



VEHICLE
FITMENT

NISSAN 2009+

- 370Z
- 370Z NISMO

Twin Turbo CHArGED sysTEM

Installation Instructions



WARNING FOR INSTALLER OF THIS PRODUCT

***** Product(s) are designed for off-road / competition use only *****

This AAM Competition, LLC product requires above average mechanical ability to install properly. Installation requires the appropriate tools for tightening and loosening nuts and bolts involved for the installation of this kit. As with all mechanical projects, take appropriate precautions for your personal safety and for the proper care and treatment of the vehicle being serviced. Be sure and read through all directions before attempting.

INTRODUCTION

Thank you for purchasing the AAM Competition 370Z Twin Turbocharger System. These instructions will provide you a guide and assist to assist in the installation process of this system.



If you encounter any issues during the installation process you are encouraged to contact our tech support department via email at: support@aamcompetition.com or by calling 301-497-9212.

Parts List

Intercooler & Piping

1.	Front Mount Intercooler Core	x 1
2.	370TT IC Piping Lower DRV	x 1
3.	370TT IC Piping Lower PSS	x 1
4.	a- 2.5" 90deg bend Lower IC Passenger Side	x 1
	b- 2.5" 90deg bend Lower IC Driver Side	x 1
5.	370Z TT Upper Charge Pipe DRV	x 1
6.	370Z TT Upper Charge Pipe PSS	x 1
7.	2.75" 90 deg Upper Drv & Pss Side	x 2
8.	Driver Side Intake	x 1
9.	Passenger Side Intake	x 1
10.	370TT Intercooler Mount Spacer	x 2
11.	Hex Head Cap Screws Thread Size: M8x1.25 Length Under Head (mm): 45	x 2
12.	M8 Split Lock Washer	x 2
13.	Silicone Straight Coupler IC Piping - 2 1/2" I.D. Short	x 3
14.	Silicone Straight Coupler IC Piping - 2 1/2" I.D. Long	x 1
15.	Silicone IC Coupler 1	x 1
16.	Silicone IC coupler 2	x 1
17.	Silicone Straight Coupler Throttle Body- 2 3/4" I.D.	x 2
18.	45deg. Silicone Elbow Upper Charge Pipe- 2 3/4" I.D.	x 2
19.	T-Bolt SS Clamps (3.00"-3.31")	x 12
20.	T-Bolt SS Clamps (2.75"-3.06")	x 8

Turbos

21.	BorgWarner EFR B1 6758 0.64 a/r Drv Side	x 1
22.	BorgWarner EFR B1 6758 0.64 a/r Pss Side	x 1
23.	GT -8AN Oil Drain Flange	x 2
24.	Drain Gasket	x 2
25.	Socket Head Cap Screws M8x1.25 20mm	x 4
26.	M8 Split Lock Washer	x 4
27.	45deg Silicone Elbow Turbo Outlet PSS - 2" to 2.5"	x 1
28.	45deg Silicone Elbow Driver Turbo Intake - 2 1/2"	x 1
29.	Silicone Reducer Driver Turbo Outlet- 2 1/2" x 2"	x 1
30.	Silicone StraightPassenger Turbo Intake - 2 1/2"	x 1
31.	T-Bolt SS Clamps (2.75"-3.06")	x 2
32.	T-Bolt SS Clamps (2.38")	x 2
33.	SS worm drive clamp 3-1/4- 2-5/16"	x 4

Parts List

Downpipes

34.	Downpipe Driver Side	x 1
35.	Downpipe Passenger Side	x 1
36.	3.0" SS 2-Bolt Gasket	x 2
37.	Hex Head Cap Screws 3/8-16 1-1/2	x 4
38.	3/8" x 16 Hex Serrated Nut	x 4
39.	3/8" Flat Washer	x 8

Vacuum Hose & Fittings

40.	Vacuum Hose - 4 mm x 1ft. - Black	x 10
41.	Clamps 12.5mm-15.5mm	x 2
42.	Tee 3/16	x 2
43.	Reducing Tee 3/8 x 3/16"	x 1
44.	4" Cable Ties	x 12

Manifold

45.	AAM Competition 350/370Z Driver Side Manifold	x 1
46.	AAM Competition 350/370Z Passenger Side Manifold	x 1
47.	Studs, Steel, 10mm x 1.25 and 10mm x 1.25, 1.614 in.	x 5
48.	Hex Nut M10 1.25mm Pitch	x 12
49.	SS Lock Washer M10 18-8, 16mm OD, 2.35mm min Thick	x 12
50.	Exhaust Lock Nut M8-1.25 Copper Plated Steel 12mm Hex	x 8
51.	Turbo Gasket for T25/T28/GT25 Inlet Flange	x 2
52.	OEM Exhaust Manifold Gasket	x 2
53.	Metric Steel Spacing Stud, M8 30mm 1.25mm	x 8
54.	Tial Turbo Outlet VC355 Clamp	x 2

Power Steering

55.	1-1/4" Minimum Diameter: 9/16 Width: 5/16, Stainless Steel	x 2
56.	Power Steering Hose 7/16"	x 12ft

Mounts & Bolts

57.	Engine Mount	x 1
58.	Cap Screw - Class 8.8, M10 Fully Threaded, Pitch: 1.5, 25mm Long	x 3
59.	Cap Screws- M6x1.00 Length (mm): 20.00	x 4
60.	Lock Nuts Thread Size (mm): M6x1.00	x 4
61.	Serrated Flange Nut - #10-32 0.3650	x 1
62.	Socket Head Cap Screws #10-32 1/2"	x1

Parts List

Heat Shields

63.	Heat Shield Driver Side	x 1
64.	Heat Shield Passenger Side	x 1
65.	Cap Screws M8x1.25 12.00mm	x 3

Fuel Fittings

66.	Walbro 255lph High Pressure Fuel Pump	x 1
67.	Pigtail Wiring for Fuel Pump	x 1
68.	Fuel Ext	x 1
69.	600cc Injectors	x 1

Filters

70.	2.5" K&N Air Filter	x 2
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Check Valve

71.	Check Valve, 1/2 NPT Female x 1/2 NPT Female, Fluoroelastomer Seal	x 2
72.	Barbed Tube Fitting, Straight for 5/8" Tube ID x 1/2 Male Pipe	x 1
73.	Barbed Tube Fitting, 90 Degree Elbow for 5/8" Tube ID x 1/2 Male Pipe	x 3
74.	Pushlock 10AN 45deg	x 1
75.	PCV Check Valve	x 1

Oil Pan Spacer

76.	Cap Screws - M6x1 40.0000 mm	x 10
77.	M6 SS Split Lock Washer	x 10
78.	Cap Screws - M8x1.25 45.0000 mm	x 2
79.	M8 SS Split Lock Washer	x 2
80.	AAMC Oil Pan Spacer	x 1
81.	AAMC Pick Up Spacer	x 1
82.	Oil Pan NPT Plug	x 1

Osiris Cable

83.	UpRev Osiris Standard	x 1
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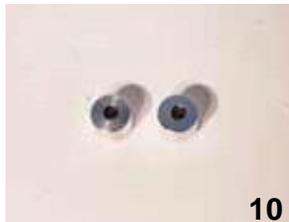
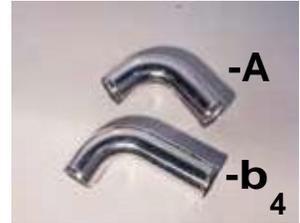
Parts List

Oil and Coolant Line Kit

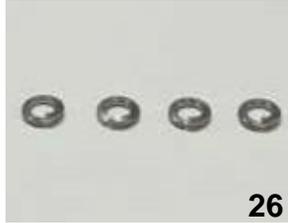
Line Kit

84.	Main Oil Feed	x 1
85.	Oil Feed Driver	x 1
86.	Oil Feed Passenger	x 1
87.	Oil Return Driver	x 1
88.	Oil Return Passenger	x 1
89.	Oil Feed 4AN Tee	x 1
90.	Oil Feed 4AN to NPT	x 1
91.	Oil Feed 4AN Joint	x 1
92.	M12 Banjo Ring Oil Feed	x 2
93.	M12 Banjo Bolt Oil Feed	x 2
94.	Oil Feed Seals	x 4
95.	Coolant Driver Main	x 1
96.	Coolant Passenger Main	x 1
97.	Coolant Driver Inner	x 1
98.	Coolant Passenger Inner	x 1
99.	Coolant Driver Outer	x 1
100.	Coolant Passenger Outer	x 1
101.	Coolant Line Tap, .75" Hose ID, 3/8NPT port	x 2
102.	2012+ Coolant Relocation Line	x 1
103.	Coolant + Drain 8AN O-Ring	x 4
104.	M14 Banjo Ring Coolant	x 4
105.	M14 Banjo Bolt Coolant	x 4
106.	Coolant Seals	x 8
107.	Adel Clamp	x 6
108.	Coolant Block Off - Side Engine	x 1
109.	Coolant 8AN 6AN Tee	x 2
110.	Coolant Adapter Fitting	x 1
111.	O-Ring- Coolant Pipe to Block	x 1
112.	Coolant Adapter Bracket	x 1
113.	1/2 Male JIC x 3/8 Male BSPT - BSP Conversion	x 1
114.	Coolant Hose Bracket 1	x 1
115.	Coolant Hose Bracket 2	x 1
116.	Clamp	x 6
117.	Clamp- 7/8- 3/8" Width: 1/2"	x 4
118.	1/8 NPTF BRASS TEE	x 1

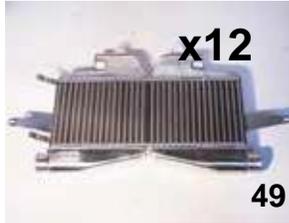
Parts Gallery



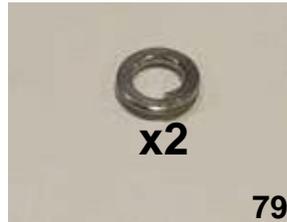
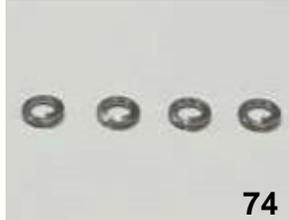
Parts Gallery



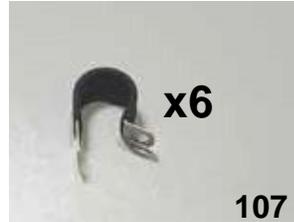
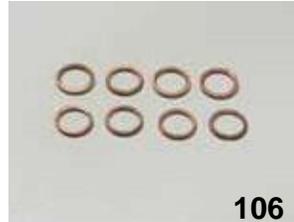
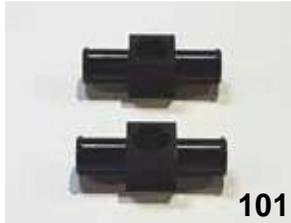
Parts Gallery



Parts Gallery



Parts Gallery



NOTE Tuner Series Twin Turbocharger Systems do not include the following items:

- 600cc High-Flow High Impedance Injectors
- High-Flow Walbro 255 lph Fuel Pump
- Engine Management - ECM Programming

Step.01

Remove the engine and transmission from the chassis.

NOTE The next several steps are to prepare the engine for the Twin Turbocharger System Installation.



Image Reference [05a]

Step.02

Remove the heat shields to gain access to the nuts that are holding the exhaust manifolds on.

Step.03

Remove the factory exhaust manifolds and converters.

Step.04

Remove the oxygen sensors and place them aside as they will be utilized later.

Step.05

After removing the exhaust manifolds, remove the exhaust studs from the driver and passenger side. Replace these with the new studs provided in the hardware kit.

*See Image Reference [05b] & [05c] for stud replacement. We recommend using an E8 socket to extract the old studs.
See Image Reference [05a]*



NOTE **YOU MUST SUPPORT THE ENGINE FIRST!**
Before removing the passenger side motor mount bracket, you must support the engine.

Step.06

Once you've supported the engine, proceed by removing the passenger side motor mount bracket.

Step.07

Once the OEM motor mount bracket is removed, install the AAMC stainless engine mount bracket using the provided hardware. Then, bolt it to engine block. *See Image Reference [07]*



Image Reference [07]



Driver Side - Image Reference [05b]

Step.08

Holding power cable, remove the bracket on back of alternator. This will provide clearance for installation of the intake, which will be covered in a later step.

Step.09

Remove the bracket securing the power steering lines to the sub-frame.



Passenger Side - Image Reference [05c]

Step.10

Remove the coolant hard pipe with the hose that runs from back of cylinder head to the driver side of valve cover. *See Image Reference [10]*



Image Reference [10]

Step.11

Remove the bracket on the rear of the driver side cylinder head.

Step.12

Bend the lower water pipe on the drivers side up so that it is in plain with the valve cover. *See Image Reference [12]*

** Inserting a 3/8 ratchet extension works well*



Image Reference [12]

Step.13

NOTE Prior to installation, please ensure both O-rings are in good condition. Also make sure they are seated properly, once installed.

Install the supplied barb fitting and hose in place of the hard pipe that was previously removed (in step 10). Use the new supplied O-ring and the original O-Ring from the coolant pipe. *See Image Reference [13a] & [13b]*



Image Reference [13a]



Image Reference [13b]

Step.14

Install AAMC water line heat shield on rear lower of driver side cylinder head, leave bolt loose for now.
See Image Reference [14]



Image Reference [14]

Step.15

Remove the plastic shielding around the starters power cable. This will help with clearance of the intake pipes in later step.

Step.16

Install the AAMC stainless turbo manifolds to the engine with the provided gaskets and hardware (Nuts & lock washers).
See Image Reference [16]



Image Reference [16]

Step.17

Install the turbo manifold heat shields. (Driver Side: For easier installation, remove the water pipe).
See Image Reference [17]



Image Reference [17]

NOTE This step (#18) is for model years 2012 & up only, with a factory oil cooler.

Step.18

Remove the water pipe from the block by removing the (2) bolts holding the flange in the block. Also, remove the supporting brace bolt behind the engine mount, along with the rubber hose attached to it. Cap off the feed hole with the supplied block off plate. Remove the threaded plug towards the front of the engine (between engine mount and AC pump). Thread in the supplied -6AN male adapter then thread the 90° -6AN female to barb onto the male adapter. Run new hose from the 90° barb to water pipe that old hose was removed from.

See Image Reference [18a] & [18b]

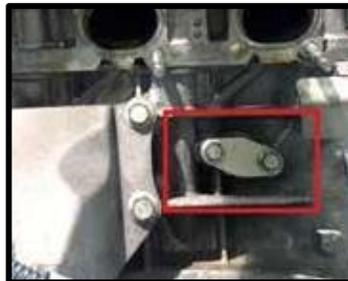


Image Reference [18a]



Image Reference [18b]

PREPARING THE TURBO CHARGERS FOR INSTALLATION

Prepare the turbochargers by installing the oil, water fittings and lines.
See diagrams below.

- Clock the compressor and exhaust housings as shown in the diagrams below.
- Final adjustments to the compressor cover will be made once the turbo is installed.



Driver Side Turbocharger



Driver Side Turbocharger Lines



Passenger Side Turbocharger



Passenger Side Turbocharger Lines

Step.20

Thread New, provided studs into turbo manifolds where the turbos will bolt up to. On each side, one stud will need to be installed upside down in order to fit turbo.

See *Image Reference [20]*

Step.21

Starting on the driver side, be sure to install the provided (2"-2.5") straight coupler on the charge pipe coming out compressor side of turbo. Tighten with a T-bolt clamp. Also attach the 45 degree coupler for the intake on the turbo.

Step.22

With the compressor housing clamp loose, you can install the driver side turbocharger onto the turbo manifold, using the supplied gaskets and copper nuts. Turn the compressor housing to fit the coupler properly behind the engine mount bracket.

NOTE Tighten the compressor housing clamp, once you've complete this step.

Now, run the oil feed lines towards the front of the engine and the inside water line and vacuum lines around the back of the turbo and towards the upper rear of the turbo.

See *Image Reference [22]*

Run the lines under the heat-shield bracket which you left loose earlier.

Step.23

Tighten the turbo to the manifold & heat shield bracket on the rear of the cylinder head. See *Image Reference [23]*

Step.24

With lines attached, Install the passenger side turbo, in the position shown in *See Image Reference [24]*. Like the driver side, leave the compressor band-clamp loose, so you can rotate the housing for best fitment. The compressor outlet should sit between the engine mount and the sub frame. Tighten the turbo to the manifold with the supplied gasket and copper nuts.



Image Reference [20] & [23]



Image Reference [22]



Image Reference [24]

Step.25

Install the AAMC waterline bracket, to the top of the transmission bolt, located on the bell housing near passenger side turbo. Run the water and vacuum lines to the rear of the engine. Run the oil lines down and to front of engine. Zip tie water lines to the AAMC transmission bracket.

See Image Reference [25]

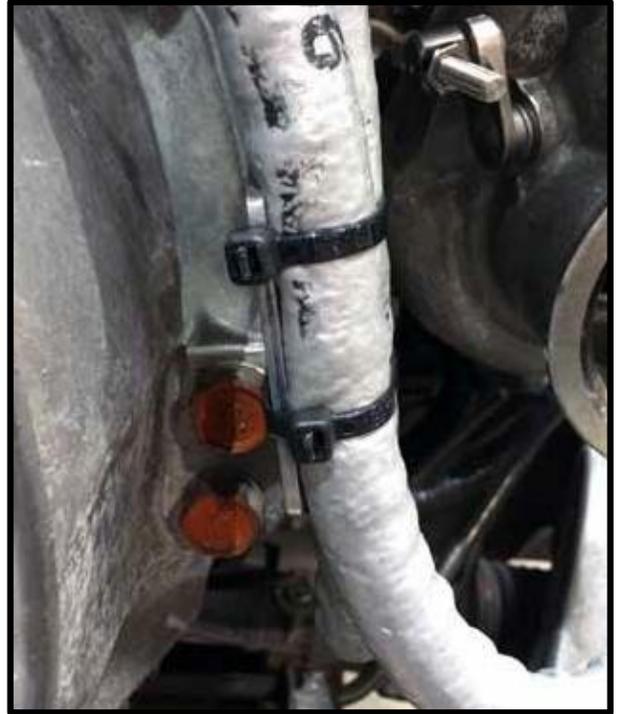


Image Reference [25]

Step.26

Attach (2"- 2 1/2") 45 degree coupler to the compressor outlet facing down. Tighten with a T-bolt clamp , and use a straight coupler for the intake on the passenger side.

NOTE Tighten Compressor housing clamp once done with this step!

Step.27

Install the AAMC water hose adapters in line with the heater core hoses. Thread the AN fitting into the pipe just enough to snug it with the rubber O-ring.

DRIVER side: Remove the pipe and clamps in the hose and replace with the AAMC hose adapter. Use worm clamps to tighten. Install to the engine side of heater hose and tighten using a worm clamp.

Passenger side: Needs to be cut. Using a worm clamp, leave one end clamped to the engine with the AAMC adapter installed.



Image Reference [27]

Step.28

With all the water and vacuum lines routed towards the rear, you should connect them all to the provided T-adapters. Run them up over the rear bell housing and behind the intake manifold. Keep the water inlet and outlet lines from each side together, into the same T-adapter, then run the vacuum line.

See Image Reference [28]



Image Reference [28] & [27]

Step.29

Next, run the oil feed lines from the turbos to the front of the engine. The OEM oil pressure sensor needs to be removed and the provided 1/8 NPT T-adapter will have to be installed in-line with it.

** Please setup lines as shown in Image Reference [29]*

NOTE

USE TEFLON TAPE ON ALL PIPE THREADS

To ensure secure fitment and prevents leaks.

Some engines may require the threads to be chased with a 1/8NPT Tap in order to thread the new brass T-Fitting in.



Image Reference [29]

Step.30

Reinstall the oil pressure sensor. Be sure to secure all lines and ensure they are out of the way from moving parts and low clearances. Use zip ties if necessary.



Image Reference [30]

Step.31

Remove the fuel line shield (located on the passenger side frame rail), and install the supplied fuel line extension and fuel quick connect fittings (-6AN line and fittings). Next, slide the provided heat shielding down over the line and cover the plastic tabs on quick connect to shield from heat.



Image Reference [31]

NOTE

We have noticed that clearance between the wastegate and the engine bay may vary from vehicle to vehicle. It is recommended to add clearance to the engine compartment using a dead blow hammer. A few lite taps will suffice.



See Image Reference [32]

Step.32

This step requires minor clearances to the frame. This will allow for proper clearance of both the driver side wastegate actuator and passenger side turbo manifold. To accomplish this, we recommend using a dead blow hammer to the areas highlighted in red.



Image Reference [32] - Passenger Side

On the passenger side (See Image Reference [32] - Passenger Side) the edges of the oval cut out need to be flattened out slightly to allow room for the turbo manifold.

On the driver side (See Image Reference [32] - Driver Side) the flatter area highlighted in red needs to be recessed a bit to allow clearance for the wastegate actuator.



Image Reference [32] - Driver Side

Step.33

Move the engine back into the engine bay and bolt the sub-frame back in place. Begin reconnecting the suspension, steering, engine harness, radiator hoses, A/C lines and vacuum hoses.

Step.34

Connect the firewall heater hoses to the AAMC adapter on the engine side. Tighten using supplied worm clamps.

NOTE Steps 35-39 are dedicated to preparing the intercooler for installation.

Step.35

Connect the fuel line to the extension.

Step.36

Drop the oil pan and install the AAMC spacer for the oil return lines. Be sure to use the new gasket sealer on both sides of spacer and be sure to install the provided oil pickup tube spacer as well. Connect the oil return lines to the fittings on the spacer. New bolts have been provided for both.

See *Image Reference [36a] & [36b]*

Step.37

Remove the plastic radiator air deflectors on the bumper support and frame rails, located by the fender liners.



Image Reference [36a]

Step.38

Remove the bumper support bar.



Image Reference [36b]

Step.39

Remove / Un-clip the temperature sensor from the radiator center support bar and reinstall on the inside.

Step.40

Remove the power-steering cooler, hoses and brackets.
See Image Reference [40]

Step.41

Remove the power steering lines and brackets going around and up frame rail, connecting to the reservoir.

Step.42

Gently bend the horn bracket back in a S-Shape, to provide clearance for intercooler. (Adjust so it does not rub a/c condenser or intercooler).

Step.45

Reinstall the power-steering cooler directly to the side tabs on the driver side of intercooler, using the top steering cooler brackets and new hardware provided. (Hose fittings facing up).
See Image Reference [45]



Image Reference [40]



Image Reference [44] - Passenger Side

Step.43

Remove the intake air ducts from radiator support.

Step.46

Mount the AAMC intercooler with the provided hardware, using the side mounting tabs and spacers between the intercooler tab and the radiator support, to the holes under the support bar. Mount top tabs into the studs on support.
See Image Reference [46]



Image Reference [44] - Driver Side



Image Reference [41]

Step.44

Trim the area around where the air ducts were.
See Image Reference [44]

Step.47

Run the new hose to the steering cooler with the new hose and clamps provided with the kit. (Zip-Tie or clamp the hose where needed to support or keep from getting damaged).



Image Reference [45] & [46]

Step.48

Trim the bottom corner of the passenger side radiator core support. *See Image Reference [48]*

Step.51

Install the turbo intake pipes with supplied worm clamps (pipes with AN fitting welded on) and air filters.

Step.49

Run both pieces of the driver side lower intercooler piping from intercooler to the turbo outlet with supplied couplers and T-bolt clamps. *See Image Reference [49]*

Step.50

Run both pieces of the passenger side lower intercooler piping from intercooler to the turbo outlet with supplied coupler and T-bolt clamps. *See Image Reference [50]*



Image Reference [50] - Driver Side



Image Reference [48]



Image Reference [49] & [50] - Driver & Passenger Side



Image Reference [49] - Passenger Side

Step.52

Install the S-Couplers on the upper intercooler outlets.
See Image Reference [58]

Step.53

Insert upper intercooler pipes (3" 90 degree) Start by inserting long end thru previously trimmed hole in radiator support then short end of pipes into S-Coupler on intercooler (do not tighten anything yet).

Step.54

Attach a 45 degree coupler to the other end of the pipes facing upwards.

Step.55

Install the couplers to the throttle bodies and tighten with T-bolt clamps on the throttle body side.

Step.56

Install the pipes with MAF flanges. **(The MAF flange side sits closest to the 45 coupler)**. Fit everything properly then remove the MAF pipes. Be careful not to move the 45 degree couplers.

Step.57

Remove the 90 degree pipes going into S-Coupler, leaving the 45 degree couplers attached to them. Be careful not to move the placement of the 45 degree couplers on the pipes. Once removed, place a T-bolt clamp on the coupler and tighten it.

Step.58

Reinstall the MAF pipes with T-bolt clamps and tighten everything. Install MAF Sensors into the pipes.



Image Reference [58]

Step.59

Reinstall the front bumper crash bar and foam pad.



Image Reference [59] Your setup should resemble this image, prior to the install of crash bar and stock foam pad.



Image Reference [53] & [54]

Step.60

Reinstall the front bumper.



Image Reference [60] - Before



Image Reference [60] - After



Image Reference [60] - After / Bumper Installed

Step.61

Install the AAMC turbo, exhaust and downpipes.

(Be sure to tighten the oxygen sensors in the downpipes).

Step.62

Attach the exhaust system to the downpipes.

Step.63

Install the check valves for driver and passenger intakes.

See Image Reference [63a] & [63b]

NOTE

PRIOR TO STARTING THE VEHICLE FOR THE FIRST TIME...

Double check that all lines, clamps, fluid levels and connections fit properly



Image Reference [63a] - Driver Side



Image Reference [63b] - Passenger Side

Step.64

Fill all fluids and bleed cooling system. Crank over the motor with the engine harness unplugged so that you prime the oiling system. Plug harness in, start engine, and check for leaks.