

## INSTALLATION INSTRUCTIONS

**SUBJECT: CHEETAH® TURBOCHARGER FOR 2011-2016 LML DURAMAX**

FPE-2022-67  
February, 2022

**FITMENT:** 2011-2016 GM/GMC 6.6L Duramax

**P/N:** FPE-LML-VNT-63-FMW-N

**ESTIMATED INSTALLATION TIME:** 6-8 hours

### KIT CONTENTS:

Item	Description	Qty
1	Turbocharger assembly	1
2	Turbo oil drain gasket	1
3	Up pipe gasket	1
4	Lower drain tube gasket	1



### IMPORTANT NOTICES:

For California customers: An E.O. identification label is required for Smog Check inspection. The E.O. identification label included with your turbocharger **MUST** be placed near the turbocharger in the engine compartment so that smog check technicians can verify the E.O. number.



2400 Commerce Way - Pittsboro, IN 46167

CARB EO No. D-834-3  
Cheetah® Turbocharger

# INSTALLATION INSTRUCTIONS

## GUIDELINES AND CHECKLIST:

1. Inspect the intake and exhaust system leading to and from the turbocharger to ensure they are free of debris. If the vehicle has experienced a turbocharger failure that resulted in mechanical damage to the compressor wheel prior to installation of a new turbocharger, a new intake air filter must be installed. Debris from a failed turbocharger can become lodged in the original filter and easily drawn into the new charger. Small particles will cause severe damage at high speeds.
2. Use new gaskets at all air, oil, and exhaust connections. Never use silicone sealants on intake components. Silicone can become loose and become ingested into the turbocharger causing damage.
3. Use high temperature anti-seize compound on all threaded fasteners connected to the turbocharger.
4. Ensure the drain port tilt is no more than 20 degrees from the bottom center in either direction. Excessive tilt can create leakage on both the turbine and compressor seals.
5. Fill the oil inlet port with clean engine oil before connecting the oil feed hose to the turbocharger
6. Before connecting the oil drain hose, crank the engine without starting it until a steady stream of oil flows from the drain port.
7. Operate the engine at low idle for at least three minutes after completing the installation of any turbocharger. This will prevent oil starvation damage to the bearing system and will tend to purge any residual contaminants from the bearings housing.

## FACTORS AFFECTING TURBOCHARGER SERVICE LIFE:

An analysis of turbochargers indicated that approximately 40% of the failures are due to foreign material going through either the turbine or the compressor. An additional 40% are due to lubrication issues. The remaining 20% are of a miscellaneous nature. Some of the foreign material damage is the result of pieces of burned or broken valves, improperly installed gaskets, casting fins that may break out of the manifold, pieces of the air cleaner, and in small cases nuts or bolts that were dropped into the intake system. Undersized or plugged oil lines are the most common lubrication issue. It is essential to have an adequate supply of oil at full engine oil pressure.

# INSTALLATION INSTRUCTIONS

## TURBOCHARGER REMOVAL:

Remove the charge air cooler inlet pipe.

Remove the turbocharger exhaust pipe.

Remove the exhaust rear gas recirculation manifold cooling feed pipe.

Remove the right side exhaust pipe.

Remove the left side exhaust pipe.

Remove the exhaust rear gas recirculation cooler assembly.

Remove the turbocharger upper heat shield bolts and upper heat shield.

Disconnect the turbo valve solenoid and sensor connectors.

Remove the eye bolt and washers from the turbocharger oil feed pipe.

Remove the two turbo oil return pipe fasteners.

Remove the turbo coolant feed hose.

*IMPORTANT NOTE: Do not twist the turbocharger oil feed pipe. Twisting of the feed pipe will result in the collapse and deformation of the plastic pipe, restricting oil flow and causing turbocharger damage. During turbocharger replacement, gently push the oil feed pipe towards the front of the engine to clear the turbocharger.*

Remove the turbocharger mounting bolts.

Remove the turbocharger cooling return pipe bolt.

Remove the turbocharger assembly with the oil feed pipe, oil return pipe and cooling return pipe.

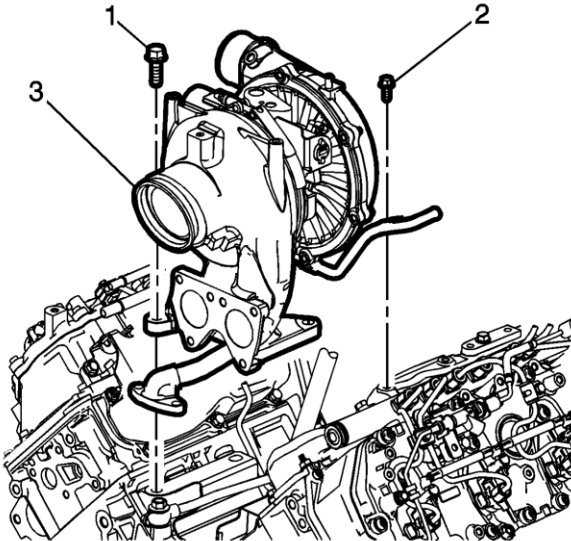
Remove the turbocharger lower heat shield.

Transfer parts as necessary to the new Cheetah turbocharger.

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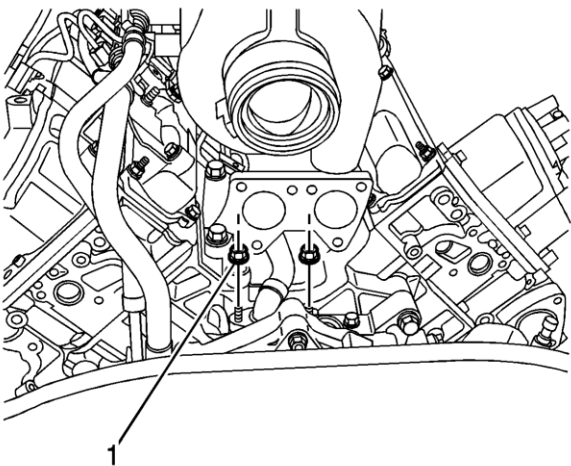
## TURBOCHARGER INSTALLATION:

1. Install the turbocharger lower heat shield.



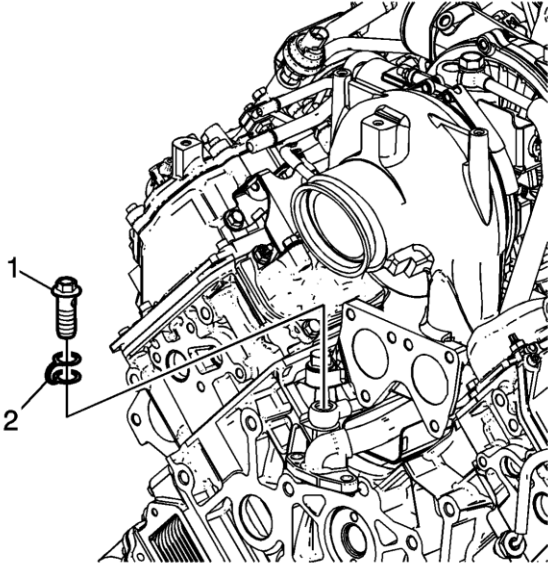
**IMPORTANT NOTE:** Do not twist the turbocharger oil feed pipe. Twisting of the feed pipe will result in the collapse and deformation of the plastic pipe, restricting oil flow and causing turbocharger damage. Install the turbocharger assembly (2) with the oil feed pipe, oil return pipe and cooling return pipe.

2. Install the turbocharger mounting bolts and tighten to 58 ft lbs.
3. Install the turbocharger cooling return pipe bolt and tighten to 18 ft lbs.



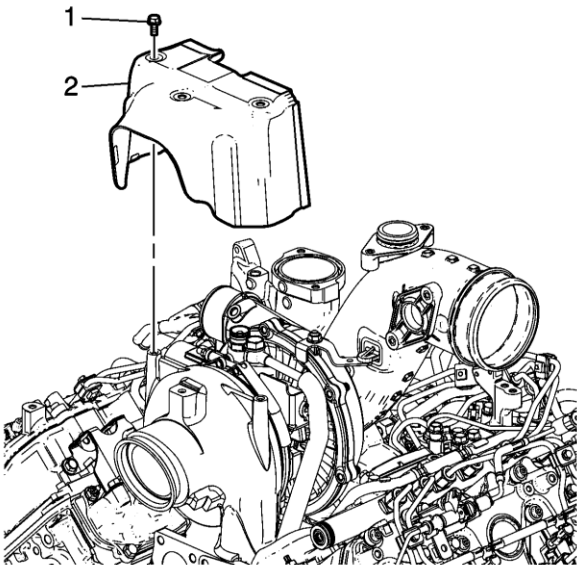
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4. Install the two turbo oil return pipe fasteners (1) and tighten to 18 ft lbs.
5. Install the turbo coolant feed hose.



NOTE: Lubricate the washers with diesel fuel before installing.

6. Install the turbocharger oil feed pipe eye bolt (1) and washers (2). Tighten the eye bolt to 37 ft lbs.



7. Connect the turbo valve solenoid and sensor connectors.
8. Install the turbocharger heat shield.

## INSTALLATION INSTRUCTIONS

9. Install the turbocharger upper heat shield bolts and tighten to 89 in lbs.
10. Install the charge air cooler inlet pipe.
11. Install the exhaust gas recirculation cooler assembly.
12. Install the left side exhaust pipe.
13. Install the right side exhaust pipe.
14. Install the exhaust gas recirculation manifold cooling feed pipe.
15. Install the exhaust turbocharger outlet pipe adapter.
16. Start the engine and check for any cooling or exhaust leaks. Operate the engine at low idle for at least three minutes. This will prevent oil starvation damage to the bearing system and purge any residual contaminants from the bearings housing.
17. Affix the E.O. identification label included with your turbocharger near the turbocharger in the engine compartment so that smog check technicians can verify the E.O. number.