



Mercedes-Benz

# Fuel Supply & ME-SFI Engine Management Fuel supply (Part 7)

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# ME-SFI

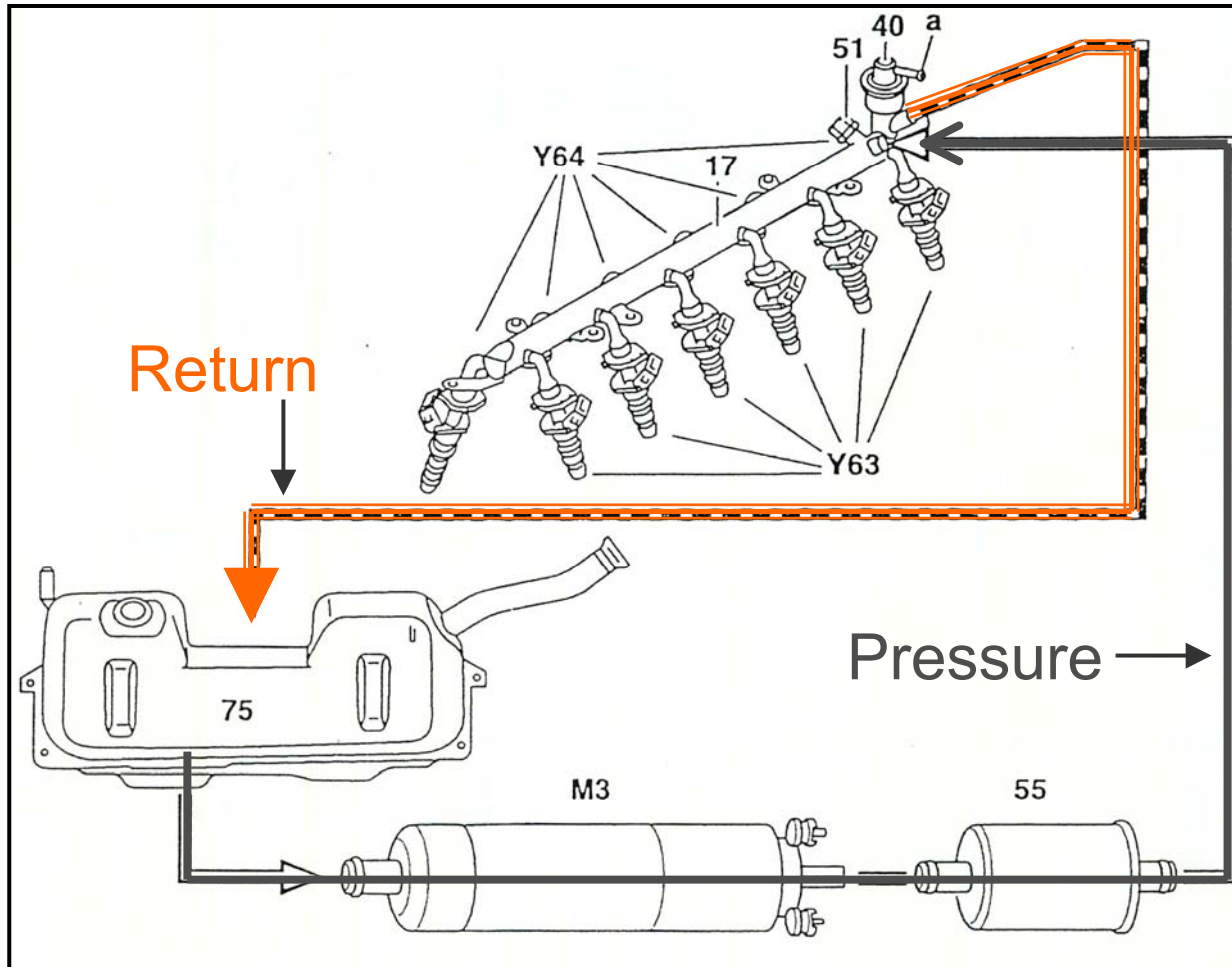
ME-SFI = Motor Electronics -Sequential Fuel Injection

## ME-SFI Versions

- ME-SFI 1.0 Engines 119 & 120
- ME-SFI 2.0 Engines 112 & 113
- ME-SFI 2.1 Engines 111 & 104
- ME-SFI 2.7 Engines 137
- ME-SFI 2.8 Engine 112 & 113 (2001 Except SL500 )
- SIM-4 LE Engine 111 (2001)

(Siemens Integrated engine Management - # of cyl, Charge air Evolution)

# Fuel Supply



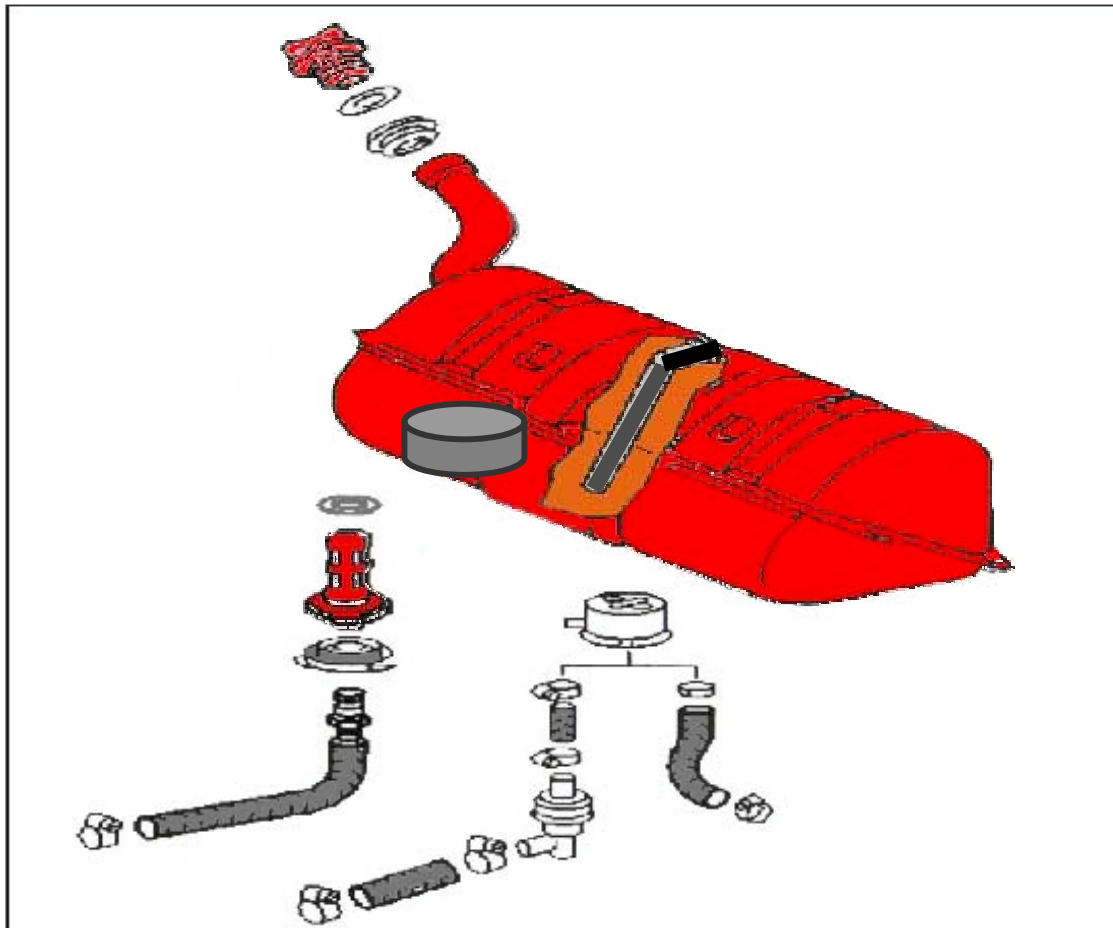
- Fuel tank - 75
- Fuel pump - M3
- Fuel Filter - 55
- Fuel Rail - 17
- Pressure Regulator - 40
- Injectors - Y64
- Fuel lines

Example shown:  
120 engine

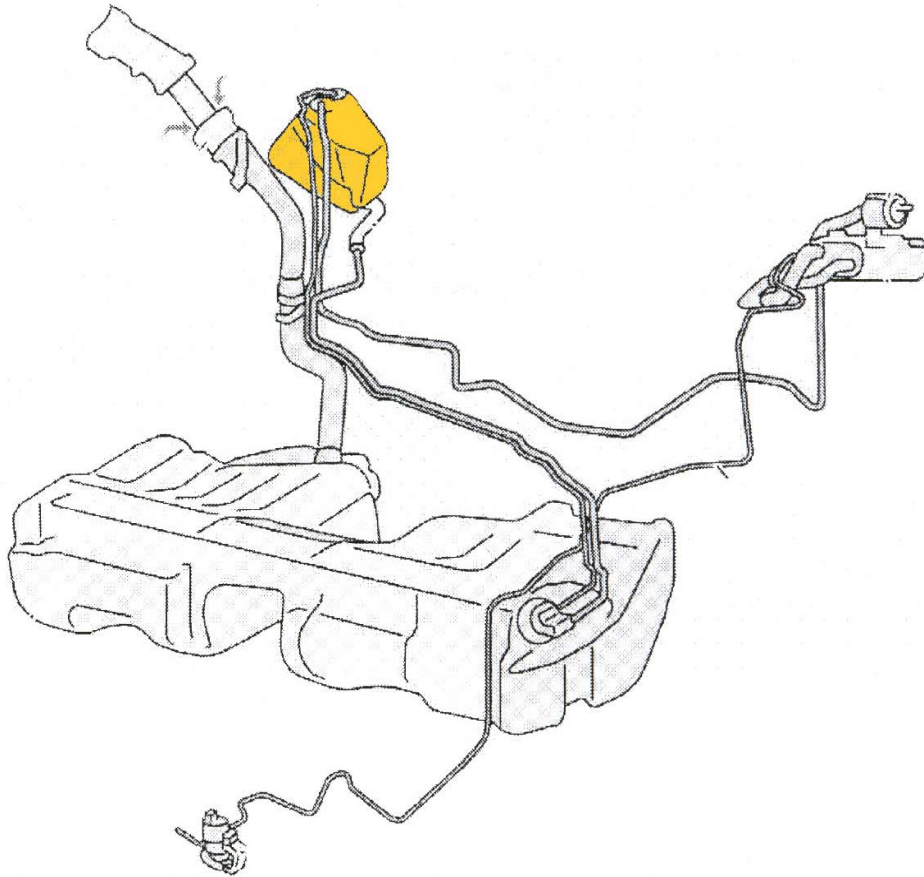
# Fuel Tank

## Tank Components:

- Tank
- Sending unit
- Pressure sensor
- Screen
- Splash bowl
- Gas cap



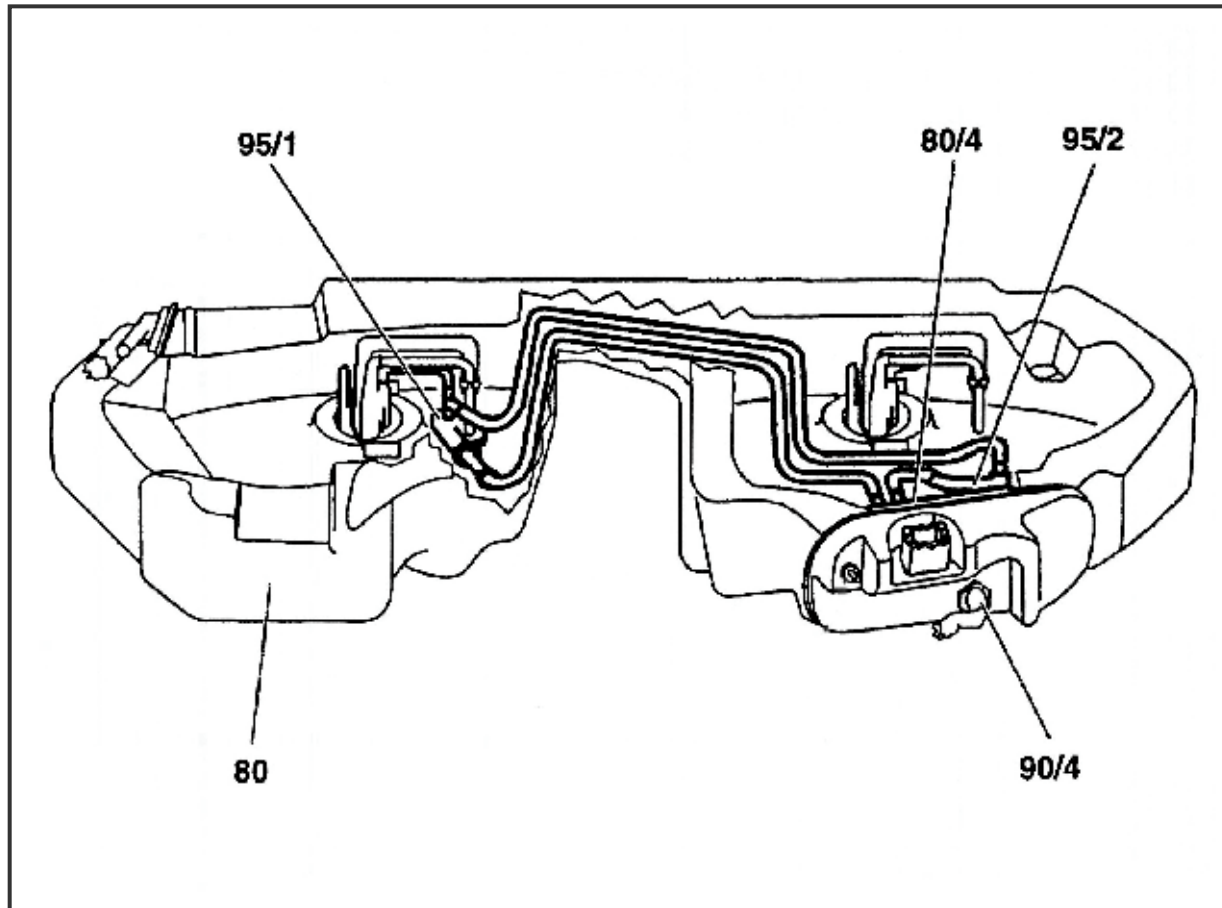
# Fuel Tank



- Expansion tank

# Fuel Tank 202 & 208

(Similar to 203)



80 - Tank

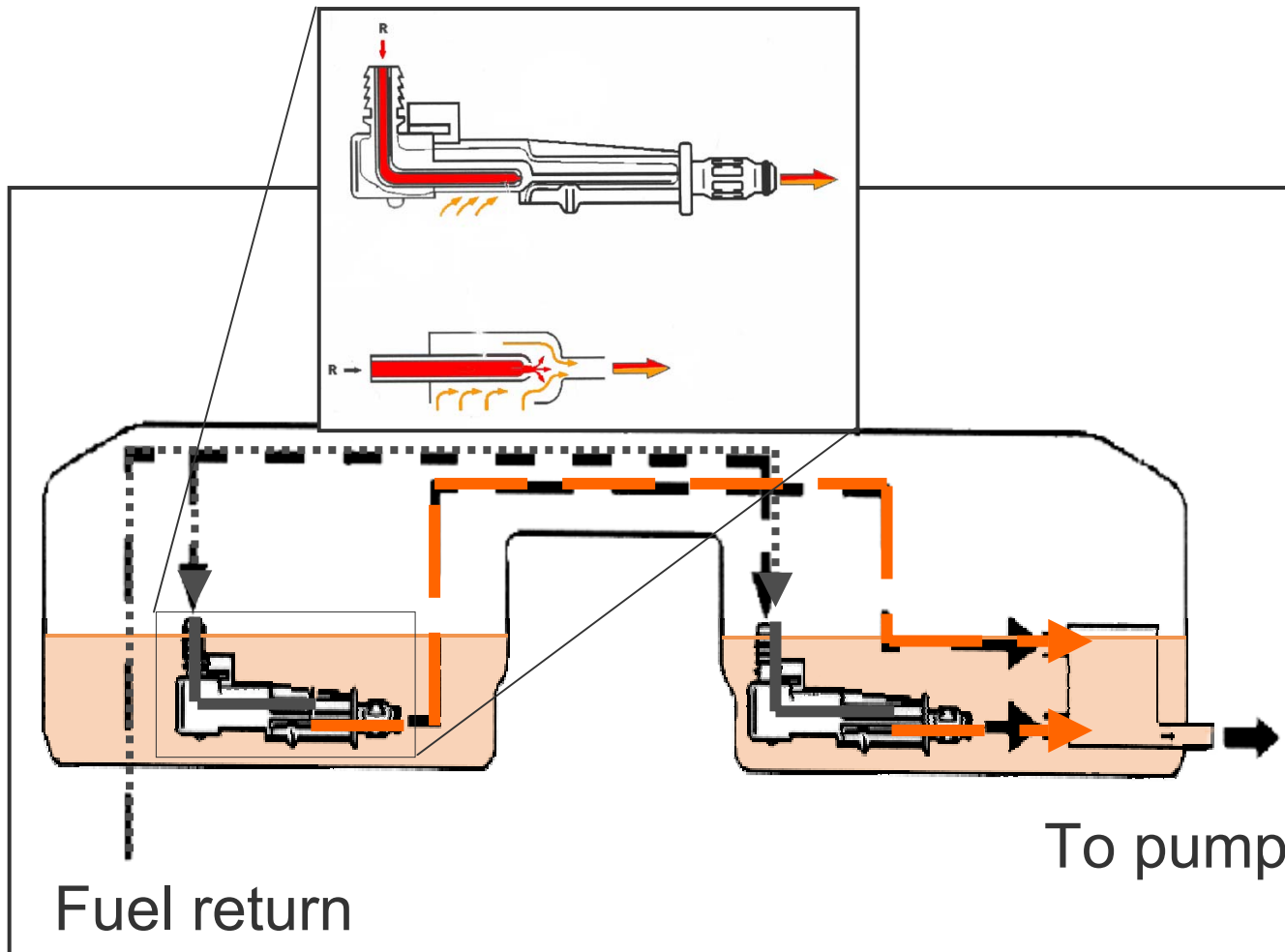
80/4 - Splash  
bowl

90/4 - Fuel out

95/1 - Left suction  
pump

95/2 - Right suction  
pump

# Venturi Siphon

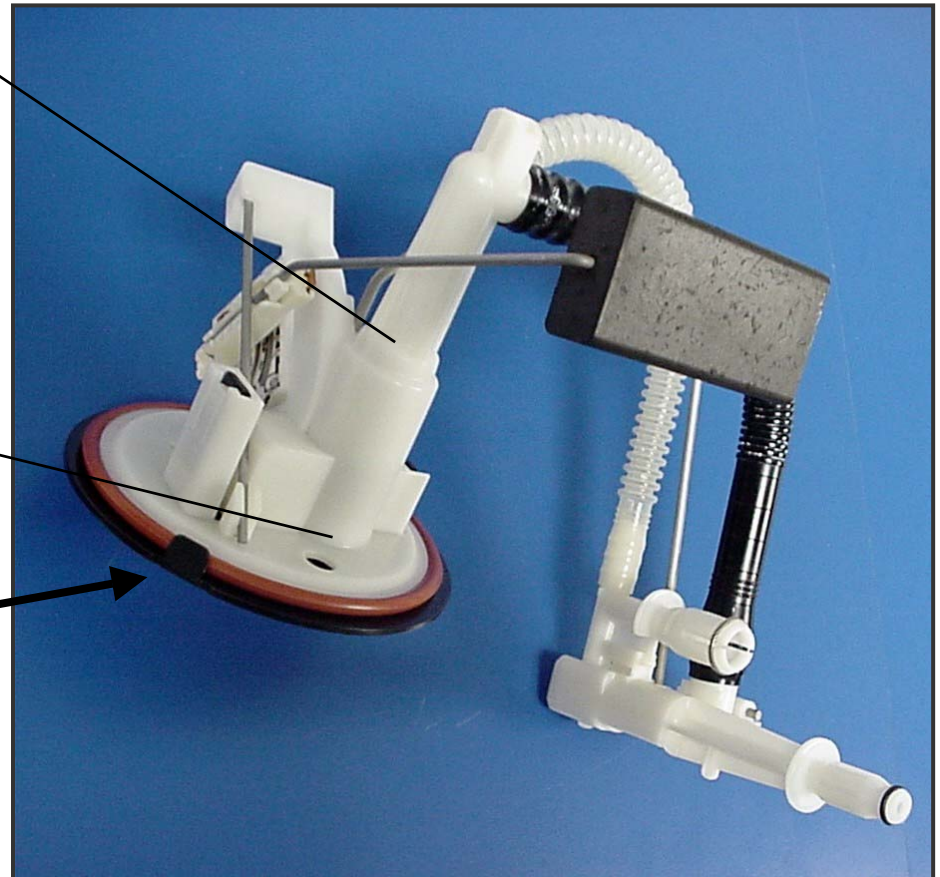
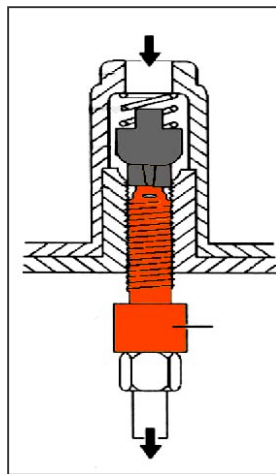


Purpose:

To move the fuel from both sides of the tank to the splash bowl.



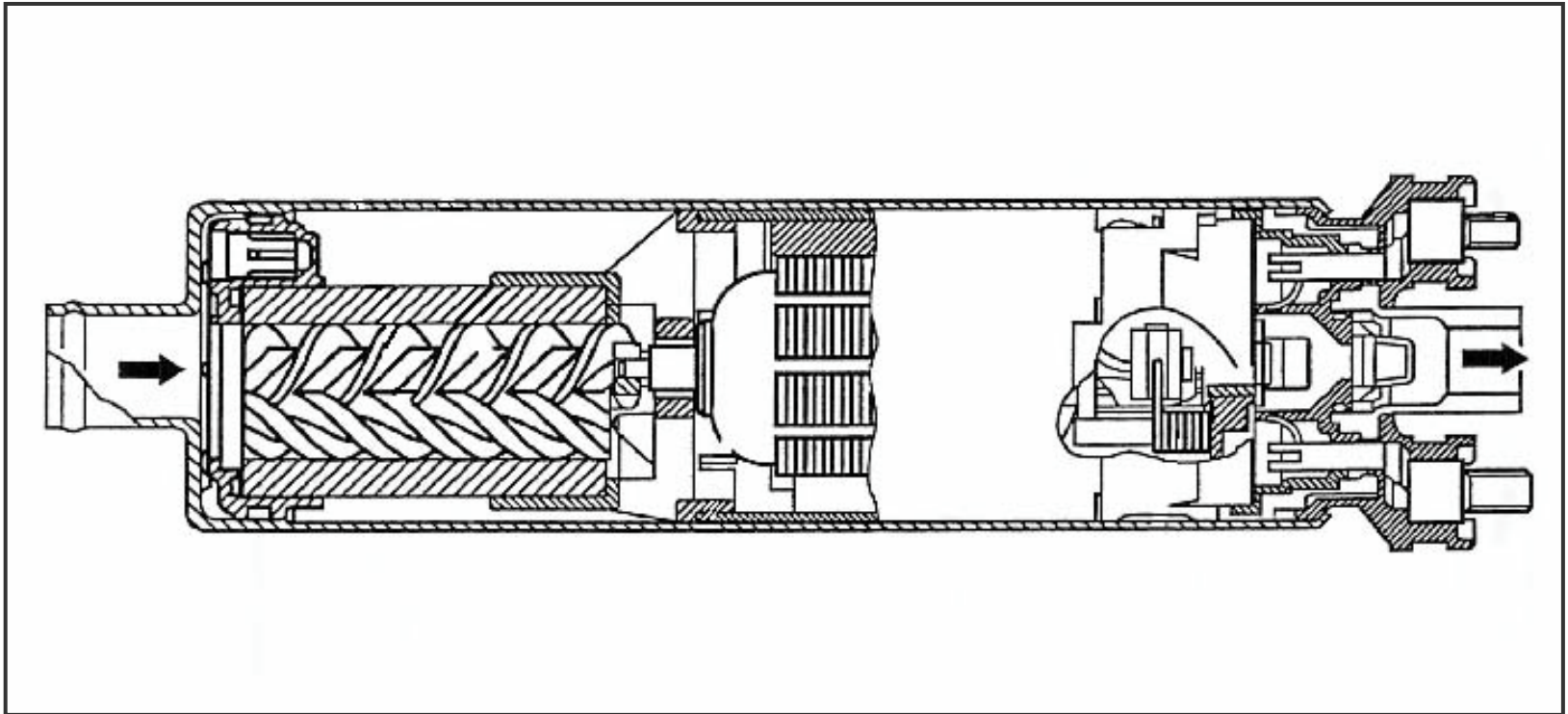
# 202 & 208 Drain Valves



# Special Tools

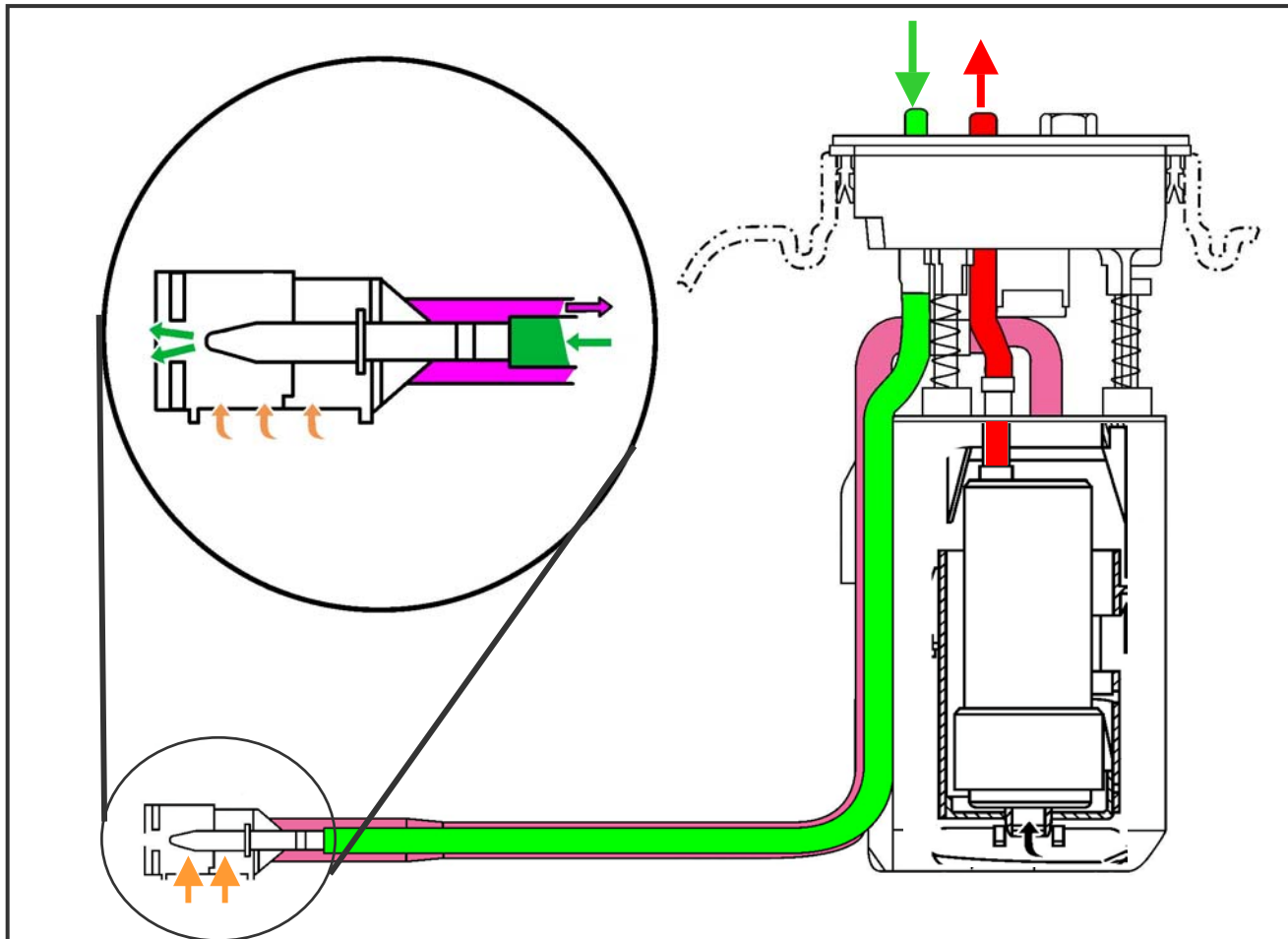


# Fuel Pumps



- Electric fuel pump.
- Never activate fuel pump out of the vehicle.
- The fuel pump is a pressure pump not a suction pump.

# Tank Mounted Pump

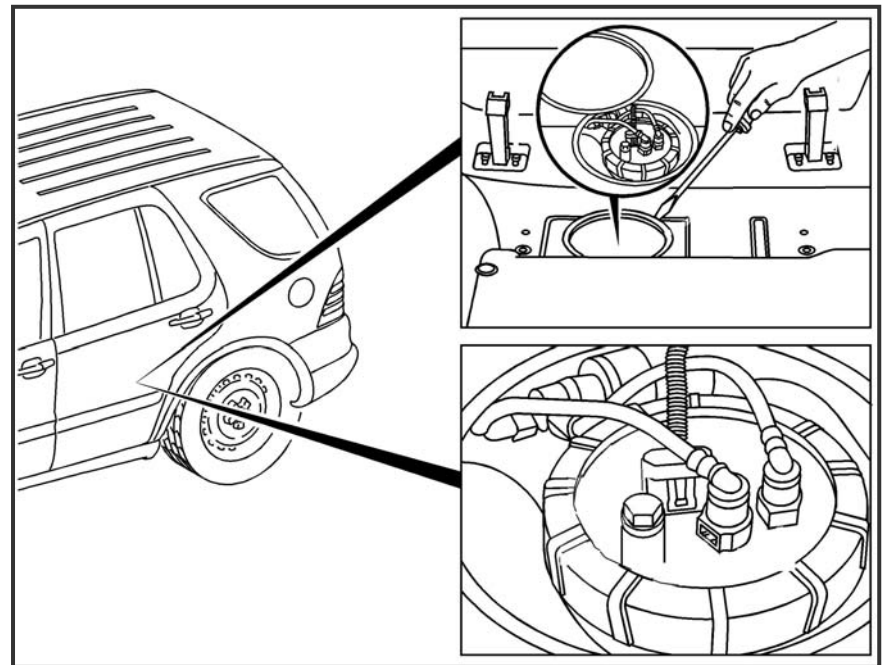
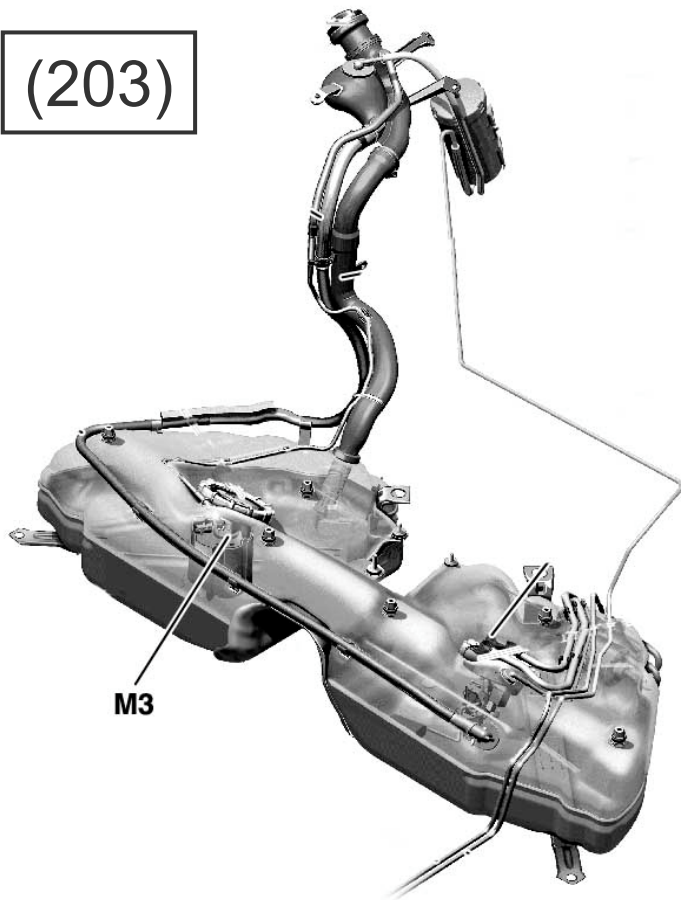


Used in:

163 chassis  
203 chassis

(163 shown)

(203)

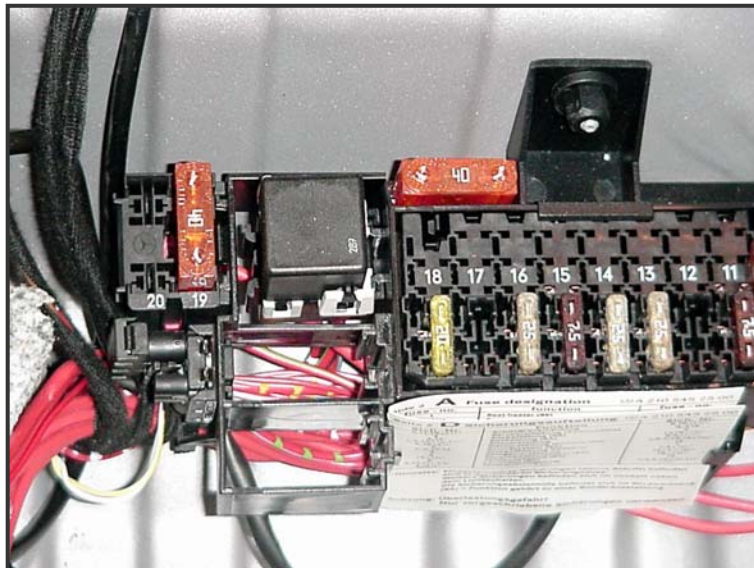
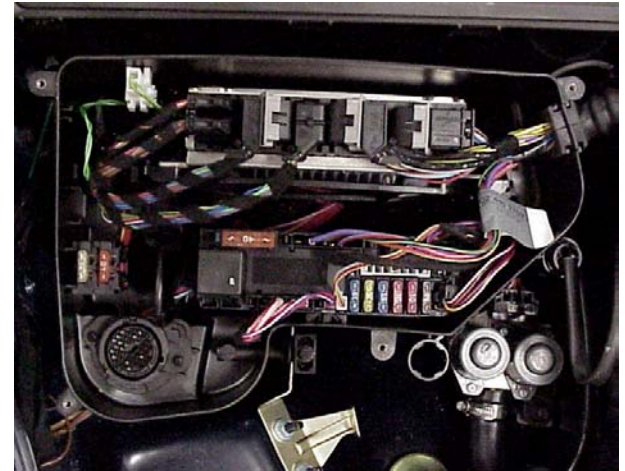




# Fuel Pump Relay

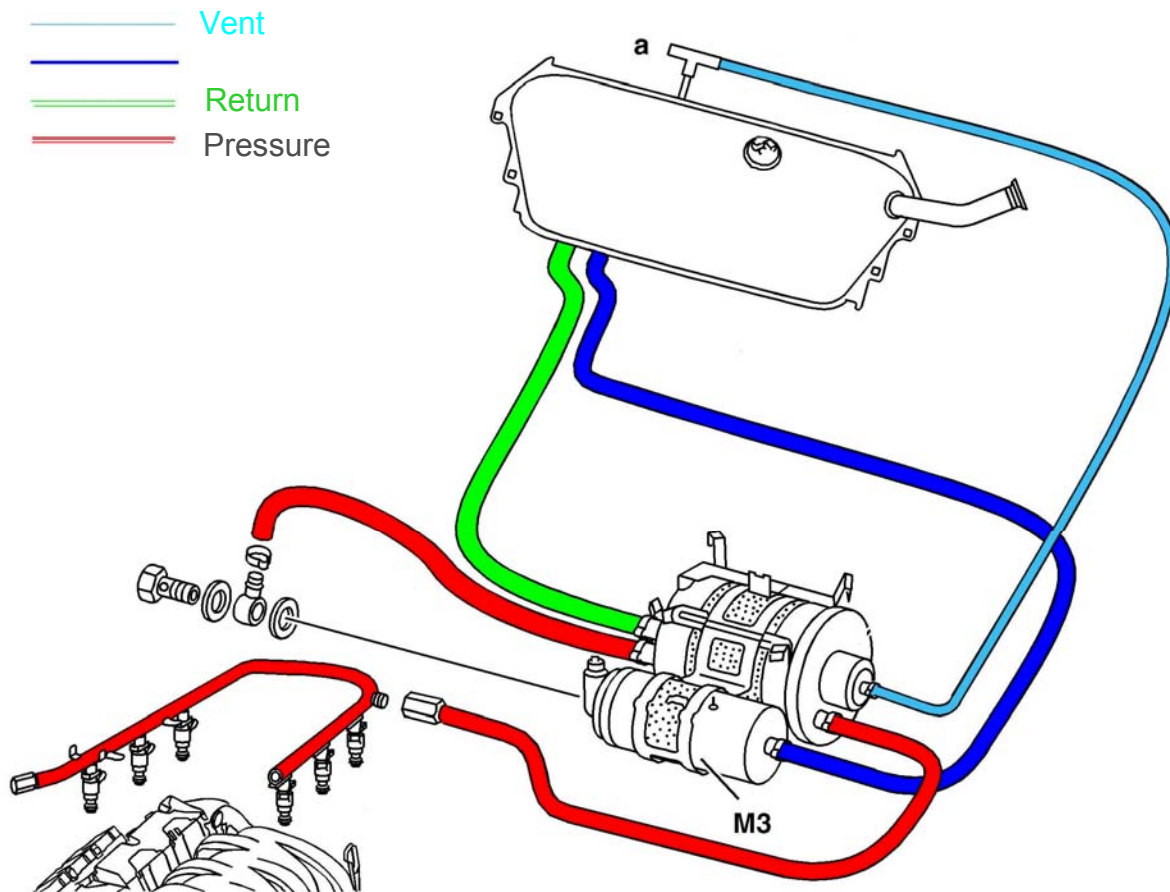
The fuel pump relay is controlled by the ME control unit.

Location varies with chassis.

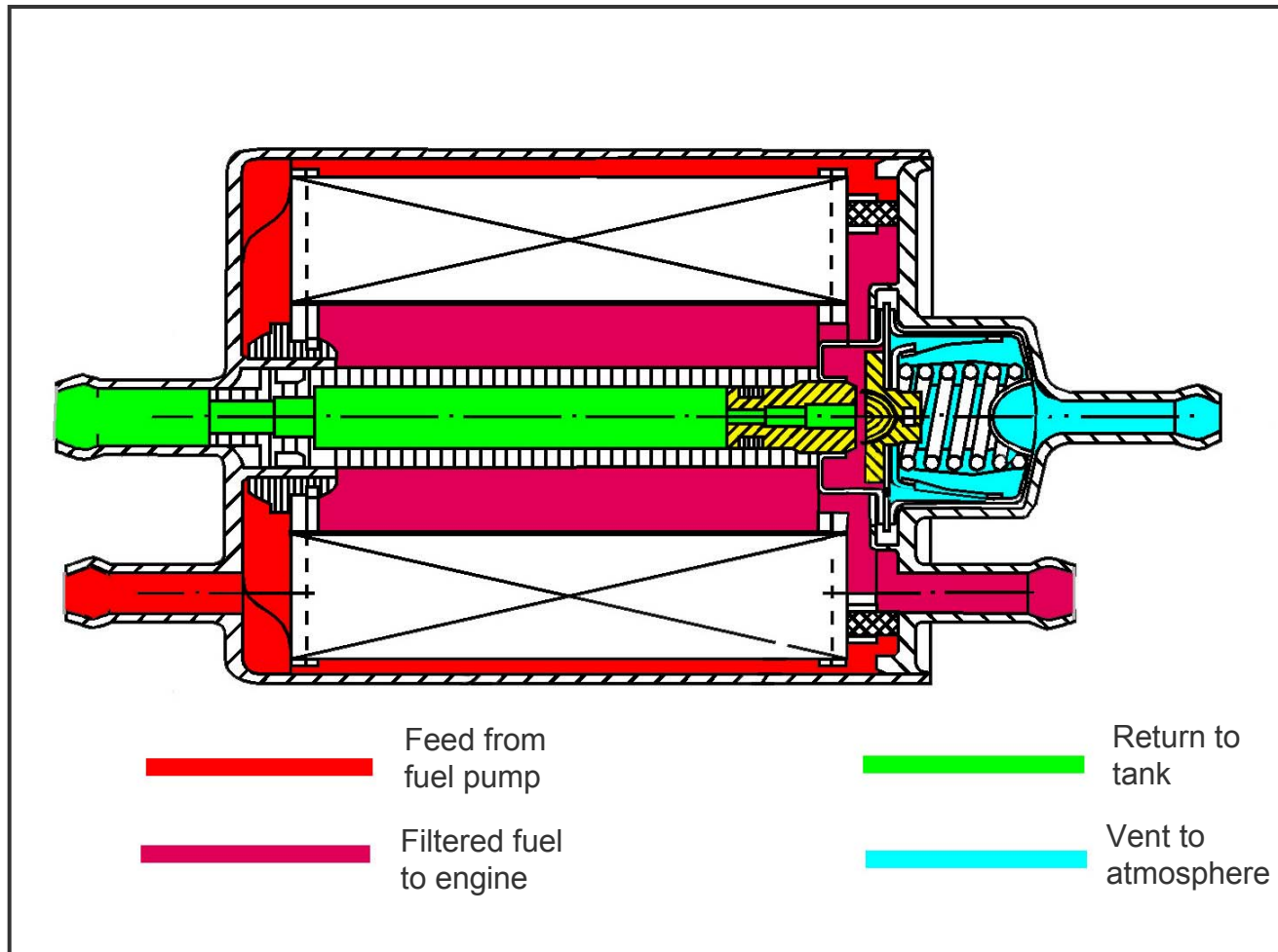


# Supply

This fuel supply system has the pressure regulator located in the fuel filter.



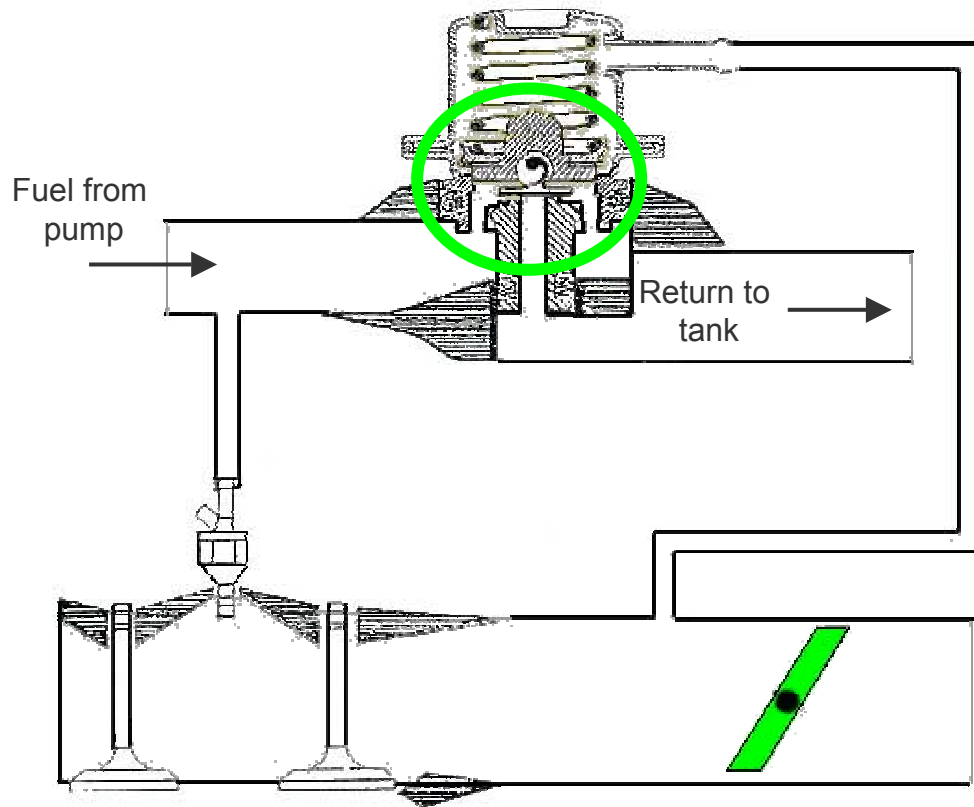
# Pressure Regulator in Filter



Fuel filter/  
regulator  
does NOT  
balance fuel  
pressure.

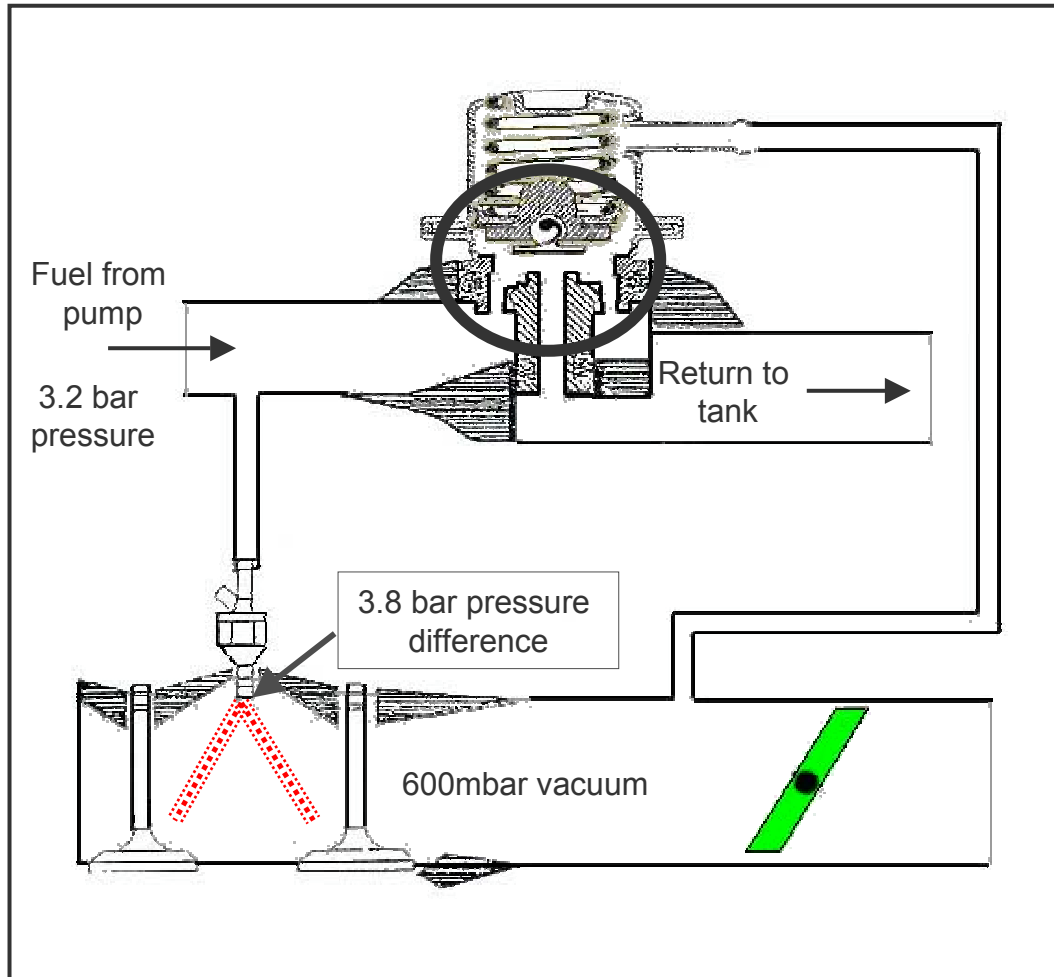


# Pressure Regulator - Engine Off



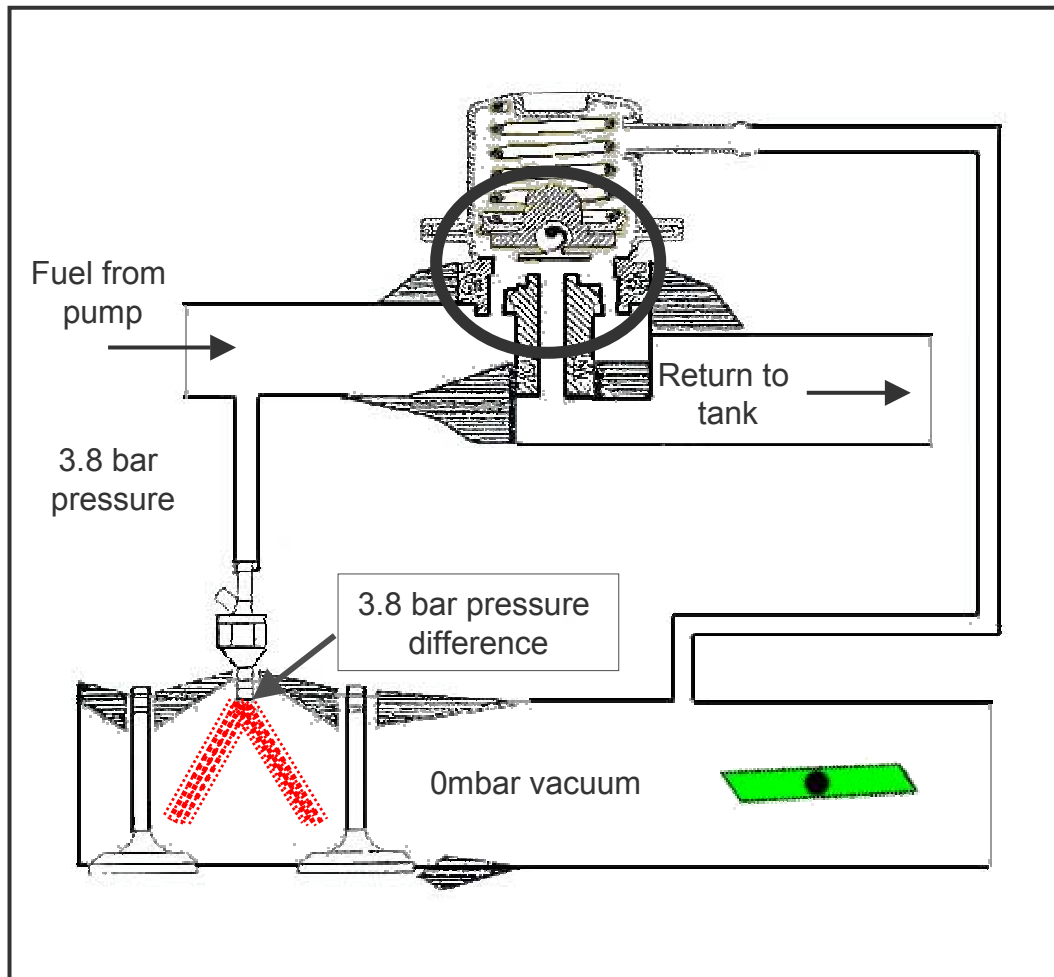
With engine off the pressure regulator functions as a check valve to maintain pressure in the fuel rail.

# Pressure Regulator - at Idle



High vacuum reduces fuel pressure to keep the pressure difference at the injector nozzle consistent.

# Pressure Regulator - Full Load



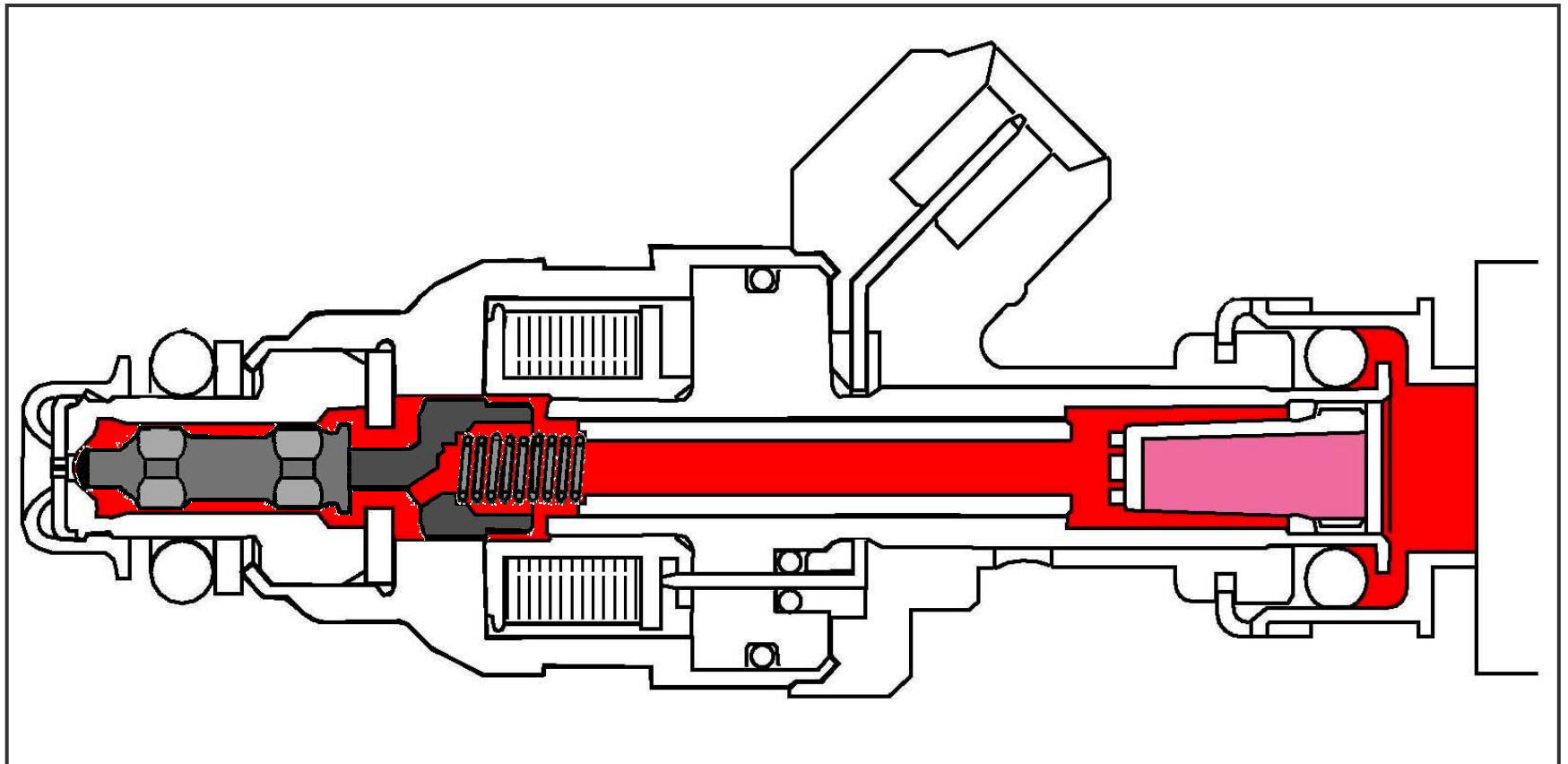
Low vacuum increases fuel pressure to keep the pressure difference at the injector nozzle consistent.

# Injectors

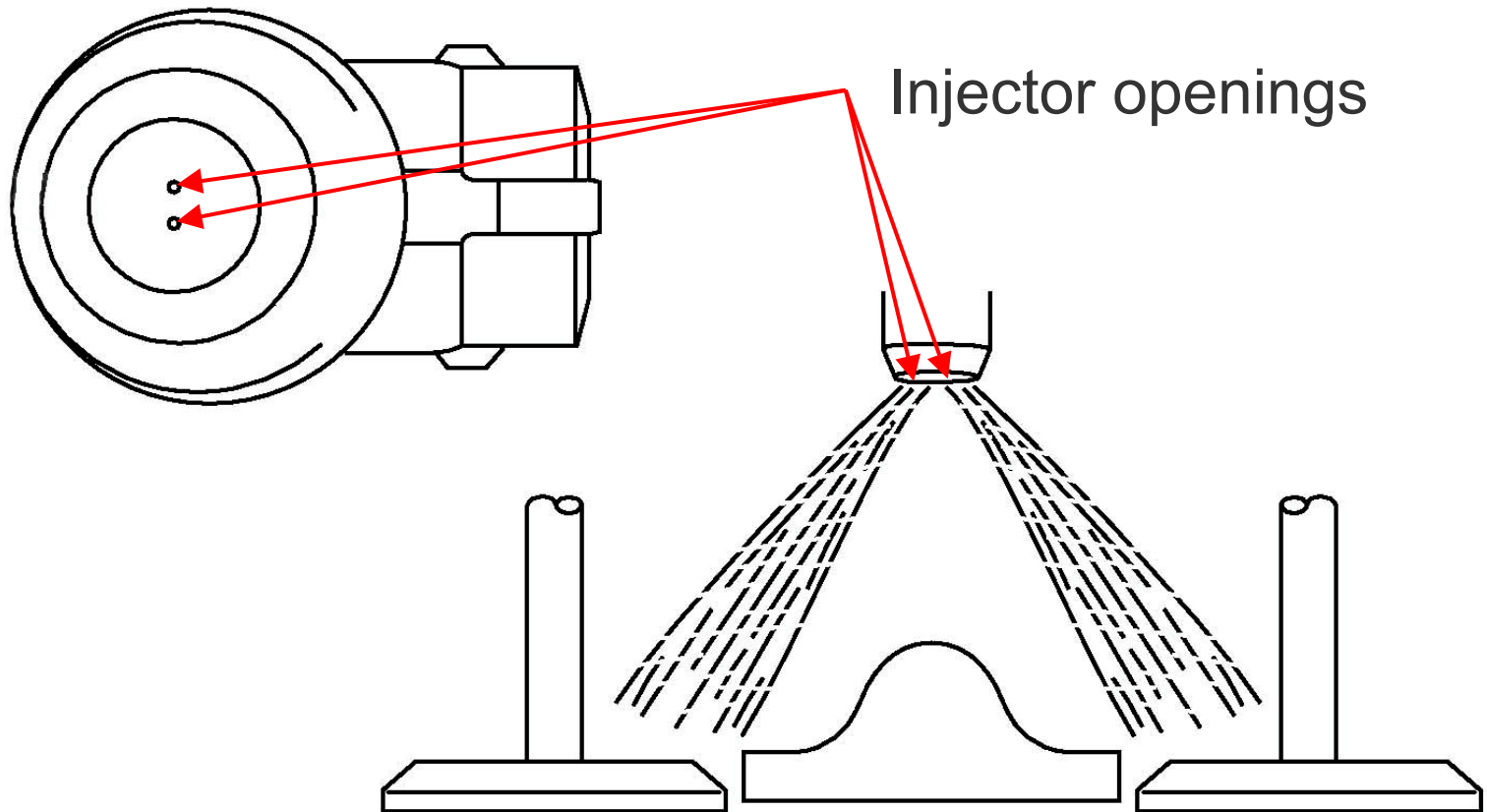


- The injectors are ground controlled from the ME control module.
- Power supply to the injectors is fused.
- If a severe misfire is detected, the affected injector is shut off.

# Injector



# Injectors



# P020(X)

ME checks the voltage and amperage draw on each injector.

If:

- $> 4.2 \text{ A}$
- $< 2.5 \text{ V}$
- Approximately 5 seconds

Then after 2 consecutive driving-cycles:



# Review

1. What is the function of the siphon pump?  
A. To fill the splash bowl.
2. If an injector is not pulsing, could the cause be a defective ignition coil?  
A. YES
3. The ME control module switches the injectors on and off by controlling the \_\_\_\_\_ ?  
A. Ground