# INTISARI

Pemeriksaan bagian – bagian kereta api menjadi sangat penting untuk meningkatkan operasional kereta api, salah satu pemeriksaannya adalah bagian roda kereta api. Pemeriksaan roda kereta api meliputi diameter roda, profil roda, dan geometri roda kereta api. Perbedaan diameter roda dalam satu gandar, satu bogie dan satu gerbong diharuskan terkontrol setiap saat sesuai peraturan perkeretaapian.

Diameter roda kereta api dapat diketahui dengan dua cara yaitu pengukuran dinamis dan pengukuran statis. Pengukuran dinamis dilakukan ketika kereta api melewati sistem pengukuran yang telah dipasang di rel sedangkan pengukuran statis dilakukan selama proses perawatan roda, pengukuran statis ini dilakukan menggunakan *Wheel Diameter Gauge* (WDG). Agar alat ukur WDG tetap presisi maka WDG harus dikalibrasi dan tertelusur ke SI sesuai dengan ISO 17025. Tugas akhir ini dikembangkan metode kalibrasi yang baru yaitu menggunakan *Gauge Block*

Berdasarkan hasil pengujian dengan beberapa sample, kalibrasi menggunakan metode baru dapat dilakukan dengan rata - rata akurasi 99,98% dan presisi 99,93 % sehingga dengan metode baru dapat digunakan untuk mengkalibrasi *Wheel Diameter Gauge* WDG dengan akurasi dan presisi yang tinggi.

# *ABSTRACT*

*Inspection of train parts such as the inspections of train wheel is very important to improve train operation,. Inspection of railroad wheels includes wheel diameter, wheel profile, and railroad wheel geometry. The wheel diameter differences in one axle, one bogie and one carriage are determined according to railway regulations.*

*The diameter of the train wheels can be determined in two ways which are dynamic measurements and static measurements. Dynamic measurements are carried out when the train passes through a measurement system that has been installed on the rails, while static measurements are carried out during the wheel maintenance process. The static measurement is carried out using a Wheel Diameter Gauge (WDG). In order to maintain the accuracy of WDG measuring instrument, the WDG must be calibrated and traceable to the SI in accordance to ISO 17025. In this final project a new calibration of WDG method has been developed using Gauge Block*

*Based on the test results with several experiments, calibration using the new method achieved average accuracy of 99.98% and a precision of 99.93% so that the new method can be used to calibrate the WDG with high accuracy and precision.*

***Keywords:*** *Calibration, Trecibility, Wheel Diameter, Precision, Accurcy*