2002-2009 Lexus GX470/ 4G 4Runner Auxiliary Tank Instructions



Product Information/Install Instructions for

Lexus GX470/ 4G 4Runner 2002-2009

Kit P/N TL470GXA24G-US

***This Kit is NOT KDSS or Air Suspension Compatible**





NOTE: This product is NOT FOR SALE TO, OR USE BY, CALIFORNIA RESIDENTS. This product has not been approved, certified, rated or otherwise passed upon by any Federal or State regulatory agency

D. INSTALLATION KIT CONTENTS

HARDWARE	HOSES & CLAMPS	MISC PARTS
4 x M8 x 25mm Bolt 2 x M10 x 90mm Bolt 4 x M12 x 30mm Bolt Fine 1.25 Pitch 4 x M8 x 25mm Flat Washer 4 x M8 Spring 4 x M10 x 25mm Flat Washer 2 x M10 Spring 2 x M10 Nyloc Nut 2 x M10 Nut 4 x M12 Spring Washer 1 x 30mm 3/8" Spacer 1 x M8 x 50mm Bolt 4 x M12 x 30mm Washer	1 x 6mm Fuel Hose @ 40" Long 1 x 8mm Fuel Hose @ 32" Long 1 x 12mm Fuel Hose @ 24" Long 2 x 25mm Fuel Hose @ 6" Long 1 x 25mm Fuel Hose @ 3" Long 1 x 5/8" Fuel Vapor Line @ 36" Long 8 x 1/4" Hose Clamp 2 x 1/2" Hose Clamp 6 x 1" Hose Clamp 3 x 5/8" Hose Clamp	1 x 25mm x 25mm x 25mm Tee Filler 1 x 1/4" Weld-on Half Cut Socket 1 x Roll Over Valve 1 x LRA-FTG-2 1 x Fuel Transfer Pump & Filter 1 x Fuel Transfer Pump Mounting Bracket 8 x 7" Cable Tie Magnet (for use inside the auxiliary tank)
BRASS	**ELECTRICAL**	
1 x P3 5/16" x 1/8" Straight 1 x 5/8" x 5/8" Straight 1 x P6 5/16" x 1/4" Elbow 1 x P3 x 1/2" x 1/4" Straight 1 x P6 1/2" x 1/4" Elbow 1 x P14 1/4" Tee 1 x P7 5/8" Hose Joiner 1 x 25E-4502 1/8" MxF Elbow (for pump inlet)	1 x LRA-PG210 Switch/Gauge 1 x 3mm Two Core Wire @ 197" Long 1 x 4mm Single Core Blue Wire@11.8" Long 1 x 5 Amp Fuse 1 x Fuse Holder 2 x Fuse Holder Terminal 2 x Red Ground Eye 1 x Red Insulated Terminal 3 x Heat Shrink @ 1" 1 x VDO 220-004 0-90 Ohm Fuel Tank Gauge Sender with 12" Ground Wire (setup and installed in aux tank)	

NOTE: If a replacement fuel filler cap is needed, they are available at AutoZone (Duralast, p/n 6817A)



A. GET READY

1. We recommend power washing the underside of the vehicle, to remove mud and debris.
2. Unpack tank and installation kit. Review packing list and kit.

B. REMOVE THE SPARE WHEEL AND SPARE WHEEL CARRIER

1. Remove rear wheels along with the spare wheel. This tank takes the place of the spare wheel, the wheel will not be reinstalled:
    a) Lower and remove the spare tire.
    b) Remove the bolts holding in the guide for the spare tire crank (Fig. A).
    c) Cut the spare tire carrier out as well as the support on the cross member (Fig. B).





A. RELOCATE CANISTER FILTER ASSEMBLY

1. Remove the canister filter assembly and set aside (save to reuse) (Figs. C, D, E).


FIG. C

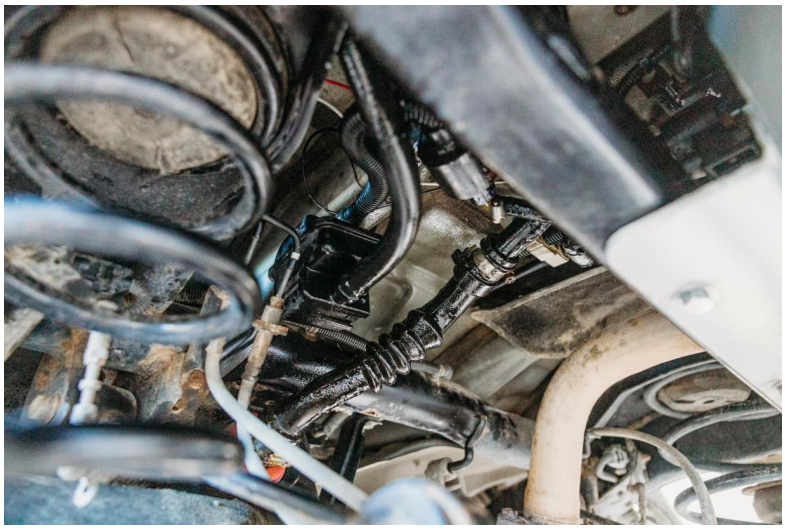

FIG. D


FIG. E

RELOCATE CANISTER FILTER ASSEMBLY *(continued)*

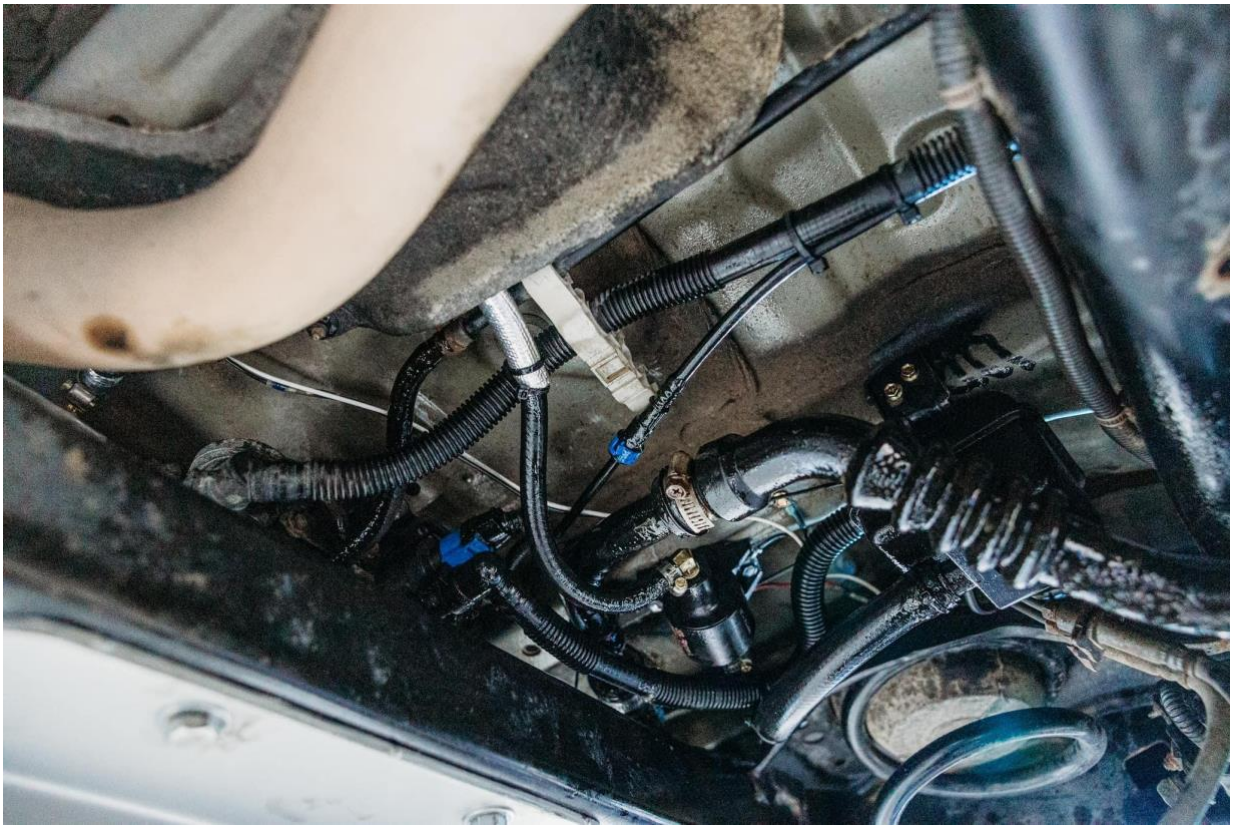
1. On the round factory cross member, measure from the edge of the brake line bracket 6-3/8”. Drill a small pilot hole for the Tek screw. Using supplied Tek screw, mount the canister filter assembly to the round factory cross member (Figure F).
2. Using the supplied 5/8” double-ended barb and 5/8” fuel vapor hose, route the “J” hose from the canister filter assembly back to the factory location on the filler neck, using supplied zip ties to keep all hoses from excessive heat and moving parts. Using the factory flex line, re-attach canister filter assembly to the evap canister (Figure G).





RELOCATE CANISTER FILTER ASSEMBLY *(continued)*

1. Relocate vehicle wiring harness as needed (Figure H).
2. Final configuration before tank is installed (Figure I, J).



NOTE: A SMALL WELD IS REQUIRED TO MODIFY THE ORIGINAL FILLER NECK, TO INSTALL A THREADED SOCKET THAT WILL ACCEPT A 90 DEGREE BRASS FITTING. DO NOT CUT OR WELD THE FILLER NECK IN THE VEHICLE, OR WHILE ATTACHED TO THE FUEL TANK.

A. MODIFY FILLER PIPE & NECK

1. Raise the tank into position and use the front mounts to mark the two holes to be drilled in the factory cross member.
2. Remove the tank and drill the two holes marked to 3/8”
3. Measuring from the steel bracket holding the 3 pipes (Figure K), mark the pipes at 2-1/4”.



FIG. K

MODIFY FILLER PIPE & NECK *(continued)*

1. Measuring from the plastic retaining bracket above the cross member (Figure L) , mark at 2”.



FIG. L

2. Remove factory filler neck, cut at marks and de-burr (Figure M). **CAUTION: Do not cut pipe while installed, a non-sparking cutter is recommended.**



FIG. M

MODIFY FILLER PIPE & NECK *(continued)*

1. Cut the 1/4-inch steel line about 3 inches before the "Y" pipe.
2. Cut and install the brass "T" fitting supplied.
3. Reinstall section of filler neck to main tank using supplied 3/8” spacer and long M8 bolt (Figure N).



FIG. N

A. MODIFY FILLER PIPE & NECK *(continued)*

4. Drill a hole and weld the 1/4-inch fitting into the top of the factory filler (Figures O, P, Q).
5. Install the 90 degree 1/2-inch fitting into the filler (Figures R, S, T).
6. Attach 1/2” hose to 90 degree barb and clamp.
7. Reinstall upper filler pipe with "Y" pipe and supplied clamps and hoses.





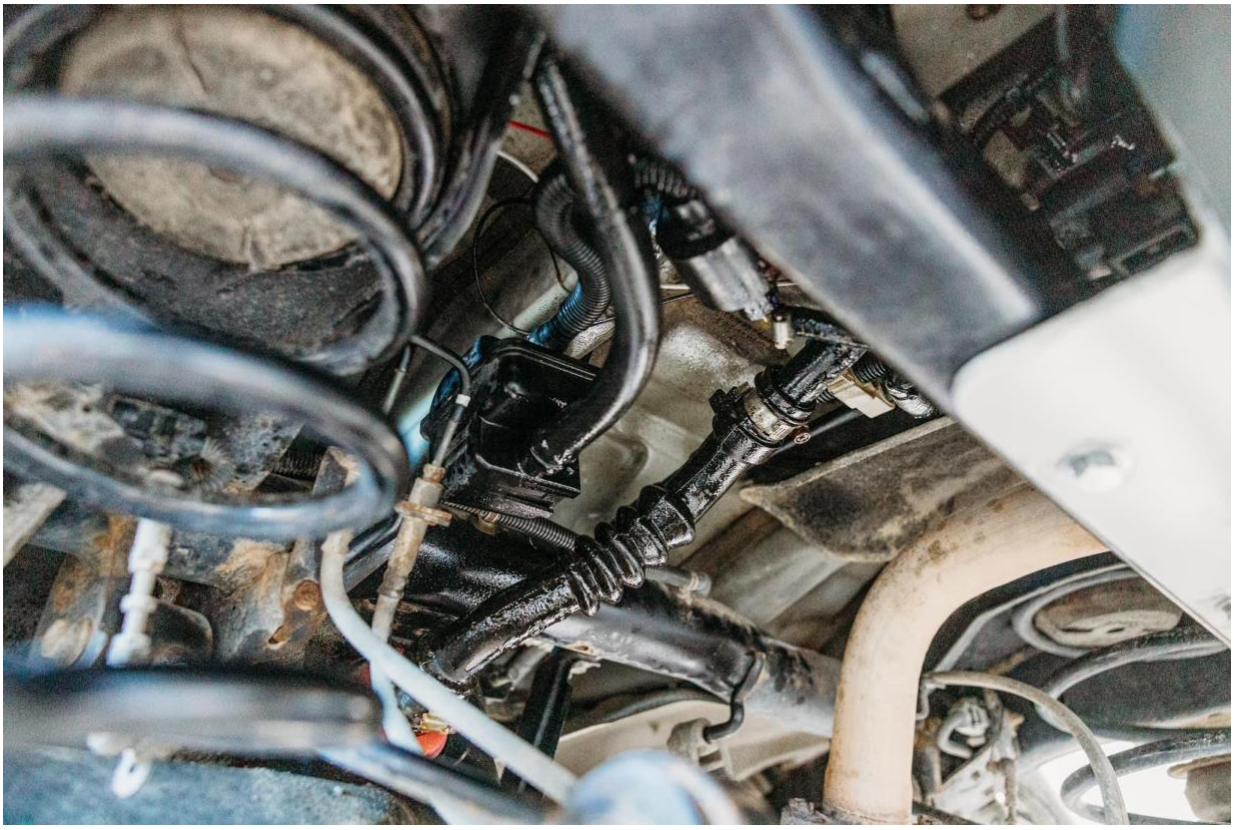


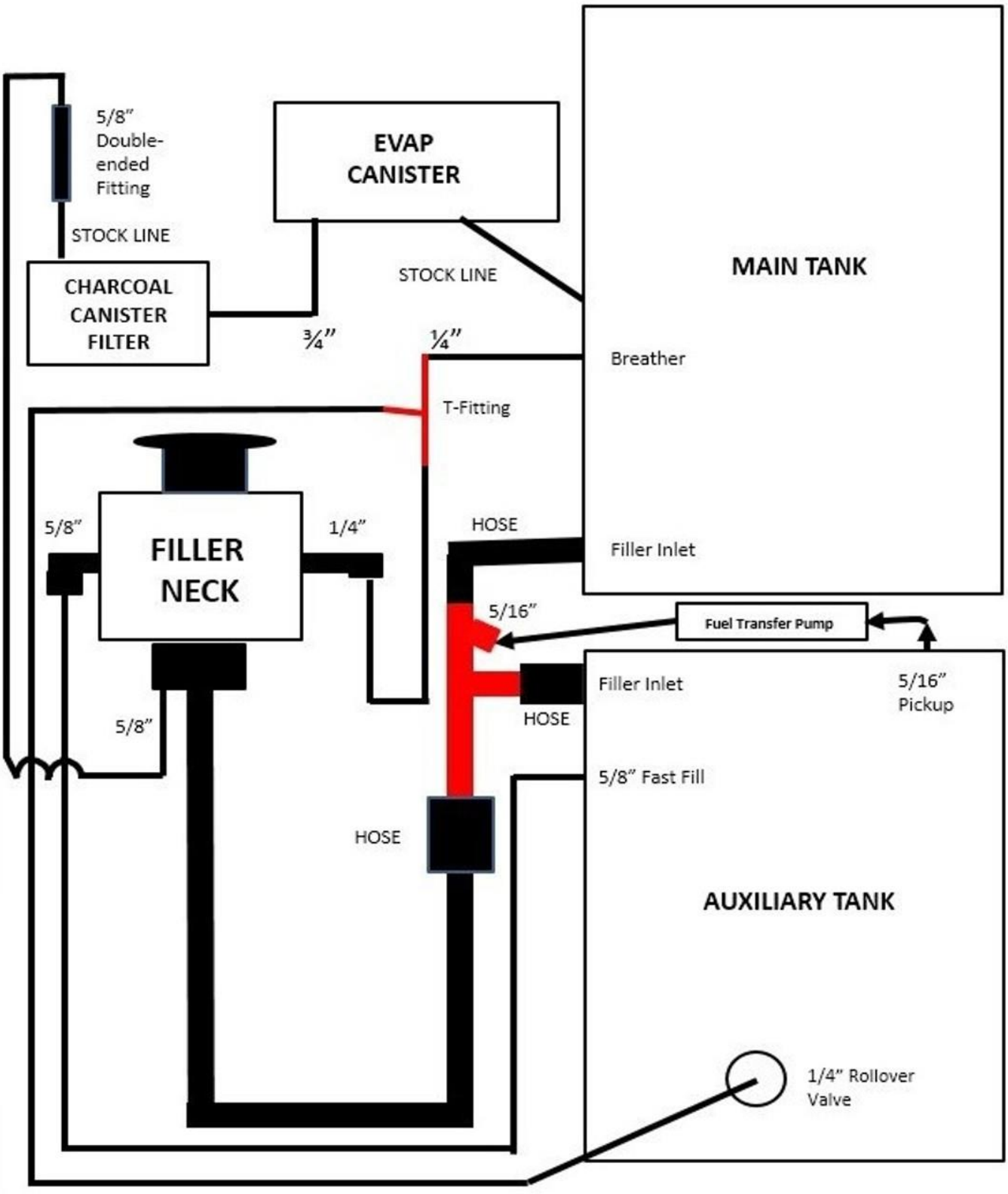
A. SET UP AUXILIARY TANK

1. The plastic valve goes in the top of the tank with the grommet (dish soap will ease installation).
2. The 5/16” elbow also goes in the top of the tank near the fuel gauge sending unit. Attach 5/16” fuel line to 90 degree fitting and clamp.
3. The 1/2” straight barb goes in the left-hand side of the tank.
4. The 5/16” straight barb goes in the “Y” pipe.
5. Remove the fuel gauge sending unit , install the provided magnet as close to the fuel pickup as possible, and reinstall the sending unit.

B. INSTALL FUEL TRANSFER PUMP

1. Mount the fuel transfer pump securely in a suitable location, making sure to avoid excessive heat and moving parts (Figure U). **THE PUMP MUST BE INSTALLED ABOVE THE FUEL LEVEL OF THE NEW TANK, AND WITHIN 12 VERTICAL INCHES OF THE NEW TANK BOTTOM. THE FUEL PUMP SHOULD BE MOUNTED WITH THE OUTLET HORIZONTAL OR ABOVE THE INLET. THIS WILL HELP TO PREVENT LOCATION-RELATED GRAVITY FEED, CHECK ENGINE LIGHTS (CELs), AND VAPOR LOCK ISSUES.**
2. Complete pump wiring. Attach the yellow wire to the positive side of the fuel pump. **DO NOT** ground the pump to the mounting bracket, instead, drill a hole in the body and clear an area for the body ground terminal to be firmly connected to bare metal. The transfer pump is sensitive to power interruption when on and a good ground is **imperative**.
3. Attach the 5/16” fuel line coming from the top of the auxiliary tank to the provided fuel filter, then to the inlet side of the pump.
4. Route the pump outlet to the 5/16” barb on the “Y” pipe.




5/8" Double-ended Fitting
STOCK LINE
EVAP CANISTER
CHARCOAL CANISTER FILTER
STOCK LINE
MAIN TANK
¾"
¼"
Breather
T-Fitting
5/8"
FILLER NECK
1/4"
HOSE
Filler Inlet
5/16"
Fuel Transfer Pump
Filler Inlet
5/16" Pickup
HOSE
5/8"
5/8" Fast Fill
HOSE
AUXILIARY TANK
1/4" Rollover Valve

A. INSTALL THE FUEL TRANSFER SWITCH/GAUGE

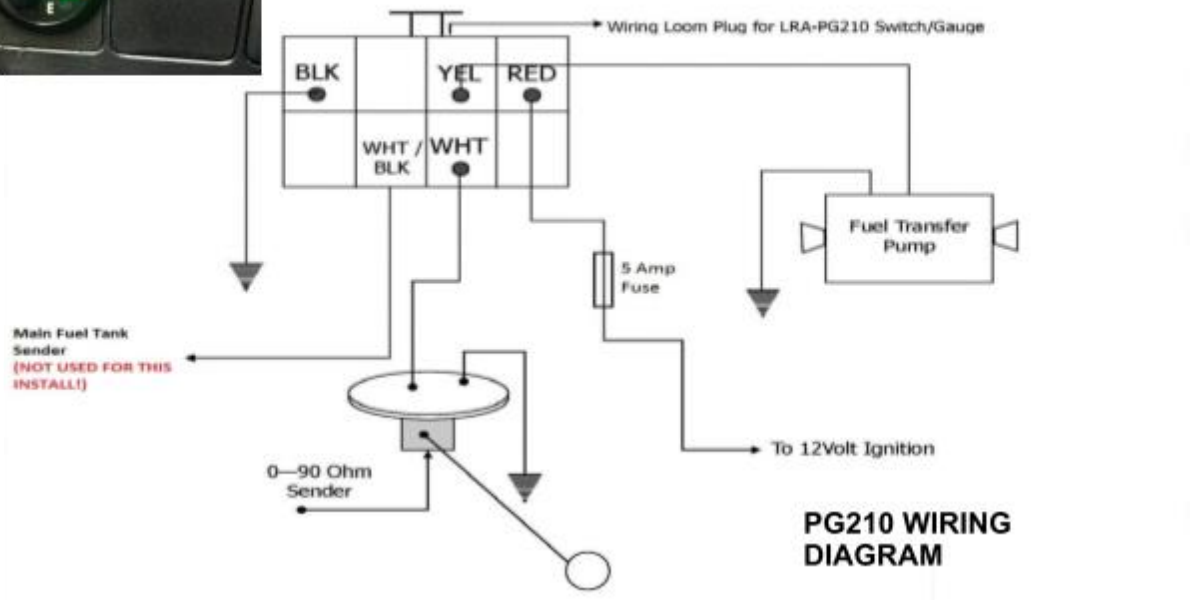
1. Select a suitable location in the dash to mount the switch/gauge unit. We recommend using one of the switch blanks (see photo, below).
2. The switch is fairly sensitive to installation. The hole diameter needs to be just the right size (20mm or .78"). If it is too small, and the switch is forced into place, the switch may be damaged or not function properly. You will need to test-fit and file or cut out more material if needed. **DO NOT FORCE SWITCH INTO PLACE WHILE TEST-FITTING OR AT ANY TIME!.**
3. Connections should be soldered and heat shrunk, **not just crimped**.
4. Double-check all connections when done.

B. WIRE THE FUEL TRANSFER SWITCH/GAUGE

1. A 12 volt ignition source can be found at the cigarette lighter circuit. Carry out wiring as per the wiring diagram, below. The 5 amp fuse goes in the red wire between the ignition power source and the switch.
2. Run the twin core sheath cable under the scuff plates and behind the quarter panel trim and out through the grommet in the jack storage area.
3. Leave enough wire to reach the fuel gauge sending unit.
4. The white and black striped wire will not be used.

PLEASE REFER TO OPERATING INSTRUCTIONS FOR THIS UNIT ON PAGES 22 & 24





A. CONNECT HOSES TO TOP OF AUXILIARY TANK

1. Install the 1/4” hose to the plastic valve with clamp.
2. Install the 5/16” hose to the barb on the top of the tank with clamp.

B. JACK THE TANK INTO POSITION AND SECURE

1. Jack the auxiliary tank into position, feeding the hoses over the cross member and frame rail.
2. Fit the fill hose on as the tank goes into position. Be sure to connect the fuel gauge sender wires at this point.
3. Using supplied hardware, bolt the tank into final position.
4. Attach the 1/4” hose from the top of the tank to the “T” fitting installed earlier.

   *
5. Tighten all clamps at this time.
6. Attach 1/2” hose from filler neck to the auxiliary tank (Figures V, W):


FIG. V


FIG. W

A. FINISH INSTALLATION

1. Check all clearances and neatly cable tie all hoses and wiring. Check over all hoses and connections.
2. Reconnect vehicle battery.
3. To test, fill main and auxiliary tanks full. Drive the vehicle until the fuel level in the main tank goes to 3/4 full, then transfer some fuel from the auxiliary tank to the main tank. Test transfer pump operation and make sure the gauge is working properly, the level lights are correct and listen for undue noise (a “tic-tock” noise is normal when the pump is running).
4. Check again for leaks.



OEM hitch Modified on Install Pictured

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!**