RANCANG BANGUN JIG
UNTUK PROSES GURDI PERMUKAAN SILINDRIS
DENGAN AUTODESK INVENTOR

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ABSTRACT

This research is the Design of a Jig tool in drilling cylindrical objects or what we are familiar with Gurdi's work. This study also aims to examine the effect of the compressive force on the object and the strength of the material. Finite element analysis was carried out by Material Comparison to measure how well the material is to Von Mises stress, deformation and safety factor. The materials used in the finite element analysis process include: Aluminum 6061 Material, Steel Material, and Iron Cast Material, with the von misis value of Jig material being 93.44 MPa, 93.33 MPa, and 93.39 MPa, respectively. The results showed that by varying the 3 types of materials that have different yields and tensions, they were simulated on the Autodesk Inventor Professional 2017 software to produce the best material, namely Steel Material with a Von Mises result of 93.44 MPa with a deformation of 0.01059 mm and a large safety factor consideration of 2.68 ul. . After carrying out the analysis stages of 3 materials, the best material is taken to be used as a product or product prototype for research purposes or for learning purposes as well as the production of a work aid in the future.

Keywords: Autodesk Inventor 2017, jig & fixture, Aluminium 6061, Steel, Iron Cast, Finite Elements Analysis.