

# INSTRUCTIONS

MODEL: *Dominator Turbo Upgrade*



FITS: **2018-2020 RZR R51**



Dominator Turbo kit for RS1\_Rev005\_2021-06-16



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INSTRUCTIONS

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# Contents List

# Thank You

for **Buying**



**Made in the USA**

(1) Dominator Turbo Upgrade  
(1) Upgraded Down-Pipe  
(1) Cold Air Intake  
(1) Charge Tube  
(1) Intercooler Radiator w/ Mounting kit  
(1) PV3 ECU-Flash Tuner w/ Gauge  
(1) Intercooler Assembly  
(1) Boondocker Control Box  
(1) RS1 Fuel Rail  
(1) Custom BoonDocker JE Pistons and Rings  
(1) Recirculating Water Pump Assembly  
(4) Heat Shields  
(1) Base Gasket  
(1) 10.5 to 1 Head Gasket  
(1) Header Gasket  
(1) Tensioner Gasket  
(2) 16" x 20" Boondocker Flag  
(1) Charcoal Gray BD Snapback  
(2) 5" BD Stickers  
(2) 12" BD Stickers  
(1) Tin of BoonMints

#### BLOW OFF VALVE KIT BAG

(1) Billet Turbosmart BOV  
(1) Breather Filter  
(1) 3/16" Plastic Y and fuel lines  
(1) 1" Heater Hose  
(2) 10/32" x 3/16" Barbed Fitting  
(6) 4" Cable Ties

#### COLD AIR KIT BAG

(3) #48 Hose Clamp  
(1) #32 Hose Clamp  
(1) #12 Hose Clamp  
(1) 3" Silicone 90  
(1) 3x2" Silicone Reducer

#### CHARGE TUBE KIT BAG

(2) #36 Hose Clamp  
(2) #32 Hose Clamp  
(1) 2x7/8" Silicone Reducer  
(1) 2.5x2" Silicone Reducer

#### CLUTCHING KIT

(1) Tan Primary Spring  
(1) Teal Secondary Spring  
(3) Pre-loaded Weight arms

#### BOOST LINE KIT BAG

(1) 8" length of 3/16" Vacuum Hose  
(1) 10" length of 3/16" Vacuum Hose  
(1) 13" length of 3/16" Vacuum Hose  
(6) Spring Clamps

#### OIL LINE KIT BAG

(1) 59" Steel Braided Oil Line and Banjo Fittings  
(1) Turbo Oil Feed line with reducer and Banjo  
(2) 6AN fittings

#### INTERCOOLER KIT BAG

(2) 1/4-20 Bolts, washers and lock nuts  
(2) 2 1/4 x 1 3/4" Silicone  
(4) #36 Hose Clamps  
(1) Cooler Restraint Bracket  
(1) 5/8" Spacer

#### THROTTLE BODY KIT BAG

(2) Machined Throttle Body Adaptors and O-rings  
(2) 2 1/4 x 13/16" Silicone  
(4) #36 hose clamps

# User Manual

## GENERAL SAFETY

1. ALWAYS wear your seatbelt (if applicable), helmet, and PPE when operating your vehicle.
2. Clutching, belts, motor, exhaust components and drivetrain may be HOT enough to burn you. Do not touch until vehicle has had sufficient time to cool. Wear proper PPE to prevent burns.
3. Clutching, belts, motor, exhaust components and drivetrain may be sharp. Wear proper PPE to prevent laceration.
4. Exhaust components are HOT. It is YOUR responsibility to prevent burns or melted items.
5. ALWAYS follow the safety suggestions of your owner's manual.

## GENERAL

1. Print entire instruction manual. In the print settings, you can choose to print multiple tiles per page (we suggest 4-6). However, the tunnel-cut-pattern needs to be printed full size.
2. Read the ENTIRE manual before you start.

## OPERATION

1. ALWAYS allow your vehicle to reach proper operating temperatures before driving. Refer to your owners manual.
2. You will need to replace your plugs more frequently with a turbocharger. After break-in mode, replace plugs AT LEAST every 500 miles for maximum performance. Plugs should be gapped to .018.
3. The Dominator turbo kit is a HIGH PERFORMANCE accessory. Proper fuel and maintenance is critical (see "FUEL")
4. High performance machines are more prone to belt failure. ALWAYS carry a spare belt, and understand how to change/replace your belt BEFORE you get out in the field. Properly inspect your belt and clean your clutches before each ride.
5. ANY "DET" or Detonation codes are not acceptable. If you get a DET code during normal operation, you likely have bad gas. Drain all of the fuel, and replace with fresh fuel from a different source. If the problem continues, immediately contact your dealer.
6. Dominator for CanAm uses a MANUAL boost adjustment. You MUST adjust boost as you change elevation. Maximum boost is 22.5 PSI. Maximum boost at sea-level is 19.5 PSI. Operation outside of these parameters may cause engine damage, and is your responsibility.
  - 6.1. For Av-gas, the desired boost range is 19.5 PSI at sea-level to 22.5 PSI at 5000 ft.
  - 6.2. For Pump-gas, the desired boost range is 15.5 PSI at sea-level to 17.5 PSI at 5000 ft.
  - 6.3. It is YOUR RESPONSIBILITY to properly set the boost.
  - 6.4. Incorrect boost may cause engine damage. Please verify data logs!
7. Check coolant levels after the first 10 minutes of operation. Coolant system may need to be bled.
8. After the first hour of operation, check the torque on all bolts. The first heat cycle may cause bolts to loosen, which could create a boost leak or cause engine damage.



# User Manual

## FUEL

1. The Dominator is a HIGH PERFORMANCE accessory. Proper fuel is critical.
2. It is YOUR RESPONSIBILITY to ensure the octane of your fuel and that the proper octane is being used. Generally speaking, 100LL is required for boost in excess of 17 PSI. However, vehicle and configuration variances may alter this. Check your gauges for detonation-correction and adjust the boost properly to prevent engine damage.
3. USE ONLY THE FUEL DESIGNED FOR YOUR KIT!
4. Fuel degrades with time. Fuel stored in plastic containers should be used within two weeks. Fuel in the tank of your vehicle will also degrade. DO NOT run fuel from any previous season or extended period of non-operation. .
5. Operating your vehicle with old/degraded fuel may cause engine failure. DO NOT allow fuel to sit in the tank for more than 30 days.
6. Operating your vehicle with the incorrect fuel for your tune may cause engine failure.

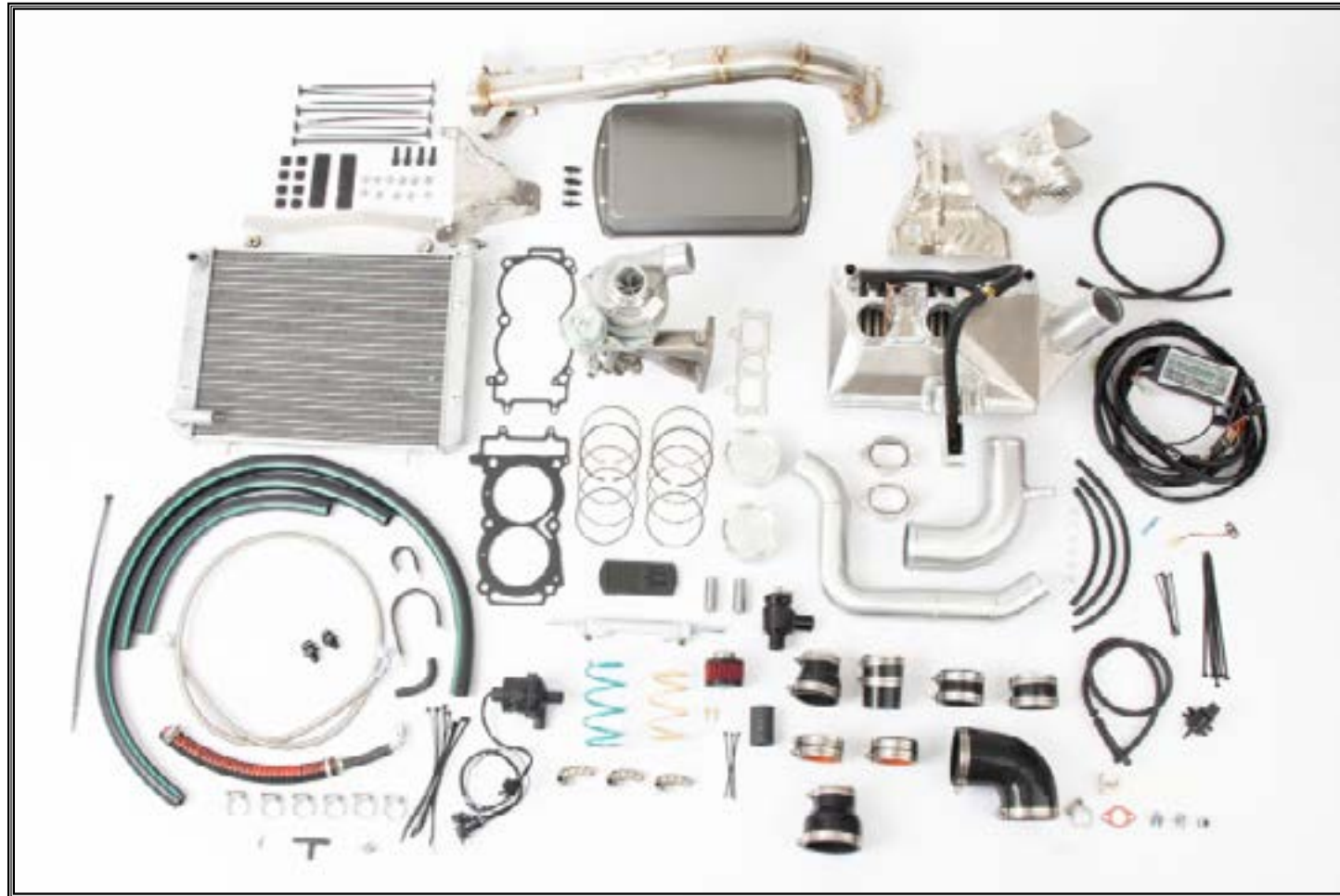
## CLUTCHING & CLUTCH MAINTENANCE

1. Our clutching is engineered and validated for the Dominator. Using other clutching may cause a loss of performance, and is not supported or suggested.
2. Clutch springs wear out over time. We suggest replacing clutch springs every 500 miles.
3. Clutch maintenance is CRITICAL on high performance machines. We suggest you clean your clutches after each ride: Remove the belt. Use compressed air to blow any remaining debris from the clutch internals. Use a red scotch-brite pad to loosen any rubber/debris from the clutch-sheave faces. Dampen a rag with acetone and wipe the clutch sheave faces. Inspect belt for damage and/or wear.
4. Proper weight configuration is (3) 45-gram and (3) 50-gram weights, loaded in an alternating pattern.
5. Turbocharged CanAm X3's are expected to turn 8400 +/- 100 RPM's on av-gas, and should turn 7900 +/- 100 RPM's on pump gas. Use provided adjustable weights to keep RPMs at recommended levels. However, they stop producing additional power after 8000 RPM's
6. DO NOT allow your vehicle to turn over 8500 RPM's.





# Initial Teardown



Verify kit contents against included contents list.

**DO NOT lift turbo assembly by the plastic bag. Carefully remove turbo assembly from bag to avoid dropping and/or damaging turbo assembly!**

**READ THE ENTIRE INSTRUCTION PACKET BEFORE PROCEEDING!**

# Initial Teardown



Remove muffler cover, muffler and down pipe.

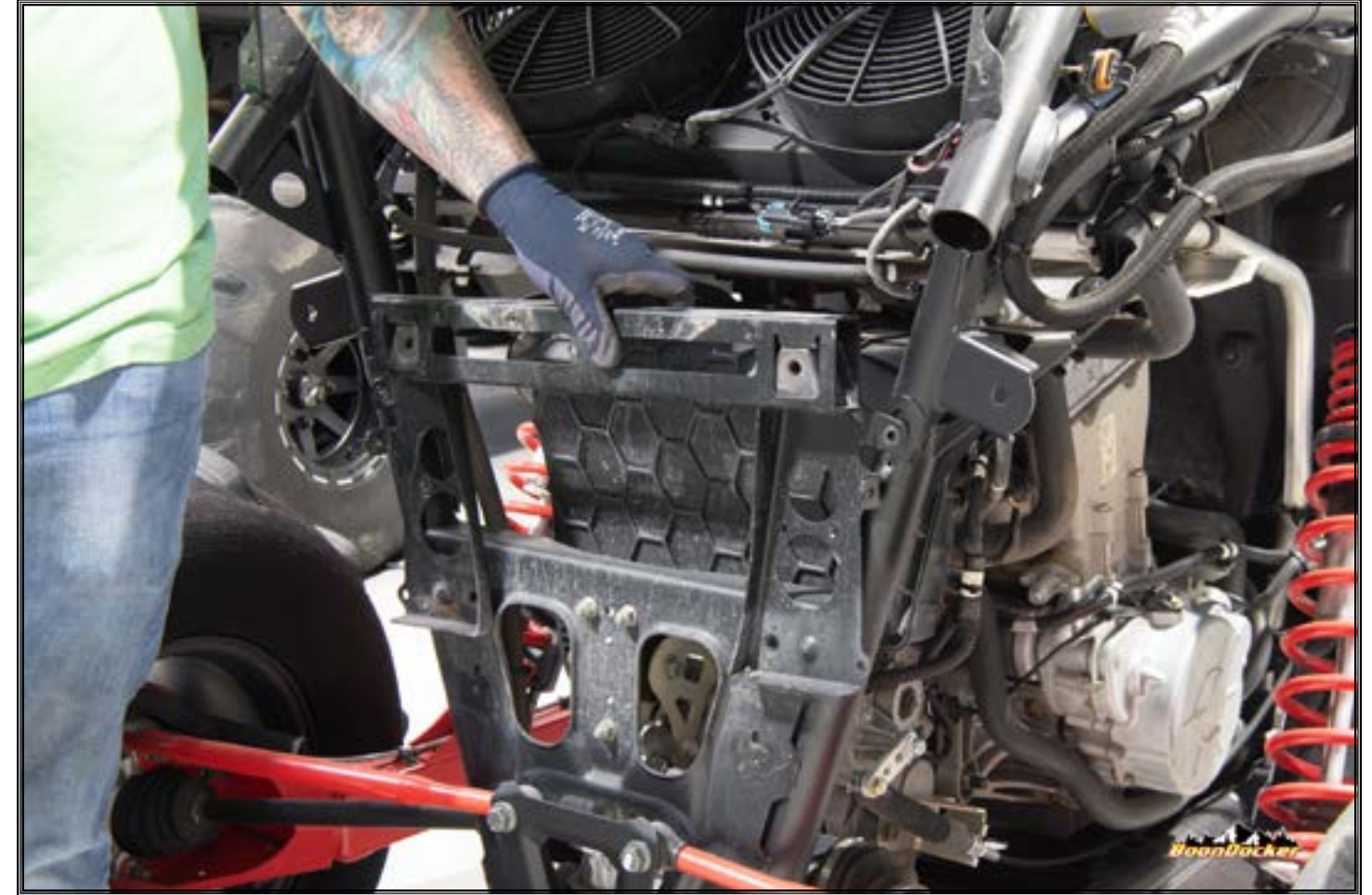


# Initial Teardown



Remove tail light shroud.

# Initial Teardown



Remove muffler bracket.



# Initial Teardown



Remove airbox.

# Initial Teardown



## CONSULT POLARIS SERVICE MANUAL FOR ENGINE REMOVAL PROCEDURE

- Using the Polaris Service Manual teardown and rebuild engine with head studs, pistons and all related gaskets and bearings.
- Head Stud torque specs are included with BoonDocker packaging
- Deeper valve recesses go towards exhaust on JE pistons
- Carrillo rods are #2 when referencing the bearing selection chart

Re-install engine following procedure in the Polaris Service Manual.



# Initial Teardown



Carefully remove cross support, take care not to damage radiator.

# Initial Teardown



Mark crossbar as shown and cut to provide radiator clearance. We've used a square to line up the tops of these two (A and B) circles.



# *Initial Teardown*



Here you can see where the line should land, we've used a brightly colored paint pen to mark it clearly.

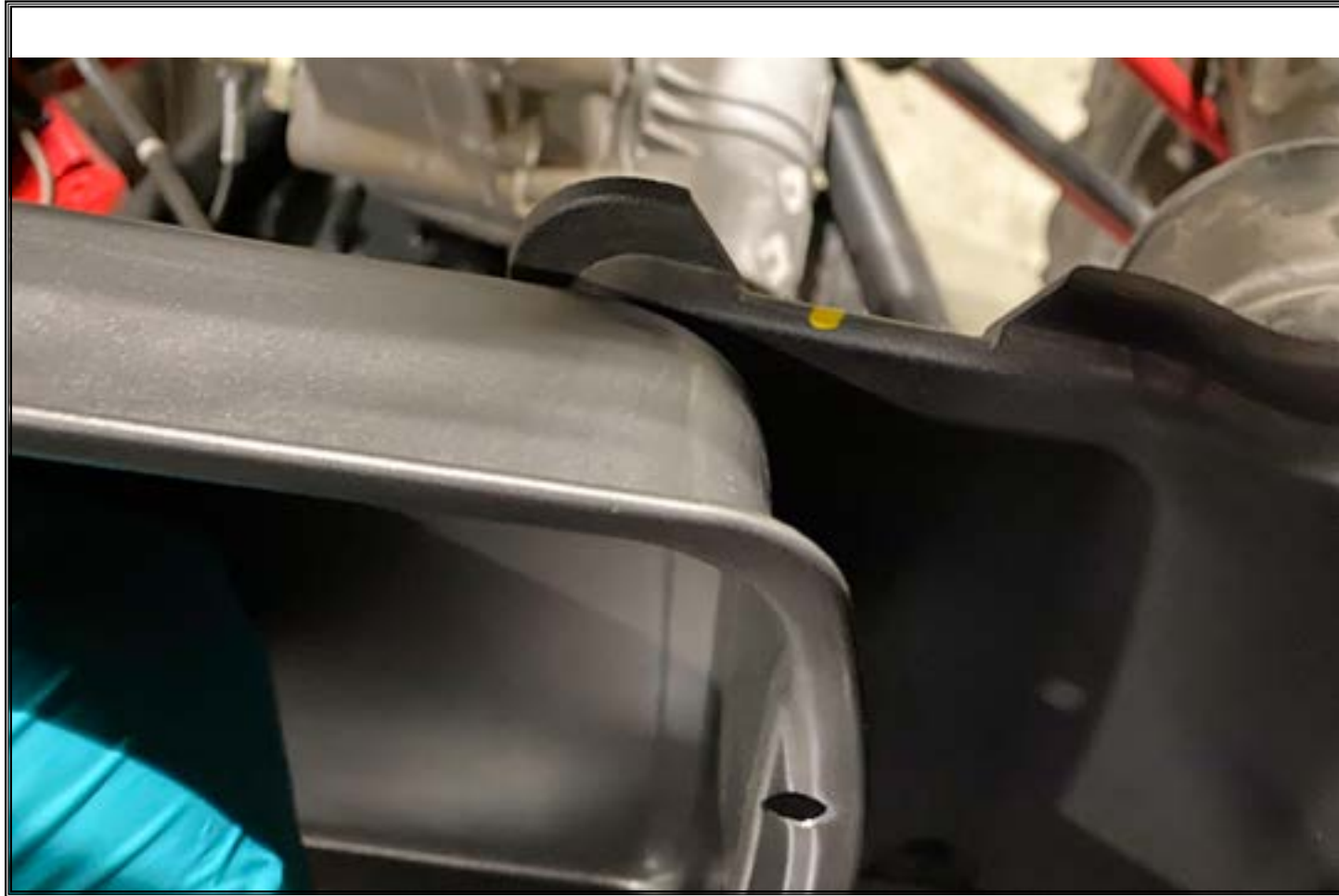
# *Initial Teardown*



Cross support after being cut.



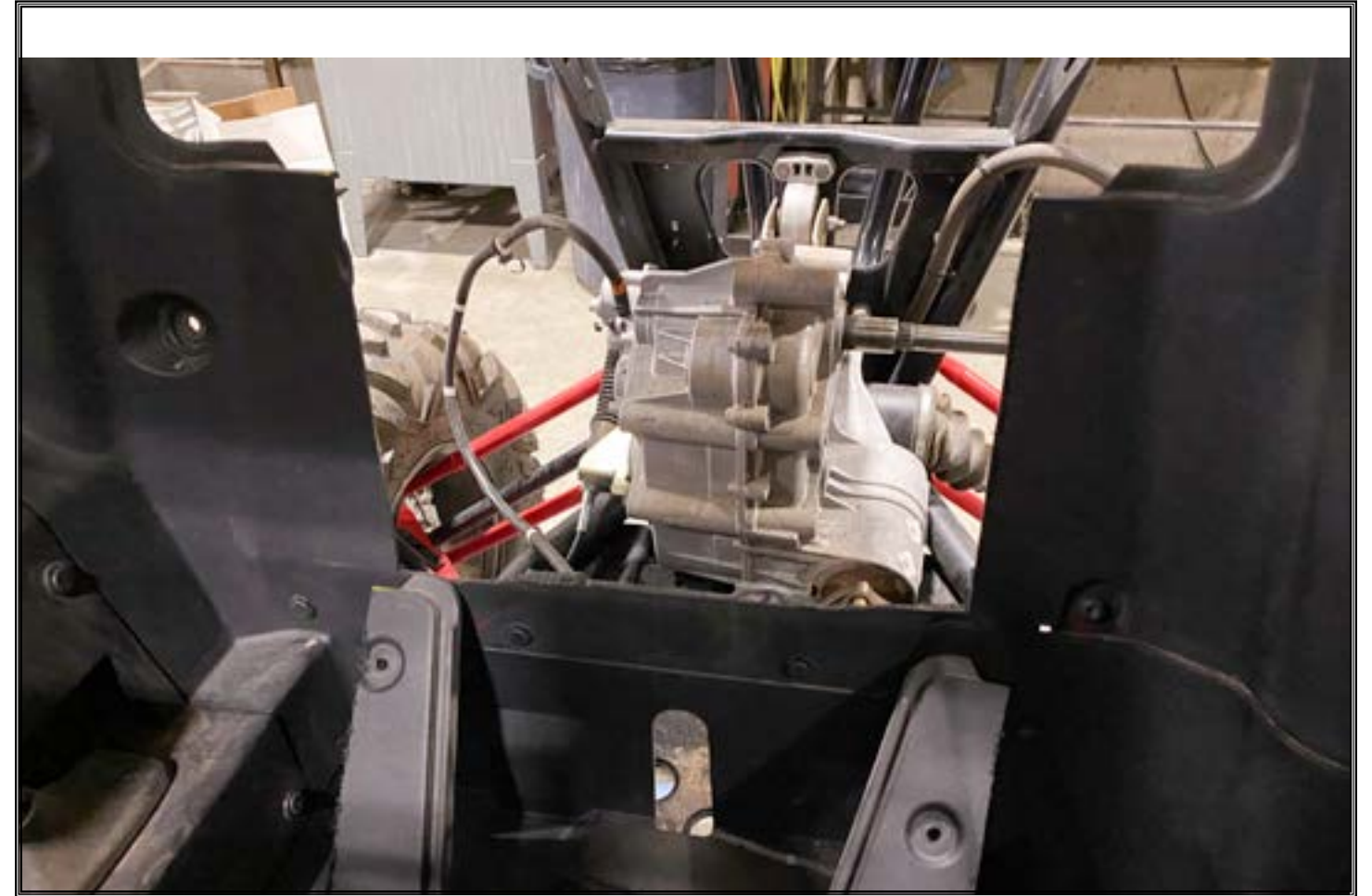
# Heat Shield



Mark where inside edge of heat shield will sit.

**Note: DO NOT CUT TO OUTSIDE EDGE OF SHIELD**

# Heat Shield



Cut out marked area as shown,



# Heat Shield



Using 5/16" drill bit, drill out four mounting holes for push darts to secure heat shield.

# Throttle Bodies



Remove throttle bodies.



# Throttle Bodies



Drill out and tap blow off valve connections using 5/32" drill bit.

# Throttle Bodies



Tapping connections with 10-32 NF thread tapper.

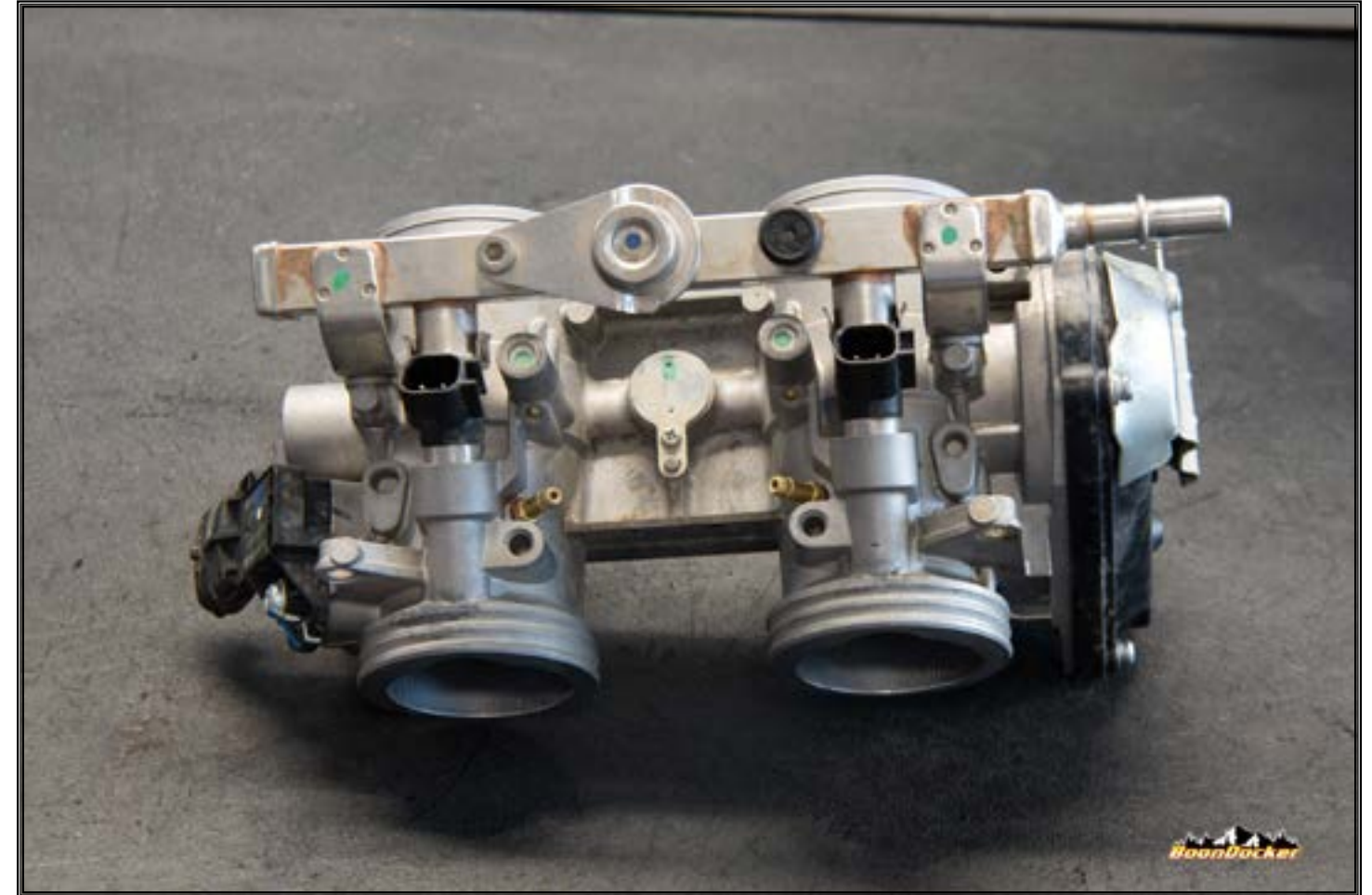


# Throttle Bodies



Use red threadlocker to install blow off valve connections.

# Throttle Bodies



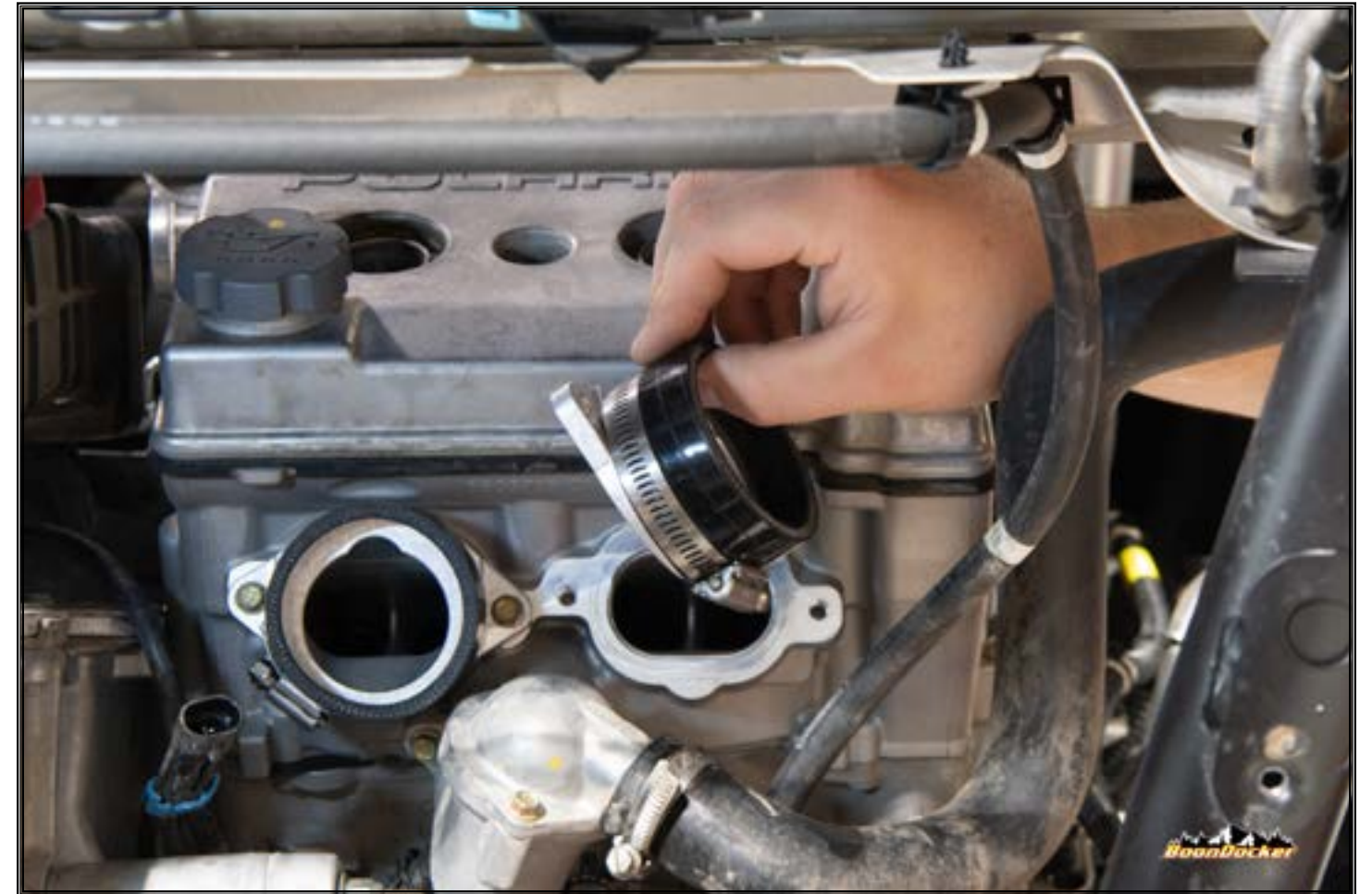
BOV connections installed.

# Throttle Bodies



Insert O-Ring into groove on Boondocker throttle bodies.

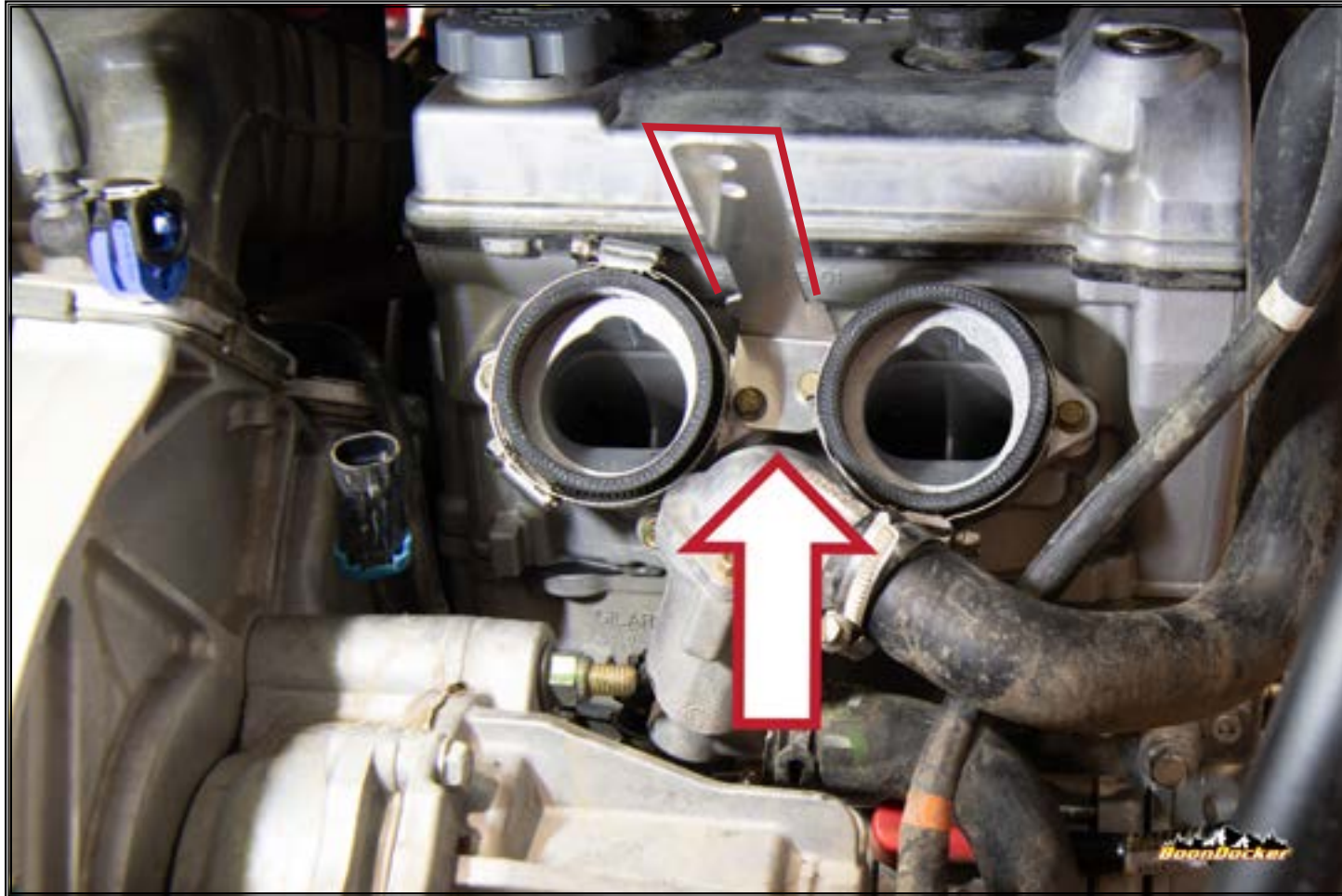
# Throttle Bodies



Install silicone to BoonDocker throttle bodies and install on engine using OEM bolts.



# Throttle Bodies



Mount Intercooler bracket

# Throttle Bodies



Install throttle bodies.



# Airbox Intercooler



Install BoonDocker Billet fuel rail.

# Airbox Intercooler



Install intercooler with supplied silicones.



# Airbox Intercooler



*install two supplied bolts between intercooler and bracket.*

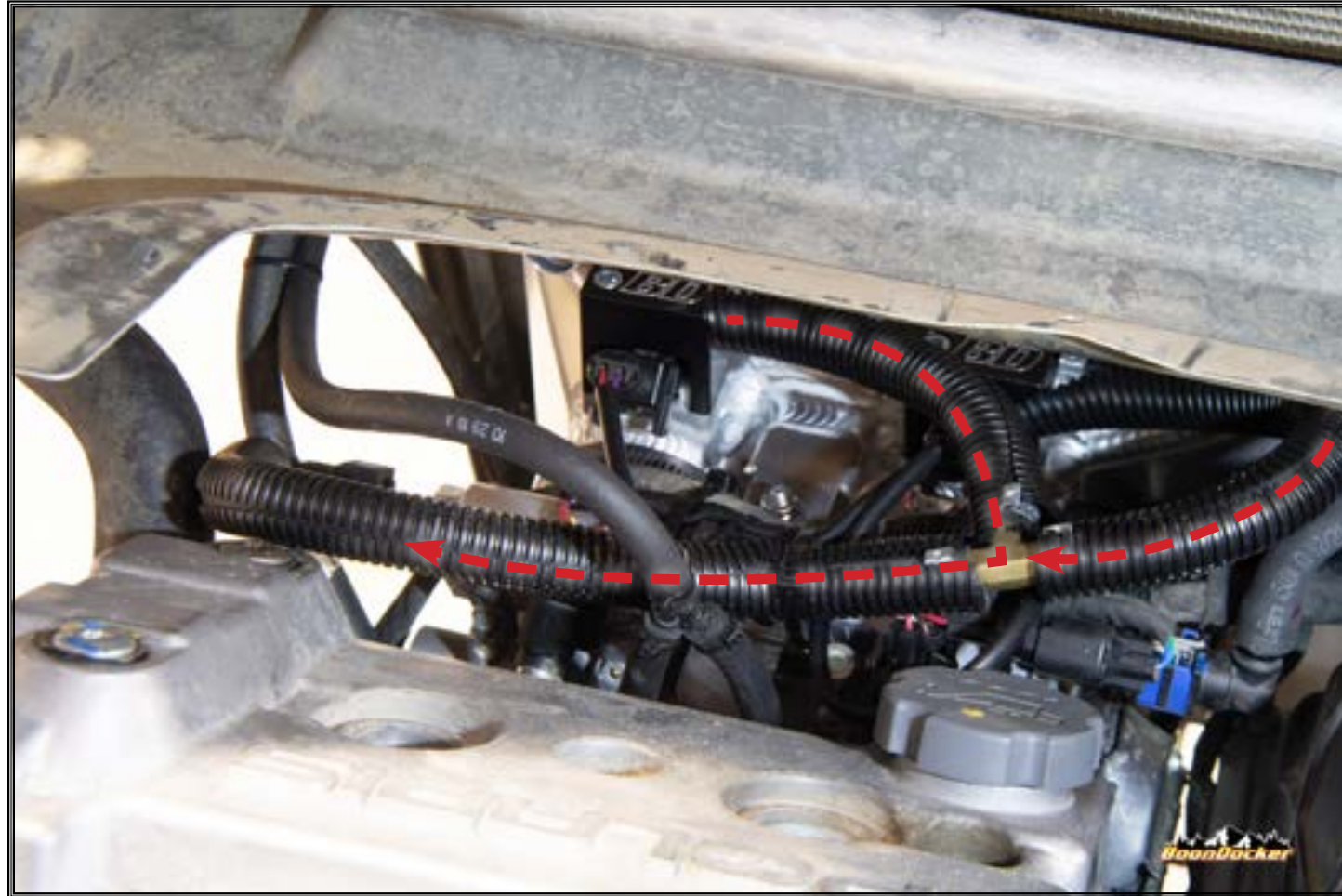
# Airbox Intercooler



*Re-install lower airbox bolt through transmission.*

*NOTE: Supplied spacer goes on PTO side of car.*

## Fuel Lines



Rotate fuel line as shown and connect to BoonDocker fuel rail.  
Ensure line is routed in a way that it is not kinked or pinched.

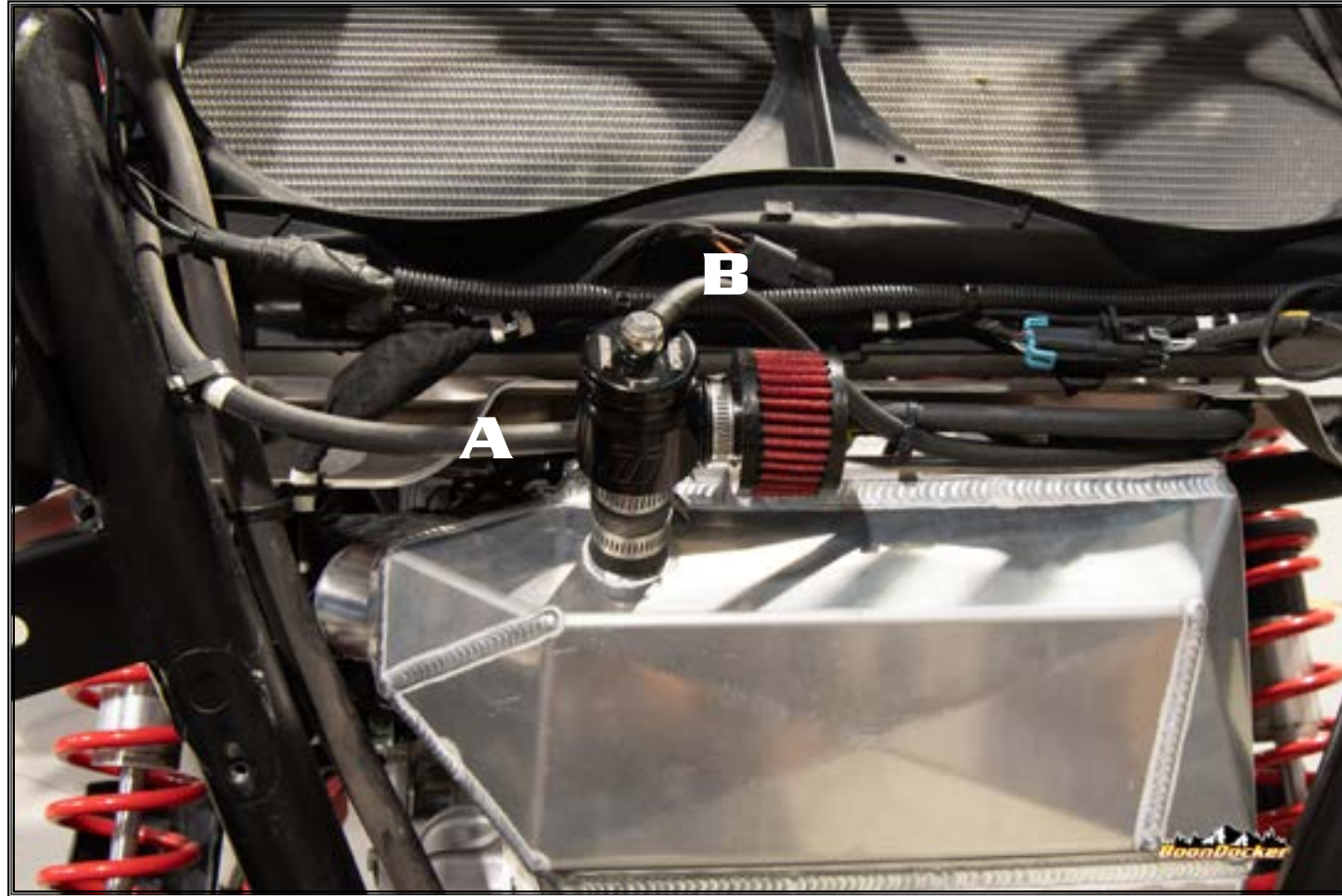
## Blow Off Valve



Connect Y end of supplied boost reference line for BOV to threaded fittings previously  
installed onto throttle bodies.



# Blow Off Valve



Install blow off valve and filter to BoonDocker Intercooler(A).  
Install boost reference line from throttle bodies to BOV(B).

# Install Turbo



Mount turbo in place using 6 bolts from factory head pipe. Install oil feed and drain lines prior to bolting into car.

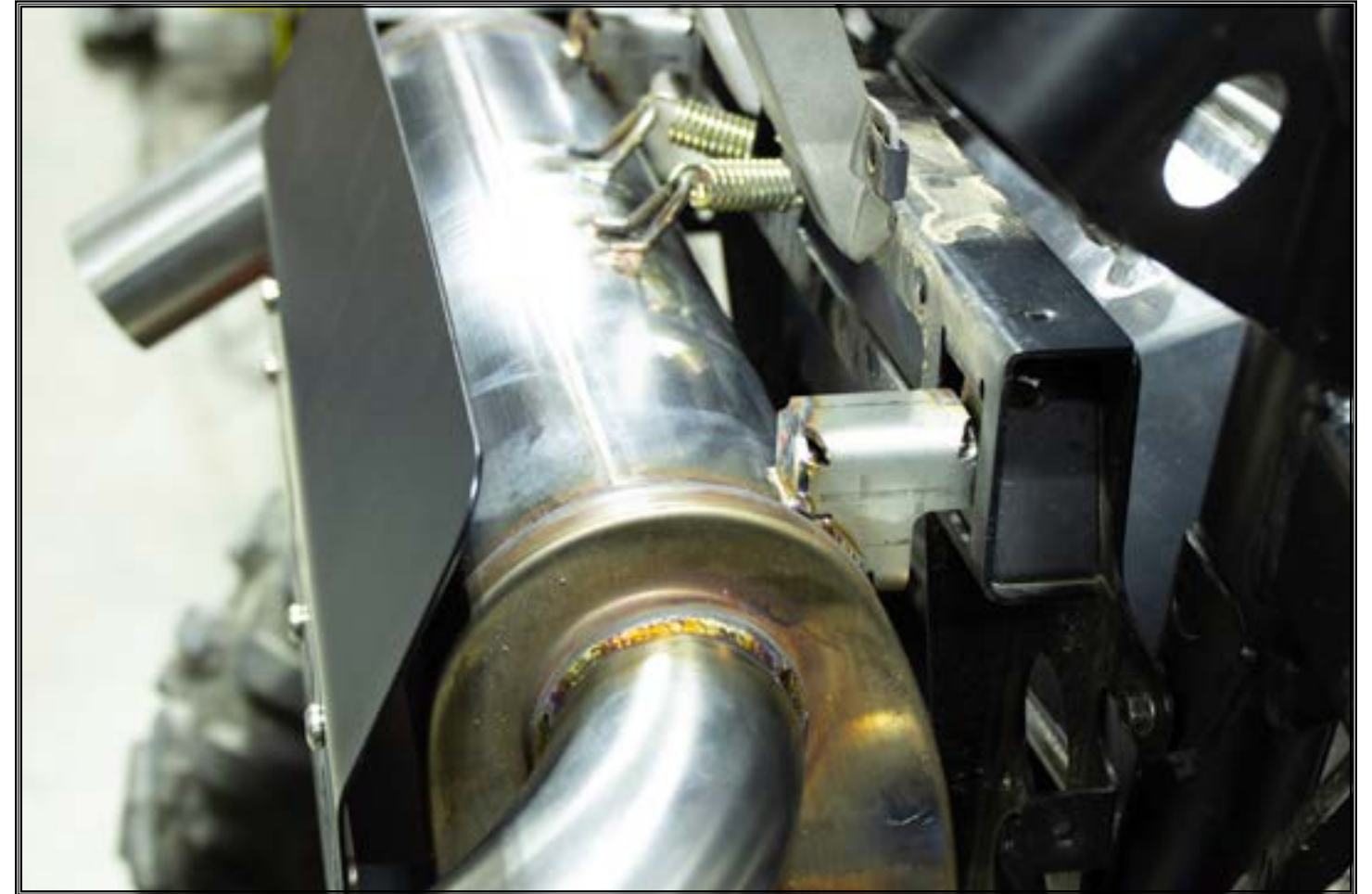


# Exhaust



Install BoonDocker down pipe using supplied allen bolts. Install factory heat shield using supplied flange bolts.

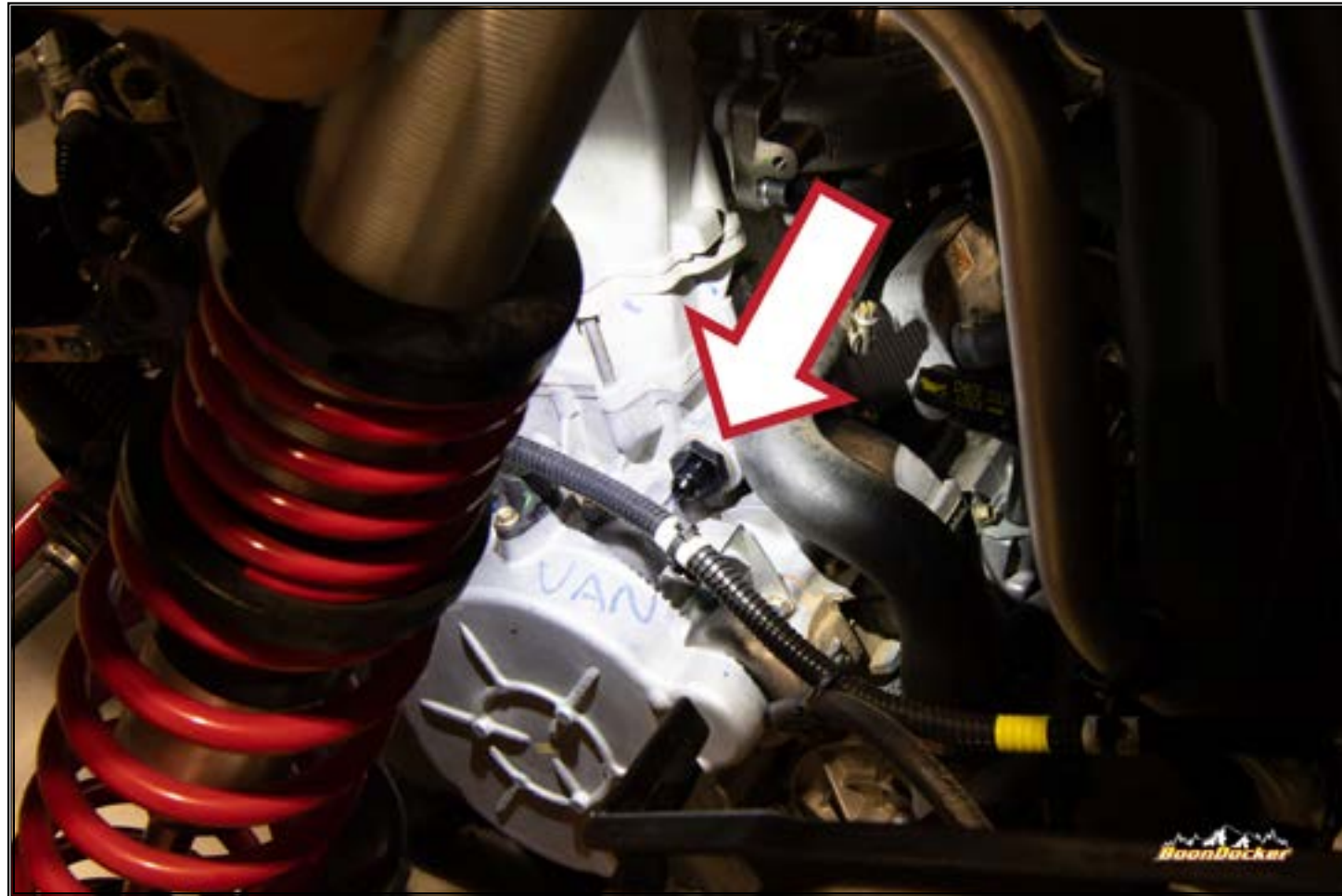
# Exhaust



Reinstall muffler using factory hardware.  
Did you know our custom laser cut cover is available in five powder coat color options  
and custom messages?  
Visit [www.boondocker.com](http://www.boondocker.com) for more details.

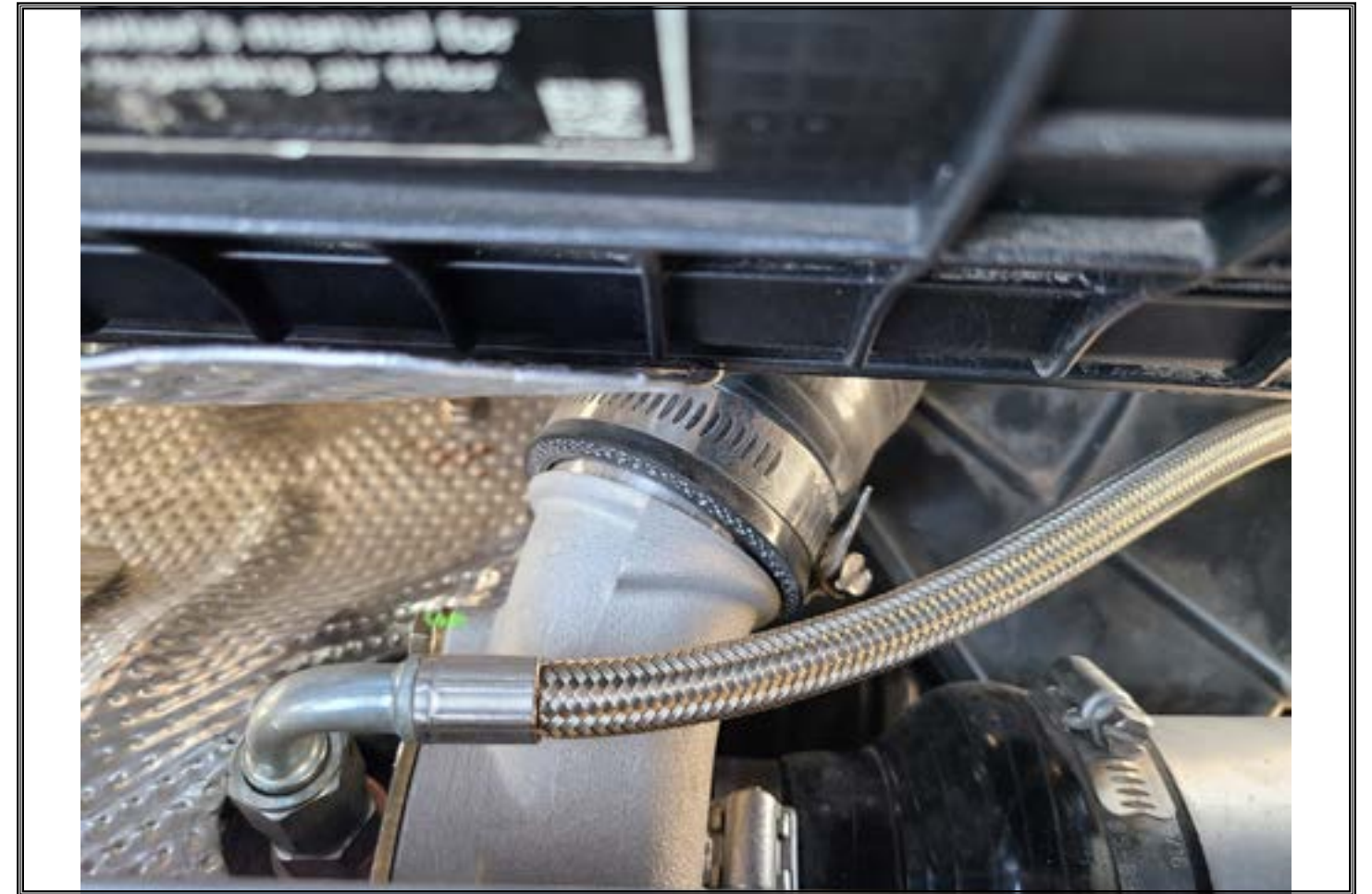


# Oil System



Install oil feed line fitting in place of plug located above MAG cover.

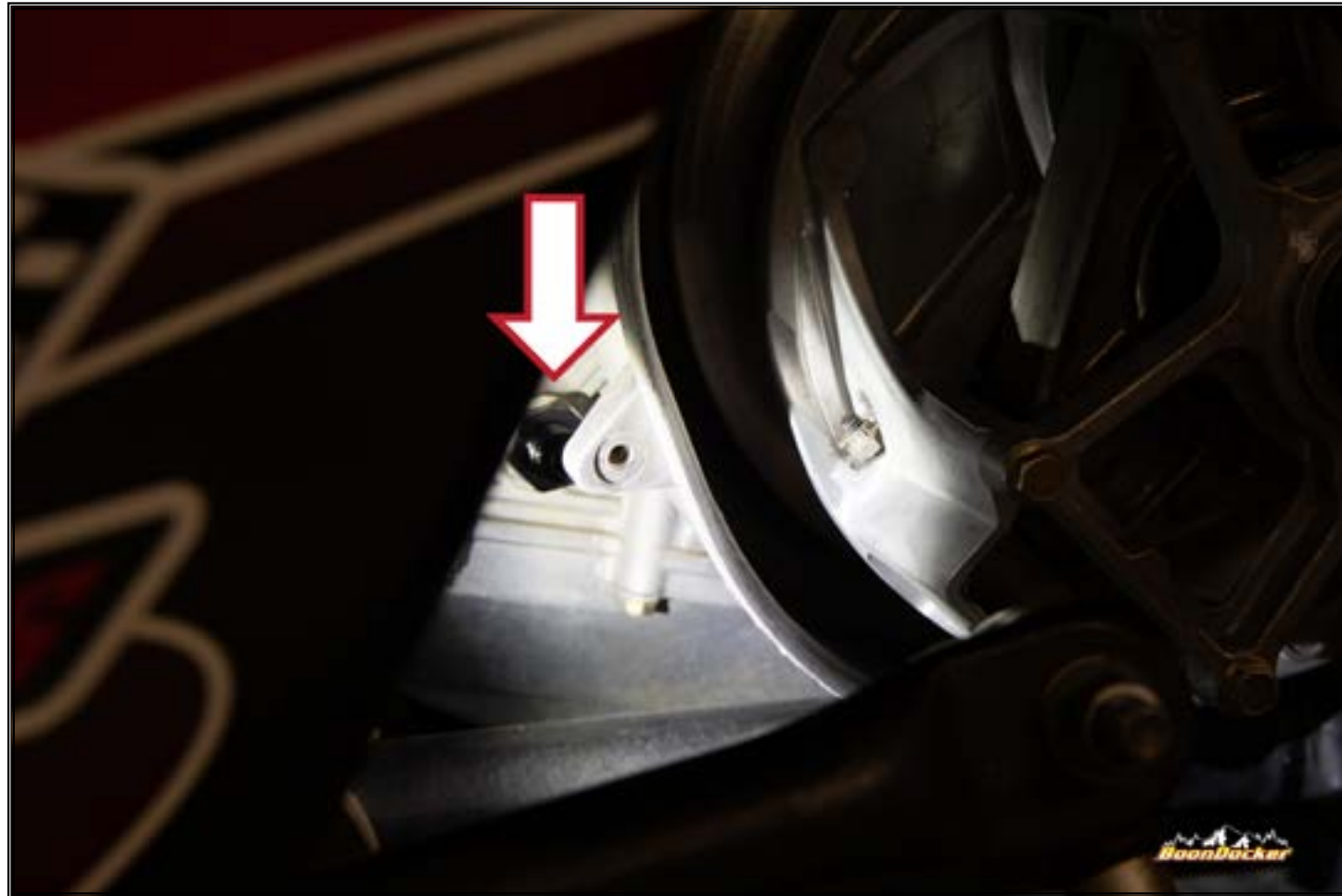
# Oil System



Route oil feed line between intake tube and charge tube. Route down and across engine mount and connect to previously installed fitting.



# Oil System



Install oil drain fitting located below and in front of clutch cover.

# Oil System



Route oil drain so that it has a constant downhill slope (no flat spots).

Note: picture is rotated 90 degrees from orientation in car.



# Cut Plastics



On the plastic engine covers shroud located below the radiator and above the engine measure 3" over from ridge as shown and mark.

# Cut Plastics



Measure 1 1/2" up from edge as shown and mark.



# Cut Plastics



Using a ruler, draw a line to connect the measured points.

# Cut Plastics



Cut on mark using 1" hole saw. After drilling the hole cut the back corner section as marked.

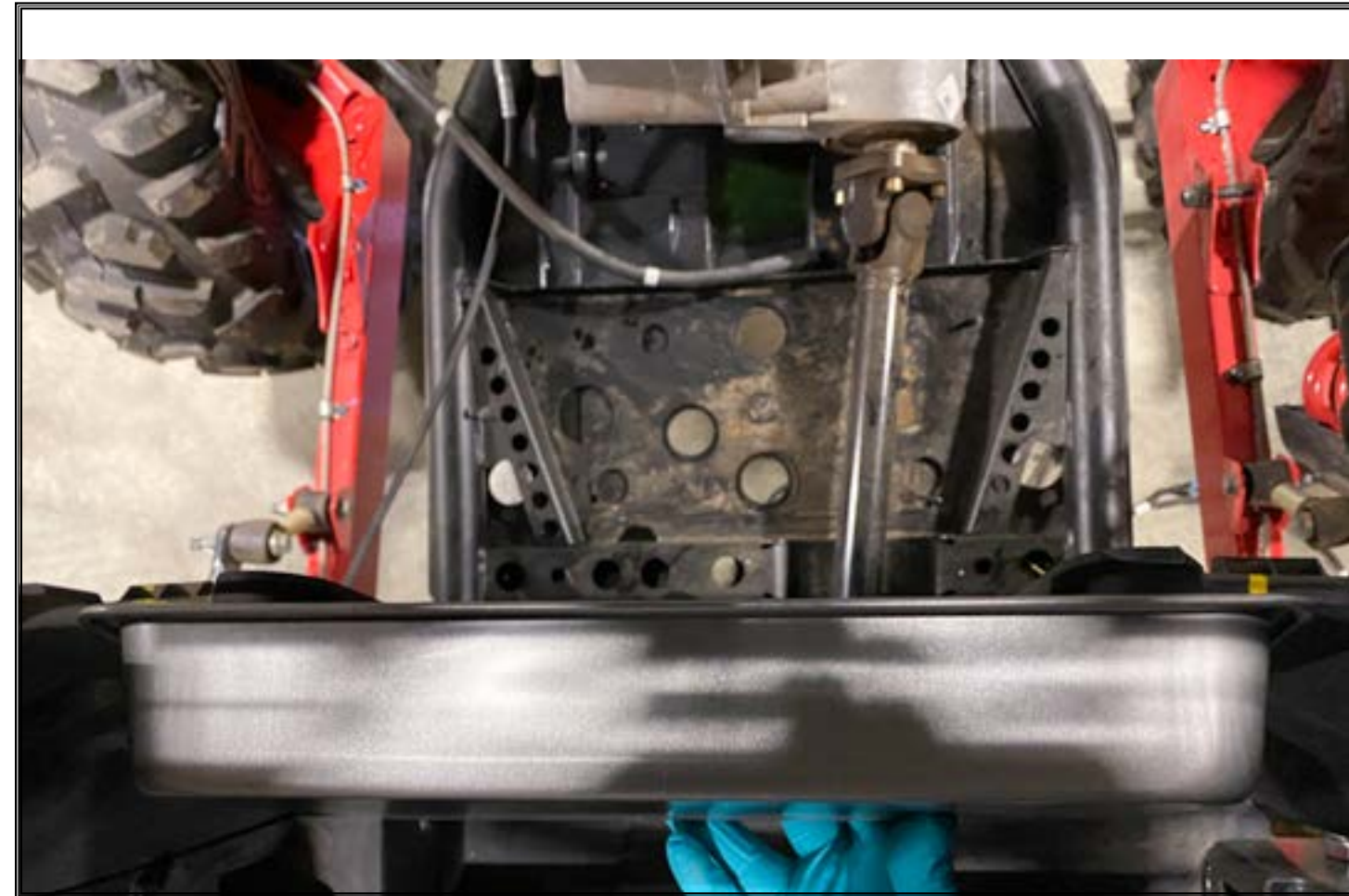


# Heat Shield



*Hold turbo heat shield up over existing cut out in plastic behind seat.*

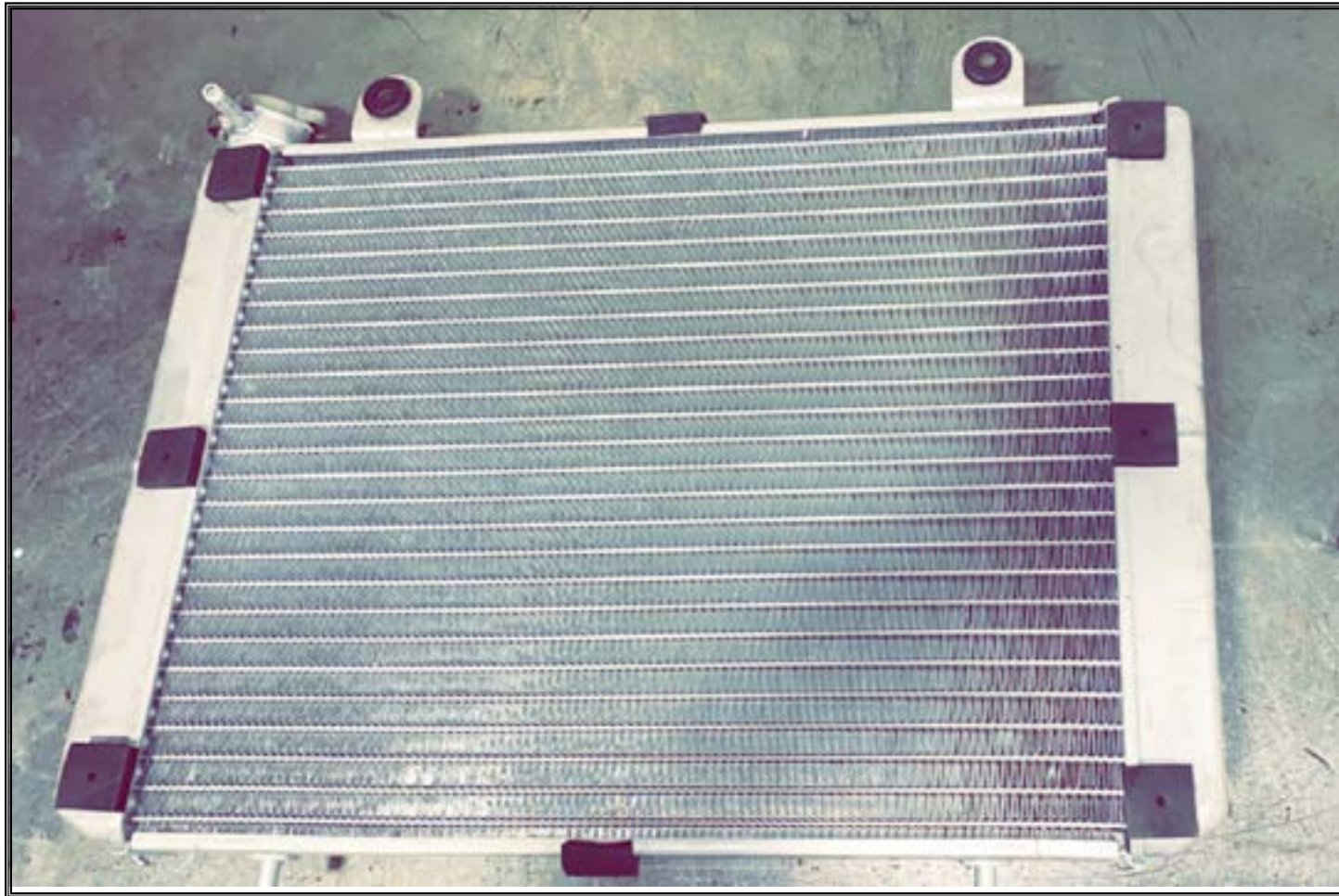
# Heat Shield



*Center the heat shield over existing hole and flush with the top edge of plastic.*



# Secondary Radiator



Install foam to ridges to ntercooler radiator to prevent rubbing.

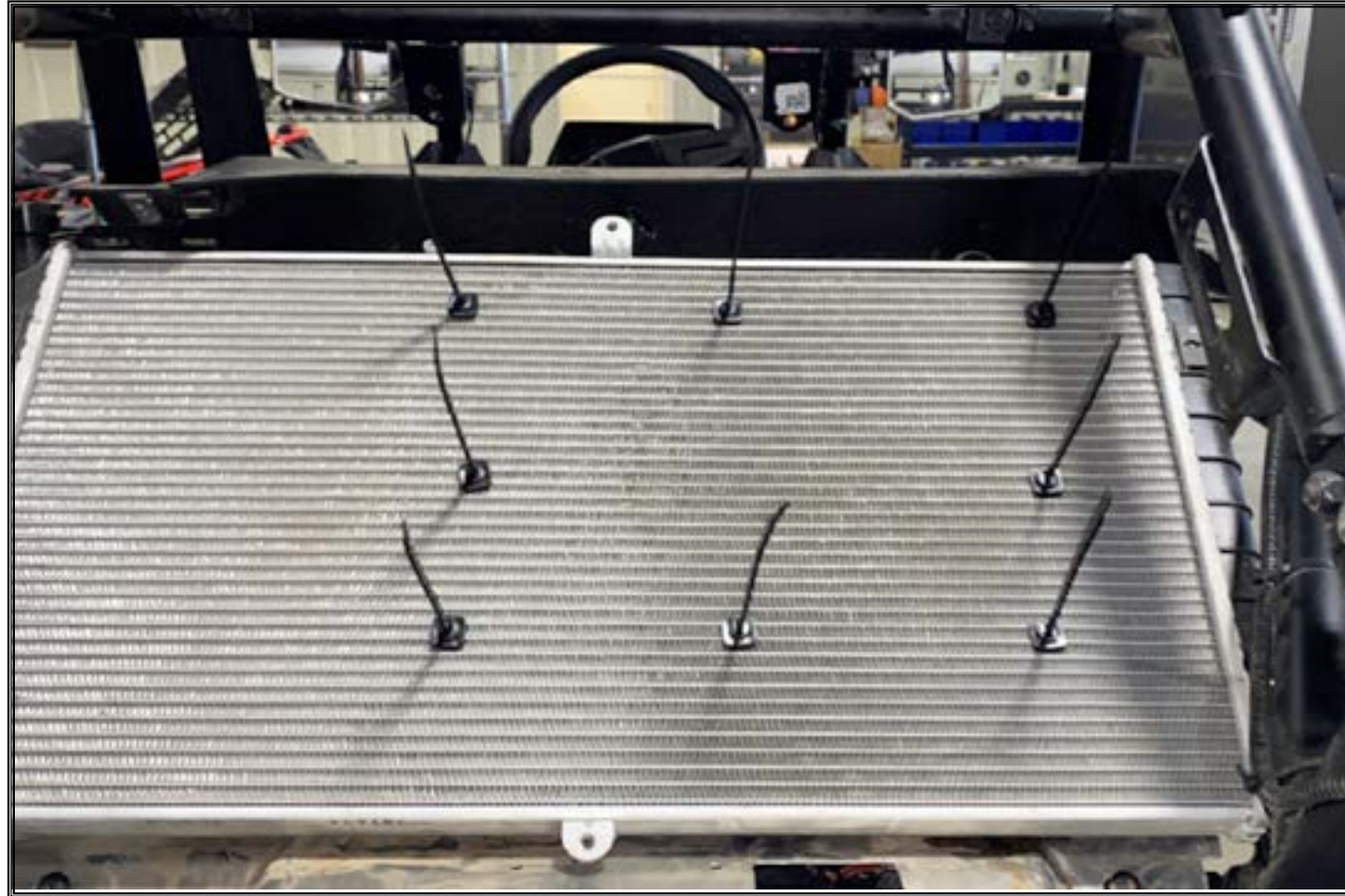
# Secondary Radiator



Place radiator flush with top of stock radiator.



# Secondary Radiator



Zip tie radiators together as shown.

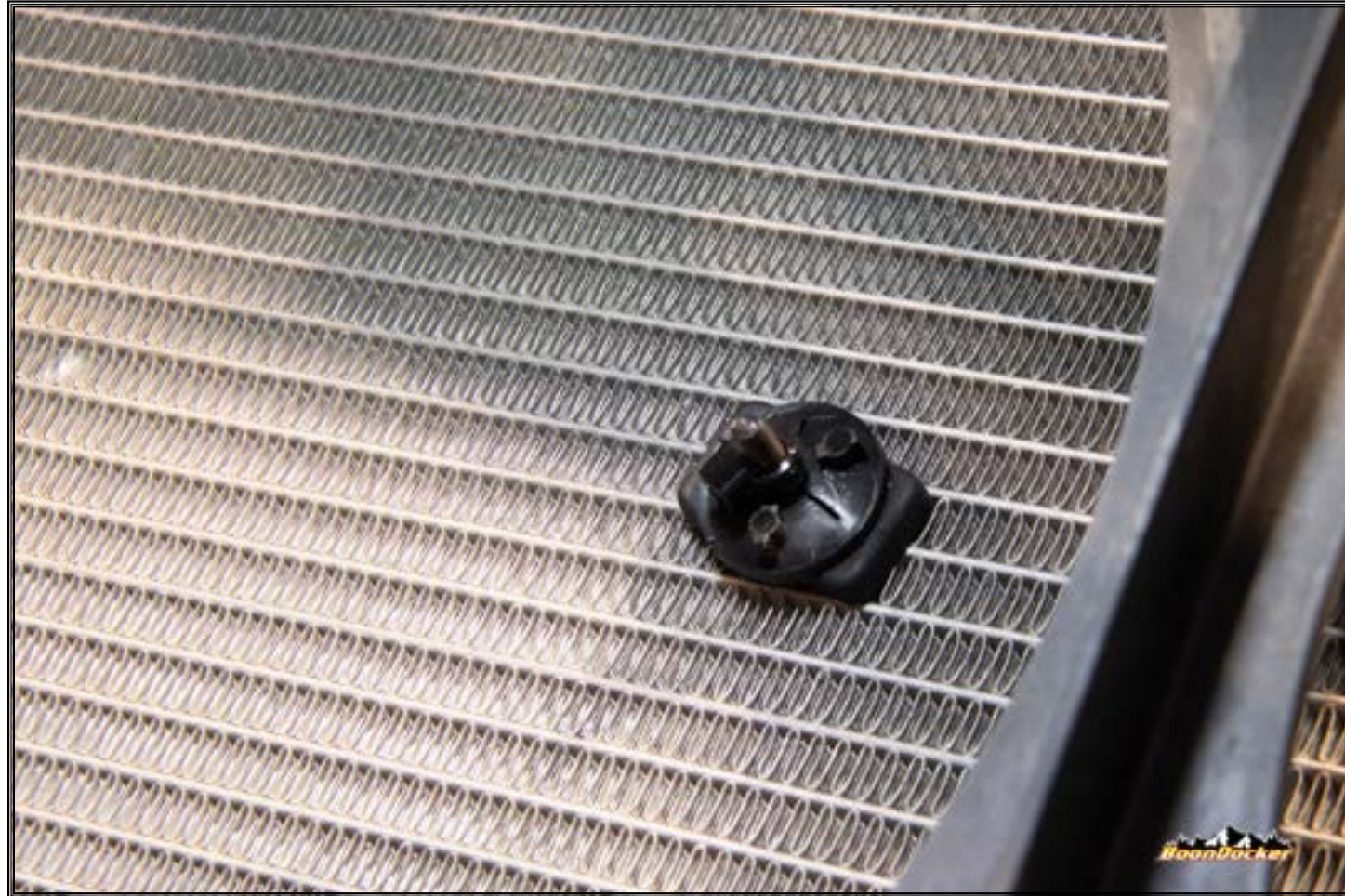
# Secondary Radiator



Zip tie AROUND radiator zip ties to prevent them backing out.

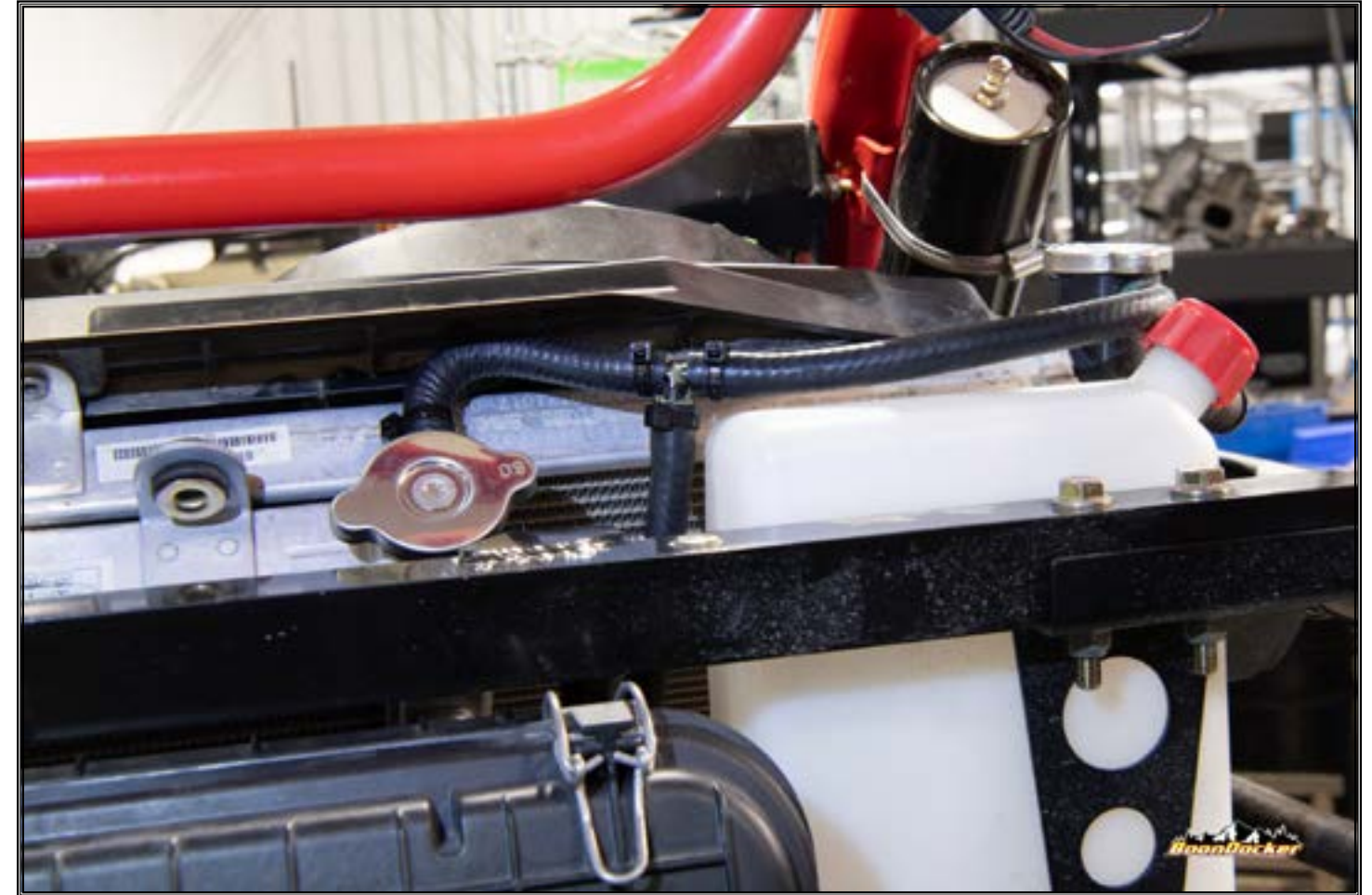


# Secondary Radiator



Trim all zip ties as shown.

# Water Pump



T into existing vent tube.

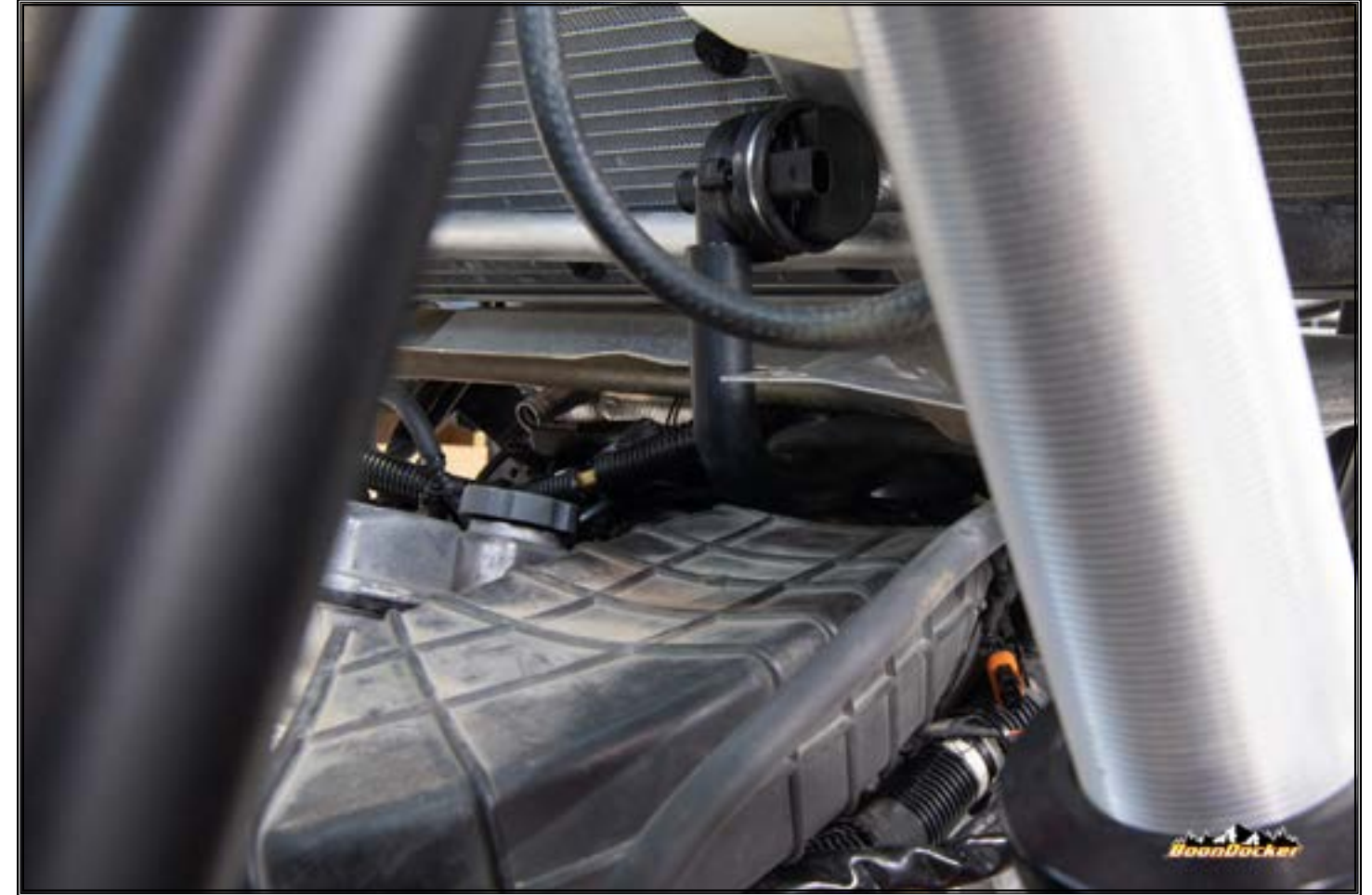


# Water Pump



*Install water pump and coolant hose hold down to radiator as shown.*

# Water Pump



*Route coolant hose directly down from water pump outlet.*



# Cooling System



Connect coolant hose to PTO side of intercooler.

# Cooling System



Route coolant hose from bottom of radiator to water pump inlet.

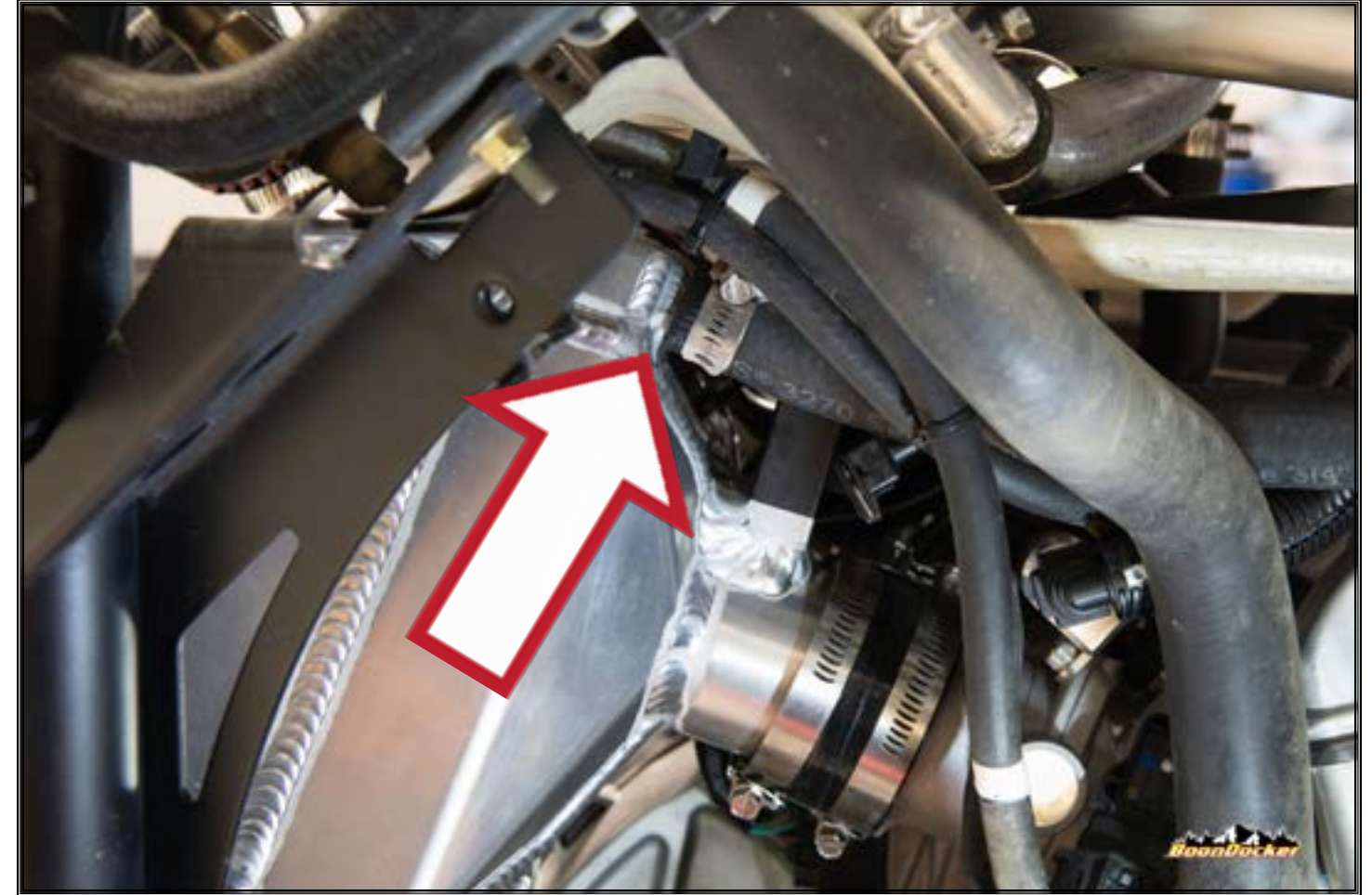


# Cooling System



Route coolant hose from top of radiator down to MAG side of intercooler.

# Cooling System



Connect coolant hose to MAG side of intercooler.



# Cooling System



Connect supplied wire harness to water pump.

# Cooling System



If the car is a California model then this plug is used on the EVAP system. The auxiliary water pump will be plugged in line that to that solenoid. Plug is located above secondary.



# Cooling System



Route ground wire for the water pump to chassis common ground.

# Turbo / Exhaust

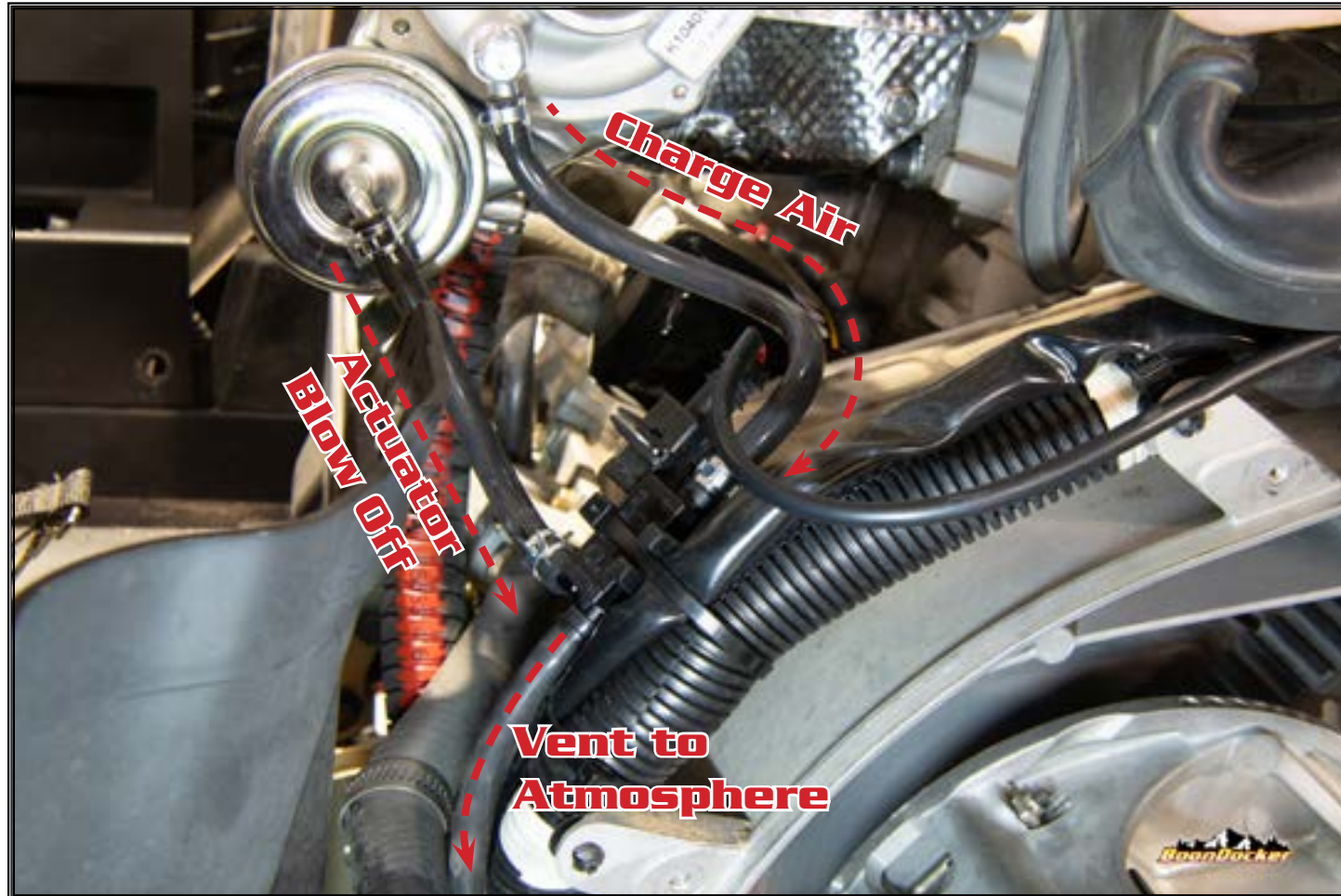


Trim supplied heat shield to fit and install to turbo using flange bolts.

Note: plastic firewall does not need to be removed for this step



# Turbo / Exhaust



Install solenoid as shown.

# Turbo / Exhaust



Install charge tube to turbo with supplied silicone and clamps.



# Turbo / Exhaust



Install charge tube to intercooler with supplied silicone and clamps.

# Turbo / Exhaust



View of installed charge tube.





Mount tuner and route cables.



Performing this installation is at your own risk. These instructions act as a general guideline, and may not include some steps. As the installer, YOU take responsibility for the entirety of the installation. YOU must ensure proper routing, fitment, shielding, etc to prevent melted parts, chaffed wires, poor performance, etc. Improper installation, of any type, is not covered as a defect under any warranty, implied or written.