

# ALH VW TDI Turbo Removal Guide

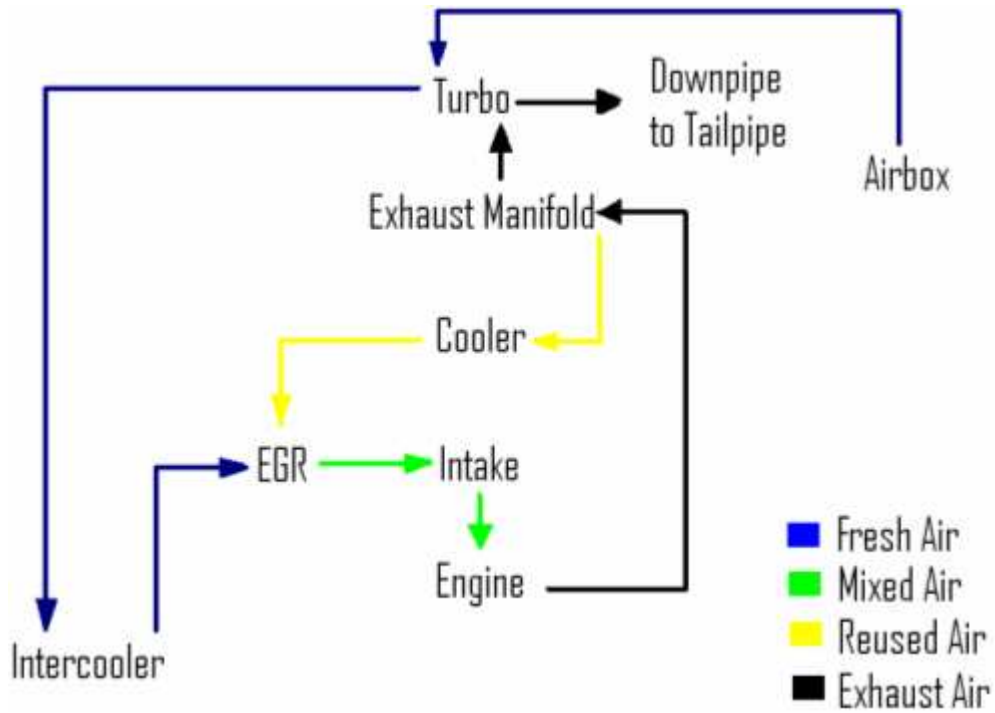
## MKIV 1998-2003 New Beetle

## MKIV 1999.5-2003 Jetta

## MKIV 1999-2003 Golf

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## Chapter 1: Turbo Intake Tube Removal

### Tools needed:

Small Flat Blade Screwdriver  
Hose Clamp Tool  
10mm socket

### Directions:

1. Using the screwdriver push on the top and remove the connector for the MAF sensor on the air cleaner box.
2. Using the hose clamp tool squeeze and slide to the side the 2 hose clamps connecting the air cleaner box to the turbo intake pipe.



3. Next using the hose clamp tool again, Remove the 2 clamps on the Rubber Elbow piece that connects the tubing from the upper intercooler charge pipe to the EGR/Anti Shutter valve assembly.



4. Next use the 10mm socket to remove the two bolts that attach the turbo intake tube onto the intake manifold.



5. Remove the turbo actuator vacuum line running down the pipe and use the hose clamp tool to remove the clamp closest to the turbo.
6. Remove the Turbo Intake Pipe



It's not completely necessary to remove the air cleaner box, but we did in this case for added room. If you are interested in removing the air box, you will need an 8" extension and a 10mm socket to remove the two bolts that hold it to the chassis. Unless you want to replace the air filter, don't open the box as it will permanently break the seal with the air cleaner.



It is also not necessary to remove the CCV puck off the top of the valve cover. We removed this for added working space.



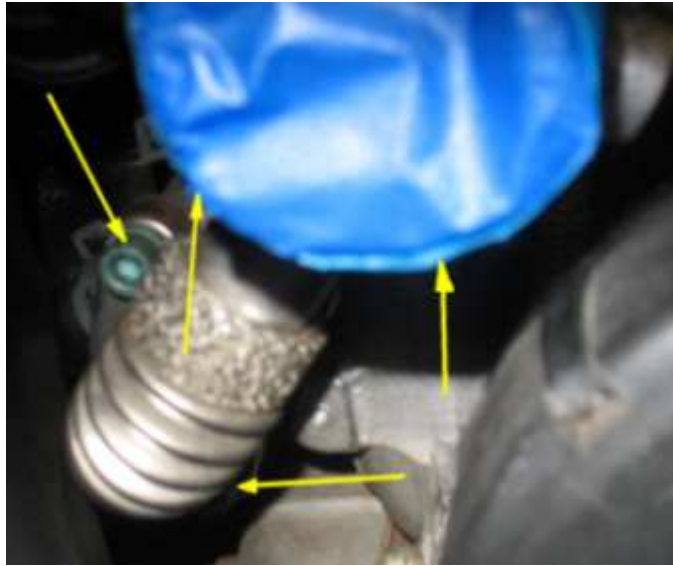
## Chapter 2: EGR Removal

### Tools needed:

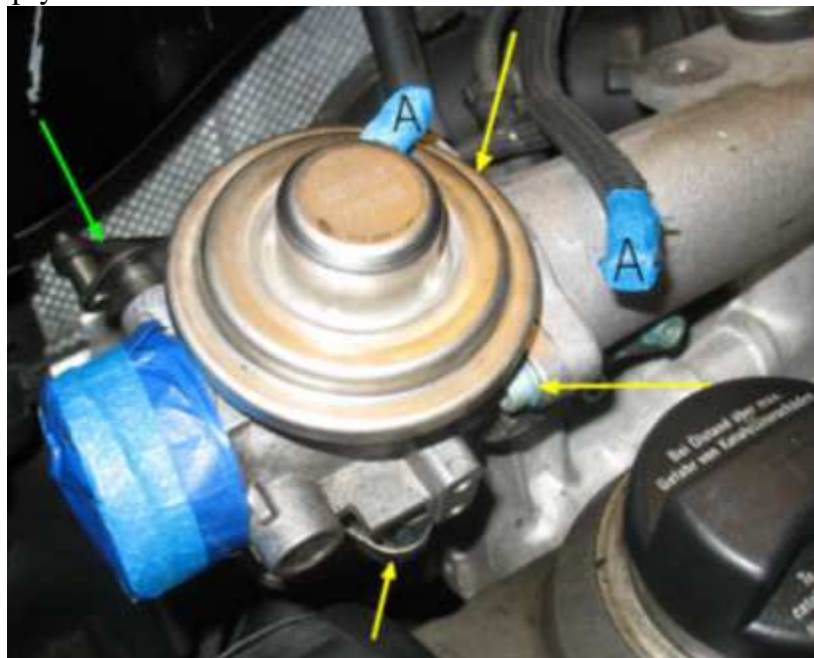
Small Flat Blade Screwdriver  
6mm Ball End Allen wrench or socket  
5mm Ball End Allen wrench or socket

### Directions:

1. Using a 6 mm Ball End Allen socket remove the 4 accessible bolts on the tube connecting the EGR to the cooler. The ball end will help get into the tight spots connecting to the EGR/Anti Shutter Valve and the EGR cooler.
2. During removal of the EGR pipe remember to collect the metal gasket between the tube and cooler.



3. Using a 5mm Ball End Allen wrench or socket; remove 3 bolts attaching the EGR/Anti Shutter Valve to the Intake Manifold.
4. Disconnect the vacuum hose that connects to the top of the EGR.
5. Remove the Anti Shutter Valve from the back of the manifold. It is held on by a plastic clip that you can pry with a small screwdriver from between the intake and the valve cover.



NOTE: It makes it easier to work if you move all the wiring and vacuum lines out of the way. Connect the EGR/Anti Shutter Valve into the grill of the fresh air supply or a windshield wiper; it keeps the valve out of the way and the area nice and neat.

In this photo it shows the EGR/Anti Shutter valve off of the car. It is not necessary to remove the valve. We removed it for more working room.



## Chapter 3: Cooler Removal

### Tools needed:

12mm deep socket

10mm socket

6mm Ball End Allen socket or wrench

### Directions:

1. Remove the (3) 10mm bolts that hold the cooler to the intake. These may be difficult to see from the top of the engine, but can easily be felt and get access to with a ratchet.

NOTE: Although it is completely unnecessary; you can disconnect the coolant hoses that connect to the cooler to remove the cooler from the engine compartment..



2. Use the 12mm socket to remove the 2 nuts that connect the EGR Tube to the Exhaust Manifold

3. Use the 6mm Ball End Allen wrench or socket to remove the 2 bolts connecting the EGR tube to the EGR Cooler.

4. Remember to collect both metal gaskets.

5. Use a bungee cord or rope tie the EGR Cooler to the right hand side of the car (see photo below).

NOTE: At this time it is a good time to shine a bright light from the bottom of the EGR Cooler to visually inspect for build up or damage.



Here's what was removed





## Chapter 4: Intake Removal

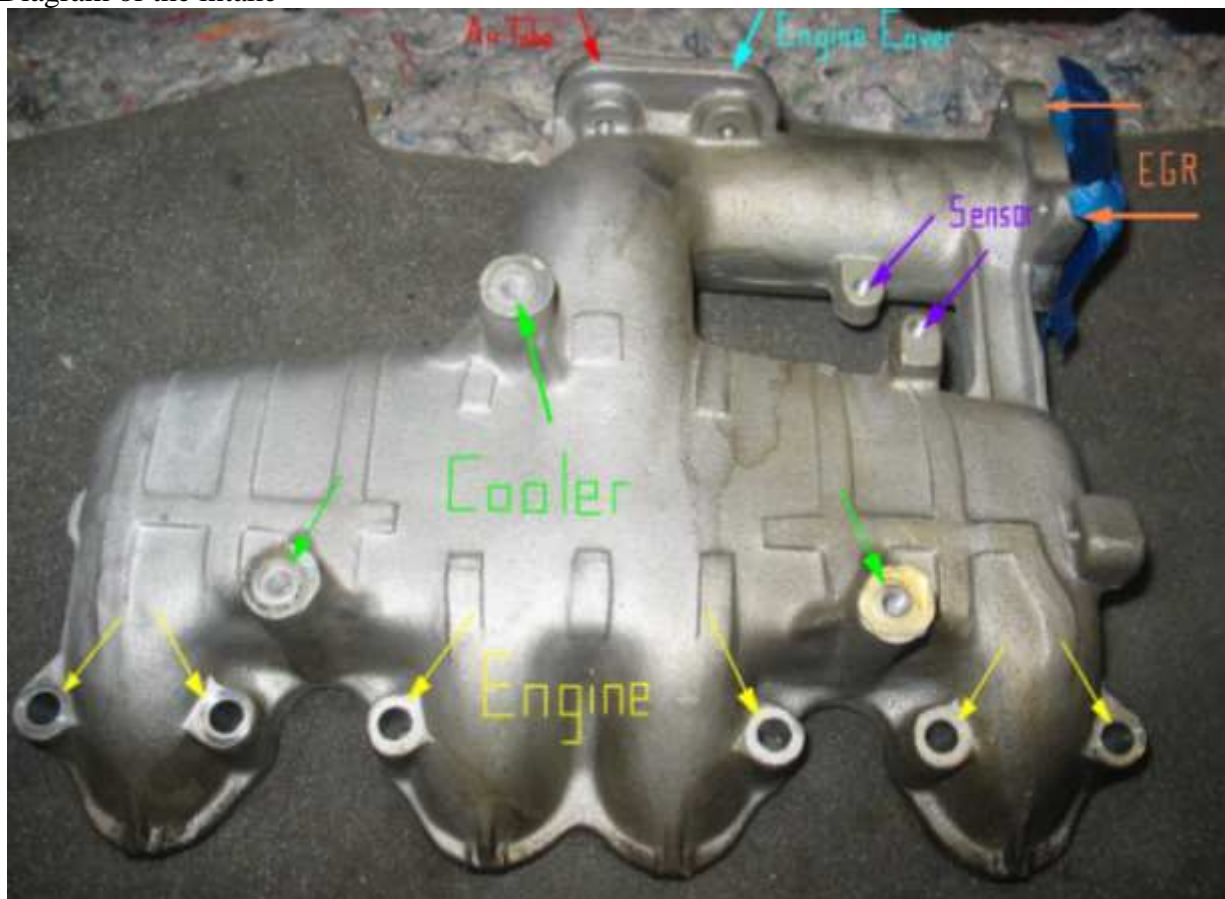
### Tools needed:

6mm Ball End Allen wrench or socket

### Directions:

1. With the cooler pulled to the side loosen the Six (6) 6mm Allen head type bolts.
2. Remove bolts once all are loosened. Do not worry if some get hung on the exhaust shield. They will come out once everything is loosened.
3. Remove Intake Manifold
4. Remove gasket between the head and the Intake Manifold.
5. Take a mirror and flashlight to inspect the intake port on the head. Look for large amounts of soot buildup or anything that does not look right. If something looks wrong consult a guru or trusted mechanic.

Diagram of the intake



## Chapter 5: Turbo Oil Line Removal

### Tools needed:

12mm deep socket  
17mm pipe wrench  
10mm wrench or socket  
Flat Blade Screwdriver

### Directions:

1. Using the 17mm pipe wrench, loosen the line on top of the turbo. You might want to pull on it hard to help minimize possible damage while trying to remove the oil.

Note: Plan ahead and have an oil line ready for replacement. Volkswagen recommends the oil line should be changed at this time; however there are many people who have reused the line with success. Your Mileage May Vary!



2. Using a 17mm wrench remove the bolt that connects the oil line to the oil filter casing.

NOTE: Make sure you get both cooper washers that are on either side of the banjo fitting. The new or reused oil line will not seal properly with either washer missing.



3. Use the 10mm wrench to remove the (2) bolts that hold the clamps onto the head and the turbo bracket.
4. Use a screwdriver to pry the clamp wide enough to slide it off the oil line. There are two clamps.

NOTE: It is easier to remove the mounting clamps if the mount on the exhaust manifold is removed; it is held on by a 12mm nut.



## Chapter 6: Turbo and Exhaust Manifold Removal

### Tools needed:

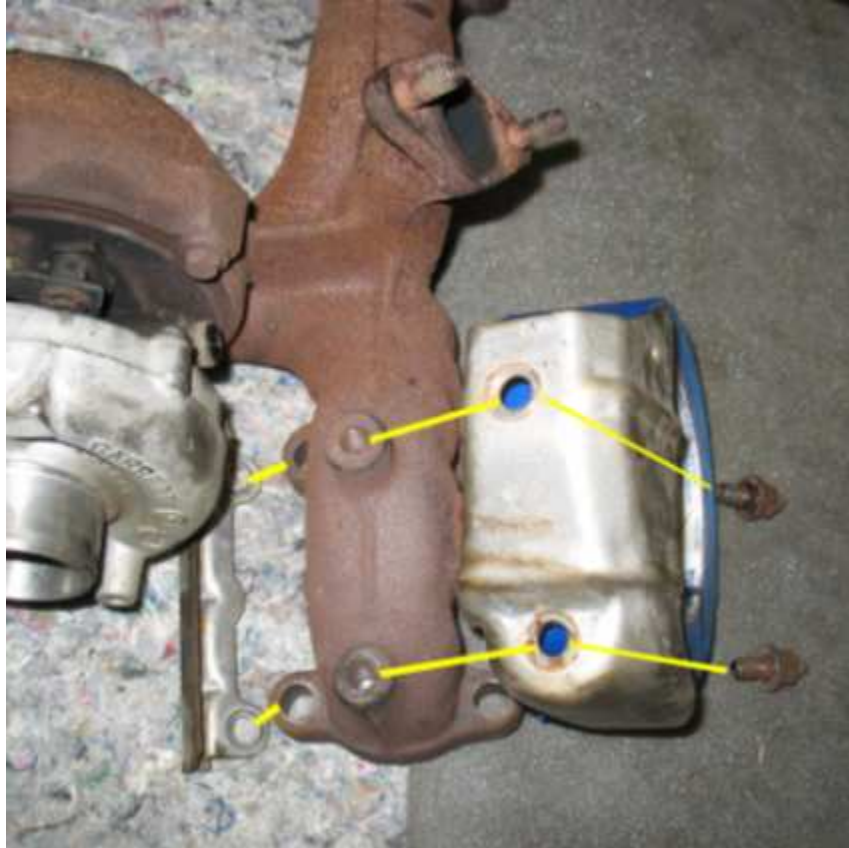
12mm socket  
22, 24, or 26mm open end wrench or adjustable wrench  
T27 Torx Bit  
5mm Allen Socket  
15mm Socket  
6mm Allen wrench

### Directions:

1. Using the 12mm socket remove the 3 nuts from the downpipe. This is located on the side of the turbo and may be hard to see all 3 nuts.
2. From the bottom of the car remove the turbo side oil drain bolts by using (depending on year) a T-27 Torx Bit or a 5mm allen head socket.
3. Remove the engine block side of the drain by using a wrench (adjustable should be fine) which can vary from 22mm to 26mm depending on model year.
4. From the bottom use a 15mm socket to remove the bolt holding the turbo to the engine bracket.



5. Use a 12mm socket to remove the 2 nuts holding the exhaust shield to the manifold.



6. Remove the 8 12mm nuts and expansion washers that hold the manifold to the block. The ones underneath you can access from the top, but they will be mostly hidden
7. Lift the turbo out of the car from the top.
8. Remove gasket from the head
9. Clean mating surfaces of the head, intake, and exhaust manifold

