

Title	Make up jigs and fixtures for use in engineering fabrication		
Level	4	Credits	5

Purpose	<p>This unit standard is intended for people training to become engineering fabricators and covers the making up of jigs and fixtures for use in locating, forming and holding fabrication components during manufacture.</p> <p>People credited with this unit standard are able to plan, and make-up jigs and fixtures, and test completed jigs and fixtures.</p>
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Classification	Mechanical Engineering > Engineering - Fabrication
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Available grade	Achieved
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Guidance Information

1 References

Health and Safety at Work Act 2015.

Accident Compensation Corporation and Department of Labour. *Metal Industry Guidelines for Safe Work*. Wellington: ACC, 2007. Available from <http://www.acc.co.nz>.

2 Definitions

Assembly – a group of components that fit together.

Fixture – device that aids in positioning components or assemblies, such as for cutting or drilling purposes.

Jig – device that holds components or objects to be worked on securely in a definite position for a fabrication operation, and provide suitable location enabling subsequent operations or finishing. May include jig tables.

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.

3 Related unit standards

This unit standard is one of a comprehensive set of fabrication unit standards. Other available related unit standards can be found by searching the Directory of Assessment Standards (DAS) on the NZQA website <http://www.nzqa.govt.nz> in the Engineering - Fabrication domain.

4 Timeframe

All activities are expected to be completed within commercially acceptable timeframes.

Outcomes and performance criteria

Outcome 1

Plan the make-up of jigs and fixtures.

Range three jigs; each jig must locate at least four components within the assemblies to be manufactured from the jig.
Two fixtures.

Performance criteria

1.1 Work is planned in accordance with job requirements.

Range work requirements, materials, tools and equipment, work sequences, identification of potential problems.

1.2 Component drawings or specifications are interpreted to determine jig and fixture dimensions and configuration.

1.3 Dimensioned sketches or drawings are made of jigs and fixtures.

1.4 Jig and fixture components are made or selected in accordance with job requirements.

1.5 Jigs include clamping restraints for at least two components within each jig.

1.6 Tools and equipment are selected in accordance with job requirements.

Outcome 2

Make up jigs and fixtures.

Range jigs and fixtures planned in outcome 1.

Performance criteria

2.1 Workplace safety procedures are followed.

Range examples are – use of personal protective equipment, checking of equipment for faults, elimination of risk of fire or explosion, protection from arc radiation.

2.2 Jigs and fixtures are made up in accordance with jig or fixture sketches or drawings.

2.3 Jig locates components within the assemblies to be formed in accordance with drawings or specifications.

Range jig accuracy – 2mm for dimensions up to 1m, and 3mm for dimensions of over 1m.

Outcome 3

Test completed jigs and fixtures.

Range jigs and fixtures made in outcome 2.

Performance criteria

3.1 Assemblies are manufactured from jigs and fixtures.

3.2 Clamping restraints are tested and meet requirements.

3.3 Assemblies are checked for compliance with specifications, and any jig or fixture discrepancies rectified.

3.4 Completion of work is reported 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	17 July 2009	31 December 2022
Review	2	20 July 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.