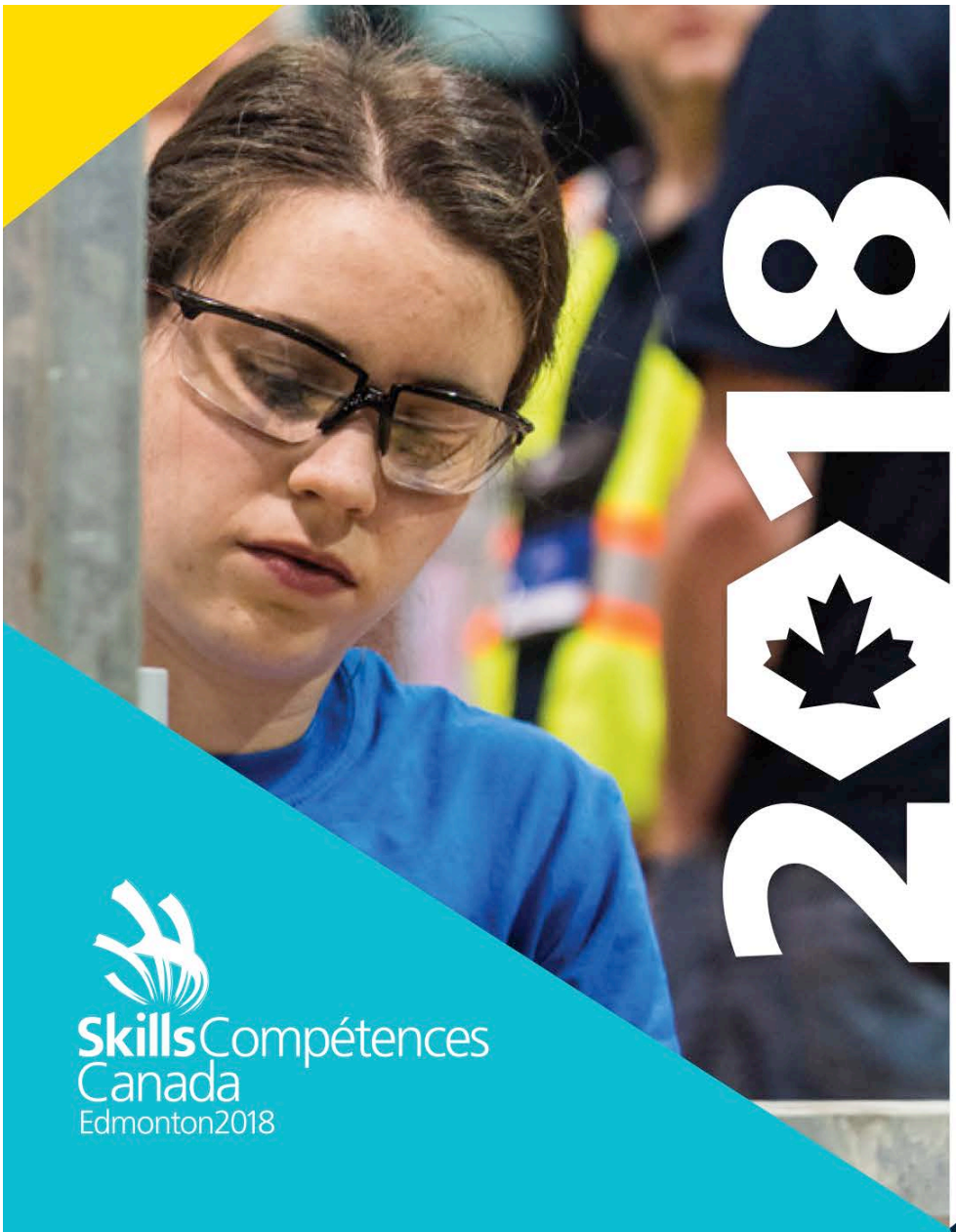

2018

SCNC
SKILLS CANADA
NATIONAL COMPETITION

OCMT
OLYMPIADES CANADIENNES
DES MÉTIERS ET
DES TECHNOLOGIES

Skills Compétences Canada
Edmonton2018

COMPONENT IDENTIFICATION AND PRECISION MEASUREMENT TASK / IDENTIFICATION ET MESURE DE PRÉCISION DES COMPOSANTS

HEAVY EQUIPMENT SERVICES
MÉCANIQUE DE MACHINERIE LOURDE

POST - SECONDARY /
NIVEAUX POSTSECONDAIRE

SkillsCompétences Canada
Edmonton2018

Component Identification and Precision Measurement TASK *(4 of 6)*

Competitor number _____ Start time _____

Judge's name _____ Finish time _____

Competition Overview

Time limit: **2 hours**

Equipment: **Components to Identify and measure,**

Number of tasks: **3**

Task 1: Identify components from the Truck-Transport and Heavy Equipment industries. **Value 50 %**

Task 2: Use precision measuring tools to measure components. **Value 25 %**

Task 3: Use measurements to calculate volume, torque, or speed. **Value 25 %**

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.

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.


DOCUMENT USE


THINKING

Hazard Assessment:

This Hazard Assessment is to discuss the following **6 hazards** and the counteractive measures you must take.

Hazard 1: Touching engine lubricating fluids may irritate skin.

- Latex gloves and wiping cloths are available.

Hazard 2: Sharp edges can cut skin.

- Keep hands clear of sharp edges, and wear mechanics gloves.

Hazard 3: Heavy objects may fall off of the bench onto your feet.

- Insure all objects on work surfaces will not be accidentally knocked off.
- Keep your work area neat.

Hazard 4: You might trip over the engine support.

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

Hazard 5: Moving components on power tools can catch loose clothing and hurt you.

- Keep hands clear of moving components such as drive belts, drill chucks, and bench grinding stones.

Hazard 6: Sparks from grinding stones could result in fire or explosion if combustible materials, vapors have not been removed.

- Be sure there are no flammable or combustible vapors or dust near the grinder.
- Keep all guards in place.

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

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

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.

Task 1 of 3: Identify components from the Truck-Transport and Heavy Equipment industries. **Value 50 %**

Match the tag numbers on the components to the names of the components, using the "**Component Identification**" sheets. (See the example below).

INSTRUCTIONS					
Item	**#**		**Item**	**#**	
3/8" Combination wrench	**1**				

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


DOCUMENT USE


THINKING

Task 2 of 3: Use precision measuring tools to measure components. Value 25%

Safely, appropriately, and accurately:

- Measure the following and record the measurements.
- Select the appropriate tool to achieve the required metric or imperial units.
- Include the proper unit increments with your measurements.

	INSTRUCTIONS	Measurement	
1	Use a VERNIER CALIPER to measure the thickness of Component A in inches.		
2	Use a VERNIER CALIPER to measure the thickness of Component B in inches.		
3	Use an imperial VERNIER OUTSIDE MICROMETER to measure the thickness of Component C in inches.		
4	Use a metric OUTSIDE MICROMETER to measure the thickness of Component D in inches.		
5	Use an imperial OUTSIDE MICROMETER to measure the thickness of Component E in inches.		
6	Use an imperial INSIDE MICROMETER to measure the thickness of Component F in inches.		
7	Use a TELESCOPING GAUGE & a metric OUTSIDE MICROMETER to measure the thickness of Component G in inches.		
8	Use an imperial DEPTH MICROMETER to measure the thickness of Component H in inches.		
9	Use an imperial DIAL INDICATOR to measure the thickness of Component I in inches.		
10	Set up and use the DIAL-BORE GAUGE to measure the maximum inside diameter of the engine cylinder liner. (Standard bore size is _____”)		
		(1 of 2) Sub-TOTAL	

Ask Information

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

Task 3 of 3: Use measurements to calculate volume, torque, and speed. Value 25 %

Safely, appropriately, and accurately:

- Measure the following and record the measurements.
- Use your measurements to calculate volume, torque, or speed.

Select the appropriate tool to achieve the required metric or imperial units.

	INSTRUCTIONS	Measurement	
1	Use a MEASURING TAPE to measure and calculate the volume (in gallons) of the hydraulic cylinder #1, up to the bottom of the internal threads. (231 inch^3 = 1 US gallon)		
2	Use a MEASURING TAPE to measure and calculate the volume (in gallons) of the hydraulic cylinder#2, up to the bottom of the internal threads. (231 inch^3 = 1 US gallon)		
3	Use a MEASURING TAPE to measure and calculate the volume (in liters) of the hydraulic cylinder #3, up to the bottom of the internal threads. (1,000 cm^3 = 1 liter)		
4	Use a MEASURING TAPE to measure and calculate the volume (in liters) of the hydraulic cylinder #4, up to the bottom of the internal threads. (1,000 cm^3 = 1 liter)		
		(2 of 2) Sub-TOTAL	
		(1 of 2) Sub-TOTAL	

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

Congratulations!

You have completed the required tasks.

Once you have completed this topic you must clean up your workstation and return any tools/materials.

Use the space below for comments.

Return this competition form to your judge for evaluation.