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2024 Ford F-450 Super Duty Service and Repair Manual

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Turbocharger LH

303-04F Fuel Charging and Controls - Turbocharger - 2.7L EcoBoost (238kW/324PS)	2022 F-150
Removal and Installation	Procedure revision date: 09/7/2022

Turbocharger LH

Removal

NOTICE

The turbocharger compressor vanes can be damaged by even the smallest particles. When removing any turbocharger or engine air intake system component, ensure that no debris enters the system. Failure to do so may result in damage to the turbocharger.

NOTICE

Special attention needs to be given to the sealing ports for the oil feed, the oil drain, and the coolant tubes, on turbocharged engines. The sealing ports must be totally clean and free from O-ring residue, have no damage to the sealing surface and the tubes to ensure that there are no leaks or repeat repairs.

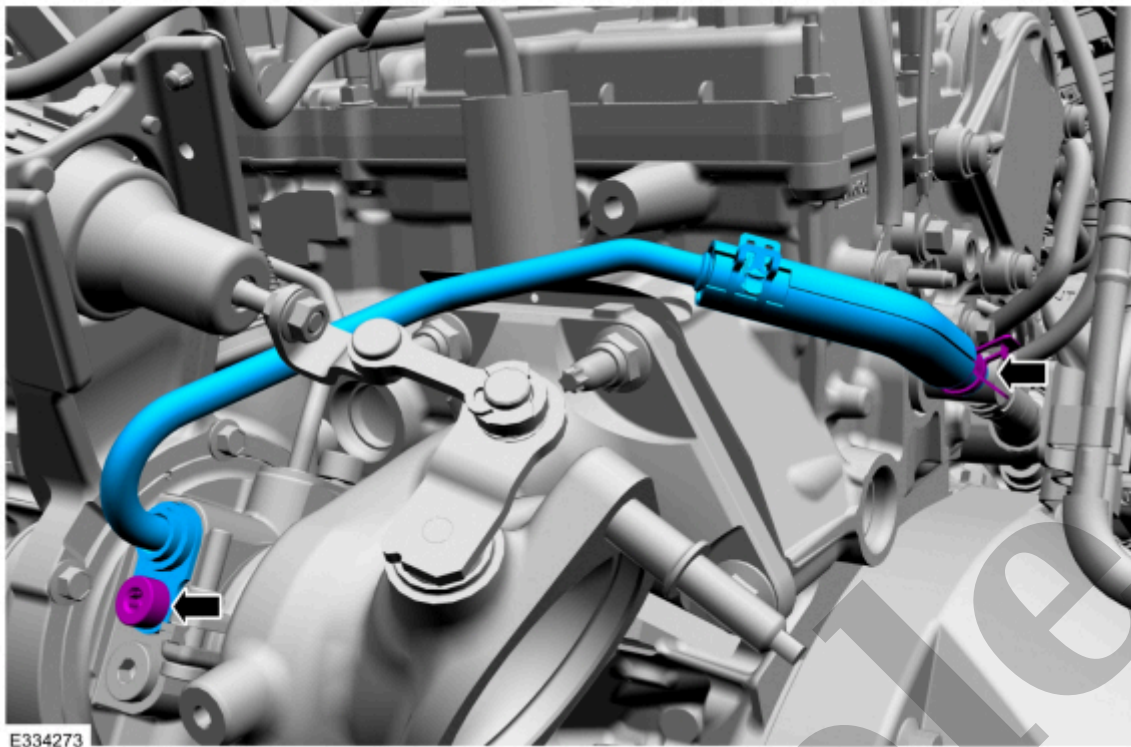
1. Drain the cooling system.

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

2. If equipped, remove the engine rear undershield.

Refer to: [Engine Rear Undershield](#)(501-02 Front End Body Panels, Removal and Installation).

3. If equipped, remove the bolts and the underbody skid plate.



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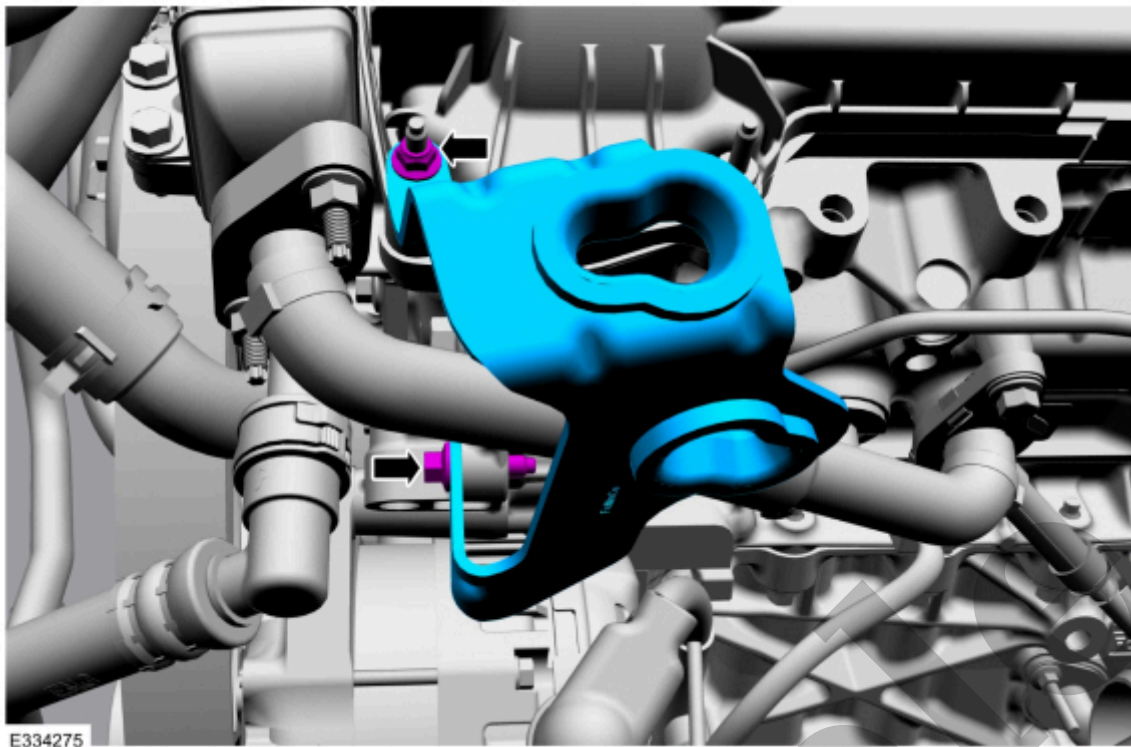
9. 1. **NOTICE**

Do not use a metal brush, damage to sealing area will result in leaks.

Inspect the turbocharger tube and the sealing surfaces. Ensure that the retaining bracket is not bent, check for square-ness of the retaining bracket to the O-ring area. Use brake cleaner and a nylon brush to clean. Install new components as needed.

Material : Motorcraft® Metal Brake Parts Cleaner / PM-4-A, PM-4-B

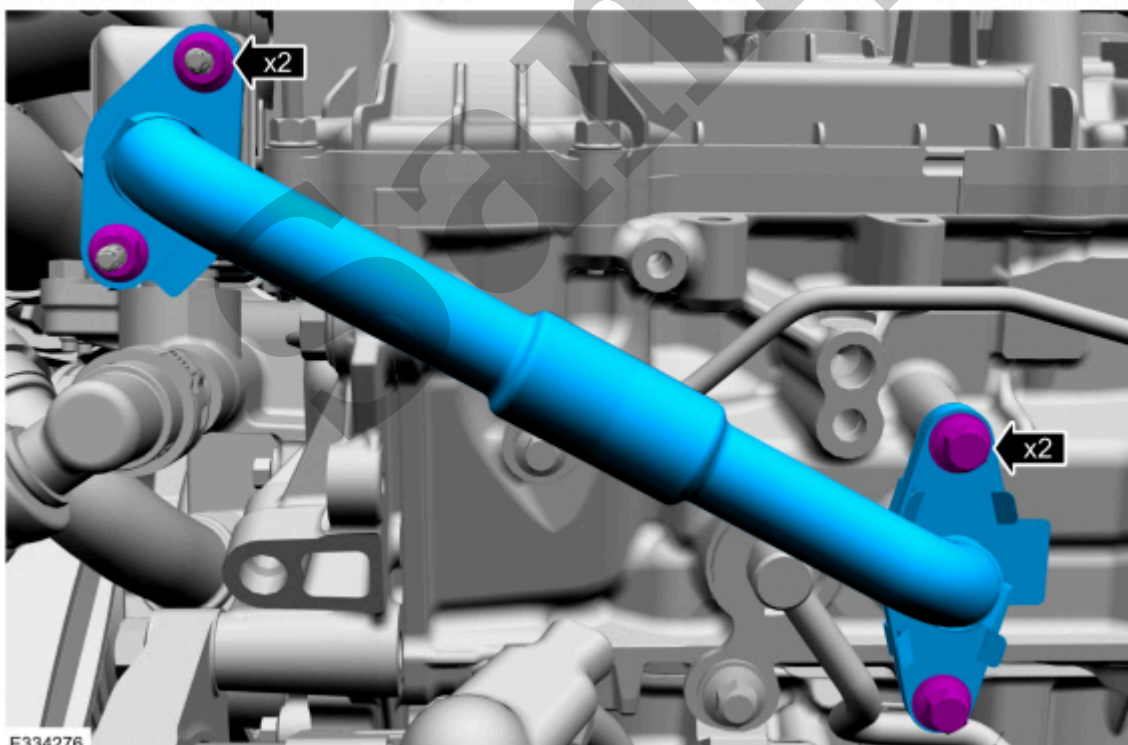
2. Remove and discard the O-ring seal.



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12. Remove the EGR tube retainers, then remove the EGR tube.



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13. Remove and discard the EGR tube gaskets.

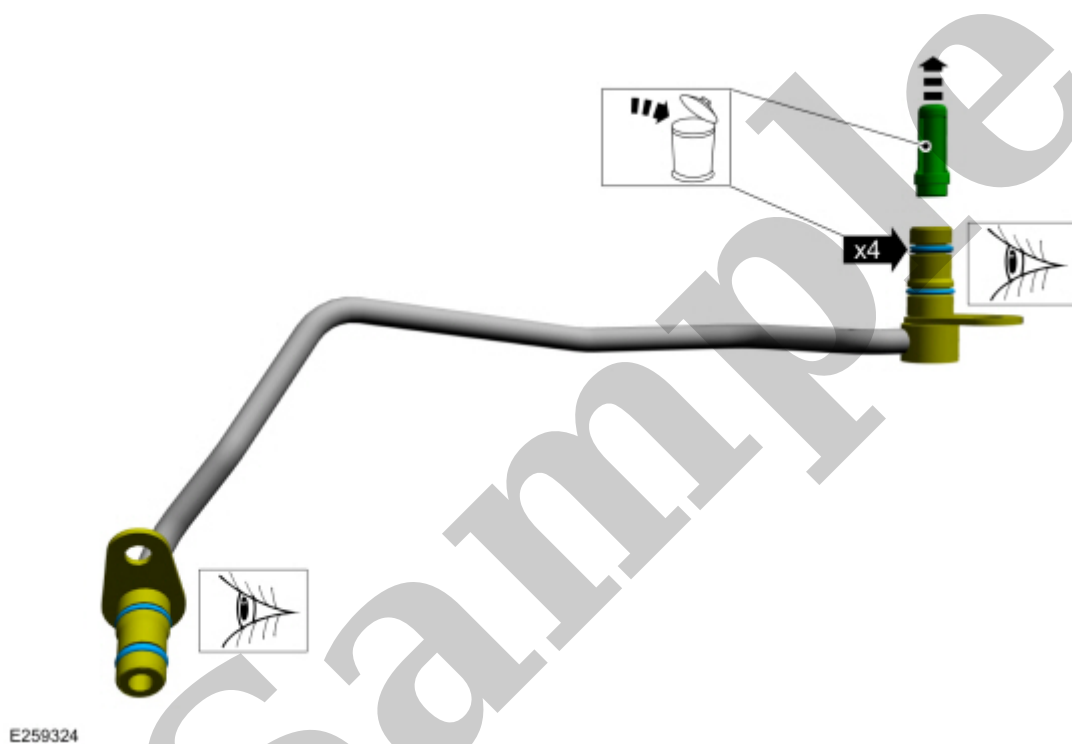
15. 1. **NOTICE**

Do not use a metal brush, damage to sealing area will result in leaks.

Inspect the turbocharger tube and the sealing surfaces. Ensure that the retaining bracket is not bent, check for square-ness of the retaining bracket to the O-ring area. Use brake cleaner and a nylon brush to clean. Install new components as needed.

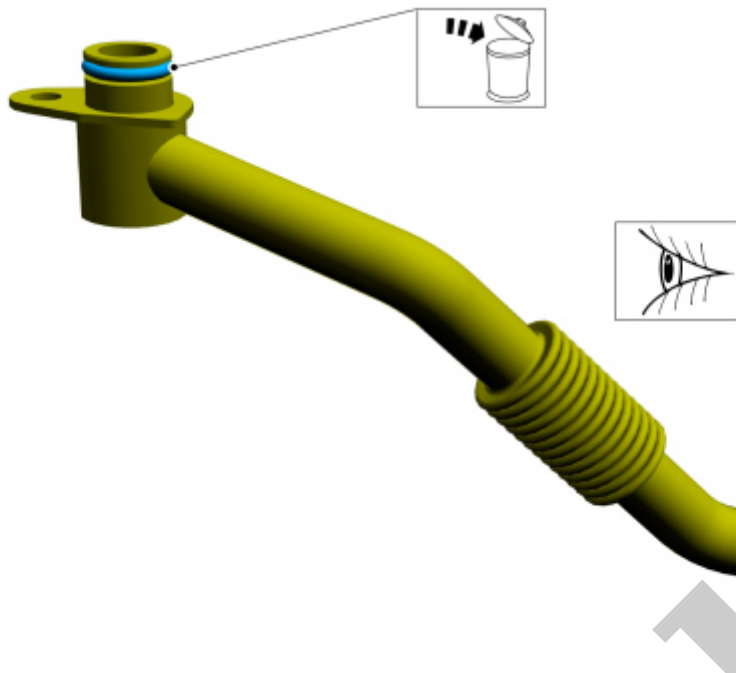
Material : Motorcraft® Metal Brake Parts Cleaner / PM-4-A, PM-4-B

2. Remove and discard the O-ring seals and the turbocharger oil supply tube oil filter.



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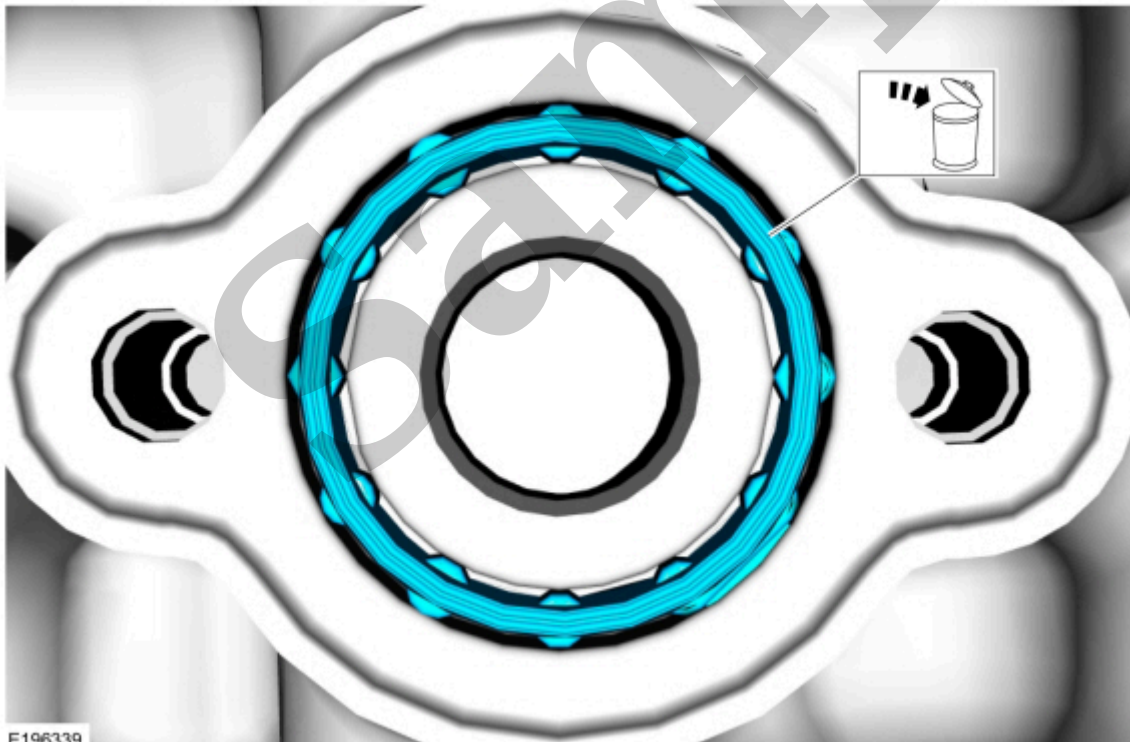
16. Remove the turbocharger oil return tube bolts, then remove the tube.



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18. Remove and discard the oil return tube tube-to-engine block gasket.



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19. Remove the turbocharger coolant supply tube bolt, disengage the tube from the engine block.

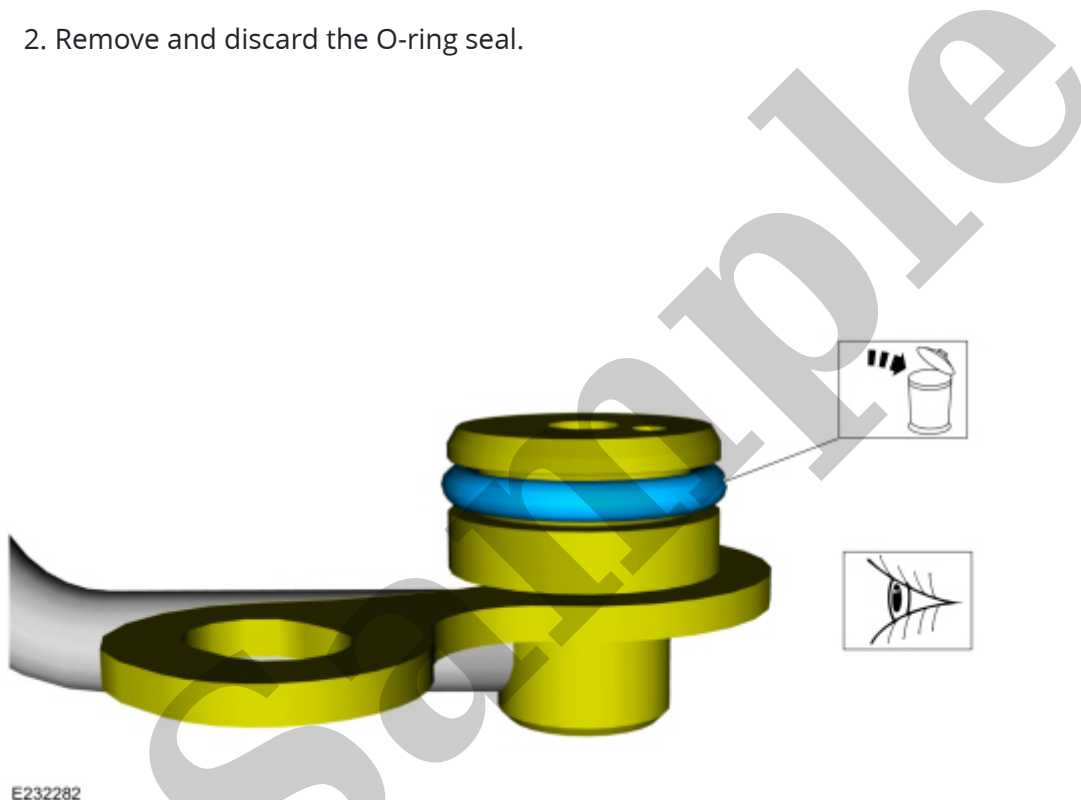
21. 1. **NOTICE**

Do not use a metal brush, damage to sealing area will result in leaks.

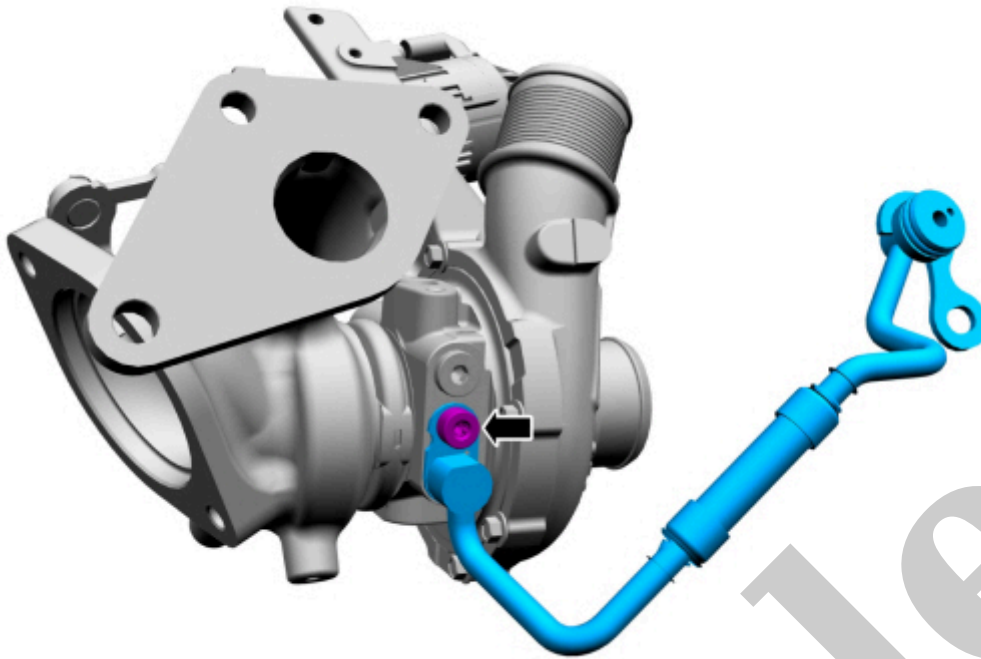
Inspect the turbocharger tube and the sealing surfaces. Ensure that the retaining bracket is not bent, check for square-ness of the retaining bracket to the O-ring area. Use brake cleaner and a nylon brush to clean. Install new components as needed.

Material : Motorcraft® Metal Brake Parts Cleaner / PM-4-A, PM-4-B

2. Remove and discard the O-ring seal.



22. Remove and discard the turbocharger gasket.



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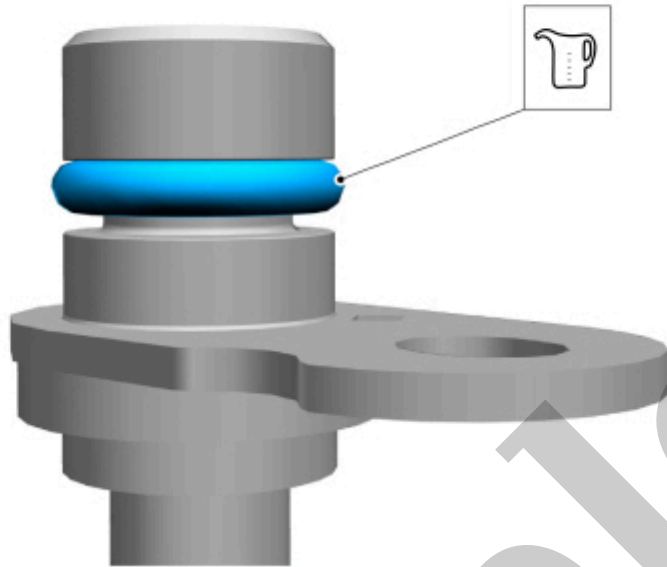
25. 1. **NOTICE**

Do not use a metal brush, damage to sealing area will result in leaks.

Inspect the turbocharger tube and the sealing surfaces. Ensure that the retaining bracket is not bent, check for square-ness of the retaining bracket to the O-ring area. Use brake cleaner and a nylon brush to clean. Install new components as needed.

Material : Motorcraft® Metal Brake Parts Cleaner / PM-4-A, PM-4-B

2. If the turbocharger coolant supply tube was removed from the turbocharger, then remove and discard the O-ring seal.



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3. 1. NOTICE

Do not use a metal brush, damage to sealing area will result in leaks.

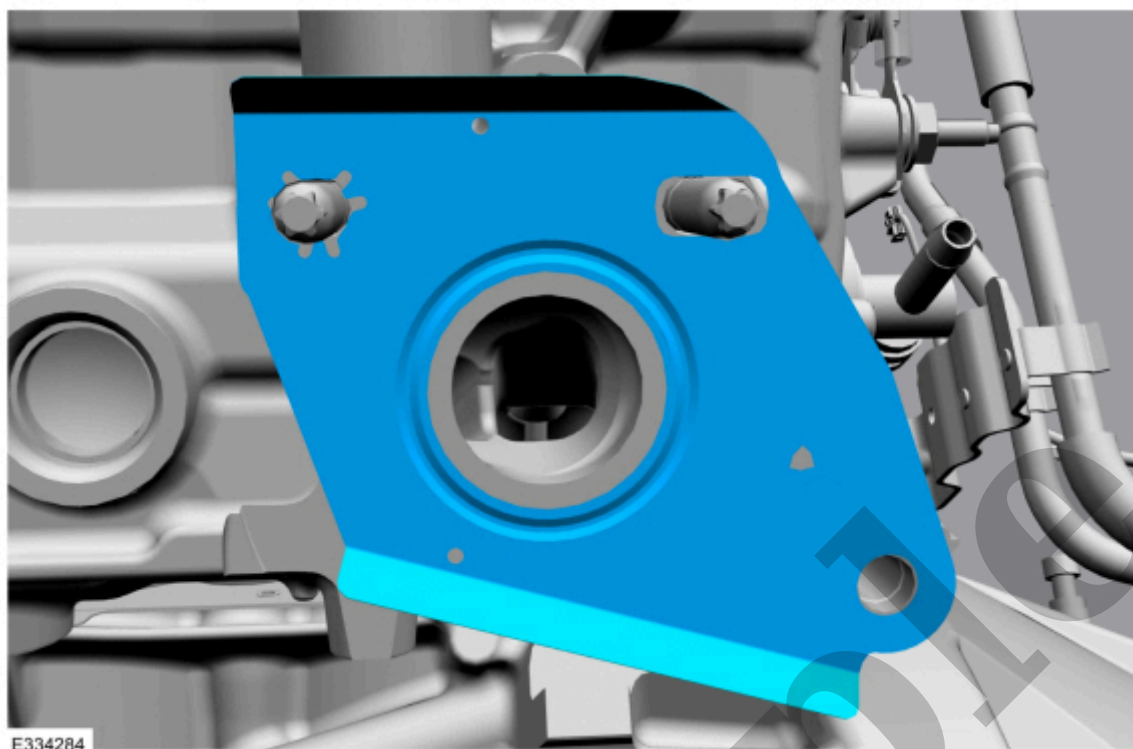
Carefully use a nylon brush to remove the old O-ring residue and use brake cleaner to rinse the O-ring residue out of the turbocharger tube to turbocharger O-ring bore. Inspect the area for deep scratches and gouges. Install new components as needed.

Material : Motorcraft® Metal Brake Parts Cleaner / PM-4-A, PM-4-B

2. If removed, install the turbocharger coolant supply tube to the turbocharger, then install and tighten the turbocharger coolant supply tube bolt.

Torque : 89 lb.in (10 Nm)

5. Install the new turbocharger gasket.



[Click here to learn about symbols, color coding, and icons used in this manual.](#)

6. Install a new O-ring seal. Lubricate the new O-ring seal with clean engine coolant.

Refer to: [Specifications](#)(303-03A Engine Cooling - 2.7L EcoBoost (238kW/324PS), Specifications).

