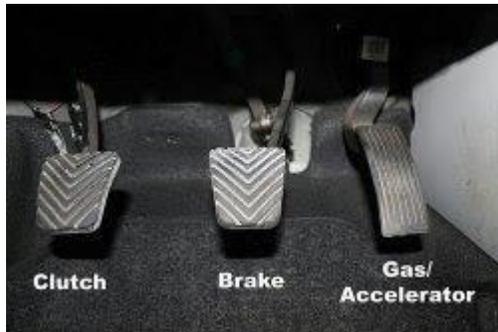


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Difference between Brake and Clutch in an Automobile

Brake and clutch are the two different components used in automotive. These two elements serve two different purposes. Though their functions are entirely different, both are needed for the smooth running of a automotive vehicle.



What is Brake?

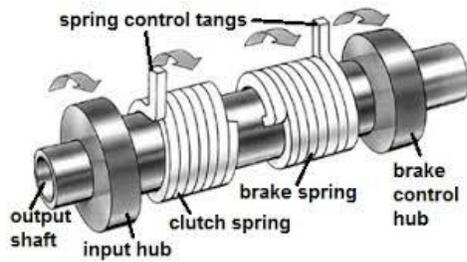
Brakes are generally used to halt the rotating wheels of a vehicle. It is used to retard the velocity of the wheel. In hydraulic braking system pascal's law of pressure is used. According to pascal's law the pressure in the system remains constant. For that reason the ratio of force to area is needed to remain constant. Suppose that F_1 and A_1 are the force and area of the brake respectively. So,

$$F_1/A_1 = F_2/A_2$$

When the brake pedal of the car or any other vehicle is pressed the force is magnified as the braking oil flows through the pipes. This magnified force is then applied in the braking pads. These pads hold the hub of the rotating wheels like a clamp. And because of the friction generated between hub and the brake pads the wheel comes to a stop. This is hydraulic braking system explained in a very simple way. For a better visualization have a look at the video which describes how the hydraulic brakes work and how the bleeding of the hydraulic brake is done.

Bleeding of the hydraulic brakes is the process with which the trapped air in the braking system is removed. It is done occasionally to remove the trapped air when hydraulic brakes are not working properly or not giving proper efficiency.

https://youtu.be/vTUTTPy_zJs



What is a clutch?

Clutch is a component used to disengage gears while driving. Clutch is found in the gearbox close to transmission. The important component of the friction clutch is the flywheel which is attached with the engine with help of crank shaft. The clutch pressure plate is attached with the flywheel. This plate is connected to the gear box by another shaft. And there is a diaphragm spring on the plate in front of which a clutch release bearing is situated. When this bearing is pushed inwards the spring also deflects and the power generated in the engine is transferred to the gear box.

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