

Precision Machining

Purpose: To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of precision machining technology.

Clothing: Acceptable work clothes (button short sleeve shirt and pants) and leather shoes, no sweats. Students with long hair must use a hair net. **Unsafe attire/actions may result in student not competing until properly/safely dressed.** No school names may be displayed on any apparel.

Contestants: 3 per region, determined by regional event

Tools to be provided by contestants: No additional tools will be permitted. Use your judgment as to what you want to bring from the tool list. Tool boxes will be checked and non-permissible tools removed.

Pencils **mandatory** (sharpened or mechanical)
Note pad
Hammer, non-mar head
Safety glasses with side shields
Tap drill size chart
Micrometer, depth 0-3"
Micrometer, 0-1", outside caliper
Micrometer, 1"-2", outside caliper
File, flat, lathe smooth (**must have handle**) & File Card
File, flat, mill bastard (**must have handle**)
Parallel bar set 1/4" X 1" X 5", 1/4" X 1-1/4" X 5", 1/4" X 1-1/2" X 5"
Dial Bore Gauge (.700 - .900)
12" Combination square set
Caliper, 0-6", may be vernier, dial or digital
Dial indicator set, universal, 0.001
Thread pitch gauge set (unified 60 deg, 9-40 threads per inch)
Edge Finder
Chip Brush and Black Sharpie Marker
6" Steel Rule and scribe
Center Gauge

Calculators, trig tables booklet, metric conversion chart, fraction decimal conversion chart, machinery handbook or equivalent are permitted.

Contest will consist of:

- Engine lathe set up and operation
- Vertical mill set up and operation
- Inspection Section (Sine Bar Angle Inspection, Dial Bore Gauge, Hole Location on Surface Plate)
- General Machining Knowledge Test (Includes GD&T)
- CNC Programming Test - student will receive a print and a program to fill in the blanks
NOTE: Programming manuals will be provided.

Scope of the Contest

The contest will be judged based on the criteria established in the 2010 SkillsUSA Championships Technical Standards.