

Installation Instructions

Transverse K04

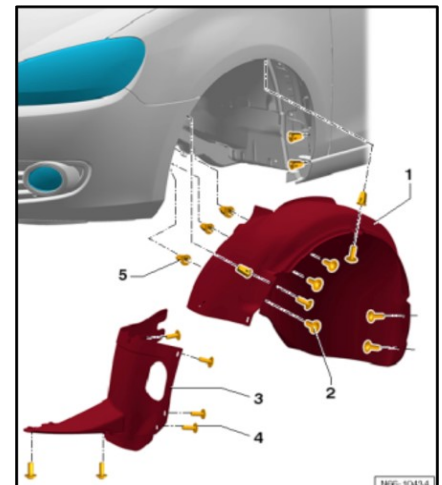


Tools Required

- Jack and jack stands
- Drain pan for coolant and oil
- 3" and 6" extensions
- Channel locks
- 7mm, 8mm, 10mm, 11mm, 12mm, 13mm, and 16mm sockets
- Oxygen sensor socket
- T25, T27, T30 Torx bits
- 5mm and 6mm hex wrenches
- M8, M10, and M12 triple square bits
- Phillips and flathead screwdrivers
- 13mm and 16mm open end wrenches
- Inspection Mirror

Factory Turbocharger Removal

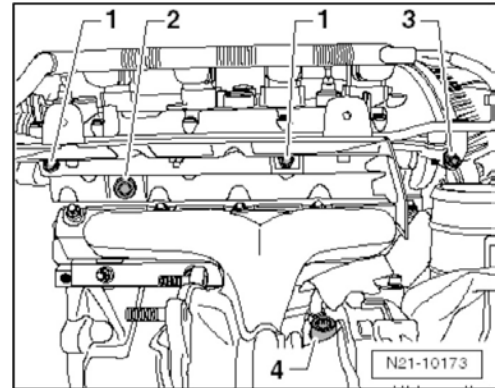
- 1) Remove the engine cover and disconnect the battery.
- 2) Drain the engine oil. Now is a good time to change the oil filter.
- 3) Remove right front wheel and 13 pieces of the T25 fasteners, securing the fender liner.



- 4) Remove air intake to turbo inlet and aluminum heat shield above the turbo by unfastening the two M10 bolts (1) and 6mm hex (2).

***NOTE:** The use of an inspection mirror is recommended for some of these bolts as they may be hard to see without a mirror.*

- 5) Remove the M8 bolt that holds the lines and the intake mount.



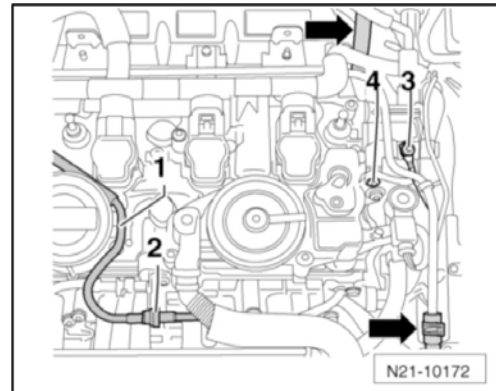
- 6) Unclip the vacuum line running over the cylinder head to the turbocharger at the separation point (2).

- 7) Remove the two T30 bolts holding the metal lines to the cylinder head. (3 & 4)

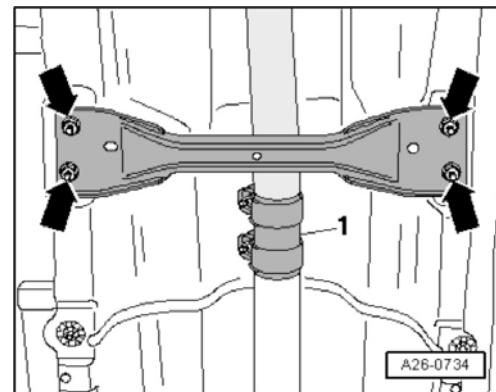
- 8) Remove the T25 fasteners holding the underbody tray.

- 9) Unclip the O2 sensor from the bracket.

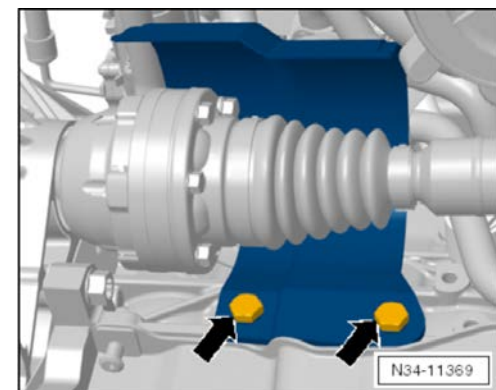
- 10) Remove the O2 sensors from the downpipe.



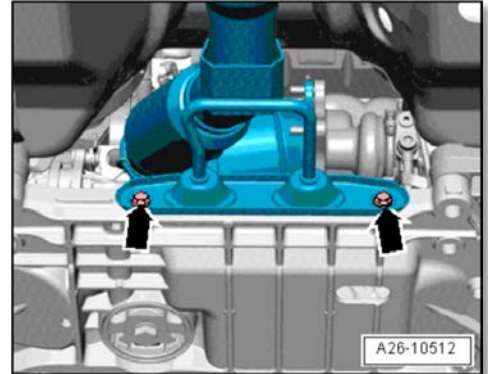
- 11) Remove the cross member bracket by unfastening the four 13mm nuts.



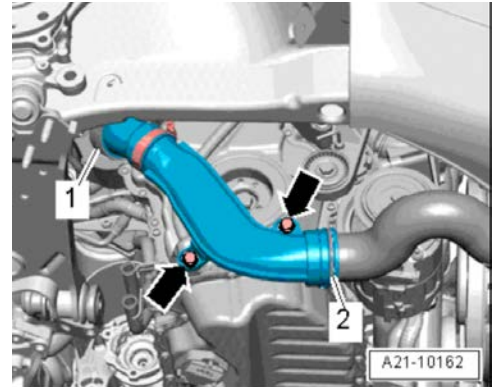
- 12) Remove the over-axle heat shield by removing the two 16mm bolts.



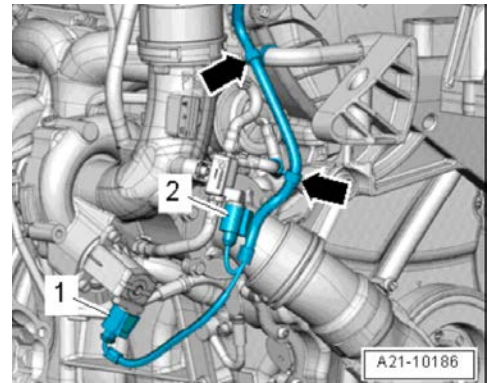
- 13) Remove the 16mm downpipe flange bolts. Heat and penetrant may be helpful during removal.
- 14) Remove the two 13mm bolts holding the downpipe bracket to the sub frame (arrows).
- 15) Remove the downpipe by snaking it out of the bottom of the engine bay.



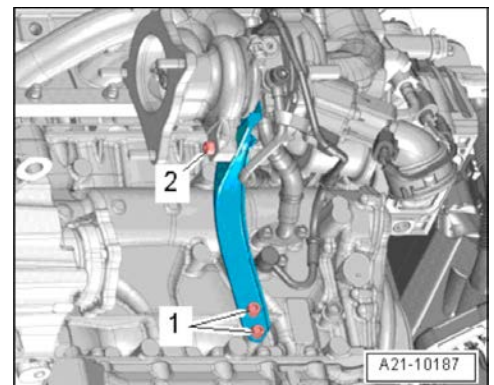
- 16) Remove the oval-shaped turbo discharge pipe by removing the two T30 bolts (arrows) and loosening the two hose clamps (1 and 2)



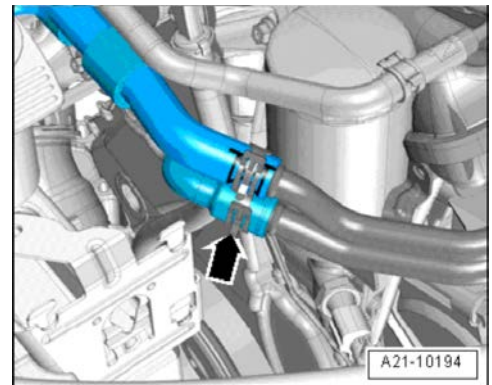
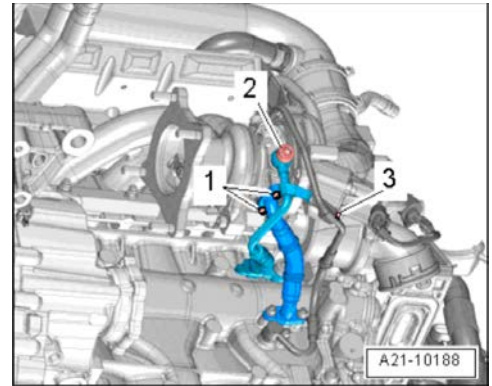
- 17) Disconnect the diverter valve (1) and N75 valve (2) connectors. Take care to avoid damage to the plug-locking tabs.



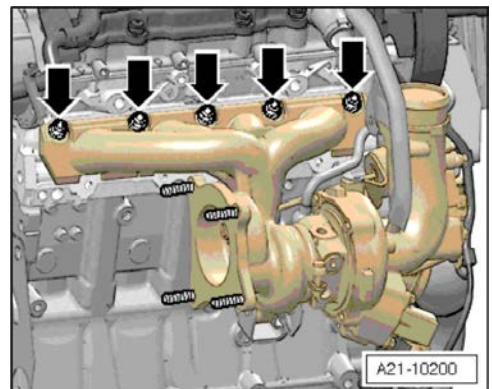
- 18) Remove the turbo support bracket by unfastening the two M10 bolts (1) and one 6mm hex on top (2).



- 19) Remove the turbo oil return line from bottom of the turbo with an 8mm triple square tool (1).
- 20) Remove the turbo coolant return line from the side of the turbo with a 12mm triple square tool (2).
- 21) Remove the oil supply line bracket near the diverter valve (3) with an 8mm triple square tool.
- 22) Remove oil supply line on the top side of the turbo with a 10mm triple square tool (Some vehicles may use a 12mm triple square tool).
- 23) Remove the harness from the coil packs and pull the harness to the side.
- 24) Remove the coolant supply hose from the plastic line near the oil filter by loosening the two hose clamps (arrow). Tuck the soft lines out of the way.



- 25) Remove the five 13-mm nuts on the exhaust manifold (arrows) and wiggle the turbo assembly free from the head.
- 26) Remove the turbocharger assembly from the engine bay by lifting it up and out with the turbine side up.



Prepare New Turbocharger



- 27) Lay both turbocharger assemblies side by side to transfer coolant supply line onto the new turbocharger. Take note of the orientation and routing of the line on the used turbo before transferring the lines so you can duplicate on the new turbocharger.
- 28) Ensure new crush washers are inserted on either end of the coolant supply line banjo bolt. Torque bolt with crush washers to 18 lb-ft plus 45 degrees.
- 29) Install new diverter valve with supplied bolts onto the new turbo.
- 30) Install supplied PCV block off plate with gasket onto K04 compressor housing
- 31) Insert the 6-mm hex coolant plug into the lower hole of the new turbocharger assembly, near the oil return hole. Torque the plug to 40 lb-ft.

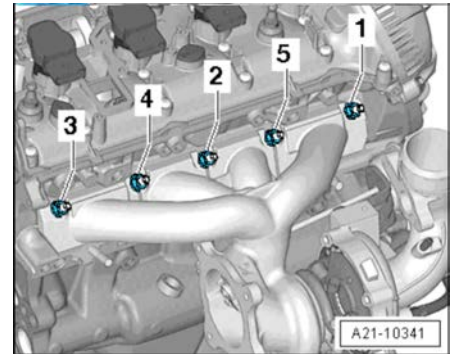
***NOTE:** Hole selection varies depending on model year, Match the location as noted on OEM turbo*

- 32) Install the silicone discharge hose and clamps provided onto the compressor outlet at approximately the same angle as the factory discharge pipe. Leave clamps snug but not fully tightened for later adjustment.
- 33) Ensure you can reach the clamps from underneath the car.

New Turbocharger Installation

- 34) Replace the manifold gasket on the block in the same orientation as the old gasket.
- 35) Install the new turbocharger assembly by inserting the assembly, compressor side first, into the engine bay and onto the cylinder head studs. Ensure that the channels on the bottom of the manifold are seated onto the locating blocks on the cylinder head.

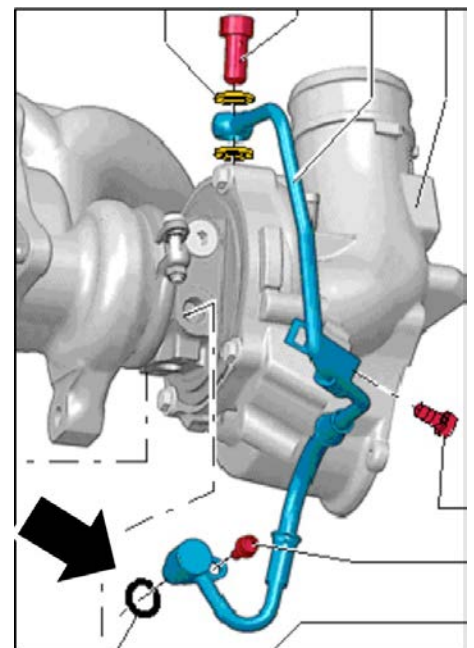
- 36) Hand-thread the five supplied 13mm manifold nuts onto the studs snugly. A coating of anti-seize on the studs is recommended.
- 37) Tighten the manifold nuts in the order specified by this figure. Starting at 10 lb-ft, complete the sequence. Then repeat the sequence, tightening all nuts to 20 lb-ft.



- 38) Install the oil feed and return lines onto the turbo. Ensure new crush washers are inserted on either end of the banjo bolts. Torque the banjo bolt with crush washers to 18 lb-ft plus 45 degrees. (Block fitting, o-ring, and bolt for oil feed line does not need to be reinstalled per the illustration as we didn't remove it originally)
- 39) Install the rear coolant line (closest to firewall) onto the turbo.

NOTE: You *MUST* use supplied double washers on the turbo side of the banjo bolt and one on the bolt side to allow the coolant line to clear the bolt. Torque the banjo bolt with crush washers to 18 lb-ft plus 45 degrees

- 40) Install the oil return pipe onto the turbo with the gasket provided.



NOTE: The coolant line and oil lines will have factory brackets which are interlocked on the original K03 turbo. These brackets will not work on the new K04 turbo, you can leave them on, but just be aware they will not attach like before. Also, with small variances on the turbo clocking, you may need to massage, bend these metal lines to fit.

- 41) Install the coolants feed line back onto the hard line near the oil filter and secure the spring clamp.
- 42) Reinstall the turbo support bracket.
- 43) Reinstall the plastic discharge pipe. It may help to rotate the silicone compressor discharge hose to achieve the correct angle.



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44) Tighten all hose clamps and reattach the two T30 bolts to the block.

NOTE: Please be aware, the turbo outlet silicone is meant to work with the OEM factory pancake pipe, if an aftermarket pipe is used, the diameter may be different.

45) Reconnect the diverter valve and N75 valve connectors, ensuring that there is a click during reconnection (positive tab engagement).

46) Reinstall the heat shield with the one 6mm hex and two M10 bolts.

47) Reinstall the downpipe and O2 sensors, using the new turbocharger-downpipe gasket supplied.

48) Reinstall the cross-member bracket.

49) Reinstall the intake assembly and reconnect the battery.

50) Reinstall the right-front fender liner and wheel.

Final Preparation

51) Fill the car with oil and replace any coolant lost during the installation process.

52) WHILE THE COILPACKS ARE STILL UNPLUGGED, crank the motor for 10 to 15 seconds to allow oil pressure to build within the turbocharger.

NOTE: It is recommended that Coil packs be replaced at the same time your K04 is installed if they are older than 12 months to ensure the best possible performance results.

53) Reconnect the coil packs and start the engine with the underbody tray removed. Allow the engine to idle for a few minutes and inspect all connects and lines for any fluid leaks or interference problems.

NOTE: Some smoke is normal at this point while any fluids burn off the turbocharger.

54) Top off the oil and coolant and reinstall the underbody tray/engine cover.

55) Take a short test drive to ensure that all boost hoses are secure and everything is performing normally.



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