



STäSIS Engineering

MTF Power Package

Warranty Guidelines & Installation Instructions



STaSIS MTF Power Package Warranty Checklist

Congratulations on your purchase of the STaSIS Engineering MTF Power Package Turbo Upgrade.

To ensure proper warranty coverage and overall health of the vehicle on which the power package will be installed, completion of the following checklist is required prior to installation. STaSIS Engineering recommends all vehicle manufacturer TSB's (Technical Service Bulletins) are completed prior to the Power Package installation to ensure smooth operation of the vehicle and total customer satisfaction. Always use proper safety equipment and eye protection. The completed checklist form and the signed warranty agreement must be faxed to STaSIS Engineering at 707.935.9711

1 _____ Perform cylinder leakage and compression test. Note down results. Perform test with a minimum oil temperature of 130F for accurate results.

Cylinder	Compression PSI	Leak down test %
1		
2		
3		
4		

2 _____ Verify spark plug condition. STaSIS Engineering recommends new spark plugs for vehicles with more than 25,000 miles using the OEM spark plug.

3 _____ Pressure leak check the entire charge air system starting at the turbocharger inlet. Pressure test to 1 bar (14.7 psi) gauge pressure.

4 _____ Verify the camshaft has been updated according to the TSB.

5 _____ Verify the high pressure fuel pump has been updated according to the TSB. Note the OEM part number on the top of the pump

6 _____ Verify the Pressure Regulating Valve and Valve Cover for the Crankcase Ventilation system have been updated according to the TSB. Note the OEM part number for the Pressure Regulating Valve.

7 _____ Once the Power Package has been installed, Pressure Leak Check the entire charge air system again to ensure there are no pressure leaks. Perform test to 1 bar (14.7 psi).

Customer Name: _____

Make/Model: _____

VIN: _____

Model Year: _____

Installers Name: _____

Date of Installation: _____

STaSIS Engineering
29647 Arnold Drive | Infineon Raceway
Sonoma, CA 95476 | 888 9-STaSIS
www.stasisengineering.com

Customer Limited Warranty Agreement

By this Limited Warranty, STaSIS Engineering ("STaSIS") proudly warrants its dealer-installed performance parts from defects in material and workmanship subject to the following terms and conditions.

DURATION: The duration of this Limited Warranty shall be equal to one year / 12,000 miles or the remaining duration of the automobile manufacturer's warranty of the automobile on which the parts are installed ("Factory Warranty"), whichever period expires first.

OEM PARTS: This Limited Warranty provides coverage for original equipment manufacturer ("OEM") parts that are damaged as a result of defects in the material and workmanship of the STaSIS MTF Power Package, to the extent the STaSIS part is covered under this Limited Warranty (duration, exclusions, limitations and disclaimers included). This Limited Warranty does not take the place of the Factory Warranty. Installation of STaSIS performance parts may affect your rights under the Factory Warranty. Purchasers are required to contact their automobile manufacturer to learn all material information prior to purchasing STaSIS parts.

PERFORMANCE: Only select Factory Dealerships are trained to service STaSIS equipped vehicles. To obtain service in the event of a defect covered by this Limited Warranty, purchasers are to notify the nearest STaSIS dealer or STaSIS, at the address below, as soon as possible and use all reasonable means to protect the automobile and STaSIS parts from further damage. Upon proof of purchase, STaSIS or its designated service representative will correct the defect subject to the terms and conditions contained in this Limited Warranty. If STaSIS determines that repair of the covered defect is not feasible, it reserves the right to instead provide a replacement part equal in value to the original purchase price of the defective part. The replacement part warranty will be equal to the balance, if any, remaining on the original part.

INDEMNIFICATIONS: Customer agrees to indemnify, hold harmless STaSIS, the STaSIS authorized dealership, and Audi of America against any and all claims, actions, and damages including injuries to persons and/or death or disease arising or alleged to arise, in whole or in part due to the performance enhancement of the vehicle.

EXCLUSIONS: STaSIS warrants only new cars that have not been previously sold to a customer or used vehicles currently covered by the Factory Warranty that have been sold and maintained by a participating dealership and have been reviewed and pre-approved in writing by STaSIS Engineering. STaSIS only warrants parts sold in, and installed on, automobiles built to United States and Canada specifications. Coverage extends to the original purchaser and shall only be transferable to the extent that the Factory Warranty is transferable. "Defects in material and workmanship" shall not include the effects of normal wear and tear of a part installed on a performance-enhanced automobile.

Parts installed in commercial applications are excluded from any coverage whatsoever. This Limited Warranty is void if STaSIS or its designated representative determines that the STaSIS part has been subjected to alteration, neglect, misuse or abuse; if any repairs have been attempted by anyone other than STaSIS or its designated representative; or if failure is caused by accident, acts of God or other causes beyond the control of STaSIS. Neglect, misuse and abuse include any installation, operation or maintenance of the automobile or part not in conformity with the instructions contained in the documentation provided with the automobile and part or otherwise available from automobile manufacturer or STaSIS. This Limited Warranty is further void if there are any items attached to, or installed on, the part after the date of dealer-installation, or if access to the part is not reasonably accessible for purposes of performing repairs.

This Limited Warranty is void if the automobile on which the Stasis parts are installed has been used in any form of racing or timed competition.

LIMITATIONS: While this Limited Warranty does not take the place of the Factory Warranty, it does take the place of all other warranties, express or implied, in fact or at law, including implied warranties of merchantability and fitness for a particular purpose. No agent, dealer, distributor, service company or other party is authorized to change, modify or extend the terms of this Limited Warranty in any manner whatsoever.

CUSTOMER INITIALS _____

DISCLAIMERS: STaSIS and its representatives shall not be liable for any injury, loss, cost or other damage, whether incidental or consequential, arising out of any defect covered by this Limited Warranty, including, without limitation, towing charges, rental car fees, loss of use of the automobile while it is being repaired, or damages resulting from the enhanced performance of the automobile, even if STaSIS has been advised of the possibility of such damage. The liability for materials and workmanship of STaSIS under this Limited Warranty, if any, shall not exceed the sum of the original amount paid for the defective product and the MSRP of all OEM parts for which the product directly affects. Coverage under this Limited Warranty shall commence in concurrence with the factory warranty and the duration of such coverage shall not extend for any reason whatsoever beyond the stated time periods. These disclaimers shall be equally applicable to any service provided by STaSIS or its designated representatives.

LEGAL RIGHTS: This Limited Warranty gives purchasers of STaSIS parts specific legal rights. Purchasers/consumers may have other rights which vary from state to state. Some states do not allow limitations on how long an implied warranty lasts, so this limitation may not apply.

CUSTOMER SIGNATURE: _____

Competition Engineering Services, Inc.
dba STaSIS Engineering
29647 Arnold Dr.
Sonoma, CA 95476
Phone – (707) 935-9700
Fax – (707) 935-9711

STaSIS Engineering Installation Instructions for MTF Turbo Kit

Not recommended for home installation.

Application: 2005+ Audi / VW Mark V front wheel drive vehicles

Parts List

STaSIS Part Number	Description	Qty
ET01.0001.00	Mahle/STaSIS Turbocharger	1
ET01.0010.00	Turbo to Head Gasket	1
ET01.0020.00	Turbo to down pipe gasket	1
ET01.0030.00	Oil return line gasket - turbo side	1
ET01.0040.00	Oil return line gasket - oil sump side	1
ET01.0050.00	Valve cover breather pipe gasket	1
HA05.0001.00	Turbine flange studs	4
HA05.0010.00	Turbine flange nuts	4
ET01.0070.00	Injector install kit	4
HA05.0020.00	Turbo to head nuts	5
HA05.0030.00	Water feed/return line sealing washers	4
HA05.0040.00	Oil feed sealing washers	2
ET01.0080.00	STaSIS HD Diverter Valve	1
HA05.0090.00	Hose clamp for breather tube form turbo to valve cover	1
HA05.0100.00	Hose clamp for vacuum fitting on intake manifold	1
ET01.0090.00	Comp in hose	1
ET01.0100.00	Flange for DV	1
HA05.0060.00	Hose clamp for DV flange	2
ET01.0110.00	Support bracket for DV flange	1
HA05.0050.00	SHCS for DV support	1
ET01.0120.00	Intake manifold gasket	1
HA05.0080.00	Hose clamp for small breather hose on turbo	1
ET02.0020.00	DV recirc hose	1
HA05.0070.00	Hose clamp for dv recirc hose	2
ET02.0040.00	Hose to DV flange	1
ET02.0030.00	Pressure pipe on front of engine	1
ET02.0001.00	Comp out hose	1
ET01.0160.00	Electrical wiring extension	1
HA05.0130.00	TY-Raps	10
ET01.0060.00	Injector	4
ET01.0140.00	Turbo support bracket	1

Please read ALL instructions prior to attempting installation. Please torque all fasteners to specifications.

Tightening Torque Specifications:	
Nut for coolant line support to intake manifold (near dipstick)	5 Nm
Bolt for coolant line support to intake manifold (passenger side)	3 Nm
Stud for dipstick retention to intake manifold	3 Nm
Bolt and Stud for charge pipe attached to front of engine	10 Nm
MAP sensor screw to plastic charge pipe	5 Nm
Small screw for noise insulation panel	2 Nm
Large screw for noise insulation panel	6 Nm
Recirculation Valve support bracket to intake manifold bolt	5 Nm
Intake manifold lower support bolt	23 Nm
Intake manifold bolt	9 Nm
Bolt for compressor outlet pipe to engine	10 Nm
M5 Triple square bolt for coolant degas pipe	9 Nm
Bolt for Crankcase breather vent pipe to turbocharger	9 Nm
Small bolt for turbocharger heat shield to cylinder head	30 Nm
Large bolt for turbocharger heat shield to cylinder head	40 Nm
Oxygen Sensor	55 Nm
CV joint heat shield bolt	40 Nm
Turbocharger to downpipe nut	40 Nm
Exhaust pipe slip joint nut	30 Nm
Oxygen sensor (post catalytic converter) connector cover	3 Nm
Heat shield nut to body	3 Nm
Exhaust down pipe support bracket bolt to sub-frame and body	23 Nm
Turbocharger support bracket bolts	30 Nm

Oil service line support bolt to side of turbocharger	9 Nm
Coolant feed lines to turbocharger banjo bolts	35 Nm
Oil return line to turbocharger bolt	9 Nm
Oil feed line to turbocharger banjo bolt	30 Nm
Pendulum Support bolt to transmission	40 Nm + 90°
Pendulum Support bolt to Sub Frame	100 Nm + 90°
Turbocharger to cylinder head nut	21 Nm
Coolant service lines support to turbocharger bolt	9 Nm
Recirculation Valve to flange bolt	7 Nm
Recirculation Valve Flange support bolt	7 Nm

Instructions

Before removing any parts, park the car on a secure, stable and level surface. All references to direction (front, left, etc) are from the perspective of being in the driver's seat, and may not represent what is depicted in a picture.

ALWAYS WEAR SAFETY GLASSES!!! You will be working around a pressurized fuel system.

**Ensure there are no sources of sparks or flame before you begin working!!
Keep a fire extinguisher close by**

Letters with numbers listed after system components are references to the VAG part code designation. Example: Wastegate Bypass Solenoid Valve N75


Air box assembly removal



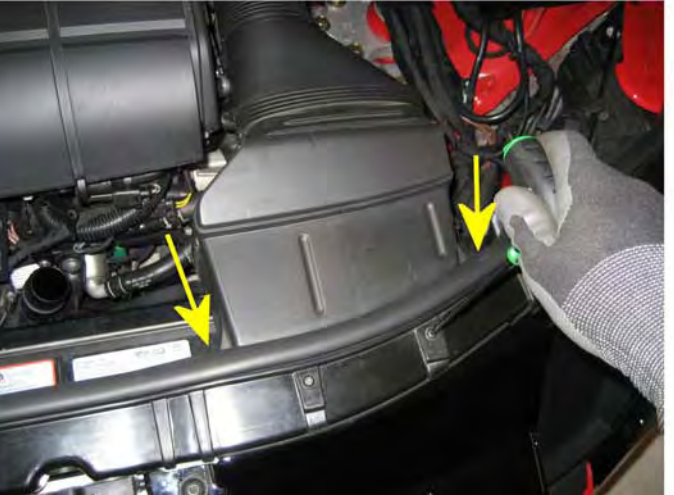
Tools required:



Spring Clip type hose clamp pliers
T-25 Torx screwdriver

Pre-requisite before commencement of installation:

Engine cold
Ignition switch in the OFF position

1	Open Hood and disconnect MAF sensor electrical connector	
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2	<p>Open clips and remove turbo inlet pipe from air box assembly. Pay close attention to large o-ring on the inlet pipe. Make sure it does not fall off.</p>	
3	<p>Compress spring ear clamp on air inlet at front of air box assembly, and slide rearward and release. Detach hose from air cleaner inlet.</p>	
4	<p>For TT application: Remove two Torx T-25 screws holding air cleaner inlet hose assembly to the lock carrier</p> <p>For Audi A3 application: Screw location is under the lock carrier as indicated by arrows</p>	

5	<p>Remove air cleaner inlet hose assembly from vehicle</p>	
6	<p>Pull up on front of air box assemble to loosen from detents. Detents can be very tight. Next pull up on rear to repeat with the rear detents. Remove assembly from vehicle.</p>	

Fuel Injector Replacement

Tools required:

- Spring Clip type hose clamp pliers
- T-25 Torx screwdriver
- T-30 Torx screwdriver
- T-45 Torx screwdriver
- 7mm nut driver
- 10 mm combination wrench
- 4 mm combination wrench
- Diagonal cut off pliers
- 17 mm combination wrench
- 10 mm ¼" drive deep socket
- T-30 Torx ¼" drive socket
- M10 triple square 3/8" drive socket
(must be minimum of 4" long shaft)
- 3/8" drive ratchet
- 3/8" drive extension – 1 ½" long
- ¼" drive ratchet
- ¼" drive extension – 12" long
- Hose clamp off tool
- T10133 VAG FSI Injector removal /
installation tool set
- Pipe brush for cleaning fuel injector
bores
- 90° Pick tool




**Pre-requisite before commencement of
installation:**




**Engine cold
Ignition switch in the OFF position**




7




Disconnect electrical on top of high
pressure fuel pump for the Fuel Pressure
Regulator Valve N276









<p>8</p> <p>Start the engine and allow to idle for 10 seconds. Turn off ignition</p> <p>NOTE: The fuel system will still be under pressure. This will depressurize the high pressure fuel system to 6 bar from 100 bar.</p>		
<p>9</p> <p>Disconnect battery ground terminal</p>		
<p>10</p> <p>Disconnect electrical connector on front of intake manifold for Intake Air Temperature Sensor G42</p>		
<p>11</p> <p>Disconnect electrical connector for the Throttle Control Module J338</p>		




12	Remove electrical connector for the EVAP Canister Purge Solenoid Valve N80	
13	Remove electrical connector for Low Fuel Pressure Sensor G410	
14	Disconnect breather hose from valve cover	




15	Detach and remove U-shaped crankcase ventilation hose from intake manifold to crankcase ventilation control valve on valve cover	
16	Detach larger crankcase ventilation hose from crankcase ventilation control valve fitting on valve cover	
17	Loosen the upper hose clamp on the throttle body boot	




18	Remove the M6 nut securing support bracket for the coolant lines at the dipstick.	
19	Remove bolt for coolant line support on the passenger side of the intake manifold	
20	Remove dipstick	




21	Push coolant line support down off of stud	
22	Using a 4 mm combination wrench, remove the stud on which the previous M6 nut (step 18) was threaded upon. This will loosen the dipstick support tab	
23	Grasping firmly, pull up to loosen dipstick tube from its support tube, and remove.	




24	Disconnect electrical connector just below the throttle control module for the fuel injectors	
25	Depress locking tab of quick disconnect fitting for the EVAP line and remove TT pictured, A3 is slightly different location	
25a	Locking tab shown by arrow on right side in picture.	

<p>26</p>	<p>Remove heat shielding from fuel line quick disconnect</p> <p>TT pictured, A3 is slightly different location</p>	
<p>27</p>	<p>Pinch off fuel line to prevent fuel flow once disconnected</p> <p>TT pictured, A3 is slightly different location</p>	
<p>28</p>	<p>Slide black plastic sleeve forward to release fitting and disconnect fuel lines. Place a clean rag below the connection to catch the escaping fuel. Place a clean rag over the connection to minimize the risk of spraying fuel.</p> <p>WEAR SAFETY GLASSES AND ENSURE THERE IS NO NEARBY SOURCE OF FLAME OR SPARK!!</p> <p>TT pictured, A3 is slightly different location</p>	

<p>29</p>	<p>Loosen spring clamp on EVAP hose on intake manifold, this is the furthest most front hose. Detach hose from hard line</p> <p>TT pictured, A3 has quick disconnect similar to the fuel line</p>	
<p>30</p>	<p>Cut and remove hose clamp for vacuum fitting on driver's side of the intake manifold. Slide hose off of intake manifold</p>	
<p>31</p>	<p>Pull small 3.5mm vacuum line off of vacuum system check valve</p>	

32	<p>Pull solid hose off of vacuum pump and gently push assembly down and away. Be careful not to exert too much force or damage may result!</p>	
33	<p>Detach the plastic support for the crankcase breather hose from the solid high pressure fuel line that connects the pump to the fuel rail</p>	
34	<p>Using a 17mm open end wrench, loosen the fitting on the bottom of the high pressure fuel pump. Place a clean rag below the fitting to minimize fuel spillage.</p> <p>WEAR SAFTEY GLASSES AND ENSURE THERE IS NO NEARBY SOURCE OF FLAME OR SPARK!!</p>	

<p>35</p>	<p>Loosen hose clamps on the rubber fuel line between the fuel rail and the high pressure pump. Slide the hose off of the fuel rail and the high pressure pump and completely remove.</p> <p>WEAR SAFETY GLASSES AND ENSURE THERE IS NO NEARBY SOURCE OF FLAME OR SPARK!!</p>	
<p>36</p>	<p>Disconnect electrical connector for the Intake Flap Motor V157</p>	
<p>37</p>	<p>Remove M6 nut for the plastic charge pipe on the front of the engine.</p>	

38	Disconnect electrical connector for the Charge Air Pressure sensor G31	
39	Place vehicle safely on support stands or using a professional service lift, raise vehicle off the ground to gain access to the noise insulation panel below the engine. Loosen all fasteners and remove panel	
40	Loosen hose clamp on lower charge pressure hose, and detach from the plastic charge pipe on the front of the engine.	

41 Using a T-30 Torx socket, remove the lower mounting bolt for the plastic charge pressure pipe on the front of the engine



42 Remove the plastic charge pipe with throttle body boot from the vehicle.









43 From above the vehicle, remove the M10 triple square bolt for the intake manifold support bracket to the engine. This bolt is difficult to see. The location is below the intake manifold and behind the throttle body. The electrical connector in the picture is for the fuel injectors from step 24. It's helpful to have a socket with a minimum shaft length of 4"



44 Disconnect electrical connector for Fuel Pressure Sensor G247. This is difficult to see and is below the intake manifold between cylinders 1 and 2.









45	<p>Disconnect electrical connector for Camshaft Position Sensor G40. There is a small plastic support clip attached to the fuel rail on the wiring loom as it leads under the intake manifold. Detach this from the fuel rail.</p>	
46	<p>Using a small ¼” drive T-30 Torx socket, remove the 5 upper bolts fastening the intake manifold to the cylinder head. Two additional lower bolts are accessible just above and to the left and right of the Throttle Control Module. An additional two M6 nuts are located on the underside of the cylinder 1 and 4 intake runners.</p>	
47	<p>Gently guide the intake manifold / fuel rail assembly off the cylinder head on the studs. Give special care to the fuel injector wiring sub harness below the intake manifold as you guide the intake manifold off. This sub harness is clipped onto the fuel rail which is attached to the intake manifold. Simply push down on the plastic harness retainer to loosen from the fuel rail. Be prepared for the remaining fuel in the fuel rail to drain as you remove the intake manifold / fuel rail assembly.</p> <p>ENSURE THERE IS NO NEARBY SOURCE OF FLAME OR SPARK!!</p>	

48	Disconnect the electrical connectors for all 4 of the fuel injectors.	
49	Gently grasp injector and remove from the cylinder head. If the injector will not remove easily, you will have to use the factory FSI Fuel Injector Removal and Installation tool set T10133 to facilitate safe removal of the fuel injector. Steps A,B and C will discuss removal of stuck injectors	
49a	If the injector will not remove easily, you will need to bend up the two little tabs that retain the metal support ring. Many times these tabs are from plastic and will break during this process. Ensure no debris enters the intake port.	

49b	Remove the compression ring from the injector
49c	Using the slide hammer T10133/3 and puller T10133/2, guide the puller into the groove on the fuel injector, and slide hammer the injector out of the cylinder head.
50	Using the pipe brush, clean out the fuel injector bores in the cylinder head to ensure a clean surface for the Teflon injector seal.



51	<p>Picture of an assembled fuel injector. Put a light film of oil on the blue injector fuel rail seal. MAKE SURE NO OILS OR GREASE CONTAMINATE THE WHITE TEFLON COMBUSTION CHAMBER SEAL!</p>	
52	<p>Using T10133/9 assembly drift, guide the fuel injector into the bore in the cylinder head. Make sure the ridge at the base of the electrical connector portion of the fuel injector seats into the register in the cylinder head. You should NOT be able to rotate the fuel injector if seated properly.</p>	
53	<p>Reattach the electrical connectors for the fuel injectors as pictured.</p>	

<p>54</p>	<p>Install supplied Turbocharger Recirculation Valve N249 support bracket onto the intake manifold. Remove the two T-30 Torx bolts which support the vacuum line from the EVAP Canister Purge Solenoid Valve N80 as it heads towards the Throttle Valve Control Module J338. Picture is shown with intake manifold on engine. This step is best performed prior to reinstallation of the intake manifold.</p>	 
<p>55</p>	<p>Replace the orange o-ring style intake manifold gasket. Reinstall intake manifold / fuel rail assembly onto the cylinder head. Pay special attention to ensure the plastic retainer for the fuel injector sub harness is clipped back onto the fuel rail. This is easiest done just before the intake manifold is all the way on.</p>	
<p>56</p>	<p>Follow the preceding steps in reverse order and ensure all hoses, hardware, and electrical connectors are reinstalled properly. Make note of step 57</p>	

57 Use the supplied plastic pressure charge pipe for the front of the engine. Transfer the Throttle Body Boot and the Charge Air Pressure Sensor G31 from the old pipe to the new pipe. Orient the index line on the boot with the index line on the pipe to ease installation and tighten clamp. Install pipe on engine.






Turbocharger installation




Tools required:




- Spring Clip type hose clamp pliers
- Diagonal cut off pliers
- 13 mm combination wrench
- 16 mm combination wrench
- 22 mm combination wrench
- 5 mm Allen head socket 3/8" drive
- 8 mm Allen head socket 3/8" drive
- 18 mm 3/8" drive socket
- 12 mm 3/8" drive deep socket
- 13 mm 3/8" drive deep socket
- 16 mm 3/8" drive socket
- 21 mm 3/8" drive socket
- T-30 Torx 1/4" drive socket
- M5 triple square socket
- M8 triple square socket
- M12 triple square 3/8" drive short socket
- 3/8" drive ratchet
- Oxygen sensor socket
- 1" wide tie down strap
- 3/8" drill
- 9/32" drill bit
- M10 X 1.5 stud installation tool




Pre-requisite before commencement of installation:




Engine cold




	<p>Ignition switch in the OFF position Battery ground terminal disconnected</p>	
58	<p>Compress spring clamp for turbo inlet hose from the air cleaner assembly MAF sensor. Remove hose from turbo charger. Cover turbo inlet to ensure no debris falls in.</p>	
59	<p>Disconnect electrical connectors for all 4 ignition coil packs</p>	
60	<p>From under the vehicle, pull down on the spring clip for the turbocharger compressor outlet hose fitting. Detach hose from turbocharger</p>	




61	<p>Pull out on spring clip for the hose fitting from the hard pipe connected to the passenger side of the engine to the rubber hose that connects to the intercooler inlet. Detach the hose from the hard pip and leave the hose connected to the intercooler</p>	
62	<p>Using a T-30 Torx, remove the two bolts fastening the hard pipe to the passenger side of the engine.</p>	
63	<p>From under the vehicle, disconnect the electrical connectors for the Wastegate Bypass Regulator Valve N75 and the Turbocharger Recirculation Valve N249. These are located on the passenger side of the turbocharger. From above the vehicle, pull the wiring harness up, and set aside.</p>	




64	Detach coolant degas hose connection from coolant reservoir to hard pipe at the back of the cylinder head.	
65	Detach coolant degas hose connection from the upper radiator hose to the hard pipe just above the vacuum pump on the driver's side of the engine.	
66	Detach coolant degas hose connection from the heater core hose and the hard pipe adjacent to the brake fluid reservoir.	




67	Using the M5 triple square socket, remove the one bolt retaining the degas pipe to the support bracket on the driver's side of the cylinder head	
68	Disconnect the small crankcase ventilation vacuum line from the cylinder.	
69	Loosen the two M6 bolts on the turbocharger inlet for the crankcase breather vent pipe	




70	Remove hose clamp for large crankcase ventilation hose to the valve cover. Remove crankcase ventilation hose from vehicle	
71	Using a M8 triple square socket, remove the two bolts holding the heat shield and coolant degas pipe to the cylinder head. Next, using an 18 mm 3/8" drive socket and ratchet, remove the additional two bolts found lower on the heat shield. All 4 of these bolts are accessed from the rear of the heat shield. Remove heat shield and degas pipe from the cylinder head.	
72	Disconnect electrical connector for the front Oxygen Sensor G39. Connector is located above brake fluid reservoir.	




73	Remove front Oxygen Sensor from exhaust down pipe.	
74	Remove the two upper M10 nuts for the exhaust down pipe at the turbocharger	
75	From under the vehicle, disconnect the electrical connector for the Oil Level Thermal Sensor G266 located on the bottom of the oil pan.	
76	Remove the 2 M10 bolts holding the CV joint heat shield to the engine, and remove heat shield.	




77	Remove the two lower down pipe nuts	
78	Loosen slip joint at down pipe and rear muffler assembly junction. Slide slip joint towards rear of vehicle to free up down pipe.	
79	Remove cover for rear Oxygen Sensor G130 electrical connector. Remove nut on heat shield to allow for removal of Oxygen Sensor wiring.	



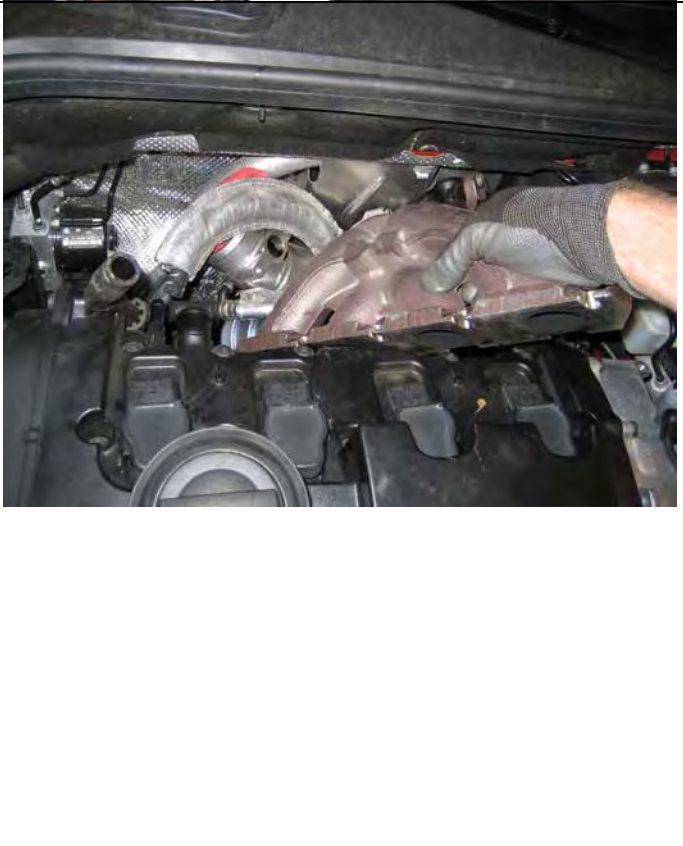
80	Disconnect, and detach the wires from the retaining clips on the heat shield	
81	Remove the bolts for down pipe support bracket to the sub frame. 2 bolts on A3 and VW applications. 4 on TT	
82	Remove down pipe from vehicle. Make sure to support the flexible upper portion of the downpipe to ensure it is not damaged.	
83	Remove the two M8 bolts from the turbocharger support bracket and remove bracket.	

84	Remove the M6 bolt supporting the oil feed line to the turbo. This is just below the Turbocharger Recirculation Valve N249.	
85	Using a M12 Triple Square socket, loosen and remove the banjo bolt for one of the coolant service lines to the turbo. Note: Have a catch pan ready. Majority of the coolant in the system will drain out of this service line.	
86	Remove the two bolts holding the oil return line flange to the turbocharger.	

87	<p>From under the vehicle, remove the 3 mounting bolts for the Pendulum support on the bottom of the engine and in the sub frame. Remove the Pendulum support.</p>	
88	<p>Using a 1" ratcheting tie down strap, affix the ends to the engine and the sub frame in suitable locations to ensure no damage can occur. Tighten strap to move the engine oil pan towards the rear of the car. This should NOT be tight, just enough until the transmission touches the sub frame is adequate! This is just to provide clearance for removing the turbocharger from the top side of the engine.</p>	
89	<p>From above the vehicle, remove the banjo bolt for the oil feed service line into the top of the turbocharger.</p>	

90	<p>Disconnect the rubber coolant service line from the turbocharger at the union with the metal pipe just below the rubber fuel and EVAP lines. This is just forward of the passenger side engine mount.</p>	
91	<p>From above the engine, remove the 5 M8 self locking nuts which hold the turbocharger to the cylinder head. Note: Only remove the TOP 5 nuts! DO NOT loosen the lower mounting nuts! This is not necessary for turbocharger removal due to the 'wedge' design of turbocharger mounting flange.</p>	
92	<p>Carefully remove the turbocharger upwards out of the engine compartment. Ensure that all connections are loose and do not catch on anything as you remove the turbocharger. Commonly the turbocharger may be difficult to move initially due to the 'gluing' effect of the exhaust gasket.</p>	

93	<p>With the turbocharger assembly on a suitable workbench, remove the 3 bolts retaining the Turbocharger Recirculation Valve N249 from the turbocharger.</p>	
94	<p>Remove the banjo bolt for the coolant service pipe on the turbo. Remove the allen head support bolt on the top side and remove the coolant service line from the turbocharger. Install onto the new turbocharger using a supplied crush washer on each side of the banjo fitting. Ensure all surfaces are clean before installation.</p>	
95	<p>Cut off hose clamp and remove the Crankcase Ventilation Hose from the inlet of the turbocharger. Install hose on new turbocharger with supplied hose clamp.</p>	

<p>96</p>	<p>Install the supplied M10 X 1.5 stud into the turbocharger outlet flange using a stud installer.</p>	
<p>97</p>	<p>Remove the old exhaust manifold gasket and install the new supplied gasket. Note the orientation of the gasket during installation. The large ear goes down and towards the driver's side of the vehicle.</p>	
<p>98</p>	<p>Apply Anti-Seize onto the studs for the turbocharger and install the new turbocharger.</p> <p>Apply Anti-Seize onto the turbocharger outlet to down pipe studs.</p> <p>Apply Anti-Seize onto the threads of the Oxygen Sensors before installation. ONLY apply to the threads or damage may result!</p> <p>Follow directions in the reverse order to complete installation</p> <p>Use new gaskets and washers for all the turbo service lines.</p> <p>Ensure the sealing surfaces are clean and oil free before installation.</p> <p>Use new nuts for the turbocharger to cylinder head flange and for the turbocharger to down pipe flange which are supplied in the kit.</p>	

99	Use the supplied turbocharger inlet pipe (right in picture) during reassembly.	
100	Use the supplied compressor outlet pipe during reassembly.	
101	Install supplied Turbocharger Recirculation Valve into the supplied flange reusing the original hardware. Ensure detent on the valve seats into the register on the flange for proper orientation.	

102 Install supplied hose onto the Turbocharger Recirculation Valve N249 flange. Orient index line for hose to index line to flange. Install supplied spring clamp. Install second spring clamp in the middle of the hose. Install assembly onto the plastic charge pressure pipe on the front of the engine. The Valve Flange will sit below the support bracket extending from the intake manifold once installed correctly. Install the supplied T-30 Torx bolt fastening the flange to the support bracket. Compress and slide hose clamp down once assembly is in place.



103 Connect the supplied electrical harness extension to the Turbocharger Recirculation Valve N249.



104 Run the extension harness along the EVAP and Fuel hard pipe on the intake manifold. Attach to the pipes using the supplied zip ties. Orient the harness so it is resting between the two pipes.



105 Continue to run the harness along between the fuel hose (middle in picture) and lower EVAP hose. Zip tie to the hose separator in the space between the two hoses.







106 Connect the extension harness to the OEM connector for the Turbocharger Recirculation Valve N249 (near the turbocharger). Zip tie the connector to the A/C pipe on the passenger side of the vehicle, forward of the ABS pump. Place the connector over the rubber buffer on the A/C pipe before you zip tie. Use two zip ties, one at each end of the connector.



107 Install supplied hose for the Turbocharger Recirculation from the Recirculation Valve flange, under the A/C service hose, to the Turbocharger Inlet hose. Attach support clip to coolant service line above alternator. Install spring clamps at both ends of the hose.



108	<p>Drill two 9/32" size holes in the Air Cleaner Assembly and install the support clips for the Turbocharger Recirculation hose. Measure from the rear corner, passenger side of the assembly (left side in the picture). Drill holes at 3 7/8" and 11 1/2" from corner and 1/2" up from the lower edge.</p>	
109	<p>Reinstall Air Cleaner Assembly onto the engine. Install the Turbocharger Recirculation hose into the plastic support clips. Connect MAF sensor electrical connector.</p>	
110	<p>Add coolant/water mix to Coolant Reservoir until the system is full. Let the system degas and top off again.</p>	

111	Flash the ECU at a GIAC authorized dealer. Contact STaSiS for further information	 <p data-bbox="873 449 1528 499">www.GIACusa.com</p>
112	<p data-bbox="191 541 829 827">Make sure oil level is full. Connect battery ground terminal. Start engine and allow to idle. Check for any leaks. Run engine at 2000 RPM until the engine is up to operating temperature. Check coolant level again. ONLY TOP OFF ONCE COLD! Never open a hot, pressurized cooling system. INJURY CAN RESULT!!</p> <p data-bbox="191 869 797 972">Test drive vehicle and ensure there are no leaks and the turbocharger is operating correctly.</p>	