

Title	Manufacture multi-stage tooling for industry		
Level	4	Credits	15

Purpose	<p>This unit standard, intended for on job assessment, covers manufacture of a multi-stage tool, typically used in plastics moulding, pressing, or forming operations.</p> <p>People credited with this unit standard are able to plan for the manufacture of multi-stage tooling; machine and assemble multi-stage tooling; confirm operation of multi-stage tooling, and complete documentation.</p>
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Classification	Mechanical Engineering > Engineering Machining and Toolmaking
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Available grade	Achieved
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Prerequisites	Unit 18542, <i>Manufacture single stage tooling for industry</i> , or demonstrate equivalent knowledge and skills.
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Guidance Information

- 1 References
Health and Safety at Work Act 2015.
- 2 Definitions

Manufacture – the planning, assembly, and trial test of multi-stage tooling.

Multi-stage tooling – tooling with two or more major axes of movement and/or the capability of multiple processes.

Specifications – detail that defines an object being made; commonly communicated by annotated and dimensioned drawings; by written description, or by other communication media. External references may also be used to specify objects such as tables or industry standards.

Workplace procedures – procedures used by the organisation carrying out the work and applicable to the tasks being carried out. Examples are – standard operating procedures, safety procedures, equipment operating procedures, codes of practice, quality management practices and standards, procedures to comply with legislative and local body requirements.

Outcomes and performance criteria

Outcome 1

Plan for the manufacture of multi-stage tooling.

Range examples of multi-stage tooling processes are – injection, extrusion, blow moulding; pressing, forming, die casting; evidence for one multi-stage tool is required.

Performance criteria

- 1.1 Toolmaking requirements are described for the type of tool to be manufactured.

Range manufacturing principles and techniques, costing, scheduling, theory, calculations, functionality, safety requirements relative to product.
- 1.2 Tool to be manufactured is described and specifications are established in accordance with workplace procedures.
- 1.3 Procedure and sequence of manufacture of the tool is identified according to the tool specifications.
- 1.4 Equipment, tools and materials to be used in manufacture of the multi-stage tool are selected in accordance with specifications and workplace procedures.
- 1.5 Safety requirements are identified and explained in accordance with workplace procedures.

Outcome 2

Machine and assemble multi-stage tooling.

Range tool planned in outcome 1.

Performance criteria

- 2.1 Material is machined to parts specifications in accordance with workplace procedures. Parts requiring off-site work, if any, are processed in accordance with workplace procedures.
- 2.2 Tool is assembled in accordance with specifications and workplace procedures.

Outcome 3

Confirm operation of multi-stage tooling and complete documentation.

Range tool machined and assembled in outcome 2.

Performance criteria

- 3.1 Operation of tool is confirmed as meeting specifications.
- 3.2 Product produced by the tool is confirmed as meeting specifications, and modifications are carried out if required.
- 3.3 Documentation for the tool is completed in accordance with workplace procedures.

Planned review date	31 December 2022
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	26 September 2001	31 December 2012
Review	2	20 June 2006	31 December 2022
Rollover and Revision	3	17 November 2011	31 December 2022
Review	4	14 December 2017	N/A

Consent and Moderation Requirements (CMR) reference	0013
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact Competenz qualifications@competenz.org.nz if you wish to suggest changes to the content of this unit standard.