University of North Carolina Asheville

Theatre Safety

Tools and Machines – Bench Grinder

A pedestal grinder is a similar or larger version of the grinder that is mounted on a pedestal, which may be bolted to the floor or may sit on rubber feet. These types of grinders are commonly used to hand grind various hardened steel cutting tools and perform other rough grinding. Depending on the bond and grade of the grinding wheel, it may be used for sharpening cutting tools such as lathe tool bits, drill bits, chisels, and gouges. Alternatively, it may be used to roughly shape metal prior to welding or fitting. A wire brush wheel or buffing wheels can be interchanged with the grinding wheels in order to clean or polish work pieces. The Design Studio has a Baldor 439B 6" bench grinder and a 10" pedestal grinder. The pedestal grinder has more power, operates at a lower speed and is suited for heavier grinding tasks.

PPE Requirements:

Safety glasses, Face Shield

Pre-Inspection:

- Ensure that the machine has been unplugged before making any adjustments.
- Inspect abrasive wheels for cracks or chips which could cause the wheels to explode – replace any wheels which are damaged or worn to a small diameter.
- Inspect the circumference of each wheel for loading of material or lack of a cylindrical geometry (tapered or grooved). If necessary, dress the wheel carefully to restore the cutting surface using a wheel dresser.
- Adjust wheel guards to be close to the grinding wheel. Adjustments are necessary as the wheel wears.
- Tool rests should be adjusted close to the wheels and thoroughly tightened in place so they cannot shift position while in use.
- Do not use these grinders with soft materials such as aluminum, plastic, copper, wood. The wheels will not effectively grind these materials and the porous face of the wheel will load up with debris.

Pedestal Grinder Operation:

- Stand to one side (not in front) of the grinder when turning on power. Centripetal forces may cause a damaged wheel to disintegrate with fragments thrown radially outward. Stay off to the side until the grinder achieves full speed.
- Hold your work piece securely using the tool rest to steady the material against the downward pressure caused when the piece is pressed against the spinning wheel. Apply light pressure against the wheel while moving the piece side to side across the face of the wheel.
- When grinding, use the face of the wheel only. **DO NOT USE THE SIDES OF THE WHEEL.** Doing so could weaken the wheel and cause it to fail catastrophically.
- Anticipate that after a short time the work piece may become hot from friction – maybe too hot to hold. A container of water may be used to periodically quench and cool the piece so that it can be held without discomfort while further grinding is carried out.

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- Anticipate flying hot sparks that may be showered outward while grinding. Long sleeves can help to avoid contact with hot sparks.
- Shut off power when finished and allow wheels to come to a complete stop before cleaning up the area.