment

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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
- liaising with customer and verifying condition and performance, identifying repair costs and recording and documenting service/repair process
- servicing, inspecting, repairing and replacing watch case components in an appropriate work environment
- selecting and using appropriate workshop tools, equipment and media for watch case servicing, polishing and graining
- determining and conducting appropriate tests for water-resistant watches
- safely cleaning watch cases and bands.

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)
- types of construction of watch cases by style, design, material and quality
- types of watch glass materials, construction and fitting procedures, including use of adhesives, as required
- types of crown construction by style, design, material and quality
- types of case gasket materials and construction fitting procedures
- types of crown styles, materials and construction
- types of pushbutton construction
- standards for water-resistance ratings
- standards for water-resistance testing methods
- procedures for testing water-resistant and divers watches
- function and operating principles for water-resistance testing
- tools and equipment for servicing watch cases and components
- watch case cleaning methods
- types of band construction, components and materials.

Assessment Conditions

- Assessors must:
 - have vocational competency in performing watch case servicing, repair and refurbishment 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.

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