

Title	Prepare electrical machines for rewinding		
Level	4	Credits	8

Purpose	<p>This unit standard is intended for people who have responsibility for preparing machines for rewinding.</p> <p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> – dismantle and inspect electrical machines in accordance with industry practice; – strip out windings in accordance with industry practice; – refurbish casing in accordance with industry practice; and – prepare armature/rotor and/or yoke in accordance with industry practice.
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Classification	Electrical Engineering > Electrical Machines
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Available grade	Achieved
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Guidance information

- 1 This unit standard has been developed for learning and assessment on-job.
- 2 Definitions

Electrical machines – are defined as electric motors, generators, alternators, and transformers.

Industry practice – those practices that competent practitioners within the industry recognise as current industry best practice.
- 3 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 standard.
 - b Performance in relation to the outcomes of this unit standard must comply with the Health and Safety at Work Act 2015, associated regulations, and any applicable company safety and health procedures.

Outcomes and performance criteria

Outcome 1

Dismantle and inspect electrical machines in accordance with industry practice.

Performance criteria

- 1.1 Record position of components.

1.2 Check air gap for uniformity.

1.3 Identify cause of a non-uniform air gap.

Range typical causes may include but are not limited to – worn or misaligned bearings, bearing journals, or housings; bent shaft.

1.4 Clean components and, where appropriate, degrease with suitable solvents.

1.5 Carry out visual inspection of all components to assess wear and deterioration.

Range may include but is not limited to –
for wear – bearings, brushgear, commutator, slip-rings, centrifugal switches, rotor and stator surfaces;
for deterioration – insulation, seals, gaskets, air passages, terminations, fasteners, casings, capacitors.

Outcome 2

Strip out windings in accordance with industry practice.

Performance criteria

2.1 Collect and record winding data.

Range coils per slot, coil turns and polarities; size of conductor; insulation types, thickness and layers; coil dimensions and shapes; connections.

2.2 Identify tools and equipment to match the type of windings.

Range may include but is not limited to – cutting and stripping tools, warming and pulling equipment; burnout oven.

2.3 Carry out cutting and stripping methods to match the machine.

Range generators, motors, transformers.

2.4 Clean and check winding slots for damage.

2.5 Test core in accordance with industry practice.

Outcome 3

Refurbish casing in accordance with industry practice.

Performance criteria

3.1 Strip and clean casing.

3.2 Inspect casing for warping or dents and repair where required.

3.3 Mask and coat casing.

Range may include but is not limited to – powder coat, spray paint, hand paint.

Outcome 4

Prepare armature/rotor and/or yoke in accordance with industry practice.

Performance criteria

4.1 Clean armature/rotor and/or yoke and prepare for windings.

4.2 Inspect armature/rotor and/or yoke for damage or wear.

Planned review date	31 December 2023
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	29 April 1994	31 December 2013
Review	2	23 April 1996	31 December 2013
Revision	3	3 April 2001	31 December 2013
Review	4	26 August 2002	31 December 2013
Review	5	22 August 2008	31 December 2023
Rollover and Revision	6	15 March 2012	31 December 2023
Revision	7	15 January 2014	31 December 2023
Review	8	22 August 2019	N/A

Consent and Moderation Requirements (CMR) reference	0003
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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 The Skills Organisation reviewcomments@skills.org.nz if you wish to suggest changes to the content of this unit standard.