

Contestant Name: _____

Practicum Score: _____

School: _____

KEY

2026 Kansas State Agriculture Technical and Mechanical Systems Compact Equipment Practicum Activity – 100 points

Instructions: Place all answers on this page. Follow all instructions carefully and completely in order to obtain full points for this activity.

Section 1 – Parts Identification

Identify the part by placing the letter of the correct term for either the tool or the part identified in the blank to the left. Make sure that your letters are legible. Not all answers will be used. (3 points each)

Parts List:

- A. Crankshaft
- B. Camshaft
- C. Connecting Rod
- D. Cylinder
- E. Intake Valve
- F. Exhaust Valve
- G. Spark Plug
- H. PCV Valve
- I. Piston
- J. Main Bearing
- K. Magneto
- L. Fuel Tank
- M. Carburetor
- N. Governor
- O. Air Cleaner
- P. Cylinder Head

Tools List:

- Q. Flywheel
- R. Cylinder Head
- S. Crankcase Cover
- T. Piston Ring
- U. Rocker Arm
- V. Valve Spring
- W. Piston Pin
- X. Rewind Starter
- Y. Spark Plug Tester
- Z. Piston Ring Compressor
- AA. Tang Adjusting Tool
- BB. Flywheel Strap Wrench
- CC. Fuel Line Remover
- DD. Digital Tachometer
- EE. Piston Ring Expander
- FF. Flywheel Puller

- | | | | | | |
|-----------------|-------------|--------------|---------------|---------------|------------|
| R/P <u>A</u> 1. | <u>O</u> 4. | <u>B</u> 7. | <u>X</u> 10. | <u>AA</u> 13. | 3 pts each |
| <u>H</u> 2. | <u>K</u> 5. | <u>A</u> 8. | <u>EE</u> 11. | <u>V</u> 14. | |
| <u>Q</u> 3. | <u>Z</u> 6. | <u>BB</u> 9. | <u>M</u> 12. | <u>I</u> 15. | |

Section 1 Score - 45 pts

Section 2 – Precision Measuring

Determine the measurement for each part by doing the actual measuring or looking at a picture of the measurement. Use the measuring tool at each station.

- 21. Outside diameter of the magneto end journal on this crankshaft? (5 points) 0.875 ^{1/1000}
- 22. Diameter of the camshaft journal. (either end) (5 points) 0.498
- 23. Inside diameter of the bearing. (4 points) 0.787
- 24. Drill bit picture - w/dial caliper (4 points) 0.357
- 25. PTO shaft with 0-1 micrometer picture. (4 points) 0.726
- 26. Outside diameter of the metal bushing. Dial caliper (4 points) 1.91

Section 2 Score - 26 pts

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Section 3 – Repair Manual Questions

Use the Repair Manuals provided to answer the following questions. All specifications will be for a Briggs and Stratton engine – Model 130U200 Use proper labels!! (3 points each)

27. What is the engine displacement for this model?

(208 cc) 12.69 ci

28. How much oil should the engine have in it?

19 to 22 oz

29. What is the Intake Valve Clearance for this engine?

(.13 to .18 mm) .005 to .007"

30. How tight should the cylinder head screw be tightened?

(28-30 N-m) 21-22 lb-ft

31. How tight should the valve cover screw be tightened?

(8-14 N-m) 21-24 lb-in

32. When checking the cylinder bore, it is determined that the bore is 0.0025" out of round. Should you use or fix/replace this cylinder?

Use Replace
(circle answer)

33. A connecting rod from this engine is checked and it is found that the diameter of the crank pin bearing diameter is 1.195" Use or Replace?

Use Replace
(circle answer)

Section 3 Score - 21 pts

Section 4 – Troubleshooting

Read the following scenarios and determine what the most likely cause might be based on the description.

34. You are attempting to start a transfer pump for your sprayer nurse tank for the first time this spring and it will not start. It has spark when checked with a tester. When you pull the recoil starter, you can tell that it seems to have adequate compression.

What is the most likely cause for this engine not starting? (4 points)

It has a fuel issue - Any answer that identifies a fuel problem.

35. You transported your push mower to a neighbor's farm to mow their yard. There were a few potholes and bumps on the way but the mower stayed in the back of the truck. When you got there, the mower would not start. You checked to see that there was gas in the tank and the starter rope pulls like you would expect.

What is the next thing that you should check? (4 points)

Check to see if the mower has spark

Section 4 Score - 8 pts

1/2 for no label