Title	**Produce components by CNC wire cut electro-discharge machine operations**		
Level	**4**	**Credits**	**15**

Purpose	This unit standard covers production of components using a Computer Numerical Control (CNC) wire cut electro-discharge machine. Preparation of the machine program is included. People credited with this unit standard are able to prepare program for operation, prepare machine for cutting, cut components, and measure components.

Classification	Mechanical Engineering > Engineering Machining and Toolmaking

Available grade	Achieved

Guidance Information

1 References
Health and Safety at Work Act 2015.
Best Practice Guidelines, Safe Use of Machinery, Worksafe, 2014.

2 Definitions
CNC – Computer Numerical Control.
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

Prepare program for operation.

Performance criteria

1.1 Drawings and documentation are interpreted to establish job requirements and component geometry.

1.2 Wire path coordinates are defined to meet specifications.

1.3 Program elements and machine code functions are defined to meet specifications.

1.4 Power settings, feed rate, and wire speed are selected to produce optimum metal cutting rates with the material used, and having regard to machine parameters.

Range parameters – surface finish, metal removal rate, workpiece material, electrode material, electrode wear, selection of di-electric, flushing rate and method, spark gap.

1.5 Program is prepared in accordance with workplace procedures.

1.6 Operation instructions are prepared in accordance with workplace procedures.

1.7 Program is verified as complying with specifications.

Range simulator or on machine tool.

Outcome 2

Prepare machine for cutting.

Performance criteria

2.1 Accessories and work-holding fixtures are installed to securely hold the work.

2.2 Machine is aligned to specified datum points in accordance with workplace procedures.

2.3 Program is selected and loaded according to workplace procedures.

Outcome 3

Cut components.

Performance criteria

3.1 Components are cut to specifications without damage to the machine.

3.2 Machine is cleaned and waste material disposed of in accordance with workplace procedures.

Outcome 4

Measure components.

Performance criteria

4.1 Components are measured using instruments matching the required accuracy to confirm that specifications have been achieved.

4.2 Measurements are recorded in accordance with workplace procedures.

Planned review date	31 December 2022

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	17 January 1995	31 December 2012
Revision	2	14 April 1997	31 December 2012
Revision	3	13 November 1997	31 December 2012
Revision	4	5 January 1999	31 December 2012
Revision	5	25 September 2001	31 December 2012
Review	6	20 June 2006	31 December 2022
Rollover and Revision	7	17 November 2011	31 December 2022
Review	8	17 August 2017	N/A

Consent and Moderation Requirements (CMR) reference	0013

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.