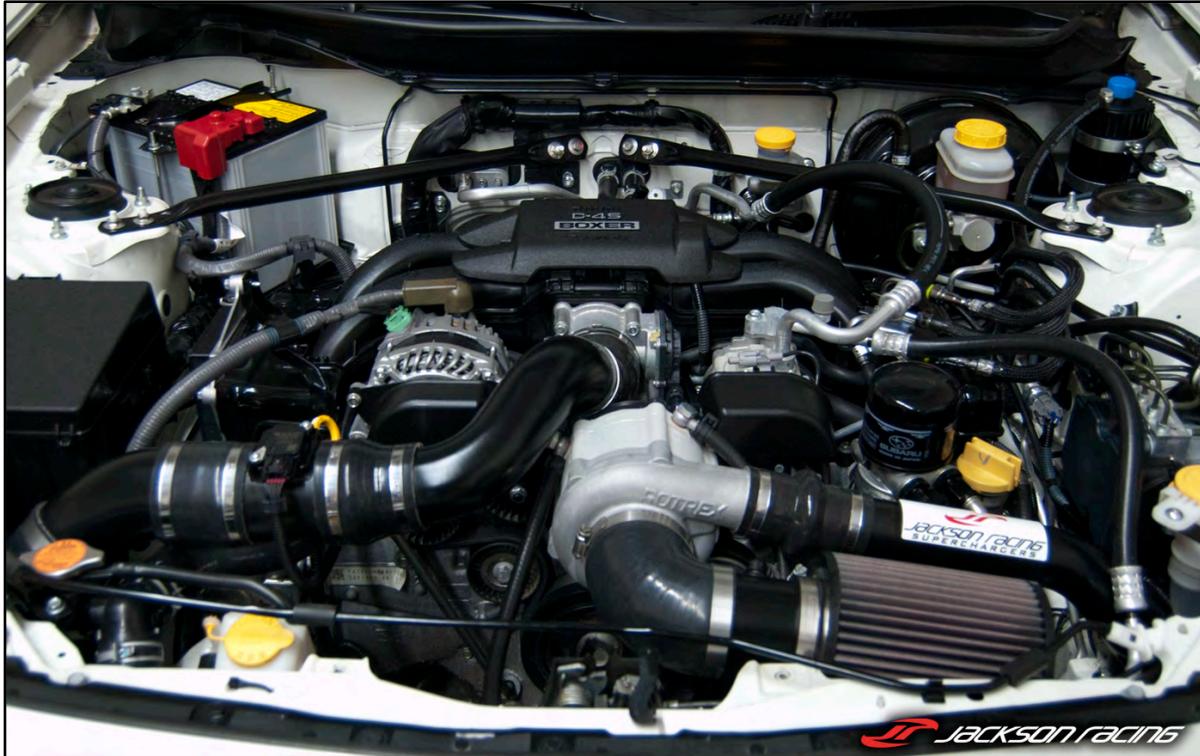




2013+ Scion FR-S/Toyota 86/Subaru BRZ  
Jackson Racing Supercharger System  
Installation Instructions



Congratulations on your purchase of the Jackson Racing FR-S/86/BRZ Supercharger System!

Jackson Racing supercharger systems are designed to be installed by a professional mechanic with a complete tool selection. If you have decided to complete the installation on your own, please be sure that you have the tools to handle the installation and ability to follow all instructions completely.

Please review the complete instruction manual before starting your installation. Please follow the instruction manual step by step and do not skip ahead.

Please refer to the Genuine Toyota or Subaru Service Manual for all mechanical and safety procedures. Make sure all vehicle updates and Technical Service Bulletins (TSBs) have been completed before installation.

Many stock parts are reused/reinstalled during installation. Do not damage or discard any pieces during disassembly or installation. We recommend marking any hose or wire before disconnecting to avoid confusion during reassembly.



Jackson Racing Supercharger Systems are designed to be installed on stock, factory engines. The Jackson Racing Factory Tuned ECU Calibration has been calibrated with the stock header and catalytic converters. If you have engine modifications, consult with a Jackson Racing representative about the possible variables this may cause.

Jackson Racing supercharger systems require Premium grade (91 Octane or greater) gasoline, as does a stock FR-S/86/BRZ. Fuel quality is very important with a high performance application, so remember to only use a "Top Tier" gasoline. Do NOT use Octane Boosters in your fuel system. Octane Boosters will damage your spark plugs and your oxygen sensors when mixed incorrectly.

You will be working under the car during this installation. Be prepared to raise the car up with a floor jack and support stands or a professional hydraulic vehicle lift. Do not work under your car without proper vehicle support!

Always wear safety glasses while performing your installation. You will be working with the fuel system and will have flammable gasoline vapors in the engine compartment area. Do not smoke while performing this installation.

#### Tools Required:

- Set of Metric wrenches from 8mm to 19mm
- Set of Metric sockets from 8mm to 19mm
- Set of Phillips and Flat Blade Screwdrivers
- Set of Metric Allen wrenches
- Set of Pliers

#### Special Tools Recommended:

- The plastic trim panel retaining clips, or push-pin clips, on the FR-S/BRZ are difficult to remove. We recommend buying a set of KD Tools Push-Pin Pliers Set.
- Torque wrench capable of reading in Inch Pounds and Foot Pounds.
- The plastic covers bolted to the A/C compressor and the alternator will need to be trimmed to fit back in place after the supercharger is installed. A Dremel rotary tool works best for this type of work. A Dremel tool is available at most hobby and hardware stores.
- Drain Pan for Windshield Washer Fluid

Part Numbers will be listed throughout the installation instructions in parentheses. (1234-56-789) or (12345-67890)



## SYSTEM NOTES AND MAINTENANCE:

**TRACK USE:** Jackson Racing Supercharger Systems go through tremendous development, including both street and track testing. Our systems have been tested by top racing drivers in the country throughout development to ensure they can live up to our high standards. Track preparation for any level driver includes racing brake pads, racing brake fluid, racing tires, etc. This includes prepping your engine for the abuse.

**Engine Oil Cooler** - The FA20 engine is a finely tuned high compression engine and engine oil temperatures can spike to dangerous levels even on stock cars. The FR-S/BRZ requires an engine oil cooler for any on track outing and we highly recommend one of our Jackson Racing Oil Cooler Kits for the best plug-n-play setup in conjunction with the Jackson Racing Supercharger System. Also, running high quality synthetic 5w/30 engine oil (i.e. Torco SR5) for track events is recommended.

**100 Octane (R+M/2) Unleaded Fuel** - It is important to run fuel designed for abuse at the track. Even stock FA20 engines should run 100 Octane when at the racetrack to ensure consistency and reliability. The additive packages in 91 Octane fuel are designed for emissions and shelf life, while 100 Octane is designed for the high cylinder pressures and full load/throttle conditions you will experience on the racetrack. When at the track, we REQUIRE running a minimum of 50% 100 Octane fuel. We highly recommend running 75-100% 100 Octane when at the track.

**Fuel Level** - You should never starve a forced induction engine of fuel or catastrophic engine damage can occur. The stock FR-S/BRZ fuel tank is not designed for the high G loads of the racetrack and can starve for fuel between  $\frac{1}{2}$  and  $\frac{1}{4}$  of a tank. Always start your track sessions ABOVE  $\frac{1}{2}$  tank of fuel to ensure no fuel starvation in high G load corners.

## MAINTENANCE:

Proper vehicle maintenance is essential to any high performance vehicle. Do not neglect your vehicle.

**Rotrex Maintenance** - Change your Rotrex Traction Fluid every 2 years/50,000 miles. Use only Rotrex Traction Fluid in your Rotrex Oiling system. Failure to use Rotrex Fluid will void the Rotrex warranty and cause damage to the drive unit.

**Engine Maintenance** - Change your engine oil/filter every 3 months/3,000 miles. Use a factory recommended oil and filter.

If you have any questions, please contact us at:

Jackson Racing Technical Support  
8am-5pm PT Monday- Friday: 909-927-8500 ext. 2  
All Hours Email Support: [tech@jacksonracing.com](mailto:tech@jacksonracing.com)

Technical Support  
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## DISASSEMBLY OF FACTORY COMPONENTS:

1. Disconnect the negative battery cable from the battery.
2. Raise the car up so that the front tires, under side plastic panels and front bumper can be removed.
3. Remove Front Bumper:
  - A. You will either need a small screwdriver and patience to pry the auto locking plastic clips on the plastic trim parts or the KD Tool listed in the “Recommended Tools” section above to remove the plastic clips.
  - B. Remove the plastic clips and bolts that hold the under tray to the front bumper and the radiator support.
  - C. Remove the front wheels to gain access to the inner fender plastic liner. Remove the three plastic Phillips screws from each side of the leading edge of the front bumper that hold the inner fender liner to the bumper. These small Phillips screws open by turning them a half turn counter clockwise. Remove the single Phillips plastic screw that is located directly behind the side-marker lights. Pull the plastic inner fender liner back so you can see the back of the side-marker light. Insert a small screwdriver through the hole in the side-marker mounting bracket and carefully push the spring-loaded tab until the side-marker can be pulled from the front bumper. Use a great deal of patience with these clips as they can be easily damaged. Unplug the side-marker at this time. Remove the vertically mounted plastic retaining clip that is behind the side-marker light that retains the bumper ends.
  - D. Remove the two plastic clips and the five bolts that hold the upper bumper to the chassis from the upper radiator area.
  - E. Pull on the outer corners of the front bumper to get it to “pop” off of its mounting points. Unplug the headlights/fog lamps and set the bumper in a safe place.
4. Remove the passenger and driver side headlight assemblies at this time. This will aid in the installation of the intercooler tubing later on. Remove the intake air snorkel in front of the radiator. Remove the air deflection shield from the area of the upper front bumper.



## 5. Remove Air Guides.

Scion FR-S/Toyota 86: The FR-S/86 bumpers have two curved air guides that are screwed to the backside of the front bumper on each side of the radiator opening. Remove these air guides, as the intercooler tubing will be routed through this area.

Subaru BRZ: The BRZ bumpers do not have curved air guides screwed to the back of the bumper like the FR-S. Instead, the incoming air is routed to the radiator by vertical air guides that come from the radiator area forward to meet up with the front bumper via some foam rubber pieces glued to the end of a plastic panel. The BRZ vertical air guide is actually an FR-S vertical air guide with a small plastic panel extension that is attached via plastic rivets to make them BRZ guides. You can easily drill out the two plastic rivets on each side or you can order up a set of FR-S air guides to replace the BRZ air guides to make room for the intercooler tubing.



6. Remove the plastic retaining clips that hold the vertical air guides to the lower radiator panel on either car at this point to make the lower radiator panel removable.

7. Remove the three 10mm headed bolts that hold the lower radiator panel to the chassis and remove the panel.

8. Unbolt the horn from the front bumper support. You will be installing a stud for mounting the intercooler in this location later in the instructions.

9. Unclip the wiring harness bracket from behind the air temperature sensor that is mounted to the lower A/C condenser bracket. Route the horn and wiring harness over to the passenger side inner fender for relocation.

Halogen Projector Headlights: The Daytime Running Light Resistor (grey box) is bolted to the inner fender. Remove the existing resistor mounting bolt. It will not be reused. Install a 25mm long spacer over the resistor mounting hole and install a M6x1.0x45mm flanged bolt (91100-06045) through the horn bracket, spacer and resistor. Thread the bolt into the existing threaded hole in the chassis. Torque to 9ft lbs.

HID Headlights: Install a 25mm long spacer onto the existing threaded chassis mounting hole and install a M6x1.0x45mm flanged bolt (91100-06045) through the horn bracket and spacer. Torque to 9ft lbs.



10. Unplug the Mass Air Flow (MAF) sensor and remove the two (2) Phillips head screws that secure the MAF sensor to the air box. Set the sensor in a SAFE place for installation in the new intercooler piping later in the installation. The original screws will not be reused.

11. Remove the plastic valve cover vent pipe assembly from the intake rubber hose. Reroute the valve cover hose from the passenger side of the A/C compressor to the driver side. Route the hose below the A/C compressor and behind the oil filter and the oil filler neck. The hose should be routed under the fuel injection high-pressure fuel line in the area directly behind the oil filler cap and the 90° plastic fitting should end up right next to the oil filler neck on the outside. You will be connecting a new valve cover vent hose to this plastic fitting later in the instructions.



12. Remove the stock air box assembly, rubber intake hose and related air box mounting components, including the “sound amplifier” mounted on top of the engine.

A. Follow the rubber hose from the back of the “sound amplifier” to the bottom of the passenger floor. Pull the hose from the rubber grommet and remove the “sound amplifier” assembly from the car. You will not be reusing any of the remaining parts.

B. From the interior on the passenger side pull the carpet down from where it reaches the base of the dash. You will see the hole where the sound amplifier was originally located. Install the .750" plug in the rubber grommet and reinstall the carpet.



13. Remove the plastic covers from the alternator and the A/C compressor. You will be trimming the plastic covers with a Dremel type rotary tool to fit back in place after the supercharger is installed. It is not required that you cut your original covers and reinstall them. You can leave the covers off but we think the engine compartment is safer and looks better with them installed. A cover-trimming template is included to use to trim your plastic covers.

14. Route the MAF sensor wiring harness under the throttle body so that it is headed towards the passenger side of the engine. Plug in the Jackson Racing MAF extension harness (3500-07-J01) and route the wiring behind the alternator for connection to the new MAF location later in the instructions.



15. Push the automatic belt tensioner down to remove tension from the serpentine belt and remove the stock serpentine belt. It will not be reused.

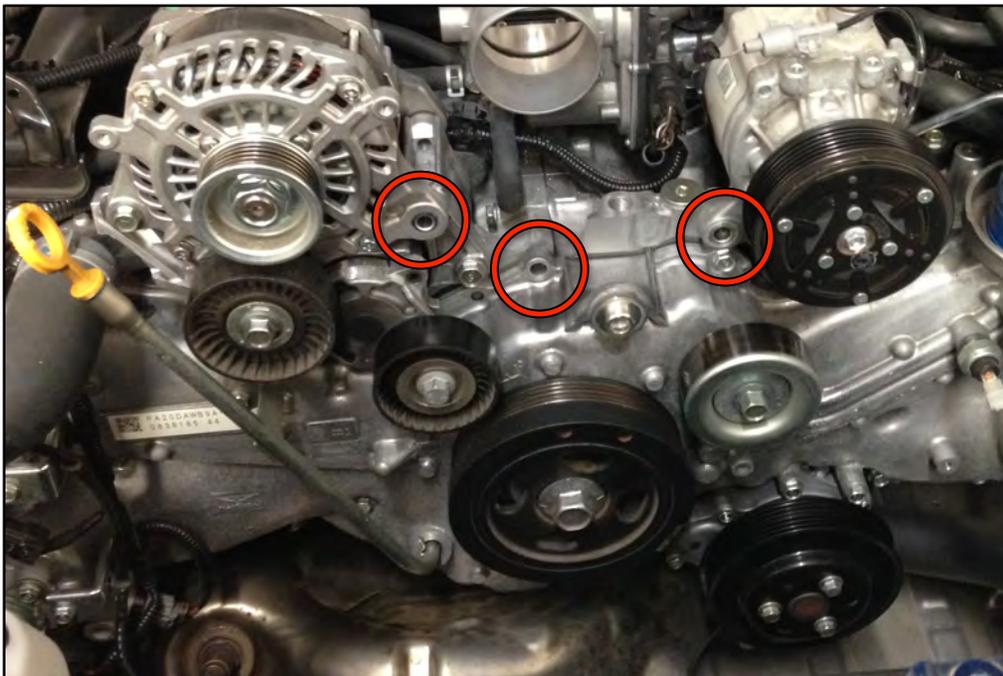
16. Remove the steel serpentine drive belt idler pulley that is bolted to the engine in the area between the alternator and the air conditioning compressor. You will not be reusing the idler or the mounting hardware.

17. Remove the plastic idler pulley directly below the alternator. Replace the original plastic ribbed pulley with a 76mm flat pulley (2150-07-J01). Reinstall the original mounting bolt and washer and torque to 16ft lbs.

18. Remove the 12mm headed engine timing cover bolt that is located just behind and to the passenger side of where the steel idler pulley was mounted. It will be just below the Throttle Body. You will not be reusing this bolt.

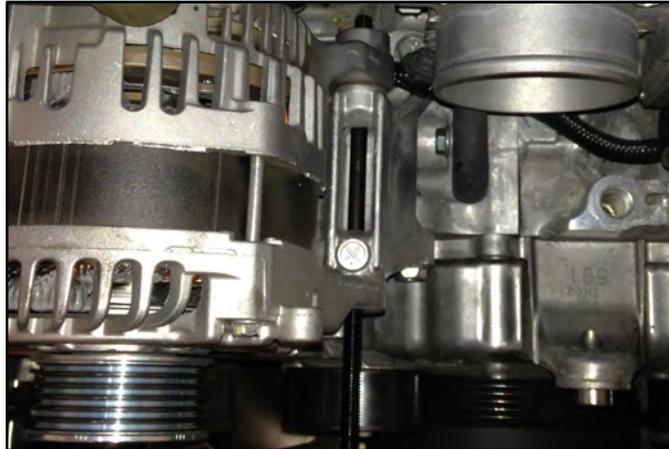
19. Remove the long alternator-mounting bolt that is closest to the throttle body. You will not be reusing this bolt.

20. Remove the A/C mounting bolt that is closest to the throttle body. You will not be reusing this bolt.



## SUPERCHARGER INSTALLATION

21. Thread the M8x1.25x180mm stud (91191-07-J02) into the alternator with the short threads of the stud threading into the back mounting point of the alternator. Thread the stud in so that just two threads shows through the rear mounting point on the alternator. Apply a small amount of Loctite thread locking adhesive to the first two threads of the stud prior to installation.



22. Thread the M8x1.25x19mm coupling nut (91590-07-J02) onto the alternator stud and tighten this nut down against the alternator to set the alternator mounting position.

23. Thread the M8x1.25x120mm stud (91190-07-J02) into the vacated hole in the engine timing cover. Apply a small amount of Loctite thread locking adhesive to the first two threads of the stud prior to installation.

24. Thread the M10x1.25x125mm stud (91192-07-J01) into the vacated hole in the A/C compressor until two threads shows through the rear of the air conditioning compressor. Apply a small amount of Loctite thread locking adhesive to the first two threads of the stud prior to installation.



25. Install a 8mm ID stepped idler spacer (2630-07-J01) onto the alternator stud so that the widest part of the shoulder sets back against the coupling nut.
26. Install a 76mm flat idler pulley (2150-07-J01) onto the stepped spacer.
27. Install another 8mm ID stepped idler spacer (2630-07-J01) into the 76mm flat idler pulley.
28. Install a 8mm ID x 76.5mm SC standoff spacer (2610-07-J01) onto the stud that is threaded into the engine timing cover.
29. Install a 10mm ID x 70.25mm SC standoff spacer (2611-07-J01) onto the stud that is threaded into the A/C compressor.
30. Install the double-sided serpentine supercharger drive belt (2205-07-J01) over all of the pulleys just as it was in the stock configuration. The exception will be where the belt comes over the alternator you will continue to route the belt over the new idler pulley that is mounted on the alternator mounting stud and not under the idler.



**NOTE:** Be sure to get the belt located correctly on the crankshaft pulley prior to starting the car. The clearance between the engine casting on the driver side of the crank pulley is moderately close. If the serpentine belt isn't properly engaged into the crankshaft pulley belt ribs when the car is started it will damage the new serpentine belt.



31. Locate the Rotrex supercharger and install the two banjo bolts, four copper crush washers, and two banjo fittings supplied on the supercharger unit. The banjo fittings will be in your oil kit while your supercharger banjo bolts/washers will be in your supercharger box. Install a crush washer on the top and bottom of each banjo fitting. With the supercharger pulley side facing you and the compressor inlet facing away from you, install the two banjo fittings so that they face away from you at a 45-degree downward angle from the supercharger-mounting surface. Torque to 15 ft lbs. (20Nm)

32. Set the Rotrex unit on a bench, with the compressor inlet down. Mount the Jackson Racing Supercharger mounting bracket (2510-07-J01) to the Rotrex supercharger with the counter bored mounting holes of the supercharger bracket facing you and the flat side of the supercharger bracket located near the bottom of the supercharger opposite the banjo fittings. Torque to 6.6 ft lbs (7Nm). Do not over tighten these bolts as it could damage the compressor housing and compressor wheel.

33. Install the Jackson Racing supercharger pulley (2130-07-J01) to the supercharger pulley adapter using six (6) Allen Head Cap Screws (AHCS) M6x1.0x12mm (92000-06012). Apply a small amount of thread locking adhesive to the first two threads prior to installation. Torque to 9ft lbs.

34. Install supercharger/bracket assembly:

A. Apply a small amount of thread locking adhesive to the first two threads of the three mounting studs.

B. Hold the automatic belt tensioner down with a 14mm wrench while lowering the supercharger/bracket assembly down onto the mounting studs.

C. Align the serpentine belt on the bottom of the supercharger drive pulley as you lower the supercharger/bracket assembly onto the mounting studs.

D. Once the SC bracket is installed onto the mounting studs you can release the automatic tensioner. Install two M8x1.25 flanged nuts onto the 8mm studs and one M10x1.25 flanged nut onto the 10mm stud. Torque the M8 nuts to 16ft lbs and the M10 nut to 20ft lbs.



Your supercharger mounting is now complete. Check your serpentine belt at each pulley and make sure the belt is completely seated in the proper grooves. Check the torque on the supercharger pulley mounting bolts one more time now that you have belt tension on the pulley to assist holding the pulley.

35. Using the template provided, trim the plastic belt covers from the alternator and the A/C compressor so that they clear the serpentine belt and reinstall the two covers.



## OIL COOLER AND INTERCOOLER INSTALLATION

36. Locate your intercooler (4100-01-J03). As a reference to the intercooler mounting position, you will notice the intercooler is asymmetrical. Install the intercooler with the inlet/exit openings in the lower position.

37. Locate your upper intercooler-mounting bracket (2710-07-J01). This long bracket is asymmetrical. It will be mounted with the Rotrex oil cooler mounting tabs facing back towards the radiator, the notched end will be on the passenger side and the end with the welded spacer will be located on the drivers end with the spacer facing the bumper support.

38. Bolt the intercooler bracket to the top of the intercooler, using three (3) M8x1.25x16mm Button Head Cap Screws (BHCS) (92510-08016). Torque the BHCS to 16ft lbs.



39. Locate your Rotrex Oil Cooler (05000-10022). Install the JR 90° M22 to 5/16" hose adapters (03530-22516) to the oil cooler so that the two fittings face away from each other. Lube the threads of the oil cooler with a small amount of oil before installing. Hold the lower hex on the oil cooler fitting with a wrench while gently tightening fittings with another wrench. Failure to hold the oil cooler hex while tightening the oil cooler fitting may damage the oil cooler and it will not be covered under warranty.

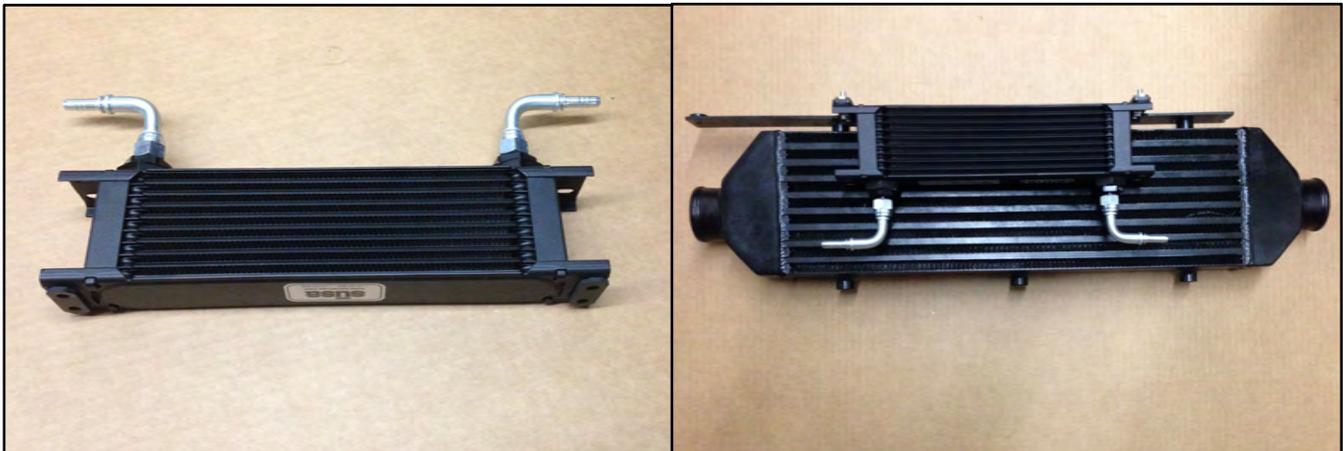
40. Install the Rotrex Oil Cooler to the intercooler bracket using four (4) M6x1.0x20mm flanged bolts (91100-06020), two (2) oval cushion spacers (05009-06070), and two (2) M6x1.0mm threaded cushion mounts (05009-06000).

A. Peel the protective layer off of the cushion spacers and stick the cushion spacers to the bottom of the oil cooler, so that the holes in the cooler match up with the holes in the spacers.

B. Lift the oil cooler into position on the intercooler bracket.

C. Thread the four (4) M6x1.0x20mm flanged bolts through the top of the intercooler bracket, the mounting cushions, the oil cooler, and then into the threaded mounts. Apply a small amount of Loctite thread locking adhesive to the threads prior to installation.

D. Torque gently until the cushions start to distort. This will keep the oil cooler isolated from harmful vibrations.



41. On the passenger side of the front bumper you will find a M6x1.0mm threaded boss welded to the underside of the stock front bumper support. Thread the high-strength M6x1.0x27.5mm steel stud into this threaded boss. Install the end with the shorter threads into the bumper. Apply a small amount of Loctite thread locking adhesive to the first two threads of this stud prior to installation. Thread in the stud until the non-threaded area seats against the bumper support.



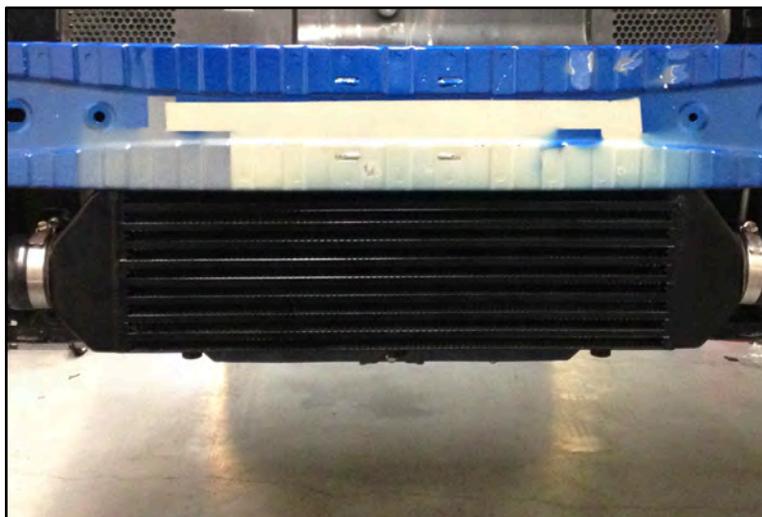
42. Install a .750" OD x .200" spacer (2620-07-J01) onto the intercooler-mounting stud followed by a M6 fender washer (93600-06000). Thread a M6x1.0mm flanged nylock nut (91610-06000) onto the mounting stud to hold the spacer and washer loosely in place. Leave enough room between the spacer and the fender washer/flanged nylock nut to be able to fit the intercooler-mounting bracket between them, or approximately 3/16" space.



43. On the driver side of the front bumper support you will find an open mounting hole with no threads that is approximately 23" from the stud mounting location. Reach in through the opening in the front bumper support and install a M6x1.0x25mm flanged bolt (91100-06025) with a M6 fender washer down through this mounting hole.

44. Lift the intercooler/Rotrex cooler/intercooler bracket assembly up to the mounting stud on the passenger side. Fit the slot in the intercooler-mounting bracket between the steel spacer and the fender washer.

45. Lift the driver side of the intercooler/Rotrex cooler/intercooler bracket assembly up until it passes through the M6x1.0x25mm flanged bolt previously installed through the bumper. Have someone hold the bolt inside the bumper while you install a M6 fender washer over the bolt and secure this complete assembly with a M6x1.0 flanged nylock nut. Tighten both sides at this time. Your top intercooler mounting is complete.



46. Attach the double-studded rubber isolation mounts (01400-06000) to the lower intercooler brackets (2711-07-J01) using the M6x1.0 flanged nylock nuts (91610-06000) provided. See photo for orientation.

47. Install the lower intercooler brackets/isolation mounts through the holes in the chassis located just below the outer edges of the A/C condenser. Secure with the M6x1.0 flanged nylock nuts provided. Loosely tighten at this time. See photo.



48. Attach the lower intercooler brackets to the mounts on the bottom of the intercooler using the M8x1.25x16mm BHCS (92510-08016). Torque to 16ft lbs. Torque the M6x1.0 flanged nylock nuts for the isolation mounts at this time to 9ft lbs.



## INTERCOOLER TUBING INSTALLATION

NOTE: Check all tubes and hoses for any foreign material inside that may be left over from manufacturing. Lube all hoses lightly with penetrating oil spray prior to installation to make it easier to align the tubes and hoses.

49. Remove the two bolts that hold the radiator inlet neck to the bracket secured to the upper radiator support. Remove the bracket from the radiator support and install two (2) M6x1.0x20mm flanged bolts (91100-06020) through the bracket. Reinstall the bracket onto the chassis using the original mounting bolts. Reinstall the bracket OVER the TOP of the radiator neck so that the neck gets relocated lower in the chassis. Install two (2) M6x1.0 flanged nylock nuts to secure the radiator neck to the new bolts. Torque to 9ft lbs.



50. Remove the plastic Phillips screw that secures the windshield washer filler neck to the chassis. This screw will not be reused later in the installation. Remove the windshield washer neck at this time.

51. Unclip the wiring harness from the windshield washer bottle. Unplug the windshield washer pump. Pull the windshield washer hose from the pump and drain the washer fluid into a clean container.

52. Unbolt the stock windshield washer bottle assembly.

53. Remove the upper rubber gasket on the stock washer bottle that sealed the washer filler tube in the bottle. Install it in the cap of the new washer bottle. Make sure the seal on the inside of the cap fits around the rubber gasket. Install cap on the new JR washer bottle. Apply a small amount of grease on the inside O-ring when installing onto the new washer bottle.



54. Remove the windshield washer pump and rubber gasket from the bottom of the stock washer bottle. Install the pump and gasket in the bottom of the new washer bottle. Lube the inside of the rubber gasket so the washer pump slides in without binding.

55. Bolt the new washer bottle to the washer bottle bracket using three M6x1.0x12mm BHCS. Put the screws on the backside of the bracket and place a washer and flanged nut on the bottle side of the bracket. Tighten the flanged nuts gently to prevent damage to the bottle.



56. Lift the washer bottle/bracket assembly up to the area where the original bottle was located. Thread a M6x1.0x35mm flanged bolt and 6mm fender washer through the bracket and into the existing threads in the fender structure.

57. Install a M8x1.25x35mm flanged bolt and 8mm fender washer through the bracket and through an existing hole in the chassis. From the back of the chassis install an M8x1.25 FUJI nut on the flanged bolt. Tighten both the 6mm and 8mm mounting bolts at this time.

58. Rotate the washer pump so that the pump electrical plug faces towards the rear of the car. Connect the electrical plug and washer hose at this time.

59. Apply a small amount of grease on the windshield washer bottle cap top seal. Insert the filler tube into the cap on the new bottle. The new washer bottle capacity is 0.5 gallon. The bottle may leak fluid if overfilled.



60. Install the 2.5x2.0"ID silicone hump hose (4303-07-J02) on the compressor outlet and loosely secure with a 50-70 silicone hose clamp (95105-50070) provided.

61. Install another 40-60 hose clamp on the open side of the 2.5x2.0"ID hump hose. Install the SC Exit tube with the 1" bypass fitting on it (4152-07-J02) down behind the headlight and through the area where the windshield washer neck originally was located. Insert the tube into the 2.5x2.0"ID hump hose and loosely secure the tube at this time with the 40-60 hose clamp.

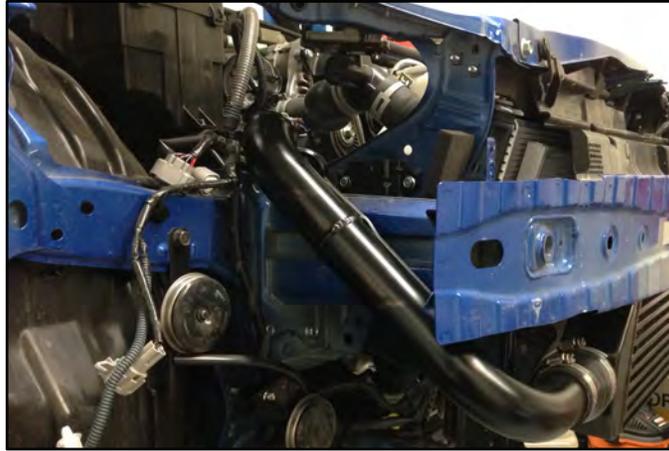
62. Install a 2.0"ID x 45° silicone hose (02102-50045) onto the open end of the compressor outlet tube and loosely secure it with a 40-60 hose clamp.

63. Install a 2.0"-2.5"ID transition silicone hose (02101-50063) onto each end of the intercooler and secure with the 60-80 silicone hose clamps (95105-60080) provided.

64. Install the 2.0"ID x 45° x 45° intercooler inlet tube (4153-07-J02) into the 2.0" x 45° silicone hose and the intercooler inlet hose using two 40-60 clamps provided. This pipe will be routed so that it sits just behind the end of the steel bumper support and back close to the washer bottle assembly. This tube has a short end and a long end after the bends. Insert the short end into the intercooler and the long end in the 45° silicone hose. Included in each system is self-adhesive rubber NVH (Noise Vibration Harshness) mat to ensure the tubing does not rattle. Apply the NVH mat to the tubing near the tight areas. Rotate all tubes until they have a natural alignment and tighten all hose clamps at this time. When complete this tube should sit back and close to the new washer bottle. Temporarily reinstall the headlight and check clearances. Adjust to make sure you have clearance.



65. Install the 2.0"ID x 90° x 22° x 45° intercooler exit tube (4154-07-J01) into the intercooler exit hose. Loosely secure using a 40-60 hose clamp provided. The 45° end of the tube should exit behind the headlight area. The pre-installed NVH mat should be between the tube and the chassis.



66. Install a 2.0"-3.0"ID transition silicone hose (02101-50076) on the end of the intercooler exit tube. Loosely secure with a 40-60 hose clamp provided.

67. Install the 3.0" x 45° MAF inlet tube (4155-07-J01) in the open end of the 2.0"-3.0"ID transition hose and loosely secure with a 70-90 clamp provided (95105-70090).

68. Install a 3.0"ID straight silicone hose onto the 3.0" x 45° MAF inlet tube and secure with a 70-90 hose clamp provided.

69. MAF Sensor and Tube installation:

A. Inspect the factory MAF O-ring. Be sure there are no kinks or breaks in the O-ring. A replacement O-ring is provided in case the factory O-ring is worn out.

B. Lube the MAF O-ring and install the MAF sensor in the MAF tube (4181-07-J01) using two (2) M4x0.7x10mm screws (92900-04010) provided.

C. Install the air straightener side of the MAF tube into the 3.0"ID straight silicone hose and loosely secure with a 70-90 hose clamp provided. Align the tube so that the MAF sensor will be facing directly vertical with the plug facing towards the front of the car.

D. Do NOT remove the air straightener from the MAF tube.



#### 70. Throttle Body Inlet Tube Installation:

A. Locate the throttle body inlet tube, one (1) 2.5"-3.0" transition 45° silicone hose, and one (1) 2.5"-3.0" transition straight silicone hose.

B. Install the 2.5"-3.0" transition 45° silicone hose onto the throttle body. Loosely secure using a 70-90 clamp. The 70-90 clamp will fit directly against the throttle body cast "bead". It is important to get the 70-90 clamp alignment correct before final tightening. The cast "bead" of the throttle body is smaller than the "rolled bead" on all of the intercooler tubes.

C. Install the 2.5"-3.0" transition straight silicone hose on the MAF tube and loosely secure with a 70-90 hose clamp on the MAF side.

D. Install the throttle body inlet tube into both of these hoses and loosely secure using two 60-80 hose clamps. Rotate all the tubes so they have a natural alignment. The throttle body inlet tube should not make contact with the supercharger pulley or supercharger bracket. The tube should fit closely to the alternator belt cover and have at least 6mm of clearance between the tube the supercharger pulley. Tighten all hose clamps from the intercooler exit to the throttle body at this time. Be sure to watch the 70-90 clamp at the throttle body to make sure it maintains alignment against the throttle body cast bead.



71. Bolt the shorter side of windshield washer filler neck bracket to the top of the windshield washer neck mounting point using an M8x1.25x16mm BHCS (92510-08016), 8mm flat washer and a M8x1.25mm FUJI nut (91615-08000). Install the 8mm flat washer between the filler neck bracket and the top of the washer neck. Connect the longer open end of the bracket to the chassis using another M8x1.25x16mm BHCS, 8mm flat washer and an M8x1.25mm FUJI nut. Install the 8mm flat washer between the filler neck bracket and the chassis.



72. Reinstall the headlights at this time.

BRZ Model: You may want to pop this plug off the backside of the headlight for a bit more clearance between the tubing and plug.



## ROTEX OILING SYSTEM INSTALLATION

Locate the Rotrex oil reservoir. It will be preassembled with a 6mm ID x 38mm spacer (01200-06038), a M6x1.0x60mm flanged bolt (91100-06060), a M6x1.0 flanged nylock nut (91610-06000), and a Rotrex reservoir mount bracket (2530-01-J01). The Rotrex reservoir will be mounted to the existing M6x1.0 threaded boss located just behind the driver side top shock mount using a 6 x 1.0 x 20mm flanged bolt (91100-06020) and a 6mm fender washer (93600-06000).

### 73. Rotrex Oil Reservoir Installation:

A. Remove the OEM bolt from the location on the top of the driver side shock mounting area and bolt the reservoir assembly with the mounting bracket facing directly back towards the windshield so you can decide what direction the banjo fittings need to be located and the height of the reservoir to the top Rotrex wrap around clamp. You will have to lift the plastic windshield washer hose bracket slightly to get the mounting bracket in place.

B. The distance between the top of the Rotrex reservoir clamp to the top of the reservoir should be approximately 28mm (1.125”).

C. Bolt the banjo bolts, banjo fittings, and banjo washers to the top and bottom of the reservoir. Install a crush washer on the top and bottom of each banjo fitting. Both fittings should face the area between the brake master cylinder and the driver side shock tower. Once you have the angle set in place tighten both fittings completely.

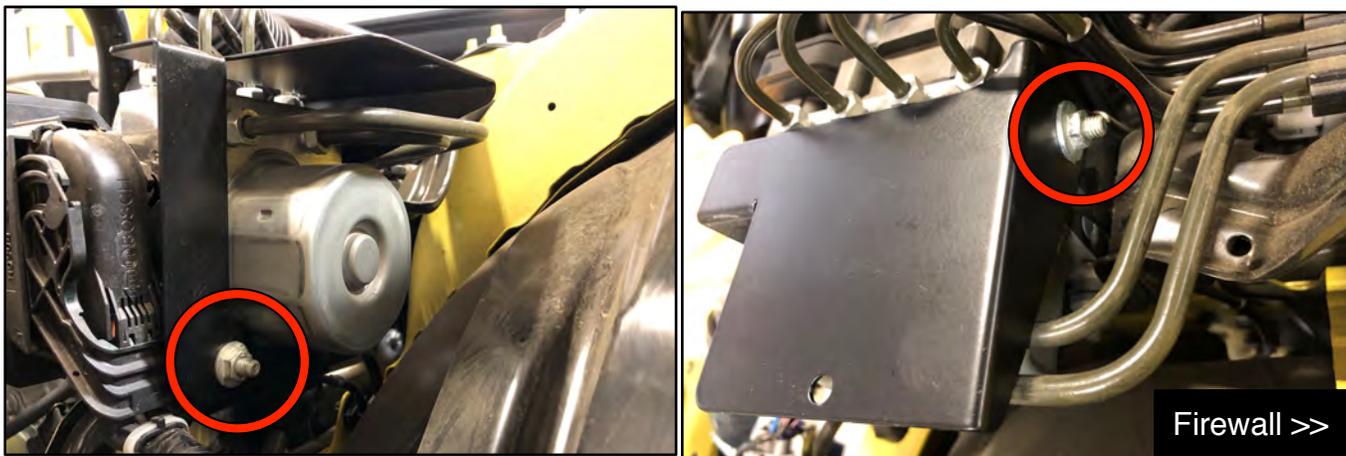
D. Install a 5/16” x 20” Rotrex oil hose (02300-08020) to the bottom fitting of the reservoir and secure with the 5/16” spring clamp provided prior to bolting the reservoir to the chassis. Otherwise it is very difficult to install the hose and clamp once the reservoir is bolted in place.

E. Apply a small amount of thread locking adhesive to the first two threads of the M6x1.0x20mm flanged mounting bolt before final installation through the mounting bracket. Torque the M6x1.0x20mm flanged bolt to 9ft lbs.



74. Route the 5/16" x 47" Rotrex oil hose (02300-08047) from the "IN" fitting on the supercharger and route this hose behind the hood latch vertical support and route it so that it meets up with the 20" long hose coming from the bottom of the reservoir. Secure the hose to the supercharger with the 5/16" spring clamp provided. Lightly lube the two oil hoses with oil prior to installing the Rotrex oil filter, with the direction of the "FLOW" arrows facing TOWARDS the supercharger. Secure with 5/16" spring clamps provided. Using plastic ties secure the oil hose to the hood latch cable so that it cannot be chaffed against engine parts, fan blades or chassis parts.

75. Remove the shouldered nuts on the bottom and side of the ABS assembly to facilitate the installation of the JR Rotrex Filter bracket. There are three nuts that hold the ABS assembly to the OEM mounting bracket. You will be removing the top one that faces back towards the firewall and the one on the bottom closest to the headlight. Do NOT mix these nuts up. They are different sizes. Install the JR Rotrex Filter bracket to the ABS assembly using the original shouldered nuts. You will not be reusing the washers that were originally used.



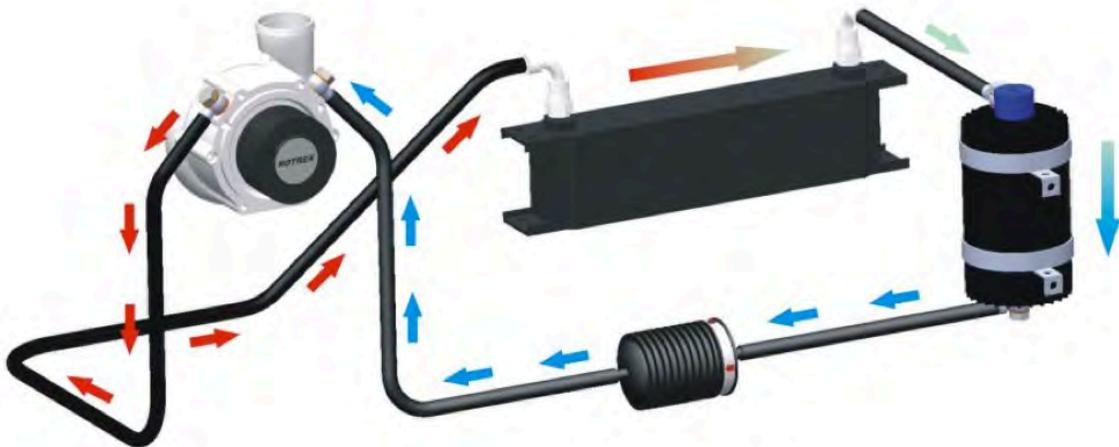
76. Wrap the Rotrex Oil Filter with the large cushion clamp provided. Bolt it down to the JR Rotrex Filter bracket using a M6x1.0x18mm flanged bolt and M6x1.0 nylock nut.



77. Route the 5/16" x 59" Rotrex oil hose (02300-08059) from the top of the Rotrex oil reservoir and route it near the lower reservoir hose that was previously installed. Secure this hose to the top of the Rotrex reservoir using the 5/16" spring clamp provided. Route this hose near the compressor outlet piping and out to the front of the car so that it can be installed onto the oil cooler. Secure this hose to the oil cooler with an 8mm stainless steel screw clamp (95500-08000) provided. Tighten the screw clamp all the way until it is tight.

78. Route the 5/16" x 65" Rotrex oil hose (02300-08065) from the "OUT" fitting on the Rotrex supercharger and route this hose behind the hood latch vertical support across the top of the radiator area towards the passenger headlight area. Route the hose down near the intercooler tubing on the passenger side and connect it to the vacant fitting on the Rotrex oil cooler. Secure this hose at the oil cooler with an 8mm stainless steel screw clamp (95500-08000) provided. Tighten the screw clamp all the way until it is tight. Using plastic ties secure all oil hoses so that they cannot be chafed against engine parts, fan blades or chassis parts.

79. Carefully fill the Rotrex reservoir with Rotrex Traction Oil so that the level is close to the top of the reservoir at this time. Once the system is running it will draw down the excess amount of oil in the reservoir to fill the supercharger and the oil cooler. There will be specific instructions about initial start up procedures later in the installation.



## BYPASS VALVE AND VACUUM INSTALLATION

80. Remove the cosmetic intake manifold cover. Locate the Power Brake hose where it exits the backside of the intake manifold on the driver side. The hose will make a 90° bend downwards. Remove the hose from the car and cut the hose 2" down from the 90° bend. Install the vacuum tee (03301-10004) into the Power Brake hose with the small fitting facing towards the driver side fender. Secure with two (2) 11.5mm CTL clamps provided and re-install the assembly.



**Automatic Owners:** There will be a capped vacuum port on the intake manifold underneath the cover. Remove the vacuum cap and install the 11/32" x 4.5" Long hose onto this vacuum port. Secure with 11.5mm CTL clamp provided. Route the hose out the backside of the intake manifold. Install the vacuum tee (03301-10004) into the 11/32" hose with the small fitting facing towards the driver side fender. Secure with a 11.5mm CTL clamp provided. Install the vacuum cap onto the large open end of the vacuum tee.

81. Install the 36" vacuum hose from the vacuum tee over towards the driver side of the engine for connection to the bypass valve later.



82. Install the 1.0" ID x 3" bypass hose (02411-25000) onto the spigot that is part of the compressor exit tubing. Secure with a 20-32 hose clamp (95105-20032) provided.

83. Install the bypass valve (04000-25000) into the 1.0"ID x 3" bypass hose. Install the valve so the 1.0"OD vacant fitting of the bypass valve faces across towards the passenger side fender and the vacuum fitting on the top of the bypass valve faces the driver side fender. Secure with a 20-32 hose clamp provided.

84. Install the 1.0"ID x 90° formed hose (02411-25404) onto the 1.0"OD vacant fitting on the bypass valve. Install it with the short side of the hose on the bypass valve and the long side facing up towards the hood, vertically. Loosely secure this hose with a 20-32 hose clamp. Route the 36" vacuum hose to the bypass valve and install on the open vacuum barb.



85. Install the 3.0"ID x 90° silicone hose (02103-76190) onto the compressor inlet using a 70-90 hose clamp provided.

86. Insert the 3.0" SC intake tube with the 1" spigot and valve cover vent grommet (4151-07-J01) into the previously installed 3.0"ID x 90° silicone hose. Install it so that the 1" bypass spigot is facing down towards the 1.0"ID x 90° formed bypass hose and the ½" rubber valve cover vent fitting grommet is facing back towards the engine. Install the bypass hose onto this tube and rotate it so that the tube/hose has a natural alignment and tighten the bypass hose clamps at this time. Loosely secure this tube with a 70-90 hose clamp provided.

87. Install the new 0.5"ID x 18" valve cover vent hose (02501-13018) onto the end of the OEM vent hose fitting that is now located next to the oil filler neck. Secure the hose to the OEM fitting using a CTL 13 clamp. Install the 0.5"ID x 90° fitting (03201-13090) into the open end of the 0.5"ID x 18" vent hose. Secure with a CTL 13 clamp. Insert this fitting into the rubber grommet of the SC intake tube.



88. Install the air filter (4200-07-J01) onto the 3" SC intake tube. Secure with the hose clamp provided. With the air filter installed, rotate and align the SC intake hose, tube and air filter until the assembly follows the angle of the SC exit tubing.



89. High Performance PCV Valve Installation:

A. Locate the PCV hose where it exits the backside of the intake manifold on the passenger side. The hose will make a 90° bend downwards. Remove the hose from the car and pull the outer cover off the hose.

B. Cut the hose 2" down from the 2nd 90° bend.

C. Insert the new high-performance PCV valve (4910-07-J02) into the hose and secure with the two (2) #15 spring clamps provided. The PCV valve installs ONE direction. Blow into each side of the valve. The side that restricts/stops flowing air when you blow will be on the intake manifold side of the PCV hose.

D. Reinstall the hose on the engine and secure the hose at the intake manifold with a CTL 13 clamp.



90. Reinstall the front bumper, underside plastic panels, wheels and cosmetic cover on the intake manifold.

## **ECU CALIBRATION INSTALLATION (FACTORY TUNED SYSTEMS ONLY)**

91. Factory Tuned System: Follow the Jackson Racing / EcuTek Programming Guide to calibrate your ECU.

## ROTEX SUPERCHARGER STARTING PROCEDURE

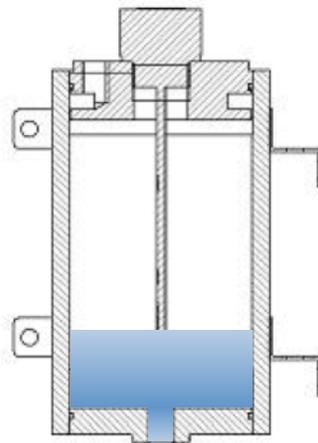
### Priming Your Oiling System:

92. Gently blow compressed air into the Rotrex oil reservoir while leaving the “IN” banjo bolt on the Rotrex supercharger loose. Cover the top of the reservoir with a shop towel while gently blowing compressed air into the reservoir until you see Rotrex oil leak from the “IN” fitting. Tighten the “IN” fitting at this time. Your system is primed and ready to be started. Once the car starts, keep a close watch over the Rotrex reservoir oil level. The oil level will decrease as the system fills all hoses, oil cooler, oil filter, and the Supercharger itself. Do NOT allow the reservoir to run dry or the supercharger will be damaged and will not be covered by the warranty.



### Checking the Rotrex Oil Level:

93. The Rotrex oiling system is a “dry sump” system meaning that it scavenges all oil from the supercharger and pumps it back to the Rotrex reservoir. At high rpm, the scavenging is stronger and the oil transfer happens quicker, filling the reservoir. To check the oil level, make sure the car is completely warmed up. Hold the throttle at 2000-2500rpm for approximately 1 minute. Let the idle come back to normal and then unscrew the dipstick, wipe it dry, and then reinsert it into the reservoir without threading it back in. The oil level should be between the low and high marks. This way of reading the oil level will give you a more accurate “real world” reading of what the oil level is while driving than simply checking it first thing in the morning.



94. Check for any fuel leaks and check all hoses, hose clamps, fittings, and fluid levels at this time.

Your installation is complete! Test drive your new Jackson Racing Supercharger system and enjoy! Once you finish your first test drive, always double check the all hoses, fittings, and fluid levels.