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2001 FORD Windstar OEM Service and Repair Workshop Manual

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2. 1. **NOTICE**

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

Carefully use a nylon brush to remove the old O-ring residue, use brake cleaner to rinse the O-ring residue out of the turbocharger and engine O-ring bores. Inspect the area for deep scratches and gouges. Install new components if necessary.

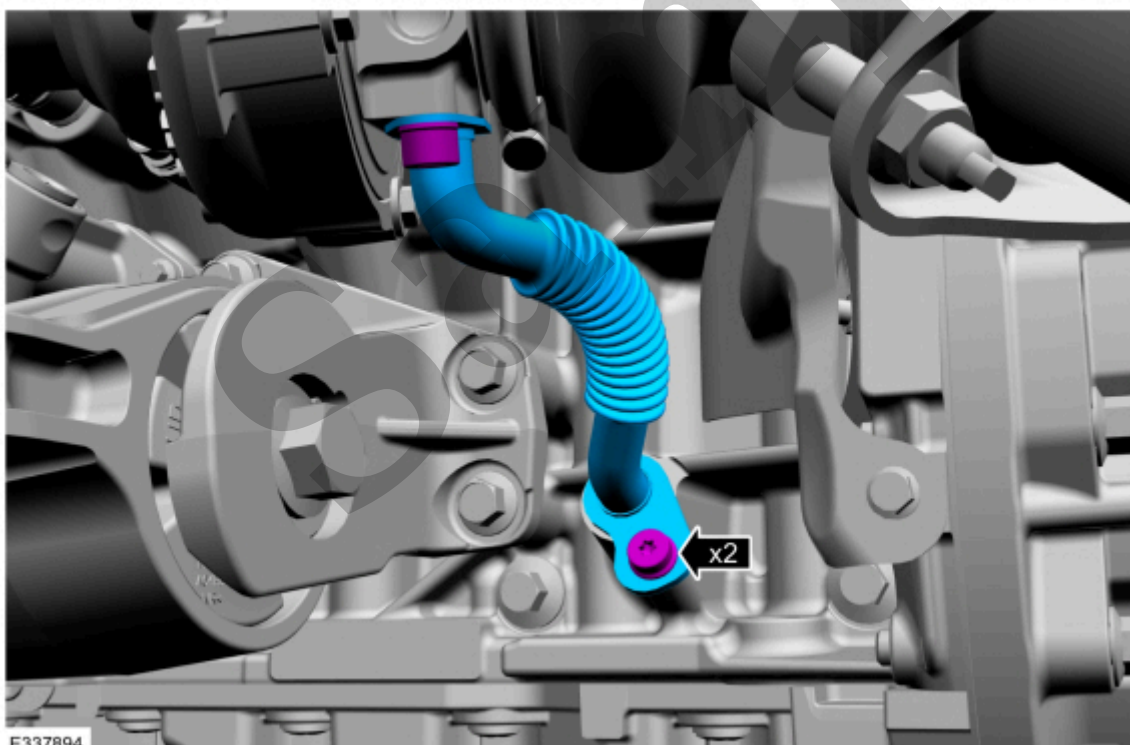
2. Fully seat the turbocharger oil return tube into the turbocharger and engine bore holes flush to 2.5 mm off of the mounting surface prior to tightening the bolts. Install the new turbocharger oil return tube, then install and tighten the turbocharger oil return tube bolts.

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

Torque :

Stage 1: Tighten to : 89 lb.in (10 Nm)

Stage 2: Tighten an additional : 30°



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

3. Install the turbocharger oil supply tube LH.

Turbocharger Oil Return Tube RH

303-04H Fuel Charging and Controls - Turbocharger - 3.5L V6 PowerBoost (CN)	2022 F-150
Removal and Installation	Procedure revision date: 10/1/2020

Turbocharger Oil Return Tube RH

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

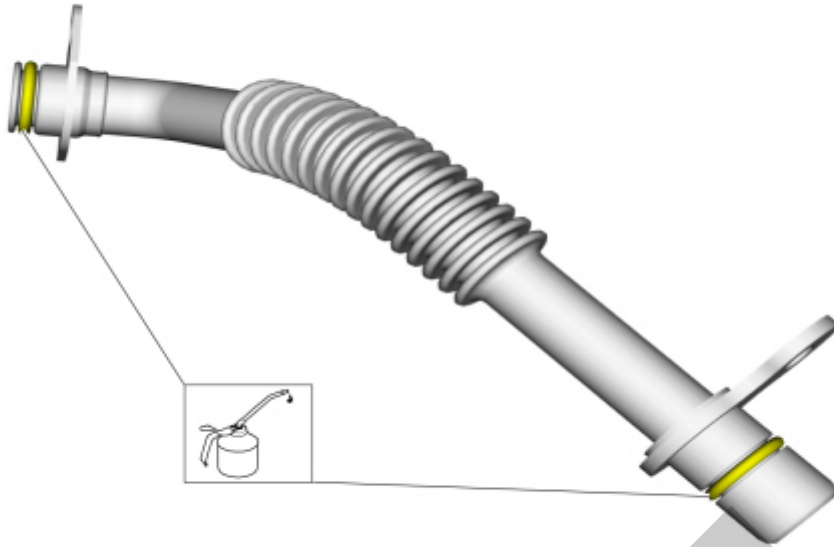
Special attention needs to be given to the sealing ports for the oil feed, the oil drain, and the coolant lines, on turbocharged engines. The sealing ports must be totally clean and free from O-ring residue, have no damage to the sealing surface and the lines to ensure that there are no leaks or repeat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

1. Remove the turbocharger oil supply tube RH.

Refer to: [Turbocharger Oil Supply Tube RH](#)(303-04H Fuel Charging and Controls - Turbocharger - 3.5L V6 PowerBoost (CN), Removal and Installation).

2. Remove the starter motor.

Refer to: [Starter Motor](#)(303-06D Starting System - 3.5L V6 PowerBoost (CN), Removal and Installation).



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

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

Torque :

Stage 1: Tighten to : 89 lb.in (10 Nm)

Stage 2: Tighten an additional : 30°

Turbocharger Oil Supply Tube LH

303-04H Fuel Charging and Controls - Turbocharger - 3.5L V6 PowerBoost (CN)	2022 F-150
Removal and Installation	Procedure revision date: 10/1/2020

Turbocharger Oil Supply Tube 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 lines, 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 lines to ensure that there are no leaks or repeat repairs.

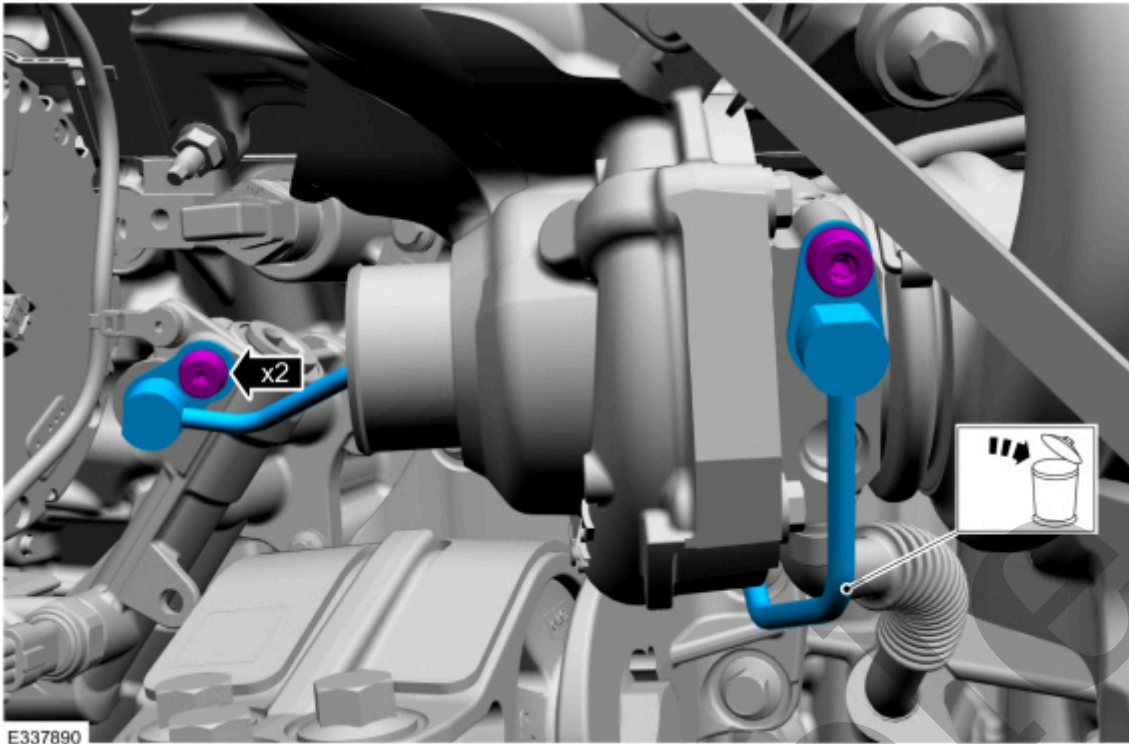
1. Remove the engine rear undershield.

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

2. Remove the left front fender splash shield.

Refer to: [Fender Splash Shield](#)(501-02 Front End Body Panels, Removal and Installation).

3. Remove the charge air cooler intake pipe - left side.



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

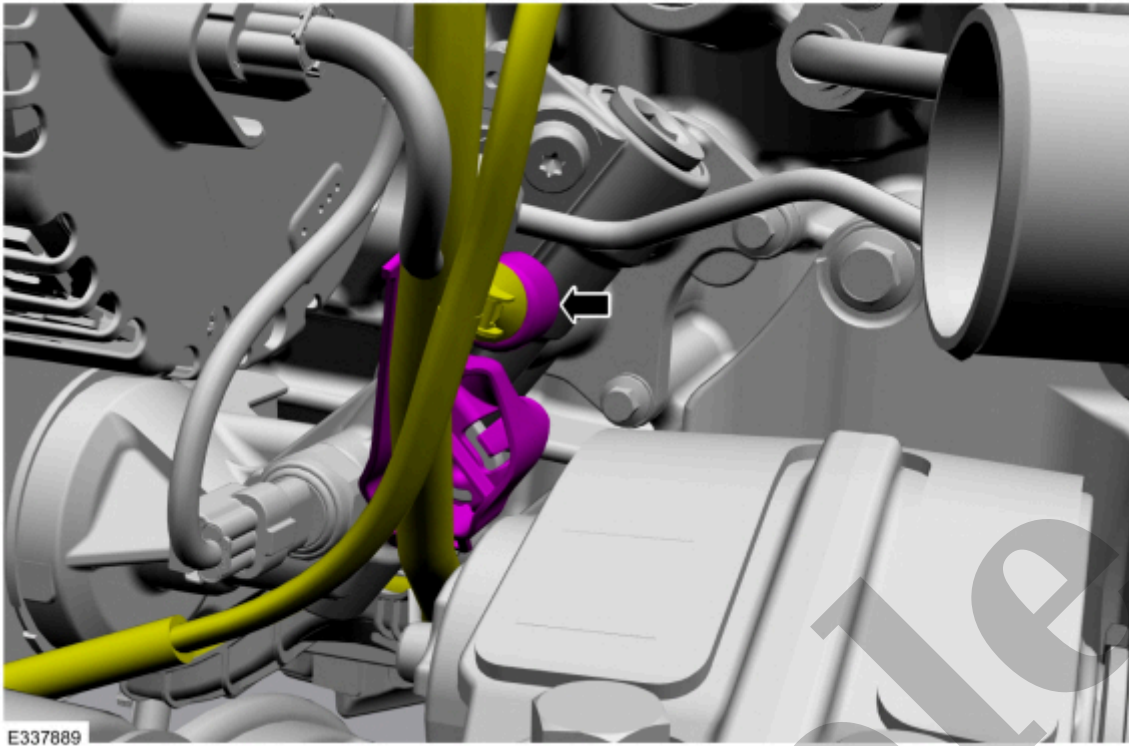
Installation

1. Lubricate the new O-ring seals with clean engine oil.

Refer to: [Specifications\(303-01D Engine - 3.5L V6 PowerBoost \(CN\), Specifications\)](#).



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

4. Install the charge air cooler intake pipe - left side.

Refer to: [Charge Air Cooler \(CAC\) Intake Pipe](#)(303-12D Intake Air Distribution and Filtering - 3.5L V6 PowerBoost (CN), Removal and Installation).

5. Install the left front fender splash shield.

Refer to: [Fender Splash Shield](#)(501-02 Front End Body Panels, Removal and Installation).

6. Install the engine rear undershield.

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

7. Check and top off the engine oil level as needed.

Refer to: [Specifications](#)(303-01D Engine - 3.5L V6 PowerBoost (CN), Specifications).

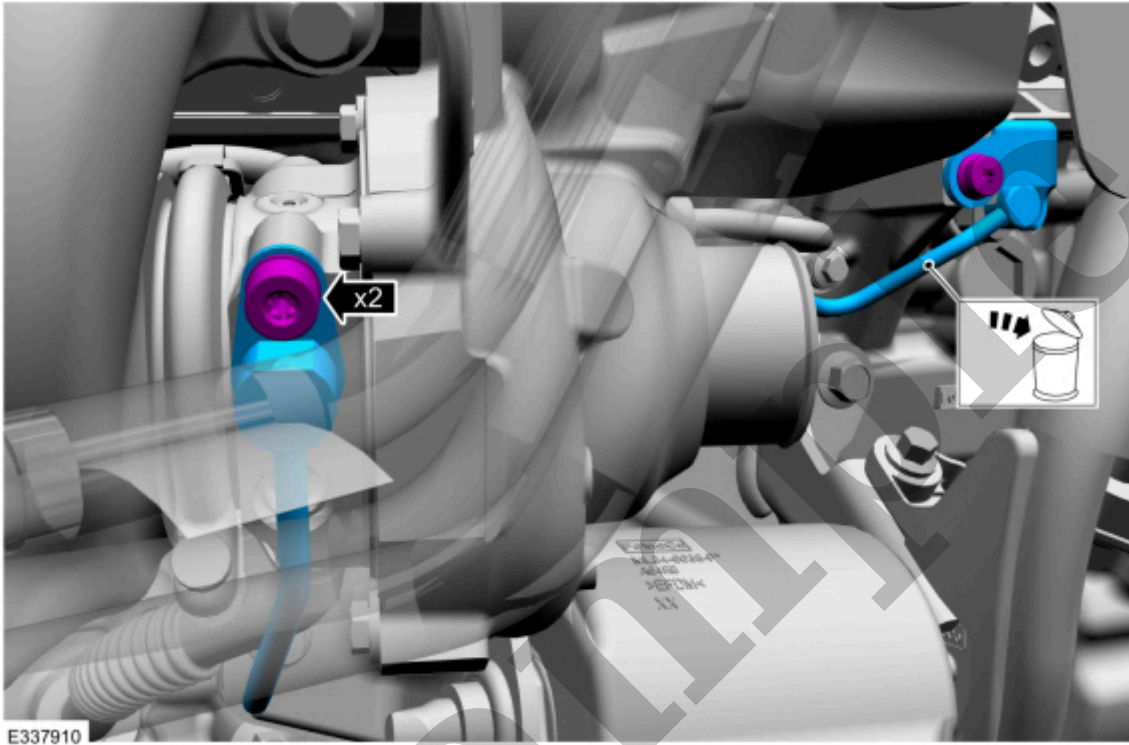
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Refer to: [Fender Splash Shield](#)(501-02 Front End Body Panels, Removal and Installation).

4. Remove the charge air cooler intake pipe - right side.

Refer to: [Charge Air Cooler \(CAC\) Intake Pipe](#)(303-12D Intake Air Distribution and Filtering - 3.5L V6 PowerBoost (CN), Removal and Installation).

5. Remove the turbocharger oil supply tube bolts, then remove and discard the turbocharger oil supply tube.



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

6. Remove and discard the turbocharger fitting and oil filter assembly from the engine block.

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

2. 1. **NOTICE**

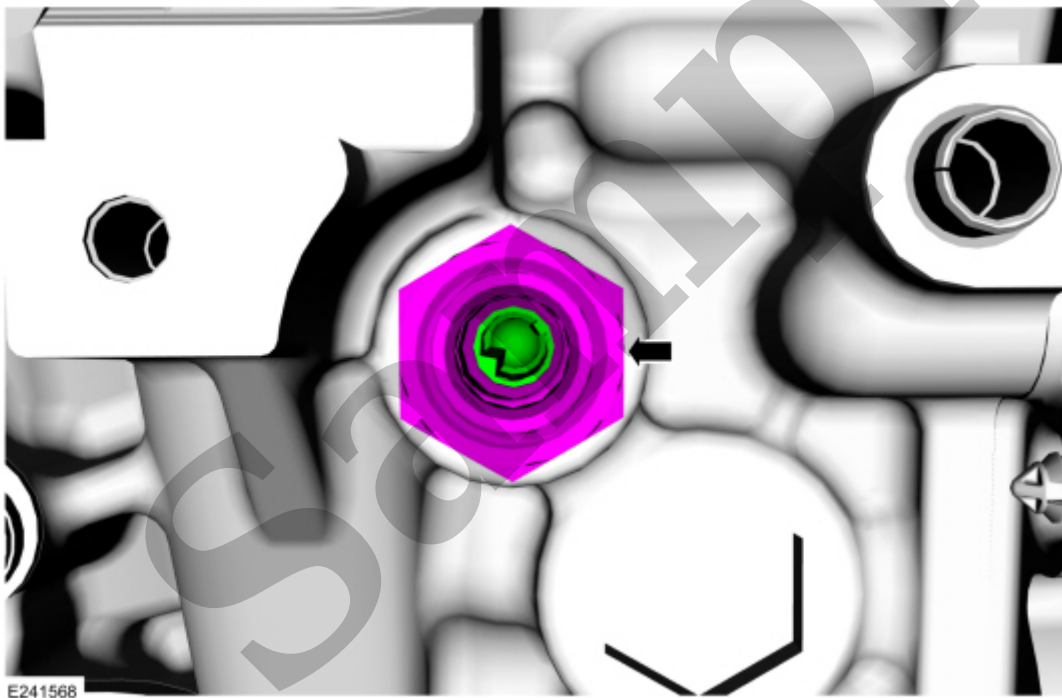
Do not use any brushes, damage to sealing area will result in leaks and possible internal turbo bearing damage.

Use brake cleaner on a lint free rag to remove the O-ring residue out of the turbocharger fitting to engine block O-ring bore. Inspect the area for deep scratches and gouges. Install new components if necessary.

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

2. Install and tighten the new turbocharger fitting, oil filter assembly.

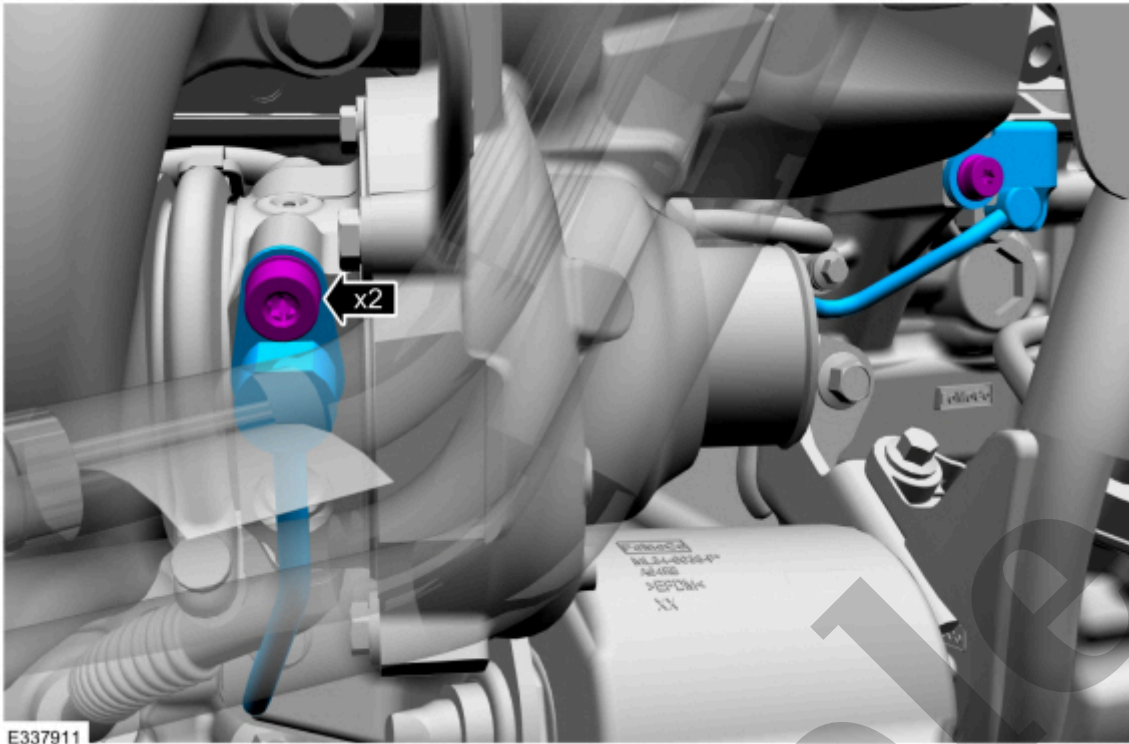
Torque : 24 lb.ft (32 Nm)



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

3. Lubricate the new turbocharger oil supply tube O-ring seals with clean engine oil.

Refer to: [Specifications](#)(303-01D Engine - 3.5L V6 PowerBoost (CN), Specifications).



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

5. Install the charge air cooler intake pipe - right side.

Refer to: [Charge Air Cooler \(CAC\) Intake Pipe](#)(303-12D Intake Air Distribution and Filtering - 3.5L V6 PowerBoost (CN), Removal and Installation).

6. Install the right fender splash shield.

Refer to: [Fender Splash Shield](#)(501-02 Front End Body Panels, Removal and Installation).

7. Install the engine rear undershield.

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

8. Check and top off the engine oil level as needed.

Refer to: [Specifications](#)(303-01D Engine - 3.5L V6 PowerBoost (CN), Specifications).

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