

## 发动机曲轴箱轴承座裂解加工数值分析

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**摘要** 预先精确计算裂解力参数,对于裂解设备设计及工艺过程的制定至关重要。应用MSC.MARC软件对捷达轿车发动机主轴承座(以RuT380材料为例)起裂过程进行数值模拟,得出了裂解力与J积分的关系曲线。根据J积分值与断裂韧性的关系,确定了临界J积分,采用线性插值的方法获得了裂解力,并进行了实验研究。实验结果表明:此方法也适用于不同结构、不同材料的其他分体类零件裂解加工时裂解力的确定。

**关键词** [材料合成与加工工艺](#); [发动机](#) [主轴承座](#) [裂解力](#) [蠕墨铸铁](#) [数值分析](#)

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## Numerical analysis on fracture splitting technology of main bearing block of engine

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**Abstract** Pre-calculating precisely the parameters of the splitting force is significant for the design of the splitting equipment and working out the technological process. The software MSC.MARC was used to simulate the splitting process of the main bearing block(its material is vermicular graphite cast iron as example) in Jetta car engines, and the splitting force versus J-integral relationship was obtained. The critical J integral value was determined from the J integral versus fracture toughness relationship, and the splitting force was derived by the linear interpolation method. The experimental study was performed and results show that the proposed method can be used to determine the splitting for the other splitting parts with different shapes and materials.

**Key words** [materials synthesis and processing technology](#) [engine](#) [main bearing block](#) [fracture splitting force](#) [vermicular graphite cast iron](#) [numerical analysis](#)

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