

This document outlines how to relock and plumb the VNT 17 on TDIs equipped with the ALH engine; the North American 98-2003 Beetle and 99.5-2003 Golf/Jetta.

As shown in the picture below, installing the turbo as shipped places the compressor outlet directly facing the power steering return line.



In order to workably install the VNT 17, the compressor housing must be reoriented, AKA 'relocked.'

Before we begin, please note that it is essential to test fit the turbo and plumbing before completely tightening the turbo mounting nuts, connecting the downpipe, or modifying the rubber air charge hose. This saves time, and allows verification of fitment before permanently modifying any expensive hoses.

Insert the compressor housing outlet adaptor into the compressor housing. It is secured by a 'C' shaped clip that will pop into place when the adaptor is fully seated.

With the turbo on the bench; loosen and remove the 6 8mm-headed bolts holding the compressor housing together as shown in the picture below. Take care to prevent the outer housing from contacting the compressor wheel. The compressor wheel is delicate, easily damaged, and precisely balanced. Rough handling of the compressor housing can result in wheel damage that will render the turbo unusable.

With the securing bolts removed, gently guide the compressor housing away from the turbo.



Re-install the housing and bolts with the compressor housing rotated roughly 90* counter clockwise (when viewing the compressor wheel through the compressor inlet). Note the pictures below for clarification when to re-orientint the compressor housing.



Before.

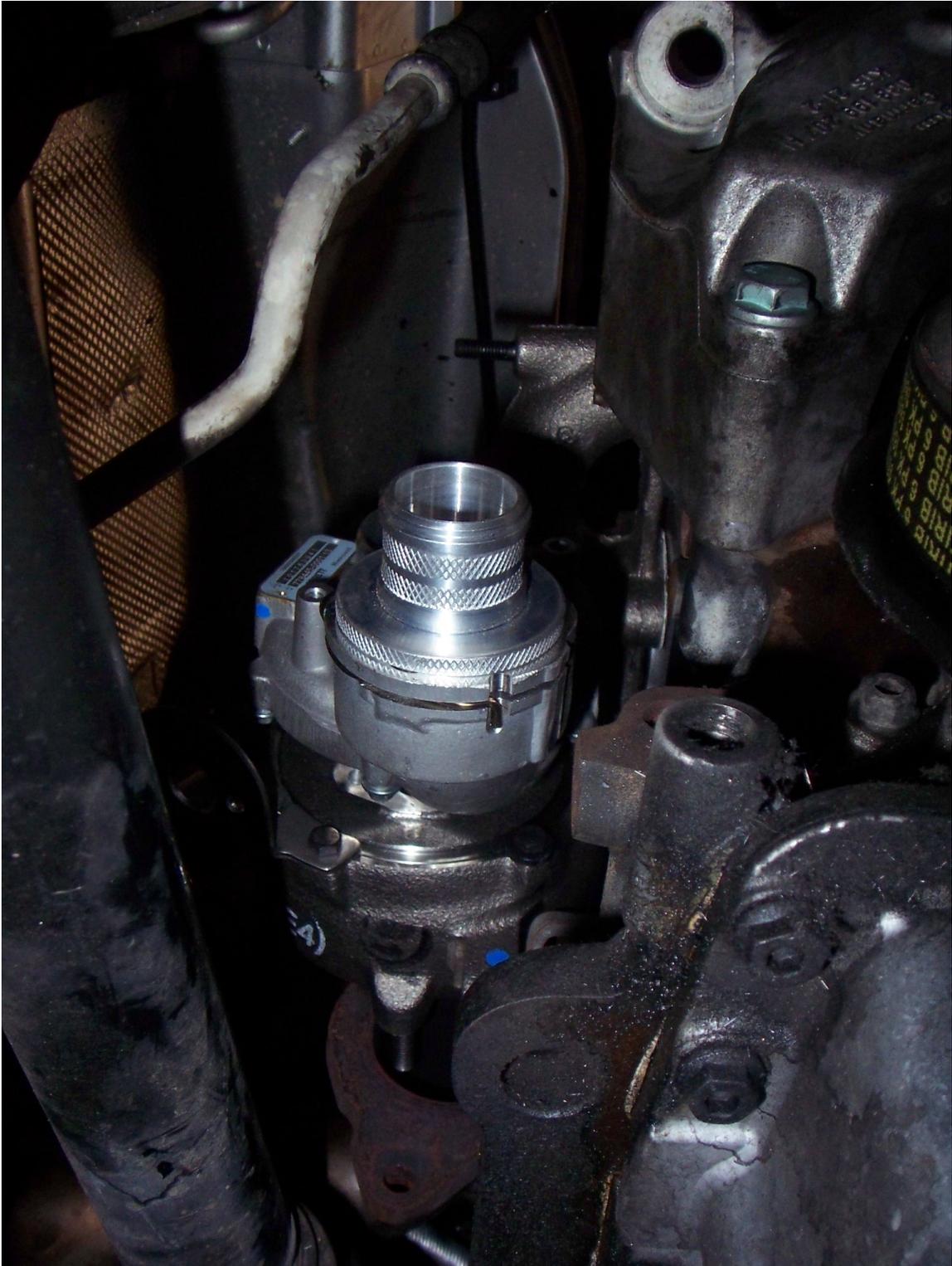


After.

Evenly tighten the 8mm-headed bolts enough to keep the compressor housing from flopping around, though loose enough to be rotated by hand. This allows fine tuning with the turbo in the installed position on the car.

Next, slip the exhaust gaskets onto the mounting studs on the cylinder head. Hang the turbo onto the studs. Snug down one of the old copper nuts on an easily accessible stud. Use one of the old nuts, as they are self-locking, and should not be repeatedly installed and removed. The turbo should now be in the installed position.

Verify that the compressor housing outlet does not contact the engine block. The correct position of the housing is ~5-10mm from the block. See photo below.



Tighten an accessible 8mm compressor housing bolt to prevent rotation of the housing once a satisfactory orientation has been achieved.

Mock fit the air charge piping as shown below.



Note that the rubber portion of the air charge piping is too long, and now has an unnecessary 90* bend. It will be necessary to trim the hose as shown below to achieve proper fitment. Double (or triple) check the location of your cut before cutting.



Ensure that any curf (debris created by cutting) have been removed from the air charge hose.

Verify correct compressor housing orientation and air charge hose length by mock fitting the air charge hose onto the compressor housing adaptor and intercooler.

Remove the turbo and tighten the 5 remaining 8mm headed bolts. Keep in mind the small size of the fasteners and softness of the aluminum compressor housing when judging the correct torque to prevent damage to the threads of the housing.

The turbo can now be fully installed. Secure the air charge hose to the compressor adaptor by re-using the factory spring clip for this purpose.