1990-1998 Toyota Land Cruiser 80 Series 24 Gallon Auxiliary Tank Instructions

Product Information/Install Instructions for

Toyota Land Cruiser 80 Series Auxiliary Tank

Kit P/N TLC80RAX24G



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

HARDWARE	HOSES & CLAMPS	MISC PARTS
12 x M8 x 25mm Bolt 2 x M10 Nyloc Nut 2 x M10 Flat Washer 2 x M12 x 30mm Bolt 12 x M8 Flat Washer 12 x M8 Spring Washer 2 x M12 Nyloc Nut 4 x M12 Flat Washer 1 x Tek Screw	1 x 5/16” Hose @ 47.2" Long 2 x 1/2” Hose @ 23.6" Long 2 x 1-3/4” Hose @ 6" Long 6 x 1/2" Hose Clamp 4 x 1-1/2" Hose Clamp 6 x 1/4" Hose Clamp	1 x 80 Series Twin Filler 1 x Rear Mounting Bar 1 x Front Mounting Bracket 1 x Fuel Transfer Pump & Filter 1 x Fuel Transfer Pump Mounting Plate 10 x 7" Cable Ties 5 x 11" Cable Ties Magnet (for use inside auxiliary tank)
BRASS	**ELECTRICAL**	
1 x P3 1/2" x 1/4" Straight 1 x P3 5/16" x 1/4" Straight 1 x 1/4" BSP Plug 1 x 12mm x 8mm Reducing Tee 2 x P6 1/2" x 1/4" Elbow	1 x LRAPG210 Combination Switch/ Gauge 1 x 3mm Two Core Wire @ 236.2" Long 1 x 4mm Single Core Red @ 19.7" Long 1 x 4mm Single Core Blue @ 11.8" Long 1 x 5 Amp Fuse 1 x Fuse Holder 2 x Fuse Holder Terminals 4 x Red Insulated Terminals 1 x Red Eye Terminal 1 x 8mm Blue Eye Terminal 2 x Red Male Terminals 1 x Fuel Gauge Sending Unit, 0-90 Ohm with 19.7" Ground Wire (set up in tank before shipment)	

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

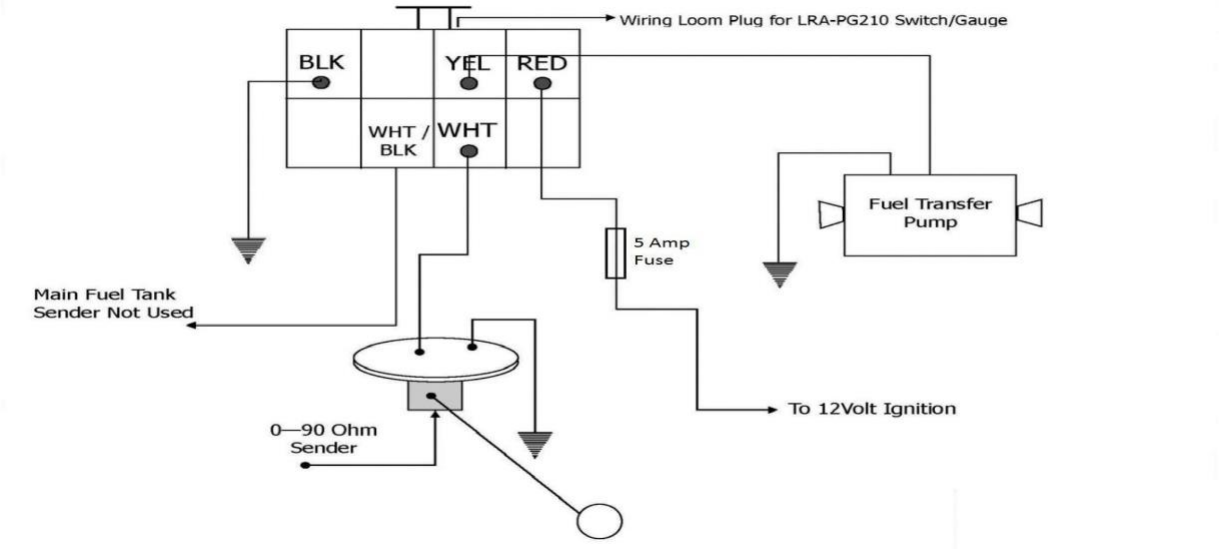
A. INSTALLATION

1. Select a suitable location in the dash to mount the switch/gauge unit.
2. Drill a small pilot hole in the desired spot. Use the pilot hole to drill a 20mm/0.78” hole with the Uni-Bit stepped drill bit. Use a small file to carefully adjust the hole size as needed.
3. The switch is fairly sensitive to installation. The hole diameter needs to be just the right size (20mm/0.78”). 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.**
4. Connections should be soldered and heat shrunk, **not just crimped**.
5. Double-check all connections when done.

B. WIRING

1. A 12 volt ignition source can be found at the cigarette lightercircuit (use meter to verify power). Carry out wiring as per the wiring diagram, below. The 5 amp fuse and fuse holder are used in the red power wire that is connected to the ignition power source.
2. Run the twin core sheath cable out of the cabin via the rubber grommet hole above the dead pedal, and down the inside of the frame to the rear of the vehicle. Leave the yellow wire at the transfer fuel pump location, and run the rest as high as possible and let drop where the auxiliary tank will be installed.
3. Leave enough wire to reach the fuel gauge sendingunit.
4. The white and black striped wire will not beused.

PLEASE REFER TO OPERATING INSTRUCTIONS FOR THIS UNIT ON PAGES 17 & 19

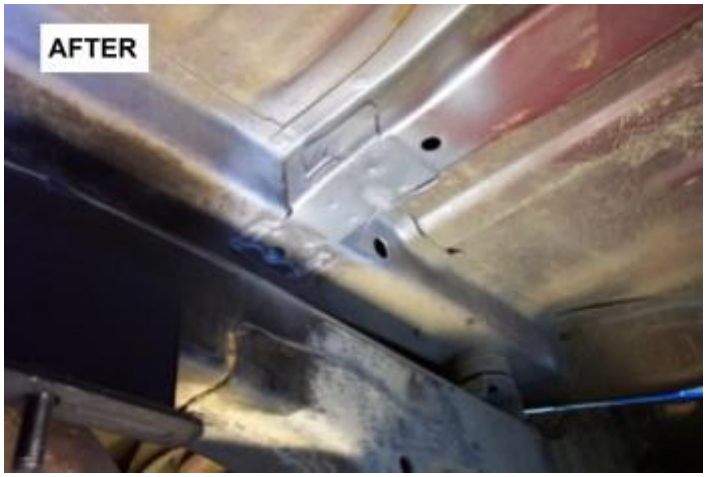


PLEASE NOTE: Before beginning the install, we recommend cleaning the underside of the vehicle using a spray nozzle. This will keep the installer from getting dirty and having debris falling on them. While the vehicle is drying, unpack the kit and do an inventory to make sure all parts have arrived, and review this manual fully.

A. REMOVE ITEMS FROM THE VEHICLE

1. Remove the driver's side rear wheel, mud flap and fuel fill protection plate (inside wheel well). Make sure the vehicle is supported by a good quality jack stand.
2. Open the fuel filler door.
3. Remove the spare wheel and the spare wheel carrier (if installed under the vehicle). Remove it by pulling the 6 bolts holding it in. The carrier is no longer needed, as the spare will not be reinstalled in this location.
4. Remove the rounded sheet metal bracket from the front of the right-hand side floor stiffening rib (if applicable), and remove any other **unused** sheet metal brackets that may be in the OEM spare mounting area:





B. OEM FILL AND VENT TUBES—REMOVE/CUT/REPLACE

1. Mark fuel fill and vent tubes at inside of frame for future cut. Remove the fill and vent tubes from the main fuel tank by removing the 2 bolts from the bracket bolted to the floor and loosening clamps visible above the rear of the OEM main tank. Pull the tubes out of the inlets and cover or block the inlets to keep vapors inside the tank, to avoid fire/explosion, and to keep debris from entering the inlets.
2. Because the vehicle's body and frame are not being separated, you will need to cut the tubes to remove the fill and vent tube assembly from the vehicle to make the final cut. Cut the original filler pipe directly in line with the inside of the chassis rail, and remove the filler neck and attached section of pipe from the ve- hicle. **NOTE: WHEN CUTTING FILLER PIPE, DO NOT USE TOOL THAT WILL CREATE SPARKS OR FLAMES. GASOLINE AND GASOLINE FUMES ARE HIGHLY FLAMMABLE!** The final cut can be made away from the vehicle with a power tool, if desired.

B. OEM FILL AND VENT TUBES—REMOVE/CUT/REPLACE *(continued)*

3. Make the final cut, then reinstall modified tube assembly to the OEM tank with clamps and bolts in its original position.

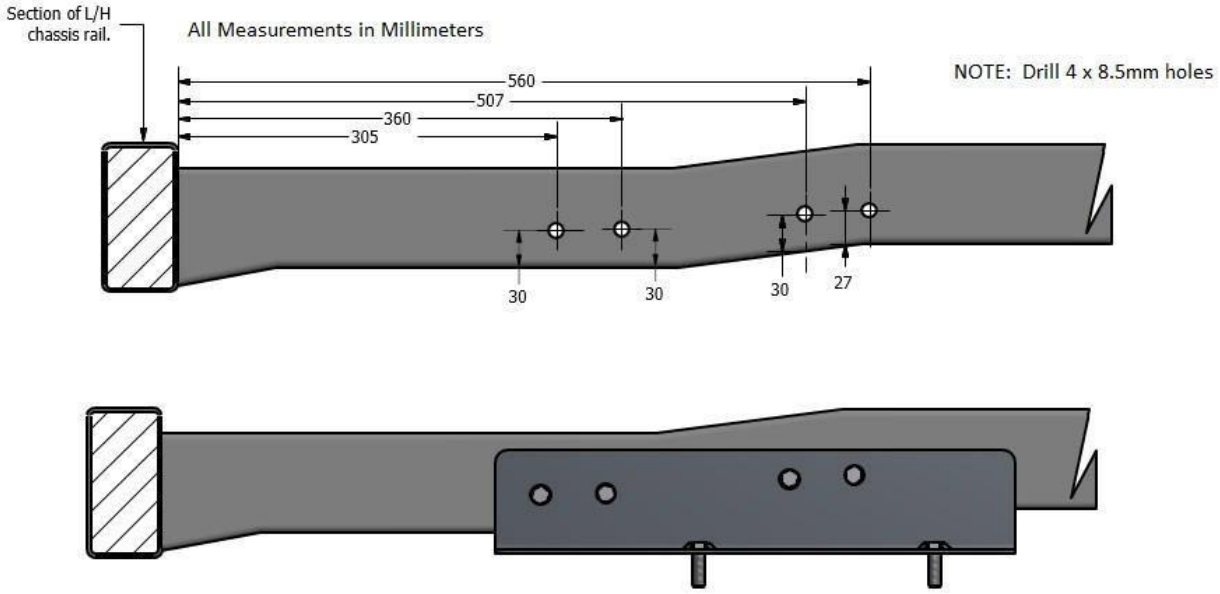
C. FUEL TRANSFER PUMP—ASSEMBLE & INSTALL

1. Attach the fuel transfer pump to the provided bracket. Attach the filter to the inlet side, nozzle to the outlet side (use fuel-rated thread sealant), arrow on pump shows fuel flow direction.
2. Mount the fuel transfer pump assembly securely in a suitable location, making sure to avoid excessive heat and moving parts. **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.**
3. Complete pump wiring. **DO NOT** ground the pump to the mounting bracket, instead, drill a hole in the body and clear an area for the body ground grommet to be firmly connected to bare metal. The transfer pump is sensitive to power interruption when on and a good ground is **imperative**.
4. Attach the 5/16” fuel hose provided to the fuel pump outlet nozzle and route it around the driver’s-side rear upper spring mount, to be connected later in the dual filler assembly area.

D. AUXILIARY TANK MOUNTING BRACKETS—INSTALL FRONT AND REAR

1. Install the front and rear auxiliary tank mounting brackets. The front bracket is bolted to the front cross member, using the provided M8 x 25mm bolts, spring washers, and flat washers. This cross member usually has four captive nuts already in it. If those nuts are not in the cross member, then the cross member must be marked and drilled per the diagram, below:

80 SERIES LAND CRUISER WITH NO CAPTIVE NUTS IN CROSSMEMBER





2. Bolt the rear bracket to the chassis, using the provided M8 x 25mm bolts, spring washers and flat washers in the threaded holes previously used by the spare tire carrier:



A. PREPARE THE AUXILIARY FUEL TANK

1. Install the 5/16” straight fitting in the fuel pick up port and the 1/4” BSP plug in the other port on the front of the auxiliary tank. Install the 1/2” straight fitting in the port next to the filler spout (please see Hose Routing Schematic on page 13 for details).

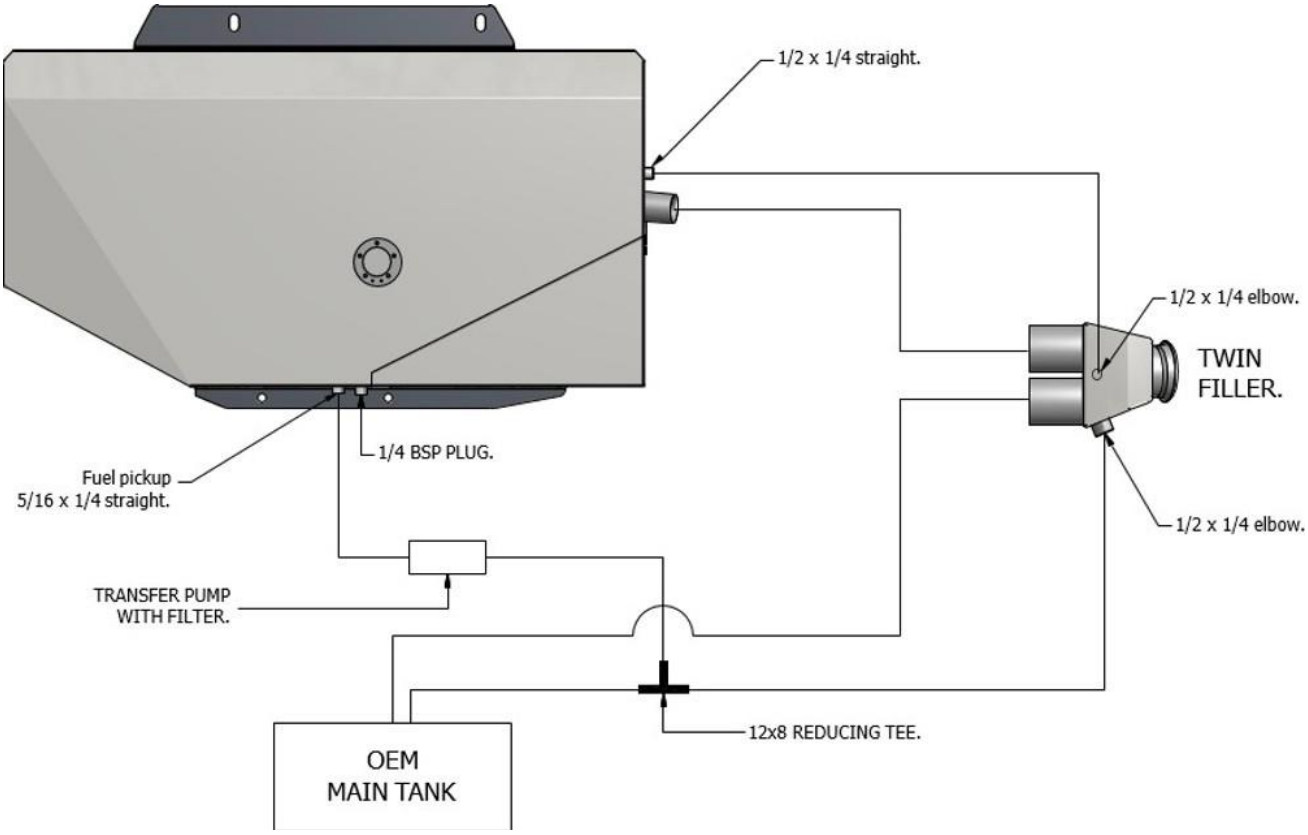
2. Remove the fuel gauge sending unit and drop in the supplied magnet, using a long screwdriver or bar to position it on the bottom of the tank near the fuel pick up. Its purpose is to collect metal shavings or random metal chips possibly left in the tank during manufacturing. Replace the sending unit when finished inserting the magnet.



3. Attach 5/16” hose (at least 18” length) to the fuel line fitting with hose clamp. The other end will be connected to the fuel transfer filter/pump inlet after securing the tank.

B. PREPARE AND INSTALL THE DUAL FUEL FILLER

1. Remove the dual fuel filler from the install kit. THE TANK KIT IS SHIPPED FROM THE FACTORY WITH A PETROL (GAS) DUAL FILLER NECK. IF THE VEHICLE IS DIESEL, LONG RANGE AMERICA WILL REPLACE THE GAS NECK WITH A DIESEL ONE BEFORE SHIPPING TO THE CUSTOMER/INSTALLER.
2. Install the 90 degree brass fittings into the dual filler assembly. The outlets should be pointing down, away from the filler neck. Install two 1/2" hoses on the fittings and secure with clamps. Install 1-3/4" hose and clamps on main tank fill tube end.
3. Mount the dual filler assembly by pushing the top end up into the fuel door area and connect main tank 1-3/4" hose to the left filler tube as you mount the filler tube in the wheel well with a M8 x 25mm bolt and washer to the fender hole. You may need to trim the rubber fuel door inner gasket to get the 90 degree elbow to fit.
4. The 5/16" hose from the fuel transfer pump outlet routed in step III.C.3 needs to be connected with the provided nylon reducing "T" using clamps. After you determine where, cut this hose, install "T" with clamps and connect hose to main tank tube end. Lengths may be shortened at your discretion depending on your routing. Leave the auxiliary tank vent hose dangling for now.


1/2 x 1/4 straight.
1/2 x 1/4 elbow.
TWIN
FILLER.
1/4 BSP PLUG.
Fuel pickup
5/16 x 1/4 straight.
1/2 x 1/4 elbow.
TRANSFER PUMP
WITH FILTER.
12x8 REDUCING TEE.
OEM
MAIN TANK

A. LIFT THE AUXILIARY TANK INTO POSITION AND INSTALL

1. Place the auxiliary tank on whatever you choose to use to lift it into position. Have the mounting hardware ready (2 x M10 nuts and washers for the front and 2 x M12 bolts, 4 washers and 2 nuts for the rear). Once under the vehicle, before doing any lifting into position, connect the white wire to the fuel gauge sending unit and the ground wire to a screw into the vehicle body.
2. Install the 1-3/4" hose and clamps on the filler assembly's auxiliary tank fill tube, to be connected to the fill spout on the auxiliary tank when the tank is in position.
3. Slowly raise tank up, keeping close watch on all four sides. The large fuel inlet spout will limit the tank's position on that side and appears to not let you adjust the tank correctly to align holes with front bracket posts. As the tank gets high enough, the fuel inlet spout will clear the frame and allow for proper final positioning. Also watch, and route if necessary, the 5/16" fuel line hose going to the fuel transfer pump over the frame X-member.
4. When the tank is in position, secure the tank to its mounting brackets with Nyloc nuts and washers on the front mount, and 2 bolts, 4 washers and 2 nuts on the rear mount. Make sure all connectors are tight.
5. Slide the 1-3/4" fuel filler hose from the auxiliary filler pipe onto the auxiliary tank fuel spout, position and tighten clamps.
6. Route vent hose over to vent fitting to determine length, cut if necessary and install and tighten clamp.
7. Connect 5/16" fuel line hose from the auxiliary tank to the filter on the fuel transfer pump using clamp. Final hose length to be determined at this step, so trimming length may be necessary.

B. FINAL INSTALLS, CHECKS & TESTS

1. Check all clearances, neatly cable tie all hoses and wiring.
2. Reinstall the fuel fill protection plate and mud flap inside wheel well. Reinstall rear wheel.
3. Reconnect vehicle battery.
4. To test, fill main tank half-full, and the auxiliary tank full. 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).
5. Check again for leaks.

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!