2023+ Ford Raptor Ranger 35 Gallon replacement tank instructions

Product Information/Install Instructions for

Kit P/N FPYRRR

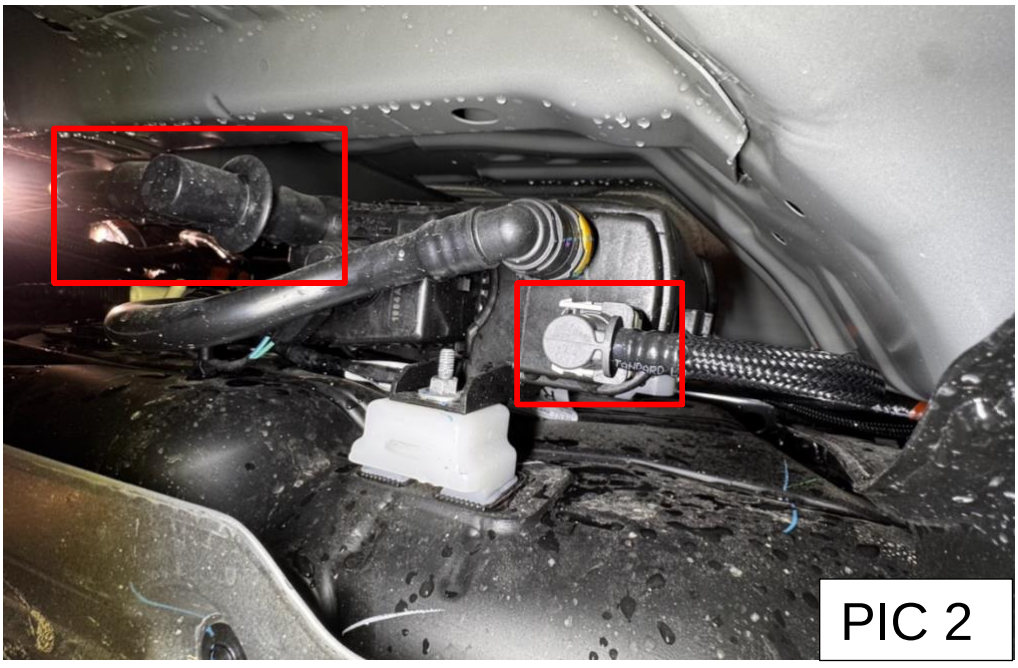
FITTING KIT CONTENTS

Updated 10/10/2024 - TL

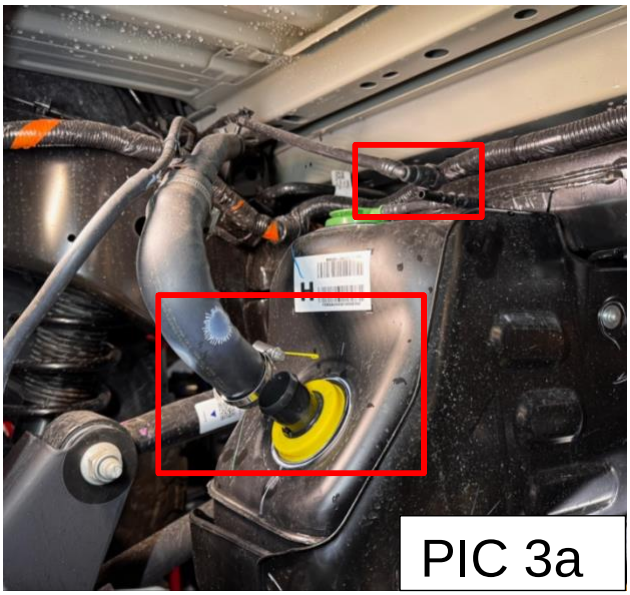
Brass:	Electrical:
○ 1 x P3 5/16 x 1/4 Straight ○ 1 x P6 5/16 x 1/4 Elbow	○ 3mm Two Core Wire @ 400mm ○ 2mm Three Core Wire @ 400mm ○ 10 x 3mm Shrink Tube@ 30mm
Bolts / Nuts:	**Misc Parts:**
○ 6 x M5 x 8 Cap Screws ○ 6 x M5 x 10 Cap Screws ○ 6 x TEK Screws ○ 3 x M6 x 16 Bolts ○ 3 x M6 Nyloc Nuts ○ 3 x M6 x 19 Washers ○ 12 x M5 Washers	○ 1 x FV11 Roll Over Valve ○ 1 x LRA-FTG-2 Grommet ○ 1 x Intermediate Fill Pipe ○ 1 x Canister Bracket ○ 2 x Support Straps ○ 1 x ICV ○ 1 x FLVV 60-16-06 ○ 1 x 16mm Blank Quick Connect ○ 1 x 8mm Blank Quick Connect ○ 1 x 3/8 Quick Connect Elbow (Part #S-001-06-06-90) ○ 1 x BS357 O-Ring ○ 1 x BS337 O-Ring ○ FPYRRR Hold Down Ring
Hose Clamps:	**Cable Ties:**
○ 4 x 1/4 Hose Clamps ○ 4 x 5/8 Hose Clamps ○ 2 x EFI Hose Clamps ○ 4 x 3/8 EFI Hose Clamps	○ 4 x 7” Cable Ties ○ 4 x 11” Cable Ties
Hose:	**7 Pages of Fitting Instructions Consisting of:**
○ 1 x 6mm Hose @ 65mm ○ 1 x 6mm Hose @ 700mm ○ 1 x 8mm Hose @ 215mm ○ 1 x 10mm Hose @ 1200mm ○ 1 x 10mm EFI Hose @ 1000mm ○ 1 x 16mm Hose @ 400mm ○ 1 x 16mm Hose @ 250mm ○ 1 x 16mm Conduflex @ 1150mm ○ 1 x 16mm Conduflex @ 950mm	○ 2 x Pages Fitting Instructions ○ 1 x Page Fitting Kit Contents ○ 4 x Pages Instruction Photos

1. Disconnect the fuel line and the electrical plug at the front of the tank, also unclip from the shield. (Reference PIC 1)

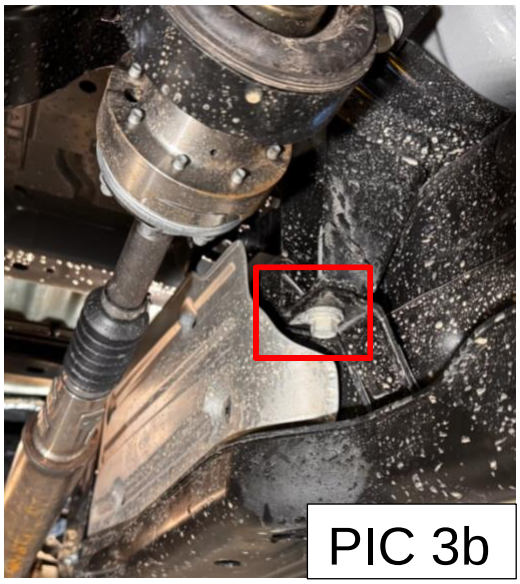
2. Disconnect the canister vent and purge lines in the middle of the tank and the vent line at the rear of the tank. (Reference PIC 2)



3. Disconnect the fill hose. Remove the 3 tank shield screws, unbolt the tank, and remove it. (Reference PIC 3a , 3b, 3c)



PIC 3a



PIC 3b

PIC 3c

4. Remove the steel section of the fuel filler and replace it with the new one supplied. Secure it into position with one bolt. (Reference PIC 4)

PIC 4

5. Modify the canister vent line, cut at the marked position and fit 250mm of the 16mm hose with hose clamp to the OEM canister fitting. (Note: You can cut in position, or you can remove from the vehicle. The joiner is under the left-hand wheel cover (Reference PIC 5a, 5b, 5c)

PIC 5a

PIC 5b

PIC 5c

6. Carefully cut the canister load line at the pressure control sensor and connect 400mm of 16mm hose and secure the hose with clamp. (Reference PIC 6a, and 6b)

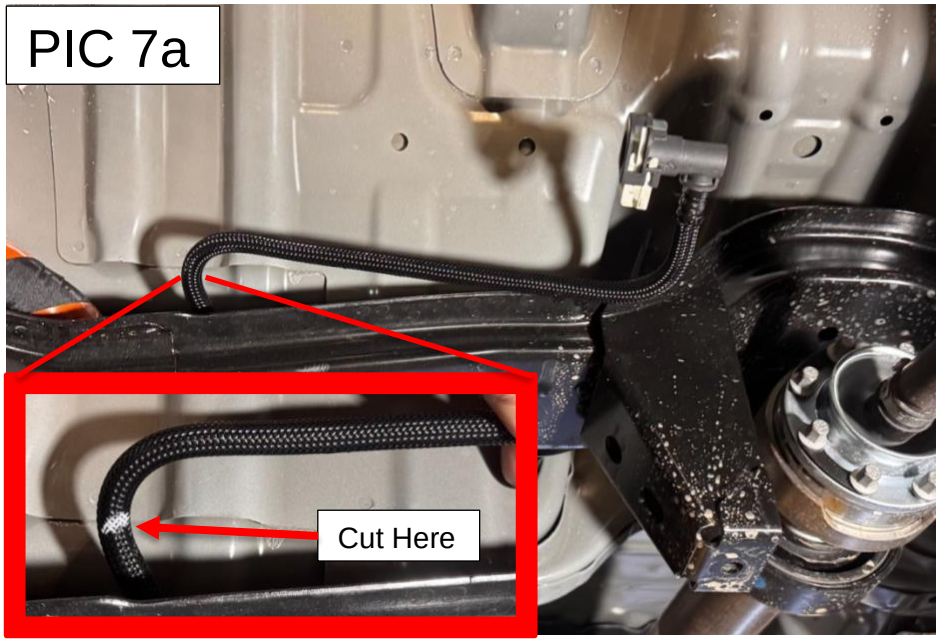
PIC 6a

PIC 6b

7. Cut the plastic canister purge line at the join on the crossmember, with the white clip (Refer Pic 4). Fit 1200mm length 10mm hose to the line, remove the quick connect fitting from the plastic line and clamp to the other end of the 1200mm length of 10mm hose. (Reference PIC 7a, and 7b)

** (It is important to distinguish between the 1200mm hose and the 1000mm hose. The 1000mm hose is intended to be used on a high-pressure fuel injection line, the 1200mm will be Continental branded with white lettering, but both will have Conduflex on the outside) **

PIC 7a



PIC 7b

Canister purge line's final location will be above the crossmember

8. Remove the charcoal canister from the OE tank and fit it to the new mounting bracket using 3 x M6 x 16 bolts.

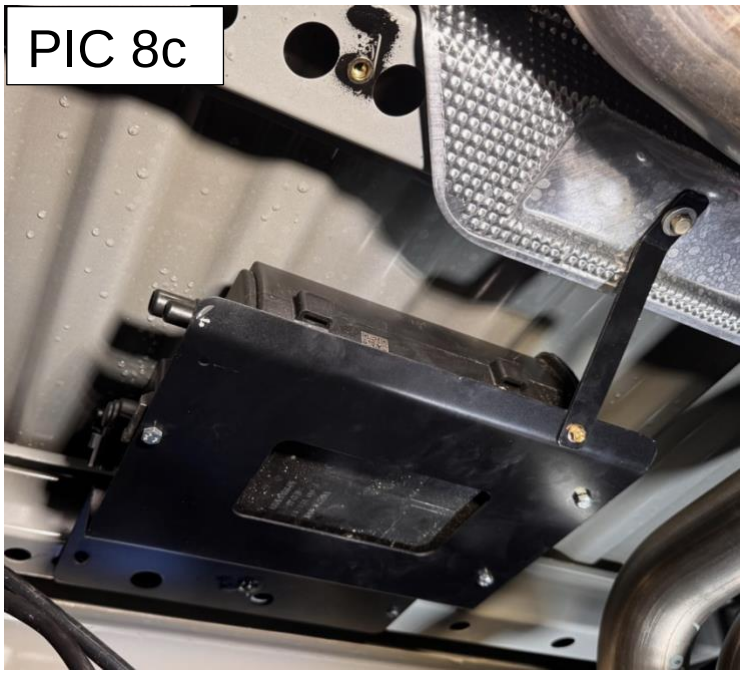
8a. Using the new charcoal canister bracket's large holes in the front as a locator, Mark the three front holes. Use 3 TEK screws (or rivnuts if the customer/installer provides them) to secure the front of the bracket.

8b. Secure the rear of the bracket with 2 short straps, fit one using the heat shield mounting location, and TEK screw (or rivnut) the other end to the bracket, 2 TEK screws are required the LH side strap.

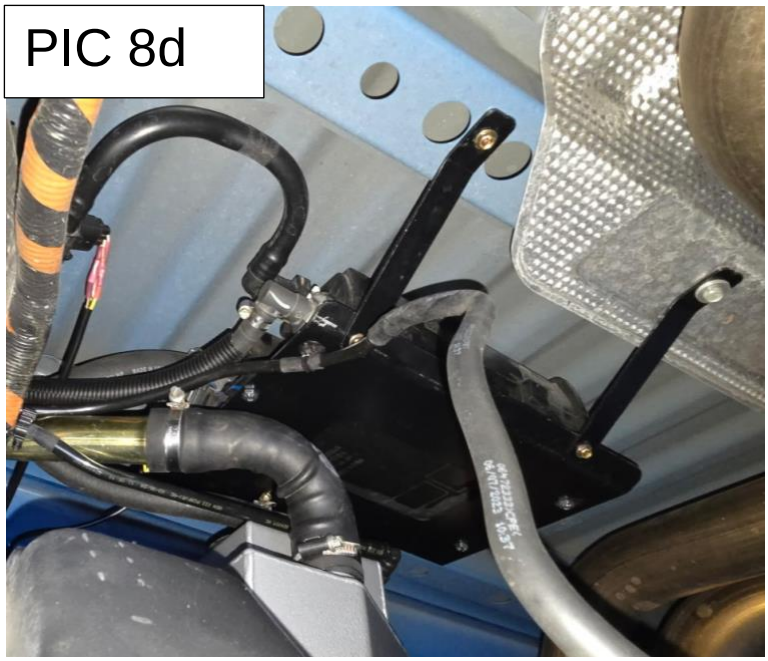
8c. Connect the canister vent line. More reference images included on next page. (Referance PIC 8a, 8b, 8c, 8d, and 8e)

PIC 8a

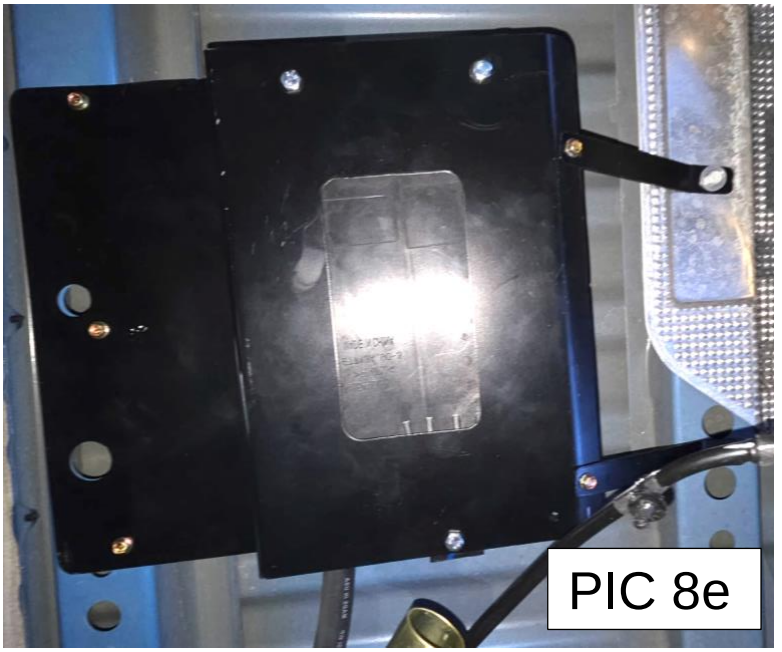
PIC 8b



PIC 8c



PIC 8d

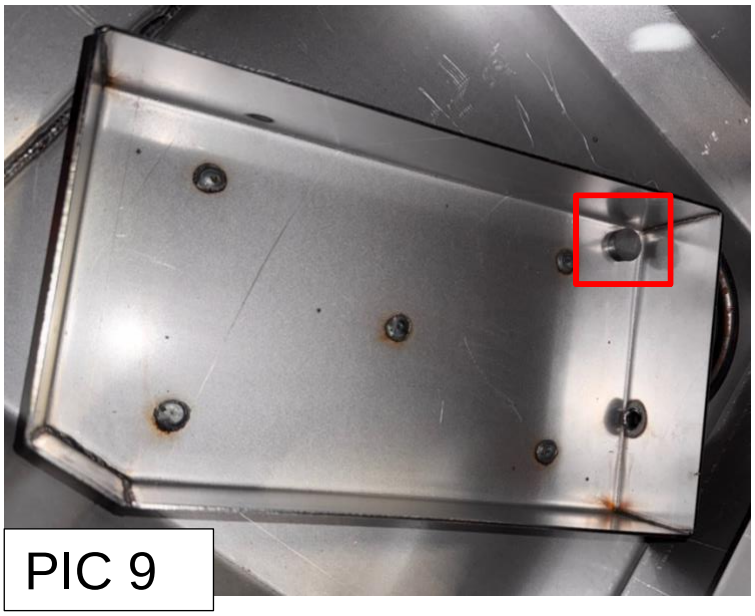


PIC 8e

[For a more detailed look at the connections click here for a quick video.]

9. Preparing tank for install.

Install magnet off to the side of the swirl pot in the new tank. (Referance pic 9)



PIC 9

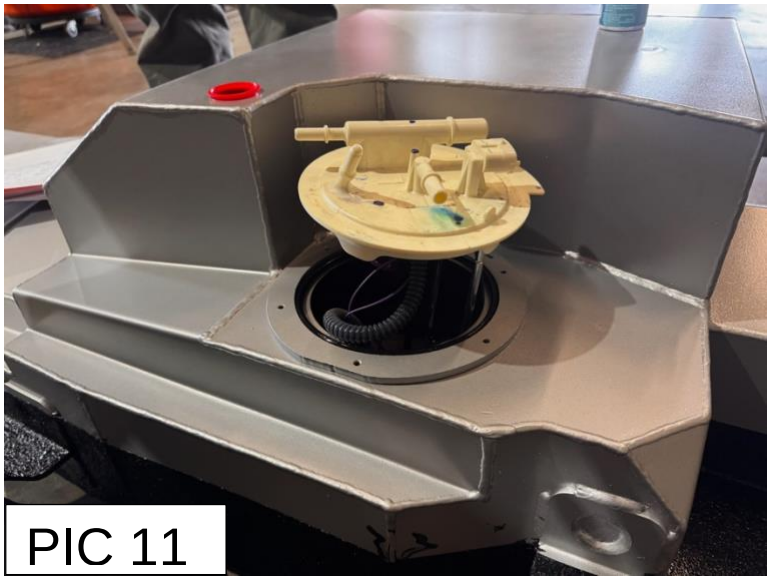
9a. Using a chisel and a hammer, carefully knock lock ring loose in a counterclockwise rotation. It is important to be gentle when working around the fuel pump. (Reference PIC 10a, and 10b)

PIC 10a

PIC 10b

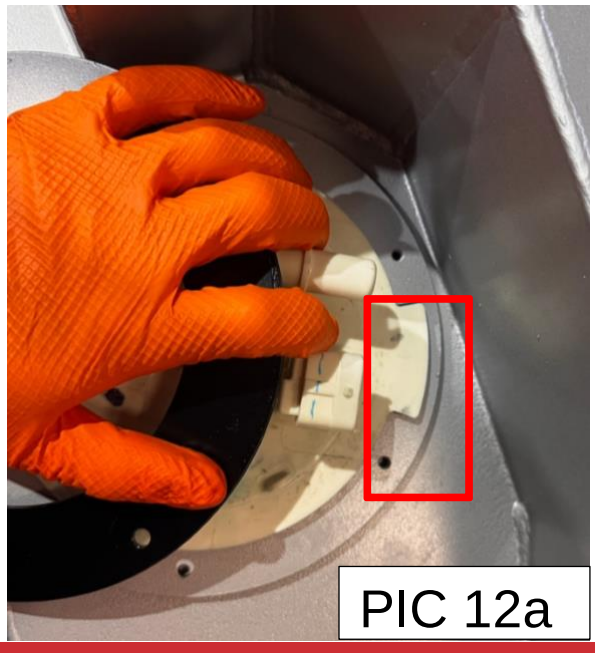
9b. Carefully remove the fuel pump from factory tank, be gentle when nearing the end of the fuel pump, it can be easy to damage the float arm. The pump will need to come out at an angle. Empty retained fuel in pump to make transfer into the new tank easier.

9c. Coat the fuel pump O-ring (Larger of the two) in a small amount of dielectric grease, add O-ring to the tank. We are now ready to transfer the fuel pump from the original tank to the new Long Range Automotive tank. (Reference PIC 11)

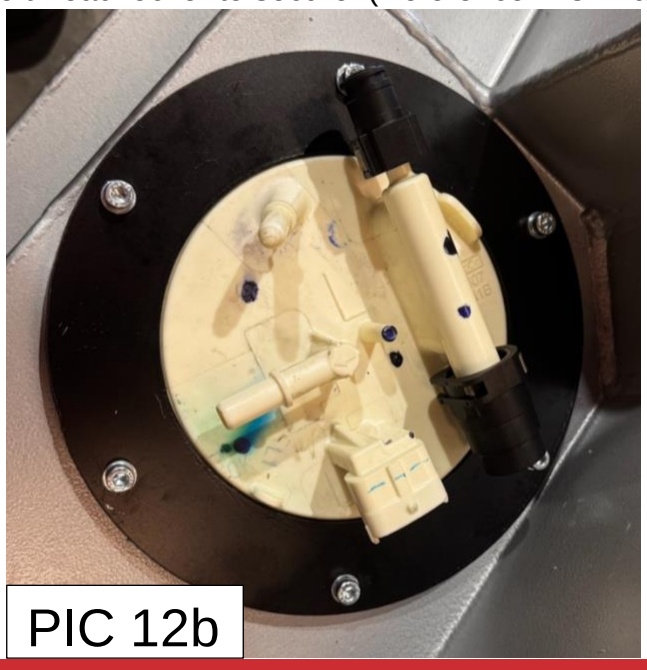


PIC 11

9d. Gently transfer the pump to new tank and lower the fuel pump into the tank, being mindful not to damage the float arm. As you lower the fuel pump into the tank, ensure that the fuel pump locator is lined up correctly. Once fully dropped down into the tank and lockring in placed on top, install fuel pump using six M5x10 cap screws, and M5 washers making use of blue thread locker to secure. (Reference PIC 12a, 12b)



PIC 12a



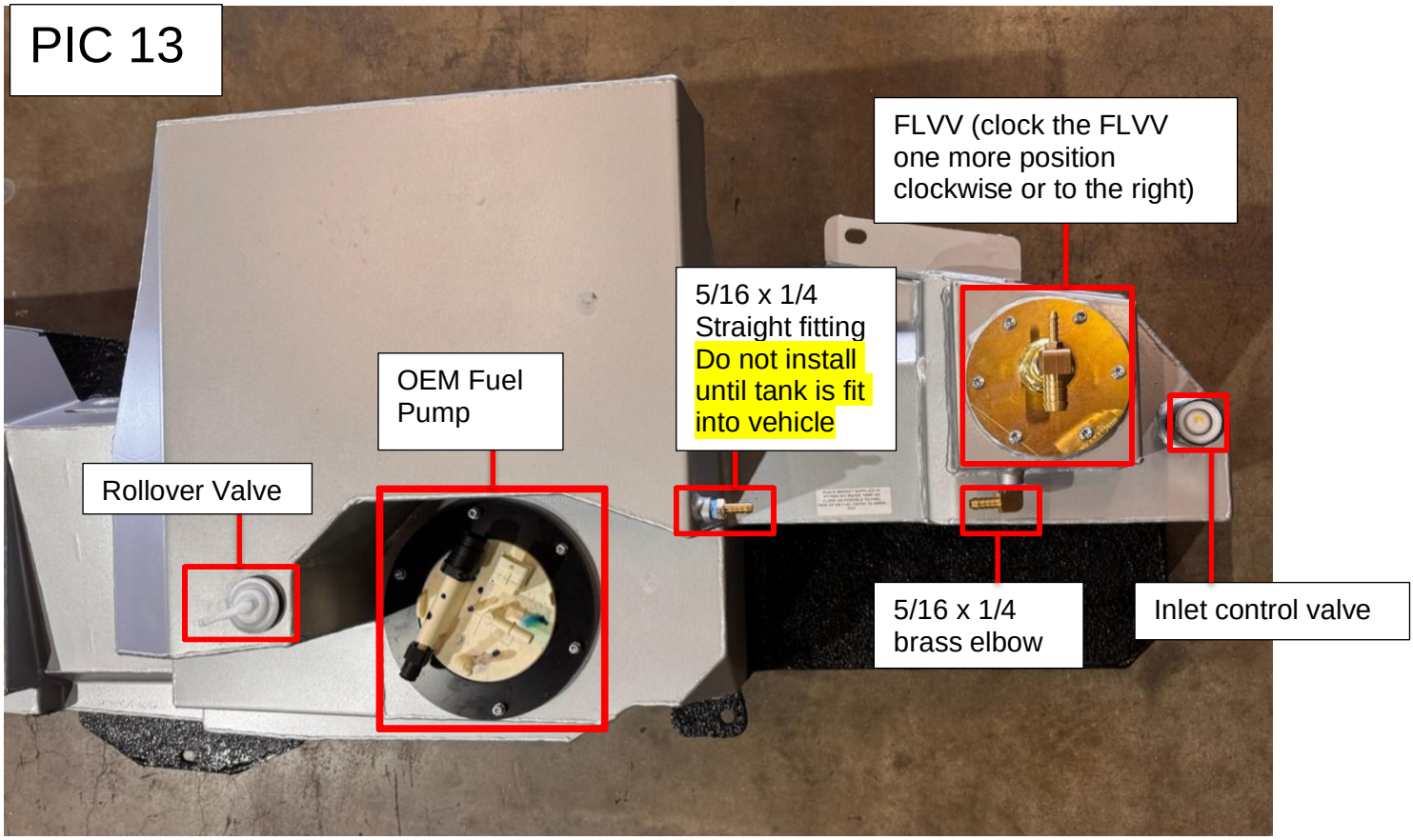
PIC 12b

9e. Install the rollover valve gromet, follow by the rollover valve using dielectric grease to lubricate. Press firmly over the top of the roll over valve with the palm of your hand to install the rollover valve (Reference PIC 13)

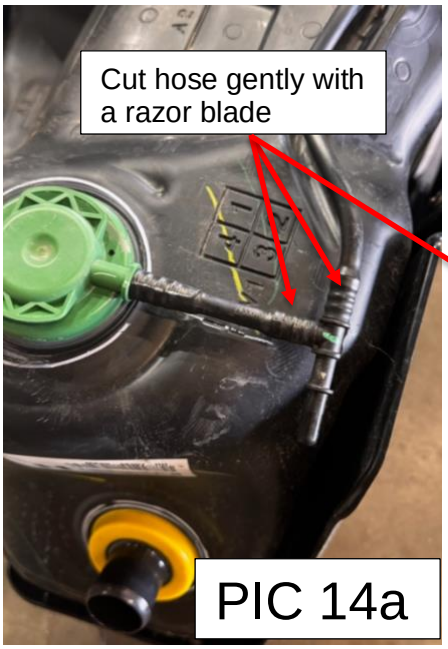
9f. Installing the FLVV. Using a small amount of dielectric grease install the smaller of the two O-rings, then we can insert the FLVV. Snug down the FLVV till the O-ring has a tight seal using six M5x8 cap screws, six M5 washers, and blue thread locker. (Reference PIC 13)

9g. Using fuel rated thread tape, install the 5/16 x 1/4 elbow brass fitting (Reference PIC 13)
(Do Not Install Straight Fitting Yet)
We highly recommend blue monster thread tape

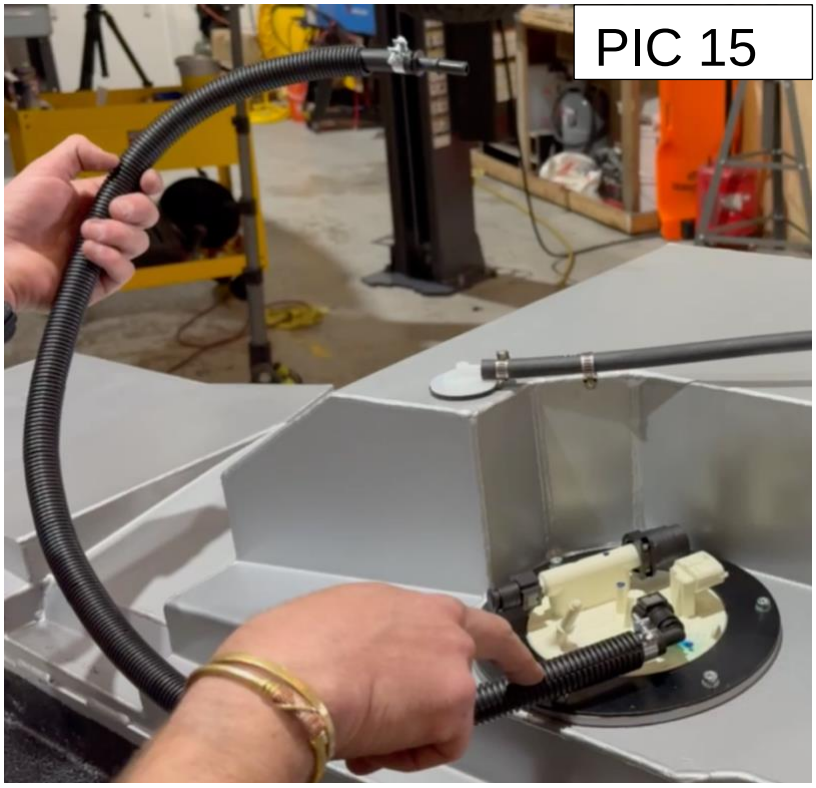
9h. Install the Inlet control valve into the filler neck using a small amount of dielectric grease. Be sure not to push too far into the tank. (Reference PIC 13)



10. Fitting lines to the new Long Range America fuel tank. Begin by removing fitting from the old fuel tank lines and setting them aside for later use (Reference PIC 14a, 14b, and 14c)



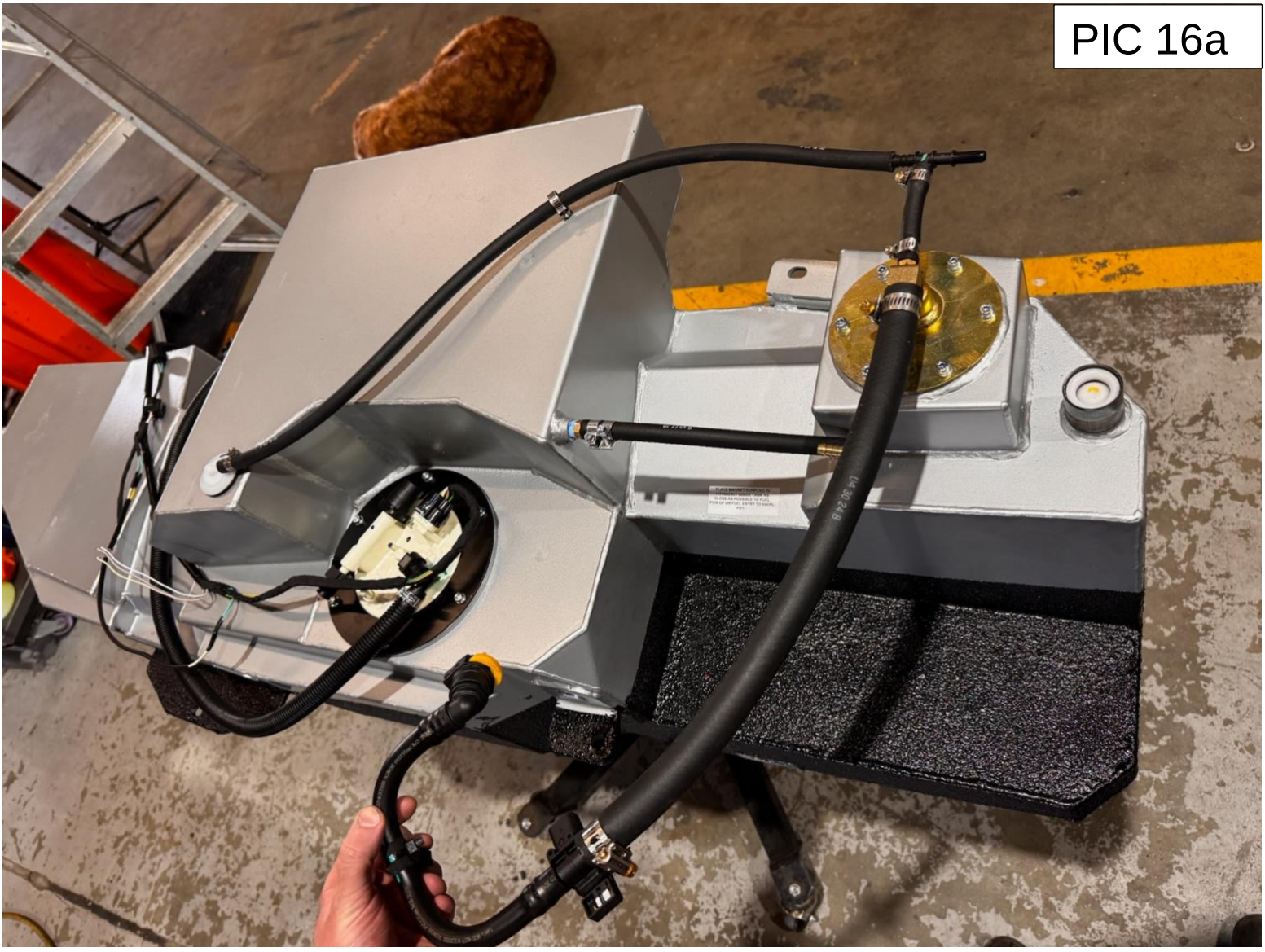
10a. Using the 1000mm of Fuel Hose (Please double check that you are using 1000mm fuel hose and not the 1200mm hose). Install OEM Ford fuel fittings on the hose using two hose claps. (Reference PIC 15)



10b. Extend the wiring to the canister and pressure sensor using 2 and 3 core wire. Solder joints and shrink tube connections and connect to the pump. (Reference PIC 16a, 16b, and 16c)

For a more detailed view of the wiring harness extension click here to watch a short video

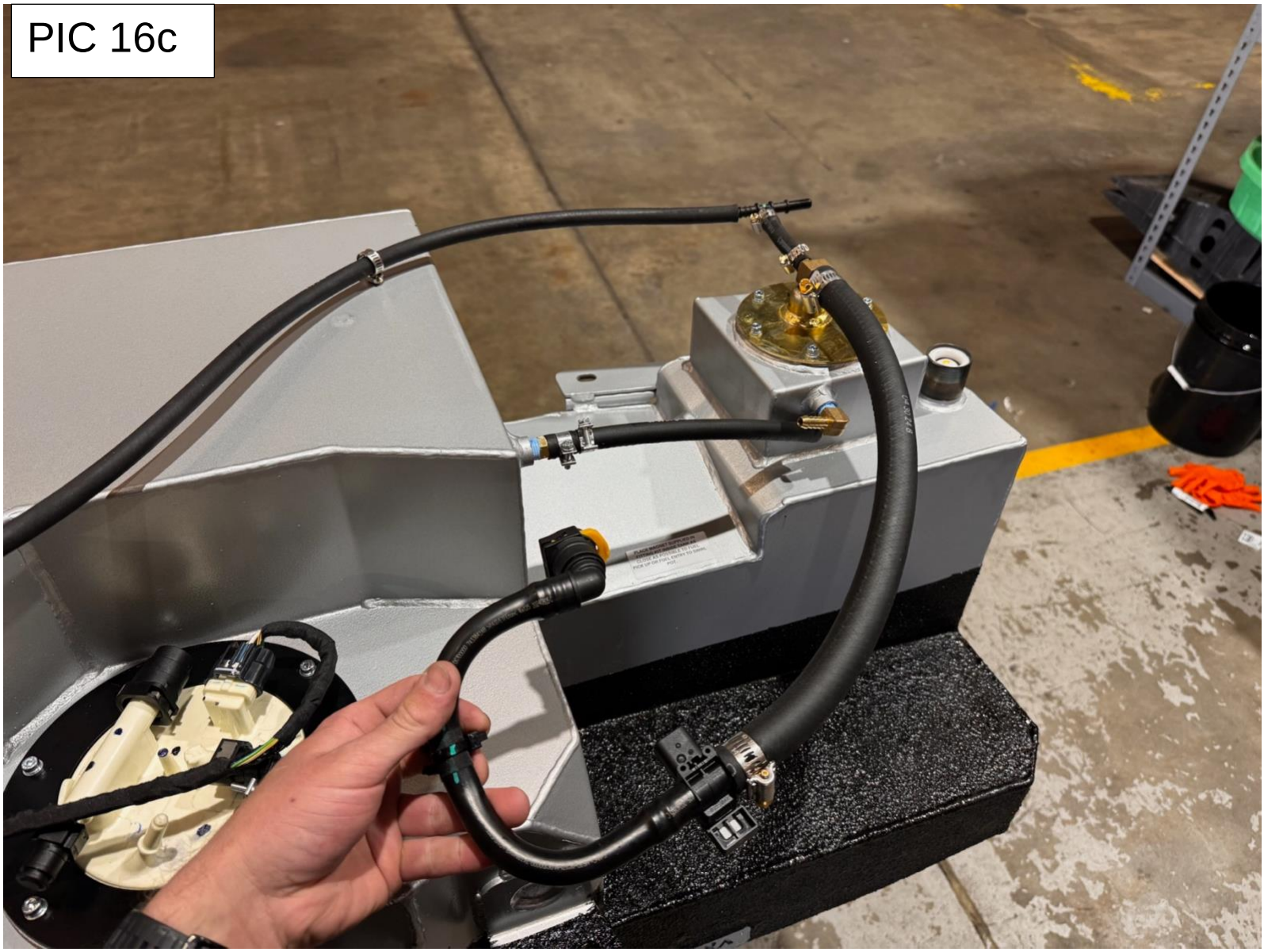
10c. Assemble and attach lines to fuel tank. * Click here for a short video explaining the hose connections.*



PIC 16a

PIC 16b

PIC 16c

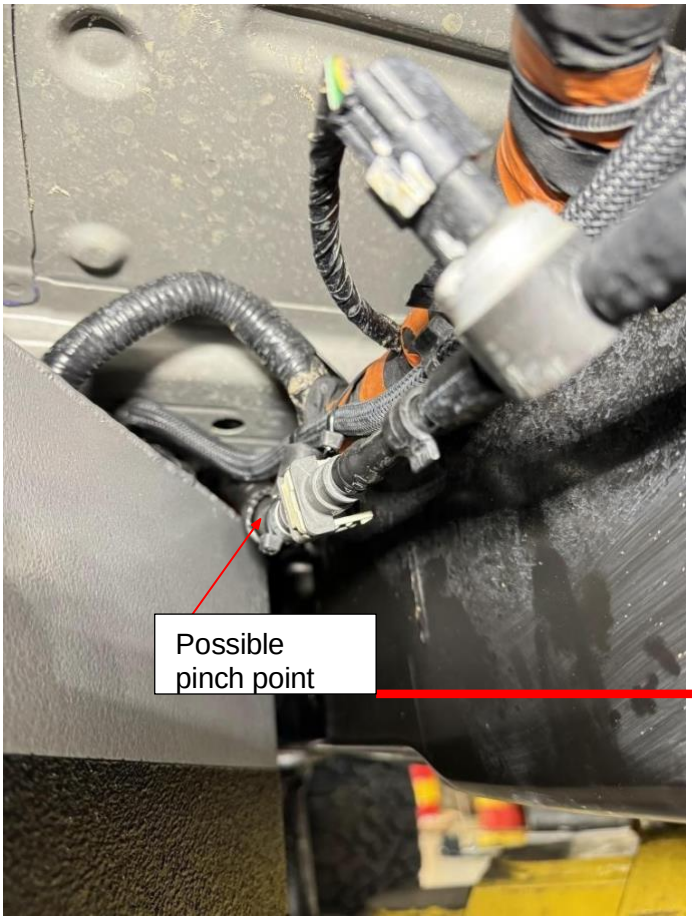


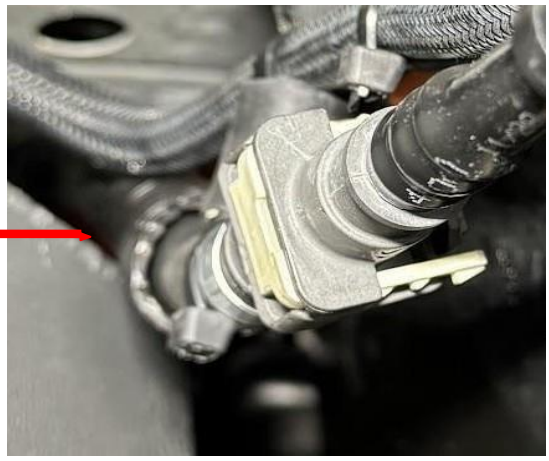
11. While lifting the tank into position, feed fuel lines over the crossmember. Feed the roll over valve, balance lines and canister purge lines over the rear crossmember. The plug for the fuel pump will need to be fed back down once tank is loosely in place.

12. Loosely install the tank mounting bolts to help hold the tank up. Connect wiring and the fuel line. Ensure all hose claps are tight.

13. Connect the rollover valve line to the tee piece and reconnect other quick connect to the OE line. Refit the canister control line to the canister and connect other end of the FLVV using 5/8” hose clamp. Cut 20mm from the short end of the rubber filler hose and connect to the tank filler. Connect wiring to the canister and pressure sensor. Neatly cable tie all hoses and wiring, secure the diff breather using OE cup to the new canister bracket. Fill with fuel and check for leaks.

14. Jack the tank fully into position and bolt in place using the OE bolts with Loctite. Be careful not to pinch any fuel lines during this step, fuel hose can become pinched between tank and frame rail. Be sure to double check all connections and ensure a secure fit (Reference PIC 17a, and 17b)





15. FORScan can be used to adjust the fuel tanks size in the vehicle's computer. Although we are unable to assist with this, FORScan's website details the process well in the following link.

Details on how to adjust tank size using FORScan here

NOTES:

A. Are all hose clamps tight and secure?

B. Are all nuts and bolts secured?

C. Are mounting brackets and straps secure?

D. Are Fuel Gauge Sending Unit bolts secured?

E. Are all fuel lines secure with no kinks?

F. Does tank interfere with, or rub on, other vehicle components?

G. Is tank calibration accurate?

☐ Congratulations! You have completed the install!