

Electric Fuel Pumps

BOSCH ELECTRIC FUEL PUMPS

Mercedes-Benz
Volvo
Volkswagen
BMW
Peugeot

DESCRIPTION

Bosch electric fuel pumps are roller cell pumps. They operate on 12 volts and supply fuel to injector units. Pump is of the positive displacement type and output pressure is limited to about 28 psi by a pressure regulator valve. Pumps with a return line have an internal pressure relief valve which opens at about 64 psi. Pumps without a fuel return line use an overflow valve which opens at approximately 73.5 psi. An eccentric rotor carries small rollers in pockets at its circumference, which seal the variable chamber volume against the internal walls of pump housing. Fuel pumping action is created by the rotor and roller movement.

OPERATION

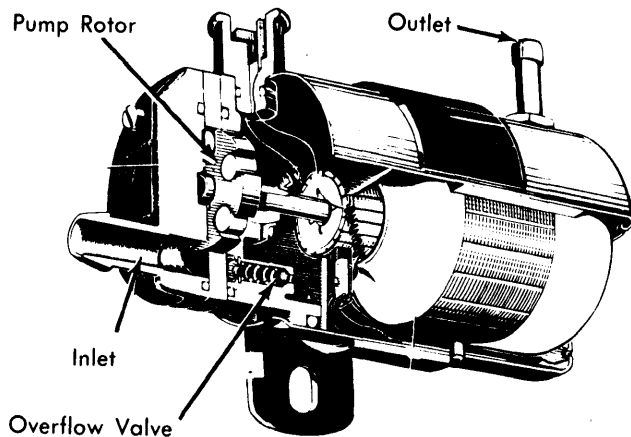
Two methods of fuel control are used by Bosch pumps:

1) On pumps which have no fuel return line, fuel is taken from inlet, through pump to delivery connection. In this type both

rotor and brushes are immersed in fuel. To maintain uniform fuel pressure, a ball valve is located in delivery connection. In addition, pump has a pressure relief by-pass which disconnects suction and delivery lines at approximately 73.5 psi. Delivery rate is approximately 2.11 quarts per minute at 2500 RPM.

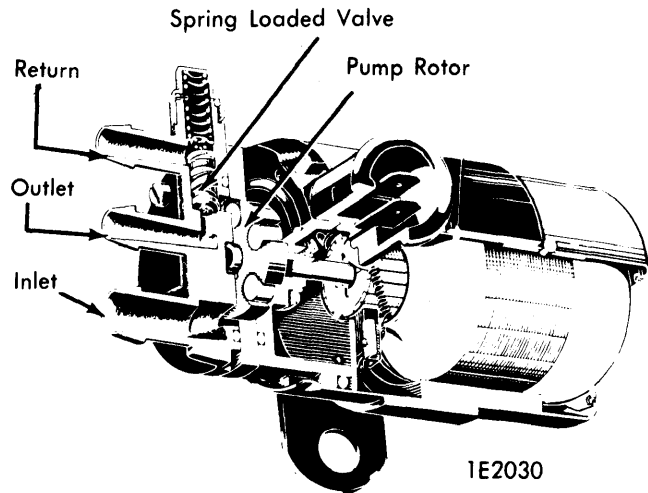
2) On pumps which have a fuel return line, fuel is circulated through pump rotor and brushes. On this type, all fuel line connections are on one end of fuel pump. When pump starts operating and there is air in pump, air is vented by a spiral groove around the side of a spring loaded valve. When air has been vented and fuel pressure increases, the spring loaded valve actuates, shutting off fuel return line and opening fuel delivery line. If fuel pump pressure goes beyond proper operating pressure, 64 psi (4.5 kp/sq. cm.), spring loaded valve opens further and allows excess pressure and fuel to be returned to fuel tank.

On both return and non-return line pumps, when ignition is switched "ON", pump runs for one to two seconds and stops, preventing flooding before engine starts. Now pump operates only when starter is engaged or engine is running. Bosch fuel pumps are sealed and no repair or disassembly is possible.



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FUEL PUMP (NON-RETURN LINE TYPE)



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FUEL PUMP (RETURN LINE TYPE)