

Electric Vehicle Drive Systems Diagnosis

Manufacturing and Technology

Show us that you know how to perform diagnostic analysis on electric vehicles high voltage drive systems, interpret data and document restorative options including components required and cost estimates for the client or service (garage) advisor.

Level **5**

Credits **10**

\$199.00 NZD (GST incl.)

Assessment

You are required to submit evidence of the following:

Perform diagnostic analysis on electric vehicles high voltage drive systems.

Document restorative options to repair electric vehicle high voltage drive systems.

To earn this EduBit, you must submit evidence to the required standard. You may be given the opportunity to resubmit if there are minor gaps in your submission evidence. If your evidence does not meet the requirements, we encourage you to practice your skills and attempt the EduBit at a later date. All work for this EduBit must be your own.

Evidence Submission Options:

Below are options to choose from to collect and submit evidence for this EduBit:

1. From naturally occurring evidence produced as a result of your normal work and validated with attestations from your qualified supervisor. Refer to acceptable evidence requirements below.

OR

2. Enrol in an Electric Vehicle Drive Systems Diagnosis workshop* and provide evidence as per requirements below.

*If you are interested in attending a workshop, please register your interest by emailing ecladmin@op.ac.nz.

OR

3. Enrol in the online Electric Vehicle Drive Systems Diagnosis and provide evidence as per the EduBit Assessment Criteria.

Learning Recommendations

[A/C Electric Motor Troubleshooting Guide - Test Procedures](#)

[Wikipedia - Induction Motor](#)

[Wikipedia - Synchronous Motor](#)

[Wikipedia - Variable Frequency Drive](#)

[What is a Variable Frequency Drive?](#)

Tasks

Proof of Identity

Please include a scanned copy of photo identification (e.g. passport, drivers licence, work ID card).

General Information

Please provide the following information:

What is the name of your organisation?

What type of industry do you work in?

A brief description of your role in the organisation (maximum 50 words).

This information is provided as context for the EduBit Assessor only.

Task 1: Identify Electric Vehicle Drive Systems and describe the System fault.

You will need to:

1.1. Identify the Electric Vehicle Driveline System that you are working on:

Evidence must include:

Vehicle/Machine details.

The type of electric motor/s (AC, Dc, synchronous or asynchronous).

Any reduction drive unit and/or torque modifier. (Transmission) used in the electric vehicles drivetrain.

Thermal management used on the system (if applicable).

Lubrication system used on system (if applicable).

Information can be provided in any of the following forms:

Written (maximum 150 words).

Video log (maximum 5 minutes) and written report.

Photographic and written report.

1.2. For the driveline system you are working on record the system fault(s) as presented to you.

Evidence must include:

Accurate description of driveline system fault as presented.
Any supporting evidence applicable to system fault (as applicable).

Evidence must be written (maximum 150 words) with supporting photos of job card supporting documentation.

If applicable, please download the [Photo Evidence Guidelines](#).

If applicable, please download the [Video Evidence Guidelines](#).

Task 2: Perform diagnostic analysis on electric vehicles high voltage drive systems.

You will need to:

2.1. Record the diagnostic procedure/s and results used to ascertain the source of the fault(s).

Evidence must include:

Diagnostic strategy overview (brief of diagnostic procedures carried out throughout procedure).
All results that identify fault(s) and/or concern must be recorded (i.e. DTC, Live Data, Electrical test meter or equivalent results) as applicable.
Specialised diagnostic procedures are documented and results given.
All Health and Safety procedures taken to ensure compliance with manufactures and legislative guidelines are documented.

Evidence can be provided in any of the following forms:

Written (maximum 250 words).
Video log (maximum 10 minutes) and written report.
Photographic and written report.
Any resources or supporting evidence must be clearly identified and referenced.

2.2. Record the analytics of all diagnostic procedures and results from the procedures outlined in 2.1.

Evidence must show:

All analytic results that have been ascertained from diagnostic results used in 2.1.
Supporting documentation that supports the analysis of diagnostic results.

Evidence can be provided in any of the following forms:

Written (maximum 250 words).
Video log (maximum 10 minutes) and written report.
Photographic and written report.
Any resources or supporting evidence must be clearly identified and referenced.

Please download the [APA Reference Guidelines](#). Upload your reference(s) as a document or type into the free text field available in this task.

If applicable, please download the [Photo Evidence Guidelines](#).

If applicable, please download the [Video Evidence Guidelines](#).

Task 3: Restorative action and cost analysis.

You will need to:

3.1. Provide a detailed restorative action plan that is required to bring drive system back to OEM specification.

Evidence must show:

Restorative procedure overview.
Related cost analysis of restorative and service actions.
Explanation of all restorative action service procedures available to bring drive system back to OEM standards.

Evidence can be provided in any of the following forms:

Written (maximum 150 words).
Video log (maximum 5 minutes) and written report.
Photographic and written report.
Any resources or supporting evidence must be clearly identified and referenced. Please download the [APA Reference Guidelines](#). Upload your reference(s) as a document or type into the free text field available in this task.

If applicable, please download the [Photo Evidence Guidelines](#).

If applicable, please download the [Video Evidence Guidelines](#).

Task 4: Supporting evidence from your supervisor/manager/team leader.

You will need to:

4.1. Provide a completed copy of the provided [Attestation Form](#) from your supervisor/manager/team leader to support the evidence you have provided in Tasks 1 to 3.

Please download the Attestation Form and make sure it is completed, signed and dated before uploading to this task.

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