

# **SIMULATION & FABRICATION OF HYDRAULIC POWER BOOST SYSTEM**

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## **ABSTRACT**

Vehicle acceleration is the most important phenomenon used to characterize a vehicle. The accelerator pedal is pressed which is in turn directly connected to the carburetor or the injector. Depending upon the accelerator position the quantity of fuel entering is governed and high speed is obtained. However heavy vehicles and racing cars find it very difficult to achieve their speeds. Thus the hydraulic power booster has been designed to facilitate their problems. In the case of heavy vehicles, they find it very difficult to climb a grade under full load conditions. Under such conditions they stress the engine power on a particular gear and prolonged operation under such conditions may even lead to gear breakage. In order to improve the vehicle life and ease the operation the hydraulic power booster can be used. By turning on the manual control valve the power stored in the accumulator will be released and vehicle will get extra torque and power under the same engine conditions. In case of racing cars speed is the only criteria. They need to achieve high speeds under a very short span of time. Hence by using this system instant acceleration can be obtained which is nearly twice normal vehicle speed. Also the system can be used to sustain the propulsion of the vehicle even when the primary power source is switched off. This is because the pressure stored in the accumulator can drive the wheels. Hence the vehicle can save some fuel.

**KEY WORDS:** Hydraulic Power Assist (HPA), Acceleration, Power Boost, Torque Assist, Accumulator