A Study on Characteristics of Parameters Influencing Internal Grinding Process with MRR

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Abstract

Objective: To generate the information about the process of internal grinding applied to envisage the grinding performance and accomplish the optimal operating procedure characteristics. In recent engineering and technology surface finish and precision are playing a major role in the manufacturing organizations. **Method/Analysis:** Different methods such as burnishing, honing, lapping and grinding are exercised for accomplishing good quality of surface finish. Grinding is the appropriate method for improving the surface finish and precision concurrently between all of those constraints. Recently lot of researches has been carried out on surface grinding process, but only few articles were elaborately described about the internal grinding procedure. In view of the fact the internal grinding processes was chosen as a main tool to characterize throughout this study. **Findings:** Similar to surface grinding various process parameters are used to get high surface finish and it could be achieved for the various components. This article relating the possibilities to get greater surface finish in internal grinding process and also it demonstrates the machining parameters involved in this process. **Application/Improvements:** The machining parameters involved in these abrasive machining technologies were speed, feed, depth of cut and material removal rate and also these constraints were considered throughout the theoretical investigation.

Keywords: Internal Grinding, MRR, Process Constraints, Surface Roughness, Surface Finish

1. Introduction

Grinding is an operation of material removal process used to produce the required shape and get the finished products which was prepared by metals or any other formed materials. Grinding process is a metal cutting operation which is generally carried out through abrasive particles where rigidly mounted on a rotating wheel of the machine. The pattern of the grinding wheel is mostly in the shape of disk and it balanced precisely for high speed

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movements¹.Each grain of the abrasive in the grinding wheel used serves as a microscopic single point cutting edge, which shears a tiny chip and helps in giving better surface finish and essential quality that shows the real value of the product. The precision and surface finish through the grinding operations is usually ten times better than turning or milling operations performed in the similar machines. In the production process surface finish considered as the most significant productivity reaction and it also depends on the quality of the work