



An automobile propels by hydraulic power without the use of traditional engine and fuel

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Abstract — an automobile propels by hydraulic power without the use of traditional engine and fuel doesn't comprise an I.C. engine. This vehicle is powered by a hydraulic Power pack [1] which includes electric DC motor (24V), hydraulic pump [2] and oil tank. This vehicle propels by a circulation of hydraulic oil [3]. The electric motor operates hydraulic Pump which is connected to the hydraulic servo motor [4] via high-pressure hoses. When hydraulic pump functions, it generates a vacuum at the inlet of the pump, which forces the hydraulic oil from the oil tank and delivers this oil to the pump outlet and forces it to the direction control valve [5]. The high-pressure oil is then applied at the inlet of the hydraulic servo motor. Then the high-Pressure oil impacts inside of the servo motor which results in output shaft to rotate and hydraulic servo motor develop torque. After passing through the servo motor, hydraulic oil delivers back to the oil tank. A torque is supplied from a hydraulic servo motor via transmission to propeller shaft which finally runs the differential [6]

Keywords: Hydraulic power pack, Hydraulic servo motor, batteries, transmission, Propeller shaft, Differential, Hydraulic pressure.

I. INTRODUCTION

1.1 General impression

Vehicles have been turned into extensive methods for transport in the life of today. It is an engine vehicle that produces destructive effects to the earth created by the I.C. engine vehicles running on gas or diesel or one that uses certain alternative fuels.

Our idea is to propel the vehicle without utilizing internal combustion engine. as there is no internal combustion engine there will not be any prerequisite of gasoline or diesel or one that uses certain alternative fuels. Our hydraulic idea based automobile concept can bring about no pollution, with far and away superior effectiveness and furthermore spare a great deal of fuel in today's fuel shortage world.

1.2 Motivation

As of late, the destructive gas that is released from a vehicle, such as a car (NO X, CO₂, etc.) have been becoming increasingly serious air pollution problems, due to which the breathing issues in human beings, greenhouse effect issues such serious issues may occur.

Energy sources of vehicles mainly compose petroleum items and a wide range of gasses. However, with reducing petroleum and gas assets and intensifying of noise contaminations, atmosphere contaminations as well as global warming issues, it becomes a consensus to us to develop eco-friendly emission free vehicle and decrease CO₂ emissions

II. Problem definition:

Throughout the world, there is increasing concern over the worsening quality of the air, particularly in and around large city areas. It has been found that much of the air pollution which exists, particularly in large cities, is caused by CO₂ emissions from the I.C. engines used in automobiles and trucks. The problem is extremely serious in the megacities like Delhi, Mexico etc.

Even where pollution from I.C. engines is not presently a considerable problem the huge portions of petroleum deposits are up with the aid of cars and trucks, is rapidly diminishing the recognized oil reserves of the Arena. Petroleum deposits are currently used as the foremost elements for ever increasing plastics production, synthetic fibers, and many other merchandise. To use these finite reserves of petroleum deposits as a source of fuel for automobiles, is broadly considered an inefficient and wasteful use of this precious resource.

Thus of the prior, serious research and experimentation has been undertaken to build up an energy efficient An automobile propels by hydraulic power without the use of traditional engine and fuel. Typically, today's existing vehicles are operated by using internal combustion engines. Internal combustion engines obtain their energy from the combustion of hydro carbon fuels like petrol, diesel or other alternative fuel with air. This combustion technique entails the chemical

reaction of hydro carbon fuels with oxygen due to which, CO₂ produces. This CO₂ is directly released to an environment, causes the air pollution and due to which the breathing problems in human beings, greenhouse effects such serious problems may takes place.

Air pollution is a critical public health problem in maximum urban cities of the developing world. Pollution stages in megacities including Delhi and Mexico City etc exceed those in any city in the industrialized countries. Studies show that air pollution in developing countries accounts for tens of thousands of excess deaths and billions of bucks in clinical prices and lost productiveness each year. These losses and the related deteriorating in a quality of life impose a huge burden on people in all sectors of society, but especially the poor. In most towns, gasoline cars are the primary source of lead aerosol and carbon monoxide, while diesel automobiles are a prime source of respirable particulate matter. In Asia and parts of Latin America and Africa -stroke motorcycles and 3-wheelers are also fundamental contributors to emissions of respirable particulate matter. Each gasoline and diesel cars contribute substantially to emissions of oxides of nitrogen. gas and diesel automobiles are also among the main sources of toxic air contaminants in maximum cities and are probably the most vital source of public exposure to such contaminants.

consequently, it is desirable to provide an An automobile propels by hydraulic power without the use of traditional engine and fuel, which overcomes the negative aspects listed above and which is efficient in operation, better performance and also save a lot of fuel in today's fuel shortage world.

III. Process planning

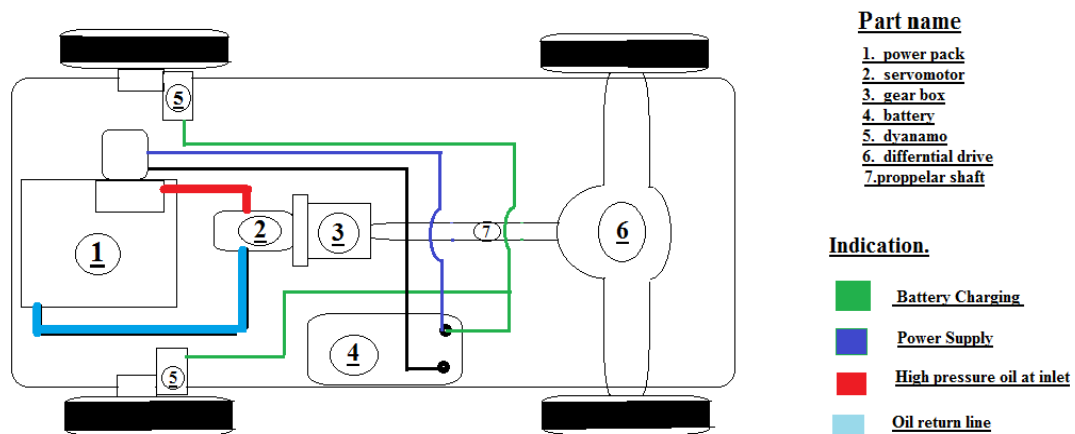


Figure: 1

Figure: 1 is a schematic block diagram of our concept of the invention. An automobile propels by hydraulic power without the use of traditional engine and fuel provided with an arrangement of associated batteries. Two batteries have been utilized, each contains of 12 V power supply. Whilst operation of the vehicle is favored, usually open switch is closed to apply energy from the batteries to the electric quantities of the vehicle system. This power is directly supplied to the 24V DC electric motor in the hydraulic power pack. The 24 volt DC motor runs at consistent speed. As the number of batteries required to operate the vehicle is increased, the burden of the car will increase in direct share, thereby reducing the useful load potential of the vehicle in that equal share. As a result, simply adding more batteries to obtain more range isn't always an ideal solution.

A 24 v DC electric motor is directly coupled to the hydraulic pump which provides the hydraulic oil flow. When hydraulic pump functions, it generates a vacuum at the inlet of the pump, which forces the hydraulic oil from the oil tank and delivers this oil to the pump outlet and forces it to the direction control valve. Directional control valve route the hydraulic oil to the inlet of the hydraulic Servo motor.

A hydraulic servo motor generates torque because of hydraulic oil performing with excessive stress closer to the rotor. Oil is then forced at the inlet port of the servo motor. Pressure is then carried out to the rotor, outcomes in the rotor and output shaft to rotate.

The pressure builds until enough torque is generated to rotate the output shaft in opposition to the burden. After passing via the servo motor, hydraulic oil again supplies back to the direction control valve from where it is supply returned to the oil tank..

The flywheel of the vehicle is attached to the output shaft of the servo motor. The flywheel is as usual further bolted with pressure plate. The output shaft of the gear box, also called as the top shaft is, as usual, splined to the clutch plate. A gear box has been provided in order to increase vehicle's load range. A torque is supplied from a hydraulic servo motor via transmission to propeller shaft which finally runs the differential. The speed of the vehicle can further be increased by providing the higher capacity pump.

IV. Result

The hydraulic mechanism has been developed by us for energy efficient an automobile propels by hydraulic power without the use of traditional engine and fuel. As from the Figure: 2, the flywheel is mounted on the shaft of the servo motor via bolts.



Figure: 2

As From the Figure: 3, we can see that that when the hydraulic oil passes through the hydraulic servo motor, a hydraulic servo motor generates a torque due to hydraulic oil pressure acting against the area of one tooth of the rotor. The flywheel which is mounted on the output shaft of the servo motor rotates on its higher RPM.



Figure: 3

As from the Figure: 4, we can see that the flywheel of the vehicle is attached to the output shaft of the servo motor. The flywheel is as usual further bolted with pressure plate. The output shaft of the gear box, also called as the top shaft is, as usual, splined to the clutch plate. A gear box Transmits the power to the propeller shaft via joint which is further transmitted to the crown pinion of the differential.



Figure 4

From the Figure: 5, we can see that the torque developed by the Servo motor is supplied to via transmission to the propeller shaft. A propeller shaft drives the differential gear arrangement which finally drives the rear wheels.



Figure: 5

V Conclusion

An automobile propels by hydraulic power without the use of traditional engine and fuel is definitely more environmentally friendly than internal-combustion vehicles. It is based on a hydraulic system and also results in better efficiency. As the petrol, diesel and gasoline fuel cost goes all time high but this hydraulic vehicle does not comprise an internal combustion engine. So there will not be any requirement of costly fuels like petrol, diesel and gasoline. This vehicle provides a vehicle which is efficient in operation, better efficiency and which is capable of being driven and also saves a lot of fuel in today's fuel deficit world. An automobile propels by hydraulic power without the use of traditional engine and fuel. An eco-friendly vehicle promises a practical, efficient, pollution free, noise free, emission free vehicle for coming era.

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