



TECHNICAL BULLETIN

APRIL 2021

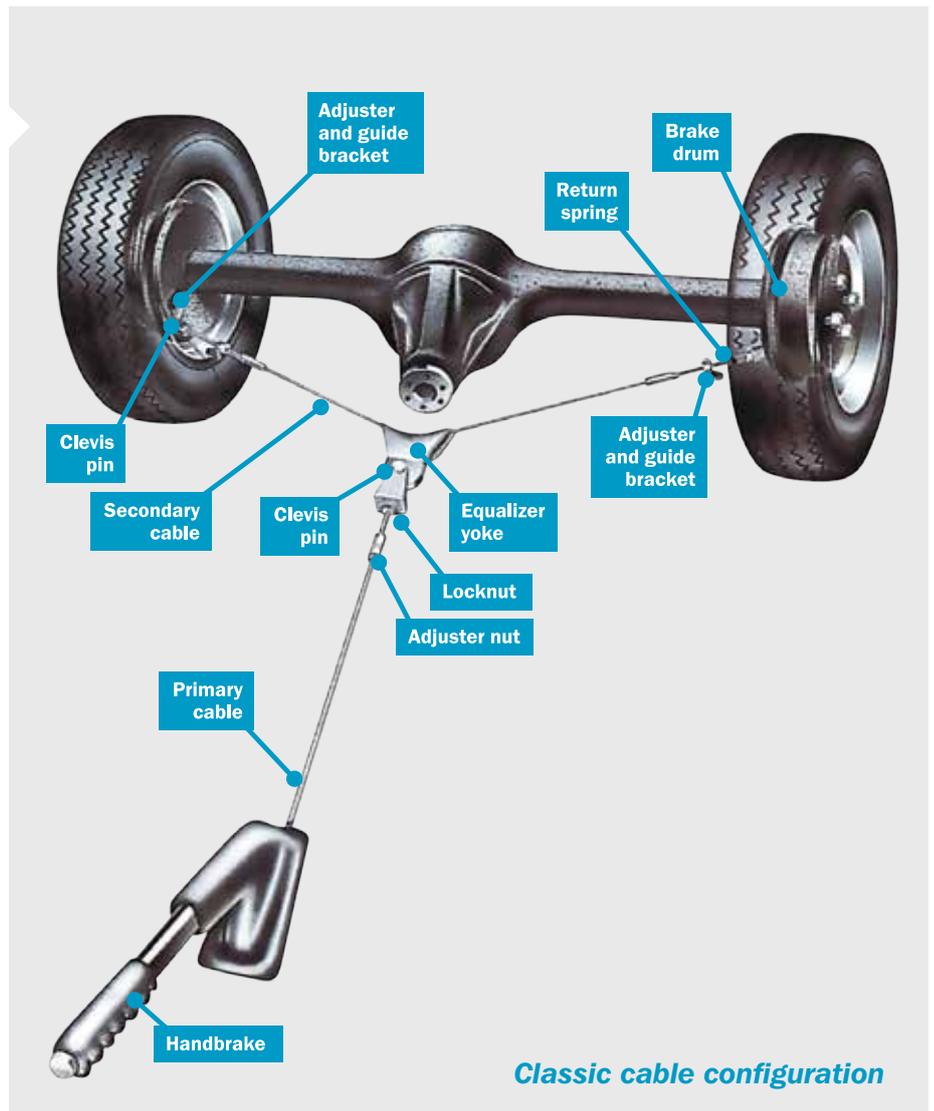
Maintenance on your E-Brake

An often over-looked component maintenance-wise, the E-Brake in your vehicle is an important component when it comes to vehicle safety.

In older cars, you might be used to seeing the classic cable handbrake, or footbrake. Electric parking brakes, however, are starting to become standard fare in more modern cars and often takes the form of button close to where you would usually find the handbrake handle.

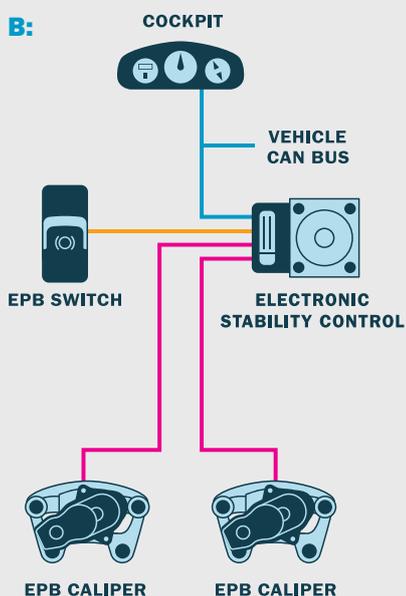
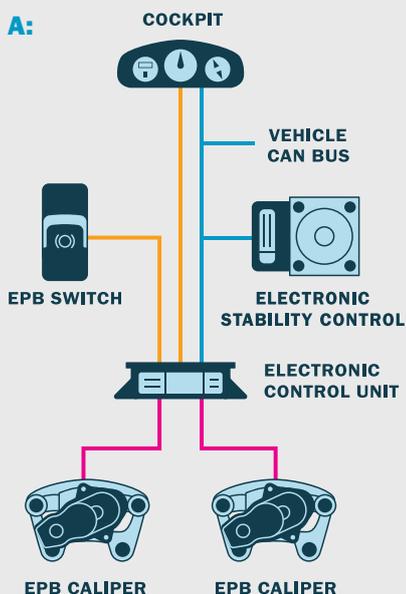
Generally, only acting on the rear wheels of your vehicle, the e-brake's main function is to prevent your car from moving when parked. It can also come in handy when setting off from a standstill on an upward slope, preventing the car from rolling backwards. A lot of us have the e-brake to thank when it came to learning those dreaded hill-starts. In more extreme cases, the e-brake is also for emergency braking. However, this is usually seen as a last resort as applying the e-brake in an emergency does come with its own potential risks.

Now how does your e-brake work? In the classic cable configuration, a cable connects the handbrake lever to the vehicle's brake shoes. Once the handbrake lever is applied, the tension in the cable increases, forcing the brake shoes on the brake drum and preventing the wheels from moving. A form of electric park brake also exists using the cable configuration. In this case, the lever is simply replaced by a switch that controls the cable operation.



Classic cable configuration

— SIGNAL
 — CAN BUS
 — ELECTRIC POWER



A conventional electric parking brake uses essentially the same working principle, albeit without the cable. Without the use of the cable, the electric park brake relies on an electronic brake module, an actuator or electric motor, wheel-speed sensors, a force sensor, and in-cabin electric switch. Essentially, the cable is replaced by a signal that is sent from the parking brake switch to a module that tells the actuators or electric motors installed within the brake calipers to operate and prevent the wheels from moving.

Fully-electronic park brakes come in two different types – Electric-Hydraulic Caliper systems, and a Full-Electric Drive-by-Wire systems. The Electric-Hydraulic Caliper type is generally employed as part of safety features such as ESP (Electronic Stability Program). When the parking brake switch is activated, the ESP control unit generates pressure within the vehicle’s braking system, forcing the brake pads against the rotors. An electronic solenoid valve then locks the calipers in place. This allows the calipers to stay in this position without the aid of hydraulic pressure. To release the brake, the ESP unit briefly generates slightly more pressure than what was required to lock the calipers and the releases the solenoid locking the brake in place.

In Full-Electric Drive-by-Wire park brake systems, an electric motor and gearbox are employed to apply pressure to the pads onto the rotors. In this setup, a parking brake latch is used to prevent the pressure in the caliper piston from rotating the park brake’s electric motor, which in turn keeps the brakes applied.

The more modern Electronic Park Brake setups carry a plethora of advantages over their mechanical counterpart. Thanks to the use of electrical components, the action of applying the park brake is near instantaneous. The electronic control also allows the park brake to be integration with a range of safety technologies such Stability Control, Anti-Lock Brakes, and Hill-Start Assist. Not only that, but without the need more as many mechanical components, there are significant weight savings to had, allowing for improved fuel economy and reduced emissions.

Electronic Park Brake technology has been around for over two decades now, and has been constantly improving since its inception. Nowadays you would be hard-pressed to not find an Electronic Park Brake in a brand-new vehicle, with the technology found in everything from small cars to light trucks, and it’s easy to see why. Just like any other braking component however, your E-Brake needs regular servicing with components such as pads and brake shoes needing replacement from time to time. And this is where Bendix comes in. Bendix offers brake shoes and pads to suit a wide range of vehicles. If it’s time to service your E-Brake, head to our website below to find the right part numbers to suit your car, and drive safe with Bendix.



FOR MORE INFORMATION

Freecall the Bendix Brake Advice Centre on 1800 819 666 (8am-5pm Monday to Friday EST) or +61 3 5327 0211 from overseas. brakeadvicecentre@bendix.com.au bendix.com.au or bendix.co.nz



*Bendix brake components are appropriate for the purpose intended and if installed by qualified staff, to the vehicle manufacturer’s specifications, can be used in logbook servicing.

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