Title	**Reassemble and test electric machines following rewinding**		
Level	**4**	**Credits**	**12**

Purpose	This unit standard is for people intending to qualify in the electrical industry in motor rewinding and repair. It is for people who have responsibility for the reassembly and testing of electric machines following rewinding. People credited with this unit standard are able to in accordance with industry practice: – reassemble electric machines; and – test electric machines.

Classification	Electrical Engineering > Electrical Machines

Available grade	Achieved

Guidance information

1 Achievement of this unit standard does not by itself imply that trainees may legally perform prescribed electrical work in their own right. Until they are registered and licensed under the Electricity Act 1992, trainees are assisting, and must work under the supervision of a Supervisor of Electrical Work when carrying out prescribed electrical work. If the prescribed electrical work in question is carried out for reward the Supervisor of Electrical Work must hold a valid practising licence.

2 References
AS/NZS 3760:2010, *In-service safety inspection and testing of electrical equipment*;
Electricity Act 1992;
Electricity (Safety) Regulations 2010;
Health and Safety at Work Act 2015;
New Zealand Electrical Codes of Practice (available from www.worksafe.govt.nz);
and all subsequent amendments and replacements.

3 Definitions
Company practice – those practices and procedures that have been circulated by the company for use by their employees.
Current regulations and standards – those requirements of the above legislation, standards, and codes, applied to the context in which the term is used.
Industry practice – those practices that competent practitioners within the industry recognise as current industry best practice.
Machines – motors, generators, regulators, transformers, and other similar equipment having windings.
Specifications – machine specifications, maintenance instructions, or bearing manufacturer's recommendations relating to removal, cleaning, testing, and fitting of

bearings and seals, and the types of lubricants to be used.

4 Assessment
- a The machines chosen are left to the discretion of the assessor, but must be sufficient to assess competence in all outcomes of the unit.
- b Performance in relation to the outcomes of this unit standard must comply with the Health and Safety at Work Act 2015, associated regulations, industry practice, and any applicable company safety and health procedures.

Outcomes and performance criteria

Outcome 1

Reassemble electric machines.

Performance criteria

1.1 Statically and/or dynamically balance rotating components in accordance with specifications and industry practice.

Range typical components – armatures, rotors, fans, pulleys.

1.2 Assemble parts in a logical sequence in accordance with industry practice and specifications.

1.3 Align parts and set to specified tolerances.

1.4 Verify tightness of each fastening in accordance with motor specifications and/or industry practice.

1.5 Lubricate machine in accordance with specifications and industry practice.

1.6 Complete testing of windings and internal connections in accordance with industry practice, specifications and current regulations and standards.

Outcome 2

Test electric machines.

Performance criteria

2.1 Confirm that testing meets all requirements of current regulations and standards, and that the machine is safe to reconnect to the supply.

Range tests – continuity, polarity, insulation resistance, earthing; phase sequence of three-phase supply.

2.2 Verify machine performance against specifications or records of previous performance, in accordance with industry practice.

Range typical tests – inductance, impedance, dynamometer test or in situ connected-load test; measurements to compare power factor, line current, speed, and output with values stated on rating plate; temperature-rise test; checks using sight, sound, touch, vibration.

2.3 Document results of tests in accordance with company practice; and compared with manufacturers' specifications.

Planned review date	31 December 2023

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	26 August 2002	31 December 2013
Review	2	22 August 2008	31 December 2023
Rollover and Revision	3	15 March 2012	31 December 2023
Revision	4	15 January 2014	31 December 2023
Review	5	22 August 2019	N/A

Consent and Moderation Requirements (CMR) reference	0003

This CMR can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.

Comments on this unit standard

Please contact The Skills Organisation reviewcomments@skills.org.nz if you wish to suggest changes to the content of this unit standard.