Optimization of Machining Parameters for Face Milling Operation in a Vertical CNC Milling Machine

Abstract:

The Taguchi method is a powerful problem solving technique for improving process performance, yield and productivity. Face milling in a CNC milling machine involves many parameter affecting the MRR. An analysis of significant process parameters of face milling process using CNC milling machine is made in this paper. The parameters considered are cutting speed, feed and depth of cut and the response considered is MRR.

Using Taguchi analysis, the effect of various process parameters at different levels on face milling is analyzed and optimal settings of the various parameters have been accomplished. The outcome of this paper is the optimized process parameters of the face milling process in CNC machine which leads to improved process performance, reduced process variability and thus maximizing MRR.