



2018

# SCNC

SKILLS CANADA  
NATIONAL COMPETITION

# OCMT

OLYMPIADES CANADIENNES  
DES MÉTIERS ET  
DES TECHNOLOGIES

  
**skillsCompétences**  
Canada  
Edmonton2018

ENGINE SYSTEM TASK /  
TÂCHE RELATIVE AUX SYSTÈMES MOTEURS

# HEAVY EQUIPMENT SERVICES MÉCANIQUE DE MACHINERIE LOURDE

POST - SECONDARY /  
NIVEAUX POSTSECONDAIRE



## Engine System Task

(2 of 6)

Competitor number \_\_\_\_\_ Start time \_\_\_\_\_

Judge's name \_\_\_\_\_ Finish time \_\_\_\_\_

### Competition Overview

**Time limit:** 2 hours

**Equipment:** Detroit engine

**Number of tasks:** 2

Task 1: Remove and reinstall the turbo charger.

**Value 85 %**

Task 2: Evaluate engine-oil samples.

**Value 15 %**

### General Instructions:

The National Technical Committee (NTC) 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.

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



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## Hazard Assessment:

This Hazard Assessment is to discuss the following **5 hazards** and the counteractive measures you must take.

**Hazard 1:** The engine starter is capable of cranking the engine and the moving engine parts can hurt you.



- Keep hands clear of moving objects. (Fan, Pulleys and belts)

**Hazard 2:** Touching engine lubricating fluids may irritate skin.



- Latex gloves, barrier skin cream, and wiping cloths are available.

**Hazard 3:** You might trip over the engine support.



- Position your feet appropriately.
- Use three points of contact at all times.

**Hazard 4:** High voltage from the engine fuel injection control system can shock you, even with the key in the off position.



- Follow the procedures in the service information when testing and disconnecting terminals.

**Hazard 5:** Sharp edges from the cut filter housing can cut skin.



- Keep hands clear of sharp edges.

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 \_\_\_\_\_

## Evaluation:

Number of marks possible: **16.7**

Skills evaluated
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.*



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**Task 1 of 2: Remove and reinstall the turbo charger.**

**Value 85 %**

1. Follow the manufacturer's procedures to safely, appropriately, and accurately:
  - Remove and reinstall the turbo charger.
2. In point form; briefly record your findings and any adjustments or components that were out of specifications.

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**Task 2 of 2: Evaluate engine-oil samples.**

**Value 15%**

Safely, appropriately and accurately:

- Evaluate engine-oil samples.

Answer the questions on the attached Fluid Analysis data sheets.

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Ask  
Information

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