WORKPLACE PRACTICES AND COMPONENT IDENTIFICATION TASK / TÂCHE RELATIVE AUX PRATIQUES EN MILIEU DE TRAVAIL ET À L'IDENTIFICATION DES COMPOSANTS

HEAVY EQUIPMENT SERVICES

MECANIQUE DE MACHINERIE LOURDE

POST-SECONDARY /
NIVEAU POSTSECONDAIRE

SkillsCompétences Canada
Winnipeg2017

Competitor number _____ Start time _____

Judge's name _____ Finish time _____

Competition Overview

Time limit: **2 hours**

Equipment: **Various engine components**

Number of tasks: **3**

Task 1: Fabricate components to specifications and perform threaded fastener repair. **Value 50 %**

Task 2: Identify components from the Truck-Transport and Heavy Equipment industries. **Value 30 %**

Task 3: Acquire a fluid sample and perform a fluid analysis. **Value 20 %**

General Instructions:

- The judge has all the materials you will need.
- Read all the instructions carefully.
- 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.
- There shall be no communication between the competitors.
- Your competitor number must be stamped onto your project.
- 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 **4 hazards** and the counteractive measures you must take.

Hazard 1: Components might fall off the work bench.

- Keep your work area neat.

Hazard 2: You might suffer a cut or scrape from handling sharp edged components.

- Do not push wrenches or any other tools away from yourself.
- Plan your movements, and watch your hands.

Hazard 3: Moving components may pinch your fingers.

- Become familiar with the moving parts.
- Keep hands clear of moving parts.
- Rotate crankshaft slowly and with control.

Hazard 4: Touching engine fluids may irritate skin.

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

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 hazards 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: **16.5**

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

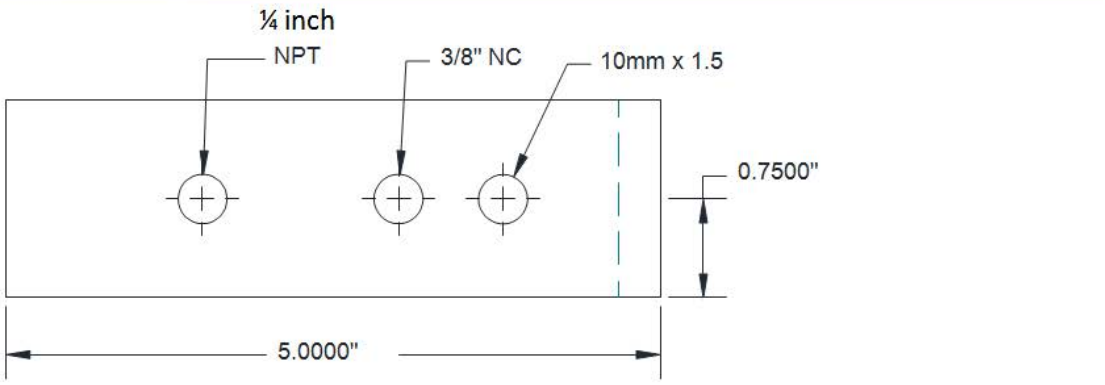
If you cannot proceed with a task, ask your judge for assistance.

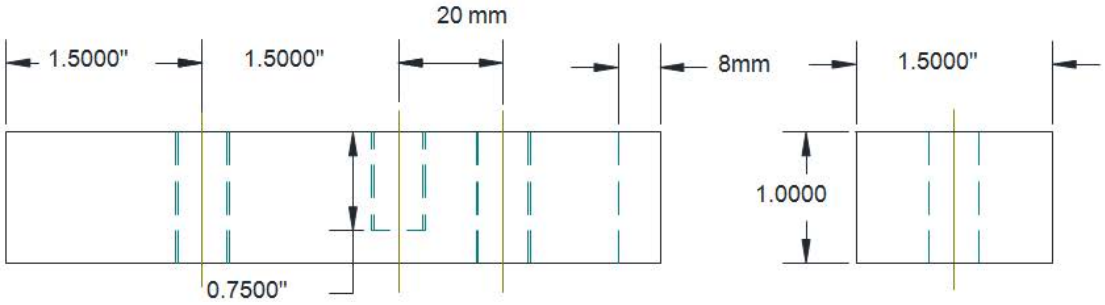
Task 1 of 3: Fabricate components to specifications and perform threaded fastener repair. **Value 50 %**

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

Fabricate components to specifications and perform threaded fastener repair.

1. Lay out the pattern on the work pieces.
2. Square one cut end of the metal blank with a file.
3. File one surface of the metal work piece to assist with the layout of your measurements.
4. Use metal bluing (dye) to prepare your layout.
5. Use the measurements in the drawing to accurately layout the project onto the work piece.





Ask Information

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

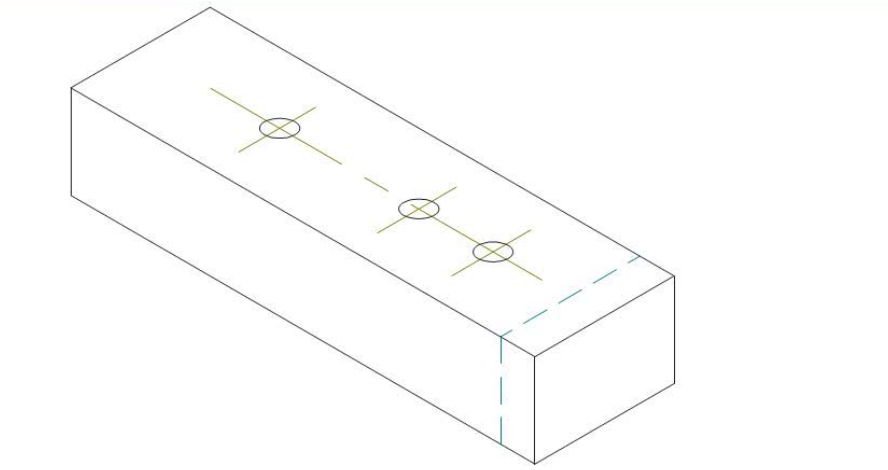
6. Drill and tap holes into the work pieces.

7. Use the attached Tap Drill Chart to determine the size of drill-bits required to tap the 3 holes :

    - 3/8” UNC tap drill size
    - 10mm X 1.5mm tap drill size
    - 1/4" NPT tap drill size

8. Appropriately drill and tap the holes in the metal work piece.

9. Label your work piece by stamping your competitor number on the top in any location.



DRILL ONE HOLE FOR A NATIONAL PIPE THREAD

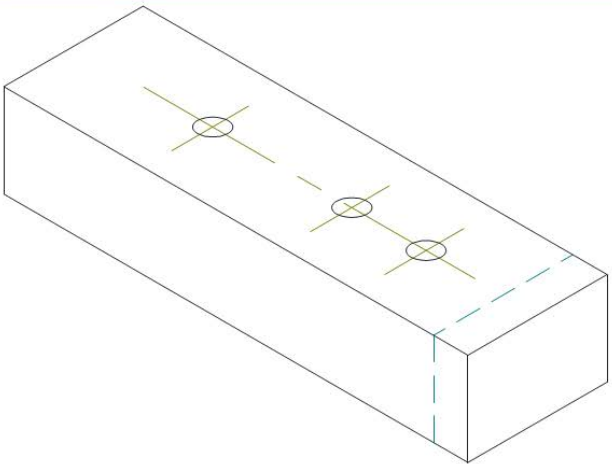
- DRILL A SECOND HOLE FOR 3/8" NATIONAL COURSE THREAD BLIND HOLE 3/4" DEEP

- DRILL A THIRD HOLE FOR A 10mm x 1.5 METRIC THREAD

Ask Information

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

10. Remove a broken bolt.
11. Use the 3/8” UNC hole and thread in the supplied cap screw.
12. Slowly and carefully tighten the cap screw until it breaks.
13. Remove the broken cap screw using appropriate drill bits and broken-bolt removal tools (Easy Outs).
14. Submit completed project to your judge.



- USING THE 3/8" NC HOLE, TWIST OFF A CAPSCREW PROVIDED
- REMOVE BROKEN CAPSCREW USING APPROPRIATE DRILL(S) AND EASY OUT(S)
- DRAWING NOT TO SCALE

Ask Information

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

Task 2 of 3: Identify components from the Truck-Transport and Heavy Equipment industries. **Value 30 %**

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.

Task 3 of 3: Acquire a fluid sample and perform a fluid analysis. **Value 20 %**

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

    - Acquire a fluid sample from the fluid compartment and perform a fluid analysis inspection.

2. In point form; briefly record your findings.

_____

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3. If you are done, please pour the sample fluid into the waste fluid collection container and clean up your work area.

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.