

<b>Title</b>	<b>Manually produce detailed engineering drawings under supervision</b>		
<b>Level</b>	<b>3</b>	<b>Credits</b>	<b>12</b>

<b>Purpose</b>	People credited with this unit standard are able to, under supervision: determine engineering drawing requirements; manually produce and confirm detailed engineering drawings; and follow drawing office procedures.
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<b>Classification</b>	Mechanical Engineering > Engineering Drawing and Design
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<b>Available grade</b>	Achieved
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<b>Entry information</b>	
<b>Recommended skills and knowledge</b>	Unit 2431, <i>Manually produce and interpret simple engineering component drawings under supervision</i> , or demonstrate equivalent knowledge and skills.

### Explanatory notes

- 1 Reference  
SAA/SNZ HB1:1995 Joint handbook – *Technical drawing for students*. Available from Standards New Zealand.
- 2 Definitions  
*Accepted industry practice* refers to approved codes of practice and standardised procedures accepted by the wider mechanical engineering industry sectors as examples of best practice.  
*Drawing items* refers to paper or synthetic film used in the process of creating engineering/technical drawings, and items of stationery including pencils, compass, and set-square.  
*Interpretation* refers to the explanation in practical terms of features shown graphically in the drawing.  
*Job specifications* refers to instructions relevant to the safe completion of the specific task, such as technical specifications, assembly instructions, drawings, parts lists, standards, codes of practice, test and commissioning procedures, and verbal instructions.  
*Supervision* refers to working under the direction of a suitably qualified tradesman or manager who oversees the learner and is responsible for ensuring that the quality of work meets the required standard.  
*Workplace procedures* refers to procedures used by the organisation carrying out the work and applicable to the tasks being carried out. They may include but are not limited to – 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 Assessment information

- This unit standard covers the production of working drawings of assemblies and components used within the engineering industry. Examples may include but are not limited to – simple pump, gearbox, hydraulic cylinder, support frame, tool and die, holding device, sheet metal fabrications.
- Assessment against this unit standard requires the presentation of a range of engineering drawings. Evidence is required of five drawings of individual components, and one assembly drawing containing a minimum of five components. All drawings must be prepared manually, presented on separate pages, and must include reference data.
- This unit standard may be used in the context of any of the mechanical engineering disciplines.

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## Outcomes and evidence requirements

### Outcome 1

Determine engineering drawing requirements under supervision.

#### Evidence requirements

- 1.1 Objects to be drawn are identified and interpreted from instructions, sketches, finished products or specifications in accordance with workplace procedures or accepted industry practice.
- 1.2 Drawing end-use requirements are identified, verified, and recorded in accordance with workplace procedures or accepted industry practice.
- 1.3 Required drawing notes are identified to meet construction requirements.
- Range examples of drawing notes – welding instructions, assembly procedures, finishing procedures.
- 1.4 Drawing items are selected to meet drawing requirements.
- 1.5 Drawing parameters are selected to meet drawing interpretation requirements.
- Range projection, view, scale, layout.

### Outcome 2

Manually produce detailed engineering drawings under supervision.

#### Evidence requirements

- 2.1 Components and assemblies are drawn to meet component construction requirements.
- 2.2 Drawings are dimensioned to meet component construction requirements.

- 2.3 Tolerances are specified for components in drawing in accordance with job specifications.
- 2.4 Drawings are labelled to meet component construction requirements.

**Outcome 3**

Confirm detailed engineering drawings under supervision.

**Evidence requirements**

- 3.1 Drawings are checked to ensure compliance with job specifications.  
Range orientation, proportion, dimensions, related notes.
- 3.2 Any non-conformance to job specifications is corrected in accordance with workplace procedures or accepted industry practice.

**Outcome 4**

Follow drawing office procedures.

**Evidence requirements**

- 4.1 Drawing office procedures are followed in accordance with workplace procedures or accepted industry practice.  
Range examples of procedures – accessing, revising, recording, filing, copying, issuing of drawings.

<b>Planned review date</b>	31 December 2021
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**Status information and last date for assessment for superseded versions**

Process	Version	Date	Last Date for Assessment
Registration	1	31 October 1994	31 December 2011
Revision	2	14 April 1997	31 December 2011
Revision	3	5 January 1999	31 December 2011
Revision	4	23 May 2001	31 December 2011
Review	5	26 July 2004	31 December 2011
Rollover and Revision	6	20 March 2009	31 December 2016
Review	7	17 November 2011	31 December 2021
Review	8	15 September 2016	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>.

**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.

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**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.