



## *Power Equipment Technology*

## Career Competition

**Career Cluster:** Transportation, Distribution, and Logistics

**State Qualifying Exam:** Yes

**National Contest:** Yes

**Participation:** Individual

### **Competition Description**

Competitors must know and understand both two- and four-cycle engines as well as the related theories that go along with the types of engines they will come across in the industry. They should also understand drive train, hydraulic and wiring schematics. Competitors will also need to be well-versed in customer service. As they rotate through the various stations, they are judged on both physical and oral skills.

Competitors will demonstrate their ability to perform jobs and skills based on the SkillsUSA National Technical Standards Guide for Power Equipment Technology. The competition is defined by current industry technical standards. These standards have been developed by the Power Equipment Technology National Technical Committee (SkillsUSA), Equipment and Engine Training Council (EETC) education program certification requirements, and the Outdoor Power Equipment (OPE) and engine manufacturers.

### **Tasks To Be Evaluated**

Workstations will be setup in rows similar in style to the National competition. The stations may consist of outdoor power equipment and components such as small engines, engine components, transmissions, pumps etc. Competitors will be judged on their ability to interpret scenarios and safely perform tasks on equipment, and complete worksheets. There will be 8-10 skill stations. The stations will be judged by outdoor power equipment industry manufacturer's representatives.

### Workstations

Depending on what is being evaluated, each workstation will have as needed:

- a competitor instruction sheet to be filled out (on all workstations)
- equipment and/or engine components and tools to work with
- manufacturers' instructions from service manuals and operator's manuals

### **Provided by Competitor**

- Competitors must create a one-page resume and submit a hard copy to the technical committee chair at orientation.

### **Provided by Technical Committee**

- All necessary engines, engine parts, workstations, test stands, power equipment, gasoline, oil and all basic hand tools as well as necessary specialty tools
- Industry manuals, including service and repair instruction manuals



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- other information such as illustrated parts and price lists
- aftermarket catalogs

### Skills Related to the Tasks Being Evaluated--(Competitors should be able to:)

- Locate the Manufacturers' equipment or engine label or stamping, identify and record information such as model number, type, spec, code, year of manufacture etc.
- Use service manuals and manufacturers specifications to disassemble, assemble, install and adjust various components on engines and equipment.
- Have a working knowledge of the operation and servicing of both 2 and 4-stroke engines, OHV, and outdoor power equipment such as lawnmowers, riding lawnmowers, string trimmers and their sub-components.
- Interpret and look-up parts in illustrated parts lists and price guides from a variety of manufacturers.
- Prepare a service order
- Interview with a judge that will play a role as a customer. (you will be a service order writer)
- Look up related outdoor power equipment parts and prices in aftermarket catalogs.
- Understand, service and adjust engine sub-systems such as OHV valve train, carburetors, governors, speed controls, and ignition systems
- Understand and identify fuel and emission components in an Electronic Fuel Injection (EFI) engine.
- Use manufacturers' service literature to partially disassemble and identify parts in a hydraulic pump and hydraulic transaxle as commonly found on Zero turn and hydrostat mowers.
- Interpret a basic riding lawnmower schematic to wire and diagnose a system.
- Use a digital multi-meter (DMM) to measure volts and ohms.
- Adjust a variety of live running engines using manufacturers procedures and specifications



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### **Clothing Requirement**

#### **National Requirement:**

**Class D:** Competition Specific — Blue Attire

- Official SkillsUSA light blue work shirt
- Navy pants
- Black, brown, or tan leather work safety shoes (with protective toe cap).

#### **State Requirement:**

National Requirement OR

- Light blue or solid color work shirt
- Work pants of any kind are acceptable dress (no jeans)
- Black, brown, or tan leather work safety shoes (with protective toe cap).
- Any embroidered names or school patches must be covered if applicable.

### **Additional Information:**

Competitors must bring a DVOM (Digital Volt/Ohm Meter) to the competition.