



Australian Government

MEM06013 Repair springs

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Modification History

Release	Comments
1	This unit of competency was first released in MEM Manufacturing and Engineering Release 5.0.

Application

This unit of competency defines the skills and knowledge required to assess spring condition, set and reset springs for repair, set up and operate spring forming equipment, form and shape material, and test components.

It does not cover the use of automated spring making equipment.

Where the interpretation of technical drawings is required, MEM09002 Interpret technical drawing should also be selected.

Where the selection and use of engineering measurement is required, MEM12023 Perform engineering measurements should also be selected.

Where the selection and use of power tools/hand held operations is required, MEM18002 Use power tools/hand held operations should also be selected.

Commonwealth and state/territory laws and regulations governing work and training environments must be complied with.

Band: A

Unit Weight: 4

Licensing/Regulatory Information

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

Pre-requisite unit(s)

MEM06003 Carry out heat treatment

MEM06010 Perform hand forging

MEM11011 Undertake manual handling

MEM13015 Work safely and effectively in manufacturing and engineering

MEM16006 Organise and communicate information

MEM18001 Use hand tools

Competency field(s)

Forging

Unit sector(s)

N/A

Elements and Performance Criteria

Elements	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 Use appropriate personal protective equipment (PPE) in accordance with SOPs 1.4 Identify job requirements from specifications, sketches, job sheets or work instructions
2. Assess spring condition	2.1 Check springs for correct operation and identify defects in accordance with SOPs 2.2 Identify springs suitable for rework and the appropriate repair procedure
3. Set and reset springs for repair	3.1 Apply stripping procedure appropriate for spring type and job requirements 3.2 Allow for setting tolerances in set/reset of springs to specification 3.3 Apply and control heat for setting/resetting springs at a level appropriate for material.
4. Set up and operate spring forming equipment	4.1 Set up and use equipment in accordance with procedures 4.2 Position spring material and safety guards 4.3 Select forming equipment and tools to meet job requirements
5. Form and shape material	5.1 Determine material lengths 5.2 Taper, roll and bend material to conform to specifications

	5.3 Adopt correct procedure for hot and cold forming 5.4 Make allowance for relief and spring-back
6. Test components	6.1 Determine spring compression from specifications 6.2 Determine any defects and confirm dimensional accuracy 6.3 Re-set non-conforming springs and adjust spring forming equipment as necessary 6.4 Nest springs to specification 6.5 Record spring test results in accordance with SOPs

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, accessibility of the item, and local industry and regional contexts) are included.	
Springs include one or more of the following:	• laminated • compression/coil • plate.
Equipment includes one or more of the following:	• tapering equipment • coiling equipment • stripping and buckling equipment • spring testing machines.
Material includes one or more of the following:	• spring steel • specialised alloy steel.

Unit Mapping Information

Current Code and Title	Previous Code and Title	Comments	Equivalence
MEM06013 Repair springs	MEM06006 Repair springs	Superseded	Equivalent

Assessment Requirements for MEM06013 Repair springs

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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 and include the ability to:

- follow work instructions, standard operating procedures (SOPs) and safe work practices
- assess spring condition and select suitable set and reset repair methods
- set up and operate spring forming equipment and tools to form and shape spring material
- test spring components and adjust, as necessary, to meet specifications.

Note: Where a volume and/or frequency is not specified, demonstration must be provided at least once.

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)
- procedures to test springs for correct operation/malfunction
- causes of deviations from specifications and/or defects in springs
- effects of annealing, hardening, tempering, soaking and setting on spring operation
- repair and rework procedures for a range of spring defects
- procedures for tapering, rolling and bending materials
- features and application of hot and cold forming processes
- allowances to be made for relief and spring-back
- procedures for recording spring test results
- procedures for nesting springs.

Assessment Conditions

- Assessors must:
 - have vocational competency in repairing springs 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.

Link

Companion volumes, including implementation guides, are found on the national training register - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=45a7f1d5-61a5-447a-9688-7abbd7e1a5c7>.