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2021 Ford Mustang Mach-E Service and Repair Manual

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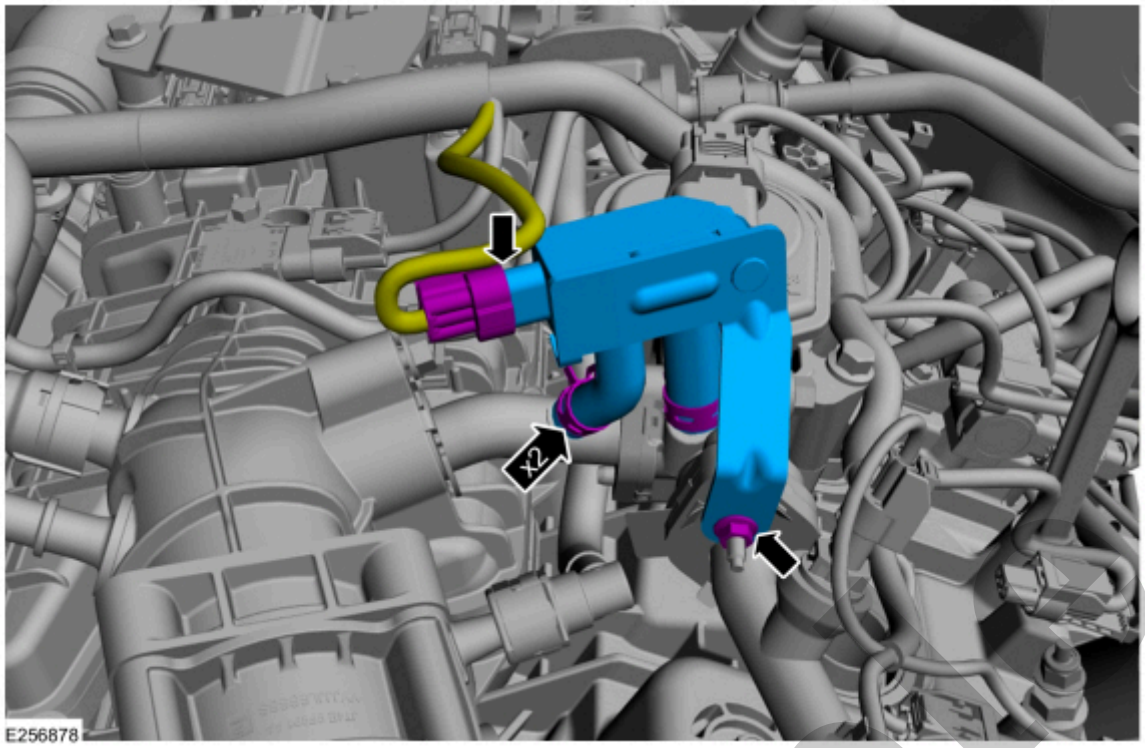
		frame data to determine the operating conditions when the DTC (diagnostic trouble code) was set.
PCM (powertrain control module) P044C:00	EGR Sensor 'C' Circuit Low: No Sub Type Information	Sets when PCM (powertrain control module) detects the average voltage to the PCM (powertrain control module) drops to a voltage less than the minimum calibrated value. The EGR (exhaust gas recirculation) monitor checks the differential pressure feedback EGR sensor signal to the PCM (powertrain control module) for low voltage.
PCM (powertrain control module) P044D:00	EGR Sensor 'C' Circuit High: No Sub Type Information	Sets when PCM (powertrain control module) detects the average voltage to the PCM (powertrain control module) exceeds the maximum calibrated value. The EGR (exhaust gas recirculation) monitor checks the differential pressure feedback EGR (exhaust gas recirculation) sensor signal to the PCM (powertrain control module) for high voltage.
PCM (powertrain control module) P139A:00	EGR Sensor 'C' Hoses Reversed: No Sub Type Information	Sets when PCM (powertrain control module) detects the differential pressure indicated by the sensor exceeds a maximum threshold or falls below a minimum threshold. At idle, the EGR (exhaust gas recirculation) monitor commands the EGR valve closed and checks the differential pressure across the EGR tube orifice which should be zero to indicate the hoses are connected and not restricted. Look for signs of water or icing in the hose. Verify the hose connection and routing. Check the differential pressure feedback EGR (exhaust gas recirculation) sensor for correct mounting and function.
PCM (powertrain control module) P139B:00	EGR Sensor 'C' Upstream Hose Off or Plugged: No Sub Type Information	Sets when PCM (powertrain control module) detects the differential pressure indicated by the sensor exceeds a maximum threshold or falls below a minimum threshold. At idle, the EGR (exhaust gas recirculation) monitor commands the EGR (exhaust gas recirculation) valve closed and checks the differential pressure across the EGR (exhaust gas recirculation) tube orifice which should be zero to indicate the hoses are connected and not restricted. Look for signs of water or icing in the hose. Verify the hose connection and routing. Check the differential pressure feedback EGR (exhaust gas recirculation) sensor for correct mounting and function.
PCM (powertrain control	EGR Sensor 'C' Downstream Hose Off or Plugged: No Sub	Sets when PCM (powertrain control module) detects the differential pressure indicated by the sensor exceeds a maximum threshold or falls below a minimum threshold. At idle, the EGR (exhaust gas recirculation) monitor commands the EGR (exhaust gas recirculation) valve closed

PCM (powertrain control module) P0404:00	EGR 'A' Control Circuit Range/Performance: No Sub Type Information	Sets when the PCM (powertrain control module) detects the EGR (exhaust gas recirculation) valve is at a position other than commanded.
PCM (powertrain control module) P0405:00	EGR Sensor 'A' Circuit Low: No Sub Type Information	Sets when the PCM (powertrain control module) detects the average voltage to the PCM (powertrain control module) drops to a voltage less than the minimum calibrated value. The EGR (exhaust gas recirculation) monitor checks the EGR (exhaust gas recirculation) valve position sensor signal to the PCM (powertrain control module) for low voltage.
PCM (powertrain control module) P0406:00	EGR Sensor 'A' Circuit High: No Sub Type Information	Sets when the PCM (powertrain control module) detects the average voltage to the PCM (powertrain control module) exceeds the maximum calibrated value. The EGR (exhaust gas recirculation) monitor checks the EGR (exhaust gas recirculation) valve position sensor signal to the PCM (powertrain control module) for high voltage.
PCM (powertrain control module) P04FA:00	EGR 'A' Control Temperature Too High: No Sub Type Information	Sets when the PCM (powertrain control module) detects the EGR (exhaust gas recirculation) valve position and speed of position is greater than a specified limit.

Possible Sources

- EGR (exhaust gas recirculation) valve circuitry concern
- MAP (manifold absolute pressure) sensor
- MAF (mass air flow) sensor
- EGR (exhaust gas recirculation) valve
- PCM (powertrain control module) (12A650)

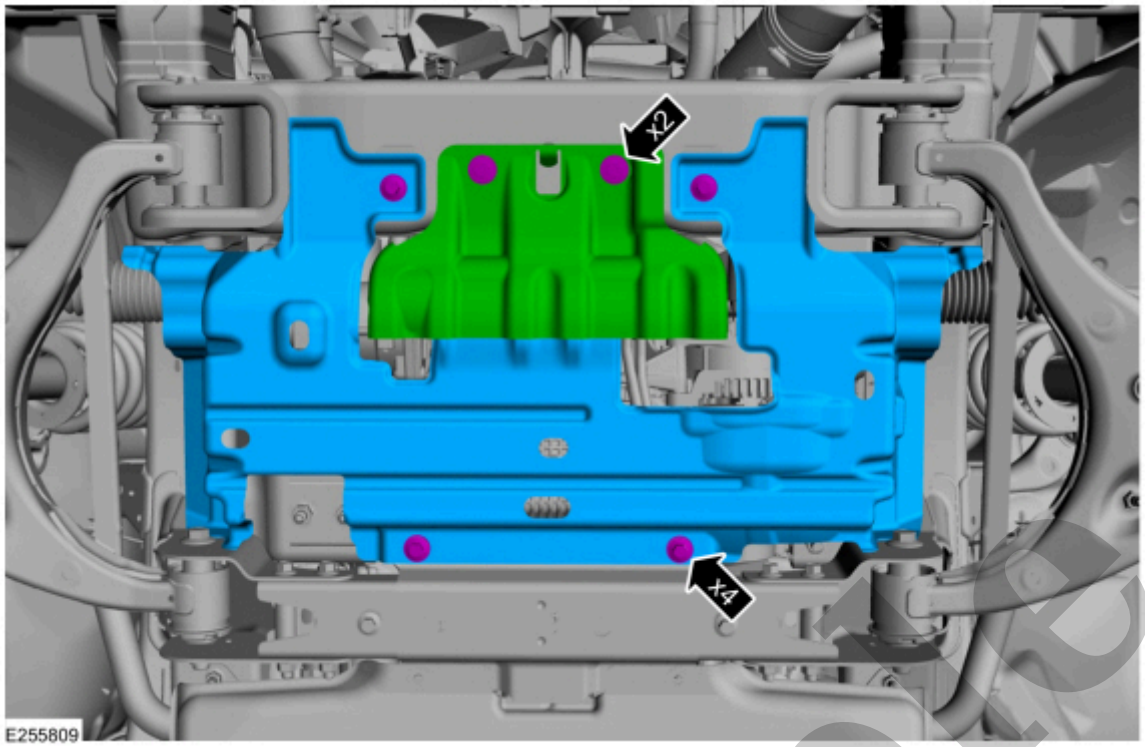
Pinpoint Test Steps available in the on-line Workshop Manual.



Click here to learn about symbols, color coding, and icons used in this manual.

Installation

1. To install, reverse the removal procedure.

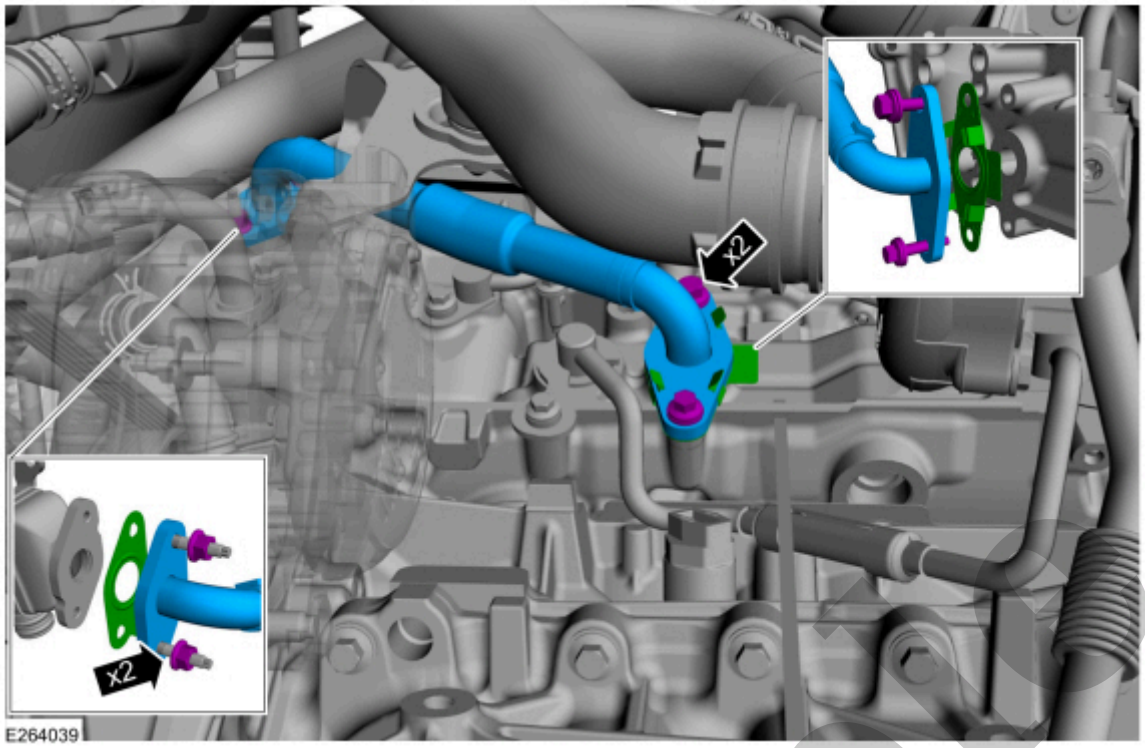


Click here to learn about symbols, color coding, and icons used in this manual.

3. Remove the air cleaner outlet pipe LH (left-hand) .

   Refer to: Air Cleaner Outlet Pipe LH(303-12A Intake Air Distribution and Filtering - 2.7L EcoBoost (238kW/324PS), Removal and Installation).

4. - Remove the fasteners.
   - Remove the EGR (exhaust gas recirculation) cooler inlet tube.
   - Remove and discard the gaskets.



Click here to learn about symbols, color coding, and icons used in this manual.

2. Install the air cleaner outlet pipe LH (left-hand) .

   Refer to: Air Cleaner Outlet Pipe LH(303-12A Intake Air Distribution and Filtering - 2.7L EcoBoost (238kW/324PS), Removal and Installation).

3. - Install the skid plates and tighten the bolts.

     Torque : 30 lb.ft (40 Nm)

Exhaust Gas Recirculation (EGR) Cooler to EGR Valve Tube

303-08A Engine Emission Control - 2.7L EcoBoost (238kW/324PS)	***2022 F-150***
Removal and Installation	***Procedure revision date: 09/23/2020***

Exhaust Gas Recirculation (EGR) Cooler to EGR Valve Tube

Removal

NOTE

Removal steps in this procedure may contain installation details.

1. Remove the exhaust pressure sensor.

   Refer to: Exhaust Pressure Sensor(303-14A Electronic Engine Controls - 2.7L EcoBoost (238kW/324PS), Removal and Installation).

2. Remove the EGR (exhaust gas recirculation) temperature sensor.

   Refer to: Exhaust Gas Recirculation (EGR) Temperature Sensor(303-08A Engine Emission Control - 2.7L EcoBoost (238kW/324PS), Removal and Installation).

3. - Remove the EGR (exhaust gas recirculation) cooler to EGR (exhaust gas recirculation) valve tube nuts.
   - Remove and discard the gasket.
   - Remove the differential pressure feedback EGR (exhaust gas recirculation) sensor bracket nut.

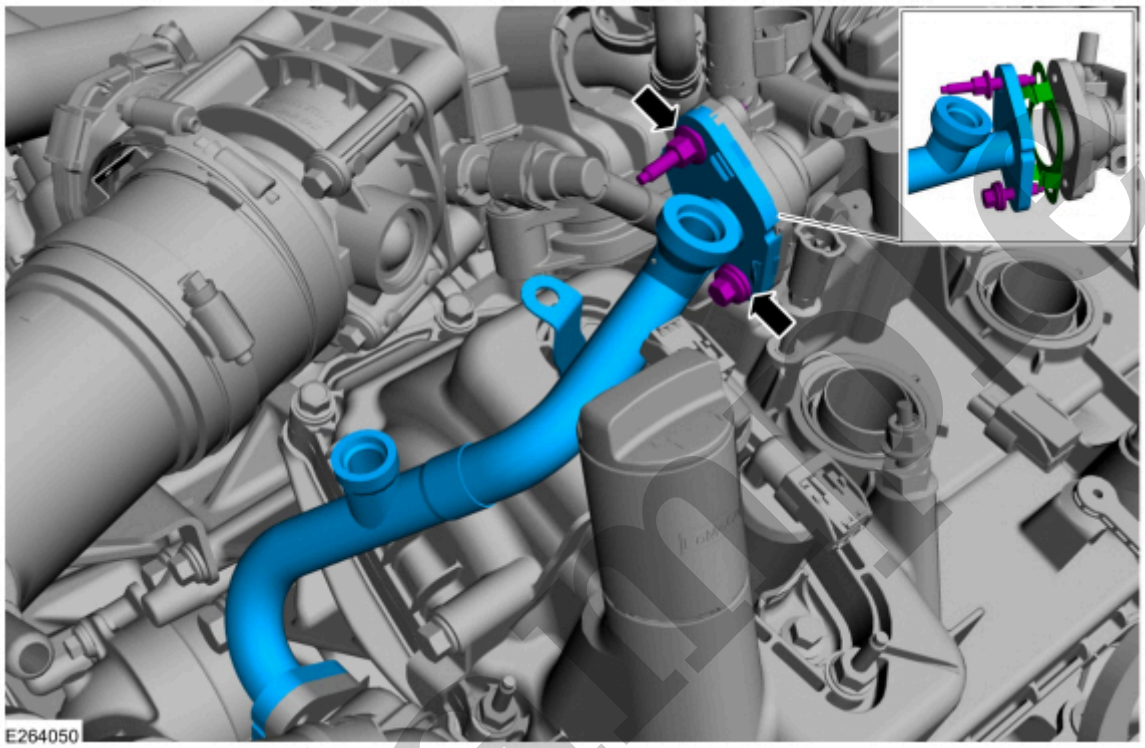
Click here to learn about symbols, color coding, and icons used in this manual.

Installation

1. - Install the fasteners.

     Torque : 89 lb.in (10 Nm)

   - Install the new gasket and EGR (exhaust gas recirculation) cooler to EGR (exhaust gas recirculation) valve tube.



Click here to learn about symbols, color coding, and icons used in this manual.

2. - Install the differential pressure feedback EGR (exhaust gas recirculation) sensor bracket nut.

     Torque : 53 lb.in (6 Nm)

   - Install the new gasket and EGR (exhaust gas recirculation) cooler to EGR (exhaust gas recirculation) valve tube.

     Torque : 89 lb.in (10 Nm)

Exhaust Gas Recirculation (EGR) Cooler

303-08A Engine Emission Control - 2.7L EcoBoost (238kW/324PS)	***2022 F-150***
Removal and Installation	***Procedure revision date: 06/29/2021***

Exhaust Gas Recirculation (EGR) Cooler

Removal

1. Drain the cooling system.

   Refer to: Engine Cooling System Draining, Vacuum Filling and Bleeding(303-03A Engine Cooling - 2.7L EcoBoost (238kW/324PS), General Procedures).

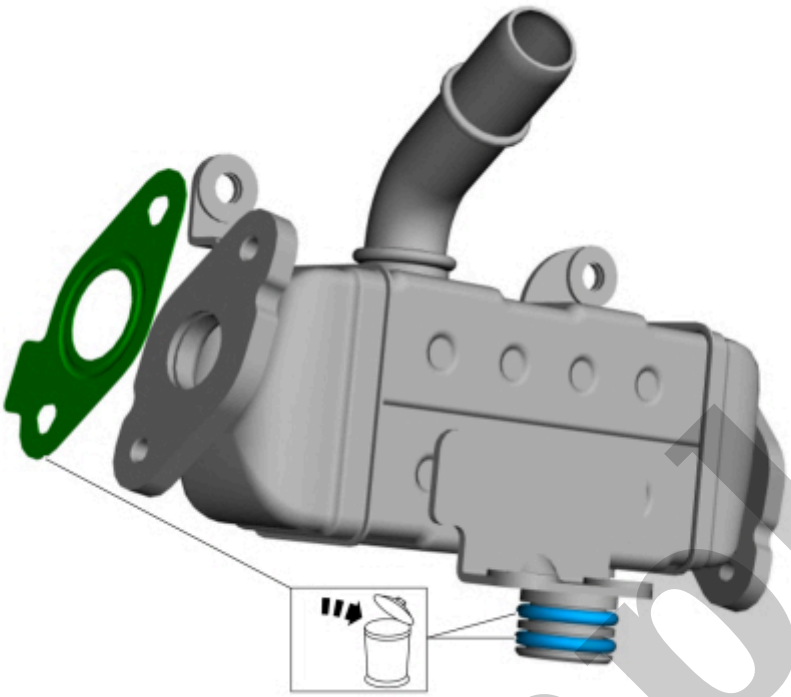
2. Remove the air cleaner outlet pipe LH (left-hand) .

   Refer to: Air Cleaner Outlet Pipe LH(303-12A Intake Air Distribution and Filtering - 2.7L EcoBoost (238kW/324PS), Removal and Installation).

3. 1. Remove the EGR (exhaust gas recirculation) cooler mounting bolts.
   2. Remove the EGR (exhaust gas recirculation) cooler tube nuts and studs, position aside the EGR (exhaust gas recirculation) cooler tube and discard the gasket.
   3. Disconnect the quick release coupling and position aside the EGR (exhaust gas recirculation) cooler outlet hose.

Click here to learn about symbols, color coding, and icons used in this manual.

5. Remove and discard the EGR (exhaust gas recirculation) cooler O-rings and gasket.



Click here to learn about symbols, color coding, and icons used in this manual.

Installation

1. - Lubricate the new EGR (exhaust gas recirculation) cooler O-rings with a small amount of engine coolant.

     Material : Antifreeze / Coolant POAT (WSS-M97B57-A1)