



# LONG RANGE AUTOMOTIVE/LONG RANGE AMERICA

Product Information/Install Instructions for

Jeep Wrangler JL 2018-2020 *Four Door Petrol/Gas*

Kit P/N JWJLPA



## CONTENTS

## PAGE

PRODUCT INTRODUCTION/TANK PART NUMBERS & SPECIFICATIONS.....	2
I. BEFORE YOU BEGIN.....	3-5
A. INTRODUCTIONS.....	3
B. DO's AND DON'Ts.....	3
C. SAFETY PREPARATIONS.....	3
D. INSTALLATION KIT CONTENTS.....	4
E. INSTALLATION PARTS IDENTIFICATION.....	5
F. TOOLS NEEDED.....	6
II. SWITCH/GAUGE UNIT WIRING & INSTALLATION.....	7-8
III. VEHICLE PREPARATION.....	9-11
IV. FILLER & TANK PREPARATION.....	12-14
V. TANK INSTALLATION.....	15
VI. FINAL INSTALLATION CHECKLIST.....	16
LONG RANGE AUTOMOTIVE AUXILIARY TANK USER GUIDE.....	17-19

**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.



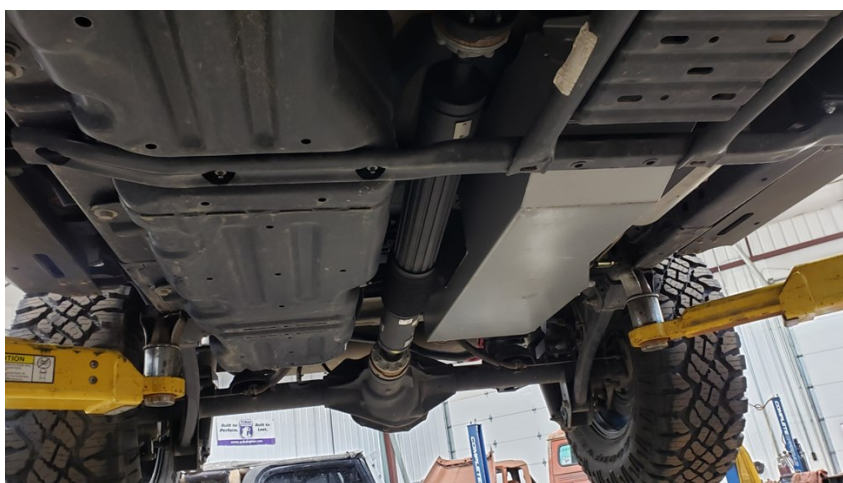
## PRODUCT INFORMATION/INSTALL INSTRUCTIONS

### Jeep Wrangler JL 2018-2020 Four Door Petrol/Gas



Direct-fit extended range fuel tank to serve expedition, long-distance travel and hauling needs...buy fuel when the price is right and be prepared for the long haul. These tank kits from Long Range Automotive of Melbourne, Australia were developed to meet the needs of North American light truck and SUV owners. We provide additional fuel capacity from a high-quality aluminized steel auxiliary or replacement tank that integrates seamlessly with factory fuel systems and emission controls in North American vehicles. These tanks are built by specialists with three decades of experience, serving customers around the world.

Part Number	JWJLPA
Type	Auxiliary
Capacity –Gallons	17
Fill Point	OEM T-Fill
Fuel	Petrol/Gas
Location	Vehicle center, LH side of Drive Shaft
Relocate Spare	No



This tank **may** be installed by a general automotive shop or mechanically competent vehicle owner, given adequate tools, skills and the help of a friend. **We strongly recommend that, to avoid potential injury and property damage, the tank be installed by a trained professional.** Please call if you have pre-install questions (800-224-7801).



Long Range Automotive fuel tanks are imported by Long Range America, LLC  
LongRangeAmerica.com  
**1-800-224-7801**

## I. BEFORE YOU BEGIN

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### A. INTRODUCTIONS

1. We at **Long Range Automotive** (LRA) and **Long Range America** (LRAM) appreciate your selection of a Long Range Automotive fuel system for your vehicle. Please read this entire Guide before beginning installation.
2. This Guide provides information necessary to install this LRA product in your vehicle. We strive to be detailed and accurate with this information...however, errors and omissions can occur. Changes to install instructions can occur without notice. If you see an error or omission, or need additional information not provided in this manual, please contact Long Range America at 800-224-7801, extension 101 (Ward Harris).
3. This product is designed to suit vehicles as delivered when new. Modifications such as suspension, skid plates, bumpers, hitches and other aftermarket additions may impact or prevent installation.

### B. DO's AND DON'Ts

1. **DO: WE HIGHLY RECOMMEND ALL WORK TO BE COMPLETED BY A PROFESSIONAL INSTALLER.**
2. **DO:** Review these install instructions and plan your installation - tools, helpers and questions - ask ahead of time.
3. **DO:** Call 800-224-7801 ext. 101 (Ward Harris) with any questions - he will get you the right answer from the right source.
4. **DO:** Use **fuel rated thread sealer** or Teflon tape on all fittings.
5. **DO:** Keep all fuel lines away from the exhaust system and any sharp edges.
6. **DO:** Use Long Range Automotive fuel systems and parts in conjunction with original manufacturer's equipment or other Long Range Automotive systems and components.
7. **DON'T:** DO NOT have any open flames or heat sources in the installation area.
8. **DON'T:** DO NOT CUT any of the existing fuel pipes while in the vehicle or while attached to the fuel tank.
9. **DON'T:** DO NOT USE Long Range Automotive fuel systems and components with other aftermarket fuel systems. This type of use can result in malfunction and will void the Limited Warranty.

### C. SAFETY PREPARATIONS

1. **BEFORE BEGINNING INSTALLATION, TURN OFF THE KEY AND DISCONNECT THE VEHICLE BATTERY.**
2. **ALWAYS WEAR THE PROPER SAFETY EQUIPMENT (SAFETY GLASSES, HEARING PROTECTION, GLOVES, ETC. AS APPROPRIATE).**
3. **BE SURE TO KEEP HEAT, SPARKS AND OPEN FLAME AWAY FROM THE INSTALLATION AREA.**

## I. BEFORE YOU BEGIN *(continued)*

### D. INSTALLATION KIT CONTENTS

HARDWARE	HOSE & CLAMPS	MISC PARTS
4 x M8 x 20mm Bolt 2 x M10 x 30mm Bolt 3 x M12 x 30mm 1.5 Fine Thread Bolt 15 x M8 x 20mm Washer 4 x M10 x 25mm Washer 3 x M12 Spring Washer 8 x M8 Nyloc Nut 2 x M10 Nyloc Nut 2 x M12 x 30mm H/D Washer 1 x M12 Washer 25mm diameter 2 x 25mm Tek Screw	2 x 8mm Hose @ 17" Long 1 x 12mm Hose @ 11.8" Long 1 x 12mm Hose @ 15.75" Long 1 x 12mm Hose @ 19.7" Long 1 x 35mm Hose @ 3.75" Long 1 x 38mm Hose @ 3" Long 6 x 1/2" Hose Clamp 2 x 1-1/4" Hose Clamp 2 x 1-1/2" Hose Clamp 4 x EFI Hose Clamp 1 x 16mm P Clip	1 x T Filler 1 x Exhaust Resonator Heat Shield 1 x Pipe Heat Shield with Nuts & Clamps 1 x Front Secondary Bracket (2 pieces) 1 x Tank Heat Shield 2 x C12 Exhaust Clamps 1 x FLVV with 1/2" Barb 1 x FLVV Hold Down Ring 1 x BS337 O-Ring 6 x M5 x 12mm Pan Heads 6 x M5 Spring Washer 1 x Fuel Transfer Pump & Filter 1 x Fuel Pump Mounting Plate 1 x ICV (fitted in Filler Tee) Magnet (for use in auxiliary tank) 3 x 11" Cable Tie
BRASS	ELECTRICAL	
1 x 25C 1/8" M & F Elbow (for pump) 1 x P3 5/16" x 1/8" Straight 1 x P6 5/16" x 1/4" Elbow 1 x 12mm Plastic Tee	1 x LRA-PG210 Switch/Gauge 1 x 3mm Two Core @ 197" Long 1 x 4mm Single Core Blue Wire @ 11.8" Long (used between the 12V power source and the fuse holder) 1 x 5 Amp Fuse 1 x Fuse Holder 2 x Fuse Holder Terminal 2 x Red Insulated Terminal 1 x Red Male Terminal 1 x 5mm Red Eye Terminal 1 x 8mm Blue Eye Terminal 1 x 0-90 Ohm Fuel Gauge Sending Unit, with 6" Long Ground (installed using 5 x M5 x 10mm Pan Heads and 5 x M5 Spring Washers, included) 4 x 3mm Shrink Tube	

I. BEFORE YOU BEGIN *(continued)*

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E. INSTALLATION PARTS IDENTIFICATION



Front Secondary Bracket Part 1 (page 9)



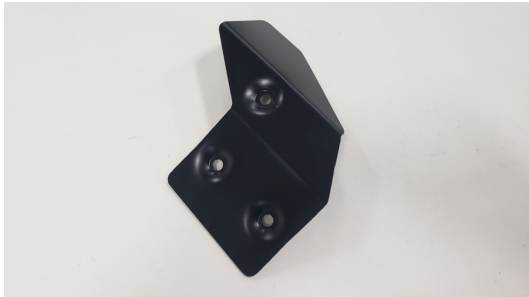
Front Secondary Bracket Part 2 (page 9)



Exhaust Resonator Heat Shield (page 10)



Exhaust Pipe Heat Shield (page 10)



Auxiliary Tank Heat Shield (page 10)



T Filler Tube (page 12)



Fuel Transfer Pump Mounting Bracket (page 15)



Clamps and Hardware



Fuel Transfer Pump,  
Gauge, Hoses, Wiring

## I. BEFORE YOU BEGIN *(continued)*

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### F. TOOLS NEEDED

1. Safety Items
  - a) Safety Glasses
  - b) Hearing Protection
  - c) Gloves
2. Ratchet Wrench
  - a) Metric Socket Set
  - b) SAE Socket Set
  - c) Socket Extensions
3. Drill
  - a) Metric Bit Set
  - b) Step Drill Bit
4. Catch Pan/Spill Mats
5. Vehicle Owner's Manual
6. Mallet
7. Hydraulic Jack
8. Flat Screwdriver
9. Small File
10. Digital Multimeter
11. Fuel Rated Thread Sealer
12. Circuit Test Light
13. Chain Pipe Cutter

## II. SWITCH/GAUGE UNIT WIRING & INSTALLATION

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### A. INSTALLATION

1. The switch/gauge can be mounted in the center console, just forward of the cup holders.
2. Remove the cup holder portion of the center console and turn it over. Mark the location between the mounting tabs from the bottom side and drill a small pilot hole.
3. Turn the console over and use a Step Drill Bit to drill a 3/4" hole, using the pilot hole as a guide. You may need to use a razor knife to clean the rubber cup holder material from the hole, as the drill bit may not cut the rubber material very well. Use a small file to carefully adjust the hole size as needed.
4. 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.**
5. Connections should be soldered and heat shrunk, **not just crimped**.
6. Double-check all connections when done.



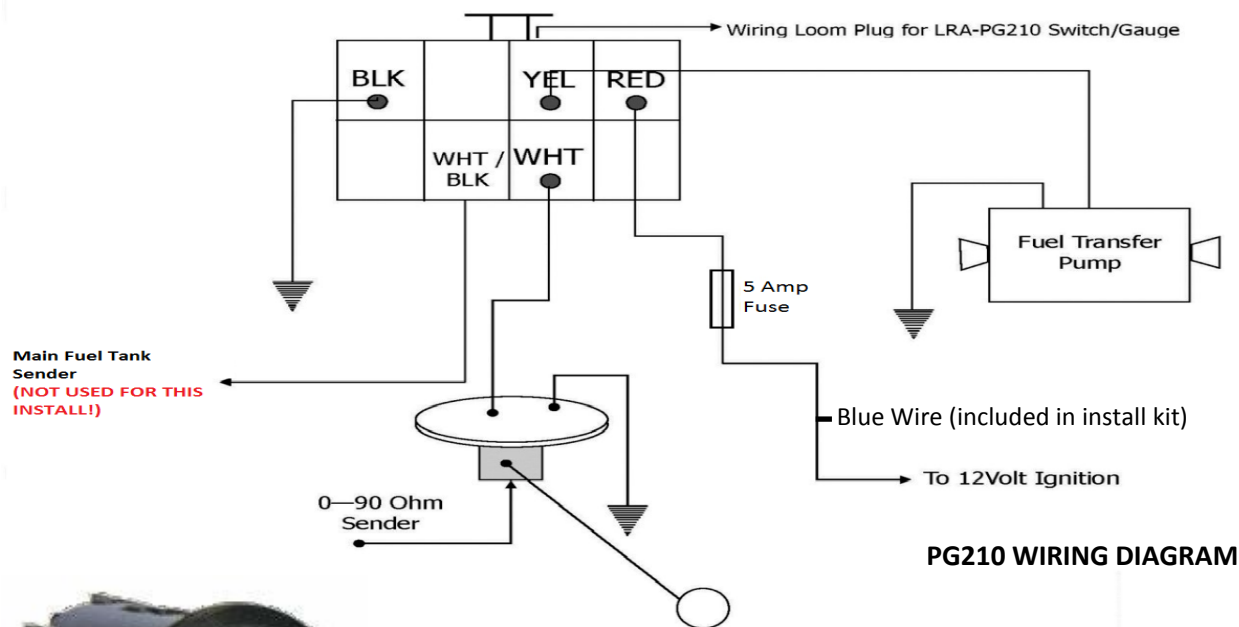


## II. SWITCH/GAUGE UNIT WIRING & INSTALLATION (*continued*)

### B. WIRING

1. A 12 volt ignition source can be found in the wiring loom under the left-hand side of the steering column, pink wire w/yellow trace (check this with test light). 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 (the blue wire included runs from the power source to the fuse holder, the red wire is connected to the output side of the fuse holder).
2. Solder and heat shrink wiring connections, then route wire out the passenger side of the console, under the carpet behind the passenger seat. Remove the floor plug and install 3/4" grommet in the floor behind the passenger seat near the rocker panel. Run the wiring through the grommet and to the rear of the vehicle for later connection of fuel pump and auxiliary tank fuel gauge sending unit.
3. Leave enough wire to reach the sending unit.

**PLEASE REFER TO OPERATING INSTRUCTIONS FOR THIS UNIT ON PAGE 18**



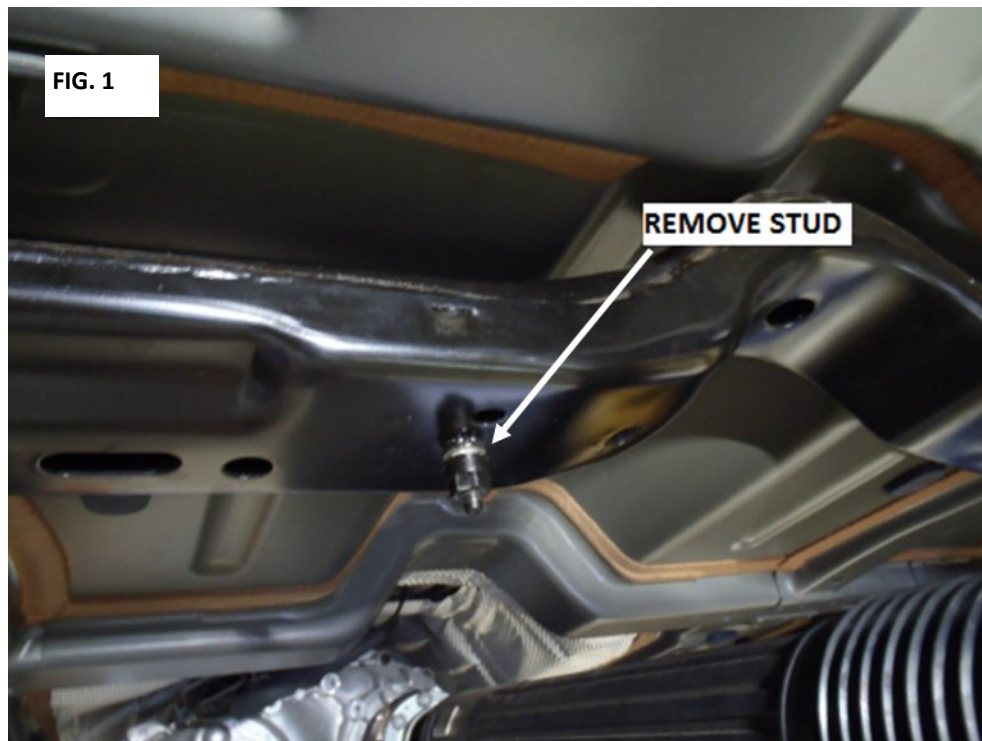


### III. VEHICLE PREPARATION

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#### A. INSTALL BRACKETS & HEAT SHIELDS

1. Remove stud from underside of the center chassis cross-member (see Figure 1):



2. Disconnect the exhaust at the joint near the transfer case. Partially lower pipe to fit the new front secondary mount.
3. Remove transfer case skid plate to install front secondary bracket. The new bracket fits around the chassis and is secured with 4 x M8 x 20mm bolts. It has a slot in the base of the bracket for the original tank support. Refit the skid plate once the tank is installed (see Figure 2):



### III. VEHICLE PREPARATION *(continued)*

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#### A. INSTALL BRACKETS & HEAT SHIELDS *(continued)*

4. Reconnect the exhaust and fit the exhaust resonator (Figures 3 & 4 below) and pipe (Figure 5 below) heat shields. Also fit the tank heat shield to the rear of the tank:



### III. VEHICLE PREPARATION *(continued)*

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#### B. REVISE VENT TUBING

1. Disconnect evap canister tube from pump assembly and unclip at chassis rail near the front of the right-hand rear wheel. Remove the tube from the vehicle.
2. Remove the fittings from the tube. Be careful not to damage the barbs on the fittings.
3. Fit straight quick connect fitting to 19.7-inch length of 12mm hose (see Figure 6):



4. Refit to the vehicle in the same location but now run over OEM tank fill hose. Open up securing clamp at chassis to fit larger hose. Fit tee piece to other end. Fit elbow quick connect fitting to 11.8-inch long 12mm hose. Connect to pump assembly and connect other end to tee piece. Fit 3.74-inch long 35mm hose to new T Filler. Where hoses are installed on barbed fittings, install 1/2" hose clamps on the rubber hose ends before fitting to the barbed ends.

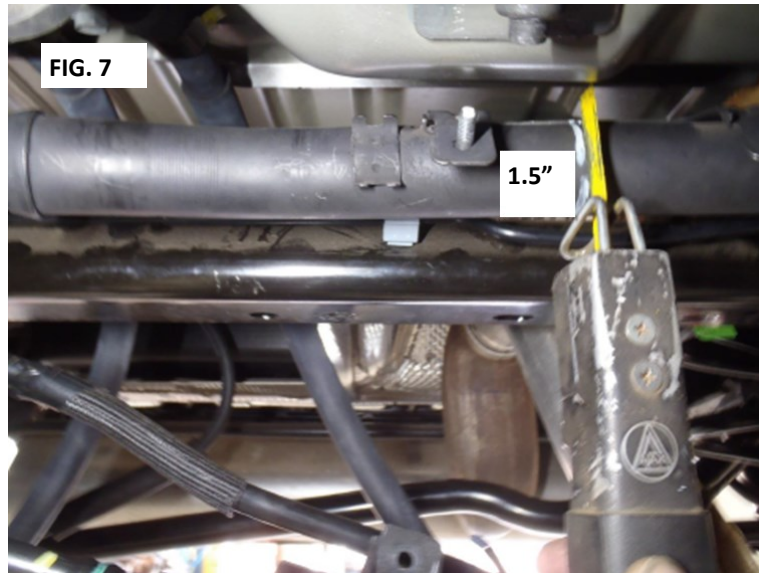


## IV. FILLER & TANK PREPARATION

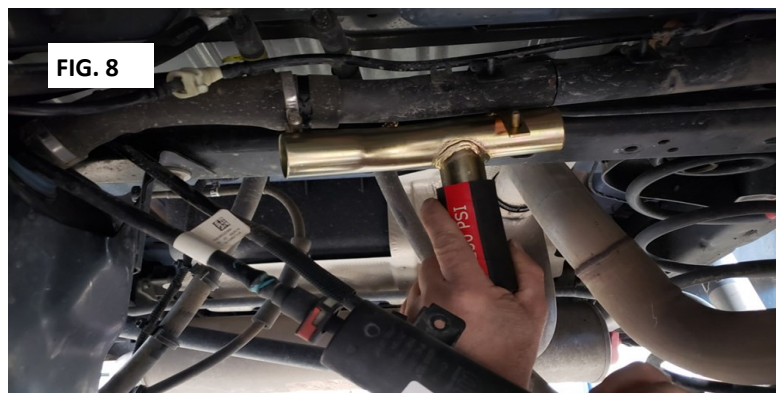
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### A. INSTALL TEE FILLER

1. Disconnect the filler hose from main tank and filler pipe.
2. Unbolt fuel separator from the fill pipe.
3. You may either remove the fill pipe from the vehicle to cut pipe, or cut pipe in place (**CAUTION: DO NOT USE A FLAME CUTTER OR CREATE SPARKS IF CUTTING THE PIPE IN PLACE**). Measure 1.5" from the fuel separator bracket, cut the fuel filler pipe and dispose of the cut off portion (see Figure 7):



4. Cut unwanted part of the bracket so rubber joining hose can slip over the fill pipe. If cutting in situation, after cutting bend bracket up and recut as close as possible to the remaining fuel separator tab.
5. Fit new T Filler section to fill pipe using 2.95-inch long, 38mm diameter hose and clamps. Use fuel separator for location of new T Filler. Make sure "T" is pointing down (see Figure 8, below):



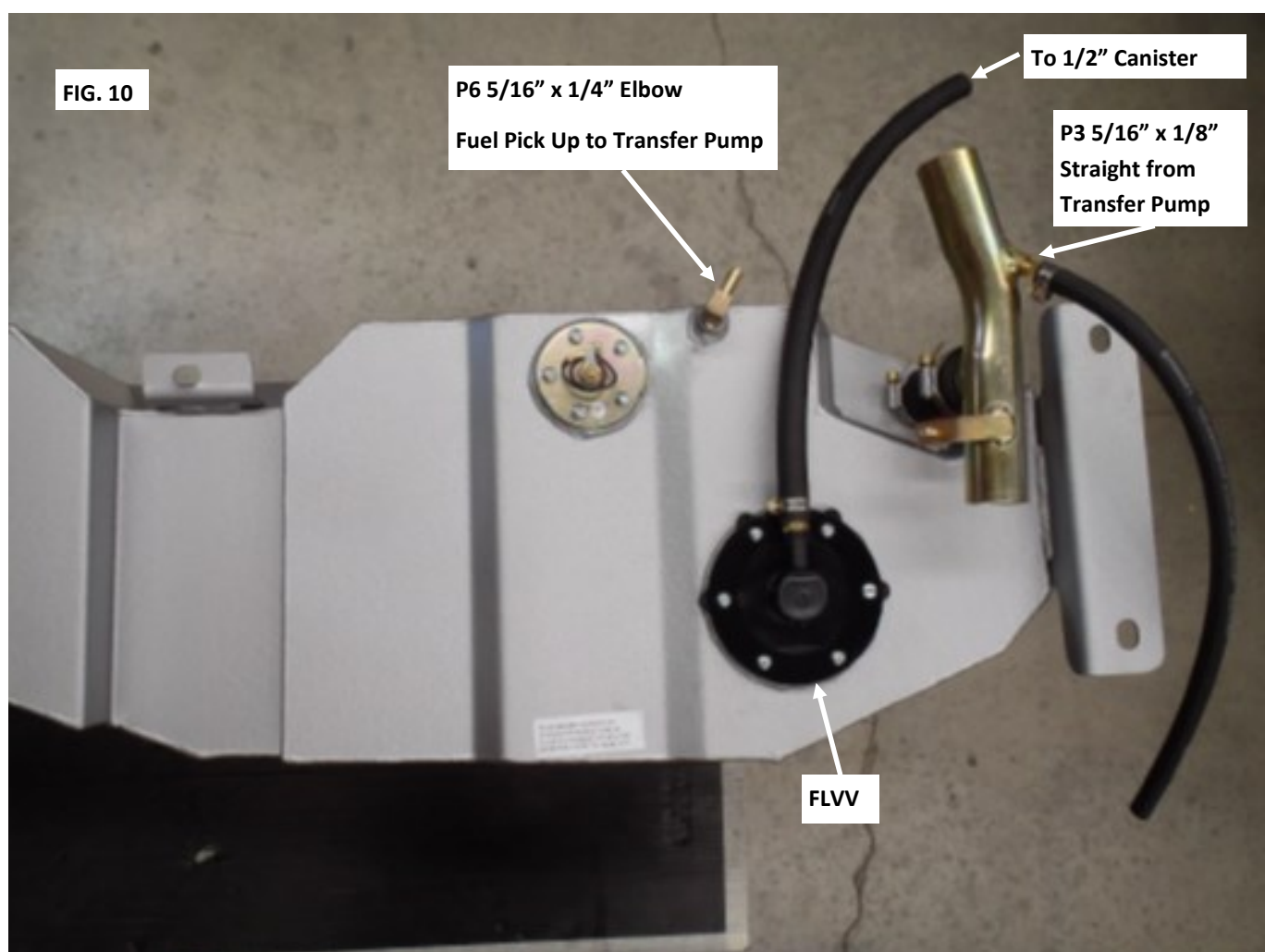
4. Also fit P3 5/16" x 1/8" straight fitting and 17-inch length of 8mm hose at this time.
5. Reconnect T Filler to main tank. Tighten all clamps (see Figure 9, page 13):

#### IV. FILLER & TANK PREPARATION *(continued)*



##### B. AUXILIARY TANK PREPARATION

1. Fit 15.75-inch long 12mm hose to FLVV (the Fill Limit Vent Valve, or FLVV, is designed to maximize fuel tank capacity and facilitate automatic nozzle shutoff) and install brass into tank (see Figure 10):

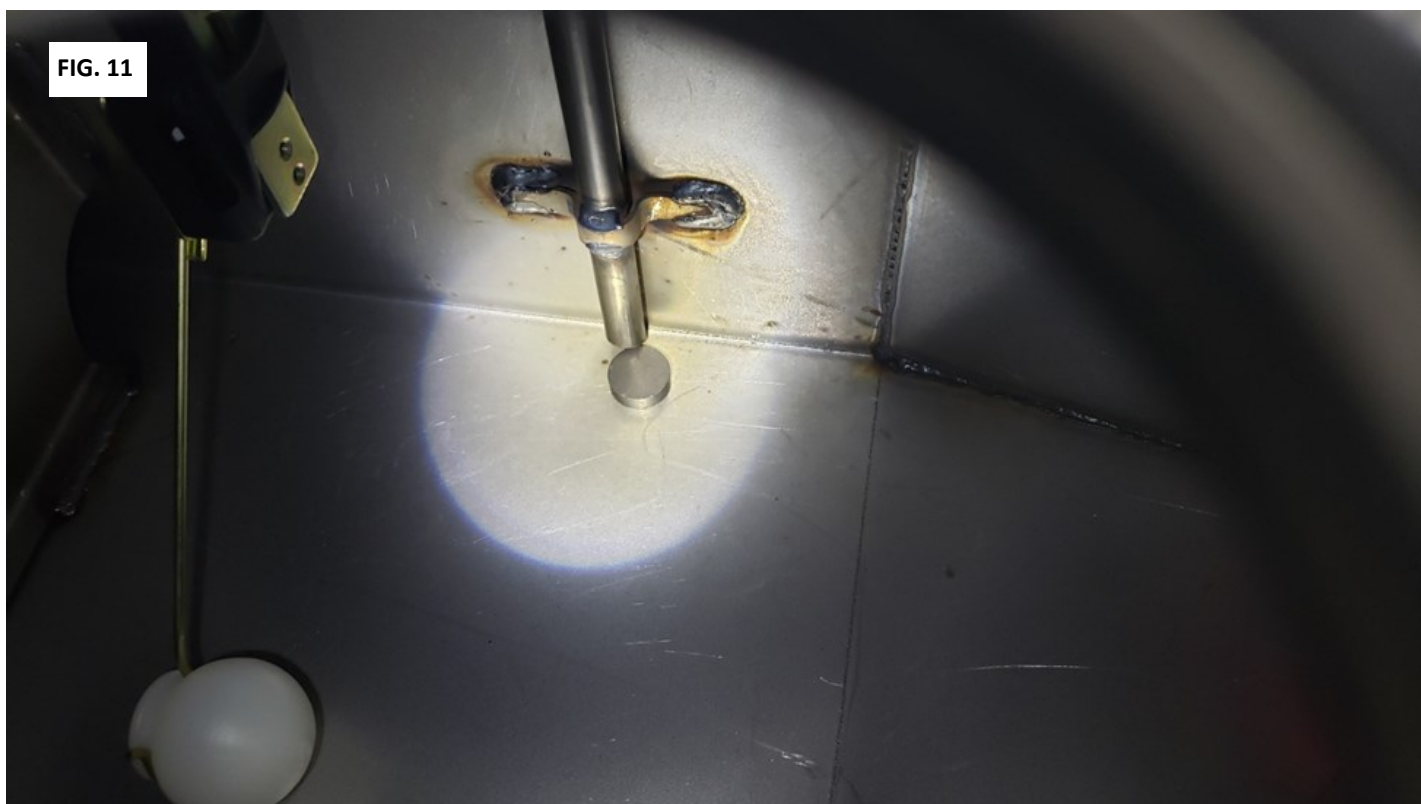


## IV. FILLER & TANK PREPARATION *(continued)*

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### B. AUXILIARY TANK PREPARATION *(continued)*

2. Make sure to place the supplied magnet into the auxiliary tank, as close to the fuel pick up as possible (see Figure 11, below):



## V. TANK INSTALLATION

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### A. JACK THE TANK INTO POSITION AND SECURE

1. Jack the tank into position and feed 35mm diameter hose onto filler neck. Secure rear and inboard mount with 3 x M12 x 30mm 1.5 fine thread bolts. Secure front of the tank to new secondary bracket with M10 x 30mm bolts, washers and Nyloc nuts. Connect FLVV 12mm hose to evap canister tee.

### B. INSTALL & WIRE THE FUEL TRANSFER PUMP

1. Fit fuel transfer pump to mounting bracket and mount to right-hand stud on cross member above the rear differential. Screw M/F 1/8" elbow to intake side of pump and fit fuel filter to this. Connect fuel pick up hose from the auxiliary tank to the filter. Connect previously fitted 8mm hose from filler tee to outlet side of the pump (see Figure 12, below).
2. Complete electrical wiring by connecting white wire to the aux fuel tank sending unit, yellow wire to the fuel transfer pump, and connect ground wires. **DO NOT** ground the fuel transfer 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.



### C. FINISH INSTALLATION

1. Check all clearances and neatly cable tie all hoses and wiring. Refit tubular cross member tank support and transfer case skid plate.
2. Reconnect vehicle battery.
3. To test, fill both tanks and drive as normal. When the fuel level in the main tank has run down by one-quarter 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.



## VI. FINAL INSTALLATION CHECKLIST

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- 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!**



## LONG RANGE AUTOMOTIVE AUXILIARY TANK USER GUIDE



### WELCOME

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And congratulations on the purchase of your new tank from Long Range Automotive of Melbourne, Australia. Properly installed and maintained, the tank is easy to operate and will provide you with years of service.

As North American agent, Long Range America is here to help along the way. Your first stop with questions about tank, installation and use is this guide, followed by a call to your installer and if need be, a visit to our website for more help.

Your kit is covered by a three-year limited warranty you can see on our website here <https://longrangeamerica.com/tank-warranty-registration/tank-limited-warranty/> and we strongly encourage you to register your purchase with us at this link <https://longrangeamerica.com/tank-warranty-registration/>

Why register? We want you to have a flawless experience, but sometimes things happen (we need to make repairs, replacements, etc.). Registration is our way of keeping track of our tanks after they leave the warehouse.

We need to collect this information within thirty days of kit purchase – whether direct sale from LRAM or through one of our authorized dealers. In addition, we occasionally make improvements to our in-service products and there may even be recalls. For these reasons, we need this information. Please help us serve and support you!

### OPERATIONS

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#### **New Configuration:**

Your new tank installation included addition of a new T-fill tube that serves both original tank and your added auxiliary 17-gallon auxiliary tank. Both tanks are filled through the same point.

#### **Adding Fuel:**

When filling, the path of least resistance is to the main tank, so it will fill first. When the main tank is full, the auxiliary tank will continue filling. At this point, the fill rate may slow due to normal venting as excess air in the tank is vented.

While filling, the operator must be sensitive to venting of the tank(s) as fuel is added. You may need to pause briefly and then adjust the flow rate as the dual tank fill/vent system accommodates newly added fuel.

If the pump fill control will not allow a “high speed” fill at this point, do not worry, it is just the tank venting that excess air. Fill at the allowed rate until the auxiliary tank is full (patience is a virtue) and DO NOT ATTEMPT TO TOP OFF THE TANK.

#### **While Driving:**

Your engine will draw fuel from the main tank and that gauge will operate normally. The stock tank has 21.5 gallons of capacity. As you consume fuel, the gauge will go down and at some point, you will need to transfer fuel from the auxiliary tank. When you do that is up to you.

## Auxiliary Tank Fuel Monitor:

Your installation included the addition of a combination control module as seen here.

There are a series of LEDs that combine to display the contents of the auxiliary tank as follows:

1. The RED and GREEN lights display the contents of the auxiliary tank.
2. All GREEN shows FULL as shown at right. As fuel is transferred, the LEDs will go dark from top to bottom, indicating  $\frac{3}{4}$  tank,  $\frac{1}{2}$  tank,  $\frac{1}{4}$  tank of fuel remaining.
3. When all of the fuel has been transferred, the RED flashing light will indicate the tank's status as EMPTY.



## Auxiliary Tank Fuel Transfer:

1. When it is time to transfer fuel, simply press the button at the left side of the module to activate the transfer pump.
2. The transfer tank is self-priming and will make a clicking sound until it fills with fuel and begins pumping. That sound will reduce somewhat when fuel is flowing.
3. When the switch is turned ON and the ORANGE light is displayed this indicates that fuel is being transferred.
4. Fuel is transferred at around **2 quarts per minute**.
5. Fuel will be transferred from the auxiliary tank into the main tank until the auxiliary gauge shows a RED flashing light at which point the pump will continue to run for 2 minutes and then the buzzer will sound, and the pump will automatically shut off.
6. You can restart the pump by simply pushing the switch button again, the pump will run again for another 2 minutes before automatically shutting off.
7. It isn't possible to overfill the main tank, it will simply drain into the auxiliary tank via the "T" in the filler line.



## QUESTIONS & SUPPORT

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### Frequently Asked Questions:

- **Will I fill the tank in the same way as before?** See instructions on page 17.
- **Will the Distance to Empty (DTE) Function work as before?** If present, your computer will accurately report on fuel range based upon fuel level in the main tank only.
- **Who do I call with questions, or for assistance?** Your first contact should be to the installer. If you are the installer, or if the installer cannot answer your question, please contact Long Range America in any of the following ways – **our business hours are 8am to 5pm (Pacific Time) Monday to Friday.**
  - Website via <https://longrangeamerica.com/support/> (see below)
  - Email via [service@longrangeamerica.com](mailto:service@longrangeamerica.com)
  - Phone via [1-800-224-7801](tel:1-800-224-7801)

And let us know how we can better serve you!

Best regards,

LONG RANGE AMERICA

