



Name: \_\_\_\_\_

School: \_\_\_\_\_

2014 Area IV & VIII  
Agricultural Mechanics CDE

**Hydraulics Skill Area**

Points are based on your performance of proper procedures as well as skill activities. Please practice safe methods while completing these activities. Read instructions carefully and thoroughly before completing each question or section.

**Station 1:** Correctly identify each of the three types of hydraulic pumps at station 1.

Pump 1: \_\_\_\_\_

Pump 2: \_\_\_\_\_

Pump 3: \_\_\_\_\_

**Station 2:** Which of the tagged control valve(s) are manual spool valves

A) 2A

C) 2C

B) 2B

D) 2D

**Station 3:** Correctly measure the following components using the provided dial calipers:

A) Diameter of the hydraulic cylinder piston: \_\_\_\_\_

B) Diameter of the hydraulic cylinder piston rod: \_\_\_\_\_

C) Diameter of the pin to be used with this hydraulic cylinder: \_\_\_\_\_



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**Station 4:** Which of the tagged fitting(s) have a male o-ring boss type connection?

A) 4A

C) 4C

B) 4B

D) 4D

**Station 5:** Which of the tagged hoses are permissible to use for hydraulic components?

A) 5A

C) 5C

B) 5B

D) 5

**Station 6:** Which of the tagged fluids should be used in a hydraulic system?

A) 6A

C) 6C

B) 6B

D) 6D

**Practical Application Scenario: Use the provided hydraulic cylinder specifications to complete the question below.**

1. How many gallons must you be capable of pumping if you want to fully extend the hydraulic cylinder in 30 seconds?

**GPM:** \_\_\_\_\_

2. What is the maximum force this cylinder is capable of applying when pushing straight down on an object? \*\*\*Pump Pressure = 2000 psi\*\*

**Maximum force:** \_\_\_\_\_ lbs

3. What size inlet port is this cylinder equipped with?

**Size:** \_\_\_\_\_

4. What is the retracted length of this cylinder?

**Length:** \_\_\_\_\_