

**2720 / 5000 Hasil terjemahan Prototype of optimizing tap pad and back pad on adaptive wheelchair PT. MAK for mass production line with IKM in Yogyakarta**

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**ABSTRACT**

The valley of innovation death will occur if UNY's innovation research cannot be reconciled by industry or vice versa. Good innovation is a problem that exists in the industry and is solved with the concept of Academic, Business, Government, and Community (ABGC). This research is the answer to the complaints of the industry, namely PT. MAK to complete how the tap pad and back pad of the wheelchair (wheelchair) can be accessible for people with disabilities (adaptive). So far, the production of wheelchairs is dominated by PT. MAK because the only domestic company that produces wheelchairs for people with disabilities but to meet consumer needs is still lacking. Small and Medium Industries (IKM) can become partners for the mass production line of wheelchair parts, especially tap pads and back pads. Referring to the basic reason why this research is important, it is to bring the industry closer to UNY so that they can collaboratively carry out research and development innovations. In particular, this research has the objectives of (1) Exploring the realtime simulation of the tap pad and back pad design owned by PT. MAK by measuring strength, safety, and calculating comprehensive production costs; (2) Designing optimum tap pads and back pads based on licensed software to produce a Detail Engineering Design (DED) with strong, safe, and low production costs; (3) Develop a prototype tap pad and back pad by optimizing the role of SMEs in Yogyakarta; and (4) Creating a detailed and comprehensive line flow for mass production tap pad and back pad involving collegial cooperation (ABGC) between UNY, PT. MAK, and IKM Yogyakarta. The research method uses the line mass production method developed by the automotive industries with 5 main stages, namely brainstorming, Detail Engineering Design (DED), prototyping, final product design, and promotion. The implementation of this research will be carried out in three places, namely FT UNY as a research and development prototype, manufacture of dies and molds and product testing, PT. MAK as a production supplier and a place for wheelchair assembly, and Metal Casting IKM as a place for mass production of tap pads and back pads with UNY students who are interns at IKM.

*Kata Kunci: tap pad, back pad, adaptive wheelchair, persons with disabilities, mass production line, ABGC collaboration*