

SKILLS COMPETITION PRECISION MACHINING – SECONDARY LEVEL

Date: February 24, 2025
Location: Loyalist College

PURPOSE OF THE CONTEST:

To provide competitors with the opportunity to demonstrate their skills and knowledge in the machining industry through practical application and interviewing.

SKILLS AND KNOWLEDGE TO BE TESTED:

- Manufacturing a total of two parts by combining the use of a standard engine lathe and a vertical milling machine
- For the lathe portion: end facing, center drilling, drilling to a specified depth, outside diameter to tolerance, grooving and safety. All dimensions will be in inches and the students will be expected to be able to work to +/- .015" tolerances.
- For the milling portion: milling faces, squaring a block and safety. The students will be able to use a precision square.
- The students will be expected to interpret the engineering drawings in which they will be working from.

EQUIPMENT AND MATERIALS SUPPLIED BY THE COMMITTEE:

- cold rolled steel
- milling cutters
- carbide turning tool, grooving tool, center drills, twist drills and taps
- 12-inch rule
- precision square
- files
- height gauge – no digital
- parallel bars
- cutting fluids
- micrometers in the size ranges applicable to the project
- vernier calipers in the size range applicable to the project.
- depth micrometers

EQUIPMENT SUPPLIED BY THE COMPETITOR

- pen or pencil
- resume
- safety shoes
- safety glasses

SAFETY

Safety is the number 1 priority at Loyalist College. At the discretion of the judges and technical support any competitor can and will be removed from the competition site for not having the appropriate safety equipment and / or for not practicing safe codes of conduct.

- it is mandatory for all competitors to wear CSA approved eyewear.
- it is mandatory for all competitors to wear CSA approved footwear.
- loose clothing, rings, necklaces are not permitted
- cell phones are not permitted on the shop floor

Rules and Regulations

- Late arrivals will be disqualified from the competition
- A competitor will be disqualified for showing any disregard for themselves, other competitors, or the equipment.
- A competitor will be disqualified for using equipment or materials that are not permitted
- A competitor will be disqualified for dishonesty or cheating.

ADDITIONAL INFORMATION

- The head on the vertical mills will be set square by Loyalist College prior to the start of the competition.
- Tailstocks on lathes to be calibrated on center by Loyalist College prior to the start of the competition.
- A maximum of 12 participants will be in the competition.