



Australian Government

MEM23136 Evaluate stamping and forging tools

Release: 1

MEM23136 Evaluate stamping and forging tools

Modification History

Release 1. Supersedes and is equivalent to MEM23136A Evaluate stamping and forging tools.

Application

This unit of competency defines the skills and knowledge required to evaluate design features and functions of stamping and forging tools and related processes used in manufacturing and engineering applications. Stamping and forging includes cold piercing, punching, shearing, forming and drawing, and hot forging.

It is suitable for people working as tool designers, maintenance technicians, paraprofessionals and draftspersons, and for those pursuing manufacturing engineering or related technical qualifications and careers.

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

Pre-requisite Unit

MEM23004 Apply technical mathematics

MEM23109 Apply engineering mechanics principles

Competency Field

Engineering science

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 scope of stamping or forging tool evaluation	1.1 Determine parameters and context of stamping and forging tools in manufacturing operations 1.2 Confirm stakeholders to be consulted on evaluation 1.3 Confirm that appropriate support, including technical and professional assistance, is available 1.4 Identify relevant work health and safety (WHS) and regulatory requirements, standards, codes of practice, risk management and organisational procedures

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. Prepare for evaluation of forging or stamping tool	2.1 Identify principles and techniques required to evaluate and optimise stamping and forging tools 2.2 Select appropriate analysis techniques 2.3 Investigate sustainability implications of forging or stamping tooling
3. Evaluate stamping and forging tools and related manufacturing processes	3.1 Review design and construction features and functions of stamping and forging tools, and related manufacturing processes 3.2 Assess stamping and forging tools and related manufacturing processes for compliance with WHS and other regulatory and risk management requirements 3.3 Assess stamping and forging tools, products and processes for sustainability 3.4 Assess suitability of stamping and forging tools for integration with lean manufacturing-related techniques 3.5 Review integration of stamping and forging tools with production management and control software 3.6 Apply systems thinking, continuous improvement, problem-solving and decision-making, and constraint and contingency management principles and techniques to evaluation 3.7 Review tooling in relation to product manufacturability and process maintainability
4. Report results	4.1 Record results of evaluation 4.2 Provide documentation including tool, product and process analysis, and computer-aided design (CAD) files

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.

Features and functions of stamping and forging tools include:	• materials used in their construction • method of manufacture • method of installation and any capacity for operator adjustment during use • method of adjustment for production changeover • the degree of training of operators required before use of the tool • any limitations on the use of the tool • cost of manufacture.
WHS, regulatory requirements and organisational procedures include:	• WHS acts, regulations and relevant standards • codes of practice from Australian and overseas engineering and technical associations and societies • risk assessments • registration requirements • safe work practices • state and territory regulatory requirements.
Appropriate technical and professional assistance includes:	• technical support and advice relating to elements which have intrinsic dangers including • professional support for technologies.
Sustainability includes:	• meeting all regulatory requirements • conforming to all industry covenants, protocols and best practice guides • minimising ecological and environmental footprint of process, plant and product • maximising economic benefit of process plant and product to the organisation and the community minimising the negative WHS impact on employees, community and customer.
Continuous improvement implementation includes one or more of the following techniques:	• balanced scorecard • current and future state mapping • measuring performance against benchmarks • process improvement, problem solving and decision making • data management, generation, recording, analysing, storing and use of software • training for improvement systems participation • technical training.
Constraints and contingencies include one or more of the following:	• financial • organisational • procedural

	• cultural • physical (resource, access and logistical limitations).
Lean principles affecting tooling and related processes include:	• quick change over • preventative maintenance • tooling and processing costs • capacity and responsiveness to product demand • quality of product • reliability of tooling, process and supply • waste minimisation which includes ease of tool change.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MEM23136A Evaluate stamping and forging tools.

Links

Companion Volume Implementation Guides are available on VETNet -

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