

Title	Demonstrate knowledge of bearings used in machines and equipment		
Level	3	Credits	5

Purpose	People credited with this unit standard are able to – demonstrate knowledge of – bearing types; the function of bearings in machines and equipment; bearing service life; and selection.
----------------	--

Classification	Mechanical Engineering > Maintenance and Diagnostics in Mechanical Engineering
-----------------------	--

Available grade	Achieved
------------------------	----------

Explanatory notes

- 1 Definition
Accepted industry practice – approved codes of practice and standardised procedures accepted by the wider mechanical engineering industry sectors as examples of best practice.
- 2 Assessment information
 Evidence provided must be in accordance with accepted industry practice.

Outcomes and evidence requirements

Outcome 1

Demonstrate knowledge of bearing types.

Evidence requirements

- 1.1 Terminology associated with bearings is explained.
 Range examples are – balls, rollers, needles, groove, raceway, loading (axial/radial).
- 1.2 Different types of bearings are matched to common machine applications.
 Range plain, ball, roller, journal, thrust.
- 1.3 Bearings are identified by the material with which they are made.
 Range examples are – white metal, steel, aluminium, bronze, synthetic. Three bearing material types.

- 1.4 Bearings are identified from manufacturer's information and parts publications for machines and equipment.

Range three bearings.

Outcome 2

Demonstrate knowledge of the function of bearings in machines and equipment.

Evidence requirements

- 2.1 The function of component movement support by bearings is described for rotational and linear bearings.
- 2.2 The function of friction reduction in bearings is described for starting and running friction.

Outcome 3

Demonstrate knowledge of bearing service life.

Evidence requirements

- 3.1 Factors affecting bearing performance and durability are described.
- Range load, rotational speed, fatigue, fretting, incompatible materials, manufacturing faults, clearances, selection, lubrication, contamination, operating environment
- 3.2 Indicators of bearing failure are described.
- Range noise, vibration, odour, visual defects, heat.
- 3.3 Bearing lubrication requirements and methods are described to maintain service life.
- Range three bearing types.
- 3.4 Storage practices for bearings are described to maintain serviceable condition.
- 3.5 The importance of maintaining accurate machine and equipment failure history records is described in terms of bearing use and equipment service life.
- Range examples are – failure history, bearing types, operating times and rates, tolerances, lubrication.

Outcome 4

Demonstrate knowledge of bearing type selection.

Evidence requirements

4.1 Factors affecting bearing type selection are described.

Range examples are – speed, loading, noise, environmental conditions, cost.

Replacement information	This unit standard and unit standard 19874 replaced unit standard 2405.
--------------------------------	---

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	28 April 2003	31 December 2011
Rollover	2	20 June 2008	31 December 2014
Review	3	15 April 2011	31 December 2021
Review	4	16 March 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>.

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 (CMRs). 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.

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.