

# 2024 – 2025 Ag Mechanics CDE – Description Sheet

Revised 1/6/2025

## Team Activity: (Machinery)

**Area and State Information** – Team Activity will deal with plant production systems. We will be using AGCO equipment. Team Activity might focus on any or all of the following. Machine and Equipment maintenance, set-up, adjusting, sizing, troubleshooting, field capacities, efficiencies, and transportation requirements.

**Reference** – [Massey Ferguson 1840M Manual](#)

## Skill Activities:

### **A. Electrical Systems**

Necessary tools will be provided. You may bring colored pencils for use on drawing diagrams.

**Area and State Information** – 2, 3, or 4 boxes will be mounted to 2" x 4" boards. The contestant will make hooks and secure the wires to the correct locations but will not cut the wire. Connections to boxes and connection of devices inside the box must be made according to NEC recommendations and accepted wiring practices (AAVIM)

### **B. Compact Equipment**

Necessary tools will be provided. Students will be required to

- Measure selected parts using dial calipers, micrometers, telescoping gauges, and/or feeler gauges
- Answer related problem-solving questions
- Assemble, install, and/or adjust specific engine components/parts

### **Area and State Information**

Briggs and Stratton Single Cylinder OHV Air-Cooled Engine, Briggs and Stratton Single Cylinder OHV Air-Cooled Engine Illustrated Parts list and Repair Manual (276781 – 8/09). Be familiar with the following sections:

- Section 1 – Safety, Maintenance, and Adjustments
- Section 2 – Troubleshooting
- Section 10 – Crankshafts, Camshafts, Balancing Systems, and Gear Reduction
- Section 12 – Engine Specifications

### **C. Environmental/Natural Resources (ENR)**

Area and State Information: Students will need to be able to:

- Take rod readings
- Measure distance with tape and/or instruments
- Determine the percent of slope or grade
- Interpret legal land descriptions
- Determine land area in area and/or volume
- Use Measurements to determine the cubic volume of fill dirt or concrete

## **D. Structures:**

### **Area Information**

Welding Skill will be a single weld weldment. GMAW Single-Pass Butt Joint (1G Position) on 1/8" thick plate using a supplied welding electrode. Weld will be strength tested.

### **State Information**

Welding Skill will be a two-weld weldment. Weld 1 will be a GMAW Single-Pass Pipe (1 ½" ID Black Iron Pipe) to 1/8" thick Plate (2F Position). The Second weld will be a Plug weld (1G Position) on the 1/8" thick plate using the supplied welding electrode. Weld may be strength/pressure tested.

### **Welding Positions**

### **Welding Equipment List for Contestants:**

1. Teams will need to provide the following items:
  - Welding Helmet – Shade 10 minimum
  - Body cover- leathers, Shop Jackets, non-flammable Coveralls
  - Welding Gloves
  - Pliers/Tongs
  - Safety glasses –approved with shields
  - Wire brush
  - Soapstone
  - Chipping Hammer
  - Tape Measure
2. Please do not share tools and equipment between team members (bring one of each for each student).
3. All other materials and tools will be provided.

Approved Safety Glasses are required for Team Activity and Skill Activities. (Meets or exceeds ANSI Z87.1-2003 safety standards)