

DESIGN AND DEVELOPMENT OF AUTOMATED TYRE INFLATION SYSTEM

ABSTRACT

Roads are one of the most important modes of transport now a day's and cars are an integral part of it. The tyre is the most essential part of an automobile and it plays a crucial role in ensuring safe driving. Tyres lose air through normal driving-especially when run through potholes and permeation. Moreover, temperature changes are also one of the reasons why tyres lose air. Thus vehicles run with an under-inflated tyre which may cause accidents. Even then, almost every automobile on the road run with either one or more underinflated tyres. A detailed survey has come with result that a drop in tire pressure by just a few PSI leads to a reduction in mileage, tire life, safe driving and vehicle performance. Unawareness of the exact pressure requirement and sudden environmental changes are some of the causes of tyres running with improper pressure. The automatic tyre pressure controlling and the inflating system ensure correct pressure in the tyre.

This project aims to develop an automatic, self-inflating tire system. Such a system ensures that tires are properly inflated at all times. The compressor will supply air to all tyres via hoses and a rotary joint fixed between the wheel spindle and wheel hub at each wheel. The Rotary joint is an integral component of the system which has half of its part rotating with the wheel and the rest of the half part is stationary. Considering today's fast-growing environmental threats, oil price hikes and energy consumption, this system is most compatible and has potential improvement in mileage and tyre wear reduction which leads to an increase in the performance of the tyres in diverse conditions. This project aims to stabilize all automobile tires with ideal pressure, make the system automated, achieve satisfactory fuel efficiency, construct an affordable system, increase tire life and reduce accident rate by installing the system in vehicles.

PROJECT GUIDE:

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