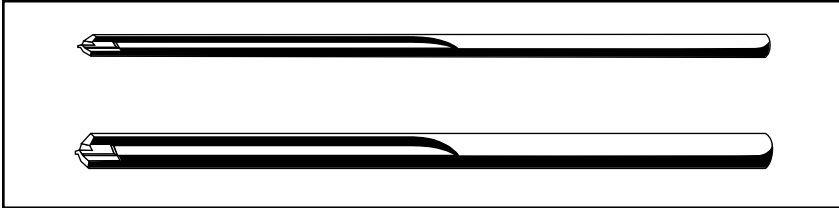


Instructions



Tungsten Tip Safe Drills



No. SHPD-12, 14

Tungsten Tip Safe Drills are designed for use on hardened die steel. Their main purpose is to make possible the drilling of steel that has been hardened in the range of C-40 to C-64 Rockwell, without annealing or using the slow and costly grinding method. The drill has a hardened high-speed steel body and a relatively long carbide tip, thereby permitting many regrinds. The point of the tool has the proper negative rake angle which prevents chipping and also helps to throw off heat from the cutting edge.

In using the Tungsten Tip Safe Drill, the drill should have sufficient power to maintain speed under load. The object being drilled should always be held rigid. In most cases a speed of 100 r.p.m. will cut the best. We strongly recommend that a liberal quantity of kerosene or turpentine be used while drilling as coolant. The use of cutting oil will quickly dull the tip. When possible, back up the material being drilled with a piece of cast iron so as to prevent extrusion around the hole at the breakthrough point as well as to minimize the possibility of chipping the tip.

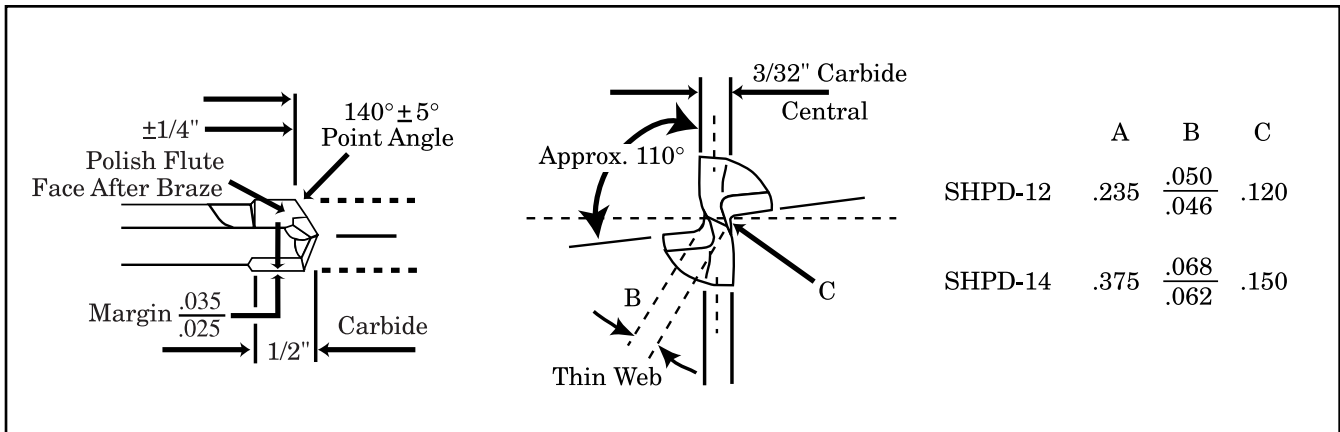
Resharpen the tool on a cutter grinder as soon as it

becomes dull. We recommend a 100 grit green silicon carbide wheel, or a 180-220 grit resinoid bonded, cup-shaped wheel. Regrind to match as closely as possible the diagrams shown below. It is important that the point be centered.

DIRECTIONS FOR DRILLING:

1. Do not wiggle from side to side when drilling.
2. Do not under any circumstances change the angle of the drill.
3. The drill must be held absolutely rigid.
4. We recommend that the drill motor be stopped prior to removing the bit.

We guarantee these Tungsten Tip Safe Drills to drill through steel that has been hardened in the range of C-40 to C-64 Rockwell range of hardness, when used according to the preceding instructions. No guarantee is implied against chipping or breakage caused by the unintentional misuse to which they might be subjected.



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