

**2019 Competition**  
**Heavy Vehicle Technology (#49)**

<b>Hydraulic Systems</b> <b>TASK</b>	<i>(1 of 6)</i>
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Competitor number \_\_\_\_\_

Start time \_\_\_\_\_

Judge's name \_\_\_\_\_

Finish time \_\_\_\_\_

**Competition Overview**

**Time limit:** 2 hours

**Equipment:** Caterpillar machine

**Number of tasks:** 1

Task 1: Diagnose sluggish hydraulic functions.

**Value 100 %**

**General Instructions:**

The judge has all the materials you will need.

If you are unsure about any procedure, you may ask your judge for clarification.  
Marks may be deducted if the judge decides you should know the procedure.

Your judge will operate the machine for you for testing purposes.

Please be very specific with what you would like them to do.

Before you start, you must go through the following Hazard Assessment with your judge so that you will be able to work safely.

## Hazard Assessment:

This Hazard Assessment is to discuss the following **7 hazards** and the counteractive measures you must take.

**Hazard 1:** Hot and moving engine parts can hurt you.



- Keep hands clear of exhaust components and moving objects. (Fan, pulleys and belts.)

**Hazard 2:** Hydraulic systems can create extreme forces.



- Stay clear and keep others clear of pinch zones near the machine.

**Hazard 3:** Raised hydraulic components may not hold raised equipment.



- Use the supplied safety supports.
- The judge will assist you with these safety supports.
- Lower all implements once testing is complete.

**Hazard 4:** Highly pressurized oil can pierce skin.



- Only use a piece of cardboard or similar material to check for any leaks.
- Do not direct pressurized oil toward your skin.
- Ensure that the system is off and depressurized.

**Hazard 5:** You might slip on any spilled hydraulic oil.



- Wipe and clean all oil drips and spills immediately.

**Hazard 6:** Hot components and fluids can cause severe burning.



- Use caution when touching any parts in the hydraulic and engine system.

**Hazard 7:** Pressurized components (accumulators) can explode causing death or severe injury if mishandled or dropped.



- Follow the manufacturer's instructions and procedures.



Ask  
Information

*If you do not quite understand or are unsure about the hazards, please ask your judge for assistance.*

*No marks will be deducted for asking about hazards.*

I have read this hazard assessment and the judge has explained it to me.

I understand the hazards and I will take precautions to avoid them.

Competitor's name \_\_\_\_\_ Judge's name \_\_\_\_\_ Date \_\_\_\_\_

Number of marks possible: **18.0**

Skills evaluated	Tasks				
	Task 1				
a. Use of safety equipment. Safe and clean workspace					
b. Use and interpretation of service manuals & schematic diagrams					
c. Logical order of repair					
d. Proper use of tools					
e. Precise adjustment of components					
f. Accurate measurements					
g. Superior Workmanship					
h. Identification of faults, codes, or components					



Ask  
Information

*If you cannot proceed with a task, ask your judge for assistance.*

**Task 1 of 1: Diagnose sluggish hydraulic functions.**

**Value 100 %**

1. Follow the manufacturer's procedures to safely, appropriately, and accurately:

- Diagnose sluggish hydraulic functions.

2. In point form; briefly record your findings and any adjustments or components that were out of specifications.

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Ask  
Information

*If you cannot proceed with a task, ask your judge for assistance.*

