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基于相差轨迹的三维标注缺失尺寸推荐

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Recommendation of 3D missing dimensions based on differential locus

摘要 图/表 参考文献 相关文章 (15)

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摘要 为保证三维尺寸标注的完整,研究了零件缺失尺寸的推荐方法。在轨迹相交法的基础上,根据轨迹生成规则建立了缺失尺寸与相差轨迹之间的映射关系,通过逆向推理轨迹相交规则建立了相差轨迹的生成规则。以尺寸标注数目最少为原则,通过求取相差轨迹建立了几何基元的最少缺失尺寸提取流程。在刚性体识别法的基础上,通过分析刚性体的等价定位元组的固定条件,建立了刚性体间的缺失尺寸提取算法。给出了零件的三维缺失尺寸推荐的总体流程,并以一个尺寸标注模型为例演示了缺失尺寸的推荐过程,验证了算法的有效性。

关键词 : 尺寸推荐, 缺失尺寸, 当前轨迹, 相差轨迹, 刚性体合并

Abstract : To achieve a complete 3D dimensioning for part model, a recommendation method of Missing Dimensions (MD) was investigated. On the basis of locus intersection method, the mapping relationship between MDs and differential locus was established according to the generation rules of locus. The generation rules of differential locus were proposed based on reverse reasoning of locus intersection. After determining the differential locus, the extracting process of MDs for a geometric element was developed based on the principle of minimum dimensions. Based on the rigid body recognition method, the extraction algorithm of MDs between rigid bodies was proposed according to the fixation of rigid bodies' equivalent group, and the overall process of recommending MDs for a part was given. A dimensioning model was taken as an example to demonstrate the process of recommending MDs, which illustrated the feasibility of the approach.

Key words : dimensions recommendation missing dimensions present locus differential locus rigid body's combination

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