

# ***THE EFFECT OF VARIATION IN THE LENGTH OF THE FREE FLOW EXHAUST SILENCER ON THE PERFORMANCE OF THE 200 CC HONDA TIGER MOTORCYCLE ENGINE***

By

**Ivan Pradana**

*Automotive Engineering Study Program  
Engineering Departement*

## ***ABSTRACT***

*The use of motorcycles is extremely helpful in people's daily activities. As time passes and is often used by consumers, motorcycle engine performance begins to decrease from a standard state. That kind of situation encourages consumers to make an effort in order to restore or improve engine performance by increasing torque and power. Replacing the exhaust was one of the many ways to maximize the performance of the motorcycle. The users of a 4-stroke motorcycle often replaced the standard exhaust with a racing exhaust. This study was conducted to determine the torque and power generated from the use of a free-flow exhaust. Based on the results of motorcycle performance research, using a standard exhaust produced an average torque of 29.14 N.m. and power of 29.6 HP, using a 30 cm free flow silencer exhaust produced an average torque of 30.28 N.m. and power of 32.5 HP, using a 25 cm free flow silencer exhaust produced an average torque of 31.15 N.m. and power of 33.0 HP and using a 20 cm free flow silencer exhaust produced an average torque of 31.41 N.m. and power of 31.8 HP. By using free flow exhaust, the exhaust gas that generated from the combustion process will be removed perfectly, this caused the torque and the power of the motorcycle was increased compared to the use of standart exhaust.*

**Keywords** : *Exhaust, Free flow, Torque, Power, engine performance*