

<b>Title</b>	<b>Assemble and fit precision tooling or mechanical components using technology aids</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>10</b>

<b>Purpose</b>	<p>This standard is for people engaged in assembly and fitting of precision machinery or tooling, and who are able to use technology aids such as laser alignment systems, coordinate measuring machines, and dynamic balancing equipment to achieve close tolerances.</p> <p>People credited with this standard are able to prepare for and perform assembly and fitting work, and test and document machinery or tooling.</p>
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<b>Classification</b>	Mechanical Engineering > Mechanical Assembly
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<b>Available grade</b>	Achieved
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## Guidance Information

### 1 References

Health and Safety at Work Act 2015.

*Best Practice Guidelines, Safe Use of Machinery*, Worksafe, 2014.

SAA/SNZ HB1:1994 *Technical drawing for students*, Standards New Zealand.

Boundy, A; *Engineering Drawing, 8th edition*. McGraw-Hill Australia, 2011; ISBN 0071016767.

### 2 Definitions

*Accepted industry practice* – approved codes of practice and standardised procedures accepted by the wider mechanical engineering industry sectors as examples of best practice.

*Precision assembly and fitting* – work requiring the application of fits and tolerances.

*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 Recommended for entry  
Unit 4437, *Select, use, and care for advanced engineering measuring equipment*; or  
Unit 22914, *Assemble and fit precision components*.
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## Outcomes and performance criteria

### Outcome 1

Prepare for precision assembly and fitting work.

Range four precision machinery or tooling assemblies.

#### Performance criteria

- 1.1 Specifications are interpreted to determine assembly and fitting requirements.
- 1.2 Components are inspected and compared against inventories and specifications, and any discrepancies rectified in accordance with workplace procedures.
- 1.3 Components are cleaned in accordance with job requirements and workplace procedures.
- 1.4 Availability of tooling, equipment and facilities is organised in accordance with workplace procedures.
- 1.5 Safety hazards are identified and managed in accordance with workplace procedures.

### Outcome 2

Perform precision assembly and fitting work.

Range precision machinery or tooling assemblies from outcome 1.

#### Performance criteria

- 2.1 Machinery or tooling is assembled and fitted in accordance with specifications or accepted industry practice.
- 2.2 Seals are fitted and sealing agents are applied in accordance with specifications or accepted industry practice.
- 2.3 Lubricants are applied in accordance with specifications or accepted industry practice.
- 2.4 Technological aids are used in accordance with aid manufacturer's guidelines or accepted workplace procedures to achieve precise alignments or adjustments.

**Outcome 3**

Test and document machinery or tooling.

**Performance criteria**

- 3.1 Machinery or tooling is tested, and adjusted where necessary, to confirm conformance with specifications or accepted industry practice.
- 3.2 Machinery or tooling performance is documented according to workplace procedures.

<b>Planned review date</b>	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	27 September 1994	31 December 2012
Revision	2	14 April 1997	31 December 2012
Revision	3	5 January 1999	31 December 2012
Revision	4	23 May 2001	31 December 2012
Review	5	20 June 2006	31 December 2022
Rollover and Revision	6	17 November 2011	31 December 2022
Review	7	17 August 2017	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	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](mailto:qualifications@competenz.org.nz) if you wish to suggest changes to the content of this unit standard.