



Australian Government

MEM19060 Cut and polish a gemstone assembly

Release: 1

MEM19060 Cut and polish a gemstone assembly

Modification History

Release 1. New unit.

Application

This unit of competency defines the skills and knowledge required to cut and polish a gemstone assembly from pre-formed materials using gemstone and trade accepted backing mediums. It is based on deleted unit CUVOPA206A Cut and polish opal doublets and triplets.

This unit applies to individuals processing gemstones in a small or large-scale production context. They use and adapt technical knowledge and skills to produce work that meets pre-determined jewellers' requirements.

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

Band: A

Unit Weight: 8

Pre-requisite Unit

MEM13015 Work safely and effectively in manufacturing and engineering
MEM16006 Organise and communicate information
MEM19059 Complete pre-cutting processes for gemstone assemblies

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 Identify job requirements from specifications
2. Prepare to cut gemstone assemblies	2.1 Identify and obtain consumables required for cutting and polishing gemstone assemblies

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	2.2 Select tools and equipment to be used 2.3 Dop pre-form on appropriate dop stick using wax or adhesive
3. Cut and polish gemstone assemblies	3.1 Grind to relevant shape using job requirements or pattern design 3.2 Polish top and sides of gemstone assemblies 3.3 Transfer the stone and re-dop 3.4 Grind and polish backing to job requirements 3.5 Remove stone from dop and clean with appropriate agents

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:	- client requirements - job sheets - work instructions.
Consumables include one or more of the following:	- cerium or tin oxide - cleaning spirit - diamond or silicon carbide wheels (#220 or #360) - diamond polishing compound (#2400 to #100000) - diamond polishing wheels (#3000 to #50000) - diamond sanding wheels (#280 to #1200) - felt or leather buffs - silicon carbide sanding paper (#180 to #600).
Equipment includes one or more of the following:	- grinding machinery - personal protective equipment (PPE)

	• polishing machinery • sanding machinery • saw • faceting machine.
Job requirements include one or more of the following:	• faceting designs or patterns • cabochon designs.
Wax or adhesives for dopping include one or more of the following:	• any 5-minute adhesive, using aluminium dop sticks • wood glue • hot wax sticks (hot glue gun) • super glues • vacuum dopping • wax (medium to low melting) • Shellac.
Shape includes one or more of the following:	• a variety of other shapes • cabochon • dome – high, medium and low • free form • rectangles.
Triplet top materials include one or more of the following:	• clear quartz • commercial standards size triplet tops • glass, plain or plate • lead crystal glass • material of the triplet top should be disclosed • synthetic spinel, corundum and topaz.

Unit Mapping Information

No equivalent unit.

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 MEM19060 Cut and polish a gemstone assembly

Modification History

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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:

- following standard operating procedures (SOPs) and complying with work health and safety (WHS) requirements at all times
- identifying, selecting and using consumables, tools, machinery and equipment appropriate to cutting and polishing tasks
- cutting, polishing and cleaning doublets or triplets on at least two different gemstone types to accepted standards
- cutting and polishing commercial and non-commercial triplet tops on at least two occasions to accepted standards.

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:

- materials, equipment, tools, machinery and consumables needed for cutting and polishing doublets and triplets
- characteristics of gemstone that make it suitable for use as an assembly
- requirements to determine jewellers' cutting angles and why this is necessary
- techniques and processes to cut and polish gemstone assemblies
- differences and similarities in cutting and polishing gemstone assembly commercial and non-commercial tops
- safety issues associated with the use of gemstone cutting and polishing:
 - materials
 - machinery
 - equipment
 - tools
 - consumables.
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Assessment Conditions

- Assessors must:
 - have vocational competency in cutting and polishing gemstone assemblies 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 that 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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