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***Design and analysis of  
the hydraulic braking system  
in the master cylinder***

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## **Abstract:**

The hydraulic brake system's master cylinder is nothing more than a piston on the inside of a cylinder. Braking is initiated and controlled by the master cylinder, which is the most important component of the braking system. Several braking fluid reservoirs are coupled to the Master Cylinder, which serves as the primary reservoir. It's a single layer of material that forms the reservoir and the cylinder of a master cylinder. It is the goal of this study to reduce weight to boost fuel efficiency in conventional road vehicles and also increase vehicle speed in sports cars. We can save some kilos just at the end of a design by reducing grams in various areas of an automobile. The master cylinder can be made of plastic because it has sufficient elasticity and is sturdy enough. The master cylinder's weight is reduced because of the use of polymers in its construction. PRO-E is used to model the master cylinder, and the ANSYS workbench is used to conduct the study. PRO-E and ANSYS make it simple to model and analyze automotive components like master cylinders.

## **Keywords:**

Polymers, Brake fluid, Pro-E, Main piston, Fluid reservoirs, Master Cylinder, ANSYS.