High Pressure Fuel Pump

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# Introduction

The purpose of this report is to inform the reader what high pressure pumps are and how they operate. The idea is that with this assignment our knowledge is extended.
I hope this report extend your knowledge too whit satisfaction

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# High pressure fuel pump

High pressure fuel pumps (see picture below) are necessary for the proper injection of fuel in diesel engines. The fuel injects at a pressure of 150-300 bar and sometimes more to get a good injection. When a fuel under low pressure enters through the atomizer, the atomizer would not spray correctly into the cylinder and then you would get an incomplete combustion. An incomplete combustion will reduce the power of the motor whit results black smoke.

The most common high pressure fuel pump is a Bosh. Each cylinder has its own fuel pump which is connected by a shielded HP line (nr:2) to injector. The fuel lines are as short as possible and kept the same length and thick-walled seamless made of annealed steel. In most cases the fuel pump is moved by the camshaft. The fuel oil supply and return manifolds are integrated in the HP fuel pump brackets (nr:4). Through line (nr:7) lubricating oil is supplied for cooling of the injector. Each HP fuel pump is provided with an air operated stop cylinder (nr:3). An air operated stop cylinder is necessary to bring the fuel rack to zero position after control air is admitted.

The pricipe and operation of high pressure fuel pump is almost always the same regardless of brand. High pressure fuel pumps are displacement pumps (verdringerpompen ?). The amount of fuel injected is determined by the pressure whit is pressed on the spring, the spring is under pressure by the cam shaft so that the plunger of the pump can be lifted. On the outside of the control rod of the fuel pump you can see a distribution setting. The Setting mode gives an indication of the output of the pump stroke. The arrow with the sign STOP indicates which direction the rod must be moved in case of emergency stop .

# Opinion

I did do this task very quickly because I have a lot of knowledge about the high pressure pumps. It was fun to reassembling the pump. Now I know how the pump works it very great technology.

# Sources

PDF: W26 Manual

Web pages:

<http://www.sleeptros.com/technieken/html/brandstofpompen_voor_dieselmot.html>