



Australian Government

MEM19032 Design and implement mechanisms in jewellery items

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MEM19032A Design and implement mechanisms in jewellery items.

Application

This unit of competency defines the skills and knowledge required to design and manufacture a range of common jewellery mechanisms for brooches.

It includes development of design specifications and application of required fabrication techniques and applies to new and existing items which can include single and multi-component pieces.

This unit applies to individuals involved in jewellery design or manufacture in a small or large-scale production context. They use and adapt creative and technical skills and knowledge to produce work.

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

Pre-requisite Unit

MEM13015 Work safely and effectively in manufacturing and engineering

MEM16006 Organise and communicate information

Competency Field

Jewellery

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
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 personal protective equipment (PPE) in accordance with SOPs 1.4 Identify job requirements from specifications
2. Assess mechanism	2.1 Assess design requirements for mechanism from brief and

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
design	identify factors and conditions affecting the design 2.2 Conduct further research or design development to meet specifications 2.3 Select components and materials that meet design requirements 2.4 Determine mechanism options and select the most appropriate to suit client requirements
3. Design mechanism	3.1 Determine specifications for manufacturing the mechanism based on chosen design 3.2 Produce illustrations or renderings showing key features of mechanism design 3.3 Confirm final design against specifications 3.4 Complete documentation of mechanism design and production specifications with all required measurements
4. Manufacture mechanism	4.1 Plan stages for manufacture of the mechanism based on specifications 4.2 Select and use tools and equipment in accordance with WHS and SOPs 4.3 Produce components using appropriate fabrication techniques 4.4 Minimise waste and ensure environmental requirements are adhered to in work practice 4.5 Ensure components conform to design specifications and are produced to correct tolerances 4.6 Ensure all moving parts operate in a smooth, straight manner without jamming or excess play

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

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.

Specifications include one or more of the following:	• job sheets • sketches • work instructions.
Mechanisms include one or more of the following:	• brooch pins • brooch joints • brooch catches.
Factors and conditions include one or more of the following:	• item designs and types • compatibility with existing materials • functionality and practicality • aesthetics • available resources • client requests • time • cost.
Tools and equipment include one or more of the following:	• drawing and illustrating equipment and media • draw bench and plates • soldering torches • heating equipment • pickling equipment • flexible drive with drill bits • rolling mills • measuring and marking out equipment • bench files • tapered reamers • polishing equipment • hand tools • consumables • protective clothing and equipment.
Production techniques and processes include one or more of the following:	• cutting • folding • bending • curving • dapping • drawing • rolling • doming

	• annealing • melting • granulation • casting • pressing • stamping • laser cutting • soldering • riveting • fitting.
Environmental requirements include one or more of the following:	• liquid waste • solid waste • emissions (gas, fumes, vapour, smoke, fugitive emissions or dust) • excessive energy and water use • excessive noise.
Fabrication techniques include one or more of the following:	• drawing wire • rolling • bending • drilling • cutting • hardening • filing • soldering • reaming • emerying • polishing.
Components include one or more of the following:	• pins (bent end for rivet and leg for spring, soldered pin dot, soldered chenier rivet carrier or double pin with chenier carrier) • joints (bent up U joint or chenier joint) • catches (figure 8, or other simple catches to suit joints and pins).

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM19032A Design and implement mechanisms in jewellery items.

Links

Companion Volume implementation guides are found in VETNet -

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

