

Purpose The main purpose of the study was to analyze the relationship between cutting forces and tool wear during turning of steel 30CrNiMo8. **Design/methodology/approach** It is very important to find the optimal machining conditions to increase the tool life and to improve product quality. Width of tool wear was measured by universal microscope. **Findings** During experimental procedure, one chip shape was obtained for the given machining parameters. Results showed negligible tool wear for the given experimental conditions. In other words, the tool wear is negligible for one chip shape. **Originality/value** To increase tool wear, there are different chip shapes.