Analysis of the Use of Stainless Steel and Galvanized Exhaust Strainers for Changes in Temperature and Strong Levels of Exhaust Gas on 4 Stroke Motorcycles

Adityo, S.T., M.T. (*Supervisor*)

Moch. Octa Risyal S
Study Program of Automotive Mechanical Engineering
Department of Engineering

ABSTRACT

This research was conducted to determine differences in temperature and noise levels when using different exhaust filters in motorized vehicles. Variations used are stainless steel filters and galvanized filters. The results of this research are the temperature difference in the exhaust filter before and after testing on stainless steel material, namely, 1000 RPM 3.4°C, 2000 RPM 7.4°C, 3000 RPM 11.3°C, and 4000 RPM 11.2 °C while the temperature difference on the galvanized exhaust filter is, 1000 RPM 9.8°C, 2000 RPM 5.1°C, 3000 RPM 12.9°C, and 4000 RPM 21.5°C. Meanwhile, the sound results produced by the stainless steel exhaust filter are, 1000 RPM 73.8 dB, 2000 RPM 75.4 dB, 3000 RPM 78.8 dB, and 4000 RPM 82.0 dB while the sound produced by the exhaust filter is galvanized, namely, 1000 RPM 74.8 dB, 2000 RPM 77.5 dB, 3000 RPM 82.4 dB, and 4000 RPM 86.3 dB. Stainless steel exhaust filters at RPM 1000, 2000, 3000 meet the sound threshold standards produced by motorbike exhausts. This is different from galvanized exhaust filters where the sound produced at 1000 and 2000 RPM is still within the national standard threshold of 80 dB, meaning that it is recommended to use an exhaust filter below 3000 RPM so that it is within the specified sound threshold.

***Keywords**: Temperature, Noise, Stainless steel, Galvanized, Muffler, Muffler Diameter*