



Australian Government

Department of Education, Employment and Workplace Relations

MEM19045A Set gems in channel style settings

Release: 1

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Modification History

New unit

Unit Descriptor

This unit of competency covers the skills and knowledge required to prepare, seat and set gems into channel style settings.

Application of the Unit

This unit applies to pre-manufactured jewellery items and must include application of both tapered and parallel channel setting techniques. Gem materials include round brilliant and baguette shaped stones.

Work includes use of gem setting equipment and cleaning and inspection of the work produced.

Band A
Unit Weight 4

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

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|---|----------------------------|-----|--|
| 1 | Prepare for gem setting | 1.1 | Identify and implement occupational health and safety (OHS) and environmental requirements for carrying out the tasks and for the work area |
| | | 1.2 | Plan gem setting procedure |
| | | 1.3 | Obtain and prepare equipment for the task and make modifications as required for work |
| | | 1.4 | Identify materials used in channel settings and their essential characteristics |
| | | 1.5 | Handle gem in a manner which ensures damage is prevented |
| | | 1.6 | Determine the characteristics and purpose of channel in setting gem material |
| 2 | Construct channel settings | 2.1 | Secure the item to be set in a manner which negates damage to the jewellery piece during the setting process |
| | | 2.2 | Check the thickness, width and length of the channel construction in regard to the gem dimension to be set |
| | | 2.3 | Prepare, lay out and cut the appropriate channel to suit the gem shape and number to be set |
| | | 2.4 | Cut the bearing by hand or with a burr and seat the gem in accordance with industry standards |
| | | 2.5 | Form the channel edge by hand or with an automatic hammer handpiece to secure the gem in the setting, including executing a bright cut on the inside edge of the channel |

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|---|-------------|-----|---|
| 3 | Finish work | 3.1 | Remove any securing compound and clean the jewellery piece for inspection |
| | | 3.2 | Ensure that jewellery piece meets quality standards |
| | | 3.3 | Complete workplace documentation |
| | | 3.4 | Clean up and maintain production environment and equipment according to enterprise procedures |

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Required skills include:

- selecting and preparing tools
- identifying metals
- identifying gem features
- adjusting, sharpening and maintaining tools
- preparing metals
- securing gems
- calculating required material size
- securing the jewellery item to be set without inflicting damage
- selecting the appropriate depth and spacing at which to cut the bearing on the inside of the channel wall
- seating the gem level and straight in the channel that has been prepared
- securing the gem by forming the channel wall over the gem
- finishing the top of the channel to reflect industry standard
- applying techniques for handling gem safely and minimising stress during setting processes
- reading and interpreting routine information on written job instructions, specifications, standard operating procedures and drawings

Required knowledge

Required knowledge includes:

- setting terminology
- gem features and handling procedures
- maintenance of tools
- setting techniques, processes and procedures
- working properties of gems
- suitability of metal for carving and setting
- essential characteristics of various styles of channel settings
- various securing techniques for jewellery items to be set
- safe operation all workshop equipment used

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	A person who demonstrates competency in this unit must be able to prepare, seat and set gems into channel style settings.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Assessors must be satisfied that the candidate can competently and consistently: • implement OHS workplace procedures and practices, including the use of risk control measures • produce a channel setting reflective of industry standard • use the safety equipment provided appropriately • demonstrate safe working operations at all times • applying techniques for handling gems safely and minimising stress during setting processes.
Context of and specific resources for assessment	• Assessment may occur on the job or in an appropriately simulated environment. Access is required to real or appropriately simulated situations, including work areas, materials and equipment, and to information on workplace practices and OHS practices. • Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability. • Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.
Method of assessment	• Assessment must satisfy the endorsed Assessment Guidelines of the MEM05 Metal and Engineering Training Package. • Assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with application of underpinning knowledge. • Assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application. • Assessment may be applied under project-related

	conditions (real or simulated) and require evidence of process. • Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances. • Assessment may be in conjunction with assessment of other units of competency where required.
Guidance information for assessment	Assessment processes and techniques must be culturally appropriate and appropriate to the language and literacy capacity of the candidate and the work being performed.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

OHS requirements	OHS requirements may include: • legislation • personal protective equipment • material safety management systems • hazardous substances and dangerous goods code • local safe operation procedures • awards provisions
Materials used in channel settings	Materials may include: • gemstones • natural stones • modified and synthetics gems • gold • silver • platinum • cast and handmade alloys • faceted and cabochon cut gems in either calibrated or freeform shapes
Gem setting tools and equipment	Gem setting tools and equipment may include: • gravers

	• grinders • micro-motors • polishing machines • sharpening stones • setters wax/cement • jewellers burrs/drills • 10X loupe or head set • emery paper • flat and half pliers • needle files • pocket knife • oil • workbench • blocks or dowels covered with setters cement • bench mate setters clamp • engravers vice • bench vice • hand held setters clamp
Environmental requirements	Environmental requirements may relate to: • liquid waste • solid waste • gas, fume, vapour, smoke emissions, including fugitive emissions, and dust • excessive energy and water use • excessive noise
Enterprise procedures	Enterprise procedures may include: • the use of tools and equipment • instructions, including job sheets, cutting lists, plans, drawings and designs • reporting and communication • manufacturer specifications • operational procedures

Unit Sector(s)

Jewellery

Custom Content Section

Not applicable.