

CBN Grinder Safety Rules



The CBN Grinder is a bench grinder that is designed to sharpen turning tools, chisels, plane irons and other tools that are made from high-speed steel. Older tools and inexpensive tools are typically made of carbon steel. Carbon steel is a relatively soft steel that is easily sharpened with oil stones, wet stones, silicon carbide sandpaper and aluminum oxide grinding wheels. These sharpening methods can also be used with high-speed steel, but because of their hardness, the sharpening proceeds very slowly. Cubic Boron Nitride (CBN) is a manmade material that is second only to diamond in hardness. It quickly cuts and sharpens all of the high-speed steels.

CBN grinding wheels are made of aluminum with CBN bonded to the surface. Unlike aluminum oxide grinding wheels (gray, white, or pink), they do not change shape with use. The grinding surface remains flat and the diameter does not change. This is a significant advantage when sharpening tools.

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Aluminum oxide grinding wheels cannot be used to grind aluminum because the aluminum is too soft and fouls the grinding wheel. This fouling can be significant enough that sufficient heat is generated to cause the grinding wheels to shatter. This is a significant safety hazard. Likewise, relatively soft carbon steel can foul the CBN grinding wheels and ruin them. These CBN grinding wheels can only be used with high-speed steel. If you are unsure if the tool you want to sharpen is high-speed steel, do not sharpen it with the CBN Grinder. Acceptable steels have a Rockwell hardness on the C scale of 60 or higher, such as M2, M42 and powdered metal. If you can cut the metal with a file, it is not high-speed steel.

The CBN Grinder has two grinding wheels. Both are 8" in diameter and 1-1/2" wide. The sides of the wheels are also coated with CBN and can also be used for sharpening. Jigs are provided to assist with sharpening lathe tools.

CBN Grinder Safety Rules:

1. Keep a balanced stance at the CBN Grinder so you do not fall or lean against the moving parts.
2. Do not overreach or use excessive force to perform any machine operation.
3. Keep your hands clear of the rotating CBN grinding wheels. Contact with them can cause rapid removal of skin and flesh.
4. Do not operate this machine when tired, or under the influence of drugs or alcohol.
5. **DANGER! The CBN grinding wheels will continue to rotate for a several minutes after the grinder is turned off.**
6. Never leave the CBN Grinder when it is running. Turn the power off and do not leave the machine until it comes to a complete stop.

Start with a Risk Assessment to ensure a safe work area:

1. A three-foot perimeter around the CBN Grinder should be kept clear of people, debris and sawdust that might impair traction or footing to avoid slips and falls.
2. Eye Protection. Safety glasses with side shields must be worn. A face shield must also be worn.
3. Dust Protection. The CBN grinding wheels produce very fine particulates that can irritate the respiratory system. Some alloying agents used in carbon steel and high-speed steel are also toxic. As with aluminum oxide grinding wheels, a dust respirator is required to be worn.
4. Eye, face and dust protection can be provided by a Powered Air Purifying Respirator (PAPR). The PAPR provides the additional protection of keeping metallic dust out of your eyes.
5. Hand Protection. It is not necessary to wear gloves while using the CBN Grinder.
6. Hearing Protection. Hearing protection is required when using the CBN Grinder only when nearby machinery or power tools are being used.
7. Remove or fasten all loose clothing or jewelry such as wrist watches, necklaces and bracelets. Tie back long hair. These items might get caught by the grinding wheels and rapidly pull you into it resulting in serious injury or death.

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8. Give the work your undivided attention. Looking around or carrying on a conversation can result in serious injury or death.

Operational Safety Rules:

1. Approach your work in the Club Shop and on the CBN Grinder with a safe attitude!
2. Keep the floor around the CBN Grinder clean and free of stock, shavings and sawdust to minimize the danger of slipping.
3. **NOTICE! Use a light touch. The CBN wheels cut very fast and can generate a lot of heat.**
4. **NOTICE! The grinding wheels can generate a lot of heat and turn your tool blue. This is not a concern for good quality high-speed steel tools.**
5. Use the 180 grit grinding wheel on the left for shaping and most sharpening needs.
6. Use the 600 grit grinding wheel on the right when an ultra-sharp finish is required and only after the tool has been first shaped with the 180 grit wheel. The 600 grit wheel should be used if you intend to use sharpening stones or hone the tool afterward.

Kodiak Sharpening System

A Kodiak sharpening system is provided for use with the CBN Grinder. It is a very simple system to use and provides excellent repeatable results. It is similar to the One-Way Vari-Grind sharpening jig that you may be used to, but has been optimized because the diameter of the grinding wheel does not change. For information on how to use this accessory please go to: <https://woodturnerswonders.com/collections/kodiak-sharpening-system> .