The Study in Accuracy and Assemblability of Mating Parts Made by RP

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ABSTRACT

The link of RP technology with CAD provide the the quick creation of 3D product and also improve significantly the traditional product design and manufacturing time. As to its product accuracy it mainly depends on the material nature and the parameters in manufacturing process. The main concern in this research is how to achieve the best assemblability of a pair of mating part made by RP process. Taguchi method is adopted here to have the optimum process parameters in 3DP-Z402C machine for making the mating parts. We use L9 orthogonal chart and nominal-the-best with 4 factors and three level. The factors are Layer thickness, chordal tolerance, x-bleed compensation, y-bleed compensation. The quality characteristics is pin (or hole) diameter which is measured by CMM. Finaliiy the diameter tolerance is analyzed by using ANOVA.

Keywords : Rapid Prototyping, STL, Layer thichness, Taguch method

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