

SECTION 303-08: Engine Emission Control
SPECIFICATIONS

Torque Specifications

Description	Nm	lb-in
Crankcase vent oil separator bolts	10	89
EGR valve assembly bolts	20	177

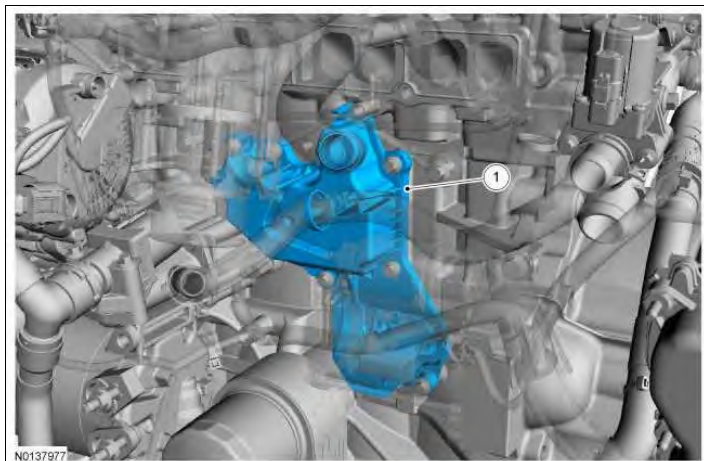
mcx30.com

SECTION 303-08: Engine Emission Control
DESCRIPTION AND OPERATION

Engine Emission Control

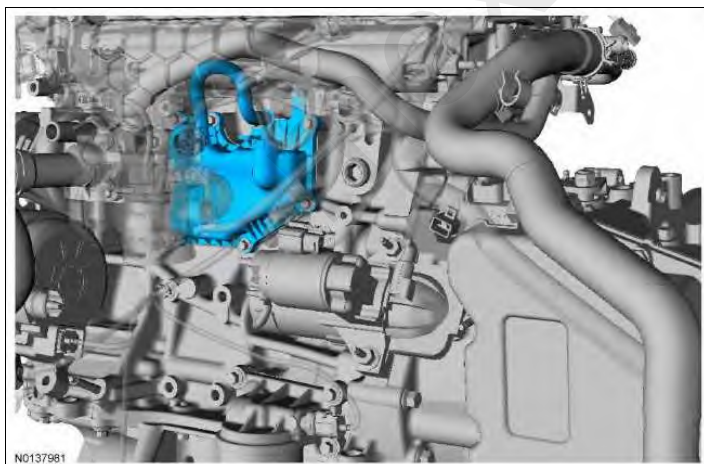
Component Location

1.6L GTDI



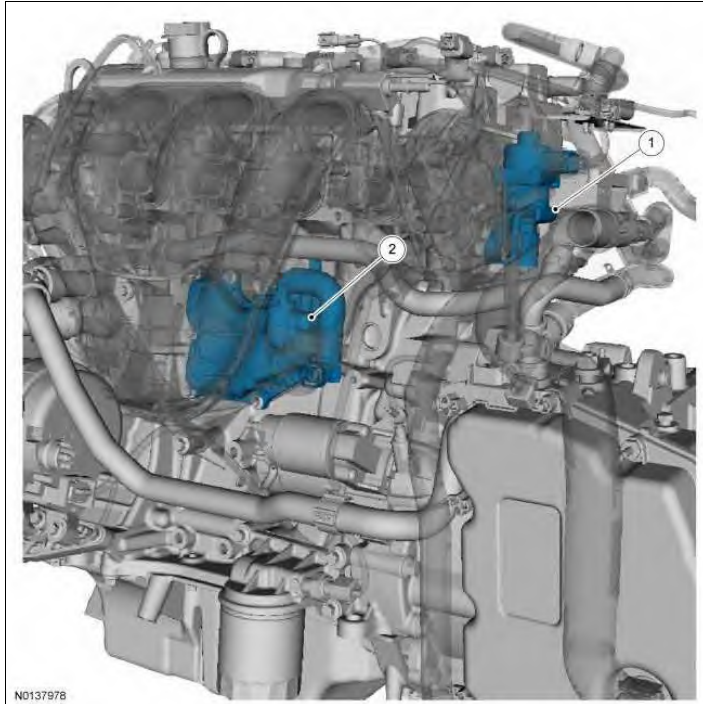
Item	Description	Comments
1	Crankcase Vent Oil Separator	-

2.0L GTDI



Item	Description	Comments
1	Crankcase Vent Oil Separator	-

2.5L



Item	Description	Comments
1	EGR	-
2	Crankcase Vent Oil Separator	-

Overview

NOTE: Do not permanently remove or render inoperative any part of the vehicle emission control system including related hardware. Failure to comply may violate applicable state and federal law.

NOTE: The vehicle emission vacuum routing diagrams are contained in the Description and Operation subsection of the Evaporative Emissions section. Refer to [Section 303-13](#).

The engine emission control system consists of the:

- EGR system.
- PCV system.

System Operation

EGR System

The EGR system returns a small amount of exhaust gas into the intake manifold. This reduces the overall combustion temperature. Cooler combustion temperatures provide a significant reduction of the Nitrogen Oxides (NOx) in the exhaust emissions.

The engine incorporates a stepper motor-controlled EGR valve which receives its signal from the PCM. Engine coolant is used to cool the EGR valve. The EGR valve and stepper motor are serviced as an assembly.

The amount of recirculated exhaust gas depends on:

- engine rpm.
- intake manifold vacuum.
- exhaust backpressure.
- engine coolant temperature.
- throttle position.

PCV System

The PCV system uses intake manifold vacuum to ventilate blow-by vapors from the crankcase and return the vapors to the intake manifold for combustion. The PCV valve varies the amount of blow-by vapors returned to the intake manifold based on available engine vacuum. The PCV valve is serviced as part of the crankcase vent oil separator.

mcx30.com

SECTION 303-08: Engine Emission Control
REMOVAL AND INSTALLATION

Exhaust Gas Recirculation (EGR) Valve - 2.5L

Material

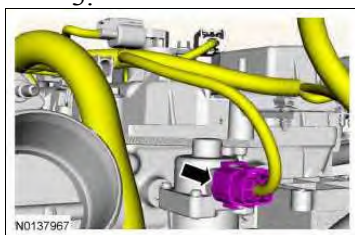
Item	Specification
Motorcraft® Metal Surface Prep ZC-31-A	-

Removal and Installation

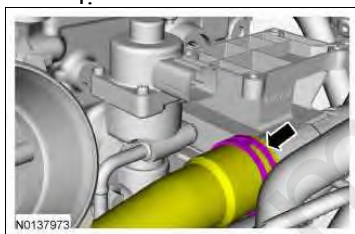
NOTE: Removal steps in this procedure may contain installation details.

1. Drain the cooling system. Refer to [Section 303-03](#) .
2. Remove the Air Cleaner (ACL) assembly. Refer to [Section 303-12](#) .

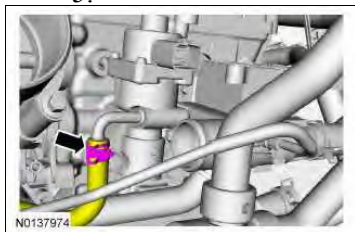
3.



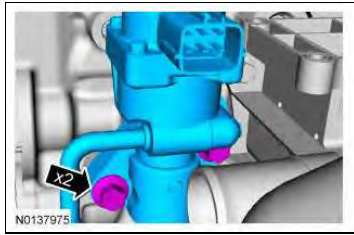
4.



5.



6. Tighten to 20 Nm (177 lb-in).



7. **NOTICE:** Do not use metal scrapers, wire brushes, power abrasive discs or other abrasive means to clean the sealing surfaces. These tools cause scratches and gouges that make leak paths. Use a plastic scraping tool to remove all traces of the Exhaust Gas Recirculation (EGR) valve gasket.

NOTE: If there is no residual gasket material present, metal surface prep can be used to clean and prepare the surfaces

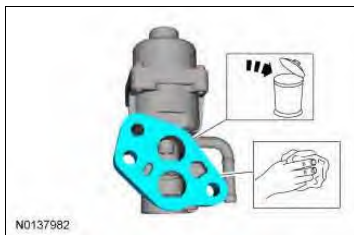
Discard the specified component. Follow local disposal regulations.

Clean the specified component with the specified material.

Material: Motorcraft® Metal Surface Prep.

To install, reverse the removal procedure.

- Install a new EGR valve gasket.



SECTION 303-08: Engine Emission Control
REMOVAL AND INSTALLATION

Crankcase Vent Oil Separator - 1.6L GTDI

Material

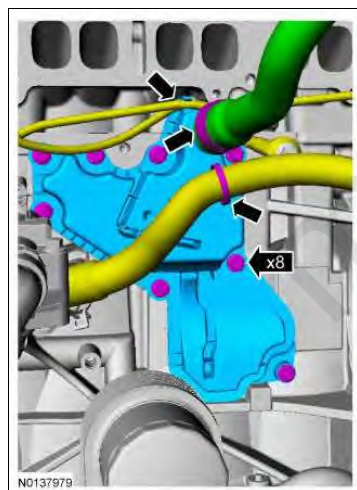
Item	Specification
Motorcraft® SAE 5W-20 Premium Synthetic Blend Motor Oil (US); Motorcraft® SAE 5W-20 Super Premium Motor Oil (Canada) XO-5W20-QSP (US); CXO-5W20-LSP12 (Canada)	WSS-M2C945-A

Removal and Installation

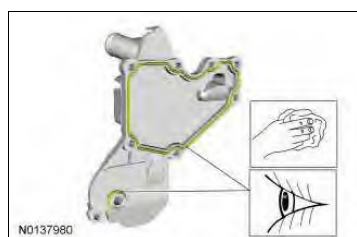
NOTICE: Clean and inspect the crankcase vent oil separator for damage prior to installation.

NOTE: Removal steps in this procedure may contain installation details.

1. Remove the intake manifold. Refer to [Section 303-01A](#).
2. Remove the starter motor. Refer to [Section 303-06](#).
3.
 - Tighten to 10 Nm (89 lb-In).



Visual check.



5. Apply the specified lubricant to the specified component.

Materials: Motorcraft® SAE 5W-20 Premium Synthetic Blend Motor Oil.



6. To install, reverse the removal procedure.

mcx30.com

SECTION 303-08: Engine Emission Control
REMOVAL AND INSTALLATION

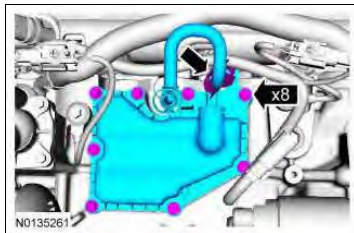
Crankcase Vent Oil Separator - 2.0L GTDI

Removal and Installation

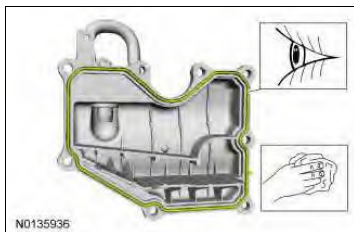
NOTICE: Clean and inspect the crankcase vent oil separator for damage prior to installation.

NOTE: Removal steps in this procedure may contain installation details.

1. Remove the intake manifold. Refer to [Section 303-01B](#) .
2. Tighten to 10 Nm (89 lb-in).



3. Clean the specified component.
Visual check.
To install, reverse the removal procedure.



SECTION 303-08: Engine Emission Control
REMOVAL AND INSTALLATION

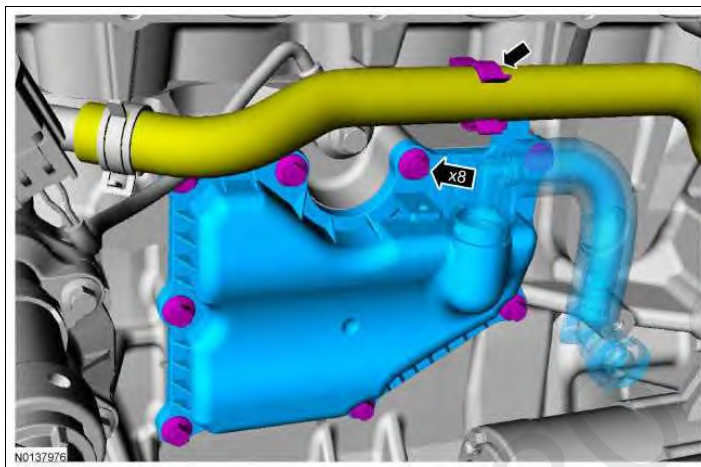
Crankcase Vent Oil Separator - 2.5L

Removal and Installation

NOTICE: Clean and inspect the crankcase vent oil separator for damage prior to installation.

NOTE: Removal steps in this procedure may contain installation details.

1. Remove the intake manifold. Refer to [Section 303-01C](#) .
2. Tighten to 10 Nm (89 lb-in).



3. To install, reverse the removal procedure.
Visual check.
Clean the specified component.

