

OSHA Training Toolbox Talk: Pedestal & Bench Grinder Safety – Mounting Abrasive Wheels

[Reference 1910.243 / 1926.303]

Thousands of people are injured in the United States each year because they do not follow proper precautions when mounting an abrasive wheel on a pedestal or bench grinder. So here is an overview of some of the key things you need to do when installing an abrasive wheel onto one of these type grinders.

First of all, check the label on the abrasive wheel to make certain it is intended to be used on the type of material you will be grinding. There are general purpose grinding wheels, but some are intended to be used only on specific types of materials (like aluminum or stainless steel only). Only use the abrasive wheel for the materials for which it is intended or it could break or shatter.

Then check the diameter of the abrasive wheel, as well as its maximum rated speed, to make sure it is suitable for use with your grinder. The size and speed ratings of an abrasive wheel are usually expressed in revolutions per minute, or RPM's - *(point out examples of this and other important info on the hand-out accompanying this toolbox talk)*. Placing an over-sized or under-rated abrasive wheel on a grinder that turns faster than the rated speed of that wheel can cause it to break apart and send small pieces of the wheel flying! Also, make sure the arbor size (center hole) of your abrasive wheel is the right size for your grinder. If the arbor hole is too small and you have to force it onto the grinder, the wheel could crack. And if the arbor hole is too large, the wheel could become unbalanced when you turn on your grinder and then break apart. Some wheel manufacturers even provide bushings that can be used to adjust the size of the opening.

Next, check the wheel to see if it has any visible damage or breaks. You must also check for hidden cracks by "sounding" the abrasive wheel; this is also called a "ring test" *(do a demo)*. Balance the abrasive wheel on a metal object such as the shaft of a screw-driver. Then strike the abrasive wheel with the wooden handle of a screw-driver on one side and listen for a "ringing" noise; this indicates that portion of the wheel is not cracked. But if you hear a dead "thud" sound, this means the wheel could be cracked and shouldn't be used. Repeat this test by rotating the wheel and "sounding" it repeatedly until all areas of the wheel have been checked.

Also, take care not to over-tighten the retaining nut and flange that holds the abrasive wheel onto the grinder, as applying too much torque can cause the wheel to crack. And always make certain the spindle guard that covers the spindle nut has been properly reinstalled on your grinder. And last but not least, always stand to one side of the grinder when you turn the grinder on so that if the wheel happens to shatter, the particles will be less likely to strike you.

We will cover more aspects of pedestal and bench grinder safety in other toolbox talks. But in the meantime, does anybody have a question or comment about these precautions to take when mounting an abrasive wheel on a pedestal or bench grinder? Please be sure to sign your name to the training certification form so you get credit for attending today's training session.

Diameter of Wheel

Suitable Uses

Recommended PPE



Rated Speed
In RPM's

Ring Test – aka “Sounding” the Wheel



