

# INSTRUCTIONS

# Collet Block Alignment Fixture & Tool Stop Guide

These instructions look detailed and involved, but once you have walked through these steps and understand the basic function of how the Alignment Fixture works, using it will become second nature.

To ensure the best tool geometry, the tool must be accurately aligned in the collet block before sharpening. This collet block alignment fixture will locate any 2, 3, 4 or 6 flute tool in the proper position for sharpening. To accurately use this Alignment Fixture it must be used in conjunction with a Square 5C and / or Hex 5C Collet Block; a Tool Stop Guide; and the Accu-Finish Series II.

## COLLET BLOCK SELECTION

The Square 5C Collet Block is used to sharpen 2 or 4 fluted tools. The Hex 5C Collet Block is used to sharpen 3 and 6 fluted tools.

## HOW-TO CALIBRATE FIXTURE

Select desired collet block, insert a 1/2" collet and secure with retainer ring.

**NOTE:** Be sure collet block and collet are free and clean of any metal chips or debris.

Insert STOP LOCATOR (ILL. A) into the collet and hand tighten only. You **MUST** be able to turn the stop locator in the collet. Position stop locator so the "FLAT" is facing up.

Place collet block flat against the side plate of fixture (ILL. B) and check that it is touching the DOWEL PIN STOP.

**NOTE:** The recess in the fixture base is to receive a 5C Hex Block. Make sure the HEX block is properly seated in this recess and against the dowel pin stop.

With the block properly positioned, tighten handle until block is secured into place.

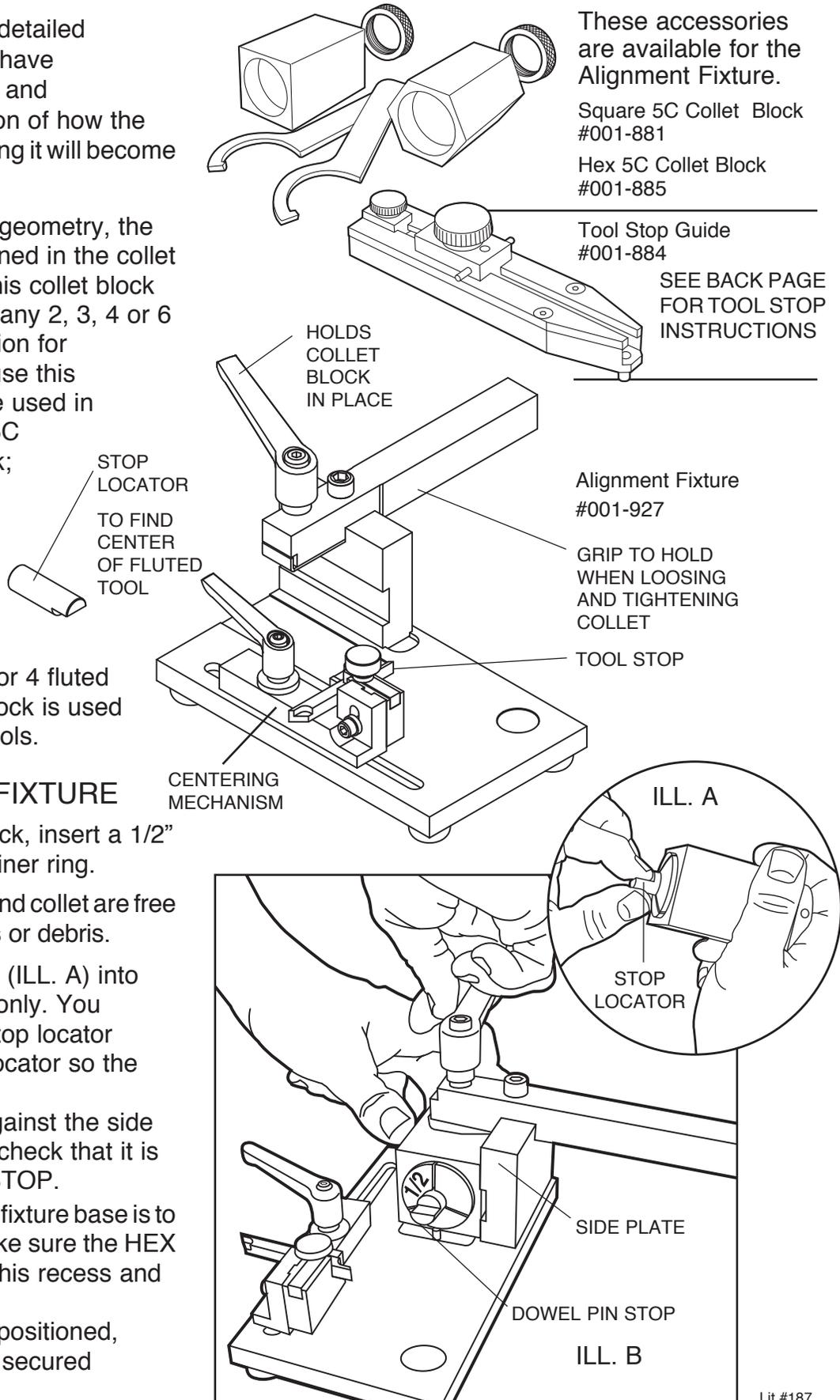
These accessories are available for the Alignment Fixture.

Square 5C Collet Block #001-881

Hex 5C Collet Block #001-885

Tool Stop Guide #001-884

SEE BACK PAGE FOR TOOL STOP INSTRUCTIONS



## HOW-TO CALIBRATE (CONTINUED)

Now, we are going to use the centering mechanism to SQUARE the Stop Locator in the collet block.

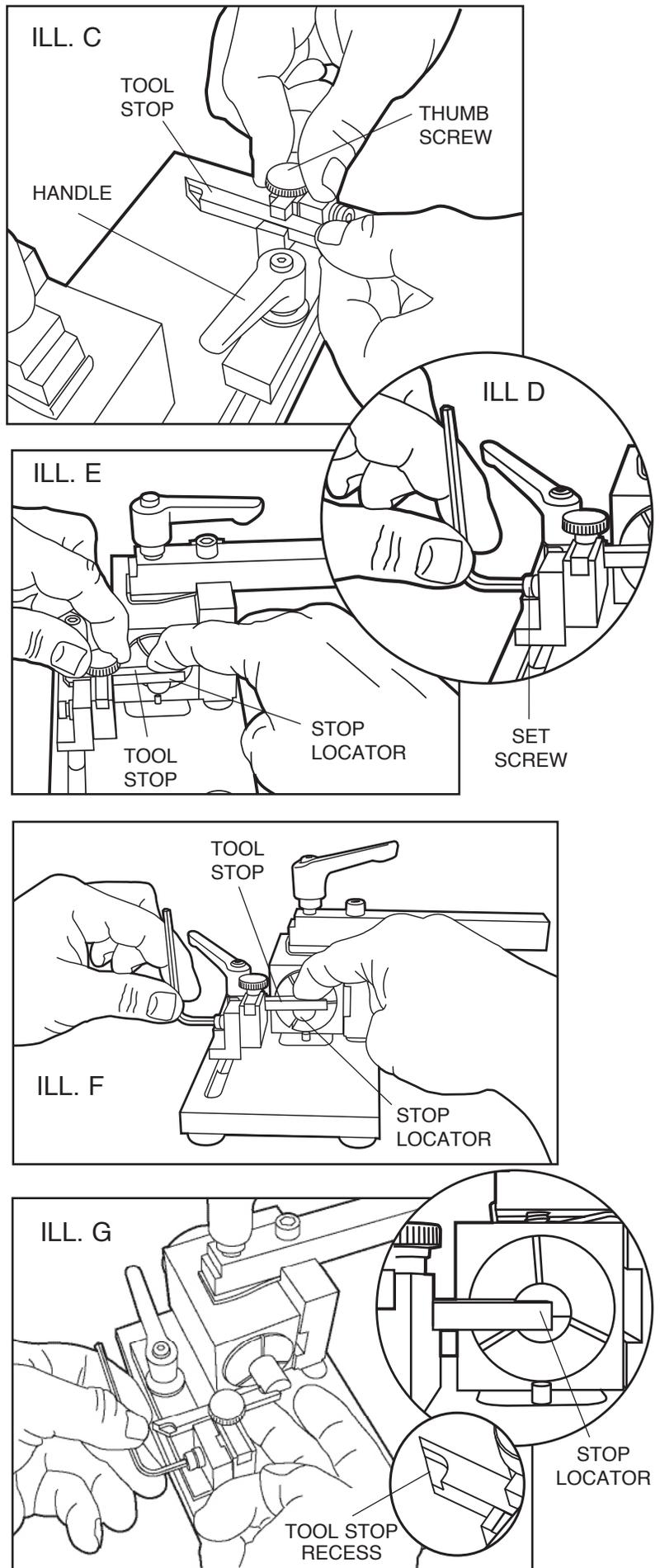
With Collet Block secure, loosen handle on the Centering Mechanism until it slides. Loosen thumb screw and extend the Tool Stop out past center of fixture and tighten thumb screw back (ILL. C). Using the hex wrench, loosen set screw that adjusts the height of tool stop (ILL. D). Now, slide centering mechanism toward collet block, lifting and resting bottom of the tool stop on the flat surface of the stop locator. Turn stop locator until it and the tool stop - rests FLAT against each other (ILL. E). While pressing the tool stop against the stop locator, tighten the handle first, then set screw (ILL. F). Double check that the tool stop and stop locator are tight and flat against each other. Using the spanner wrench, tighten lock ring on the collet. Check again to make sure the tool stop and stop locator are tight together. Loosen centering mechanism handle and slide forward.

Now, we are going to use the Stop Locator to set the centering mechanism.

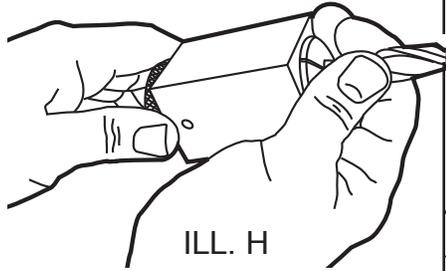
Remove the collet block, turn it over (180°) and replace back into fixture. Make sure block is against dowel pin stop and side plate, then lock into place. Position the tool stop recess under corner of the stop locator as shown in (ILL. D). This will require loosening the thumb screw and set screw. While holding tool stop tight against the stop locator, tighten mechanism handle first; then thumb screw; and set screw last. The tool locator is now accurately centered to the collet block you have in the fixture.

**IMPORTANT:** THE SET SCREW LOCKS CENTER POSITION. DO NOT LOOSEN OR FIXTURE WILL BE OUT OF CALIBRATION.

(NOTE: If you use another collet block, you will need to recalibrate the fixture for that block.)



**NOTE:**  
THE LESS A  
TOOL EXTENDS  
FROM COLLET  
BLOCK  
DECREASES  
THE CHANCE OF  
CHATTER WHEN  
SHARPENING.



## FLUTED TOOL SHARPENING

Once fixture is calibrated to the collet block, you are ready to insert and calibrate a tool in that block.

Place tool to be sharpened into the collet block you just calibrated the fixture with (ILL. H). Make sure it's clean and clear of any metal chips or debris. Hand tighten tool into collet block only. You will need to be able to turn tool in collet. Loosen centering mechanism and slide it forward, out of the way. Place block into fixture. Check to assure it is against the dowel pin stop and side plate, then tighten into position.

Loosen thumb screw and position tool stop recess under the tool flute. Rotate tool until it rests flat against the tool stop recess (ILL. I & ILL. J).

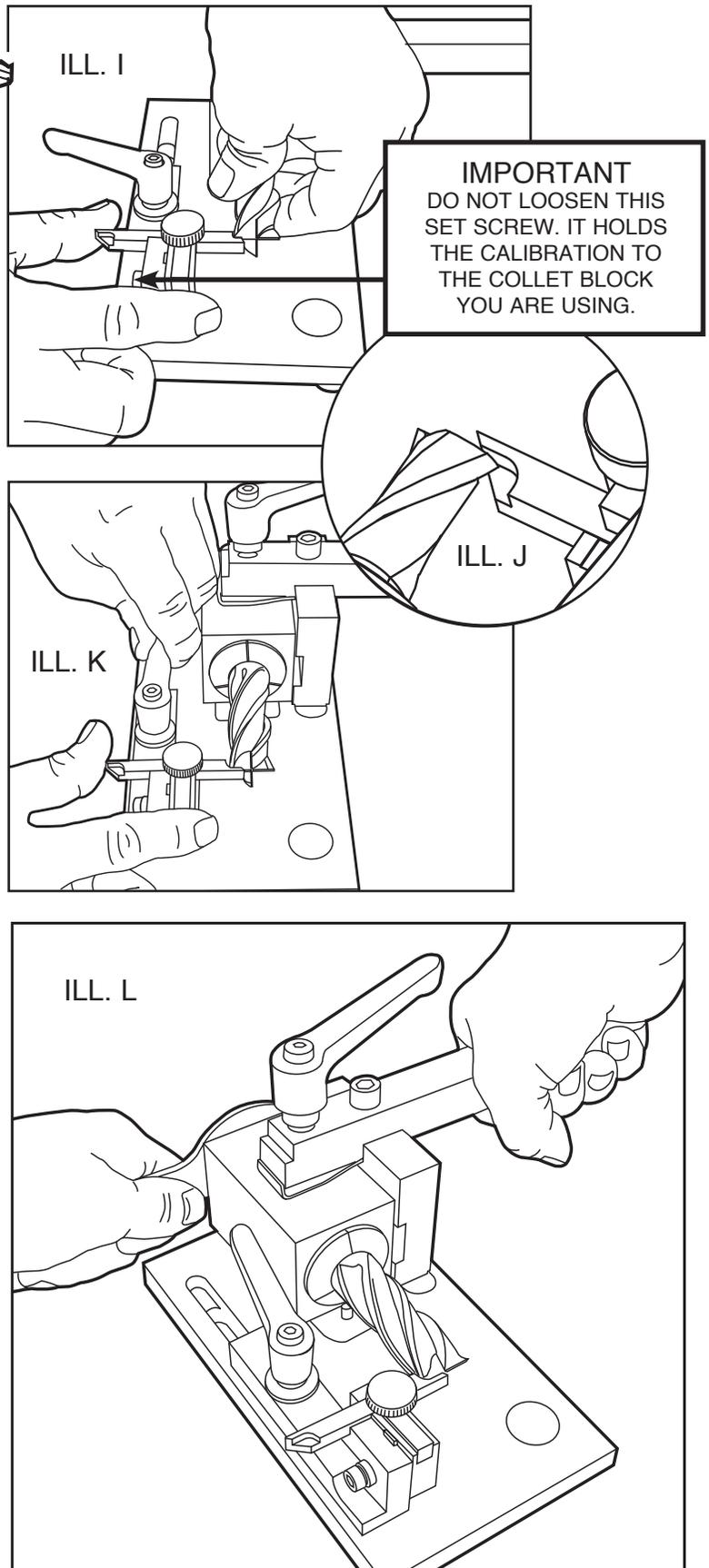
**IMPORTANT: REMEMBER - DO NOT LOOSEN THE SET SCREW. IT WILL UN-CALIBRATE THE FIXTURE.**

Tighten the centering mechanism handle and thumb screw (ILL. K). Check to make sure the tool is resting flat against tool stop recess (ILL. J). Using spanner wrench, tighten the collet ring. Double check to make sure tool is still resting flat against the tool stop recess.

The tool is square in the collet!

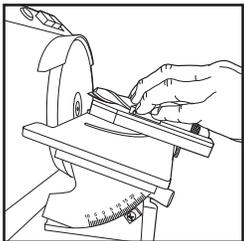
Remove block from fixture. The tool is now ready to be accurately sharpened on an Accu-Finish Series II.

See back page for Tool Stop  
Guide instructions.

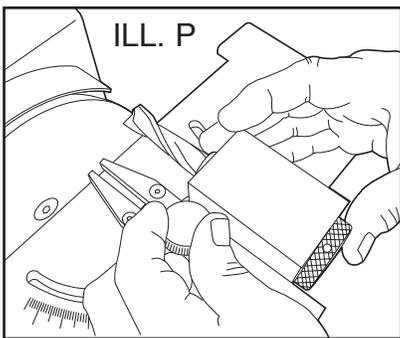
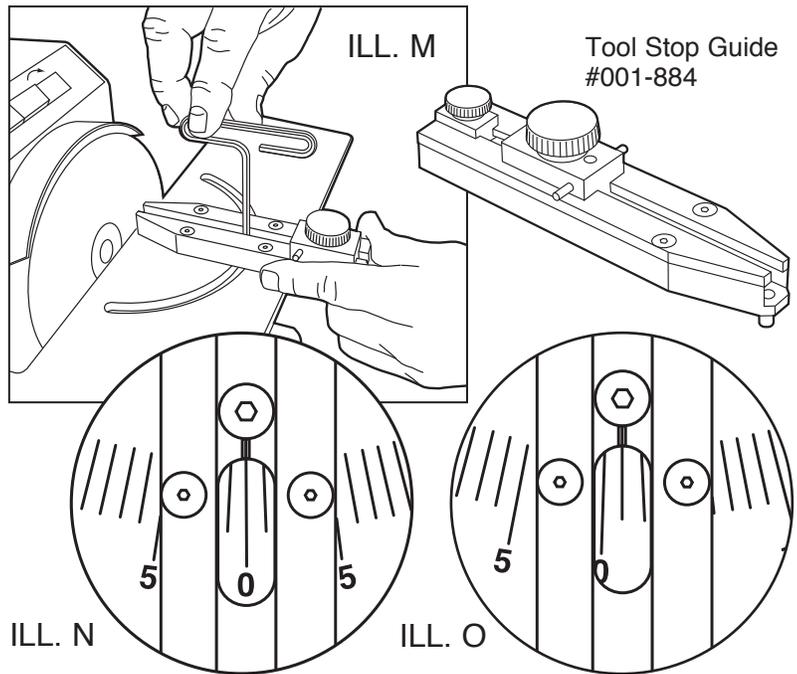


## USING THE TOOL STOP GUIDE

Remove the Protractor Guide from Accu-Finish table and attach the Tool Stop Guide (ILL. M). Look through opening in the tool stop and align centering mark with  $0^\circ$  (ILL. N). NOTE: To add "RAKE" or "RECESS" to the tool's cutting tip, adjust desired degree to the right of  $0^\circ$  (ILL. O).

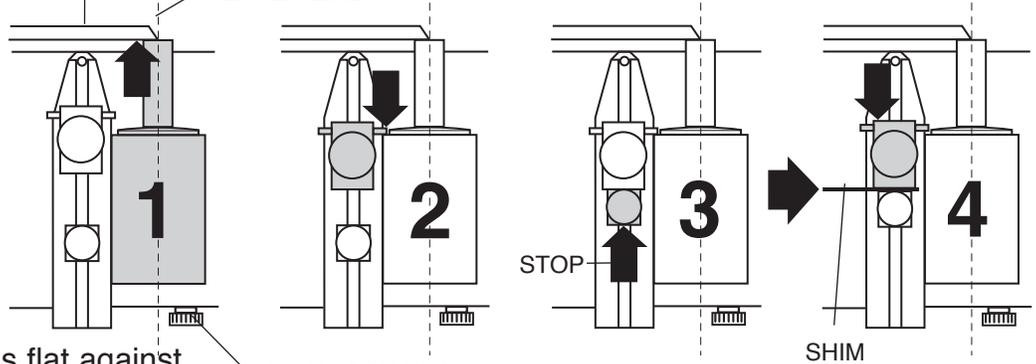


Set desired face angle on the table's side protractor. Place Collet Block against right side of tool stop. Holding it tight against the tool stop, move table until the center of tool aligns with edge of the diamond wheel (ILL. P).



30° REVERSE ANGLE WHEEL

CENTER LINE



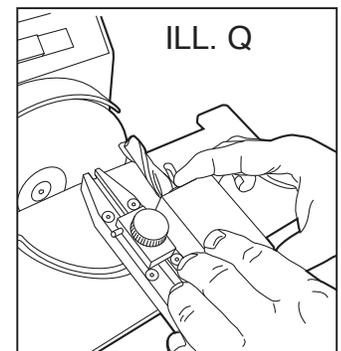
Double check that block is flat against tool stop and the "Stop Pin" is ahead of the block. Center tool with diamond wheel edge and LOCK table in position.

NOTE: When sharpening fluted tools, especially with a recess, we recommend using a  $30^\circ$  Reverse Angle Diamond Wheel for best results.

Push collet block forward until tool tip is against diamond wheel (1). Holding it there, move the Pin Stop against collet block (2) and tighten knob. Press smaller Stop (3) against Pin Stop and tighten knob. Loosen the larger Pin Stop knob and position a shim between the two stops (4). The shim should be the desired thickness of material you want to remove from tool's cutting edge. NOTE: .003" is about the thickness of a piece of typing paper.

Some choose to use only steps 1 & 2. Using off-hand placement of the Pin Stop for amount of tool tip removal. But, by using a measured amount shim, you will get longer tool life.

Holding the collet block against the tool stop guide, gently feed it into the wheel until the STOP PIN stops it. (ILL. Q). CAUTION: DO NOT FORCE TOOL INTO WHEEL - DAMAGE WILL OCCUR. Rotate collet block and sharpen each flute the same way.



To grind the secondary relief and clearance angles, adjust the desired angle on the table's side protractor and set the stop pin forward a small amount and grind one flute. Check frequently to see how much material is being removed. If not enough and you are against the stop pin, move the pin inward. If you have removed enough and you are not against the pin, hold the tool against "stopped" wheel and reset pin stop. After establishing pin placement, do the other flutes.