

COMPONENT CHECKLIST

Extra care is taken to ensure that all **RACETRONIX** kits are tested and packaged properly. Please use the photo and checklist below to familiarize yourself with the kit components and to ensure that you are not missing any of the pieces.

The F98 fuel pump assembly is comprised of:

- [ ] - Fuel pump assembly

[ ] - Fuel sock adapter

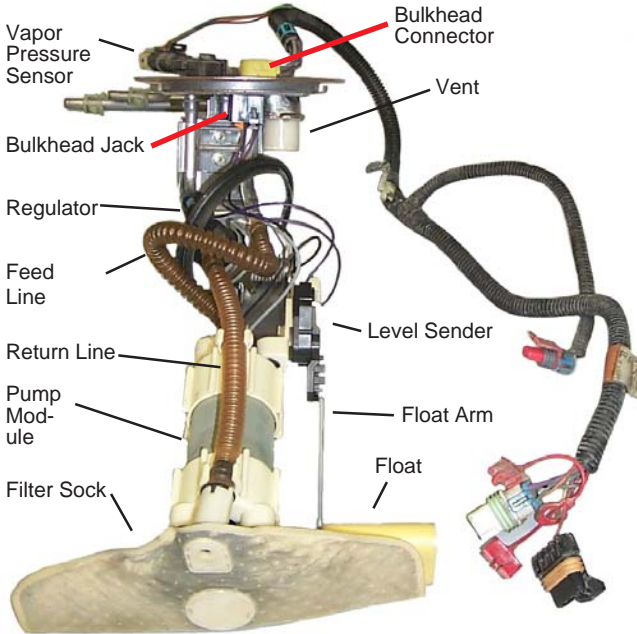
[ ] - In-tank wiring harness
- [ ] - Hexkey

[ ] - Paperclip

[ ] - Hose clamp



1. Cover the ends of the metal tubes coming out of the sending unit with electrical tape to protect them from getting scratched. If the push-lock ends become damaged they will leak when inserted back into their female mates.



REQUIRED TOOLS

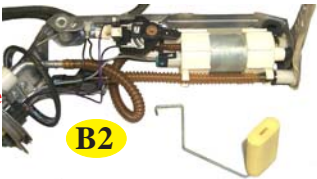
The following hand tools are required to remove the factory fuel pump module and replace it with the new Racetronix unit:

- [ ] - Utility or X-Acto knife
- [ ] - 3/16" Slot screwdriver - medium size blade
- [ ] - 1/4" Nutdriver or socket with handle (optional)
- [ ] - 5/16" Nutdriver or socket with handle (optional)

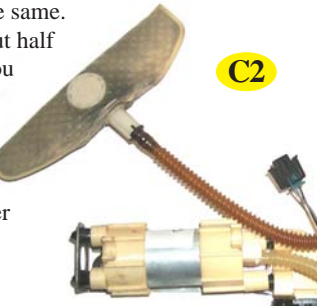
2. Place the blade of a slot screwdriver under the float arm as shown in **figure 'B1'**. Gently rotate the screwdriver until the float arm pops straight up and out of the plastic level sender. Place the arm in a safe place until your installation is complete so that it does not get bent.



**CAUTION!**  
A bent float arm will give false fuel level readings on your dash gauge.



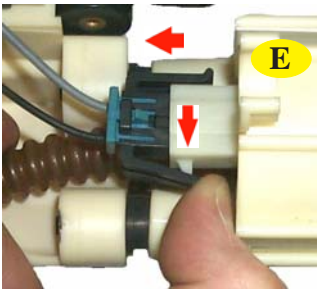
3. Place the blade of a slot screwdriver under the fuel sock nipple as shown in **figure 'C'**. Gently rotate the screwdriver until the fuel sock nipple starts to slide off. Place the slot screwdriver on the opposite side of the fuel sock nipple and do the same. Once the fuel sock nipple is about half way off the fuel pump's inlet, you may gently pull the sock off by pulling straight down with a slight rotating motion. If the sock does not come off easily use the slot screwdriver to further loosen the nipple.



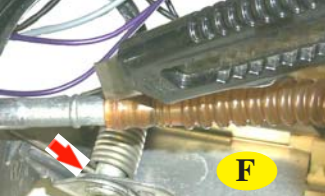
4. With a firm grip separate the fuel sock from the return line as shown in **figure 'D'**. This requires a moderate amount of force. You may leave the sock attached to the return line during the installation but we have found it easier with it out of the way.



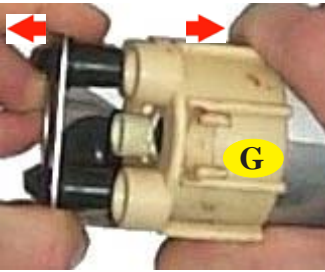
5. Release the connector's two adjacent locking ears by lifting them away from the socket body as shown in **figure 'E'**. Once both ears are lifted gently pull back on the connector to unplug it. If you find the locking ears too hard to grasp with your fingers, a slot screwdriver can be used to gently pry them back.



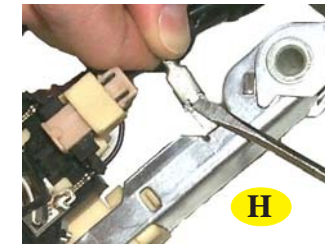
6. Using a utility knife, or side-cutters gently make a slit or nick in the plastic outlet hose as shown in **figure 'F'**. **Do not cut through the hose which will score the metal tube and prevent a proper seal with the new tube.** Pull the hose off the steel line as it is no longer required and is not reusable. Sometimes fuel trapped inside the pump will leak out once the hose is cut. Keep a shop rag handy to absorb any remaining fuel.



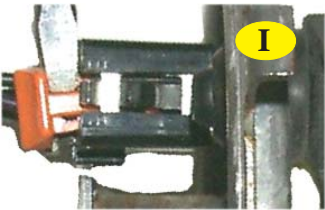
7. With a firm grip separate the G.M. fuel pump assembly from the spine of the sending unit by pulling in opposite directions as shown in **figure 'G'**. Lift the fuel pump assembly out and set it aside. The fuel pump assembly may contain fuel so be sure to place it in a safe container in order to prevent a fuel spill.



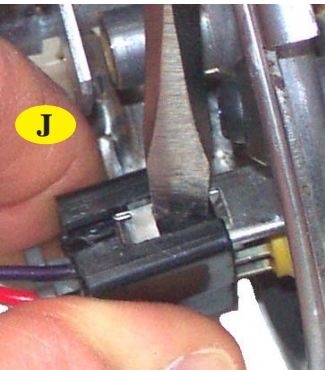
8. Place the blade of a slot screwdriver under the ground terminal as shown in **figure 'H'** to release its spring lock. While holding the lock in the released position, pull up on the terminal to disconnect it from the spine of the sending unit as shown in **figure 'H'**.



9. Place the blade of a slot screwdriver under the orange lock as shown in **figure 'I'** to gently pry it out. Sometimes you may have to work both sides of the orange lock in order for it to release itself from the black connector.



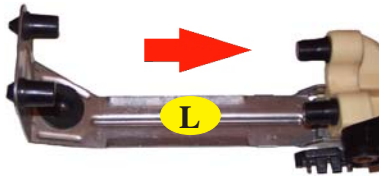
10. Gently pull back on the black connector's body while using the blade of a slot screwdriver to depress its locking tab as shown in **figure 'J'**. While grasping the connector's body a gentle rocking motion may be required to get it to slide off. Do not pull by the wires. If the connector does not move, make sure that you are applying enough force with the screwdriver on the black locking tab to keep it down. This will allow it to pass under the lock hole in the metal bracket. Once the lock is released the black connector will slide easily off as shown in **figure 'J'**.



11. Using the supplied hex key remove the two bottom fuel pump module mounting dowels as shown in **figure 'K'**. Make sure that the hex key is inserted all the way so you do not strip the cap screws.



12. Bending the FSU's spine to remove the old fuel pump module causes excessive clearance between the upper and lower sets of rubber bumpers. Tension is required to properly hold the fuel pump module in place. To retension the module, gently bend the bottom 'L' portion up as shown in **figure 'L'** very slightly. About 3/8" inch in recovered distance is required for proper tension. If you are unsure of how much to bend the spine, do so in small increments. The tension can be checked in the next few steps and if required, you can always apply more. **Do not over tension the spine!**



13. Slide the **RACETRONIX** fuel pump module into the two upper rubber bumpers as shown in **figure 'M'**.

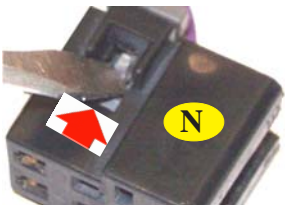


14. Slide a mounting dowel on to a lower rubber bumper. Gently pull back the fuel pump module and place its edge onto the mounting dowel's edge. There should be tension on the dowel. (Return to step 13 for re-tensioning procedure if required) Align the mounting dowel over the threaded hole in the fuel pump module. Replace the cap screw holding the mounting dowel with the supplied hex key as shown in **figure 'N'**.

**Make sure the hex key is fully inserted into the cap screw before tightening so that you do not strip the head. Make sure the screw turns freely while using the long end of the hex key so that you do not cross-thread the cap screw. Use the short end of the hex key to tighten the cap screw once it is all the way in. Make sure the screw is tight as this must not come loose once in the tank.**

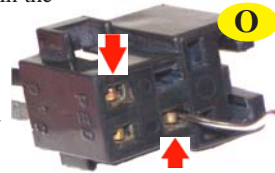
15. Repeat step 14 for the second bottom dowel.

16. Remove the gray terminal lock from the black bulkhead connector by pressing down and up on its locking ears located on both sides of the connector as shown in **figure 'N'**.

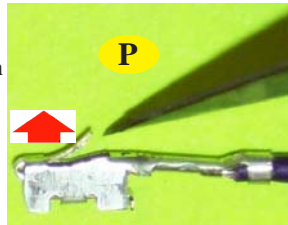




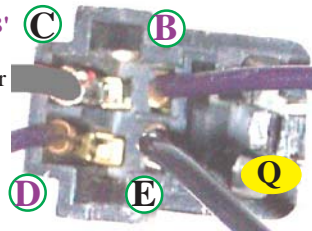
17. Release the locking tang on the **violet** level sender terminals inside the black bulkhead connector by inserting the supplied paper clip into release **channel 'B'** and **'D'** as shown in **figure 'O'**. Make sure the paper clip is fully bottomed in the channel and then remove it. Give a gentle tug on each violet wire and they should slide out from the connector body. If they do not come out easily re-insert the paper clip and try again. **Do not try to force the terminals out of their cavities as you may damage them!**



18. Using a small utility blade gently bend the locking tangs of each violet wire's terminal slightly up as shown in **figure 'P'**. If the terminal is positioned as shown in **figure 'P'** the tang should point towards two o'clock. This will help the terminal achieve a positive lock when it is re-inserted.



19. Insert one violet wire's terminal into marked **channel 'B'** of the new **RACETRONIX** bulkhead connector and the other into marked **channel 'D'** as shown in **figure 'Q'**. **The terminal tang points towards the connector's lock.** The terminal should make a 'click' once inserted indicating that its tang has locked into place properly. Gently tug on the violet wires to confirm a positive lock. If a terminal slips out of the cavity inspect it for contamination or deformation. If all looks OK repeat steps 18 and 19. Cavity 'E' black wire is pump - and cavity 'C' gray wire is pump +.

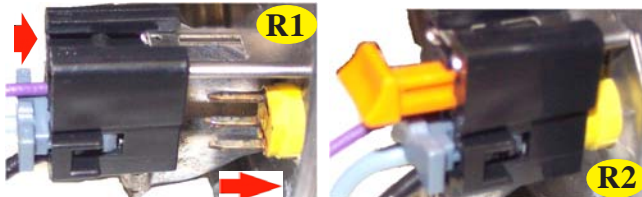


**DOUBLE CHECK THE 4 BULKHEAD AND 2 PUMP TERMINAL POSITIONS TO PREVENT PERMANENT PUMP AND LEVEL SENDER DAMAGE. ALWAYS DOUBLE CHECK FACTORY AND INSTALLER CONNECTIONS!**

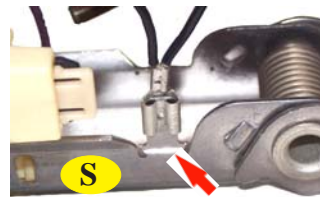
20. Insert the new gray terminal lock so that both ears lock into place on either side of the black connector as shown in **figure 'R1'**.

21. Inspect the male bulkhead connector terminals for corrosion and clean them with fine sandpaper (400+) or steel wool if required. Plug the black bulkhead connector in until it locks into place as shown in **figure 'R1'**.

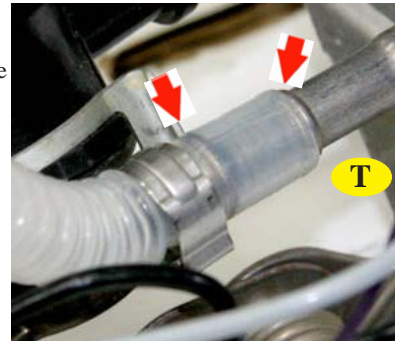
22. Replace the orange connector lock as shown in **figure 'R2'**. Make sure the orange lock is inserted all the way. This lock prevents the connector from backing out due to vibration.



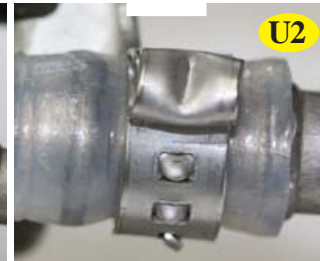
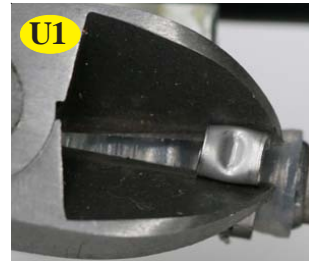
23. Slide the ground terminal with the two black wires attached onto the grounding point as shown in **figure 'S'**. Make sure the connector is seated and locked by gently pulling it back. It should not come off if the locking dimple has been seated in its hole as shown in **figure 'S'**.



24. Place the supplied small crimp clamp onto the steel feed line. Slide the flex fuel line from the **RACETRONIX** pump assembly onto the steel feed line until the end reaches the top bump as shown in **figure 'T'**. This may require a bit of force as it is a tight fit.



25. Slide the crimp clamp over the flex fuel line and position it between the two bumps on the metal fuel feed-line as shown in **figure 'T'**. Using a pair of side cutters or fence pliers crimp the clamp as shown in figure 'U1' and 'U2'. **Do not use excessive force which may cut through the crimp clamp.**



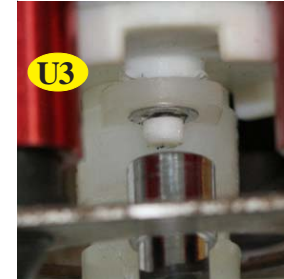
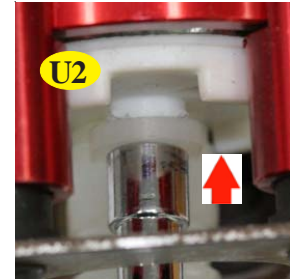
26. Place the filter sock on the bottom of the pump making sure it is fully seated as shown in **figure 'V'**.



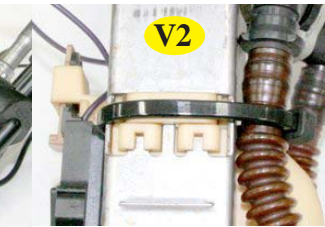
27. Place the small lock ring on the end of a nut-driver or socket with its flared end inwards towards the socket as shown in **figure 'U1'**.



28. While holding the pump assembly standing up, press the small lock ring onto the pump's bottom locating nipple to lock the filter sock into place as shown in **figure 'U2'**. **BE VERY CAREFUL NOT TO DROP & LOSE THE LOCK RING.**



29. Using a supplied tie secure the fuel return tube attached to the regulator onto the left side spine of the sender as shown in **figure 'V1'**. Cut the excess tie flush as shown in **figure 'V2'**.



30. If the tank seal o-ring was removed to aid in the assembly slide it back to the top of the sending unit. Make sure the tank seal o-ring tank has the thin portion of its body pointing down towards the fuel filter sock as shown in **figure 'W'**.



31. Lock the float arm into the level sender by pressing firmly and straight in so that the arm snaps into the plastic locks as shown in **figure 'X'**. **Do not place bending force on the level sensor arm otherwise damage will occur. Apply direct force to the arm only in order to lock it into place.**



#### CAUTIONARY NOTES

Run through the entire installation procedure to make sure nothing has been overlooked before installing the sender back into the tank. Double check the electrical connections to make sure the correct wires are in the proper cavities.

Inspect the gas tank for contamination (i.e. sand rust). A brown / black dirty factory filter sock indicates potential trouble / premature pump failure. Even a new F-98 LS1 metal tank can contain rust as gas station tanks contain all types of contaminants.

Fill the tank with at least 10 gallons of fuel and let stand 10 minutes before attempting to run the pump.

Do not use gas that has been open or sitting for long periods of time. (i.e. winter storage) as it can contain water which will damage the pump.

For support please contact your dealer or support@racetronix.com

**RACETRONIX**  
Research / Design / Manufacturing / Distribution

# FPA-002A

## 1998 LS1 F-Body High-Performance Fuel Pump Assembly Installation Manual

1998 cars with metal fuel tanks only



#### CAUTION

This manual is intended to be used in conjunction with the G.M. factory service manual. Please consult the G.M. manual for precautionary notes, torque specs and items that may be beyond the scope of this manual.

This product is intended to be installed by a qualified automotive service technician. Review this entire manual before starting installation. Proper safety precautions **must** be implemented when working with gasoline.

Always disconnect the negative battery cable before commencing electrical work on a vehicle. Observe factory vehicle jacking / lifting recommendations and safety precautions.

Improper installation, use or modification of this product voids all warranties.

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