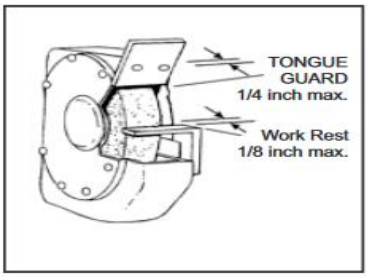
## University of North Alabama – EHS Training Tool

# Bench Grinder Safety




The bench grinder (sometimes called an offhand or pedestal grinder) is one of the most common pieces of equipment found in a shop setting. It has a multitude of uses, but can also cause serious injuries if not operated correctly.
The OSHA regulation for grinders (29 CFR 1910.215) is one of the most frequently cited violations during OSHA inspection. This is primarily due to improperly adjusted work rests and tongue guards on bench grinders. There are normally three "guards" found on a bench grinder – the tongue guards, work rests and spark shield.

- The tongue guards are metal plates located at the upper part of the wheel opening. They are designed to stop pieces of the grinding wheel from flying out in the event the wheel shatters. Tongue guards should be adjusted so they have a ¼ inch clearance between them and the grinding wheel.
- The tool rest must be kept adjusted closely to the wheel with a maximum opening of 1/8". This is to prevent the work piece from being jammed between the wheel and the rest, which may cause wheel breakage or pull the operator's hand into the wheel.
- Grinders may, or may not, also have spark shields installed. These are usually clear plastic shields used to divert sparks away from the operator. **THEY ARE NOT A SUBSTITUTE FOR EYE PROTECTION**! Operators must always wear safety glasses or goggles as well as a face shield when using the grinding or wire wheel. Remember face shields do not adequately protect the eyes from flying particles (from the grinding wheel or the wire wheel) so should always be worn in addition to eye protection.

Before operating a bench grinder, use the following checklist to ensure your safety and the safety of your coworkers:

- Eye protection - clean ANSI rated safety glasses and face shield.
- Hearing protection - used for noisy machines and operations.
- Hand protection - leather or canvas work gloves – if safe.
- Ensure that the bench or floor-mounted tool is securely mounted to surface.
- Ensure electrical cords are grounded, switch is not damaged, and there are no exposed wires.
- Assure machine has anti restart device in case electric service is interrupted during use.
- Make sure all guards are in place and properly adjusted.
- Check that wheels are rated for a higher speed than the machine RPM and that the grinder tool rest gap to wheel is no larger than 1/8 inch.
- Conduct a "ring" test for all new stones. This will ensure no cracks, breaks or chips are present.
- To perform the ring test, wheels should be tapped gently with a light nonmetallic implement, such as the handle of a screw driver for light wheels, or a wooden mallet for heavier wheels.
- Tap wheels 45 degrees each side of the vertical line and about 1" or 2" from the periphery.
- Rotate the wheel 45 degrees and repeat the test.
- A sound and undamaged wheel will give a clear tone. If cracked, there will be a dead sound and not a clear ring and the wheel must not be used. Wheels must be dry and free of sawdust when applying.
- Replace the wheel when you cannot adjust the tool rest gap to the proper opening size.