

NED UNIVERSITY JOURNAL OF RESEARCH



EVALUATION OF FINISH TURNING INSERTS

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Volume: **1**

No: **1**

Pages: **49-60**

Date: **January 1994**

Abstract:

The need for finishing operations have become even more significant with the continuing trends in near net shape manufacturing. This requires finish machining as the only form of machining aimed at imparting quality into the manufactured component. Accordingly, tool inserts having two different nose radii were purchased from a wide range of commercially available carbide/cement chip groove combinations and tested for machining performance. Finish machining operations are characterized by high cutting speeds, low feeds, and low depth of cut. In our experimental work, we decided to cover a wide range for both the feed and the depth of cut. Chips were collected and mounted on chip control charts and cutting forces were recorded for all test conditions, in order to develop a total understanding of the various chip flow mechanisms and the corresponding cutting power rates and surface finish requirements for designing optimum chip grooves.

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