

# **ANALYSIS OF THE INFLUENCE OF VARIATIONS IN INTAKE WATER PIPE DIAMETER AND USE OF JET RANGER ON ENGINE PERFORMANCE ON THE VARIO 125 CC MOTORCYCLE**

By

**Enno Nur Rizky**

Automotive Engine Study Program

Department of Engineering

## **ABSTRACT**

This study aims to examine the performance, fuel consumption and wind velocity on a 125 cc Vario motorbike by varying the diameter of the air intake pipe and using a jet ranger, where the function of the jet ranger is to change the direction of the incoming wind which is initially linear (in the same direction) to spin (twist). From torque testing data obtained by not/using a jet ranger at Ø (26mm) experienced an increase of 8.4%, at Ø (31mm) there was an increase of 1.2% and at Ø (36mm) there was an increase of 1.6% and from power testing there was a significant increase in Ø (26mm) an increase of 3.5% in Ø (31mm) an increase of 2.9% and finally in Ø (36mm) an increase of 3.6%. For the fuel consumption test, there was an increase in fuel consumption for each diameter variation starting from Ø (26mm) which experienced an increase of 8.6% to Ø (31mm) which experienced an increase of 22.6% and finally at Ø (36mm) which experienced an increase of 21%. And for the wind velocity, there was an increase in wind velocity for each diameter variation starting from Ø (26mm) which experienced an increase of 7.7% to Ø (31mm) which experienced an increase of 1.6% and finally at Ø (36mm) which experienced an increase of 4.4%.

**Keyword :** *Air Intake Pipe, Jet Ranger, Torque and Power, Vario 125cc, Fuel Consumption, Wind Velocity.*