INSTALL INSTRUCTIONS FOR 75-7001

PART#: 75-7001 (TRUCK PARTICLE SEPARATOR)

Vehicle Application

YEAR: 2017-2019
MAKE: Ford
MODEL: F-250/F-350/F-450/F-550
ENGINE: 6.7L Powerstroke

Tools Required

- 7mm, 8mm, 10mm (Deep), & 13mm Socket / Ratchet
- 13mm Wrench
- Phillips Screwdriver
- Flathead Screwdriver
- T20 Torx Screwdriver
- Scissors/Utility Knife
- Panel Popper
- Wire Stripper
- Torque Wrench
- Flush Cutters

Note: Approximate Install Time: 2 Hours

S&B Filter Maintenance

CARB Status - Pending

CARB EO # D-590-22

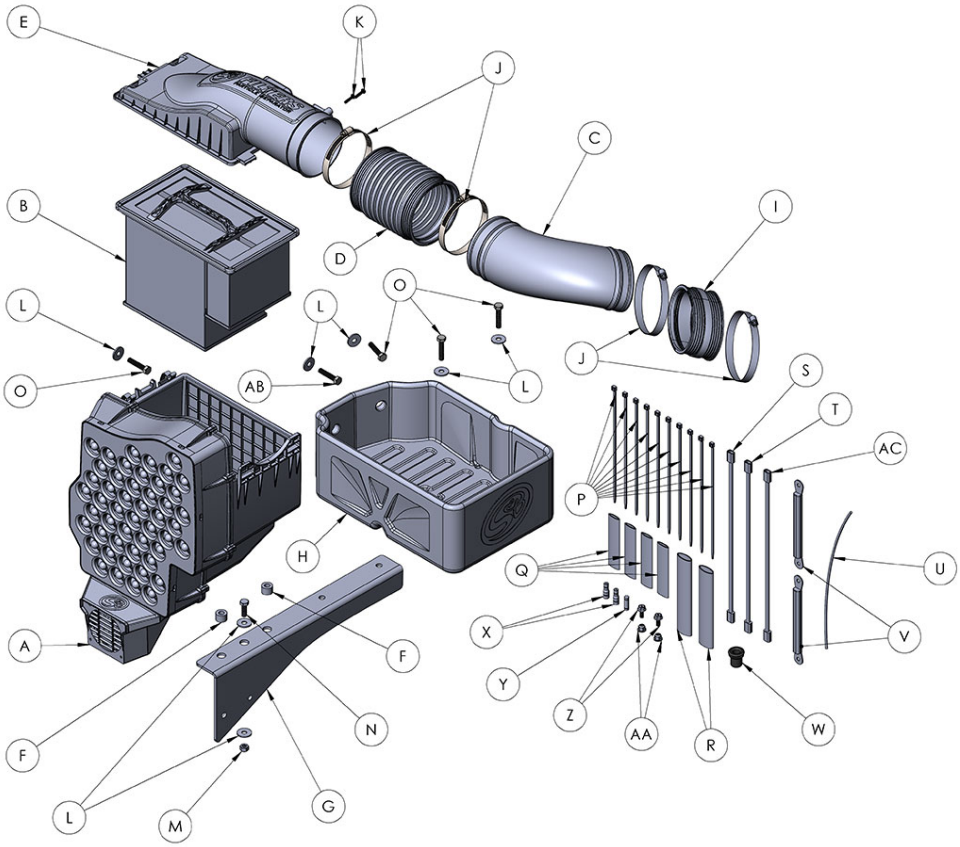
*Legal for use in CA and other states adopting CA emissions Standards.

Before You Start

- Please read the entire product guide before proceeding.
- Ensure all parts are present.
- If you are missing any of the components, call our customer support at (909) 947-0015.
- Do not work on your vehicle while the engine is hot.
- Make sure the engine is turned off and the vehicle is in Park or the Parking Brake is set.

Related Products

PARTS LIST



ITEM	PART NUMBER	DESCRIPTION	QTY.
A	AL2009-00	PARTICLE SEPARATOR ASSEMBLY	1
B	KF-1071	AIR FILTER	1
C	AL1342-00	INTAKE TUBE	1
D	AI2151-00	RIBBED COUPLER	1
E	AI2148-00	UPPER HOUSING	1
F	AI2243-00	SPACERS	2
G	AI1958-00	BATTERY TRAY BRACKET	1
H	AL1298T-01	BATTERY TRAY	1
I	AI1523C-00	STRAIGHT COUPLER	1
J	AG1009-00	HOSE CLAMP, #72	4
K	AI1720-00	MAF SENSOR SCREWS, #8-32	2
L	AI2317-00	M8 WASHER	7
M	AI1736-00	M8 LOCKNUT	1
N	AI1214-00	M8 BOLT, 25mm	1
O	AI2319-00	M8 BOLT, 40mm	4
P	AI1750-00	ZIP TIE	10
Q	AI2019-01	HEAT SHRINK (RED)	4
R	AI2107-01	FABRIC HEAT SHRINK	2
S	AI2235-00	FAN WIRE HARNESS	1
T	AI1481-00	MAF SENSOR EXTENSION HARNESS	2
U	AI2264-01	12" EXTENSION WIRE	1
V	AI2007-00	BATTERY CABLE EXTENSION	2
W	AI1814-00	FILTER MINDER GROMMET	1
X	AI1799-00	POSI-TAP (BLUE)	2
Y	AI2250-00	POSI-LOCK (RED)	1
Z	AI2014-00	M6 BOLT	2
AA	AI2015-00	M6 LOCKNUT	2
AB	AI2318-00	M8 BOLT, 70mm	1
AC	AI2433-00	2-PIN TO 3-PIN ADAPTER HARNESS	1

INSTALLATION STEPS

STEP 1

With the ignition switched off and the parking brake set, disconnect the negative battery cables on both batteries and the positive battery cable on the passenger side only.

IMPORTANT: Failure to disconnect the battery for a minimum of 2 hours may cause the Check Engine Light to illuminate upon completion of the installation or subsequent operation.DO NOT SKIP THIS STEP!

Tools Required: 10mm Socket/Wrench.

STEP 2

Remove the two nuts from the battery hold down bracket, then remove the negative battery cable mounting tab and hold down bracket from the battery. Set the hardware aside, they will be reused in Step 39.

Tools Required: 10mm Deep Socket/Wrench

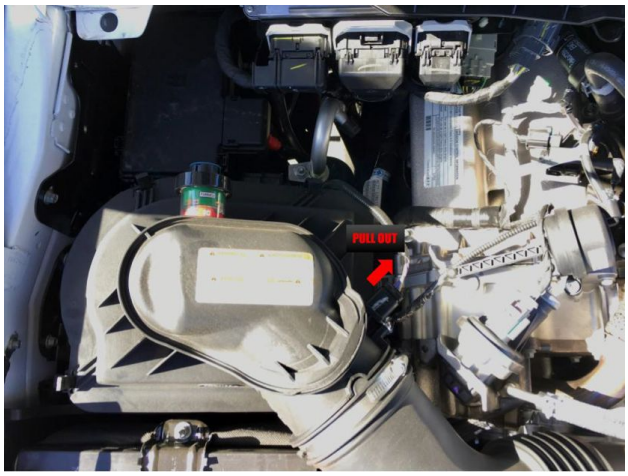
STEP 3

Remove the battery and battery blanket from the vehicle. The battery is heavy so be extra careful when taking it out. Remember, the battery is filled with battery acid, keep it level, during removal, to prevent the acid from spilling out the top.

Safety Note: Wear appropriate safety glasses and protective gloves for battery removal and installation.

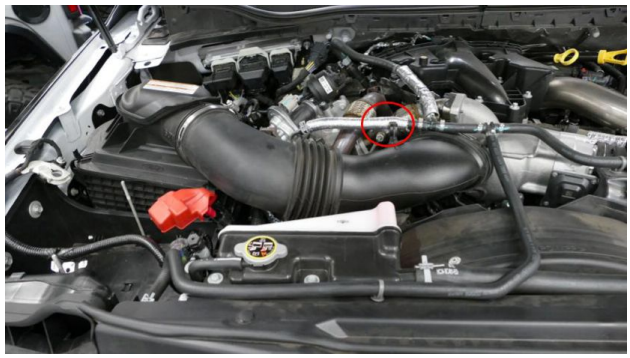
STEP 4

Disengage the red locking clip, press down on the tab, then pull out to disconnect the MAF sensor harness from the MAF sensor.



STEP 5

Disconnect the hoses attached to the stock intake tube.



STEP 6

Loosen the hose clamps securing the intake tube to the stock intake box and turbo inlet, then remove the stock intake tube from the vehicle.

Tools Required: 7mm Socket/Wrench

STEP 7

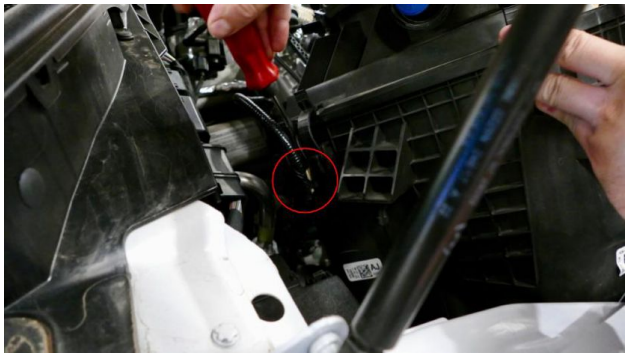
Remove the two screws securing the stock intake box.

Tools Required: 8mm Socket/Wrench

STEP 7B

Pop out the MAF harness clip attached to the back of the stock intake box.

Tools Required: Panel Popper or Flat Blade Screwdriver



STEP 7C

Lift up the stock intake box slightly to unseat the prongs from the stock grommets then remove the stock intake box from the vehicle.

STEP 8

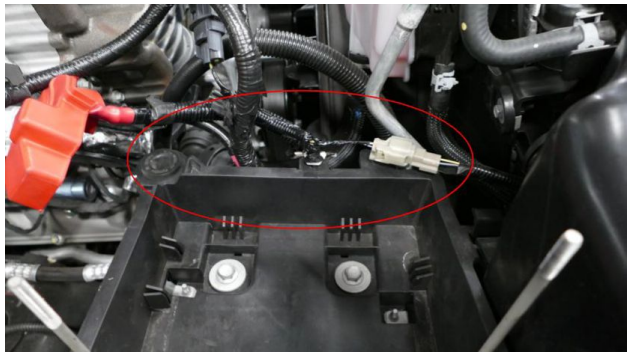
Pop out the stem and remove the push in rivet securing the front inlet.

Tools Required: Panel Popper or Flat Blade Screwdriver

STEP 9

Pop out all the wire harness clips secured to the engine side of the battery tray.

Tools Required: Panel Popper or Flat Blade Screwdriver.



STEP 9B

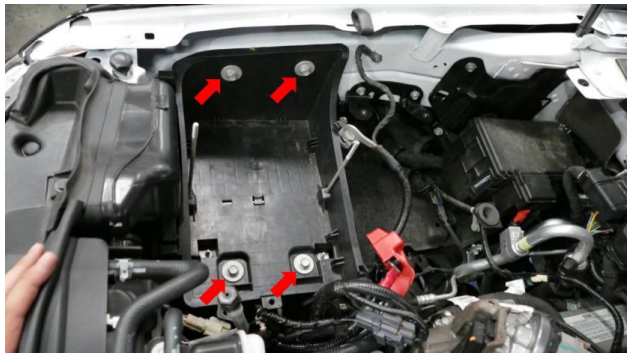
If applicable, pop out the two harness clips on the firewall side of the battery tray.

Tools Required: Panel Popper or Flat Blade Screwdriver

STEP 10

Remove the four battery tray mounting screws then remove the battery tray from the vehicle. Set these screws aside, they will be reused in Step 30c.

Tools Required: 13mm Socket/Wrench



STEP 11

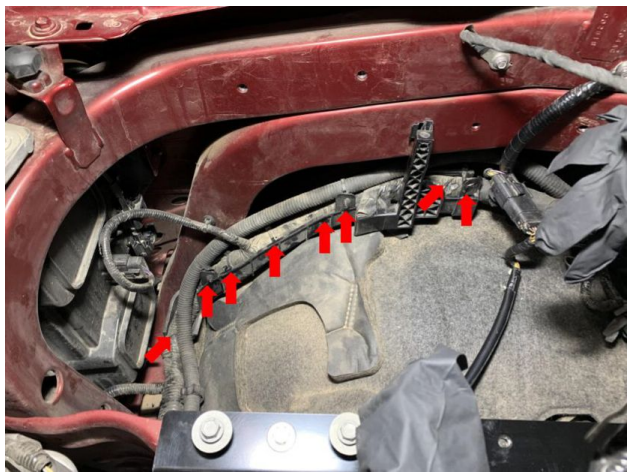
Remove the two mounting screws then remove the stock intake box bracket from the vehicle.

Tools Required: 10mm Socket/Wrench

STEP 12

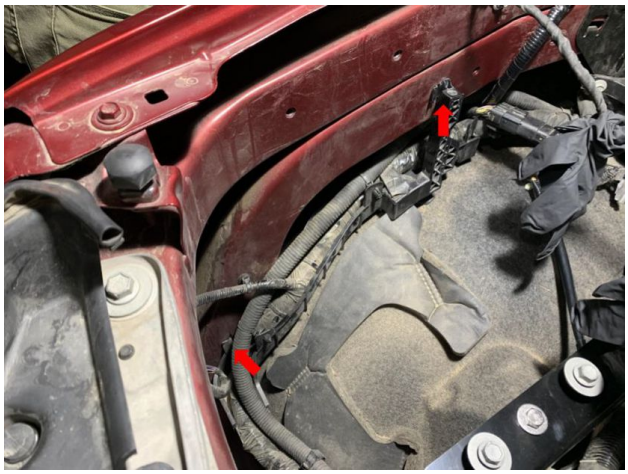
To remove the stock wire harness tray, cut all zip ties, tape, and plastic rivets that secure the stock wire harness to the stock wiring tray.

Tools Required: Flush Cutters, Scissors, Panel Popper



STEP 12B

Once all zip ties, tape, and push-in rivets are removed, squeeze the two locking tabs and pull them out of the frame.



STEP 12C

The stock wire harness tray should now be able to removed from the vehicle.

STEP 13

Remove the AC line clip and electrical harness clip that is attached to the frame before installing the Battery Tray Bracket (G). Make sure that the flange on the battery tray bracket is on the side facing the engine. Install the shorter M8 Bolt (N), two M8 Washers (L), and M8 Locknut (M) into the center mounting hole. You can use two stock bolts, removed in Step 10, to aid in lining up the bracket but remove them from the bracket before continuing on.

Tools Required: Panel Popper, 13mm Socket/Ratchet, & 13mm Wrench

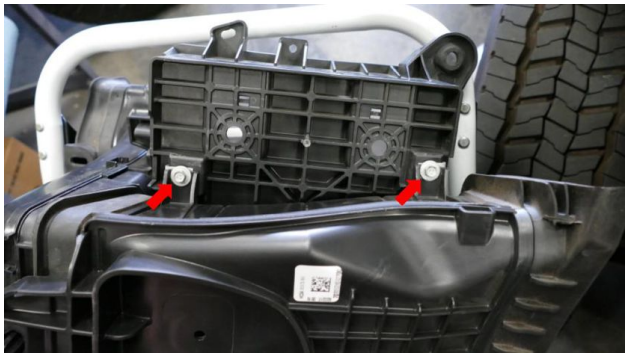
STEP 13B

Reinsert the AC line clip and electrical harness clip into the holes provided in the side of the Battery Tray Bracket (G).

STEP 14

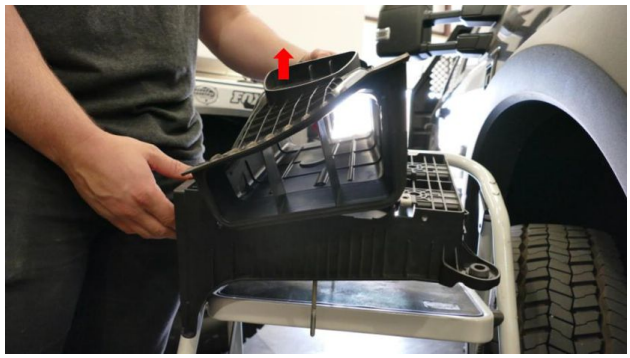
Remove the two screws securing the stock battery tray to the stock intake inlet.

Tools Required: 8mm Socket/Wrench



STEP 14B

Push the locking tabs and lift the stock inlet away from the stock battery tray.

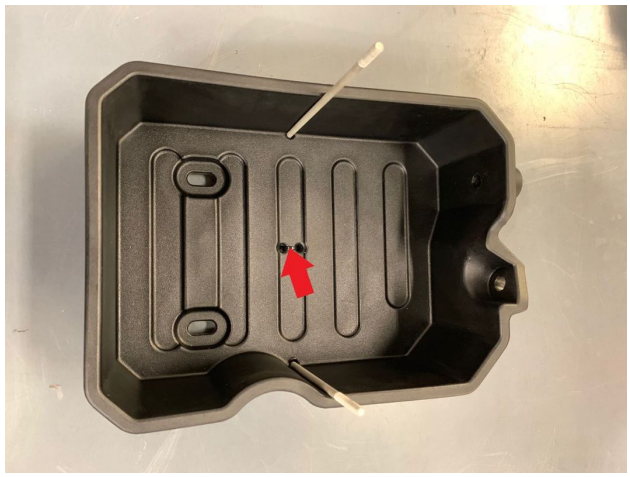


STEP 14C

Pop out and remove the hold down U-bolt from the stock battery tray.

STEP 15

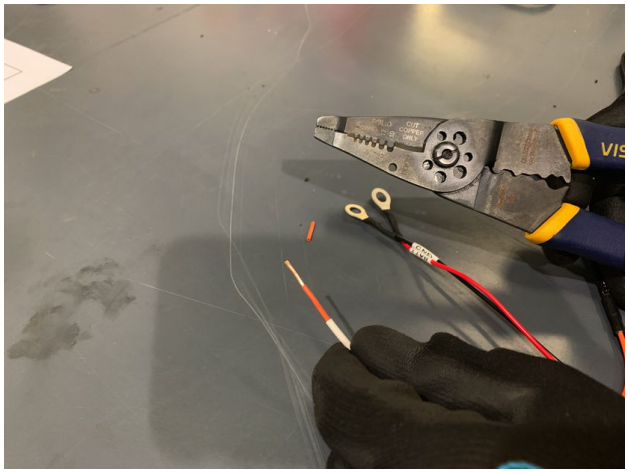
Install the stock hold down U-bolt onto the Battery Tray (H). The stock hold down U-bolt should be installed as shown. The longer end should be closest to the longer side of the Battery Tray (H). Use a Zip Tie (P) through the center of the battery tray to secure the hold down U-bolt.



STEP 16

Strip about 1/4" to 1/2" of insulation off the end of the orange ACC wire from the Fan Wire Harness (S).

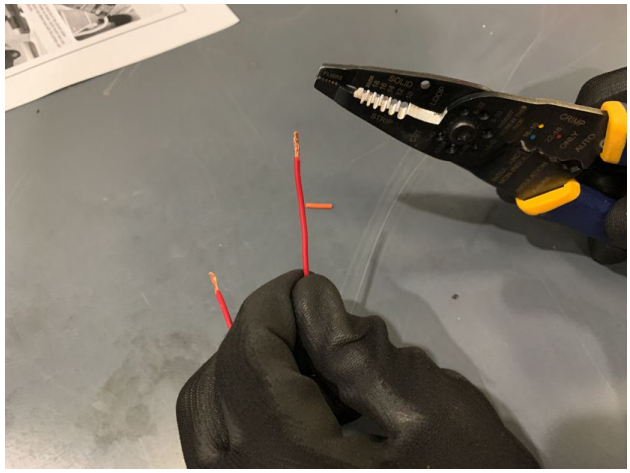
Tools required: Wire Stripper



STEP 16B

Strip about 1/4" to 1/2" of insulation off both ends of the 12" Extension Wire (U).

Tools required: Wire Stripper



STEP 17

Behind the passenger side fuse box, in the engine bay, there is a bundle of four pass-through wires. Locate this bundle and pull it forward. You may have to cut through some electrical tape to release them from the stock wiring harness.

Tools Required: Utility Knife/Scissors

STEP 18

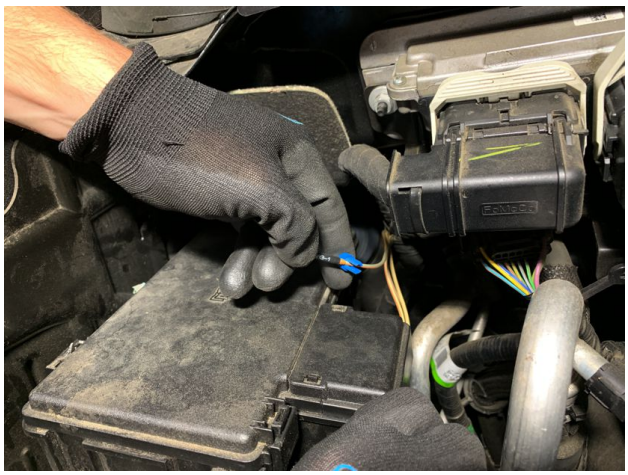
Choosing a Pass-Through Wire: The blue Posi-Tap (X) will need to be installed on any of the 3 larger wires within this bundle. Ideally you will choose a wire that is not being used by any other accessory. (However, if you already have a pass-through wire that is connected to a 12V key-on source then that wire will work for this application.) Make a note as to which wire you choose because you will be attaching another blue Posi-Tap (X) to the other end of this pass-through wire inside the cab in Step 23. Be aware that the pass-through wire of your choosing will ultimately be connected to a 12V key-on source and this will provide power to the fan wire harness.

NO IMAGE REQUIRED FOR THIS STEP

STEP 18B

Once you have selected a pass-through wire, unscrew the larger end of the blue Posi-Tap (X) then place the pass-through wire inside the channel of the end you unscrewed. Removing the pass-through wire from the bundle of wires may make this step easier.

Tools Required: Utility Knife

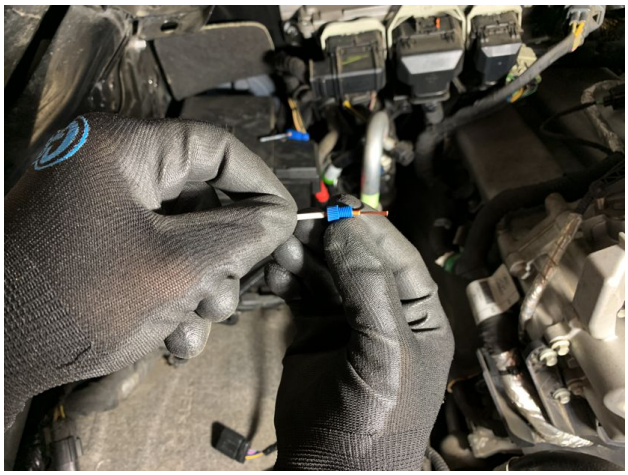


STEP 18C

Screw the body of the blue Posi-Tap (X) onto the end of the blue Posi-Tap end cap containing the pass-through wire.

STEP 18D

Unscrew the smaller end of the blue Posi-Tap (X) then insert the orange ACC wire, from the Fan Wire Harness (S), through the end cap of the blue Posi-Tap (X).



STEP 18E

Insert the orange ACC wire fully into the body of the blue Posi-Tap (X). Once fully inserted, screw the end cap into the body of the blue Posi-Tap (X) to lock the orange ACC wire in place. Leave the relay, red positive wire, and black ground wire resting on the fuse box for now.

STEP 19

Remove the passenger side kick panel by pulling out on the finger tab to unseat the prongs then slide the kick panel out of the locating tabs.

STEP 19B (OPTIONAL)

To give yourself more room to work, remove the plastic panel under the passenger side glove box by removing the two plastic push-in rivets then pulling down and out.

Tools Required: Panel Popper

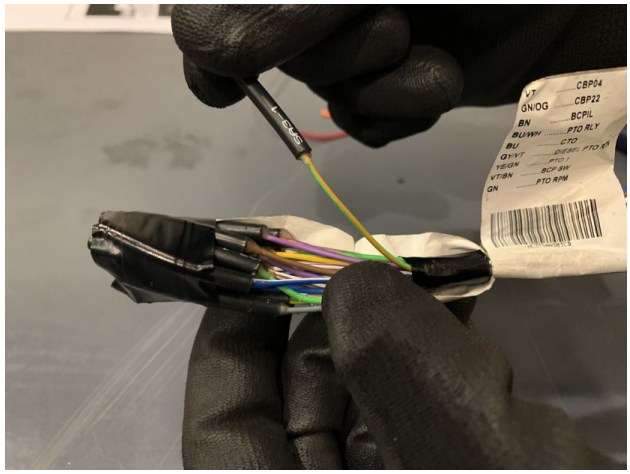
STEP 20

Locate the bundle of wires near the fuse box. Press the black locking tab, on top of the connector, and remove the wire bundle from the vehicle.

STEP 20B

Separate CBP22 (green with orange stripe) from the wire bundle.

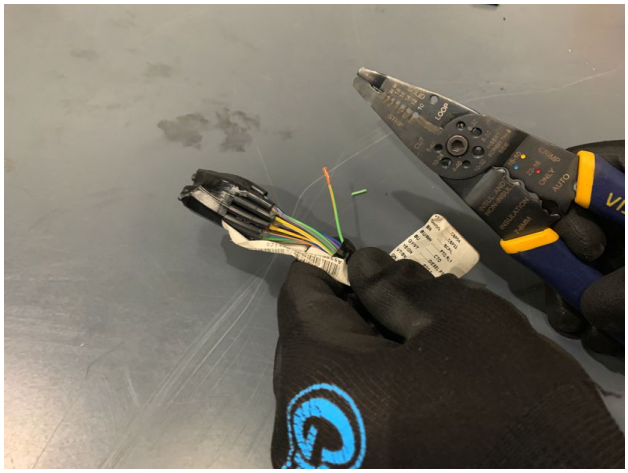
Tools Required: Utility Knife



STEP 20C

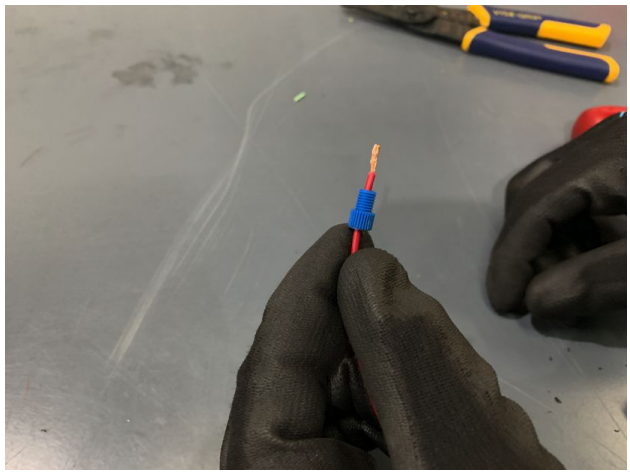
Cut off the black insulation then strip about 1/4" to 1/2" of insulation off the end of the green/orange CBP22 wire.

Tools Required: Wire Stripper



STEP 21

Unscrew the smaller end from the body of the blue Posi-Tap (X) then insert the 12" Extension Wire (U) through the end cap of the blue Posi-Tap (X).

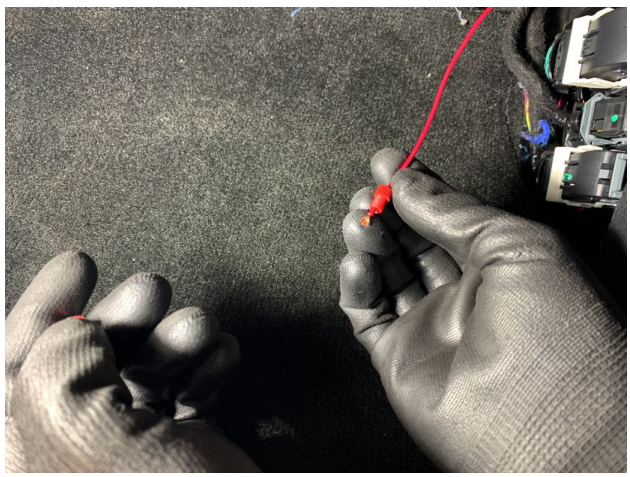


STEP 21B

Insert that end of the 12" Extension Wire (U) fully into the body of the blue Posi-Tap (X). Once fully inserted, screw the end cap into the body of the blue Posi-Tap (X) to lock the 12" Extension Wire (U) in place.

STEP 22

Unscrew one end from the body of the red Posi-Lock (Y) then insert the other end of the 12" Extension Wire (U) through the end cap of the red Posi-Lock (Y).



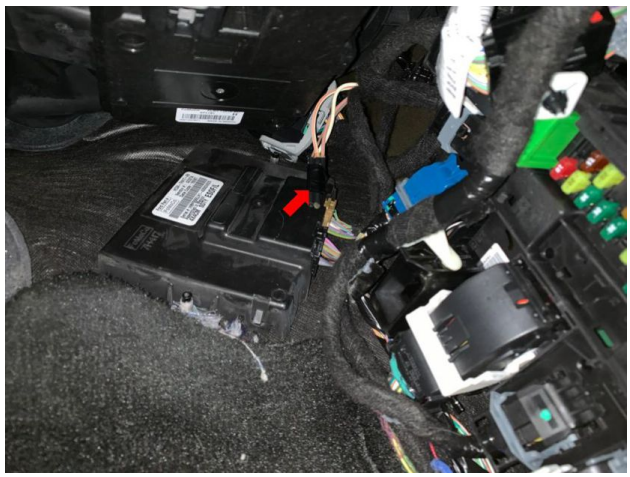
STEP 22B

Insert that end of the 12” Extension Wire (U) fully into the body of the red Posi-Lock (Y). Once fully inserted, screw the end cap into the body of the red Posi-Lock (Y) to lock the 12” Extension Wire (U) in place.

STEP 23

Locate the bundle of four pass-through wires underneath the passenger side glove box area. These will look the same as the bundle in Step 17.

Note: Steps 23b and 23c will need to be performed on the same pass-through wire that you selected in Step 17. Failure to do so will result in the scavenge fan not working properly.



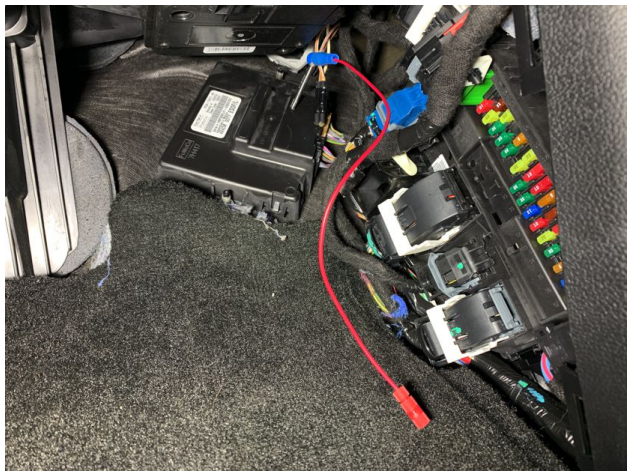
STEP 23B

Unscrew the larger end of the blue Posi-Tap (X) then place the pass-through wire inside the channel of the end you unscrewed. Removing the pass-through wire from the bundle may make this step easier.

Tools required: Utility Knife

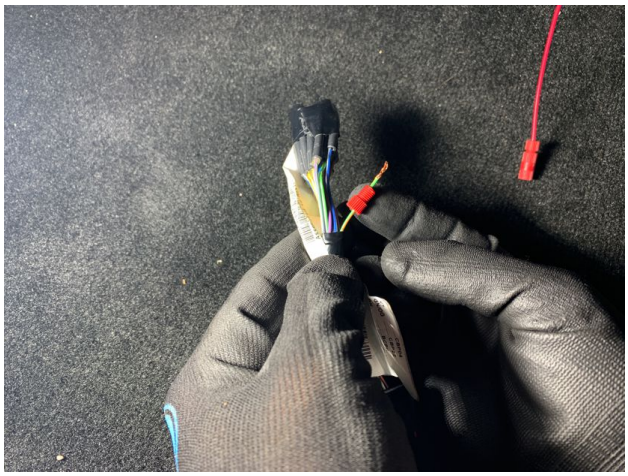
STEP 23C

Screw the body of the blue Posi-Tap (X), containing the 12” Extension Wire (U), onto the end cap of the blue Posi-Tap (X) containing the pass-through wire.



STEP 24

Unscrew the other end from the body of the red Posi-Lock (Y) then insert the green/orange CBP22 wire from the stock wire bundle, prepared in Step 20, through the end cap of the red Posi-Lock (Y).



STEP 24B

Insert the end of the green/orange CBP22 wire fully into the body of the red Posi-Lock (Y). Once fully inserted, screw the end cap into the body of the red Posi-Lock (Y) to lock the green/orange CBP22 wire in place.

STEP 25

Reattach the stock wiring bundle to the stock wiring harness near the passenger side kick panel fuse box.

STEP 26

Replace the passenger side kick panel by sliding the locating tabs into position first, then pushing in the panel to lock in the mounting prongs.

STEP 26B (OPTIONAL)

If you removed the panel in Step 19B (Optional), replace the panel under the passenger side glove box by inserting the mounting prong into the fire wall, then pressing the plastic rivets into the glove box frame.

STEP 27A

Connect the 2-Pin to 3-Pin Adapter Harness (AC) to the 2-Pin Fan Wire Harness (S).

STEP 27B

Rest the Particle Separator Assembly (A) on top of the engine/radiator area, do not place it in the wheel well opening yet. Connect the 2-Pin to 3-Pin Adapter Harness (AC) to the 3-Pin Scavenge Fan Connector coming from the Particle Separator Assembly (A)

STEP 28

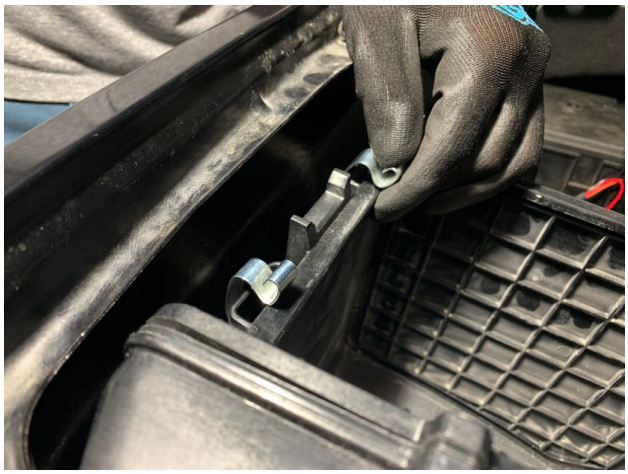
Place excess Fan Wire Harness (S) and 2-pin to 3-pin Adapter Harness (AC) into the wheel well and secure it to the stock wiring harness with Zip Ties (P). Make sure the relay, red wire, and black wire are still resting on the fuse box, leave some slack in the Fan Wire Harness (S) going to the relay, you will need it during Step 34.

STEP 29

Unlatch the two metal spring clamps on the side of the Particle Separator Assembly (A), then remove the Upper Housing (E) and the Air Filter (B).

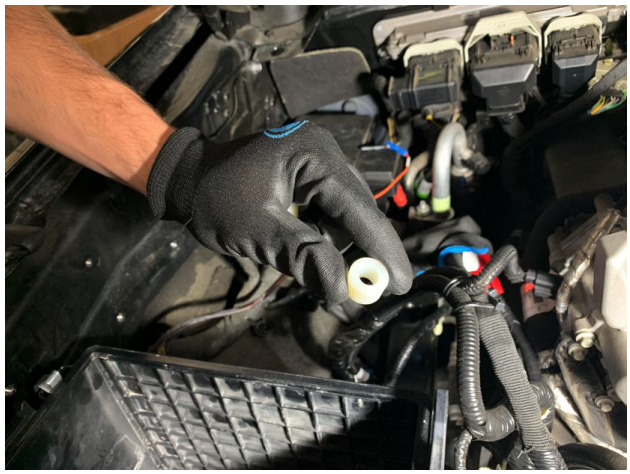
Then, lower the Particle Separator Assembly (A) into the open wheel well area then slide it towards the front of the vehicle, right behind the headlight.

Note: When placing the Particle Separator Assembly (A) into the vehicle be sure that the metal spring clamps are not hanging down, they will become unreachable once the assembly is bolted to the frame. They need to be sticking upward, above the top of the airbox area, as shown in the image.



STEP 30

Place both Spacers (F) between the Particle Separator Assembly (A) and the Battery Tray Bracket (G).



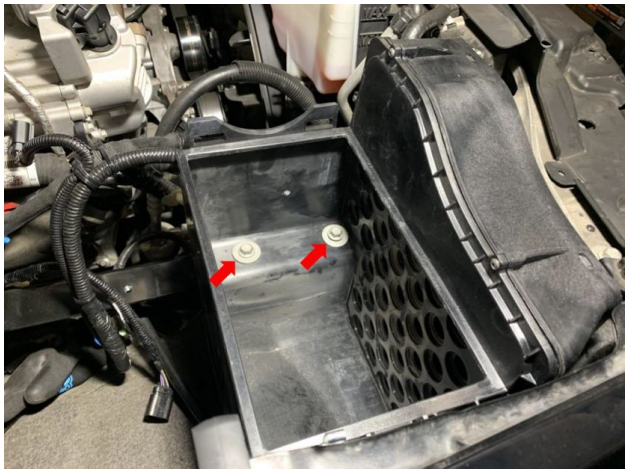
STEP 30B

Line up Spacers (F) with the two through holes in the Particle Separator Assembly (A). Be careful to not drop these spacers into the engine bay during the install.

STEP 30C

Once the Spacers (F) are in place install the stock screws, removed in Step 10, through the Particle Separator Assembly (A) and Spacers (F) into the Battery Tray Bracket (G). Do not tighten these bolts yet.

Tools Required: 13mm Socket/Wrench



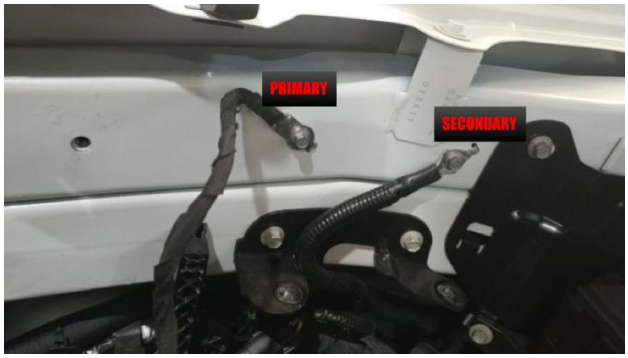
STEP 31

Insert M8 Bolt (O) and M8 Washer (L) through the Particle Separator Assembly (A) and into the nut in the vehicle's frame. Fully tighten this bolt then go back and fully tighten the two bolts installed in Step 30c.

Tools Required: 13mm Socket/Wrench

STEP 32

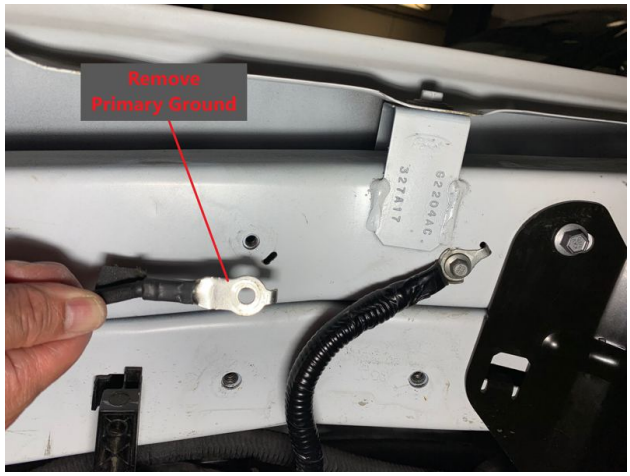
Check to see if you have one or two ground cables attached to the fender as shown. Some trucks have only the primary ground and others have both the primary and secondary grounds.



STEP 33

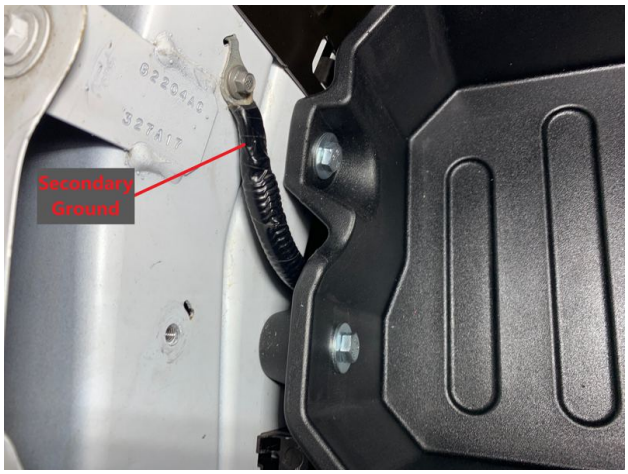
Remove the grounding bolt that attaches the primary ground to the fender. Set the grounding bolt aside to be used in Step 60.

Tools Required: 8mm Socket/Wrench, Torque Wrench



STEP 34

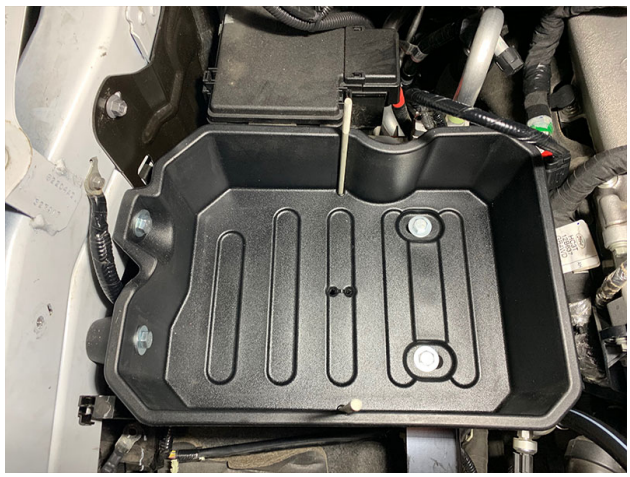
Place the Battery Tray (H) into the vehicle, do not loosen the screw that holds down the secondary ground. The Battery Tray (H) is designed to have enough clearance so that the secondary ground does not touch the Battery Tray (H). Ensure that the Fan Wire Harness (S) is routed underneath the Battery Tray (H).



STEP 35

Align the holes on the Battery Tray (H) with the holes on the Battery Tray Bracket (G) and side fender wall then tighten with the M8 Screws (O) and M8 Washer (L). Use the longer M8 Screw (AB) for going through the long side fender boss on the Battery Tray (H). Make sure the Battery Tray (H) is not touching the secondary ground.

Tool Required: 13mm Socket/Wrench



STEP 36

Place the battery and battery blanket inside the Battery Tray (H). Be careful as the battery is heavy. The battery is also filled with battery acid so remember to keep it level to prevent the acid from spilling out the top. Pay attention to the orientation of the battery where the negative post is closest to the fender and the positive post is closest to the engine. Also make sure the U-bolt is on the outside of the battery blanket.

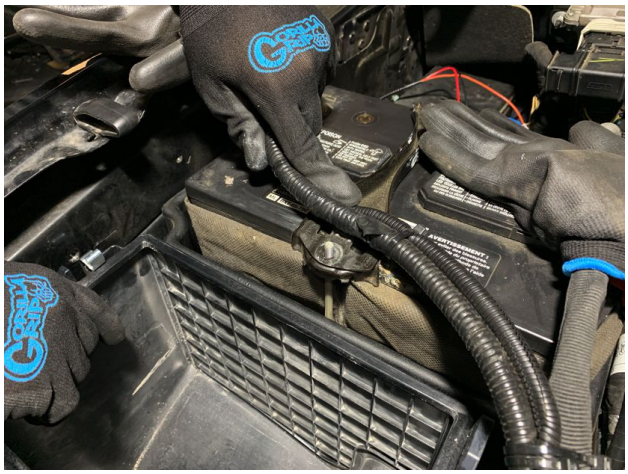
Safety Note: Wear appropriate safety glasses and protective gloves for battery installation.

STEP 37

Install the stock hold down bracket onto the battery.

STEP 38

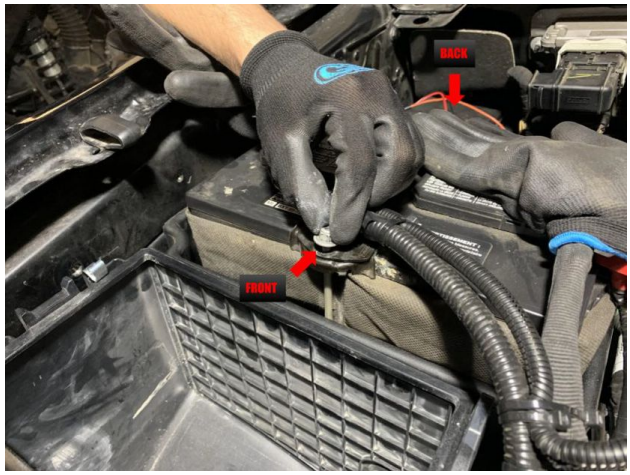
Install the negative battery cable mounting tab.



STEP 39

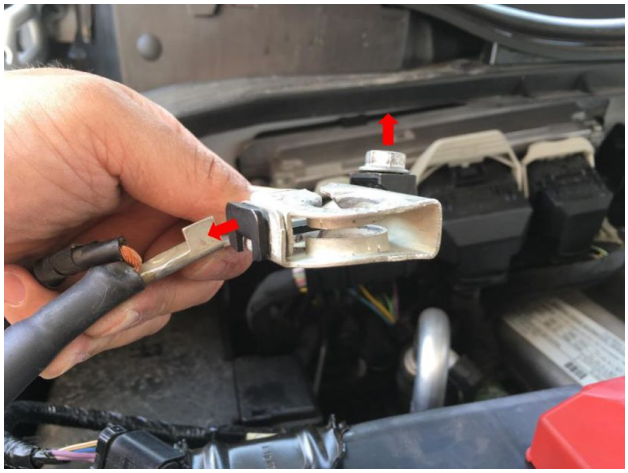
Reinstall and tighten the two nuts, removed in Step 2, on both the front and the back of the battery hold down bracket.

Tools Required: 10mm Deep Socket/Wrench



STEP 40

We will now rearrange and flip the tightening mechanism on the negative battery cable terminal. This will allow the terminal to reach the battery post after the battery relocation. First completely remove the nut, screw and wedge then pull out the metal clip then reinstall the metal clip into the longer side on the battery terminal as shown.



STEP 41

Reinstall the tightening mechanism and then flip the negative cable terminal over. The longer side of the negative battery terminal should be facing the passenger side during installation. Open up the battery terminal diameter by opening up the slit with a screwdriver so it will be easier to get the terminal fully seated onto the battery post.

Tools Required: Flat Blade Screwdriver

STEP 42

Remove the nut on the positive battery terminal and disconnect the secondary cable. Set the nut aside, it will be reused in Step 46.

Note: If you have two secondary positive battery cables, disconnect both from the battery terminal.

Tools Required: 10mm Socket/Wrench

STEP 43

Secure one end of the Battery Cable Extension (V) to the secondary positive battery cable using the supplied M6 Bolt (Z) and M6 Locknut (AA). Keep the metal contacts straight. Torque the M6 Bolt (Z) and M6 Locknut (AA) to 88 lb-in (9.9 Nm).

Warning!: If you have two secondary positive battery cables, install the battery cable extensions separately. Do not attempt to install two secondary positive cables with only one Battery Cable Extension (V). This may lead to a potential fire. Also note the orientation of the extensions when attaching them so that the free end can be stacked flat and back to back as shown.

Tools Required: 10mm Socket/Wrench, Torque Wrench

STEP 44

Slide a single layer of red Heat Shrink (Q) over the metal contact then shrink the tubing by applying heat. Make sure there is no exposed metal or tears after shrinking the tube. Then repeat the procedure once more and cover the red Heat Shrink (Q) with another layer of red Heat Shrink (Q), then shrink the second layer of tubing by applying heat.

Note: If you have two secondary positive battery cables, repeat this entire step for the other secondary positive battery cable. Do not use one Heat Shrink (Q) for both secondary positive battery cables.

Tools Required: Heat Gun

STEP 45

Slide the Fabric Heat Shrink (R) and cover the entire Battery Cable Extension (V), including the red Heat Shrink (Q), then shrink the fabric tubing by applying heat. Make sure there is no exposed metal or tears after shrinking the Fabric Heat Shrink (R).

Note: If you have two secondary positive battery cables, repeat this entire step for the other secondary positive battery cable. Do not use one Fabric Heat Shrink (R) for both secondary positive battery cables.

Tools Required: Heat Gun

STEP 46

Reinstall the nut removed in Step 42 to secure the other end of the Battery Cable Extension (V) onto the positive battery terminal. Leave the nut loose.

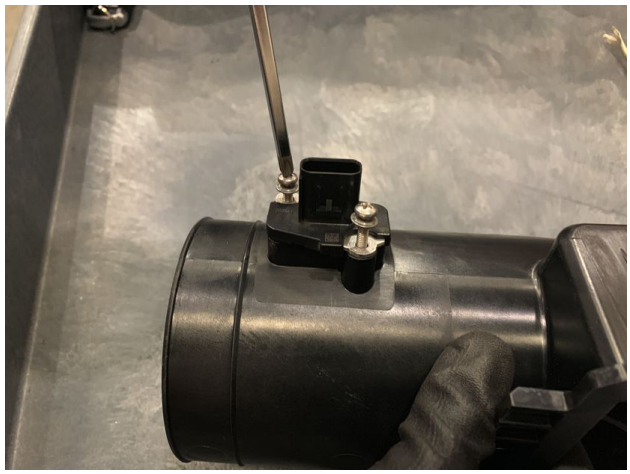
Note: If you have two Battery Cable Extensions (V) installed, stack the two cables on top of each other flat, back to back as shown in Step 43, then reinstall the nut.

Tools Required: 10mm Socket/Wrench

STEP 47

Carefully remove the MAF sensor from the stock intake tube and install it onto the Upper Housing (E) with the provided #8-32 Screws (K).

Tools Required: T20 Torx, Phillips Screwdriver



STEP 48

Remove the filter minder and filter minder grommet from the stock airbox and install them into the Upper Housing (E). If for some reason you do not have the stock filter minder and filter minder grommet, you can use the supplied Filter Minder Grommet (W) to seal the hole in the Upper Housing (E).

STEP 49

Place the Air Filter (B) into the Particle Separator Assembly (A).

STEP 50

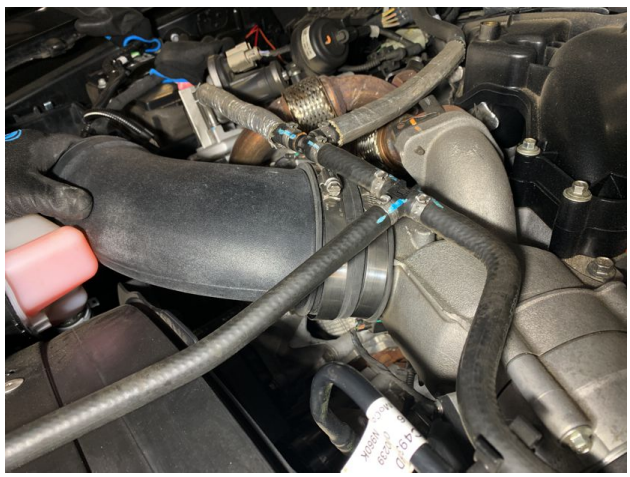
Place Straight Coupler (I) and two #72 Hose Clamps (J) onto the turbo inlet. Tighten the #72 Hose Clamp (J) on the turbo side only.

Tools Required: 8mm Socket/Wrench

STEP 51

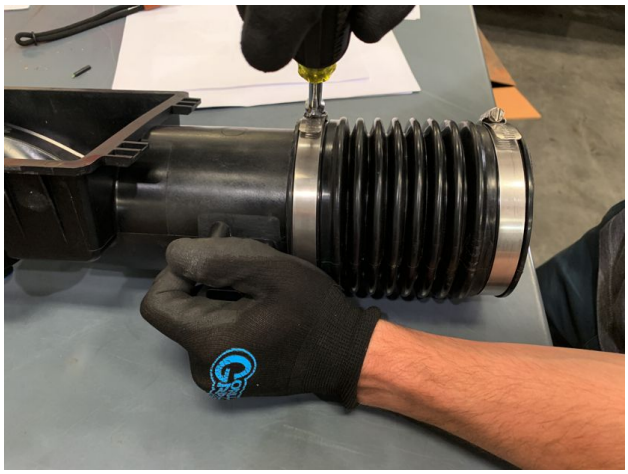
Insert the Intake Tube (C) into Coupler (I) and secure by tightening the #72 Hose Clamp (J).

Tools Required: 8mm Socket/Wrench



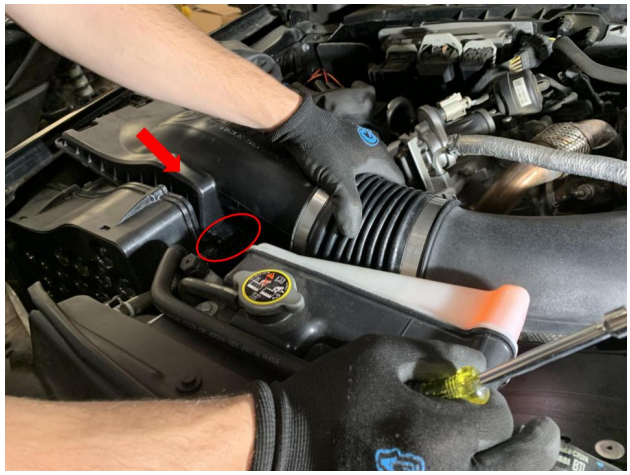
STEP 52

Place two #72 Hose Clamps (J) onto the ends of the Ribbed Coupler (D). Install one end of the Ribbed Coupler (D) onto the Upper Housing (E). Tighten the #72 Hose Clamp (J) on the end installed onto the Upper Housing (E).



STEP 53

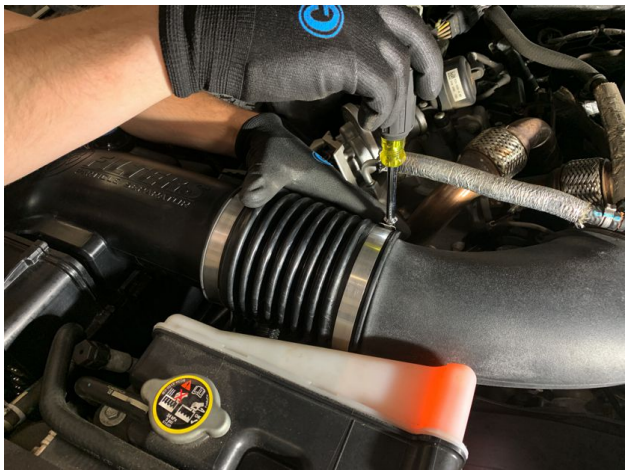
Install the end of the Ribbed Coupler (D) onto Intake Tube (C), don't tighten the #72 Hose Clamp (J), then install the Upper Housing (E) by inserting the tabs into the open slots on the Particle Separator Assembly (A) at a downward angle, as shown. Ensure that the tabs are fully inserted through the open slots; the tabs will be protruding out the other side of the slot when it is inserted fully. It may help to move the Upper Housing (E) from side to side as you are pushing the tabs through the open slot.



STEP 54

Install the open end of the Ribbed Coupler (D) onto the end of the Intake Tube (C). Tighten the #72 Hose Clamp (J) to secure the Ribbed Coupler (D) to the Intake Tube (C).

Tools Required: 8mm Socket/Wrench



STEP 55

Once the Upper Housing (E) tabs are firmly in place in the Particle Separator Assembly (A) slots, secure the Upper Housing (E) to the Particle Separator Assembly (A) by snapping the metal spring clamps into position on the Upper Housing (E). Tip: If you have troubles snapping the metal spring clamp into place, a flathead screwdriver can be inserted from the side to provide leverage. Before moving forward, ensure there is a good seal between the Upper Housing (E) and the entire perimeter of the Air Filter (B).

STEP 56

Connect one end of the MAF Sensor Extension Harness (T) to the stock MAF sensor harness then connect the other end to the MAF sensor installed in the Upper Housing (E).

STEP 57

Remove the terminal clamp nut assembly and rotate it to the other side of the terminal as shown by the arrow. Moving the terminal clamp nut assembly will allow the positive cables, and extensions, to be as close as possible to the side of the battery.

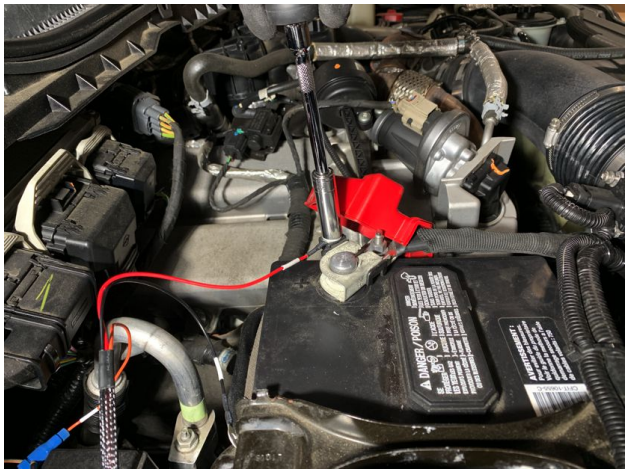
Tools Required: 10mm Deep Socket/Wrench, Torque Wrench

STEP 58

Before securing the wiring terminal to the battery post, place the red BATT wire, from the Fan Wire Harness (S), into the clamp nut assembly. Once added, place the wiring terminal onto the battery post and secure the assembly with the terminal clamp nut torqued to factory specifications, 80 lb-in (9 Nm).

Note: When securing the terminal to the battery post, verify that the battery cables and extensions are as close as possible to the side of the battery so that all cables and wires are away from any hot components or moving parts that could potentially damage the cables or wires.

Tools Required: 10mm Deep Socket/Wrench, Torque Wrench



STEP 59

Remove the nut from the negative terminal clamp assembly then place the black GND wire, from the Fan Wire Harness (S), into the clamp nut assembly. Once added, place the wiring terminal onto the battery post and secure the assembly with the terminal clamp nut torqued to factory specifications, 80 lb-in (9 Nm). Also, reinstall the negative terminal onto the battery post on the driver side battery with the same factory specifications, 80 lb-in (9 Nm).

Tools Required: 10mm Deep Socket/Wrench, Torque Wrench

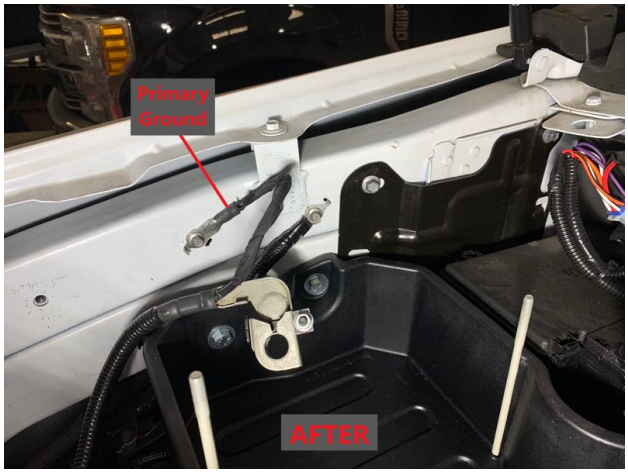
STEP 60

With the provided zip ties (P), secure the relay and excess wiring, from the Fan Wire Harness (S), to the stock wire harness.

STEP 61

Reinstall the primary ground cable into the frame as shown. Reuse the factory grounding bolt, removed in step 33, to attach the ground to the frame and torque to factory specifications, 106 lb-in (12Nm).

Tools Required: 8mm Socket/Wrench, Torque Wrench



STEP 62

Inspect your installation, make sure the kit is properly positioned and all fasteners are secured. Keep all stock parts in case you would ever need to reinstall the stock intake assembly. Affix the ID label near the intake kit. The installation is now complete.

Performance Testing

- Engage parking brake and start your engine. Listen for abnormal noises. If an air leak is detected, re-inspect hoses and connections as they may need to be repositioned and tightened.
- S&B FILTERS recommends that you keep your OE intake system in the event it is required in the future.
- In order to maintain your warranty, all connections and components must be checked periodically for alignment and for proper tension on all connections. Failure to do so may void your warranty.
- Use only S&B FILTERS cleaning and oil products to service your filter. Using any other brand oil and or cleaners on your S&B air filter may void your warranty.

Warning!

If your vehicle has a Vehicle Emission Control Information decal affixed to the factory airbox, a new replacement label must be obtained and installed in a readily visible position in the engine compartment in order to remain CARB compliant. Failure to do so will prevent the vehicle from passing a smog check. Replacement labels can be ordered from your local dealership. Regulations state that the VECI label shall not be affixed to any equipment which is easily detached from the vehicle. Label placement, under the hood on a painted surface is recommended.