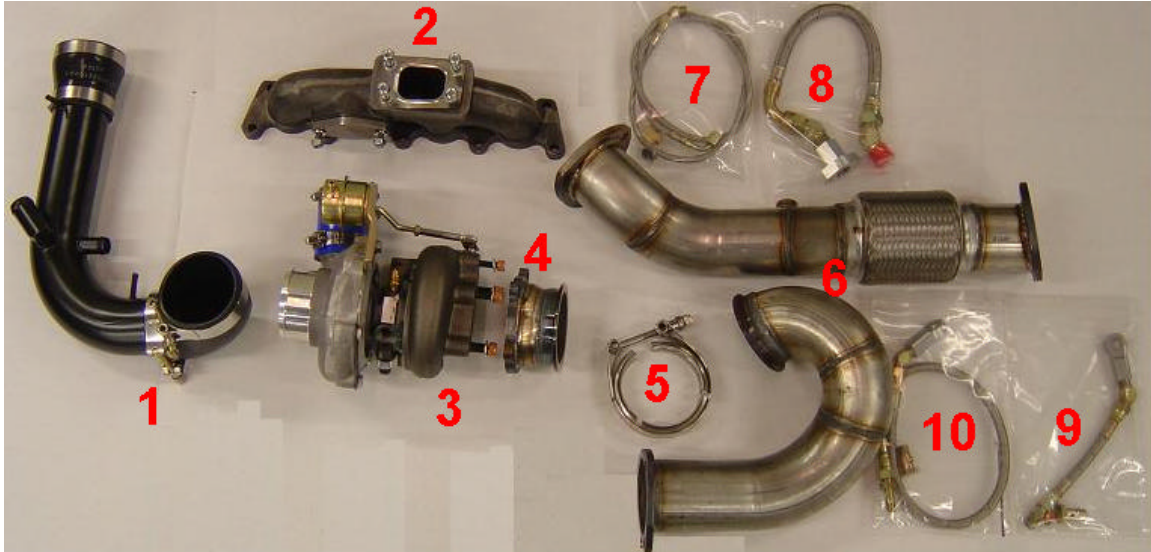


**Procedure:****Installation for the GT28RS Turbo Upgrade for the Transverse Mounted 1.8T Golf/Jetta/GTI/Beetle Model Years 2000 to 2004**

Warning: Check local laws before adding turbo components to your vehicle. Some states prohibit the addition of an aftermarket turbo system on emissions controlled vehicles.

**Parts Checklist (Bill Of Materials):**

- 1) Turbo Inlet Pipe Set
  1. Input pipe with hose nipples
  2. 90 Degree Inlet Elbow (2.5" to 3") with 2 T-bolt Clamps
  3. Silicone Transition connector (2.5" to 2.75") with 2 Screw type clamps
- 2) High Flow Cast Exhaust Manifold with hardware
  1. Turbine Inlet gasket
  2. 4 8mm studs and locking nuts
  3. Block-off plate for external waste-gate port, gasket, 8mm studs and locking nuts
- 3) GT28RS Turbocharger unit fully clocked and assembled with basic hardware
  1. Silicone Connector 2" on outlet with 2 clamps
  2. Waste-gate actuator with bracket mounted in place with e-clip
  3. Set of (5) 8mm studs, nuts, and washers for turbine discharge (no gasket required)
- 4) V-band turbine discharge adapter (5 bolt to 3" V-band Adapter)
- 5) V-band Clamp 3"
- 6) 3" Stainless Downpipe Assembly with hardware
  1. V-band flanged turndown pipe
  2. Center section with flex tubing
  3. Rear race section to mate to exhaust
  4. Exhaust gaskets, nuts and bolts to join the three sections

- 7) Oil feed line assembly:
  1. 4 ft #4AN steel braided line
  2. Oil inlet fitting (custom machined) for turbo side
  3. Oil adapter fitting for oil filter housing side on engine
- 8) Oil Drain line assembly:
  1. Oil drain flange, gasket, and 2 bolts for bottom of turbo drain outlet
  2. #10 AN Male to 1/2" NPT Adapter
  3. Steel braided #10 AN steel braided line
  4. #10 AN Male to 1/2" NPT Adapter
  5. Oil drain Adapter for stock VW/Audi Oil Pan
- 9) Short Coolant line assembly (for turbo to engine block):
  1. Banjo bolt, machined banjo, 2 crush washers for turbo side
  2. #6 AN male to 1/4" NPT male adapter
  3. Short #6 AN steel braided line
  4. #6 AN male to 1/4" NPT male adapter
  5. Banjo bolt, machined banjo, 2 crush washers for turbo side
- 10) Long Coolant line assembly (for turbo to existing coolant source on side of head):
  1. Banjo bolt, machined banjo, 2 crush washers for turbo side
  2. #6 AN male to 1/4" NPT male adapter
  3. Long #6 AN steel braided line
  4. #6 AN male to 3/8" barb male (to mate to existing hose)

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### Some notes regarding this turbo upgrade:

The GT28RS kit provides the hardware foundation to support 350 crank HP. The kit should be used with the proper fueling changes in order to realize the above HP. In the absence of larger fuel injectors or other fuel modifications, boost should be limited to 12 psi to avoid a lean mixture under wide open throttle.

An FMIC (front mounted intercooler) kit is required in order to handle the type of airflow generated by the larger turbo to ensure consistent, reliable HP.

Additionally, the larger 3" downpipe included in this kit requires the elimination of the first two stock intercooler pipes coming out of the stock turbo. If using this kit with the stock intercooler, a new intermediate pipe set out of the turbo will have to be fabricated in order to walk around the large downpipe. This special pipe set is also available for sale through ATP.

For customers who already own an ATP FMIC kit, the pipes found on this kit is fully compatible with the GT28RS kit.

## Installation Instructions:

### Installation Tip #1:

It is strongly recommended that penetrating oil be applied to ALL nuts and bolts in the turbo exhaust track prior to attempting to remove. Exhaust components on turbo vehicles endure a lot of heat cycling and can be prone to seizing. To avoid the breaking of exhaust nuts and bolts during removal, allow the penetrating oil to penetrate well before beginning disassembly.

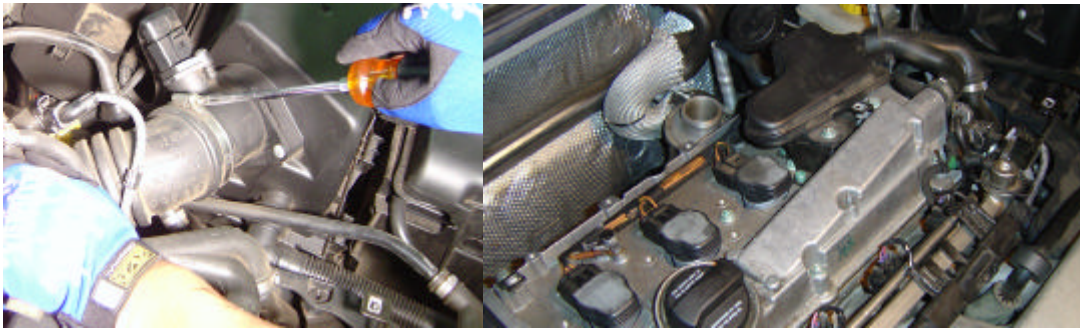
### A. Drain fluids from engine

1. Unscrew oil drain plug on oil pan and drain oil pan – just like a regular oil change.
2. Replace oil drain plug and tighten.
3. Replace oil filter with new unit.

Disconnect lower coolant hose into engine and drain coolant from engine

### B. Remove piping work connected to stock turbo

1. Disconnect turbo inlet pipe from side of turbo.
2. Disconnect 90 degree rubber hose from turbo outlet nozzle.
3. Unbolt downpipe and catalytic assembly.
4. Unbolt 3 bolts holding turbo to manifold, but leave suspended at original location.

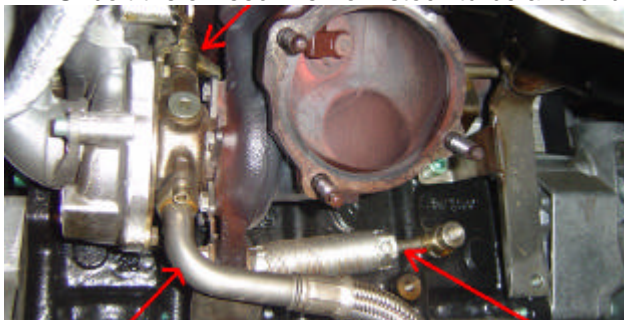


### C. Remove oil and coolant lines connected to stock turbo

1. Unbolt oil drain line.
2. Unbolt the coolant line from turbo leading to passenger side of engine bay. Cut coolant line at rubber section near passenger side of engine bay.
3. Unbolt the coolant line from turbo leading to back of engine block and unbolt from back of engine block under the turbo.

New coolant lines and fittings supplied will run to both locations.

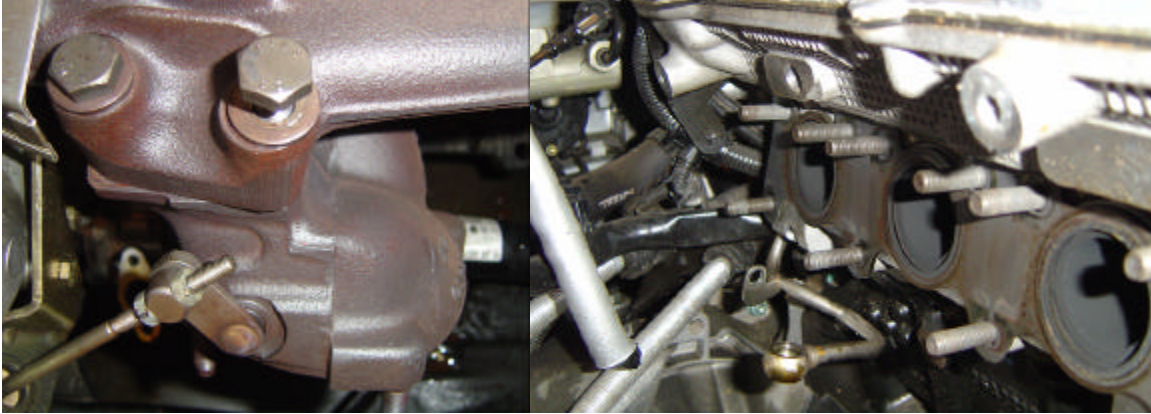
4. Unbolt the oil feed line from stock turbo and unbolt from top of oil filter housing.



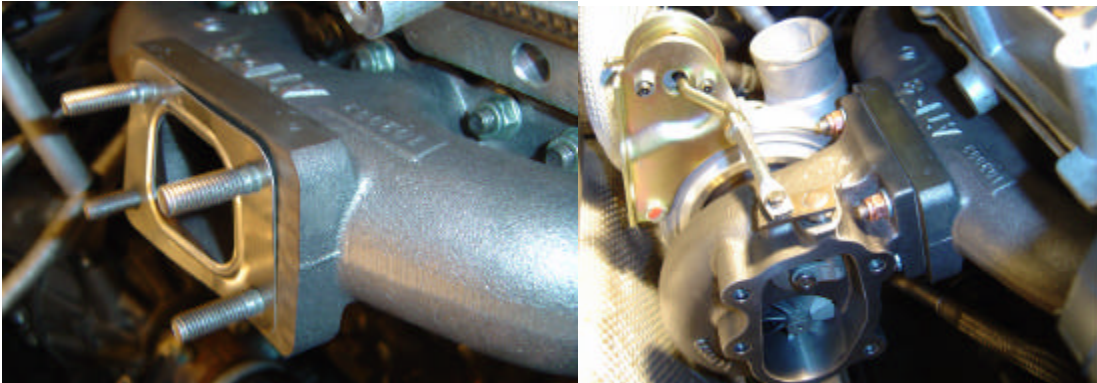
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**D. Remove stock turbo and manifold and prepare new manifold and turbo for installation**

1. Remove stock turbo and manifold from vehicle.
2. Prepare new manifold and turbo for installation. Turbo should already be pre-clocked to correct orientation of all inlet and outlets as per the picture above.

**E. Bolt up the New Turbo manifold**

1. Carefully place all nuts on studs after sliding in the new manifold
2. Slowly drive the top row of inner 6 nuts first with an open end 12mm wrench.
3. Drive the rest of the nuts down after the top inner 6 nuts are hand tight.
4. Tighten all nuts to 25 ft/lb without over tightening

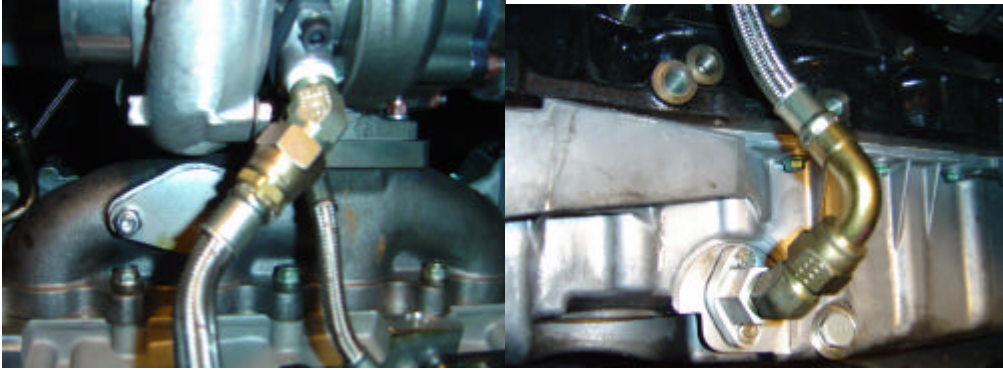
**F. Bolt up the GT28RS Turbocharger Unit**

1. Place GT28RS turbo (pre-assembled as per above) up against manifold.
2. Drive 8mm nuts one at time until tight against the manifold

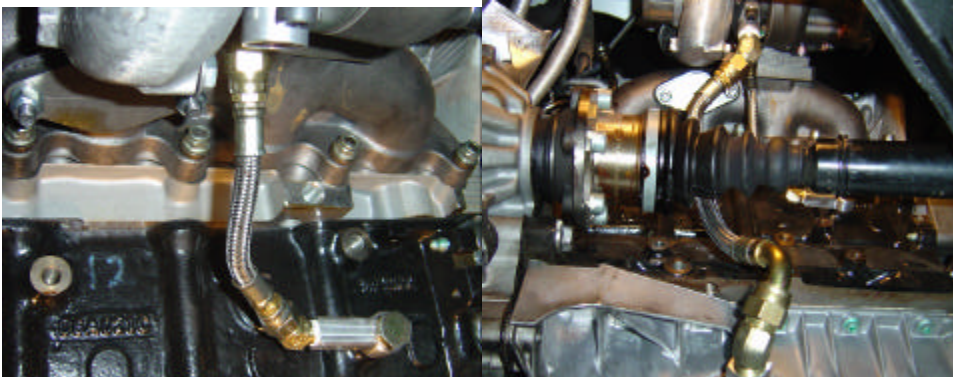
**G. Run new oil and coolant lines to and from the GT28RS Turbocharger**

1. Oil Feed – Once the original oil feed line is removed, there is fitting supplied to go into the existing hole in the oil filter housing. Screw the special GT restrictor/inlet fitting into the

- top of the turbo. Install the adapter fitting to the oil filter housing, then the oil feed line that was supplied.
2. Oil Return – Install the oil drain flange and gasket to the bottom of the oil drain hole on the turbo. Using Teflon tape to seal the  $\frac{1}{2}$ " NPT threads, install the 45 degree adapter. Install the machined oil pan adapter at the oil pan and, with Teflon tape to seal the  $\frac{1}{2}$ " NPT threads, install the other 45 degree adapter to the pan adapter. Install the oil return line between these two fittings.



3. Coolant – Short Line – This line assembly connects the coolant from back side of turbo to the back side of the block. Use Teflon tap on the  $\frac{1}{4}$ " NPT side of the threads.

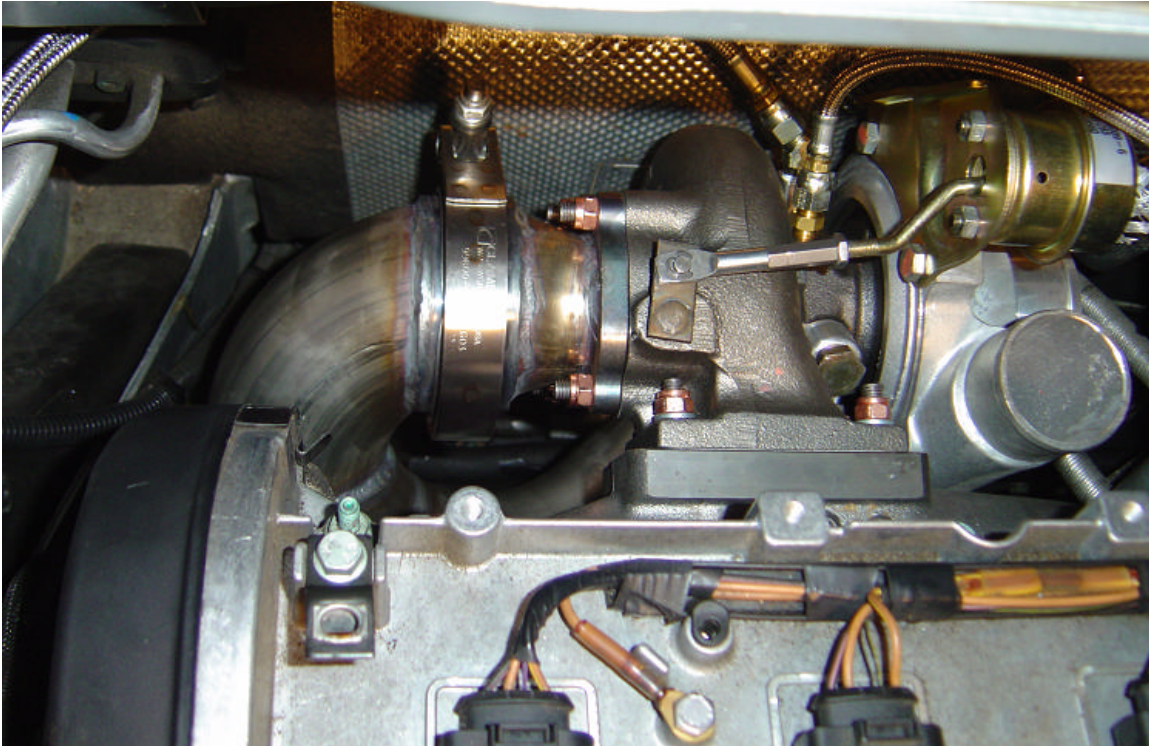
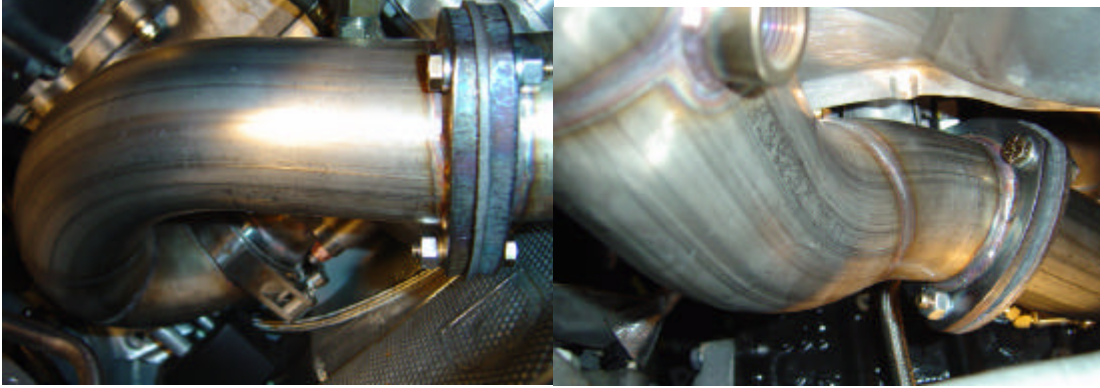


4. Coolant – Long Line – This line assembly connects the coolant from front side of turbo to and existing rubber coolant hose on the passenger side of the head. Use Teflon tap on the  $\frac{1}{2}$ " NPT side of the threads. Cut the exist rubber hose and slide into the barb end of the steel braided line.



## H. Install the Downpipe Assembly

1. Install the 5 Bolt to V-band Assembly
2. Install the top part of downpipe and v-band clamp but do not tighten.
3. Install middle section of downpipe with flex section
4. Install transition pipe to existing exhaust system
5. Tighten down all nuts and bolts including V-band clamp

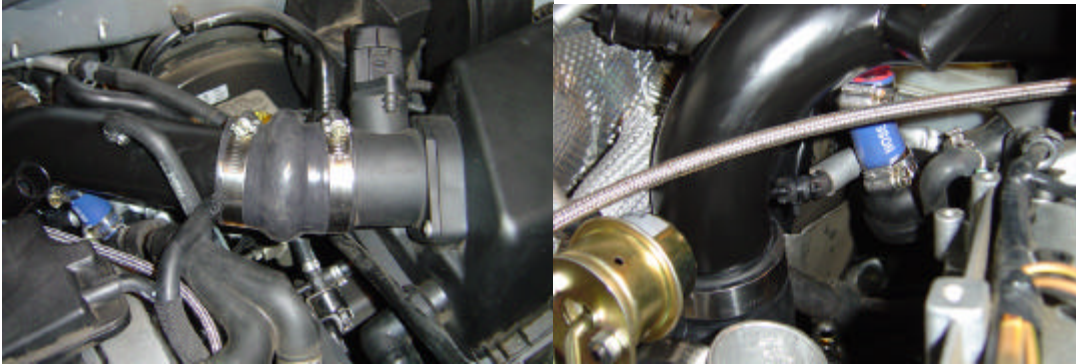


### Installation Tip #2:

Ensure that the oil and water lines never make direct contact with any part of the turbine, exhaust, manifold, or exhaust piping otherwise immediate rupture of the hoses will result.

## I. Connecting the inlet pipe assembly

1. Connect the 90 degree rubber elbow at the compressor outlet and clamp down.
2. Connect the main pipe to the 90 degree elbow
3. Connect the breather hose from valve cover to the  $\frac{3}{4}$ " nipple pointing down.
4. Connect the diverter valve exit (return) to the large 1" nipple on the pipe.
5. Connect the original vacuum vent hose from stock inlet pipe to the lower  $\frac{1}{4}$ " nipple
6. Connect the N75 valve exit to the top  $\frac{1}{4}$ " nipple on pipe.



## J. Install FMIC kit or intermediate pipe set to plump charge pipe to turbo exit.

## K. Startup Preparation

1. Fill engine with proper amount of oil and coolant.
2. Check dipstick and coolant reservoir for proper levels.
3. Check to make sure there are no leaks present and continue with startup procedure if all of the above has been met.

## L. Startup Procedure

1. Do not re-connect ECU until step 2 is complete.
2. Crank ignition start continuously for 30 seconds to circulate some oil into the turbo bearing housing
3. Reconnect the ECU.
4. Crank ignition again to start engine.
5. When engine starts, allow 10 minutes of idle while monitoring the oil and water temps.
6. If water and oil temps appear normal, and there are no leaks, take car for test drive.

End of Install