PNEUMATIC WHEELCHAIR

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A Project Report
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Award of the Degree of Bachelor of Engineering in Mechanical Engineering
Of the Visvesvaraya Technological University, Belgaum

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ABSTRACT

Today advanced technology and its application are becoming popular. There are many vehicles designed for humans such as motor cycles, cars etc. These automobiles, in which one form of energy is converted into other form. In most of the vehicles chemical energy of fuels is converted into heat energy and this heat energy is converted into mechanical energy. Mechanical energy is finally utilized for driving vehicles. Combustion of fuels is becoming danger for nature. Animals and humans are facing breathing problems due to pollution.

It is necessary to develop such automobiles which will work with minimum pollution or pollution free. This concept leads to the development of non-conventional sources of energy for driving automobiles. Automobiles driven by electrical motors are one of the non-polluting vehicles. But this requires an electrical energy input. Some vehicles are designed and developed on storage energy carried along with vehicles. Examples of storage energy are storage batteries, compressed fluids etc.

In storage batteries energy is stored in the form of electrical energy and it is utilized whenever required. Compressed fluids have energy stored in it. This is utilized in actuators for expansion work. Air is fluid available in nature with no cost. It is also a non-polluting fluid and hence there is no danger of pollution. It has also less viscosity and surface tension.

In this project work, air is elected as working fluid for actuators.

Actuators are the devices which converts potential energy of air into mechanical energy. Compressed air is stored in the tank which is to be carried along with vehicle. This compressed air is supplied to actuators. The actuators may be linear or rotary. Mechanical energy at the output side of actuators I transformed to wheels of vehicles through mechanism. The distance travelled by vehicle depends upon potential energy in storage tank, efficiency of mechanism and load in vehicle. Vehicle selected is handicap's vehicle and is designed for carrying single person. We have made efforts for reducing weight of the vehicle so that loss energy is minimized.