

Brake calliper

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Function

The brake calliper is an essential part of the disc brake system. It must hold and guide the brake pads. With the assistance of one or a number of pistons, it also converts the hydraulic pressure in the <link [https: www.my-cardictionary.com brake.html](https://www.my-cardictionary.com/brake.html) internen link in neuem>brake system into a mechanical force which presses the <link [https: www.my-cardictionary.com brake brake-pad.html](https://www.my-cardictionary.com/brake/brake-pad.html) internen link in neuem>brake pads against the <link [https: www.my-cardictionary.com brake brake-disc.html](https://www.my-cardictionary.com/brake/brake-disc.html) internen link in neuem>brake disc. Brake callipers are located near to the wheels – on the left and right of the front axle. Vehicles with disc brakes at the rear axle too also have brake callipers there.



When the driver presses the brake pedal, overpressure relative to the atmospheric pressure is created in the hydraulic system. This pressure is transmitted to the brake callipers via the <link [https: www.my-cardictionary.com brake brake-lines.html](https://www.my-cardictionary.com/brake/brake-lines.html) internen link in neuem>brake lines and hoses. When it reaches the callipers, it causes the brake calliper pistons to push the brake pads against the brake disc. As a result, the friction at the brake increases, causing the moving vehicle to slow down or stop completely. When the brake pedal is released, the overpressure in the brake system drops back. The rubber seal on the piston pushes the piston back to its original position. The brake disc can then turn freely again. Designs By far the most widely used design in motor vehicles is the floating calliper. In this design, the pistons only press on the inner brake pad, pushing it onto the brake disc. The outer brake pad is pushed onto the brake disc with the same force by the reaction force of the floating brake calliper. The fixed calliper is another design. It is used primarily on the rear axle. With a fixed calliper, there is a hydraulic piston on each side of the brake disc.

In most cases, the brake callipers are equipped with one or two pistons. Up to four pistons per brake calliper can be installed in high-performance or very heavy vehicles. In very few cases, there are even designs where two complete brake callipers are used for each wheel.

Alongside the service brake, which is needed to slow down a moving vehicle, the brake calliper can also take over the function of the parking brake. The parking brake must secure a stationary vehicle against rolling away. When the parking brake is applied, a force is applied mechanically to the brake piston and thus to the brake pad. This is sufficient to hold the stationary vehicle even on an incline. The parking brake can be applied purely mechanically by means of a lever system (traditional handbrake lever inside the vehicle) or with electrical assistance in the form of an electric motor and a gearbox or a cable (electromechanical parking brake).

Designs

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Safety

Brake callipers are subject to permanent wear caused by external influencing factors (moisture, road grime, road salt, mechanical factors in the form of stone chips, etc.). This can cause seals to come loose and brake fluid to leak out, it can stop the pistons from moving correctly or interfere with the guidance of the brake pads. All of this can result in excess wear of the brake pads and brake discs. In the worst-case scenario, the braking effect can fail completely.

Furthermore, the mechanically operated mechanism of the parking brake is frequently the subject of complaints.

Environmental protection

Brake callipers can be purchased as new parts and replacement parts. In most cases, garages use replacement parts recycled by the motor vehicle components industry. Alongside the ecological benefits of recycling (approx. 80% of energy saved in production and reduction of CO2 emissions), car drivers benefit from more attractive spare part prices compared with a similar new part offering the same

quality, durability and safety.

Bilder



Brake calliper



Floating calliper

Hersteller



TRW KFZ Ausrüstung GmbH_EN



FTE_EN



BOSCH
Invented for life

Bosch



ATE



Brembo



Delphi_EN



HELLA



Herth+Buss



DRIV



Valeo_EN



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Quelle:

<https://www.my-cardictionary.com/cardictionary/electric/products/brake-calliper.html>