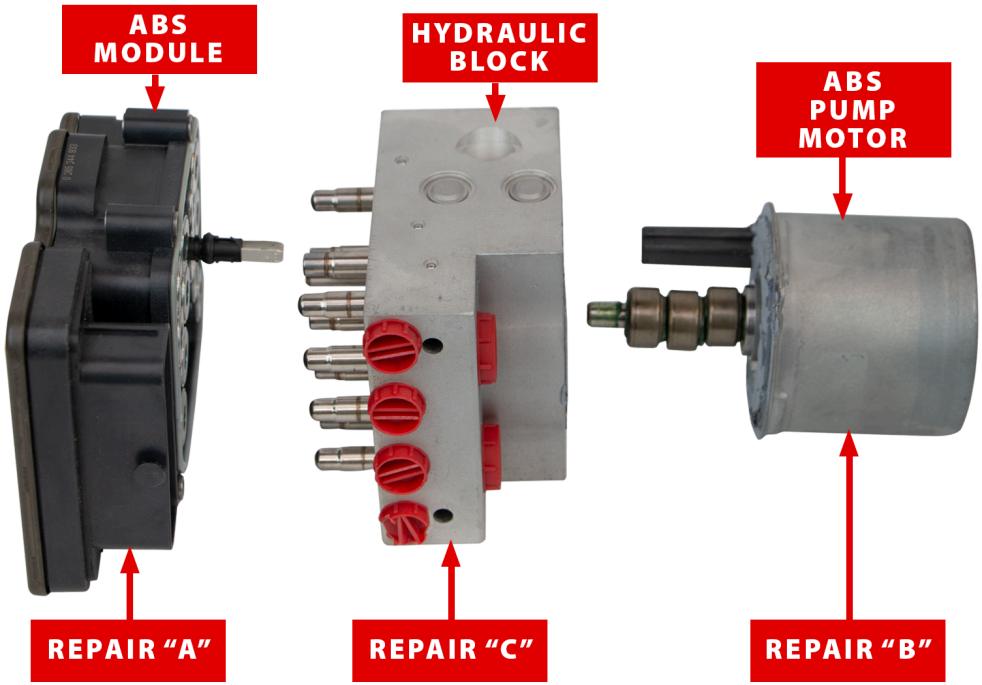
BOSCH 9.0 ESP

The Bosch 9.0 ABS System comprises three main components: The ABS Module, Hydraulic Block, and the Electric Pump Motor. It is a flexible and modular system; it comes in several variants supporting a wide variety of powertrain technologies. The modular software architecture offers significant reduction in development and validation costs to the automaker.

BOSCH 9.0 ABS HYDRAULIC BLOCK EXPLODED VIEW



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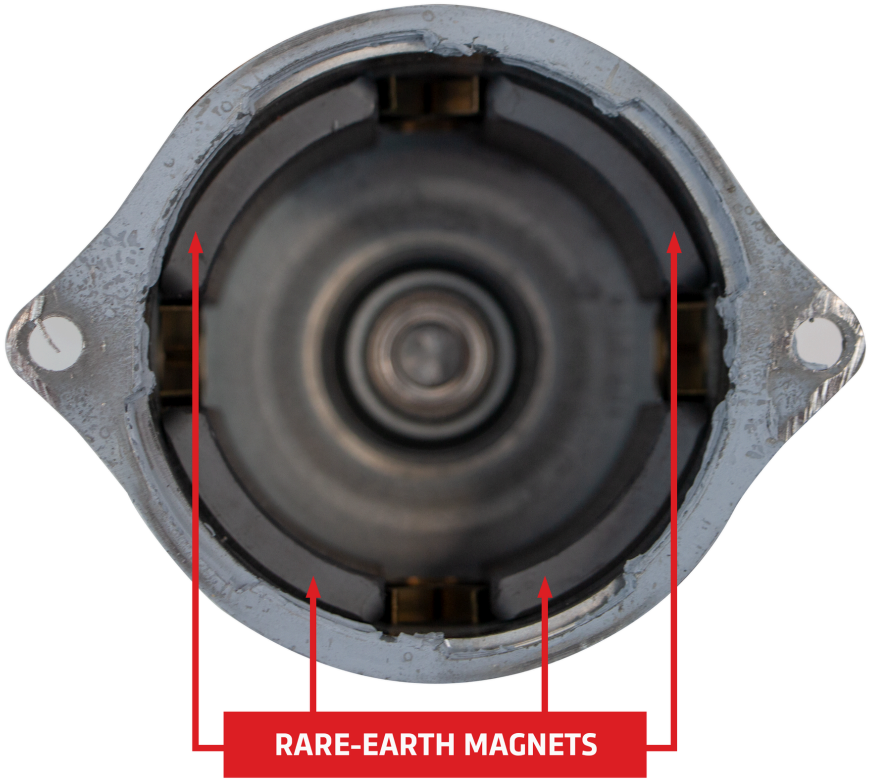
ELECTRIC MOTOR

Motor uses rare-earth magnets that significantly improve power-to-weight ratio. Reducing the motor weight by 30% compared to Bosch 8.0 version.

BOSCH 9.0 MOTOR MAGNETS



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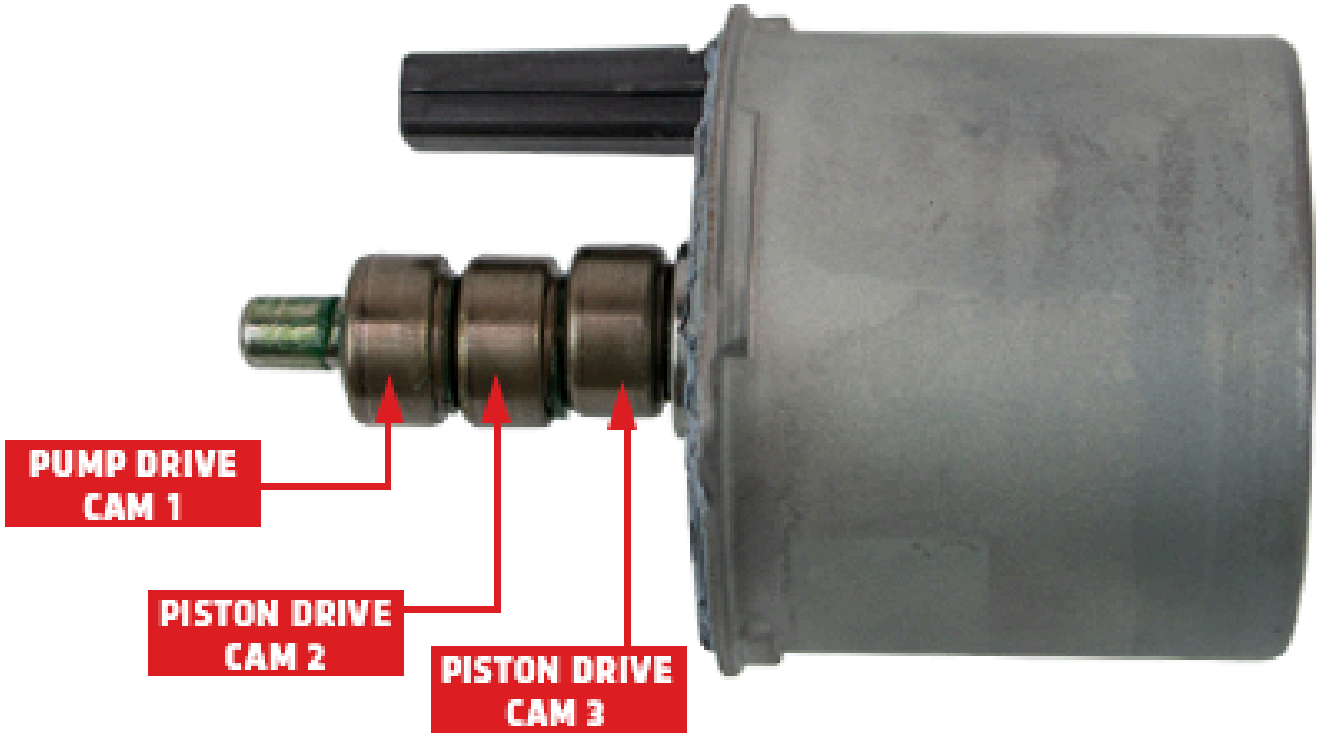
ELECTRIC MOTOR

The stronger motor is now capable of driving six pistons, as opposed to two in previous versions. There are three bearings that are mounded on the off-centered main motor shaft.



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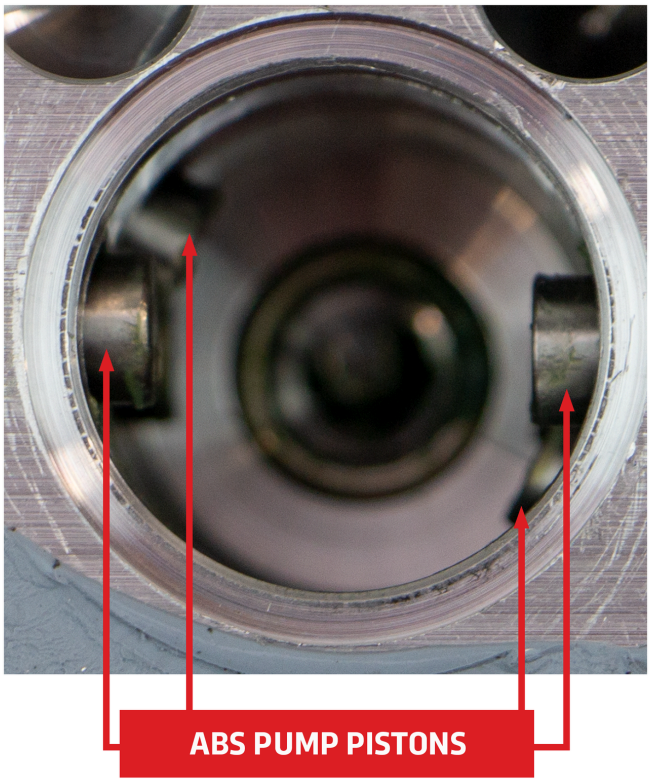
HYDRAULIC BLOCK PISTONS

Each cam bearing drives a pair of pistons. The design allows the ESP to apply brake pressure to any caliper, regardless of the actual brake pedal position. This enabled the auto-brake function capabilities as well as advanced stability control capabilities.

BOSCH 9.0 HYDRAULIC BLOCK PISTONS



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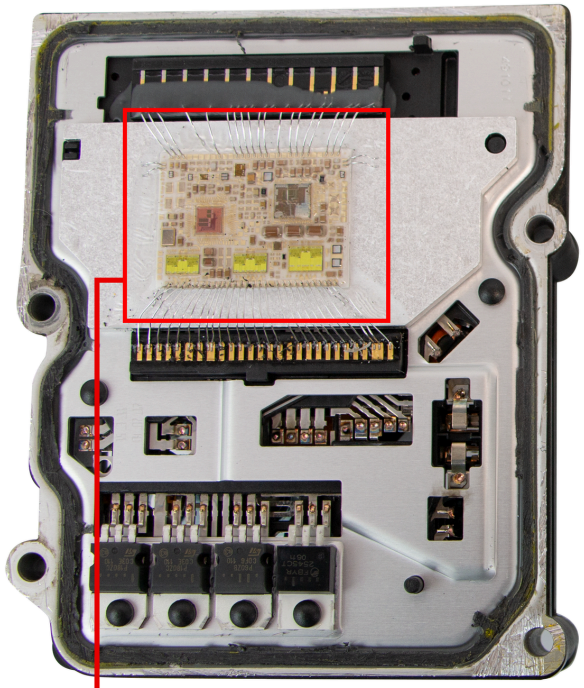
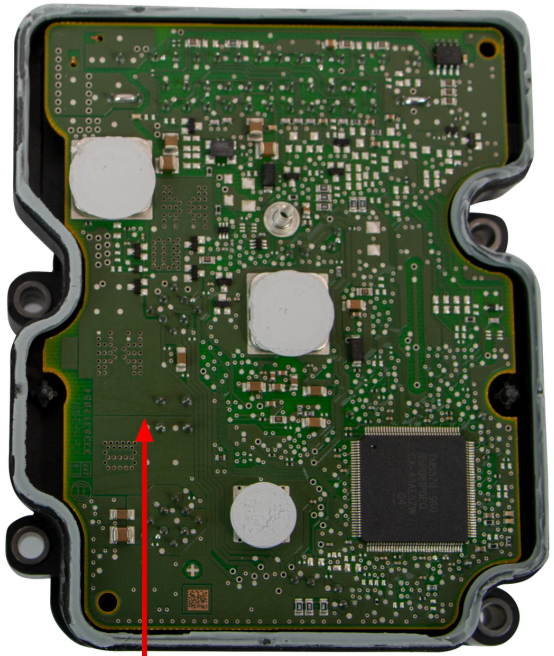
BOSCH 9.0 ABS MODULE

Bosch ABS Modules versions 5.3, 5.7 and 8.0, were based on ceramic substrate board. This was a very complex design that enabled the board to be extremely compact. However, it had its disadvantages; The microscopic wire bonds, that connected the individual components were prone to damage under vibration. In version 9.0, they were replaced with a standard printed circuit board.

BOSCH 8.0



BOSCH 9.0



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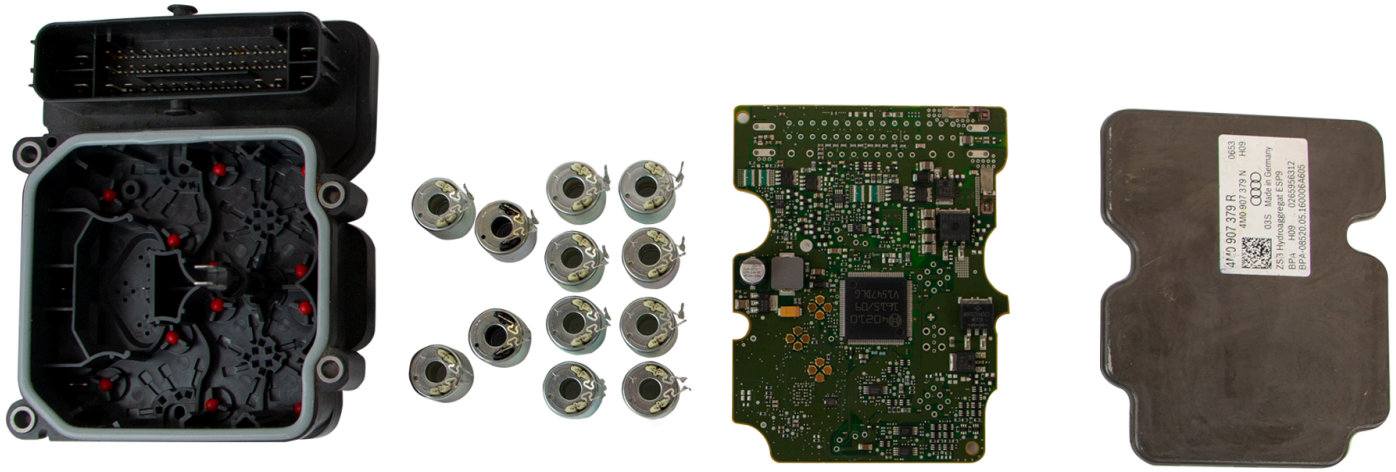
BOSCH 9.0 ABS MODULE

BOSCH 9.0 MODULE EXPLODED VIEW



Bosch 9.0 ABS Module is not a rebuilder-friendly design. Majority of the silicon chips are located on the opposite side of the board. This means that the entire module must be fully dismantled, to remove the printed circuit board. This is a delicate and time-consuming process.

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