

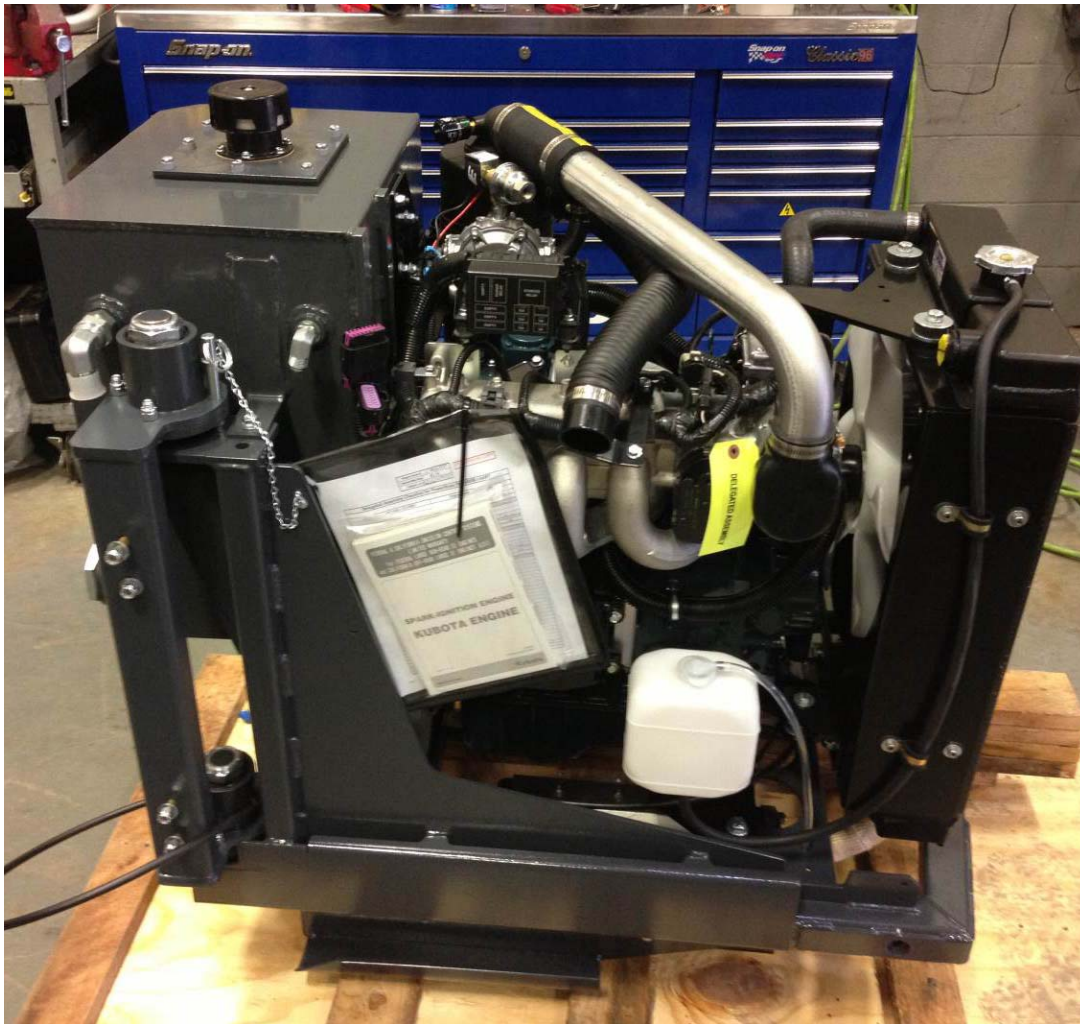
## ASSEMBLY & WORK INSTRUCTIONS

Model Number: WG1605B - 1AAR7 (CORE 50)

REV B

9/18/2013

### **ASSEMBLY SPECIFICATIONS**



## **STEP 1: Change Exhaust Manifold**

Install a downward front exhaust manifold, P/N 16283-12310



Reinstall manifold gasket and torque nuts to 13 Ft-lbs

## STEP 2: Install Senders

Install all senders using Loctite 567 PST on the threads



Remove existing oil switch and reinstall

Orientate the oil sender fittings as shown below.

Plug back in the oil switch that was previously removed

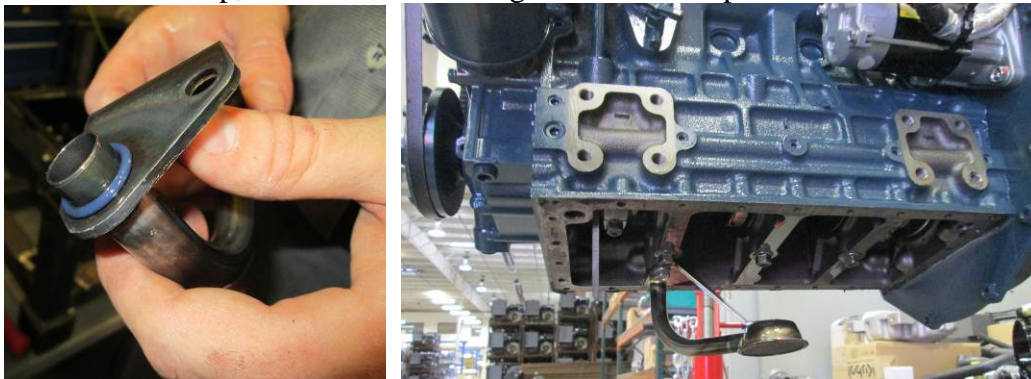


### STEP 3: Rotate Oil Pan, and Install New Sump

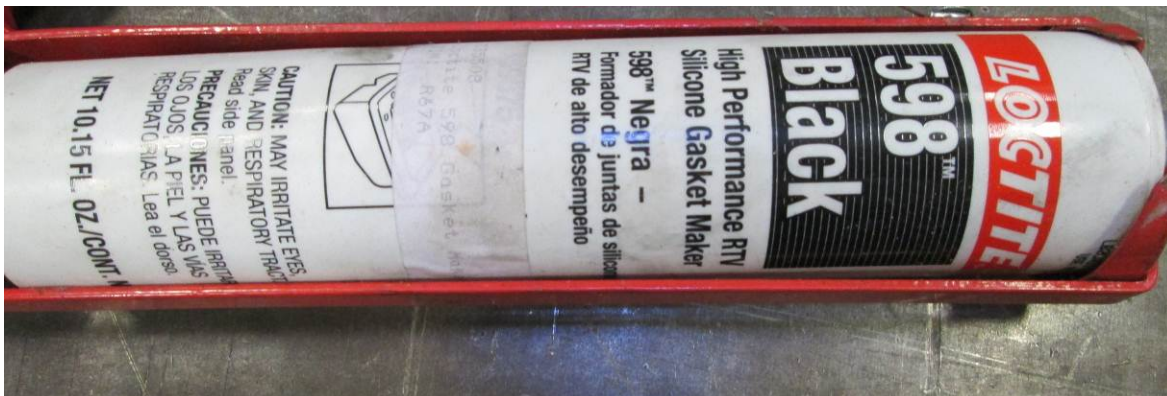
Remove the existing oil pan. Take care not to damage the pan, because it will be reused



Remove the sump, and KEEP the O-ring on the old sump. Discard the removed sump



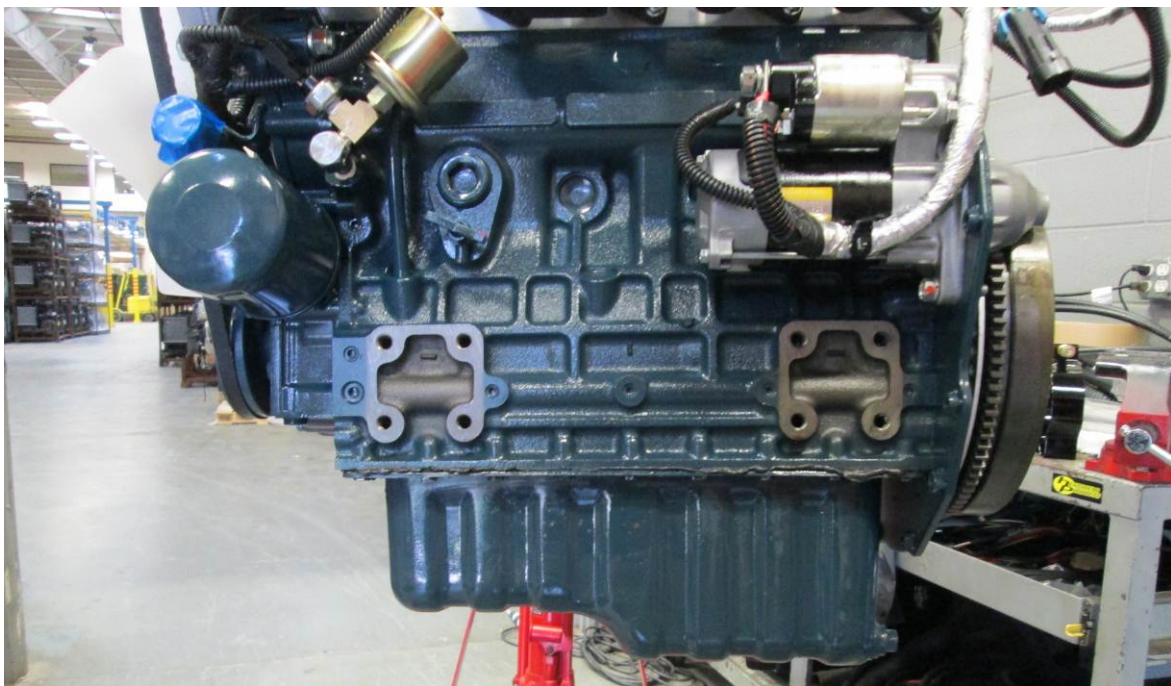
Insert the lubricated O-ring on the new sump, 16616-32115 and install on engine



Clean any debris off of the sealing surface of the oil pan, and apply a bead of Loctite 598



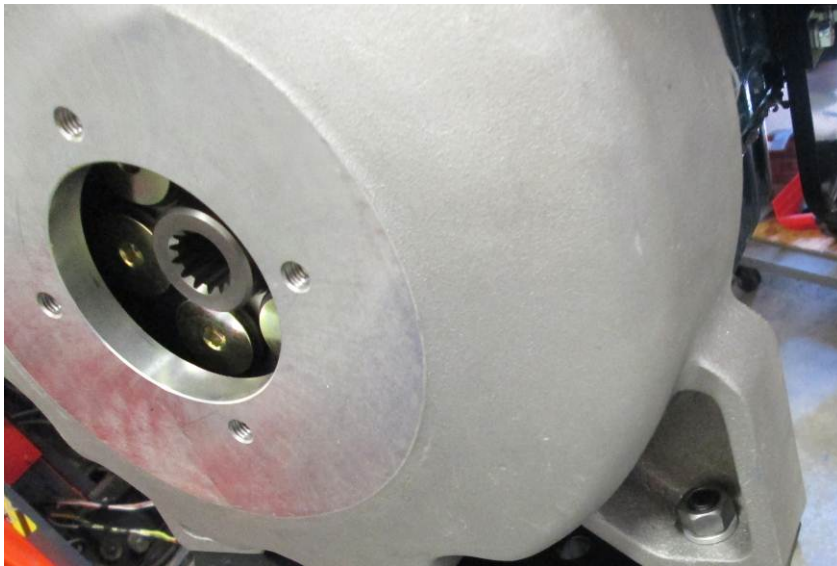
Re-install oil back onto engine



Torque oil pan bolts to 25 Ft-Lbs

## STEP 4: Install Drive Plate and Pump Mount

Confirm the correct drive plate is installed

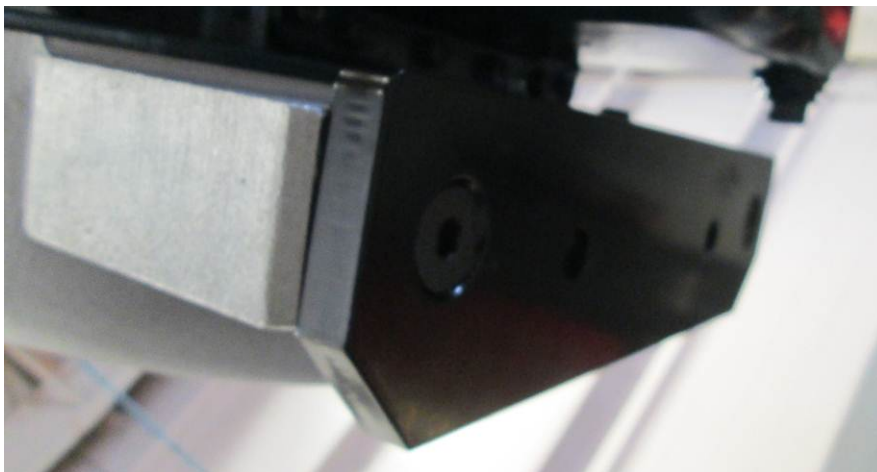


All bolts come in the kit of the pump mount assembly

## STEP 5: Engine and Radiator Mounting Feet

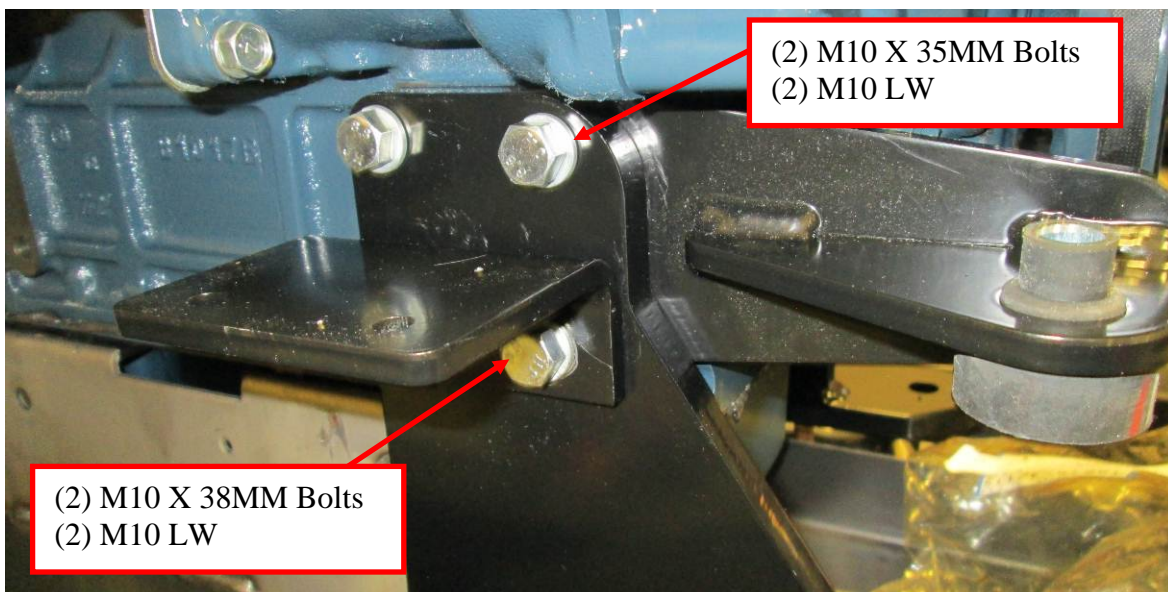
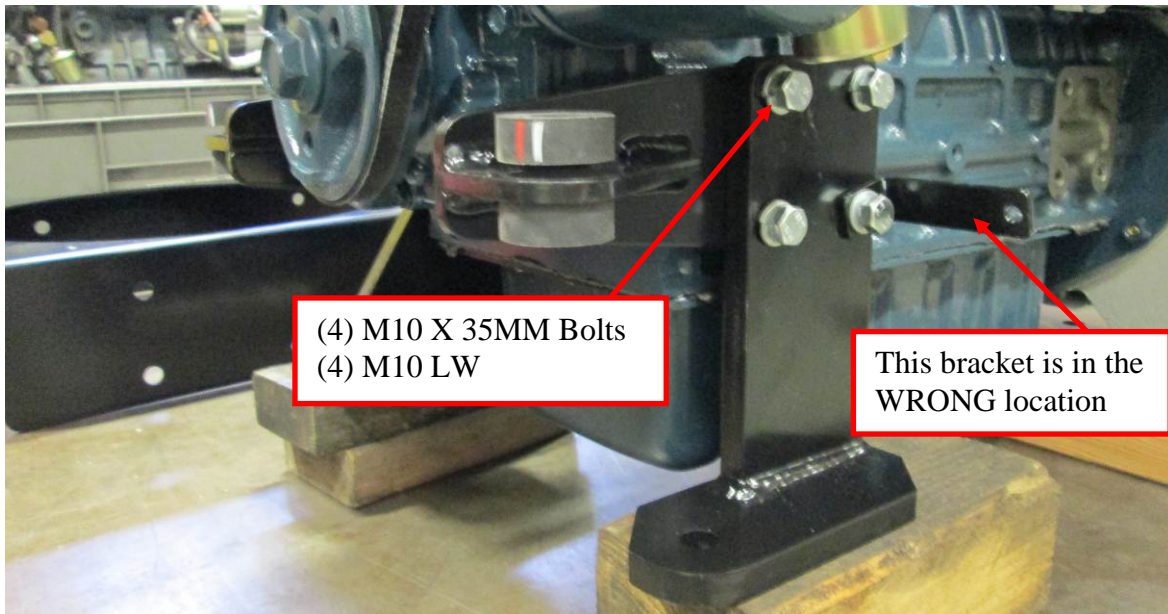
Install the rear mount plate

Make sure the notched corners face rearward



Install front feet and radiator mounts

Make sure the radiator mount go next to the engine block!!





## STEP 6: Install Radiator

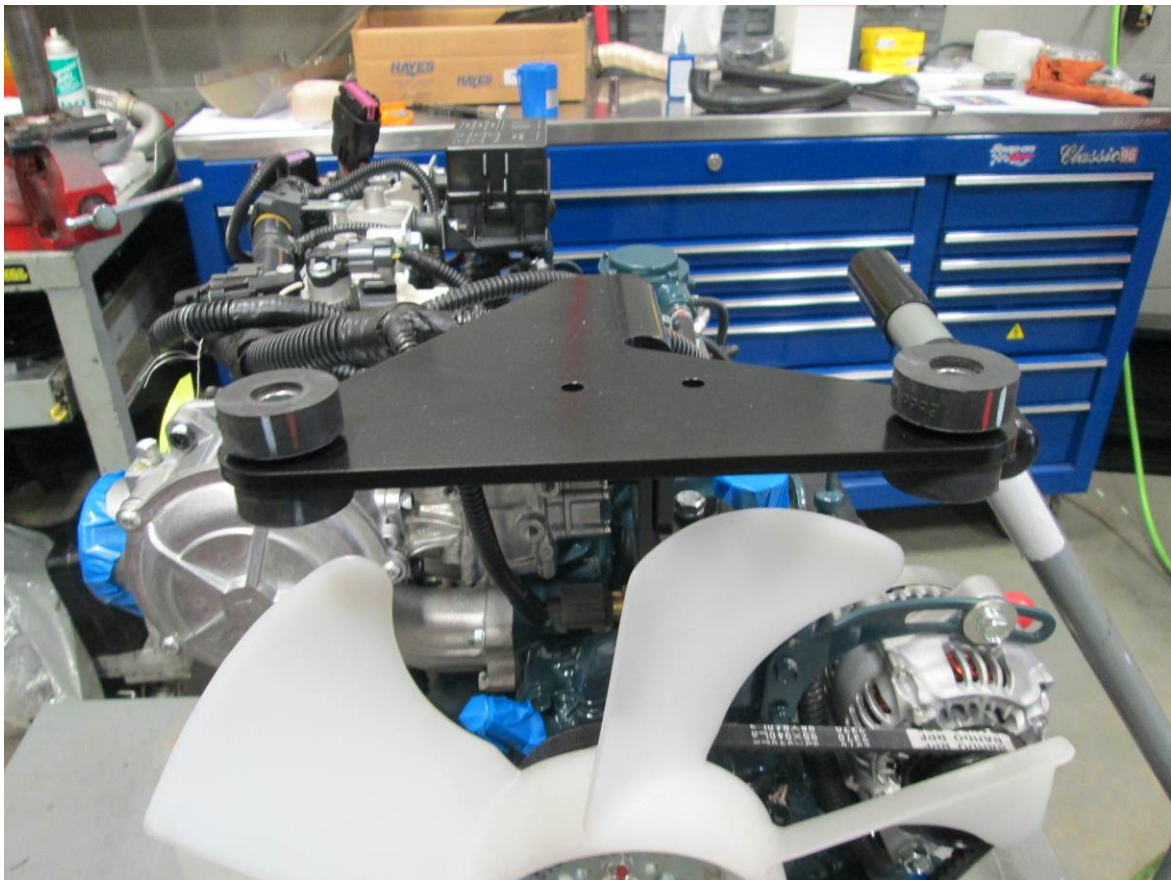
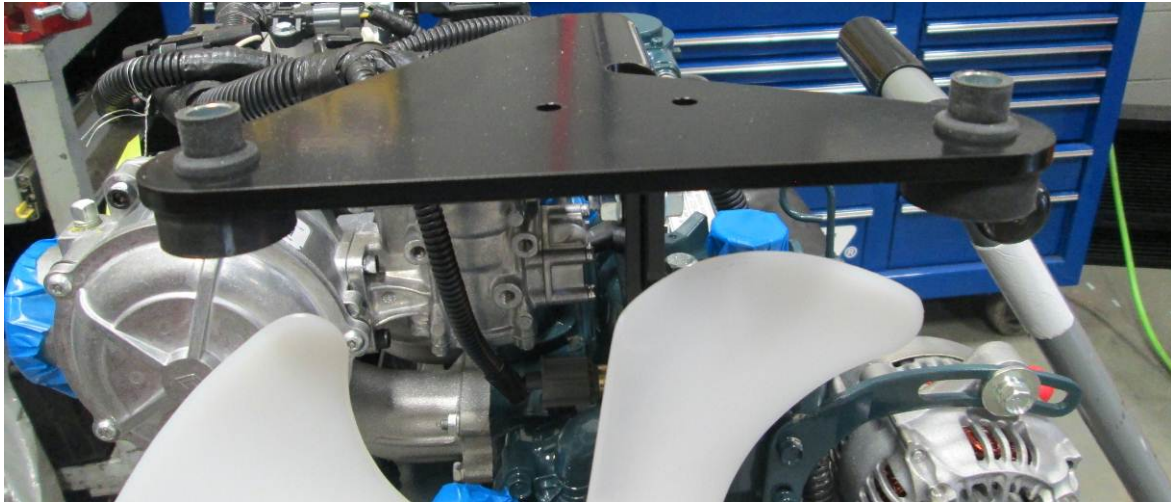
Install top mount to thermostat housing



Install top radiator mount

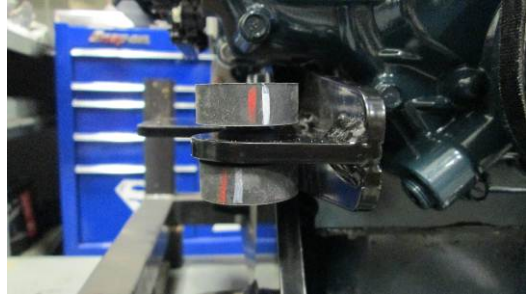


Install isolators on the top radiator mount

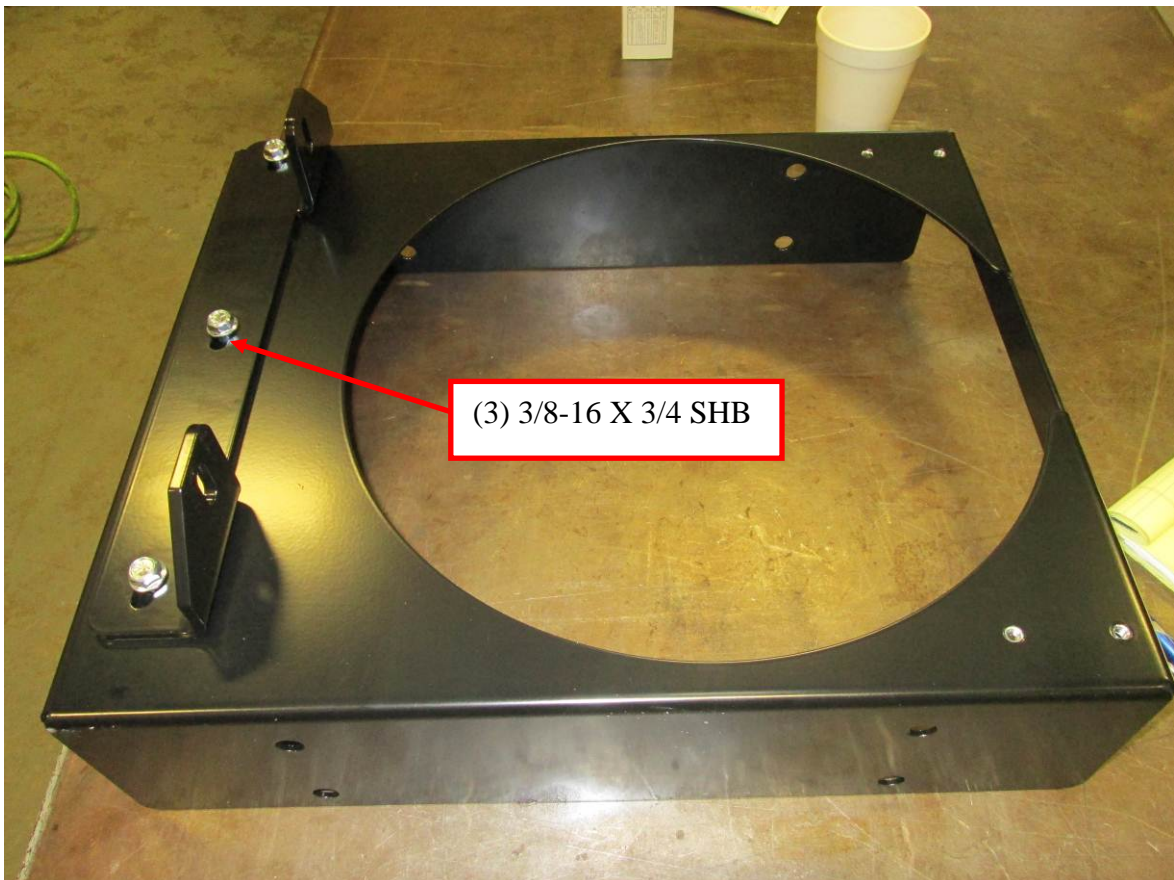


Make sure the Red/White Stripe Isolators are used

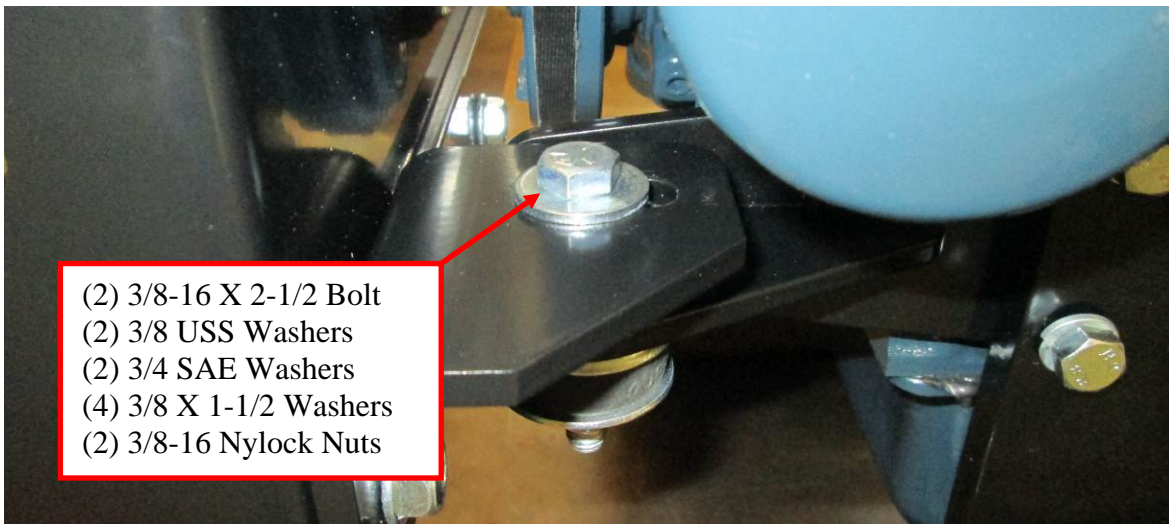
Install isolators in the lower mount

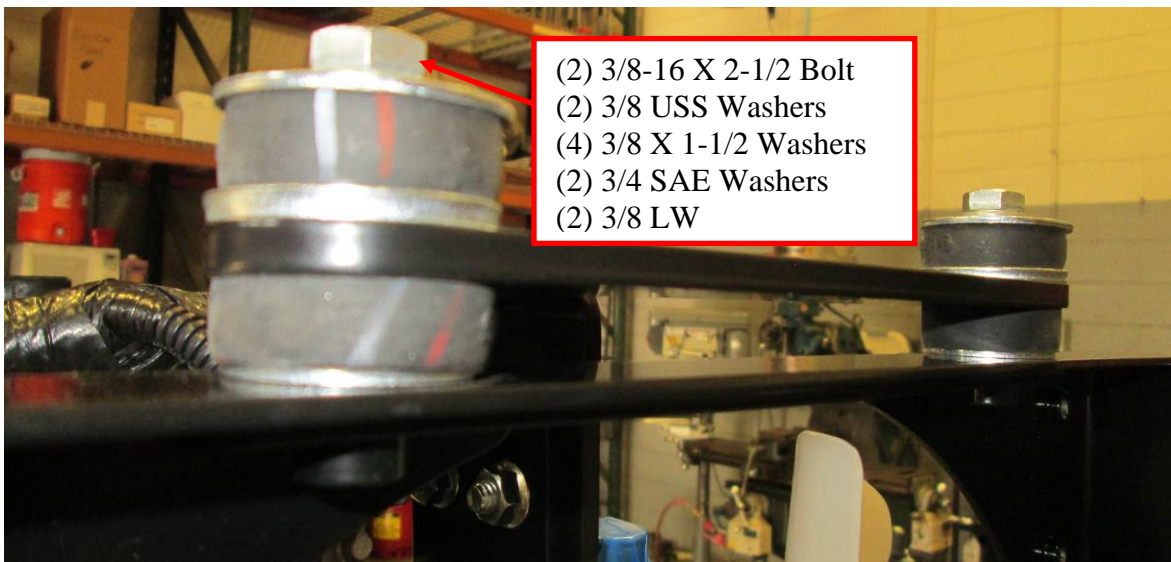


Mount the bottom isolator mount to the shroud



Install radiator shroud to the mounts





- (2) 3/8-16 X 2-1/2 Bolt
- (2) 3/8 USS Washers
- (4) 3/8 X 1-1/2 Washers
- (2) 3/4 SAE Washers
- (2) 3/8 LW



**Center shroud about the fan and tighten all bolts**

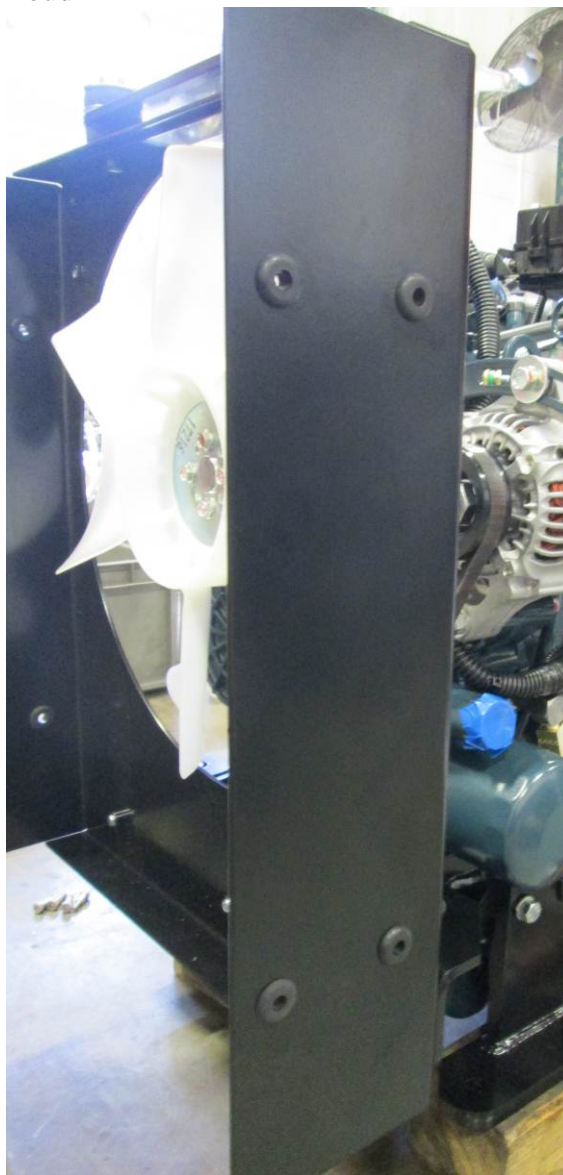
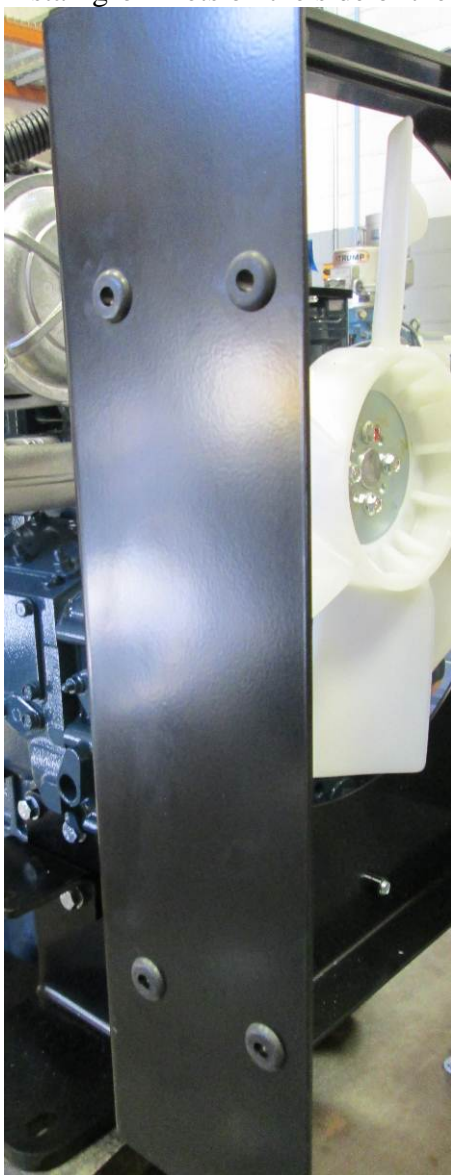
Install edge trim seal on the shroud

Cut (2) pieces of trim to 17" long

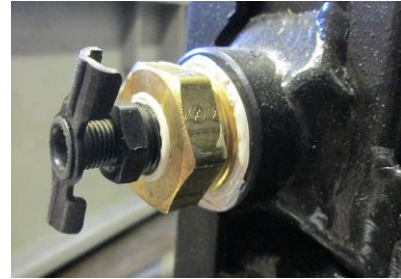
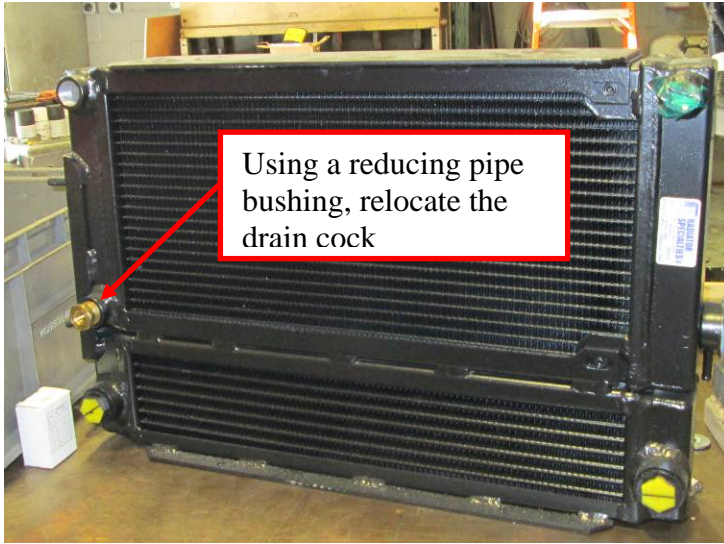
Modify the top piece of trim to go around the top isolators



Install grommets on the side of the shroud



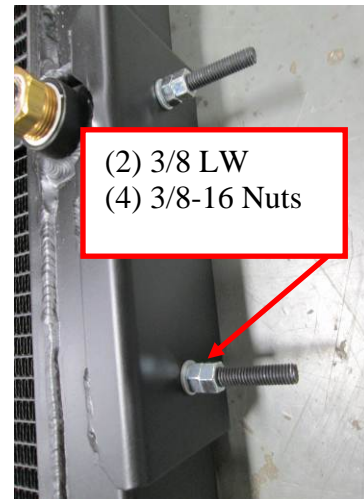
Assemble fittings into the radiator/cooler. Use Loctite 567 PST on all pipe threads



Install a low profile plug on the original port of the drain cock, and radiator cap



Install fittings into ports on the radiator/cooler



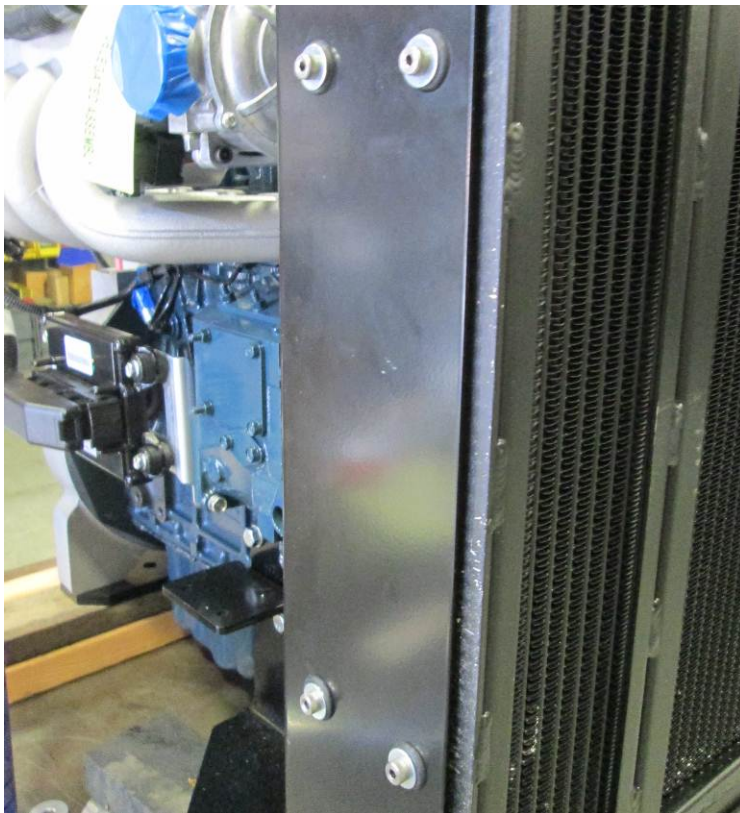


Apply Loctite 243 to the threads of the shoulder bolts



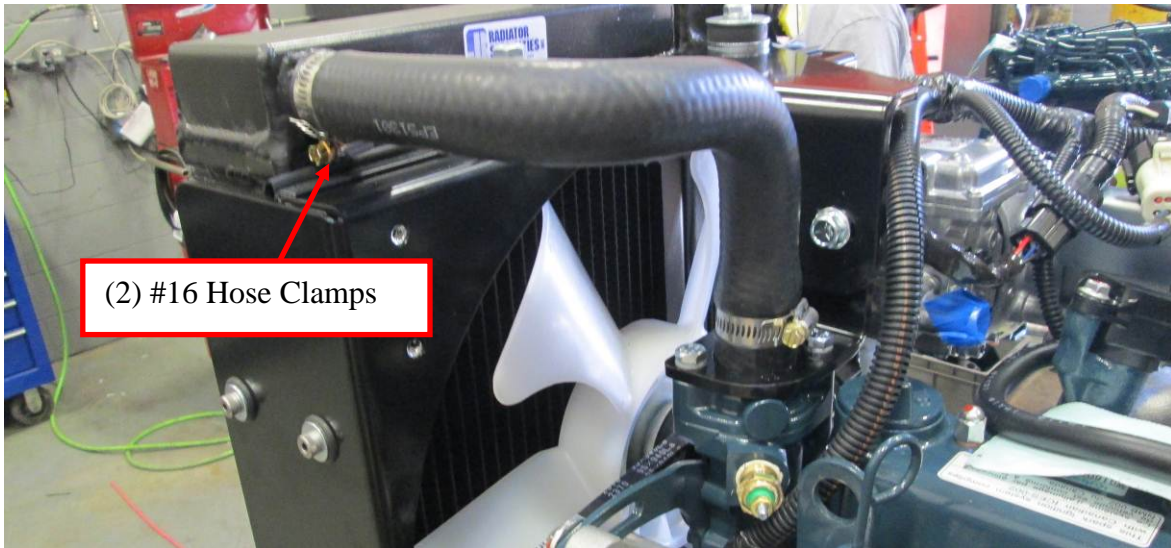
Install radiator into shroud

**DO NOT USE AIR OR IMPACT TOOLS TO TIGHTEN SHOULDER BOLTS**



Make sure the washers **cannot** turn freely when the shoulder bolt is tightened

NOTE: Radiator is very close to the shroud!! Designed clearance is 3/8"-1/2"  
Install radiator hoses

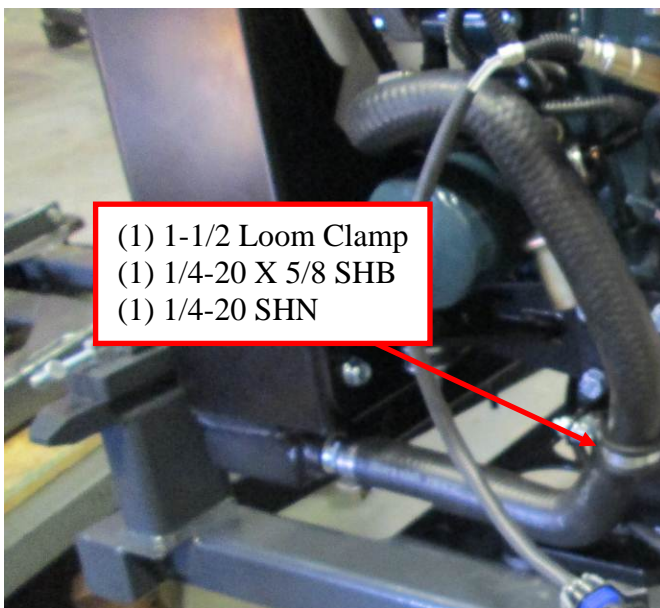


Tighten hose clamps, mark hose clamps, and torque

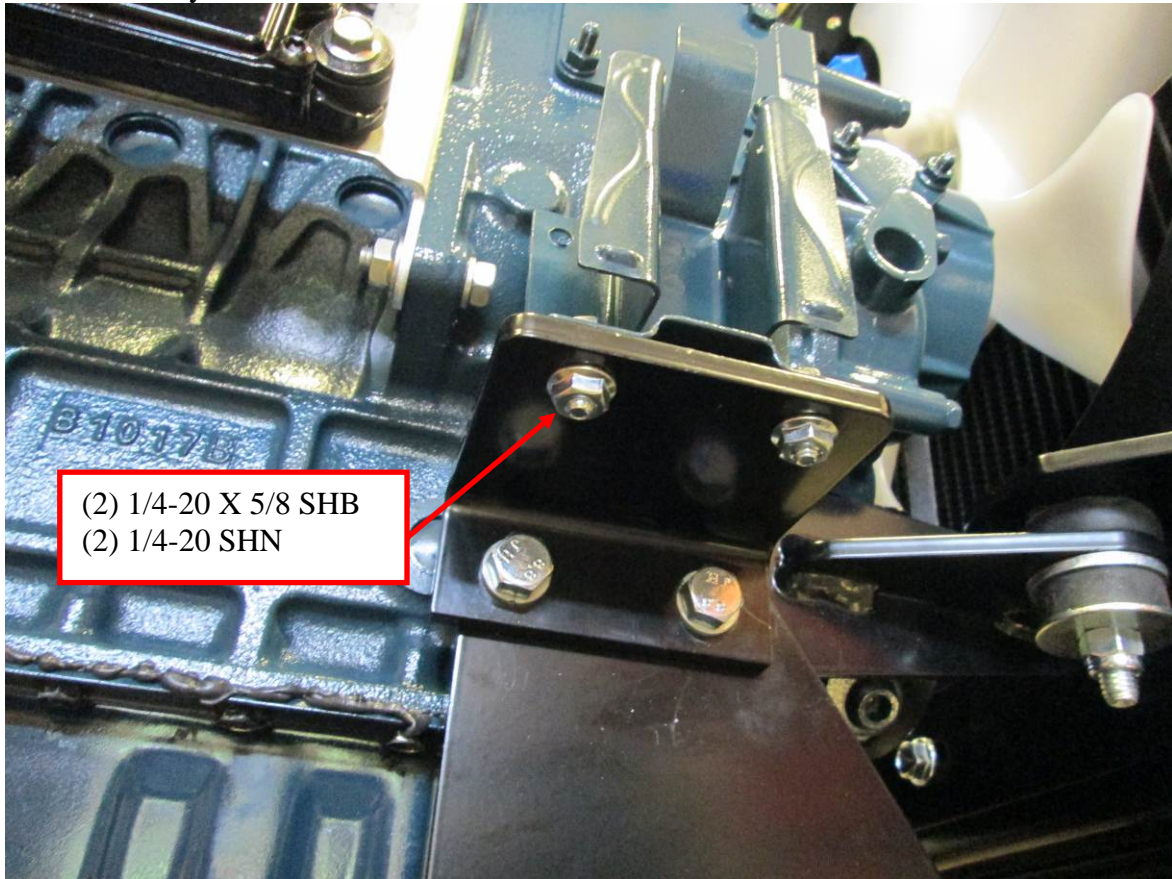


Torque hose clamps to 31 in-Lbs

Modify the lower radiator hose.  
Cut 4-3/4" off of the long end of the hose.



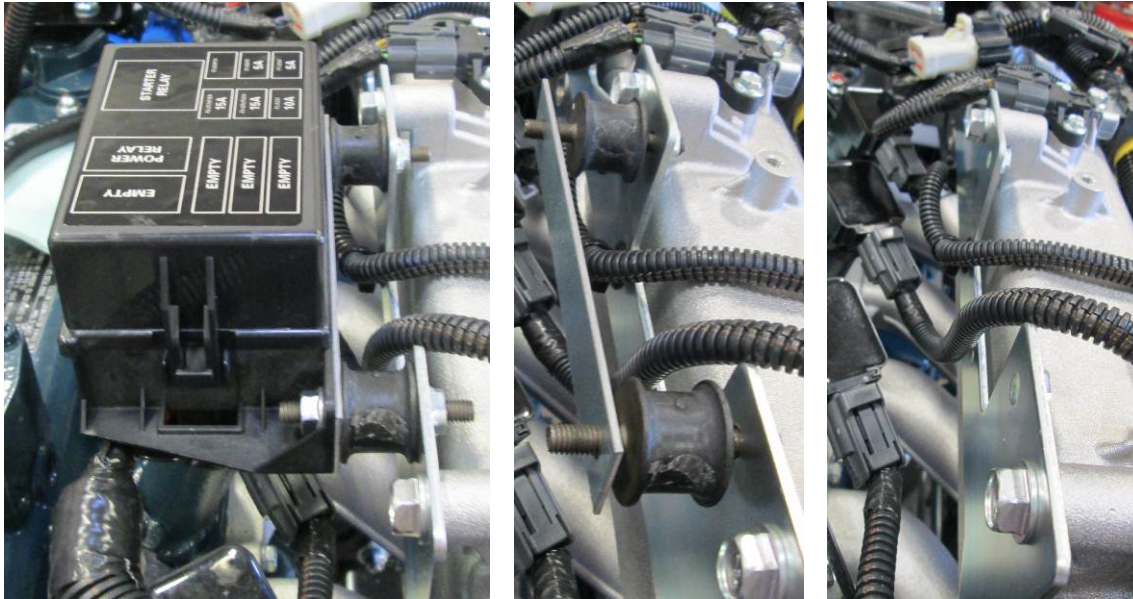
Install recovery tank bracket



## STEP 6: Relocate the Fuse Box

Remove the fuse box; keep the nuts, and spacer bar

**TAKE GREAT CARE TO NOT DAMAGE THE PLASTIC FUSE BOX!!!**



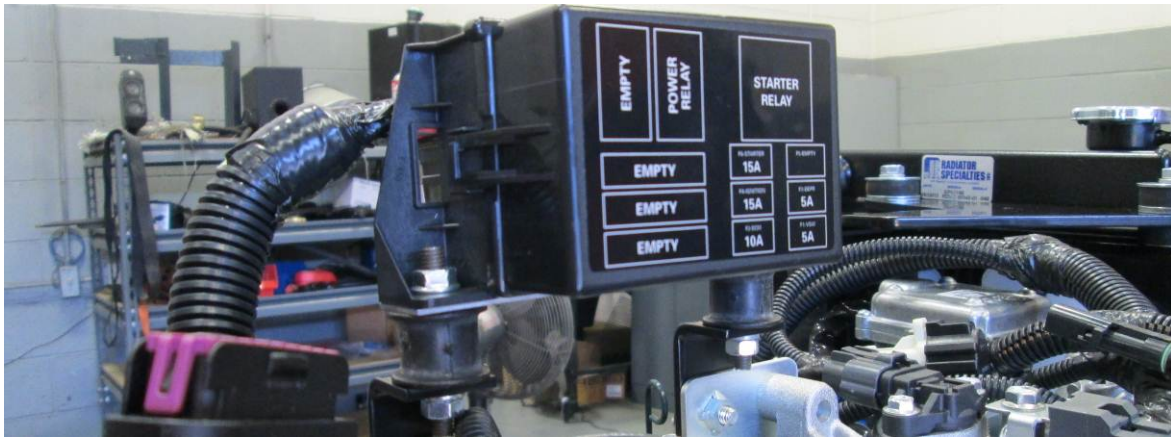
Install the removed isolators on the angled brackets



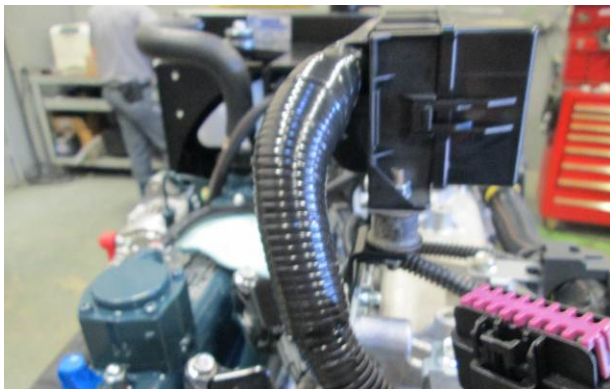
Mount angled brackets on the intake, and add spacer bars before tightening bolts



Reinstall the nuts and washers that were removed previously.

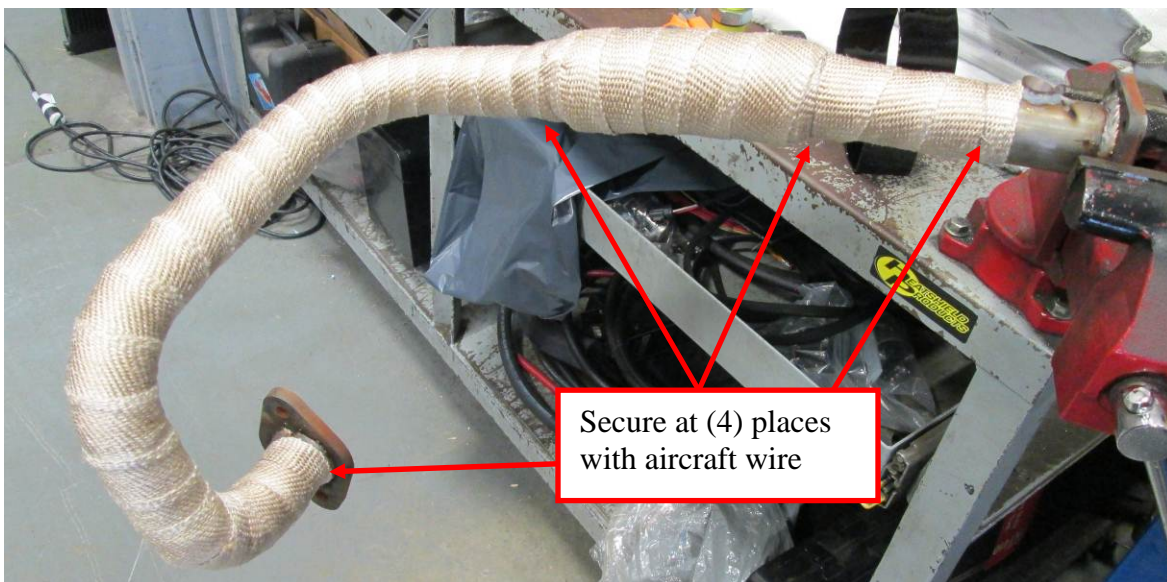
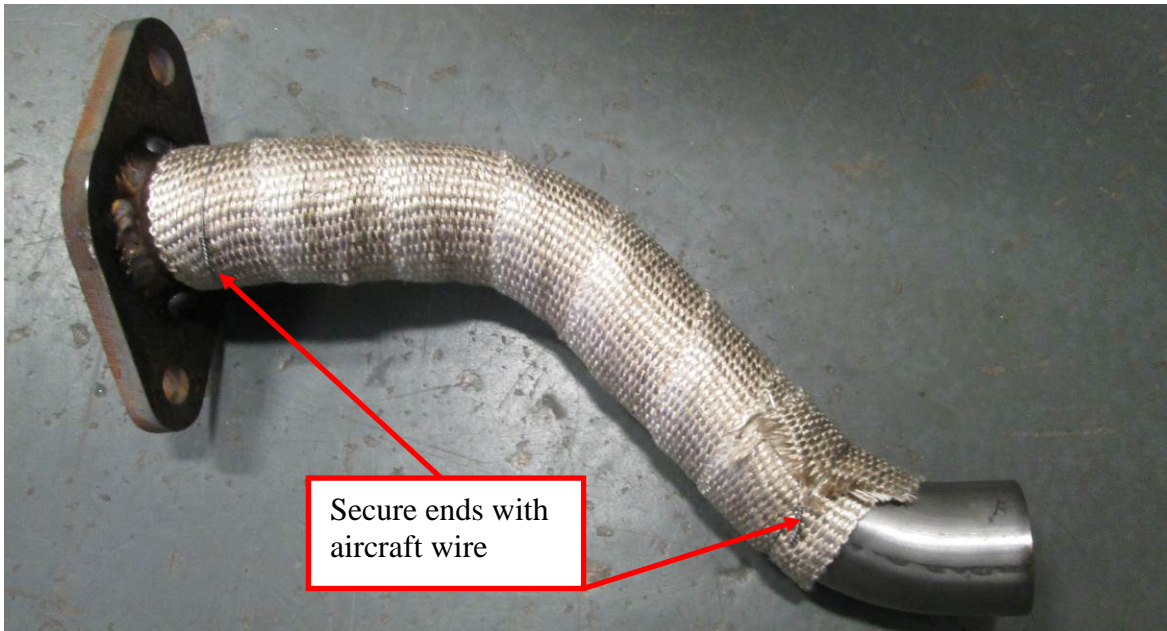


Add a piece of 5/8" loom, 6" long and tape up where the wires enter the fuse box



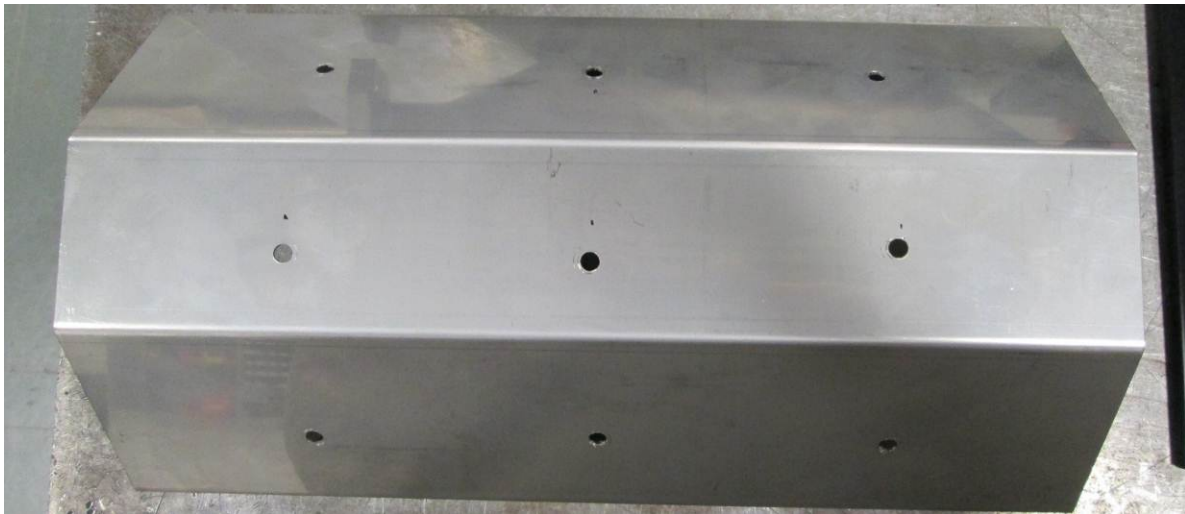
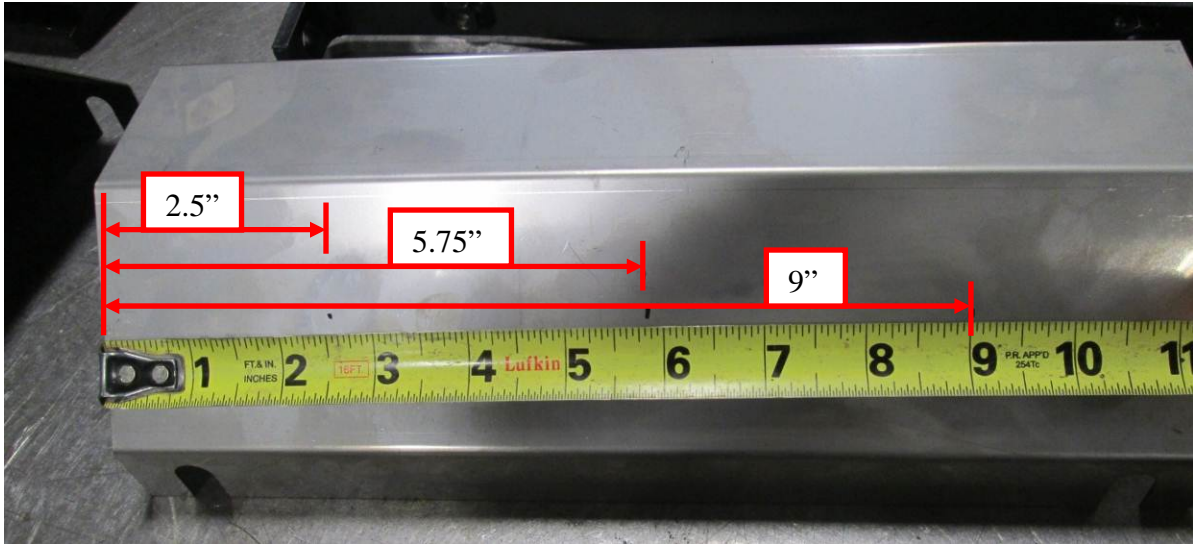
**STEP 7: Install the Exhaust, and Mount Engine to Frame**

Use the high temp inferno wrap and wrap both exhaust pipes



Assemble the heat shield and mount the Catalyst

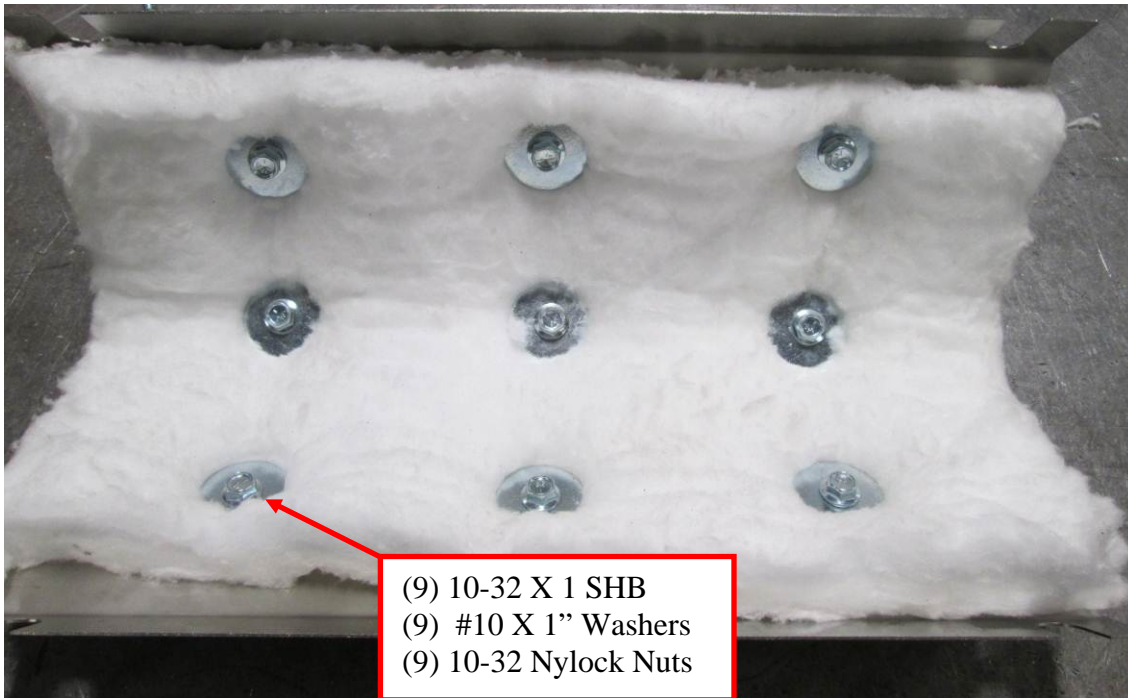
Drill (9) 1/4" holes in (1) of the heat shields



Cut (1) piece of insulation 7" X 12.5"



Install insulation into the heat shield



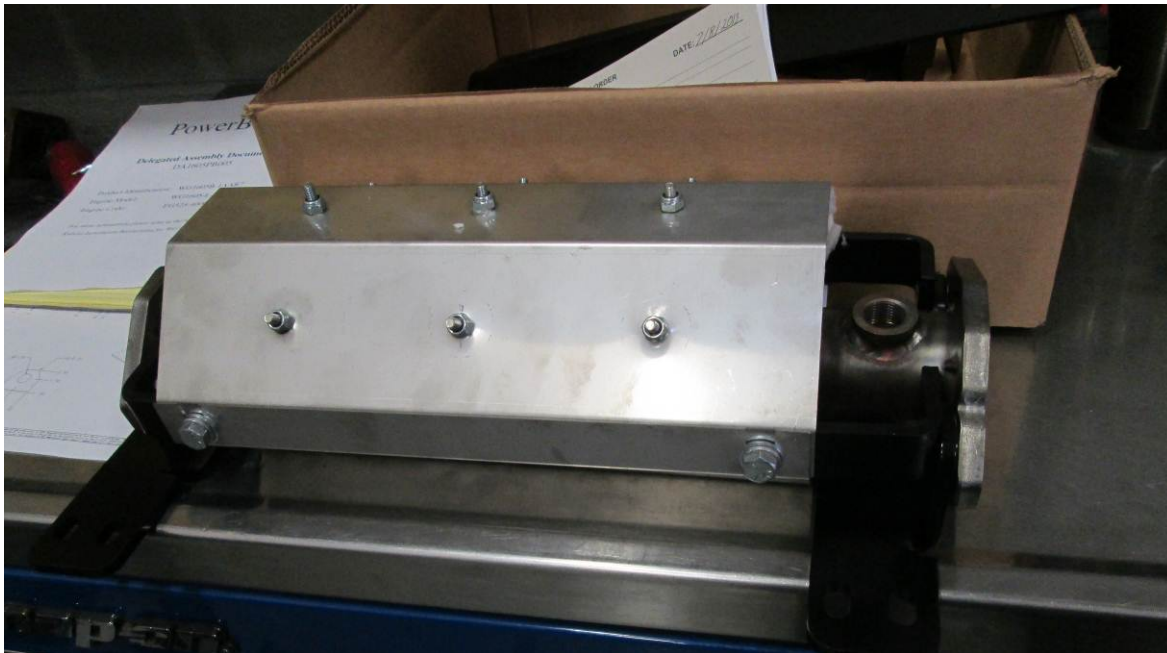
(9) 10-32 X 1 SHB  
 (9) #10 X 1" Washers  
 (9) 10-32 Nylock Nuts



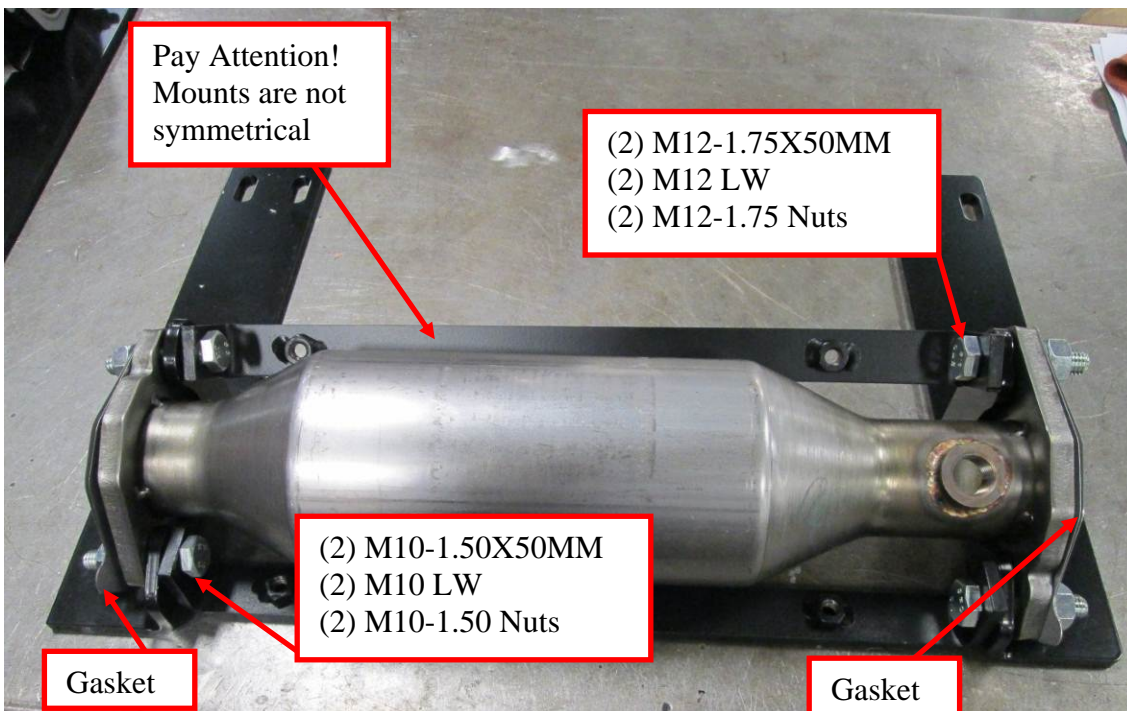
Remove the Catalyst from the box. Record the serial number, manufacturing date, and lot number on the Delegated Assembly Paperwork

Engine Serial #	1CW6777	POWERBOSS COPY
Catalyst Mtg Date	N/A	
Catalyst Lot #	1212310450	
Delegated Assembly Checklist for PowerBoss WG1605B-1AAR7		
Engine Model: WG1605-L-E3-PBS1		Engine Code: EGS25-40000
Intake System	Engine Power Source	PowerBoss
FOR MORE INFORMATION PLEASE REFER TO THE KUBOTA MANUAL		





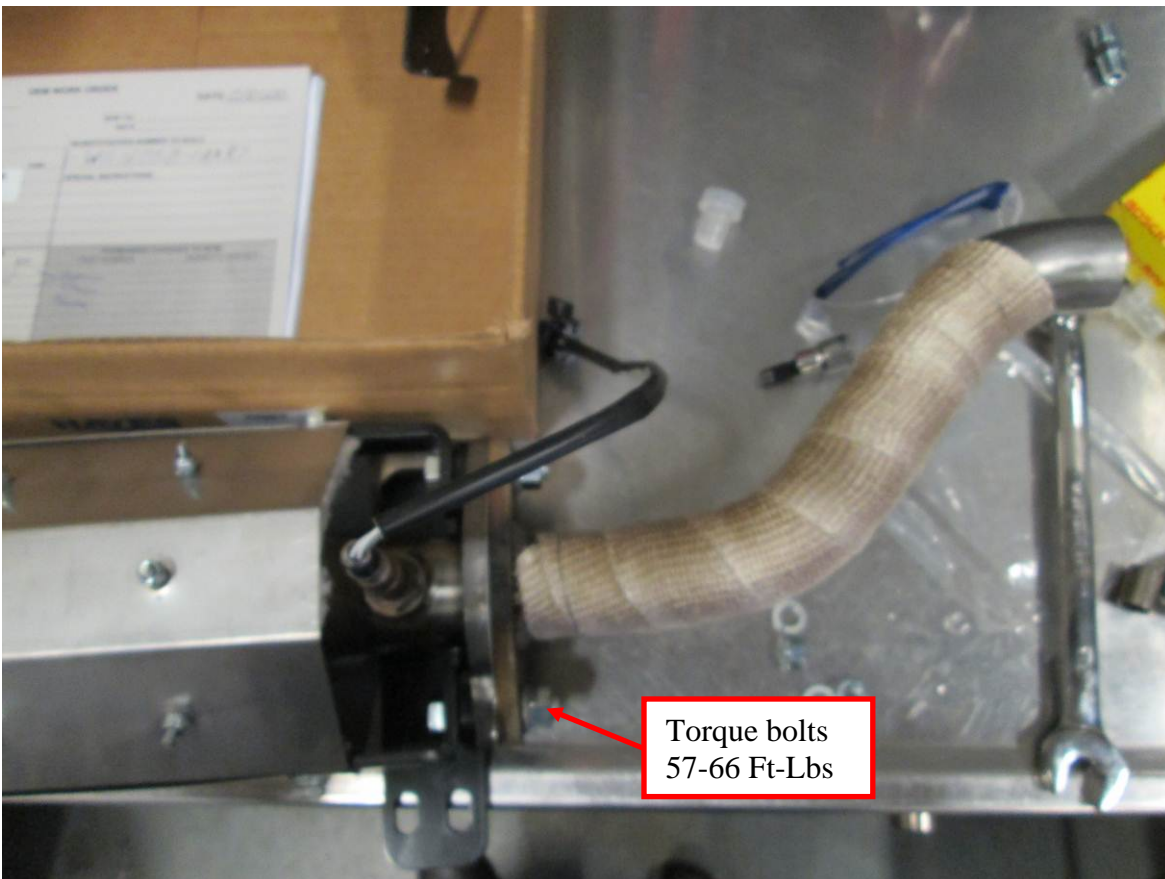
Place Cat in support brackets and install heat shield mounts



Install (1) O2 sensor and torque to 35 Ft-Lbs using a crow's foot

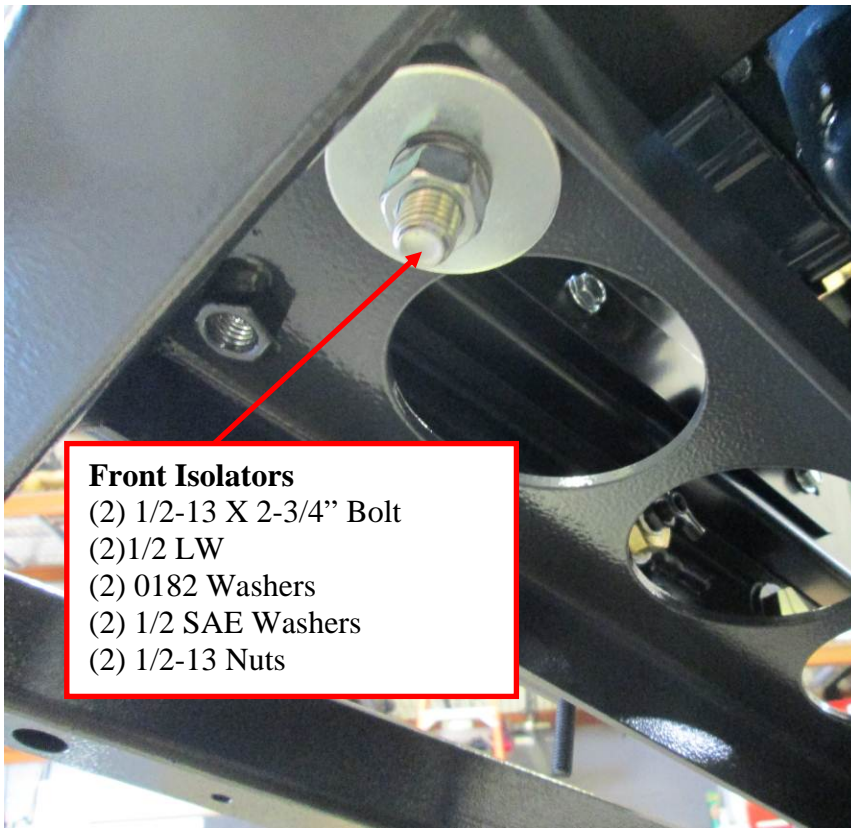


Install Heat shield, with the insulated shield upward



Mount engine to frame

Make sure the (4) isolators are in the frame



**Front Isolators**

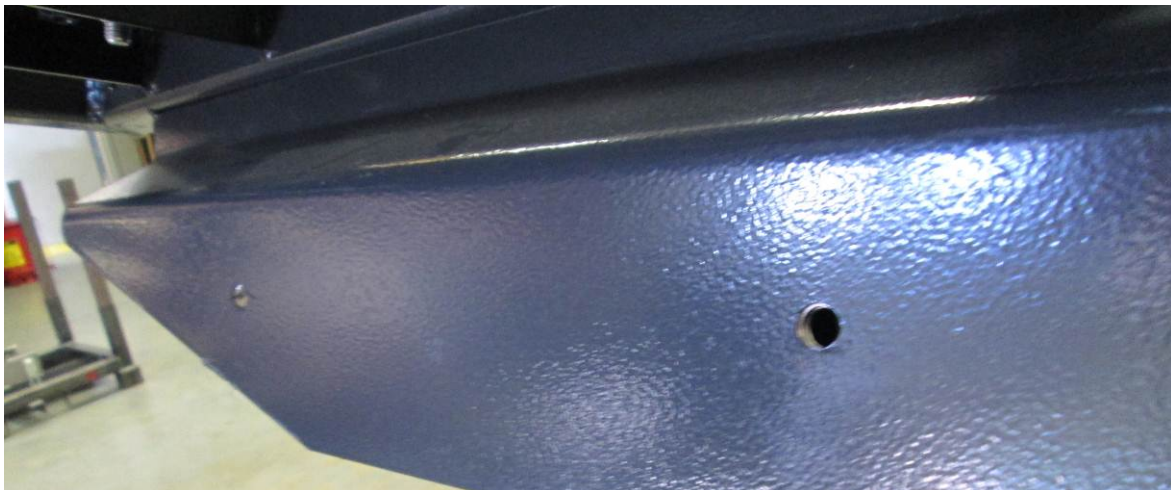
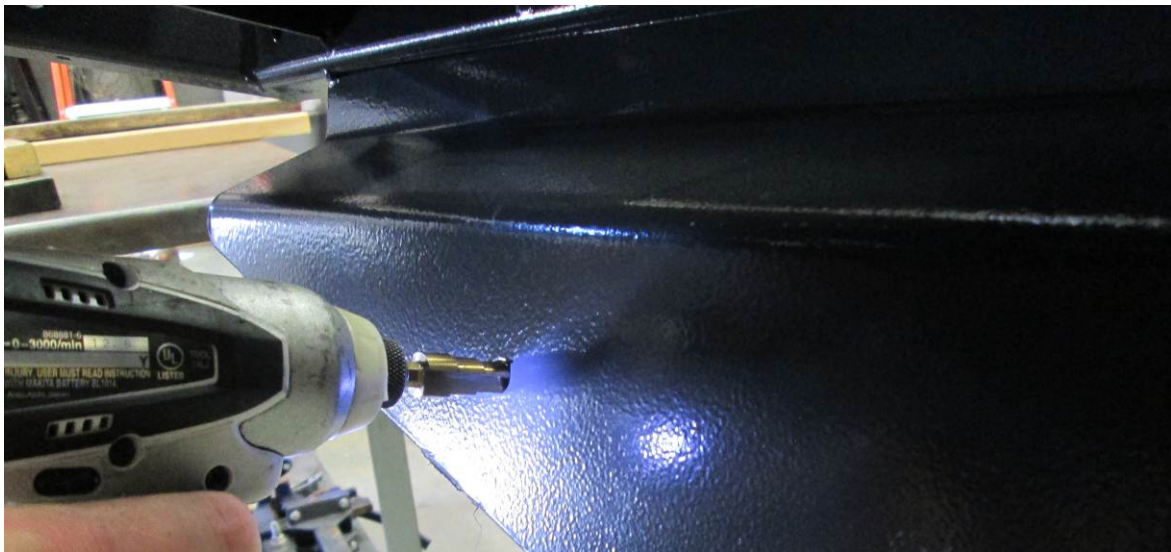
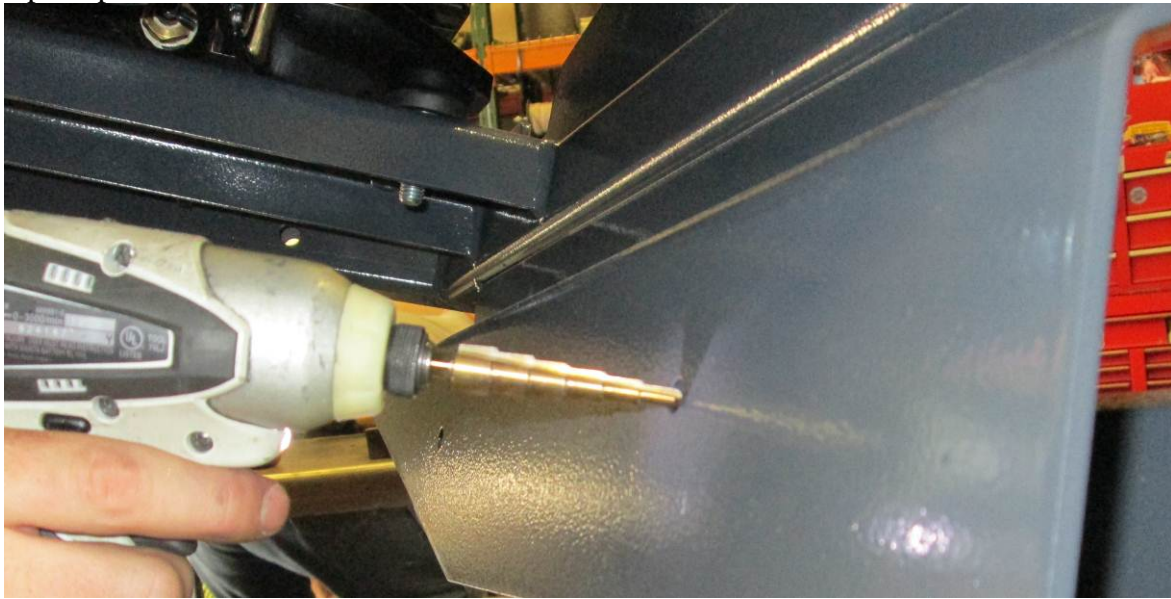
- (2) 1/2-13 X 2-3/4" Bolt
- (2) 1/2 LW
- (2) 0182 Washers
- (2) 1/2 SAE Washers
- (2) 1/2-13 Nuts



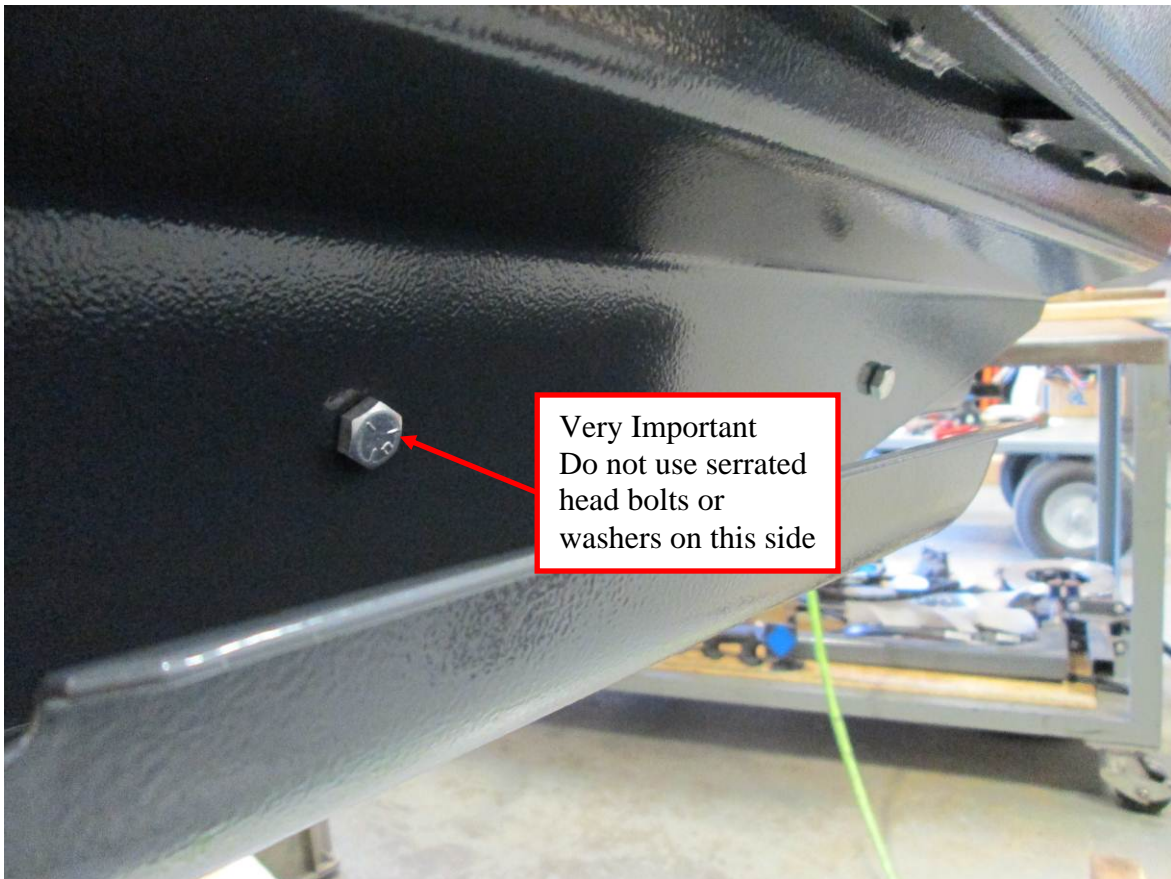
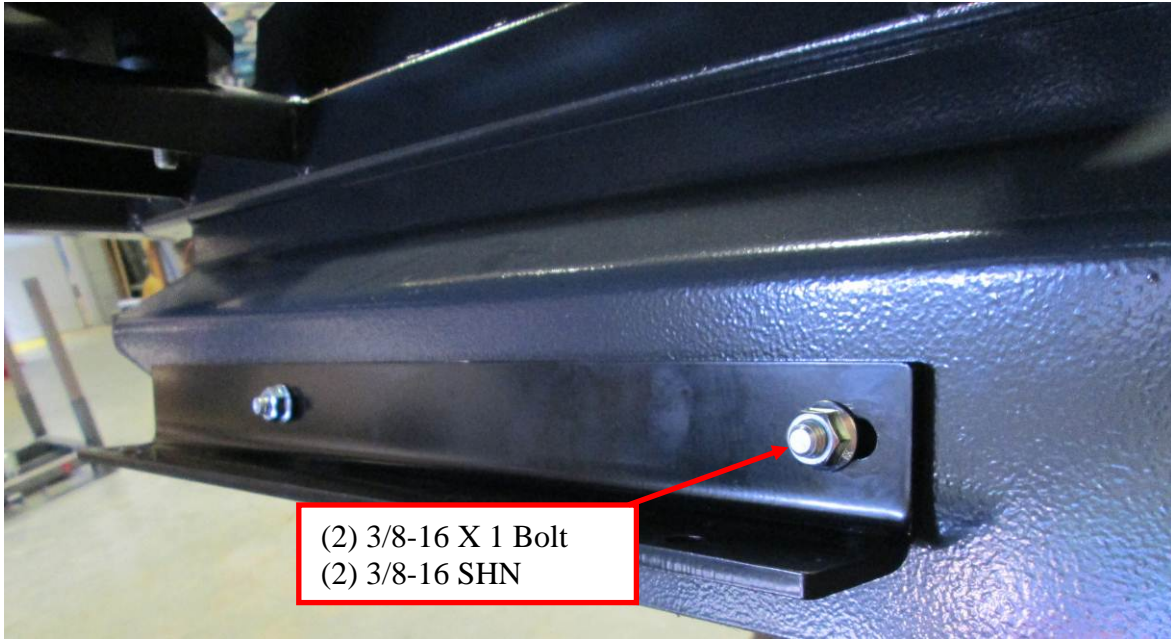
**Rear Isolators**

- (2) 1/2-13 X 2-1/2" Bolt
- (2) 1/2 LW
- (2) 0182 Washers
- (2) 1/2 SAE Washers
- (2) 1/2-13 Nuts

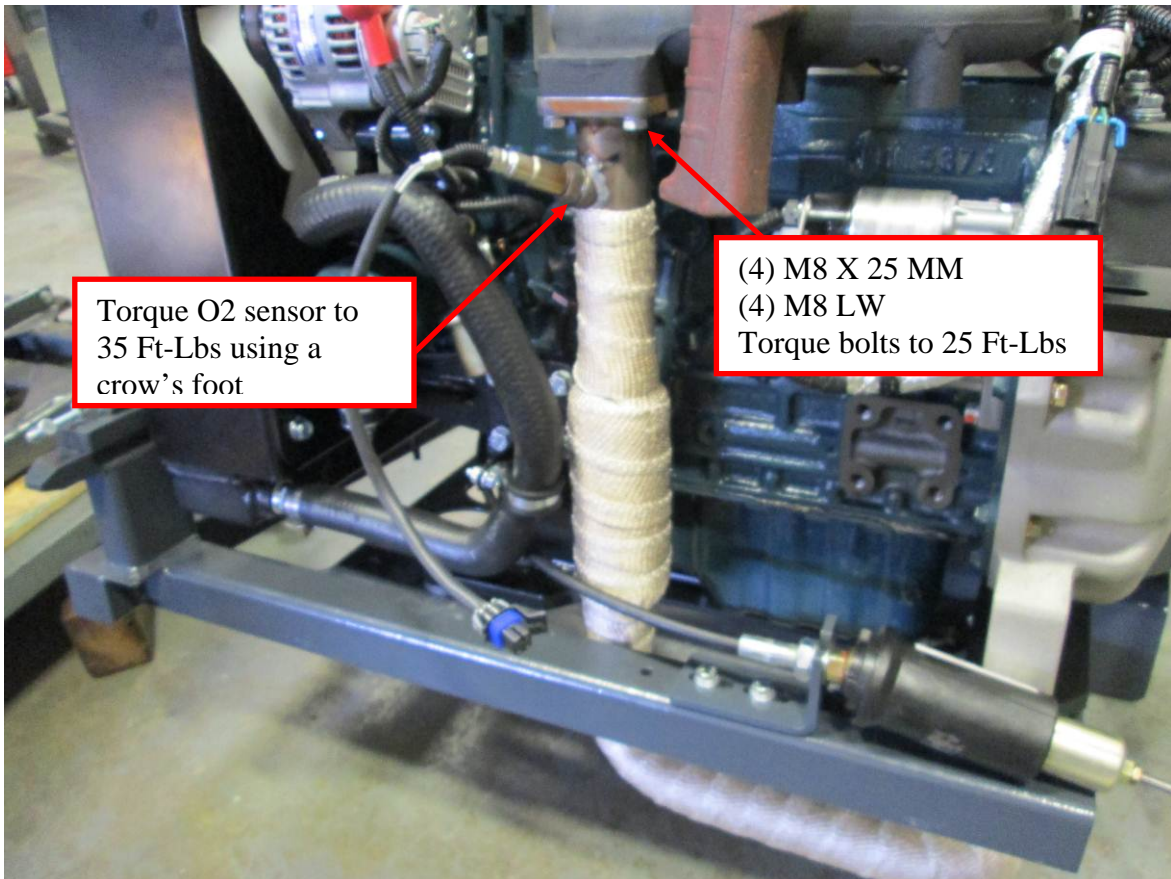
Open up holes in bottom of frame to 3/8" to mount the cat



Mount the Cat support angle. DO NOT USE SERRATED HEAD BOLTS HERE!!!



Install exhaust pipe on the manifold

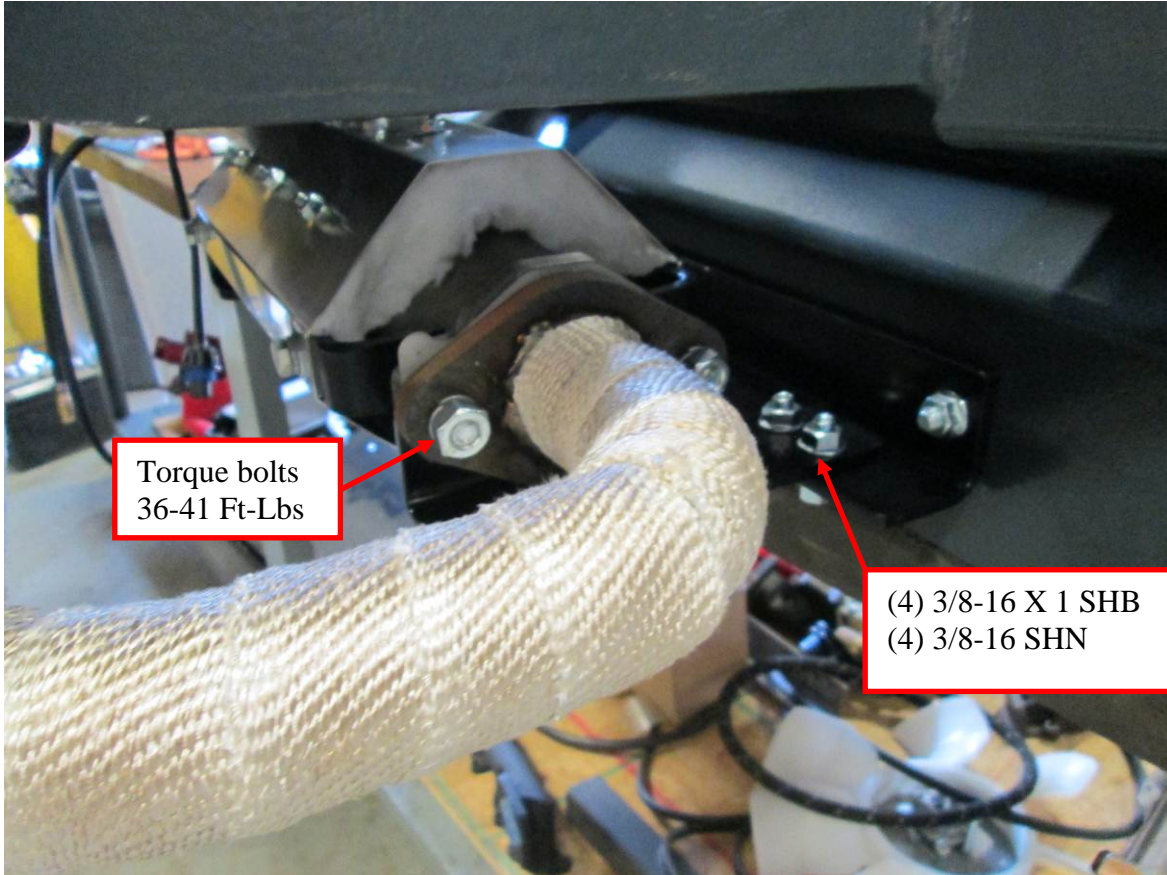


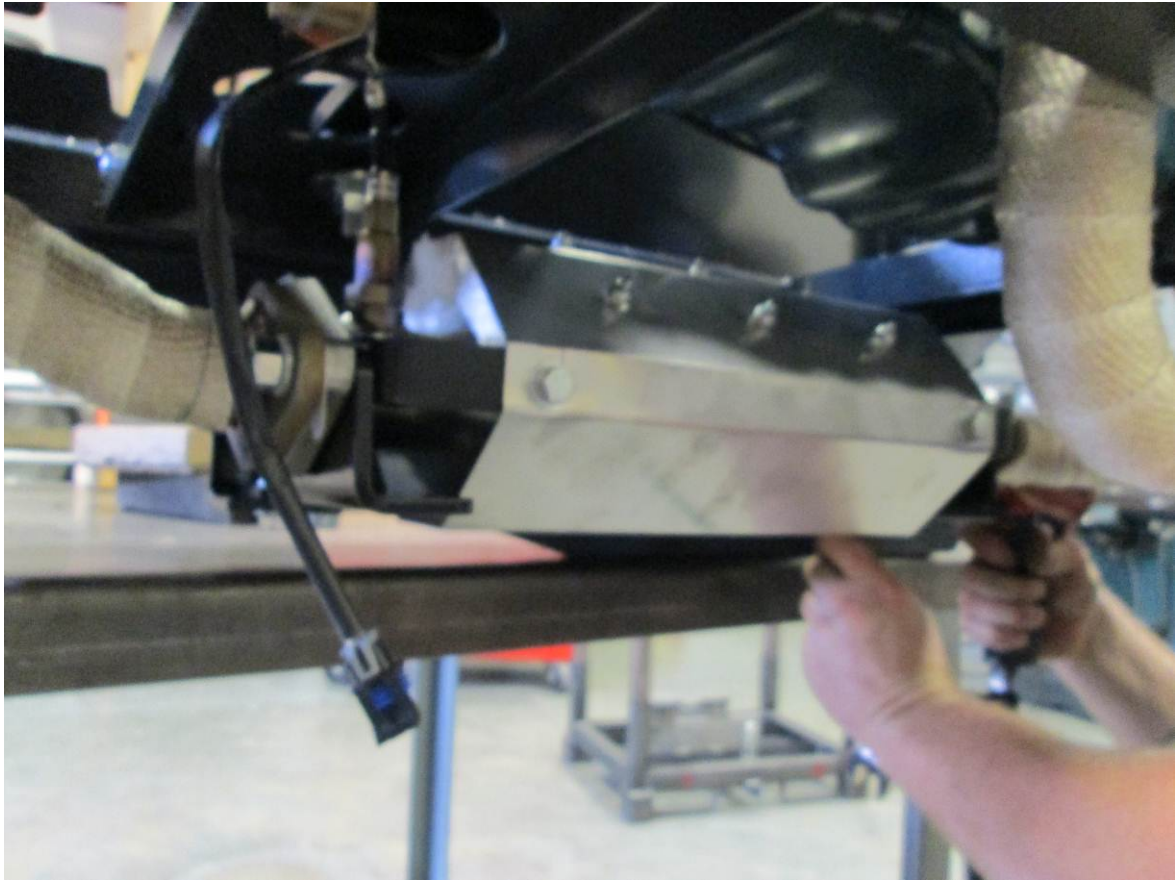
Torque O2 sensor to 35 Ft-Lbs using a crow's foot

(4) M8 X 25 MM  
(4) M8 LW  
Torque bolts to 25 Ft-Lbs

Mount the Cat assemble to the exhaust pipe. Secure the cat to the angle that was bolted on the frame.

Tighten the cat assembly to the exhaust pipe, and then secure the cat mount to the frame





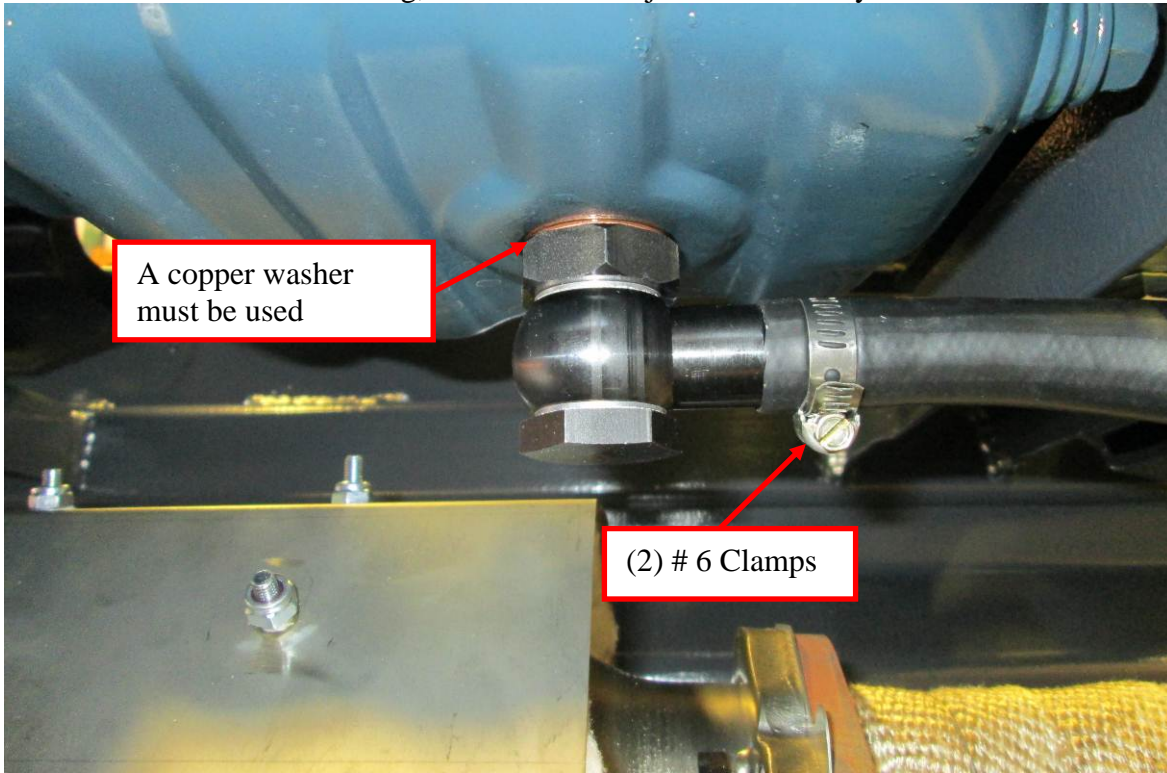


Install muffler blanket

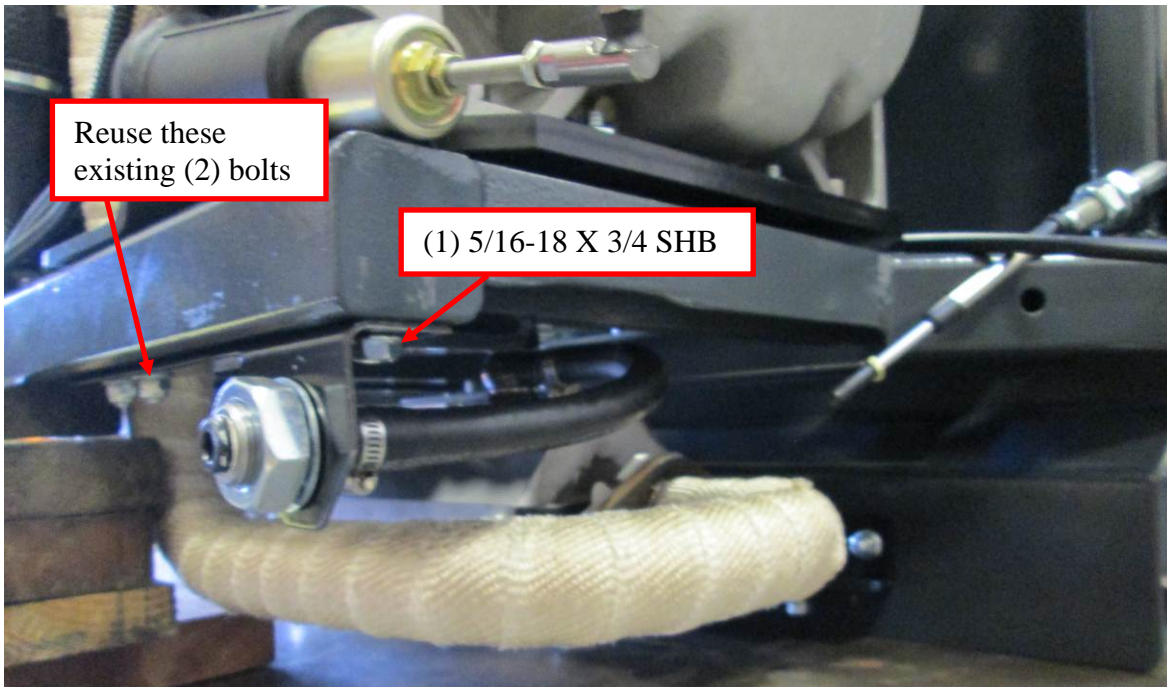


## STEP 8: Install the Remote Oil Drain and Recovery Tank

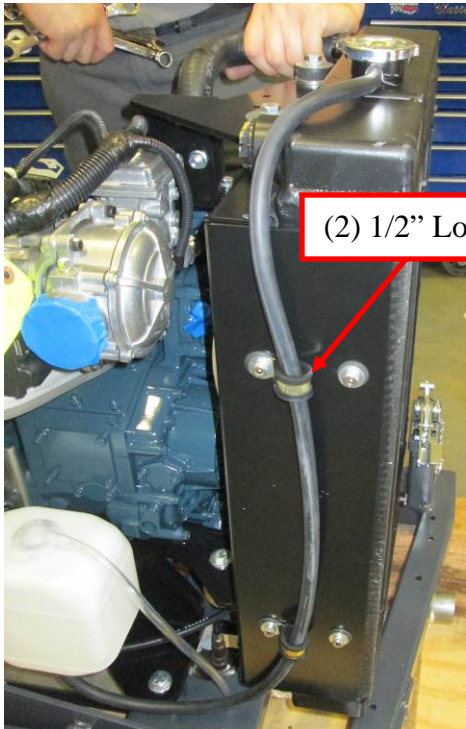
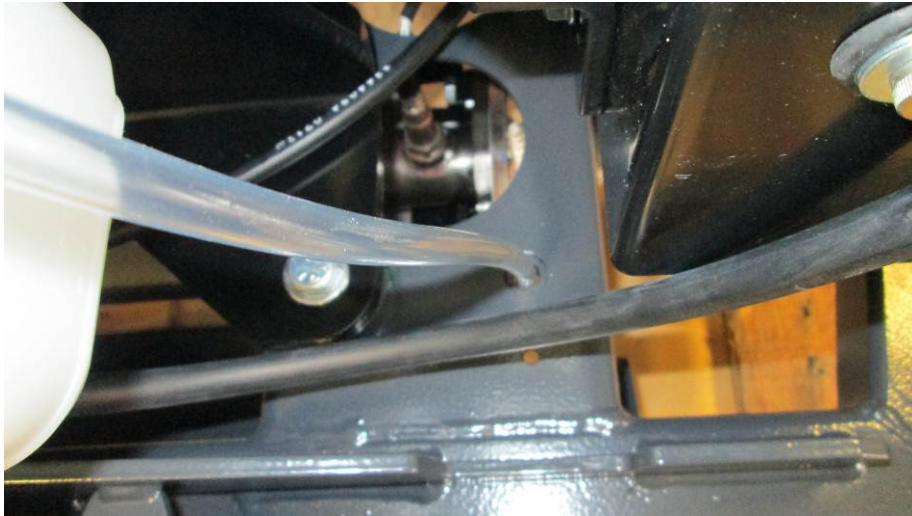
Remove the bottom drain fitting, and install a Banjo Bolt Assembly



Install the remote oil drain holder and hose

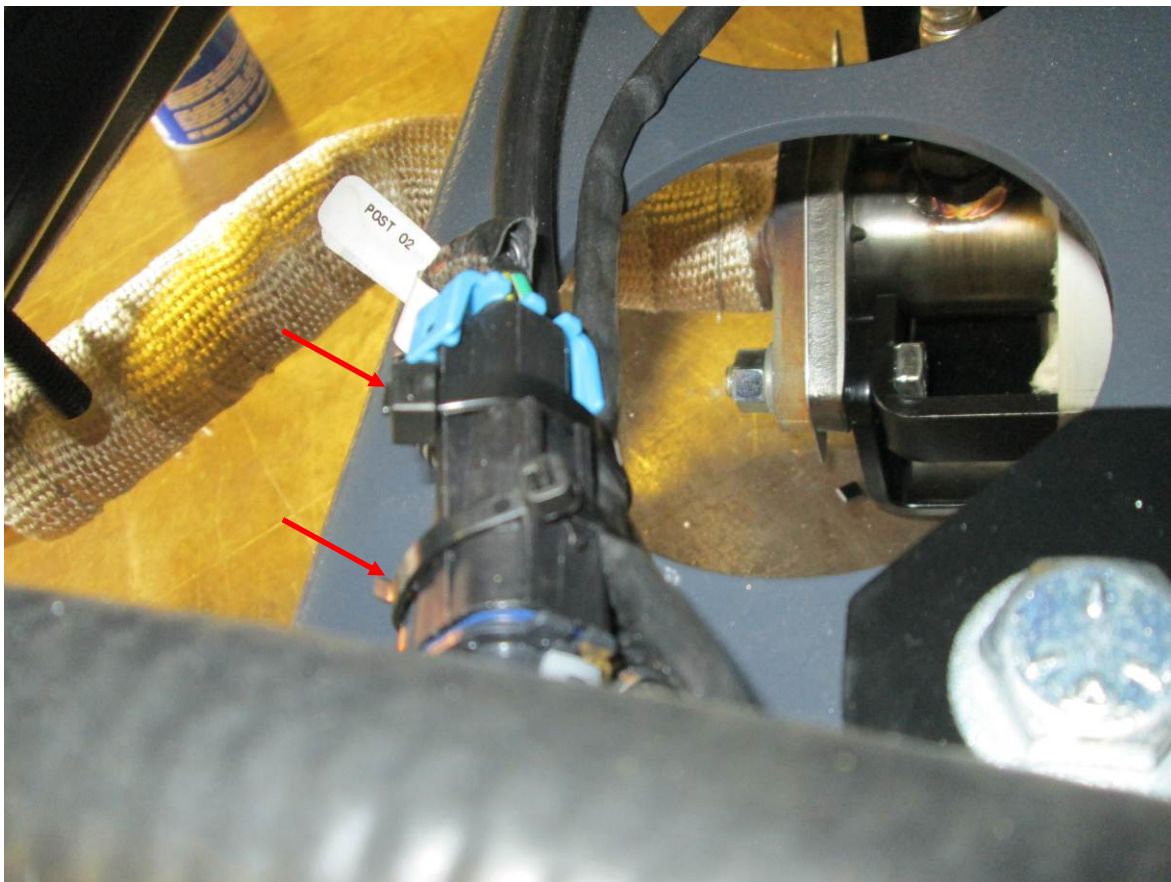


Install recovery tank and hoses



**STEP 8: Secure the O2 sensor wires**

Use nylon ties and secure where the plug is to restrain them



## STEP 8: Install unit on pallet

Gather wood and assemble pallet as shown below



Set unit on pallet and secure with lag bolts



## STEP 9: Install Oil Reservoir

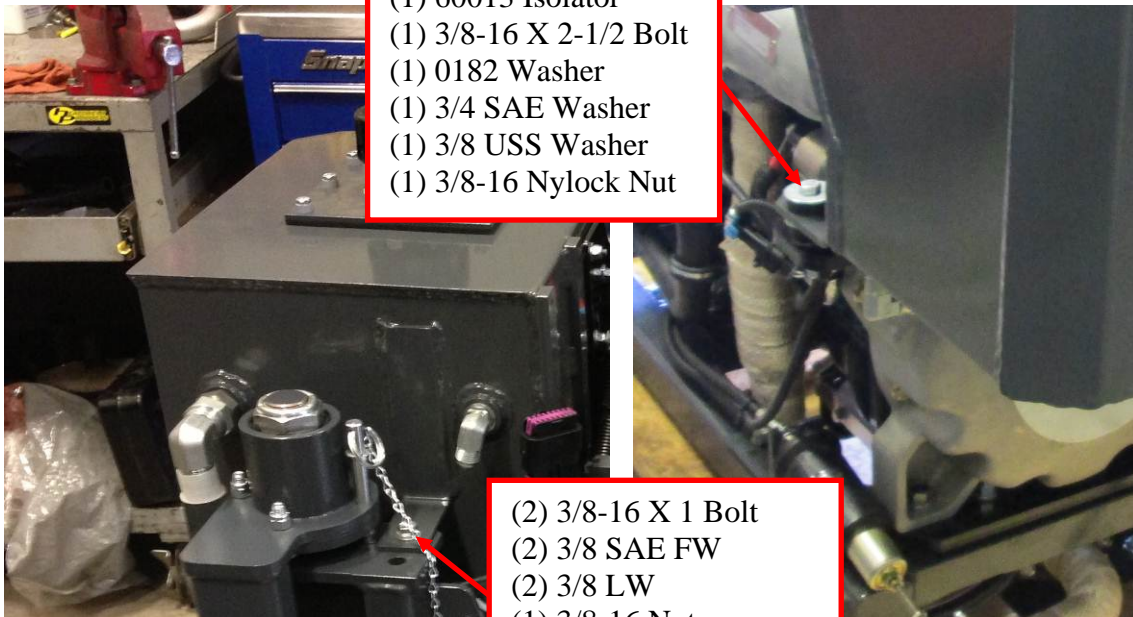
Install tank mount



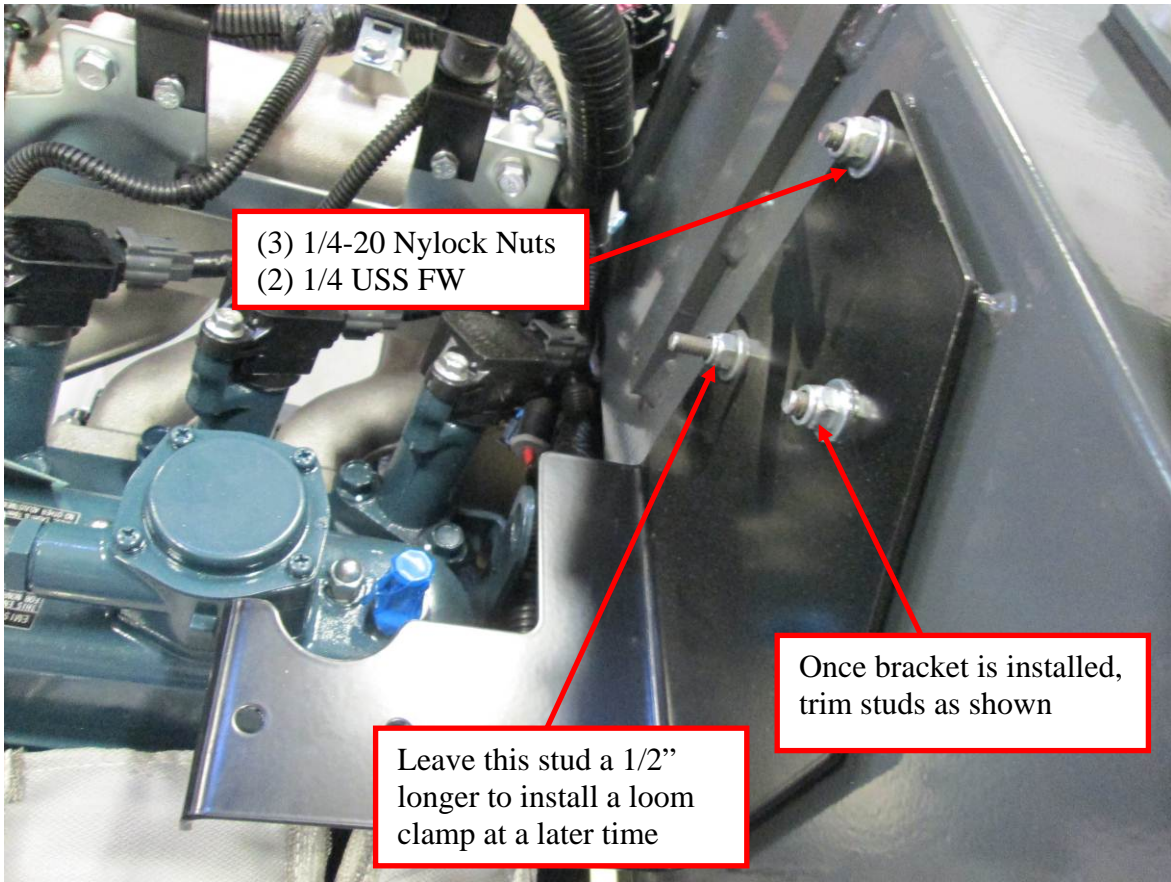
Install tank on frame and secure



- (1) 60013 Isolator
- (1) 3/8-16 X 2-1/2 Bolt
- (1) 0182 Washer
- (1) 3/4 SAE Washer
- (1) 3/8 USS Washer
- (1) 3/8-16 Nylock Nut



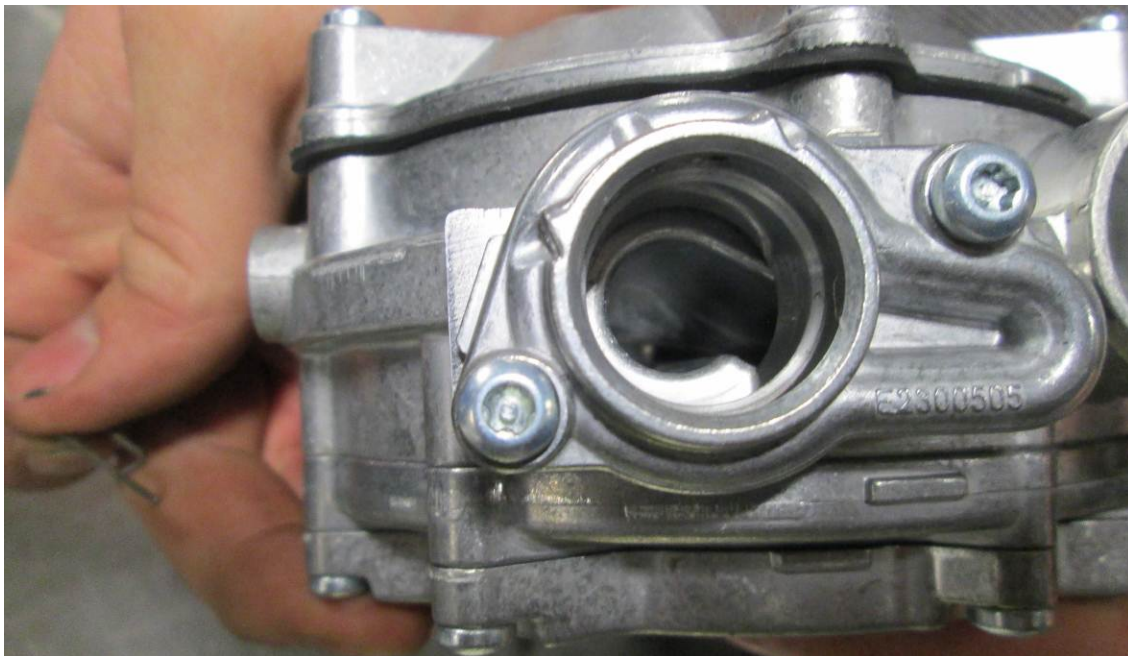
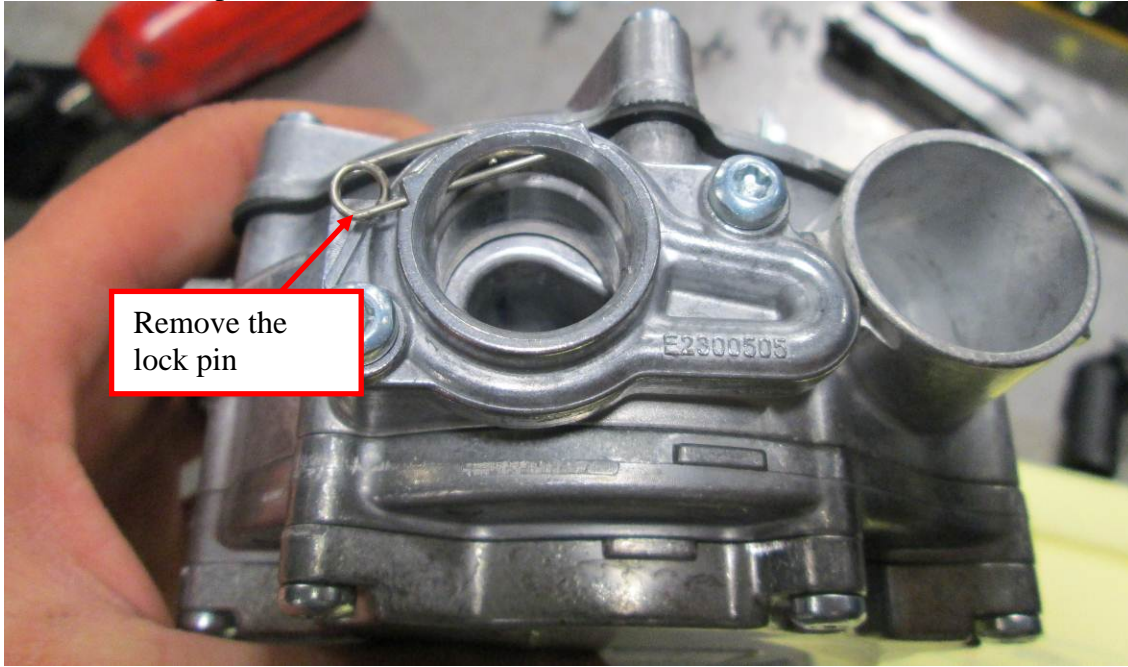
**STEP 9: Install Vaporizer Bracket, and Trim Studs, and Vaporizer**



Cut the hoses to the following lengths;

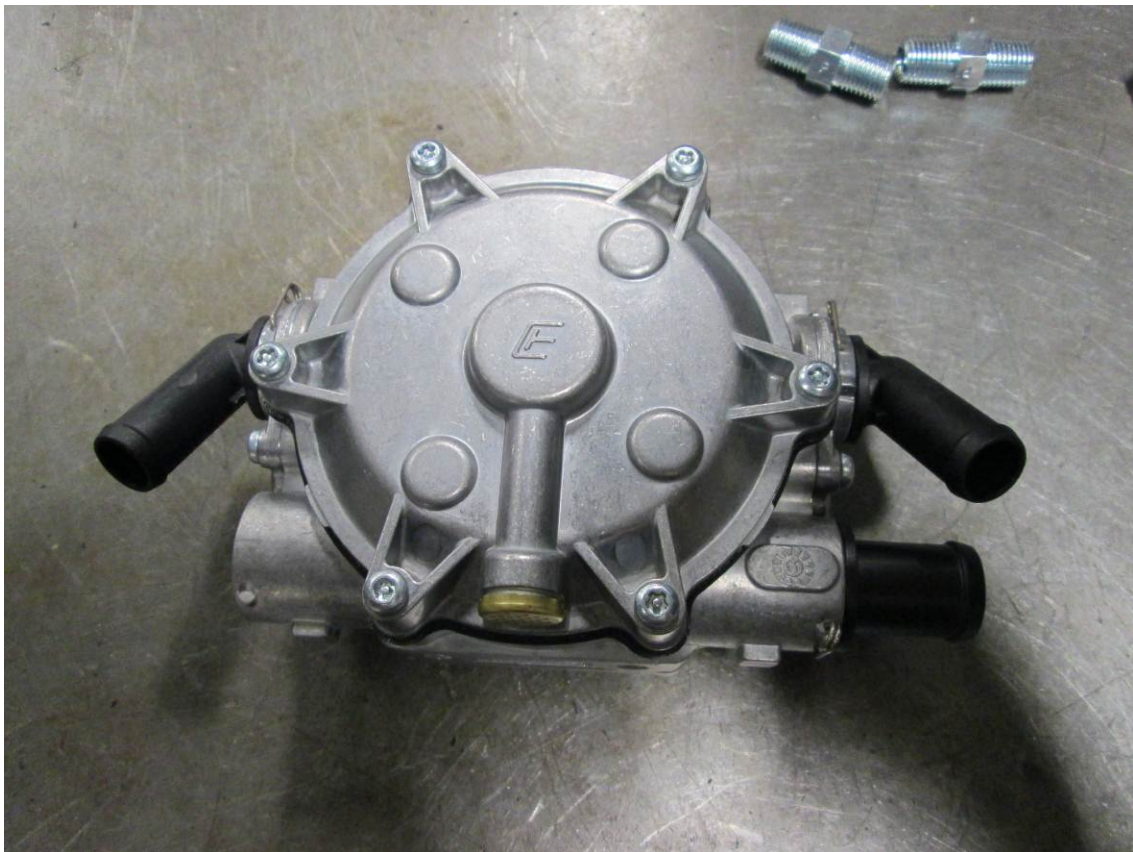
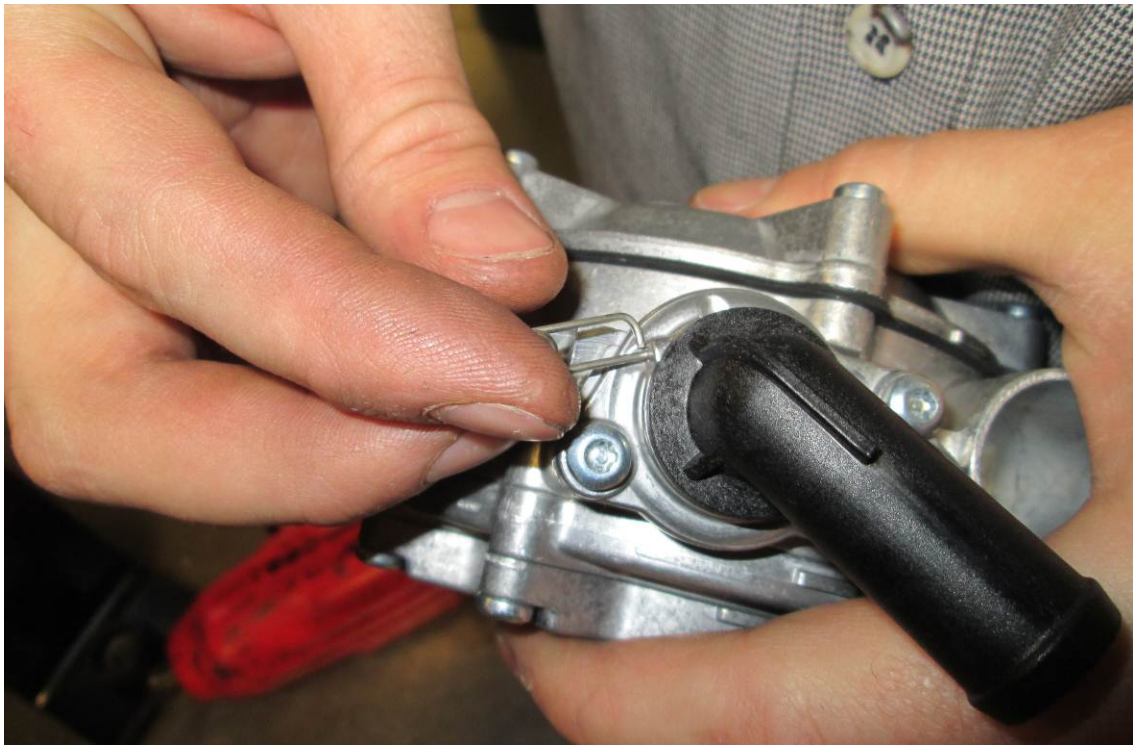
11.5"	3/4" ID Vaporizer Hose	Loom with 1-1/4"	(2) #12 Clamps
17"	5/8" ID Coolant Hose	Loom with 1"	(2) #10 Clamps
33"	5/8" ID Coolant Hose	Loom with 1"	(2) #10 Clamps

Assemble the vaporizer



Install both fittings and reinstall the lock pin

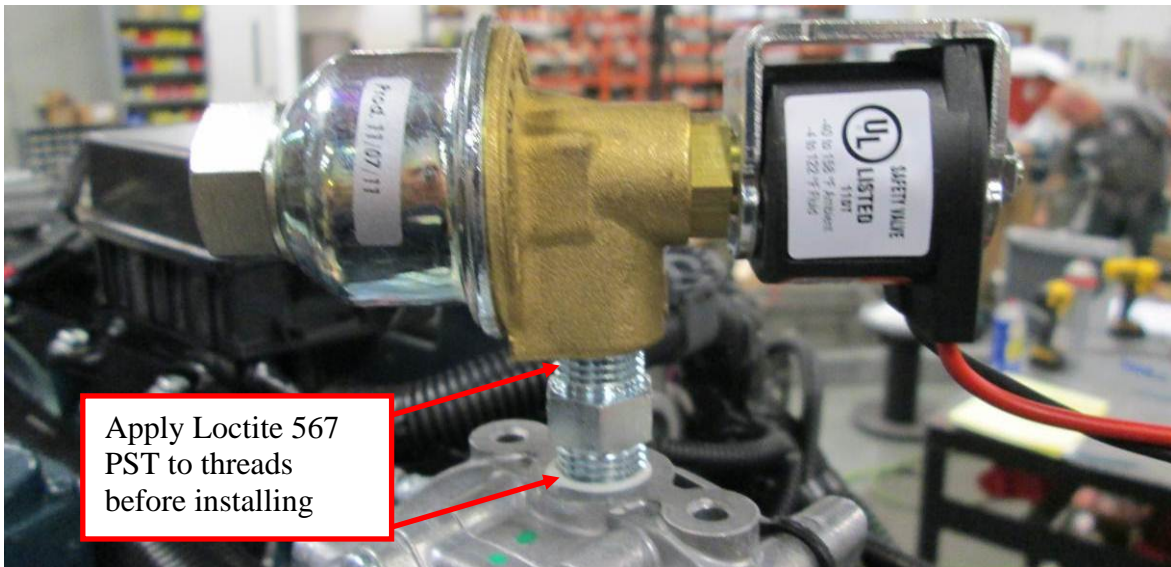




## Install Vaporizer



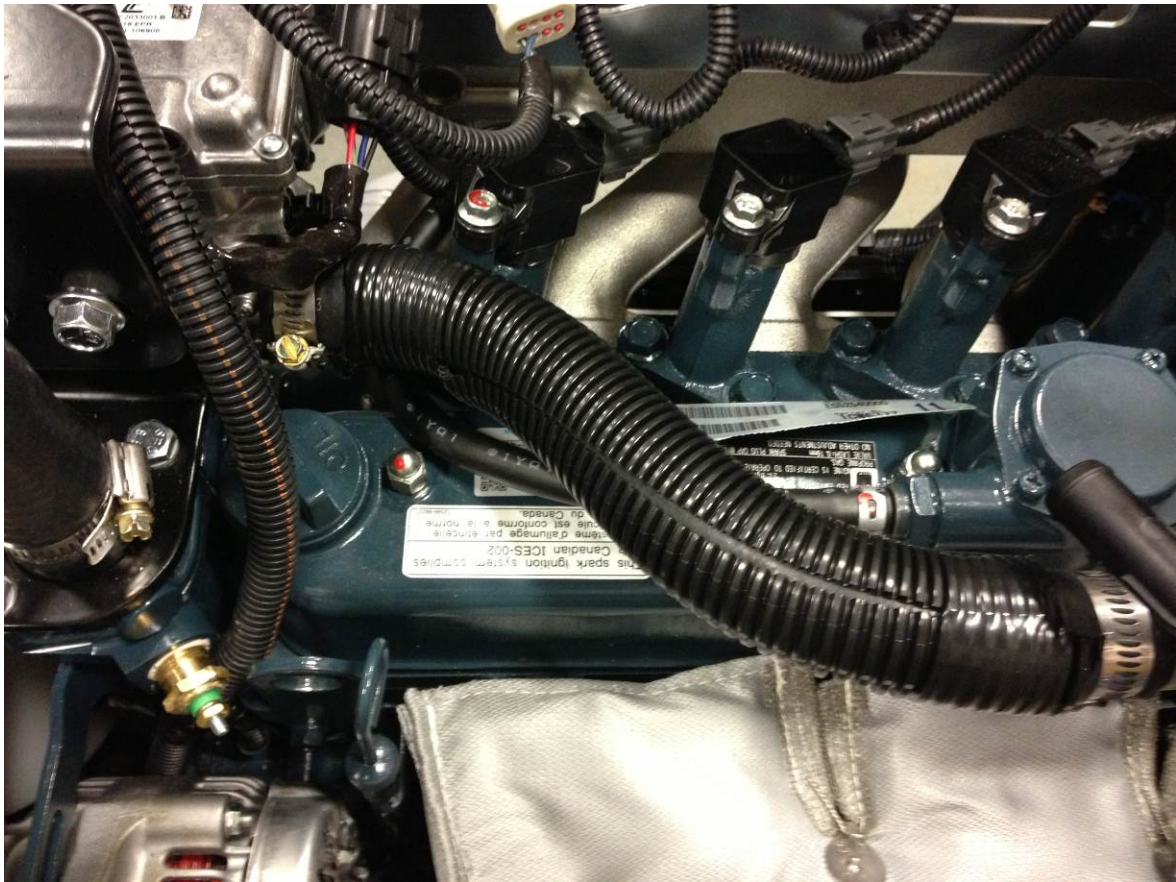
## Install Valve



Install vaporizer hose

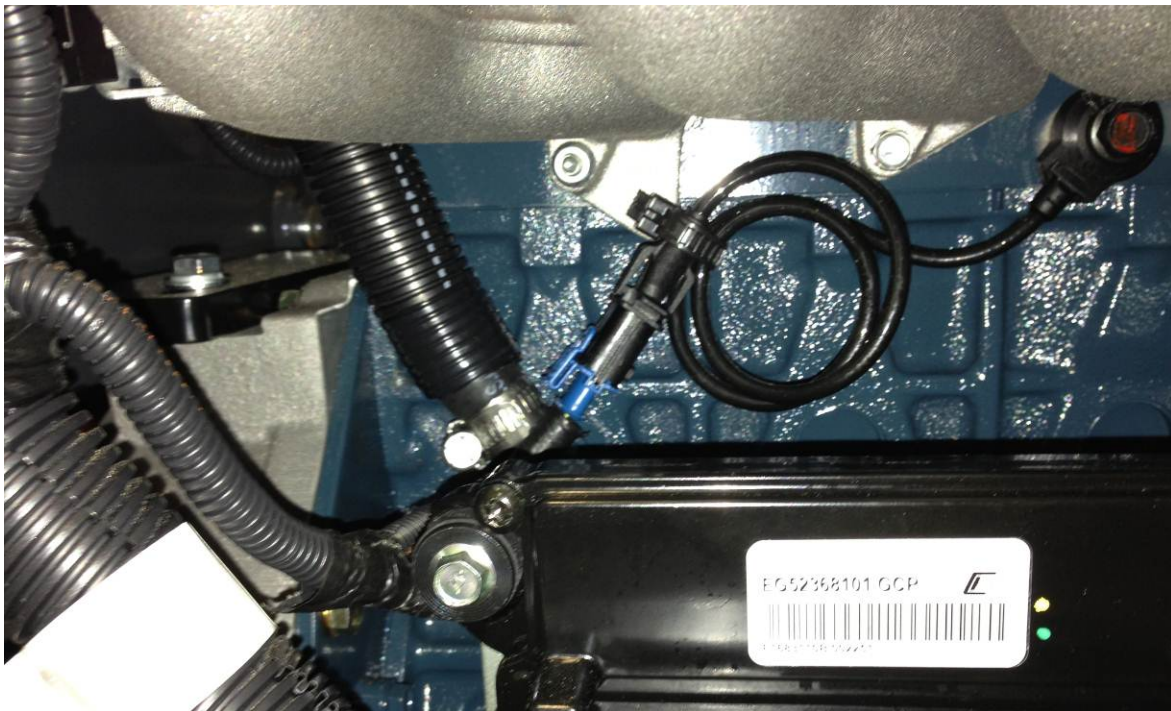
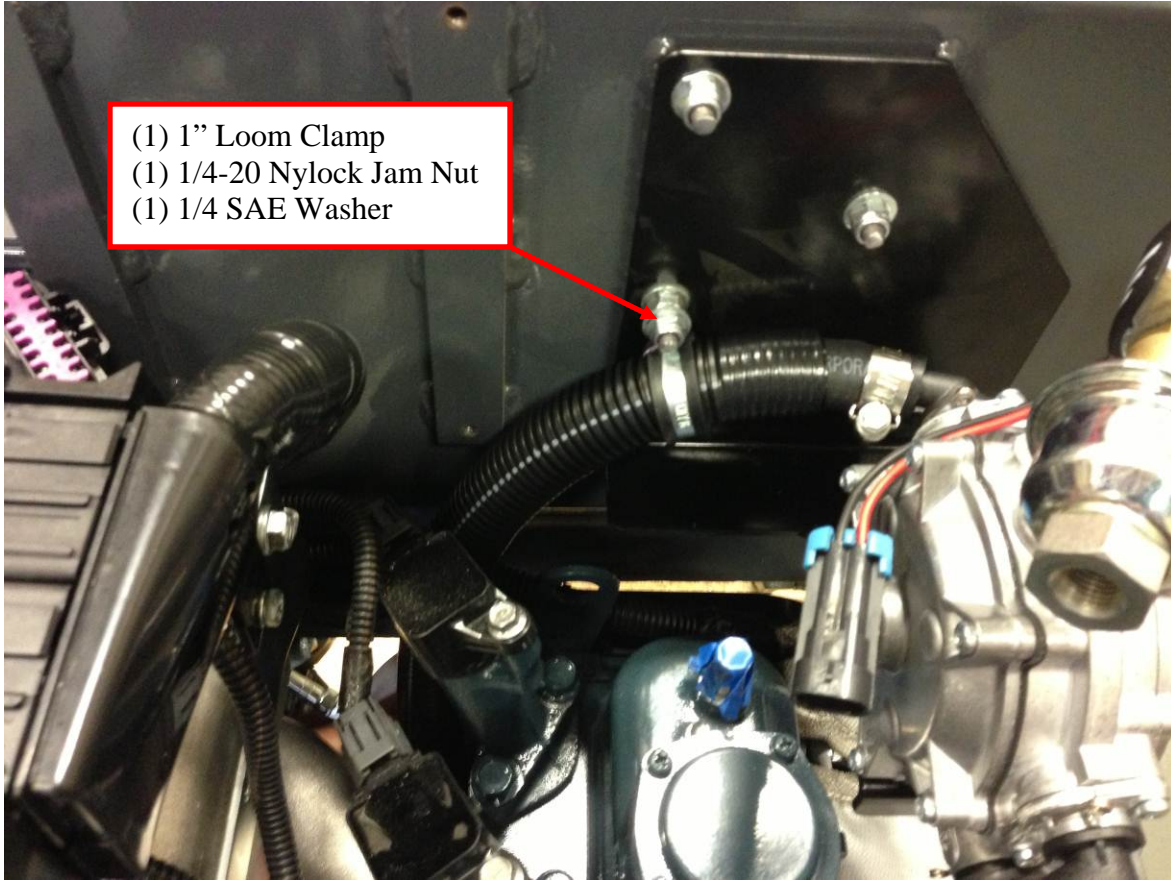


Torque all hose clamps to 31 in-lbs., and mark with a black paint marker as before

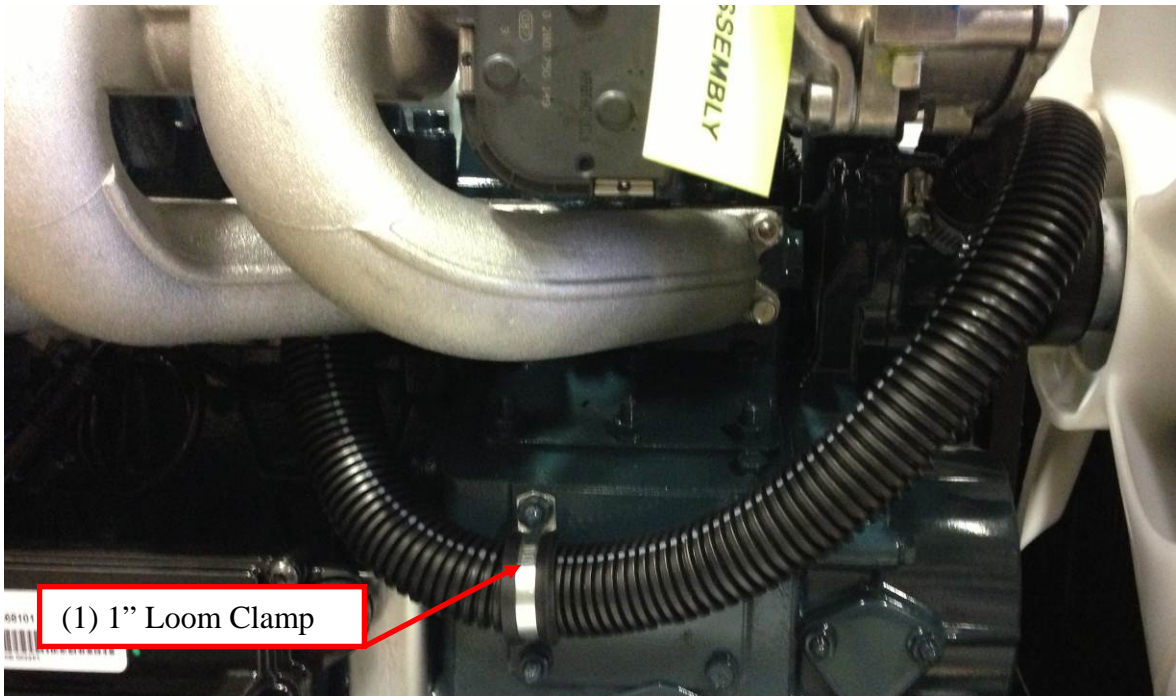


Install rear coolant hose (17")

- (1) 1" Loom Clamp
- (1) 1/4-20 Nylock Jam Nut
- (1) 1/4 SAE Washer

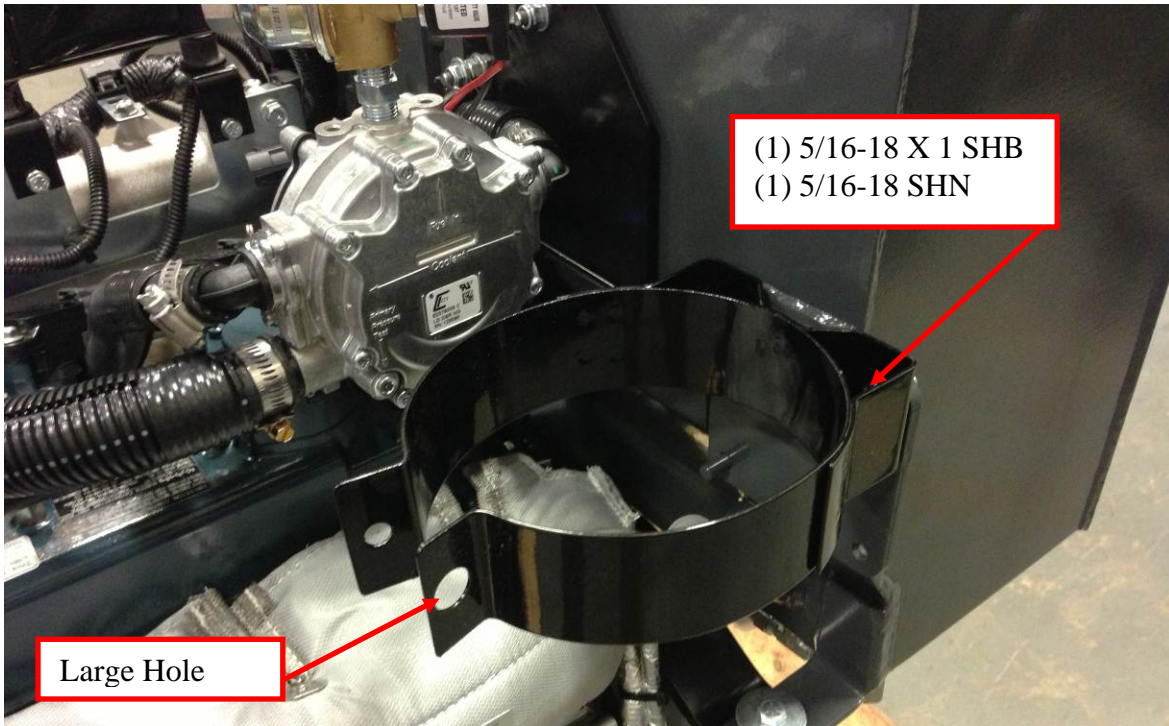


Install front coolant hose (33")



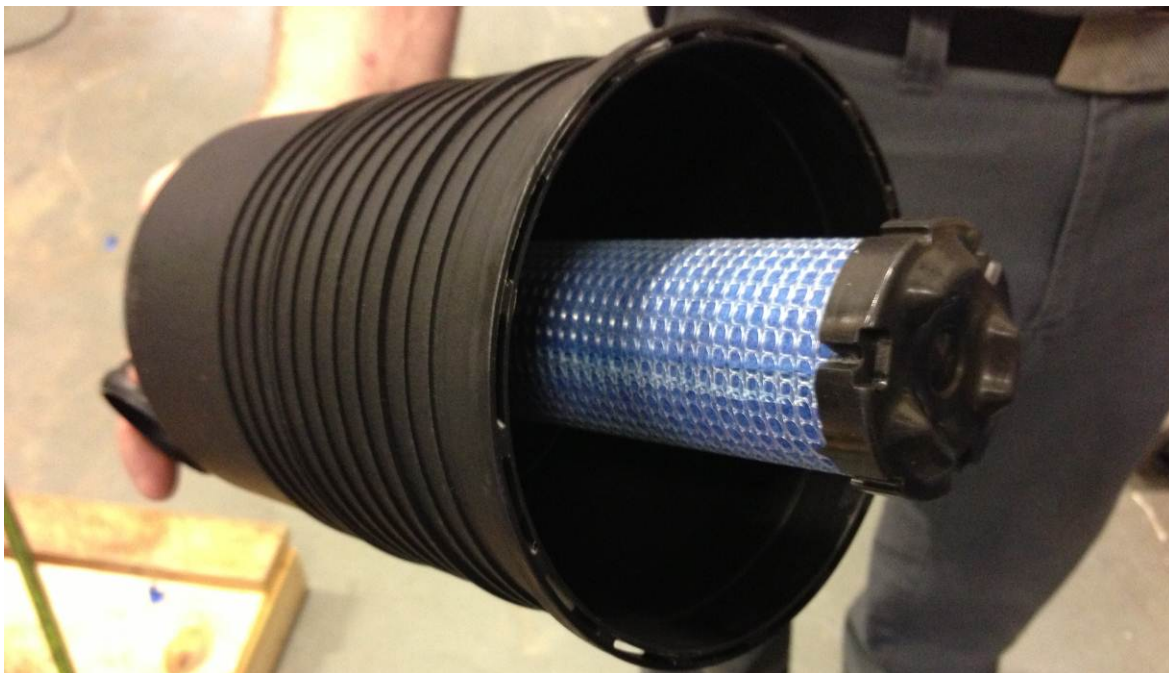
## STEP 10: Air Cleaner Assembly and Vent Hose

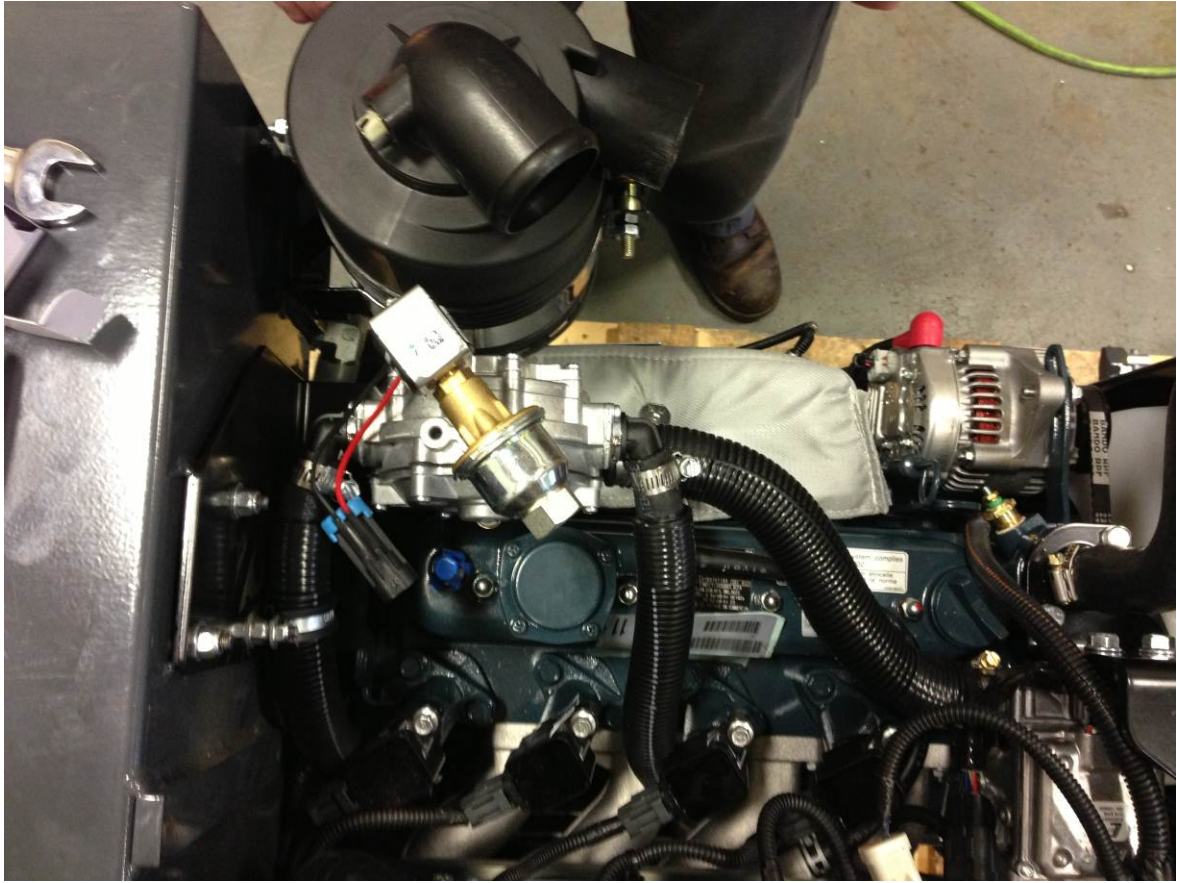
Mount the Air Cleaner band using a locating pin and a bolt assembly



Install Air Cleaner.

**MAKE SURE THE SAFETY FILTER IS INSTALLED**





Install the Air filter indicator





Install the DAP fitting on the engine

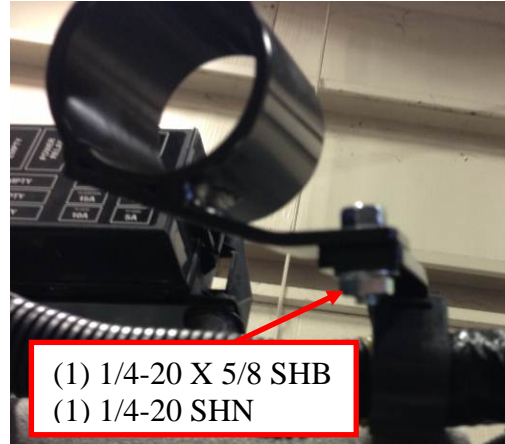
Remove and discard the bolt



Use (2) 1/4 SAE washers to offset the support bar



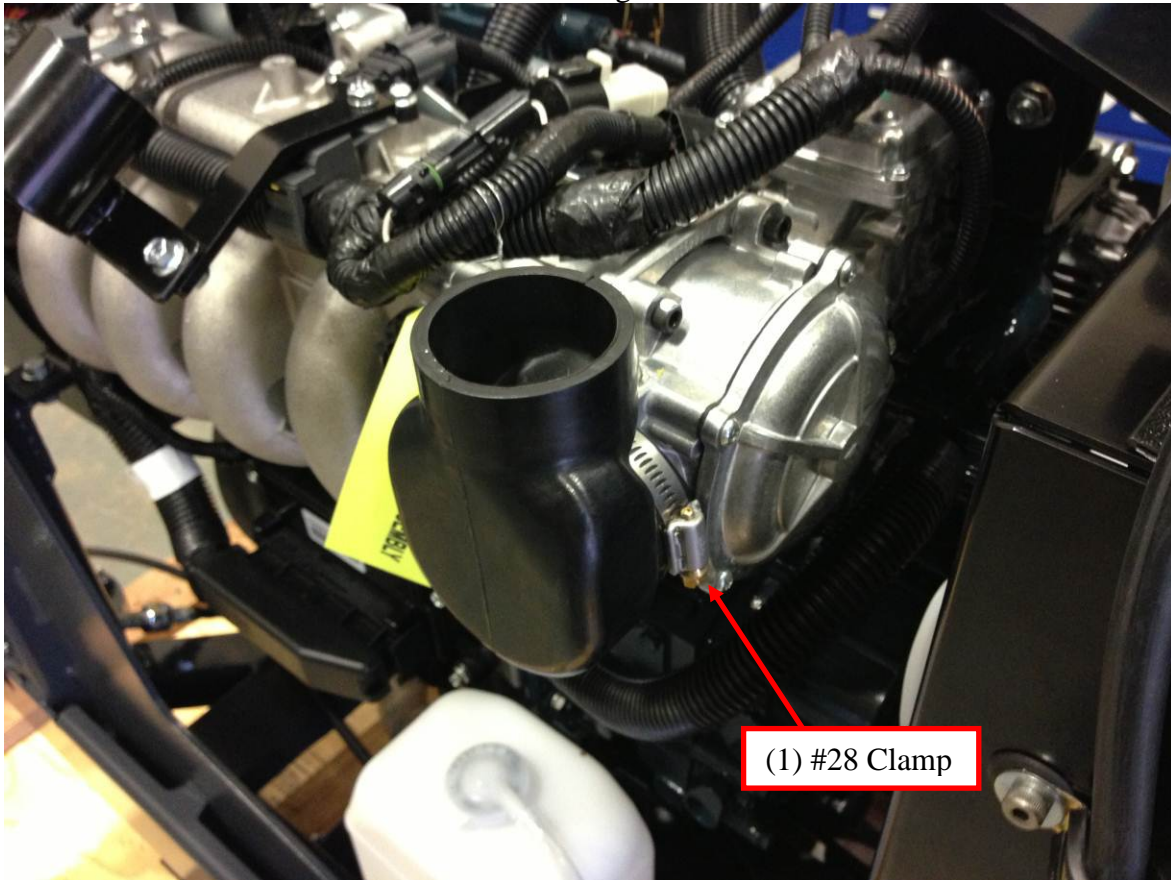
- (1) M6 X 20MM
- (1) M6 LW
- (2) 1/4 SAE FW



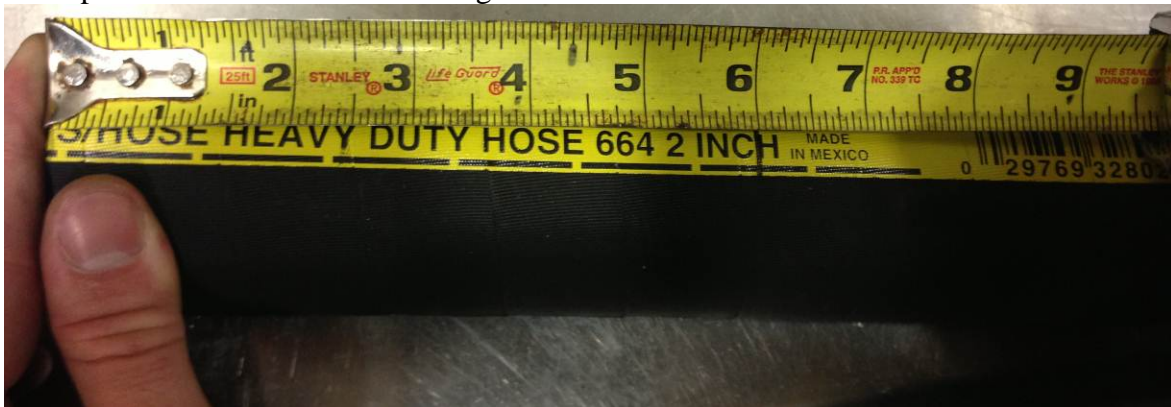
- (1) 1/4-20 X 5/8 SHB
- (1) 1/4-20 SHN



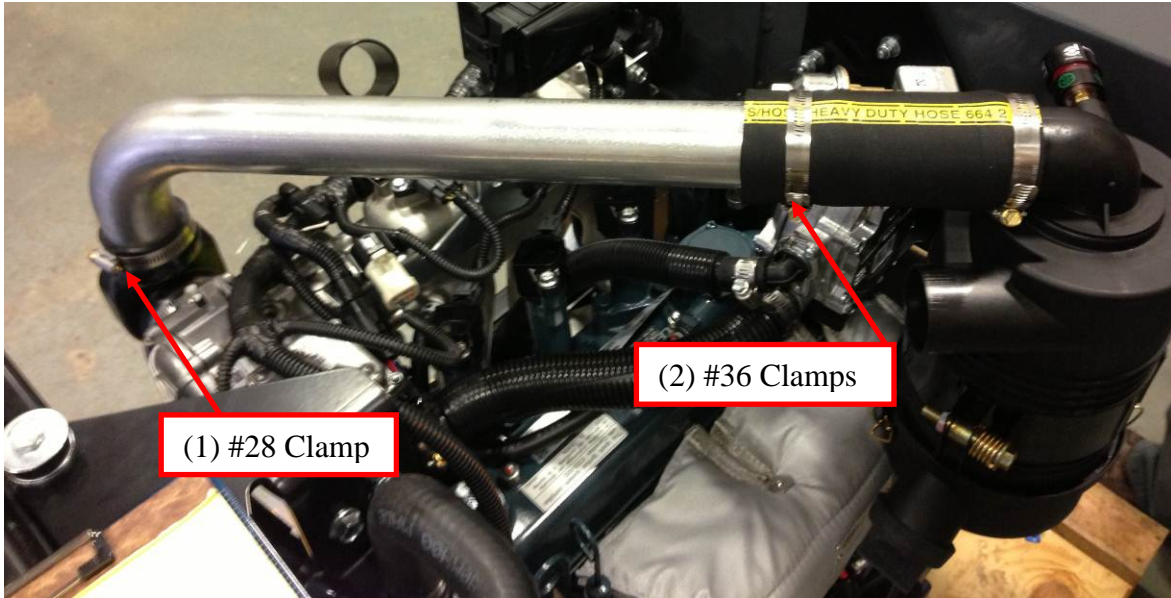
Install the cobra elbow on the air inlet on the engine



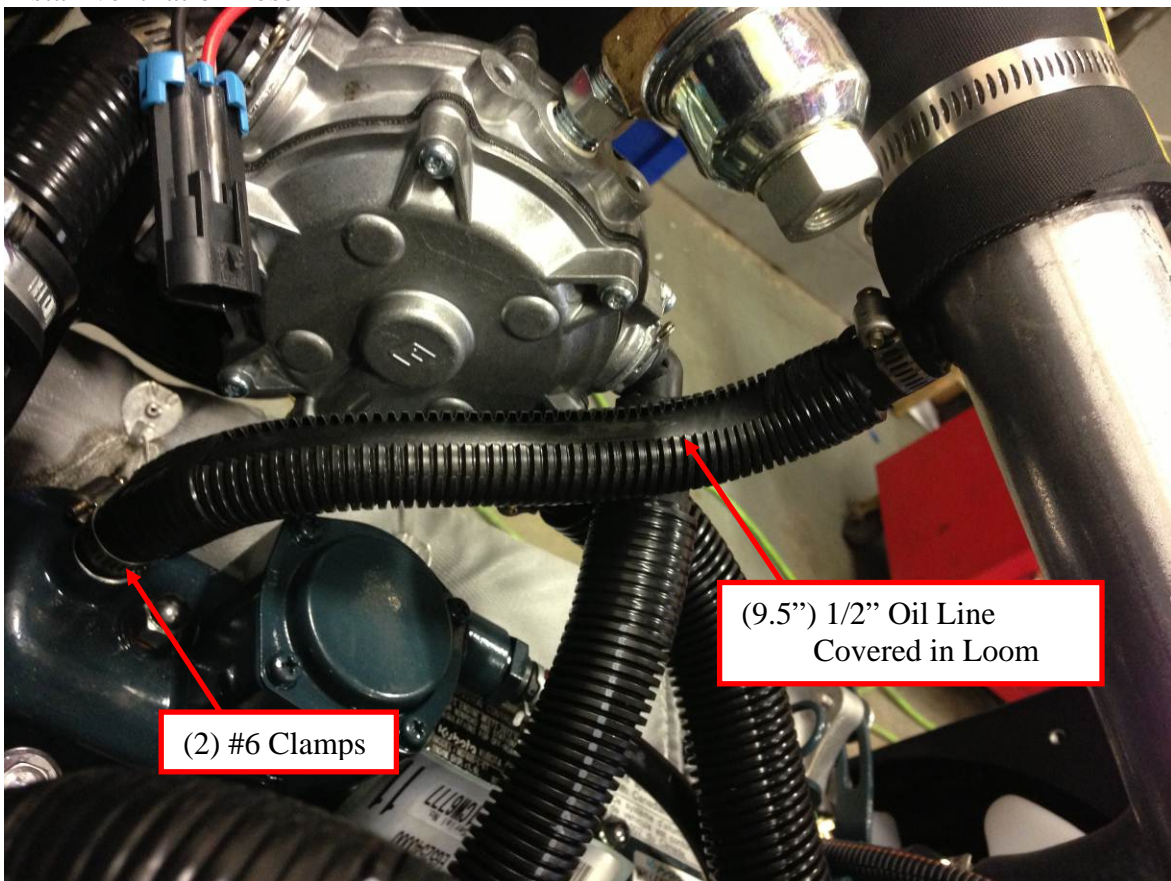
Cut a piece of 2" stick hose to 6" long



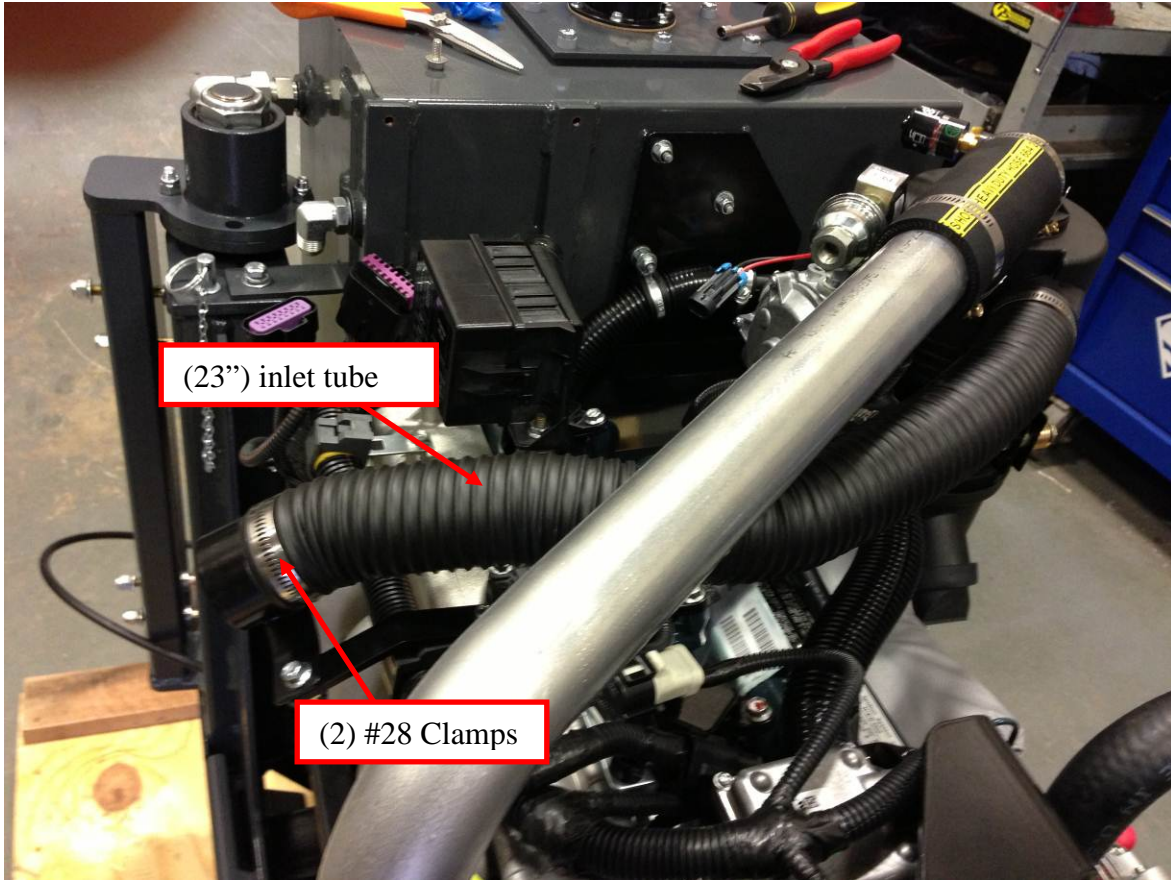
Install A/C Pipe



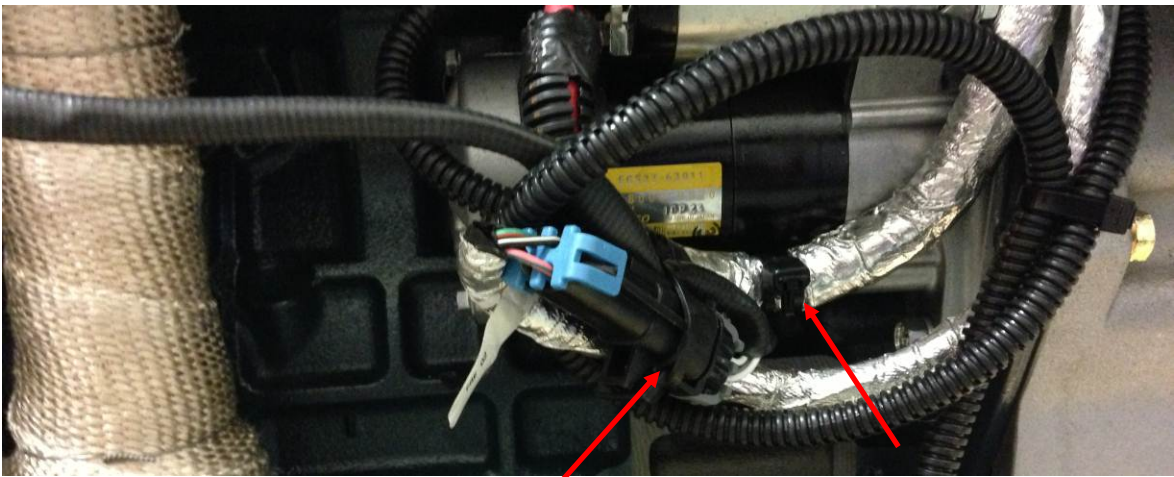
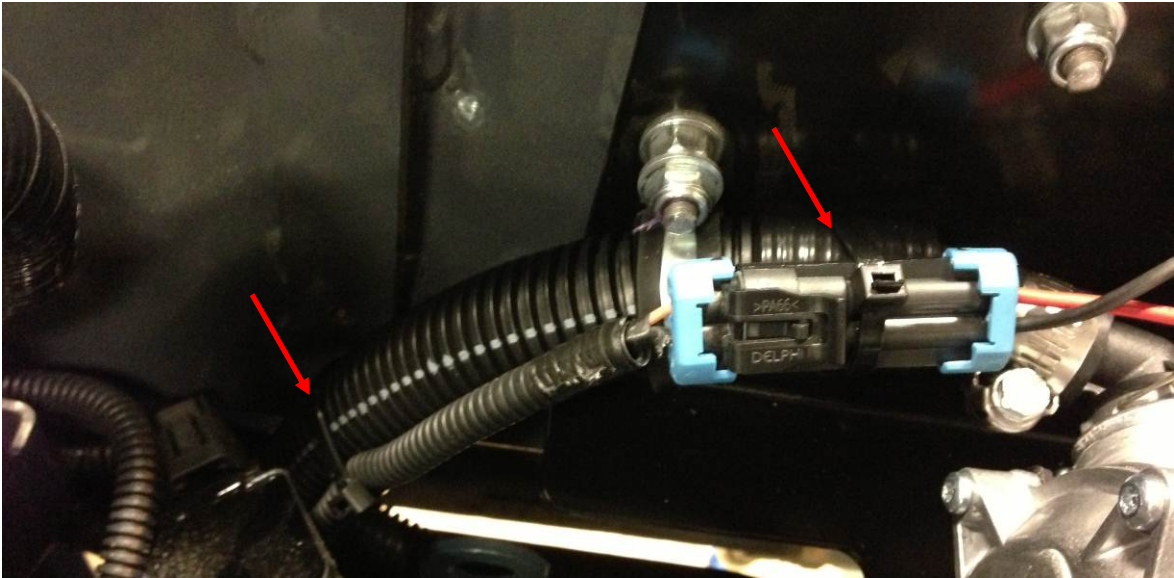
Install ventilation hose



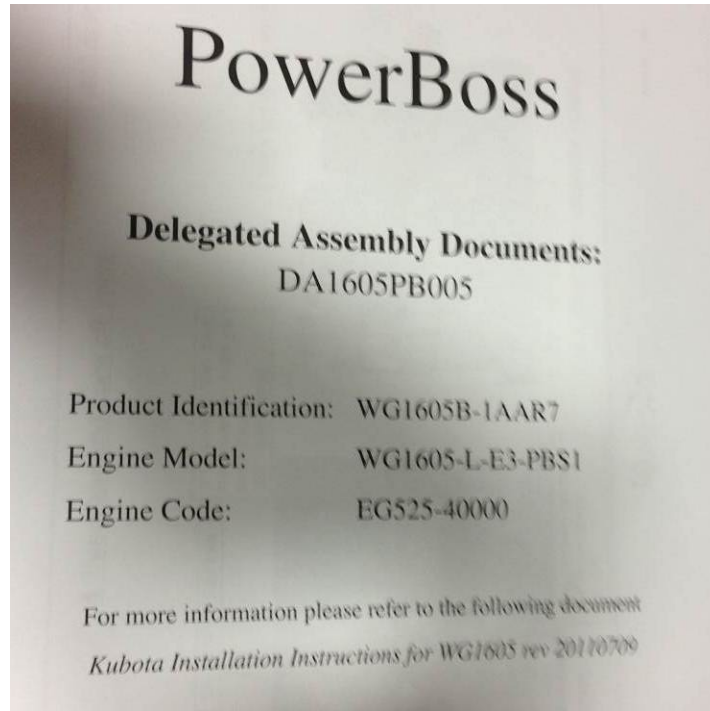
Cut the corrugated A/C tube to 23 Inches long and install



**STEP 11: Make sure all wires are secured, and connections are made**



**STEP 12: Fill out all delegated Paperwork**



Engine Serial # LCW6277  
 Catalyst Mfg Date N/A  
 Catalyst Lot # 1212310450

POWERBOSS COPY

**Delegated Assembly Checklist for PowerBoss WG1605B-1AAR7**

Engine Model: WG1605-L-E3-PBS1      Engine Code: EG525-40000

Intake System				Engine Power Source	PowerBoss	Date
FOR MORE INFORMATION PLEASE REFER TO THE KUBOTA INSTALLATION INSTRUCTIONS FOR WG160, REV161016						
Item #	Description	Qty	Part #			
1	Intake Pipe	1	EP26184	✓	N/A	
2	Choke/Case Ventilation Hose	1	EP26267	✓	N/A	
Supervisor's Signature which indicates all parts are installed				<i>[Signature]</i>	N/A	7-16-13
Fuel System				Engine Power Source	PowerBoss	Date
FOR MORE INFORMATION PLEASE REFER TO THE KUBOTA INSTALLATION INSTRUCTIONS FOR WG160, REV161016						
Item #	Description	Qty	Part #			
1	Valvepin Mounting Bracket	1	EP26473	✓	N/A	
2	Valvepin Pin	1	EP26474	✓	N/A	
3	Coilover Inlet Pin	2	EP26214-0002A	✓	N/A	
4	Valvepin	1	13068-01401	✓	N/A	
Supervisor's Signature which indicates all parts are installed				<i>[Signature]</i>	N/A	7-16-13
Exhaust System				Engine Power Source	PowerBoss	Date
FOR MORE INFORMATION PLEASE REFER TO THE KUBOTA INSTALLATION INSTRUCTIONS FOR WG160, REV161016						
Item #	Description	Qty	Part #			
1	Exhaust Manifold	1	13063-10110	✓	N/A	
	Manifold Stud	8	13063-10101	✓	N/A	
	Nut for Manifold Stud	8	EP26186	✓	N/A	
	Manifold Gasket	1	13063-01001	✓	N/A	
	Catalyst Gasket	1	13063-01001	✓	N/A	
	Catalyst Gasket 2	1	13063-01011	✓	N/A	
	W/3-400 Heat Shield Mount	2	EP26084	✓	N/A	
	W/3-400 Heat Shield	2	EP26085	✓	N/A	
	W/3-400 Heat Shield	2	EP26081	✓	N/A	
	CONE 90 CAT Support Mount	1	EP26082	✓	N/A	
	CONE 90 CAT Support 1	1	EP26083	✓	N/A	
	CONE 90 CAT Support 2	1	EP26084	✓	N/A	
	Clamp Bracket	2	E03509-12120	✓	N/A	
	M12-1.75 Nut	2	M12-1.75N01	✓	N/A	
	CONE 90 Preheat Exhaust Shimline	1	EP26079	✓	N/A	
	CONE 90 Tail Pipe Weldment	1	E03523-12120	✓	N/A	
	Catalytic Converter	2	M12-1.75N01	✓	N/A	
	M12 Lock Washer	2	M12-1.75N01	✓	N/A	
	M12-1.75 X 30 Bolt	2	M12-1.75N01	✓	N/A	
	M12-1.75 Nut	2	M12-1.75N01	✓	N/A	
	M12 Lock Washer	2	M12-1.75N01	✓	N/A	
	M12-1.75 X 30 Bolt	2	M12-1.75N01	✓	N/A	
	Heat Wrap, 2000 Deg F (Fib)	1	20291-10000	✓	N/A	7-16-13
	Clamp Insulation	1	N/A	✓	N/A	
Supervisor's Signature which indicates all parts are installed				<i>[Signature]</i>	N/A	7-16-13

Note: The technician that assembles the above component, must write his initials, indicating that

6/20/2011

Make sure you initial the paperwork, and have a supervisor sign and date the document

Gather the manual and the PowerBoss copy of the delegated assembly and secure to engine



Have an inspector check over the unit and install the QC sticker near the serial tag







