

坩埚常见问题分析 Analysis of Common Problems in Crucibles

问题描述 Problem description	原因分析 Analysis of causes
1、星状裂状 Star-shaped fissure	
1) 在坩埚的底部 At the bottom of the crucible	1) 由于热膨胀导致 Due to thermal expansion
2) 在坩埚的侧面 On the side of the crucible	2) 通常为加热后楔形物膨胀所致 It is usually caused by the expansion of the wedge-shaped object after heating
2、洞/破口 Hole/break	
1) 在尚未变薄的坩埚壁上出现大洞 A large hole appeared on the wall of the crucible that had not yet thinned	1) 大部分是由重击所导致，如：把铸锭扔进坩埚里 Most of them are caused by heavy impacts, such as: throwing the ingot into the crucible
2) 小孔 Ostiole	2) 通常是由于裂缝所导致。需要暂停使用并寻找裂缝 It is usually caused by cracks. It is necessary to suspend the use and look for cracks
3、纵向裂纹 Longitudinal crack	
1) 坩埚在长时间使用之后，坩埚壁出现纵向裂纹，并且裂纹处的坩埚壁较薄。 After long-term use, longitudinal cracks appeared on the crucible wall, and the wall at the crack area was relatively thin.	1) 坩埚即将或已经达致使用寿命时，坩埚壁会变薄，承受不了过大的外力 When a crucible is about to reach or has already reached the end of its service life, the crucible wall will become thinner and cannot withstand excessive external forces
2) 初次使用（或接近全新）的坩埚在下沿出现裂纹并贯穿坩埚底部。Cracks appeared at the lower edge of the crucible that was used for the first time (or nearly brand new) and penetrated through the bottom of the crucible.	2) 将冷却的坩埚放高温的热火中，或当坩埚在冷却的状态下，对坩埚底部进行过快加热。该损坏情况一般还会伴随釉面剥落的现象 Place the cooled crucible in a high-temperature heat or heat the bottom of the crucible too quickly when it is still in a cooled state. This kind of damage is usually accompanied by the phenomenon of glaze peeling off
3) 由坩埚顶部边缘延伸的纵向裂纹。 Longitudinal cracks extending from the top edge of the crucible.	3) 对坩埚进行过快加热所造成，尤其是当坩埚底部和下沿的受热速度远远快于顶部的时候。在坩埚顶部边缘的楔入操作也容易造成该损坏。不适合的坩埚钳或者对上沿的敲击也会造成该损坏 This is caused by excessive heating of the crucible, especially when the heating rate of the bottom and lower edge of the crucible is much faster than that of the top. The wedging operation at the top edge of the crucible is also prone to cause this damage. Unsuitable tongs or knocking on the upper edge can also cause this damage
4) 坩埚侧面的纵向裂纹（裂纹没有延伸到坩埚顶部或底部） Longitudinal cracks on the side of the crucible (the cracks do not extend to the top or bottom of the crucible)	4) 通常由内部压力所造成。如：将冷却的模料横向放入坩埚中，当楔形铸料横向放入坩埚中，当楔形铸料在受热膨胀后就会造成该种损坏 It is usually caused by internal pressure. For instance, when the cooled mold material is placed horizontally into the crucible, if the wedge-shaped casting material is placed horizontally into the crucible and expands due to heat, this kind of damage will occur

