SEG Awards Level 2

Motor Vehicle Studies

**Underpinning Knowledge Evidence Record**

T/601/5558 Knowledge of Removing and Replacing Motorcycle Chassis Units and Components

|  |  |
| --- | --- |
| **Learners Name** |  |
| **SEG Awards Registration Number** |  |
| **Centre Name** |  |
| **Assessor 1 Name** |  |
| **Assessor 2 Name** |  |

**DECLARATION OF AUTHENTICITY**

This declaration must be completed and signed by the learner and countersigned by the tutor / assessor and covers all evidence submitted for moderation.

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| --- | --- | --- | --- |
| Learner Name |  | | |
| Unique Learner Number (ULN) |  | SEG  Learner Reg. ID |  |
| Qualification Title |  | | |
| Centre Name |  | | |

# Learner statement of authenticity

**Before signing please read the guidance below**.

I confirm, that the attached assignment / portfolio is all my own work[[1]](#footnote-1) and does not include any work completed by anyone other than myself. I have completed the assignment / portfolio in accordance with SEG Awards’ instructions and within the time limits set by my centre.

|  |  |  |  |
| --- | --- | --- | --- |
| Signature |  | Date |  |

# Centre confirmation of authenticity

On behalf of …………………………………….(insert centre name), I confirm that the above mentioned learner, to the best of my knowledge, is the sole author of the completed assignment / portfolio attached, and the assessments have been completed under the required conditions.

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| --- | --- | --- | --- |
| Signed |  | Date |  |
| Name |  | | |
| Title |  | | |

**Guidance for Learners**

You have been asked to sign this Declaration of Authenticity and place it at the front of your portfolio or course work assessment. It confirms that the work you have submitted for assessment is your own and that you have not copied it from someone else or allowed another learner to copy it from you.

When preparing any course work it is good practice to undertake research using information from published sources. If you quote directly from these sources then this must be indicated in your work by using quotation marks and referencing the document from which the quotation was taken. You must then comment in your own words on any ideas expressed.

Assessors, internal verifiers and SEG Awards’ external moderators and verifiers are subject specialists who can spot the use of published materials that may be passed as your own words or ideas.

If you do copy words from a published source and do not indicate their reference you will be committing plagiarism. This is considered a form of cheating and may result in your assessment being declared void.

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| **Task No** | **Title** | **Assessment Criteria** |
| 1 | Motorcycle suspension and steering systems | 1.1, 1.2, 1.3, 1.4, 1.5 |
| 2 | Brake layout and operation | 2.1, 2.2, 2.3, 2.4, 2.5 |
| 3 | Motorcycle wheels and tyres | 3.1, 3.2, 3.4, 3.5 |
| 4 | Check and replace systems | 4.1, 4.2, 4.3, 4.4 |

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| **Task 1 – Motorcycle suspension and steering systems** | **Assessment Criteria 1.1, 1.2, 1.3, 1.4, 1.5** |

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| **On the frame below draw and label suspension system components** | |
|  | |
| **Describe and compare the construction and operation of motorcycle suspension and steering systems** | |
| **Component** | **Construction and operation** |
|  |  |
|  |  |
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| **Explain the following key engineering principles relating to suspension** | |
| **Principle** | **Explanation** |
| **Steering angle** |  |
| **Hydraulic forces** |  |
| **Stress and strain** |  |

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| **Task 2 – Brake layout and operation** | **Assessment Criteria 2.1, 2.2, 2.3, 2.4, 2.5** |

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| **Draw a diagram of a typical motorcycle braking system layout** | **Label Diagram** | **Explain their operation** |
|  | **1** |  |
| **2** |  |
| **3** |  |
| **4** |  |
| **5** |  |
| **6** |  |
| **7** |  |

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| **Draw a diagram of a motorcycle disc brake** | **Label Diagram** | **Explain their operation** |
|  | **1** |  |
| **2** |  |
| **3** |  |
| **4** |  |
| **5** |  |
| **6** |  |
| **7** |  |

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| **Draw a diagram of a motorcycle drum brake** | **Label Diagram** | **Explain their operation** |
|  | **1** |  |
| **2** |  |
| **3** |  |
| **4** |  |
| **5** |  |
| **6** |  |
| **7** |  |

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| **Compare the different systems explaining advantages and disadvantages** | |
| **Component** | **Comparison** |
| **Hydraulic /mechanical** |  |
| **Disc/drum** |  |

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| **Describe the following key engineering principles relating to brakes** | |
| **Principle** | **Explanation** |
| **Laws of friction** |  |
| **Hydraulics** |  |
| **Properties of fluids** |  |
| **Properties of air** |  |
| **Braking efficiency** |  |

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| **Task 3 – Motorcycle wheels and tyres** | **Assessment Criteria 3.1, 3.2, 3.4, 3.5** |

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| **In the table below identify the labelled components on the following tyre diagram, giving a description of each component** | | |
|  | | |
|  | **Tyre Component** | **Description** |
| **A** |  |  |
| **B** |  |  |
| **C** |  |  |
| **D** |  |  |
| **E** |  |  |

|  |  |  |
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| **Draw and label a diagram of a motorcycle spoked wheel** | **Label Diagram** | **Explain their operation** |
|  | **1** |  |
| **2** |  |
| **3** |  |
| **4** |  |
| **5** |  |

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| **Draw and label a diagram of a motorcycle alloy wheel** | **Label Diagram** | **Explain their operation** |
|  | **1** |  |
| **2** |  |
| **3** |  |
| **4** |  |
| **5** |  |

|  |  |
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| **Compare different wheel and tyre components explaining the advantages and disadvantages of each** | |
| **Component** | **Comparison** |
| **Tyres** |  |
| **Wheels** |  |

|  |  |
| --- | --- |
| **Describe the following key engineering principles relating to wheels and tyres** | |
| **Principle** | **Explanation** |
| **Un-sprung weight** |  |
| **Dynamic balance** |  |
| **Static balance** |  |

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| **Task 4 – Check and replace systems** | **Assessment Criteria 4.1, 4.2, 4.3, 4.4** |

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| **Describe how to remove, test, evaluate and replace the following system/components** | |
| **Steering system/components** |  |
| **Suspension system/components** |  |
| **Brake system/components** |  |
| **Wheels and tyres** |  |

|  |  |  |  |
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| **Give at least 3 examples of common chassis system faults and describe the common causes for each** | | | |
|  | **Fault 1** | **Fault 2** | **Fault 3** |
| **Frame** |  |  |  |
| **Steering** |  |  |  |
| **Suspension** |  |  |  |
| **Brakes** |  |  |  |

1. Unless otherwise stated e.g. for some entry level qualifications, learners can work together but should identify sections which are their own work. [↑](#footnote-ref-1)