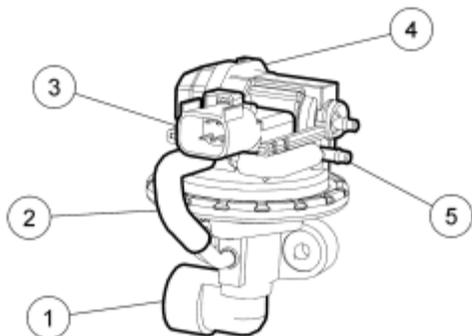


Exhaust Gas Recirculation (EGR) System Module (ESM)

The ESM system components have been integrated into a single component called the ESM. The flange of the valve portion of the ESM bolts directly to the intake manifold with a metal gasket that forms the metering orifice. This arrangement increases system reliability, response time, and system precision. By relocating the EGR orifice from the exhaust to the intake side of the EGR valve, the downstream pressure signal measures manifold absolute pressure. This manifold absolute pressure signal is used for EGR correction and inferred barometric pressure (BARO) at ignition ON. The system provides the PCM with a differential pressure feedback EGR signal.

ESM

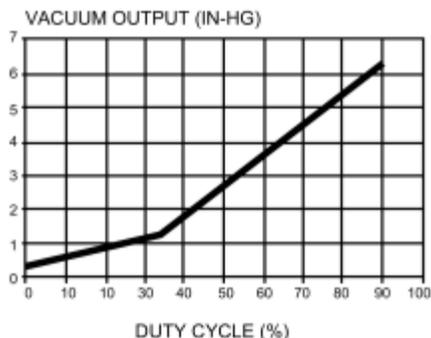


N0073130

Item	Number	Description
1	—	Exhaust Flow
2	—	Upstream Differential Pressure Feedback EGR Port
3	—	Differential Pressure Feedback EGR And Manifold Absolute Pressure (MAP) Sensor
4	—	EGR Vacuum Regulator Integrated Into Upper Body
5	—	Downstream Differential Pressure Feedback EGR Port

Exhaust Gas Recirculation (EGR) Vacuum Regulator Solenoid

The EGR vacuum regulator solenoid is an electromagnetic device used to regulate the vacuum supply to the EGR valve. The solenoid contains a coil which magnetically controls the position of a disc to regulate the vacuum. As the duty cycle to the coil increases, the vacuum signal passed through the solenoid to the EGR valve also increases. Vacuum not directed to the EGR valve is vented through the solenoid vent to the atmosphere. At 0% duty cycle (no electrical signal applied), the EGR vacuum regulator solenoid allows some vacuum to pass, but not enough to open the EGR valve.



A20906-A

Typical EGR Vacuum Regulator Duty Cycle

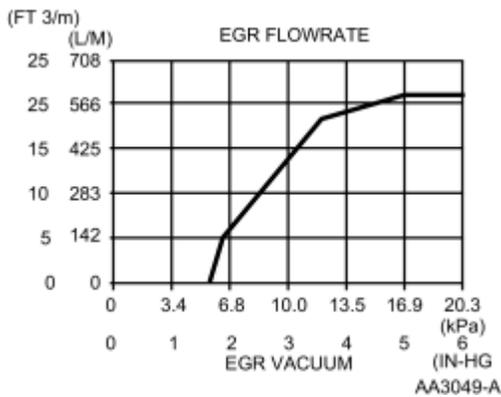
EGR Vacuum Regulator Solenoid Data

Duty Cycle (%)	Vacuum Output					
	Minimum		Nominal		Maximum	
	In-Hg	kPa	In-Hg	kPa	In-Hg	kPa
0	0	0	0.38	1.28	0.75	2.53
33	0.55	1.86	1.3	4.39	2.04	6.9
90	5.67	19.2	6.3	21.3	6.93	23.47
EGR vacuum regulator solenoid resistance: 26-40 Ohms						

Exhaust Gas Recirculation (EGR) Valve

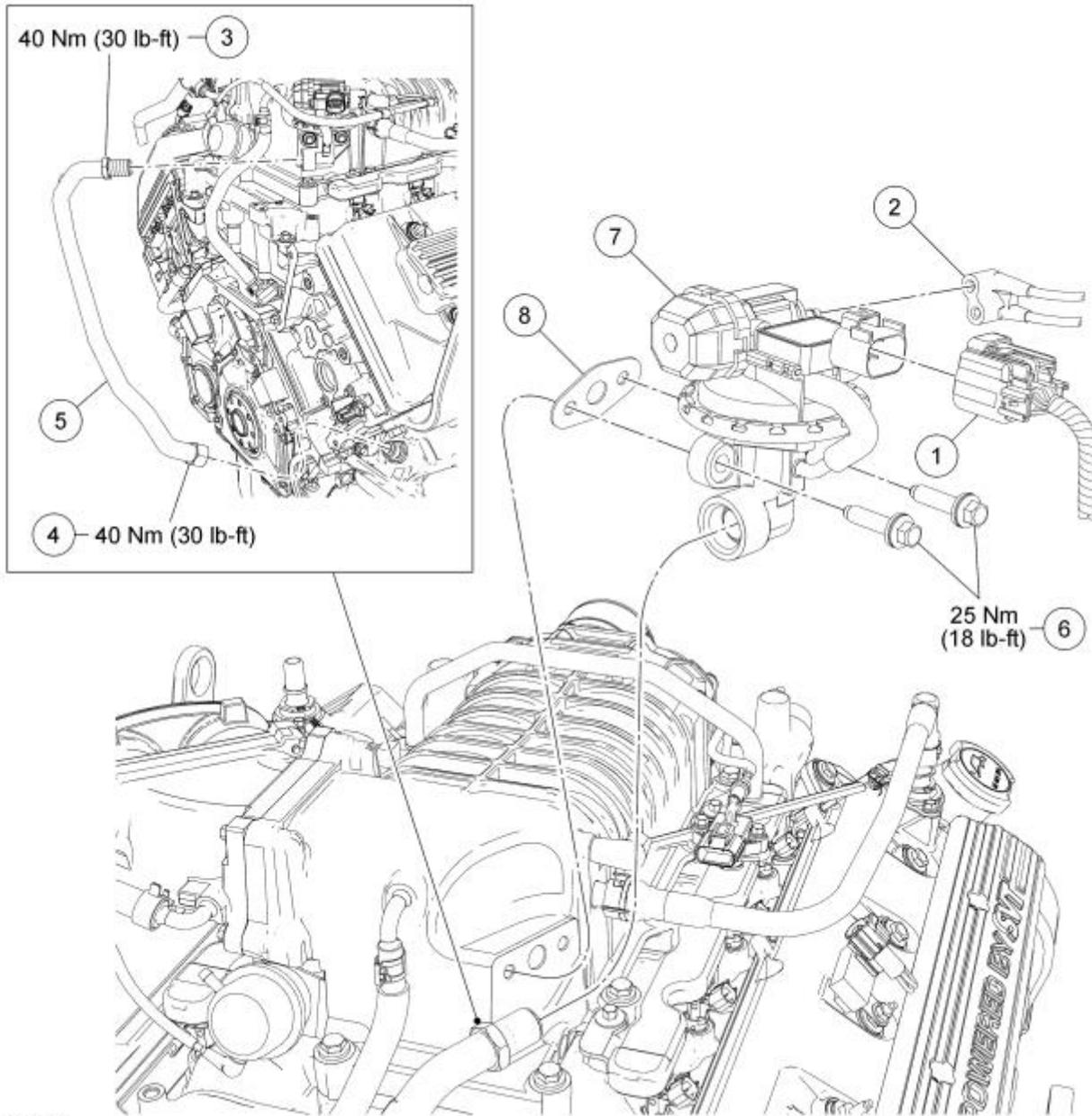
The EGR valve in the differential pressure feedback EGR system is a conventional, vacuum-actuated valve. The valve increases or decreases the EGR flow. As vacuum applied to the EGR valve diaphragm overcomes the spring force, the valve begins to open. As the vacuum signal weakens, at 5.4 kPa (1.6 in-Hg) or less, the spring force closes the valve. The EGR valve is fully open at approximately 15 kPa (4.4 in-Hg).

Since the EGR flow rate requirement varies greatly, providing repair specifications on flow rate is impractical. The on board diagnostic (OBD) system monitors the EGR valve function and triggers a DTC if the test criteria is not met. The EGR valve flow rate is not measured directly as part of the diagnostic procedures.



Exhaust Gas Recirculation (EGR) System Components — Exploded View

5.8L (4V) Engine



N0085980

Item	Part Number	Description
1	14A464	EGR system module electrical connector
2	9E498	Engine vacuum harness-to- EGR system module connector
3	—	EGR system module tube-to- EGR system module fitting (part of 9D477)
4	9F485	EGR system module tube-to-exhaust manifold fitting
5	9D477	EGR system module tube
6	W701232	EGR system module bolts (2 required)
7	9Y456	EGR system module
8	9D476	EGR system module gasket

1. Refer to the procedures and/or exploded views in this section for any Warnings, Notices, Notes, Materials, Specifications, and Special Tools. Items in the exploded views may not be listed in order of removal.

Exhaust Gas Recirculation (EGR) System Module

Removal and Installation

1. Disconnect the EGR system module electrical connector.
2. Disconnect the engine harness vacuum-to-EGR system module connector.
3. Disconnect the EGR system module tube-to-EGR system module fitting.
 - To install, tighten to 40 Nm (30 lb-ft).
4. **NOTE:** Upon installation, make sure to install the correct EGR system module mounting gasket. Even though varying gaskets may be very similar, orifice sizes may differ thus causing performance issues.

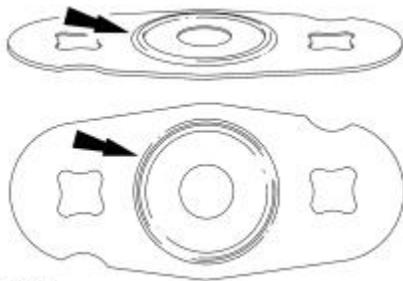
Remove the 2 bolts, the EGR system module and the gasket. Discard the gasket.

- To install, tighten to 25 Nm (18 lb-ft).
5. **NOTICE:** Do not use metal scrapers, wire brushes, power abrasive disc or other abrasive means to clean the sealing surfaces. These tools cause scratches and gouges which make leak paths. Use a plastic scraping tool to remove all traces of the old gasket.

NOTE: The EGR system module sealing surfaces are soft metals.

Carefully clean the EGR system module sealing surfaces.

6. To install, reverse the removal procedure.
 - Install a new gasket with the raised circle facing away from the EGR system module.



N0011448

Exhaust Gas Recirculation (EGR) System Module Tube

Removal

1. Remove the battery tray. For additional information, refer to Section 414-01.
2. Disconnect the EGR system module tube-to-EGR system module fitting.
3. Disconnect the EGR system module tube-to-exhaust manifold fitting and remove the tube.

Installation

1. Install the EGR system module tube and connect the EGR system module tube-to-exhaust manifold fitting.
 - Tighten to 40 Nm (30 lb-ft).
 2. Connect the EGR system module tube-to-EGR system module fitting.
 - Tighten to 40 Nm (30 lb-ft).
 3. Install the battery tray. For additional information, refer to Section 414-01.
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