INSTALLATION INSTRUCTIONS

SUBJECT: COOLANT TANK ASSEMBLY FOR 2019-2024 CUMMINS

FITMENT: 2019-2024 RAM 2500/3500 with 6.7L Cummins
KIT P/N: FPE-CUMM-CLNT-TNK-1924

EST INSTALL TIME: 2 hours
TOOLS REQUIRED: Clip puller, small flathead screwdriver, pliers, 7MM socket or wrench, 8MM socket or wrench, 10MM socket or wrench, 13MM socket or wrench, 36MM socket or adjustable wrench.

KIT CONTENTS:

Item	Description	Qty
1	Coolant Tank	1
2	Coolant Level switch	1
3	5/16” heater hose (24” cut length)	1
4	3/4” heater hose (32” cut length)	1
5	Size 11-17MM hose clamps	2
6	Size 14-27MM hose clamps	2
7	Permatex Thread Sealant	1
8	9MM x 1/8” NPT Barbed Fitting	1
9	M6x1 Locknut	2

APPLICATION NOTES:
This kit is a direct replacement for MOPAR 68370066AC.

WARNINGS:

- Use of this product may void or nullify the vehicle’s factory warranty.
- User assumes sole responsibility for the safe & proper use of the vehicle at all times.
- The purchaser and end user releases, indemnifies, discharges, and holds harmless Fleece Performance Engineering, Inc. from any and all claims, damages, causes of action, injuries, or expenses resulting from or relating to the use or installation of this product that is in violation of the terms and conditions on this page, the product disclaimer, and/or the product installation instructions. Fleece Performance Engineering, Inc. will not be liable for any direct, indirect, consequential, exemplary, punitive, statutory, or incidental damages or fines cause by the use or installation of this product.

PROCEDURE:

STEP 1: Park the vehicle on a level surface and allow for the engine and cooling system to cool prior to disassembly. **Disconnect the negative terminals on both the passenger and drivers side batteries.** Using a 10MM socket or wrench, loosen each 10MM nut retaining the negative terminals. Remove each terminal then isolate to prevent accidental sparks or arcing.

Figure 1: Negative terminal isolated with a shop rag.

STEP 2: Drain the coolant from the vehicle into a clean bucket.

Relieve pressure from the cooling system by placing a shop rag over the top of the coolant reservoir cap, then slowly twist the cap counterclockwise. The shop rag will provide a layer of protection from any heat or steam that may escape from the coolant reservoir during this process. Once the cap is fully removed, inspect the O-rings on the cap. If the O-rings are in poor condition, it is best to replace the cap with an OEM replacement.

Figure 2: Coolant cap, O-rings highlighted with arrows.

Once all pressure has been relieved from the cooling system, the coolant can be drained from the radiator. The radiator petcock is located on the bottom of the radiator towards the driver's side. To drain the coolant from the cooling system, twist the petcock counterclockwise and allow the fluid to drain completely. This coolant maybe reused or can be properly discarded of if the coolant is going to be replaced with new.

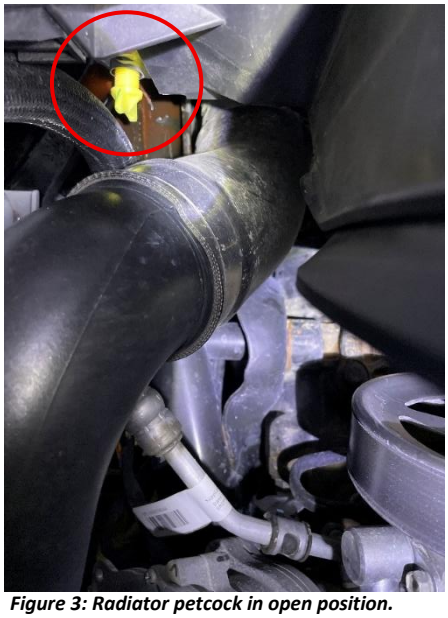

Figure 3: Radiator petcock in open position.

STEP 3: Remove the passenger side fender brace.

While waiting for the cooling system to fully drain, remove the passenger side fender brace. Using a 13MM socket, remove the 13MM bolt and 13MM nut retaining the fender brace, then set the brace and hardware aside.

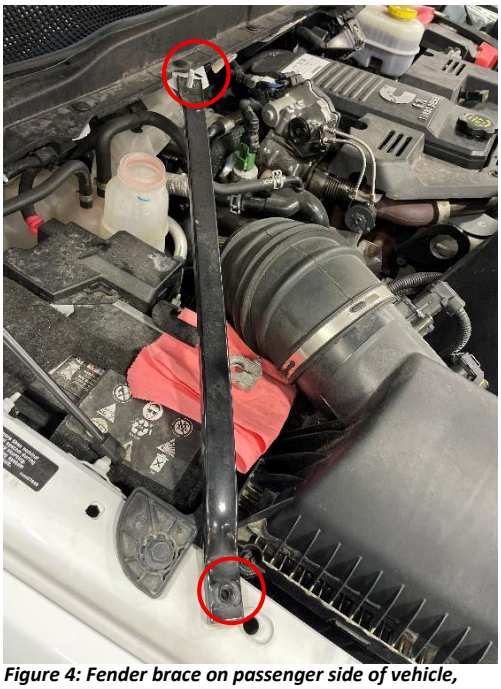

Figure 4: Fender brace on passenger side of vehicle, fastener locations circled.

STEP 4: Remove passenger side fender liner.

Using an 8MM socket, remove the eight 8MM bolts retaining the fender liner. There are three pushpins located on either side of the liner, remove these with a clip puller. Set all fasteners aside for reuse.

Figure 5: Fender brace on passenger side of vehicle, fastener locations circled.

STEP 5: Remove the airbox from the engine bay.

Using an 8MM socket loosen each hose clamp on either end of the intake tube. Remove the intake tube and set aside.

Disconnect the barometric pressure sensor, which is the sensor closest to the front of the vehicle, by pressing the push tab down, and pulling the connector downward. Disconnect the MAF sensor, the sensor closest to the rear of the airbox, by pressing the push tab down, and pull the connector towards the engine.

Figure 6: Air intake tube before removal.

Figure 7: Barometric Pressure sensor (left) and MAF sensor (right) disconnected.

Remove the plastic tube to the right side of the engine air filter box by squeezing the top and bottom of the tube towards one another, then push the tube in the same direction as the airbox.

Figure 8: plastic air inlet tube to the right of the air filter housing.

Following the removal of this tube, pull the airbox assembly upward to remove from the engine bay. Check to see if the mounting bracket for the engine air filter housing still has the rubber isolator on it. Remove the isolator and install it back into the air filter housing for easier installation (*Figure 9*).

Figure 9: plastic mounting bracket for engine air filter housing.

STEP 7: Remove the passenger side battery.

Remove the black plastic cover from the positive terminal and set it aside (*Figure 10*).

Figure 10: Plastic terminal cover.

Remove each cable attached to the positive terminal block (*Figure 11*).

Using a 10MM socket or wrench, loosen the 10MM nut retaining the positive battery terminal. Then, with a 13MM socket or wrench, remove the nut retaining the battery crossover cable (Rearmost cable location).

Using a 10MM socket or wrench, remove the 10MM nut retaining alternator cable (centermost cable location). Set the nut aside then lift the cable up and off the terminal cluster.

Remove the 10MM nut retaining the grid heater power supply line with 10MM socket. Set the nut aside then lift the cable up and off the terminal block.

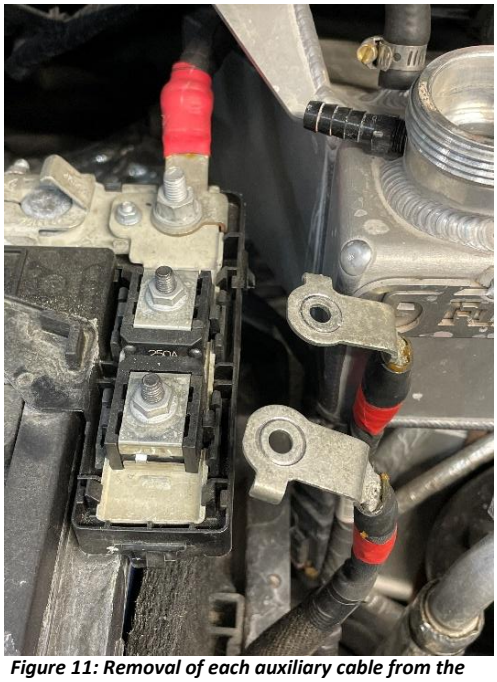

Figure 11: Removal of each auxiliary cable from the positive terminal.

Lift each cable out of the way then pull the positive terminal block up and away from the battery. Install each nut removed from the terminal block back into its original spot to keep everything together, then set aside (*Figure 12*).

With a 10MM socket, remove bolt retaining battery hold down then set both the hold down and bolt aside (*Figure 13*). Use caution during this step, this bolt is frequently dropped.

Once the hold down is removed, lift the battery up and out of the vehicle, then set aside.

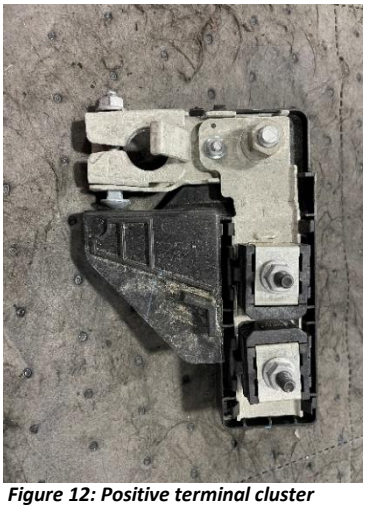

Figure 12: Positive terminal cluster removed.

Figure 13: Battery hold down and 10MM retaining bolt.

STEP 7: Remove the passenger side battery tray.

Starting at the wiring harness that is mounted along the battery tray, remove all six fir tree fasteners with a clip puller. Next, remove the grid heater relay. Using an 8MM socket loosen the two 8MM bolts retaining the relay. Lift the relay up and off the retaining tray.

Figure 14: Fir Tree fasteners retaining wiring harness to passenger side battery tray.

Figure 15: 8MM bolts retaining grid heater relay.

The grid heater power cable will still be connected to the relay. Set both the relay and power supply cable aside. For organization, reinstall the two 8MM bolts into battery tray.

Using a 13MM socket, remove each of the six 13MM bolts retaining the battery tray. Four of the six bolts are located on the top portion of the battery tray (*circled in Figure 16*). The remaining two are located on the underside of the tray and accessed from fender well (*circled in Figure 16*).

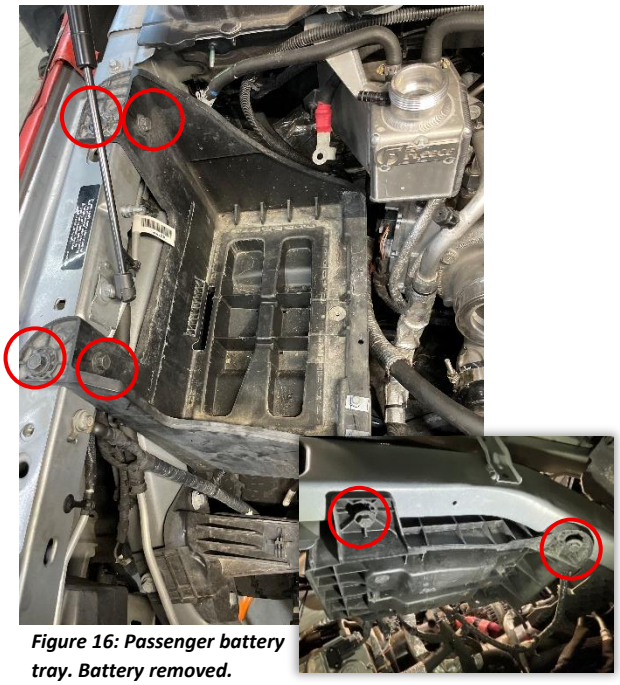

Figure 16: Passenger battery tray. Battery removed. Fasteners circled for clarity

With all six bolts removed, lift the battery tray up, and pull the tray out of the engine bay. For organization, keep all six 13MM bolts and the battery tray together, then set the parts aside.

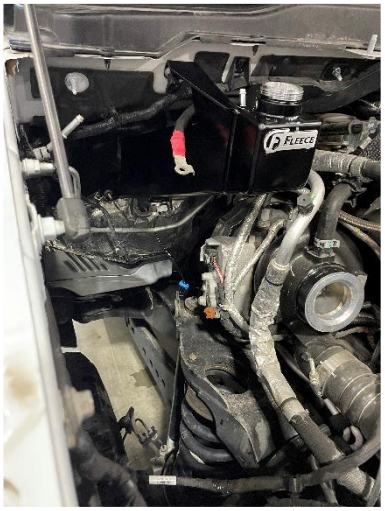

Figure 17: Battery tray removed.

STEP 8: Remove the stock coolant tank.

Using a clip puller, remove any firtree fasteners that hold the coolant hoses and wiring harness to the stock coolant tank (*highlighted with arrows in Figure 18*).

At the bottom of the stock coolant tank, disconnect the coolant level sensor by pressing the push tab on the connector down and pulling away from the reservoir toward the passenger side of the vehicle (*circled in Figure 18*).

Figure 18: Coolant level sensor unplugged. Firtree fasteners highlighted with arrows.

Remove the hose clamp that holds the hose located on the bottom of the reservoir to the coolant standpipe (*Figure 19*). Once disconnected from the standpipe turn the hose upward and tuck the open end into the opening on the top of the coolant tank. This will keep any excess coolant contained to the reservoir.

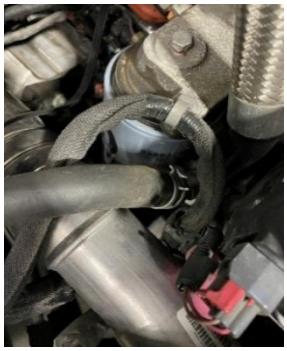

Figure 19: Lower coolant hose clamp at coolant standpipe

Figure 20: One of two coolant hose, attached at coolant standpipe.

Remove each hose clamp retaining the two hoses connected to the top of the cooling reservoir. Starting with the hose on the standpipe, use a set of pliers to move the clamp off the hose. Then remove the hose from the standpipe (*Figure 20*). Repeat the same process for the hose located on the passenger side of the reservoir. Handle each of the coolant hoses with care as they will be reused in the installation of the new tank.

Remove the 10MM bolt from the AC line retainer using a 10MM socket (*highlighted with an arrow in Figure 21*). Set the bolt aside. Using a clip puller, remove the harness retainer circled at right (*Figure 21*).

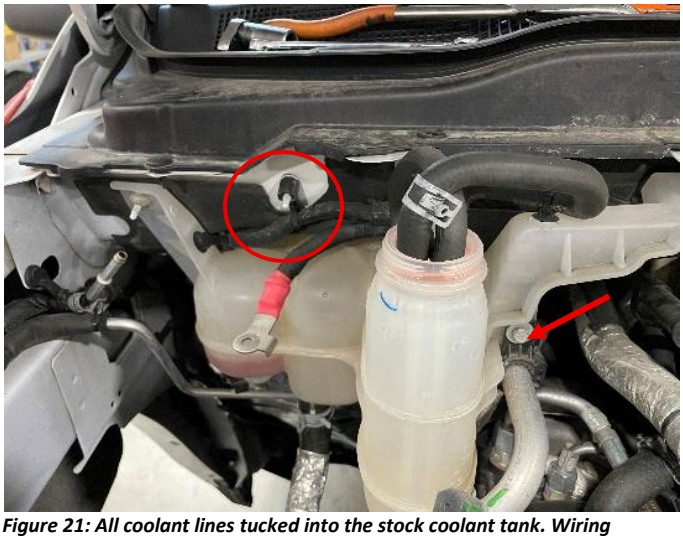

Figure 21: All coolant lines tucked into the stock coolant tank. Wiring harness retainer circled.

Using a 10MM socket, remove each of the three 10MM retaining nuts at each mounting stud of the stock cooling reservoir. Set each of the nuts aside then pull the cooling reservoir away from the fire wall and out of the engine bay.

STEP 9: Disassemble the stock cooling reservoir.

Using a small flathead screwdriver or pick, unlock each hose clamp retaining the two hoses at the top of the cooling reservoir. Once the clamps have been removed, they should be discarded, then remove each hose from the stock cooling reservoir.

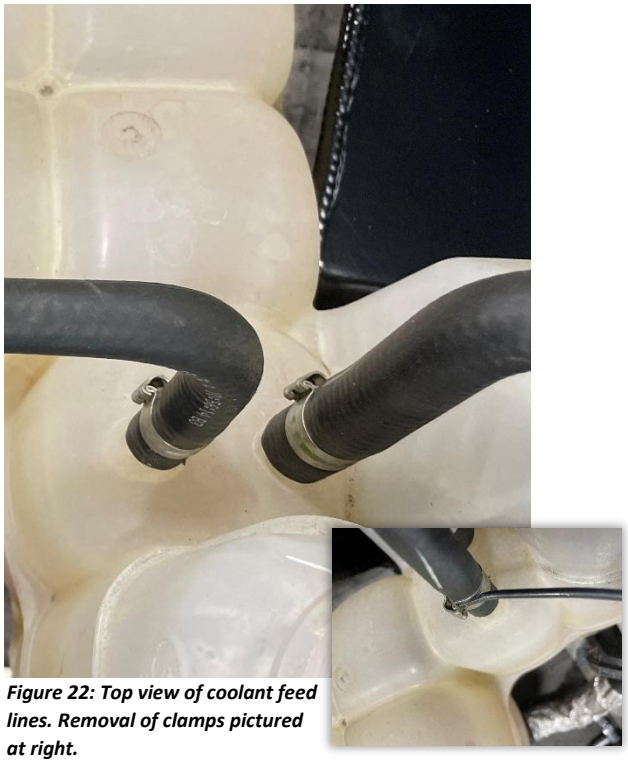

Figure 22: Top view of coolant feed lines. Removal of clamps pictured at right.

Note the location of each hose as they are being removed and handle the hoses with care, they will be installed in the same location on the new Fleece coolant tank.

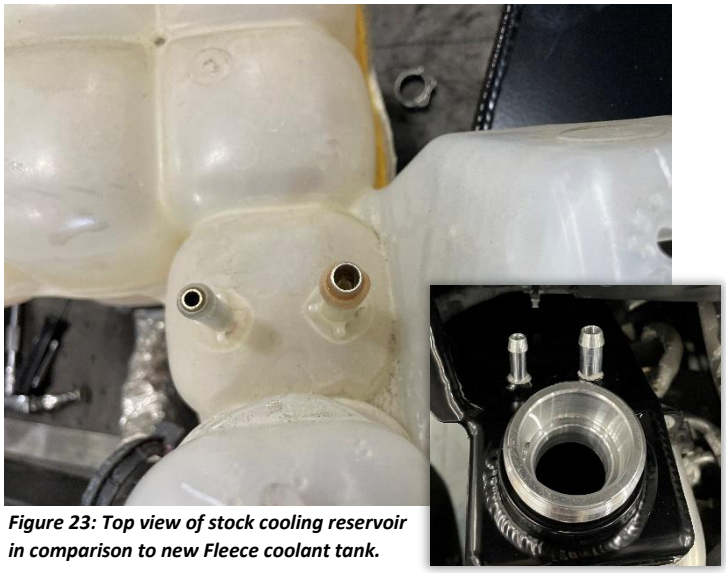

Figure 23: Top view of stock cooling reservoir in comparison to new Fleece coolant tank.

STEP 10: Preassemble the new Fleece coolant tank.

Install the low coolant level switch into the bottom of the tank. Place a bead of thread sealant along the treads of the switch and spread evenly. Install the switch and tighten with a 36MM wrench.

At the top of the coolant tank, install the included 9MM hose Barb x 1/8" NPT Fitting. Apply a bead of thread sealant along the threads of the fitting and spread evenly. Install the fitting into the threaded port at the top of the coolant tank then tighten the fitting with a 7/16" wrench.

NOTE: The included Permatex thread sealant requires up to 24 hours to cure. Please allow for appropriate time for the sealant to fully cure. If a more immediate application is required, Teflon tape can be used instead of the provided Permatex sealant.

Following the installation of the level switch and 1/8" NPT fitting, install the two feed hoses previously removed from the stock cooling reservoir onto the new Fleece coolant tank. Orient the hoses in the same position as the stock cooling reservoir, then push each hose into place. Remove any firtree fasteners attached to the feed hoses at this time. Using one of the supplied blue hose clamps on each hose, secure the hoses to the top of the new Fleece coolant tank and tighten each clamp with 7MM socket (*highlighted in with arrows in Figure 26*).

Apply heat wrap to the new ¾" hose included in the kit. Align the heat wrap in the desired position on the hose and pull the plastic film off to expose the adhesive. Press the adhesive side into place to fully secure the wrap.

Install the ¾" hose onto the tank by pushing one end of the hose onto the bottom barb of the tank. Secure the hose with one of the larger supplied hose clamps and tighten the clamp using an 8MM socket.

Figure 24: Thread sealant application on coolant level switch.

Figure 25: Thread sealant application on 1/8" NPT fitting.

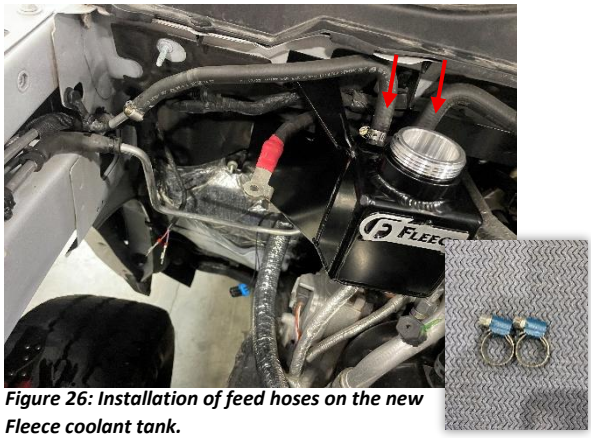

Figure 26: Installation of feed hoses on the new Fleece coolant tank.

Figure 27: Installation of heat wrap on ¾" heater hose.

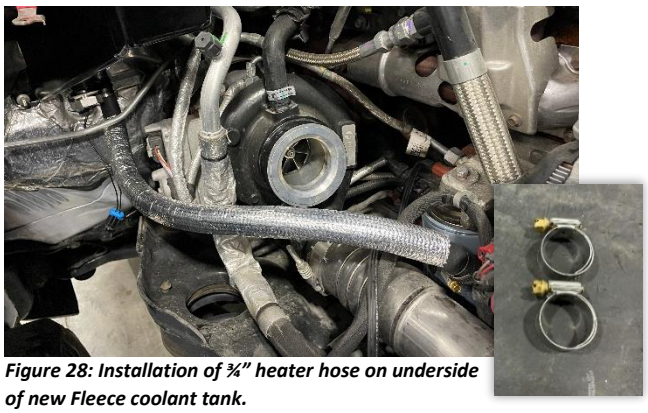

Figure 28: Installation of ¾" heater hose on underside of new Fleece coolant tank.

STEP 11: Install the new Fleece coolant tank.

Install one of the supplied M6x1 nuts onto the stud pictured at right (*Figure 29*).

Figure 29: Original mounting studs for stock coolant tank, this location will not be used.

Line the coolant tank up with the mounting studs pictured at right (*Figures 30 and 31*). Secure the coolant tank to the firewall using the three original retaining nuts from the stock reservoir. Using a 10MM socket, tighten each of the retaining nuts. Reinstall the harness retainer onto the previously unused stud, over the newly installed 10MM nut (*circled in figure 31*).

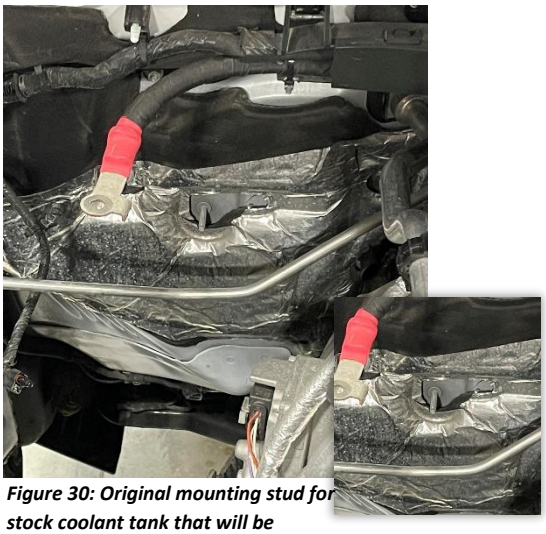

Figure 30: Original mounting stud for stock coolant tank that will be utilized in the installation of the new Fleece coolant tank.

Figure 31: Previously unused stud at firewall. Wiring retainer circled.

STEP 12: Reconnect the coolant lines and coolant level switch.

With the new Fleece coolant tank mounted in position, plug the float switch back in on the underside of the new Fleece coolant tank.

Figure 32: New coolant level switch plugged in.

Install the 5/16” hose onto the 1/8” NPT fitting at the top of the coolant tank. Push the hose into place. Allow the hose to lay between the cooling tank and where the battery would sit. This will function as an overflow tube.

Reinstall the hoses from coolant tank to the standpipe and degas tube. Using a set of pliers, reinstall the retaining clamps at either end of each hose.

Figure 33: Installation of opposite end of coolant feed hose.

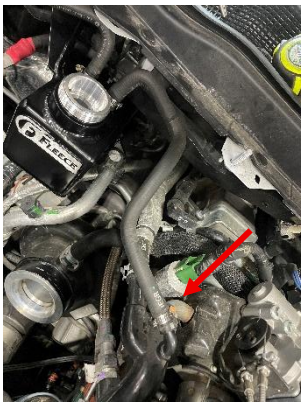

Figure 34: Installation of opposite end of coolant feed hose at standpipe. AC line retainer.

Reinstall the AC line retainer at this time. Line the retainer up with the mounting tab on the driver’s side of the new coolant tank. Place the factory bolt through the mounting tab on the fleece coolant tank and secure with one of the supplied M6x1 nuts.

Install the other end of the lower heater hose by pushing it into place on the coolant standpipe. Secure the hose in place with one of the larger hose clamps. Using an 8MM socket tighten the clamp. The hose may be cut to length at this step if preferred.

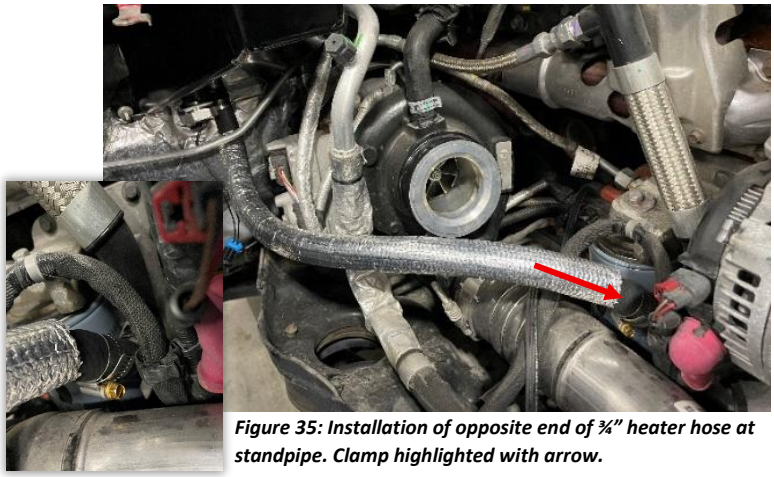

Figure 35: Installation of opposite end of ¾” heater hose at standpipe. Clamp highlighted with arrow.

STEP 13: Reinstall the passenger side battery tray.

Position the battery tray in its original mounting location. Reinstall each of the six 13MM bolts then torque each bolt to 96 INLBS with a 13MM socket *(Figure 36)*.

Reinstall grid heater relay. Remove each of the 8MM bolts from the battery tray, then reinstall once the relay is in place. Tighten each of the bolts with 8MM socket *(Figure 36)*. Push each of the fir tree fasteners for the wiring harness on the side of tray back into place.

Figure 36: Battery tray reinstalled; grid heater relay reinstalled.

STEP 14: Reinstall the battery.

Set battery into battery tray in the same orientation it came out in. Reinstall battery hold down and tighten 10MM bolt with 10MM socket. Place the positive terminal block back onto the positive terminal. Reinstall each of the three auxiliary cables in the same order they were removed in *(Figure 37)*. Once all three cables have been reinstalled, reinstall the plastic terminal cover.

Figure 37: Reinstallation of each auxiliary cable to the positive terminal cluster.

STEP 15: Reinstall the air filter assembly.

Set the engine air filter housing in its factory mounting location and push the air box into place. Then, push the air intake tube back onto the air filter housing and tighten the clamp with an 8MM socket.

Reconnect the MAF sensor, the sensor closest to the rear of the airbox. Reconnect the barometric pressure sensor, which is the sensor closest to the front of the vehicle.

Figure 38: Engine air filter housing reinstalled. MAF sensor and barometric pressure sensor reinstalled. Clamps on intake tube tightened.

STEP 16: Reinstall the plastic air inlet duct to the side of the engine air filter housing by pushing the plastic tabs back into place (*Figure 39*).

Figure 39: Plastic air inlet tube to the right of the engine air filter housing reinstalled.

STEP 17: Refill the cooling system.

Turn the radiator petcock clockwise until it is verified to be in the closed position *(Figure 40)*. Refill the cooling system with either the old coolant from when the system had been originally drained or with new coolant. Once filled, install the stock cooling reservoir cap onto the new Fleece coolant tank.

Figure 40: Radiator petcock in open position. Turn clockwise until it is in the closed position.

STEP 18: Start the engine and check for any cooling leaks.

Reconnect each of the negative battery terminals. Start the engine and allow for the truck to run at idle until it reaches operating temperature. Once operating temperature has been reached, inspect the cooling system for any leaks. After verifying no leaks are present, shut the engine down and allow for it to cool. Check the coolant level and top off as needed.

STEP 19: Reinstall the passenger fender brace.

Once it has been verified no leaks are present, position the brace in its original factory location. Then thread the 13MM nut and retaining bolt into place, tighten with a 13MM socket (*Figure 41*).

Figure 41: Passenger fender brace reinstalled in factory location.

STEP 20: Reinstall the passenger fender well.

Position the fender well into its original location. Install all eight 8MM bolts and tighten with an 8MM socket (*circled in Figure 42*). Reinstall the three push pins into their appropriate location (*highlighted with arrows in Figure 42*).

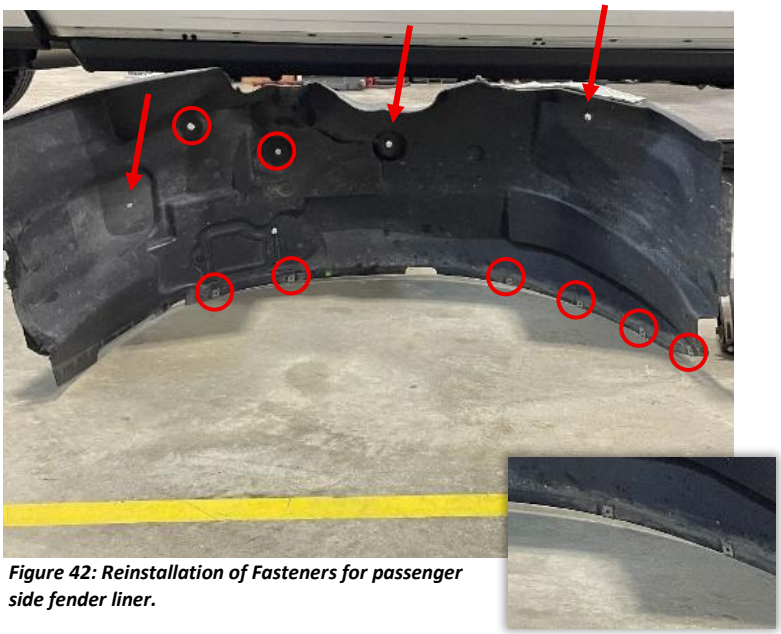

Figure 42: Reinstallation of Fasteners for passenger side fender liner.