Arctic Cat M8 Pump Gas Turbo Install Instructions

Important Information Before Installing This System:

The 2010 -2011 M8 will require a head modification to run pump gas call Boondocker for more information.

Before you begin your turbo install, read through these instructions to determine if you are comfortable installing this system. If not please take it to an experienced mechanic for your install. It is also a good idea to check the kit contents to verify all parts were provided in the kit before getting started. This install requires time and patience. Do not rush the installation, if you have any questions on your installation please contact Boondocker tech support at 1-877-522-7805.

Step 1: Tear Down

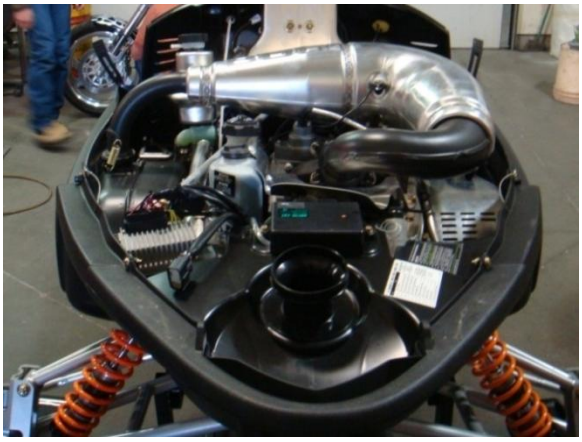
Parts Needed:

None

Tools Needed:

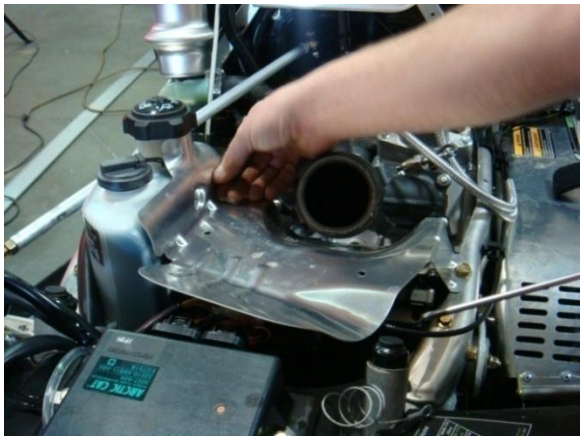
Basic tool set
Air saw

A. Remove hood and side panels

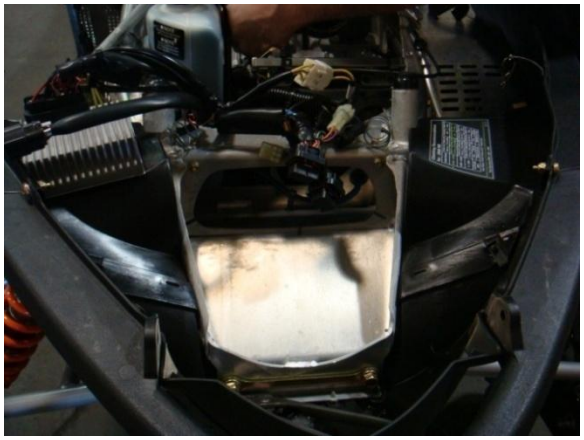


B. Remove pipe and can (remove the stock rubber mount from the exhaust can we will need this later).

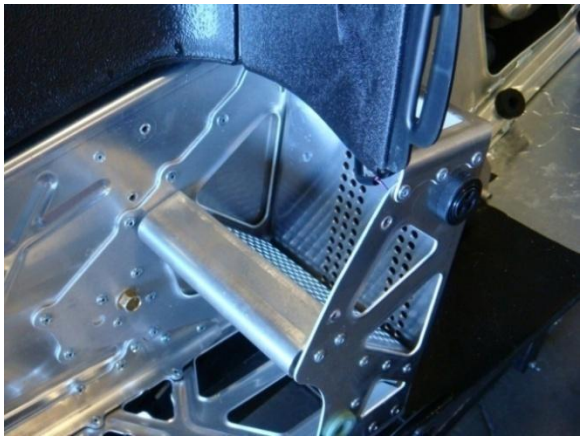
C. Remove Y pipe and heat shield. Note: If you are installing EGT's now would be the time to weld on the EGT bungs. Be sure to mount them 2 ½" from the flange.



D. Remove airbox from nose cone and remove the plastic boot that connects to the throttle bodies.



E. Remove the temp sensor from the airbox and set it aside, you will need this later in the install.



F. Remove right hand step panel and reverse beeper.

G. Cut and remove this portion of bulk head using an air saw, if you do not have an airsaw you can work this piece loose with a pair of pliers.

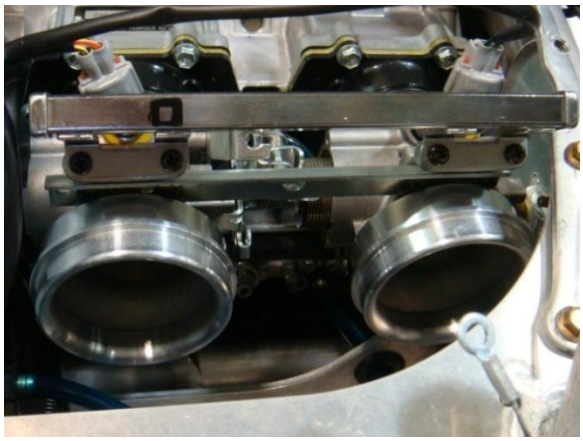
Step 2: Mounting The Airbox and ECU

Parts Needed:

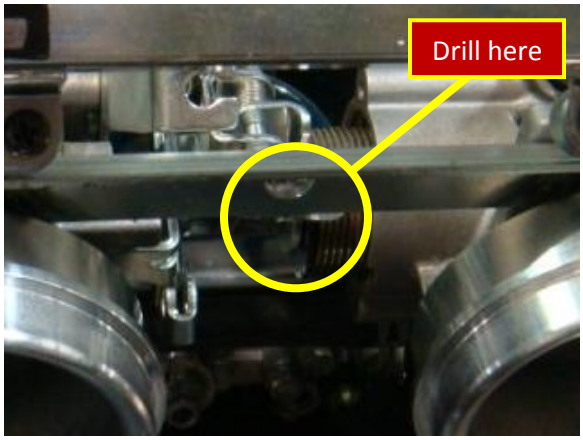
2- Machined rings/o-rings installed
Air temp sensor (removed from stock airbox)
Boondocker airbox
2- self tapping sheet metal screws
5/16 x ¾" bolt with lock washer
2- Rubber ECU mounts

Tools Needed:

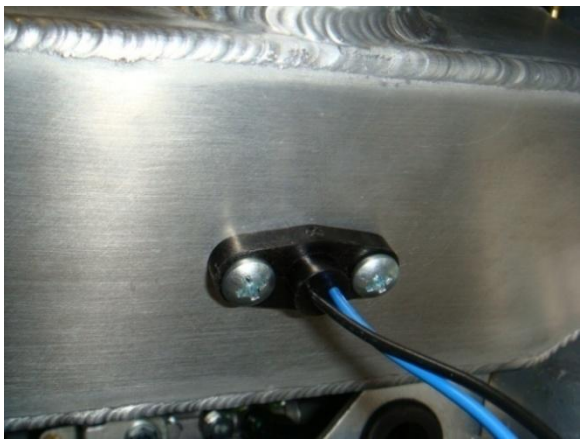
Drill with 5/16 drill bit
Basic tool set
Assembly lube
Silicone



A. Lubricate the o-rings on the machined rings, this will help ensure a good o-ring seat. Install the rings to the throttle bodies as shown.



B. Insert the airbox over the machined rings. Mark and drill a 5/16" hole in the throttle body support for the airbox mount.

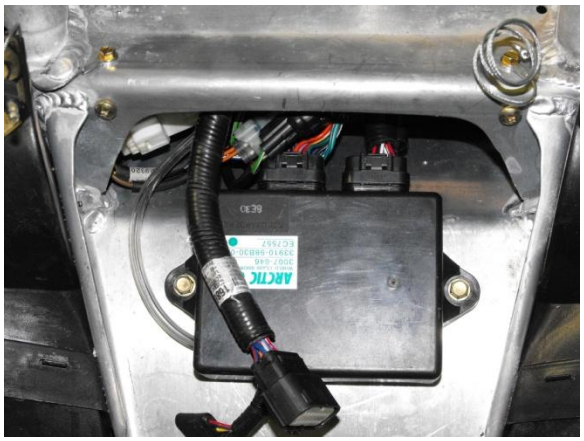


C. Use silicone around the factory temp sensor to help seal this connection. Be sure not to get any silicone on the sensor itself. Install the sensor in the predrilled hole in Boondocker airbox using the provided self tapping screws.

D. Reroute the ECU Harness. Be sure the harness does not rub on the chassis, this can cause a short in the wiring,

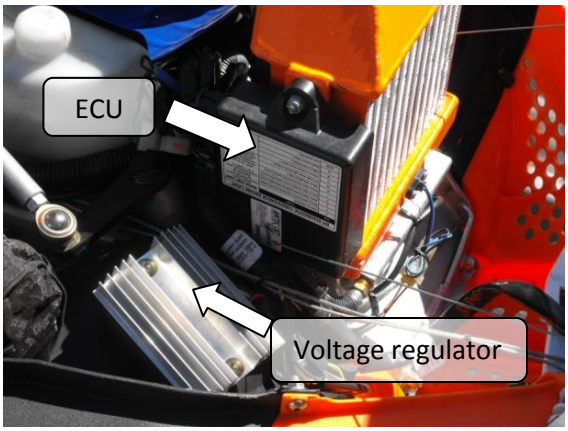
E. Install the Boondocker airbox and fasten it using the provided 5/16 x ¾" bolt with lock washer.

F. Relocate the ECU as shown in the picture. Be sure to mount the ECU far enough forward so that the connectors plug in without hitting the bulkhead. Use the factory bolts, and the provided rubber ECU mounts in between the ECU and bulkhead to dampen the vibration.(DO NOT OVERTIGHTEN)



Installing Intercooler (in place of Airbox)

Follow step A-E for Airbox. Relocate the ECU to the side of the Intercooler and re locate the voltage regulator (see pictures). **For wiring fan see Step 6 section B**



Step 3: Install the Air Density Advantage Kit:

Parts Needed;

ADA kit bag w/ instructions

Tools Needed:

Basic tool set

Step 4: Installing the Control Box (See Control Box Instuctions):

Parts Needed:

Control Box w/instructions

Tools Needed:

Basic tool set

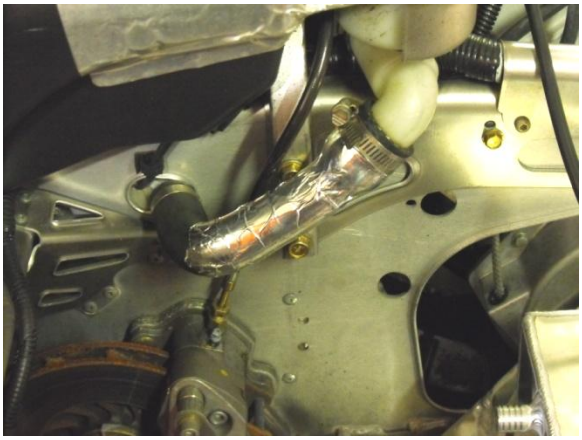
Step 5: Muffler

Parts Needed:

Muffler
5- 8mm x 25mm Allen head bolts
Spring tab
¼" x ½" bolt with lock nut
Muffler support with rubber bumper
2- Aluminum rivets
4- Gold exhaust springs
Turbo oil tank assembly
12" of heat tape

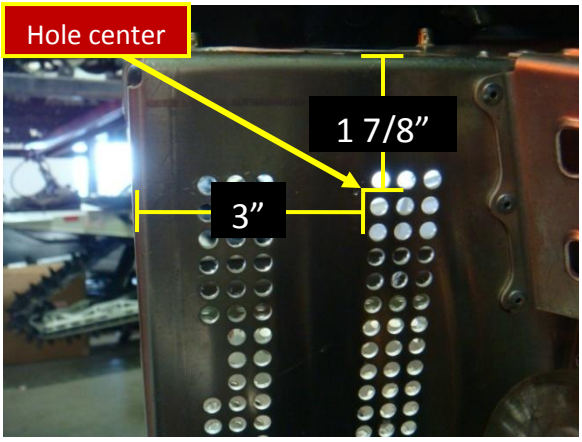
Tools Needed:

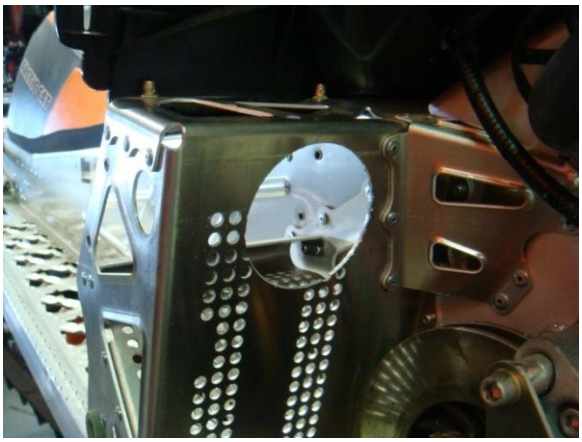
Basic tool set
3" hole saw
Die grinder
2 ¼" hole saw



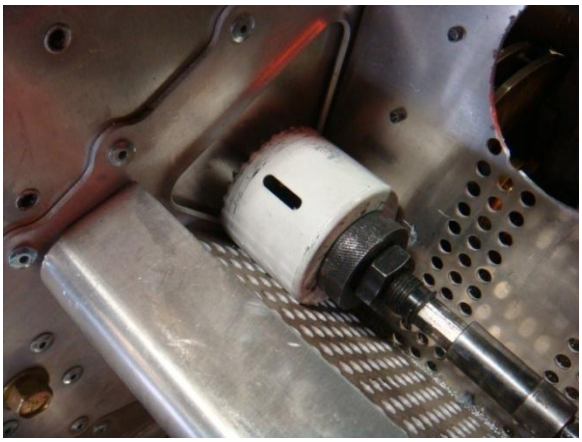
A. Using the provided 12" piece of heat tape. Wrap the coolant line as shown in picture.

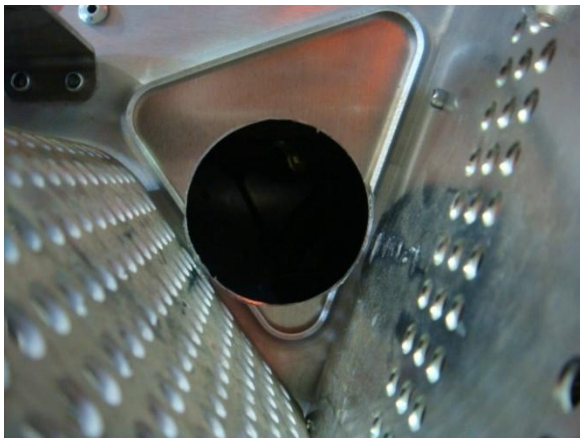
B. Using a 3” hole saw make the first cut as shown in picture.



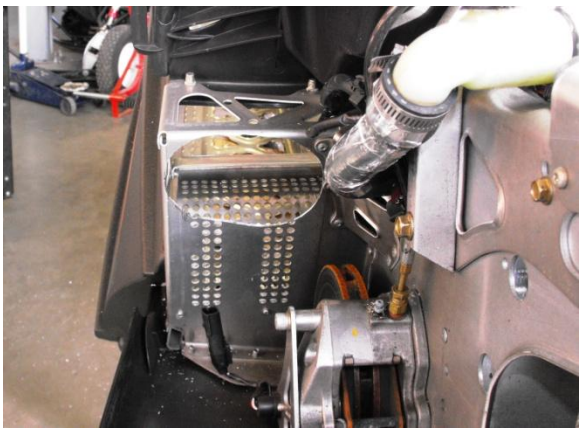


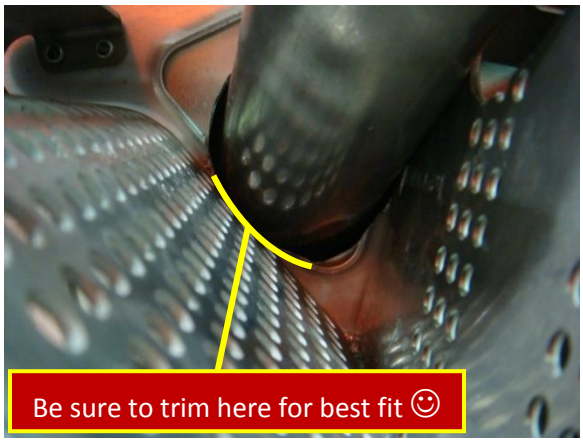
C. Using a 2 ¼” hole saw make this first cut as shown



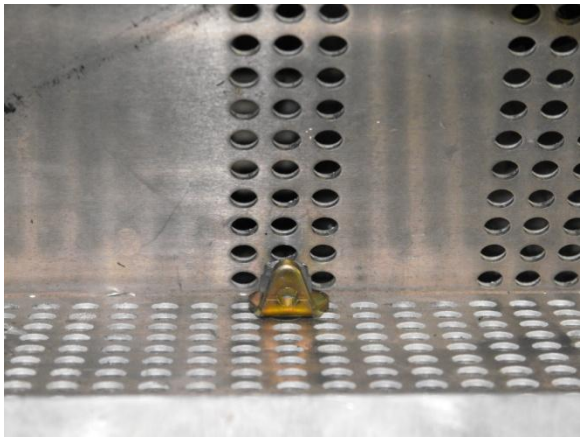


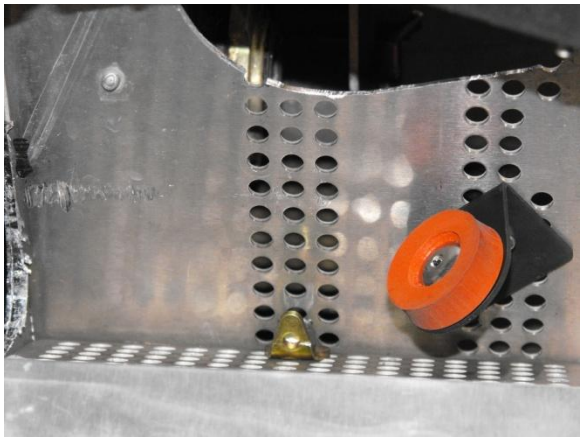
D. **NOTE: You <u>will</u> have to do additional trimming in the holes to get the muffler to fit, use a die grinder for this step (see below).** You can now fit the muffler inside the foot rest.





E. From the inside of the footrest find the center row in the vertical hole pattern and the hole in the very bottom of the horizontal pattern. Install the spring tab here using the ¼" x ½" bolt with lock nut as shown in picture.





F. Trim the hole pattern on the front of the foot rest count 6 holes up on the middle vertical hole pattern and 5 holes up on the right vertical hole pattern. Fasten the muffler support bumper here using the 2 aluminum rivets as shown in picture.

G. Trim 3 rounded spots on the foot rest as shown and mount the reverse beeper.

H. Place a bead of high temp silicone around the muffler flange as shown, reinstall to turbo.

I. Install the 5 hole muffler flange to the turbo exhaust housing using the 5- 8mm x25mm Allen heat bolts. Install the 4 gold springs as shown.

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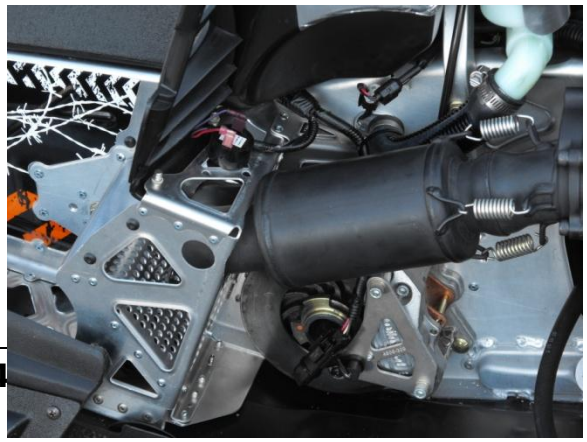


J. Turn the sled on its side and install the heat deflector plate as shown in picture, fasten using the factory bolts

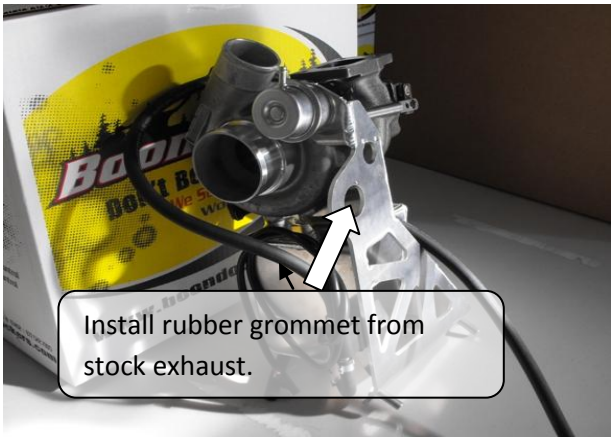
Step 6: Turbo/Oil Tank Assembly Installations

Parts Needed:

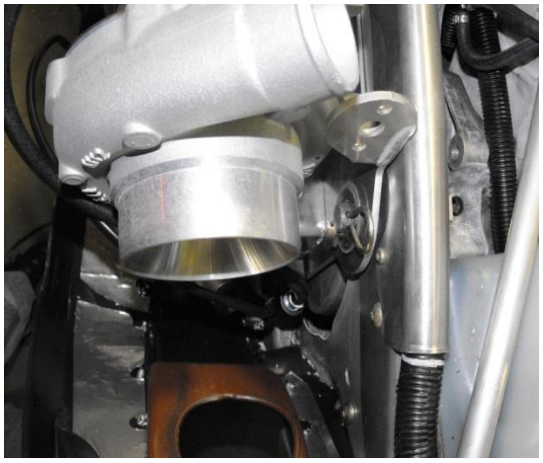
Turbo/Oil Tank Assembly

Tools Needed:

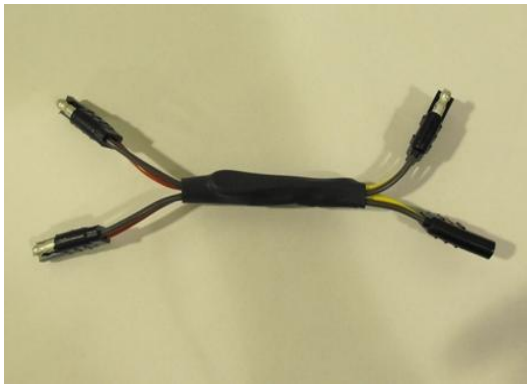
Basic Tool Kit

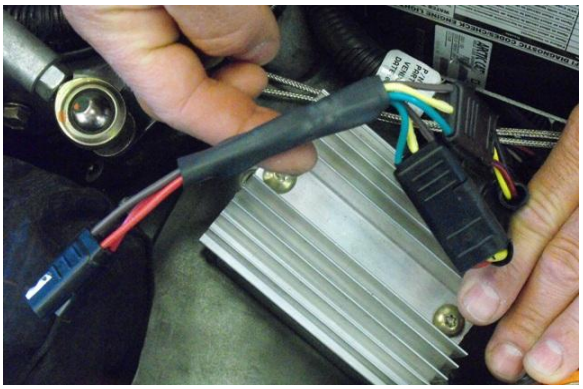


A. Mount the oil tank/ turbo assembly to the sled using the stock exhaust can mounts as shown in picture.



B. Wiring your oil pump. Use the Voltage Regulator Power Adapter (supplied in the kit, see picture), plug in between the chassis harness and voltage regulator (see picture). **If you have an Intercooler with fan you will connect here also.**





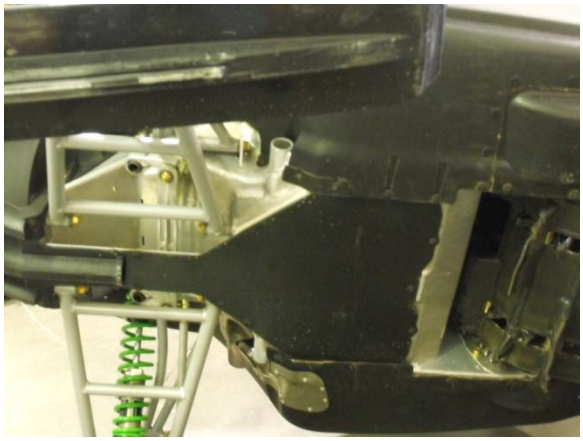
Step 7: Installing Water Lines

Parts Needed:

2-Banjo style water fittings 1 @ 17" 1 @ 19''
2- Bolts for Banjo fittings
1-¼" x ¼" barbed fitting
T20 torx head bit.

Tools Needed:

Basic tool set
4- Copper washers



A. To route the water lines tilt the sled on its side and remove the belly plate using a T20 torx head bit.

B. Locate the factory water line that runs from the throttle bodies to the back of the motor. Pinch the factory water line with a pair of vise grips or other clamping pliers and remove the factory clamp Note: you may have to rotate the clamp to gain access to
The worm drive fastener on the hose clamp.

C. Connect the 19” water line on the turbo charger to the back of the motor and fasten with the factory clamp

D. Trim the protective plastic cover right before the clamp. We will use this later.

E. Route the 17” water line from the turbo to the stock water line that you just pinched off. Trim the factory water line to proper length and connect the factory water line to the 17” turbo water line using the supplied ¼” barb and fasten with the 2 #4 hose clamps provided in the kit (as shown in picture).

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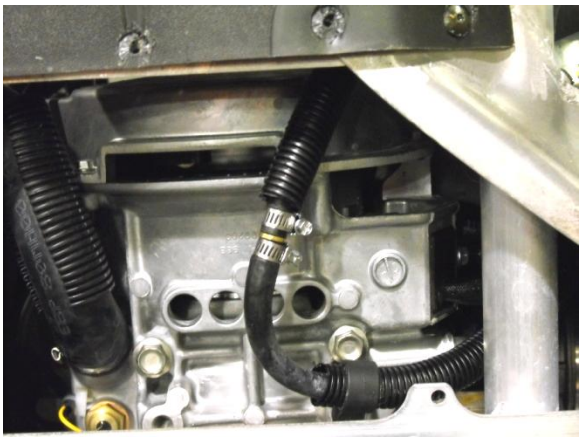
C. Install the piece of trimmed plastic sleeving on the upper side of the water line, this will keep the hose from rubbing on any sharp edges (see picture).



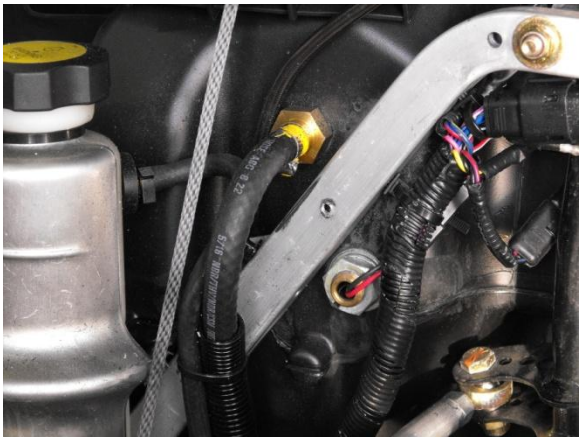
Step:8 Fuel System

Parts Needed:

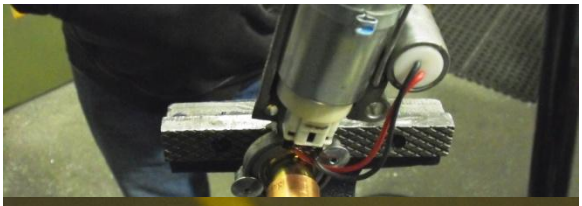
Fuel regulator fitting
2- 1/8” NPT x 1/8” PTC 90
41” of 1/8” poly line
Bulkhead fitting with 1/8” push to connect
5/16 nylon lock nut
1/4 “ flat washer
4- 8” cable zip ties
7” of clear 3/16” tubing
Boondocker airbox

Tools Needed:

Basic tool set
Vise
Drill w/ 5/16” drill bit
Nut driver

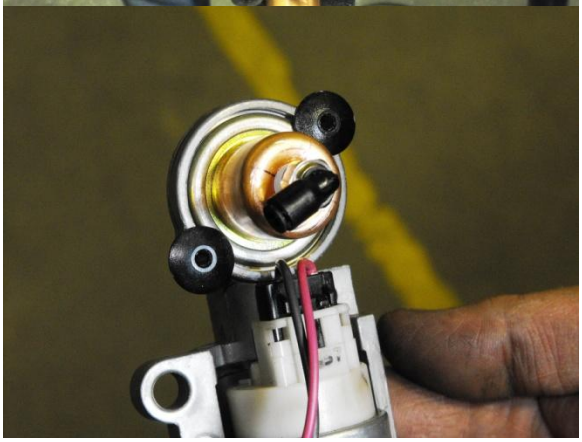


A. Disconnect and remove the electrical connector, fuel line, brass fitting and the nut shown in picture, then remove the factory fuel pump from the gas tank.



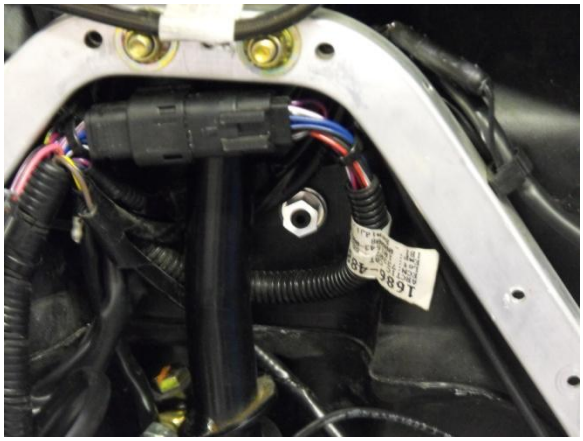
B. Locate the brass fuel regulator fitting and using a 9/16” socket press the fitting on the stock fuel regulator using a vise as shown in picture.

C. Thread the 1/8 push to connect 90 into the copper cap as shown in picture

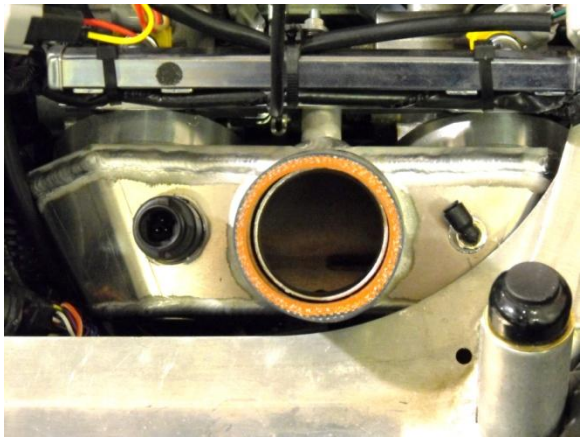


D. Reinstall the fuel pump in gas tank.

E. Find a flat surface on the fuel tank to mount the bulkhead fitting. Drill a 5/16” hole and install the bulkhead union in gas tank. Fasten the bulkhead fitting using the provided 5/16 lock nut and ¼” tighten using a nut driver. **IMPORTANT: Do not over tighten this fitting it will break.**



F. Install the 90 degree push to connect fitting in the air box as shown



G. Locate the 41” of 1/8” black poly and route the poly line to the bulkhead fitting following the throttle cable as shown. Insert the 7” of clear tubing onto the poly line as shown and connect to airbox. Note: be sure to avoid sharp edges, possible melting and kinking the 3/16” hose.

H. Push the poly line through the bulkhead fitting and connect it to the fitting on the copper cap we installed in part C.

Step 9:Exhaust Pipe

Parts Needed:

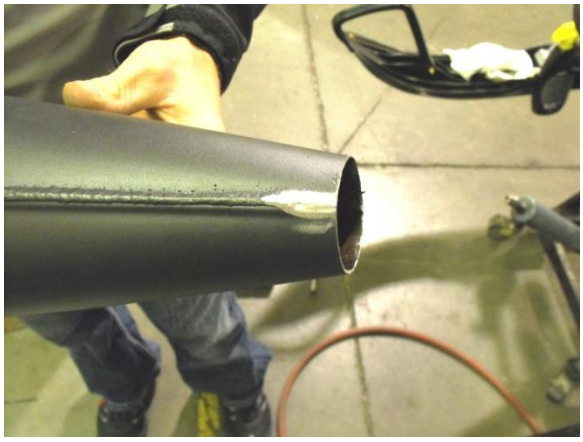
4- 8mm non Nylon lock nuts
Stock pipe
Boondocker turbo inlet
4- 8mm x 25mm bolts

Tools Needed:

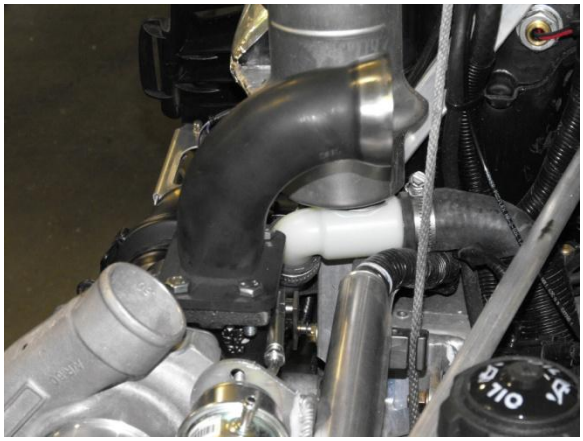
Air saw or band saw
Welder
Basic tool kit
Grinder or sand paper

A. Remove stock heat shield from pipe.

B. Cut the exhaust pipe right before the weld as shown in picture. You will also need to grind about 1.5" inches off the factory weld of the pipe as shown in picture.

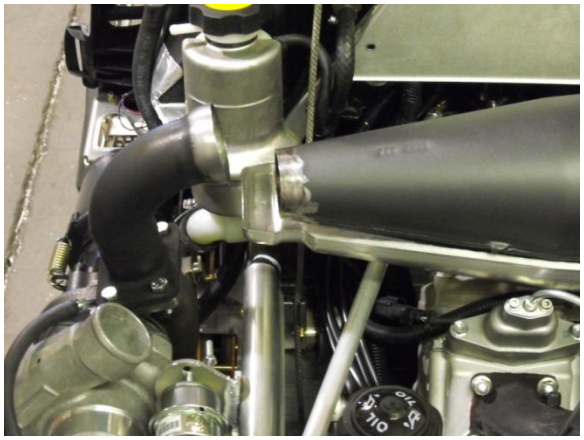


C. Sand the end of the pipe and the inlet for a clean weld on the pipe

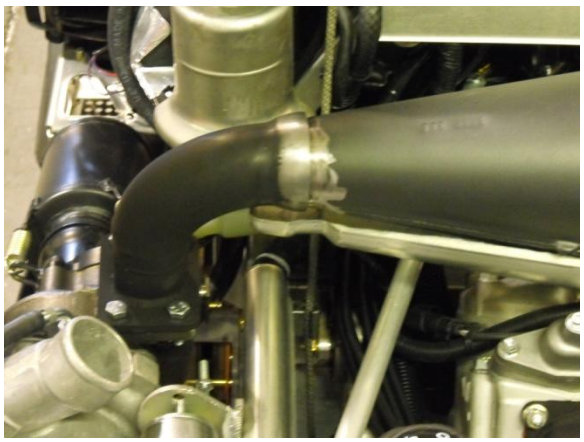


D. Bolt the turbo inlet to the exhaust housing on the turbo as shown using the provided 8mm bolts and nuts Note: the exhaust housing side of the turbo should still be loose, this will allow you to rotate the housing as needed to fit the exhaust pipe.

E. Reinstall the bottom heat shield on the pipe and install the exhaust pipe as shown in picture Be sure to spring the pipe in place to ensure proper placement (use factory springs).



F. We are now ready to weld the inlet to the exhaust pipe. Either mark the inlet and pipe with a permanent marker and remove pipe to tack and weld, or If you plan on tacking the inlet to the pipe on the sled, be sure to disconnect the ECU **failure to follow this step will result in damage to your ECU.** Remove pipe and finish the weld.



NOTE: Do not reinstall the exhaust pipe until you complete step 9.

Step 10: Exhaust Pipe Final Install

Parts Needed:

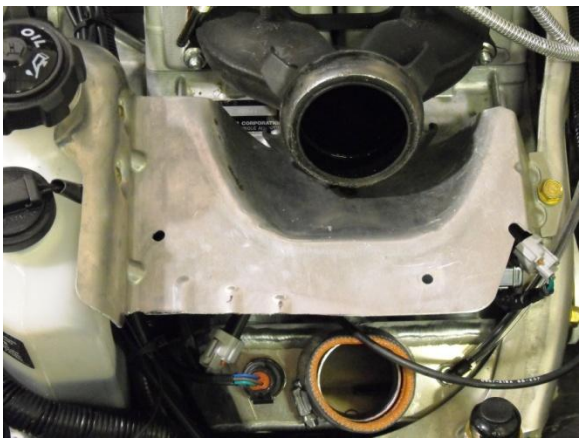
4- High tension exhaust spring
4- 8mm x 25mm bolts
4- 8mm top lock nuts
4 Hole exhaust gasket (packaged in turbo box)
Exhaust Pipe with heat shield
Factory heat shield

Tools Needed:

Air saw or band saw
Basic tool kit
Spring tool
Black high temp spray paint

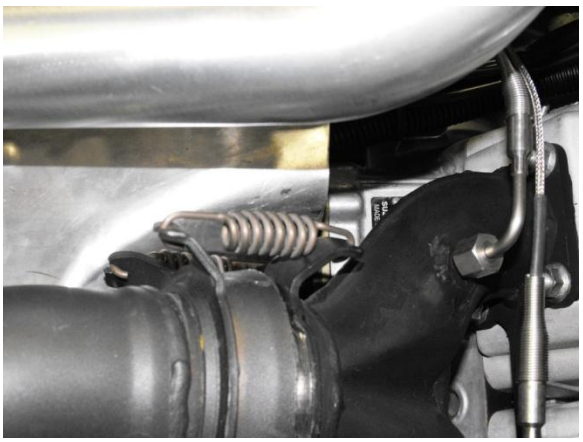
A. For a cleaner look, paint the welded inlet on the exhaust pipe with a black high temp spray paint.

B. Reinstall the factory heat shield on exhaust pipe.

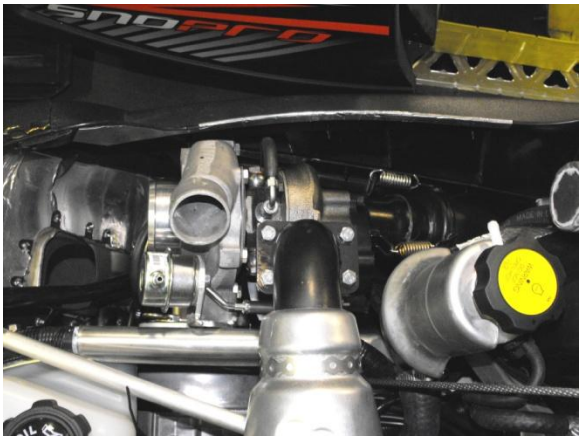


C. Using an air saw or band saw trim the exhaust heat shield as shown in picture

D. Reinstall the heat shield to the sled



E. To save you a headache install the 2 high tension exhaust springs on the right side of the pipe first, this allows you to use the exhaust pipe to torque the springs instead of a spring puller. Be sure to install the short hook onto the pipe side and the long side of the spring to the Y pipe.



F. Be sure to add the 4-hole gasket on the turbo side of the pipe. Fasten this connection using the provided 8mm bolts with lock nuts.

G. Install the remaining high tension exhaust springs

Step 12: Charge Tube (If Intercooler kit same process)

Parts Needed:

2” x 3” black silicone
2” x 2” black silicone
4- Size 32 hose clamps
6.5” of 3/16” hose
2- 4” zip ties

Tools Needed:

Basic tool set

A. Install 2” x 2” black silicone to the Boondocker airbox and loosely place 2 size 32 hose clamps over the silicone.

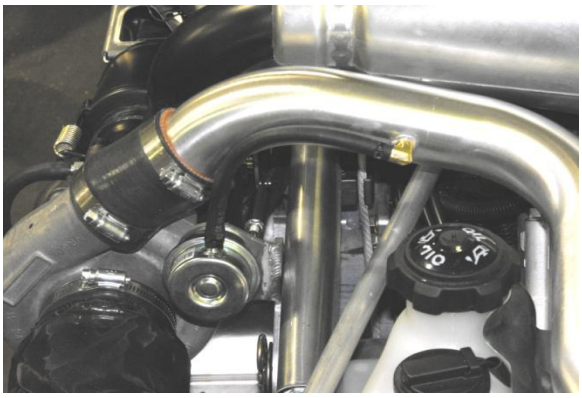
B. Install 2” x 3” black silicone to the turbo charger and loosely place 2 size 32 hose clamps over the silicone.

C. Insert the charge tube into the 2 silicone pieces as shown

D. Tighten all 4 size 32 hose clamps

E. Route the 6.5” piece of 3/16” tubing from the actuator to the barbed fitting on the charge tube.

F. Zip tie these 2 connections.



Step 13: Final Touches

Parts Needed:

Snorkel filter
Oil tube w/dipstick

Tools Needed:

Basic tool set
Assembly lube

A. Fill oil tank with 16oz of synthetic 2 stroke engine oil **IMPORTANT:** start the sled to make sure the oil pump is working before installing it to the turbo.

B. Install the oil hose to the top of the turbo as shown
C. Clean up and zip tie all hoses.

D. Using the provided size 48 hose clamp, fasten the snorkel filter to the turbo inlet as shown.

E. Well you did it, good job. Replace the hood and side panels, oh yeah, and don't forget to hold on!!! Thanks for choosing Boondocker Performance Products.