

Brake Fluid Level Management

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Hydraulic braking system prevails as the most popular type of modernized braking application. The braking system is more efficient by the controlled use of braking fluid. Supply line failures and damaged oil tanks are alleviating the functionality of the system, which inherently leads to accidents with loss of control. This research aims to develop an alternative fluid supply line to the master cylinder in case of emergency. The parameters such as less space, automated operation, and ease of manufacturing and assembling have been identified as key promoters for the development. A gravitational means of fluid transportation is encouraged. When the master cylinder chamber requires braking fluid, the main fluid reserve supplies the needed amount of braking fluid. With this alternative supply, even main supply system fails, the master cylinder will receive enough fluid oil when needed. This system will be helpful at emergencies until drivers find a repair station to fix the braking system failure. The device has been formulated with the minimum number of components namely, a level sensor, non-return valve, reserve tank, and a few fluid lines. The results highlighted a reduction of 30% in efficient working during normal circumstances. In addressing the limitations, a pump can be accommodated to undermine the issues of reserve tanks. Thus, the brake fluid level management rectifies the negativities of conventional setup while minimizing emergencies.

Keywords: Fluid level management, accidents, level sensors, Hydraulic braking, braking failures