



## Grinding Away

You'd never think a grinder could kill you. But it can. In 2003, a foundry worker, using an ordinary pedestal grinder, the same type that we see in many repair shops, was killed when the wheel exploded. Only six months earlier, a worker in the same city was critically injured when the same thing happened. The abrasive wheel shattered, propelling fragments and the wheel guard itself some fifty feet.

Whether you are an automotive collision or a mechanical repair shop, you probably have an abrasive wheel or a grinder. Almost every shop has one—a hand grinder, bench grinder or pedestal grinder. You may use them daily or only occasionally, but are you aware of safety hazards with them?

It's easy for us (and OSHA) to find problems with grinders. We don't have to look very hard. Are guards missing? Is the work rest on your bench or pedestal grinder a half inch away from the wheel? No tongue guard? Not secured? Wheel with a deep groove? These are all problems.

It's almost as easy – really, it is! – to avoid those problems. The requirements for grinders aren't difficult to understand.

Hand grinders need a guard. The guard doesn't prohibit use of the wheel; it covers parts of the wheel that never come in contact with the work piece. Don't have a guard? Contact the manufacturer and buy one. It is always your responsibility to make sure equipment is adequately guarded, even if it didn't come that way from the manufacturer.

Bench or pedestal grinders require three types of guards. You need a guard around the wheel, to contain the wheel if it explodes. The grinder has to have a work rest, to support the item being worked. And it needs a tongue guard at the top of the opening, to contain debris from a shattered wheel.

Why the concern about shattered or exploding wheels? Because even brand new wheels can explode. That can happen if you use a wheel that's not rated as high as the speed of the grinder. It can also happen if the wheel itself is faulty.

To ensure you have a good wheel, ring test it before you install it. Take a screwdriver handle or other nonmetallic item, and tap the wheel a half inch from its side. Give it a quarter turn and do that again. You should hear a clear tone each time. If the sound is a dull thud, return the wheel.

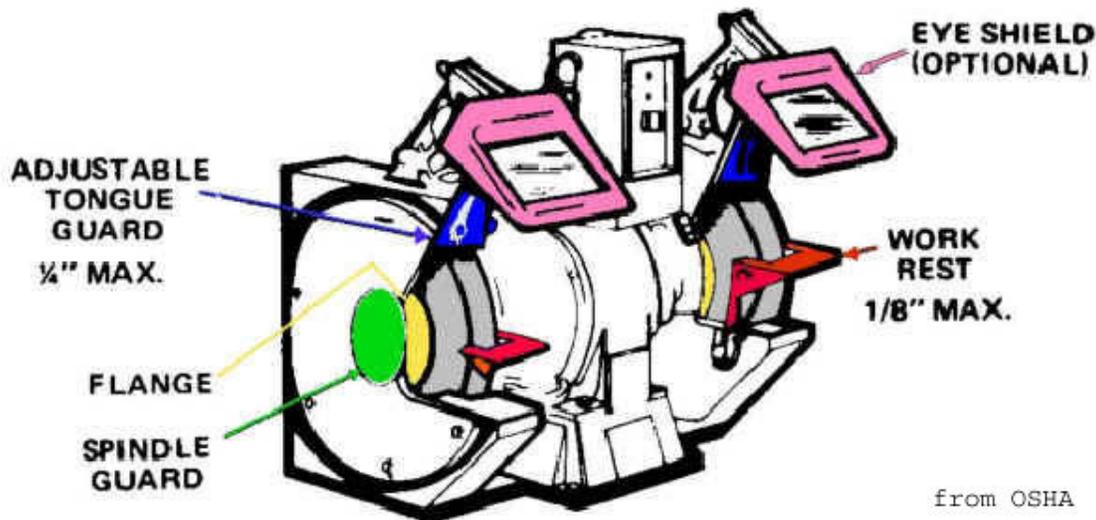
Make sure the wheel is installed correctly, with the flanges tightened enough to hold the wheel securely. Overtightening can damage the wheel.

The work rest needs to be kept within  $\frac{1}{8}$ " of the wheel. That means adjusting it as the wheel wears down. If you can fit a pencil between the wheel and the work rest, the gap's too large. Teach your grinder users to adjust the wheel before each use.

The tongue guard needs to be adjusted to  $\frac{1}{4}$ " from the wheel. This guard sits at the top of the grinder opening. Again, as the wheel wears down, this needs to be readjusted.

If you use the grinder for sharpening, you could wear a groove down the middle of the wheel. Keep the workpiece moving across the face of the wheel, so it wears evenly. Once a deep groove develops, the grinder could go out of balance or fracture.

Bolt down the grinder, so it can't move during use. That only applies to bench or pedestal grinders, of course. You never secure a hand grinder in place; it has to be held during use. People who like living dangerously have actually tried putting hand grinders in vises, so they could serve as fixed grinders. Bad practice!



A quick checklist for guarding grinders:

- Hand grinders: guard over the back and bottom of the wheel
- Bench or pedestal grinders: guarded around the wheel, leaving just enough exposed to do the work, work rest kept within  $\frac{1}{8}$ ", tongue guard adjusted to  $\frac{1}{4}$ ".
- All grinders: wheel maximum speed matches that of the grinder.

This article is intended to provide general information (not advice) about current safety topics. To discuss your specific concerns and how CHESSE may help, please contact CHESSE at 651-481-9787 or [chess@chess-safety.com](mailto:chess@chess-safety.com).