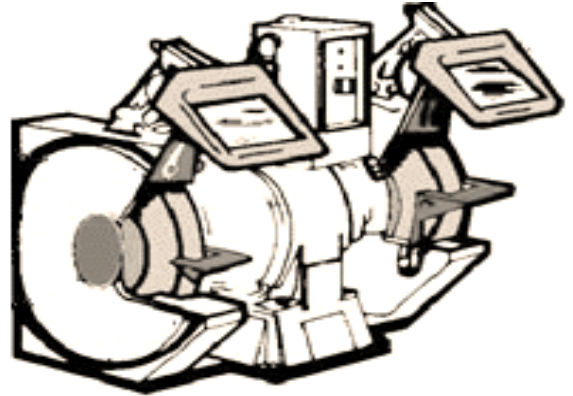




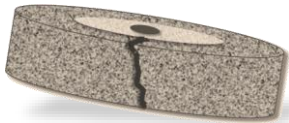
Preventing Bench & Angle Grinder Injuries

A fatality caused by an exploding wheel, an amputated finger from an unguarded grinder, a metallic splinter in the eye – these are preventable accidents caused by the improper use of grinders or by mistakenly using a defective grinding wheel. Do not let this happen to you!



SPOTTING DEFECTIVE WHEELS

Grinding wheels should be inspected and "ring-tested" before they are mounted to ensure they are free from cracks or other defects. When suspended and tapped appropriately, an undamaged wheel will give a clear metallic tone or ring.



The distinctive ring comes from the hardness of the material in the wheel and its ability to transmit sound vibrations. If the wheel is cracked, the vibrations stop at the crack and there is no ring. A ring test alone may not detect all defects in a wheel, so a careful visual inspection is also necessary.

PERFORMING THE RING TEST

Make sure the wheel is dry and free of sawdust or other material that could deaden the sound of the ring. You will need a hard plastic or hard wood object, such as the handle of a screwdriver or other tool, to conduct the test. Use a wood mallet for heavier tools. Do not use metal objects.

1. Suspend the wheel on a pin or a shaft that fits through the hole so that it will be easy to turn, but do not mount the wheel on the grinder. If the wheel is too large to suspend, stand it on a clean, hard surface.
2. Imagine a vertical plumb line up the center of the wheel.
3. Tap the wheel about 45 degrees on each side of the vertical line, about one or two inches from the wheel's edge. Large wheels may be tapped on the edge rather than the side of the wheel.
4. Turn the wheel 180 degrees so that the bottom of the wheel is now on top.
5. Tap the wheel about 45 degrees on each side of the vertical line again.

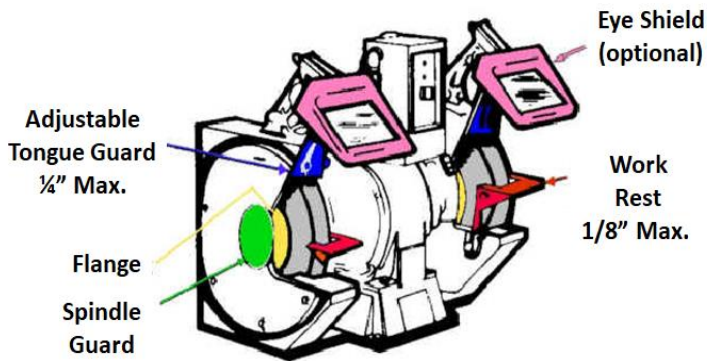
The wheel passes the test if it gives a clear metallic tone when tapped at all four points. If the wheel sounds dead at any of the four points, it is cracked. Do not use it!

Preventing Bench & Angle Grinder Injuries

Before mounting the wheel, check the grinder's spindle speed to ensure that it does not exceed the maximum operating speed marked on the wheel. After mounting the wheel, stand to the side of the machine when powering it on in case a crack or defect was not detected.

Safeguarding Bench Grinders

After inspecting the wheel, check that guards are affixed and properly adjusted. Two of the three guards on a bench grinder require periodic adjustments. The tongue guard must be adjusted to within $\frac{1}{4}$ " of the wheel and the work rest must be adjusted to within $\frac{1}{8}$ " of the wheel.



Safeguarding Angle Grinders

Another commonly used tool by SDRMA members are angle grinders. This type of grinder requires the use of a 180-degree fixed guard. Do not operate with the guard removed!



General Precautions for Bench/Angle Grinders

- Always unplug the grinder before removing the wheel or adjusting guards.
- Use the correct wheel for the grinder's size/speed and the work being performed.
- The RPM rating of the disc/blade must be higher than that of the grinder.
- Use both safety glasses and face shields when operating any type of grinder.
- DO NOT wear loose-fitting clothing or have hanging strings. Keep hair tied back if applicable.
- Move all flammable and combustible materials away from the work area.
- Know the location of the nearest eye wash station and fire extinguisher.
- Allow the grinder to come to full speed and warm up before using.
- Maintain good footing, balance & work position.
- Always use two hands. Keep hands away from rotating wheel and avoid continuous vibration.
- Do not carry an angle grinder with your finger on the switch.

As you review the information in this *Safety Talk* it is important to talk to your supervisor if you have any questions or need additional information about your District's specific procedures.