SUMMARY

Muhammad Faisal I. R., Department of Mechanical Engineering, Faculty of Engineering, Universitas Brawijaya, May 2016, The Effect of Depth of Cuts Variations to The Surface Roughness of SKD 11 Steel on Cylindrical Grinding Machine Longitudinal Grinding Process, Academic Supervisor: Endi Sutikno and Ari Wahyudi.

Cylindrical grinding machine is a tool that serves as a workpieces finishing process which having a cylindrical shape, a cylinder-rise, tapered and so forth. The working principle is almost the same as the principles of the lathe. The workpiece is clamped, then do finishing workpiece with the help of a chisel. Sculpture in cylindrical grinding machine is an abrasive circular solid. Steel SKD 11 are known as high-quality steel that is made to be applied as a cutting tool, forming tool, and a mold. To be able to produce a quality of surface roughness, then there are several factors, including the election of a chisel, feeding speed, depth of cut, feeding directions, workpiece, the chisel form an the operator.

The objective of this study was to determine the effect of depth of cuts variations to the surface roughness of skd 11 steel on cylindrical grinding machine longitudinal grinding process.

Results from this study showed that the value of the depth of the cut affect the results of the surface quality of the machining process. The greater the dept of cut so chips thickness generated will also increase, resulting in surface roughness will also increase. Values of surface roughness highest in steel SKD 11 with depth of cut of 0.04 mm with a surface roughness value of an average of 1,046 µm. While the value of the surface roughness was lowest for the steel SKD 11 with a depth of cut of 0.01 mm with a surface roughness values by an average of 0.677 µm.

Keywords: Cylinder grinding, depth of cut, SKD 11, chips thickness, surface roughness.