STāSIS 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:**_____

STāSIS 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 cause 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: 2005.5 - 2008 Audi A4 2.0 TFSI

Parts List

STaSIS Part Number	Description	Qty
	MAHLE/STaSIS Turbocharger	1
	Turbo to Head Gasket	1
	Turbo to down pipe gasket	1
	Oil return line gasket - turbo side	1
	Valve cover breather pipe gasket	1
	Injectors	4
	Injector install kit	4
	STaSIS HD Diverter Valve	1
	Coolant feed pipe	1
	Flange for DV	1
	Support bracket for DV flange	1
	Intake manifold gasket	1
	Oil feed pipe	1
	Electrical wiring harness extension for DV	1
	Turbine flange studs	4
	Turbine flange nuts	4
	Turbocharger to cylinder head nuts	5
	Water feed/return line sealing washers	6
	Oil feed sealing washers	4
	SHCS for DV support	1
	Hose clamp for small breather hose on turbo	1
	Hose clamp for breather tube form turbo to valve cover	2
	PCV Pipe	1
	PCV Hose	1
	Ty-Raps	5
	Turbocharger compressor inlet hose	1
	Hose clamp for compressor inlet - 40-60mm	1
	Hose clamp for MAF - 70-90mm	1
	Turbocharger compressor outlet hose	1
	Hose clamp for compressor outlet - 50-70mm	1
	Hose clamp for passenger side intercooler – 50-70mm	1
	DV recirculation hose	1
	Hose clamp for DV flange – 32-50mm	1
	Hose clamp for DV recirculation hose – 20-32mm	2
	Throttle body Y hose	1
	Hose clamp for driver's side intercooler – 50-70mm	1
	Hose clamp for throttle body – 60-80mm	1
	Retaining clip for DV electrical harness extension	1
	Large retaining clip for DV electrical harness extension	2
	Ty-Rap with mounting block for turbocharger	1
	Retaining clips for DV recirculation hose	2
	HHCS for turbocharger services support bracket to engine block	1
	M8 flat washer for HHCS	1

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

Tightening Torque Specifications:	
Turbocharger to cylinder head nut	**21 Nm**
Turbocharger to catalytic converter nut	**40 Nm**
Turbocharger support bracket bolts	**30 Nm**
Coolant feed lines to turbocharger banjo bolts	**35 Nm**
Oil feed line to turbocharger banjo bolt	**30 Nm**
Turbocharger service lines support to turbocharger bolt	**9 Nm**
Oil return line to turbocharger bolt	**9 Nm**
Oil feed line to engine block banjo bolt	**30 Nm**
Coolant feed line to engine block banjo bolt	**23 Nm**
Turbocharger service lines support bracket to block bolt	**20 Nm**
Large bolt for turbocharger heat shield to cylinder head	**40 Nm**
Small bolt for turbocharger heat shield to cylinder head	**30 Nm**
Bolt for Crankcase breather vent pipe to turbocharger	**9 Nm**
Bolt for high pressure fuel pump to cylinder head	**9 Nm**
Brass test port fitting for high pressure fuel pump	**13 Nm**
Bolt for fuel line support bracket	**7 Nm**
Bolt for coolant line support to intake manifold (front of engine)	**3 Nm**
Bolt for dipstick tube to intake manifold	**3 Nm**
Fuel supply line to high pressure fuel pump	**30 Nm**
Fuel supply line to fuel rail from rubber hose	**30 Nm**
Recirculation Valve Flange support bolt	**7 Nm**
Recirculation Valve to flange bolt	**7 Nm**
Recirculation Valve support bracket to intake manifold bolt	**5 Nm**

Intake manifold lower support bolt	**23 Nm**
Intake manifold bolt and nut	**9 Nm**
M5 Triple square bolt for coolant degas pipe	**9 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 SAFTEY 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**

Turbocharger installation

Tools required:

Spring Clip type hose clamp pliers
Diagonal cut off pliers
10mm combination wrench
13mm combination wrench
5 mm Allen head socket 3/8" drive
6 mm Allen head socket 3/8" drive
8 mm Allen head long 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 ¼" drive socket
M12 triple square socket
M12 triple square 3/8" drive short socket
3/8" drive ratchet
7mm nut driver
#2 Phillips screwdriver
Medium flat blade screwdriver
M10 X 1.5 stud installation tool
Ear type pinch clamp pliers

Pre-requisite before commencement of turbocharger installation:

Engine cold
Ignition switch in the OFF position
Battery ground terminal disconnected

1	Open hood and pull up to remove plastic engine cover.	
2	Disconnect electrical on top of high pressure fuel pump for the Fuel Pressure Regulator Valve N276	
3	Start the engine and allow it to idle for 10 seconds. Turn off ignition NOTE: The fuel system will still be under pressure. This will depressurize the high pressure fuel system to 6 bar from 100 bar.	

4	Disconnect battery ground terminal.	
5	Remove the two fasteners for the air inlet duct.	
6	Pull up on air inlet duct where it enters into the air box. Remove air inlet duct from vehicle.	

7	Disconnect MAF Sensor (G70) electrical connector on the air box.	
8	Compress spring clamp for turbo inlet hose from the air cleaner assembly MAF sensor and turbocharger inlet. Remove hose from turbocharger. Cover turbo inlet to ensure no debris falls in.	
9	Gently pull up on the electrical harness running over the top of the air box. Lay wire harness inboard of the air box assembly.	

10	Using a flat blade screwdriver, gently pry out the center circle of the retaining clip for the air box assembly to the fender wall. Remove retaining clip completely.	
11	Pull up on air box assembly to detach detents and remove assembly from vehicle. It is common for the detents to remain in the chassis. Simply pull out and re-attach to the air box assembly.	
12	Remove the 4 M10 nuts retaining the catalytic converter to the turbocharger outlet.	

13	Slide the catalytic converter towards the rear of the vehicle, off of the studs on the turbocharger.	
14	Cut hose clamp from the large crankcase ventilation hose at the valve cover.	
15	Slide the spring type hose clamp down and disconnect the hose for the EVAP system from the valve cover.	

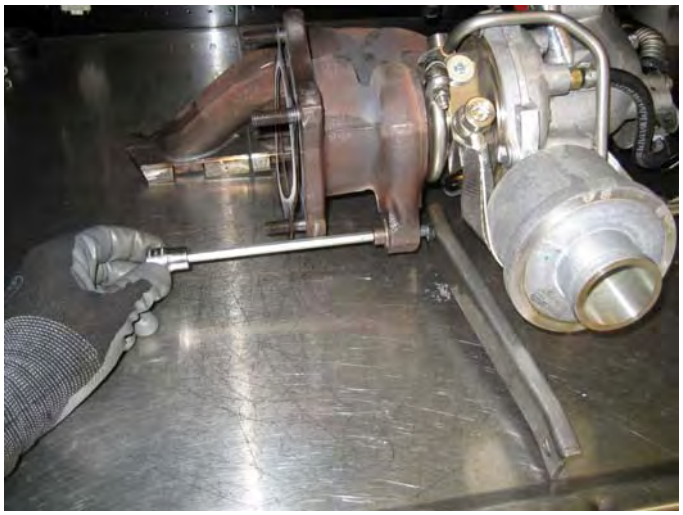
16	Remove the two M6 bolts retaining the large crankcase ventilation hose to the turbocharger compressor inlet.	
17	Slide the large crankcase breather hose off of the valve cover and remove from vehicle.	
18	Loosen the hose clamp and disconnect the coolant turbocharger service line at the union of the hard pipe to rubber hose at the front of the engine on the intake manifold side. Be prepared for coolant to drain from the engine.	

19	Using a M6 Allen, remove the two bolts retaining the heat shield above the turbocharger.	
20	Using a 16mm 3/8” drive socket, remove the retaining bolts for the heat shield above the turbocharger. Remove the heat shield from the vehicle.	
21	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.	

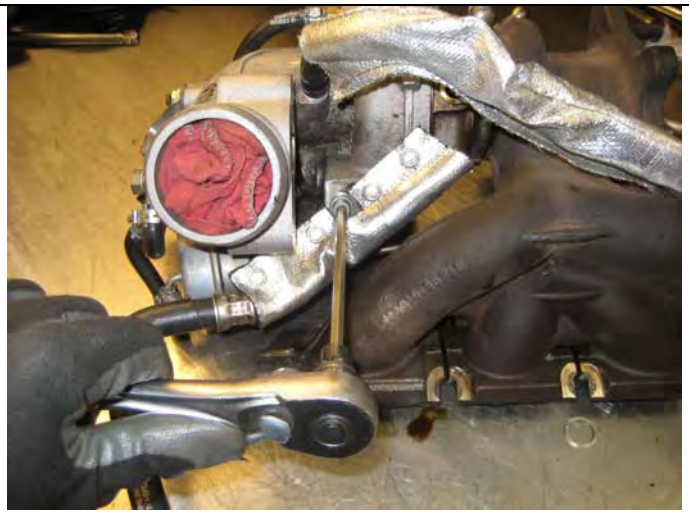
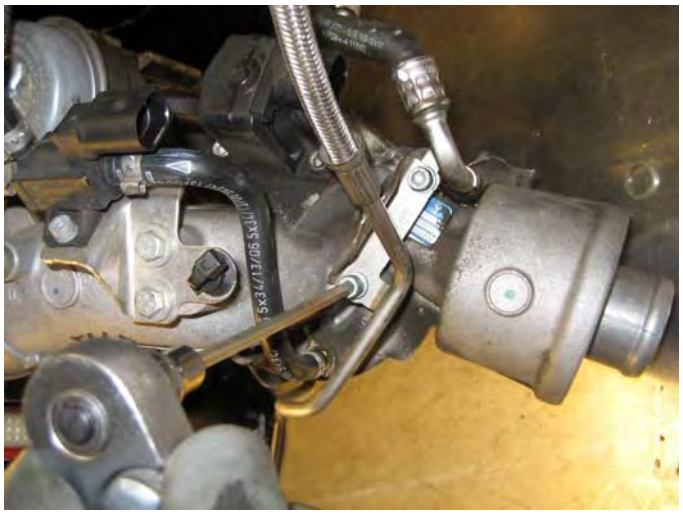
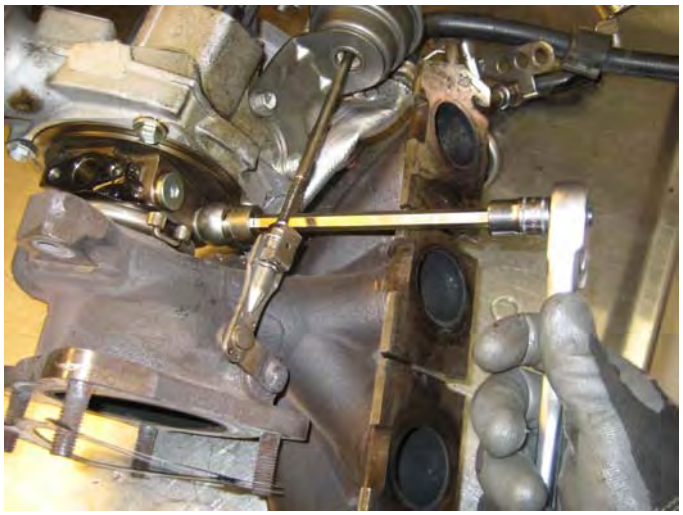
22	Raise and safely support the vehicle. Remove the quick release hardware and remove the noise insulation panel from the underside of the vehicle.	
23	Loosen hose clamps and disconnect the hose from the turbocharger compressor outlet to the passenger side intercooler.	
24	Disconnect the electrical connector for the Turbocharger Recirculation Valve (N249)	

25	Disconnect the electrical connector for the Wastegate Bypass Regulator Valve (N75)	
26	Using a M12 triple square socket, loosen the bolt in the support bracket for the turbocharger service lines into the cylinder block.	
27	Using a M12 triple square socket, loosen the turbocharger coolant service line banjo at the cylinder block. Be prepared for engine coolant to drain from the cylinder block.	

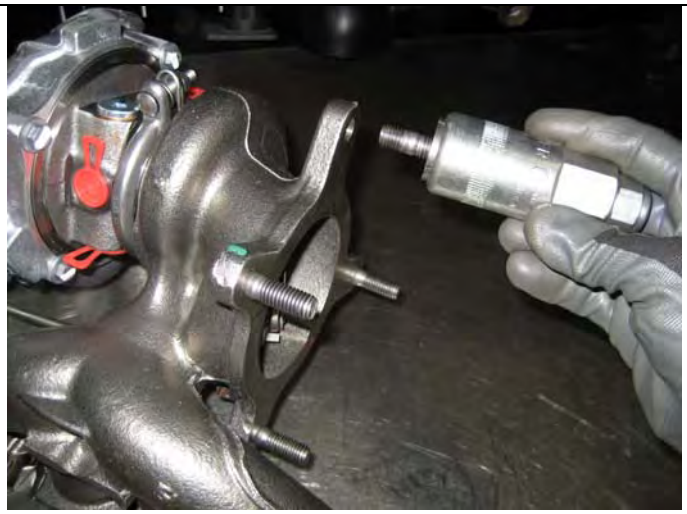
28	Using a M12 triple square socket, remove the banjo bolt for the oil turbocharger service line on the cylinder block towards the front of the engine. Be prepared for a small amount of oil to drain from this fitting.	
29	Using a long M5 allen head socket, remove the two bolts for the oil return line at the turbocharger.	
30	Using a M6 allen head socket, remove the lower mounting bolt for the turbocharger support bracket.	

31	Using a M6 Long Allen, loosen the bolt for the turbo support bracket to the turbocharger by 2 turns. This bolt is difficult to see and must be accessed from beneath the Catalytic Converter. The bolt socket head faces towards the rear of the vehicle.	
32	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.	
33	Using a 6mm Allen, finish removing the turbocharger support bracket bolt. Install bracket onto new turbocharger leaving the bolt slightly loose to aid in turbocharger installation.	
34	Cut off hose clamp and remove the EVAP Hose from the inlet of the turbocharger. Install hose on new turbocharger with supplied hose clamp.	

35	Remove the 3 bolts retaining the Turbocharger Recirculation Valve N249 from the turbocharger. The hardware will be reused later in step 98.	
36	Using a M12 triple square socket, remove the banjo bolt for the oil feed line.	
37	Using a M12 triple square socket, remove the banjo bolt for the coolant feed line on the outboard side of the turbocharger.	

38	Using a M5 allen socket, remove the socket head support bolt on the top side and remove the coolant service line from the turbocharger.	
39	Using a M5 allen socket, remove the bolt shown holding the turbocharger service line support to the compressor outlet. This bolt will be reused later in step 43.	
40	Remove the banjo bolt for the coolant service pipe on the turbo. Install the pipe onto the new turbocharger using a supplied crush washer on each side of the banjo fitting. Ensure all surfaces are clean before installation.	

41	Install the supplied turbocharger oil feed line onto the turbocharger. Use the supplied crush washer on each side of the banjo bolt and ensure the banjo bolt is clean	
42	Install the supplied turbocharger coolant feed line onto the turbocharger. Use the supplied crush washer on each side of the banjo bolt and ensure the banjo bolt is clean.	
43	Install the bolt which was removed from step 39 into the machined face on the turbocharger to support the oil feed line. When you install the coolant feed line in the previous step, make sure the support tab rests in the hole on the support ear from the oil feed line.	

44	Install the supplied M10 X 1.5 stud into the turbocharger outlet flange using a suitable stud installer.	
45	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 rear of the vehicle.	
46	Apply Anti-Seize onto the studs for the turbocharger and install the new turbocharger. Apply Anti-Seize onto the turbocharger outlet to down pipe studs. Follow directions in the reverse order to complete installation, paying attention to the following steps. Use new gaskets and washers for all the turbo service lines to the engine block. Ensure the sealing surfaces are clean and oil free before installation. Use new nuts for the turbocharger to cylinder head flange and for the turbocharger to down pipe flange which are supplied in the kit.	

47	Don’t forget to tighten the turbocharger support bracket at the turbocharger once you have the lower support bolt tightened.	
48	Use the supplied PCV hose and Pipe during reassembly. Install rubber hose onto end of the pipe and affix with supplied hose clamp using suitable ear type hose clamp pliers.	

49	Use the supplied bolt for the turbocharger services support bracket to the engine block	
50	Using the supplied zip tie with block, mount it into the front of the turbocharger on the compressor inlet pipe and attach the wire harness for the Wastegate Bypass Regulator Valve N75 to it. Leave slack in the wire between the turbocharger and the chassis to accommodate for engine movement.	

51	Use the supplied turbocharger inlet pipe and hose clamps during reassembly. MAF side: 70-90mm Compressor Inlet side: 40-60mm	 

52	Use the supplied compressor outlet pipe and hose clamps during reassembly. Compressor outlet side: 50-70mm Intercooler inlet side: 50-70mm	 

Fuel Injector Replacement

Tools required:

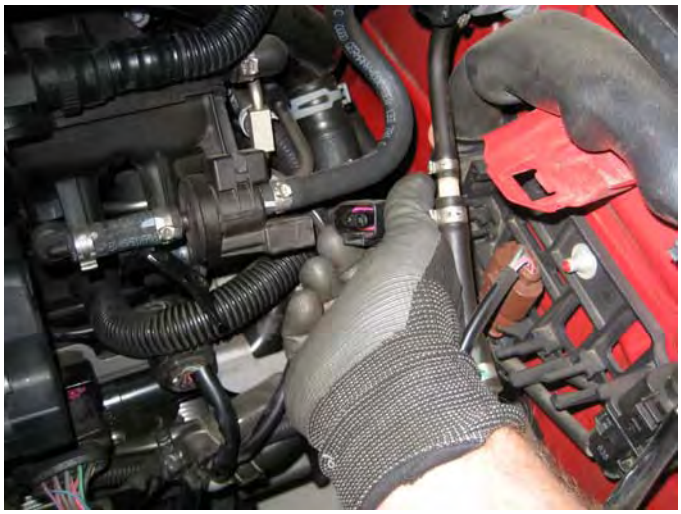
Spring Clip type hose clamp pliers
T-30 Torx ¼" drive socket
#2 Phillips screw driver
7mm nut driver
10mm combination wrench
13mm combination wrench
14mm combination wrench
17mm combination wrench
Diagonal cut off pliers
M5 triple square 3/8" drive socket
M10 triple square 3/8" drive socket (must be minimum of 4" long shaft)
3/8" drive ratchet
3/8" drive extension – 1 ½" long
¼" drive ratchet
¼" drive extension – 12" long
Tape measure
T10133 VAG FSI Injector removal / installation tool set (available from STaSIS Engineering for loan)
90° Pick tool
3/8" drill
9/32" drill bit

Pre-requisite before commencement of installation:

Engine cold
Ignition switch in the OFF position

53	Loosen the upper and lower hose clamps for the hose connecting the driver's side intercooler and the Throttle Valve Control Module (J338). Remove hose from vehicle.	
54	Remove the Phillips screw retaining the coolant reservoir.	
55	Lift up and detach the coolant reservoir from the chassis. Disconnect the electrical sensor for the Coolant Level Sensor located on the bottom of the coolant reservoir. Lay the coolant reservoir to the side.	

56	Disconnect electrical connector for Camshaft Position Sensor G40.	
57	Disconnect electrical connector on the intake manifold for Intake Air Temperature Sensor G42	
58	Disconnect electrical connector for the Throttle Control Module J338	

59	Disconnect electrical connector for Fuel Pressure Sensor G247. This is difficult to see and is below the intake manifold between cylinders 1 and 2.	
60	Remove electrical connector for the EVAP Canister Purge Solenoid Valve N80	
61	Remove electrical connector for Low Fuel Pressure Sensor G410	

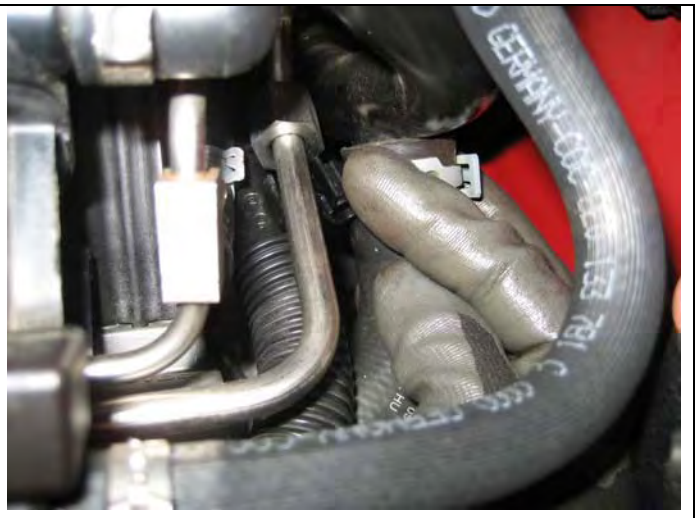
62	Disconnect the electrical connector for the Intake Manifold Flap Motor V157. This is towards the rear of the engine, inboard of the EVAP Canister Purge Solenoid Valve N80, below the high pressure fuel pump.	
63	Disconnect small EVAP breather hose from valve cover	
64	Detach and remove U-shaped crankcase ventilation hose from intake manifold to crankcase ventilation control valve on valve cover.	

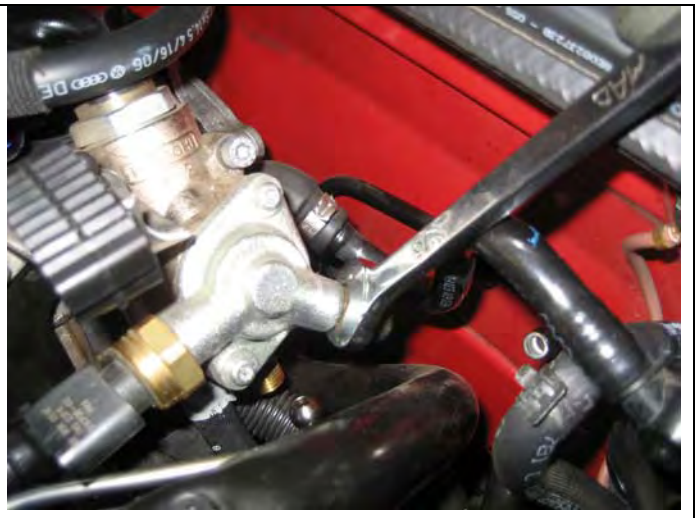
65	Detach larger crankcase ventilation hose from crankcase ventilation control valve fitting on valve cover.	
66	Using 14mm and 17mm open end wrenches, detach the fuel supply line from the hard fuel pipe on the top of the intake manifold. Place a rag under the fitting to minimize fuel spillage. Fuel may still be pressurized in this line as you loosen the fitting. **WEAR SAFTEY GLASSES AND ENSURE THERE IS NO NEARBY SOURCE OF FLAME OR SPARK!!**	
67	Loosen the clip and remove the fuel hose from the support bracket.	

68	Remove the support bracket for the fuel line above the high pressure fuel pump.	
69	Using a M5 triple square, remove the bolt for the fuel line support to the coolant pipe on the top of the intake manifold.	
70	Using a T30-Torx, remove the bolt for the coolant line support tab on the top of the intake manifold.	

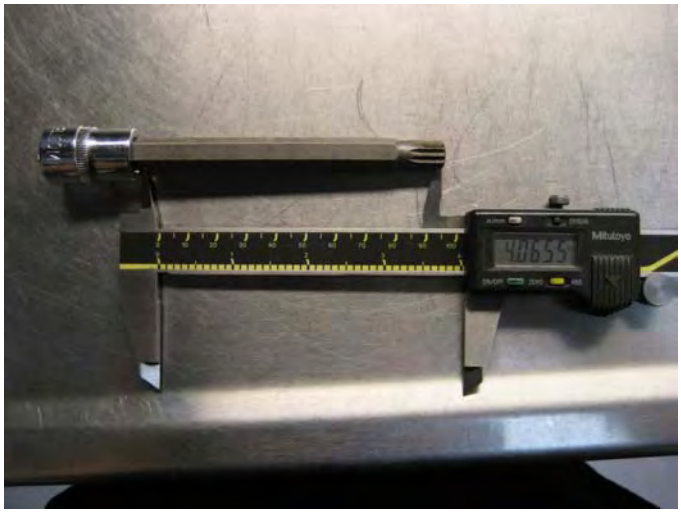
71	Using a T-30-Torx, remove the bolt holding the turbocharger coolant line support to the top of the intake manifold.	
72	Using a T-30-Torx, remove the lower bolt for the turbocharger coolant line support. This is behind the alternator just below the coolant pipe coming from the thermostat housing.	
73	Using a T-30-Torx socket, remove the bolt for the coolant pipe support from the front of the intake manifold.	

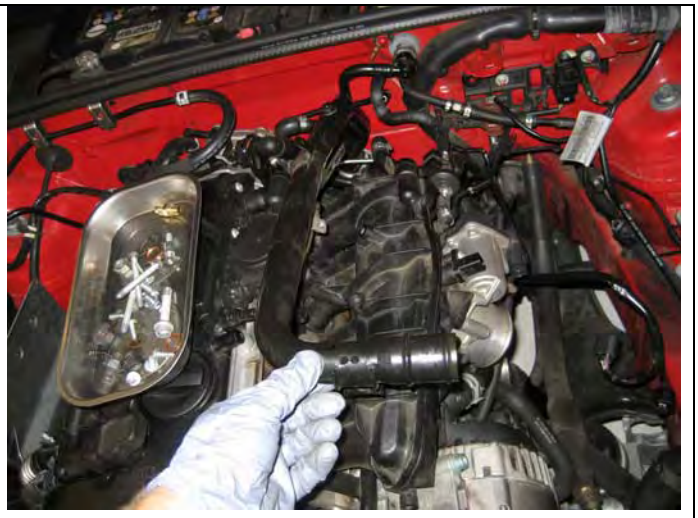
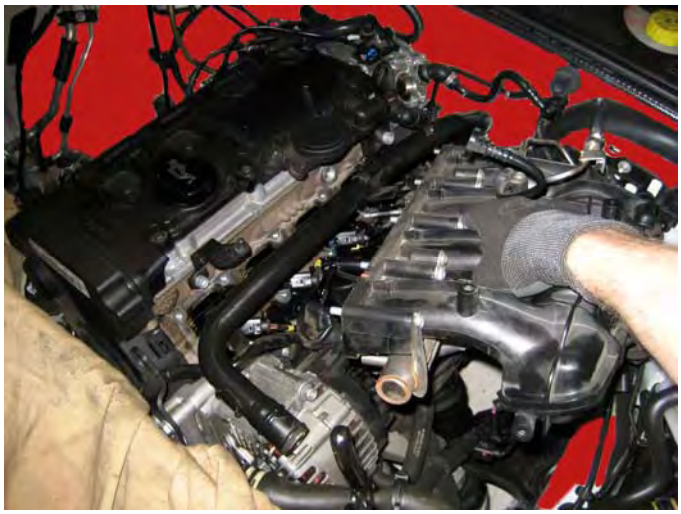
74	Using a 17mm open end wrench, loosen the fuel line jam nut on the bottom of the high pressure fuel pump. This fitting may still have some pressure, be careful to avoid fuel spray as you remove this fitting. Place a clean rag under the fitting to minimize fuel spillage. **WEAR SAFTEY GLASSES AND ENSURE THERE IS NO NEARBY SOURCE OF FLAME OR SPARK!!**	
75	Slide the hose clip back and detach the rubber fuel supply hose from the fuel rail to the high pressure fuel pump. This is between the engine and the firewall.	

76	Detach the plastic clip for the plastic PCV hose from the metal fuel line going to the High Pressure Fuel Pump.	
77	Gently pull the brake booster check valve out of the rubber grommet in the firewall.	
78	Loosen hose clamp and detach the EVAP hose connecting the intake manifold to the hard pipe on the firewall.	

79	Using a 13mm open end wrench, remove the test port connection from the high pressure fuel pump. Place a clean rag below the fitting to minimize fuel spillage. **WEAR SAFTEY GLASSES AND ENSURE THERE IS NO NEARBY SOURCE OF FLAME OR SPARK!!**	
80	Using a T-30-Torx, remove the three bolts which retain the high pressure fuel pump to the cylinder head. Remove the bolts gradually in a sequential order.	
81	Remove fuel pump. Ensure the fuel pump remains absolutely clean to ensure no damage can result to the pump from contamination. Make sure the fuel pump camshaft follower remains in the cylinder head. **WEAR SAFTEY GLASSES AND ENSURE THERE IS NO NEARBY SOURCE OF FLAME OR SPARK!!**	

82	Using a T30-Torx, remove the bolt which retains the dipstick tube to the intake manifold.	
83	Remove dipstick, then remove dipstick tube from engine.	

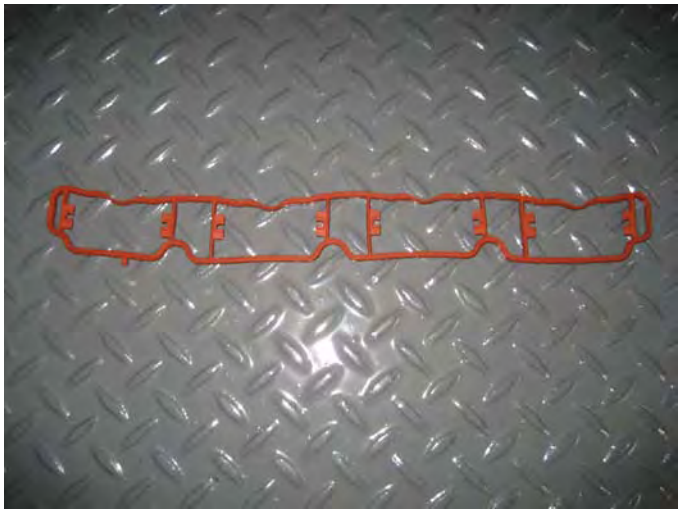
84	Remove the M10 triple square bolt for the intake manifold support bracket to the engine. This bolt is difficult to see. The location is below the intake manifold and behind the throttle body. It's helpful to have a socket with a minimum shaft length of 4"	 
85	Using a small ¼" drive T-30 Torx socket, 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.	

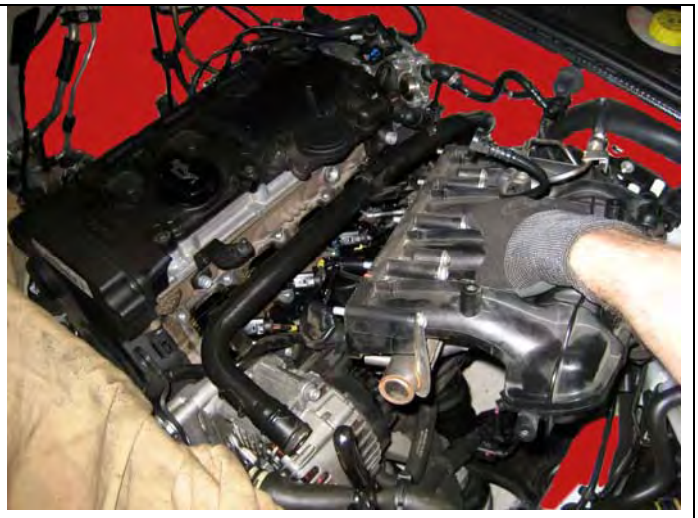
86	Detach the upper radiator coolant hose from the coolant pipe which runs above the intake manifold. Be prepared for coolant to drain from this connection.	
87	Gently guide the intake manifold / fuel rail assembly off the cylinder head on the studs. Give special care to the fuel hard line on the top of the intake manifold as you guide the intake manifold off the engine while holding the coolant pipe above it. Be prepared for the remaining fuel in the fuel rail to drain as you remove the intake manifold / fuel rail assembly. **ENSURE THERE IS NO NEARBY SOURCE OF FLAME OR SPARK!!**	
88	Disconnect the electrical connectors for all 4 of the fuel injectors.	

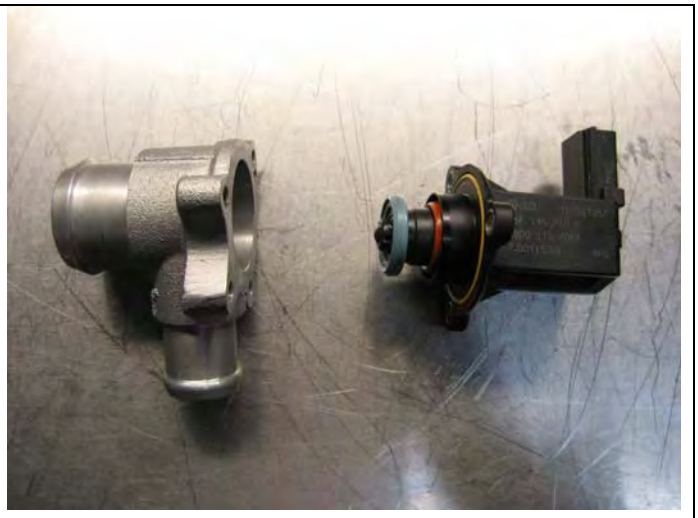
89	Gently grasp injector and remove from the cylinder head. If the injector will not remove easily, you will have to use the factory FSI Fuel Injector Removal and Installation tool set T10133 to facilitate safe removal of the fuel injector. Steps A,B and C will discuss removal of stuck injectors. This tool is available from STaSIS Engineering for loan.	
89a	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 plastic and will break during this process. Ensure no debris enters the intake port.	
89b	Remove the compression ring from the injector	

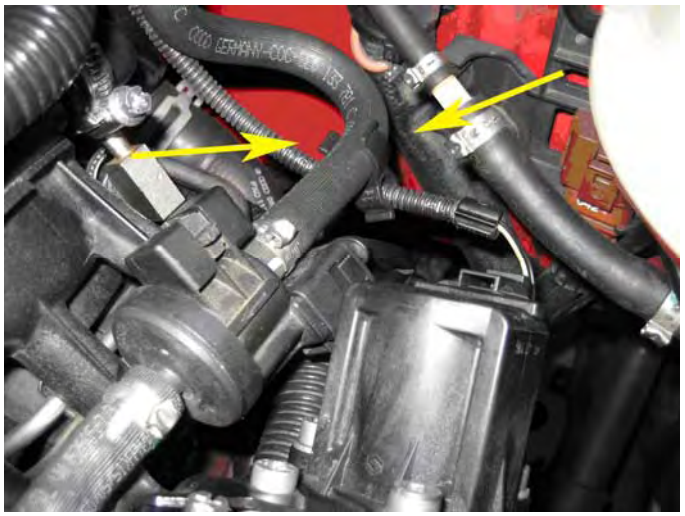
89c	Using the slide hammer T10133/3 and puller T10133/2, guide the puller into the grove on the fuel injector, and slide hammer the injector out of the cylinder head.	
90	Using the pipe brush in the kit, clean out the fuel injector bores in the cylinder head to ensure a clean surface for the Teflon injector seal. Clean the brush with brake parts or carburetor cleaner between cylinders.	
91	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!**	

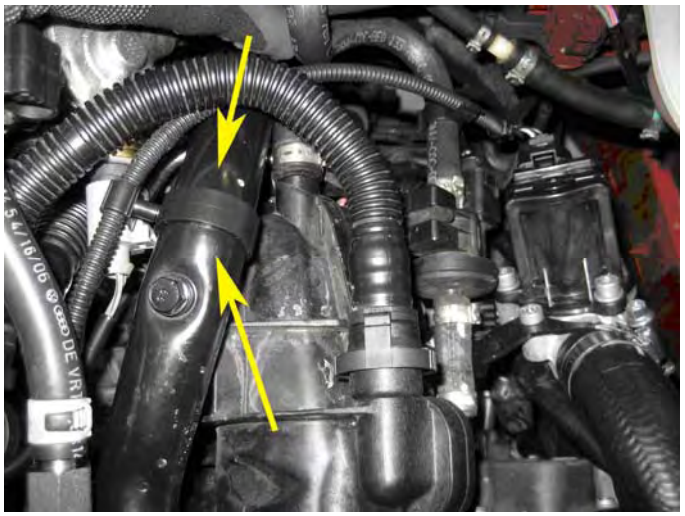
92	Using T10133/9 assembly drift, guide the fuel injector into the bore in the cylinder head. Make sure the ridge at the base of the electrical connector portion of the fuel injector seats into the register in the cylinder head. You should NOT be able to rotate the fuel injector more than 5 degrees if seated properly.	
93	Reattach the electrical connectors for the fuel injectors as pictured.	

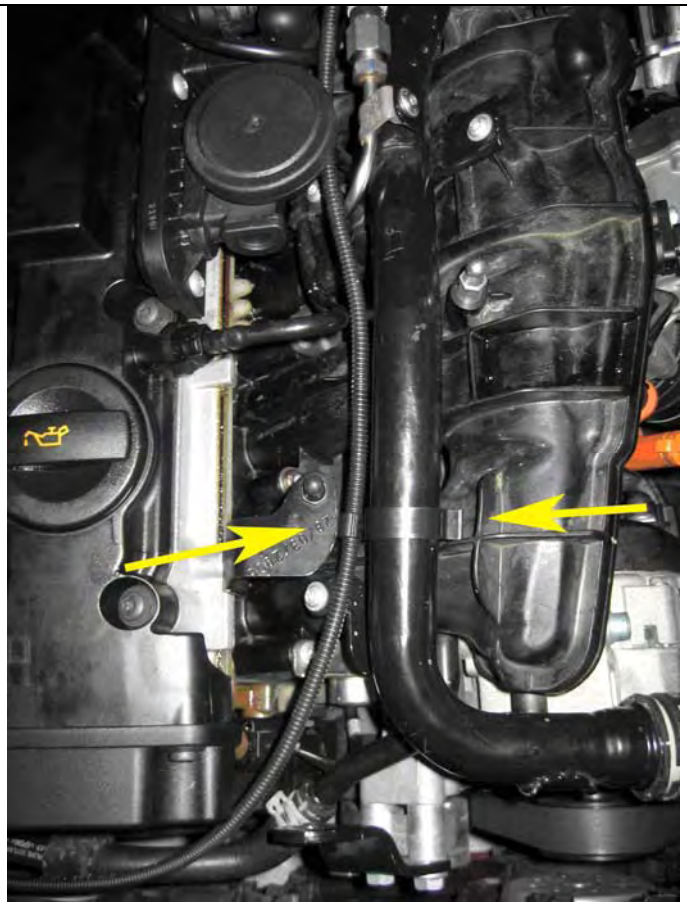
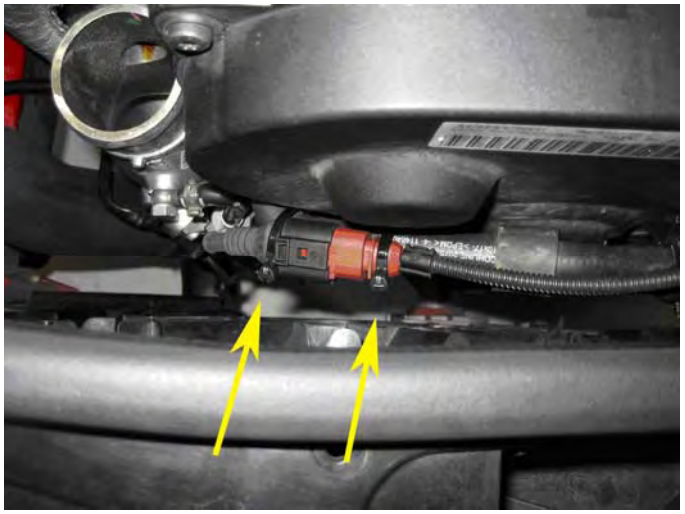
94	Install supplied Turbocharger Recirculation Valve N249 support bracket onto the intake manifold. Remove the two T-30-Torx bolts which support the vacuum line from the EVAP Canister Purge Solenoid Valve N80 as it heads towards the Throttle Valve Control Module J338. This step is best performed prior to reinstallation of the intake manifold.	 
95	Replace the orange o-ring style intake manifold gasket. Reinstall intake manifold / fuel rail assembly onto the cylinder head.	

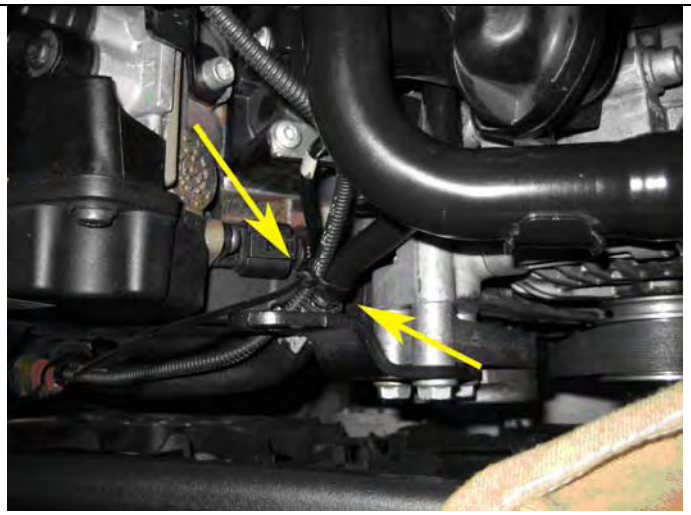
		
96	Follow the preceding steps in reverse order to reinstall the intake manifold. Ensure all hoses, hardware, and electrical connectors are reinstalled properly.	
97	Install the supplied Throttle Body Y-hose between the engine and the driver's side intercooler with the supplied hose clamps. Throttle Body side: 60-80mm Intercooler side: 50-70mm	 

98	Install supplied Turbocharger Recirculation Valve into the supplied flange reusing the original hardware from step 35. Ensure detent on the valve seats into the register on the flange for proper orientation.	
99	Install the Turbocharger Recirculation Valve (N249) with the supplied hose clamp into the Throttle Body Y-hose. Attach the flange to the support bracket with the supplied bolt. DV flange hose clamp: 32-50mm	

100	Connect the supplied electrical harness extension to the Turbocharger Recirculation Valve N249.	
101	Attach the supplied harness clip to the EVAP hose next to the Turbocharger Recirculation Valve (N249).	 

102	Using a pair of side cuts, remove the portion shown from the 2 large wire clips.	
103	Mount the 1st clip onto the coolant pipe that runs on the top of the intake manifold.	

104	Mount the 2nd clip towards the front of the engine. Run the wire harness inboard of the coolant pipe.	
105	Connect the extension harness to the OEM connector for the Turbocharger Recirculation Valve N249 (near the turbocharger). Zip tie the connector to the coolant hose on the front of the engine. Use two zip ties, one at each end of the connector. .	

106	Attach one zip tie holding the harness to the coolant pipe near the spring clamp for the hose to the hard pipe	
107	Install supplied hose for the Turbocharger Recirculation from the Recirculation Valve flange to the Turbocharger Inlet hose using the supplied hose clamps. DV recirculation hose clamps: 20-32mm	 

108	Open the bleeder bolt on the upper coolant pipe above the intake manifold. Add coolant/water mix to Coolant Reservoir until the system is at max line. Let the system degas and top off again until fluid comes out of the bleeder bolt. Close bleeder bolt and top off coolant reservoir.	 
109	Using in 9/32” drill bit, drill two holes in the front of the engine cover using the dimensions given in the following steps. Install retaining clips as shown once complete.	

		
110	For the driver's side of the cover, drill ½" up from the lower edge and 1" inboard from the lower edge.	 

111	For the passenger's side, drill 11/16" up from the lower edge and 1 ½" inboard of the middle step.	 

112	Install engine cover and install Diverter Valve Recirculation Hose into support clips at front of engine.	
113	Connect battery ground terminal. Flash the ECU at a GIAC authorized dealer. Contact STaSIS for further information	GIAC www.GIACusa.com
114	Make sure oil level is full. Start engine and allow it 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!! Test drive vehicle and ensure there are no leaks and the turbocharger is operating correctly.	