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| pedestal / bench grinder safety | 5 |
| Metals  |

Objectives

* Explain the safe operation of typical grinding machines
* Adjust and prepare a typical grinding machine
* Observe grinding safety rules

Grinding is an operation used to remove material by rotating an abrasive wheel or belt against the work, used in the following applications:

* Sharpening tools
* Removing material too hard or difficult to remove by other techniques
* Cleaning the parting line from forgings and castings
* Contouring and **Deburring** *(removing a sharp edge from metal after cutting, stamping or machining)*
* When fine surface finishes and close tolerances are required
* Finishing and polishing casting molds

**General rules**

* Do not grind aluminum. Aluminum dust is explosive.
* Check with shop staff for safety instructions if aluminum must be ground.
* Abrasive wheel machinery should not be operated without the appropriate guards in place.
* Inspect the wheels before turning on the power. Do not use wheels that are chipped or cracked.
* Never use a wheel that has been dropped or received a heavy blow, even though there may be no apparent damage. It may be weakened or unbalanced enough to fly apart upon startup.

**Before Starting the Bench or Pedestal Grinder**

* Keep the tool rest as close to the grinding wheel as possible without touching it. The tool rest must be minimally within 1/16” of an inch of the grinding wheel.
* If a magnetic chuck is being used on the surface grinder, make sure it is holding the work securely before starting to grind.
* Prior to starting the grinder, ensure the tang at the top of the wheel opening is located within -inch of the wheel.
* Before starting the grinder, make absolutely sure that the grinding wheel clears the top of the work piece. Approach the work piece manually to ensure this. Do not feed the table in automatic grind mode. While in Operation
* Stand to one side of the wheel when turning on the power. Damaged wheels will sometimes fly apart, and this is most likely to happen upon startup.
* Be alert and cautious when a grinding operation requires locating fingers close to the wheel.
* Feed the stock into the wheel with light to medium pressure. Do not force the piece.
* Do not use the side of the grinding wheel to shape stock.
* Stand erect in front of the grinder with both legs straight and slightly apart. Avoid stooping or leaning into the machine.
* Keep the grinding wheel **dressed**. **Dressing** a small amount frequently is better than having to dress a lot later and will allow the wheel to cut faster, cooler and with a better surface finish. Dressing is cleaning and smoothing the surface of the grinding wheel.
* Hold work securely while grinding, use the tool rest to support the work when **off-hand grinding** on bench or pedestal grinders.

**Maintenance**

* Report to the shop supervisor immediately any cracked, broken or otherwise defective wheels.
* Prior to adjusting the work rest or tang, unplug the power to the grinder from the wall receptacle.

Resources

Resources

Walker, John R. (2004). *Modern Metalworking, The Godheart-Wilcox Company Inc. Tinsley Park, Illinois*

https://ehs.umich.edu/wp-content/uploads/2018/08/BenchPedestalGrinderSafety.pdf