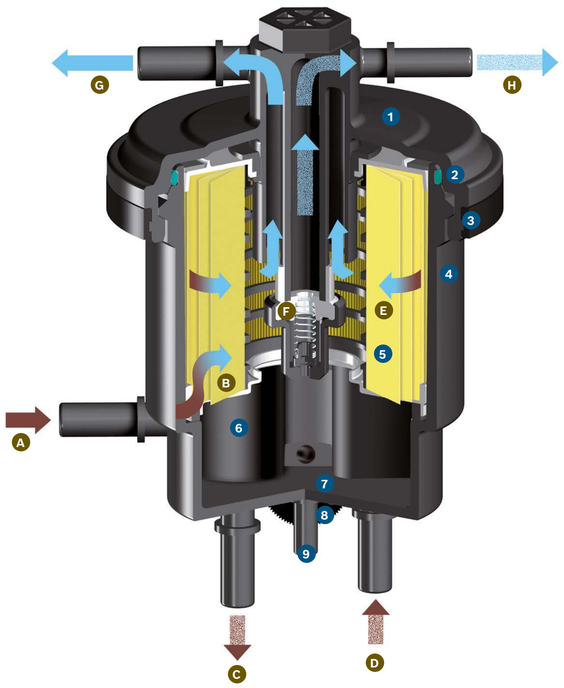
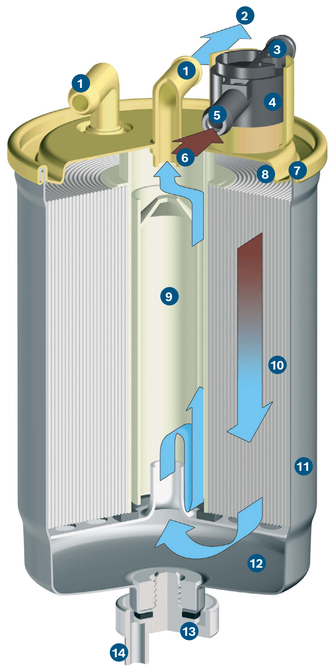
Diesel fuel filters

Structure

Common-rail filter



Diesel line filter

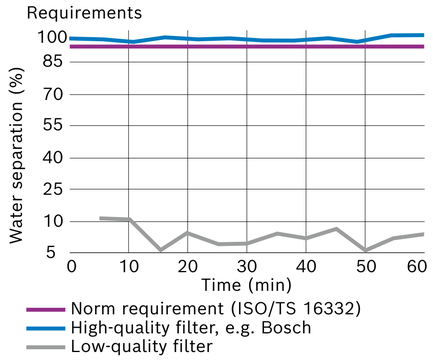


- A Inflow of the contaminated diesel into the filter
- B Bimetal valve ensures optimum temperature of the diesel by redirecting the flow of warm fuel from engine to filter
- C Fuel return line to tank
- D Fuel return line from engine
- E Filtration of the diesel
- F Overflow valve opens if the pressure in the filtered diesel is higher than 1 – 1.5 bar
- G The cleaned diesel is conducted to the engine
- H The excess diesel is conducted back to the tank

1. Filter cover of plastic
2. Sealing ring
3. Metal ring
4. Pressure-resistant filter housing of plastic
5. Filter medium
6. Bimetal valve (check of optimum temperature)
7. Water accumulation chamber
8. Water drain screw
9. Drain tube

1. Hose connection
2. Fuel outlet
3. Hose connection
4. Preheating valve
5. Hose connection
6. Fuel inlet (return from engine)
7. Double bordering
8. Filter cover of galvanized steel plate
9. Support tube
10. Filter medium
11. Pressure-resistant filter housing of galvanized steel
12. Water accumulation chamber
13. Water drain screw
14. Drain tube

Water separation



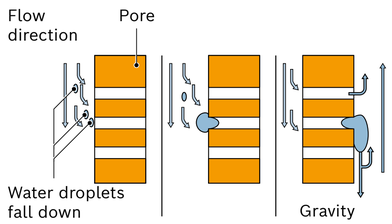
Reasons for insufficient water separation:
Exceeded exchange interval or usage of low-quality filters.

Risk:
- **Corrosion:** Water merges with acids in the fuel and corrodes ferrous and non-ferrous metals. Metal surfaces that are particularly exposed due to abrasion corrode easily.
- **Rust particles in the diesel:** In combination with iron and steel surfaces, water leads to corrosion. Rust particles in the fuel can cause abrasive wear and failure of parts.
- **Abrasion:** Compared to diesel, water does not lubricate moving parts. Wear and tear increase.

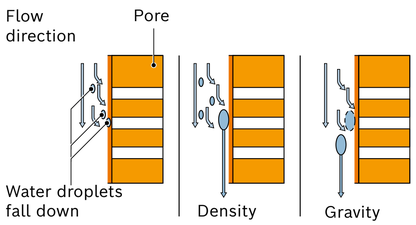
Corrosion in the high-pressure pump housing

Corrosion on the injector

Principles of water separation



Water separation on clean side
of the filter by coalescence effect.



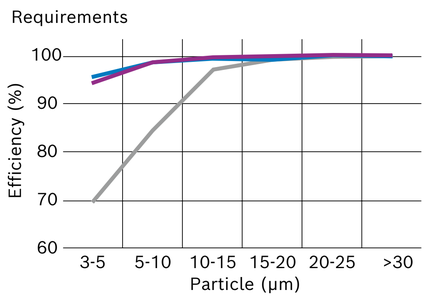
Water separation on dirty side
of the filter by hydrophobic effect.

Water promotes **microbial growth,** which can lead to slime formation.

Acids formed by **contaminated fuel** corrode the tank and fuel system.

Diesel contaminated with water can damage the injection system and cause **engine starting difficulties.**

Particle separation



Reasons for insufficient particle separation:
Delayed exchange interval or usage of low-quality filters.

Risk:
Early wear of the injectors causing engine damages.

Abrasive erosion

Wear and tear formation