

Title	Produce components by performing basic engineering milling operations		
Level	2	Credits	12

Purpose	<p>This unit standard covers basic mechanical engineering milling operations, milling parallel to the surface of the working piece.</p> <p>People credited with this unit standard are able to: prepare for, and perform, basic milling operations, and measure components.</p>
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Classification	Mechanical Engineering > Engineering Machining and Toolmaking
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Available grade	Achieved
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Explanatory notes

- 1 References

Health and Safety in Employment Act 1992;
Occupational Safety & Health Service. *Guidelines for Guarding Principles and General Safety for Machinery*. Wellington: Department of Labour, 1995.
- 2 Definitions

Safe working practices – work practices designed to prevent personal injuries and damage to equipment and plant. This includes practices relating to personal attire and use of safety clothing and equipment, use of machinery and tools, and handling of materials and waste.

Worksite procedures – operational procedures put in place by the candidate's employer. These include site safety procedures, equipment operating procedures, job procedures, and procedures for the handling and disposal of materials and waste.
- 3 Assessment Information
 - a All activities must comply with relevant legislative and/or regulatory requirements, which include, but are not limited to, the Health and Safety in Employment Act 1992.
 - b All activities must demonstrate safe working practices.
- 4 Range

Evidence of at least two parallel cuts using face mill, two parallel cuts using end mill, and two keyways is required.

Outcomes and evidence requirements

Outcome 1

Prepare for basic milling operations.

Evidence requirements

- 1.1 Machine is lubricated and routine maintenance carried out in accordance with worksite procedures.
- 1.2 Drawings, instructions, and specifications are interpreted to establish job requirements.
- 1.3 Sequence of operations is planned to achieve job requirements efficiently, and verified in accordance with worksite procedures.
- 1.4 Components are marked out as required by specifications.
- 1.5 Accessories and work-holding fixtures are installed to securely hold the work.
- 1.6 Tools are selected for efficient machining, prepared, and mounted securely.
- 1.7 Cutting speeds and feeds are selected relevant to machine, material, and tooling.

Outcome 2

Perform basic milling operations.

Evidence requirements

- 2.1 Machine coolant type and flow are adjusted as required by machine and milling operations.
- 2.2 Components are machined and finished to specifications, without damage to machine and tools.

Range accuracy – ± 0.1 mm.
- 2.3 Machine is cleaned and waste material disposed of in accordance with worksite procedures.

Outcome 3

Measure components.

Evidence requirements

- 3.1 Components are measured using instruments matching the required accuracy to confirm that specifications have been achieved.
- 3.2 Measurements are recorded in accordance with worksite procedures.

Replacement information	This unit standard, unit standard 11661, unit standard 11662, and unit standard 11664 replaced unit standard 2700.
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This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	18 November 1997	31 December 2012
Revision	2	25 September 2001	31 December 2012
Review	3	20 June 2006	31 December 2022
Rollover and Revision	4	17 November 2011	31 December 2022
Review	5	20 July 2017	31 December 2022

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>.

Please note

Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMR). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.