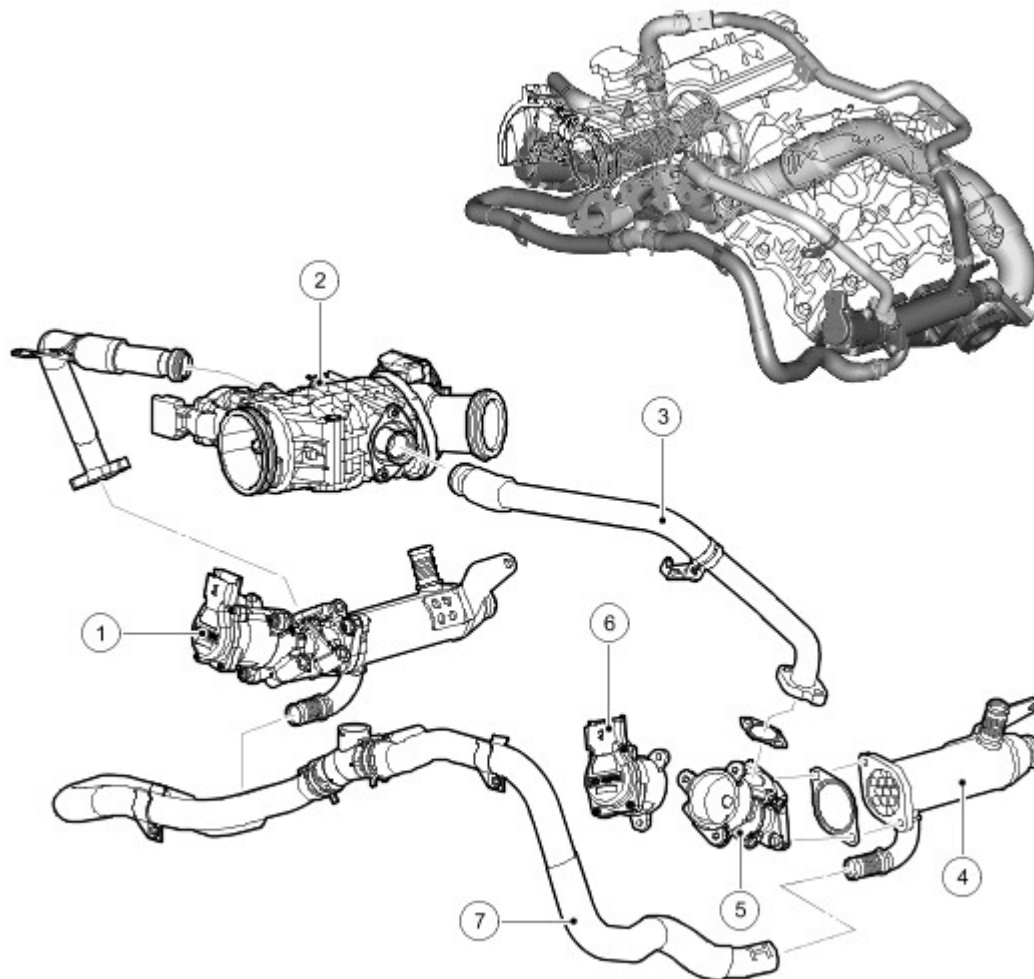




Engine Emission Control



E4B444

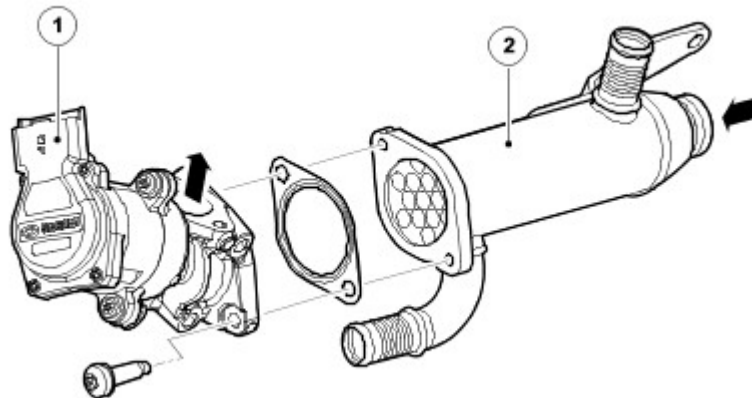
Item	Part Number	Description
1	-	EGR modulator/ cooler assembly
2	-	Electric throttle
3	-	EGR to electric throttle tube
4	-	EGR cooler
5	-	EGR modulator valve
6	-	EGR modulator solenoid valve
7	-	EGR coolant hoses

EGR SYSTEM

The EGR system comprises:

- EGR modulator x 2
- EGR cooler x 2
- Associated connecting pipes

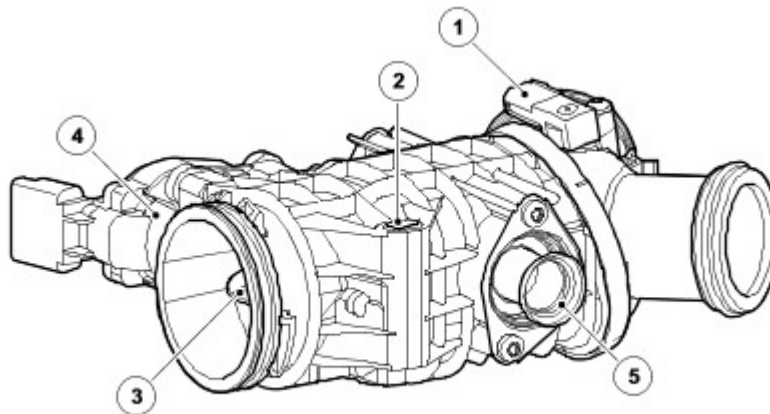
EGR Cooler and Modulator



E48446

Item	Part Number	Description
1	-	EGR modulator
2	-	EGR cooler

Electric Throttle Body



E48447

Item	Part Number	Description
1	-	Inlet air temperature sensor
2	-	Electric throttle body
3	-	Electric throttle flap
4	-	Electric throttle control motor
5	-	Gas inlet port

The EGR modulator and cooler are a combined unit.

The combined EGR modulator and cooler is located under each cylinder bank, between the exhaust manifold and the cylinder head. The cooler side of the EGR is connected to the vehicle cooling system, via hoses. The inlet exhaust side is connected directly into the exhaust manifolds on each side. The exhaust gas passes through the cooler and is expelled via the actuator and a metal pipe into the throttle housing. The EGR modulator is a solenoid operated valve which is controlled by the ECM. The ECM uses the EGR modulator to control the amount of exhaust gas being recirculated in order to reduce exhaust emissions and combustion noise. The EGR is enabled when the engine is at normal operating

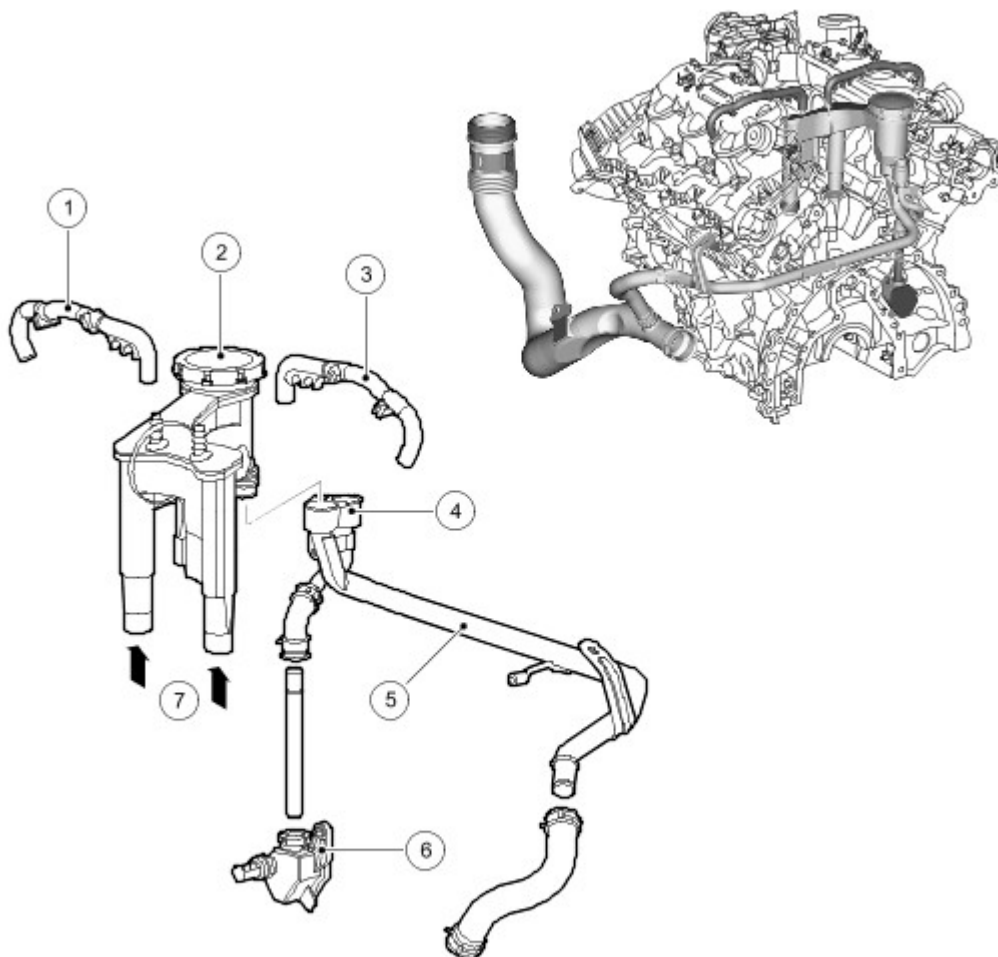
temperature and under cruising conditions.

The EGR modulator receives a 12V supply from the main relay. The ground for the solenoid is via the ECM and is controlled using a PWM signal. The PWM duty signal of the solenoid ground is varied to determine the precise amount of exhaust gas delivered to the cylinders.

The modulators are operated through their full range at each engine start-up, to clear any carbon deposits that may have built up whilst the engine was running

In the event of a failure of the EGR modulator, the EGR function will become inoperative. The ECM can monitor the EGR modulator solenoid for short circuits and store fault codes in the event of failure. The modulator can also be activated for testing using T4.

CRANKCASE VENTILATION



E48445

Item	Part Number	Description
1	-	Breather tube
2	-	Oil separator
3	-	Breather tube
4	-	Crankcase oil return connection
5	-	Oil return tube
6	-	Crankcase oil return valve

7	-	Breather flow
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The crankcase ventilation system on the TdV6 ensures that all gasses emitted from the crankcase during engine running are separated from any oil particles.

Crankcase gasses are drawn into the oil separator unit from the crankcase and the cylinder head covers (both banks) where the gas and oil are separated. The gas is returned to the inlet side of the air induction system prior to the turbo charger. The oil is drained down to the sump via an oil return valve locate at the rear of the cylinder block.