

Designing Fixture Loading Strategies

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Fixtures are designed to hold parts accurately in specified positions and orientations in order to facilitate various manufacturing objectives, such as finishing and assembly. However, when parts are placed in fixtures, they sometimes jam (imperceptibly) before all intended contacts are achieved. When this occurs, the accuracy of the part's position and orientation and, importantly, all subsequent operations, is compromised. In an attempt to eliminate this problem, we have developed a method based on rigid body dynamics to design robust, non-jamming fixture loading strategies.