

## PCBN刀具切削淬硬钢时倒棱参数对切削过程的影响

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**关键词:** 聚晶立方氮化硼 刀具 硬态切削 倒棱

**摘要:** 研究了聚晶立方氮化硼(PCBN)刀具切削淬硬钢GCr15时,倒棱刃口几何参数(倒棱宽度和倒棱角度)变化对切削力、切削温度和锯齿形切屑形态的影响规律。结果表明:随着倒棱宽度的增大,主切削力、径向力和切削温度逐渐增大,但倒棱宽度对切屑锯齿化程度影响并不明显;随着倒棱角度的增大,主切削力、径向力和切削温度随之增大,径向力增加尤为显著,倒棱角为 $20^{\circ}$ 时,切屑锯齿化程度最低。When polycrystalline cubic boron nitride (PCBN) cutting tools machine hardened steel GCr15, the effects of the chamfered edge parameters (including chamfer width and chamfer angle) on the cutting force, cutting temperature and saw-tooth chips morphology were investigated respectively. The results indicate that the main cutting force, radial force and cutting temperature increase gradually with the increment of chamfer width, but the chamfer width has less effect on the serrated saw-tooth chips. It is shown that the cutting force, radial force and cutting temperature increase with the enlargement of chamfer angle, and the radial force increases more significantly. As the chamfer angle is  $20^{\circ}$ , the chips has the lowest serration.

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