

DOUBLE-BACK CARBIDE

KNIFE SYSTEM

General Grinding Instructions



1. Grind the Double-Back Carbide Knife System in two separate operations on the initial grind.
 - A. Grind the steel backing plate according to your grinder manufacturer's instructions for grinding HSS knives.
 - B. Locate the carbide knife into the bottom micro-corrugations on the back side of the steel backing plate, align laterally, and grind the carbide knife in like manner, using the recommended diamond wheel. Using the Weinig Axial-Constant Grinding System provides maximum efficiency for knife alignment and performance.
2. Maximum carbide knife extension: Heel (backside) of back clearance bevel to be approximately 1.5mm (1/16") higher than top edge of steel backing plate.
3. When repositioning the carbide knife into new micro-corrugations becomes necessary due to wear, use a small machinist's square or straight edge to realign, or flush together, the sides of the knife and steel backer.
4. Balance knives per set (carbide knife and steel backer), not individual pieces, with actual weight adjustment to be done on the steel backing plate. For best performance, total variance should be 0.1 gram or less per head.
5. Grinding wheel recommendations:
 - A. Carbide knife rough grind: Weinig resin bond diamond grinding wheel, 100-120 grit. Do not use silicon carbide grinding wheel, as this will cause extreme chipping.
 - B. Carbide knife finish grind: Weinig resin bond diamond grinding wheel, 320 grit or finer.
 - C. Steel backing plate: Weinig Premium Blue or Euro 54 grit aluminum oxide grinding wheel. Finish grind not required.

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6. Light pressure on the work piece produces better and faster results, and prevents chipping of the carbide knife. Recommended initial removal rate per pass when grinding the carbide;
 - A. Finishing wheels 0.005mm (0.00025")
 - B. Roughing wheels 0.025-0.05mm (0.001-0.002")

7. Recommended back clearance angle:
 - A. Approximately 20-25deg on the steel backing plate
 - B. Approximately 15-20deg on the carbide knifeThese may vary according to individual customer usage and needs.

8. Generally, two or three regrinds can be performed on the carbide knife before the diamond grinding wheel begins to contact the steel backing. Then, repositioning the knife only into the next micro-corrugations becomes necessary.

9. Due to the micrograin structure of the carbide knife, jointing with a conventional jointing stone is possible. The profile stone recommended is Weinig stone #100724, although other stone options are possible.

10. Do not mix different versions of backer and carbide blanks. The original Double Back carbide sets were rated for operation up to 6000RPM only. The new style Double Back +3 is rated for operation up to 12,000RPM. Make sure that the micro-corrugation of backer and insert properly match.

11. Recommended grinding wheel speed for profiling of the carbide knife is 3000RPM. The speed for grinding of the steel backing plate should be in accordance with the grinder manufacturer's instruction for grinding tool steel.

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12. Micro-corrugations in the carbide knife and steel backing plate must fit concisely. Do not cross-thread.
13. To prevent damage to the micro-corrugations located on the back side of the steel backing plate, there are two options that can be used when performing the initial grind on this plate:
 - A. A small filler strip is available to insert between the knife and clamping wedge
 - B. Use a previously ground Double-Back carbide knife that does not extend into the backing plate grinding area
14. Cleanliness is critical. Do not allow dust or foreign particles to become clamped between the carbide knife and backing plate. Any gap between the knife and backer could lead to breakage.
15. Recommended side clearance angle:
 - A. 5deg for non-jointed moulder
 - B. 10deg for jointed moulder

The appropriate angle is necessary on both carbide knife and backing plate. In order to attain correct side clearances, an oversized wheel or undersized tracing pin can be used. This is particularly important on 90deg cuts, in order to prevent the kinife regrinds from cutting into the steel backing plate.
16. The steel backing plate is designed to prevent radial movement in the cutterhead. This is a safety feature for your protection, and does not adversely affect the cost-effectiveness of this system.