



SHERLINE PRODUCTS

INCORPORATED 1974

3/8" IC 55° NEGATIVE RAKE INSERT TOOL HOLDER

P/N 7610

AS WITH ANY CUTTING OPERATION, IT IS IMPERATIVE TO WEAR SAFETY GLASSES AT ALL TIMES!

I believe Sherline's 3/8" IC 55° negative rake indexable holder will bring a lot of enjoyment to your machining, particularly if you have trouble grinding good tools or if you choose to turn difficult materials such as stainless steel. The indexable carbide insert sits on the tool holder at a 5° negative angle. This gives the sides of the cutter clearance even though the insert has square sides. By having square sides, both the top and bottom of the insert can be used as cutting edges. This gives you front and back, top and bottom of both sides for a total of four cutting edges on each insert. Though not inexpensive, when you consider you are getting four cutting tools in one, it is really a pretty good deal.

Remember that carbide cutting tools are a little more brittle than high speed steel and take care not to break the insert. If you break a chip out of one surface, I don't recommend that you use the cutting surface on the other side. The insert would not be properly supported on the tool holder with material missing from the lower surface which should be resting solidly on the tool holder. Damage to the tool holder can occur if you use a broken insert in this fashion.

Keep in mind also that it is not good machining practice to feed a tool straight into a part any further than necessary. Parting off tools are designed for this task, but regular cutting tools are not. Going straight in puts two cutting surfaces to work at once, and as you get deeper and deeper into the part, you can overload the cutting capacity of the machine and cause it to jam. If you must feed straight in to cut a groove, for example, go a short distance and then open up the slot side to side, using only one cutting surface of the tool at a time. Then go a little deeper and repeat the side to side cuts.

An advantage of this tool is that it will cut in either direction. It can also give good finishes on hard to machine materials such as cold rolled steel. (Note: the best finishes on soft materials such as aluminum, brass or leaded steels will still be achieved using a good, sharp high speed steel tool.

However the carbide insert tool will still do a very good job and will last almost forever on these materials.) A good finish on harder materials using a carbide tool is accomplished by turning up the RPM of the spindle about three times faster than if you were using a high speed steel tool. In fact, when making most cuts with this tool, don't be afraid to turn up the RPM and feed the tool rapidly. Of course, you must have the part you are machining held in a setup sufficiently secure to accomplish this.

The holder is manufactured from 7075 Aluminum, which is approximately twice as hard as regular aluminum in a T6 condition. This material also costs approximately twice as much, but I felt it would be money well spent to insure a long life of your holder.

The carbide insert is designed in such a way that it cuts like a positive rake cutter. Positive rake cutters don't require as much rigidity as negative rake cutters. This type of design allows the advantages of a negative rake cutter (four cutting edges per insert) without requiring the rigidity that can't be found in bench type machines.

Replacement inserts for this holder are available from Sherline as well as from several tool manufacturers. They are usually designated DNMG-331.

Joe Martin, President and Owner
Sherline Products Inc.

PARTS LIST

Part No.	Description
76110	3/8" IC 55° Tool Holder Body
76120	55° Insert (DNMG-331)
76130	Button Head Screw 6-32 x 7/16"
40250	Extended T-Nut
40660	3/16" ID Washer
40740	Skt. Hd. Cap Screw 10-32 x 7/8"
76140	5/64" Hex Key