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## Installation Instructions 2005-2007 Mustang GT Single 76mm Turbo System



**Proper Installation of the Granatelli Turbocharger Kit requires a general understanding of automotive mechanics. Please read the entire installation manual completely and decided whether you feel qualified to attempt the installation before you begin. A major portion of this installation is to be done from the bottom. (4) Four sturdy jack stands with a minimum of 18 inches of height is highly recommended.**

**Always use premium grade fuel 91 octane or higher and maintain regular oil changes every 3000 miles**

**Step (1)** Find a place where you will be able to work on the car without having to move it for at least 10 hours. Elevate car and place jack stands as wide as possible in all four corners to support the car. A hoist is also very helpful.

**Step (2)** Disconnect (+) Positive and (-) Negative cables from battery using 5/16 or 8mm wrench located at passenger side firewall

**Step (3)** Remove the entire factory air intake system. This includes the factory air box. Note: Air Box is held in place by (2) 10mm bolts.



**Step (4)** Remove the plastic belly pan under the nose. Note: Held in place by (7) 5.5mm screws. Keep this in a safe place as this part will be re-installed.

**Step (5)** Remove plastic radiator cover. Note: Held in place by (6) push in clips.



**Step (6)** Remove front nose assembly held in place by 3 per side Phillips head screws at lower front fender well. Note: It is also a good idea to remove the front tires to gain even more access however, turning steering wheel lock to lock allows for all screws to be removed. At front fender belt line, remove 1 per side 10mm bolts at the top of the engine compartment, just to the side of each headlight. Before removing nose, disconnect wiring harnesses to fog lights, turn signals and running lights.

**Step (7)** Remove Passenger side headlight (3) 10mm bolts

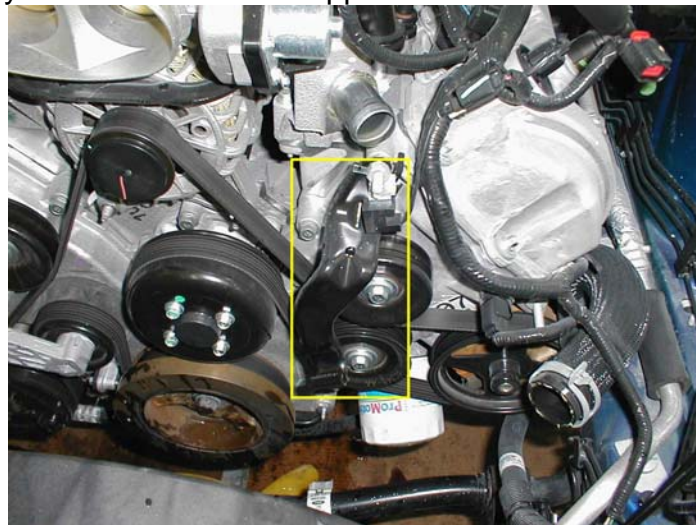
**Step (8)** Remove windshield washer tank. (2) 10mm bolts and (1) 10mm nut off stud.  
Note: this will be reinstalled.

**Step (9)** Drain engine coolant. – Petcock is on passenger side bottom of radiator.

**Step (10)** Remove coolant tank (2) 8mm screws. **Save to be reinstalled.** Note: Once bolts are removed, hold the tank up as high as possible so coolant in the tank drains back to the engine, then pull 1" hose off bottom of the tank and drain excess coolant.

**Step (11)** Remove upper radiator hose off drivers' side and at top of thermostat housing. Disconnect lower radiator hose from drivers' side of radiator.

**Step (12)** Remove bracket on block that supports radiator hose held in place by 15mm nut on drivers side cylinder head. – This support bracket is not reused.



**Step (13)** Remove (2) upper Radiator support bracket held in place by (2) 10mm bolts. These parts are modified by drilling (2) 3/8 (7.93mm) holes in the brackets to pull the upper portion of the radiator forward 3/4 of an inch.



**Step (14)** Drill (2) two 3/8 holes, per bracket 3/4" closer to the rubber grommet. Reinstall brackets using newly drilled holes. We do this to tilt the top of the radiator/fan assembly forward for more clearance for the turbo.



**Step (15)** Remove the power steering reservoir held in place with (1) 8mm bolt at fan shroud. Drain all fluid.

**Step (16)** Remove factory power steering cooling tube. The tube is fastened in front of the a/c condenser running from the rack and pinion and is returned back to the power steering fluid reservoir. This is a simple "single pass" tube. It will no longer be needed.

**Step (17)** Remove the lower radiator hose.

**Step (18)** Remove the hose from the thermostat housing assembly to the expansion reservoir.

**Step (19)** Remove the top/upper hose from the thermostat housing to the engine.

**Step (20)** Remove the side hose from the thermostat housing, leave the other end attached to the engine.

**Step (21)** Remove the thermostat housing as an assembly to be modified



**Step (22)** Remove the pressed in tube from the thermostat housing. This can be done 2 ways:

1. By heating the area around the pressed in fitting while moving it back and forth, as the sealant get soft the fitting will pull out or
2. By placing the pressed in fitting in a vice and gently twisting it back and forth. Once the pressed in fitting has been removed, clean out the excess sealant and use a  $\frac{1}{2}$  npt tap to thread the hole. Once tapped and clean apply thread sealer and install the supplied  $\frac{1}{2}$  npt x  $\frac{5}{8}$  barbed hose fitting.



**Step (23)** Remount the power steering reservoir to the left side strut tower using the supplied bracket and hardware, use the existing tapped hole in the shock tower.



**Step (24)** Once the reservoir is mounted locate and install the  $\frac{3}{8}$  by 20" long, the hose is routed from the reservoir to the rack and pinion. The larger of the two hoses needs to be cut so you are able to rotate it to line up properly. Use the supplied  $\frac{3}{4}$  brass hose coupler and clamps.



**Step (25)** Locate the lower radiator hose removed in step (17) cut and remove a 90 degree section from it.



**Step (26)** Install the 90 degree section of hose just modified onto the lower radiator outlet pointing up at the 12 o'clock position.

**Step (27)** Install the thermostat housing modified in step (22) onto the lower radiator hose as show in picture below.



**Step (28)** Install the aluminum extension pipe 1 ½ x 4" into the 1 ½ x 3" long silicone hose, then install in between the radiator hose from the block. Tighten all clamps.



**Step (29) Lengthening the lower coolant Expansion Tank tube:** Since we moved the thermostat housing, now we need to extend the expansion tank hose that runs from the thermostat housing to the tank. Locate  $\frac{3}{4}$  x 5" metal extension tube supplied in your kit. This needs to be installed in the middle of the lower reservoir hose to lengthen it. (See photo). Once lengthened, reconnect to newly installed barbed fitting on housing



## Fuel System Upgrades –

If you purchased a Granatelli Turbo kit that included injectors, now is the perfect time to install them. Consult the factory service manual for detailed installation instructions. However, this is really a simple and straight-forward procedure.

- a. The fuel rails are held in place by two(2) 7mm bolts per side. Starting from either side, remove the two bolts
- b. Remove the wiring harnesses that snap into each injector
- c. Wiggle the fuel rails in an upward motion. Doing so will gently pull the injectors from their socket in the manifold.
- d. Once the rails are away from the engine it will be easy to remove the factory injectors and directly replace them with injectors supplied in the kit.

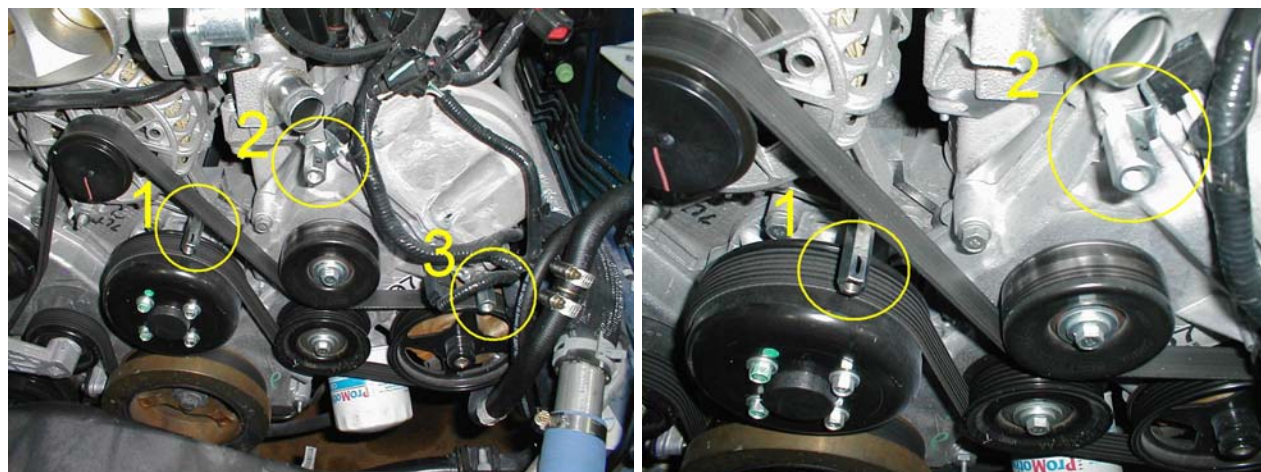


## Fuel Pump Upgrade

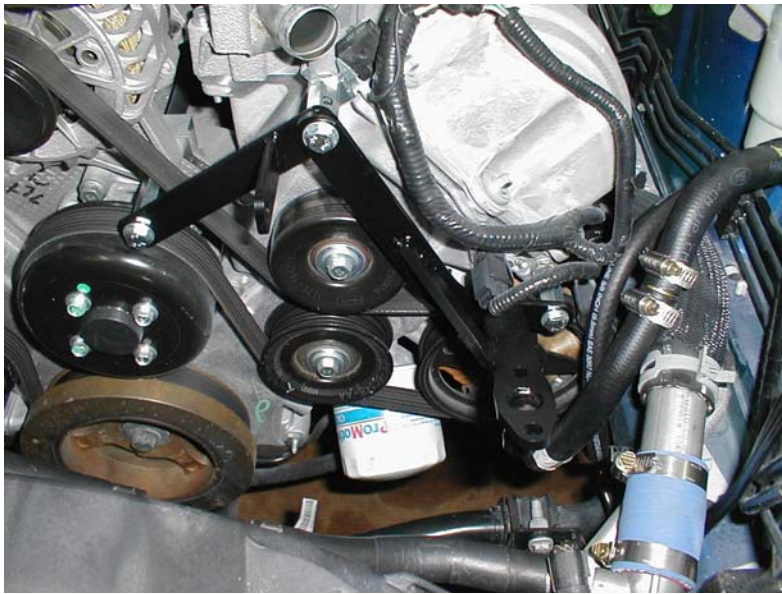
Your factory fuel pump is more than adequate to supply enough fuel to support 525 hp (at the crank). When coupled with the Granatelli Turbo kit at less than 8psi, no fuel pump modifications are required. Granatelli Motor Sports also offers a high flow / high pressure fuel pump upgrade kit (part # GMFS0507) for those of you looking to exceed 480 rear wheel hp. **Caution internal engine modifications are highly recommended before you proceed to increase boost past 10 psi.**

## Installing the Turbo Head Unit Mounting Brackets

**Step (30)** Your kit came with 5 spacers: 3 coupling nuts with 7/16 bolts and washers and 2 with 7/16 studs. The 2 shorts spacers with studs are used to mount the intercooler so we are not ready for them. (see Intercooler Installation section) Locate the three coupling nuts marked #1, #2, & #3. The #1 nut goes onto the lower alternator stud on the drivers' side. #2 nut goes on the stud right under the water outlet neck on the driver' side of engine. Note: In some cases this stud will need to be shortened by cutting 3/8 of an inch off the end of the stud. If required, simply remove the stud, make required modification and reinstall bolt, now you can install #2 nut onto stud. #3 nut goes on the stud right above power steering pulley. Note: this stud may require similar modifications as well. Install #3 nut onto cut stud, tighten #1, #2, #3 nuts.



**Step (31)** Install the 2 turbo support backs, the straight bracket goes between #1 and #2 support Nuts first. (See photo).



**Step (32)** The curved bracket goes between #2 and #3 nuts second.(See photo). These brackets will go in several different ways, see photo to make sure they are installed correctly. Note: The curved bracket stacks on top of the short bracket.

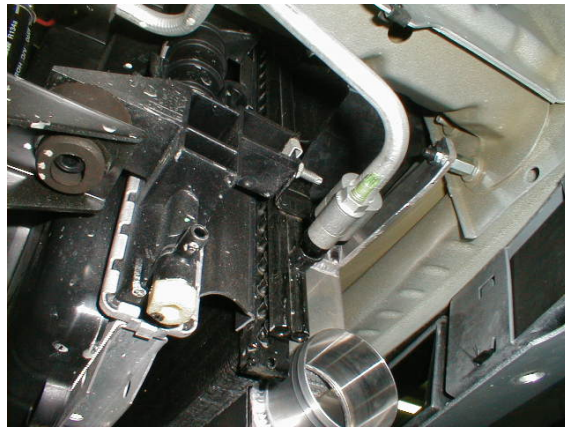
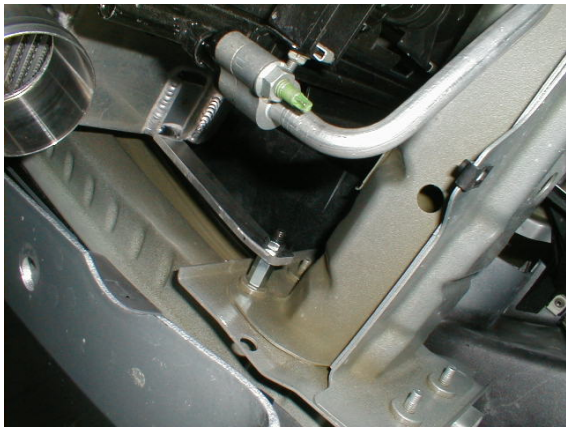


The last step is to install the oil drain tubing. The support bracket has the oil drain nipple welded to it to prevent any chance for a leak. Put the oil drain hose on the bracket and clamp tightly. Step 50 to 60 address getting the oil into the pan.

## **Installing Front Mount Intercooler**

**Step (33)** The Intercooler is supported by the two(2) 8mm lower studs of the inter side of the bumper mount. Start by threading the supplied intercooler spacers to the factory studs. These are the spacers that have a ¼ x20 stud sticking out of one end. Once spacers are fastened, mount intercooler and tighten in place using ½” wrench. When facing the front of your car, the discharge side of intercooler should be pointing towards passenger side of car on the bottom and the inlet side is pointing towards the drivers side top Discharge side of intercooler is 3” and inlet side is 2.5” (See photo).





## Installing Discharge Tubing (3" Cold Side)

Your discharge tubing consists of 3 sections: MAF (mass airflow sensor) tube, transition tube and throttle body tube. Additionally you were supplied a BA-2800 MAF and MAF wiring harness extension.

**Step (34)** Install the blue GMS supplied blow off valve into the discharge transition tube using the O-ring and snap ring supplied. Note: Vacuum nipple needs to point straight down.

**Step (35)** A small portion of the passenger side head light support must be removed to allow the discharge tubing to properly follow the path of least resistance. Using tin snips, small air saw or narrow hacksaw cut the section out as needed (See photo).



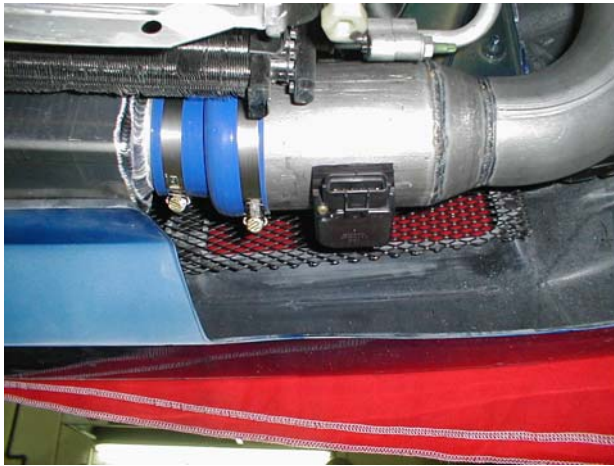
**Step (36)** Install BA-2400 / BA-2800 MAF electronics into the appropriate section of discharge piping. Be careful not to damage the electronics as you insert them into the tube.

Note the “airflow” arrow on the electronics and confirm the arrow points in the path of the throttle body and not towards the intercooler. (see photo below step 39)

**Step (37)** With the MAF electronic securely fastened into the tube, connect the MAF tube to the intercooler using the supplied 3” to 4” adapter sleeve with #64 clamp.

**Step (38)** Using the 3” x 4” long coupler sleeve, attach the transition elbow with #44 clamps.

**Step (39)** Using the 3” x 45° angle coupler sleeve, install the throttle body tube in at one side and using the 6” x 4” long coupler sleeve in the oval configuration fasten to the throttle body. (See photo).



**Step (40)** Locate supplied MAF extension harness and install from factory wire to new MAF sensor.

**Step (41)** Reinstall the windshield washer fluid tank back to the factory position and location.

**Step (42)** Remove catalytic converter “H” pipe (“Y” in shape) section from exhaust manifolds and save nuts and band clamps.

**Step (43)** Measure 2” in front of hanger brackets and cut both pipes. (See photo).





**Step (44)** The starter wires will need to be rotated up to clear the new exhaust pipes. Simply loosen wires to starter and flip them 180° so that they are facing up. (See photo).



Before



After



Before



After

**Sway Bar Drop Brackets.** In order to add clearance for the down pipe from the turbo the sway bar must be dropped one bolt hole. The sway bar will have to be relocated by dropping it down 3 inches.

**Step (45)** Remove the (4) 15mm sway bar mounting nuts holding the sway bar to the radiator omega brackets and remove sway bar from the studs. You will need to cut 3/8 of an inch off the top of the studs.

**Step (46)** Locate the sway bar relocation brackets and (2) 3/8 x 1 bolts, locknuts and washers. These brackets relocate the sway bar 3" lower. Install slotted sway bar drop brackets over factory studs protruding from Omega brackets. The top factory sway bar retainer hole now mounts the supplied brackets and the bottom stud from the factory omega bracket now becomes the top-mounting hole for the sway bar clamps

**Step (47)** Reinstall sway bar onto brackets. (See photo).





**Step (48)** Drain Engine Oil

**Step (49)** Locate 23 ½" oil pressure hose ¼ tee and ¼ x -3 90°.

**Step (50)** Remove oil pressure sending unit from oil filter adapter and install ¼ pipe tee and ¼ x -3 90° fitting, see photo for clocking. Install -3 braided steel oil feed hose and tighten, reinstall sending unit.



**Step (51)** Locate 3/8 oil drain tee and 3/8 x ¾ hose barb,

**Step (52)** Remove oil level sensor on passenger side of oil pan.



**Step (53)** Install 3/8 tee and hose barb and reinstall oil level sensor, see photo for clocking.



**Step (54)** There are some power steering tubes that will need to be bent to clear the exhaust discharge pipe, see photo to see which way they need to be bent , be careful not to kink or break them.



## Installing Turbocharger Head Unit

**Step (55)** Locate turbocharger, oil drain gasket and two 8mm oil drain bolts. Using gasket sealer, glue gasket on to support bracket. **Do not use silicone.** Install turbocharger onto support bracket using the two 8mm bolts and finger tighten only.





**Step (56)** Locate all exhaust pipes and two rolls of heat wrap, you will need to heat wrap all exhaust pipes except the 3" Y pipe and the two converters. (See photo).

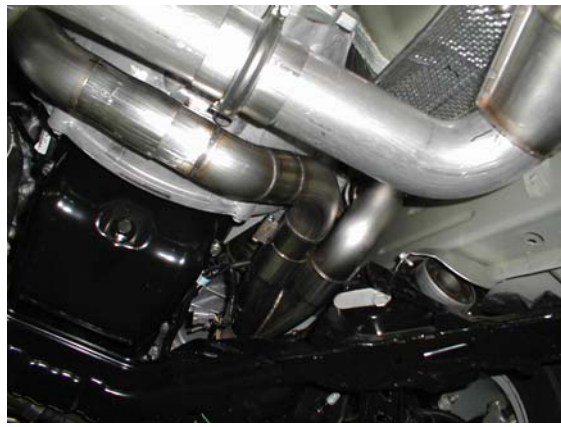
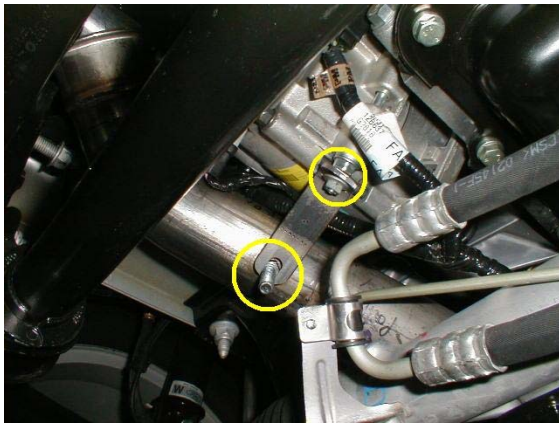


**Step (57)** The crossover pipe is next, we have pre assembled this pipe, it will go in assembled, install it now, leave the bolts loose for positioning.



**Step (58)** Locate small support bracket. This bracket bolts to the 2 ½ pipe and to the lower front A/C stud (See photo), leave loose for positioning.





**Step (59)** Install exhaust turbine drive pipe. Four bolt square flange on turbine side and V band flange on the other side. This pipe goes from the turbo inlet to the 2 ½ pipe installed above. Locate 2 ½ V band clamp, turbo inlet gasket and four 3/8 x 1 ¼ bolts and locknuts. Install pipe onto bottom of turbo using gasket bolts, nuts and V band clamp. **Do not tighten yet.**

**Step (60)** Locate four(4) 3/8 x 1" exhaust discharge bolts. Install the first bolt into the upper rear exhaust turbine house through the support bracket. **Finger Tight.**

**Step (61)** (Locate exhaust discharge pipe, install this pipe onto turbo and under oil filter, using the four 3/8 x 1" bolts and gaskets, **do not tighten.** (See photo).



**Step (62)** Once all these pipes have been installed, position pipes for clearance from frame, radiator fan, AC compressor, sway bars mounts, tighten all bolts on turbo mount from steps 55 to 62. **Double check for clearance.**

**Step (63)** Attach oil feed hose to turbo and tighten.



**Step (64)** Install heat shield on turbo.

**Step (65)** Locate exhaust pipe and V band clamp, this pipe has a V band inlet and a 3" slip outlet. Install onto down pipe using the V band clamp. This pipe should be pointed straight back. **Do not tighten yet.**

**Step (66)** Locate Y pipe and two 3" V band clamps. Install Y pipe next.

**Step (67)** Locate converters and install onto previous mounted exhaust piping. (See photos).



**Step (68)** Install V band clamps, position all pipes as to clear frame, power steering, hoses, and floorboard, tighten all clamps now from steps 63 to 68. **Double check for clearance.**

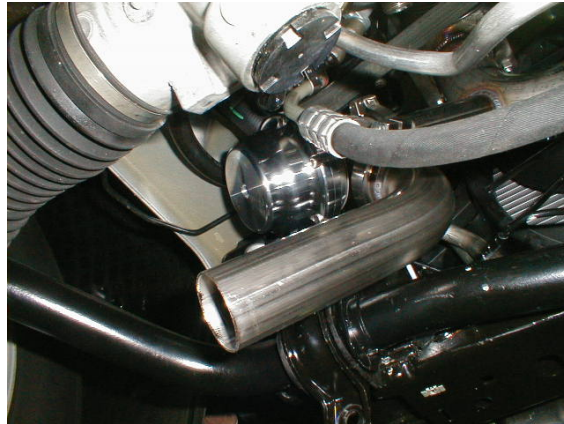
**Step (69)** Install three O2 sensors, one in crossover and one in each converter

**Step (70)** Reinstall previously cut factory rear H pipe. ("Y" in shape)





**Step (71)** Locate wastegate and wastegate pipe, install wastegate now using supplied V band clamps. Install wastegate discharge pipe, position pipe to clear sway bar and oil filter and steering rack, tighten both clamps. Install wastegate pressure hose from turbo compressor outlet to the side of wastegate. Your kit came preset at 7lbs of boost which will support 450 hp and 470 ft/lbs of torque to the rear wheels **Do not use top wastegate port unless you are using a boost controller not supplied.**



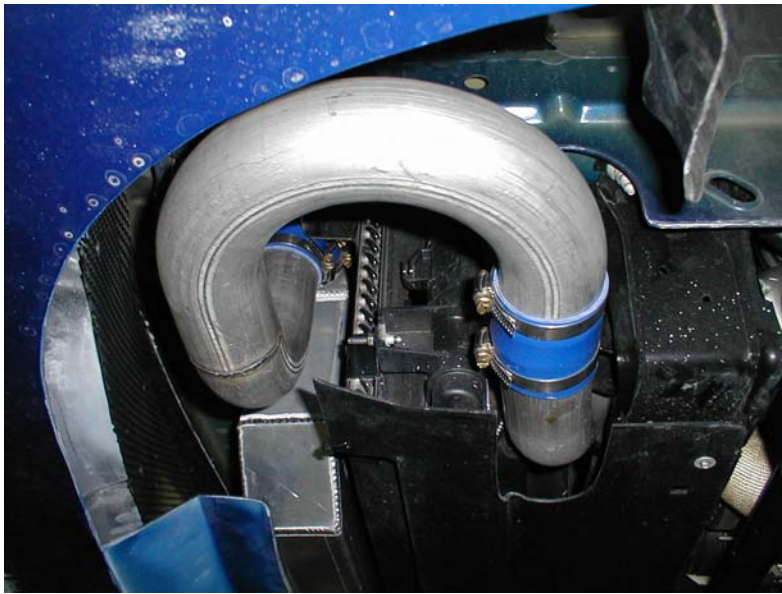
### **Installing Discharge Tubing (2 1/2" Hot Side)**

**Step (72)** Install 90° 2 1/2" elbow on to driver side of intercooler with 90° elbow facing straight down. The first pipe goes between radiator fan and frame

**Step (73)** Install couplers onto turbo discharge and then slide pipe in from bottom and into the coupler on turbo

**Step (74)** The second pipe, the horseshoe shaped intercooler inlet tube, goes from intercooler to first pipe, (see photo)





Once both pipes are installed, tighten all clamps making sure pipes do not come in contact with brake lines or **A/C** hoses.

**Step (75)** Locate oil drain hose and two #10 clamps. Install onto turbo drain and oil pan. Be sure to make sure hose does not come in contact with any moving parts or exhaust pipes.



**Step (76)** Locate air filter, 4" coupler, two(2) #64 clamps, and air filter pipe. Install coupler onto turbo. Install air filter onto pipe and install onto turbo. Position filter so it has clearance and tighten.



**Step (77)** Locate stainless water pipe and two 1-¼ couplers and four #24 clamps. Install couplers onto motor and thermostat. Install pipe, be sure pipe clears brake lines and turbo housing. (See photo).



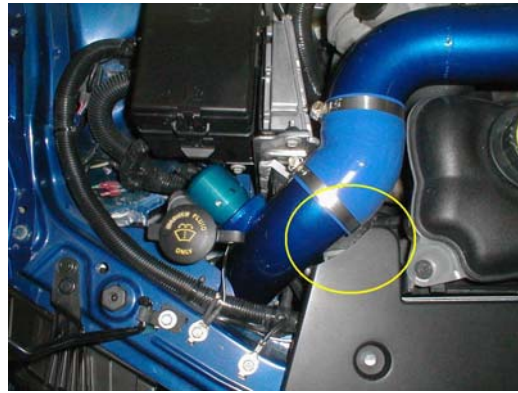
**Step (78)** The breather system needs to be modified, the 1/2 hose that goes from drivers side valve cover needs to be cut and check valve needs to be installed. Remove tube from engine and cut 1 ¾ section out of straight section, install check valve with arrow pointing towards engine and tighten clamps, reinstall now. (See photo).



**Step (79)** The crank case vent needs to be modified also, this tube is on the passenger side valve cover, remove tube and strip plastic tube off of valve cover fitting, locate 3/8 breather hose and install from passenger side valve cover to air filter pipe.



**Step (80)** The plastic radiator cover needs to be notched to clear bypass pipe. (See photo).



**Step (81)** Lower plastic air deflector, needs to be modified, (see photo) reinstall washer reservoir, fill cooling system, install oil, fill power steering reservoir, install injectors, and hook battery up.



**Completed Kit**



**LIMITED WARRANTY:**

Granatelli Motor Sports warrants that all products shall be free from defects in materials and/or workmanship for ninety days from the date of purchase (except in-tank and in-line fuel pumps purchased at dealer or wd prices as these items have no warranty and roller rocker arms which have a 12-month limited warranty). The following requirements and exclusions apply: (1) You must be the original purchaser and must complete the warranty registration form (located at [www.GranatelliMotorSports.com/warranty.asp](http://www.GranatelliMotorSports.com/warranty.asp)) and return the defective product within 10 days after the expiration of the product warranty. Failure to do so voids all warranty, either express or implied set forth herein. (2) You must reside in the United States or Canada and use the product as described in the warranty registration. (3) The product must not have been altered, disassembled, modified, or converted for any other use than intended by Granatelli Motor Sports. (4) The product, or any part thereof, is not used in accordance with the operating parameters specified by Granatelli Motor Sports (5) The product or any part thereof is damaged or rendered unserviceable due to negligence, vandalism, theft, fire, debris, flood, Act of God, or other peril, malfunction of equipment, or by any cause within the Customer's control. (6) The serial number (if applicable) must not have been altered or removed. The extent of Granatelli Motor Sports' liability under this warranty shall be limited to the prompt correction or replacement, at Granatelli Motor Sports' option and at no cost to the customer other than return shipment, of any defective part of the product determined to be necessary by Granatelli Motor Sports. This only applies if written Granatelli Motor Sports received notice of the claimed defect prior to expiration of the warranty period. All warranties of merchantability and fitness for a particular purpose are expressly excluded. The duration of any and all implied warranties is limited to the duration of this express warranty. All incidental and consequential damages including but not limited to loss profits even if it has been advised of the possibility of such damages are hereby excluded. Regardless of the form of the claim, Granatelli Motor Sports liability for any damages to the customer for such product is limited to the guidelines herein. This stated, expressed warranty is in lieu of all liabilities or obligations of Granatelli Motor Sports for damages arising out of or in connection with delivery, use or performance of the product. This warranty cannot be amended or changed by any Granatelli Motor Sports representative, employee, or agent and any promises inconsistent with this warranty are void and unenforceable against Granatelli Motor Sports. Some states do not allow limitations of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may have other rights that vary from state to state. Your sole remedy for the above warranties is the repair or replacement of the defective product only, at Granatelli Motor Sports' sole discretion.

**RETURN POLICY:**

Before you return a product for a warranty claim, contact our service department M-F 8AM-5PM (PST) at 805-486-6644 or [techsupport@GranatelliMotorSports.com](mailto:techsupport@GranatelliMotorSports.com) for an RGA number. No returns are accepted without a pre-approved RGA (return goods authorization). No returns on special orders, electrical items or after 90 days from date of original shipment. All returns must be safety packaged in original packaging (if available) and clearly marked with your RGA number on the top and two sides of the box. Please insure your shipment for full replacement value as lost, stolen or items damaged in shipment are not covered by our limited warranty. We recommend using FedEx ([www.FedEx.com](http://www.FedEx.com)) or UPS ([www.UPS.com](http://www.UPS.com)) for shipping. Lost, stolen or damaged items claims must be made by the customer and resolved by the freight company and not Granatelli Motor Sports. All returns may be subject to a restocking fee of up to 25%. The balance will be returned in the form of a company check or may be applied as credit towards another purchase.

**PERFORMANCE CONSUMER'S BILL OF RIGHTS:**

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