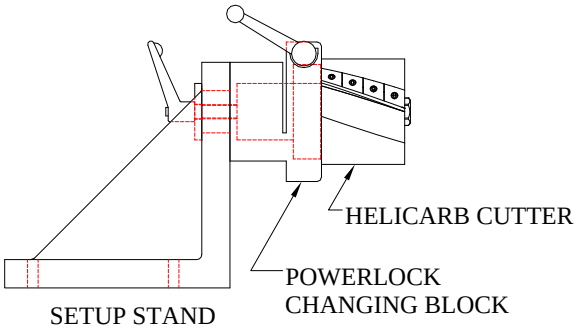
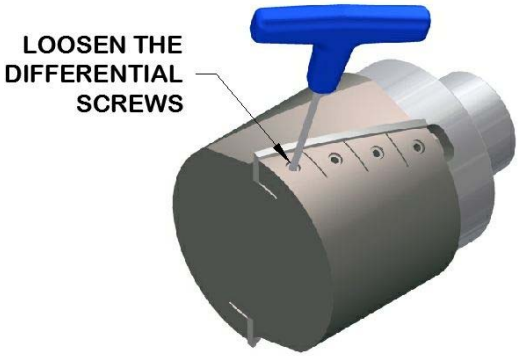
Helicarb® 100 mm Diameter PowerLock Cutter Blade Replacement

Note: Instructions are for a typical cutter. The cutter shown



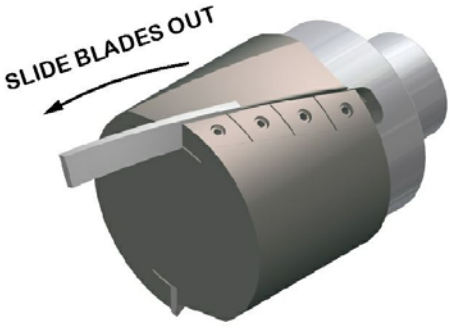
1. Great Lakes Custom Tool recommends the use of **safety glasses at all times.**
2. When cutter is mounted on the machine, be sure to follow **LockOut/TagOut** procedures and use all appropriate personal protection equipment.
3. Remove cutter from machine.
4. Place Cutter in a setup stand to change blades. Setup stand must be fastened to a solid work bench or table. Setup stand & accessories can be purchased from Great Lakes Custom Tool.
   Order: 955-07584-0000 Stand Assembly and
   950-07584-PL00 PowerLock changing block.

Blade Removal



1. Use a 1/8” hex key to loosen the differential screws in the wedges. It is not necessary to remove the wedges and screws. Loosen the differential screws one turn. The differential screws have right hand threads that go into the cutter body and left hand threads that are in the wedges. This combination of both right hand and left hand threads insures for positive release of the wedges when loosening the screws.

2. With the screws and wedges loosened, slide the Helicarb® twisted blade out the end opposite the tool stand.



3. With all the blades removed, clean cutter and blade slots using an air hose to blow out any loose material. Remove wood pitch or “caked on material” using hot water or a cleaning solvent.

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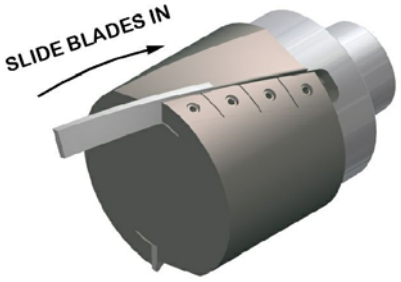
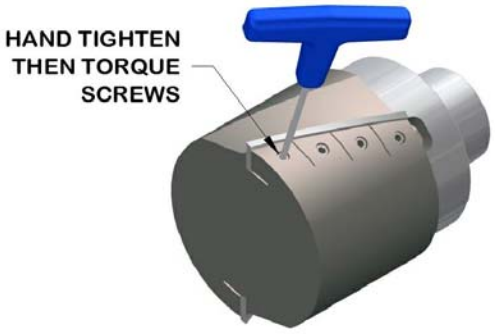
Blade Installation



1. Slide the new Helicarb® twisted blade into the slot from the end of the cutter. The blade has a slight taper with the base being wider than the cutting edge. Slide the blade in until the end is flush with the end of the cutter body.

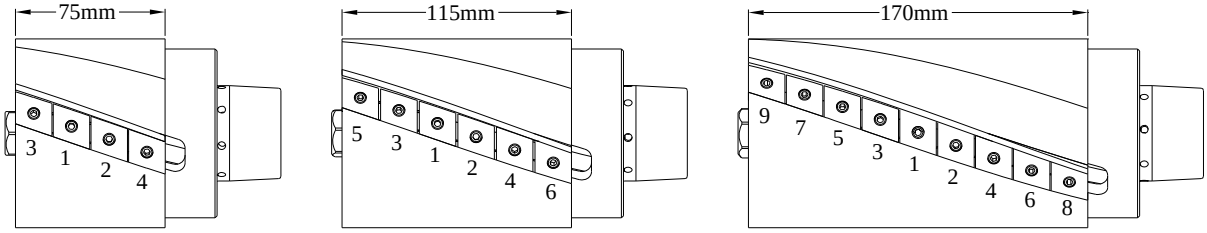
2. Hold the blade flush with the end of the body and down against the cutter body slot. **Be careful the blade is sharp and can cut you.**

3. Applying pressure to hold the blade in place, tighten the screws enough to hold the blade in place. As the differential screws are tightened, the angled wedges will contact the tapered surface of the blade drawing the blade down to the helical bottom surface of the slot for accurate positioning and positive clamping. **Torque the differential screws following the instructions below.**



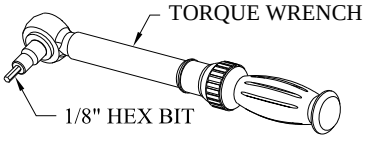
Helicarb Differential Screw Tightening Instructions

After hand tightening the differential screws with a T-handle allen wrench, **use a torque wrench** (GLCT Part No. 74530) **to tighten each screw to the correct torque value as listed in the chart below**. Tighten each screw a small amount at a time **following the tightening sequence below. Do not** tighten the screw directly to the torque value listed. Tightening each screw a small amount at a time applies equal pressure to the wedge and helps keep the blade precisely in place. (Note: The torque values listed are Anti-Seize lubricated torque values. Never torque a screw without Anti-Seize to this amount, false torque and/or failure could occur.)



TIGHTENING SEQUENCE FOR DIFFERENTIAL SCREWS

		TORQUE VALUE	
SCREW SIZE	HEX KEY SIZE	NEWTON METERS	INCH POUNDS
1/4"	1/8 " GLCT Part No. 1/8"HEX BIT	12.4	110



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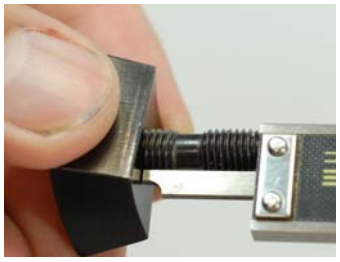
Differential Screw Maintenance

It is recommended to reapply anti-seize to the differential screws after 2-3 blade replacements. If the hex socket in the screw becomes damaged, replace the screw; **Order: 1/4"-28 Differential Screw.** If the hex socket in the screw is stripped and the screw can not be removed, return the cutter to Great Lakes for repairs.

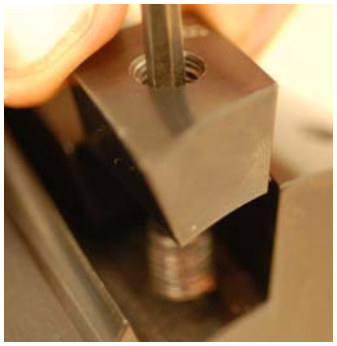
When reinstalling a wedge or a differential screw, it is **very important to position the differential screw properly** in the wedge. The position of the differential screw in the wedge **will affect the balance of the cutter**.

The differential screw has both left and right hand threads. The wedge has left hand threads and the cutter has right hand threads.

Place anti-seize on the left hand threads of the differential screw. **Start the differential screw into the hole on the narrow end of the wedge, turning the screw counter-clockwise 3 to 4 revolutions.**



Use a digital caliper to measure the length of the screw extending out of the wedge. This **distance should be .600" to .610" for the 1/4-28NF differential screws.** Turn the differential screw clockwise or counterclockwise as necessary to achieve this dimension.



Place anti-seize on the right hand threads of the differential screw and then install the wedge and screw into the Helicarb cutter. Turn the 1/8" T-Handle hex key clockwise making sure that the screw threads start into the tapped hole of the cutter. Turn the screw 4-5 revolutions. Repeat this procedure for all wedges and screws being replaced.

Helicarb cutters have a letter and number stamped on the wedge and body. Reinstall wedges to match the number on the cutter body. If a wedge is damaged return the cutter to Great Lakes for inspection, refurbishing and rebalancing.

When all wedges have been installed onto the cutter, the blades can then be installed. Follow the instructions on page 2 titled **Blade Installation.**

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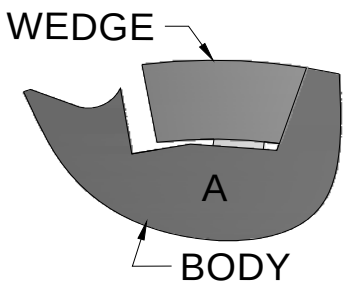
Helicarb Wedges

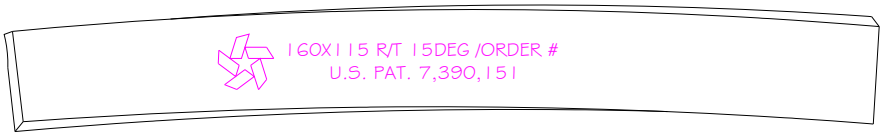


Helicarb wedges are balanced to a weight constant, respective to the wedge part number, so are interchangeable. Reinstall wedges matching the taper of the cutter body. If a wedge is damaged return the cutter to Great Lakes for inspection, refurbishing and rebalancing.

Wedges for 135 & 160 diameter cutters can be replaced in the field. All 100mm diameter cutters must be returned to GLCT for wedge replacement.

When all wedges have been installed onto the cutter, the blades can then be installed.
Follow the instructions on page 2 titled **Blade Installation.**

Helicarb Blades



The individual blades in a Helicarb Cutter are balanced within .2g (grams).
Replacement Helicarb Blade Sets are also balanced within .2g (grams).

Examples: An 8 wing cutter will have all blades balance within .2g.
A 2 wing cutter will have all blades balanced within .2g.

Blades must be replaced in complete sets to insure this degree of balance.

The helicarb blades are laser etched with the Part Number and also an order number. All blades with a common order number will have the blades balanced within .2g.

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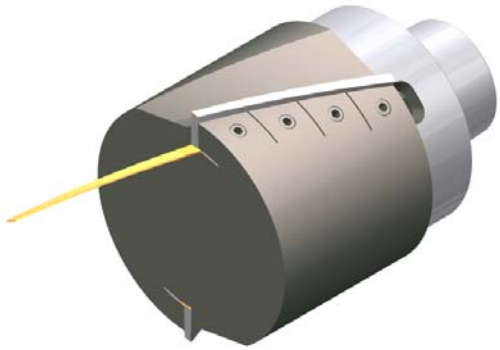
Helicarb® 100 mm Diameter PowerLock Cutter Blade Shimming

Blade Removeal

1. GLCT recommends removing the blade and cleaning the blade and cutter body prior to installing the shims. Follow the “Blade Removal” instructions from sheet 1of 5.

Blade Installation

1. Slide the Helicarb® twisted blade into the slot from the end of the cutter. The blade has a slight taper with the base being wider than the cutting edge. Slide the blade in until the end is flush with the end of the cutter body.



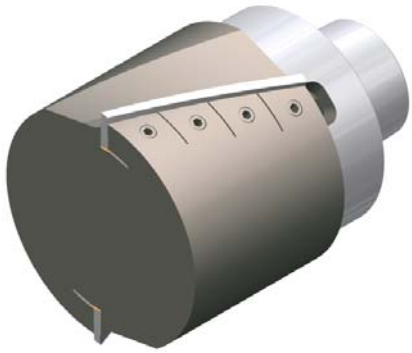
2. Lift up on the blade and slide the plastic shim in under the blade until the shim is flush with the opposite end of the blade.

   ***GLCT does not recommend using anything other than the HCS-KIT shim kit that can be purchased from us, due to thickness consistency and balance.**

   ***Never use more than one .030” thick shim per wing.**

   ***When using shims *ALL* wings must be shimmed to insure proper balance.**

3. Hold the blade flush with the end of the body and press both the Blade and shim down against the cutter body slot. **Be careful the blade is sharp and can cut you.**



4. Applying pressure to hold the blade and shim in place, tighten the screws enough to hold the blade in place. As the differential screws are tightened, the angled wedges will contact the tapered surface of the blade drawing the blade and shim down to the helical bottom surface of the slot for accurate positioning and positive clamping. **Torque the differential screws following the instructions from sheet 2 of 5.**

5. Carefully cut off any excess shim stock that may be sticking out of the end of the cutter.

6. With the shims installed the blades must be O.D. ground prior to use. **See the “Helicarb Grinding Instructions” (A00154) for the proper grinding procedure.**

Note:
Cutters wider than 235mm or with multiple blades per wing cannot be shimmed.

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