

**DESIGN OF AXIAL LOAD FATIGUE TESTING TOOLS WITH A MAXIMUM POWER OF 370MPA USING THE VDI 2221 METHOD**

**ABSTRACT**

*Fatigue test equipment is a tool designed to measure how much yield strength of a material. Fatigue failure occurs in a dynamic load condition after a long usage period. The stage of material fatigue consists of crack initiation that starts in areas with high stress concentrations, crack growth and final fractures. Several types of components in a structure that undergo axial and radial dynamic loading such as the shaft component and other. Failure due to fatigue is the main cause of damage. The objective to be achieved in this research is to design a Tired test tool with axial load using ASTM E-8 testing standards. The fatigue test equipment specifications are designed for testing ST 37 material with a maximum yield strength of 370 MPa. The maximum force planned from this fatigue test device is 7835 N with a safety factor of 5. The method used to design this Tired test tool is VDI 2221 in order to get the best design so that it can proceed to making the tool.*

*Keywords: Fatigue Test, axial load, ASTM E-8 standard, ST 37 material, VDI 2221 method.*

