عنوان مقاله:

Numerical analysis of forces on locating agents in fixturing of flexible workpieces with freeform geometry

محل انتشار:

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نویسنده:

Hadi Parvaz - *Assisstant professor, Department of Mechanical Engineering, Shahrood University of Technology Shahrood, ۳۶۱۹۹-۹۵۱۶۱, Iran*

خلاصه مقاله:

The problem of calculating reaction forces on six locators of fixture is statically indeterminate which can't be solved by considering compatibility relations (deformations) due to the freeform geometry. In this study, finite element analysis was employed for determination of reaction forces on the locating agents of a dedicated fixture. For this purpose, a freeform sheet metal workpiece is chosen as the case study and FE analysis was conducted for calculation of reaction forces using Abaqus software by considering the clamping forces as the external wrenches. Also, the effects of locating, clamping location and wrenches were studied on the produced reaction forces. The appropriateness of the designed locating and clamping plans beside the reasonable clamping forces confirmed the efficiency of method.

کلمات کلیدی:

Fixture design, flexible workpiece, force analysis, free-form geometry, locating system

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