

Helicarb® Grinding Instructions

Note: Instructions are for a typical cutter. The cutter shown may not look identical to your cutter.

1. Great Lakes Custom Tool recommends the use of **safety glasses at all times.**
2. When cutter is mounted on the machine, be sure to follow **LockOut/TagOut** procedures and use all appropriate personal protection equipment.

The Helicarb knives are to be ground in the cutter head using a Weinig Rondamat Grinder. Other makes and models of grinders may also be used, if adaptable.

Setting up the Grinder

Change the insert on the Rondamat Grinder knife rest by removing the 2 screws holding the straight carbide insert. Remove this insert and replace it with the radius insert. Ensure that your knife rest has chamfered corners. See additional instructions for further explanation.

GLCT Part Number----- 810-23426-0100

Weinig Part Number-----930-013024HEL2

The new insert will be installed according to tool helix (L/B or R/T). Reinstall the mounting screws with nylon washer. Do NOT over tighten, as this may cause breakage of the carbide insert.

Helicarb carbide knives require a finish diamond wheel for regrinding. We recommend the use of Weinig grinding wheel **930062003**, which is a 4mm wide finishing wheel with square edge.

Set the back clearance angle on the grinder between 11-20 degrees. This should be 11-13 degrees for hardwoods, and 14-20 degrees for softwoods and jointed applications. Always ensure that the grinding wheel does not touch the tool body.

Set the side clearance angle on the grinder to “0”.

GRINDERMAN’S HELPFUL TIP

Before starting the grinding wheel, use a black marker and darken the edge of both knives. Move the knife to the wheel and rotate the grinding wheel by hand. This will only slightly “scratch” the black away from the knife. This will allow you to determine if you are using the correct back clearance angle for your application. This will also show afterwards if you have completely removed all blemishes on the knives.



Helicarb Powerlock Cutter



Insert Knife Rest Mounted on Grinder



Use black marker to see the effect of sharpening

Grinding the Knife

Mount the Helicarb Powerlock tool in the grinder. **Use gloves or a shop towel to protect your hands.** Other Helicarb tools with straight bores or hydro sleeves are mounted on an arbor but are all ground in the same manner.

Adjust the grinding wheel toward your tool rest, maintaining normal gap of 0.020". Position the non-axial end of the knife onto the knife rest with light contact on the grinding wheel.

You then have a couple of options on how to maintain a parallel grind on the knives:

- (1) Secure the carriage with the radial clamping device. Always stand either right or left of the grinder during this grinding process, pushing and pulling the carriage. This is the recommended method.
- (2) When using a straight template, move the tool into position on the knife rest. Adjust the template up to the tracing pin, standing in front of the grinder, just as you would when grinding a profile knife.

Start the grinding wheel only. Set the wheel speed to **3000 RPM**. Slightly adjust the cutter towards the grinding wheel until you hear minimal contact. Traverse into the knife slightly (up to 1/4"), and then move out of the cut, so as to confirm that you are making the proper depth and contact angle of knife edge. Now you can start the coolant flow. Make your initial pass forward and return, then inspect your knife. If satisfied with the grinding angle, proceed to the other knives in the tool. Afterwards, inspect each knife, to confirm that all blemishes have been removed, and that your knives are completely sharpened. If not, then repeat the process.

Always keep the knife down onto the knife rest in both directions. Remove no more than 0.002" to 0.004" material in each forward and reverse pass. The grinding wheel must never contact the cutter body.

When the grinding wheel is close to touching the cutter body, you then have the following options:

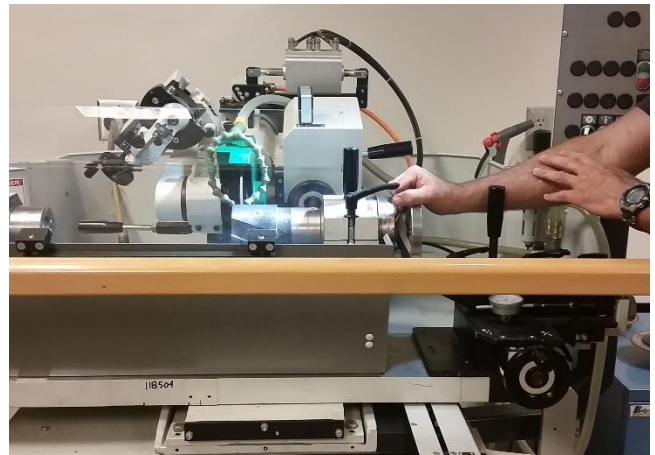
- 1) Change or reduce the back clearance angle
- 2) Add shim below the existing knife, in order to increase the available sharpening area. Please note the **Maximum** allowable shim is **(1) .030" orange shim per blade**. More than this is an unsafe practice and is not allowed.
- 3) Replace the Helicarb knives

After the knives are all sharpened, remove the cutter from the grinder. Dry the tool completely and then measure on your optical comparator for concentricity. If all knives are within 0.001" of each other, then you are ready to put this tool onto the moulder!

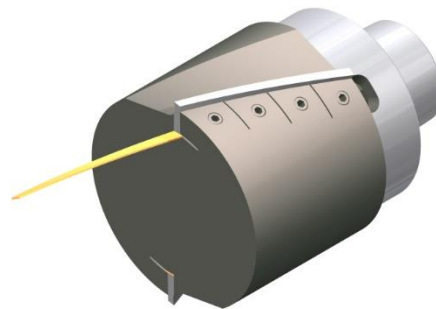
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Use gloves or shop towels when mounting a Helicarb Tool



Grinding knife by Option 1

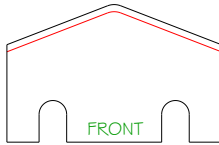


Installing shim under a knife

Modifying Weinig Grinder Knife Rest Base

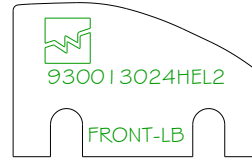
- When changing to the new radius Knife Rest Insert 810-23426-0100, (Weinig Number 93001302HEL2) it may be necessary to modify the metal Knife Rest Base by adding (2) 45° chamfers.

Existing Angled



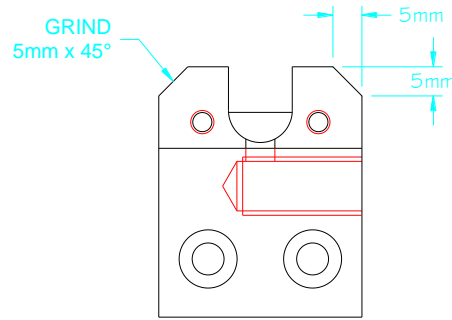
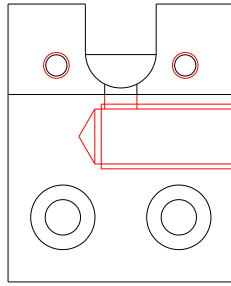
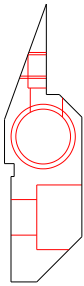
810-23426-0000
(Weinig Number 930013024HEL)

New Radius



810-23426-0100
(Weinig Number 930013024HEL2)

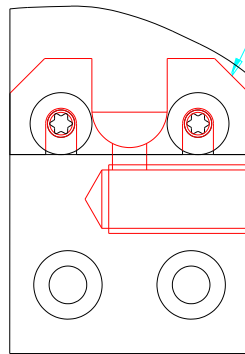
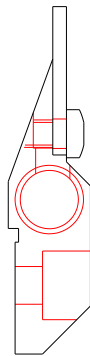
- Remove the Knife Rest Base and grind (2) chamfers 5mm x 45° as shown below. If you prefer not to make this modification, all new Knife Rests are now available with the chamfer already included.



Original Knife Rest Base Before Grinding Corners

Knife Rest Base After Grinding Corners

- After the chamfer is added, install the new Knife Rest Insert onto the Knife Rest Base. You are now ready to install this assembly onto the grinder and begin grinding on your Helicarb tool according to the attached instructions.



MAKE CERTAIN CORNER
IS CLEARED AWAY AS SHOWN