



2 Stroke Top End  
**Outdoor Power and Recreation**  
POST-SECONDARY

Competitor Name: \_\_\_\_\_ Province/Territory \_\_\_\_\_

## 2 Stroke Top End Measurement

**Do not start this lab until told that the competition is ready to start.**

**If there is something you don't understand, you may ask for clarification from the Judge.**

### 1. Locate and record the following:

Engine Type 2 or 4 Stroke	
Type of Induction (intake system type)	
Engine Displacement	
<b>Torque Specs</b>	
Cylinder Head Nut Torque Final	<b>10ftlb</b>
Cylinder Base Nut Torque Final	<b>15ftlb</b>
Spark Plug Torque	<b>14ftlb</b>

### Using the supplied tools and equipment:

- Remove the cylinder heads and cylinders
- Remove the pistons from the connecting rods
- Carefully remove the top piston rings
- Measure all components and calculate clearances to complete the following table
- Record all measurements, and clearances in METRIC and in the tables provided and include the unit of measure.
- Re-assemble the top end components torquing all fasteners to **the spec above**. Have the Judge verify your torque settings.

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2. Enter all measurements in the table below. Show calculations when possible.

Part name	Measurement						
<b>Piston Diameter</b> (taken 10mm from bottom)	<b>MAG</b>						
	<b>CEN</b>						
	<b>PTO</b>						
<b>Cylinder Bore Diameter</b>		D1	D2	D3	D4	D5	D6
	<b>MAG</b>						
	<b>CEN</b>						
<b>Piston To Cylinder Clearance</b>	<b>PTO</b>						
	<b>MAG</b>						
	<b>CEN</b>						
<b>Top Ring End Gap</b>	<b>PTO</b>						
	<b>MAG</b>						
	<b>CEN</b>						
<b>Top Ring Groove Clearance</b>	<b>PTO</b>						
	<b>MAG</b>						
	<b>CEN</b>						
<b>Cylinder Taper</b>	<b>PTO</b>						
	<b>MAG</b>						
	<b>CEN</b>						
<b>Cylinder Out of Round</b>	<b>PTO</b>						
	<b>MAG</b>						
	<b>CEN</b>						
<b>Cylinder Out of Round</b>	<b>PTO</b>						

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**NOTES AND CALCULATIONS**



NUMERACY



PROBLEM SOLVING



WRITING