



INSTALLATION INSTRUCTIONS

SUPERCHARGER SYSTEM | 2006-2015 MIATA MX-5

#150-10-0613(B/T)



MIATA NC

INTRODUCTION

The Kraftwerks Supercharger kit for the '06-'15 Miata was designed for easy installation. Competent mechanics with the appropriate tools will find the process to be relatively simple. This is a GENERAL installation guide; the installation and vehicle may vary slightly and some parts may not reflect current production pieces.

PLEASE BE AWARE THAT SOME PARTS MAY COME PRE-ASSEMBLED BUT ARE NOT TORQUED TO SPEC.

Review the installations in its entirety before beginning the installation. If you have any questions about your ability to perform the installation, take your vehicle to a qualified installer. If you cannot find an installer, please contact the seller or Kraftwerks directly for a referral.

A minimal amount of work will be performed underneath the vehicle so you will need access to a lift or a floor jack. If you will be using a floor jack, be sure to have properly rated jack stands to safely keep the vehicle in the air while it is being worked on.

NEVER WORK UNDER A VEHICLE WITHOUT APPROPRIATE JACK STANDS.

DISCLAIMER

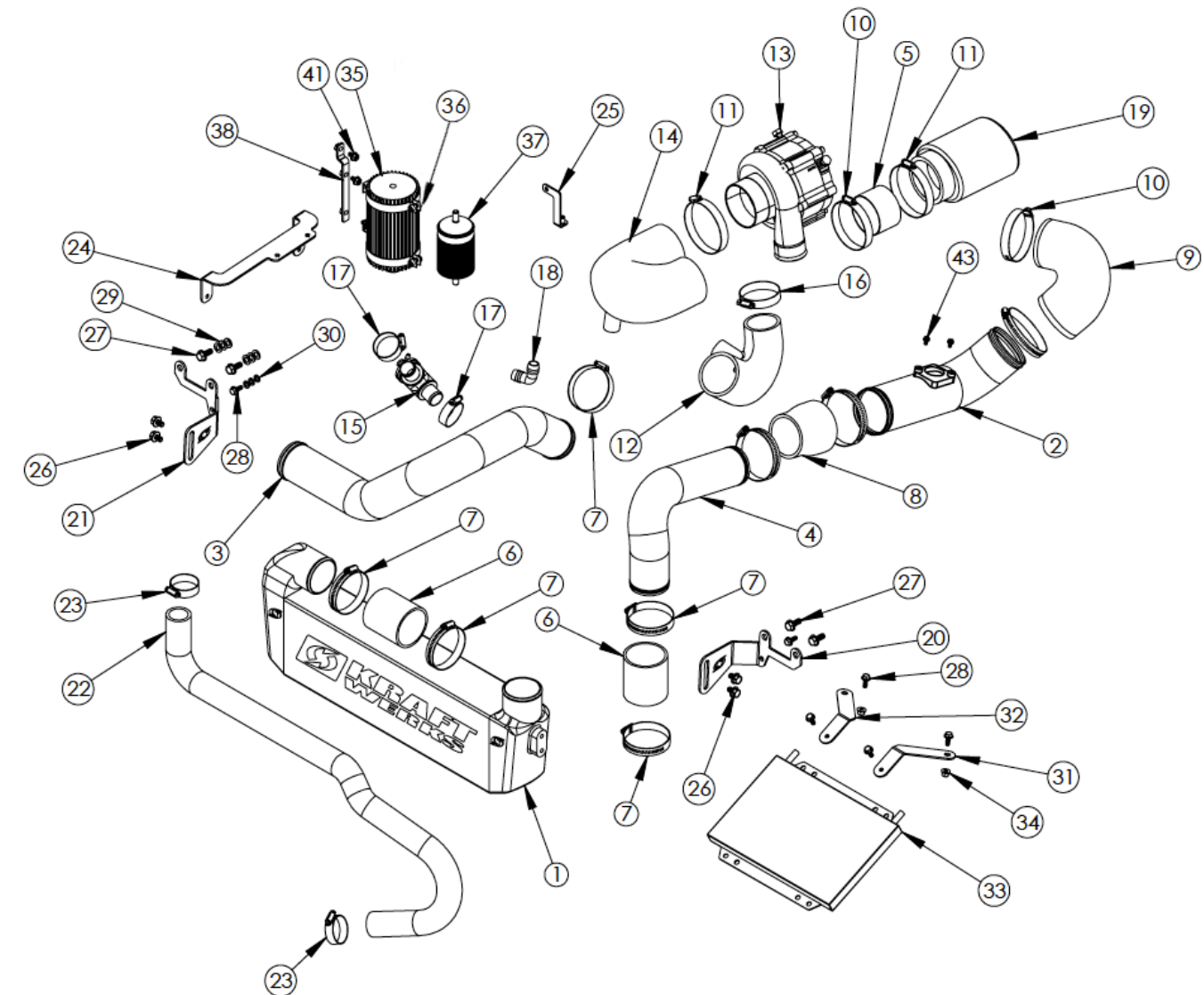
- Engine Rev Limiter must be set below 8,200 RPM with an 85mm Pulley, 7,700 RPM with an 80mm Pulley, or 7,200 RPM with a 75mm Pulley. Any higher RPM will OVER-SPIN the Rotrex Supercharger head and WILL void its warranty.
- Kraftwerks Supercharger Kits do not require break-in or warm-up periods. However, always warm your engine up properly before operating at full boost.
- If an engine oil and filter change has not been performed recently, do so now using a high quality oil and filter.
- A minimum of 91 OCTANE fuel must be used.
- Fuel Filters with more than 50,000 miles of use must be replaced prior to operating engine under boost (this is critical to proper fuel flow and engine performance).
- Vehicles with more than 100,000 miles of use, consider installing a new radiator and thermostat (coolant/water with high calcium content can leave deposits over time that can inhibit proper cooling).

ROTREX COMPONENTS DISCLAIMER

- Only use genuine Rotrex SX150 Traction Oil for supercharger lubrication. The proprietary traction formula protects the supercharger where other oils would fail, and is what allows its high-RPM operating levels. Use of Non-Genuine Rotrex SX150 Traction Oil WILL void the warranty of the Rotrex Supercharger.
- Keep all Pipes and Hoses sealed and clean until ready for installation. The Rotrex Supercharger operates at speeds as high as 100,000 RPM on this application. ANY debris that inadvertently enters the inlet pipes or becomes stuck to the silicone hoses can enter the Rotrex Supercharger and damage its compressor blades. Compressor blade damage is NOT covered by the Rotrex two-year warranty.
- NEVER rotate the Rotrex Supercharger counter-clockwise. Rotating the Rotrex Supercharger counter-clockwise will void the warranty.

THIS SUPERCHARGERKIT MAY NOT BE LEGAL FOR USE ON PUBLIC ROADS OR POLLUTION CONTROLLED ENVIRONMENTS. CHECK YOUR LOCAL REGULATIONS BEFORE INSTALLING THIS SUPERCHARGER KIT.

PIPING ASSEMBLY

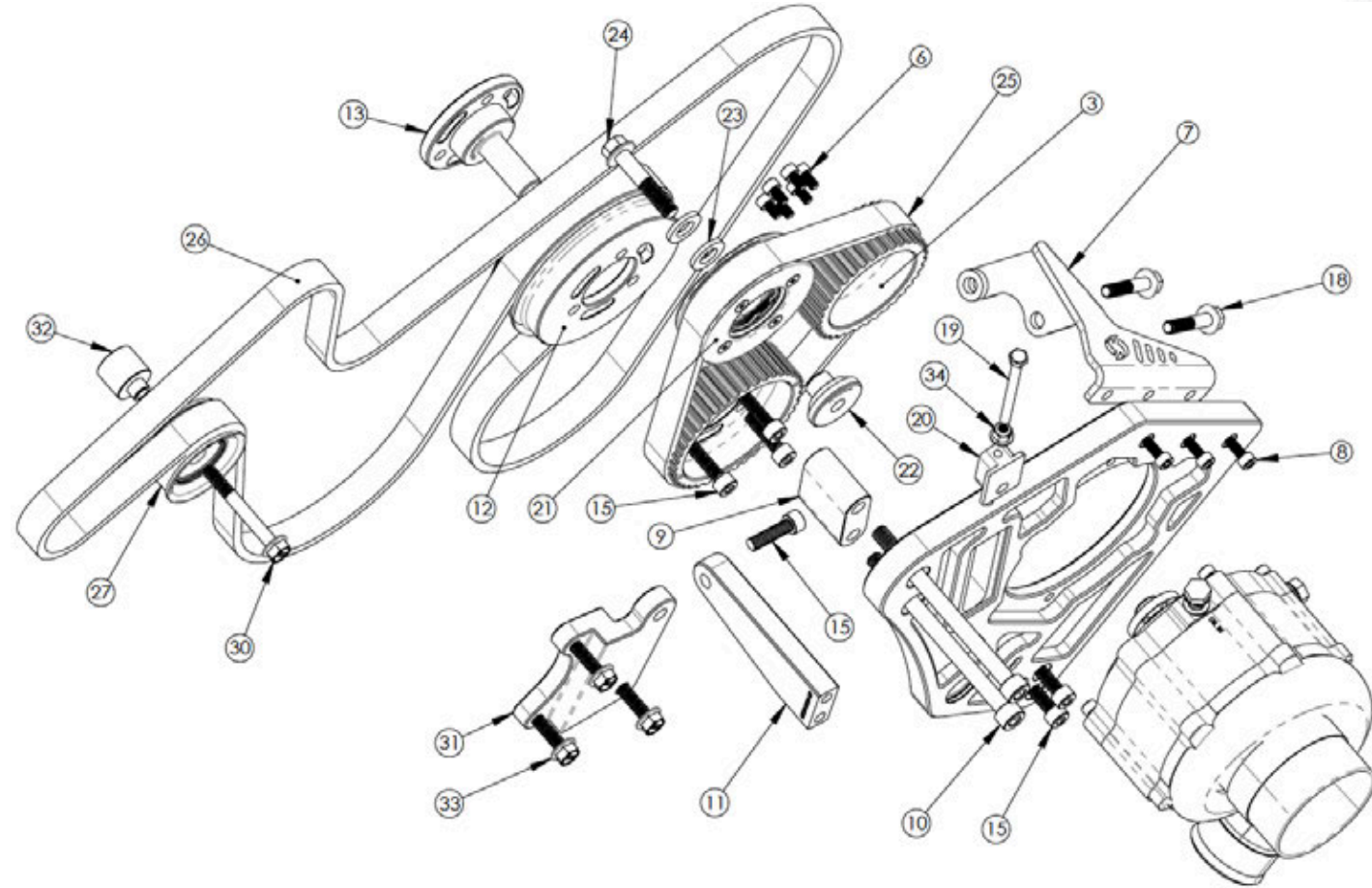


NO.	DESCRIPTION	QTY
1	Intercooler	1
2	Engine Inlet Pipe - Cold Side	1
3	Supercharger Outlet Pipe - Hot Side	1
4	Intercooler Outlet Pipe - Cold Side	1
5	Air Filter Adapter	1
6	Coupler - Straight, 2.5"	2
7	Lined Hose Clamp - #40	5
8	Coupler - Reducer 3" x 2.5"	1
9	Coupler - 130° Reducer 2.75" x 3"	1
10	Lined Hose Clamp - #44	3
11	Lined Hose Clamp - #48	4
12	Coupler - 130° Reducer 2.5" x 2"	1
13	Supercharger Head Unit	1
14	Intake - Miata NC	1

NO.	DESCRIPTION	QTY
15	Blow-Off Valve	1
16	Lined Hose Clamp - #32	1
17	Lined Hose Clamp - #16	2
18	90° .50" Hose Barb - Plastic	1
19	Air Filter - 2.75" Oval	1
20	Driver Side Intercooler Bracket - Miata NC	1
21	Pass Side Intercooler Bracket - Miata NC	1
22	Upper Radiator Hose - Miata NC	1
23	Lined Hose Clamp - #20	2
24	ECU Mounting Bracket - Miata NC	1
25	Purge Solenoid Bracket - Miata NC	1
26	Flange Head Bolt - M8 x 1.25 x 12	4
27	Flange Head Bolt - M8 x 1.25 x 20	4
28	Flange Head Bolt - M6 x 1.0 x 16	6

NO.	DESCRIPTION	QTY
29	Flat Washer - M8, 16mm OD x 1.5mm T	6
30	Flat Washer - M6, 12mm OD x 1.5mm T	3
31	Driver Side Oil Cooler Bracket - Miata NC	1
32	Pass Side Oil Cooler Bracket - Miata NC	1
33	Oil Cooler - 11.00" x 7.00" w/ 5/16" Barb	1
34	Nyloc Flange Nut - M6 x 1.0	2
35	Rotrex Oil Reservoir	1
36	Rotrex Oil Reservoir Clamp	2
37	Magnetic Oil Filter	1
38	Rotrex Oil Reservoir Bracket - Miata NC	1
41	Flange Head Bolt - M6 x 1.0 x 10	1
43	Button Head Bolt - M4 x .7 x 8	2

DRIVE ASSEMBLY



NO.	DESCRIPTION	QTY
2	Supercharger Mounting Bracket	1
3	Rotrex Supercharger Pulley - 85mm x 25mm, 34 Teeth	1
6	Socket Head Bolt - M6 x 1.0 x 10	6
7	Upper Mounting Bracket	1
8	Socket Head Bolt - M6 x 1.0 x 30	3
9	Left Lower Mounting Bracket	1
10	Socket Head Bolt - M10 x 1.50 x 130	2
11	Right Lower Mounting Bracket	1
12	Water Pump Drive Pulley	1
13	Supercharger Drive Mandrel	1
14	Supercharger Drive Pulley - 100mm x 27mm, 40 Teeth	1
15	Socket Head Bolt - M8 x 1.25 x 35	6
18	Flange Head Bolt - M8 x 1.25 x 40	2
19	Hex Head Bolt - M6 x 1.0 x 70	1

NO.	DESCRIPTION	QTY
20	Tensioner Adjuster	1
21	Tensioner Pulley - 77.5mm x 21mm 31 Teeth	1
22	Tensioner Pulley Spacer - 38mm OD x 21.35mm T	1
23	Flat Washer - M12, 24mm OD x 3mm T	2
24	Flange Head Bolt - M10 x 1.25 x 50	1
25	Supercharger Drive Belt - 640mm x 20mm	1
26	Accessory Drive Belt - Double Sided 6 Rib	1
27	Accessory Drive Belt Idler Pulley	1
30	Flange Head Bolt - M8 x 1.25 x 65	2
31	Accessory Drive Belt Tensioner Relocator	1
32	Accessory Drive Belt Idler Pulley Spacer	1
33	Flange Head Bolt - M8 x 1.25 x 30	3
34	Nyloc Flange Nut - M6 x 1.0	1

I GENERAL ENGINE-BAY OVERVIEW

» The installation of your new Kraftwerks supercharger kit requires the removal of several OEM engine parts and body panels and requires an experienced level of mechanical aptitude, proper tools, and a factory repair manual. If you do not possess these things... We highly recommend taking your vehicle to a qualified installer.



II BATTERY DISCONNECT

» Lets get started by first disconnecting the battery.

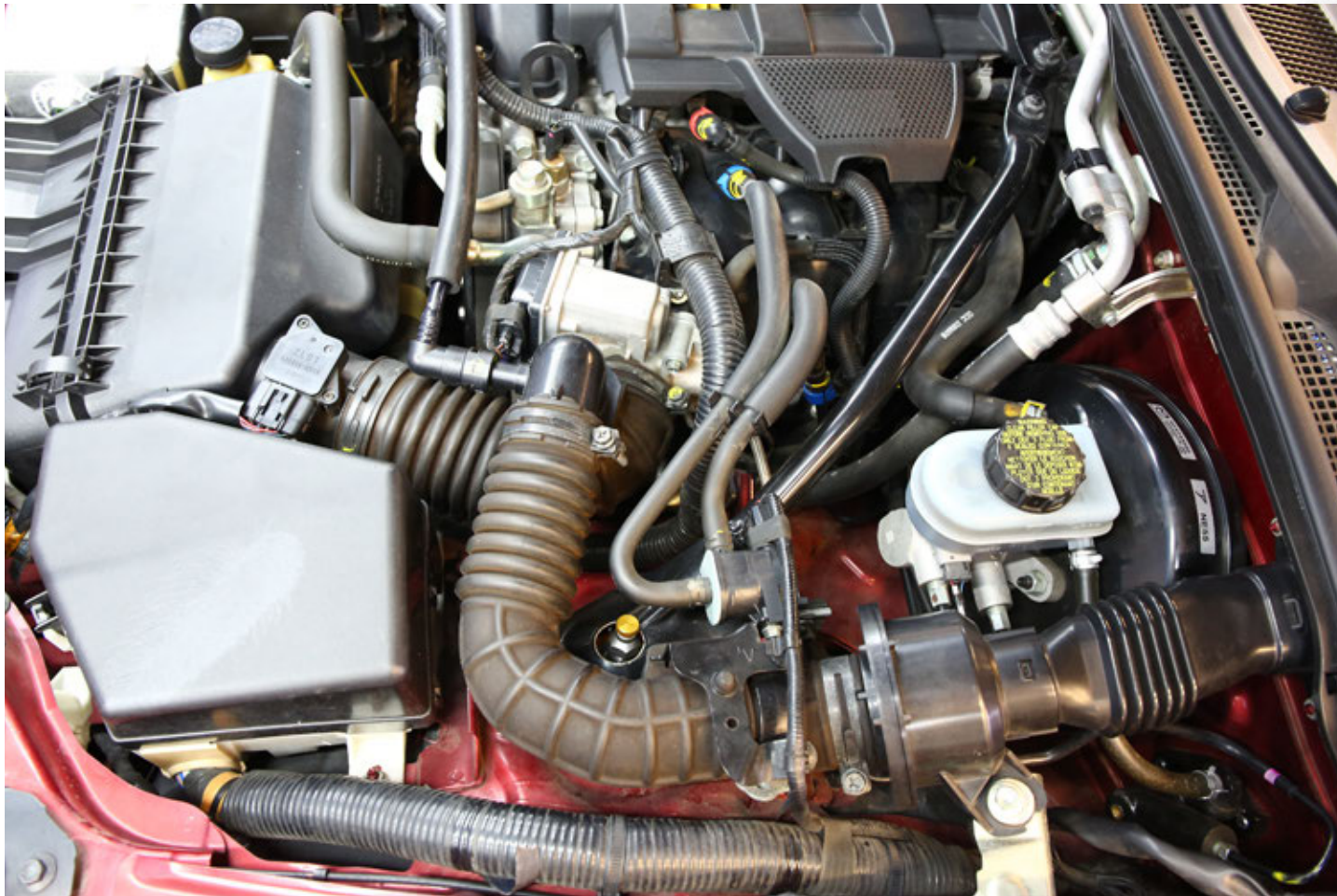
The battery will be completely removed in later steps so go ahead and disconnect both the positive and negative cables.



3 INTAKE & SOUND GENERATOR REMOVAL

» The intake sound generator is connected to the intake tube and will need to be disconnected from the firewall and chassis mount before it can be removed with the air cleaner assembly.

Disconnect the emissions sensor bracket assembly by firmly pulling upwards. Move assembly aside once free. Now disconnect the PCV line attached to the rigid sound generator elbow, loosen the throttle body and air box lid hose clamps and remove the complete intake and sound generator tube assembly as one unit.

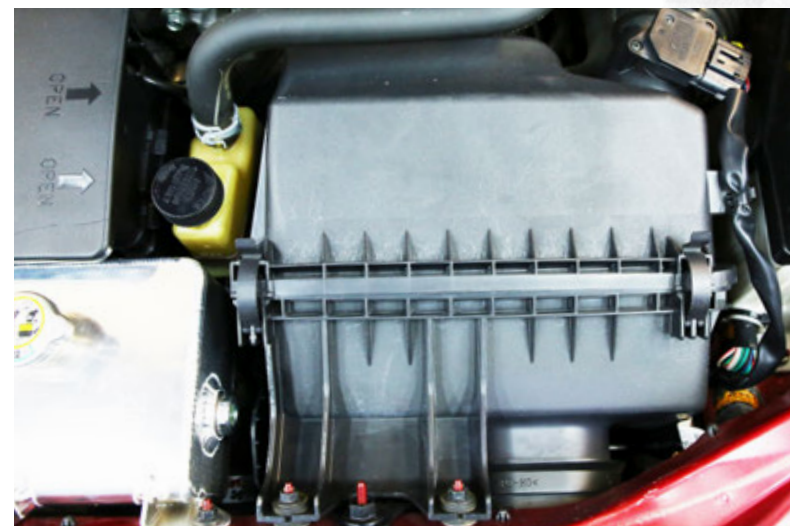
**4 AIR BOX REMOVAL**

» Disconnect the mass air flow (MAF) sensor wire harness from the MAF sensor by compressing the clip and firmly pulling away from the sensor.

Disconnect the MAF sensor wire harness from the air box lid and move the harness aside once free.

Remove the three nuts holding the air box assembly to the front core support. Firmly push the air box assembly towards the engine to clear the two mounting studs and firmly pull up on the air box to remove from engine compartment.

NOTE: The air box assembly is secured by a rubber grommet on the underside and may require some effort to pop out. Removal of air box lid may also help.

**5 ENGINE CONTROL UNIT REMOVAL**

» Disconnect the two engine control unit (ECU) harness plugs by pulling the white levers back. The gray plugs will move out of the ECU as you move the levers.

Remove the bolt holding the ground to the ECU cover and move the ground aside.

Pry open the radiator hose retaining clamp and pull the radiator hose out.

Remove the four ECU mounting nuts, lift the ECU cover, and remove the ECU.

**6 REMOVE ECU LID**

» Lift the ECU lid as high as possible and using a pair of pliers, pinch the two wire harness retaining clip prongs from the underside, on each clip while gently pulling away.

NOTE: The wire harness clips will not be reused in any later steps so you can cut the band on these clips if you so please.

Remove the two bolts holding the ECU mounting tray to the chassis. Remove the ECU mounting tray and plastic shroud as an assembly.

**7 OVERVIEW**

» You've just removed the intake sound generator, intake tube, air box assembly, ECU, ECU mounting tray and plastic shroud.



8 BUMPER & SPLASH GUARD REMOVAL

» This step is going to require a jack, jack stands, and a factory service manual.

With the vehicle on a flat and level surface, jack the vehicle up high enough you can comfortably get underneath. Once the vehicle is high enough, set it down on properly rated jack stands.

Bumper removal can involve upwards of 80 screws and clips. Refer to a factory service manual so you don't remove things unnecessarily.



9 DRAIN COOLANT

» Remove the radiator cap from the coolant reservoir.

Locate the radiator drain; it's on the bottom drivers-side of the radiator, you will find the radiator's drain plug is plastic with a Phillips head.

Place a large drain pan or bucket under the drain and remove the plug.

NOTE: Inspect the drain plug gasket/ o-ring for cracks or damage and replace as necessary. Reinstall the drain plug once the cooling system has completely drained.



10 AIR BOX INLET REMOVAL

» Remove the factory air box inlet tube by removing the single M6 bolt and two plastic push-clips.



11 COOLANT TANK REMOVAL

» This vehicle has an aftermarket coolant reservoir but the removal process should essentially be the same for OEM.

Remove the two small coolant lines by pinching the small spring clamps with a pair of pliers and move the clamp up the hose about an inch. Twist the lines while firmly pulling away from the reservoir to remove.

Remove the reservoir by removing the three M6 nuts that hold it to the core support.

With the reservoir now loose, flip it over or on its side and remove the large coolant line by pinching the large spring clamp with a pair of pliers, move the clamp up the hose about an inch, and once again twist the line while firmly pulling away from the reservoir.



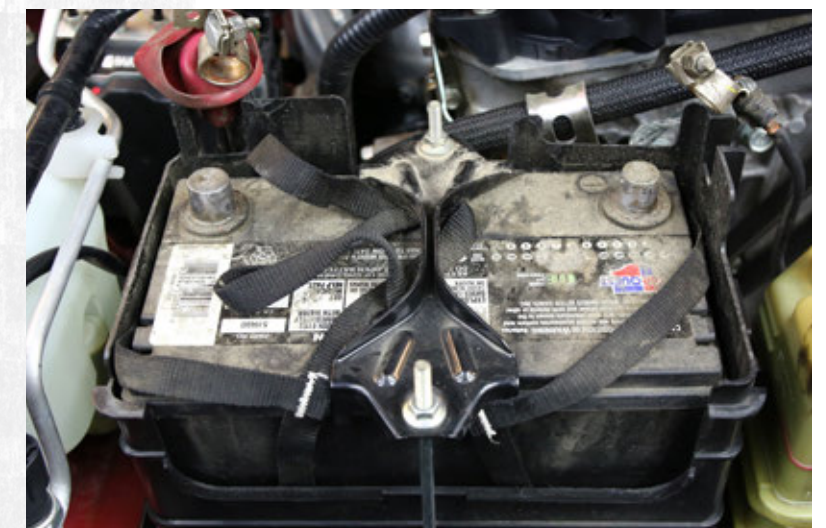
12 BATTERY REMOVAL

» Remove the battery by loosening the two M6 nuts approximately half the distance to the end of the j-bolt's thread.

Once the j-bolts are loose, simply rotate each j-bolt until they are free from the slot, in the battery tray base, that they are hooked into.

Lift battery out of the tray and set aside.

NOTE: If your vehicle came with DSC, please be aware that you will need to perform the "Steering Angle Sensor Initialization Procedure" once you re-connect the battery.



13 BATTERY TRAY REMOVAL

» Please refer to the factory service manual for this step.

The sides of the battery tray snap into the base, removal requires that you push outwards in a few locations, while firmly pulling upwards.

NOTE: We recommend referring the factory service manual for help due to the possibility of cracking the cover.

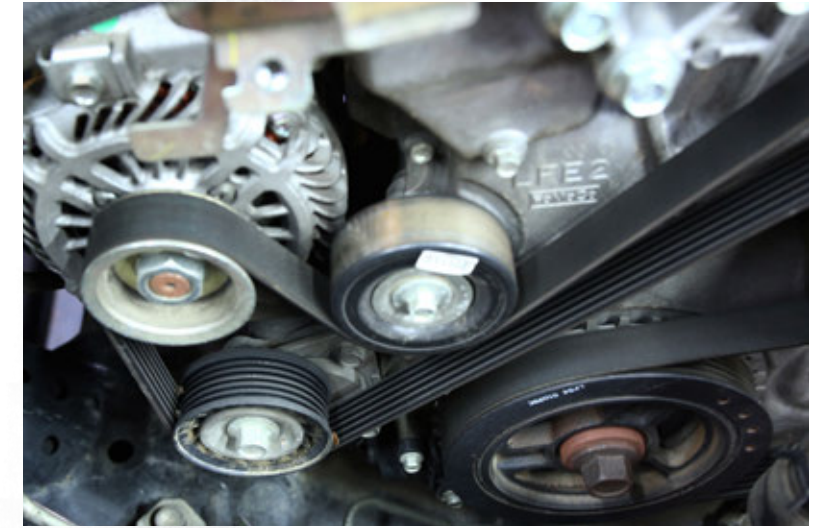
Once the cover has been removed, a hidden M6 bolt will be exposed, remove the four bolts and the base can be tilted so you can disconnect the harness from the backside.



16 BELT REMOVAL

» Remove the accessory drive belt by using a 12 pt. socket and a long handle breaker bar.

Use the breaker bar and socket to swing the tensioner counter clock-wise. Hold the tensioner in position until you have slipped the belt off one of the pulleys.



14 P/S RESERVOIR RELOCATION

» Most of the supercharger installation is going to take place near the power steering reservoirs original location.

Temporarily relocate the power steering reservoir to any one of the free M6 threads found on the left side of the cross-member.



17 IDLER PULLEY REMOVAL

» Remove the idler pulley assembly.



15 LOOSEN WATER PUMP PULLEY

» We will be removing the accessory drive belt in the next step so loosening the three water pump pulley bolts now, while there is belt friction, will make the job a little easier.

Do not remove the bolts!

NOTE: If you are using an electric or air powered impact, you can skip this step.



18 IDLER PULLEY EXTENSION

» Locate the static idler pulley extension bracket, pulley, and hardware.



19 BELT REMOVAL

» Assemble the OEM idler pulley and idler pulley extension bracket.

Torque to 20 lb.ft.



22 RADIATOR HOSE INSTALL

» Install the Kraftwerks silicone radiator hose in the reverse order of the two previous steps.

NOTE: Do not tighten either worm clamp until the desired fit has been achieved.

Rotate the hose so that it does not make contact with any sharp edges in the engine bay.

Once the hose is in position be sure to install the new hose into the clamp located under the bulkhead

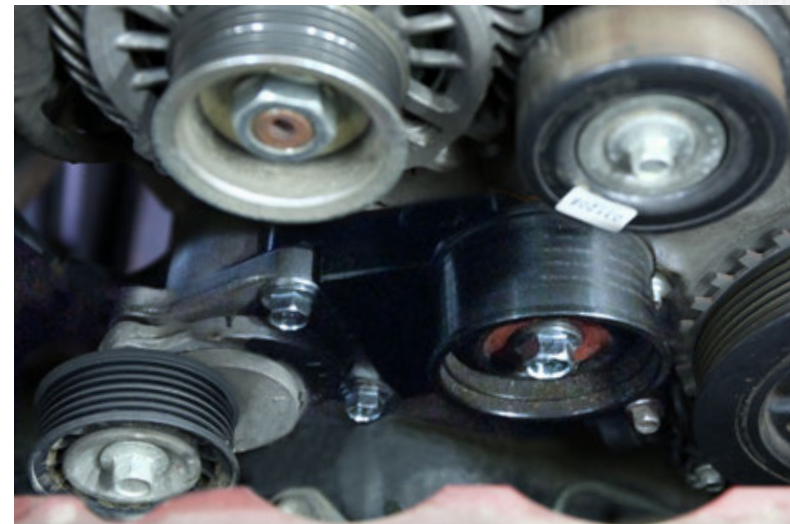


20 IDLER PULLEY REMOVAL

» Install the idler pulley assembly in the original location of the OEM idler pulley.

Torque to 20 lb.ft.

NOTE: The Kraftwerks pulley will install in the upper bolt hole.



23 S/C DRIVE PULLEY

» Locate the Kraftwerks water pump pulley, supercharger drive mandrel, supercharger drive pulley, and hardware.



21 IDLER PULLEY EXTENSION

» Remove the upper radiator hose by pinching the large spring clamps with a pair of pliers, moving the clamps up the hose about two inches, and releasing.

The radiator hose may be stuck to the radiator, use a pair of pliers to twist the radiator hose while firmly pulling away from the radiator.

Remove the clamp under the bulkhead to free the radiator hose from the chassis.



24 S/C DRIVE PULLEY ASSEMBLY

» Disassemble the Kraftwerks water pump pulley, supercharger drive mandrel, supercharger drive pulley, and hardware as shown.

Apply a small amount of thread locker to the three bolts.



25 WATER PUMP PULLEY REMOVAL

» Remove the OEM water pump bolts and pulley



26 S/C DRIVE ASSEMBLY INSTALL

» Install the Kraftwerks supercharger drive mandrel, water pump pulley, and supercharger drive pulley by hand using the pre-prepped hardware with thread locker.



29 ECU BRACKET

» Locate the Kraftwerks ECU mounting bracket and the two OEM M6 ECU mounting tray bolts.



30 ECU BRACKET INSTALL LOCATION

» Remove the two M6 nuts holding the fuse box to the frame.

27 ACCESSORY BELT INSTALL

» Install the Kraftwerks accessory drive belt as shown, in the reverse order of step 16.

NOTE: A second set of hands would be very helpful in this step as the belt is new and fits very snug.

If a second set of hands is not an option... route the belt so that you finish by sliding the belt under the tensioner pulley as it has no lip.



28 S/C DRIVE ASSEMBLY TORQUE

» With the Kraftwerks accessory drive belt installed and the breaker bar still on the tensioner, swing the breaker bar clockwise to pre-load the accessory belt while you torque the drive assembly bolts.

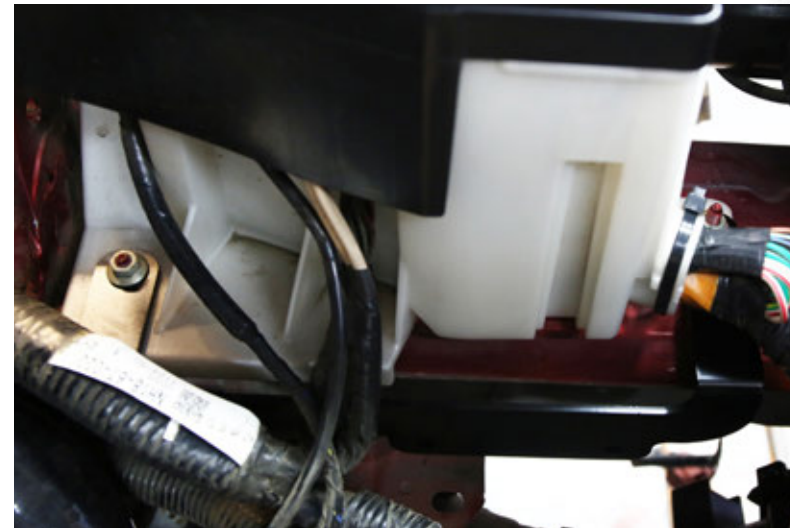
Torque to 22 lb.ft.



31 ECU BRACKET INSTALL

» Install the Kraftwerks ECU bracket over the fuse box base, with the long leg of the bracket at the front, using the two M6 nuts you removed in the previous step.

Torque to 7 lb.ft.



32 WIRE HARNESS CLAMP

» Cut and remove the wire harness clamp just behind the fuse box assembly.



33 ECU INSTALL

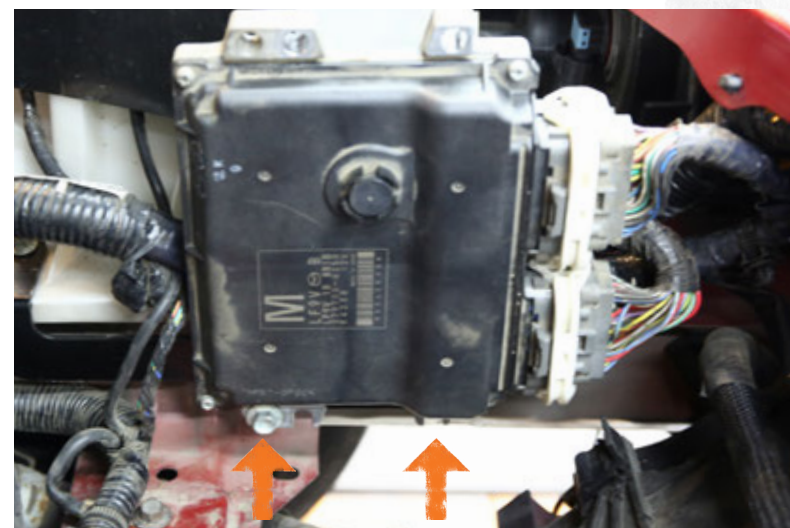
» Plug both of the wire harness ECU plugs into the ECU.

Tuck the wire harness between the ECU and the fuse box assembly.

Using one of the two OEM M6 ECU mounting tray bolts, install the ECU on to the Kraftwerks ECU bracket.

NOTE: You may need to unplug the wire harness from the ECU a few times to rotate the bulky harness so that it sits as relaxed as possible.

Once the desired fitment has been achieved, install the second OEM M6 ECU mounting tray bolt and tighten.



34 HEAD UNIT & PULLEY

» Locate the supercharger head unit, cog pulley, and mounting bolts.



36 PULLEY INSTALL

» Install the cog pulley using the supplied M6 socket head bolts with thread locker from the previous step, by hand. Do not attempt to tighten.

!!!DO NOT SPIN THE SUPERCHARGER COUNTER CLOCKWISE!!!

NOTE: Spinning the supercharger in the reverse direction of operation **WILL VOID YOUR WARRANTY.**



35 PULLEY HARDWARE PREP

» Prep each of the supplied M6 socket head cog pulley bolts by applying a fair amount of thread locker as shown.



37 BANJO BOLT ASSEMBLY

» Locate the banjo bolts, banjo fitting, and copper crush washers.

Assemble by installing one copper crush washer on each banjo bolt as shown.



38 BANJO BOLT ASSEMBLY

» Now place a banjo fitting on top of the copper crush washer and finish by installing the remaining copper crush washer on top of each banjo fitting as shown.



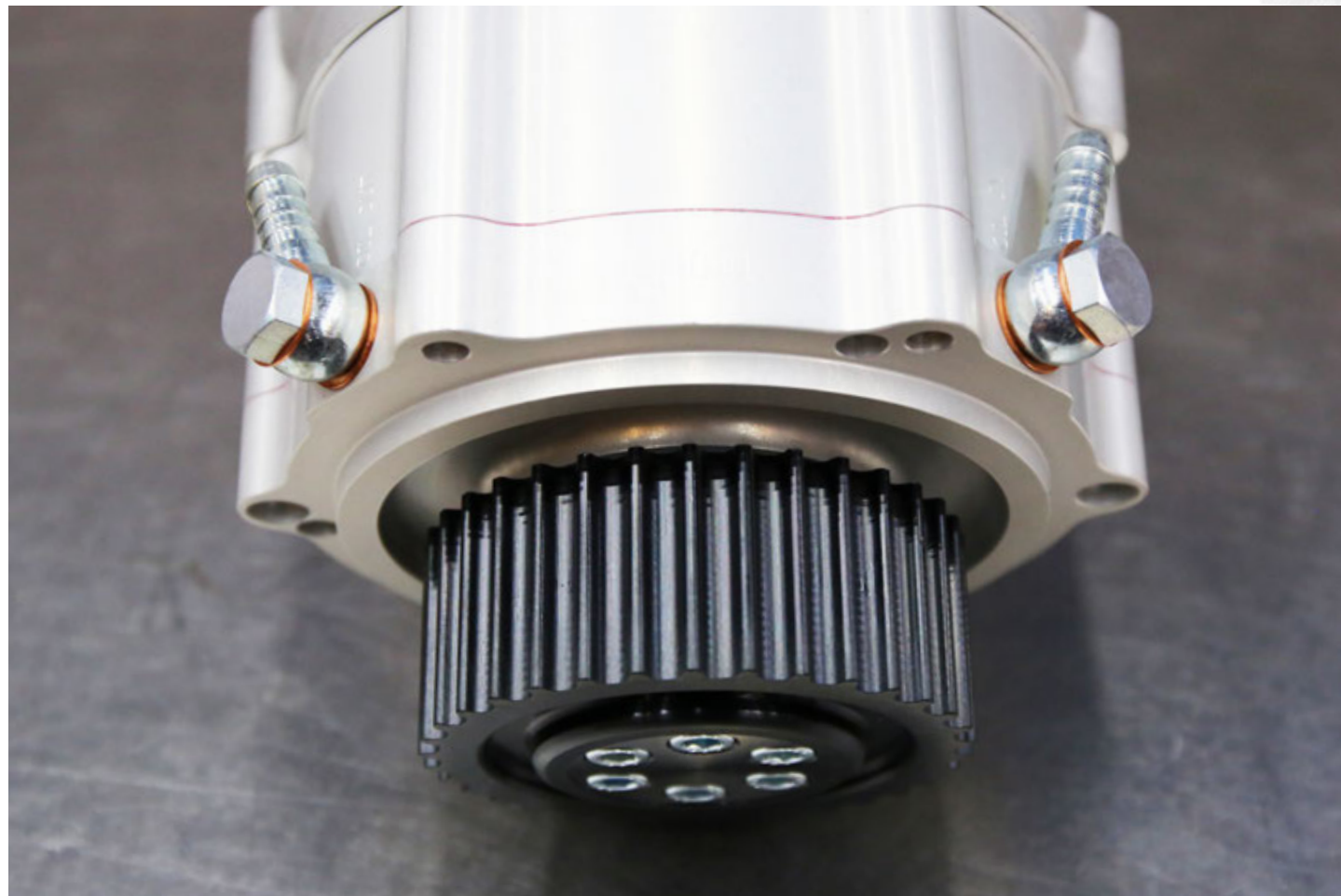
40 S/C MAIN BRACKET

» Locate the main supercharger bracket and supercharger belt tensioner pulley.



39 BANJO BOLT INSTALL

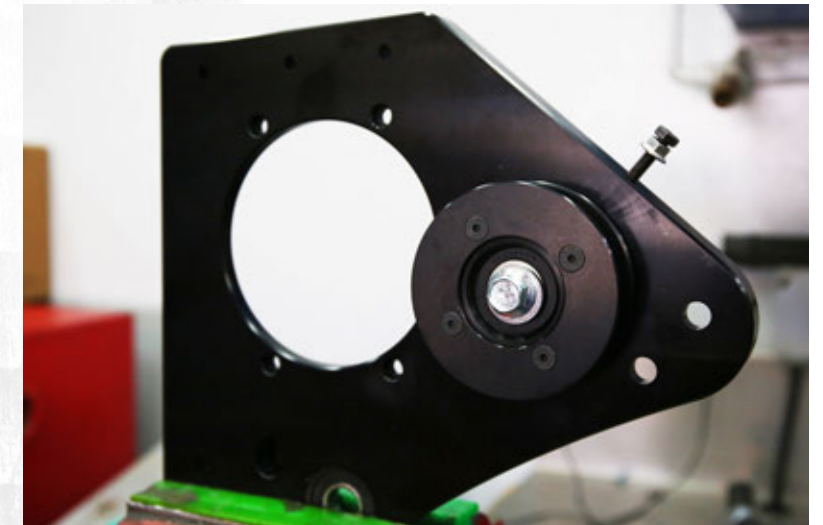
» Install each of the banjo fitting assemblies onto the supercharger head unit as shown. Make sure they are snug but not tight.



41 S/C MAIN BRACKET ASSEMBLY

» Installing the head unit into the main bracket is best done with two hands so if you have a vice, use it... it makes the next few steps a one person operation.

We highly recommend the use of padded jaws so you don't compromise the finish.



40 HEAD UNIT MOUNTING BOLTS

» Prep each of the supplied M6 socket head head-unit mounting bolts by applying a fair amount of thread locker as shown.

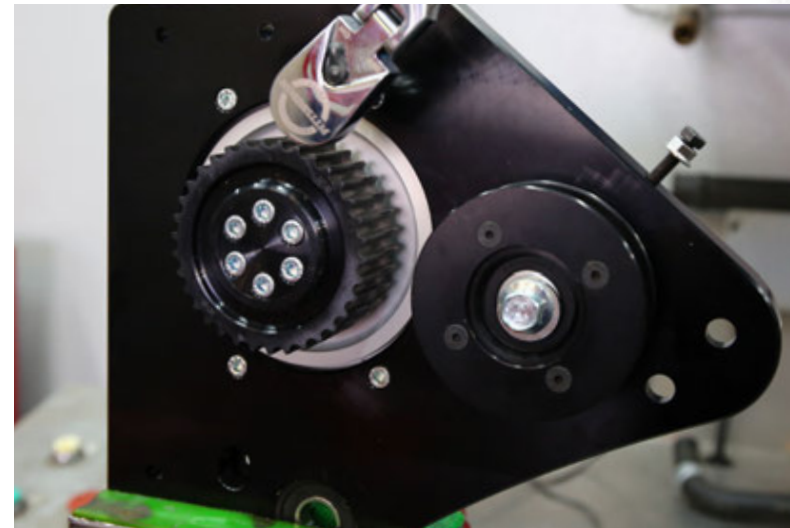


42 HEAD-UNIT INSTALL

» Install the head-unit into the main bracket using the supplied M6 socket head bolts with thread locker, from the previous step, by hand.

Do not tighten or torque until you have hand installed all four bolts.

Torque to 7 lb.ft.

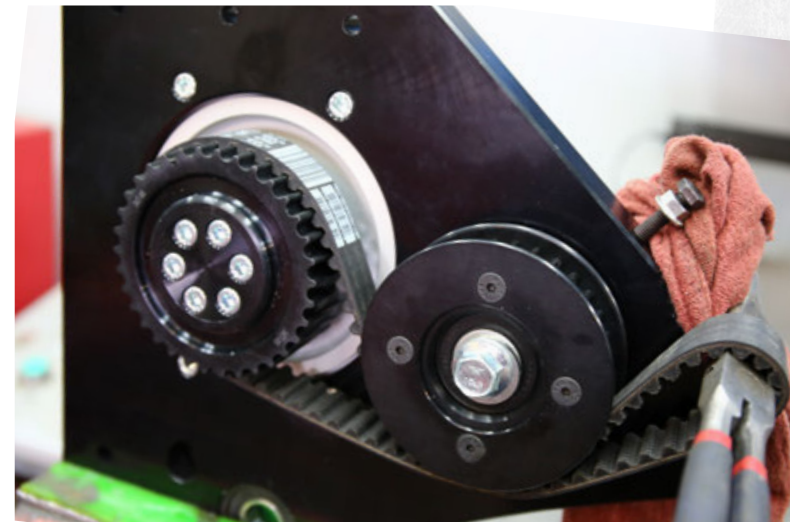


43 S/C PULLEY HOLDER

» Holding the supercharger from spinning while you torque the six M6 socket head bolts can be a bit difficult.

We have successfully used the supercharger drive belt as a strap wrench if routed like shown.

Place a rag on the bracket so you don't compromise the finish as you use a tool to create leverage.

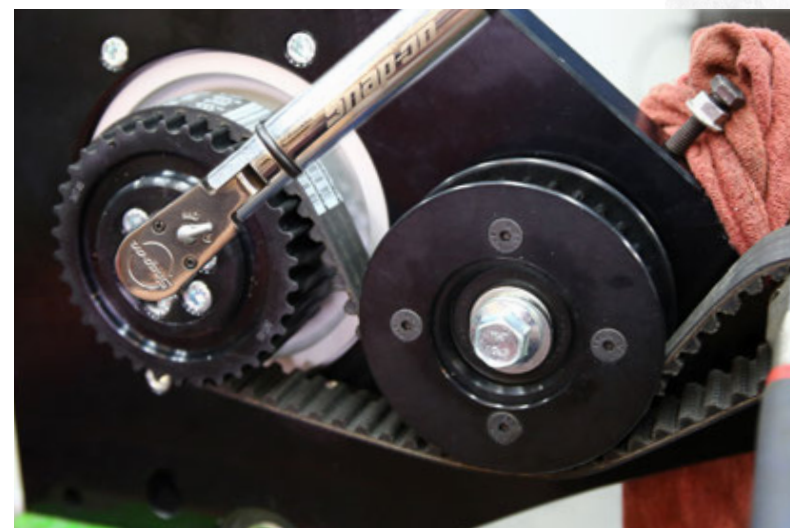


44 S/C PULLEY TORQUE

» Torque the six cog pulley bolts in a criss-cross pattern to 7 lb.ft.

!!!DO NOT SPIN THE SUPERCHARGER COUNTER CLOCK-WISE!!!

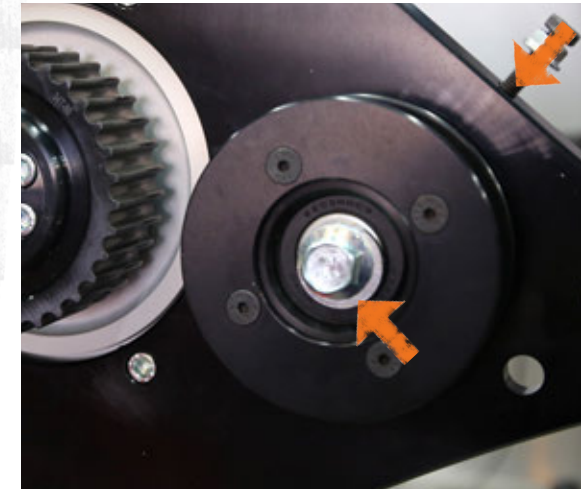
NOTE: Spinning the supercharger in the reverse direction of operation **WILL VOID YOUR WARRANTY.**



45 S/C BELT TENSIONER

» Now that the supercharger pulley is tight, loosen the center bolt on the supercharger belt tensioner pulley.

Adjust the nut and bolt so that the pulley is at its max loose adjustment.



47 S/C STAND-OFF - SHORT

» Locate the short supercharger bracket stand-off and two M10 x 130mm socket head bolts.

Prep each of the bolts by applying a fair amount of thread locker as shown.



46 PULLEY HARDWARE PREP

» Remove two of the three front engine cover bolts.



48 S/C MAIN BRACKET INSTALL - I

» Install the drive belt as shown.

Line up the main bracket bearing with the water pump/supercharger pulley drive mandrel shaft; all while keeping the belt wrapped around all three pulleys.



49 S/C MAIN BRACKET INSTALL - II

» Gently push the supercharger bracket onto the shaft.

Do NOT Force It On!

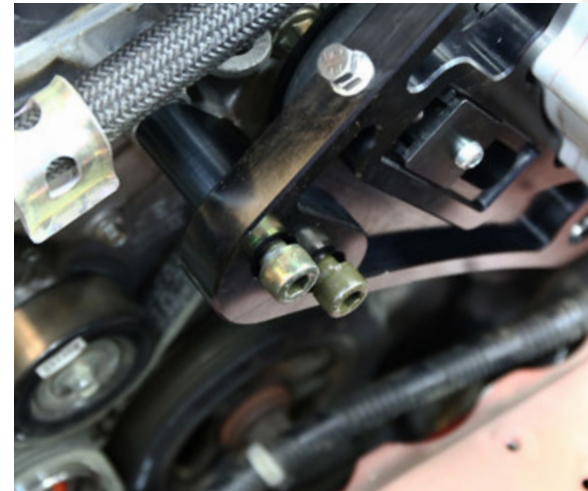
Walk it on by moving it side to side while applying little to no pressure; use some WD40 as an aid if necessary.



50 SHORT STAND-OFF INSTALL

» Rotate the main bracket until the two counter sunk bolt holes line up with the two bolt holes in the front engine cover.

Slide the short stand-off in between the main bracket and engine and loosely install the two M10 bolts.



53 TALL STAND-OFF INSTALL - II

» Line up the two bolt holes in the tall supercharger stand-off with the two counter sunk bolt holes in the main bracket.

Loosely install the two M8 bolts.



54 P/S PRESSURE LINE

» Loosen the high-pressure power steering line banjo bolt.



51 S/C STAND-OFF - TALL

» Locate the tall supercharger bracket stand-off and three M8 x 30mm socket head bolts.

Prep each of the bolts by applying a fair amount of thread locker as shown.



52 TALL STAND-OFF INSTALL - I

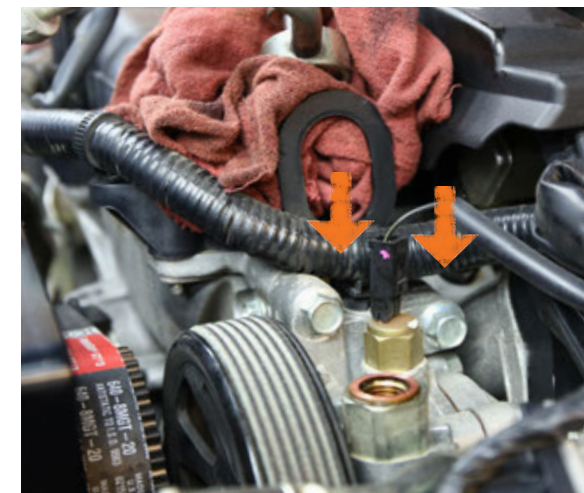
» Install the tall supercharger bracket stand-off by loosely attaching the end with one bolt hole to the engine as shown.



55 P/S PRESSURE LINE REMOVAL

» With a rag ready; completely loosen the high-pressure power steering line banjo bolt and move the line out of the way. Save the copper crush washer as it will be reused.

Remove the two upper power steering pump bolts.



56 S/C BRACKET BRACE

» Locate the formed supercharger bracket brace, two M8 x 40mm flanged hex head and three M6 x 30mm socket head bolts.



57 S/C BRACE PREP

» Remove the three M6 x 30mm socket head bolts and set aside.
Prep each of the M8 x 40mm bolts by applying a fair amount of thread locker as shown.



58 S/C BRACKET BRACE INSTALL

» Start by lowering the high-pressure power steering line back into its original position.

Install the formed supercharger bracket brace by lining up and loosely installing the two M8 x 40mm bolts in place of the two upper power steering pump bolts removed in step 54.

Line up the three counter sunk bolt holes with the threads in the brace. Start each of the M6 socket head bolts by hand, adjust the position of the bracket for each M6 bolt as necessary.



59 S/C BRACKET TORQUE

» Now that you have ALL of the supercharger mounting bracket bolts loosely installed, its time to snug each of the bolts from the past few steps, alternating each position as the main bracket gets pulled towards the engine.

Once all bolts have been snugged into place by hand, go back and torque each bolt to the final specs listed below.

M10 to 32 lb. ft.

M8 to 20 lb. ft.

M6 to 7 lb. ft.



60 S/C BELT TENSION - I

» The belt and tensioner pulley should still be loose from install but if it is not... loosen it now.

The flange nut is responsible for pulling the tensioner pulley up/ tightening the belt. Do not turn the bolt and expect the tension to change.

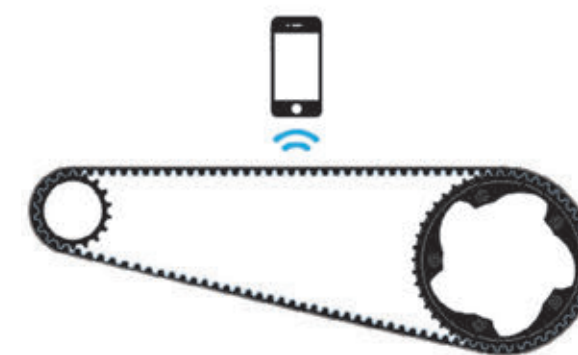


62 S/C BELT TENSION - III

» The belt tension, or vibrating frequency, should be measured near the mid-point of the longest free belt span between drive pulleys.

Holding your smart phone near the belt, with little to no background noise, flick the belt so that it vibrates.

The target is 175hz or 4mm of deflection.



61 S/C BELT TENSION - II

» Download the Gates Carbon Drive Mobile App to your smart phone.

CHECKING BELT TENSION: GATES CARBON DRIVE MOBILE APP [FOR IPHONE & ANDROID]

Gates Carbon Drive Mobile App measures belt tension from the natural frequency (Hz) of the belt span. Using the microphone, the App converts the sound into the primary frequency of the belt.

From the App, click the Tension icon and then click Measure. Hold the device microphone (be sure microphone is 'on') facing the belt. Pluck the belt so that it vibrates similar to a guitar string. Rotate the crank 1/4 turn and repeat the frequency measurement. Compare your belt's frequency to the chart pg 44 to review any necessary tension adjustments. The Gates Carbon Drive Mobile App works best in a quiet environment.

- Find key parameters of your drive such as speed ratio and center distance
- Change belt length or sprocket sizes to better suit your riding needs
- Compare two belt drive bikes to each other
- Check out what sprocket sizes, mounting options, and belt lengths are available in our catalog
- Check tension with our frequency measuring tool (SPof Touch needs an external microphone!)

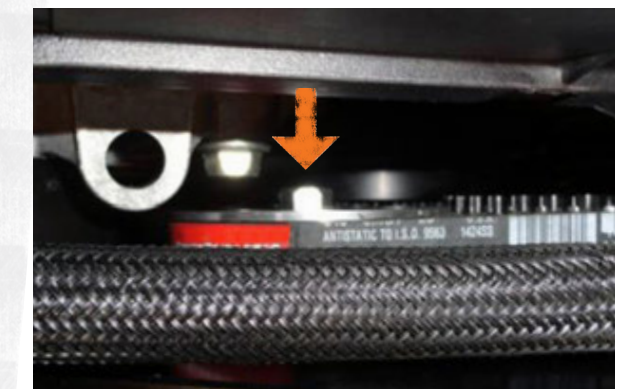


63 S/C BELT TENSION - IV

» Make adjustments by increasing or decreasing belt tension and retest as necessary.

Once the proper belt tension has been achieved, tighten the supercharger belt tensioner pulley using an open-end wrench.

See step 44 for a better look at the bolt being tightened.



64 P/S PRESSURE LINE INSTALL

» Using the original copper crush washer that you collected upon removal, reinstall the high-pressure power steering line and banjo bolt.

Torque to 22 lb. ft.



65 P/S RESERVOIR RELOCATION

» Now that the supercharger assembly has been installed, the power steering reservoir can now be moved back to its original position.

Torque to 7 lb. ft.



66 BATTERY TRAY INSTALL

» Reinstall the molded batter tray base.

Torque to 7 lb. ft.



67 CHARGE HARNESS INSTALL

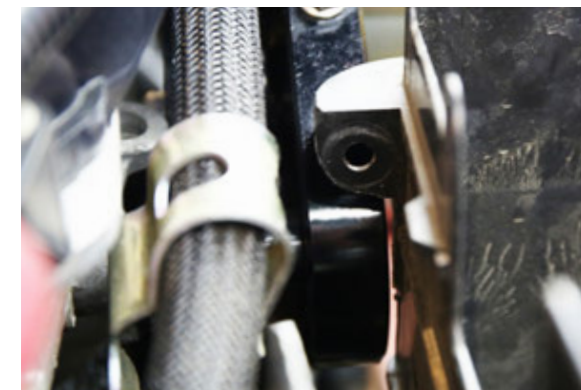
» Clip the charge harness back into the batter tray base.



69 BATTERY COVER CLEARANCE

» The battery cover mod should provide you with a fit similar to this.

If you take your time, trimming only the material needed, you can retain the mounting point for your ground cable.



68 BATTERY COVER MOD

» The battery is next but before you force the cover into place, you will notice that a tab on the backside makes contact with the supercharger bracket assembly.

Modify the cover as shown.



70 BATTERY COVER INSTALL

» Install the battery cover by lining up all the clips with the base and firmly pushing it into position.

Once installed, clip the battery cables back into position.



71 TRAY REMOVAL

» Remove the plastic tray from between the bumper beam and core support.



72 I/C BRACKETS

» Locate the intercooler mounting brackets, bolts, nut and spacers.



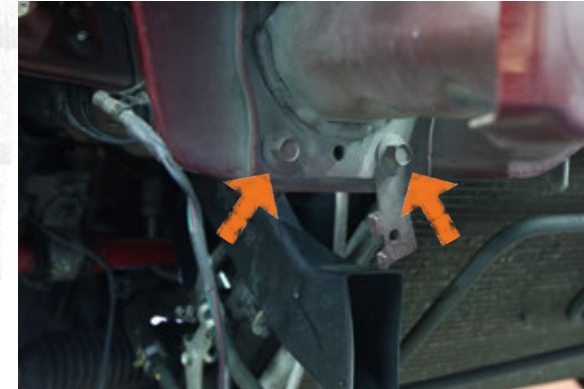
73 I/C BRACKET PREP

» Remove the horn and two lower bumper beam mounting bolts.



78 I/C BRACKET PREP

» Remove the two lower bumper beam mounting bolts.



79 I/C BRACKET INSTALL

» Install the passenger-side intercooler mounting bracket using the supplied hardware and spacers.

The supplied spacers install between the intercooler mounting bracket and frame.



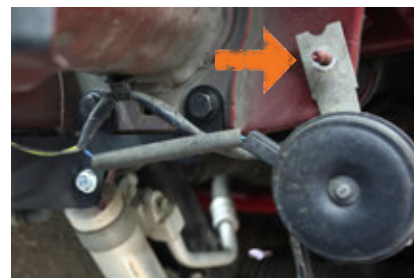
74 I/C BRACKET INSTALL

» Install the driver-side intercooler mounting bracket using the supplied hardware. No spacers on this side.



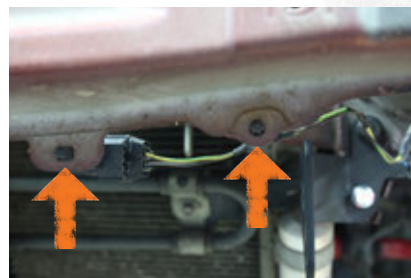
75 HORN RELOCATION

» Relocate the horn to this unused mounting stud.



76 SENSOR REMOVAL

» Disconnect the ambient air temp sensor by pinching both clips with a pair of pliers.



80 OIL COOLER ASSEMBLY

» Locate the oil cooler, oil cooler mounting brackets, and mounting hardware.

The oil cooler mounting brackets are installed onto the oil cooler from the factory.



81 OIL COOLER INSTALL

» Install the oil cooler assembly as shown using the Nyloc nuts on the backside.

Using a wrench to hold the Nyloc nuts on the backside, tighten from the front side.

NOTE: It may be easier to install the 63" oil line on the passenger-side and the 43" oil line on the driver-side prior to installing the oil cooler.



77 HORN & SENSOR RELOCATION

» Clip the ambient air temp sensor into the unused hole adjacent to the bumper beam mount.

Flip the horn as shown and tighten into position using the supplied M6 nut.



82 I/C ASSEMBLY

» Locate the intercooler assembly and mounting hardware.



83 I/C INSTALL

» Hang one end of the intercooler by loosely installing the hardware on the passenger-side.



84 I/C INSTALL

» Hang the opposite end of the intercooler by loosely installing the hardware on the driver-side.



89 LONG CHARGE PIPE

» Locate the passenger-side intercooler charge-pipe, coupler, and clamps.



90 CHARGE PIPE INSTALL

» Install the coupler onto the charge-pipe. Install the assembly by routing the pipe through the core support and then attaching it to the intercooler.



91 PIPE CLOCKING - I

» The charge-pipes should look something like this once installed.



85 I/C CLEARANCE

» The intercooler should be pretty level even though it is loose. Make sure that the core is not making contact with any sheet metal from the bumper beam.



86 SHORT CHARGE PIPE

» Locate the driver-side intercooler charge-pipe, reducer coupler, and clamps.



87 CHARGE PIPE INSTALL

» Install the coupler onto the charge-pipe. Install the assembly by routing the pipe through the core support and then attaching it to the intercooler.



92 PIPE CLOCKING - II

» The charge-pipes should look something like this once installed.



93 S/C COUPLER

» Locate the molded supercharger coupler and clamps.



94 COUPLER INSTALL

» Install the coupler onto the charge-pipe and then install the small end onto the supercharger outlet.

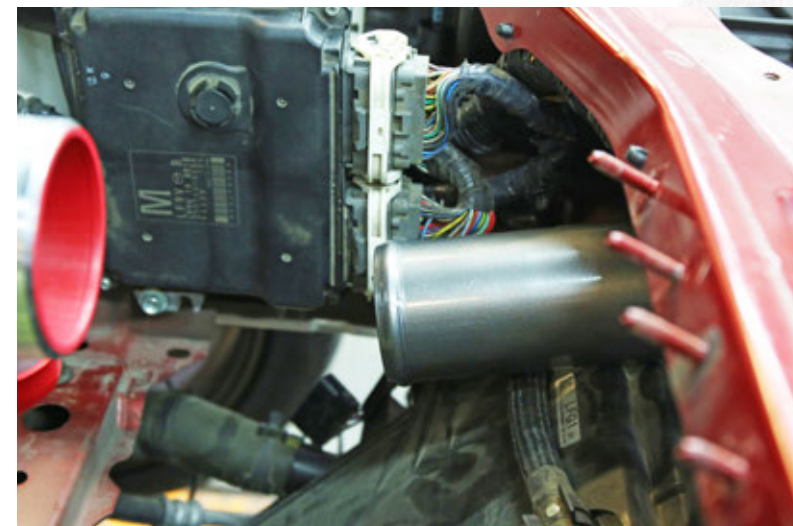


88 PIPE CLOCKING

» The charge-pipe should look something like this once installed but will need to be adjusted a bit to point down towards the bulkhead.

We recommend installing one clamp on the intercooler side of the coupler to keep the coupler from moving while making adjustments.

NOTE: Tighten one clamp on the coupler for each new pipe added so it does not move out of position. We do not recommend tightening both hose clamps at each connection until the very end, as there will be a fair amount of adjusting to get all the pipes to sit properly.



95 COUPLER CLOCKING

» The molded supercharger coupler should look like this once installed.

This coupler and charge pipe require very little to no adjustment and all connections can be tightened at this time.



96 MAF CHARGE PIPE KIT

» Locate the MAF charge-pipe, reducer coupler, elbow coupler, and hose clamps.



98 MAF CHARGE PIPE INSTALL

» Install the coupler onto the straight-end of the MAF charge pipe.

Install the bent-end into the elbow.

Rotate the elbow and MAF pipe so that the pipe points down towards the bulkhead as much as possible. The pipe pipe should be no more than flat to allow proper clearance of the supercharger inlet assembly.



97 ELBOW INSTALL

» Install the elbow in the orientation shown.

NOTE: This coupler and the MAF charge pipe being installed in the next step requires lots of tweaking! Patience is key to getting this combo to sit right.



99 MAF SENSOR INSTALL

» Remove the MAF sensor from the factory intake tube and transfer it over to the MAF charge pipe using the supplied hardware.

Plug in the MAF harness.

NOTE: The MAF sensor should sit relatively flat but may point upwards just slightly. If it sits at more than a 15 degree angle... you will need to tweak the clocking.



100 OIL RESERVOIR

» Locate the oil reservoir, reservoir mounting bracket, banjo bolts, and copper crush washers.



101 BANJO BOLT ASSEMBLY

» Assemble by installing one copper crush washer on each banjo bolt, installing the banjo fitting, and finally the remaining copper crush washers on top of each banjo fitting as shown.



102 BANJO BOLT INSTALL

» Install each of the banjo fitting assemblies onto each end of the oil reservoir.

Do NOT tighten.



103 RESERVOIR LOCATION

» The oil reservoir will be installed into this factory oval cut-out on the passenger-side inner fender.



104 RESERVOIR INSTALL

» Remove the M6 bolt from the mounting bracket, insert the bracket into the oval cut-out, lay bracket down, and tighten the M6 bolt as shown.



105 OIL COOLER OUT

» This oil line is the "Out" and gets routed to the top of the oil reservoir.



110 MAGNETIC OIL FILTER

» Locate magnetic oil filter, 5" section of hose, 55" section of hose, and springs clamps.



111 LINE ROUTING - III

» It will be easiest to remove the banjo fitting to install the short section of hose and then reinstalling the banjo fitting with hose once fitted.



106 LINE ROUTING - I

» Feed the 63" oil line through the this hole in the core support as shown.



107 LINE ROUTING - II

» Once the oil line is through the core support, you can route the line along the passenger-side inner fender, using supplied zip-ties to hold it in place.



108 RESERVOIR CLOCKING

» Loosen the reservoir mounting bracket and rotate the reservoir as shown. Tighten reservoir mounting bracket once in position.



112 MAGNETIC OIL FILTER INSTALL

» Install the short 5" section of hose onto the big end of the magnetic oil filter and the longer 55" section of hose on the small end.

Reinstall the banjo bolt on the bottom of the oil reservoir and tighten to this position.

Zip tie the magnetic oil filter to the brake lines as shown.



113 LINE ROUTING - IV

» Finish routing the oil line from the magnetic oil filter in the previous step however you best see fit.

We routed the line through the ABS area, around the battery cover, under the coolant reservoir area, and up around the power steering reservoir.

Attach the end of this line to the "OIL IN" banjo on the supercharger but do NOT tighten.



109 RESERVOIR HOSE CONNECTION

» The 63" oil line we supplied is long enough to route multiple ways.

Once you have chosen your specific routing, mark the oil line where it meets the banjo fitting, cut, install the hose using the supplied spring clamps, and tighten banjo bolt.

NOTE: The spring clamps are very tight fit of the oil line so we recommend using a little bit of WD40 on the outside of the hose to help slide the spring clamp on.

Once on... push the hose onto the fitting while the clamp is pinched. It is harder to install the hose over the fitting and then trying to move the clamp.



114 LINE ROUTING - IV

» Route the remaining oil line from the driver-side of the oil cooler through the same hole in the core support that the charge pipes pass through.

Attach the line to the "OIL OUT" banjo on the supercharger and tighten.



116 BRAKE BOOSTER LINE

» Remove the OEM brake booster line from the vehicle.

Cut a 1.50" section of hose out of the brake booster line as shown.

NOTE: Don't cut the booster line on the wrong side of the hidden check-valve.



115 VACUUM T ASSEMBLY

» Locate the vacuum line, vacuum T, and zip-ties.

NOTE: The T and vacuum line may be pre assembled from the factory.



117 BANJO BOLT ASSEMBLY

» Install the vacuum T into the cut brake booster line as shown. Secure the hose to the T using the supplied zip-ties.

Route the vacuum line to the supercharger the safest possible way. Be sure to avoid hot engine parts and moving accessories.



118 COOLANT TANK INSTALL

» Reinstall the coolant tank by first attaching the lower hose, then mounting the tank using the three nuts. Attach the two small hoses on top and fill the cooling system.



121 MOCK INSTALL

» Install the molded supercharger inlet coupler so you can check clearances with the front core support.



119 B.O.V. INSTALL

» Install the blow-off valve into the molded coupler as shown.

Finish routing the vacuum line from step 112 to the top of the BOV.



122 STUD REMOVAL

» Remove the molded supercharger inlet coupler and trim/ cut the stud from the core support as needed and reinstall the inlet coupler.



120 S/C INLET KIT

» Locate the molded supercharger inlet coupler, adapter, filter and clamps.



123 B.O.V. CONNECTION

» With the inlet coupler now in place, push the BOV into the inlet coupler, and tighten both BOV clamps.



124 AIR FILTER INSTALL

» Install the section of tube (adapter) into the air filter base with approximately half of the tube protruding from the filter base and tighten the hose clamp.

Insert the air filter into the molded supercharger inlet coupler, clock the filter so that it clears the supercharger housing and the ECU, and tighten the hose clamp.

Completely open the large hose clamp used to tighten the molded supercharger inlet coupler to the supercharger, slide the clamp around the coupler, close the clamp and tighten as shown.



125 SENSOR BRACKET

» Locate the small L shaped sensor bracket and two M6 mounting bolts.



126 INSTALL LOCATION

» The sensor bracket will be installed near the driver-side shock tower, using an unused M6 thread.



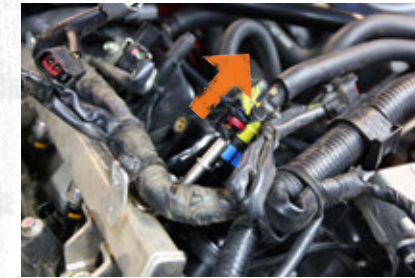
127 BRACKET INSTALL

» Install the sensor bracket onto the chassis and then install the sensor assembly to the bracket.



132 FUEL RAIL REMOVAL - V

» Once the collars have been removed, have some rags ready, and gently pull up on the connection and move aside.



133 FUEL RAIL REMOVAL - VI

» Remove the two bolts holding the fuel rail to the cylinder head and remove from the vehicle.



134 FUEL INJECTORS

» Locate the fuel injector kit.



128 FUEL RAIL REMOVAL - I

» Start by unplugging the four ignition coils and pulling the wire harness over the intake manifold.



129 FUEL RAIL REMOVAL - II

» Next, unplug the four fuel injectors and pull the wire harness over the intake manifold.



130 FUEL RAIL REMOVAL - III

» Now release the wire harness from the fuel rail by pinching the two clips holding the harness to the fuel rail.



135 INJECTOR INSTALL

» Use a small amount of WD40 on each of the top o-rings and install each injector into the fuel rail.



136 FUEL RAIL INSTALL - I

» Use a small amount of WD40 on each of the bottom o-rings and install the fuel rail with injectors.



Torque to 18 lb. ft.

137 FUEL RAIL INSTALL - II

» Install the red safety collar onto the fuel feed and then push it onto the fuel rail hard-line.



131 FUEL RAIL REMOVAL - IV

» Carefully remove the red safety collar from the fuel rails feed line.

NOTE: If you break this collar... the fuel line will not stay connected to the fuel rail once it is reinstalled.

Please use the factory shop manual if removal of this collar is not obvious to you or it is troublesome.



138 FUEL RAIL INSTALL - III

» Reinstall the the two wire harness clips back into the fuel rail.

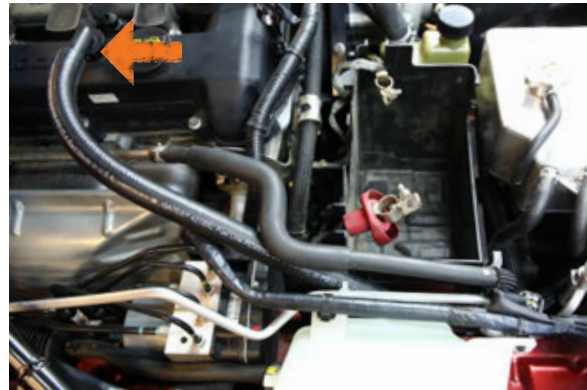
Pull the wire harness towards the fuel injectors and plug in each of the four fuel injector leads into the fuel injectors.

Plug in each of the four ignition coil leads into the ignition coils.



139 BREATHER LINE INSTALL - I

» Install the large pcv / eec rated hose onto the OEM valve cover fitting and route the opposite end of the line to the open port on the molded supercharger inlet coupler.



141 BREATHER LINE INSTALL - III

» We are not big fans of small worm clamps but if you are... feel free to use them to tighten the breather hose to the valve cover fitting. We use zip ties.



140 BREATHER LINE INSTALL - II

» Once the large pcv / eec rated hose wraps around the battery tray you will want to zip-tie the hose to something to aid in turning it under the coolant reservoir as shown.

Connect the line to the intake using the supplied elbow.



142 BREATHER LINE INSTALL - IV

» Use zip-ties to tighten the breather hose to the elbow and molded supercharger inlet coupler.



143 SEAT REMOVAL

» To gain access to the fuel pump you will need to remove both the driver-side and passenger-side seats.



146 PUMP LID REMOVAL

» We recommend removing the six Phillips head screws before disconnecting the fuel line. Smelling fuel while working is no fun!

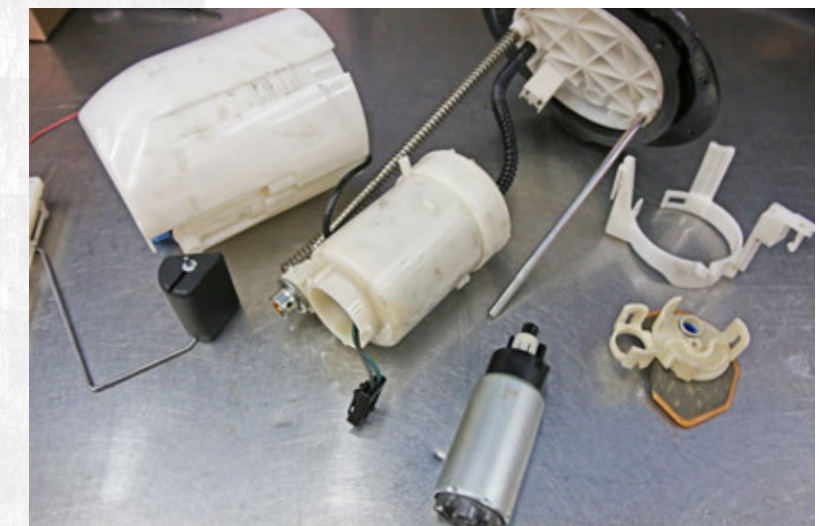


149 PUMP DISASSEMBLY

» Fuel pump disassembly is a bit tricky.

A factory service manual should be used to break the fuel pump assembly down without breaking sensitive electronics and old plastic clips.

Once the pump has been broken down, we highly recommend cleaning each component and replacing the fuel filter.



144 PANEL REMOVAL

» Now you will need to remove the interior trim panels.

We highly recommend the use of the factory service manual.



147 FEED LINE REMOVAL

» Make sure you are in a well ventilated area with no flames/ sparks within 100 feet!! While you disconnect the fuel feed line and perform the next few steps.



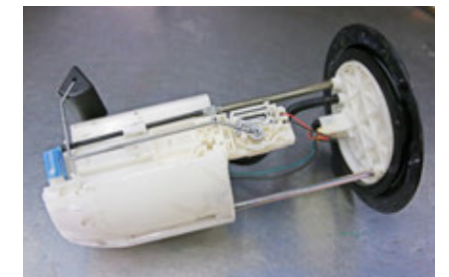
145 PUMP COVER REMOVAL

» The fuel pump assembly is located behind this access cover.



148 HANGER REMOVAL

» Remove the fuel pump assembly.



150 FUEL PUMP KIT

» Install the Grams Performance fuel pump in place of the OEM unit.

The Grams unit is a plug-n-play replacement for the Miata NC so there is no cutting or soldering required. Many of the items in the fuel pump kit are universal and will not be used. One item that should be used and easily overlooked... is the fuel pump outlet o-ring! It may be stuck in the OEM housing and needs to be fished out. Place the new o-ring on the pump and install your new Grams Performance pump.



151 PUMP LID BOLTS

» If the fuel pump lid was as difficult for you to remove as it was for us... we know you will appreciate the new hardware!

Use these to replace your old Phillips head screws as needed.



152 PUMP INSTALL

» Drop the pump assembly into the tank, attach the fuel feed line, and tighten the lid to the fuel tank using the supplied M4 socket head bolts.



154 IPANEL INSTALL

» Reinstall all the interior trim panels.

Don't rush, take your time. Break for milk & cookies.



153 PUMP COVER INSTALL

» Plug the harness into the fuel pump and reinstall the fuel pump cover.



155 SEAT INSTALL

» Reinstall the driver and passenger seats.



156 ROTREX OIL

» To ensure proper traction fluid circulation and adequate lubrication, it is important to prime the oil system before the engine is started for the first time; after the supercharger installation.



158 PRESSURIZING OIL RESERVOIR

» Carefully apply pressurized air to the reservoir fill hole.

Do not exceed 15psi.

Use a rag or a sponge as a seal between the air gun and the canister.



157 FILLING OIL RESERVOIR

» Fill the reservoir with traction fluid without exceeding the maximum mark on the dip stick.

NOTE: The oil level is measured with the thread of the dip stick cap fully engaged.



159 BLEEDING SUPERCHARGER

» When oil appears at the "OIL IN" banjo bolt, the system is primed, stop applying pressure and tighten the banjo bolt.

Now refer to step# 156 and top off the reservoir.



160 OIL RESERVOIR

» Reinstall the power steering return line and top off with power steering fluid as needed.

NOTE: Attaching the power steering return line to the reservoir first and then slowly attaching the opposite end to the pump may help to minimize or eliminate power steering fluid spillage.



161 BANJO BOLT ASSEMBLY

» Reinstall the battery, the battery hold down, and reconnect the positive and negative terminals.

Reinstall the battery cover.



162 BANJO BOLT INSTALL

» Reinstall the front bumper, fender liners, and under-tray.



LIMITED WARRANTY

163 OIL RESERVOIR

» The hood prop rod is not going to lay down as it once did and will require some adjusting.



164 BANJO BOLT ASSEMBLY

» Most if not all of the adjusting will be done in this section.

The prop rod is springy and pretty easy to bend even on the car. Using your best judgment and this image as a guide, reshape the prop rod to clear the silicone intake tube.

Very little adjustment will be needed on the other end.



165 BANJO BOLT INSTALL

» The prop rod will clip into the prop rod holder in a different portion of that end but with patience... can be made to look like it came from the factory that way.



Kraftwerks USA offers a 12 MONTH Limited Warranty against defects in materials, components, and workmanship unless specified otherwise. The warranty period starts on the ORIGINAL date of retail purchase directly from Kraftwerks or from your local dealer (Warranty of the Rotrex Supercharger Head Unit is 3 years from date of manufacture). This limited warranty is only offered to the ORIGINAL OWNER (receipt will be required for verification). Furthermore, the warranty excludes any electronic components manufactured by other companies. **IF THE KRAFTWERKS SUPERCHARGER KIT IS ALTERED FROM THE FACTORY SETTINGS, THE WARRANTY MAY BE VOID.**

This includes but is not limited to the following:

- Over spinning of the Rotrex supercharger head unit
- Use of non-approved or custom hubs/pulleys
- Alteration of brackets, pulleys, and other drive components
- Modification or re-routing of any charge piping or intake system that is included in the "FULL" Kits

Kraftwerks will honor a warranty claim at its sole discretion after the component in question is inspected at the Kraftwerks facility and/or the Rotrex A/S facility located in Denmark. **NO WARRANTY CLAIM WILL BE ACCEPTED IF THE COMPONENT IS FOUND TO HAVE BEEN TAMPERED, MIS-INSTALLED, MISUSED, OR MISHANDLED (I.E. DROPPED) IN ANY WAY.** Furthermore, disassembly of the Rotrex Supercharger Head Unit voids ALL warranty claims. No Kraftwerks dealer is authorized to make any warranty claims, repair, or modification. Any claims for freight/shipping damages will need to be directed towards the freight/shipping company.

- If the component in question is covered under the Kraftwerks USA limited warranty, the product will be repaired or replaced at the discretion of Kraftwerks USA.
- If the component in question is not covered by the Kraftwerks USA limited warranty, our Kraftwerks staff will advise you on the specific reason, the cost of replacement/repair, and the estimated time it will take.

TO PROCEED WITH A WARRANTY CLAIM

Contact KraftwerksUSA directly at (951) 808-9888 and be prepared to send the following information to support@kraftwerksusa.com

1. Copy of original receipt or invoice (PayPal verifications alone are not accepted)
2. Pictures and description of issue (Limit 1-2 Pictures per email or Compress Images)
3. Contact information-Name, address, and contact number
4. Vehicle description-Year, make, model, and any additional/supporting modifications

Once all of the above have been received and the warranty claim has been INITIALLY approved by Kraftwerks USA; you will be contacted with a Return Merchandise Authorization (RMA) number. You will then be directed to package the component(s) in question, write the RMA number (in **BOLD**) on the outside of the box, and a call tag will be issued to pick up the package from your location.

Kraftwerks USA is located in California. Please be aware that warranty claims will be shipping GROUND (faster shipping available at an additional cost to you) so please allow enough lead time for shipping and inspection of the component(s). Please package components securely as any damage to components due to improper packaging will NOT be covered by the limited warranty. Please note that if a Rotrex supercharger head unit is being sent in for warranty inspection, the lead time will be longer due all head unit warranty inspections are handled by Rotrex in Denmark. Only Rotrex can approve or deny head unit warranty claims (if this is a time sensitive case, we do offer CORE CHARGE options. Please contact a KraftwerksUSA representative for more information).

Please note that KRAFTWERKS USA is NOT liable for the voiding of your factory warranty and/or components as well as damage(s) to clutch, transmission, drive-line, etc. components.



DYNO CELL 1

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