عنوان مقاله:

Designing Tolerance of Assembled Components Using Weibull Distribution

محل انتشار:

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خلاصه مقاله:

Tolerancing is one of the most important tools for planning, controlling, and improving quality in the industry. Tolerancing conducted by design engineers to meet customers' needs is a prerequisite for producing high-quality products. Engineers use handbooks to conduct tolerancing. While use of statistical methods for tolerancing is not a new concept, engineers often use known distributions, including the normal distribution. However, if the statistical distribution of the given variable is unknown, a new statistical method will be employed to design tolerance. Therefore, in this study we want to offer a proper statistical method for determining tolerance. The use of statistical methods to design tolerance is not a new concept; however, flexible use of statistical distributions can enhance its performance. In this regard, Weibull distribution is proposed. To illustrate the proposed method first technical characteristics of production parts were selected randomly, and then manufacturing parameters were determined using maximum likelihood method. Finally, the Goodness of Fit test was used to ensure the accuracy of the obtained results.

کلمات کلیدی:

Tolerancing, Weibull distribution, Statistical quality control