

Bench Grinder Safety

The OSHA standard for grinders, OSHA 29 CFR 1910.215, is one of the most frequently cited violations issued during OSHA machine-safety inspections. Improperly adjusted work rests and tongues on bench grinders are the main reasons for the citation. According to 29 CFR 1910.215(a)(4), work rests must be kept adjusted closely to the wheel with a maximum opening of 1/8 inch to prevent the work piece from being jammed between the wheel and the rest, which may cause wheel breakage. In addition, 29 CFR 1910.215(b)(9) states that the distance between the wheel periphery and the adjustable tongue must never exceed $\frac{1}{8}$ inch. Refer to the diagram on the following page.

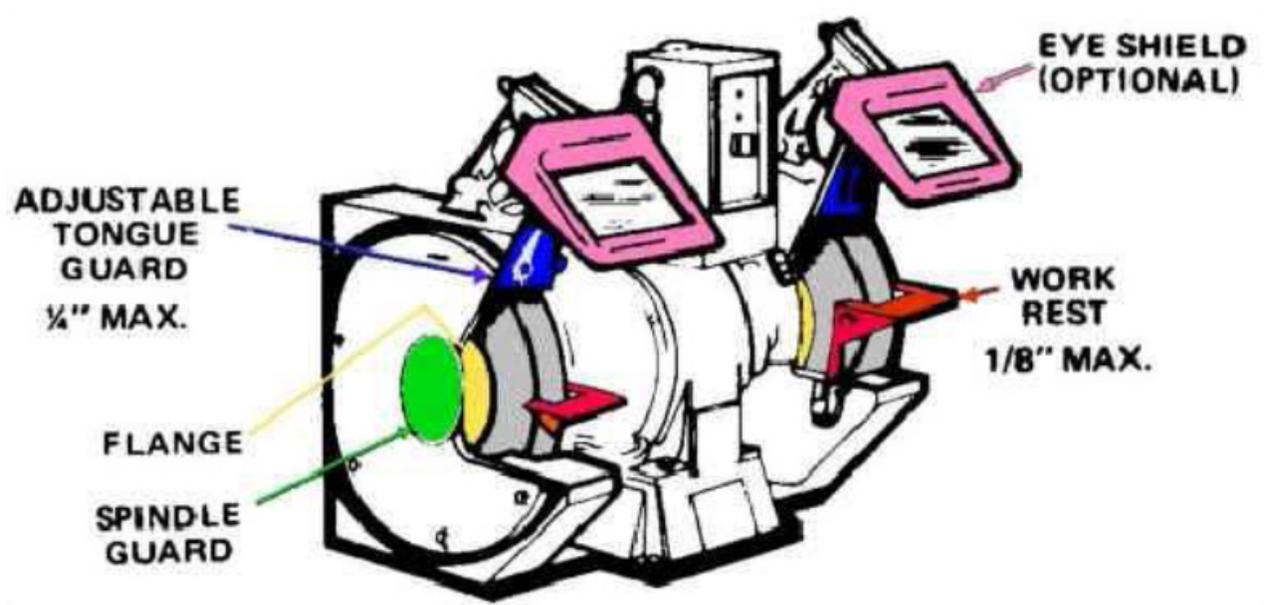
Bench grinders have several basic adjustments and machine guarding components that must be utilized in order to use the machines safely. Typical accidents involving grinders include fingers caught in machine components and eye/face injury due to wheel disintegration, missing guards, or misadjusted components.

Supervisors and instructors need to ensure all grinding equipment is code-compliant, in safe working order, and that users are properly trained in the safe use of the equipment.

Here are some safety tips for using a bench grinder:

- Wear the correct eye protection – safety glasses with side shields and full face shield for high velocity and flying particles.
- Don't wear loose-fitting clothing or jewelry when operating grinders or other moving equipment.
- Be sure you are using the correct grinder and wheel for the job you are doing. The wheel should be designed for that grinder. Certain materials require specific types of wheels.
- Verify that the grinding wheel rpm rating is matched or rated higher than the rpm rating of the grinder motor.
- Be sure all guards are in place. Adjust the tongue guard to within 1/4 inch of the wheel surface.
- Adjust the tool rest to within 1/8 inch of the wheel surface to prevent objects from being pulled in.
- "Ring test" grinder wheels before mounting them. If you hear a clear ringing tone, it is in good condition. If it sounds dull, replace it.
- Inspect the wheels for hairline cracks before using. Do not use a cracked wheel.
- Don't operate a grinder unless it is securely mounted to a workbench or floor.
- Tag the grinder and remove it from service if you find any defects.
- Stand to one side as you start the grinder. A defective wheel is most likely to explode when being started.
- Let the grinder reach operating speed before starting to work. This is usually about one minute.
- Use the tool rest and bring the work slowly into contact with the wheel. Do not force the material into the wheel. Use minimum force. Excessive force may cause kickback.
- Use clamping pliers when grinding parts that cannot be held easily by hand.
- Use only the correct surface of the wheel. Do not use the side of the wheel as this can cause the wheel to disintegrate.
- Maintain good housekeeping around the grinder workstation. Don't allow sparks from grinding to fly into combustible or flammable materials such as scraps or solvents.
- Turn off the grinder when you are done using it. Wait until it comes to a complete stop. Never stick an object into the wheel to stop the grinder more quickly.

Bench grinders are a source of many workplace injuries. Protect yourself – especially your eyes – when you use any type of grinder.



Resources

- OSHA Checklist for Abrasive Wheel Equipment Grinders
- <https://www.osha.gov/SLTC/machineguarding/new-grinder-checklist.html>

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