



TRASK
TURBO SYSTEMS

TWIN CAM TURBO SYSTEMS

THE PURCHASER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF ANY AND ALL PRODUCTS PURCHASED

Please note all products are designed for off road use only.

Purchaser understand and recognizes the Trask Turbo System equipment provided by manufacturer and or sold by Authorized Dealers are subject to varied conditions due to the manner in which they are to be installed and used. Purchaser further recognizes and agrees that the suitability of any part sold or manufactured for a particular application is the purchaser's decision and that the purchaser is not relying on the skill or judgment of the manufacturer and/ or Authorized Dealer regarding suitability of any product or service.

Manufacturer and Authorized Dealer make no warranties whatsoever, expressed or implied, orally to purchasers with regard to off-highway use equipment, all warranties are contracted in writing. The right to make changes in design or add to or improve on product without incurring any obligations to install the same on products previously manufactured is expressly reserved. Buyer agrees to indemnify and hold seller harmless from any claim, action or demand arising out of or incident to the buyer's installation or use of products purchased from Manufacturer and/ or Authorized Dealer. All parts are aftermarket replacement parts. No implication is made that these parts are the original manufacturers', are from the original suppliers, or are approved by them.

Before operating vehicle, always utilize all safety applications.

WARNING

Installation of any component or product should only be performed by persons experienced in the installation and proper operating of vehicle systems. It is also the responsibility of the person installing any component or kit to determine the suitability of the components or kit for that particular application. Products are intended for off-road use only. The manufacturer and Authorized Dealers are not responsible for any misuse of these products. Check with your local authorities for highway laws in your area because highway laws and the enforcement of those laws vary widely. Please check with your local DMV or vehicle department for regulations and information. Manufacturer and distributor is not responsible for any legal issues of any product you purchase here.

Introduction

Thank you for purchasing the Trask Turbo System. The most reliable, efficient, forced air induction system on the market. This system is designed for stock Harley Davidson Twin Cam engines, if you have engine modifications please contact Trask Performance.

Before you get started with installing your Trask Turbo System we would like to go over a few recommendations. Please read and familiarize yourself with the instruction booklet before proceeding with the install. If at all possible have a trained technician help or install the system. *****NOTE: Engine oil and oil filter MUST be changed. The Turbo System utilizes the engines oiling system. Be sure to change the oil every 2000 miles with premium synthetic oil***** Like your motor and factory drive train, the turbo needs to maintain a service life of its own. By properly following the Trask 2000 mile service intervals, you will ensure the life of your turbo system.

*****NOTE: We strongly recommend having the appropriate service manual for your model and year of Harley Davidson. There are specific removal and installation procedures along with torque specifications for your bike. This is a must if you are upgrading your camshaft.*****

You must have the appropriate tools for the installation of this system. This will include the use of standard and metric tool sets. Other important tools will be listed in the Harley Davidson manual.

The standard Trask Turbo System is preset @ 8lbs of boost. Running a minimum of premium 91 octane pump gas is required. **Running over 8lbs will require higher octane fuel, high boost mapping, MLS head gaskets and other performance upgrades.**

Once the system is installed, the proper adjustments have been made, and final tuning has been completed, we recommend at least 100+ miles be put on the bike, followed with a final run through of all fasteners on the system, especially the exhaust as this receives the most heat and temperature changes. Then, continue to check the fasteners at the recommended regular service interval (2000 miles).






WARRANTY AND RMA AUTHORIZATION

Trask Turbo Systems have a 90 day warranty period on all Trask manufactured items against manufacturing defects. This does not include items sold by Trask Turbo Systems made or manufactured by another company. If you experience a manufacturing defect within the 90 day warranty period on a Trask Turbo System item, you must contact Trask Turbo Systems and request an RMA number so the item may be sent back. Trask Turbo Systems may request photos of the subject parts to be emailed before issuing the RMA. If said customer is unwilling to comply with the return policy procedures Trask Turbo Systems has the right to refuse the warranty submission.




If product is returned without proper authorization no warranty repair or refund for product will be given, and any shipping and handling fees will not be returned. If any returned items are not claimed and arranged for shipment from Trask Turbo Systems within 30 business days, Trask Turbo Systems will treat item as abandoned. Although all Trask Turbo Systems sales are final, if a return is authorized by Trask Turbo Systems, all refunds other than warranty items will be charged a 20% restocking fee. If product is damaged in shipping it is the sole responsibility of the customer to file a claim with the shipping company. Trask Turbo Systems is not responsible for shipping damage compensation.

Fastener Torque Chart

Metric

Relative Strength Marking	4.6		4.8		8.8 or 9.8		10.9		12.9	
Bolt Markings										
Diameter (MM)	Maximum Torque		Maximum Torque		Maximum Torque		Maximum Torque		Maximum Torque	
	Ft lb	Nm	Ft lb	Nm	Ft lb	Nm	Ft lb	Nm	Ft lb	Nm
M3	0.3	0.5	0.5	0.7	1	1.3	1.5	2	1.5	2
M4	0.8	1.1	1	1.5	2	3	3	4.5	4	5
M5	1.5	2.5	2	3	4.5	6	6.5	9	7.5	10
M6	3	4	4	5.5	7.5	10	11	15	13	18
M8	7	9.5	10	13	18	25	26	35	33	45
M10	14	19	18	25	37	50	55	75	63	85
M12	26	35	33	45	63	85	97	130	111	150
M14	37	50	55	75	103	140	151	205	177	240
M16	59	80	85	115	159	215	232	315	273	370
M18	81	110	118	160	225	305	321	435	376	510
M20	118	160	166	225	321	435	457	620	535	725
M22	159	215	225	305	435	590	620	840	726	985

Standard

Bolt Markings	 18-8 Stainless Steel		 Grade 5		 Grade 8	
Diameter (MM)	Maximum Torque		Maximum Torque		Maximum Torque	
	Ft lb		Ft lb		Ft lb	
1/4 20	6.3		6.3		9	
1/4 28	7.8		7.3		10	
5/16 18	11		13		18	
5/16 24	11.8		14		20	
3/8 16	20		23		33	
3/8 24	22		26		37	
7/16 14	31		37		52	
7/16 20	33		41		58	
1/2 13	43		57		80	
1/2 20	45		64		90	

Note: Some fasteners on the system will not allow you to apply a torque wrench to it. These charts are for a reference so those fasteners are not over torqued possibly causing damage to the fastener or stripping threads.

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1. Prep & Tank Removal



Now that you have your Trask Turbo System, it is time to prep and install the system. To better prepare for the install make sure you have all the needed tools and the factory service manual for your year and model bike to aid in the installation.



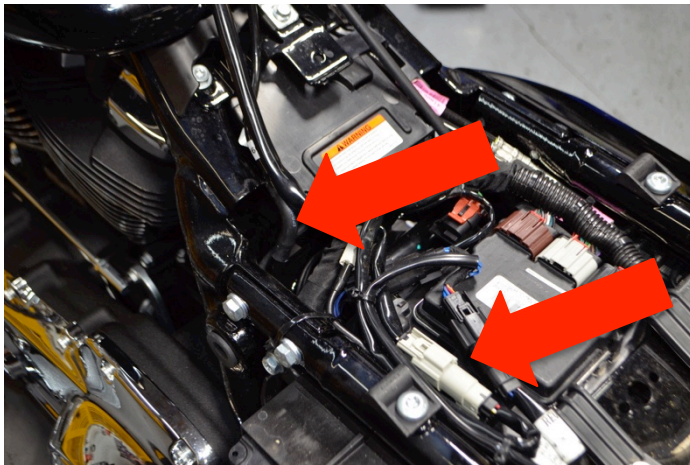
Remove the kit from the box and packaging. Lay the kit out for ease of installation and make sure everything is accounted for. A clean area prevents things from getting lost.



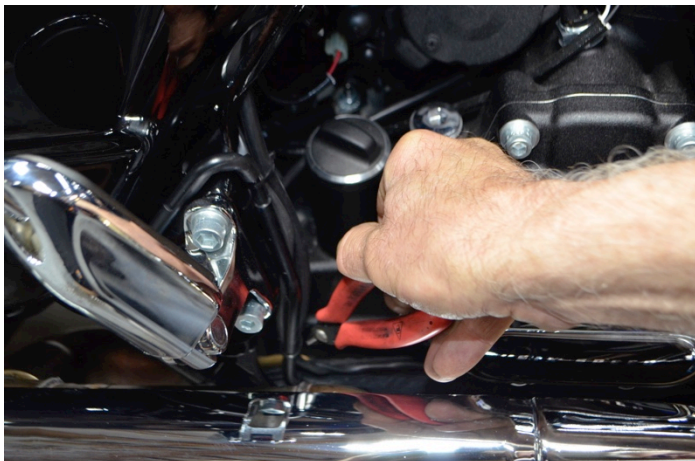
To Disconnect the battery, remove the bags and left side cover. (Remove the "Main Fuse") For your safety and to prevent damage to your bike's electrical system, ***NOTE: If your bike is equipped with the factory security system it is important that you turn on the ignition BEFORE you remove the Main Fuse. This deactivates your alarm.



Refer to the Harley service manual for relieving fuel line pressure. This evacuates any built up pressure in the fuel line so you can safely remove the fitting from the tank.

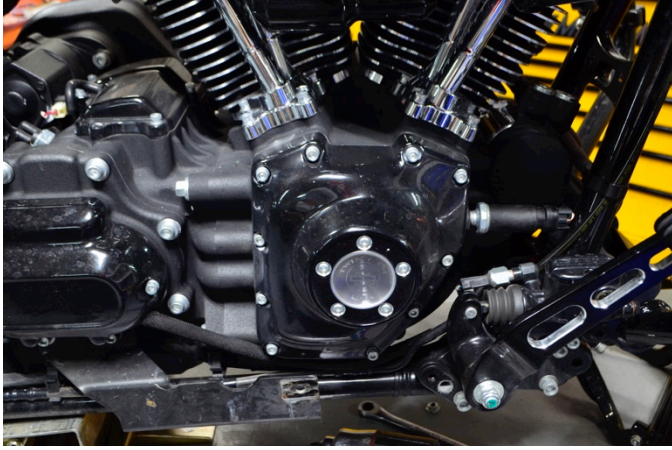


Disconnect the breather line and harness plug for the fuel pump as indicated by the arrows.



For the other breather line on the right side of the tank, cut the two zip ties fastening it to part of the harness as shown. Pull the line out. Undo the fasteners for the tank and remove the tank.

2. Floor Board & Exhaust Removal



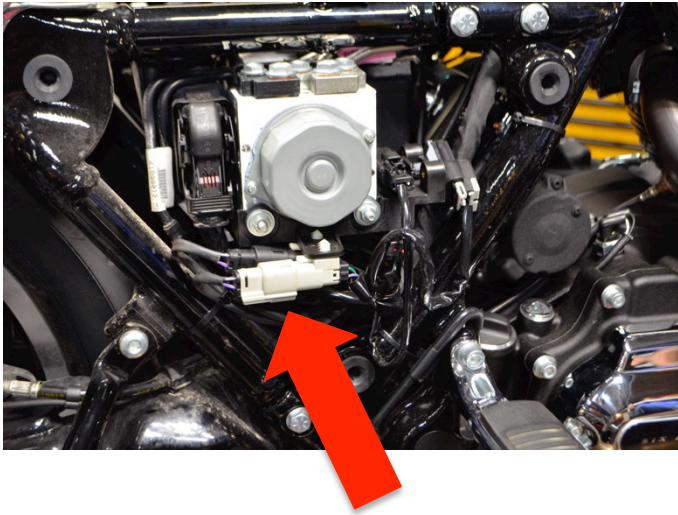
Remove the right floor board.



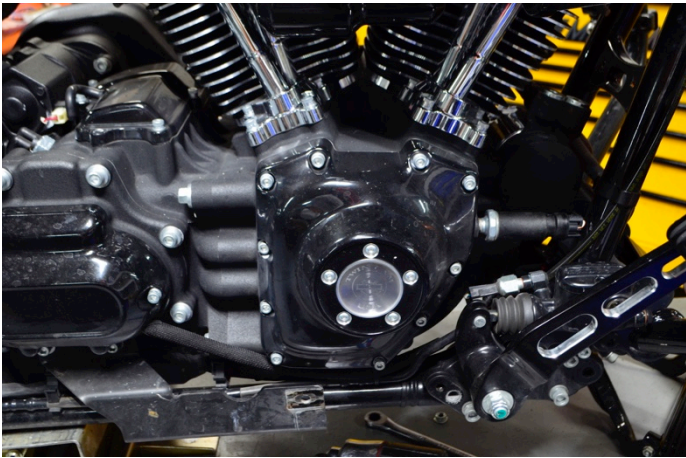
Remove left muffler first with crossover bracket and pipe.



Remove right side muffler.



At this point disconnect the two o2 sensor plugs from the harness.



There is one zip tie to cut and retaining clips that hold the sensor wires along the frame rail. Once wires are removed and free from the frame you can now take off the head pipe.



***NOTE: DO NOT discard the factory exhaust flanges and retaining clips. You will need these for the turbo head pipe.

3. Air Box Removal

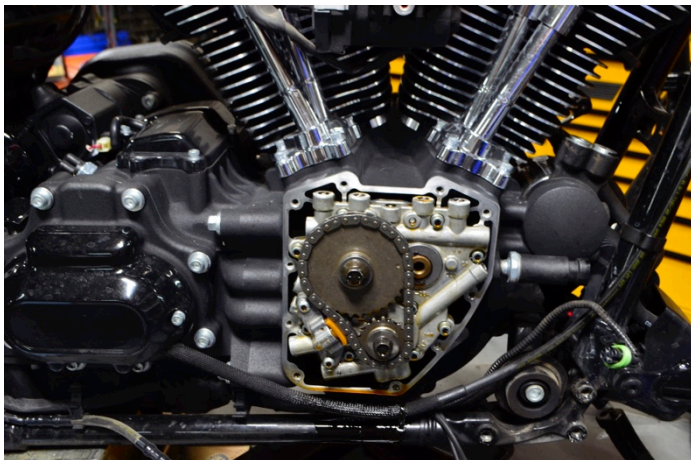


Remove the factory air box. Use the factory service manual for reference.

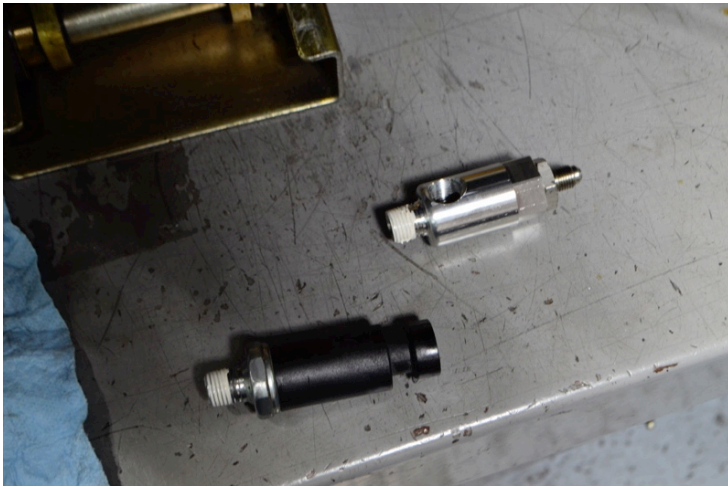


Remove breathers and all hardware for the air box.

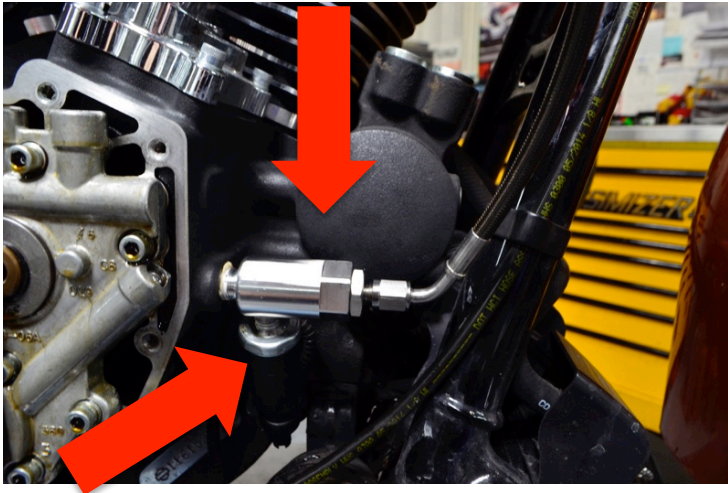
4. Cam Cover & Oil Feed



To remove the factory cam cover, remove all fasteners. Be sure to put an oil pan underneath to prevent oil spill. Be sure to clean gasket surface of any gasket material and oil. Remove the brake pedal to gain access to the oil pressure switch.



To install the oil feed adapter, locate the oil pressure sending unit and remove. With the supplied pre filter/ oil feed adapter coat the threads with liquid thread sealant.



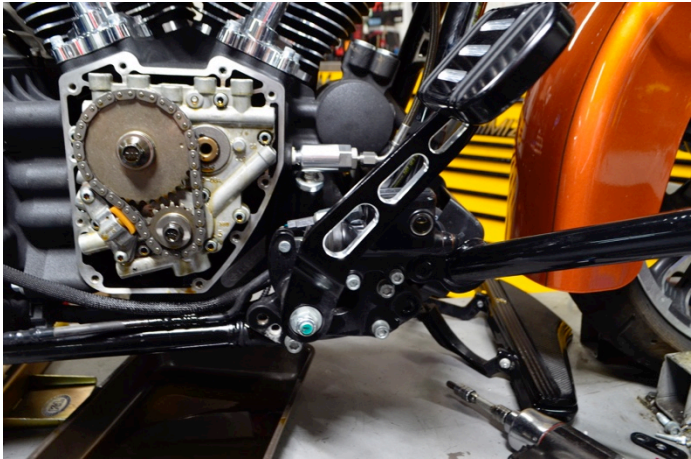
Thread the oil feed adapter into the block (be careful not to over tighten and damage the threads on the block or adapter). Thread the oil sending unit in and clock the assembly as shown. Now thread the oil feed line using the 35 degree end.

*****SOFTAIL ONLY*****

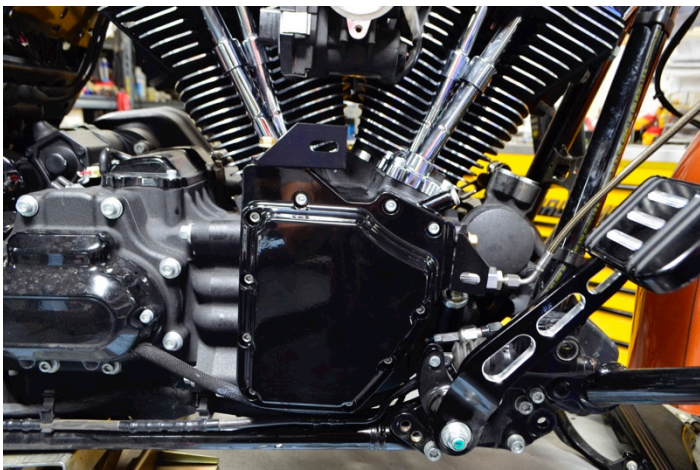


45 DEG. ANGLE FITTING IS REQUIRED FOR OIL FEED LINE INSTALLATION ON A SOFTAIL. HERE IS AN EXAMPLE OF HOW THE ANGLE FITTING IS INSTALLED INTO THE CASE, FOLLOWED BY THE ADAPTER, AND OIL FEED LINE.

****OIL FEED LINE -- 30deg end to adapter / 90deg end to turbo cartridge****

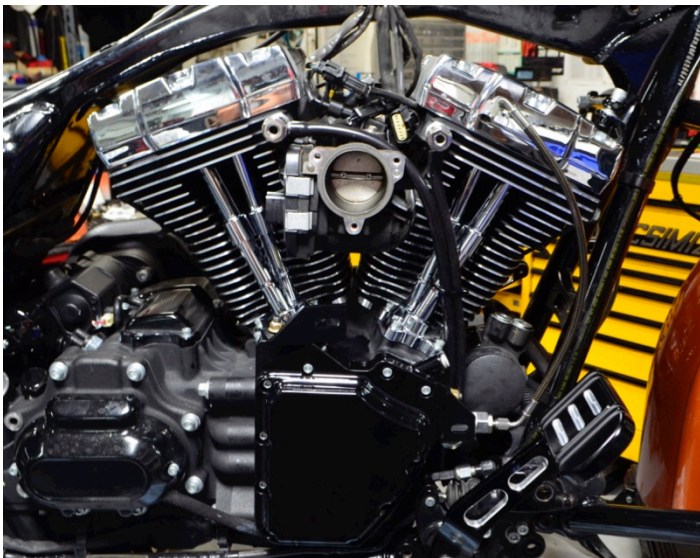


Re-install the brake assembly back onto the frame.

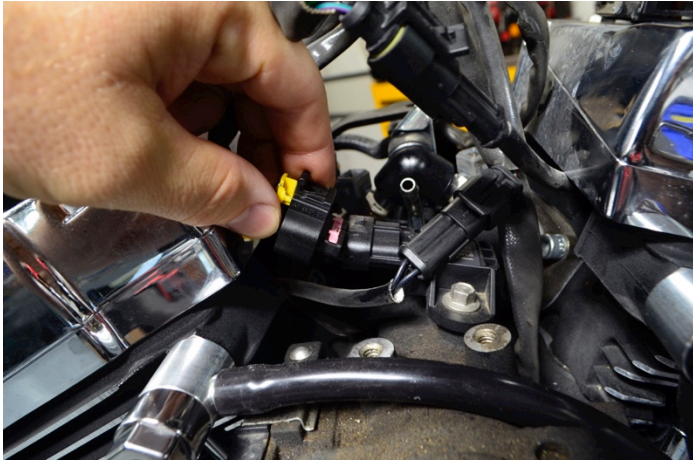


Install the Trask cam cover using the supplied gasket and factory fasteners. Apply blue Loctite and torque to factory specs. ***NOTE: Orientate header support brackets as shown and DO NOT tighten at this point.

5. Breather Bolt and Breather line



Install the supplied breather bolts and fittings. Torque to spec and route the breather lines as shown exiting between the frame and motor under the bike. Trim the lines evenly.



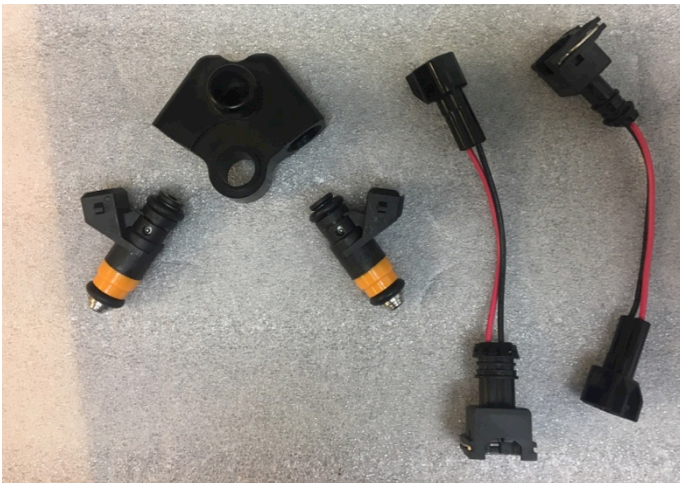
Unplug the factory map sensor. This will plug into the MAP sensor on the Trask plenum. For cable bike models a supplied jumper harness will be used to connect the MAP sensor.

6. 2007 & Earlier Vacuum Port Mod. (Dyna/ Softail)

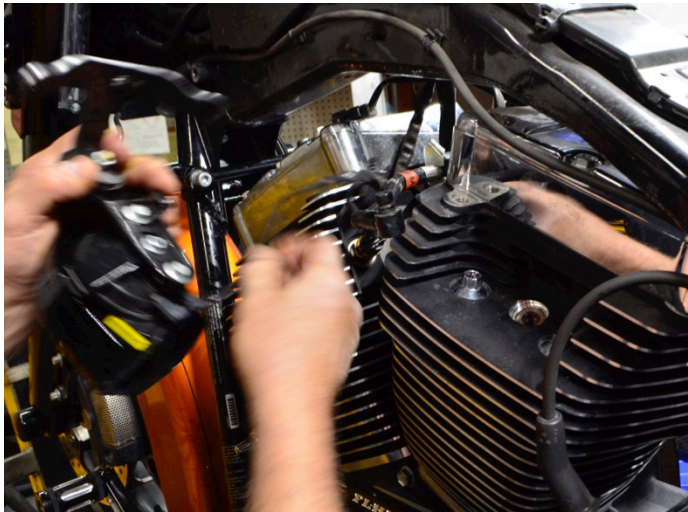


For removal of the 07 and earlier throttle body refer to your Harley service manual. Remove and on the bottom side of the manifold, mark as shown, then drill and tap with the supplied drill and tap (1/4-20). Thread the supplied aluminum fitting with O-ring and be careful not to over tighten. This may cause the fitting to shear off.

7. Fuel Injectors



For the 06-07 FL's, Dyna and Softail models require the adapter kit as needed.



Remove the fastener for the fuel line going into the injectors. To gain access to this remove the horn bracket. Remove the factory injectors.



Install the injectors provided in the kit. Depending on year and model you may have to use the adapter block and harnesses. Be sure to lube the o-rings on the injectors prior to installation.

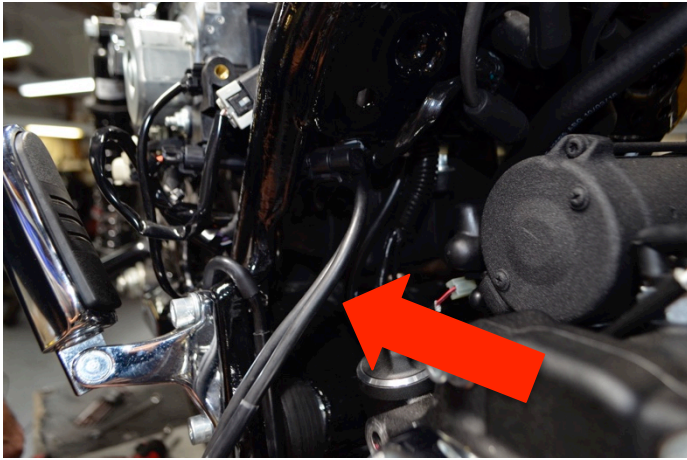


8. MAP Sensor

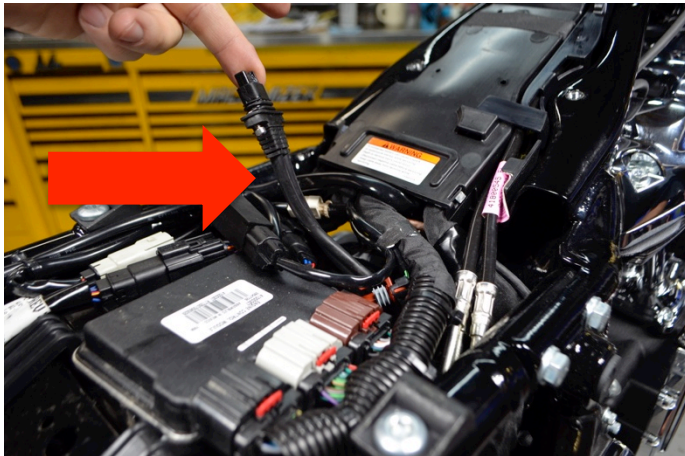


Depending on your model the MAP sensor may require an adapter harness (provided). On the left is throttle by wire which is a direct plug and play. On the right is for cable throttle bodies which requires the adapter harness and will plug into the factory harness.

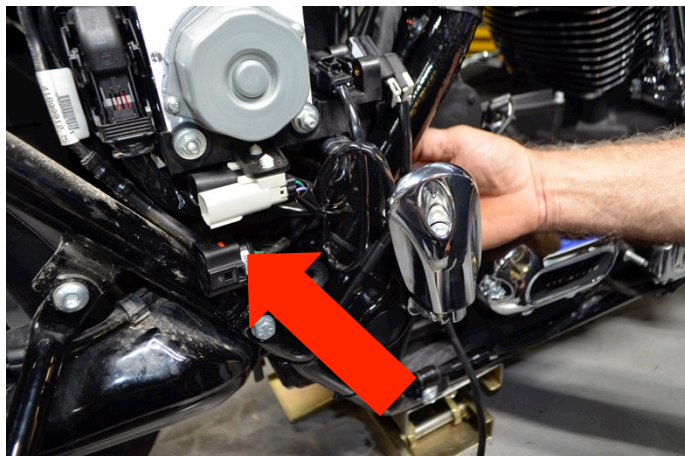
9. T-Max o2 Harness & Exhaust Bracket Install



Route the T-Max o2 wire harness through the frame rail as shown.



Continue to route to where the T-Max unit will be installed.



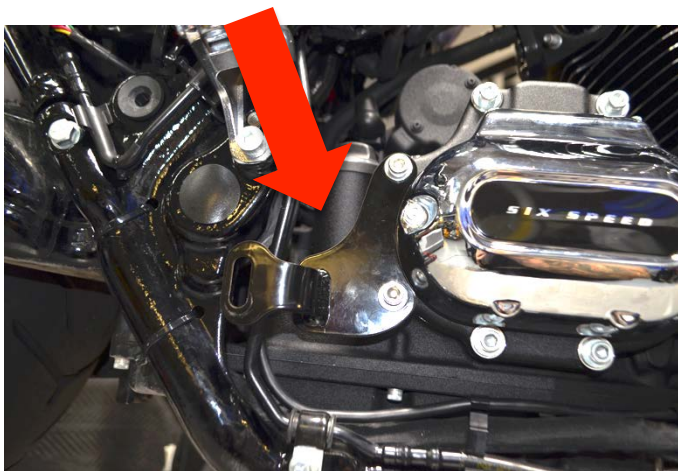
Route the rear o2 plug as shown here.



Route the front o2 sensor plug as shown. Use the clips that held the factory o2 harness for the T-Max harness.

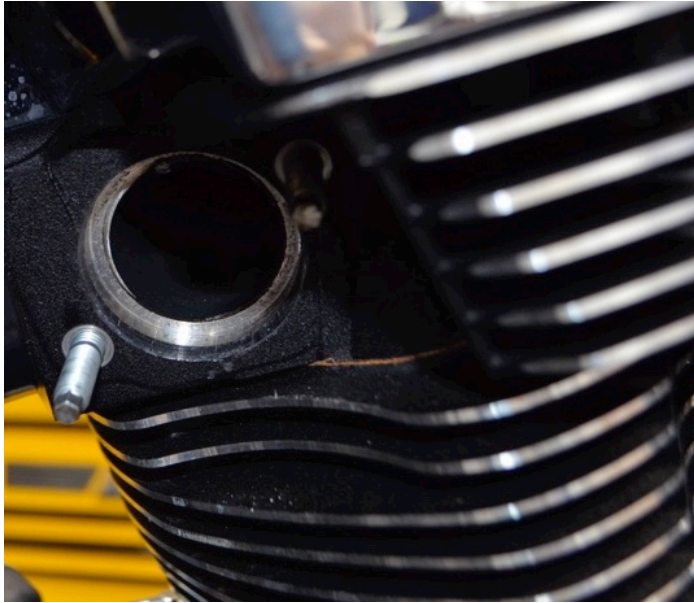


Zip tie and secure the rest of the harness as shown. Do not over tighten the zip ties for o2 wires as the harness has to breath.



Remove the two factory fasteners on the tranny. Install the supplied exhaust support bracket with washers and fasteners and torque them to factory spec.

10. Head Pipe Install



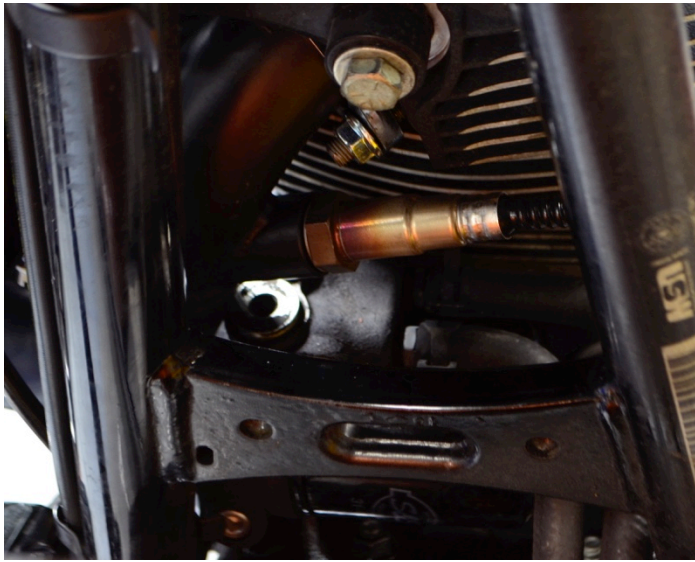
Remove existing exhaust gaskets. Be sure to clean any remaining gasket material prior to installing the new one.



Press the new gasket into the port. Be sure the gasket is seated all the way.



Install the heat shields at this time. Rear first, then the middle with it overlapping the rear shield at the slip-fit. Put the clips, flanges just as you removed from the factory head pipe. Install on the heads. **DO NOT TIGHTEN DOWN.**



Install the front o2 sensor in the head pipe. Route the harness to meet the connector for the T-Max under the frame.



Plug the front o2 into the T-Max harness and zip tie to the frame. Be careful to not make the zip ties too tight.

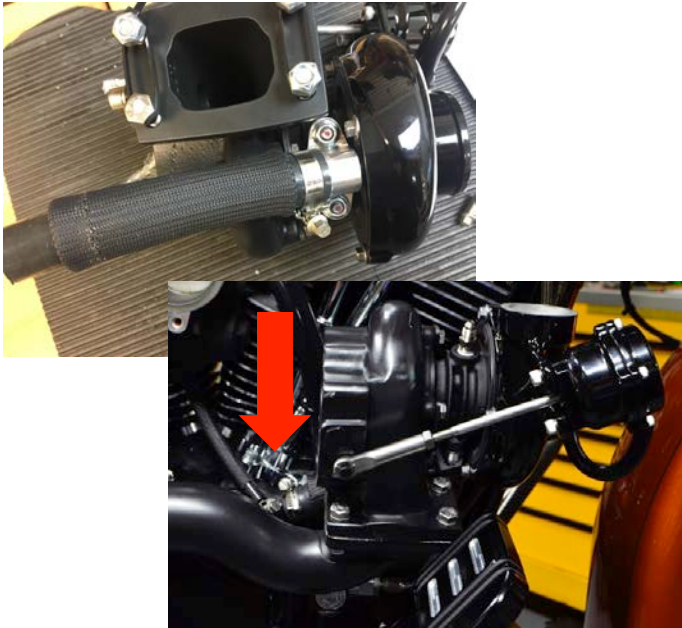


Install the rear o2 sensor and route to plug into the T-Max harness.

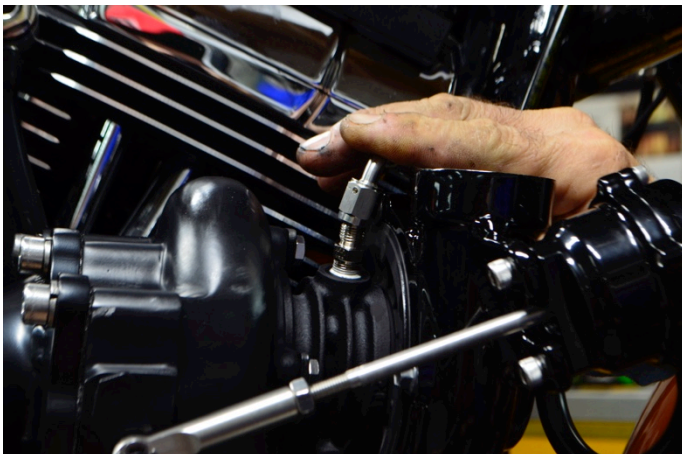


Plug the rear o2 harness as shown.

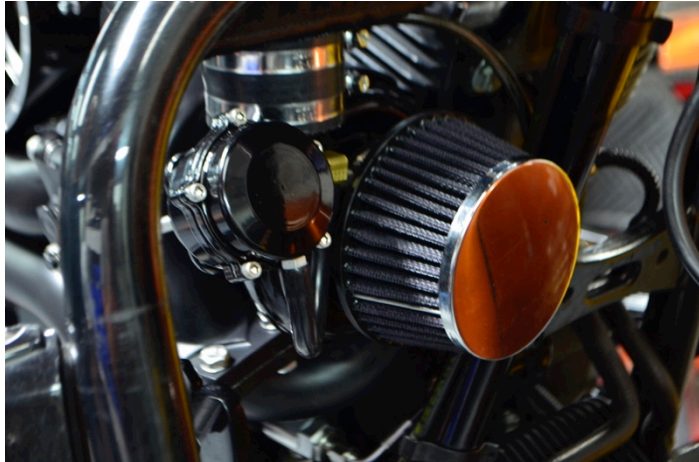
11. Turbo & Tail Pipe install



Place the drain tube with sheathing and clamp as shown on the turbo drain fitting and tighten clamp. ***Note the clamp is facing down. This gives you access to the screw to tighten while the turbo is on the bike if need be. Place the turbo on head pipe with supplied gasket. Place the drain tube on the drain fitting on the cam cover and tighten clamp as shown. NOTE: YOU MAY NEED TO TRIM THE DRAIN LINE AS TO NOT KINK THE LINE.



Install the feed line from the feed adapter to the oil feed fitting on the turbo.



Install turbo air filter.



Install the exhaust support bracket at the tranny indicated by the red arrow. Install tail pipe with supplied gasket and loosely thread in fasteners at the exhaust support bracket. Loosely thread in the 5 bolts at the turbo as well. Do not tighten at this time.



Install muffler. At this time tighten these fasteners in sequence.

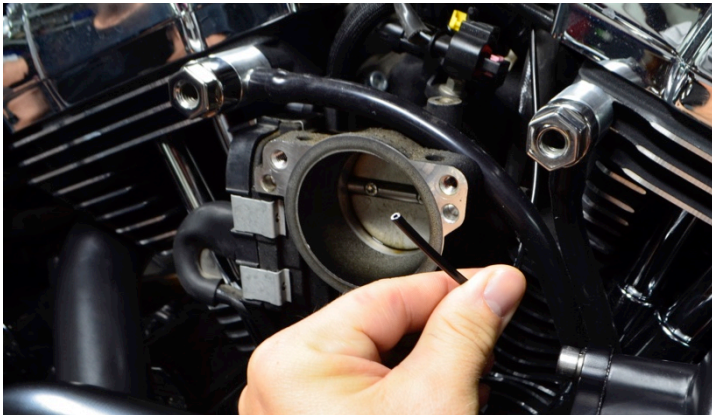
1. Exhaust to Turbine Fasteners
2. Turbo to Head Pipe
3. Exhaust Port Nuts
4. Turbo Support Brackets on cam cover.
***NOTE: adjust the front bracket first by closing the gap between the "L" bracket and head pipe first (DO NOT TIGHTEN) you can then tighten the "L" bracket to the cam cover. Then tighten the fastener for the bracket to head pipe. Do the same sequence for the rear support bracket.
5. Finally tighten the fastener for the exhaust support bracket on the transmission

12. Plenum Install and Waste Gate (if applicable)

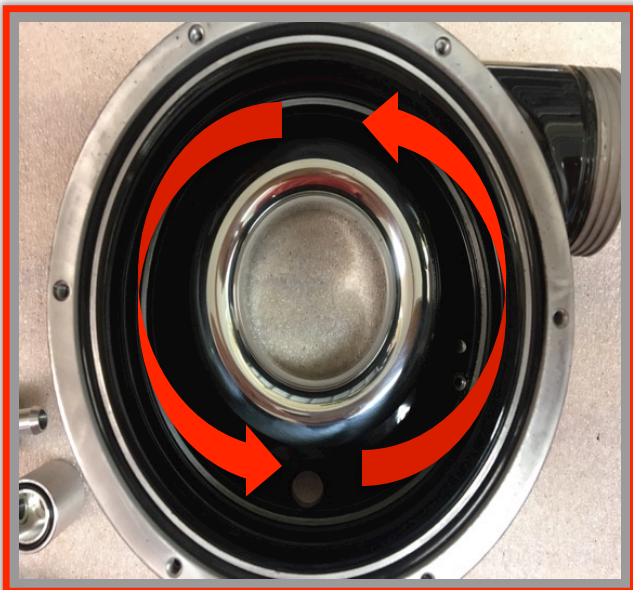


NOTE: this pic applies to externally gated kits ONLY.

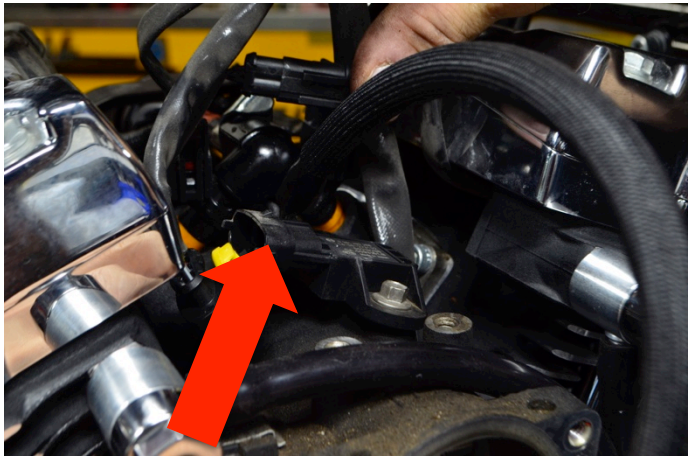
Line the waste gate up with the head pipe and tail pipe as shown. Adjust till the ports line up and install the clamps. Tighten the waste gate into position. Also route silicone line and sheathing towards plenum.



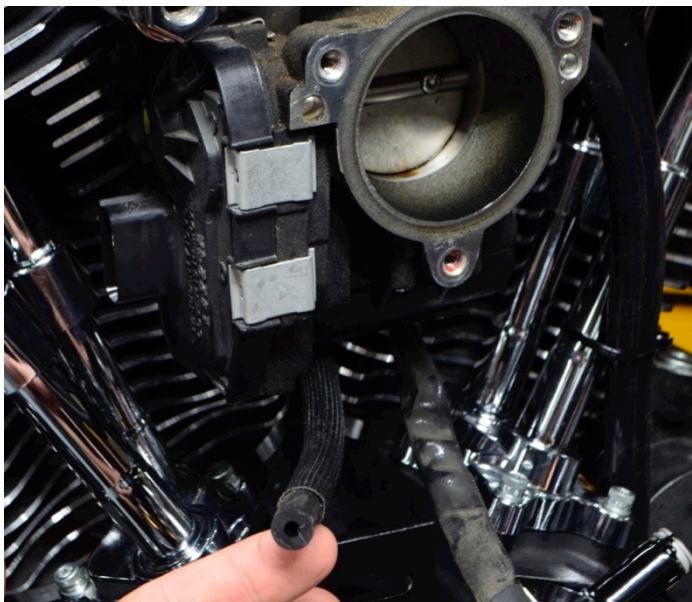
Route the boost line for the boost gauge from the handlebars along the back bone of the frame to where it will connect to the boost line fitting on the back of the plenum. NOTE: see vacuum line diagram in instructions.



Prior to installing the plenum twist the velocity stack counter clock wise to unlock and pull to remove to access the three holes that mount to the throttle body.



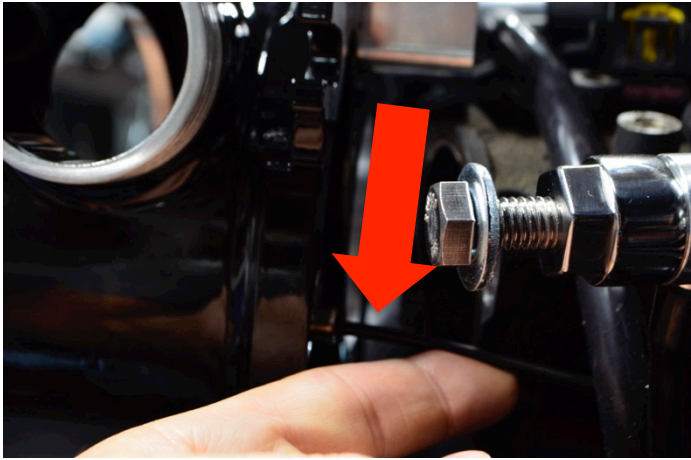
Install the line for the blow off valve on the factory port on the throttle body. NOTE: a black rubber cap will be covering this port on throttle by wire models. On cable models the modification is shown on where to drill and tap for this fitting.



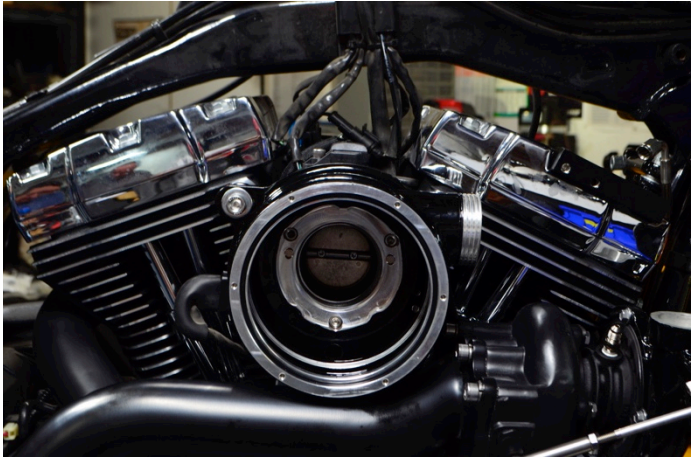
Route the line so it will go on the fitting on the blow off valve.



Put the line on the fitting for the blow off valve.

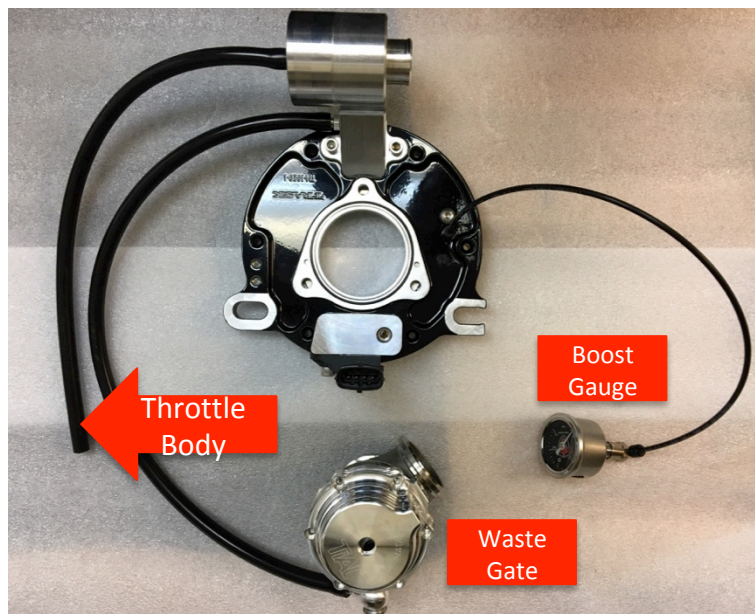


Plug the boost line into the push connect fitting on the back of the plenum.



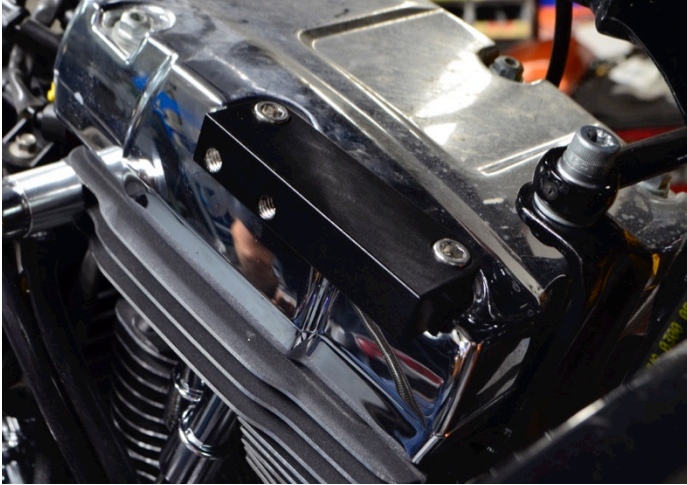
Install and torque the three 1/4-20 SHCS to the throttle body. Tighten the 3/8" hex head and 3/8" SHCS to secure the plenum.

13. Vacuum/ Boost Diagram



NOTE: Shown with external waste gate. If you do not have an externally gated kit this port will be blocked off.

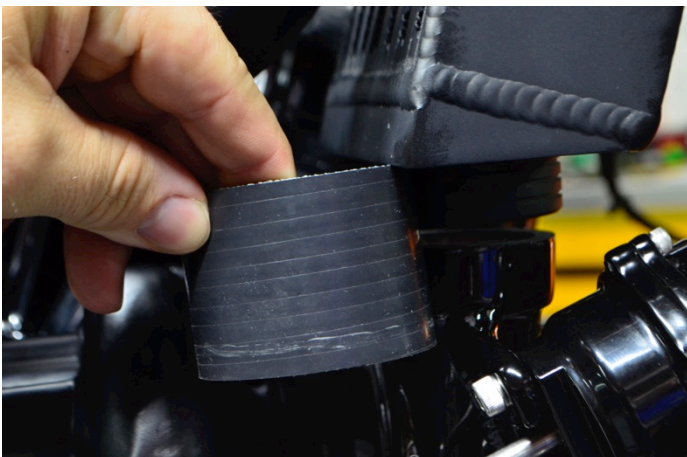
14. Intercooler Install



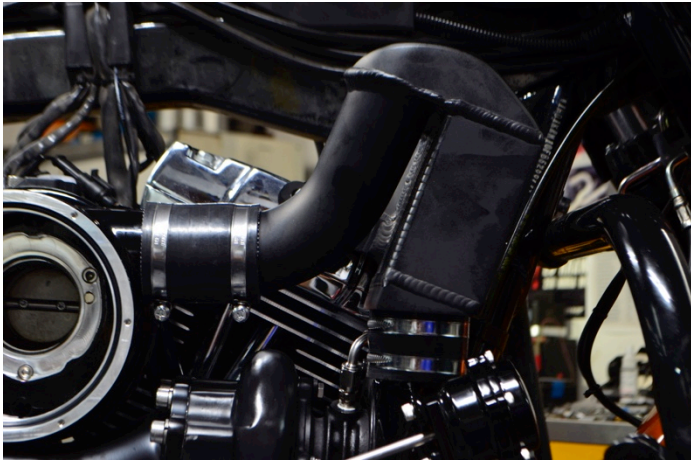
Install the intercooler support bracket onto the front rocker box cover using the supplied hardware.



Mock up the intercooler on the rocker box mount to ensure proper orientation of the compressor housing and to trim silicone boots if necessary. Loosen the four flange bolts on the compressor only. Rotate to line the outlet and inlet of the compressor to meet up to the intercooler. Once it is lined up, tighten the four flange bolts on the compressor.



Then take the boot and place next to the compressor and intercooler. You may need to trim the boot prior to installing as shown.



Once the boots are trimmed you can now final install the intercooler tightening the 5/16" SHCS to the support bracket and tighten the clamps in place.



Install the velocity stack, cover and plenum ring.

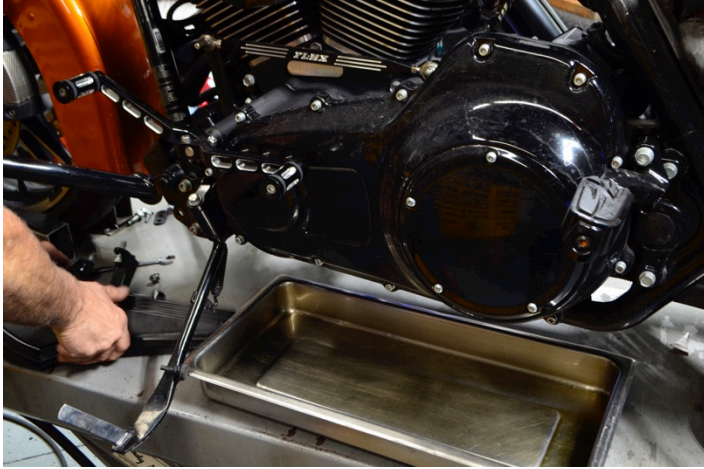
15. Priming the Turbo



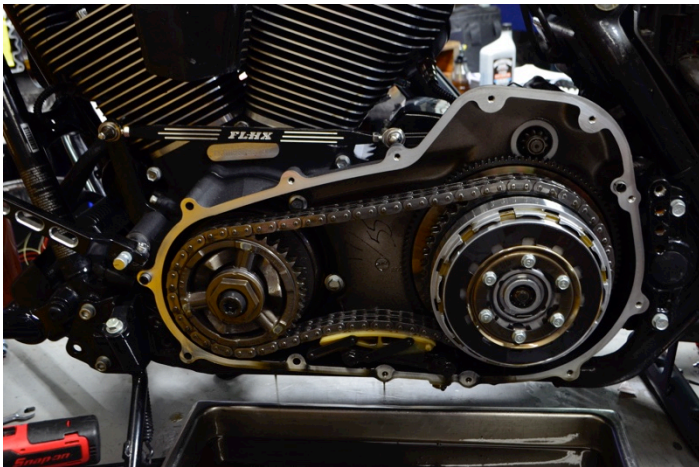
*****NOTE:** When installing the system YOU MUST CHANGE THE OIL. No matter the previous mileage on your last oil change. This reduces particles going through the new turbo. Also fill oil filter $\frac{3}{4}$ of the way and if possible squirt some in the turbo cartridge prior to tightening the oil feed line. This is crucial to start up as to not starve the turbo of oil.

16. Clutch Spring Install

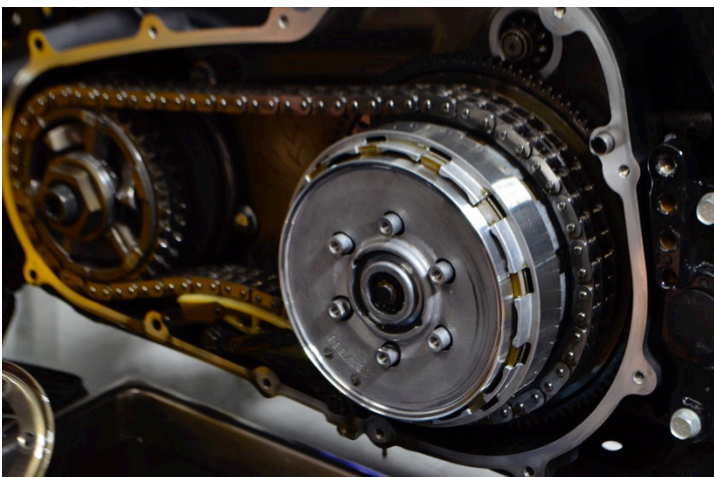
NOTE: CVO MODELS 2013 AND UP ARE EQUIPPED WITH A SLIPPER CLUTH AND DO NOT REQUIRE THE CLUTCH SPRING UPGRADE.



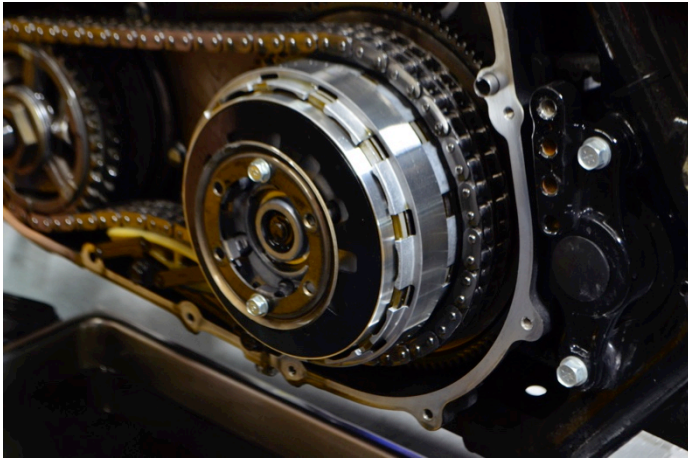
Drain primary oil. While oil is draining collapse the clutch cable. Refer to service manual.



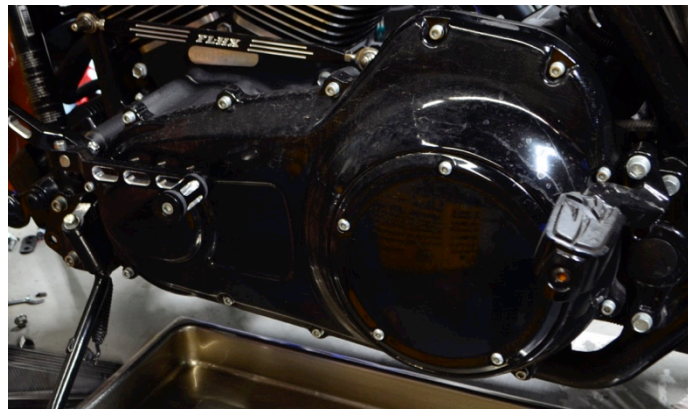
Remove the primary cover. Break loose jam nut and adjust the clutch out. Next remove fasteners for clutch spring as referred to in factory manual.



Once the spring is removed you can now install the provided clutch spring.



Refer to the factory service manual for install procedure and adjustment of the clutch.

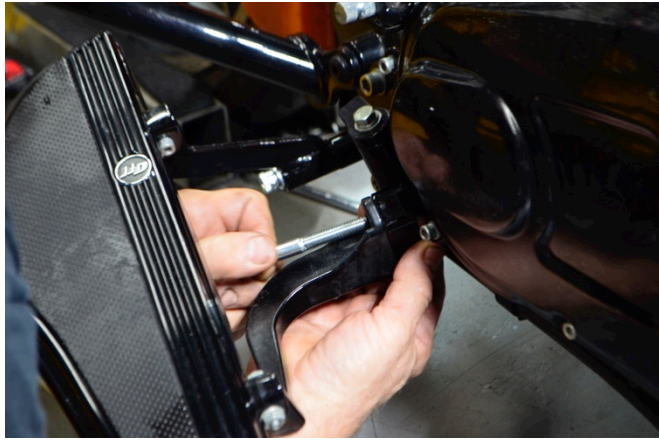


Install primary cover and torque to spec. Reinstall drain plug with new O-ring and thread sealant. Fill primary with oil as per factory spec. You can now adjust the clutch as per Harley spec in the manual.

17. Final Assembly



Install right floor board spacers provided in the kit and torque to spec.

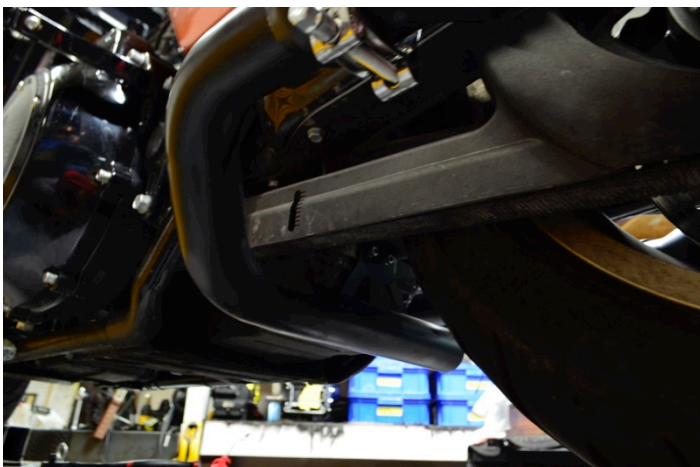


Install the left floor board spacers and torque to spec.



With the boost line in place remove the factory control clamp and replace it with the boost gauge clamp. Torque to spec and insert the line into the push connect fitting then zip tie the line to the bars.

18. Cross Over Pipe Install



If you purchased the left side muffler option depending on your year there will be different hardware supplied. However the pipe itself is still the same and mounts to the factory location behind the tranny using the factory hardware.



The 02-08 FL models will use this hardware kit. Mounts to the bottom of tranny using the ¼-20 fasteners.



Install the left side muffler and heat shield.

19. Spark Plug Install and Start Up



Be sure to gap the supplied plugs to 0.035" and apply copper antisieze to the threads of both plugs and torque to factory specs.



Install the "Main Fuse" along with side covers, bags, tank and seat.



NOTE: Initialize the T-max per Zippers instructions. Start the bike and heat cycle for 2 to 3 minutes then test ride 5 to 10 miles. Once cooled down check over the fasteners again to make sure they have not loosened up.



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