

## INSTALLATION INSTRUCTIONS

**SUBJECT:** CHEETAH® HX35 TURBOCHARGER FOR 1994-2002 5.9L CUMMINS

FPE-2023-87  
November, 2023

**FITMENT:** 1994-2002 Dodge Ram with 5.9L Cummins

**P/N:** FPE-HX35-63-FMW

**ESTIMATED INSTALLATION TIME:** 4-5 hours



### KIT CONTENTS:

Item	Description	Qty
1	Turbocharger assembly	1
2	T3 divided turbine flange gasket	1
3	Turbine housing nut	4
4	Turbine housing mounting stud	4
5	Turbocharger oil drain 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-X  
Cheetah® HX35 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.

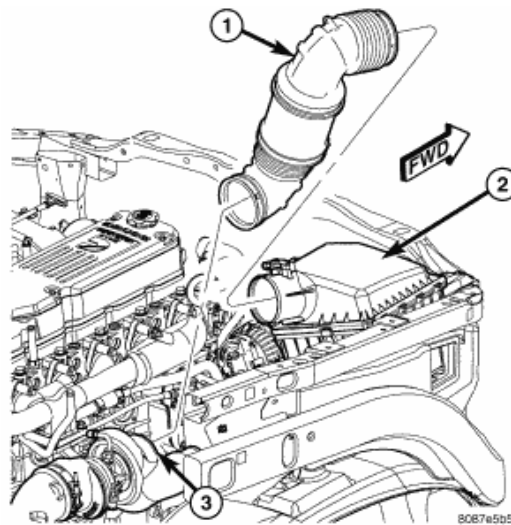
## FACTORS AFFECTING TURBOCHARGER SERVICE LIFE:

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.

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## TURBOCHARGER REMOVAL:

1. Disconnect the battery ground (negative) cables on both batteries.
2. Disconnect the air intake pipe (item 1 below) by removing the hose clamps at either end of the pipe at the turbocharger inlet and air intake filter. The hose clamps will be reused.

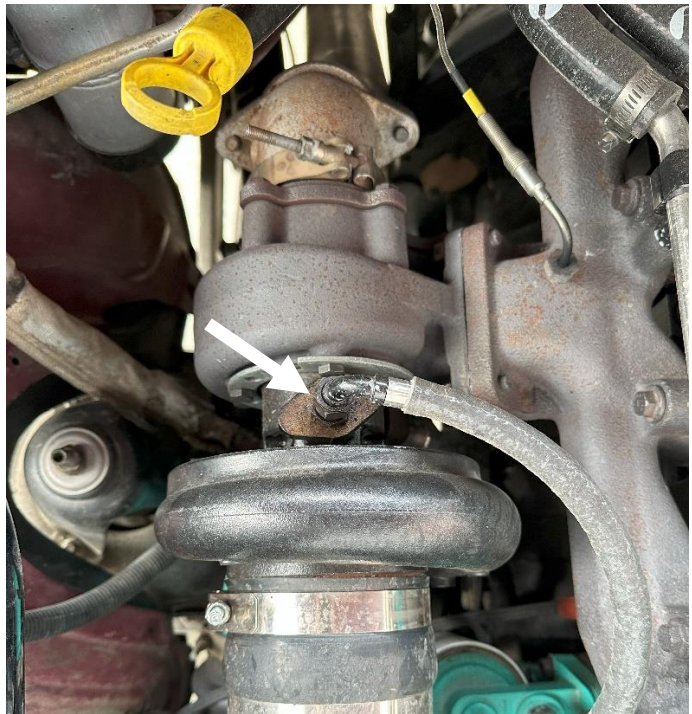
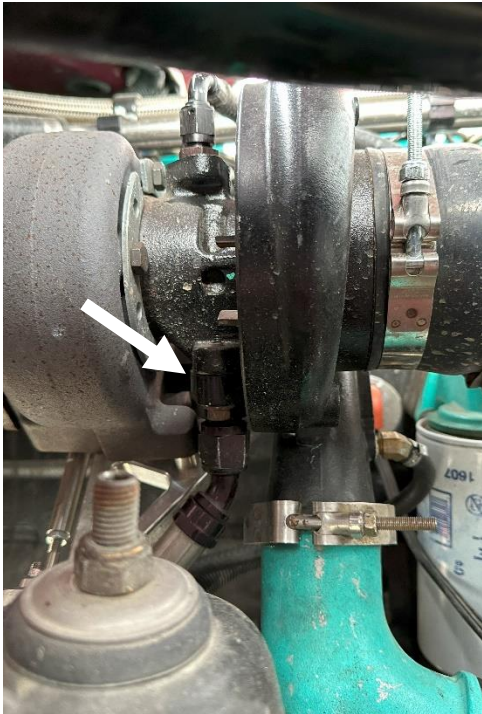


3. Disconnect the exhaust pipe from the turbocharger by removing the clamp. The clamp will be reused.

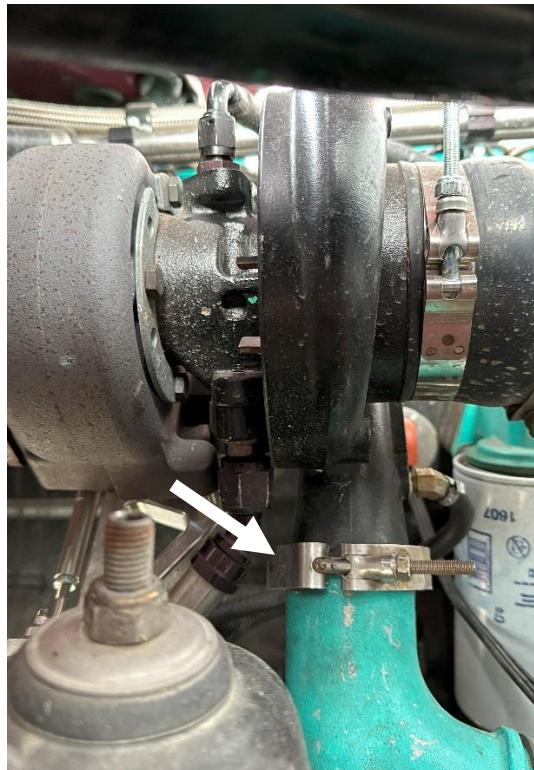


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4. Disconnect the turbocharger oil supply line and the oil drain tube from the turbocharger. Discard the original turbocharger oil drain tube gasket.

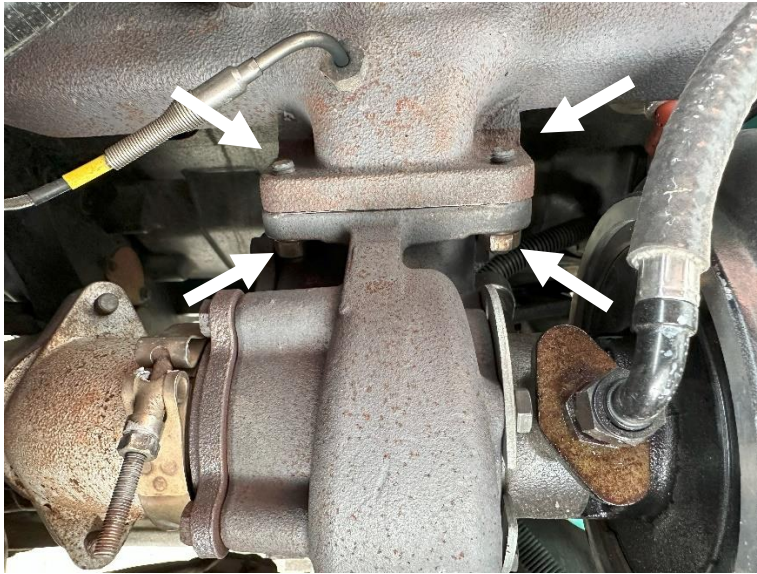


5. Disconnect the charge air cooler (intercooler pipe) from the turbo by loosening the clamp. The clamp will be reused.



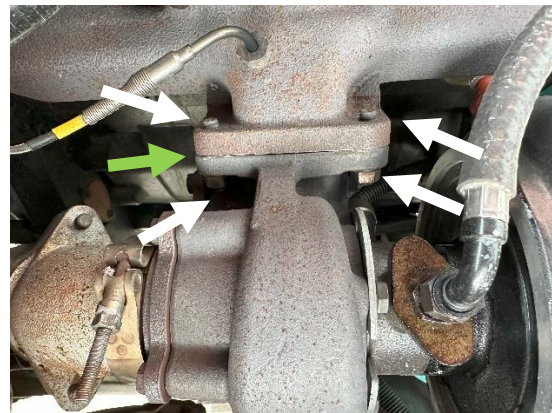
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6. Remove the four turbocharger mounting nuts from the manifold and turbocharger. Remove the turbine flange gasket from the exhaust manifold. Discard the original manifold gasket, nuts, and studs.



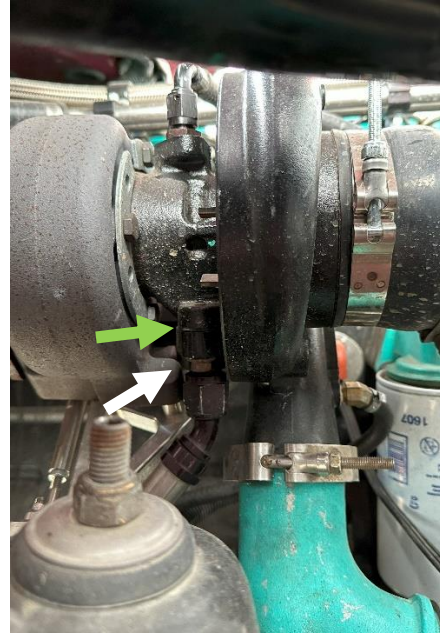
### TURBOCHARGER INSTALLATION:

1. Clean and inspect all mating surfaces.
2. Install the new turbine flange gasket included with the new turbocharger and apply anti-seize compound to the new mounting studs and nuts included with the turbocharger. Install the turbocharger to the exhaust manifold. Tighten the turbocharger mounting nuts to 32 ft-lbs torque.

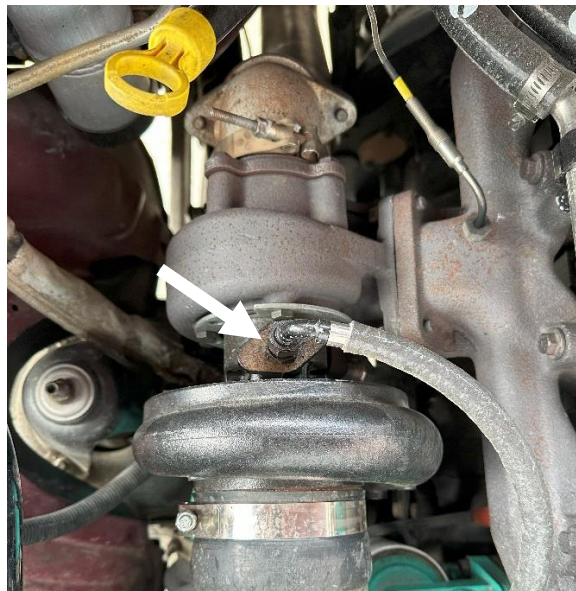


## INSTALLATION INSTRUCTIONS

- Using the new turbocharger oil drain gasket provided with the turbocharger, connect the turbocharger oil drain line. Tighten the drain line connection bolts to 24 N·m (18 ft. lbs.) torque.

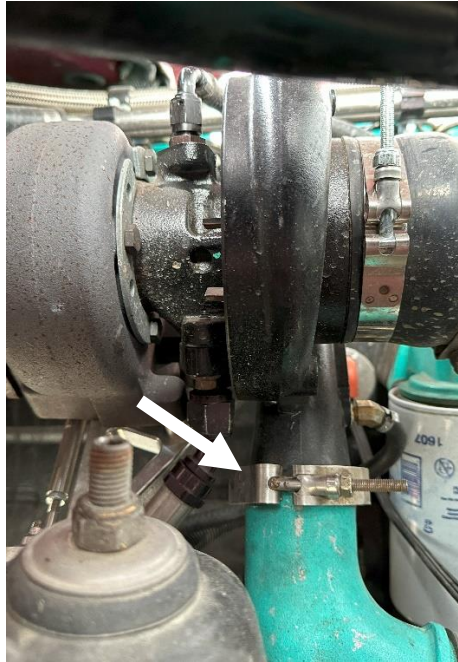


- The turbocharger must be pre-lubricated with clean engine lubricating oil before engine start up. Using a funnel, pour 2-3 ounces of oil into the supply fitting while rotating the compressor shaft by hand.
- Install the turbocharger oil supply line. Tighten the oil supply line fitting nut to 15 N·m (11 ft. lbs.) torque.

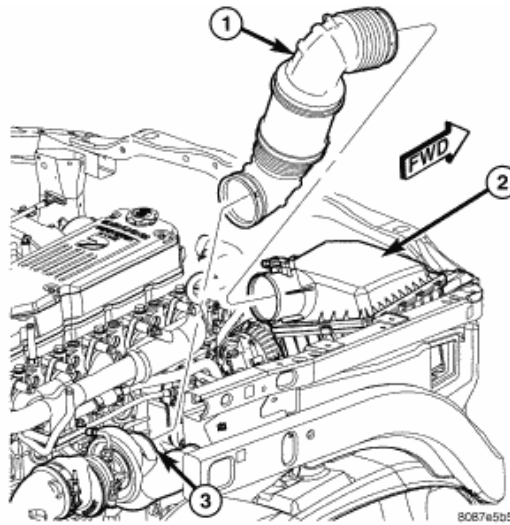


## INSTALLATION INSTRUCTIONS

- Position the charge air cooler (intercooler) inlet duct to the turbocharger. With the clamp in position, tighten the clamp nut to 8 N·m (72 in. lbs.) torque.



- Position the air intake pipe and the exhaust pipe onto the turbocharger. Tighten the exhaust pipe clamp to 11 N·m (100 in. lbs.) torque. Re-install the two clamps on the air intake pipe.



- Connect the negative cable to the battery. Start the engine and check for leaks.
- For California customers 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.