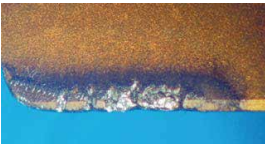
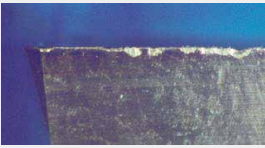
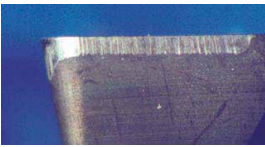


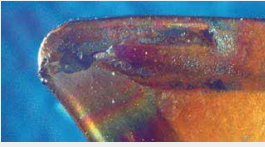



Trouble / 情況	Occurrences / 原因	Countermeasures / 對策
 <p>Thermal Crackin 熱裂</p>	<p>Intermittent heating of the cutting edge. High speed, high volume metal removal. 切削角間歇性高熱，高切削線速度和較大的金屬移除量，造成的熱裂</p>	<ol style="list-style-type: none"> 1. Use heat resistant grades 使用具有耐熱阻抗的刀片材質 2. Use positive or large rake 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
 <p>Chipping 脆裂</p>	<p>Cutting tool excessively brittle. 刀片材質太硬脆</p>	<ol style="list-style-type: none"> 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
 <p>Excessive Flank Wear 過度磨耗</p>	<p>Cutting tool too soft. 刀片材質太軟</p> <p>Surface speed too fast. 切削線速度太快</p>	<ol style="list-style-type: none"> 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
 <p>Notching 凹陷</p>	<p>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</p>	<ol style="list-style-type: none"> 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
 <p>Built-Up-Edge 積屑</p>	<p>Cutting speed too slow for material being machined. 就被加工材料而言，切削線速度太低</p>	<ol style="list-style-type: none"> 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
 <p>Deformation 變形</p>	<p>Heavy feeds or higher cutting speed. 切削線速度太快或是進給量太大</p>	<ol style="list-style-type: none"> 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
 <p>Crater Wear 熱裂</p>	<p>Excessive heat and pressure welding of chip to rake. 切削產生的高溫和高压，造成鐵屑焊黏在刀口上</p>	<ol style="list-style-type: none"> 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

* Picture from Kennametal Tooling catalogue