

**RANCANG BANGUN MESIN PRESS PNEUMATIK BUNDEL BUKU
KAPASITAS 250 HALAMAN BERBASIS MIKROKONTROLER
ARDUINO UNO**

Yusuf Azizi Rahman, Dhimas Satria, Erny Listijohrini

Jurusan Teknik Mesin, Fakultas Teknik, Universitas Sultan Ageng Tirtayasa

Jl. Jendral Sudirman Km.3, Cilegon-Banten 42435.

*Email : yusuf.azizi03@gmail.com

Abstrak

Buku merupakan media informasi yang digunakan diseluruh dunia. Menurut KEMENPRIN pertumbuhan industri grafika meningkat 5,3% dan pada tahun 2013 tercatat 33.199.557 eksemplar buku terjual di pulau jawa. Buku merupakan sekumpulan kertas tercatat yang dijadikan satu dengan teknik jilid. Penjilidan sendiri terdapat banyak jenisnya. Beberapa jenis teknik jilid dilakukan tahap penekanan bundel buku. Pada penelitian ini merancang dan membangun mesin press bundel buku. Perancangan dimulai dengan permintaan percetakan (*requirement list*), *house of quality*, penentuan spesifikasi, fungsi, morfologi, konsep hingga dihasilkan pemilihan varian terbaik. Sistem penekanan bundel buku yang digunakan mengikuti kebutuhan percetakan dengan sistem semi otomatis. Mesin dibuat dengan menimbang kebutuhan percetakan dan harga agar dibawah pasar. Pada penelitian ini terpilih sistem tekan pneumatik dengan kapasitas 250 halaman yang dikontrol dengan arduino UNO. Penelitian ini membahas pemilihan dan menghitung komponen pneumatic serta rangka, pemilihan komponen kontrol, mensimulasikan hasil pemilihan komponen dan kontrol. Dari hasil rancang bangun didapatkan biaya komponen sebesar Rp. 2.565.500.

Kata Kunci : *Quality function development*, Pneumatik, Arduino UNO, Simulasi Proteus 8 profesional

**DESIGN OF MACHINE PRESS PNEUMATIC OF BUNDLE BOOK
CAPACITY 250 PAGE BASED ON ARDUINO UNO
MIKROKONTROLER**

Yusuf Azizi Rahman, Dhimas Satria, Erny Listijohrini

Mechanical Engineering Major, Engineering Faculty, Sultan Ageng Tirtayasa
University

.Jendral Sudirman.St Km.3, Cilegon-Banten 42435.

*Email : yusuf.azizi03@gmail.com

Abstract

Books are information media that are used throughout the world. According to KEMENPRIN the growth of the graphics industry increased by 5.3% and in 2013 33,199,557 books were sold on the island of Java. The book is a collection of recorded papers put together by binding technique. Binding itself there are many types. Several types of binding techniques are carried out in the book bundle suppression stage. In this research, designing and building a book bundle press machine. The design starts with the demand for printing (requirement list), house of quality, determination of specifications, functions, morphology, concepts to produce the best variant selection. The book bundle suppression system used follows the needs of printing with a semi-automatic system. The machine is made by weighing the needs of printing and prices to be below the market. In this study selected a pneumatic press system with a 250 page capacity that is controlled by Arduino UNO. This study discusses the selection and counting of pneumatic components as well as the framework, the selection of control components, simulating the results of component selection and control. From the design results obtained component costs of Rp. 2,565,500.

Keyword : Quality function development, Pneumatic, Arduino UNO and Proteus 8 profesional simulation