

INSTRUCTIONS

MODEL: *Low or High Boost
Agility for Ski-Doo*

FITS: **2019-2020 SKI-DOO GEN 4**



BoonDocker
Agility

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Contents List

Thank You
for Buying



Made in the USA

(1) F47 Turbocharger/Muffler Assembly including:

- (1) Air solenoid
- (1) Actuator
- Hoses, fittings, hardware

(1) Exhaust Inlet

(1) Charge Air Box w/ Injectors & Bosch Sensor

(1) Charge Tube

(1) Coil Mount Bracket

(1) Cold Air Intake Tube

(1) Fuel Control Box

INLET KIT BAG

- (3) Long exhaust springs
- (4) Short exhaust springs
- (4) 8x25mm SS Hex bolt
- (4) 8mm SS top lock nut
- (4) 8mm SS washer

CHARGE AIR KIT BAG

- (4) #40 Hose Clamp
- (4) #32 Hose Clamp
- (2) 2.5" Pieces of 2" Silicone
- (2) 1.75" Pieces of 2.5" Silicone
- (18) 8" Zip Ties
- (5) 4" Zip Ties

AUXILLARY OIL KIT BAG

- (1) Clear Oil Line
- (1) Oil Pump
- (4) 4" Zip Ties
- (1) 90 Degree Push-In Tank Fitting

COLD AIR INTAKE KIT BAG

- (1) 2.5x3" Silicone
- (1) 3" 90 Degree Silicone
- (3) #48 Hose Clamps
- (3) Self-Tapping Screws
- (3) Washers (for self-tapping screws)
- (4) Large Head Rivets
- (1) Plastic Fastener Bracket Set

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. 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. Installation IS YOUR RESPONSIBILITY. During the first ride, take the time to pull over, OFTEN, and check for excess heat, leaks, rubbing wires, and general installation fit and completion. BoonDocker does not cover or warranty parts against melting. We strongly recommend venting and heat-shielding as necessary. These items may not be included in the kit, but are YOUR RESPONSIBILITY!

OPERATION

1. ALWAYS allow your vehicle to reach proper operating temperatures before driving. Refer to your owners manual.
2. Your Polaris comes with ECU-programmed "break-in". During this time, your SideKick may not perform at the optimum level. Once break-in is complete, you will likely notice more power and cleaner engine performance. During break-in, expect your snowmobile to run rich.
3. Because of excessive oiling, during break-in mode, you will need to replace your plugs more frequently. After break-in mode, replace plugs AT LEAST every 500 miles for maximum performance.
4. The SideKick turbo kit is a HIGH PERFORMANCE accessory. Proper fuel and maintenance is critical (see "FUEL")
5. 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.
6. 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.
7. SideKick is calibrated for operation above 5,000 feet. Use below that elevation is at your own risk.
8. Check coolant levels after the first 10 minutes of operation. Coolant system may need to be bled.
9. Run your sled in "PREMIUM" mode. Switching to "ETHANOL" mode will make the vehicle run Richer (approx. 7% richer). Some sleds/fuel may require "ETHANOL" mode for a richer running condition. ONLY run "ETHANOL" mode if instructed. Refer to your owners manual to correctly configure your vehicle. DO NOT connect the "Map Jumper" unless instructed by BoonDocker.



User Manual

FUEL

1. The SideKick is a HIGH PERFORMANCE accessory. Proper fuel is critical.
2. ALL KITS are initially calibrated for a 50/50 mix from BoonDocker. Using any other blend or straight pump gas may cause engine failure.
3. 50/50 Mix tunes require an exact 50% mix of 91-octane (up to 10% ethanol, and 50% 100LL Av-Gas. Using a 50/50 mix of 91/110 race gas is also acceptable.
4. When available (coming soon for Patriot 850) - Pump Gas tunes REQUIRE 91-octane fuel (or higher). Non-ethanol fuel is recommended. DO NOT use fuel with >10% Ethanol. If you're concerned about the quality of pump fuel, mix NO MORE than 15% Av-Gas. Using higher octane than required will cause poor performance.
5. When available (coming soon for Patriot 850) - AV-Gas tunes REQUIRE 100LL (or higher), Av-Gas tunes: INTERCOOLER REQUIRED.
6. USE ONLY THE FUEL DESIGNED FOR YOUR KIT!
7. 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.
8. Operating your vehicle with old/degraded fuel may cause engine failure.
9. Operating your vehicle with the incorrect fuel for your tune may cause engine failure.

CLUTCHING & CLUTCH MAINTENANCE

1. A primary-clutch puller is REQUIRED for clutching installation. If you do not have one, you can have your dealer install the clutching. BoonDocker sells clutch pullers, and most dealerships also stock them, some even rent them.
2. Our clutching is engineered and validated for the SideKick. Using other clutching may cause a loss of performance, and is not supported or suggested.
3. Clutch springs wear out over time. We suggest replacing clutch springs every 500 miles.
4. 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.
5. Weights may ship pre-loaded, or may be blank. Load weights 2-3-3-2 (from heel to toe). Total weight should be approximately 73g per weight for 50/50 SideKick.
6. Any clutch-weight modification MUST be done to all three weights in unison. DO NOT run unbalanced weights. Additionally, the magnets are polar. To change weighting, pull ALL magnets from the weights (all holes), align in a stack, and repopulate weights with magnets to preserve polarity. DO NOT just add one weight without preserving polarity of the entire magazine of weights. Failure to preserve polarity will lead to magnets being 'thrown' from weights and potential clutch damage and/or personal injury.
7. Turbocharged Polaris Patriots are expected to turn 8550 +/- 100 RPM's. Use provided adjustable weights to keep RPMs at recommended levels.
8. Adjusting peak RPM is possible by adding/removing weight from the toe.
9. It is possible for magnets to be ejected from weights if they're not properly seated. We suggest using a small amount of glue as a precautionary measure.

Initial Teardown



Remove side panels.

Initial Teardown



Remove clutch cover.

Initial Teardown



Remove instrument cluster and glove box.

Initial Teardown



Unplug head lights and T-BAP sensor.

Initial Teardown



Unbolt two top screws holding hood to steering structure.

Initial Teardown



Remove two screws holding hood to main chassis.

Initial Teardown



Remove airbox sound dampener.

Initial Teardown



Loosen clamp from airbox to hood.

Initial Teardown



Remove hood.

Initial Teardown



Remove seat and plastic gas tank shroud.

Initial Teardown



Remove upper gas tank shroud bolts.

NOTE: Do NOT lose aluminum spacer on back bolt.

Initial Teardown



Remove center tank shroud bolt.

Initial Teardown



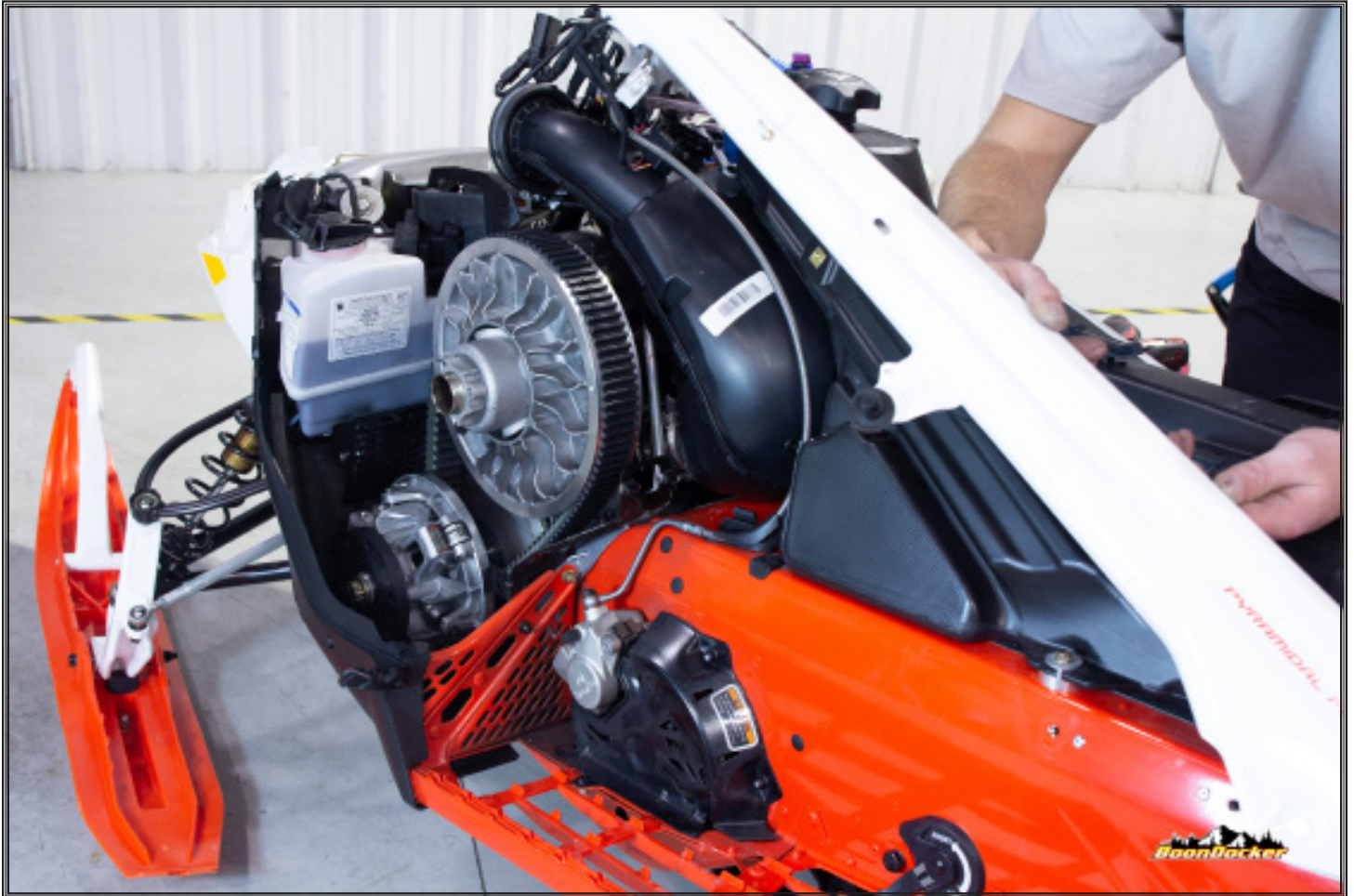
Remove black torques head bolts from bottom of gas tank shroud.

Initial Teardown



Remove rivet with 3/16" drill bit.

Initial Teardown



Remove both metal tank shrouds.

Initial Teardown



Remove tank bolts and slide tank back.

Initial Teardown



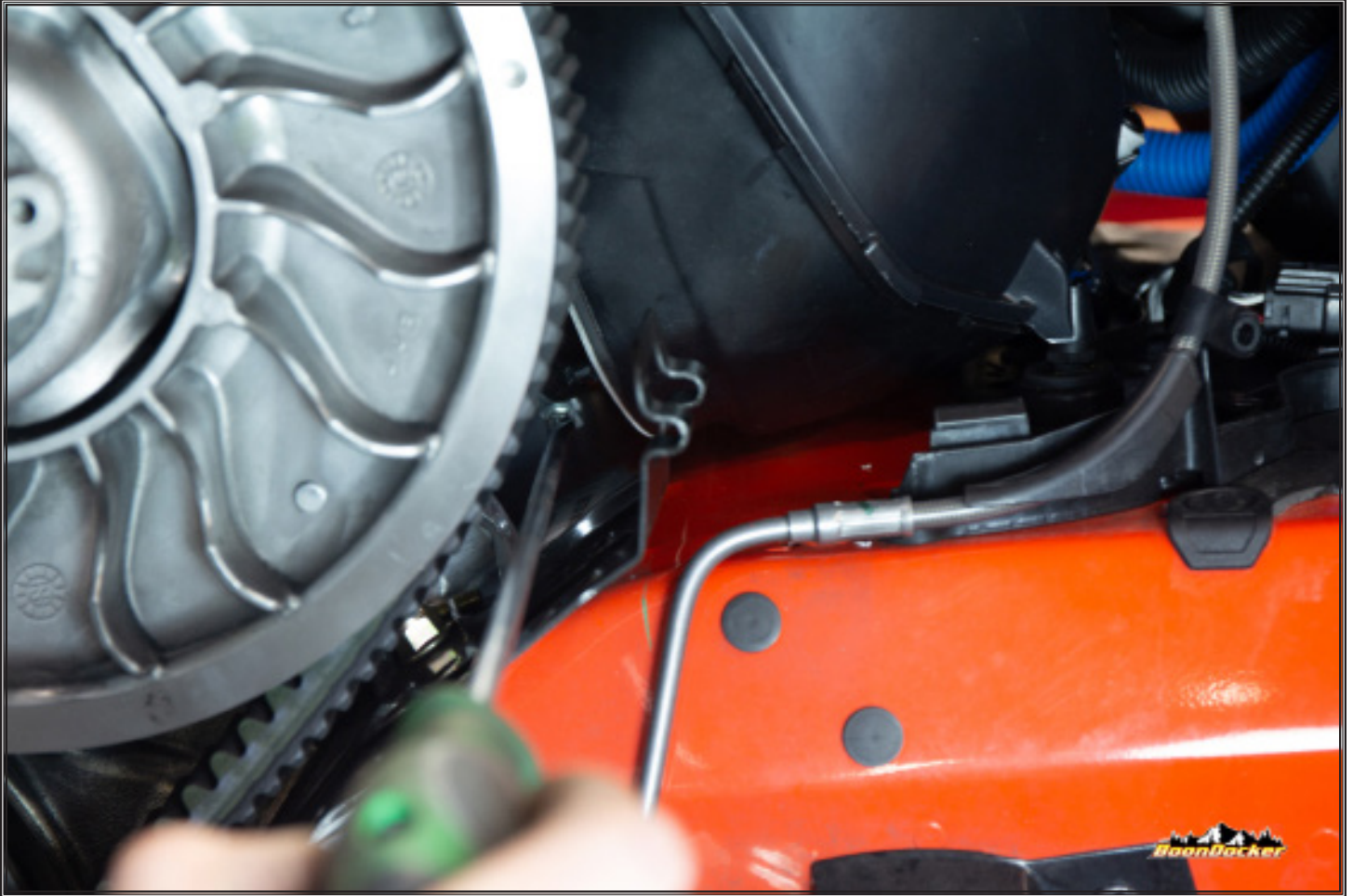
Remove top PTO side support bar bolt.

Initial Teardown



Remove lower PTO support bar bolt.

Initial Teardown



Loosen clamps from airbox to throttle bodies.

Initial Teardown



Remove airbox and remove cross member from airbox.

Initial Teardown



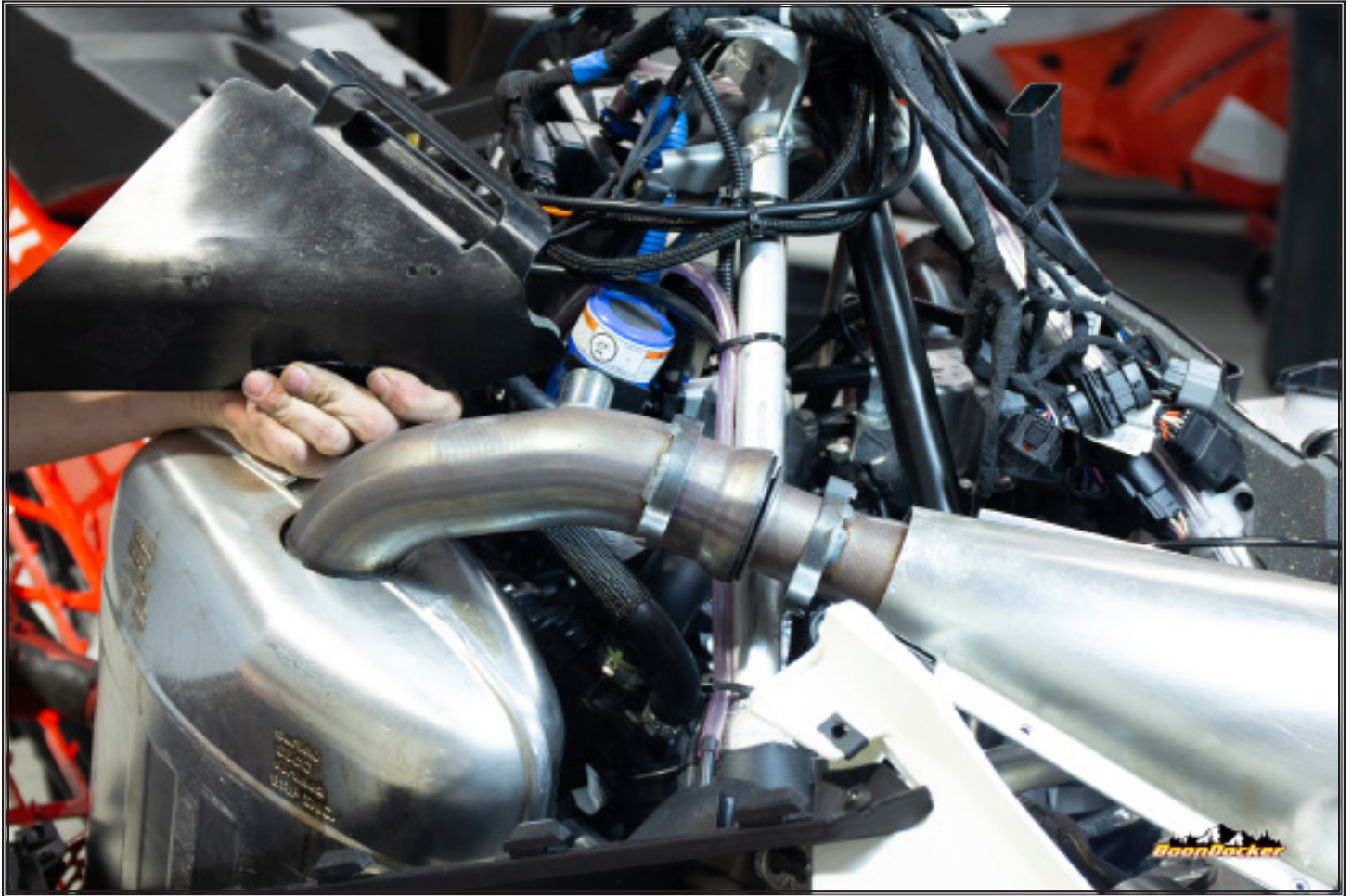
Re-install cross member.

Initial Teardown



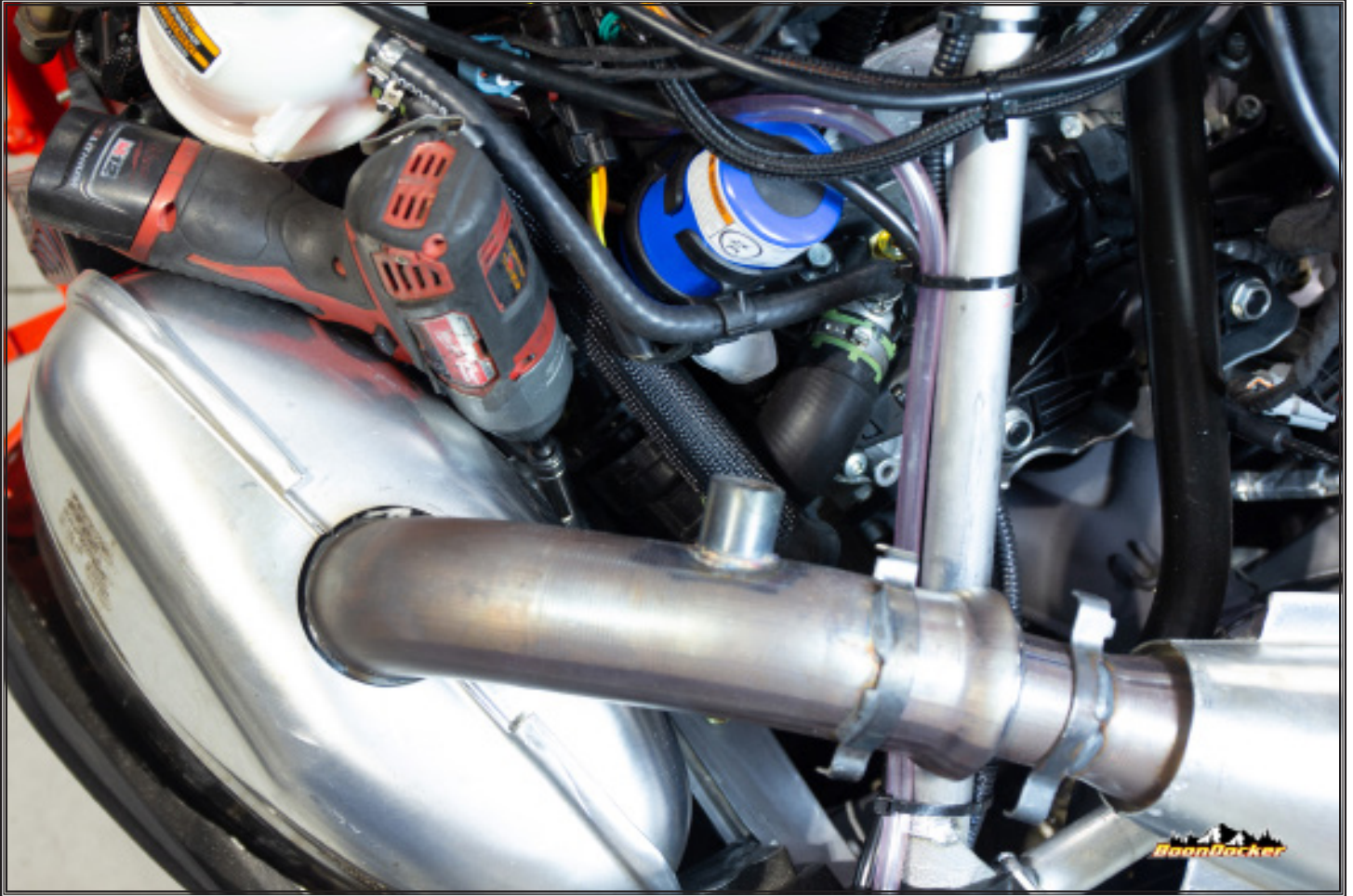
Remove heat shield and remove springs holding exhaust pipe to muffler intake.

Initial Teardown



Remove plastic sound dampener

Initial Teardown



Remove top bolt and spring from muffler.

Initial Teardown



Unplug exhaust temp sensor and remove muffler from chassis.

Initial Teardown



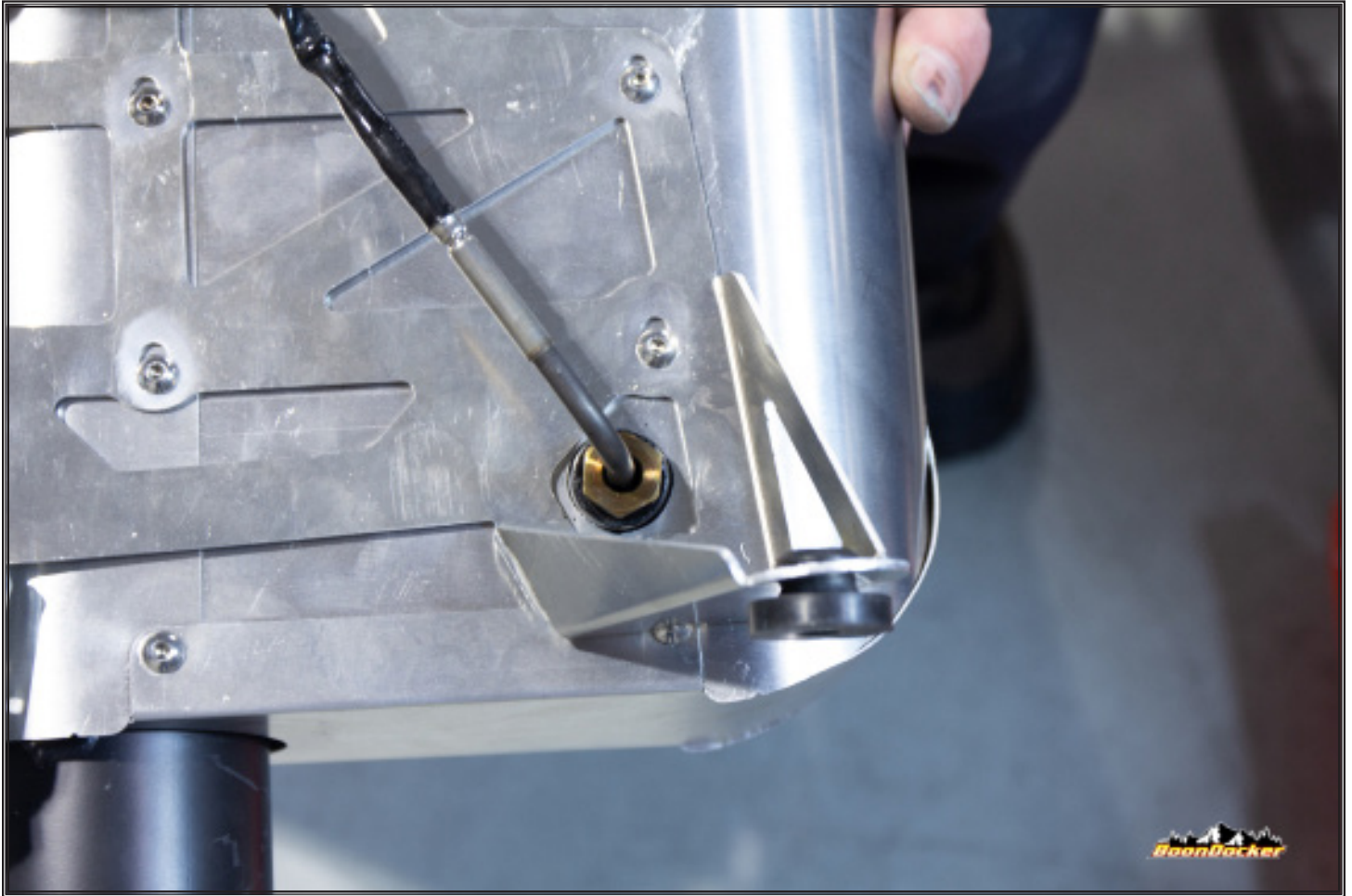
Remove exhaust temp sensor from muffler.

Turbo/Muffler Assembly



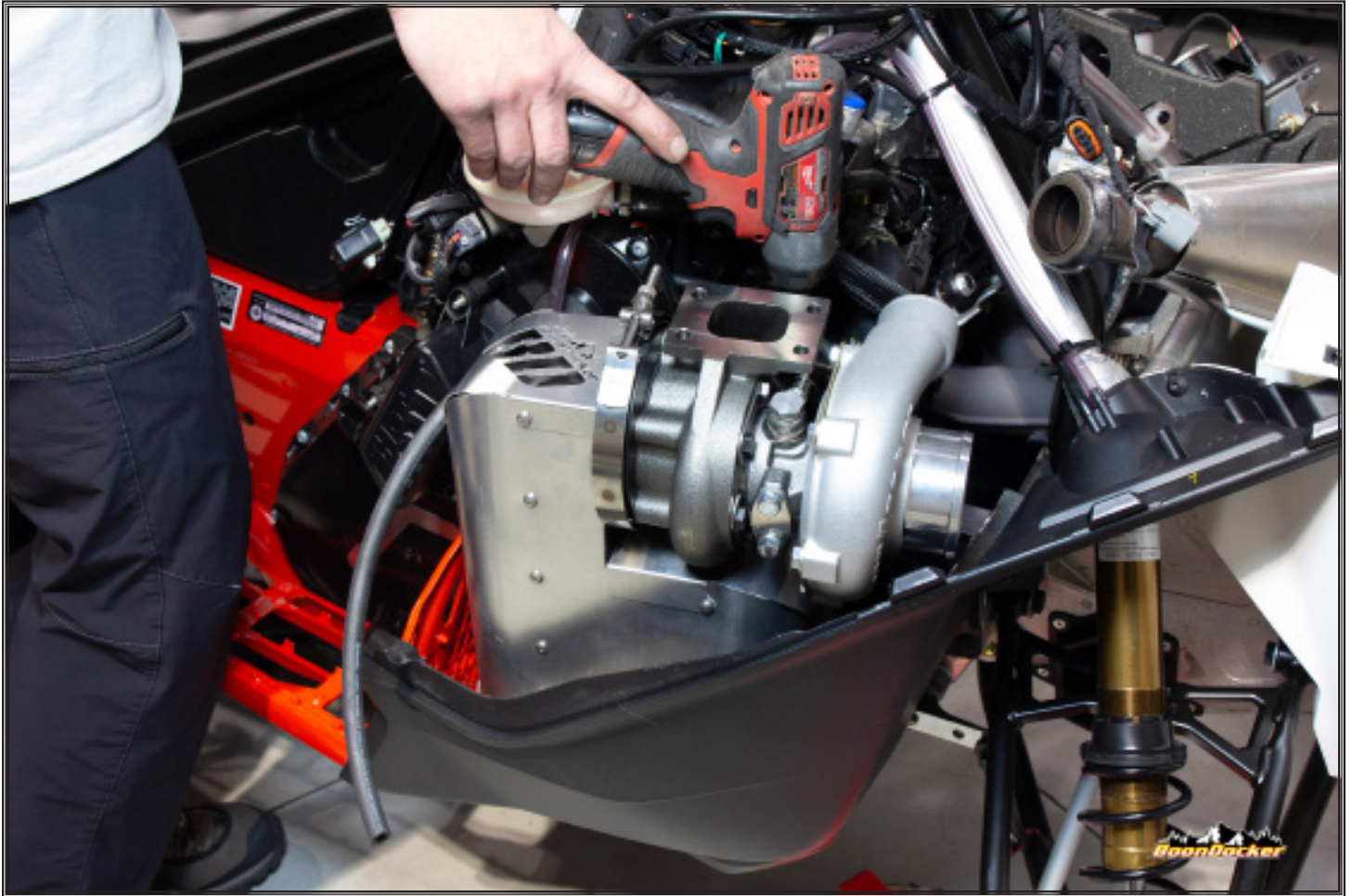
Install stock rubber grommets to bottom of turbo bracket.

Turbo/Muffler Assembly



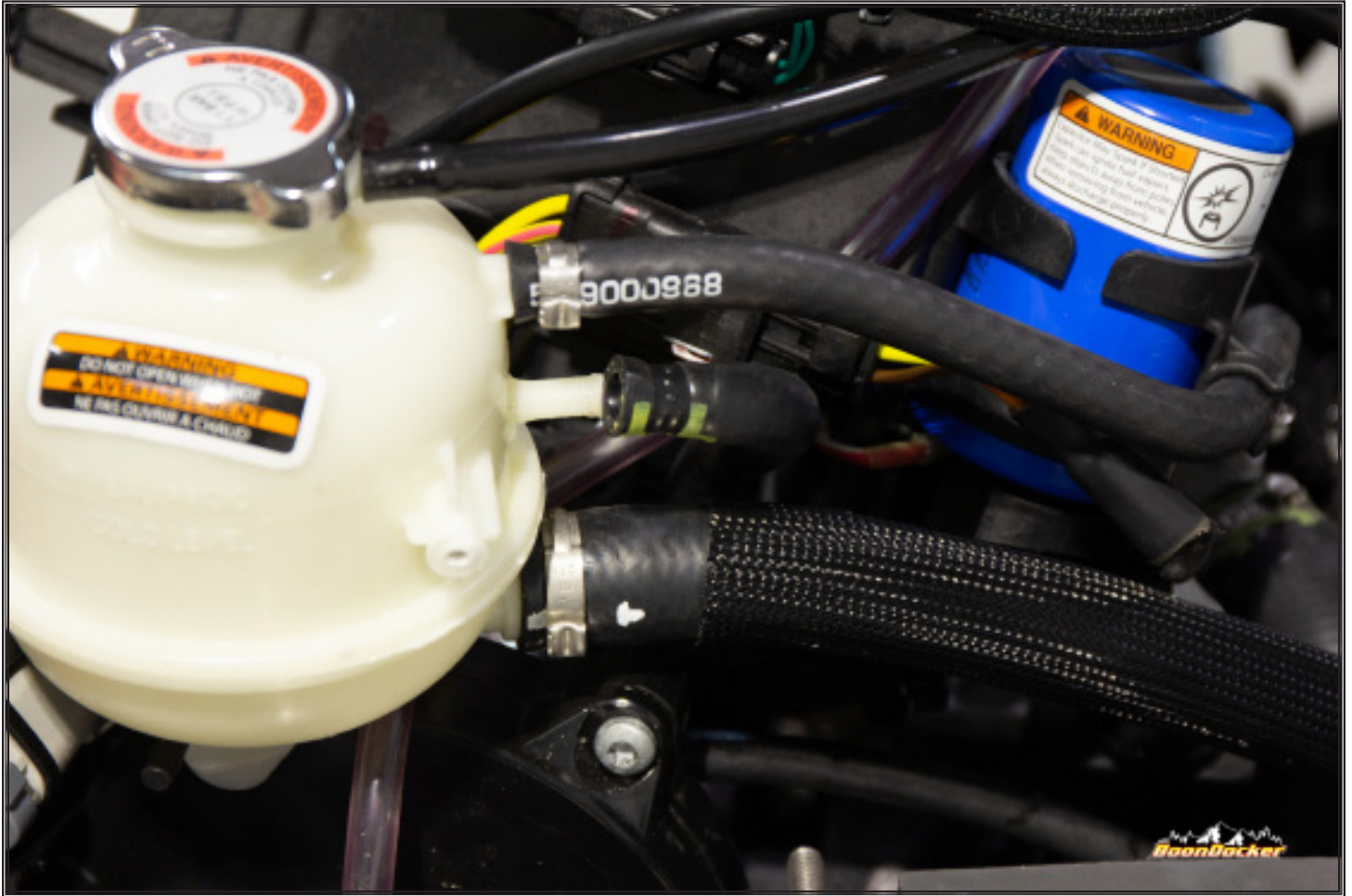
Install exhaust sensor onto turbo muffler turned slightly towards the front of the vehicle.

Turbo System



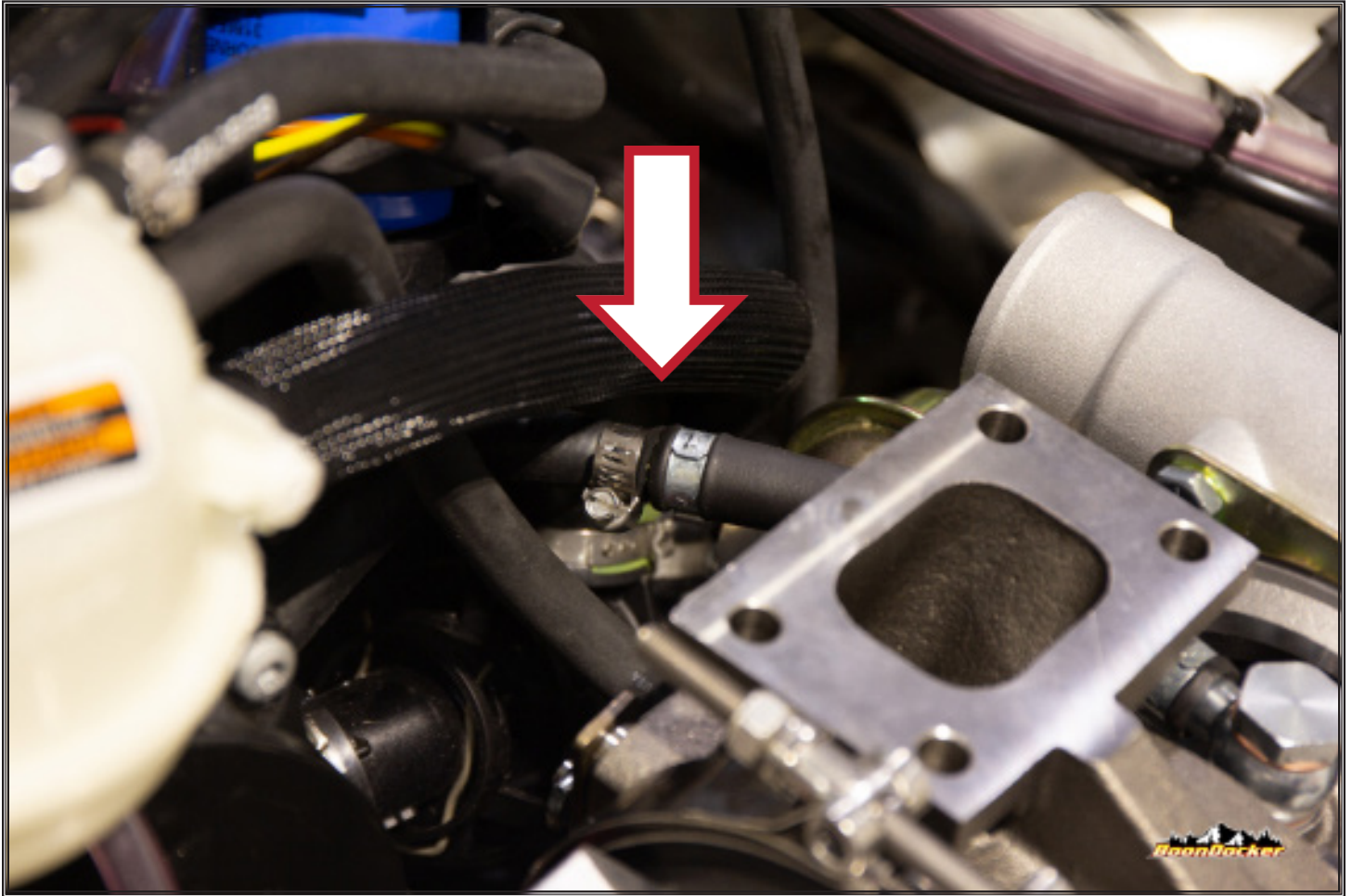
Install muffler assembly to sled using factory spring and bolt.

Coolant System



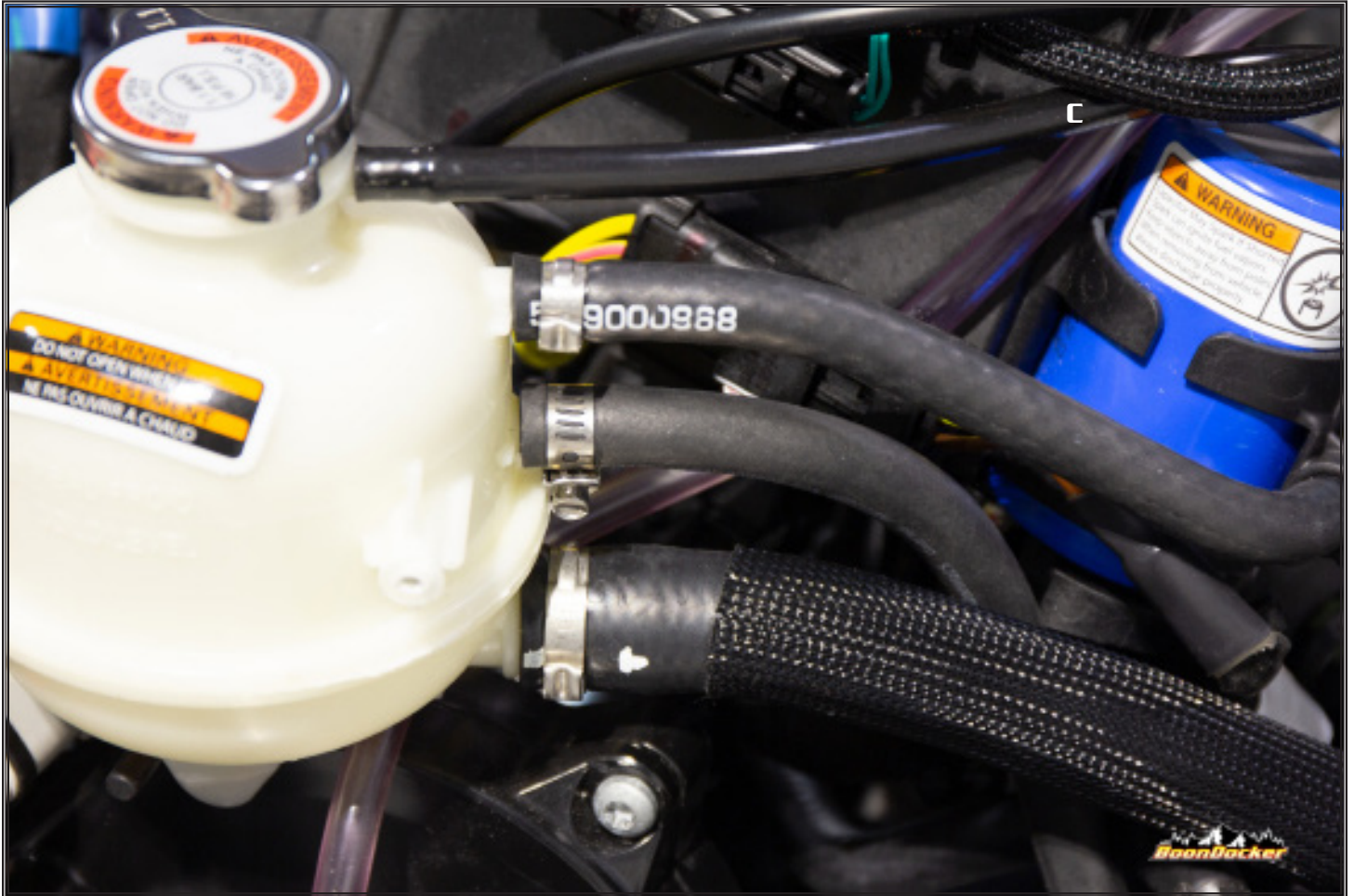
Cut clamp and remove coolant line from bottle.

Coolant System



Cut coolant line just after first 90 and route underneath large coolant hose and fasten to upper turbo water line with supplied hose clamp.

Coolant System



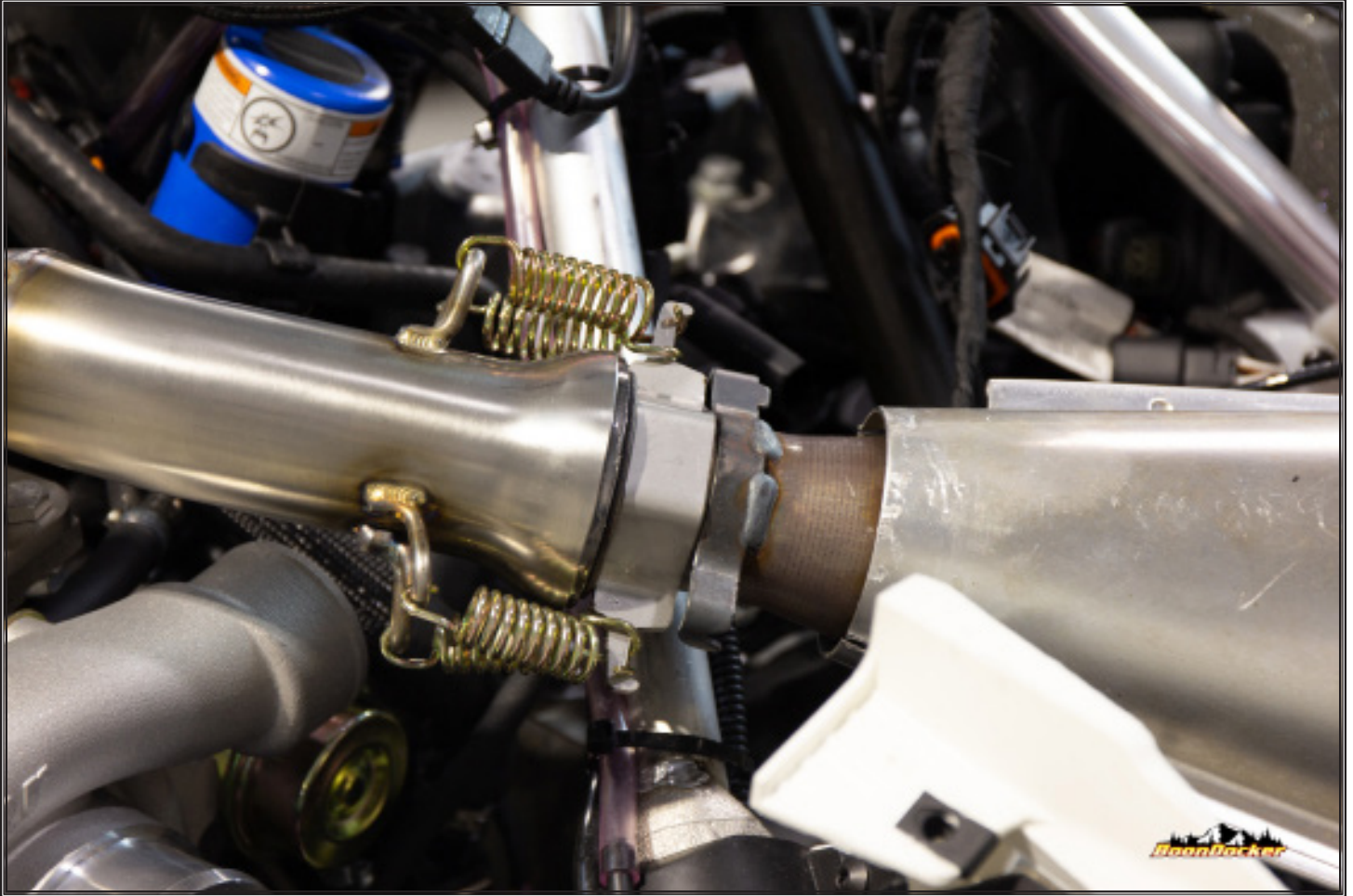
Route lower turbo coolant line to bottle and fasten with supplied hose clamp.

Exhaust



Install inlet with supplied gasket and hex bolts.

Exhaust



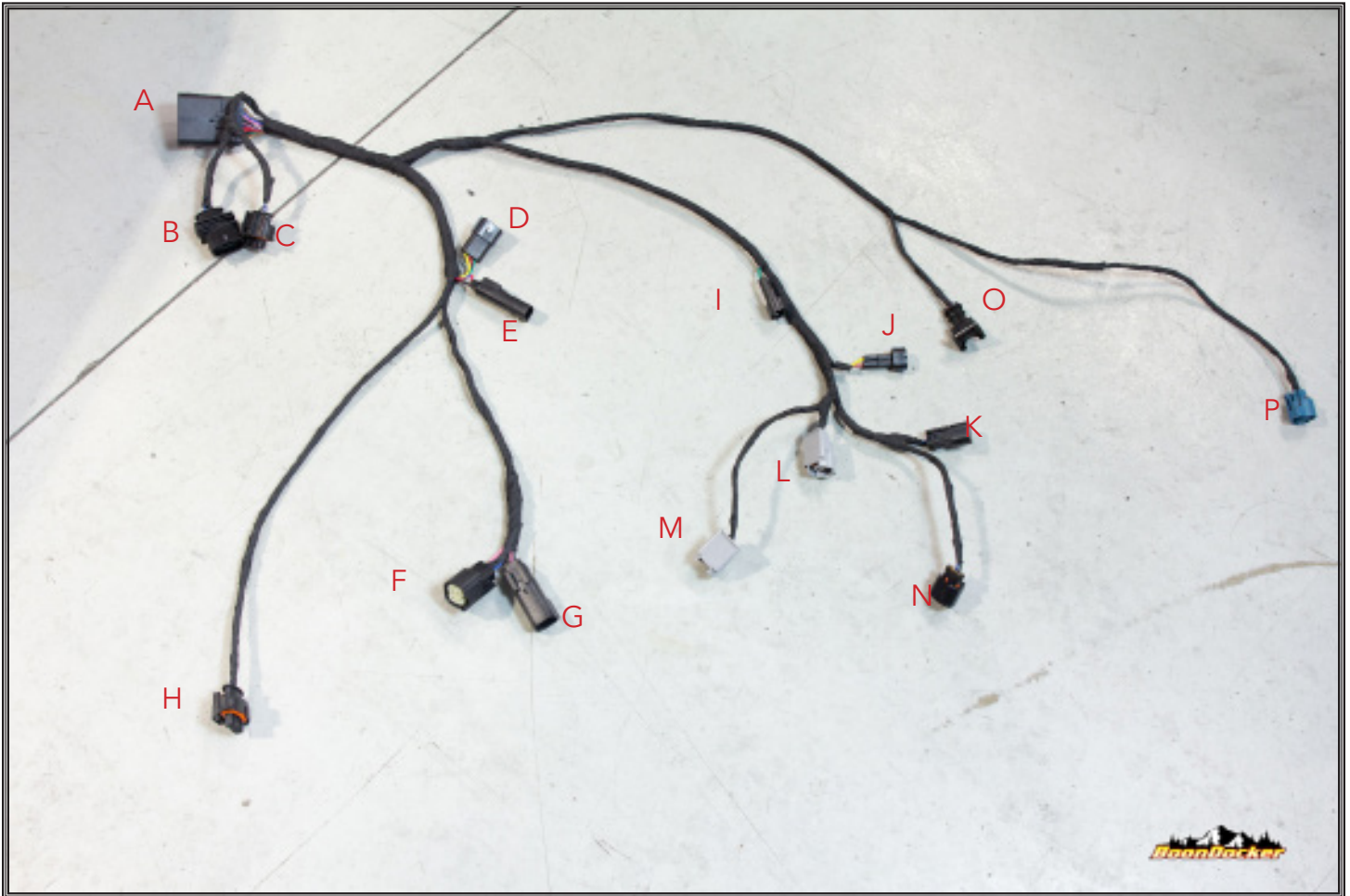
Install the spring tab re-enforcement kit to pipe and spring to inlet with supplied short gold springs.

Exhaust



Double up springs on Y-pipe with supplied long gold springs.

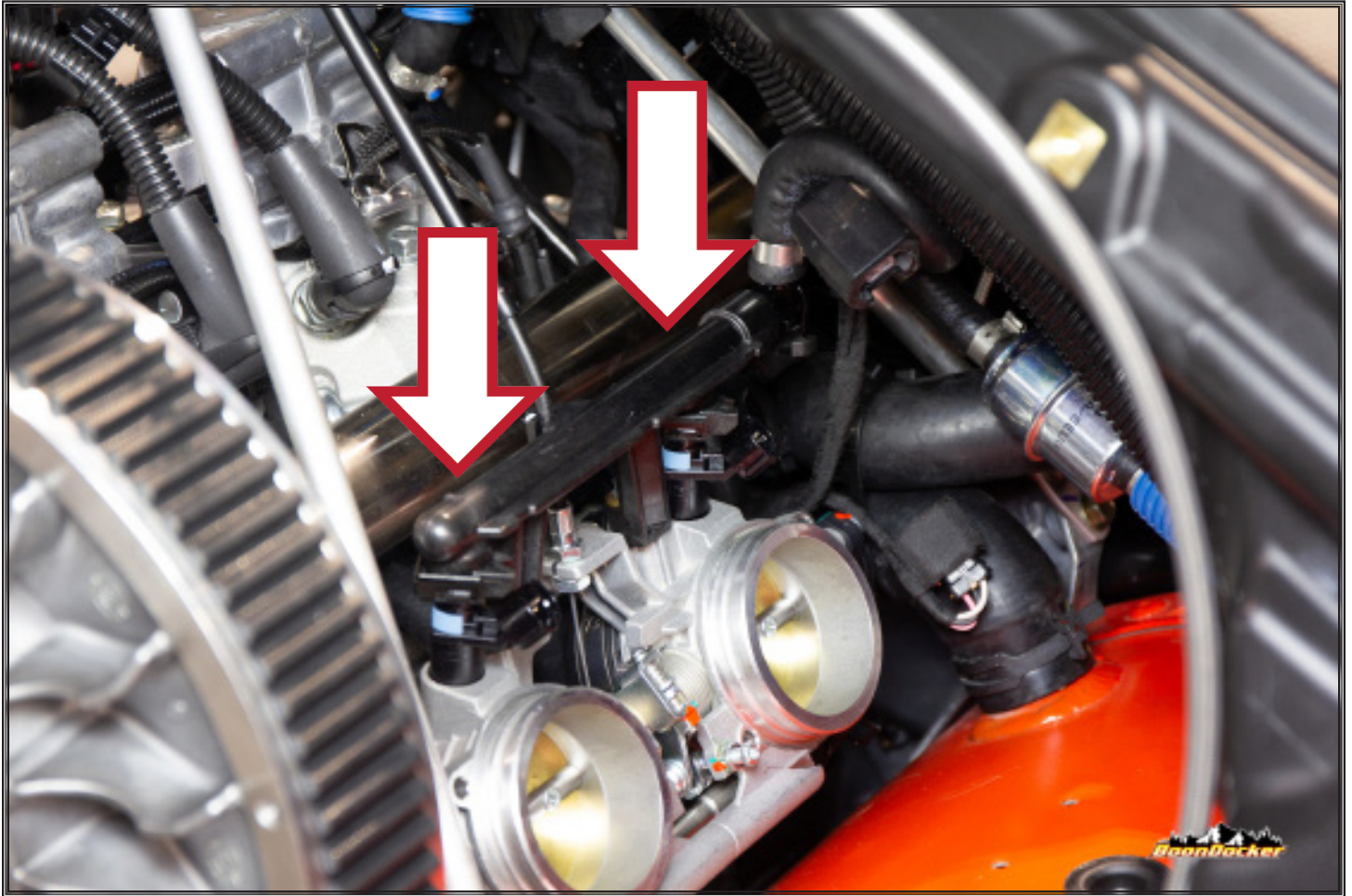
Control Box



WIRING DIAGRAM:

- A Control Box
- B Plugs into factory T-BAP wire harness on hood
- C PLugs into Factory T-Bap on hood
- D BoonDocker resistor
- E Factory accessory power
- F Factory coil pack wire harness
- G Factory coil pack
- H Boost sensor on BoonDocker airbox
- I Factory PTO injector wire harness
- J Factory MAG injector wire harness
- K Factory TPS wire harness
- L MAG side injector
- M PTO side injector
- N Factory TPS sensor
- O BoonDocker boost solenoid
- P BoonDocker oil pump

Control Box



Unplug factory injector harness from injectors.

Control Box



Lay control box harness over steering structure routing solenoid, oil pump, injectors down turbo side of sled and routing coil pack wires and T-BAP wire down clutch side of sled.

Control Box



Plug yellow wire harness into factory MAG side injector wire harness and zip tie as shown.

Control Box



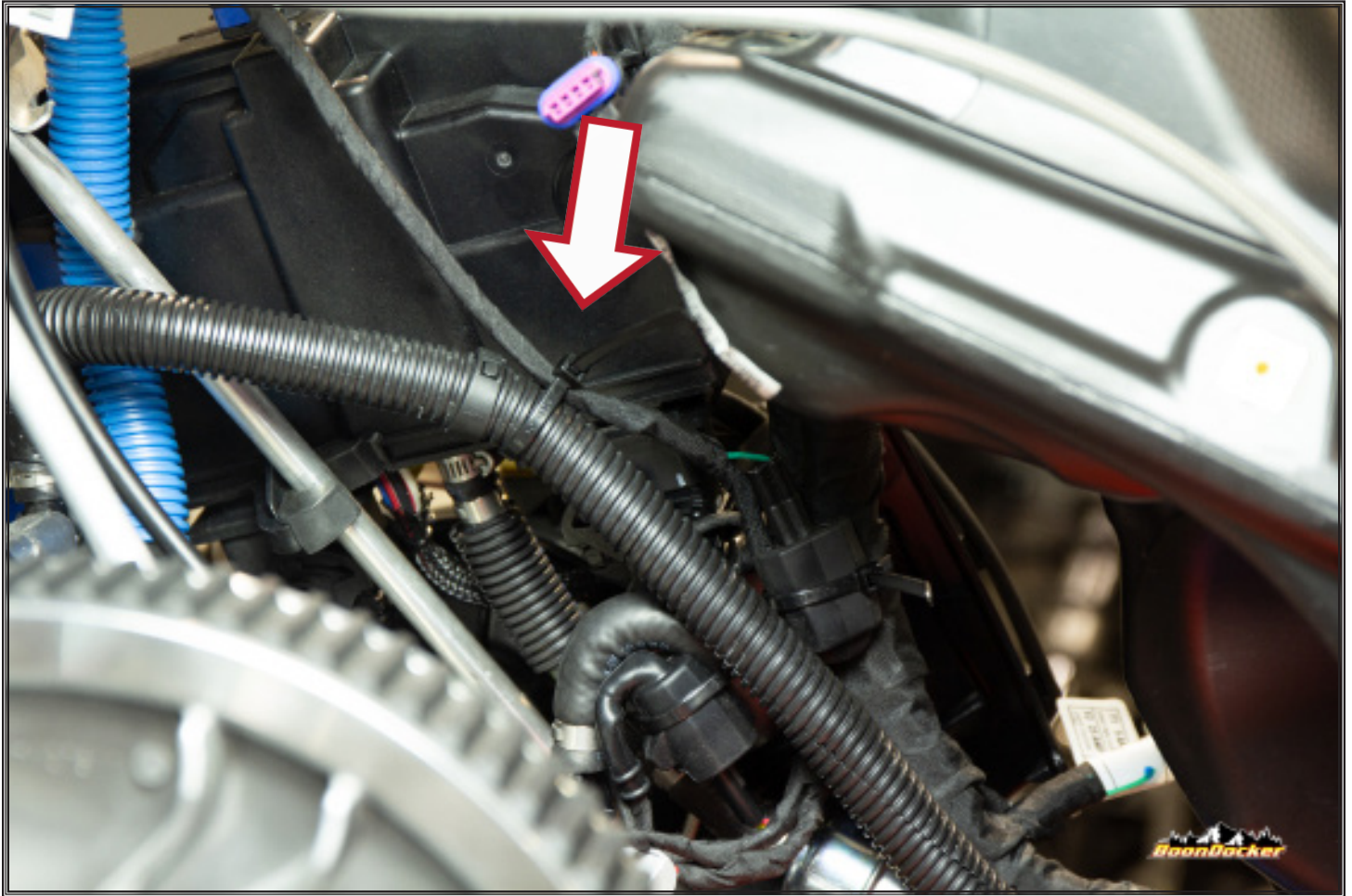
Plug BoonDocker injector wires into injectors ensuring yellow wire goes to MAG and green wire goes to PTO.

Control Box



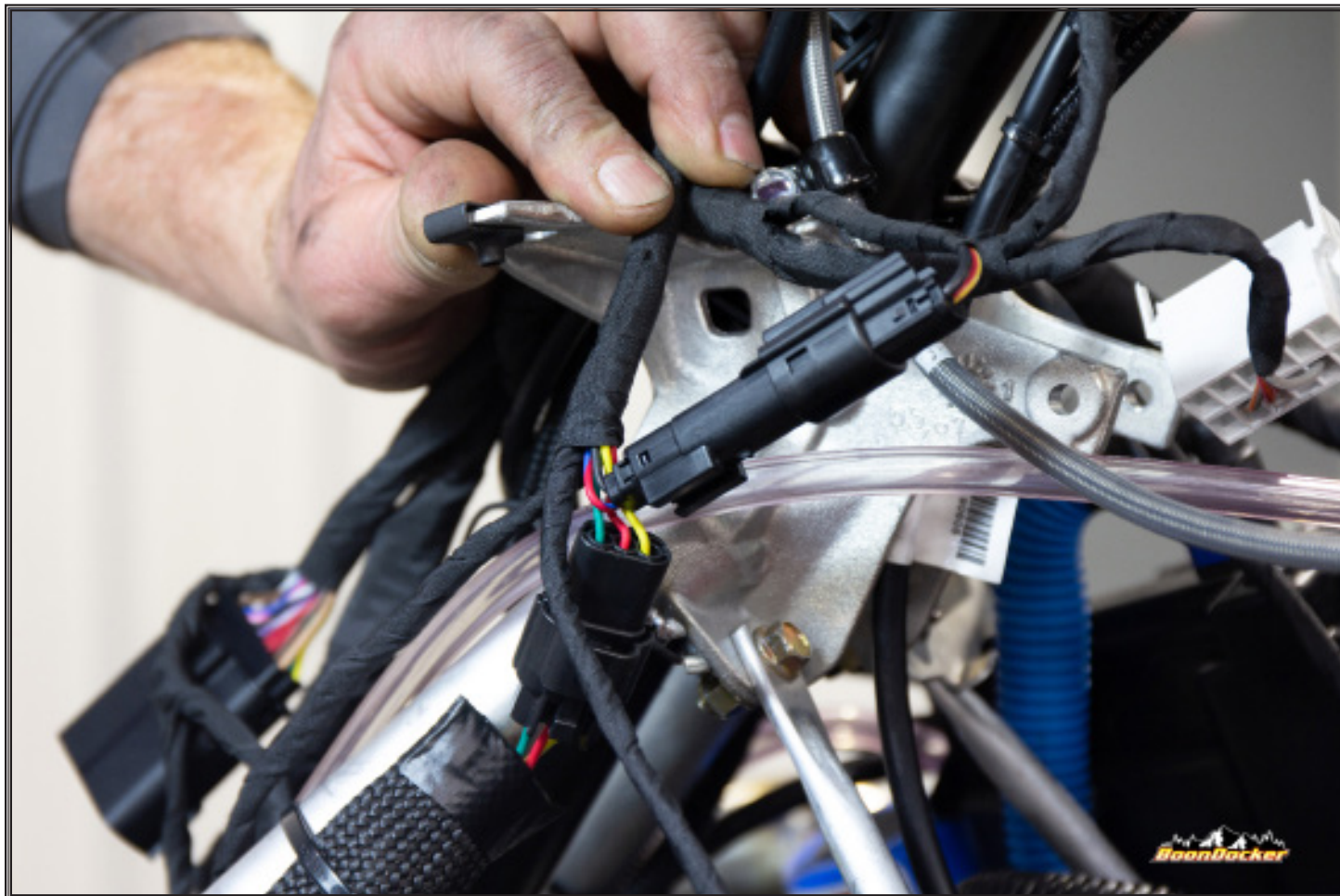
Unplug factory TPS, plug BoonDocker TPS wire harness and zip tie as shown.

Control Box



Plug BoonDocker green wire harness into factory injector wire and zip tie as shown.

Control Box



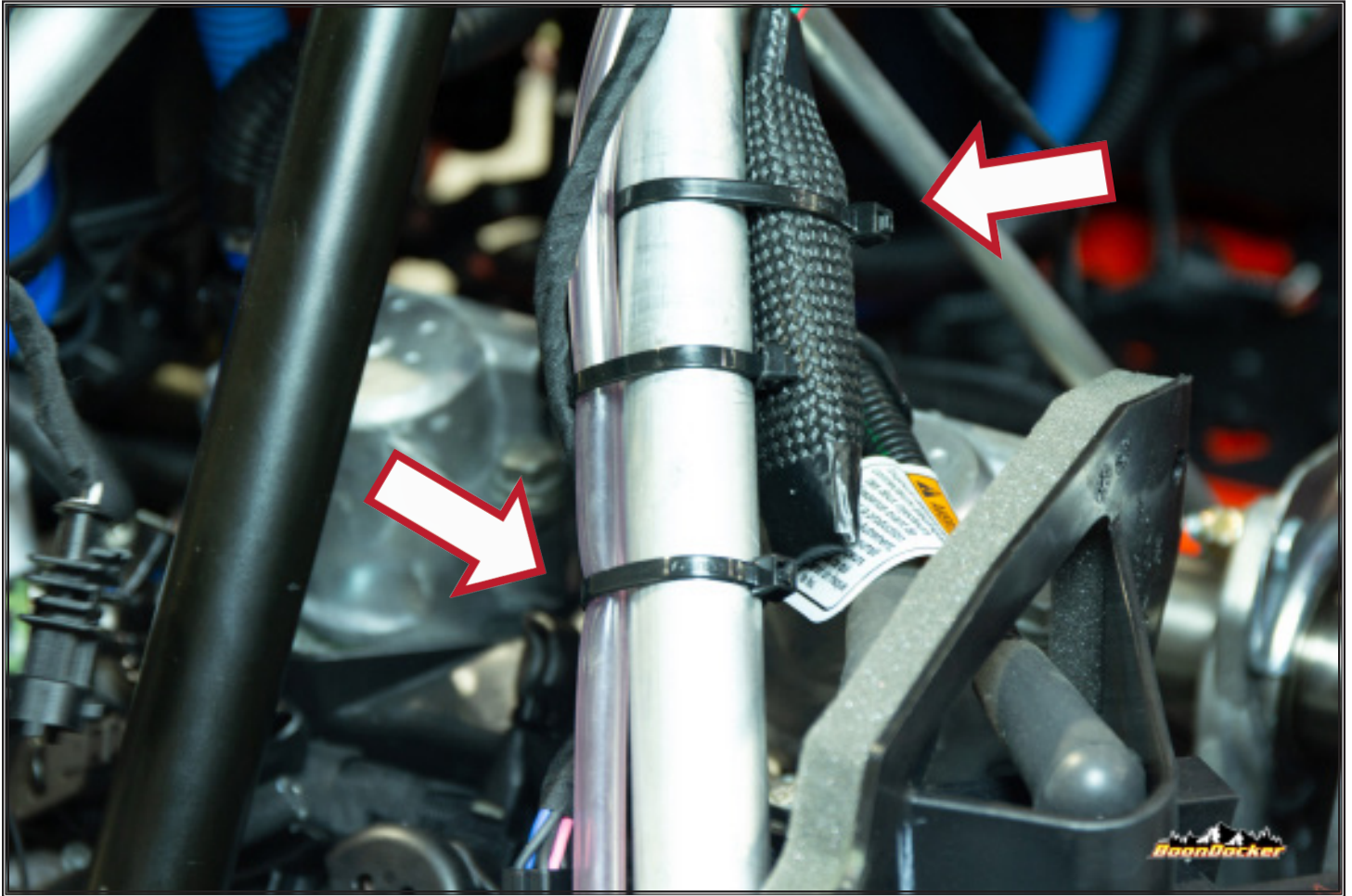
Plug control box into power harness and BoonDocker resistor.

Control Box



Unplug coil pack and plug BoonDocker harness into both connections.

Control Box



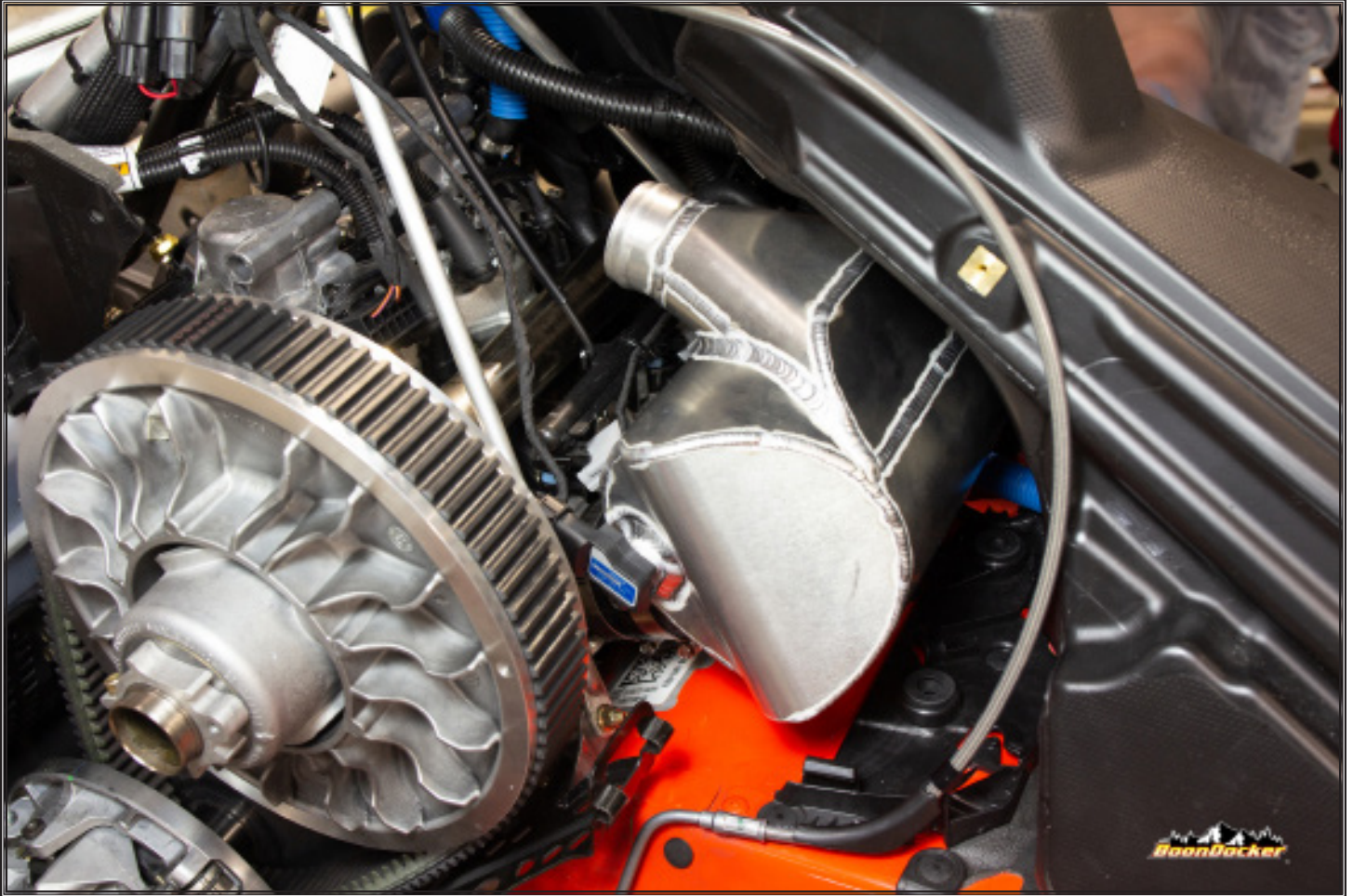
Zip tie wire harness and resistor as shown.

Charge Air



Install supplied silicone to throttle bodies.

Charge Air



Install airbox and plug wire harness into boost sensor on airbox.

Charge Air



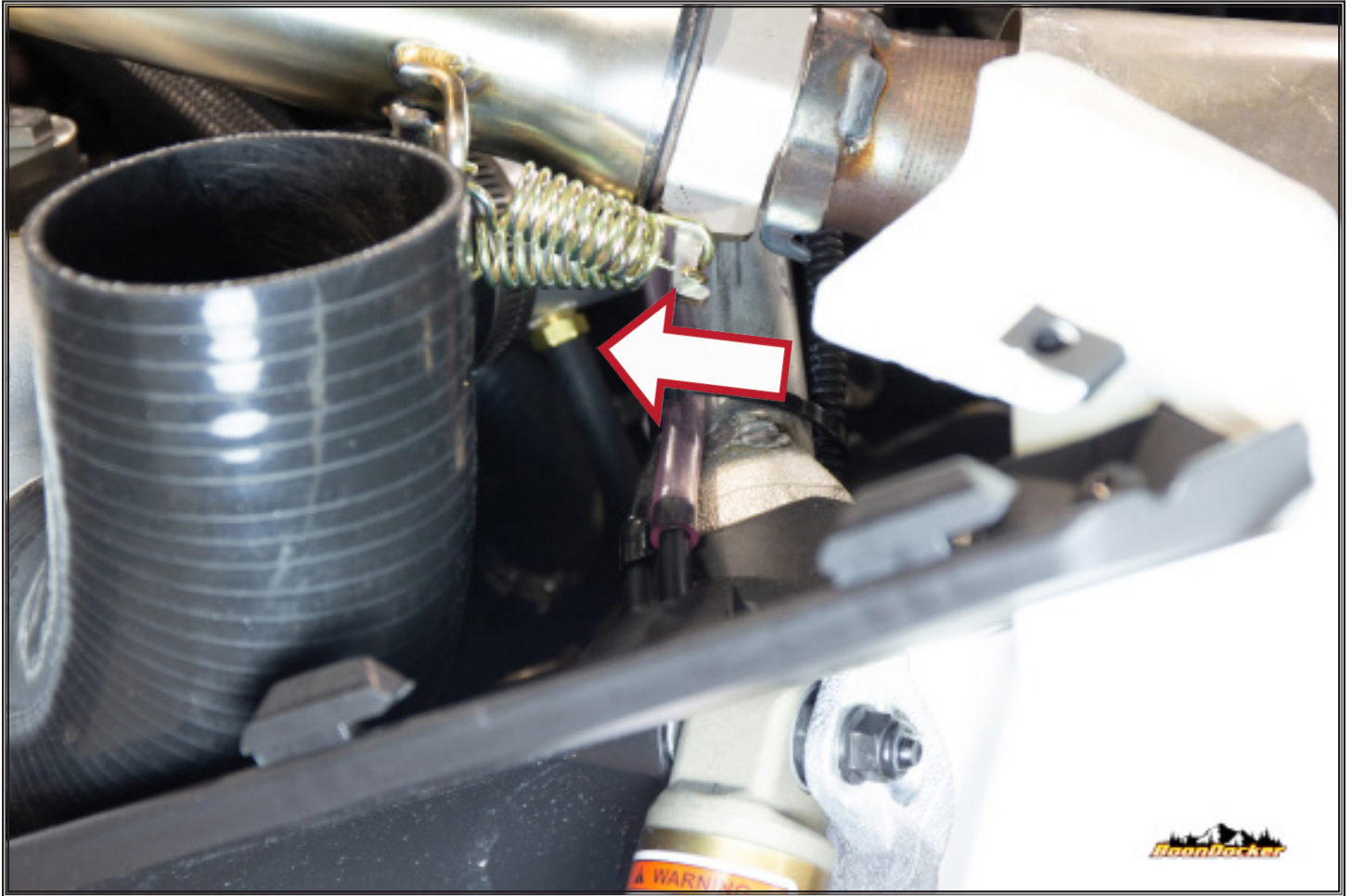
Install charge tube to airbox using supplied silicone.

Charge Air



Install charge tube to turbo using supplied silicone and hose clamps.

Charge Air



Install solenoid hose to brass nipple on charge tube and zip tie.

Charge Air



Plug control box wire harness into solenoid.

Oil System



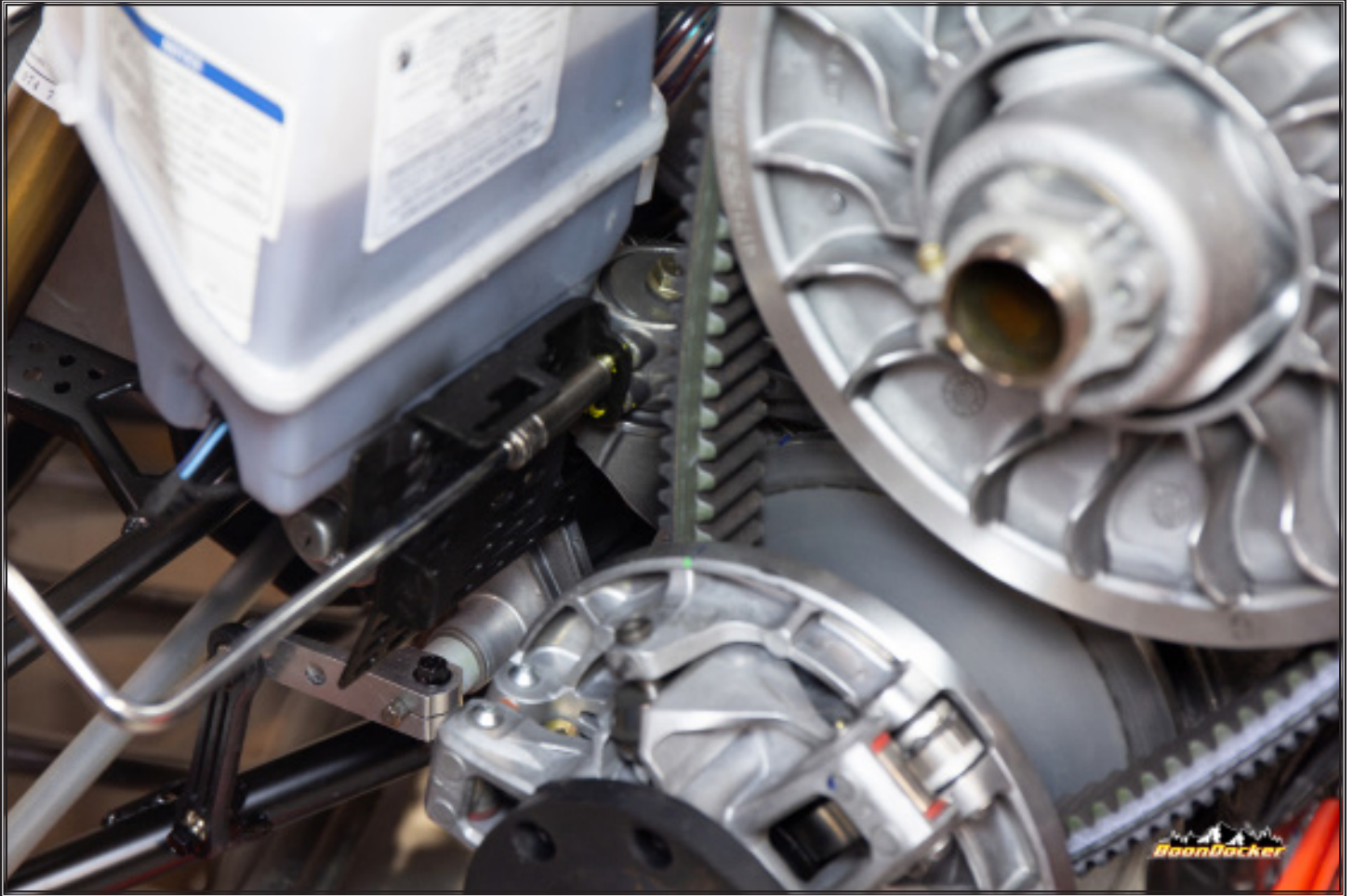
Unscrew and remove clutch side belly pan from vehicle.

Oil System



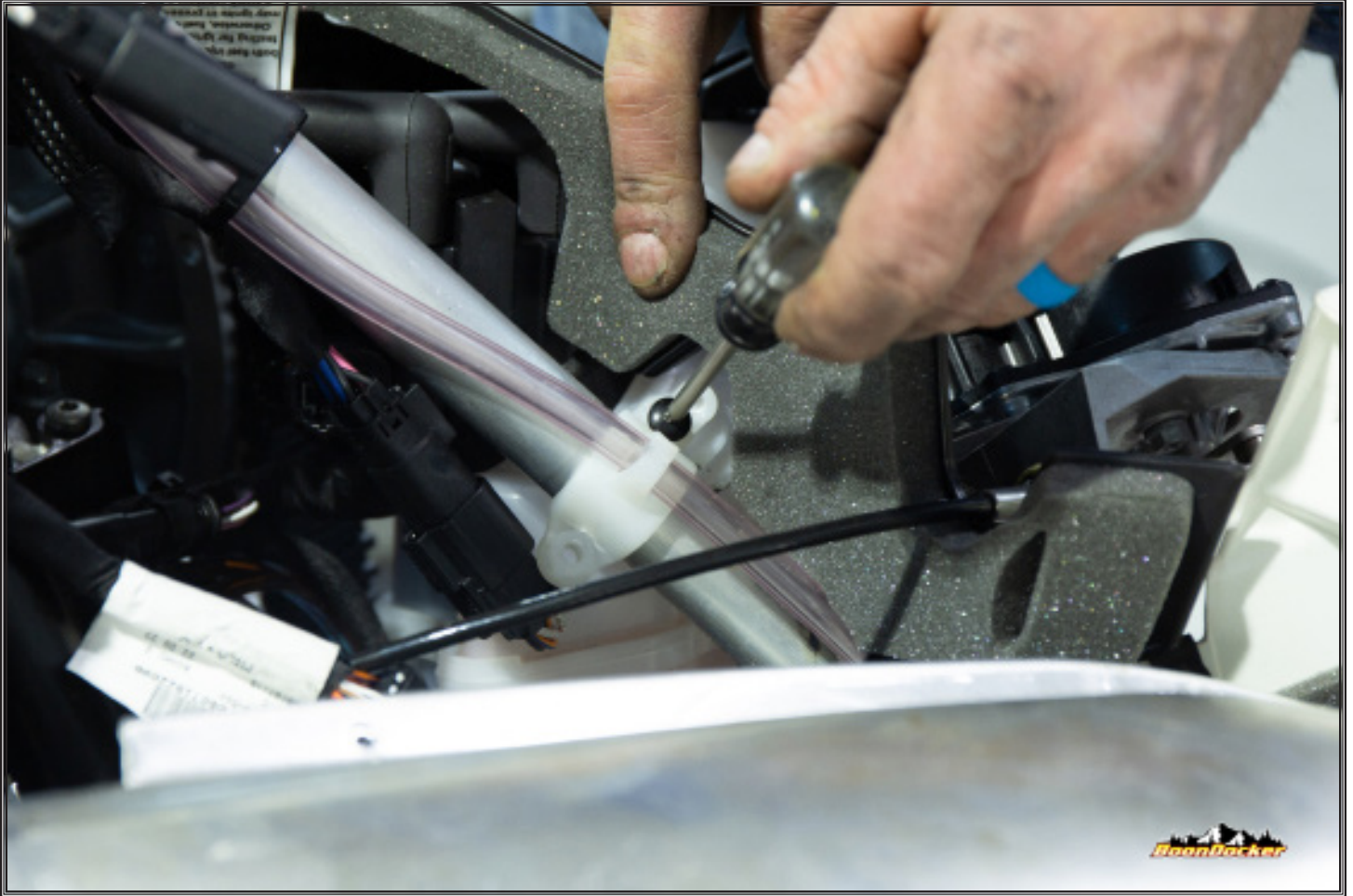
Unscrew bottom bolt from oil tank.

Oil System



Unscrew metal shroud from chassis.

Oil System



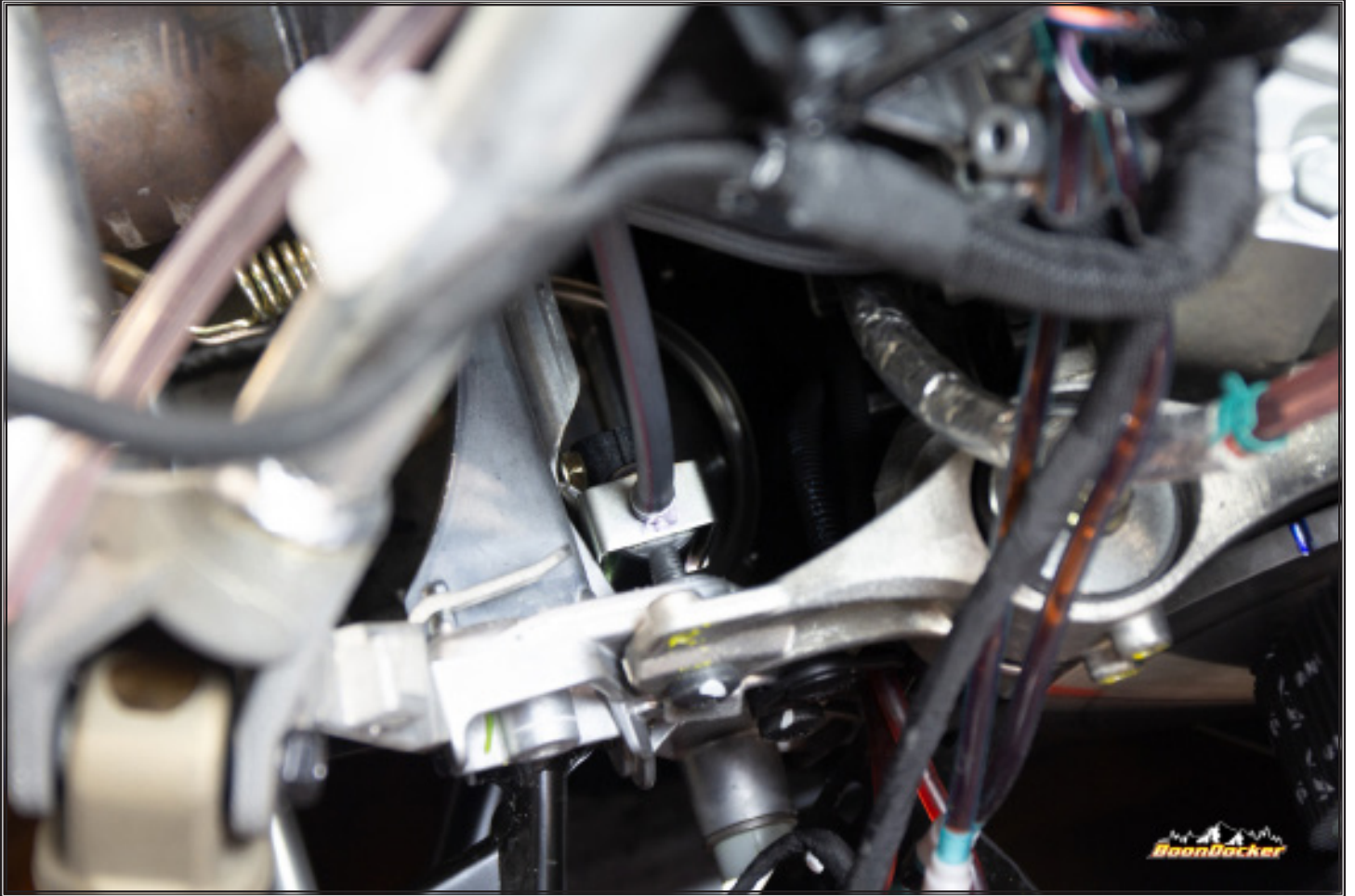
Unscrew bar clamp from oil bottle.

Oil System



Remove coil pack and plastic noise shroud from oil bottle.

Oil System



Install oil pump to gold bolt located on chassis below oil tank position.

Oil System



Drill 1/2" hole on rib close to bottom of oil tank.

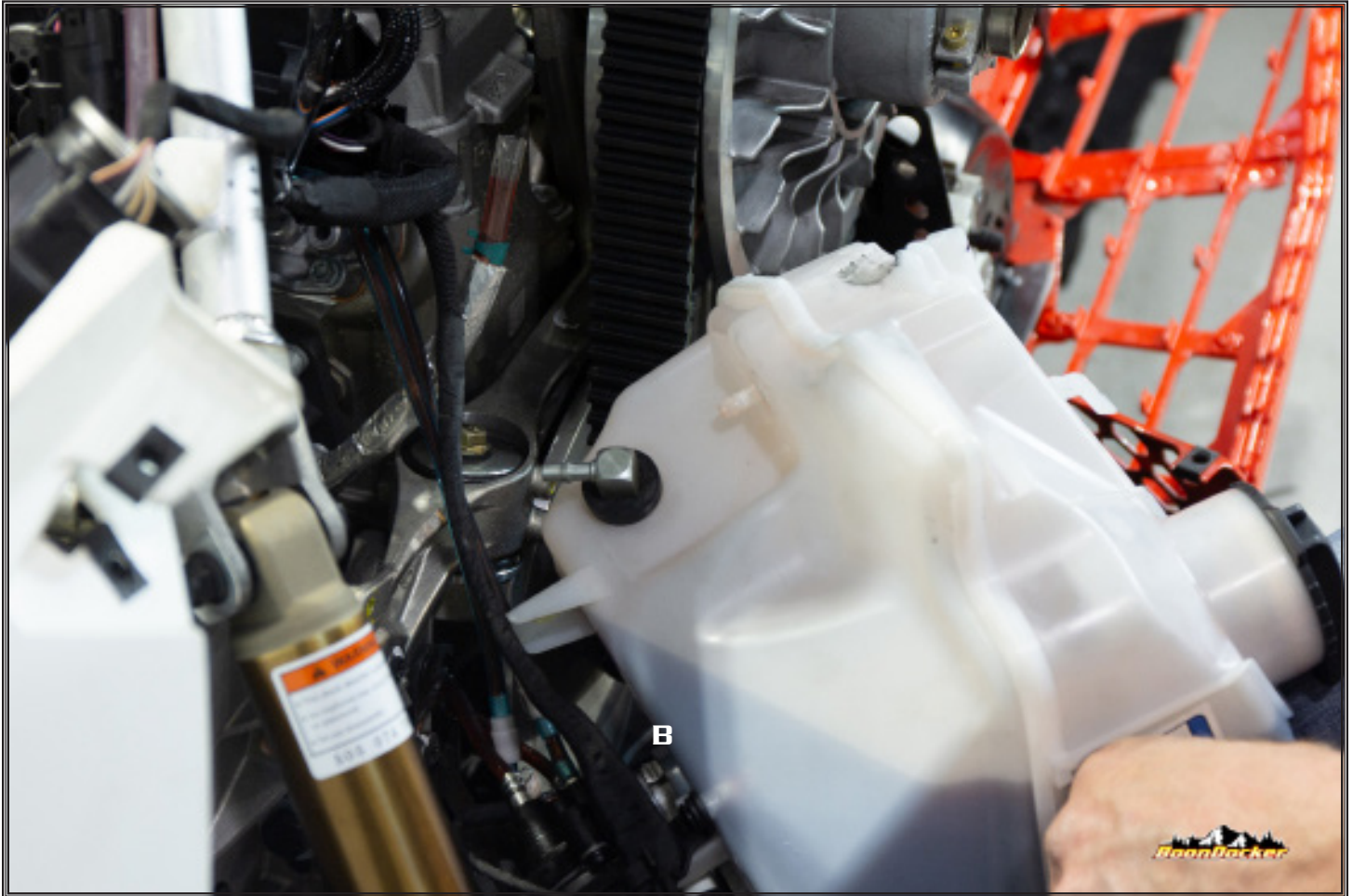
NOTE: do NOT allow plastic debris to fall into oil tank.

Oil System



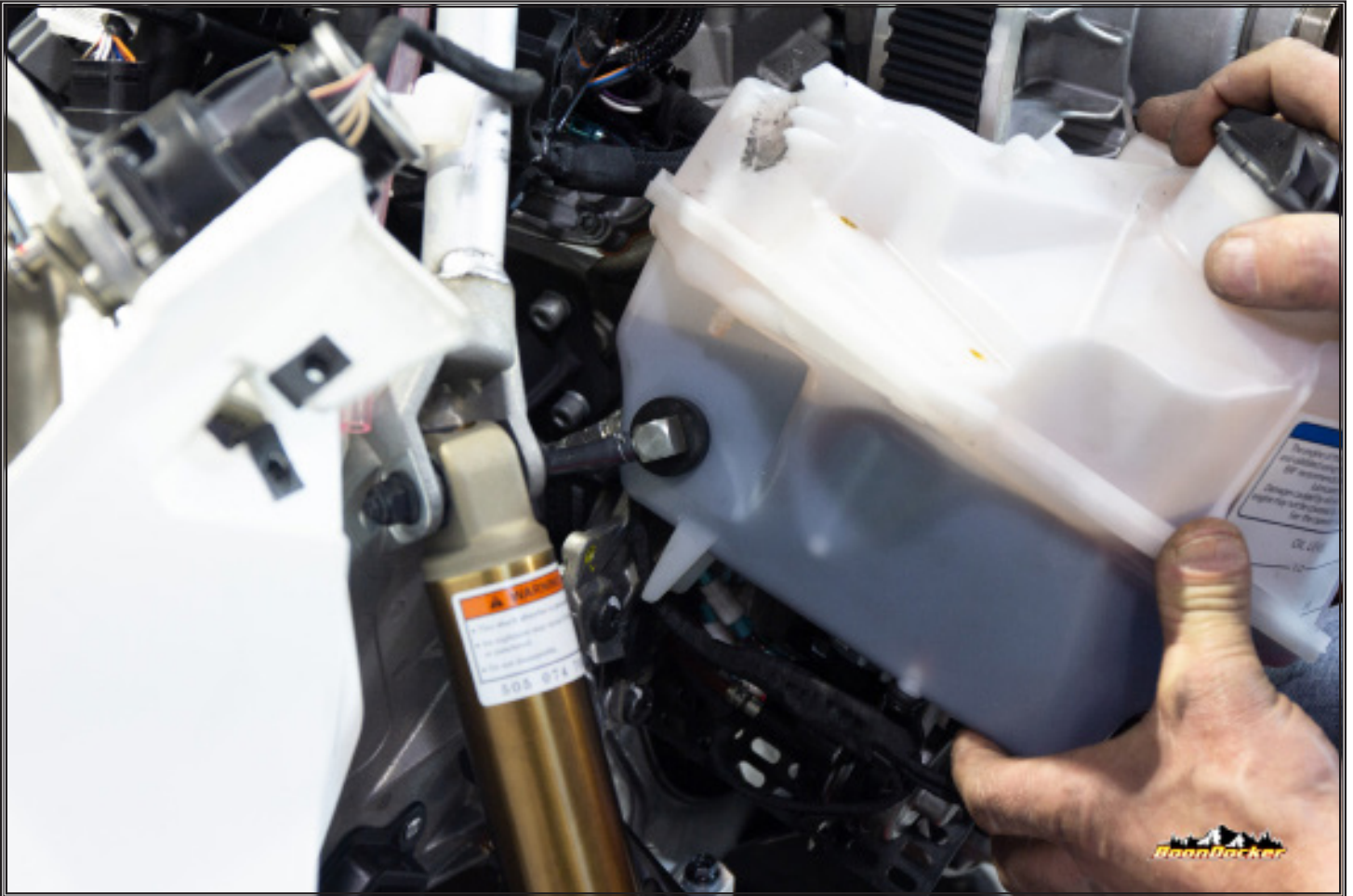
Install rubber grommet to oil tank.

Oil System



Press metal 90 into rubber grommet.

Oil System



Remove red plug from oil pump line and plug into metal 90.

Oil System



Re-install oil tank.

Oil System



Re-install clutch side belly pan.

Oil System



Purge line with oil and route clear oil pump line under Y-pipe to steel braided oil hose attached to turbo and route oil pump wire harness to oil pump following clear oil line and zip tie as shown.

NOTE: oil CANNOT be pushed through the pump but it can be pulled through the pump with a suction device.

v
!WARNING!

FAILURE TO PURGE
AIR FROM OIL LINES

WILL
RESULT IN
TURBO DAMAGE

DO NOT
PROCEED WITH
INSTALL UNTIL OIL
LINES ARE FREE OF
AIR

Reassemble



Re-install gas tank and gas tank metal shrouds.

Cold Air System



Re-install plastic tank shroud and seat.

Cold Air System



Remove sound dampener from hood.

Cold Air System



Remove two front hood bolts and nuts.

Cold Air System



Remove Ski-Doo plastic protector and remove screw underneath.

Cold Air System



Remove vents and remove hidden screw underneath vents.

Cold Air System



Remove front hood shroud.

Cold Air System



Remove stock T-BAP sensor.

Cold Air System



Remove all screws from intake plenum holding it to hood.

Cold Air System



Remove 2 remaining bolts holding plenum to hood.

Cold Air System



Remove head light assembly.

Cold Air System



Remove 2 screws holding intake plenum to intake box.

Cold Air System



Remove hidden screws underneath intake vent holes and split both plenums.

Cold Air System



Remove plastic locking tabs from intake plenum.

Cold Air System



Cut corner pieces off of intake delivery tube allowing the silicone boot to slip on

Cold Air System



Drill 1/2" hole into intake airbox.

Cold Air System



Install factory T-BAP sensor into 1/2" hole.

Cold Air System



Blow air intake box out ensuring no debris is in the box

Cold Air System



Install silicone with provided 3 self tapping screws and washers.

NOTE: 1 screw is hidden in this photo and goes on top side of silicone.

Cold Air System



Re-install top screws holding hood to air intake box.

Cold Air System



Re-install front hood shroud with factory bolts, washers and nuts .

Cold Air System



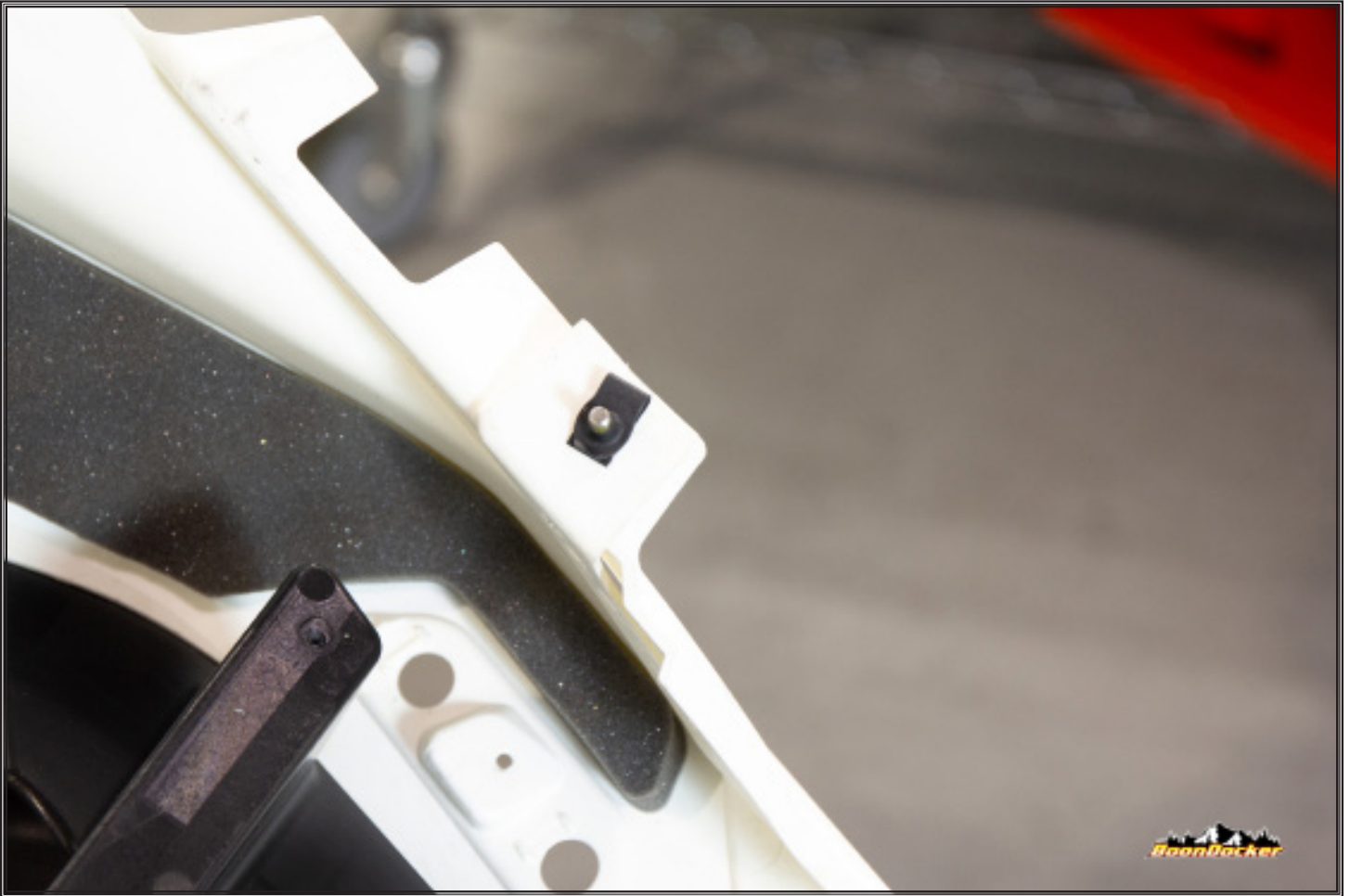
Re-install hidden bolt under intake vents.

Cold Air System



Re-install intake vents.

Cold Air System



Remove black threaded clips from intake plenum and re-install outer bolts using clip.

NOTE: use a pair of pliers to hold clip during installation due to clip no longer being in plastic.

Cold Air System



Remove black threaded clips from intake plenum and re-install inner headlight bolts using clip.

NOTE: use a pair of pliers to hold clip during installation due to clip no longer being in plastic.

Cold Air System



Install plastic clips to metal clip holders, place corners of bends on metal clip holders to edge of plastic and drill 3/16" holes for rivets.

NOTE: Smaller side of clip holders go towards back of snowmobile.

Cold Air System



Rivet clip holders to hood with supplied 3/16" large head rivets.

Cold Air System



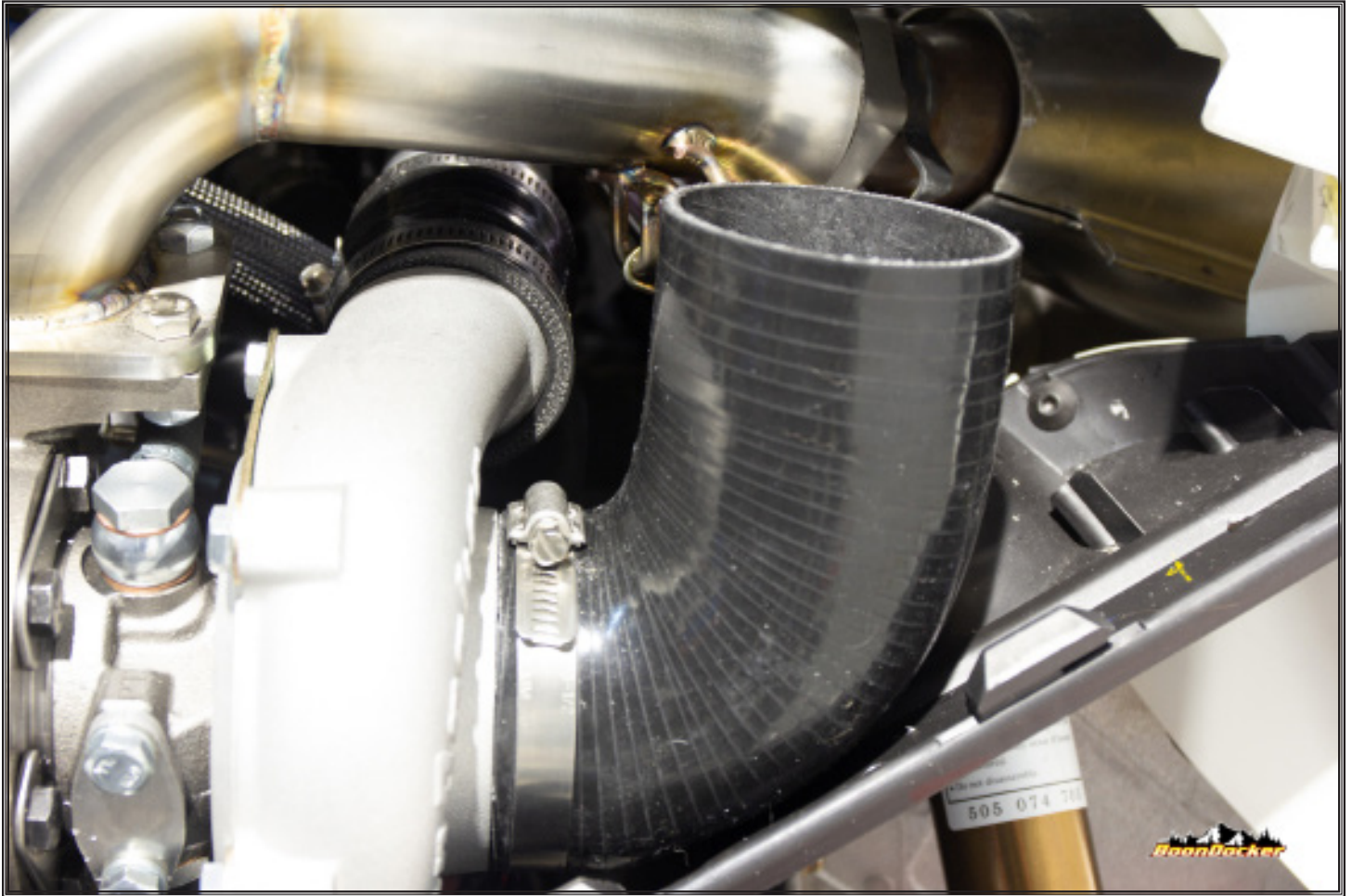
Re-install plastic Ski-Doo emblems.

Cold Air System



Trim out notch on hood to allow room for cold air intake and re-install hood.

Cold Air System



Install silicone 90 with provided hose clamp.

Cold Air System



Install cold air intake tube to silicone 90.

Cold Air System



Attach cold air intake to hood with provided hose clamp and plug BoonDocker control box into factory T-BAP sensor and factory wire harness.

Cold Air System



Trim side panel to allow clearance for silicone 90 on turbo.

Reassemble



Re-install instrument cluster and glove compartment.