STaSIS Engineering

R8 V10 Coupe and Spyder
Supercharger Installation Guidelines
# R8 TORQUE VALUES

## Body

<table>
<thead>
<tr>
<th>Component</th>
<th>Torque Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bumper cover center section outer bolts</td>
<td>1 Nm</td>
</tr>
<tr>
<td>Bumper cover center section upper bolts</td>
<td>5 Nm</td>
</tr>
<tr>
<td>Bumper cover center section lower bolts</td>
<td>4 Nm</td>
</tr>
<tr>
<td>Lower air guide retaining screw</td>
<td></td>
</tr>
<tr>
<td>Lower bumper to chassis bolt</td>
<td>4 Nm</td>
</tr>
<tr>
<td>All bumper cover retaining bolts</td>
<td>5 Nm</td>
</tr>
<tr>
<td>License plate mounting bracket</td>
<td>5 Nm</td>
</tr>
<tr>
<td>Bumper bar bolts</td>
<td>8 Nm</td>
</tr>
<tr>
<td>Lower air duct bolts</td>
<td>4 Nm</td>
</tr>
<tr>
<td>Grille screws to taillight housings</td>
<td>1.5 Nm</td>
</tr>
<tr>
<td>Grille screws to spoiler carrier</td>
<td>4 Nm</td>
</tr>
<tr>
<td>Fender liner screws</td>
<td></td>
</tr>
<tr>
<td>Reverse camera screws</td>
<td>4 Nm</td>
</tr>
<tr>
<td>Outer heat shield bolts to bumper cover</td>
<td>4.5 Nm</td>
</tr>
<tr>
<td>Taillight bolt to body</td>
<td>4.5 Nm</td>
</tr>
<tr>
<td>Taillight nut to body</td>
<td>4.5 Nm</td>
</tr>
<tr>
<td>Under tray bolts</td>
<td>4 Nm</td>
</tr>
</tbody>
</table>

## Exhaust

<table>
<thead>
<tr>
<th>Component</th>
<th>Torque Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Muffler support bracket bolt to muffler</td>
<td>45 Nm</td>
</tr>
<tr>
<td>Muffler support bracket to chassis</td>
<td>25 Nm</td>
</tr>
<tr>
<td>Muffler heat shield screws</td>
<td>1.5 Nm</td>
</tr>
<tr>
<td>Heat shield bolt to chassis beneath anti roll bar</td>
<td>6 Nm</td>
</tr>
<tr>
<td>Heat shield nut to chassis/vacuum pipe</td>
<td>6 Nm</td>
</tr>
<tr>
<td>Speed clip to bumper bar and chassis for heat shield</td>
<td>2 Nm</td>
</tr>
<tr>
<td>Heat shield bolt to bumper bar</td>
<td>6 Nm</td>
</tr>
<tr>
<td>Heat shield bolt to chassis cross member</td>
<td>6 Nm</td>
</tr>
</tbody>
</table>

## Engine

<table>
<thead>
<tr>
<th>Component</th>
<th>Torque Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air box to chassis</td>
<td>8 Nm</td>
</tr>
<tr>
<td>Engine Cover Bracket</td>
<td>8 Nm</td>
</tr>
<tr>
<td>Engine Compartment Crossmember, torx</td>
<td>8 Nm</td>
</tr>
<tr>
<td>Engine Compartment Crossmember, hex head</td>
<td>20 Nm</td>
</tr>
<tr>
<td>Engine Compartment Trim Bracket</td>
<td>8 Nm</td>
</tr>
<tr>
<td>Engine Mount, Left</td>
<td>20 Nm</td>
</tr>
<tr>
<td>Engine Mount, Right</td>
<td>20 Nm</td>
</tr>
<tr>
<td>Heat Shield</td>
<td>10 Nm</td>
</tr>
<tr>
<td>Left Engine Support</td>
<td>40 Nm</td>
</tr>
<tr>
<td>Oil Pump Bracket</td>
<td>22 Nm</td>
</tr>
</tbody>
</table>
STaSIS Engineering R8 V10 Supercharger Pre-Install Checklist

Upon vehicle arrival, before starting disassembly of the vehicle, please perform the following tasks:

- Check mileage of the vehicle. Vehicles are required to have at minimum 1,000 street driven miles before the STaSIS supercharger can be installed.
  
  o Due to initial tight tolerances on the connecting rod/crankshaft bearings and required bedding of the clutch plates on new vehicles, high stresses encountered with the extra torque load from the STaSIS supercharger during the initial break-in period of 1K miles can lead to abnormal and excessive wear and tear of the powertrain components.

- Check and record all error codes found with the Audi scan tool. Check history of car for any engine related activity. If any issues are found please contact STaSIS before installing the kit.

- Make sure ECUs have the OEM software. If the ECUs have been flashed with the STaSIS software, use the STaSIS flashing computer to flash the ECUs back to OEM settings.
  
  o Following the normal STaSIS flash procedure, on “Programming step 3” please select the “Flash Stock Only” option and this will re-flash the ECUs back to stock settings.

- If the ECUs contains software from an outside vendor (non OEM or STaSIS), please contact STaSIS immediately as this could affect programming of the ECUs with the supercharger software.

Please remove the engine following the Audi OEM engine removal procedure with the following exceptions. STaSIS highly recommends following the listed procedures below in order to enable ease of re-installation-

- Remove Intake Manifold while the engine is in the vehicle.

- Coupe only – Intake Manifold should be removed before removing the carbon fiber trim attached to the firewall. Trim will get scratched if the manifold is not removed first, masking of all carbon fiber trim pieces in the engine compartment (side panels and air box lid) with masking tape is highly recommended before removal as the carbon is easily scratched

- Do not remove the wire harness from the interior of the vehicle as listed in the Audi manual. Unplug all connectors from the engine and the underside of the chassis and set wire harness off to the side of the vehicle during engine removal. Plugs at the front of the engine next to the firewall can easily be accessed once the intake manifold is removed. The interior of the car does not require any disassembly for both the Spyder and Coupe; this will save a tremendous amount of time for disassembly and re-assembly. Additional procedures for the Spyder are listed below.
- Do not remove the starter cable from the passenger foot well as listed in the Audi manual. Cable should instead be disconnected from the starter and routed out of the engine area and hung from the chassis.

- Do not disassemble the rear wing, rear wing mounting plate and sub-frame assembly. Complete assembly should be removed off of the chassis in one piece with the wing support sub-frame.

- Removal of Side Blades is optional for the Coupe. Access to the wire harness ground plugs can be accessed without Side Blade removal.

- Do not separate the transmission from the engine, axle shields do not have to be un-bolted.

- Do not remove the power steering pump. Disconnect the power steering line going to the front of the vehicle at the connection located on the driver’s side lower frame rail behind the driver’s side rear wheel.

**Body panel removal recommendations for R8 Spyder disassembly (does not apply to R8 Coupe)**

- To remove the rear convertible deck lid, activate convertible opening/closing process until the deck lid is sitting at a 45 degree angle. Mark location of deck lid brackets to the hinge mount with a paint pen or scribe. Remove the 2 bolts on each side attaching the deck lid bracket to the hinge mount.

  **Do not remove the 2 bolts on each side attaching the deck lid brackets to the carbon fiber deck lid** (nut-serts installed in the carbon fiber lid strip out easily due to the Loctite used on the bolts from the factory).

- Caution – Hydraulic pressure for the convertible actuators will depressurize after 5 minutes of non-operation which can cause the deck lid to collapse if not supported properly.
• When removing the rear engine deck lid, mask and cushion the front corners of the lid before loosening the bolts as the lid can slide and damage the fenders.

• Before removing the convertible base tray (sheet metal panel above the engine), initially loosen all perimeter bolts with hand tools (do not use impact or air tools) to prevent the nuts- serts from stripping out.

• Do not remove the convertible top assembly as listed in the Audi manual. Please use the following procedures listed below for removal as this will save an enormous amount of time for both removal and installation of the engine. The procedures are different than what is recommended from Audi, but is required as our kit requires modifications to the convertible assembly which cannot be accessed when using the standard Audi procedures.

• Follow the picture sequence below for the convertible cross bar frame above the engine.

• Remove all bolts attaching the cross bar frame to the chassis. Do not disconnect any hydraulic lines or wire harnesses attached to the cross bar frame. Use masking tape and car covers to protect the convertible top fabric.

• Shift frame to the driver's side and push driver's side convertible wing tip under the frame.
- Route frame around the side of the passenger side convertible wing tip.

- Lie frame on top of convertible cover and secure with bungee cords. Secure driver’s side hinge frame assembly with bungee cords to prevent the hinge from extending out.

Additional steps required once the engine has been removed, required for Spyder and Coupe:
- Remove lock nut on transmission prop shaft (drive shaft to the front wheels) flange and remove flange. Use Large bearing separator (if you have one) to remove rubber dampener pressed on to the flange.

- Remove crank pulley and clean out thread lock. Due to the sealing Loctite compound installed at the factory, take care not to break bolts during bolt removal, use hand tools to start loosening the bolts.

- Remove injector rails and tumble flap runners to give access to cyl head ports – **CLEAN** all valves (recommend soaking in BG cleaning fluid), dividers, and intake ports. This procedure is **required** for all vehicles with over 3000 miles of mileage.

- Remove alternator pulley, idler pulley, and alternator belt tensioner assembly.

- Remove front bumper and plastic panels in the front luggage compartment. Removal of wiper blades and plastic flat panel underneath the wiper blades is not required. Forward panels can be removed without removal of the wiper blade panel.
Once engine has been removed from the vehicle follow the instructions listed below.

**Engine vacuum line and hose disassembly (remove the intake manifold)**

- Separate vacuum supply hose from EVAP hose assembly by sliding hose out of shrink tube sleeve (will be reattached with this sleeve during re-assembly).

- Remove EVAP solenoids and complete hose assembly,

- Remove Secondary Air Actuator

- Remove all brackets for solenoids and actuator, brackets will not be reused
- Remove Coolant Breather hose off of adell clamp and plastic clip on Intake Runner. Remove adell clamp and clip off of Intake Runner, parts will not be re-used.

### Engine Intake Runner and Injector disassembly

- Remove Fuel Lines, make sure to collect all rubber cushions and support brackets as the flat lower brackets tend to fall into the crankcase cavities

- Remove Intake Runner and Fuel Rail Assemblies. Take care not to remove fuel injectors out of the heads.

- Check type of fuel injector. If injector electrical plug matches the injector plug sent with the kit, replace fuel injectors with the ones supplied in the kit. Use cages supplied with the kit. Check Teflon crush with Audi OEM injector tool kit.

- If fuel injector electrical plug is smaller, do not remove the injectors. OEM Injectors will be re-used with the kit. Cover injectors to prevent debris contamination

- Clean Intake Valves
Secondary Air assembly

- Attach Secondary Air actuator to the Tumble Flap actuator bracket with two zip ties in an “X” orientation. Note orientation of actuator.

- Connect harness plugs to both actuators.

- Attach short hose supplied with the kit to the secondary air “Switched Vacuum” port and route underneath bracket to hard plastic vacuum line.

- Reattach bracket with 90 degree vacuum supply valve located to the right of the bracket.

- Do not connect “Vacuum Supply” lines to both actuators at this time.
EVAP Hose assembly driver's side

- Disconnect all hoses from EVAP hose assembly and solenoids, except hose on the bottom of the metal “T”, rotate hose on metal “T” 90 degrees.

- Locate EVAP “T” hose assembly next to the oil filter housing with “T” upside down and long hose routed along the OEM location

- Use OEM EVAP hose with the 180 degree curvature, cut 90 degree ends off to form a U bend hose.

- Attach short side of the U bend hose to the EVAP solenoid (note direction of vacuum)

- Attach long side of U bend hose to long hose supplied with the plastic connector. Zip-tie connector to the solenoid.

- Attach medium hose supplied in kit to the other side of the EVAP solenoid.

- Locate EVAP solenoid assembly along heat exchanger on the driver’s side, above the engine knock sensor. Relocate solenoid harness plug to this location and plug solenoid in.

- Route long hose along crankcase to the front of the engine, hose routes in front of the oil filter housing (underneath harness plugs). The hose will be attached to the supercharger intake manifold.

- Route medium hose along crankcase, connect end to the “T” next to the oil filter housing.
EVAP hose assembly passenger side

- Re-install fuel rails and intake runner assemblies. **Warning** – Make sure tumble flaps do not catch on guide plates during installation. Check tumble flap actuation with fingers after the runners are installed.

- Zip-tie EVAP solenoid to intake runner to prevent the assembly from touching the knock sensor.

- Route Coolant Breather hose on passenger side next to the fuel injectors (inside of the wire harness) to the front of the engine (against the firewall).

- Install short hose supplied in kit to second EVAP solenoid (vacuum side). Hose will connect to the supercharger intake manifold.
• Zip-tie solenoid to the harness plug located next to the oil filter housing (passenger side). Using a leftover OEM EVAP hose, trim hose to make a short connection from the EVAP solenoid to the “T” connector. Route harness plug to solenoid and plug in.

• Zip-tie “T” connector to the bracket located next to the oil filter housing (passenger side).

Vacuum line and fuel line assembly

• Re-install fuel lines. Route vacuum hoses over fuel line and re-attach Vacuum Supply lines to the secondary air and tumble flap actuators. Re-attach Switched Vacuum line from tumble flap diaphragms to actuator.

• Zip-tie vacuum line multiple “T” connector to the vent line. Make sure no vacuum lines are kinked.
• Route vacuum supply line back to vacuum reservoirs, re-attach to EVAP hose with shrink tube sleeve.

• Make sure vacuum supply line remains located in the OEM position to attach to the intake manifold.

• Insure all harness plugs for injectors, fuel pressure sensors, EVAP solenoids, and actuators are reconnected. Insure all vacuum lines for tumble flaps, actuators, and EVAP are reconnected. If a connection is missed, the supercharger must be removed for access once the car is assembled.

• Mock up Base Plate to check for fuel line clearance, supercharger housing will follow the outline of the base plate. Fuel lines located on the driver’s side (front corner) and passenger side (center location) will need to be adjusted to clear the supercharger assembly.
• Rotate clamp on the driver’s side fuel line so tabs are facing away from the supercharger. Using a medium pry bar, pry both fuel lines to clear supercharger assembly. Be careful not to mar or scratch fuel line for risk of cracking.

**Base Plate assembly**

• Install Super Charger Base Plate with the M6 bolts supplied. Plate will push against some lines to locate, make sure no hoses are pinched. Use red loc-tite tightening in a crisscross pattern from the center out.
  o Torque – 11 ftlbs

• Tape over base plate intake ports, engine will be installed in the vehicle before the supercharger is installed.
**Air conditioning re-charge line installation**

- Remove air-conditioning re-charge line located on the engine, part will not be re-used. Wire harness attached to the ac line (older vehicles) will be routed once pulley bracket is installed. **Coupe only** – upper support bracket attached to the line will be re-used for the remaining re-charge port.

- Install new air-conditioning line supplied with the kit. Re-charge outlet port will now be located underneath the vehicle next to the thermostat housing.

- Replace one thermostat housing bolt with support spacers, adell clamp, and long bolt supplied with the kit to support the new ac line. AC line can be bent slightly to fit the location (will slightly push on the water hose). Make sure not to bend the line too far as the line will kink.
Engine coolant line installation

- Remove engine coolant recirculation hose and fitting at the front of the engine next to the crankshaft pulley, parts will not be re-used. Bolts for the fitting will be used on the new part supplied with the kit.

- Install stainless steel water line, o-ring and hose supplied with the kit. Water line needs to be as close as possible to the crankcase to allow for pulley clearance.

Engine pulley installation

- Remove crankshaft pulley and clean all threads.

- Install new crank pulley and alternator drive pulley. Make sure index mark on the crank pulleys and crankshaft line up. Use new bolts supplied with the kit.
  - Torque – 25 ftlbs
- Remove alternator pulley, tensioner assembly (remove pulley from tensioner, pulley will be reused) and fixed idler (idler will no longer be used).

- Install tensioner block in place of OEM tensioner.

- Install OEM tensioner pulley on the new tensioner.

  Note- Bolt on tensioner is reverse threaded

- Install tensioner assembly on tensioner block. Use red Loctite on tensioner stud. If there is difficulty tightening the nut, the alternator support bracket can be loosened to have access to tighten the nut.
• Attach 4 rib belt to the alternator pulley and main drive pulley before installing the alternator pulley.

• Slide alternator pulley onto the alternator shaft with the belt sitting on either side of the tensioner pulley. Install OEM nut for the alternator pulley
  
  o Torque – 65 Nm

• Slide 15mm wrench under the belt and turn alternator tensioner to the full loose position. Slide belt onto the tensioner pulley.

Supercharger Pulley Bracket and belt installation

• Hand tighten bolts for all pulleys to the supercharger pulley bracket. Note location of smooth vs toothed pulleys. Route belt through the pulleys and mock up supercharger pulley bracket on the engine.

  o Note the three mounting locations for the bracket, the bottom bolt will have a spacer and the belt will be on either side of the spacer. Tighten all mounting bolts.

  o Note the pulley located in front of the stainless steel water pipe, the pulley will have two spacer washers included. There can be possible interference with the water pipe which will be adjusted on the next step. You will need to adjust spacer quantity based on belt location.
• Route belt around the crankshaft pulley and pull up on the belt from the top of the engine. Make sure belt is line up with all 7 rib toothed pulleys. Rotate the belt by hand with light tension (it will slide on the crankshaft pulley) to get the belt located in a neutral position on the smooth pulley that is in front of the water pipe. Make sure the belt is sitting completely on the pulley surface-

  o If the belt is hanging off of the edge of the pulley, more washers must be added until the belt sits inboard of the edge of the pulley.

  o If the belt is too far inboard, remove washers until the belt sits just inside of the edge of the pulley.

  o Once the pulley is located properly with the belt, there can be a slight interference with the pulley on the water pipe. Glue a thin rubber cushion (from a piece of hose) on the pulley bolt to space the water pipe away from the pulley.

  o The belt position is critical because if the belt rides off of the edge of the pulley, belt life will decrease dramatically. To adjust spacing of the pulley at later stages will require engine removal from the vehicle!

• Remove pulley bracket and attach all pulleys to the bracket with a small amount of red Loctite for each bolt.

  o Torque – 20 ftlbs
• Reattach bracket with the belt. Apply red Loctite to the upper M12 bolt and M6 bolt. **Do not use Loctite** on the lower M12 bolt with the spacer (to change the belt, this bolt must be removed in the vehicle, therefore no Loctite is recommended).
  
  o Torque M12 – 45 ftlbs
  o Torque M6 – 10 ftlbs

• Zip-tie belt to the driver’s side engine hanger bracket for engine installation.

• Older vehicles- Route wire harness, originally attached to the ac recharge line, around the side of the bracket. Use an adell clamp and bolt harness to the valve cover on the driver’s side.

• Route wire harness for driver’s side tumble flap sensor around the inside of the engine hanger bracket.
Vehicle Firewall modifications

- Remove hard AC line located on the driver’s side firewall. 90 degree bend below the flex line must be bent to accommodate the new supercharger pulley bracket. Bend line closer to the firewall (straighten horizontal leg), and bend 90 degree elbow to 120 degrees.

- OEM sound matting on the firewall must be removed to accommodate the pulley bracket. Remove all bolts and brackets on the firewall (driver’s side only). Mock up “Hushmat” supplied with the kit and align to the center stud on the firewall. Cut OEM sound matting on the firewall to match the width of the “Hushmat” with one edge aligning to the center of the vehicle. Cut should start underneath the rear window support brace and straight down to the bottom of the OEM matting.

- Slide fingers in between matting and firewall to pull foam off of the glue on the firewall (do not pull on the matting as all of the foam will be stuck on the firewall). Remove any remaining bits of foam stuck to the firewall. Gradually remove backing paper off of “Hushmat” and adhere it to the firewall from the top down, making sure to follow the contours of the firewall with the mat.

- Trim bottom of mat to match OEM location. Reattach all AC lines, brackets and heat shields.

OEM matting does not have to be removed on this side of the trim line, as shown in the picture.
Engine Installation

- Install the engine into the vehicle. Attach electrical harnesses, oil lines, ac lines and power steering lines.

- Do not re-attach EVAP supply and vacuum supply line (passenger side) at this time.

- Re-route fuel pump wiring harnesses on both sides of the engine to route in between the fuel pump and fuel lines and tuck harnesses in next to the base plate tray.

- From underneath the vehicle, check for clearance of the ac line with the supercharger pulley bracket. If the line is touching the face of the bracket, use a long pry bar and pry between the line and the bracket. Pry until the line is no longer touching the pulley bracket.

- Re-attach all coolant hoses and ac lines in the center tunnel.

- For the driver’s side tumble flap harness, route plug to the inside of the engine hook as the belt runs close to the outside of the hook and can damage the harness.

- Re-install “H” sub-frame bar and route the wire harness along the OEM locations. Re-install all major OEM hardware components except the following – coolant tank, driver’s side secondary air pump (coupe only), ac charge port bracket (spyder only), airbox, oil tank, and exhaust.
### Supercharger Housing Setup

- Assemble supercharger housing with the idler pulley, tensioner pulley, and tensioner adjustment block. Use red Loctite for all mounting bolts.

- Using a 15mm wrench, rotate tensioner to fully un-tensioned position. Thread adjuster bolt to hold tensioner in place and remove wrench.

### Supercharger Installation

- Cut zip-tie holding the belt to the hanger bracket, apply duct tape across the inside of the high-pressure fuel pumps and pump bolts (otherwise parts will scratch the charger housing during install).

- With one person on each side of the vehicle, lower charger assembly onto the engine. First angle charger so the pulley goes under the firewall structure, then straighten charger out and lower straight down. Charger assembly cannot be angled in.

- Slide charger assembly back and feed the belt onto the charger, tensioner, and idler pulleys. Make sure the 7-rib belt is located properly for both the supercharger pulley and the two toothed idler pulleys.
• Slide charger into position and install bolts for the charger housing, do not use Loctite. Make sure to tighten the two bolts that were preinstalled underneath the front of the charger.
  
  o Torque M6 – 11 ftlbs

• Check supercharger belt from the top and bottom of the vehicle and make sure belt is aligned properly with all pulleys. Deto- tension the tensioner by loosening the tensioner adjuster bolt until the bolt is tight against the engine hanger bracket.

**Supercharger Water Tank Installation**

• Remove tool tray out of the front luggage compartment, this will be where the water tank is located (tool tray will be sitting on top of the water tank).

• Using the cardboard template provided, push cardboard against the floor of the compartment and drill holes for the four mounting bolts of the water tank.

• From underneath the vehicle, finger-tighten the four bolts to locate the water tank. Make sure to rotate the water pump as far clockwise as possible and locate the center of the pump outlet against the compartment wall with a pen mark. Also mark the center of the water tank inlet location.

• Remove water tank and drill 1-3/8" holes for both inlet and outlet locations, make sure the
pump outlet hole is below the chassis cross bar on the other side. Drill a 9/16 hole in the center of the back wall of the compartment right above the water tank for routing the water pump wiring.

**Warning** – make sure to protect the battery on the other side of the wall from the drill bit.

- Disconnect the pump wiring from the pump relay (wires with the plug attached), note wire locations on relay. Route wiring with the grommet through the hole and up to the battery terminal area. Push grommet into the wall. Re-attach pump relay wires.

- Connect wiring to the pump and install the water tank. Use flat washers and red Loctite on all mounting bolts. Route wiring around pump and tank.

- Remove fuse from the relay. Route unterminated yellow wire behind the trunk compartment up to the top of the passenger side headlight.

- Locate trunk interior power harness. Cut insulation away from the harness where it is attached to the chassis frame rail. Locate the red wire with a purple tracer; splice yellow wire from relay to this wire with a butt connector.

- Attach the short wire with a spade plug from the relay to battery negative; attach the long wire with a spade plug to battery positive. Do not plug in fuse at this time.
Supercharger Radiator Installation

- Remove front undertrays, center drive shaft undertray, front bumper, center radiator air duct, and side radiator air ducts. Center air duct will not be re-used.

- Mark with a pen, the lower corners of the front bumper support bar that stick past the chassis. The water hoses will be routed through this location, remove the bar and cut the corners off to prevent damaging the water hoses.

- Remove the driver’s side bumper pad, loosen the passenger side bumper pad and rotate down (pad cannot be removed as one mounting bolt cannot be accessed).

- Using the pdf template provided, cut holes in the template to mount to the rubber bushings on the center radiator support brackets. On the passenger side the template will be mounted with the printed side facing you, on the driver side the template will be mounted with the printed side against the bracket (pre poke the holes before mounting template). Drill and tap 2 M6 x 1.0 holes on each side of the center radiator support brackets. Protect radiator with a piece of sheet metal between bracket and radiator while drilling. It is recommended to drill and tap the first 3 holes and mount the radiator before drilling the 4th hole.
• Assemble radiator brackets and bushings onto the supercharger radiator, brackets are identical and flipped in relation to each other. Driver’s side brackets will only use the front bolt attachment (rear bolt interferes with the bumper pad).

• Before final mounting of the radiator, after all holes are drilled and tapped. Route short hose provided through the driver’s side cavity and attach to the supercharger radiator with a crimp clamp.

• Route long water hose (with no 90 degree bend or attachments) through the passenger side cavity next to the OEM center radiator. Attach hose to the supercharger radiator with the crimp clamp provided.

• Mount radiator with M6 bolts provided, use red Loctite.

• Re-install all bumper bars and adjust to make sure the radiator does not contact any components.

• Re-install side radiator shrouds.
Water Hose Installation

- Install large grommets into the wall for the tank inlet and outlet.

- The short hose coming from the radiator will go to the water pump outlet, lube both inside and outside of the hose and push the hose through the grommet into the pump. Do not attach the grommet to the hose first! Grommet must be installed in the wall first or it will not attach properly to the wall. Use supplied hose clamp to attach.

- The long hose with the 90 degree elbow at the end will attach to the water tank. Lube both inside and outside of the hose and push the hose into the grommet and water tank, attach to tank with a supplied hose clamp.
• Disconnect the tee attachment on the other end of the hose coming out of the water tank, to be re-installed later. For both long hoses duct tape plastic sleeve to the hose end to be routed through the vehicle. This will prevent the plastic sleeve from catching and bunching up.

• Route hoses next to the steering rack supports and out below either side of the front differential.
• Attach driver’s side hose with an adell clamp and the supplied nut and bolt to the open hole on the driver’s side of the differential. Using an adell clamp on the passenger side hose, attach to the lower differential cover bolt.

• Install the 4 supplied rubber caps to the differential support studs on either side. Route both hoses next to the capped studs and along each side of the center tunnel.

• Attach driver's side hose to the aluminum hard lines with zip-ties as shown.
• Attach passenger side hose to the brake line brackets with zip-ties.

**Warning:** Do not attach zip-ties directly to the brake line! This could lead to brake failure! Zip-ties should be fed through the small opening in the brake line support brackets then tied to the hose.

**Driver's Side Hose Routing**

• Route hose around the corner of the center tunnel, next to the thermostat housing (underneath the new ac charge port), and to the side of the chassis following the oil lines.

• Make sure there is very little slack in the hose as it is cut to the proper length when shipped.
• The hose routes up along the inside of the oil cooler and around the heat shield to the engine compartment.

• Re-attach hose tee and locate water fill port next to the wire harness (coupe) or power steering reservoir (spyder).

• Route remaining end of the hose along the main wire harness and into the supercharger cooler. Hose must follow the harness or else it will interfere with other components to be installed. Harness should be sitting on the inside of the harness, if it sits above the harness it will interfere with other components. Zip-tie hose to the harness and check for any kinks in the hose by running your hand along the hose, trim if necessary. Crimp clamp to the cooler.
Passenger Side Hose Routing

- Route hose around the corner of the center tunnel and in between the aluminum line and heat shield (bend heat shield corner away from hose).

- Route hose straight up and towards the back of the vehicle.

- Straighten heat shield tube supplied with the kit. With the plastic sleeve duct-taped to the hose, twist heat shield tube onto the hose and sleeve. Push shield down until it is located where the hose is nearest to the exhaust header (underneath the water tank)
• Hose will route underneath the water tank to the main harness, then follow the harness to the supercharger cooler. Trim hose if needed. Zip-tie hose to the harness and crimp clamp hose to the cooler.

• Run fingers along both hoses to check for pinching at corners and bends.

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**Intake Manifold Assembly**

• After the water hoses are attached, lay a shop rag over the supercharger opening and position the intake manifold in its approximate location (do not insert bolts).

• Attach PCV hose supplied with the kit.

• Attach EVAP hoses that were previously routed (use crimp clamps)-
  - Drivers side EVAP hose
  - Passenger side EVAP hose
- Remove rag and install intake manifold bolts
  - Torque – 20 ftlbs
- Attach vacuum supply hose to the intake manifold with a crimp clamp
- Attach OEM throttle bodies with OEM gaskets and bolts. Plug in throttle butterfly actuators. (do not attach rubber bellows as shown in the picture at this time).

**Vacuum Reservoir Assembly**
- Re-install OEM oil tank and all oil lines.
- Remove vacuum reservoir and vacuum lines from underneath the OEM intake manifold.
- Attach reservoir with zip-ties through the two mounting holes on the reservoir to the underside of the “H” sub frame next to the oil tank.
- Route OEM reservoir vacuum line underneath frame up to the second reservoir line.
• Using the OEM tee junction and remaining OEM vacuum lines, join the line from the engine to the two vacuum reservoir lines.

• Trim EVAP line and reattach with OEM coupler

**Intake Manifold MAF Housings**

• Install fuel line bracket supplied with the kit to the intake manifold and install fuel line.

• Attach PCV hose to the driver's side valve cover outlet.
• Re-install OEM airbox, remove lid and remove OEM air filters and MAF housings.

• Super Glue 2 shims (included) to the backside (non air filter side) of each new MAF housing supplied with the kit. Remove MAF sensors from the OEM MAF housings and install sensors in the new housings.

• Attach rubber bellows to the new MAF housings by pushing on the rubber flange from the inside, **do not use lubricant.** Note right and left designators

• Attach MAF assembly to the throttle bodies.

• Install new air filters supplied with the kit and slide flange into the airbox, if flange is too thick remove shims accordingly.

• Remove OEM “U” hose assembly attached to the OEM one way valve.
• Trim "U" hose to join one way valve to the single intake manifold outlet.

• Re-install all electrical plugs and hoses on MAF assemblies, install airbox lid and insure flange and shims are seated properly in the airbox assembly.

Supercharger Cooling System Wiring and Filling

• Test relay for water pump by switching the car on with the key and installing the fuse, pump should start running. Remove fuse quickly as the pump should not run dry.

• Remove air bleed cap off of the top of the water tank. And attach supplied bleed hose to the fitting (do not use a hose clamp), insert other end of hose into a catch can.

• At the rear of the vehicle, remove the machined cap off of the tee hose on the driver’s side. Attach a funnel with a hose clamp.
• Coolant system capacity is approximately 4 gallons. Fill procedure, requires two people-
  
  o Fill system with coolant and water (same proportion as OEM coolant) through funnel until water comes out of the bleed tube on the water tank (approx. 3.5 gallons).

  o Clamp bleed tube and make sure the funnel is filled up halfway. Run the pump by turning the car on and inserting the fuse into the relay. You will hear air bleed through the pump.

  o Continue filling funnel until coolant level stops moving in funnel, stop water pump by removing fuse. Un-clamp bleed hose and continue filling.

  o Repeat this process until water continuously streams out of the bleed hose when un-clamped and no air is heard when the pump is running.

• When system is filled, stop the pump and wrap a rag around the clamped bleed hose. Remove hose and quickly replace with cap, use hose clamp to attach.

• Remove funnel and top off tee hose, re-cap hose with the machined cap.

• Re-install fuse into the relay.

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**Belt Inspection**

• Finish re-installing all major hardware components to be able to start the engine. Do not install undertrays or body panels at this time.

• Make sure ECU’s are re-programmed for the STaSIS supercharger kit. Clear all ECU error codes.

• Double check supercharger belt for proper alignment on all toothed pulleys and make sure tensioner adjustment bolt is not touching the tensioner and tight against the engine hanger bracket.

• Have one person start the vehicle while one person watches the belt from the driver’s side with a flashlight. Make sure belt runs smoothly and is not moving from side to side.

• Continue running the car and inspect the belt from underneath the car. Make sure the belt is riding properly on the smooth pulley next to the stainless water pipe and the edge of the belt is not off the surface of the pulley.

• Make sure the pulley is not spinning on the water pipe. If this is the case, use a file and push lightly against the edge of the pulley while the engine is running to grind some clearance.

• Check alternator belt for proper operation, make sure belt is riding properly on all pulleys.

• After running, double check ECU error codes for any issues.
**Coupe Only – Firewall Trim Panel**

- For both the carbon fiber and the plastic firewall trim panel, a clearance hole must be cut for the supercharger pulley and belt.

- Using a 4 ½ inch hole saw, cut hole in the location shown. Hole centerline is 11.0" from the left lower edge and 1 7/8" from bottom edge.

- Mask all surfaces with masking tape, set drill speed on high speed and feed it slowly. Hole saw will start cutting on the curvature of the upper edge of the panel.

- Once hole is cut, use tin snips and do a straight cut at 15.7 degrees on the driver’s side and 90 degrees on the passenger side.

**Spyder Only – EVAP hose relocation**

- Unclip EVAP hose off of the plastic clips along the firewall. Remove plastic clips.

- Disconnect EVAP hose on the driver’s side. On the passenger side, rotate hose 90 degrees where it connects to the white junction box.

- Remove plastic nut holding the insulation from the top center of the firewall.
• Using the supplied brackets and plastic nuts. Attach brackets to the center and driver’s side studs on the firewall (where the EVAP clip and the insulation nut used to be located).

• Zip-tie EVAP hose to the brackets.

• Re-attach EVAP hose on the driver’s side.

Spyder Only – Engine Cover Panel Insulation

• In order to clear the supercharger, the insulation on the cover panel over the engine must be trimmed.

• Remove all stud nuts and insulation off of cover panel. Mock up the cardboard template supplied onto the cover panel using the studs to locate the template, square hole should be off centered to the driver’s side (if not flip the template over). The stud located inside the square hole must be ground off. Apply a dab of paint after grinding to prevent corrosion.

• Remove template off of cover panel and re-install insulation (do not re-install stud nuts). Place template over insulation and locate with the studs. Using a marker outline the square hole on the insulation.

• Remove insulation and cut the square hole with a sharp knife. Be careful not to bend or flex the insulation as the seams come apart easily.

• Re-install insulation to cover panel. To prevent insulation from deteriorating, tape two layers of HVAC aluminum tape around the cutout onto the cover panel.

• When re-installing cover panel on the vehicle, make sure all adjustable nut-serts on the chassis is loose and bottomed out before install. Tighten all short bolts first before tightening the long bolts attached to the nut-serts.
Final Vehicle Assembly

- Re-install all body panels and **all** undertrays before test driving the vehicle. Proper cooling of the engine compartment is critical and highly dependent of all body panels and undertrays being installed. There is a high risk of melted components if all panels are not installed before driving.

- Make sure all panels and wing components are aligned properly during install. Spyder panels have adjustable rubber stops on corners on most cover panels.

- During first test drive, drive until engine is up to operating temperature and pull over to inspect the belt and to check for leaks.

- Supercharger does not require break in and can be run to redline once the engine is up to operating temperature.

- STaSIS highly recommends data logs with VAG COM of 3 power runs from idle to red-line in 3rd gear depending on driving/dyno conditions. Logging channels per run –
  
  - Run 1 – 003 / 020 / 031
  - Run 2 – 002 / 031 / 140
  - Run 3 – 002 / 031 / 103

Please send logs to STaSIS for evaluation once completed.