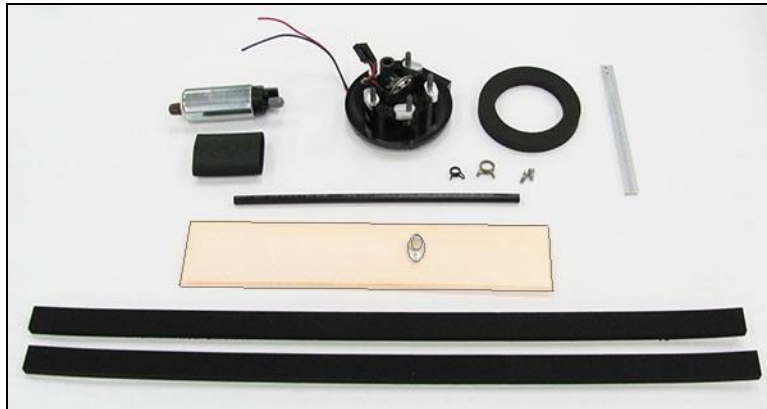




**UNIVERSAL PUMP HANGER INSTALLATION INSTRUCTIONS**



**WARNING! THESE INSTRUCTIONS MUST BE READ AND FULLY UNDERSTOOD BEFORE BEGINNING INSTALLATION. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN POOR PERFORMANCE, VEHICLE DAMAGE, PERSONAL INJURY, OR DEATH. IF THESE INSTRUCTIONS ARE NOT FULLY UNDERSTOOD, INSTALLATION SHOULD NOT BE ATTEMPTED. PLEASE CONSULT HOLLEY TECH SERVICE OR A QUALIFIED MECHANIC.**

<b>Parts Included:</b>		<b>Tools Needed:</b>
<b>Qty.</b>	<b>Description</b>	
1	Fuel Pump (255 LPH or 450 LPH depending on module selected)	3-1/4" Metal Cutting Hole Saw
1	HydraMat Assembly	Straight Slot (flat blade)
1	Fuel Pump Hanger Assembly	Screwdriver
1	Foam Ring Gasket	Drill
2	24" Long Foam Spacer Strips	5/64" & 1/8" Hex Head Socket
2	Pump Clamps	5/64" & 1/8" Hex Head Ratchet
2	Hose Clamps	Tape Measure
		Metal Cutting Saw

**PARTS REQUIRED FOR INSTALLATION:**

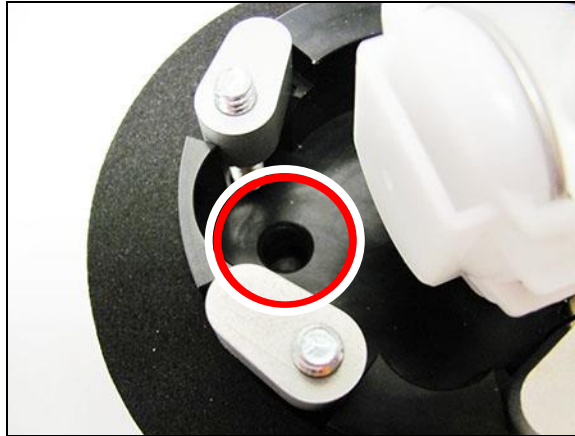
- Post-Filter- Holley HP Billet Filter or equivalent model
- Relay Kit (30amp minimum) – Holley P/N 12-753 or equivalent.
  - Additional wire and connectors may be necessary
- Fuel Hose & Fittings (Threads in pump are 1/4" NPT)

1. Determine the best area on the fuel tank surface to drill the 3.25" diameter hole saw by:
  - a. Identifying where the chassis frame rails contact the fuel tank
  - b. Evaluating the position & path of the fuel level sender float – we recommend removing the existing unit to determine float arm path and direction before cutting new mount hole.
  - c. Locating any internal vent line routing
  - d. Avoiding any internal fuel bowl or baffles
  
2. Determine the best routing for positioning the applicable:
  - a. supply hose
  - b. return hose
  - c. wire harness
  - d. vapor vent hose
  
3. Then, drill the 3.25" diameter hole saw through the tank after following the above determinations and deburr the inside and outside edges. The foam ring gasket can compensate for ribbed tank surfaces up to .28" deep. Deeper ribs or more perpendicular ribbed walls will require an additional sealant such as Dow Corning 730 fluorosilicone RTV between the foam ring gasket and the tank surface.
  
4. Remove all the debris inside the tank before starting the installation.



5. Measure the depth from the highest surface around the drilled hole to the highest surface of the tank floor.
6. The tube lengths as supplied will fit a maximum tank depth of:
  - a. 12" for the 12-129, 12-130, 12-132, 12-134, 12-136, 12-137, 12-158, & 12-159 Universal Pump Hanger Assemblies
  - b. 13-7/32" for the 12-131, 12-133, & 12-135 Universal Pump Hanger Assembly
  
7. The minimum tank depth is:
  - a. 7.00" for the 12-129, 12-130, 12-136, & 12-158
  - b. 8.50" for the 12-131
  - c. 7.50" for the 12-132, 12-134, 12-137, & 12-159
  - d. 9.00" for the 12-133 & 12-135
  
8. **If installing the Roll-Over Valve (12-874) into the flange**
  - a. Drop the ball into the valve body and finger tighten the fitting into the valve body.

- b. Hand install the roll-over valve assembly into the flange and then torque the valve body to 10-14 in. /lbs.



**9. Cutting the Supply Hose**

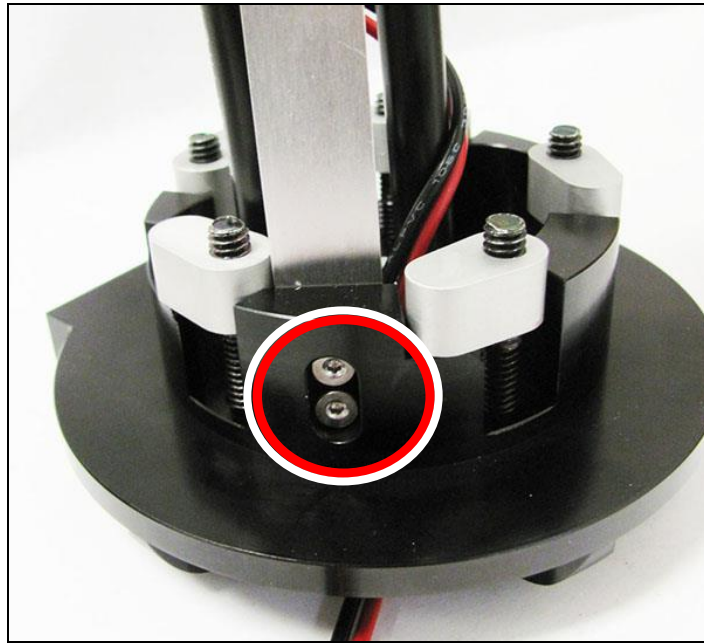
- a. Take your tank depth measurement from Step #5 and insert it in the Chart below.
- b. You will subtract your depth from the Supply Hose specification for your model of hanger to get the proper length of the supply and return hose. There is an example in the first row of the chart for your reference.
- c. Once you have the desired length measurement, place the module upside down on your work surface and make your measurement from the existing hose end downward towards the module base and make your cut.

**10. Cutting the Pump Mounting Bracket**

- a. Take your tank depth measurement from Step #5 and insert it in the Chart below.
- b. You will subtract your depth from the Pump Mounting bracket specification for your model of hanger to get the proper length of the mounting bracket. There is an example in the first row of the chart for your reference.
- c. Once you have the desired length measurement, place the module upside down on your work surface and make your measurement from the upper end of the bracket downward and make your cut.

**Hose & Bracket Depths Measuring for Pump Hangers**

P/N	Description	Base Measurement to Subtract from Supply Hose	Your Tank Depth (Subtract)	Cut Supply Hose Length To	Base Measurement to Subtract From Pump Mounting Bracket	Your Tank Depth (Subtract)	Cut Pump Mounting Bracket Length To
Example	Example	12"	7"	5"	12"	7"	5"
12-129	255 LPH	12"			12"		
12-130	Billet Return						
12-136	Type/Cast						
12-158	Returnless						
12-131	255 LPH Returnless Type	13-3/16"			13-3/16"		
12-132	450/525 LPH	12"			11"		
12-134	Billet Return						
12-137	Type/Cast						
12-159	Returnless						
12-133	450/525 LPH	13-3/16"			12-3/16"		
12-135	Returnless Type						



**11. Installing pump for 12-129, 12-130, 12-132, 12-134, 12-136, 12-137, 12-158, & 12-159 Universal Pump Hanger Assy (Billet Return & Cast Return/Returnless)**

- a. Install the pump bracket with the 2 screws and lock washers (pictured below) into the flange boss and torque to 12-18 in. /lbs.
- b. Slip the screw clamp onto the supply hose and push the pump outlet into the hose until it contacts the pump surface.
- c. Rotate the pump until it contacts bracket.
- d. Position the hose clamp between the pump surface and the pump hose barb and tighten in place to 13.5 in./lbs.
- e. Install and tighten the 2" diameter screw clamps around the pump and mounting bracket towards each end of the foam sleeve on the pump

**12. Installing pump for 12-131 & 12-133 Universal Pump Hanger Assy (Billet Returnless)**

- a. Install the pump bracket with the 2 screws and lock washers into the flange boss and torque to 12-18 in. /lbs.
- b. Push the pump outlet into the cut nylon tube until it contacts the pump surface.
- c. Slip the screw clamp(s) onto the nylon tube.
- d. Insert the cut nylon tube to the bottom of the regulator tee.
- e. Rotate the pump until it contacts bracket.
- f. Install and tighten the 2" diameter screw clamps around the pump and mounting bracket towards each end of the foam sleeve on the pump.
- g. Tighten the hose clamp(s) on the tee to 13.5 in./lbs.
- h. The flange is equipped with a brass screw-in plug. If the application has a PWM pump speed controller, it may be necessary to drill a 1/32" hole through the plug and reinstall, depending on your system requirements.

**13. Installing the HydraMat on the 255 LPH fuel pump inlet**

- a. Position the HydraMat shortest length of media pointing towards the closest tank wall.
- b. Rotate the HydraMat to (preferably) point the longest length towards the center of the fuel tank.
- c. Avoid the fuel level sender float or other internal tank features like a bowl or baffle.
- d. Push the HydraMat outlet until it bottoms on the pump inlet. The HydraMat can be removed and repositioned without damage to the HydraMat.

#### **14. Installing the HydraMat on the 450/525 LPH fuel pump inlet**

- a. Install the plastic washer on the center portion of the plastic inlet.
- b. Position the HydraMat shortest length of media pointing towards the closest tank wall.
- c. Rotate the HydraMat to (preferably) point the longest length towards the center of the fuel tank.
- d. Avoid the fuel level sender float or other internal tank features like a bowl or baffle.
- e. Push the HydraMat outlet until it bottoms on the pump inlet. The HydraMat can be removed and repositioned without damage to the HydraMat.

#### **15. If Installing the Universal Hanger Shim (12-877) for Polypropylene Tanks ONLY**

- a. Deflect the shim at the slot and spiral through the tank opening.
- b. Apply an adhesive compound like Loctite #571 to the shim surface facing the inside of the tank.
- c. Compress the shim against the inside surface of the tank opening. Position the shim so that it is not visible in the opening and wipe any excess Loctite that protrudes into the tank opening.



#### **16. Fuel Connections**

- a. Complete fuel connections before reinstalling the tank assembly. The unit has ¼" NPT threads on all ports. We recommend inspecting all existing fuel line components and replacing as necessary at this time.

**NOTE:** Avoid unnecessary restrictions, such as sharp bends and undersized fuel fittings and hoses. Avoid routing fuel lines in areas that would cause chafing. All fuel line connections must be leak proof.

**WARNING! IF SPLICING INTO EXISTING FUEL LINES, USE EXTREME CARE TO AVOID CONTAMINATING THE LINE WITH RUBBER OR METAL SHAVINGS, AS THIS WILL DAMAGE THE PUMP. IF THE FUEL LINE HAS BEEN CUT, IT IS ESSENTIAL THAT IT BE CLEANED TO ENSURE THAT NO METAL OR RUBBER PARTICLES ENTER THE FUEL SYSTEM. THIS IS PERFORMED BY BLOWING THE LINE CLEAN WITH COMPRESSED AIR. HOLLEY DOES NOT RECOMMEND THE PROCEDURE WHERE THE COIL WIRE IS DISCONNECTED, THE ENGINE IS CRANKED, AND THE FUEL IS COLLECTED IN A CONTAINER. SPARKING CAN OCCUR DURING THIS PROCEDURE, WHICH MAY RESULT IN A FIRE AND/OR EXPLOSION.**

**NOTE:** Tank vent should be reconnected to existing charcoal canister system on the vehicle.

### **17. Changing the Regulator (If Necessary)**

- a. Remove the two screws that hold the regulator in place
- b. With a small screwdriver gently pry the underside of the regulator until it separates from the flange
- c. Lubricate the o-ring on the new regulator with a silicone based lubricant such as silicone spray
- d. Hold the new regulator on the outer edge and press until seated.
  - i. **Note: Do not press regulator on the center as there is a high probability that damage may occur.**
- e. Re-install the two screws that hold the regulator in place and tighten to 20-30 in-lbs.

### **18. Installing the Universal Pump Hanger Assembly**

- a. Install the preferred 1/4" NPT hose adapters or plugs into the flange ports for supply, return and vapor vent as required.
- b. The open end of the hose connected to the tank vapor vent port must terminate a minimum of 6" above the top of the fuel tank.
- c. Install the preferred electrical connector that is capable of a 20 Amp load.
- d. Install the foam ring seal against the flange surface.
- e. Bend the longest side of the HydraMat to fit past the tank opening and lower the Universal Pump Hanger Assembly into position against the fuel tank surface.
- f. Look through the fill neck opening (if possible) to insure the HydraMat is in the desired position and avoiding internal tank interference points. Rotate the Universal Pump Hanger Assembly as necessary.



Closed



Open

- g. Make sure that the swing out mounting lugs are in the closed position like the picture above.
- h. Compress the flange against the tank surface and tighten the assembly screws in a clockwise motion to swing the mounting lugs out into the open position like the picture above. Then, gradually torque the (5) assembly screws using a "criss-cross" pattern until the torque of 40-60 in. /lbs. is achieved for all (5) screws.



### **19. Pump Wiring**

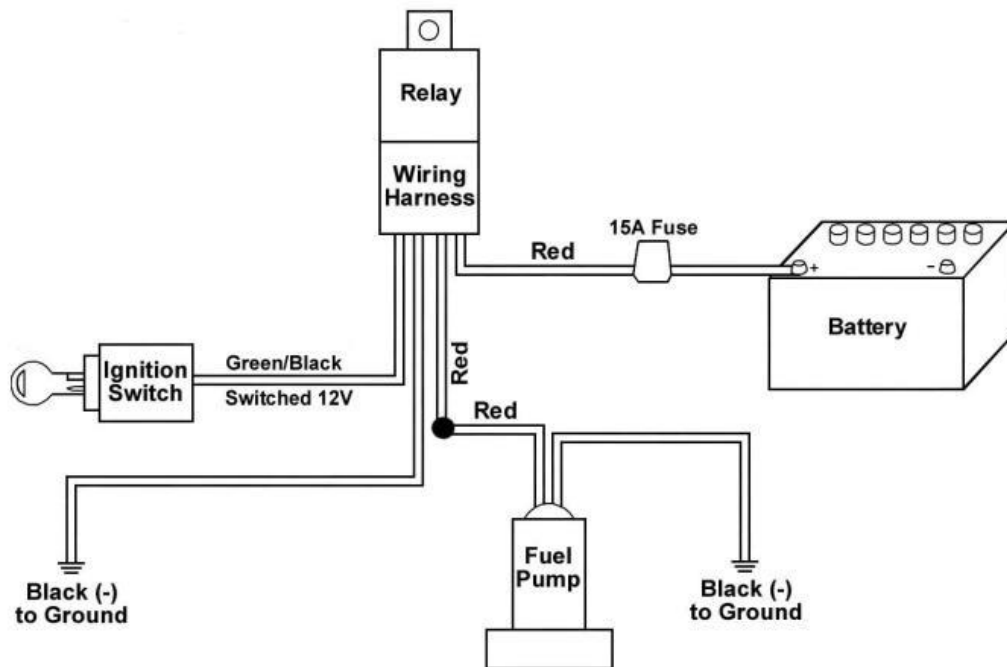
**NOTE:** You will need a Holley Fuel pump relay kit P/N 12-753 or equivalent 4-wire relay.

**WARNING! USE A MINIMUM OF 12 GAUGE WIRE. BE SURE TO CRIMP OR SOLDER ALL CONNECTORS SECURELY AND CLEAN ANY AREA WHERE GROUND LEADS WILL BE FASTENED. FAILURE TO USE THE MINIMUM WIRE GAUGE COULD RESULT IN PUMP MALFUNCTION AND/OR ELECTRICAL FIRE, RESULTING IN PROPERTY DAMAGE, SERIOUS INJURY, AND/OR DEATH.**

#### **WIRING THE FUEL PUMP WITH A RELAY:**

1. Disconnect the cables from the battery.
2. Mount relay in convenient location away from exhaust heat.
3. Plug the fuel pump relay harness into the relay, until it locks into place.
4. Connect the black wire of the harness to ground.
5. Connect the Green/Black wire to a switched 12V source.
6. Connect one of the red wires to the positive wire (red wire) of the fuel pump.
7. Attach the in-line fuse holder to the remaining red wire. After attaching the fuse holder, insert the 15A fuse and connect to the positive side of the battery.
8. Reconnect the battery cables.

**NOTE:** *Be sure to route all electrical wires clear of any moving suspension or drivetrain components and any exhaust components! Protect wires from abrasion and road obstructions or debris.*



## 20. Tank installation

- a. Reinstall the completed tank into the vehicle. The kit also contains 2 strips of 24" long adhesive-backed, 1/2" thick foam to provide extra clearance to the chassis floor if required.

**CAUTION:** *While performing the following steps, if any fuel leaks are detected, immediately turn the fuel pump OFF, remove any spilled fuel, and repair the leak(s) before proceeding!*

1. Turn the fuel pump ON **without starting the engine by turning the ignition key to the "ON" position**, allow the pump to run for several seconds and check the fuel pressure gauge (if applicable). If there is no pressure, turn the fuel pump OFF, wait one minute, then turn the fuel pump ON and recheck the pressure. Repeat this fuel pump OFF and ON procedure until the fuel pressure gauge registers pressure or you detect a fuel leak.
2. It may be necessary to loosen the fuel line fitting at the pressure regulator to bleed off excessive air in the system. Tighten any fuel line fittings which were loosened and insure that any spilled fuel is cleaned up and removed from the vicinity of the vehicle. If no pressure is registered on the gauge after running the pump for several seconds and you have found no leaks, check all fuel and electrical connections to determine the cause.
3. Test drive the vehicle to insure proper operation and re-check the fuel system for leaks. **If any leaks are found, immediately discontinue use of the vehicle and repair the leak(s)!**