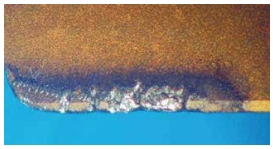
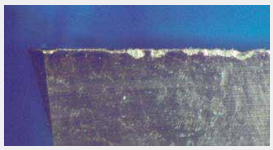
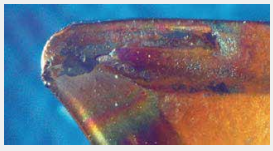
Troubleshooting in Insert 刀片加工異常原因及對策

Trouble / 情況	Occurrences / 原因	Countermeasures / 對策
 Thermal Crackin 熱裂	Intermittent heating of the cutting edge. High speed, high volume metal removal. 切削角間歇性高熱，高切削線速度和較大的金屬移除量，造成的熱裂	1.Use heat resistant grades 使用具有耐熱阻抗的刀片材質 2.Use positive or large rake tools 使用正角或較銳利的刀片 3.Increase nose radius 使用較大半徑刀口的刀片 4.Reduce speed, feed or depth of cut 降低切削線速度、進給或切深
 Chipping 脆裂	Cutting tool excessively brittle. 刀片材質太硬脆	1.Use tougher grades 使用韌性較高的刀片材質 2.Use negative or smaller rake tools 使用負角或較鈍的刀片 3.Increase nose radius 使用較大半徑刀口的刀片 4.Use increased edge land 使用較大刀口平台的刀片 5.Increase cutting speed 增加切削線速度
 Excessive Flank Wear 過度磨耗	Cutting tool too soft. 刀片材質太軟 Surface speed too fast. 切削線速度太快	1.Use harder and more wear resistant grade 使用較硬或較耐磨的刀片材質 2.Reduce cutting speed 降低切削線速度 3.Increase feed 增加進給 4.Use coolant 使用冷卻液
 Notching 凹陷	Cutting material working harden cause serious wear of insert. 被加工材料產生硬化而造成刀片嚴重磨損	1.Increase approach angle 增加進刀時切削邊隙角 2.Reduce cutting speed and feed 降低切削線速度及進給量 3.Use high lubricity coolant 使用潤滑性較高的冷卻液
 Built-Up-Edge 積屑	Cutting speed too slow for material being machined. 就被加工材料而言，切削線速度太低	1.Increase cutting speed 提高切削線速度 2.Use friction reducing grade 使用摩擦力較低的刀片材質 3.Use high lubricity coolant 使用潤滑性較高的冷卻液
 Deformation 變形	Heavy feeds or higher cutting speed. 切削線速度太快或是進給量太大	1.Reduce cutting speed or feed 降低切削線速度或進給量 2.Use polished tools to reducing friction 使用拋光刀片降低磨擦阻力 3.Use more heat resistant grade 使用更高耐熱阻抗的刀片材質
 Crater Wear 熱裂	Excessive heat and pressure welding of chip to rake. 切削產生的高溫和高壓，造成鐵屑焊黏在刀口上	1.Use a harder grade 使用較硬的刀片材質 2.Reduce cutting speed and feed 降低切削線速度及進給量 3.Use high lubricity coolant 使用潤滑性較高的冷卻液

＊ Pictures from Kennametal Tooling Catalogue