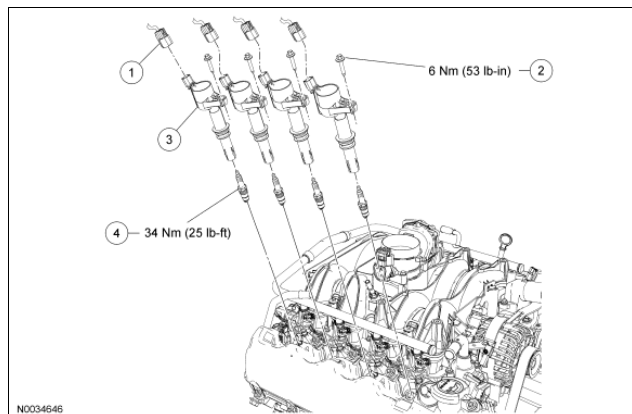
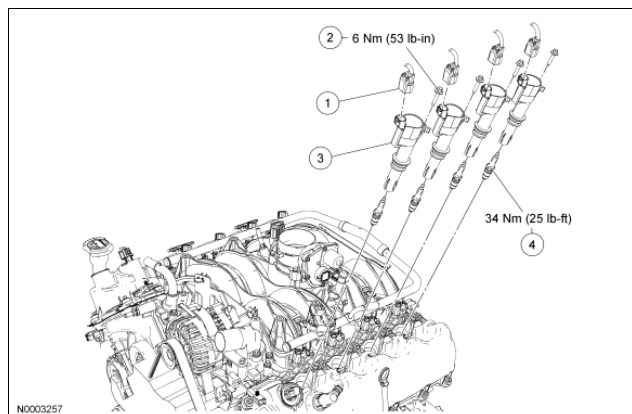


Engine Ignition Components — Exploded View**Engine Ignition — RH**

Item	Part Number	Description
1	14A464	RH ignition coil electrical connector (4 required)
2	W711062	RH ignition coil retaining bolt (4 required)
3	12A366	RH ignition coil (4 required)
4	12405	RH spark plug (4 required)

Engine Ignition — LH

Item	Part Number	Description
1	14A464	LH ignition coil electrical connector (4 required)
2	W711062	LH ignition coil retaining bolt (4 required)
3	12A366	LH ignition coil (4 required)
4	12405	LH spark plug (4 required)

1. For additional information, refer to the procedures in this section.

Ignition Coil-On-Plug

Material

Item	Specification
Silicone Brake Caliper Grease and Dielectric Compound XG-3-A	ESE-M1C171-A

Removal and Installation

1. Disconnect the ignition coil-on-plug electrical connector.
2. Remove the ignition coil-on-plug bolt.
 - To install, tighten to 6 Nm (53 lb-in).
3. **NOTE:** When removing the ignition coil-on-plug, a slight twisting motion will break the seal and ease removal.

Remove the ignition coil-on-plug.

4. **NOTE:** Verify that the ignition coil spring is correctly located inside the ignition coil-on-plug boot and that there is no damage to the tip of the boot.

To install, reverse the removal procedure.

- Apply a light coat of dielectric compound to the inside of the ignition coil boots.

Spark Plugs

Material

Item	Specification
High Temperature Nickel Anti-Seize Lubricant XL-2	ESE-M12A4-A
Motorcraft Carburetor Tune-Up Cleaner (aerosol) PM-2	—
Motorcraft Carburetor Tune-Up Cleaner (fluid) PM-3	—
Silicone Brake Caliper Grease and Dielectric Compound XG-3-A	ESE-M1C171-A

Removal

1. Disconnect the ignition coil electrical connector.
2. **NOTE:** When removing the ignition coils, a slight twisting motion will break the seal and ease removal.

Remove the bolt and the ignition coil.

3. **NOTICE:** Do not remove the spark plugs when the engine is hot or cold soaked. Spark plug thread or cylinder head damage can occur. Make sure the engine is warm (hand touch after cooling down) prior to spark plug removal.

NOTICE: Only use hand tools when removing or installing the spark plugs or damage can occur to the cylinder head or spark plug.

NOTE: Use compressed air to remove any foreign material from the spark plug well before removing the spark plugs.

Remove the spark plug in the following sequence.

1. Loosen the spark plug no more than one-eighth to one-fourth of a turn.
2. **NOTICE:** Excessive use of carburetor tune-up cleaner can introduce enough liquid volume to hydro-lock the engine.

Using carburetor tune-up cleaner, fill the spark plug well until fluid has reached the spark plug jamb nut. Follow the directions on the packaging.

3. **NOTICE:** Do not loosen or tighten the spark plug for a minimum of 15 minutes or damage to the cylinder head or spark plug may occur.

Let the carburetor tune-up cleaner soak for a minimum of 15 minutes.

4. **NOTE:** Some screeching and high effort may be noticed and is normal.

NOTE: The expected removal torque is around 45 Nm (33 lb-ft).

Tighten, and then loosen the spark plug, repeating until turning effort is reduced, and remove the spark plug.

4. Inspect the spark plug. Install a new spark plug as necessary. For additional information, refer to Section 303-00 .

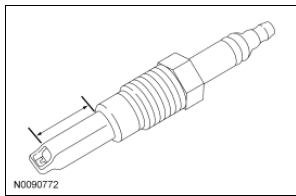
Installation

1. **NOTICE:** The spark plug gap is **NOT** adjustable. Damage can occur to the ceramic if the spark plug gap is adjusted. Install a new spark plug if the gap is out of specification.

NOTE: Refer to the specifications in this section for correct spark plug identification.

NOTE: Do not apply high temperature nickel anti-seize lubricant to the spark plug ground strap area.

Apply high temperature nickel anti-seize lubricant to only the spark plug ground electrode shield as shown.



2. **NOTICE:** Only use hand tools when removing or installing the spark plugs or damage can occur to the cylinder head or spark plug.

Install the spark plug.

- To install, tighten to 34 Nm (25 lb-ft).

3. **NOTE:** Verify that the ignition coil spring is correctly located inside the ignition coil-on-plug boot and that there is no damage to the tip of the boot.

Install the ignition coil and the bolt.

- Apply a light coat of dielectric compound to the inside of the ignition coil boots.
- To install, tighten to 6 Nm (53 lb-in).

4. Connect the ignition coil electrical connector.

General Specifications

Item	Specification
Lubricants	
Motorcraft SAE 5W-20 Premium Synthetic Blend Motor Oil XO-5W20-QSP (in Canada Motorcraft SAE 5W-20 Super Premium Motor Oil CXO-5W20-LSP12) or equivalent	WSS-M2C930-A

Torque Specifications

Description	Nm	lb-ft	lb-in
Brake booster vacuum hose bracket nut	10	—	89
Exhaust gas recirculation (EGR) system module bolts	25	18	—
EGR system module stud bolt — 4.2L and 4.6L (2V)	25	18	—
Exhaust manifold-to-EGR system module tube fittings	40	30	—
Heated positive crankcase ventilation (PCV) intake fitting bolts — 5.4L (3V)	6	—	53

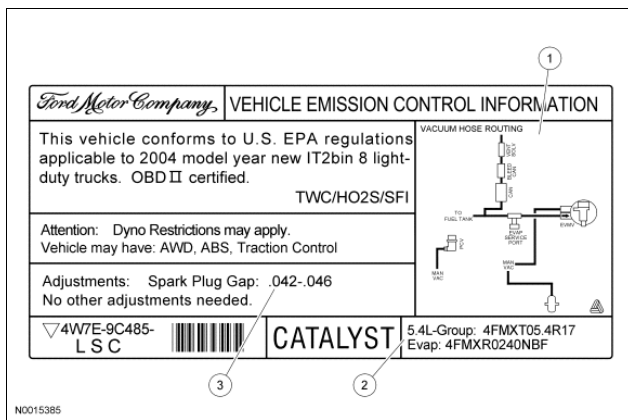
Engine Emission Control

⚠ CAUTION: Do not remove any part of the engine emission control system. Operating the engine without the engine emission control system will reduce fuel economy and engine ventilation. This will weaken engine performance and shorten engine life.

The engine emission control system consists of the:

- positive crankcase ventilation (PCV) system.
- exhaust gas recirculation (EGR) system (4.2L and 4.6L [2V] only).

Typical Vehicle Emission Control Information (VECI) Decal



Item	Part Number	Description
1	—	Engine vacuum hose routing (typical)
2	—	Engine type
3	—	Spark plug gap specification

The Vehicle Emission Control Information (VECI) decal shows:

- components of the emission control system.
- the correct vacuum hose routing.
- the color stripe of the vacuum hoses.

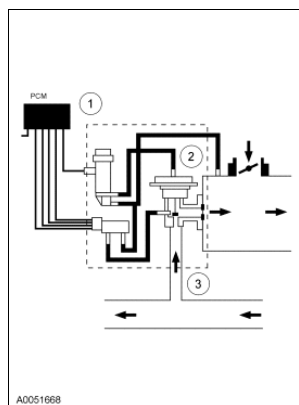
Refer to Section 100-01 .

The PCV system uses intake manifold vacuum to ventilate the crankcase and return the fumes to the intake manifold for combustion.

The PCV valve:

- controls the amount of ventilating air and blow-by gases going to the intake manifold.

EGR System Components



Item	Part Number	Description
1	12A650	Powertrain control module
2	9D475	Exhaust gas recirculation (EGR) system module
3	9D477	EGR valve-to-exhaust manifold tube

The exhaust gas recirculation (EGR) system returns a portion of the exhaust gas to the intake manifold to reduce the combustion temperature. This results in lower nitrous oxide formation.

The powertrain control module (PCM) controls the EGR system module. The EGR system module controls the vacuum to the EGR valve. When the EGR valve opens, exhaust gas flows to the intake manifold. The EGR system module measures the flow through the EGR valve to the exhaust manifold tube and sends a signal to the powertrain control module.

The EGR system module-to-exhaust manifold tube:

- connects the exhaust manifold to the EGR system module.

The EGR system module:

- monitors the EGR system module flow rate through the EGR to exhaust manifold tube.
- sends an EGR system module flow rate signal to the powertrain control module.
- supplies a manifold absolute pressure (MAP) signal to the PCM.

The EGR system module uses input from the powertrain control module to change the EGR system module operation.

Engine Emission Control

Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual.
