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| Title | **Perform ignition system service** |
| Level | **2** | **Credits** | **8** |

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| Purpose | This Competency Standard identifies the competencies required to perform service of ignition system of vehicle, at workplace by Automobile Mechanic, in accordance with the organization’s approved guidelines and procedures. You will be expected to diagnose ignition system problems of vehicle, service distributor and C.B point of ignition system and Service spark plugs & wires of vehicle, service emission control system of vehicle and perform ignition road test of vehicle, at workplace. Your underpinning knowledge regarding service of ignition system of a vehicle will be sufficient to provide you the basis for your 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 |

| **Unit of Competency** | **Performance Criteria** | **Knowledge & Understanding**  | **Tools & Equipment** |
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| F-1 Diagnose ignition systemproblems (e.g., scan tool, scope) of vehicle  | You will be able to: P1: Arrange tools and equipment required to diagnose ignition system problemsP2. Follow the instructions of repair manual to diagnose ignition system problemsP3. Inspect the following components of ignition system according to repair manual:* Ignition switch
* Ignition coil
* Spark plug wires
* Spark plug
* Battery
* Distributor
* Contact breaker point (CB)
* Resistance
* Condenser
* Crank sensor
* Cam sensor
* Electronic control module (ECM)

P4. Follow safety precautions at workplace | You will be able to:K1. Explain the usage of tools and equipment for diagnosing ignition system problems K2. Explain the usage of special service tools (SSTs) for diagnosing ignition system problemsK3. Read and interpret repair manualK4. describe the electronic ignition system K5. Describe the distributor ignition system K5. Explain the function of sensors and actuators of ignition system K6. Explain the function of ECM in ignition systemK7. Explain the safety precautions regarding personal health and workplace  | Scanner, repair manual, multi meter, oscilloscope, lamp tester, spanners, socket set, T handles, magnetic stick, hydro meter, PPE |
| F-2 Service Distributor and C.B point of ignition system  | You will be able to:P1: Arrange tools and equipment required to service distributor and C.B point P2. Follow the instructions of repair manual to service distributor and C.B pointP3. Inspect the following components of distributor according to repair manual:* Contact breaker (C.B) point
* Condenser
* Router
* Distributor cap
* Router shaft
* Advance plate
* Governor weights
* Advance vacuum mechanism

P4. Follow safety precautions at workplace | You will be able to:K1. Explain the usage of tools and equipment for servicing distributor and C.B point K2. Explain the usage of ignition timing gunK3. Read and interpret repair manualK4. Explain the dwell angle of C.B point K5. Explain the sequence of firing orderK6. Explain the safety precautions regarding personal health and workplace | Repair manual, ignition timing gun, spanner, filler gauge, star Allen keys, analyser, screw drivers, plier, PPE |
| F3 Service spark plugs & wires of vehicle | You will be able to:P1: Arrange tools and equipment required to service spark plugs and wiresP2. Follow the instructions of repair manual to service spark plugs and wiresP3. Follow safety precautions at workplace | You will be able to:K1. Explain the usage of tools and equipment for servicing spark plugs and wiresK2. Explain the usage of multi meterK3. Read and interpret repair manualK4. Identify the types and range of spark plugs K5. Describe the clearance of spark plugsK6. Explain the resistance of spark plug wiresK7. Explain the safety precautions regarding personal health and workplace | Multi meter, filler gauge, socket set, plug cleaner, T handles, repair manual, PPE |
| F4. Service emission control System of vehicle  | You will be able to: P1: Arrange tools and equipment required to service emission control systemP2. Follow the instructions of repair manual to service emission control systemP3. Inspect the following components of distributor:* Catalytic convertor
* Charcoal canister
* Purge valve
* Positive crankcase ventilation valve (PCV)
* Fuel tank
* Fuel tank lid
* Exhaust gases recirculation valve (EGR)
* Heated oxygen sensors (H2OS)

P4. Follow safety precautions at workplace | You will be able to:K1. Explain the usage of tools and equipment for servicing emission control systemK2. Explain the usage of special service tools (SSTs) for servicing emission control systemK3. Read and interpret repair manualK4. Explain the emission control system K5. Describe the function of catalytic convertor K6. Describe the function of exhaust gases recirculation valve (EGR)K7. Explain the safety precautions regarding personal health and workplace | SSTs, Scanner, repair manual, exhaust gas analyzer, back pressure tester, spanners, socket set, screw drivers, vacuum tester, PPE |
| F5. Performignition road test of vehicle | You will be able to: P1. Follow the organizational policy regarding road test P2. Verify the followings on road test according to organizational guidelines:* Pick up
* Juttring
* Drivability

P3. Follow safety precautions while driving | You will be able to: K1. Explain organizational rules, regulations and policies regarding road test K2. Describe organizational standard operating procedures (SOPs)K3. Explain the method of checking performance of vehicle K4. Explain local driving laws | Scanner, seat covers protector, steering wheel cover, hand brake cover, gear lever cover, floor matts, driving license |