

# CNSI Innovation Workshop Benchtop Grinder User Outline

This guide may be found online through the Innovation Workshop and microfluidics wiki.

## Location

The benchtop grinder is located in 2448 Elings Hall next to Fume Hood #3.

## Safety

- Part not secure and becoming a projectile
- Thin parts (less than 0.07 in or 1.7 mm in thickness) can be pulled into the gap between the wheel and guide and cause the machine to seize.
- Flying sparks, metal dust.
- Metal reaches a high temperature during grinding. Apply coolant while grinding and let part cool before making skin contact.
- Keep body parts clear of grinding discs. Use a tool to hold small parts.
- Don't wear bracelets, dangling articles of clothing, gloves or long sleeves while using the benchtop grinder.

## Training

Attend the in-person training.

## Overview

The grinder is a benchtop grinder with two abrasive discs. It is used to remove material

## User Guide

### Sequence of operation:

1. Wear proper PPE (safety glasses), face shield if needed
2. Mark workpiece, for example with a marker or scribe tool.
3. Turn on grinder. Stand to one side of the grinder until the wheel reaches operating speed.
4. Bring work into contact with the grinding wheel slowly and smoothly, without bumping.
5. Apply gradual pressure to allow the wheel to warm up evenly. Use only the pressure required to complete a job.
6. Move the work back and forth across the face of the wheel. This movement prevents grooves from forming.
7. Remove workpiece, turn off grinder
8. Use the shop vacuum to clean metal dust from work area.

## Frequently Asked Questions

- What materials can I grind?
  - Ferrous (iron containing) metals such as steel and cast iron
  - Never grind softer metals such as aluminum or magnesium.
  - Never grind plastics or wood

## Accident Response

- In the event of injury, contact lab staff and emergency services if necessary (?)

## Maintenance

- Use wire brushes to clear metal residue out of grinding wheel
- Adjust grinding wheel guide as wheel wears

## Supplies (In drawer labeled “Grinder Accessories”)

- 2 silicon carbide 8” grinding wheels
- 1 buffing wheel
- Wire bristle brushes
- Grinding compounds

From:

<https://microfluidics.cnsi.ucsb.edu/wiki/> - Innovation Workshop Wiki

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Last update: **2020/08/13 18:42**

