## Power Equipment Technology

**I. Ignition, Charging, Fuel and Governor Systems**

Tasks Instructions:

| Each number to the right refers to a single student/candidate (1-10). Place a check (√) in the respective column for the appropriate student/candidate number (1-10) if the skills listed below are observed as stated. Leave blank if not observed. Student/candidate will only get credit for the skills they have demonstrated. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Demonstrate the ability to disassemble an ignition system, inspect and test ignition components | | | | | | | | | | |
| Demonstrate proficiency in testing coil/ignition modules | | | | | | | | | | |
| Repair/replace electronic ignition components | | | | | | | | | | |
| Test and troubleshoot equipment related switches and harnesses along with stators, regulators, and any related wiring harnesses | | | | | | | | | | |
| Explain and be able to inspect, service, repair, and adjust carburetors, gaseous fuel regulators, and mixers | | | | | | | | | | |
| Inspect, clean and replace filters | | | | | | | | | | |
| Check fuel tanks and service and repair fuel pumps and solenoids | | | | | | | | | | |
| Test equipment-related fuel tanks, lines and related systems and understand the procedures for testing for compliance systems as they are related to emission requirements and standards | | | | | | | | | | |
| Understand and be able to explain the various governor systems | | | | | | | | | | |
| Inspect, service and reassemble governor systems | | | | | | | | | | |
| Explain which components cause engines to increase or decrease in the number of revolutions per minute | | | | | | | | | | |
| *Safety and infection control are adhered to during all aspects of this task.* | | | | | | | | | | |
| *The student completed task within the time limited.* | | | | | | | | | | |

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| **Points earned** | | | | | | | | | | |
| **Total possible points (13)** | | | | | | | | | | |
| | | | | | | | | | | |
| **II. Starter, Cooling and Lubrication Systems** | | | | | | | | | | |
| Tasks Instructions: | | | | | | | | | | |
| | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
| Demonstrate the ability to inspect, service and adjust the various starting systems; use wiring schematics of related equipment systems | | | | | | | | | | |
| Test and troubleshoot both liquid and air-cooled cooling systems of both engines and equipment | | | | | | | | | | |
| Recognize signs of heat related failures or problems | | | | | | | | | | |
| Define and understand the various styles and types of lubrication systems | | | | | | | | | | |
| Demonstrate the ability to check oil levels and fuel/oil mixtures | | | | | | | | | | |
| Demonstrate the method of checking oil pressurized systems with the use of required tools | | | | | | | | | | |
| Explain the various grades of oils and uses in the proper engines and/or equipment | | | | | | | | | | |
| *Safety and infection control are adhered to during all aspects of this task.* | | | | | | | | | | |
| *The student completed task within the time limited.* | | | | | | | | | | |
| **Points earned** | | | | | | | | | | |
| **Total possible points (9)** | | | | | | | | | | |
| | | | | | | | | | | |
| **III. Valves, Exhaust and Engine Block Systems** | | | | | | | | | | |
| Tasks Instructions: | | | | | | | | | | |
| | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |

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| Identify and service various types and styles of valve train components as well as explain why the sealing of these components is important | | | | | | | | | | |
| Identify the various types of exhaust systems and explain how they relate to the engine and/or equipment | | | | | | | | | | |
| Inspect and service exhaust and understand the procedures for testing for compliance systems as they are related to emission requirements and standards | | | | | | | | | | |
| Identify and provide the necessary service/repair techniques to the various manufacturers within the industry; this could include disassembly, inspection and measuring of crankshafts, connecting rod bearings, journals, cylinders, piston and rings | | | | | | | | | | |
| Complete repairs to correct torque of critical fasteners and replace any gaskets and/or sealants | | | | | | | | | | |
| *Safety and infection control are adhered to during all aspects of this task.* | | | | | | | | | | |
| *The student completed task within the time limited.* | | | | | | | | | | |
| **Points earned** | | | | | | | | | | |
| **Total possible points (7)** | | | | | | | | | | |

**IV. Diagnostic and Failure Analysis**

Tasks Instructions:

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Demonstrate the proper use of various specialized tools of the industry | | | | | | | | | | |
| Demonstrate the ability to test crankcase vacuum, compression gauge, leak down testers, voltmeters/multimeters and other required tools | | | | | | | | | | |
| Analyze failed engine components to determine the correct type of failure | | | | | | | | | | |
| Determine the best method to repair and estimate the cost of repair | | | | | | | | | | |

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| *Safety and infection control are adhered to during all aspects of this task.* | | | | | | | | | | |
| *The student completed task within the time limited.* | | | | | | | | | | |
| **Points earned** | | | | | | | | | | |
| **Total possible points (6)** | | | | | | | | | | |
| | | | | | | | | | | |
| **V. Shop Procedures** | | | | | | | | | | |
| Tasks Instructions: | | | | | | | | | | |
| | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
| Demonstrate the proper techniques in the care and use of tools and equipment | | | | | | | | | | |
| Demonstrate the ability to work accurately with precision instruments | | | | | | | | | | |
| Demonstrate the ability to use service manuals and/or bulletins | | | | | | | | | | |
| Demonstrate verbal responses to customers and answer customer-related problematic questions | | | | | | | | | | |
| Prepare equipment for delivery | | | | | | | | | | |
| *Safety and infection control are adhered to during all aspects of this task.* | | | | | | | | | | |
| *The student completed task within the time limited.* | | | | | | | | | | |
| **Points earned** | | | | | | | | | | |
| **Total possible points (7)** | | | | | | | | | | |
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| **VI. Business Operation** | | | | | | | | | | |
| Tasks Instructions: | | | | | | | | | | |
| | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
| Demonstrate the ability to look up proper part numbers using paper, | | | | | | | | | | |

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| microfiche and/or electronic means available | | | | | | | | | | |
| Prepare shop repair tickets and warranty claims | | | | | | | | | | |
| Demonstrate the ability to calculate costs accurately | | | | | | | | | | |
| Operate equipment within equipment manufacturer's guidelines | | | | | | | | | | |
| Demonstrate effective customer interaction and professional customer communications and relations | | | | | | | | | | |
| *Safety and infection control are adhered to during all aspects of this task.* | | | | | | | | | | |
| *The student completed task within the time limited.* | | | | | | | | | | |
| **Points earned** | | | | | | | | | | |
| **Total possible points (7)** | | | | | | | | | | |
| | | | | | | | | | | |
| **VII. Transmission/Power Train** | | | | | | | | | | |
| Tasks Instructions: | | | | | | | | | | |
| | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
| Demonstrate the understanding of the theory of transmission and transaxle components | | | | | | | | | | |
| Dissemble power train components, assemble power train components and diagnose and correct a potential problem | | | | | | | | | | |
| Explain the different types of transmissions and what types of lubrication systems are necessary for each | | | | | | | | | | |
| *Safety and infection control are adhered to during all aspects of this task.* | | | | | | | | | | |
| *The student completed task within the time limited.* | | | | | | | | | | |
| **Points earned** | | | | | | | | | | |
| **Total possible points (5)** | | | | | | | | | | |
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| **VIII. General Competencies** | | | | | | | | | | |
| Tasks Instructions: | | | | | | | | | | |

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Explain basic two-stroke and four-stroke theory | | | | | | | | | | |
| Explain electrical theory | | | | | | | | | | |
| Explain carburetion theory and other related fuel systems | | | | | | | | | | |
| Read and follow schematics for hydraulics, electrical, etc. | | | | | | | | | | |
| Demonstrate effective communication to others | | | | | | | | | | |
| Demonstrate basic computer skills | | | | | | | | | | |
| *Safety and infection control are adhered to during all aspects of this task.* | | | | | | | | | | |
| *The student completed task within the time limited.* | | | | | | | | | | |
| **Points earned** | | | | | | | | | | |
| **Total possible points (8)** | | | | | | | | | | |
| **Total points earned for all sections (A)** | | | | | | | | | | |
| **Total possible points for all sections (B) 62** | | | | | | | | | | |
| **Student/candidate score (divide A/B)** | | | | | | | | | | |