Abstract

The repair process on components of a tool, machining process is needed, for example is turning machine. Turning process is used to decrease outside diameter from workpiece. But, not at all of the workpiece cannot be turned by using a turning machine in common way.

This final project raise problem from PT. United Tractors Tbk, that is about a workpiece which cannot be turned by using turning machine in common way. So that, the necessary equipment could be used in such condition. In this final project is contained about design and manufacturing from reboring hole pin machine. The workpiece is confined on pin hole from bucket. It has a big condition. This machine is used to make inside diameter from hole pin be bigger than before, it purpose to overcome unwell condition and have ellipse form of hole pin. Reboring hole pin machine is made portable type which the dimension can be place with the workpiece. In manufacturing process is needed a design process by drawing design of it.

Beside that, it is needed to calculate the components, it is like motor-gearbox as prime mover, shaft for chisel, screw shaft, bearings, coupling. From the calculation of it, capacity of motor-gearbox is 1 hp with 1400 rpm and it has gear ratio 1:40. This machine can cut worksheet is 1 mm with material is St 70. After doing a verification of machine by using “melt steel”, it can cut worksheet until 3 mm. The minimum diameter which can cut is 50 mm and the maximum diameter is 170 mm.

Key word : Turning process, St 70, mild steel, reboring hole pin, bucket, motor-gearbox.