



kinetic motorsport

Volkswagen VR6 Turbo Kit

Installation Manual

1 Preface

This is meant to be a basic installation guide, as easy as the kit is to install, some mechanical experience is necessary. If you don't feel comfortable in removal and reinstallation of engine components, then perhaps it is best left for someone with more experience. A Robert Bentley Manual for your particular car is recommended, not only for this installation but is an invaluable resource. It will explain, in detail and with illustrations each area that is involved with this installation. Identify all parts prior to installation, this will make things easier.

NOTE The Kinetic Motorsport VR-6 Turbo Turbo kit is intended for OFF-ROAD USE ONLY.

2 Parts List



Turbo



Manifold



Wastegate



Down Pipe



Inlet Track



Silicone Hoses



Spark Plugs



Fueling
Note:OBD2 chip/injectors shown.



Oil Filter Housing End

Oil Feed Line

Turbo End



Oil Return Line



Boost



Check Valve



Fasteners



Clamps

3 Installation

- 1) To begin, first disconnect battery.
- 2) Remove air box and associated inlet pieces
- 3) Remove upper intake manifold as described in Robert Bentley Manual. Remove the spark plug leads and various shrouds. Removing the 6mm allen head bolts along the front of manifold where the 2 halves join. Remove the 6mm allen head bolts which attach the manifold brackets to the head. Remove throttle cable from throttle body. Unplug the various sensors and vacuum hoses. The upper manifold should now be free, remove it from car. ***NOTE *** with the intake manifold off, cover the lower half of the manifold so that nothing can fall into engine making the installation of turbo useless and the need for a rebuild a possibility.
- 4) You can now replace the fuel injectors. Be careful as the fuel system is pressurized and will spray (safety glasses and rags are definitely recommended). The injector o-rings must be lubricated before installation.
- 5) Next is the oil feed line. While the intake manifold is off, look straight down to the top of the oil filter housing. There are three sensors, remove the one closest to the transmission; install brass “run tee” (be sure to use thread sealer on threads of tee) the sensor then screws into top of tee. The 1/8 NPT to -4 adapter threads into side of tee (more sealer on end of adapter which threads into tee) the 90 deg swivel goes on next with the oil line threading onto swivel pointing up towards top of engine. Run oil line in a logical path so that it does not interfere with manifold (when reassembled). Keep open end of oil line clean and free of debris, tape would be a good thing. Note: it may be easier to remove the oil filter housing altogether this is done by first draining housing and then removing the three bolts which attach it to the block. Once removed, it is a simple procedure to install run tee etc. Be sure that when you reinstall the ‘O-ring’ (the figure 8 looking seal) is in good condition or it will leak.
- 6) Soak all nuts/bolts of exhaust with WD-40 or something similar. Crawl under car and undo down pipe from cat. Remove down pipe from manifold. Remove heat shields and undo manifolds from head. Be sure that O2 sensor is disconnected before you remove down pipe.
- 7) Install turbo manifold (if gaskets are shot ...replace). Cut/install heat shield for top of manifold so that it does not interfere with turbo. Install studs into manifold, turbo gasket, and turbo. Loosen the bolts around compressor/exhaust housings so that center housing can be rotated. Install 1/8 NPT to -4 90deg. adapter to oil inlet on turbo. You want to rotate center housing so that the oil feed is straight up. The bolts on the exhaust housing side can be tightened. Tighten oil line to adapter on turbo.

- 8) Drain oil from pan. Remove bolts holding pan to engine (on the transmission there is a cover to remove before you can remove bolts). Locate where to drill hole in pan (approx. centered on 2 hole directly above oil drain, 1" down from top). Drill hole in pan, weld bung onto pan. Reinstall oil pan; make sure that the gasket is good (some sealer (silicone like substance) can be used sparingly around gasket/pan). Install brass 90 deg. onto pan (use thread sealer), install 1/2" NPT-5/8" with barbed end (use thread sealer), install 5/8 hose onto barbed adapter (use lubrication.... it goes on a lot easier). Install oil drain flange/gasket onto turbo (this uses the imperial bolts supplied). Install -10 fitting onto end of oil drain hose and attach to oil drain flange.
- 9) Reinstall intake manifold, use new gaskets if warranted. Install silicone inlet piece (rotate compressor housing to facilitate ease of installation). Tighten bolts on compressor housing.
- 10) Install flex pipe onto down pipe using t-bolt clamp 4043. Install down pipe onto turbo. Install stainless flange with tube onto flex pipe, install waste gate onto manifold and attach onto flange/flex (use gaskets) tighten all clamps/bolts. Attach down pipe to cat, install O2 sensor.
- 11) If the car is equipped with AC, gently bend lines so that when the turbo inlet silicone is installed, the lines won't rub. Install inlet pieces and attach inlet tube to back of block. Remove MAF element from housing and install into new aluminum housing. Install air filter to new MAF and install into car.
- 12) Install molded hose from valve cover to inlet, install Bosch blow off valve to throttle body silicone, use 1" hose to attach to inlet piece. OBD-1 cars need to install hose between compressor housing and idle speed controller.
- 13) Replace vacuum hose which runs between intake manifold and EVAP Canister Purge Regulator Valve with silicone hose, install 1 vacuum tee near throttle body run line to waste gate. Run hose towards the passenger side of car install the other tee and run 3/16" vacuum hose to blow off valve. The 1-way check valve is placed before the EVAP solenoid so that vacuum opens the check valve and boost closes the valve.
- 14) Locate the computer in rain tray: remove the computer from car, remove from bracket and open case. Take note what the orientation of the chip is, carefully remove factory chip from socket on board and replace with chip supplied (usually found taped to MAF housing). Reinstall computer into car.
- 15) Check all clamps, bolts and **don't forget to refill the oil!** Reinstall battery. Turn key to on, but do not start. The throttle body needs to recalibrate, it will buzz for approx. 20 seconds.
- 16) Start the car.