

Sportster Installation Instruction Manual



TRASK[®]
TURBO SYSTEMS

Air filter / Charcoal Canister Removal

Note: The Charcoal Canister is located in front of the rear tire

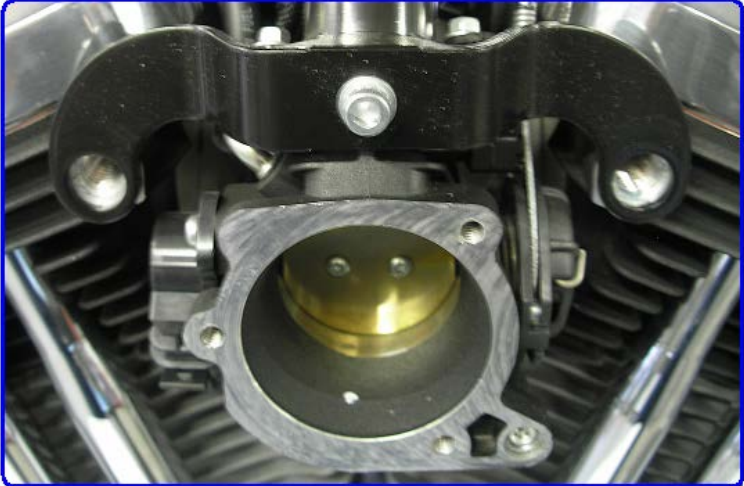
First- Remove the Air filter assembly. Next - Remove the Throttle body support mount that bridges the two Breather Plates



Showing Factory Location of charcoal canister



Factory Configuration



Throttle Body Support



Note: If your motorcycle is equipped with a charcoal canister you will need to block off the vacuum port on the throttle Body. If this is not performed you pressurize the fuel tank under boost. Disconnect line going to the throttle body and let this line vent to atmosphere. – Use a vacuum cap to plug the port on the throttle body.



Installed Vacuum Cap





Remove the Factory Exhaust –
The exhaust pipes, it will not be
used again with the turbo
system.

With the exhaust pipes off you can
now remove the right side foot peg
assembly. Unbolt the brake lever
push rod at the rear connection point.
Unbolt the two bolts on the frame.



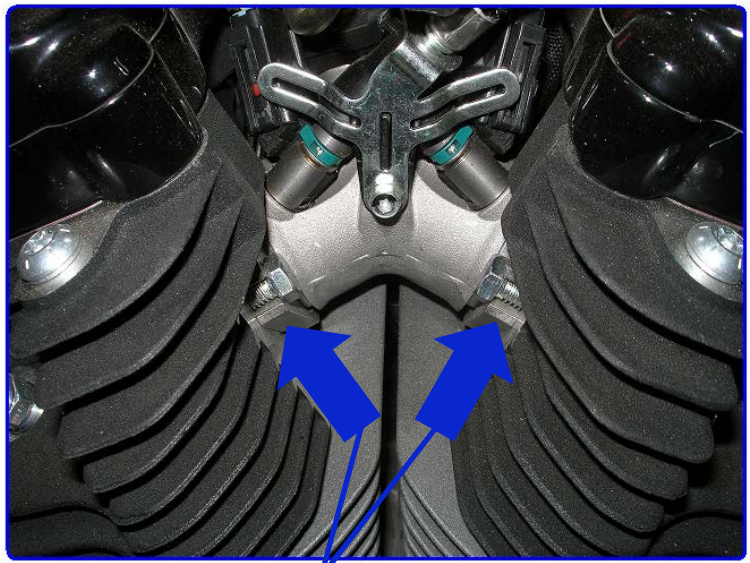
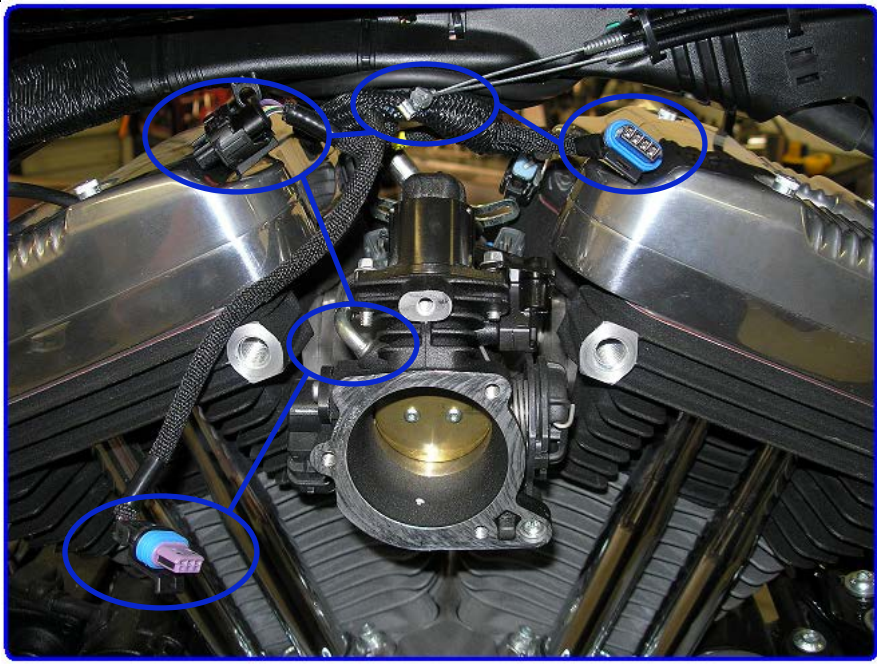
**Rear Brake lever
connection point**

**Front 2 mounting
Bolts**



Throttle Body / Fuel Injectors

To remove the throttle body, disconnect the throttle + idle cables. Unplug the sensor connections. Disconnect the fuel line and unplug the fuel injectors. Unbolt the complete throttle body and intake manifold assembly and remove it from the engine.



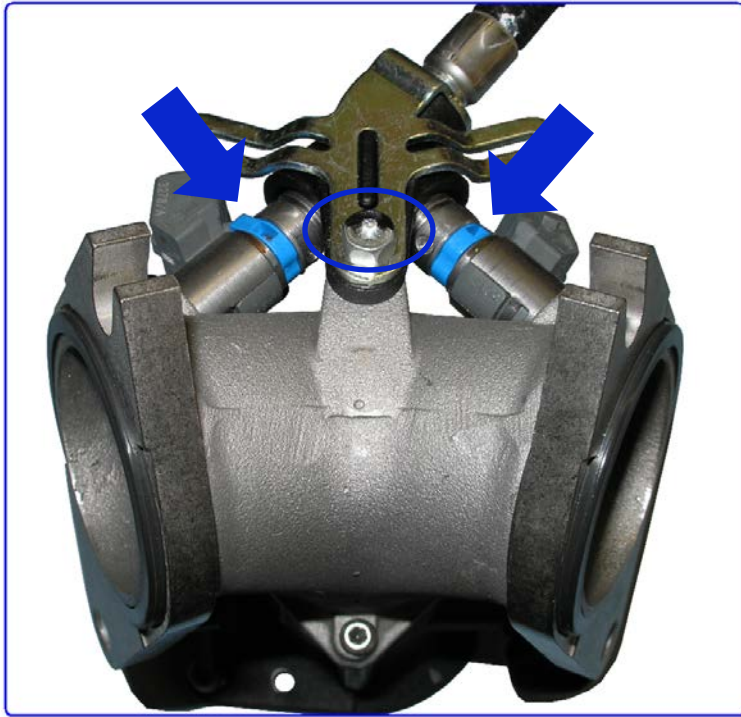
Back side, Intake manifold bolts



Drill a #7 hole (with supplied Drill Bit) on the bottom of the intake manifold (AS shown). Tap drilled hole with 1/4-20 tap (supplied). **IMPORTANT:** Blow out all the shavings out of the intake manifold. Install the supplied 1/4-20 Vacuum fitting into intake manifold with red loctite.



Remove the fuel injector retaining bolt and fuel line retainer. Remove the fuel feed line and the fuel block that locates the injectors. (Blue Band) Replace with the supplied yellow band fuel injectors . Use silicone lube to install the new injectors. (Not supplied).



Factory Configuration

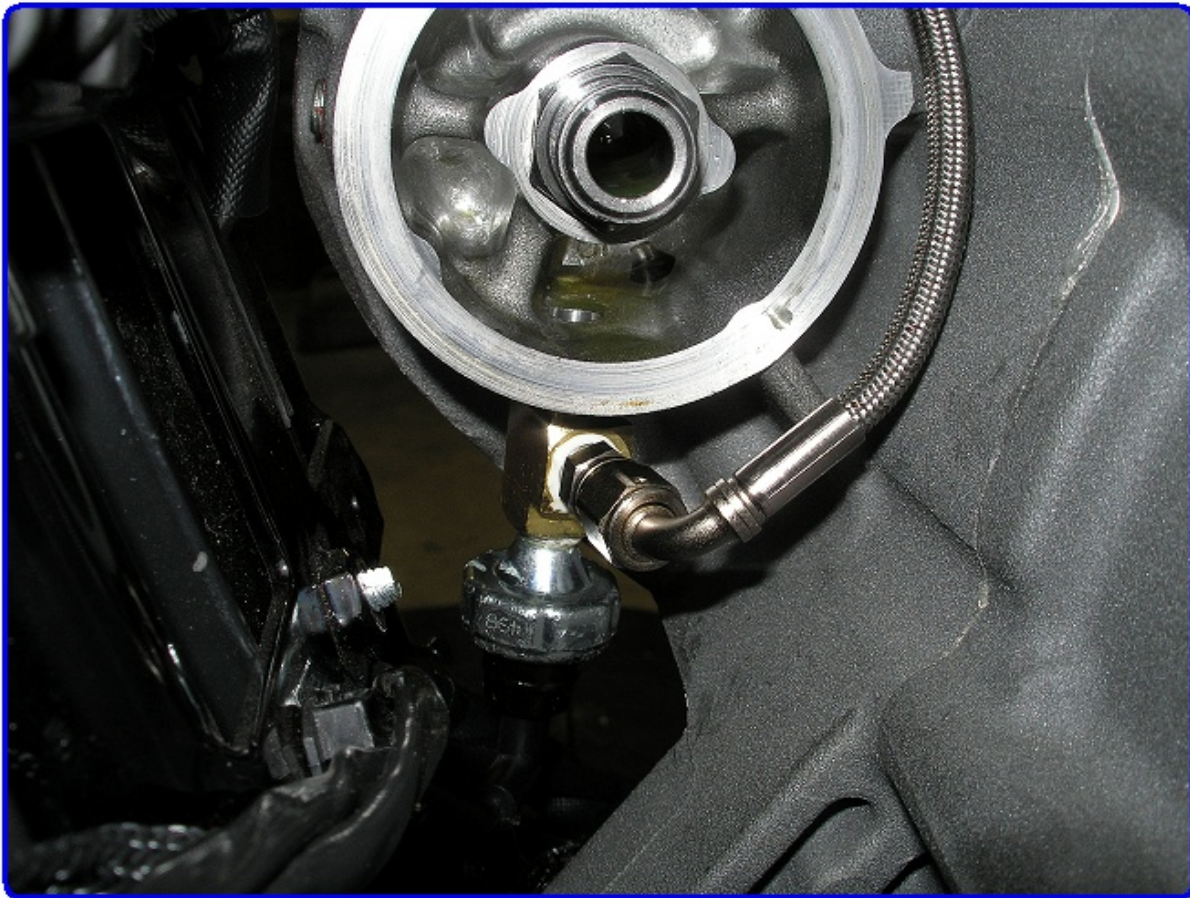


Supplied Injectors
5.08

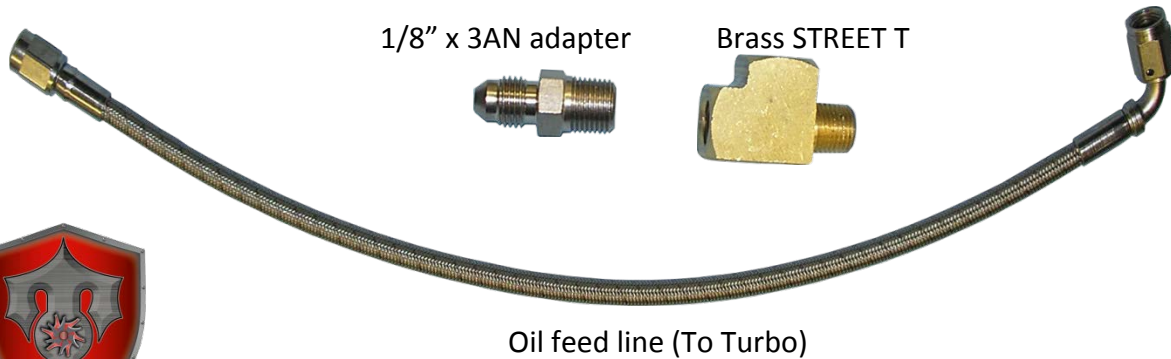
Reassemble the throttle body , install the throttle body onto the engine, Re-connect the sensor wires, map sensor harness, fuel injectors, and the idle/throttle cables.

Note: Remember to cap of the vacuum port of the throttle body as on page 2.





Remove the oil pressure switch. Apply thread sealer to the pressure switch and install the brass street-T to the oil pressure switch. Tighten the 2 pieces and install back onto the engine. Install the 1/8" NPT 3an adapter. Install the oil feed line onto the -3 AN adapter with a drop of red loctite. Route the oil feed line around the oil filter.



1/8" x 3AN adapter

Brass STREET T

Oil feed line (To Turbo)

Oil Pressure Switch



Oil feed and oil feed line final configuration



- Drain Primary oil - Remove left foot peg
- Remove the Shift lever - Remove the Derby Cover
- Loosen clutch cable - Remove the clutch Adjuster and ball + ramp from cable
- Remove the Primary chain adjustment cover. (Loosen the adjuster Jam nut and back off the adjuster shoe)
- Unbolt the 16 Primary Cover bolts - Use a Spring compressor tool to remove the retaining clip.



Primary Chain adjustment Cover

Clutch adjustment

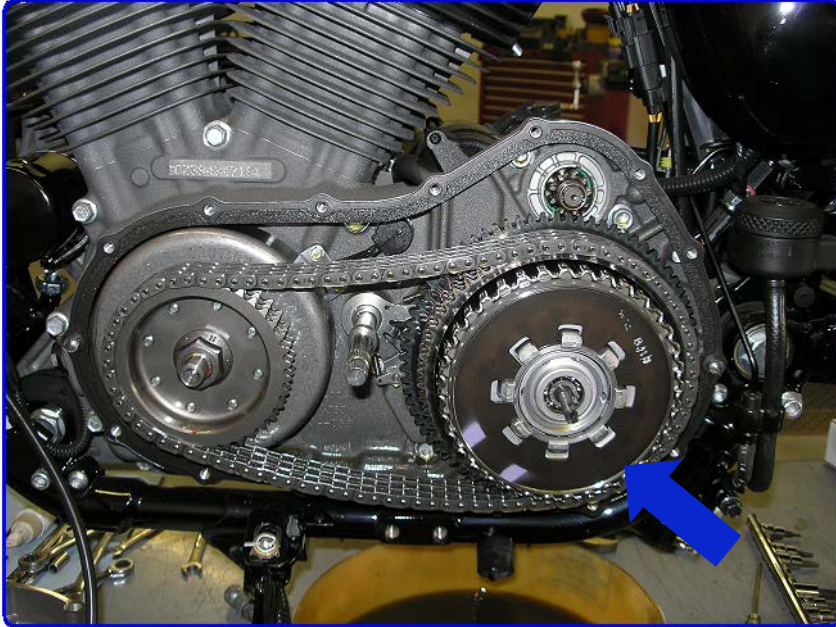
Ball & Ramp



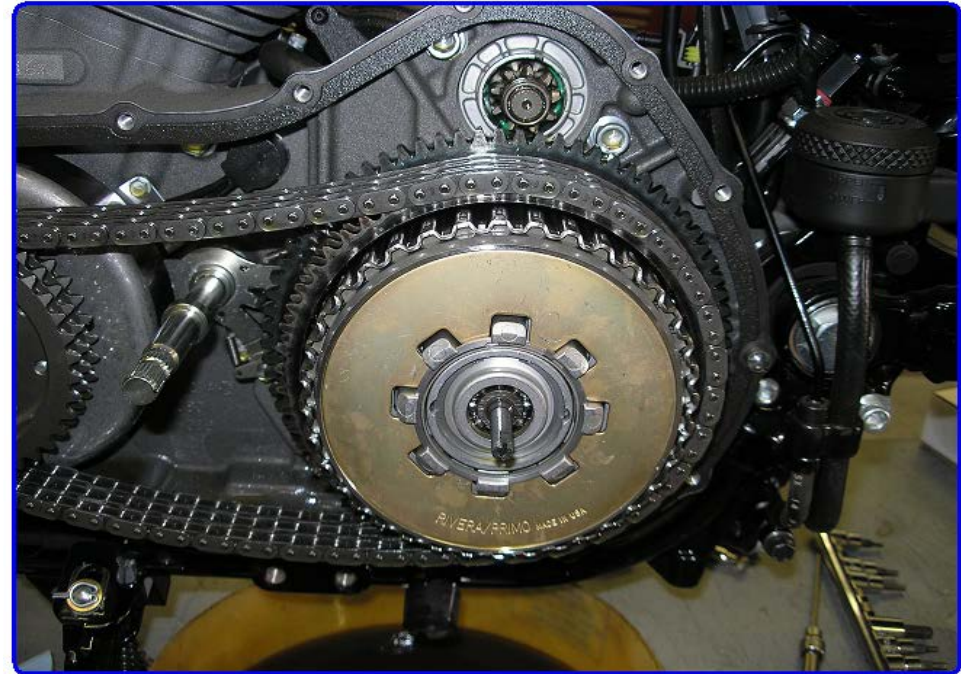
Chain Adjuster



Factory Spring :
Notice the steel coloring



Supplied Spring



NOTE: Refer to your service manual for clutch adjustment and torque specs.

Final configuration

Re-install the primary cover, tighten adjuster shoe for primary chain as instructed in your service manual, install chain cover, clutch cable, ball + ramp, adjust clutch as instructed in service manual, Refill primary with oil



To drill and tap for an oil drain you need to do the following



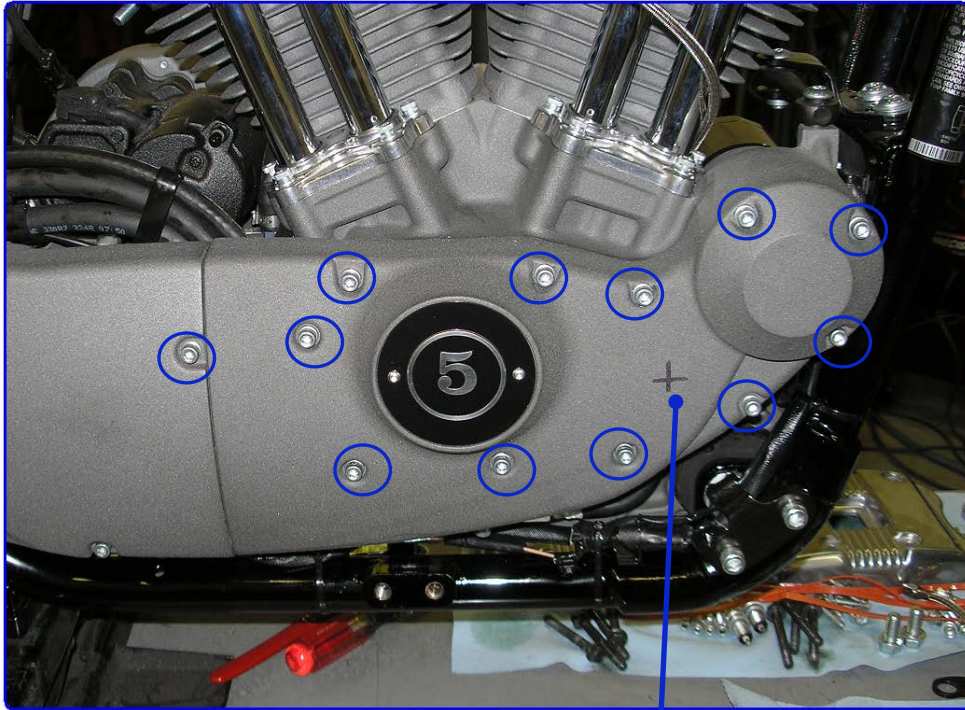
Remove the front and rear rocker box covers.

Unbolt the lower rocker boxes and allow them to lift up and take pressure off the Push rods. You may want to rotate the engine over to Front cylinder TDC. This will align the timing marks on the cam gears

See service manual

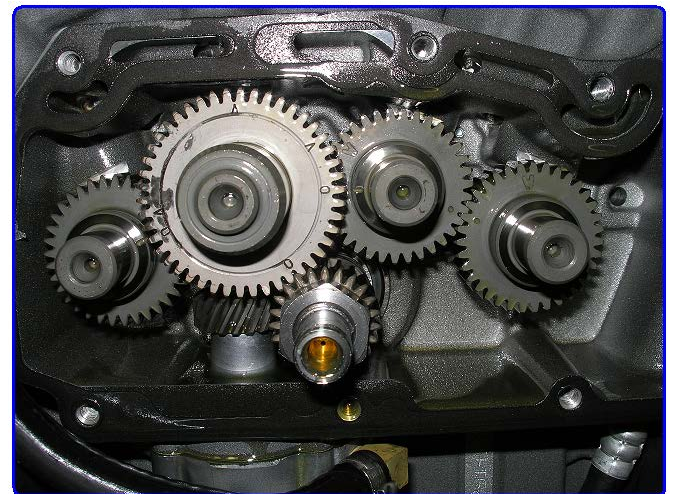


Mark the out side of the cam cover (as shown) for the location of the oil drain brass fitting. Remove the hardware on the cam cover,



Once hardware is removed carefully Pull the cam cover out about ½" off of the engine. Use a screw driver to push the cams back towards the engine case. If the cams come out you will need to re-time the engine.

Location of oil drain.



Cam cover removed



Clean the oil out of the cam cover with brake clean/compressed air. Mask off the cam bushings so no shavings fall into the oil passages. (As shown below)





Mark the drill location on the inner side of the cam cover. (As Shown)
Center drill about the center of the "-04A" cast part number. Center drill with the supplied #7 drill bit. Then drill with the 37/64 supplied drill bit. Tap out the hole the 3/8 NPT tap. Tap the hole from the outside of the cover. - DO NOT TAP THE FITTING TOO DEEP - . See picture below

Drilled oil drain hole

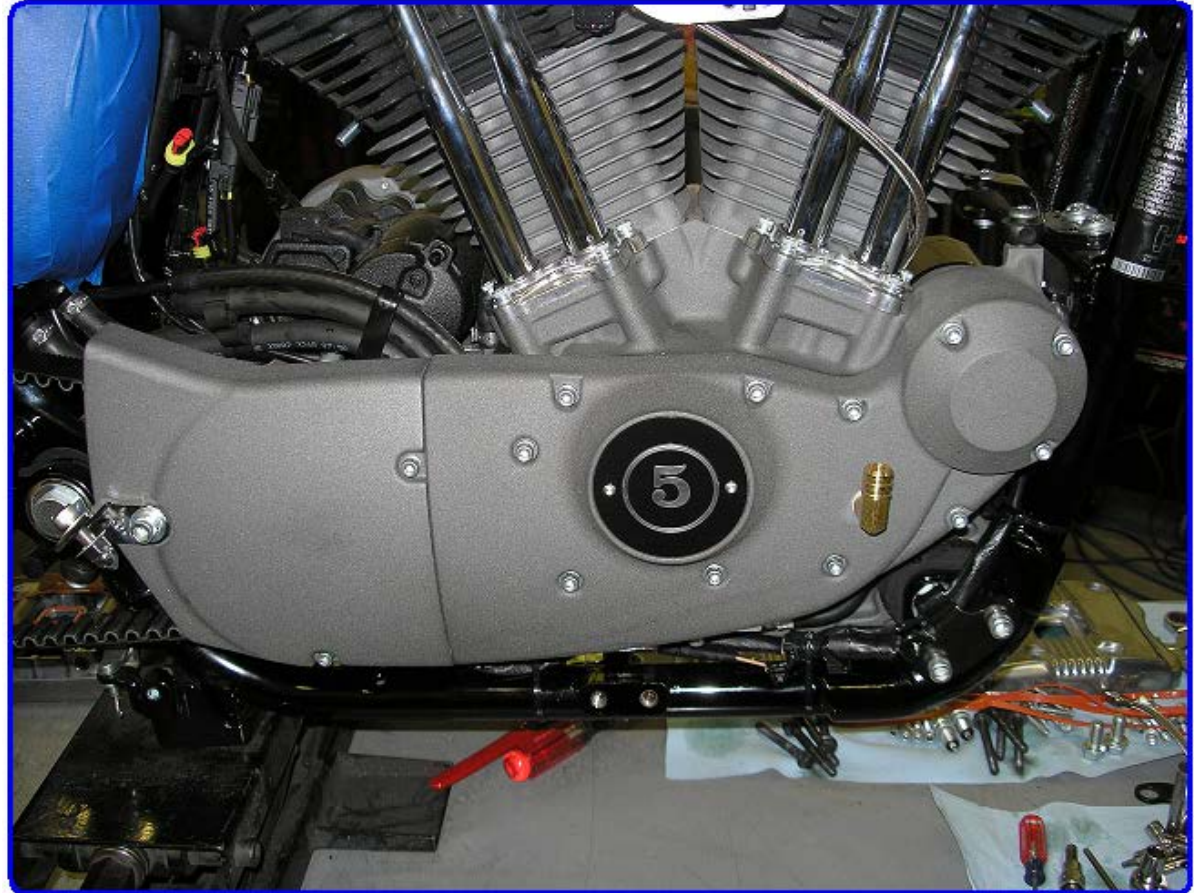


Clock the fitting and seal with
teflon thread sealer NOT TAPE



Re-assemble your rockers
boxes.

If you had no problems removing the cam cover, re-
assemble the cam cover. It is always a good idea to
double check your timing if there are any doubts.



Final Configuration

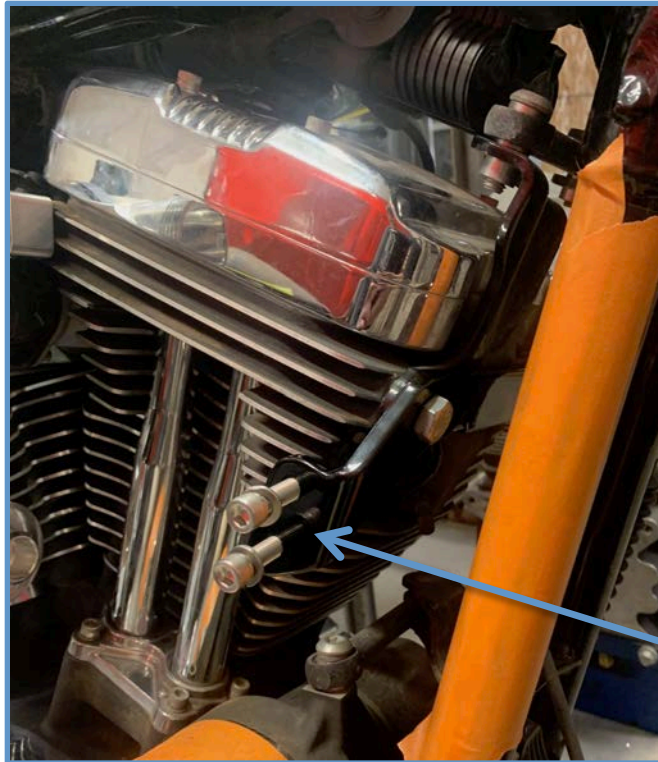




Loosen and remove bolts from stock front cylinder support bracket.



SUPPLIED SUPPORT BRACKET & HARDWARE



INSTALLED SUPPORT BRACKET

-Install supplied support bracket on outside of stock bracket with provided hardware. Holes in bracket are slotted for minor adjustments.

Headpipe 4-Bolt flange mounting surface and fasteners



Heat shield



Turbo Head Pipe



Install the head pipe onto the engine. Use new $\frac{1}{4}$ " – 28 flanged lock nuts. Replace the exhaust gaskets if necessary (Gaskets not supplied) Install the O2 sensors at this time if using the Thundermax.

This head pipe is a 2 piece design, it maybe necessary to twist the slip fit rear cylinder to achieve a proper fitment

2" Heat shield hose clamps





GT-22 Turbo Assembly



4 Bolt Turbo flange gasket

Install the turbo assembly onto the head pipe with the supplied gasket. Connect the oil feed line. (NEW TURBO/TAILOPIPE DESIGN WILL DIFFER FROM PICTURES)

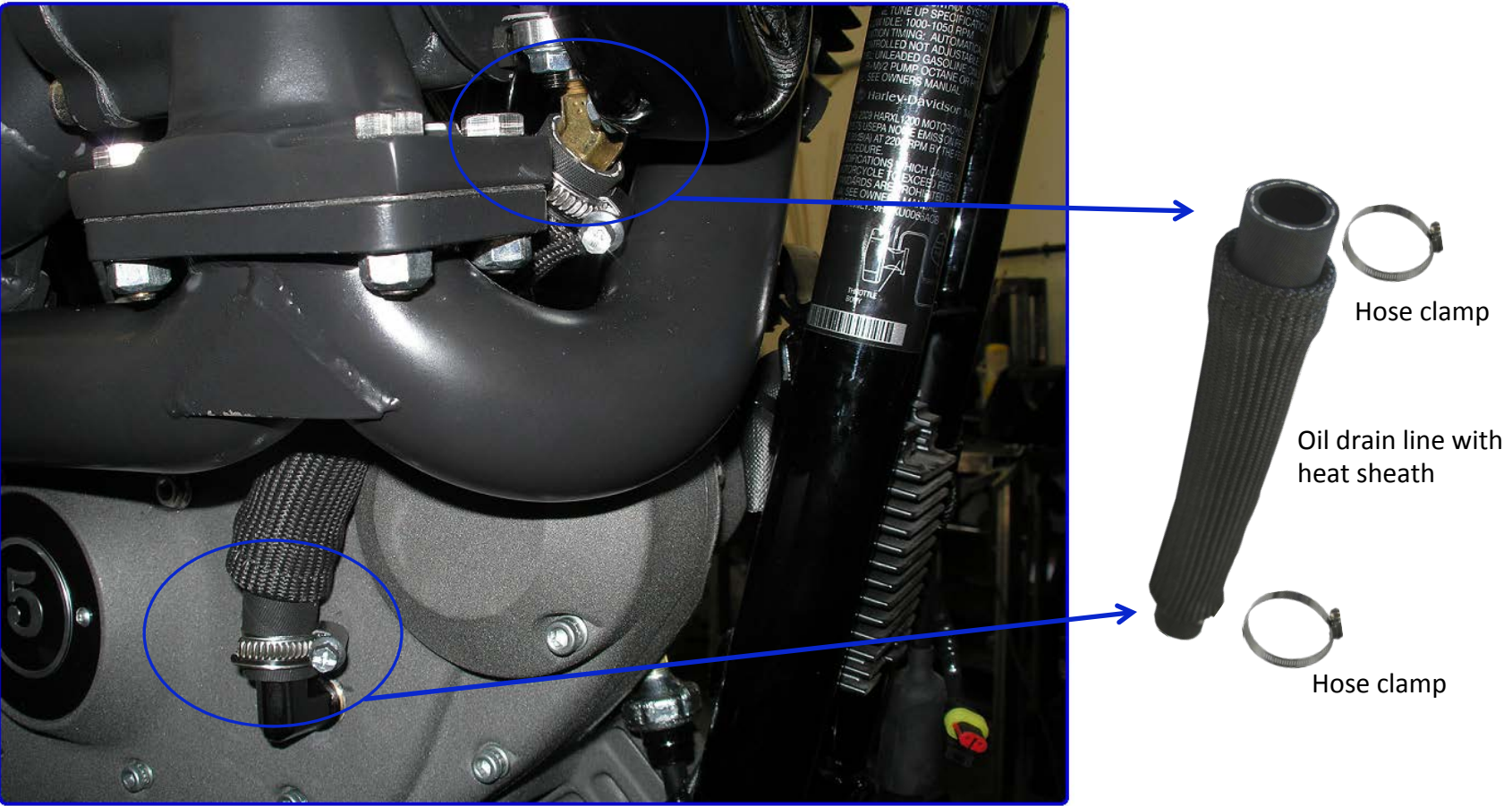


Oil feed connection



Oil Drain Connections

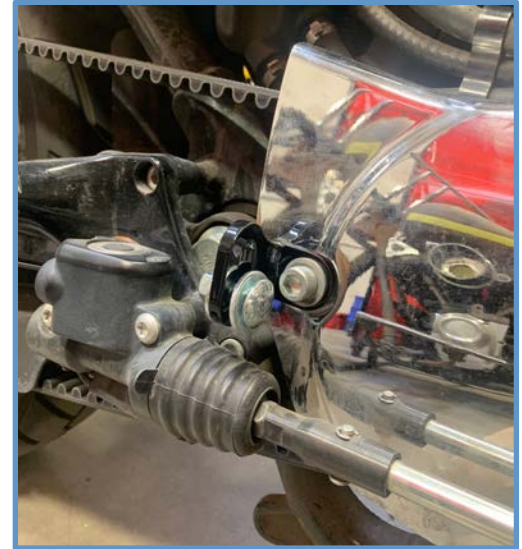
Connect the oil drain line with the heat sheath installed. Trim to length is necessary. Leave the line long enough so it holds itself up off of the head pipe.





Install the tail pipe onto the turbo, use the provided discharge gasket. Loosely install the tail pipe hardware.

Supplied exhaust bracket & carriage bolt



Tail pipe support

Utilizing stock bolt from pulley cover, install exhaust support bracket loosely, and wait to tighten after pipe has been installed.

5/16" split lock washers

Discharge Gasket

M8 x 25mm



After all of the hardware is installed, tighten the hardware in the following order.

- Discharge Flange to the turbo (QTY 5)
- The head pipe to turbo (QTY 4)
- Turbo support bolts and nuts (QTY 2)
- Tail pipe support (QTY 1)

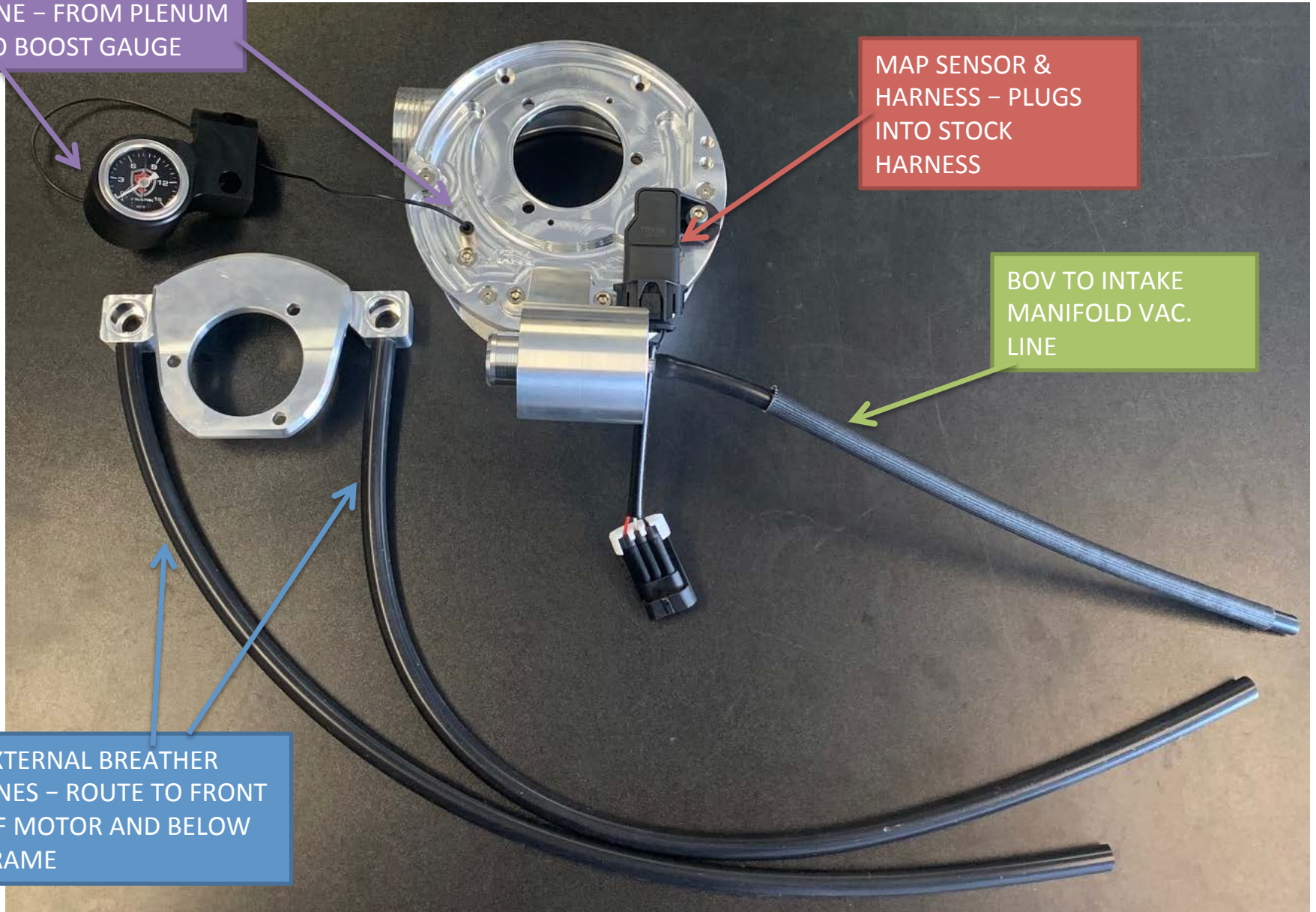
LINE ROUTING DIAGRAM

1/8" POLY BOOST
LINE - FROM PLENUM
TO BOOST GAUGE

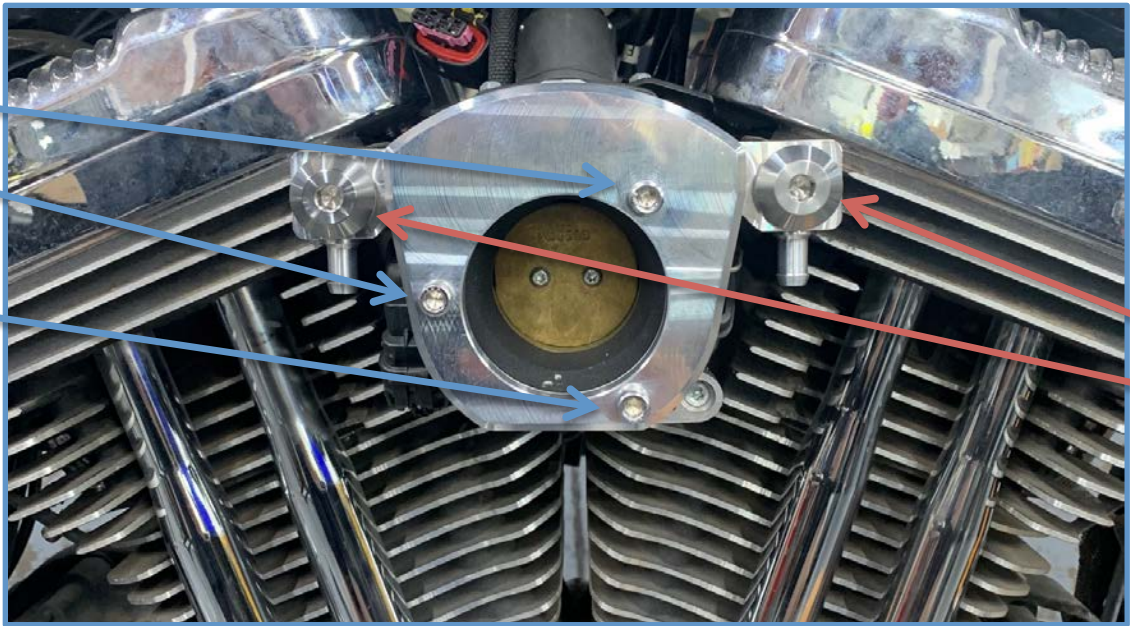
MAP SENSOR &
HARNESS - PLUGS
INTO STOCK
HARNESS

BOV TO INTAKE
MANIFOLD VAC.
LINE

EXTERNAL BREATHER
LINES - ROUTE TO FRONT
OF MOTOR AND BELOW
FRAME



Loosely installed
1/4-20 x 3/4"
throttle
body bolts
(3)



XL Breather bolts
(red loctite)

XL BACKING PLATE ADAPTER

-When installing the adapter plate, utilize the (3) 1/4-20 x 3/4" socket head bolts to align the throttle body in the correct position while ONLY tightening down the breather bolts (red loctite). Be sure the breather O-rings are installed prior.

External
Breather
Hose
Barbs

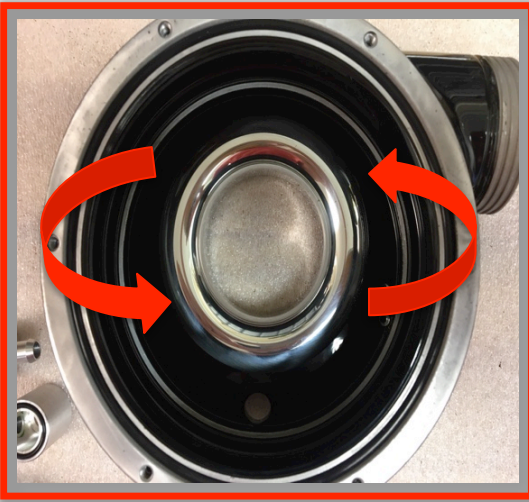


-Once breather bolts are installed, remove throttle body bolts. These bolts will be used for installing plenum body to backing plate adapter/throttle body. Now is a good time to install external breather lines (1/4" ID x 24") onto hose barbs, on adapter plate, and route down to front of motor and trim excess just below the frame.

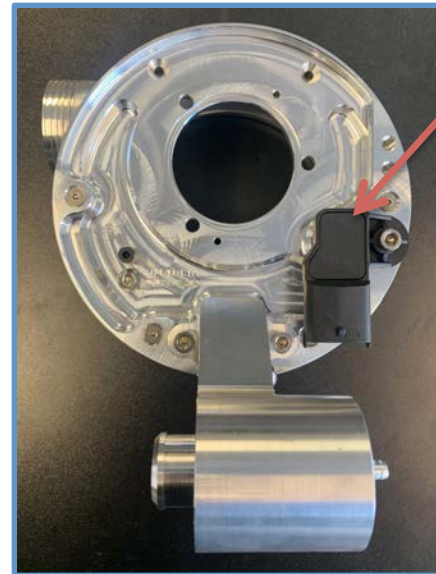
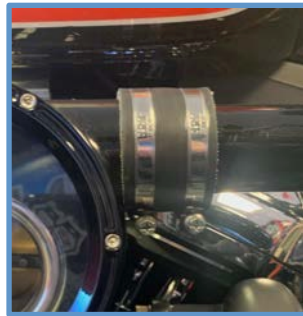


Plenum Installation

-Velocity stack is held in place by magnets with an indicator **arrow** pointing up (on back of v.stack) showing which way the stack should be facing inside the plenum. It also is held in by locking tabs. To remove the velocity stack, rotate the stack counter-clockwise, until past the lock tab and pull to remove. Behind the velocity stack will reveal the throttle body mounting holes.



Install the (3) throttle body bolts to mount the plenum through the adapter and to the throttle body. Then re-install the velocity stack and allow the magnets to turn the stack, returning it to the installed/locked position.



*Make sure to plug-in MAP sensor harness into MAP sensor, installed on backside of backing plate.

*Use the provided 2" silicone boot, to connect the turbo compressor housing to the plenum assembly. Secure with (2) 40-60MM hose clamps. (Pictured above)



Installation of boost gauge.

- Remove the rear brake lever assembly clamp from the bars
- Mount the boost gauge assembly with the supplied hardware
- Route the 60" long 1/8" Nylon line from the plenum to the 1/8" push connector fitting on the boost gauge. Route tight and clean, cable tie as needed
- Trim excess to length with a sharp razor blade.



Trask boost gauge/
handlebar bracket

Stock HD
R.Brake lever
clamp

The boost gauge and boost gauge bracket will come pre-assembled

Installed Trask Boost Gauge



- Double check all connections, fittings, hardware, ETC *
- Check oil level before starting the engine (fresh oil change)*

- Download provided map into your tuner

- If you purchased a Thundermax ECM with your turbo system, it will have a base map pre-installed

- We recommend fine tuning all systems on a dyno. Find an experienced tuner. Air Fuel 12.2 – 12.5 under Heavy load & 12.5 – 13.2 for light load. You may lean the map out slightly at cruise to help fuel consumption. Call Trask Tech support if you need assistance with tuning.

- After you have ridden the bike, let the engine idle down for 30 seconds or so. This will help cool the turbo and keep the turbo lubricated while spooling down. This will ensure turbo longevity.

