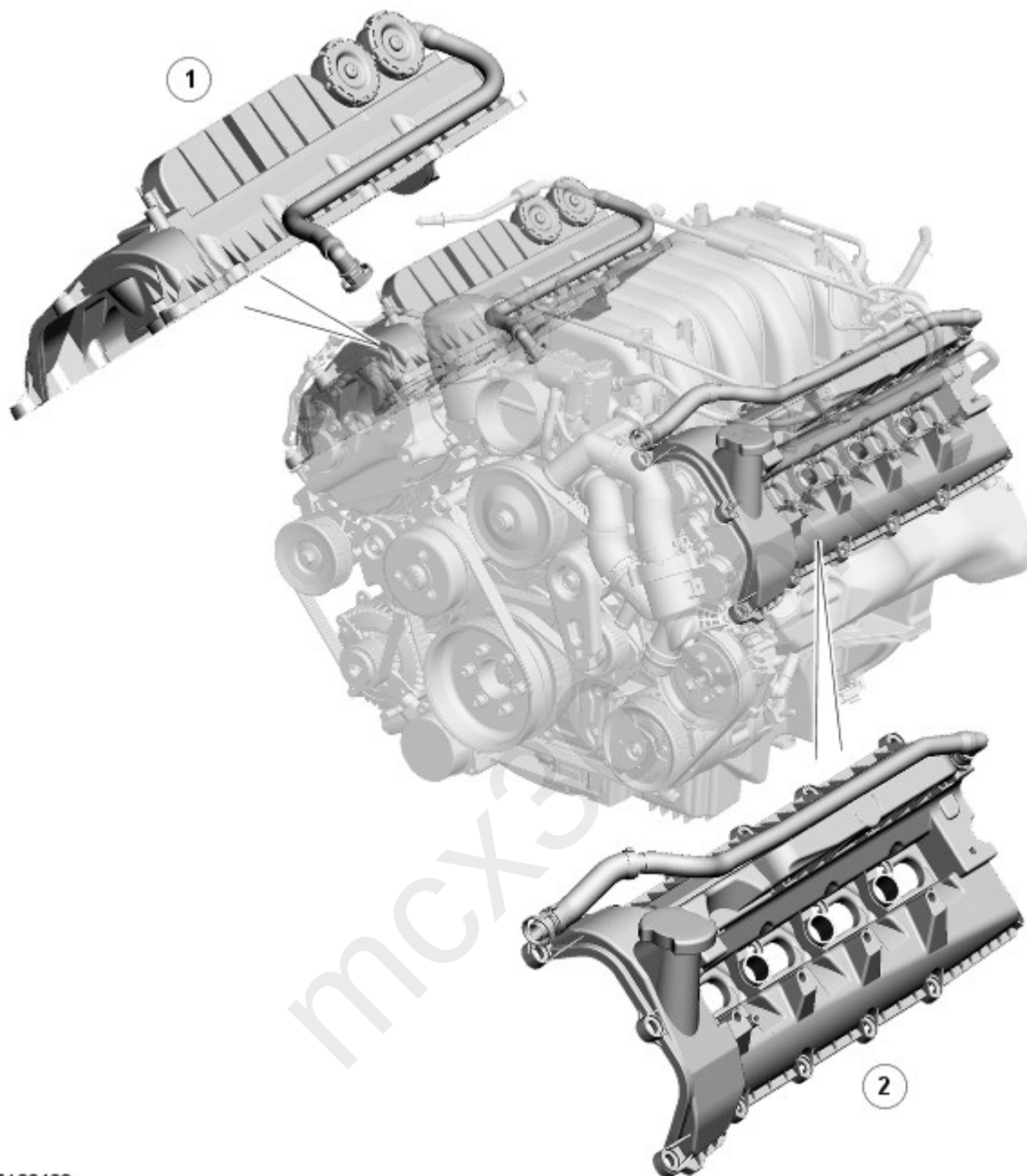


Engine Emission Control - V8 5.0L Petrol - Engine Emission Control

Description and Operation

COMPONENT LOCATION



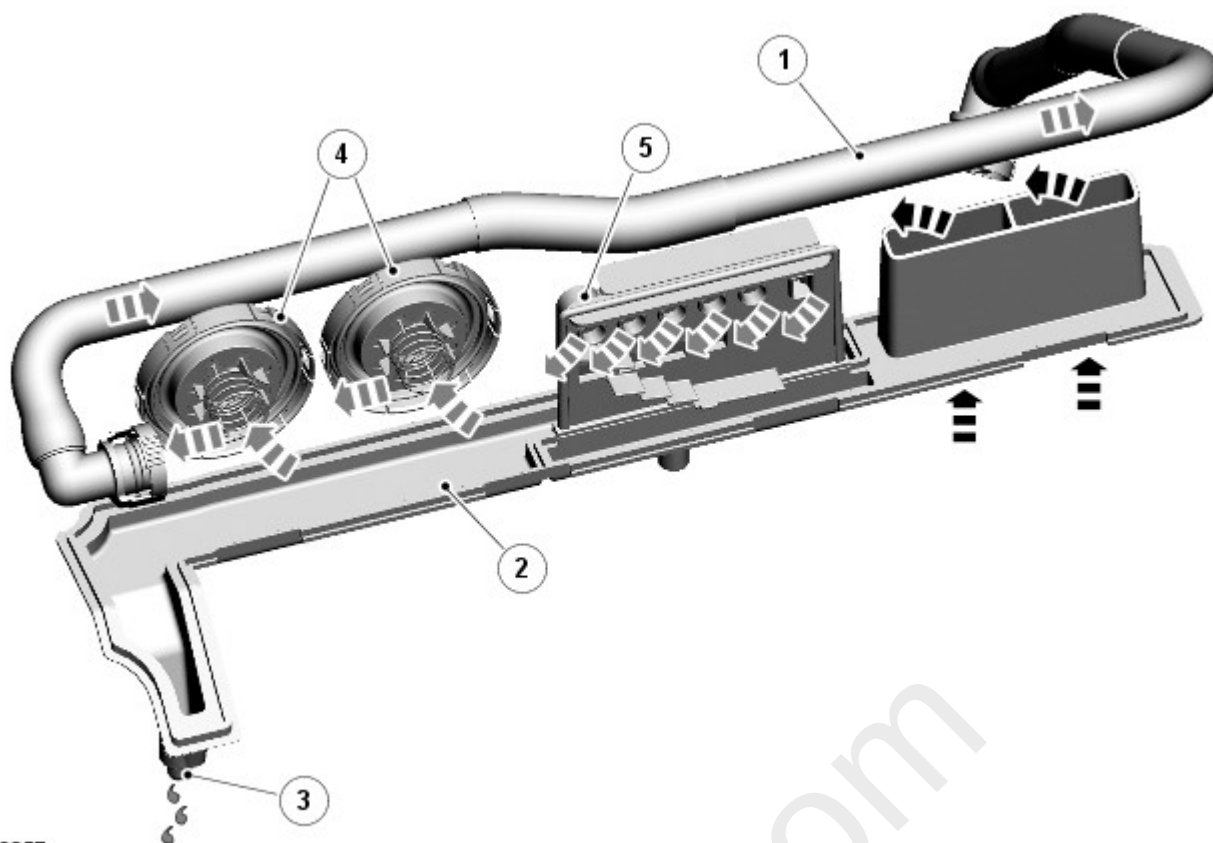
E122438

Item	Part Number	Description
1	-	Part load breather
2	-	Full load breather

INTRODUCTION

The engine emission control system reduces the level of hydrocarbon emissions released to atmosphere from the engine. The engine emission control system consists of a **PCV (positive crankcase ventilation)** system with part and full load breathers. Piston blow-by gases are drawn through the breathers into the engine air intake and added to the air charge. The resultant depression in the engine sump, front covers and cylinder head covers reduces the load on the joint seals in those areas.

PART LOAD BREATHER



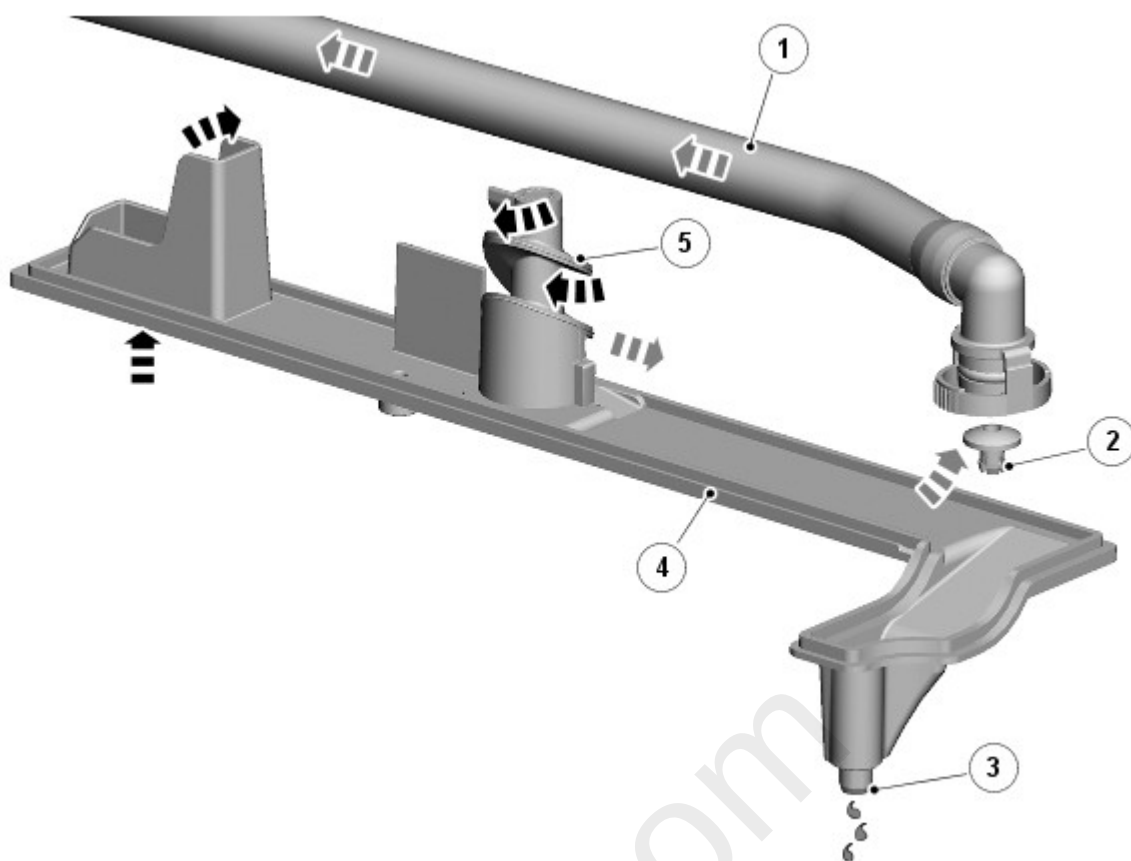
E113857

Item	Part Number	Description
1	-	Flexible hose
2	-	Baffle plate
3	-	Oil drain
4	-	PCV (positive crankcase ventilation) valve
5	-	Oil separator

The part load breather consists of an oil separator, two [PCV](#) valves and a flexible hose. The oil separator and the [PCV](#) valves are installed in the top of the [RH \(right-hand\)](#) cylinder head cover. The flexible hose connects the [RH](#) cylinder head cover to the inlet of the intake manifold.

The oil separator is installed in a channel in the top of the cylinder head cover. A baffle plate, which incorporates a gas inlet and an oil drain, is installed over the channel. The two [PCV](#) valves are installed on the outside of the cylinder head cover and connected in parallel in the gas outlet from the channel to the flexible hose. The [PCV](#) valves prevent reverse flow into the cylinder head cover when there is minimal depression in the intake manifold.

FULL LOAD BREATHER



E113867

Item	Part Number	Description
1	-	Flexible hose
2	-	Two-way valve
3	-	Oil drain
4	-	Baffle plate
5	-	Oil separator

The full load breather consists of an oil separator, a two-way valve and a flexible hose. The oil separator and the two-way valve are installed in the top of the **LH (left-hand)** cylinder head cover. The flexible hose connects the **LH** cylinder head cover to the **LH** air duct of the intake air distribution and filtering system.

The oil separator is installed in a channel in the top of the cylinder head cover. A baffle plate, which incorporates a gas inlet and an oil drain, is installed over the channel. The two-way valve is installed in the gas outlet from the channel. The two-way valve prevents reverse flow into the cylinder head cover when there is minimal depression in the air duct.

Engine Emission Control - V8 5.0L Petrol - Engine Emission Control

Diagnosis and Testing

Principles of Operation

For a detailed description of the engine emission control system and operation, refer to the relevant Description and Operation section of the workshop manual. REFER to: [Engine Emission Control](#) (303-08D Engine Emission Control - V8 5.0L Petrol, Description and Operation).

Inspection and Verification



CAUTION: Diagnosis by substitution from a donor vehicle is **NOT** acceptable. Substitution of control modules does not guarantee confirmation of a fault and may also cause additional faults in the vehicle being checked and/or the donor vehicle.

• **NOTE:** Check and rectify basic faults before beginning diagnostic routines involving pinpoint tests.

1. **1.** Verify the customer concern.
2. **2.** Visually inspect for obvious signs of mechanical or electrical damage.

Visual Inspection

Mechanical	Electrical
- Exhaust gas recirculation system - Breather hoses - Positive crankcase ventilation valve - Fuel level - Fuel contamination/grade/quality - Throttle body	- Fuses - Loose or corroded electrical connectors - Exhaust Gas Recirculation (EGR) valve - Engine Control Module (ECM)

3. **3.** If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.
4. **4.** If the cause is not visually evident, verify the symptom and refer to the Symptom Chart, alternatively check for Diagnostic Trouble Codes (DTCs) and refer to the DTC Index.

Symptom Chart

Symptom	Possible Causes	Action
Difficult to start cold	- Battery - Crankshaft Position (CKP) sensor - Exhaust Gas Recirculation (EGR) valve stuck open - Fuel system - Evaporative emissions purge valve	For battery information, CKP sensor, fuel system and purge valve tests, refer to relevant workshop manual section. Check the EGR valve.
Engine stalls soon after start	- Breather system disconnected/restricted - Engine Control Module (ECM) relay - MAF sensor - Ignition system - Air filter restricted - Air leakage - Fuel lines	Check the engine breather hoses, PCV, etc. Check the Engine Control Module (ECM) relay operation. For MAF sensor, ignition system tests, air intake and fuel line information, refer to relevant workshop manual section.
Poor throttle response	- APP sensor malfunction - TP sensors - ECT sensor - MAF sensor - Transmission malfunction - Traction control event - Air leakage - Breather system disconnected/restricted	For APP, TP, ECT, MAF sensor tests, intake system checks and transmission information, refer to relevant workshop manual section. Check the breather system hoses, PCV, etc.

DTC Index

For a list of Diagnostic Trouble Codes (DTCs) that could be logged on this vehicle, please refer to Section 100-00. REFER to: [Diagnostic Trouble Code \(DTC\) Index - V8 5.0L Petrol, DTC: Engine Control Module \(PCM\)](#) (100-00 General Information, Description and Operation) / [Diagnostic Trouble Code \(DTC\) Index](#) (100-00, Description and Operation).