

**Analisa Pengaruh Perpindahan Panas *Thermoelectric Air Intake Cooler* Pada
Intake Manifold Di Kendaraan Roda 2 110cc**

*(Analysis the Effect Heat Transfer of Thermoelectric Air Intake Cooler on Intake
Manifold in 110cc 2-Wheeled Vehicles).*

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ABSTRACT

Motorbikes very helpful for humans activities and routines day or night. In this case, engine performance is needed to help human activities and routines to arrive on time. However, there are times when during the day the machine's performance is not optimal than at night, on the other hand, the day is a busy time for human activities and routines. Engine performance, especially on motorbikes, is influenced by many things, one of which is the influence of the intake air temperature in the combustion process. Heat transfer in this case will affect the intake air temperature because there will be temperature differences that occur in this process, especially in the intake manifold. In this research, a device that can cool the air was made where the device will be placed on the intake manifold using a peltier thermoelectric. The engine torque produced by TEC is 10.976 Nm and without TEC is 9.014 Nm while the engine power with TEC decreases by 1.666% of the engine power without TEC. In measuring the average temperature of the intake air using the Thermoelectric Air Intake Cooler, there is an increase in temperature of 0.595 ° C from the average temperature of the intake air without using a Thermoelectric Air Intake Cooler. However, the lowest temperature that can be reached by the Thermoelectric Air Intake Cooler device is 26.70 ° C, while without the device the lowest temperature that has been reached is 29.35 ° C. The use of TEC has not been effective for long time use, this is evidenced by the final temperature of the test temperature which is higher than without TEC

Keywords: Torque, Power, Thermoelectric Cooler, Temperature.