|  |  |  |  |
| --- | --- | --- | --- |
| Title | **Repair and replace lighting system of vehicles** | | |
| Level | **2** | **Credits** | **10** |

|  |  |
| --- | --- |
| Purpose | This Competency Standard identifies the competencies required to repair lighting system of a vehicle by Auto Electrician in accordance with the organization’s approved guidelines and procedures. Trainee will be expected to identify faults in different parts of the lighting system of a vehicle and fixing the problems by repairing or replacing the faulted parts. Trainee’s underpinning knowledge regarding tools, techniques, methods and procedures for repairing/replacing auto-lighting parts will be sufficient to provide Trainee the basis for his/her work. |

|  |  |
| --- | --- |
| Classification ISCED | 0716 Motor vehicles, ships and aircraft |

|  |  |
| --- | --- |
| Available grade | Competent / Not yet competent |

|  |  |
| --- | --- |
| Modification history | N/A |

|  |  |  |  |
| --- | --- | --- | --- |
| **Unit of Competency** | **Performance Criteria** | **Knowledge** | **Tools & Equipment** |
| B1: Diagnose Fault in Lighting System of the Vehicle. | *TraineeMust be able to:*  P1. Carry out tests to determine faults using proper tooling and techniques.  P2. Adopt a method for testing systems and components without causing damage to them.  P3. Identify faults and determine repair actions to client.  P4. Carry out tests according to guidelines and organization’s procedures/policies.  P5. Follow Repair manual for diagnosing fault in lighting system | *Traineemust be able to know and understand*:  K1. Using multi-meter and test lamp.  K2. Components and functions of lighting system.  K3. Different types faults in lighting system of vehicles.  K4. Techniques and procedures of diagnosing faults in lighting system.  K5. Specific safety precautions and guidelines. K6. Reporting procedures of faults and possible repair actions.  K7. Guidelines, procedures and policies of the organization.  K8. Read and interpret repair manual. | Multi-meter, Test lamp Cutter Pliers, repair manuals |
| B2: Repair lighting system of the Vehicle. | *TraineeMust be able to:*  P1. Select tools and equipment according to job requirement.  P2. Repair faults in the components as diagnosed according to procedures.  P3. Adopt a method for repairing systems and components without causing damage to them P4. inspect and verify the fault is removed P5. Observe occupational health and safety precautions at all times. | *Traineemust be able to know and understand*:  K1. Use of multi-meter, test lamp and toolkit K2. methods and procedures of repairing faults in the components ( harness, switch) K3.Techniques for inspecting and verifying the repair of lighting system.  K4.Specific safety precautions and guidelines. K5. Guidelines, procedures and policies of the organization.  K6. Read and interpret repair manual. | Multi-meter, Test Lamp, Wire Insulating Tape, Cutter Pliers, screw drivers, spanners. |

|  |  |  |  |
| --- | --- | --- | --- |
|  | P6. Follow Repair manual for repairing lighting system of the vehicle |  |  |
| B3: Replace Fuses/Connectors of Lighting System. | *TraineeMust be able to:*  P1. Select proper tools and equipment according to the job requirement  P2. Follow the instructions of repair manual for the replacement of faulty fuses/connectors  P3. Communicate to the client if the replacement of fuses/connectors is required P4. Follow Repair manual for replacement of fuses/connectors  P5.Observe occupational health and safety precautions at all times. | *Traineemust be able to know and understand:*  K1. Use of multi-meter, test lamp, fuse puller and cutter pliers  K2. functions of fuses and connectors  K3. classification of fuses (e.g. 10 Amp, 20 Amp, 30 Amp etc)  K3. Read and interpret repair manual.  K4. specific safety precautions and guidelines K5. Organizational standard operating procedures (SOPs) | Multi-meter, Test Lamp, fuse puller, screw driver, cutter pliers, insulation tape |
| B4: Repair Indicator Light Unit. | *TraineeMust be able to:*  P1. Select tools and equipment according to job requirement.  P2. Repair faults in the components as diagnosed according to procedures.  P3. Adopt a method for repairing indicator light unit without causing damage to it.  P4. inspect and verify the fault is removed P5. Observe occupational health and safety precautions at all times.  P6. Follow Repair manual for repairing indicator light unit of the vehicle | *Traineemust be able to know and understand:*  K1. Use of multi-meter, Flats & Phillips Screw Drivers, Test Lamp, Amery Paper, spanner K2. methods and procedures of repairing faults in indicator light unit  K3. techniques for inspecting and verifying the repair of indicator light unit  K4. Specific safety precautions and guidelines. K5. Guidelines, procedures and policies of the organization.  K6. Read and interpret repair manual.  . | Multi-meter, Flats & Phillips Screw Drivers, Test Lamp, spanner, Amery Paper (for cleaning rusted points). |
| B5: Replace Light Bulbs of the Vehicle. | *TraineeMust be able to:*  P1. Select proper tools and equipment according to the job requirement  P2. Follow the instructions of repair manual for | *Traineemust be able to know and understand:*  K1. Use of Phillips Type Screw Driver, Flat Type Screw Driver, spanner  K2. Classification of bulbs (Volts and Watts) | Phillips Type Screw Driver, Flat Type Screw Driver, spanner |

|  |  |  |  |
| --- | --- | --- | --- |
| **Unit of Competency** | **Performance Criteria** | **Knowledge** | **Tools & Equipment** |
|  | the replacement of faulted light bulbs P3. Communicate to the client if the replacement of light bulbs is required  P4. Follow Repair manual for replacement of light bulbs  P5. Observe occupational health and safety precautions at all times. | K3. Read and interpret repair manual.  K4. specific safety precautions and guidelines K5. Organizational standard operating procedures (SOPs)  . |  |
| B6: Allign the Head Lights of the Vehicle. | *TraineeMust be able to:*  P1. Select proper tools and equipment according to the repair manual  P2.adopt a method for adjusting head lights without causing damage to them  P3. Inspect and verify the focus of head lights according to the repair manual  P4. Observe occupational and machine safety at all times | *Traineemust be able to know and understand:*  K1. Use of Phillips screw Driver,  Head light Aligner ( Special Service Tools SST) K2. Read and interpret repair manual.  K3. Techniques and procedure of using headlight aligner (SST)  K4. specific safety precautions and guidelines K5. Organizational standard operating procedures (SOPs) | Phillips screw Driver, Head light Aligner (SST), measuring tape |