



## **Twist drill sharpening techniques - high-speed steel cone shank twist drill grinding**

If you get a bit in a hurry the grinding, grinding must be blind. Only put good position before grinding, the "ground" for the next step to play solid foundation, this step is very important.

The technique of grinding formula:

Formula one, "a straight edge round surface." This is the first step on the bit and the relative position of grinding wheel, often have students has not been smoothed edge will depend on the grinding wheel grinding. This is certainly not good grind. Here the "edge" is the main cutting edge, "settle" refers to a portion of the main cutting edge sharpening in the horizontal position. "Wheels" refers to the surface of the grinding wheel. "Rely on" is the meaning of slowly convergence. This bit can not contact grinding wheel.

Formula 2: "drill shaft Angle of oblique out front." Here refers to the bit axis and the relations between the location of the grinding wheel surface. "Edge horn" namely apex Angle  $118^\circ$  half of plus or minus  $2\alpha$ , approximately  $60^\circ$ , the location is very important, directly affect the bit size and shape of the main cutting edge and chisel edge Angle. Remember to prompt students to the commonly used a piece of  $30^\circ$ ,  $60^\circ$ ,  $90^\circ$ ,  $60^\circ$  Angle in the triangle so that they are easy to master, Formulas formulas I and II are by the relative position of drill grinding ago, both to balanced, not to settle gracefully angled edge while ignoring, or to gracefully settle diagonal axis while ignoring the edge. In practice is often out of these errors. The bit in the position to contact grinding wheel under the condition of right.

Formula 3: "behind by grinding blade consistency." Here refers to the start bit parts along the entire blade slowly after grinding, For convenient grinding and heat dissipation.

Three formulas: "from the edge toward the back ground behind." This refers to the cutting edge of the drill grinding slowly along the entire flank. This facilitates cooling and grinding. On the basis of steady consolidation of formulas I, II on, then bit gently touching the wheel, be a relatively small amount of sharpening, to observe the uniformity of sparks when sharpening, the pressure is adjusted in a timely manner, and pay attention to cooling the drill bit. When cooled resumed sharpening, to continue gracefully formulas one or two positions, which is often difficult to grasp at beginner, often involuntarily alter the validity of its position.

Formula 4: "don't skip bobbing up and down the tail." This movement is also very important in the process of drill sharpening, often there are students in the sharpening of the "bobbing" into a "turned up and down", the bit of the other main cutting edge destroyed. The tail end of the drill bit is not above at the same time become warped on the center line of the grinding wheel level above, or you will make the edge grinding blunt, not cutting.

Master above formulas, one can improve the sharpening techniques.