Almost every maintenance shop has a bench or pedestal grinder. They are most commonly used to shape or sharpen the cutting edges of tools such as chisels or lawn mower blades. These are powerful, useful tools, but they are also potentially dangerous, because users take them for granted. Serious injury and even death can result from improper handling, installation or use of abrasive wheels. Cracked or defective grinding wheels can "explode" when in use.

Secure both pedestal and bench style grinders securely to the floor or work bench to prevent movement during usage. Store grinding wheels carefully on racks in dry places, and visually inspect them for warping, chips, cracks or other damage before installation. Discard used wheels once they are approximately 2/3 worn.

Proper guarding is one of the most important safety requirements. Missing or improperly adjusted guards are common and frequent safety violations. Check the following before using your grinder:

- The wheel guard enclosure should cover most of the wheel, the spindle, and the wheel mounting hardware. Some of the wheel must be exposed to allow grinding access, but the maximum access space between the horizontal work rest and the top of the wheel guard opening should be no more than 65 degrees of the wheel.
- The horizontal work rest should be adjusted to within 1/8-inch of the wheel. This reduces the risk of wheel breakage caused by an item being jammed between the work rest and the wheel.
- The tongue guard is an adjustable safety plate that is attached at the top of the wheel guard enclosure and can be moved closer to the wheel as its diameter decreases from wear. The distance between the tongue guard and the wheel must not exceed 1/4-inch in order to minimize exposure to flying fragments in the event of wheel disintegration.
- A transparent hinge-mounted face guard should be attached over the exposed wheel surface area to provide additional protection from particles thrown off the rapidly spinning disk.
- Personal protective equipment includes safety glasses and a face shield--your face as well as your eyes need protection. Do not wear loose fitting clothing that could become caught in the wheel.
- Do not stand directly in front of the grinder during start up, in case the wheel disintegrates as it reaches full speed. Before commencing grinding, allow the grinding wheel to run at operating speed for at least one minute and then bring the item to be honed slowly and smoothly into contact with the wheel. Gradual application gives the wheel an opportunity to warm up and lessens the chance of breakage due to thermal stress.
- Most grinding wheels are designed for face use only. The side of the wheel should not be used for grinding unless it is designed for that purpose.
- Wheel disintegration can cause very serious injury due to the high speed of flying particles. Be sure your shop grinder is equipped with the proper safety features.
SAFETY RULES / OPERATING PROCEDURES FOR BENCH / PEDESTAL GRINDING OPERATIONS.

- Always check that a Grinding Wheel R.P.M Rating is consistent with speed of the Grinding Machine.
- Never remove guards from a Bench/Pedestal Grinder. They offer protection in case of wheel failure and protects hands and fingers from injury.
- Work rests or tools rests are provided on all machines. The tool rest on a bench grinder should be securely attached. It should be adjusted as the disc becomes smaller through wear and dressing. Never adjust tool rests while the grinder is running.
- Do not use a wheel that vibrates.
- When commencing a grinding operation, avoid impact or bumping motions.
- Move the object being ground, back and forth across the face of the wheel, as this prevents "ruts" or grooves from forming.
- Occasionally a new wheel is cracked or flawed and is likely to shatter as soon as it is used. New wheels should be visually checked and given a test before being fixed to the spindle. Tap the side of the wheel with a light tool. It should have a clear ring. A dull noise indicates a flaw.
- Ensure that the hole in the grinding wheel fits closely on the spindle.
- When a wheel has been newly fitted between appropriate washers & flanges, rotate it by hand to check for balance before switching on the power to use the machine.
- Unless flanges and washers are evenly seated on either side of the wheel before the locking nut is tightened, the wheel can crack and shatter. Avoid over-tightening the locking nut, as this can exert hazardous forces on the wheels.
- Unless the wheel is "dressed" with a diamond dresser, when pores become blocked or it loses its cutting effect, exerting forces that may cause the wheel to shatter.
- Nearby safety signage should indicate that PPE must be worn to operate the grinder
- Shut off switch should be clearly marked and accessible to the operator

Wheel Dressing Procedure:

- Use a dressing tool approved for the job.
- Inspect star dressers for loose shaft and worn discs.
- Round off the wheels with a hand stone before and after dressing to prevent the edges from clipping.
- Use the work rest to support and guide the tool.
- Apply moderate pressure slowly and evenly.

Always apply diamond dressers at the center or slightly below the center, never above.

Suggested SIPE Safety Videos:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-2</td>
<td>Shop Safety Power Tools</td>
<td>(20 minutes)</td>
</tr>
<tr>
<td>216</td>
<td>Machine Cutting, Grinding and Sanding</td>
<td>(8 minutes)</td>
</tr>
</tbody>
</table>