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| Title | **Install and repair starting system of vehicle** |
| Level | **2** | **Credits** | **17** |

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| Purpose | This Competency Standard identifies the competencies required to Install and Repair Starting System of Vehicle by Auto Electrician in accordance with the organization’s approved guidelines and procedures. Trainee will be expected to identify starting system’s common problems and to figure out possible solutions, either by repairing or replacing the parts of the starting system of the vehicle. Trainee’s underpinning knowledge regarding tools, techniques, methods and procedures for installation and repairing starting system of a vehicle will be sufficient to provide you the basis for his / her work. |

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

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| Available grade | Competent / Not yet competent |

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| Modification history | N/A |

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| **Unit of Competency** | **Performance Criteria** | **Knowledge** | **Tools & Equipment** |
| D1: Diagnose faults in Starting system of vehicle | *TraineeMust be able to:*P1. Carry out tests on following to determine faults:* Glow Plug for diesel engine
* Spark Plug for petrol engine
* Ignition coil
* Injection pump solenoid valve for diesel engine
* Fuel pump and regulator valve
* Contact and Breaker Point (CB) and Condenser

P2. Using proper tooling and techniques for performing diagnostic tests.P3. Adopt a method for diagnosing faults in starting system without causing damage to them.P4. Identify faults and determine repair actions to client.P5. Carry out tests according to guidelines and organization’s procedures/policies.P6. Follow Repair manual for diagnosing fault in | *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, scanner,Tool kit (Spanner set, Screw driver, Pliers),Tester, Fuel pressure gauge. |

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| **Unit of Competency** | **Performance Criteria** | **Knowledge** | **Tools & Equipment** |
|  | starting systemCheck the cranking /selfP7. Report the diagnose fault to the concerned department. |  |  |
| D2: Repair Starter Motorof Vehicle | *TraineeMust be able to:*P1. Select tools and equipment according to job requirement.P2. Repair faults in the starter motor,as diagnosed, according to procedures.P3. Adopt a method for repairing starter motor without causing damageP4. inspect and verify the fault is removed P5. Observe occupational health and safety precautions at all times.P6. Follow Repair manual for repairing starter motor of the vehicle | *Traineemust be able to know and understand:*K1. use of toolkit and repair manualK2. procedure of repairing faults in starter motorK3. safety precautions for dismantling and assembling starter motorK4. method of measuring resistance of starter motor components. | Screw driver and pliers Spanner Set, Socket SetRepair manual, soldering iron, Star Allen Key, Allan Key , Jumper Wire, Soldering wire, paste,Multi-meter and Vernier caliper, Screw Drivers Set, Pliers Set, Test Lamp |
| D3: Install the starter motor in the Vehicle | *TraineeMust be able to:*P1. Select relevant tools and methods for installation of starter motor in the vehicle. P2. Reconnect the wiring and connectors according to repair manual.P3. Tighten the bolts of starter motor to specified torque.P4. Ensure the fault is removed and starter motor is functioning properly. | *Traineemust be able to know and understand:*K1. Procedure for installation of starter motor in the vehicle.K2. Guidelines and procedures of repair manual of vehicles.K3. Importance of tightening the bolts at specified torque.K4. Method of connecting wires carefully. | Screw driver and pliers Spanner Set, Socket Set Repair manual, soldering iron, Star Allen Key, Allan Key , Jumper Wire, Soldering wire, paste,Multi- meter and Vernier caliper, Screw Drivers Set, Pliers Set, Test Lamp |