



Instructions for:

VMP TVS Upgrade kit for 05-10 4.6L 3V M90 - PN: 19TVSM90

The VMP TVS replaces the stock M90 supercharger on 05-10 Roush Stage 3 Mustangs and 4.6L 3V GTs with the Roushcharger kit installed on them. 05-09 and 2010 are slightly different.

Parts List for 05-10:	Part Number:	Qty:	Check:
VMP TVS Supercharger		1	
Supercharger pulley 66MM-85MM		1	
VMP Elbow (GT or GT500 Style) for 4.6L 3v		1	
elbow has two 3/8" connections and bushing with 3/8" 90* tube			
Molded o-ring for elbow blower flange (black)	R07060152-13-AA	1	
Molded o-ring for elbow TB flange (red) RE-USE	R07060153-13-AA	Re-use	
M6x14MM bolts for pulley (use 5mm allen wrench) (6)		1 pak of 6	
M6x22MM bolts for blower to elbow & elbow to TB (8)		2 pak of 4	
3/16" vacuum hose - short section	51225K25	6"	
3/16" vacuum Tee	5463K185	1	
3/16" vac cap (side of CAI)	84735K76	1	
5/16" vac cap (brake booster Tee)	84735K78	1	
Alternator bracket		1	
5/8" black vinyl vacuum cap (for drivers side valve cover)	84735K18	1	
Bushing with 90* SAE tube if not in elbow	EVAP-TUBE	Install	

Additional parts for 05-09 only (includes 113MM CAI kit/shield/filter)

Throttle motor extension (05-09 only)	CS-105574???	1	
Throttle position sensor extension (05-09 only) (24in)	CS-105680	1 - 2	
Air Filter	MAF113B	1	
113mm tube		1	
Heat shield	JLT-P-HSGT500-07	1	
PCV fresh air tube/hardline (runs from passenger VC to CAI)	RSH	1	
MAF sensor screws M4.7		2	
Techflex 1/2" sleeve for 05-09 fuel rail crossover	F6N0.50BK75	1'	
P51 Zip tube (fits GT500 throttle body)		1	
Short reducer sleeve (4.5" ID/5" OD) required for GT TB only	C40B-450 1"	1 GT TB	
Throttle body and tube clamps #80 2 1/2"-5 1/2"	5415K35	2	
Large black plug for side of tube	5463K781	1	
Small black plug for side of tube	5463K761	1	

Instructions:

Swapping the supercharger takes ~2hrs and can be done with basic tools.

The M90 supercharger is held on by 6 bolts, once the CAI is removed, the electrical connectors on the TB unplugged, the belt released, and the vacuum lines disconnected it easily comes off. 2010 have a rear fuel rail cross over. 2005-2009 will need to have the fuel rail removed to swap the blower.

Make sure the two alignment dowels are in the lower intake manifold.

The metal gasket is re-used. If no gasket is available a very thin sealant like Loctite can be used.

You will need to Tee into the vacuum connection below the rear of the supercharger, currently this connection runs to the fuel rail pressure sensor and a boost gauge if you have one. Use a short piece of hose to connect the supplied Tee to the manifold, one side of the Tee will go to the fuel rail pressure sensor, the other side of the Tee will go to the supercharger by-pass valve. If your car has factory hard lines they may be cut and the rubber elbow re-attached. Above 12psi these connections should be zip-tied.

The left rear mounting hole on the supercharger is slotted, the bolt should be installed with about ½” space under the head. It will take a little more space than you think as the supercharger has to slide up over the alignment dowels before dropping into place.

Tighten down all 6 bolts in an alternating pattern, final torque should be 20-30 ft/lbs, do not overtighten.

Use the vacuum line from earlier and connect it to the supercharger bypass actuator.

The supercharger bypass vent line is removed, and the side of the CAI capped with the supplied cap. The new supercharger only has one line going to the bypass and should be referenced to boost and vacuum using the source described above.

Re-install the fuel rail.

Place protective sleeve on the fuel rail crossover where it touches the sides of the supercharger (05-09 only).

Partially install the two lower elbow bolts.

Install the supplied black molded o-ring into the elbow flange that mates to the supercharger. Remove the red molded TB o-ring from the old supercharger and install it into the VMP elbow.

Place the elbow onto the partially installed bolts, install the upper bolts and tighten snug.

Install the throttle body using the supplied M6 bolts, the stock ones are too long.

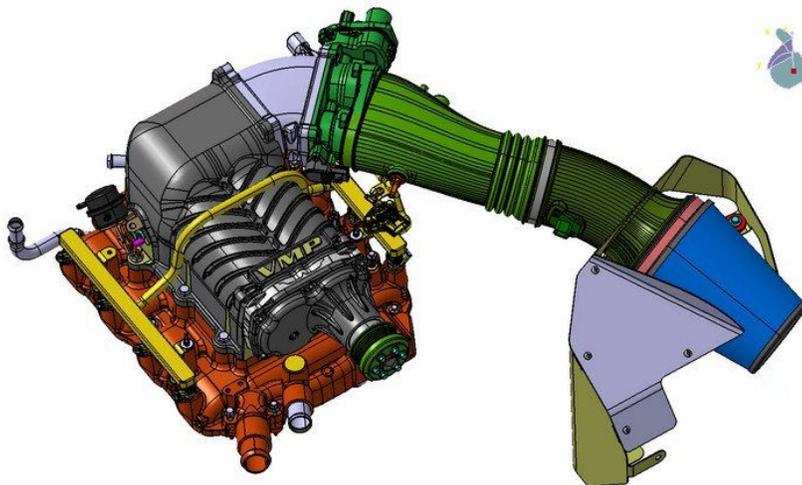
See Page 3 description and pictures for how to connect vacuum lines to side of elbow (2005-09 and 2010)

The driver’s side PCV hose should be deleted to prevent oil ingestion into the supercharger and potential vacuum leaks. Use the supplied ½” cap on the valve cover. The engine is still vented through the other valve cover.

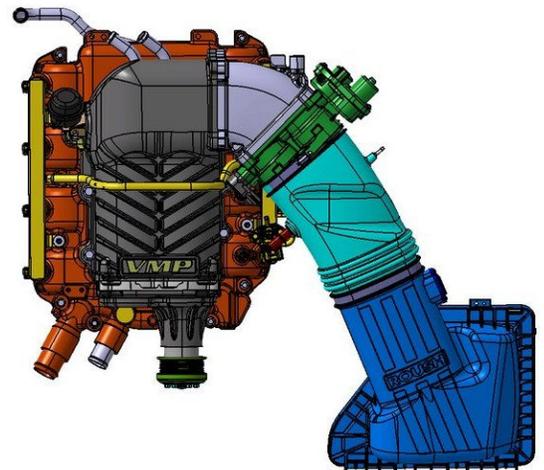
Install the supercharger pulley with the supplied six short M6 bolts. For 82-85mm pulleys we recommend the stock 75mm idler and stock Roush belt. For 79mm and below we recommend a 90mm idler.

Connect the Roush airbox/ram air (2010) or supplied VMP CAI (05-09).

2005-2009 with VMP CAI (GT500 or GT TB)



2010 stock airbox/ram air (GT TB only)



2005-2009 will install the VMP 113mm CAI:

Pre-assemble the heat shield, black tube, and your stock mass air sensor. Use the supplied fine-thread M4.7 bolts to hold the mass-air sensor into the tube. Install the air filter onto the black tube. Install the heat shield/filter/tube assembly in the car. Use the P51 zip tube to connect the throttle body to the 113mm tube. The small vacuum line on the side is capped with the included cap. Reconnect the mass-air sensor electrical harness.

*The P51 zip tube throttle body connection is 5" and designed for the GT500 style throttle body (dual 60mm, VMP 67mm, or FRPP 63/65MM). If using it with a stock GT throttle body a reducer sleeve (included) is required.

The connections on the side of the elbow are slightly different in 05-09 vs 10 the way Roush installs the kit, but end up the same with the 1.9L upgrade and VMP elbow.

The brake booster and EVAP line connections are always used. The drivers side PCV line is deleted and capped.

Connect the brake booster line and EVAP lines.

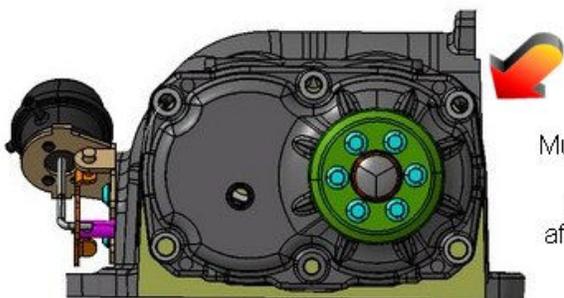
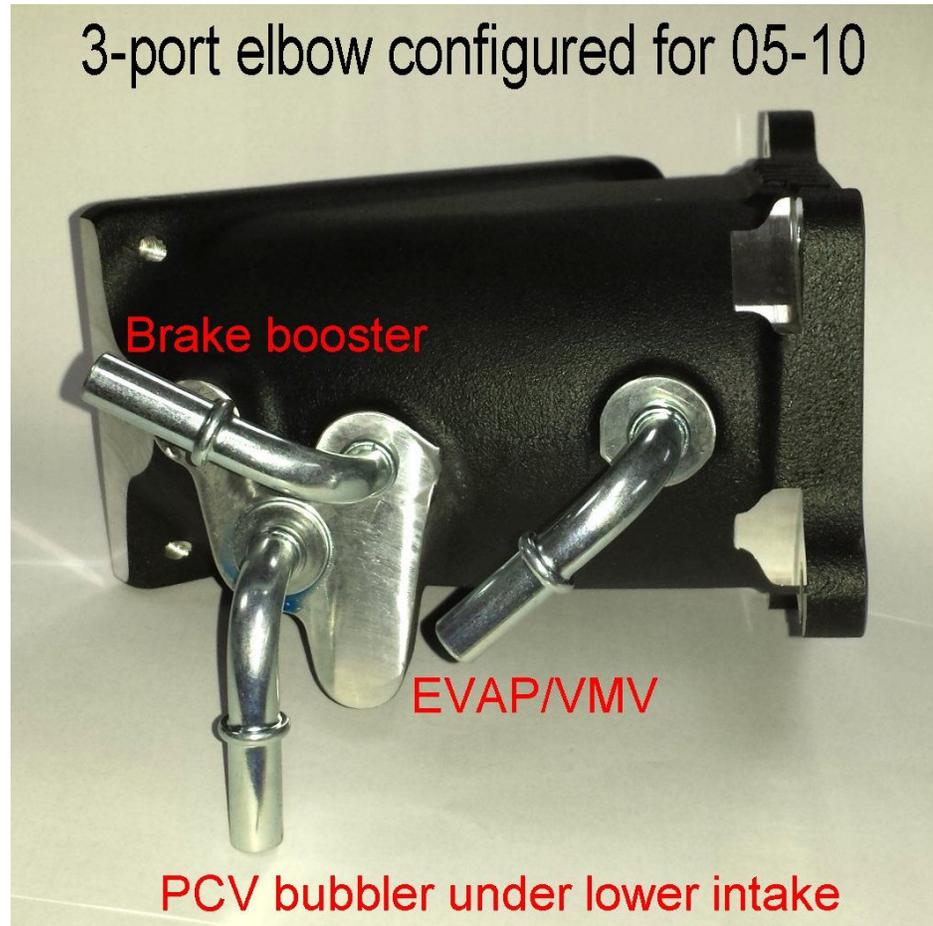
05-09 use a 3rd pcv bubbler connection from under the lower intake which you will connect to the VMP elbow.

In 2010 they Teed this into the PCV line, on 10s you will need to disconnect it from the PCV line.

All years will connect the PCV bubbler line to the bottom 90° tube that fits into the elbow with the bushing. Use the Loctite to seal it the bushing in the elbow, allow time for it to dry (may be pre-installed by VMP). The other two 90° tubes may be rotated with a socket and extension if needed.

***If you have an 05-early 07 with the silver PCV vacuum box on the firewall it should be completely removed and deleted, it was there to only allow SC boost when at wide open throttle, do not use it.**

***The silver flanged upper right bolt on the supercharger nose drive must be removed to install the alternator bracket. Afterwards, the bolt MUST BE RE-TORQUED to 25-30 FT/LBs to prevent the nose drive from leaking. Loctite is recommended on the bolt threads.**



Must Re-Torque this bolt to 25-30FT/LB after alt-bracket install

