Australian Government

MEM21018 Service clock escapements and oscillating systems

Release: 1

MEM21018 Service clock escapements and oscillating systems

Modification History

Release 1. Supersedes and is equivalent to MEM21018A Service clock escapements and oscillating systems

Application

This unit of competency defines the skills and knowledge required to apply service and repair techniques to inspect, diagnose faults, repair and adjust common clock escapements and oscillating systems.

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

Band: A

Unit weight: 4

Pre-requisite Unit

MEM11011	Undertake manual handling
MEM13015	Work safely and effectively in manufacturing and engineering
MEM16006	Organise and communicate information
MEM18001	Use hand tools
MEM21008	Service mechanical watches
MEM21009	Inspect, diagnose, adjust and repair mechanical watches
MEM21012	Service and repair mechanical watch oscillating systems
MEM21013	Service, test and adjust watch escapements
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	**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	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	**Identify escapement and oscillator type**	2.1	Identify clock escapements/oscillating systems and applications
		2.2	Establish the performance characteristics of the clock according to escapement and oscillating system
		2.3	Record and document repair requirements
3	**Diagnose clock escapements and oscillators**	3.1	Select and use appropriate workshop tools and equipment
		3.2	Inspect clock escapement and oscillators for correct function, engagement and performance
		3.3	Record and report wear and damage to parts
		3.4	Determine appropriate repair process to rectify faults
4	**Repair and adjust clock escapements and oscillators**	4.1	Remove and reassemble escapement/oscillators using appropriate tools, equipment and techniques
		4.2	Determine theoretical length of replacement pendulum
		4.3	Repair or replace escapement and oscillator components
		4.4	Adjust escapement and oscillator components for correct operation

Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.	
5	**Service and adjust torsional pendulums**	5.1	Remove and reassemble torsional pendulums and oscillator components using appropriate tools, equipment and techniques
		5.2	Inspect torsional pendulum components and identify condition and wear
		5.3	Repair and replace torsional pendulum
		5.4	Adjust torsional pendulum for correct operation (in-beat)
6	**Service and set up platform escapements**	6.1	Remove and reassemble platform escapement using appropriate tools, equipment and techniques
		6.2	Inspect platform escapement and identify condition/wear
		6.3	Repair and replace platform escapement
		6.4	Adjust platform escapement and correct depthing with contrate wheel
7	**Test and adjust rate**	7.1	Verify and confirm function of clock movement
		7.2	Set up and operate mechanical clock timing machine and interpret readings
		7.3	Verify clock performance and rate testing
		7.4	Adjust rate, as required, according to performance and design characteristics

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.

Clock escapements/ oscillator systems include one (1) or more of the following:	• verge • recoil escapement • deadbeat escapement • cylinder • platform (lever escapement or cylinder) • simple pendulum • compound pendulum • compensating pendulum • torsion pendulum • floating balance • suspension systems (spring blade, knife edge or silk)
Record and document repair includes one (1) or more of the following:	• extent and date of repair • cost of replacement part • time spent on procedure
Adjust escapement and oscillator includes one (1) or more of the following:	• condition amount of drop • condition and extent of lockings • condition and amount of impulse • pendulum action and amplitude • in-beat
Torsional pendulums include one (1) or more of the following:	• 400 day clocks • Atmos clocks • suspension spring

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM21018A Service clock escapements and oscillating systems

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2