GF07.02-P-3010IC	Component description for the high-pressure pump	7.12.04

ENGINE 648.961

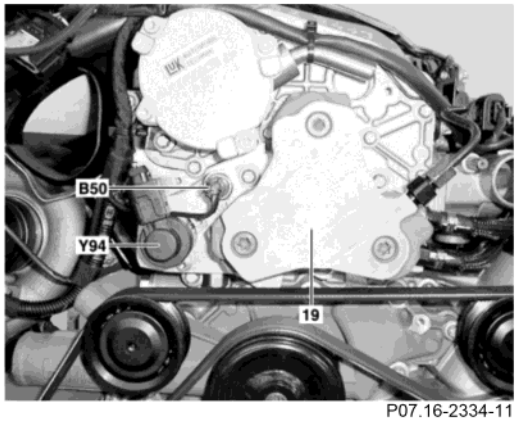
Arrangement

19 High-pressure pump

B50 Fuel temperature sensor
Y94 Quantity control valve

The high pressure pump is located at the right front on the cylinder head.

Task
The high pressure pump compresses the fuel up to an operating pressure of 1600 bar and pumps a controlled quantity of fuel into the rail.

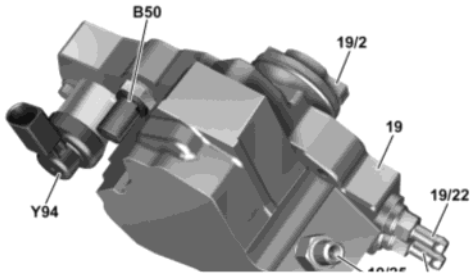


P07.16-2334-11

Design

19 High-pressure pump
19/2 High pressure pump drive
19/16 Fuel return flow to fuel tank
19/22 Fuel feed line from fuel filter
19/25 High pressure connection for rail

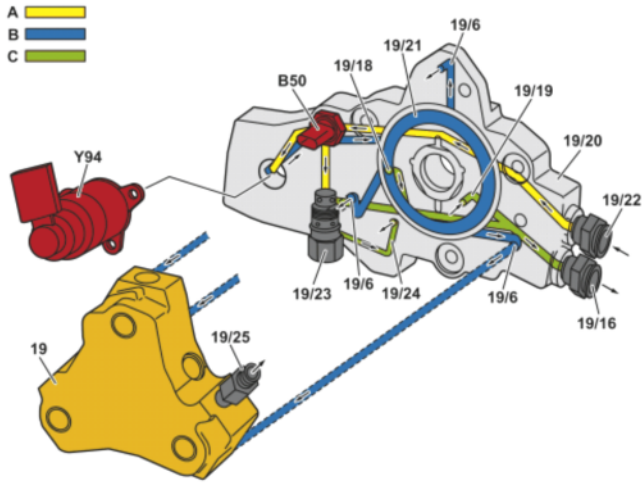
B50 Fuel temperature sensor
Y94 Quantity control valve



P07.02-2062-11

Function

19 High-pressure pump
19/6 Fuel feed line to pump elements
19/16 Fuel return flow to fuel tank
19/18 Zero delivery throttle
19/19 Fuel return from lubrication (eccentric shaft)
19/20 High pressure pump flange
19/21 Annular passage
19/22 Fuel feed line from fuel filter
19/23 Fuel pressure relief valve
19/24 Fuel feed from lubrication (eccentric shaft)
19/25 High pressure connection for rail



P07.02-2061-76

B50 Fuel temperature sensor
Y94 Quantity control valve

A Fuel from fuel tank
B Fuel from quantity control valve
C Fuel return flow

Low pressure side
The fuel supplied by the electric fuel pump (M3) arrives over the fuel feed from the fuel filter at the high pressure pump flange and is led from there to the flow control valve and the fuel pressure relief valve.
The quantity control valve controls the volume of fuel which is passed along the annular passage and the fuel feed lines to the three pump elements of the high pressure pump.

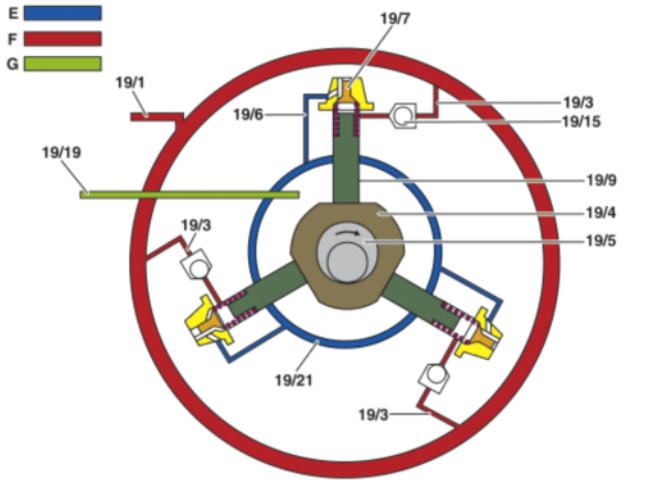
The fuel pressure relief valve limits the fuel pressure which exists at the quantity control valve, to approx. 4.5 bar. If this value is exceeded, the fuel pressure relief valve opens which allows passage of the excess fuel back through the return line to the fuel tank.

The fuel pressure relief valve also sends some of the fuel for lubrication to the eccentric shaft.
Any air entrained by the fuel is passed through the fuel pressure relief valve over the fuel return to the fuel tank.

High-pressure side

19/1 High pressure conduit to high pressure connection
19/3 High pressure conduit
19/4 Eccentric disk
19/5 Eccentric shaft
19/6 Fuel feed line to pump elements
19/7 Filling valve
19/9 Pump plunger
19/15 Ball valve
19/19 Fuel return from lubrication (eccentric shaft)
19/21 Annular passage

E Fuel low pressure
F Fuel high-pressure
G Fuel return for lubrication



P07.02-2063-76

The task of generating a high pressure is performed by a radial piston pump with three pump elements arranged at an angle of 120°.
The high pressure pump is driven at about 1.3 times the camshaft speed.
The rail pressure reaches a maximum of 1600 bar.