REFUELING TANK INSTALLATION INSTRUCTION SHEET

Installation Sheet–841

An online installation video is available by clicking here or by scanning this QR code:

TRANSFERFLOW
PREMIER AMERICAN-MADE FUEL SYSTEMS
1444 Fortress Street, Chico CA 95973 ● (800) 442-0056 / (530) 893-5209 ● Fax (530) 893-0204
www.TransferFlow.com

Forward

Thank you for purchasing a Transfer Flow refueling tank. Please read the following procedures carefully before starting the installation.

This manual provides the necessary information for installing a Transfer Flow refueling tank onto your vehicle. Changes to these installation instructions may be made at any time without notice. If you find something we have missed or require any additional information, please don't hesitate to contact our technical support team at (800) 442-0056 ext. 2.

Transfer Flow fuel systems and parts are intended to be used in conjunction with either the original manufacturer's equipment or with Transfer Flow systems and components. Transfer Flow refueling tanks and components are not intended to be used in conjunction with other aftermarket fuel systems. Attempting to use our products inappropriately may lead to malfunction and voids the warranty. To ensure that your Transfer Flow refueling tank performs appropriately for many years to come, we ask that you follow these guidelines.

IMPORTANT: All Transfer Flow refueling tanks are to be installed only as prescribed, directly behind the cab of the truck and across the width of the vehicle. **Transfer Flow refueling tanks are not meant to be installed on a cab chassis, bed delete, incomplete vehicle, or truck without a bed.** Please get in touch with Transfer Flow immediately if there are any questions regarding the installation of the refueling tank.

Supplemental Instructions

- IS-484 – Torque Specifications
- IS-374 – Department of Transportation (DOT) Permit SP-11911
- IS-457 – DOT Exemption Information
- IS-456 – Transfer Flow, Inc. Refueling Tank Maintenance Log

* If using a fuel filter kit, please refer to instruction sheet IS-689 for fuel filter installation instructions.

* If installing a refueling tank on a 2015-2016 Ford F-150 or any 2017 or later Ford F-series truck with an aluminum body, please read QVM bulletin Q-222R1 available by clicking here or by scanning the QR code below:

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Notice

This product is protected by state common law, copyright, and/or patent. All legal rights therein are reserved. The design, layout, dimensions, geometry, and engineering features shown in this product are the exclusive property of Transfer Flow, Inc. This product may not be copied or duplicated in whole or part, abstractly or fundamentally, intentionally, or fortuitously, nor shall any design, dimension, or other information be incorporated into any product or apparatus without the prior written consent of Transfer Flow, Inc.

Transfer Flow fuel systems and parts are intended to be used in conjunction with either the original manufacturer's equipment or with Transfer Flow systems and components. Transfer Flow refueling tanks and components are not intended to be used in conjunction with other aftermarket fuel systems. Attempting to use our products inappropriately may lead to malfunction and voids the warranty. To ensure that your Transfer Flow refueling tank performs appropriately for many years to come, we ask that you follow these guidelines.

Safety Notes

Before beginning the Transfer Flow refueling tank installation, please read the following instructions thoroughly.

If you would prefer your fuel system to be professionally installed, please contact your local dealer, or you can browse our list of approved dealers in your area on our website at www.TransferFlow.com/installation.

Transfer Flow refueling tanks are designed for use on stock vehicles. We do our best to foresee how our customers will use and modify their vehicles, but unfortunately, we cannot verify all aftermarket modifications. If your vehicle has had any modifications to the chassis, suspension, fuel system, truck bed, or wheel/tire size is different than stock; please call Transfer Flow before installing one of our refueling tanks.

- **Work in a well-ventilated area.**
- **Always wear safety glasses.**
- **The Transfer Flow tanks are heavy; please use proper lifting techniques when handling the tank.**

CAUTION: DO NOT HAVE ANY OPEN FLAME OR HEAT SOURCE CLOSE TO THE INSTALLATION AREA.

CAUTION: DO NOT OVERFILL.

Please read the following procedures carefully before starting the installation.

Tools and Supplies Requirements

Before starting the installation process, review the entire installation instructions. If you have any questions regarding the fuel system or the installation process, please contact Transfer Flow at (800) 442-0056 ext. 2.

Tool List:

- ☐ Long 1/8-inch drill bit
- ☐ 1/2-inch drill bit
- ☐ 9/16-inch drill bit
- ☐ Drill
- ☐ 1¼-inch hole saw
- ☐ 10-millimeter or 3/8-inch socket
- ☐ 13-millimeter or 1/2-inch socket
- ☐ 7/16-inch socket or wrench
- ☐ 3/4-inch wrench, preferably a ratcheting wrench
- ☐ Ratchet
- ☐ 12-inch open-ended adjustable box wrench (crescent wrench)
- ☐ Pipe wrench
- ☐ Wire strippers
- ☐ Crimping pliers
- ☐ Heat gun
- ☐ Measuring tape
- ☐ Permanent marker or paint marker
- ☐ Torque wrench capable of at least 65 ft/lbs.
- ☐ Thread sealant tape or Loctite 567

Parts List

Before beginning installation, verify all parts listed below are included in the installation kit. If there are any missing or damaged parts, please contact Transfer Flow at (800) 442-0056 ext. 2.

***NOTE**: Fuel system shown above is Transfer Flow's 82-gallon in-bed refueling tank system. Your tank's appearance and parts shown may vary.*

Parts List:

- Installation sheet (IS-841)
- Transfer Flow refueling tank
- 12-foot refueling hose
- Refueling nozzle
- Transfer Flow refueling tank mounting kit 020-01-14132
- Transfer Flow refueling pump wiring harness 040-01-14124

Installation Instructions

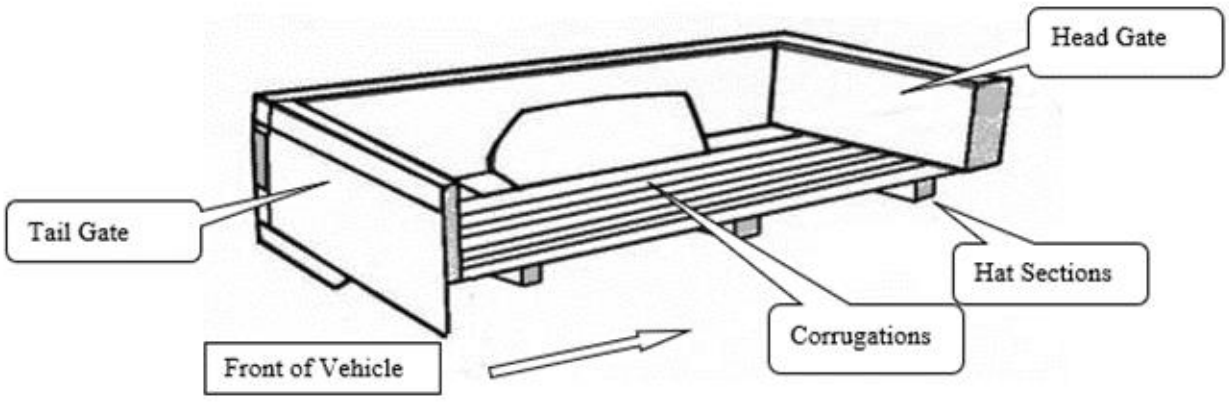
SECTION 1: Preparing the vehicle

1. Extinguish any sources of heat or open flame that may be present in the area.
2. Remove any loose or movable objects from the bed of the truck.
3. Disconnect the vehicle's battery.

SECTION 2: Preposition the Refueling Tank in the Bed of the Truck

NOTE: Transfer Flow refueling tanks are not meant to be installed on a cab chassis, bed delete, incomplete vehicle, or truck without a bed. The tank is not to be rigidly mounted to the frame rails of the vehicle. If a tank is mounted this way, damage will be caused to the tank over time due to frame twist and voids the warranty.

1. Place the tank in the bed of the truck. The tank should be spaced about 1-inch away from the head gate and centered between the bed rails. In all cases, the fill opening should be on the driver's side.

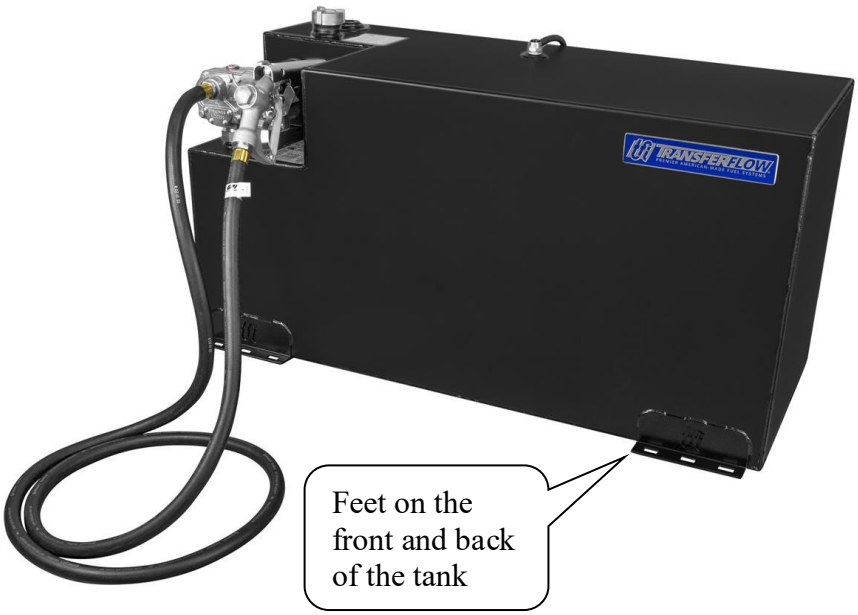


This cutaway drawing shows the head gate and bed corrugations.

2. There will be one of two different foot patterns for mounting.

- For the 100-gallon L-shaped refueling tanks, the feet are located on both the front and sides.

- On the 40, 50, 82, 109-gallon, and the 50/50 split refueling tanks, the feet are located on the front and back of the tank.



3. Mark the mounting holes with a permanent market or paint pen. If you cannot reach the mounting tabs near the cab, attach your permanent marker or paint pen to a long stick or socket extension using some electrical or other sturdy tape.

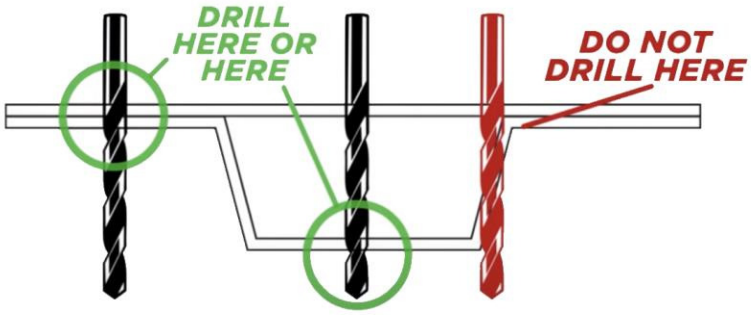
4. **<u>For 100-gallon L-shaped refueling tanks</u>:** There are six mounting feet on these tanks. Not all six feet need to be mounted. The rear side feet nearest the front of the vehicle must be mounted but either the front side feet or the front feet nearest the rear of the vehicle can be mounted. On some vehicles, the front feet are above the frame or OEM fuel tank making them difficult to secure.

5. Remove the tank from the mounting area.

6. Measure the mounting hole locations using the head gate and bed corrugations as reference lines.

7. From underneath the truck, while using the head gate and bed corrugations for reference, measure and mark the bed mounting holes on the bottom side of the bed.

8. Ensure that the mounting hole location marks you have created provide enough clearance to fit the included ½-inch bolt and large shims. Ensure the mounting bolts have plenty of clearance and won't interfere with or damage any surrounding hoses or electrical components. It is acceptable to drill through the hat section of the bed but do not drill through the tall edge of the hat section. Ensure the mounting holes will be drilled through a flat section of the hat area.



9. If you have any doubts about the tank location, double check your measurements and reposition the tank as needed. If you move the tank, you will also need to remark the holes on the underside and double check your measurements.

10. On some vehicles the tank may need to be pushed more towards the head gate. If this is the case, make sure you're able to install the stiffener supplied in the kit onto the bolt before drilling.

11. Move out of the way any hoses, electrical wires, or obstructions that may be scarred by a drill bit.

SECTION 3: Mounting the Refueling Tank

1. From the bed of the truck, drill pilot holes with a long 1/8-inch drill bit drilling from the top down. Double-check that the pilot holes came through the bottom location where expected.

2. Enlarge the tank mounting holes using a 9/16-inch drill bit.

3. Drill a 1/8-inch pilot hole for the wiring harness and vent hose in the pickup bed side panel, about 2-inches above the bed floor. Prior to drilling make sure you are not drilling into anything valuable such as the outside of the bed, wiring harness, or filler neck. **Do not drill these holes in the head gate!**

4. Enlarge the hole for the wiring harness and vent hose using a 1¼-inch hole-saw. Insert the provided rubber grommet into the hole.

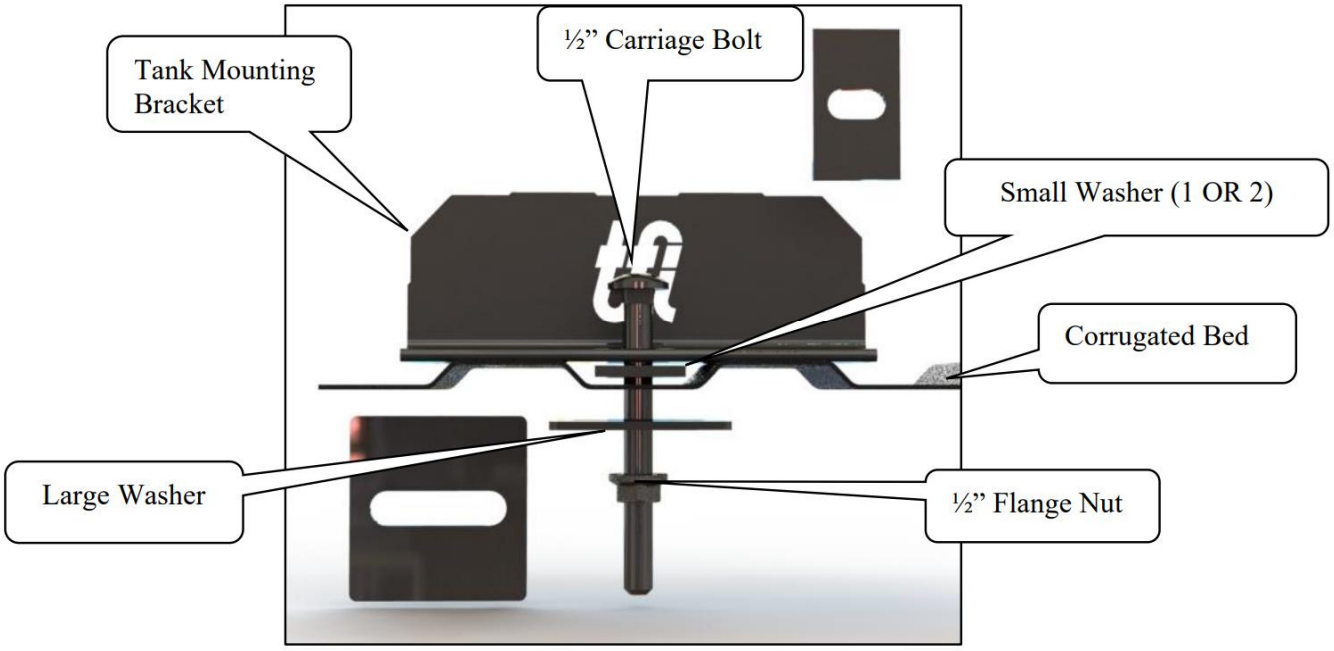
5. It is advised to use a rust-inhibiting paint on all holes drilled in the vehicle to prevent corrosion of bare metal. On aluminum vehicles, the use of a rust-inhibiting paint is mandatory.

6. Attach the three sticky back foam strips to the bottom of the tank or truck bed. Place one strip on the bottom next to each side and the third strip under the middle of the tank. These strips prevent the tank from rubbing directly on the bed. **NOTE:** If the bed of the truck has a spray-on bed liner, the foam strips may not be needed. The tank cannot be mounted on a plastic bed liner.

7. Place the refueling tank in its final position.

8. Route the vent hose through the hole with the rubber grommet installed that you drilled in the side of the bed. Ensure the end of the hose is clear of all sources of heat or spark as fuel vapors may emit from the end of the vent hose.

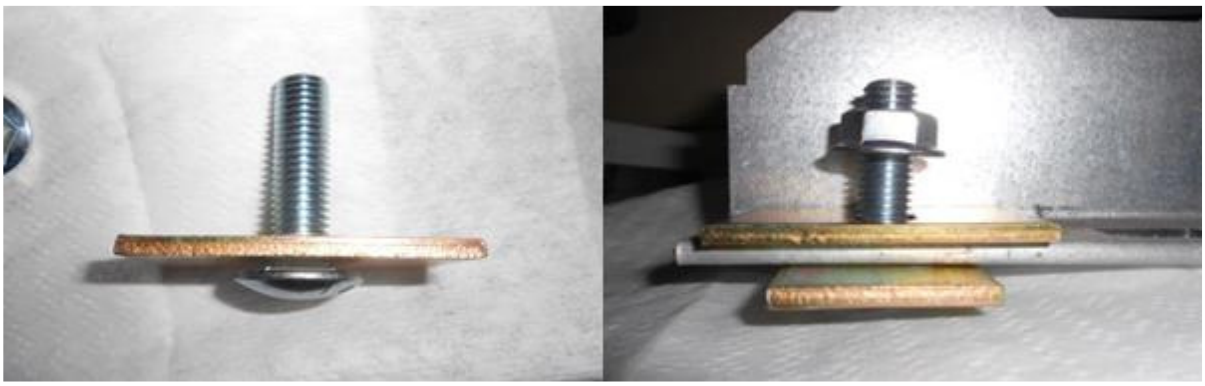
9. If the feet of the tank / mounting brackets are over a valley part of the pickup bed corrugations, to prevent the bed corrugations from collapsing, place one or two shims under the feet to bring them up to the same height as the high part of the bed corrugations. If the feet of the tank / mounting brackets are over the high part of the pickup bed corrugations, do not use shims. **Shims are not used on top of the tank feet.** Always use as large of shims as possible on the underside of the pickup. Some GM pickups may require the shims to be cut to fit properly. **Make sure the refueling tank is sitting on the pickup bed corrugations and not the shims between the bed corrugations.**



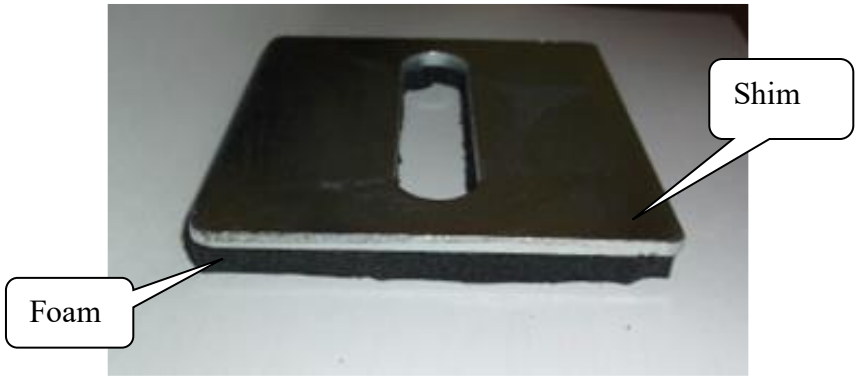
10. Insert the ½-inch carriage head bolts through the refueling tank feet / mounting brackets and through the pickup bed of the truck.

11. Secure the fasteners with the nuts provided and torque the specification found in Instruction Sheet IS-484.

    A. On some vehicles it may be necessary to install the carriage bolts from underneath the truck. If this is case, place one shim on the head side of the bolt before installing through the pickup truck bed hole. On the tank feet, use one shim with the ½-inch flange nut to secure the tank.



    B. On 2015 – 2016 Ford F-150 pickups and all 2017 and later Ford F-series pickup trucks, it is necessary to use foam on the shim to prevent the paint from scratching and, hence rusting. Please refer to Ford's QVM bulletin Q-222R1 found by following the link or scanning the QR code on page 3 of this document.



12. **<u>Double-check your work</u>!** At this point, your refueling tank should be secured in the pickup bed of your truck and all hardware should be properly torqued.

SECTION 4: Refueling Hose and Nozzle Installation

1. Your refueling tank comes with the pump already mounted onto the tank. Remove the red plastic cap from the pump.

2. If a fuel filter upgrade kit is to be installed, do that now using the instructions that came with that kit.

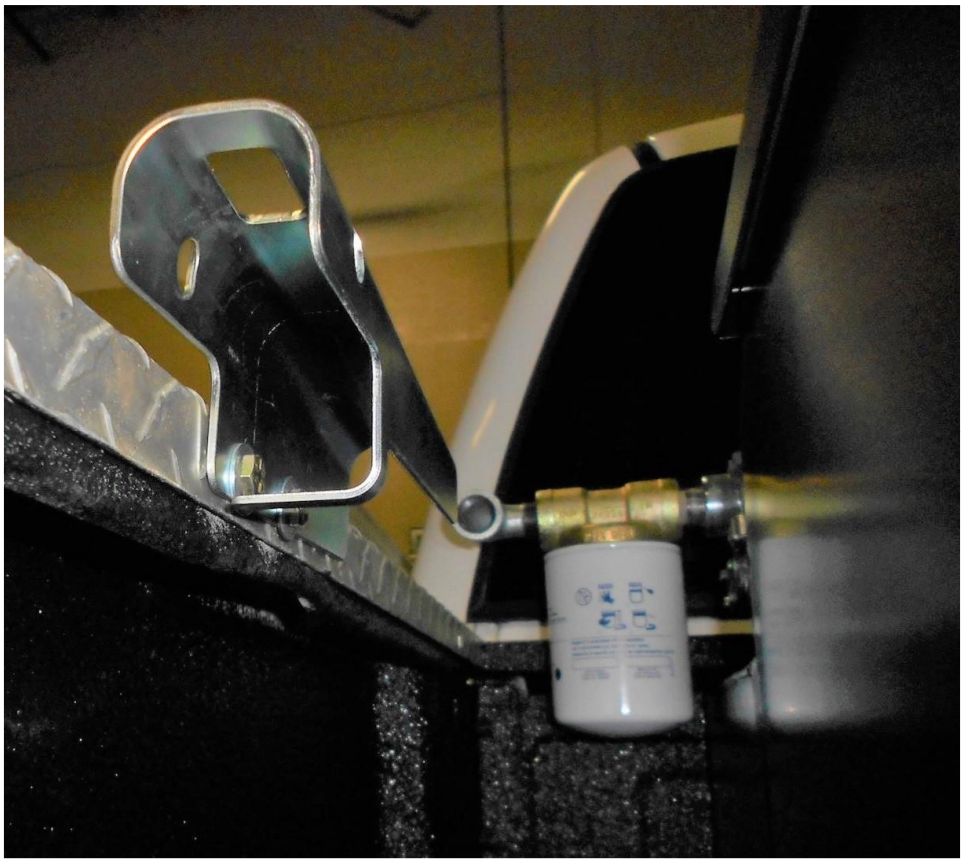
3. Apply thread sealant tape or Loctite 567 to the ¾-inch national pipe threads on the fuel dispensing hose. Attach the fuel dispensing hose to either the pump where you removed the red plastic cap or to the filter if one was installed.

4. If a fuel meter upgrade kit is to be installed, do that now using the instruction that came with that kit.

5. Apply thread sealant tape or Loctite 567 to the ¾-inch national pipe threads on the other end fuel dispensing hose or the threads of the flow meter if one was used. Attach the fuel dispensing nozzle to either the fuel dispensing hose or the flow meter if one was installed.

Refueling tank shown with optional fuel filter and fuel meter. These items are available from Transfer Flow.

6. **For 100-gallon L-shaped refueling tanks** the nozzle bracket needs to be relocated to the refueling tank side of the pickup bed rail. Remove the nozzle bracket from the refueling pump using a 7/16-inch wrench or socket. Use the nozzle bracket as a template to mark the location of the holes you will drill to attach the refueling nozzle bracket to the pickup bed rail. The hardware to relocate the nozzle bracket is not included in this kit. Drill the holes to the size you will mount to bolt the nozzle bracket to the pickup bed.



Nozzle Bracket shown mounted to pickup truck bed.

SECTION 5: Wiring Harness Installation

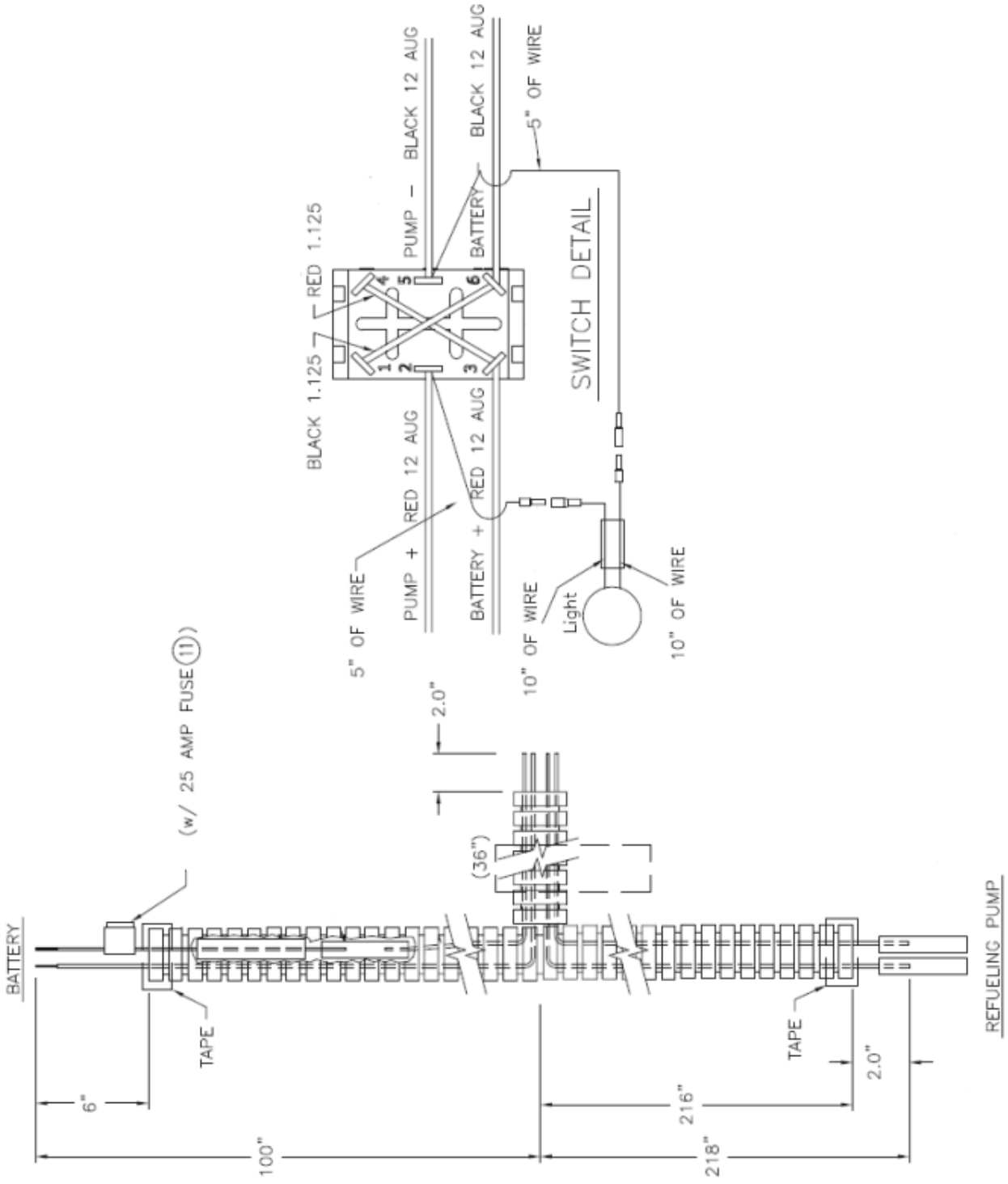
If a 50-50 split refueler is being installed; two wiring harnesses instead of one need to be installed.

- **Ford Trucks with an Automatic Transmission:** Locate the black rubber grommet under the carpet in the driver's side foot well. This grommet will be located just to the left and behind the accelerator pedal with the transmission gear selector cable running through it. Make an incision out from the center of this grommet ensuring that the grommet is kept intact but is open on one side. This firewall opening allows the Transfer Flow wiring harness to pass through the engine compartment into the cab of the vehicle.

Photo of wiring harness being routed into the cab of the vehicle through the floorboard.

- **Ford Trucks with a Manual Transmission:** If the above wiring harness port listed in the "Ford trucks with an automatic transmission" is not present, a 1¼-inch hole will need to be drilled in the firewall. Prior to drilling the hole, make sure that the hole will not interfere with any other components on the chassis. After the hole has been drilled, insert the supplied 1¼-inch rubber grommet.

- **Dodge and GM Trucks:** Either use the existing OEM rubber grommet located in the firewall to route the end of the TFI wiring harness or a 1¼-inch hole will need to be drilled and the supplied rubber grommet will need to be installed. Prior to drilling the hole, make sure that the hole will not interfere with any other components on the vehicle.



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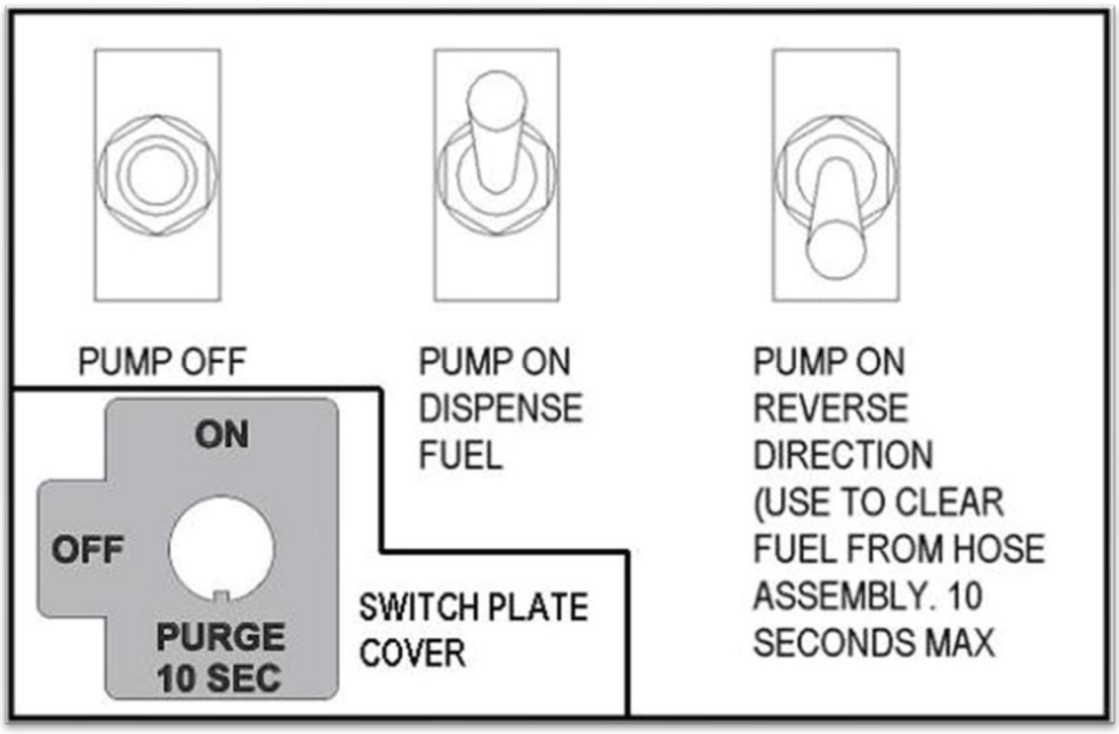
1. Remove the Transfer Flow wiring harness from the installation kit. Locate the end of this harness that has the switch. From inside the vehicle, insert both of the other open ends of the wiring harness through the access hole leaving the switch inside the cab of the vehicle. If drilling a 1¼-inch access hole, route the wires through the provided grommet and hole before inserting the grommet into position.

2. Find a suitable location on the dash for the switch and light. **The switch and light are not waterproof** and should only be located in a vehicle cab or another sealed compartment. After confirming there are no objects or electrical wires that could be damaged, drill two ½-inch diameter holes in the desired switch and light mounting locations. Drill these holes, or at least the one for the light in a visible location.

3. Insert the switch into the hole so the up position is ON, the middle position is OFF, and the down position is PURGE. Leave the switch in the OFF position during the installation process. Install the supplied switch label plate and nut into the switch and tighten down.



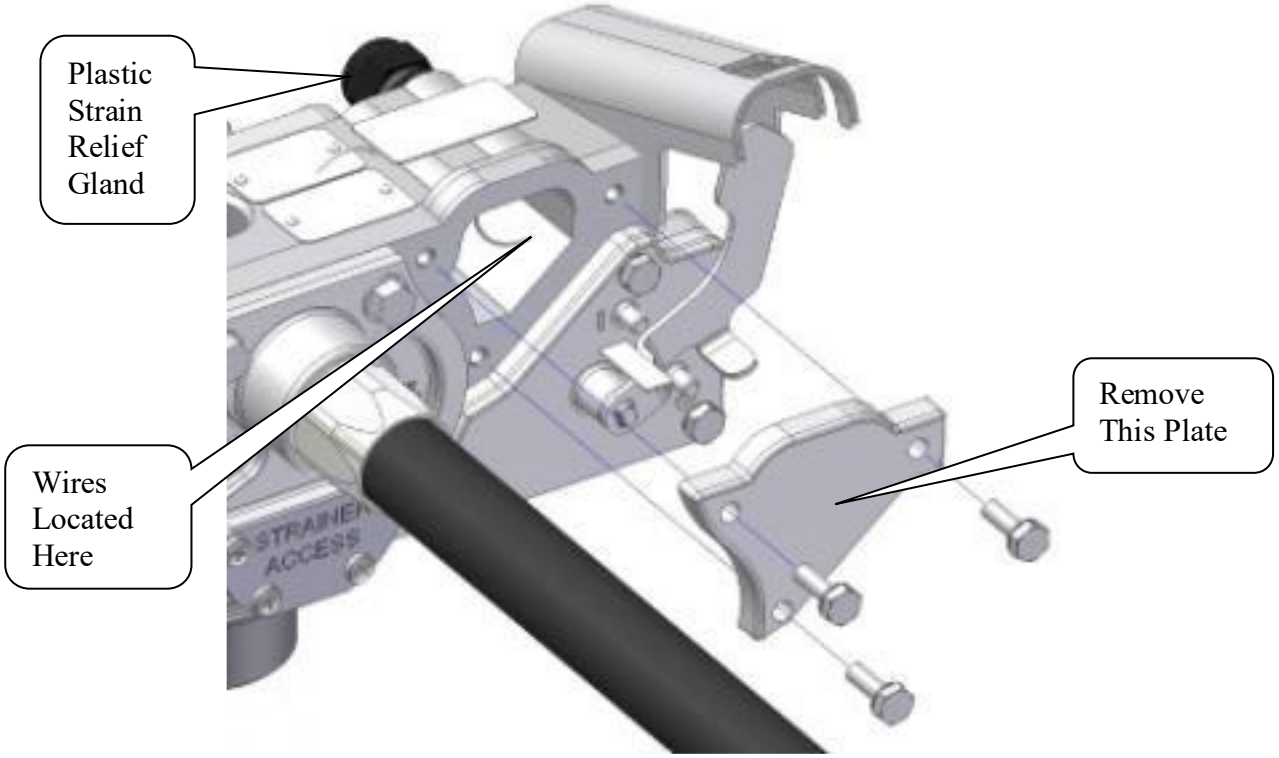
4. Install the light through the hole and tighten the nut. Connect the male and female bullet connectors from the light and switch together; they can only go together one way. The light comes on when the switch is in the ON position.

5. Route both ends of the wiring harness through the firewall access hole.

6. **Route the end of the wiring harness with the two butt connectors towards the refueling tank/rear of the vehicle.** It is extremely important not to cross the two sides of the wiring harness. **The ends with the butt connectors must be routed to the refueling tank pump and the stripped ends must go to the battery.** It is extremely important to route these wires correctly as failure to follow this step and routing these wires in reverse will result in the failure of your refueling pump.

7. Route the end of the wiring harness with the butt connectors through the grommet in the pickup bed side panel and pull the wiring harness into the bed of the truck. Avoid routing the wiring harness too close to any hot, sharp, or moving parts of the vehicle. Use the nylon zip-ties provided to secure the wiring harness to the vehicle. Do not secure the wiring harness to any brake or fuel lines.

8. To gain access to the refueling tank fuel pump wires, use a 7/16-inch socket to remove the plate on the front of the refueling pump.



9. Remove the plastic nut from the plastic strain relief gland. Place the plastic nut over the wiring harness and thread the wiring harness through the plastic strain relief gland. Make sure that the red and black wires from the Transfer Flow wiring harness are through the pump enough to connect to the pump wires.

10. Place a piece of heat shrink over the red wire of the wiring harness. Crimp the red wire from the wiring harness to the red wire of the pump. Using a heat gun, seal the heat shrink over the butt connector. Repeat this operation for the black wires.

11. Pull the wiring harness excess back through the plastic strain relief gland until the wires are snug but not strained or tight. Tighten down the plastic nut to the strain relief gland. This secures the wires in place, so they won't move.

12. Reinstall the plate on the front of the refueling pump making sure not to pinch any of the wires.

13. From the cab access hole, route the other end of the wiring harness, the end without the butt connectors on it, towards the front of the vehicle, into the engine compartment, and up to the vehicle's battery. Avoid routing the wiring harness too close to any hot, sharp, or moving parts of the vehicle. Use the nylon zip-ties provided to secure the wiring harness to the vehicle. Do not secure the wiring harness to any brake or fuel lines.

14. Trim the red and black power and ground wires to the appropriate length to reach your battery.

15. Install the red inline fuse holder to the red power wire.

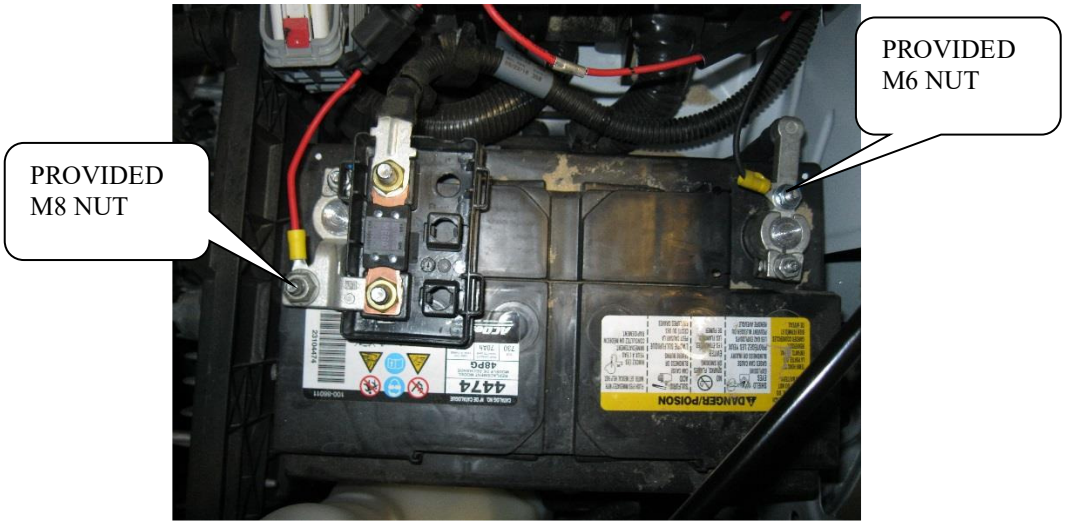
16. Some vehicles use top-post batteries while other vehicles use a side-post battery. Based on your battery, connect either the 3/8-inch eyelet or the 5/16-inch eyelet to the inline fuse that was attached to the red power wire.

17. Attach the red power wire to the positive battery terminal.

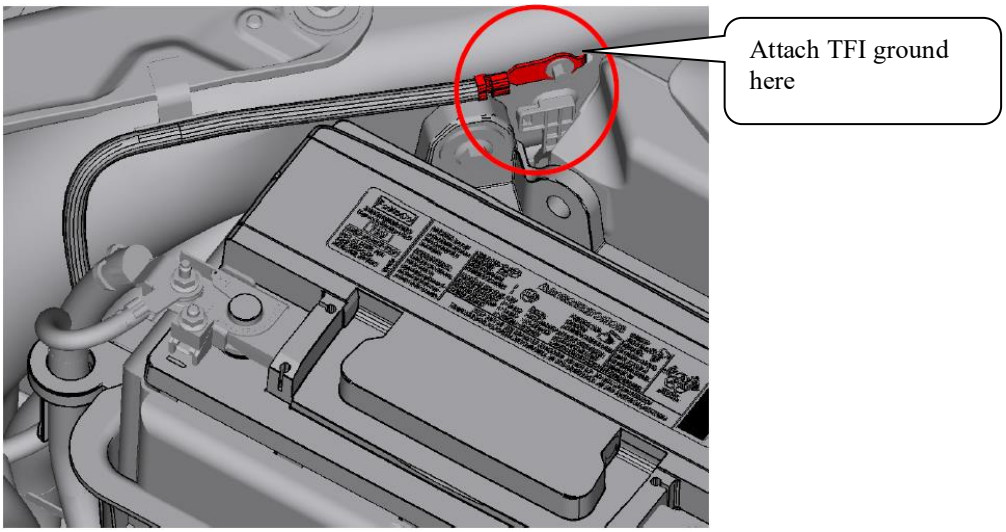
18. Depending upon your battery, connect either the 3/8-inch eyelet or the 5/16-inch eyelet to the inline fuse that was attached to the black ground wire.

19. Attach the black ground wire to the negative battery terminal.

- NOTE: 2018 and newer GM and Chevrolet trucks have studs on the battery terminals. One M6 nut and one M8 nut are provided for vehicles that are so equipped.



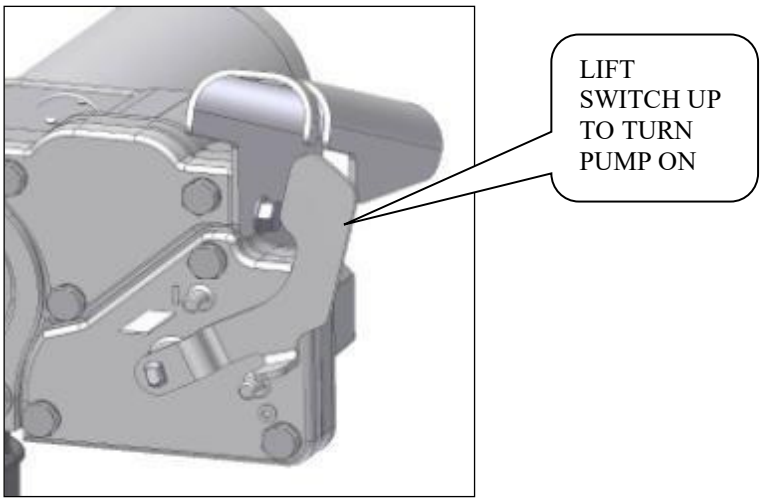
- NOTE: On some vehicles, battery current is detected using a sensor on the negative battery cable. On this type of vehicle, do not make any direct connections to the negative battery post. Instead, attach the Transfer Flow wiring harness ground to the vehicle body ground shown in the following figure.



<u>CAUTION</u>: Touching a ground wire to the positive side of a battery can injure the person or damage electrical components.

20. Install the 25-amp mini fuse supplied with the kit into the inline fuse holder.

21. Confirm that the pump operates by turning the cab switch and the pump switch on.



<u>CAUTION</u>: Do not run the pump for more than 5-seconds without fuel in the tank or permanent damage to the pump may occur.

SECTION 6: Finalizing the Installation

1. Do not leave the system running without fluids. "Dry running" can damage the pump. If the system fails to deliver fuel after 15 to 20-seconds, turn the system off and refer to the troubleshooting section found at the end of these instructions.

2. Holding the switch in the cab in the "momentary reverse" position for 15 seconds with the nozzle open will run the pump in reverse. This is done to drain excess fuel from the refueling pump supply hose.

3. When not using the refueling pump, the switch in the cab of the vehicle should be in the OFF position. This will eliminate the possibility of running down the vehicle's battery. It also reduces the risk of an unauthorized person taking fuel from the refueling tank.

CAUTION:

- The rated duty cycle of the pump is 30-minutes ON and 30-minutes OFF to allow the pump to cool.
- An automatic bypass valve prevents pressure build up if the pump is on while the nozzle is closed. To avoid motor damage, do not run the pump for more than 10-minutes with the nozzle closed.
- The light is included to remind you if the pump is left on in order to prevent damage to the pump motor by continuously running.

4. Apply labels to the refueling tank.

DIESEL APPLICATIONS ONLY: Place the small "DIESEL" label on the refueling tank near the fill tube where it can be easily seen by the operator dispensing fuel. Place the "COMBUSTIBLE" label on the refueling tank where it can be easily seen. It is a requirement of the special permit to install both these labels on the refueling tank.

GASOLINE AND ALL OTHER FUELS: Place the small "GAS" label on the refueling tank near the fill tube where it can be easily seen by the operator dispensing fuel. Place the "FLAMMABLE" label on the refueling tank where it can be easily seen. It is a requirement of the special permit to install both these labels on the refueling tank.

5. After the first 100 miles of driving, recheck the torque of all bolts including the fuel pump nut. Retorque as needed.

Congratulations on the successful installation of your Transfer Flow refueling tank!

SECTION 7: Troubleshooting Guide

- **If the pump does not run:**
  - Confirm that the switch in the cab is in the ON position.
  - Confirm that the cab switch is not mounted upside down.
  - Confirm that the pump switch is in the ON position.
  - Confirm that the 25-amp inline mini fuse is not blown or missing.
  - Confirm that at least 12-volts is measured at the fuel pump strain relief connection.
  - Confirm that the red wire delivers 12-volts.
  - Confirm that the black wire delivers a good ground.
- **If the pump runs but no fuel comes out of the dispensing nozzle:**
  - Confirm that the dispensing nozzle trigger is compressed.
  - Confirm there is fuel in the refueling tank.
- **If the light stays on when the switch is in the off position:**
  - The harness is installed in reverse.

For further troubleshooting information, refer to the pump owner's manual or call Transfer Flow technical support Monday through Friday 6:30 a.m. to 3:00 p.m. Pacific Standard Time at (530) 893-5209 ext. 2 or toll-free at (800) 442-0056 ext. 2.