Haynes shows you how

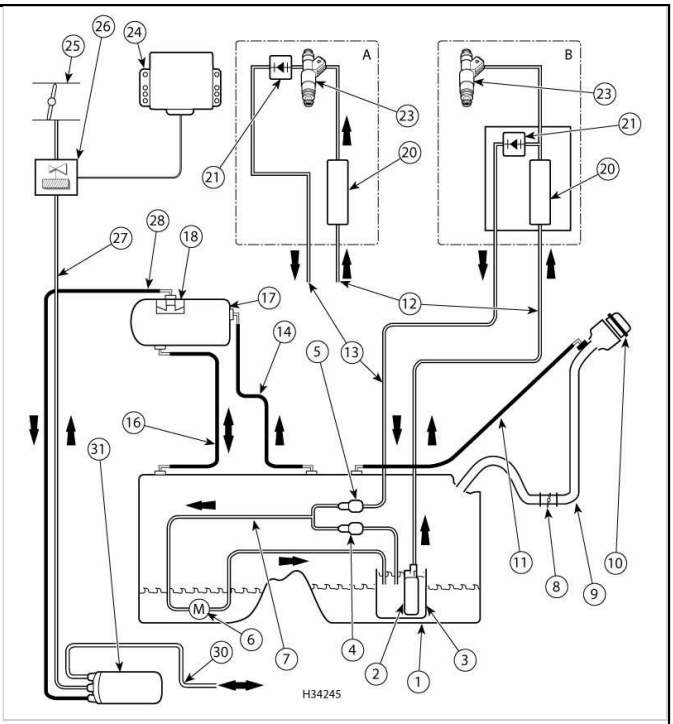
BMW 3-Series and Z4 (99-05) Includes 2006 325ci/330ci Coupe and Convertible models Haynes Online Manual.

1 General information and precautions

General information

The fuel supply system consists of a fuel tank (which is mounted under the rear of the vehicle, with an electric fuel pump immersed in it), a fuel filter, fuel feed and return lines. The fuel pump supplies fuel to the fuel rail, which acts as a reservoir for the four fuel injectors that inject fuel into the inlet tracts. The fuel filter incorporated in the feed line from the pump to the fuel rail ensures that the fuel supplied to the injectors is clean. On M52TU engines, a fuel pressure regulator is installed on the fuel injection rail, where the fuel then returns to the tank. On M54 engines, the pressure regulator is incorporated into the fuel filter assembly **(see illustration)** . On M56 engines, the pressure regulator is mounted inside the fuel tank.

1.1 Fuel system



A M52 TU engines

B M54 engines

1 Fuel tank

2 Electric pump

3 Surge chamber

4 Pressure limiting valve

5 Outlet protection valve

6 Suction jet pump

7 Tank expansion pipe

8 Non-return valve

9 Filler neck

10 Filler cap

11 Breather hose

12 Fuel supply pipe

13 Fuel return pipe

14 Breather hose

16 Breather hose

17 Expansion tank

18 Roll-over valve

20 Fuel filter

21 Pressure regulator

23 Fuel rail

24 ECM

25 Intake manifold

26 Tank vent valve

27 Purge pipe

28 Vent pipe

30 Evaporation pipe

31 Carbon canister

Refer to Section 7 for further information on the operation of the fuel injection system, and to Section 14 for information on the exhaust system.

325i models with an M56 engine

Specific 2003 and later 325i models, with automatic transmissions, are equipped with the M56 engine. These models are sold in California, Massachusetts, New York and Vermont (2004 and later) during the time this book was written. These models are designed to meet higher standards for lower emissions. The fuel delivery and emissions equipment, although similar, varies in these vehicles. As a result, the home mechanic will be limited to certain repairs due to the special tools and equipment necessary to service these systems. Moreover, these models have a sealed stainless steel fuel tank with certain fuel system components inside. If any of the components fail, the fuel tank will have to be replaced as an assembly (at least this was the case at the time this manual was written).

On the M56 engine, BMW warrants emission components (along with specified fuel delivery components) for a period of 15 years or 150,000 miles; whichever occurs first from the date the vehicle was first put into service. If the vehicle falls within this time period, take the vehicle to a BMW dealer for warranty service.

Precautions

Warning:
Gasoline is extremely flammable, so take extra precautions when you work on any part of the fuel system. Don't smoke or allow open flames or bare light bulbs near the work area, and don't work in a garage where a gas-type appliance (such as a water heater or a clothes dryer) is present. Since gasoline is carcinogenic, wear fuel-resistant gloves when there's a possibility of being exposed to fuel, and, if you spill any fuel on your skin, rinse it off immediately with soap and water. Mop up any spills immediately and do not store fuel-soaked rags where they could ignite. The fuel system is under constant pressure, so, if any fuel lines are to be disconnected, the fuel pressure in the system must be relieved first (see Section 8). When you perform any kind of work on the fuel system, wear safety glasses and have a Class B type fire extinguisher on hand.