



## **ABSTRACT**

*The development of the automotive industry is very rapid. PT. Elangperdana Tire Industry (EPTI) is one of the automotive manufacturers in Indonesia. PT. EPTI produces tubeless tires for cars and trucks. In the manufacture of tires there are various types of processes, one of which is building. The building process uses 2 types of machines, namely first stage building and second stage building. In the first stage building, the preparation of a green case is carried out. In the preparation of the green case, there is a side wall cutting process that is less effective because it requires operator assistance in cutting. Therefore, it is necessary to cut side wall tools to facilitate the process of preparing the green case.*

*The design is done by designing a side wall cutting tool using autodesk inventor software. In addition, it is also necessary to select the required standard parts such as pneumatic cylinders, linear guide rail, and cutting tool frames. Collecting and calculating data is needed to support the design process of side wall cutting tools.*

*Based on the results of the design of side wall cutting tools, pneumatic cylinders used have bore size specifications of 32 mm, rod size 12 mm, and 200 mm stroke length. The trunk frame used is a 100 mm x 100 mm IWF profile steel which has a surface area (A) of 2190 mm<sup>2</sup>. The bolt used is M14 × 2 mm as many as 8 pieces. The design of side wall cutting tools is expected to accelerate the preparation time of the green case and can reduce work accidents.*

*Keywords : side wall, design.*



## INTISARI

Perkembangan dunia industri otomotif sangat pesat. PT. Elangperdana Tyre Industry (EPTI) merupakan salah satu produsen otomotif di Indonesia. PT. EPTI memproduksi ban *tubeless* untuk mobil dan truk. Pada pembuatan ban terdapat berbagai macam proses salah satunya adalah *building*. Proses *building* menggunakan 2 jenis mesin yaitu *first stage building* dan *second stage building*. Pada *first stage building* dilakukan penyusunan *green case*. Pada penyusunan *green case*, terdapat proses pemotongan *side wall* yang kurang efektif karena memerlukan bantuan operator dalam pemotongannya. Oleh karena itu diperlukan alat potong *side wall* untuk mempermudah dalam proses penyusunan *green case*.

Perancangan dilakukan dengan mendesain alat potong *side wall* menggunakan *software autodesk inventor*. Selain itu diperlukan juga pemilihan *part-part* standar yang dibutuhkan seperti silinder pneumatik, *linear guide rail*, dan rangka alat potong. Pengumpulan serta perhitungan data diperlukan untuk menunjang proses perancangan alat potong *side wall*.

Berdasarkan hasil perancangan alat potong *side wall*, silinder pneumatik yang digunakan memiliki spesifikasi *bore size* 32 mm, *rod size* 12 mm, dan panjang *stroke* 200 mm. Rangka batang yang digunakan adalah baja profil IWF dengan ukuran 100 mm x 100 mm yang memiliki luas permukaan (A) adalah 2190 mm<sup>2</sup>. Baut yang digunakan adalah M14 × 2 mm sebanyak 8 buah. Perancangan alat potong *side wall* diharapkan mempercepat waktu penyusunan *green case* dan dapat mengurangi kecelakaan kerja.