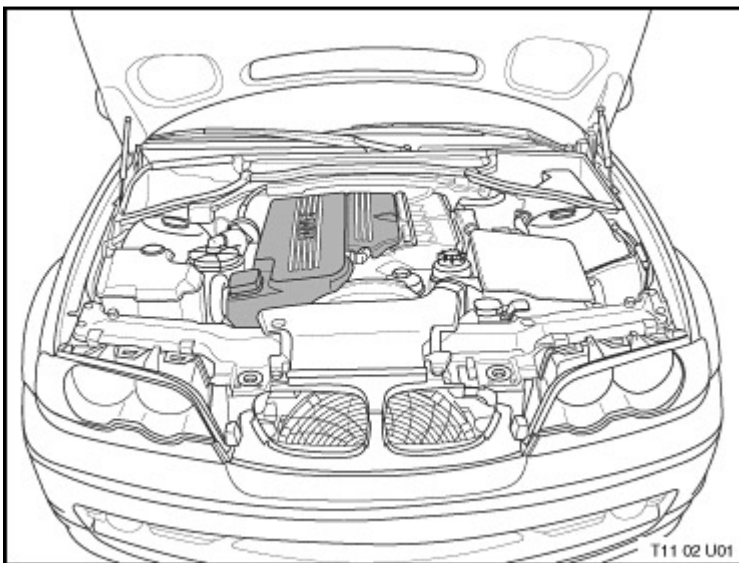


**SUBJECT****2.5 Liter Six Cylinder Engine (M56 SULEV)****MODEL**

2003 325iA (E46) sedan, coupe and sport wagon with automatic transmission

SITUATION

With the introduction of the 2003 E46 325iA (sedan, coupe and sport wagon), the M54 2.5 liter engine has been further developed to meet stricter emission requirements.



The updated 2.5 liter engine designated M56B25, has been phased into production on E46 Super Ultra Low Emission Vehicles (SULEV) along with various other emission control system changes listed below.

The M56B25 power output and vehicle performance is the same as the comparable model equipped with the M54B25 engine.

SULEV models listed above will be sold in California, New York and Massachusetts as 2003 models and in Vermont starting in 2004 model year.

The M54B25 engine will continue to be incorporated in these models (for all other states) for the 2003 model year.

In addition, these vehicles are certified as Partial Zero Emission Vehicles (PZEV):

- The vehicles meet the SULEV tailpipe emission standard, which is approximately 1/5 of the ULEV standard.
- The vehicles conform to the Zero Evaporative Emissions requirements.

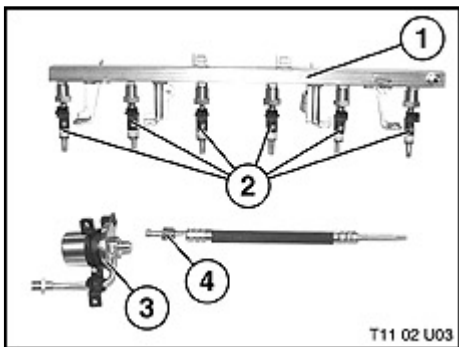
- The emission relevant components are warranted for 15 years or 150,000 miles.

System components used to achieve "Zero Evaporative Emissions" requirements:



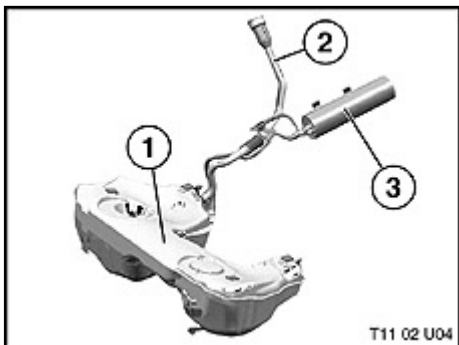
HC block in the air intake system:

Hydrocarbon escape via the intake system is prevented due to the use of an additional carbon filter (1) incorporated in the air filter housing and a "closed" throttle valve actuator (2).



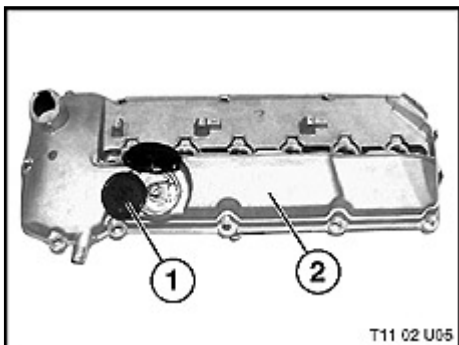
Fuel system components:

All metal fuel system components (fuel rail (1), injectors (2), tank ventilation valve (3), etc.) are made of stainless steel and are fastened together using coupling type connectors (4).



Fuel tank and tank ventilation system:

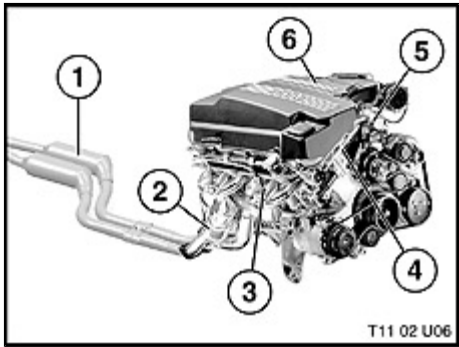
The fuel tank (1), tank filler neck (2) and evaporative canister (3) are made of stainless steel.



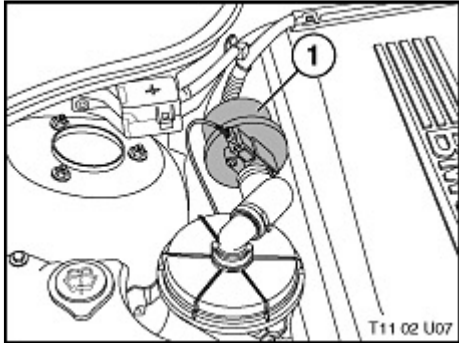
Crankcase ventilation system:

The crankcase ventilation valve (1) is incorporated in the aluminum cylinder head cover (2).

System components used to achieve SULEV tailpipe emission requirements:



- (1) Dual down stream catalytic converters
- (2) "Warm up" catalytic converters – high cell density technology
- (3) Upstream oxygen sensors – wide band technology
- (4) Pistons – only 3mm fire land
- (5) VANOS – set to fixed position during start up for improved engine start
- (6) New style fuel injectors – 4 hole design (5 bar fuel pressure)



Secondary air system with secondary air mass flow sensor (1) used for improved monitoring of secondary air flow.

In addition SULEV models also incorporate a "Direct Ozone Reduction System". The external heat exchange surfaces of the radiator are coated with a catalyst which reduces the ozone in the ambient air drawn through the radiator.

Note:

As always, your feedback on new BMW products / systems is greatly valued. Please submit Quality Control Information Reports (Pink Sheets) regarding any M56 (SULEV) related issues.

[Copyright © 2002 BMW of North America, LLC]