

Development of Air Multiplier for Application in the Automotive Industry

Nihar Jadhav¹, Akhilesh Madavi², Harsh Madnani³

Student, Department of Automobile Engineering, Dhole Patil College of Engineering, Pune, India^{1, 2, 3}

Abstract: *An experimental study on the application of air multiplier popularly known as bladeless fan in the automobile field and in the process comparing it with the conventional bladed fan that is used on a large scale in the industry are investigated. It consists of a brushless electric motor along with asymmetrically-aligned blades attached to a rotor. The frame is sloped at such an angle that by this pressure is increased. The surrounding air is rapidly sucked or 'entrained' inside resulting in a stronger air flow. By this process the air multiplier, multiplies the flow of air. This is how the air multiplier increases the flow of air by 15% compared to a conventional fan. The results of the comparison between the mainstream bladed fan and the bladeless fan are shown with the important factors such as efficiency, quietness, speed of the air flow and nature of the air flow are shown. These findings are then incorporated to apply the air multiplier in use in automobile industry to eliminate the use of bladed fans in the applications of HVAC fans, radiator fans, headlight cooling fans. The theoretical assumption is that the air multiplier will have a higher air flow output with a lower energy consumption. It will also have a continuous air flow and the issue of buffeting that is evident in the case of bladed fans will be nominated.*

Keywords: Entrained, HVAC (Heating, Ventilation and Air Conditioning), Buffeting, etc.

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