



## 2011 Secondary Regional Technological Skills Competition

Friday, March 25, 2011  
Georgian College, Owen Sound

### Precision Machining — Secondary Level

#### PURPOSE OF THE CONTEST:

Assess the secondary school competitor's precision machining skills and trade knowledge.

#### SKILLS AND KNOWLEDGE TO BE TESTED:

**Each competitor will manufacture a part on a conventional engine lathe. The competitor will have (2 hrs. & 15 minutes) to complete the following tasks:**

- Exterior cylindrical turning
- Exterior taper turning
- Exterior threading
- Grooving
- Applied technology
- Reading blueprints
- Trade calculations

**Each competitor will manufacture a part on a conventional vertical milling machine. The competitor will have**

**(2 hrs & 15 minutes) complete the following tasks:**

- Parallel and perpendicular milling
- Drilling
- Tapping
- Applied metrology
- Reading blueprints

#### SUPPLIED BY COMPETITOR:

Scale, 6 inch  
Standard Micrometer 0-1"  
Thread template, 60 deg. (Fish tail)  
Solid Square  
Ø ½ HSS or Carbide endmill  
Ø 5/16 Drill  
3/8 Endmill HSS or Carbide  
Pocket Drill and Tap reference chart  
5/16 or 3/8 HSS Threading tool  
3/8 -16 UNC nut  
Parallel bars  
Tap and drill for 3/8 - 16  
#3 or #4 centre drill  
Tap handle

Standard Vernier calliper 0-6"  
Deburring tool  
Smooth cut file  
Edge finder  
Soft faced hammer  
Ø ¼ HSS or Carbide endmill (Qty 2)  
Calculator  
5/16 or 3/8 HSS Turning tool  
1/8 or smaller grooving tool, part off tool  
Ø 2.0 in Flycutter to fit Bridgeport type mills



**IMPORTANT:**

**COMPETITORS WILL NEED TO BRING OWN CUTTING TOOLS  
CHALLENGE WILL TAKE ABOUT 4½ HOURS (2 hrs & 15 minutes) each lathe and mill work)**

**SUPPLIED BY COMMITTEE:**

**MATERIAL – COLD ROLLED MACHINING STEEL (LEADED) 3/4” DIAMETER  
COLD ROLLED MACHINING STEEL (LEADED) 3/4” Square stock**

**PROJECT MARKING SCHEME**

The highest marks will be assigned to the dimensions which are within tolerance. All other marks will be a sliding scale according to tolerances and finish.

	<b>MILLING</b>	<b>TURNING</b>
<b>COMPLIANCE WITH Health and Safety regulations</b>	<b>5.0%</b>	<b>5.0%</b>
<b>Compliance with dimensions and tolerations specified</b>	<b>40%</b>	<b>40%</b>
<b>Completion project</b>	<b>5.0%</b>	<b>5.0%</b>
<b>TOTAL</b>	<b>100%</b>	

As the rules state, there will be no ties. Tie will be broken by the students closest to nominal size on prints.

**RESUME/JOB INTERVIEW (NEW PROCEDURE):**

Y Employment Services will be available to students who require assistance preparing resumes and interview skills for the Ontario Skills Competition. More information will be available in the winners' package.

**CONTACT:**

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**(2011 SECONDARY REGIONAL TECHNOLOGICAL SKILLS CHALLENGE)**

Never wear loose clothing around machines, remove hats, vests, ties and roll sleeves to the elbows.

Do not wear rings, watches, or jewellery etc. which could become tangled in machinery.

Long or loose hair must be tied back or covered.

Do not attempt to operate any machine before you fully understand how it works, and be sure you know how to stop a machine before you start it.

Always stop a machine before measuring, cleaning, oiling or making any adjustments.

Never operate a machine unless all safety guards are in place.

Do not attempt to stop a machine with your hands e.g. drill press spindle or lathe chuck.

Do not use shop rags near moving parts, e.g., drill press spindle, mill cutters or lathe chucks.

Store used shop rags in proper containers or storage areas.

Always keep the floor clear of oil, grease, tools and metal cuttings.

Avoid horseplay.

Never have more than ONE, (1) person operating a machine at a time, and do not crowd the working area.

If the lift is heavy, get help to avoid back strain.

It is the student's full responsibility to wear safety glasses at all times while in the shop.

It is the student's full responsibility to wear safety boots, or safety shoes at all times while in the shop.

Any student not wearing approved safety equipment will be dismissed from class.

**AGREEMENT:**

I, \_\_\_\_\_ understand the safety regulations and the requirement to wear safety  
**(Please Print)**  
glasses, safety boots or shoes, at all time in the shop.

\_\_\_\_\_  
Signature of Student/Competitor

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Parents/Guardians\*\*

\_\_\_\_\_  
Date

\*\* If you are under 18 years of age, permission by a parent/guardian is required to participate