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2018 Ford Transit-150 Service and Repair Manual

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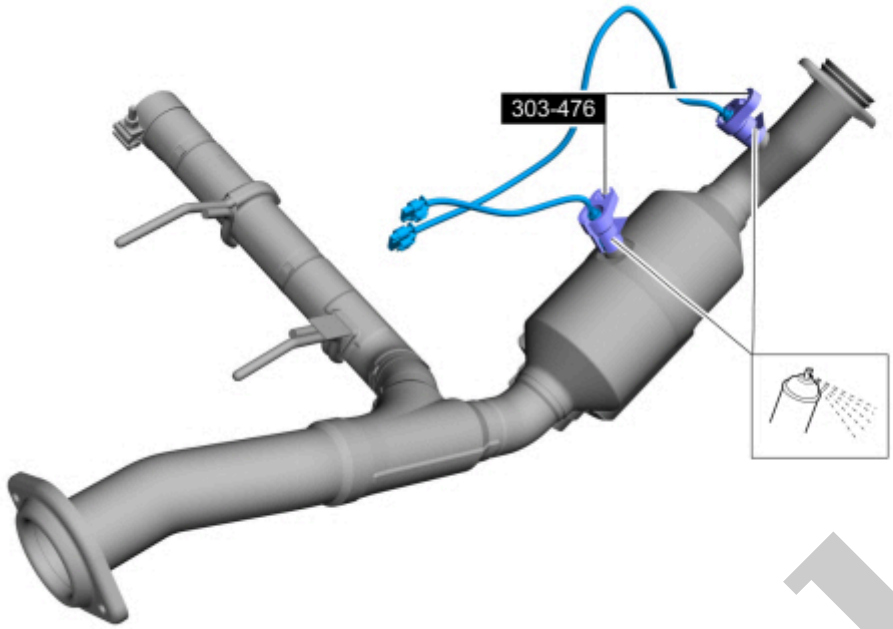


E334584

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

Installation

1. Clean all exhaust connections before reassembly.
2. **NOTE**

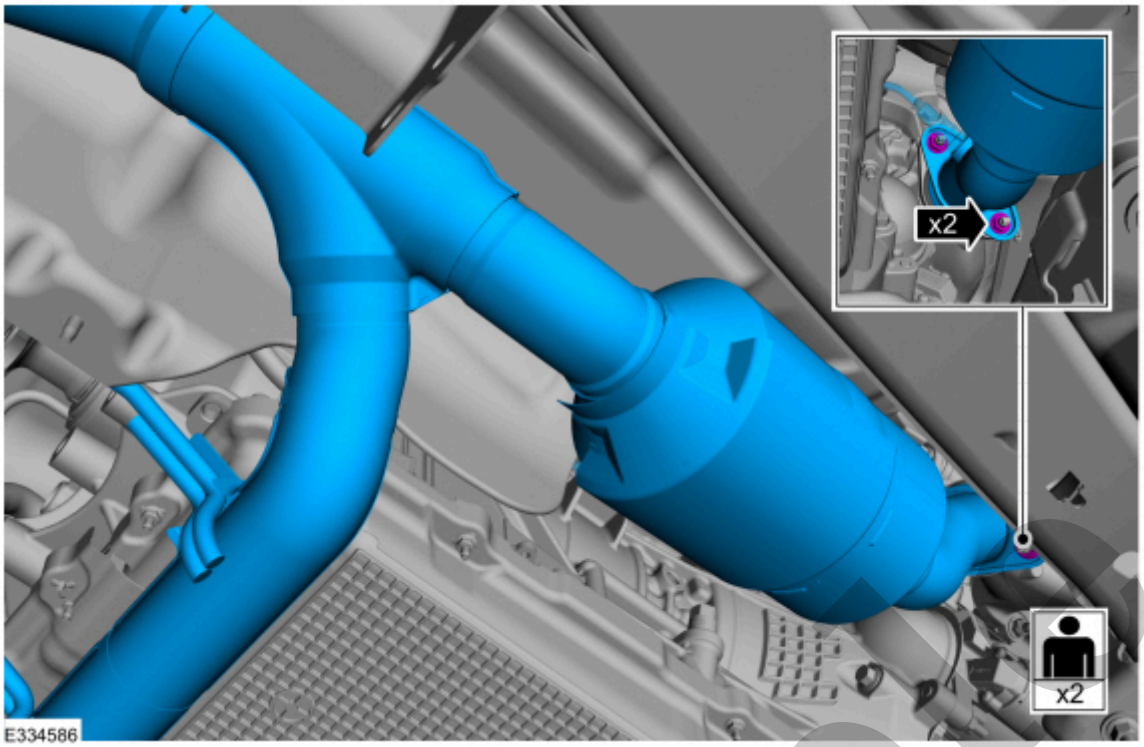
   This step is only required if you are replacing with new components.

   Apply anti-seize to thread of sensor. Using the special tool, install the HO2S (heated oxygen sensor) and the catalyst monitor sensors.

   Use Special Service Tool : 303-476 (T94P-9472-A) Socket, Exhaust Gas Oxygen Sensor

   Material : Motorcraft® High Temperature Nickel Anti-Seize Lubricant / XL-2

   Torque : 35 lb.ft (48 Nm)



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4. Install the transmission support insulator.

   Refer to: Transmission Support Insulator(307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, Removal and Installation).

5. **NOTE**

   Evenly tighten the RH (right-hand) catalytic converter nuts.

   Tighten the RH (right-hand) catalytic converter nuts.

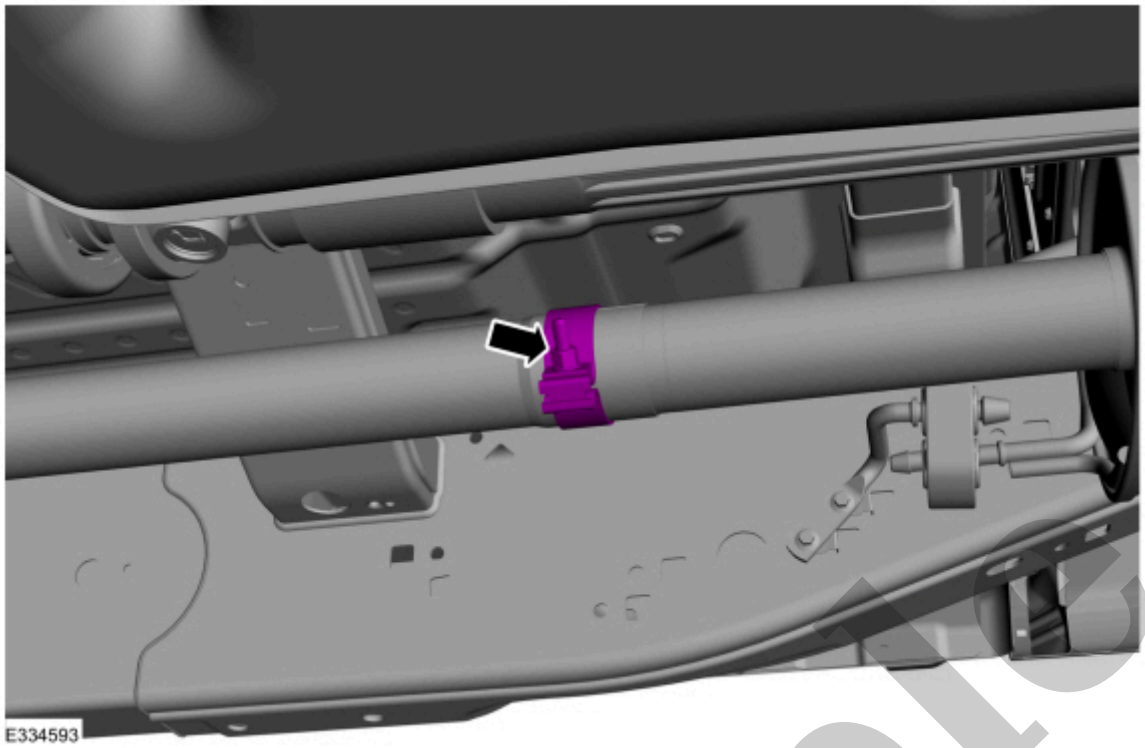
   Torque : 30 lb.ft (40 Nm)

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

8. Install the muffler inlet pipe.

   Refer to: Muffler Inlet Pipe(309-00E Exhaust System - 5.0L 32V Ti-VCT, Removal and Installation).

9. Check the exhaust system for leaks.



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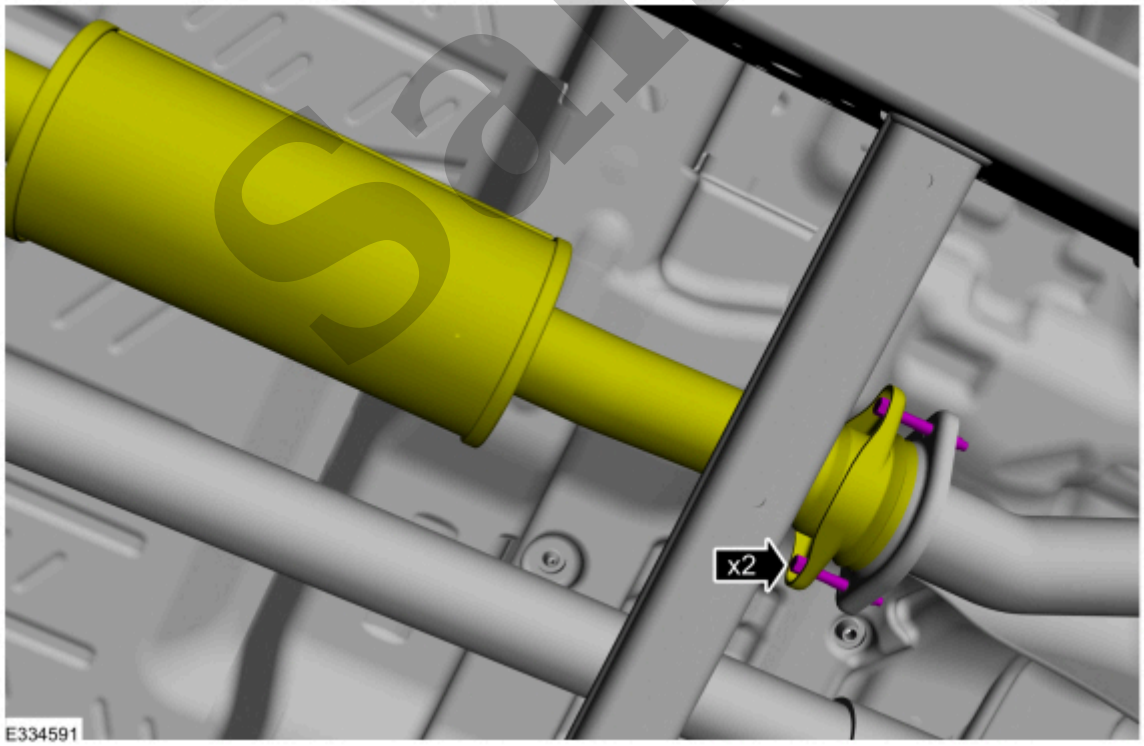
3. Loosen the muffler inlet pipe bolts.

   Torque : 30 lb.ft (40 Nm)



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Isolator hanger bracket

NOTE

The following steps are only required if you are replacing the isolators.

6. **NOTE**

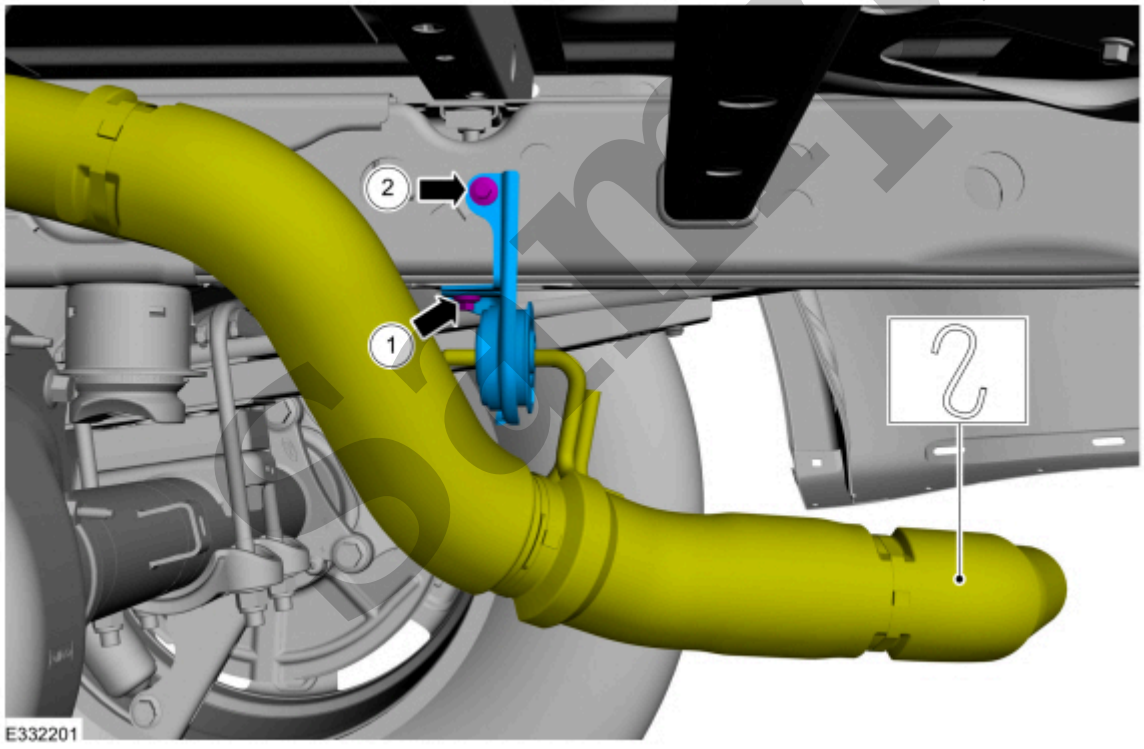
   The isolator must be installed using the same bolt installation sequence as the removal process.

   1. Remove the bottom frame rail bolt.

      Torque : 22 lb.ft (30 Nm)

   2. Remove the side frame rail bolt and the isolator.

      Torque : 22 lb.ft (30 Nm)



7. Remove the bolt and the isolator.

   Torque : 22 lb.ft (30 Nm)

Muffler Inlet Pipe

309-00E Exhaust System - 5.0L 32V Ti-VCT	***2022 F-150***
Removal and Installation	***Procedure revision date: 07/22/2020***

Muffler Inlet Pipe

Removal

NOTE

Muffler inlet pipes will vary in configuration with different wheelbases and powertrains. Typical application shown.

NOTE

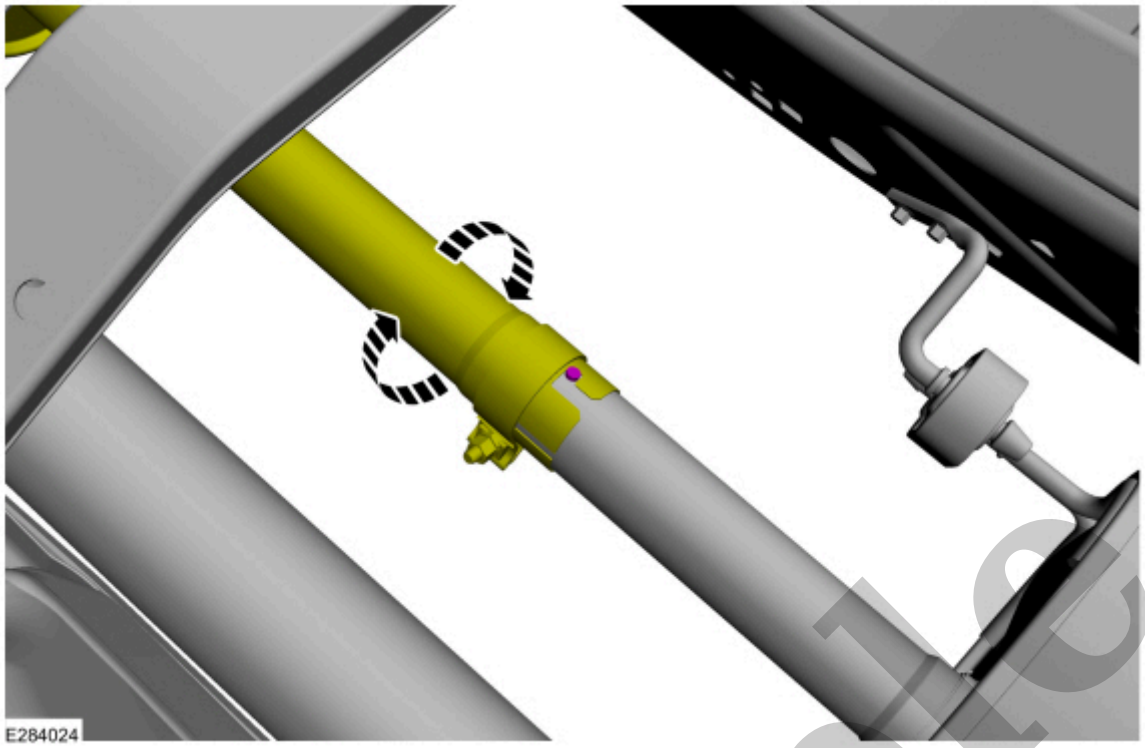
Removal steps in this procedure may contain installation details.

1. With the vehicle in NEUTRAL, position it on a hoist.

   Refer to: Jacking and Lifting - Overview(100-02 Jacking and Lifting, Description and Operation).

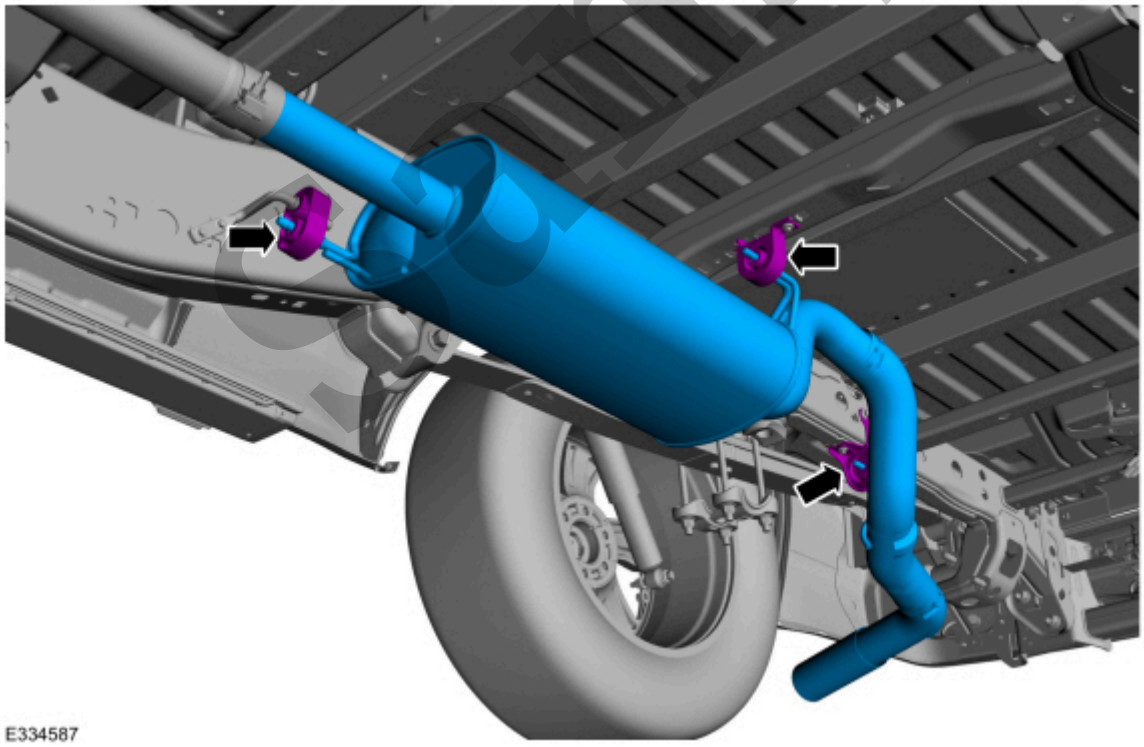
2. Loosen the clamp.

   Torque : 41 lb.ft (55 Nm)



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

5. Slide the muffler and tailpipe rearward out of the insulators and remove the muffler and tailpipe.



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6. Remove the bolts and the muffler inlet pipe.

Intake Air Distribution and Filtering - System Operation and Component Description

303-12A Intake Air Distribution and Filtering - 2.7L EcoBoost (238kW/324PS)	***2022 F-150***
Description and Operation	***Procedure revision date: 10/19/2020***

Intake Air Distribution and Filtering - System Operation and Component Description

System Operation

Adaptive Airflow

Vehicles equipped with electronic throttle control (ETC) have an adaptive airflow strategy that allows the PCM (powertrain control module) to correct for changes in the airflow. During idle, the PCM (powertrain control module) monitors the throttle angle and airflow. If the airflow is determined to be less than expected, the PCM (powertrain control module) adjusts the throttle angle to compensate.

The PCM (powertrain control module) only learns the adaptive airflow when the vehicle is at idle and normal operating temperature and the airflow is less than a calibrated limit. Whenever the battery is disconnected or the KAM (keep alive memory) is reset, it is necessary for the PCM (powertrain control module) to learn the new value and not use the default value.

Intake Air Systems

The intake air system provides clean air to the engine, optimizes airflow, and reduces unwanted induction noise. The intake air system consists of an air cleaner assembly, resonator assemblies, and hoses. Some vehicles use a hydrocarbon filter trap to help reduce emissions by preventing fuel vapor from escaping into the atmosphere from the intake when the engine is OFF. It is typically located inside the intake air system. The hydrocarbon trap is part of the EVAP (evaporative emission) system. The intake air system also contains a IAT (intake air temperature) sensor that measures the intake air temperature. Intake air components can be separate components or part of the intake air housing. The function of a resonator is to reduce induction noise. The intake air components are connected to each other and to the throttle body assembly with hoses.

the calculation of fuel, spark, and airflow.

The IAT (intake air temperature) sensor provides a quicker temperature change response time than the CHT (cylinder head temperature) or ECT (engine coolant temperature) sensor.

The IAT2 (intake air temperature 2) sensor is used to measure the intake manifold temperature. The PCM (powertrain control module) uses this information to determine the air charge and provide input for various engine control functions. The IAT2 (intake air temperature 2) sensor is integrated with the MAP (manifold absolute pressure) / IAT2 (intake air temperature 2) sensor.

Manifold Absolute Pressure /Intake Air Temperature 2 (MAP/IAT2) Sensor

The MAP (manifold absolute pressure) sensor is located on the intake manifold and measures the intake manifold pressure. The PCM (powertrain control module) uses this information to determine the air charge and to provide the input for various engine control functions. The MAP (manifold absolute pressure) sensor is integrated with an IAT (intake air temperature) sensor.

Turbocharger Boost Pressure (TCBP) Sensor

The turbocharger boost pressure (TCBP) sensor is located in the intake air tube between the turbocharger and the cylinder head. The turbocharger boost pressure (TCBP) sensor measures the throttle inlet pressure. The PCM (powertrain control module) uses the information from the turbocharger boost pressure (TCBP) sensor to refine the estimate of the airflow rate through the throttle and to determine the desired boost pressure. The turbocharger boost pressure (TCBP) sensor is integrated with a charge air cooler temperature (CACT) sensor.

The turbocharger boost pressure/charge air cooler temperature (TCBP/CACT) sensor has one digital signal output from the sensor. There is one reference voltage circuit and one signal return circuit for the sensor.