

9-441-C10x-0912

DeatschWerks 2014-2019 Ford Fiesta ST DW440 Brushless Pump Installation Guide

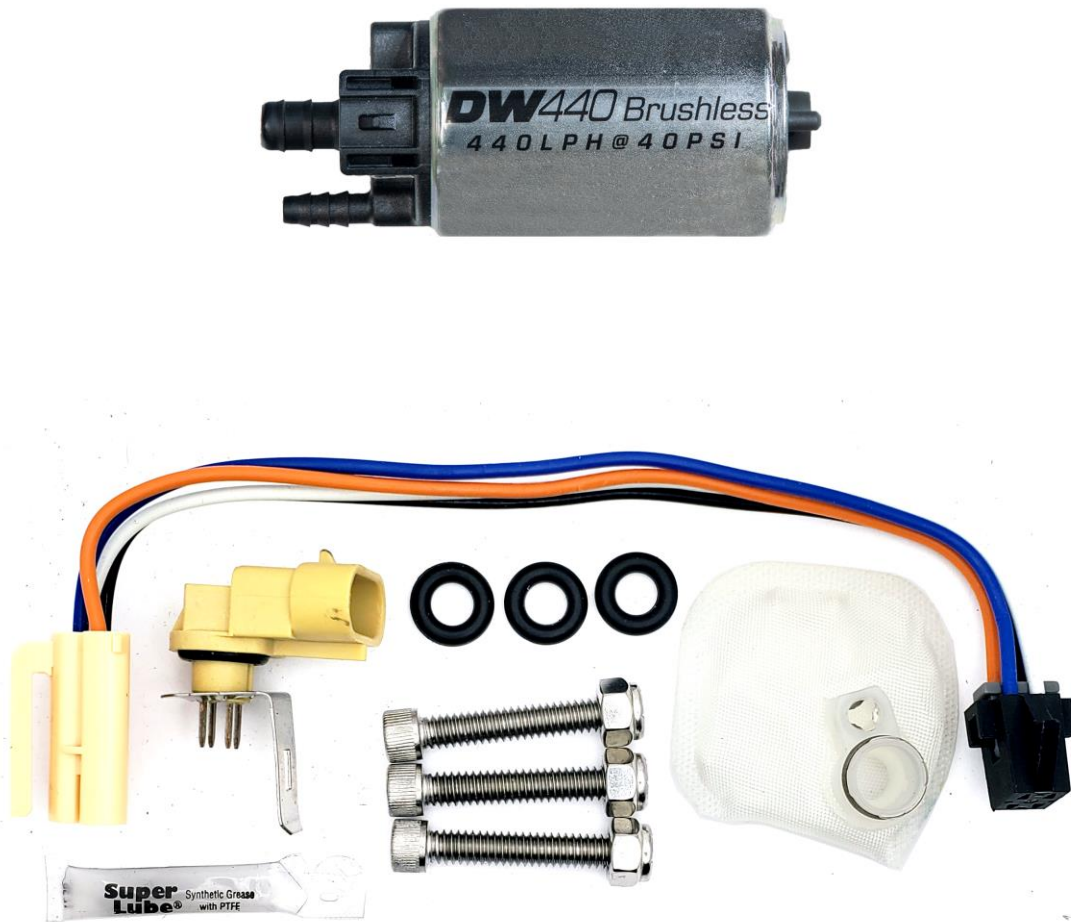


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Included Parts:

- DW440 Brushless 440LPH Fuel Pump
- 8" Pump Electrical Connector
- Electrical Bulkhead w/Retainer and O-Ring
- Fuel Sock Pump Pre-Filter
- O-Ring (x3)
- ¼" x 1.5" Stainless Allen Head Bolt (x3)
- ¼" Stainless Nyloc Nut (x3)
- 1cc Super Lube

2014-2019 Ford Fiesta ST DW440 Brushless Installation Guide

PLEASE READ: This guide is intended to aid in the installation of our products. It is recommended that factory manuals or instructions are followed to remove the fuel pump assembly from the vehicle. Instructions in this guide are generic and are intended to aid in the installation of a DW440 Brushless fuel pump. The factory manual should supersede any contradiction.

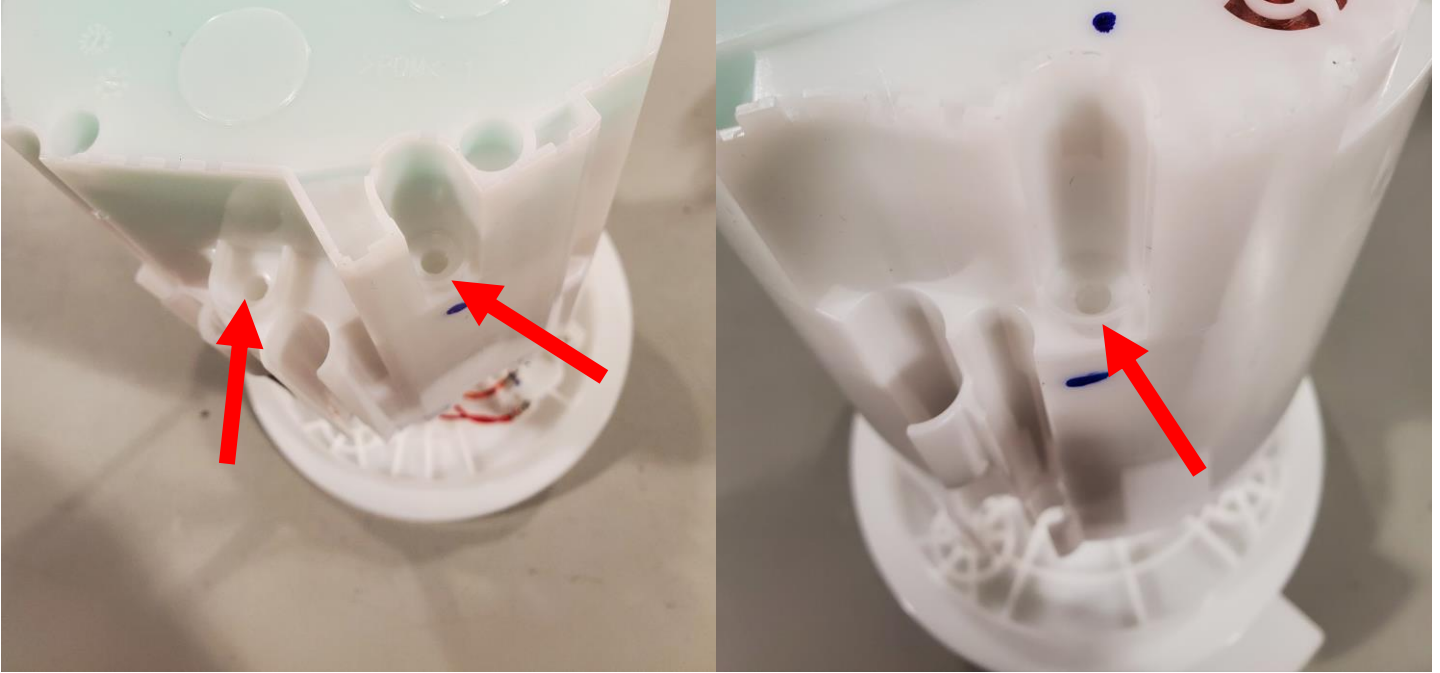
Note: The Fiesta fuel pump module is plastic welded together from the factory, in order to install a different fuel pump you must drill out those plastic welds, and replace them with the bolts provided, these steps will be detailed below.

Below is a picture of some suggested tools that will make the installation process easier.

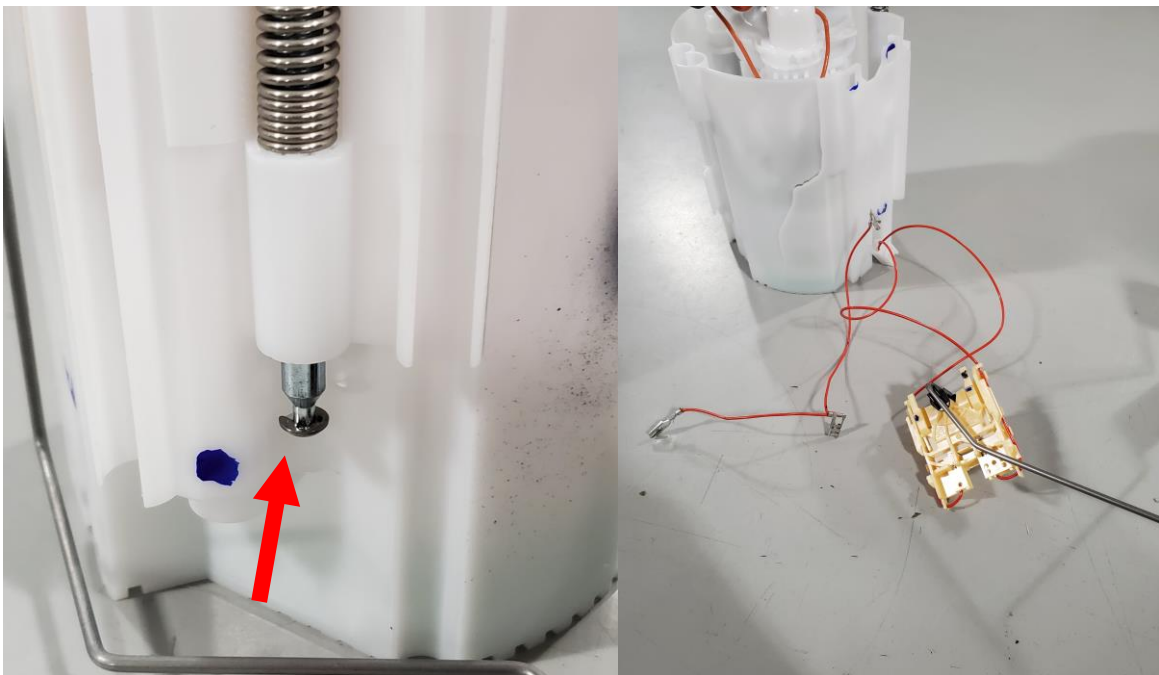


Disassembly of OEM Module

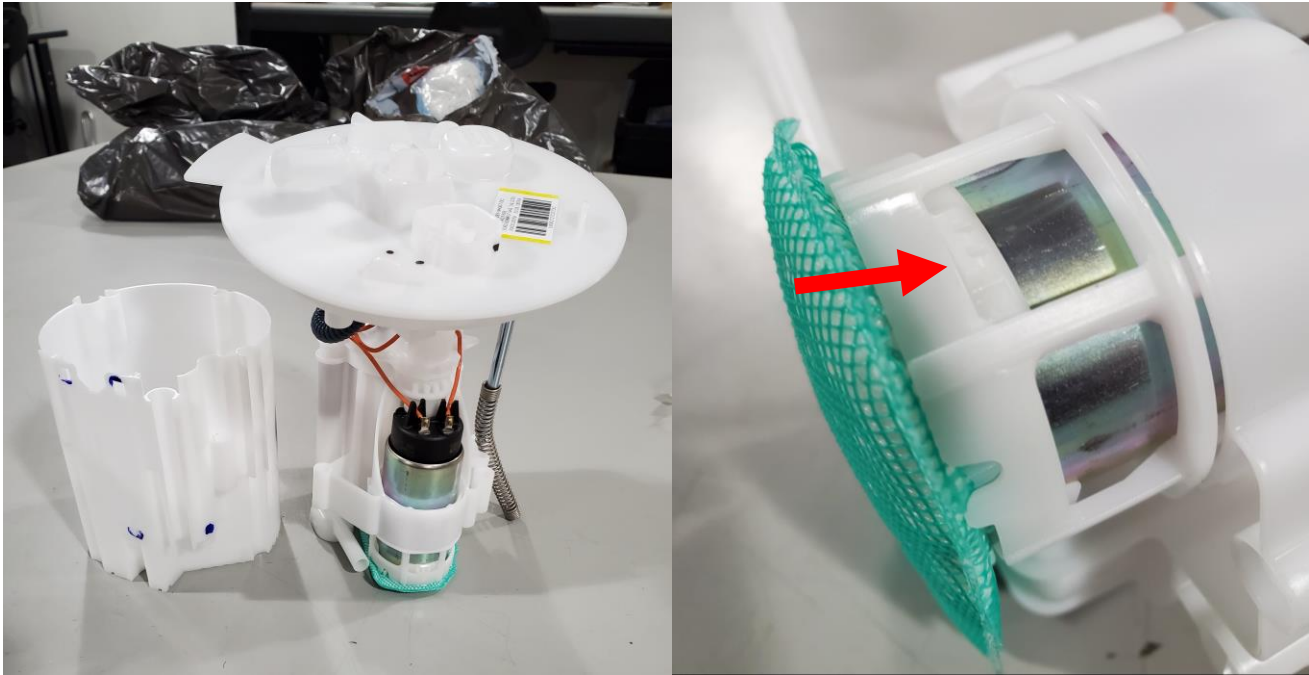
1 – Using a 17/64" drill bit, drill out the three plastic welds from the bottom of the bucket. You will need to drill fully through the bucket and the center section.



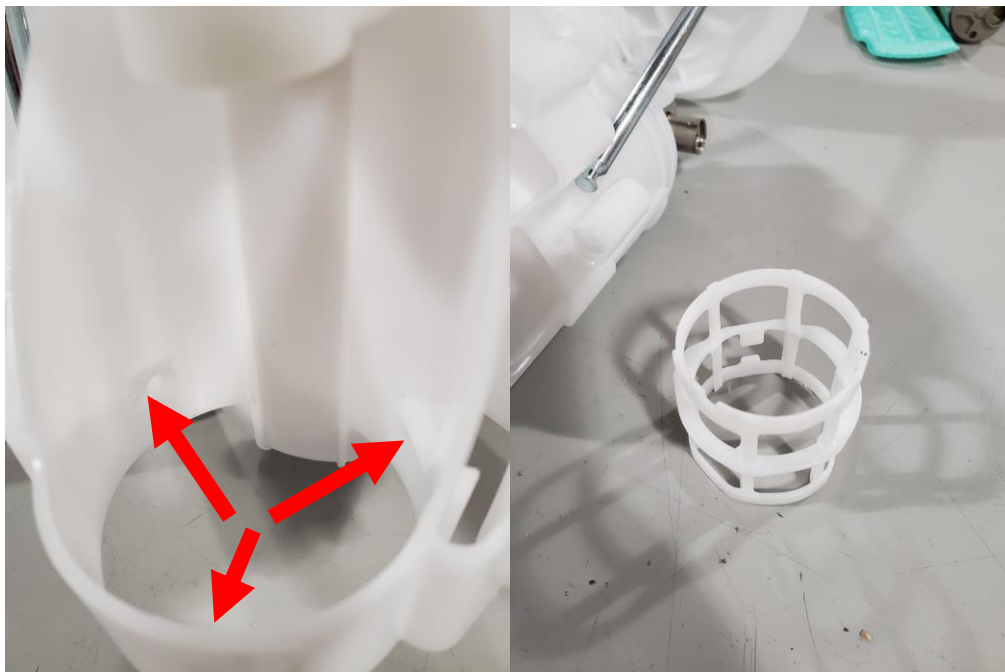
2 – Compress the top hat and remove the e-clip from the rod. Remove the fuel level sending unit and static ground wires from the top hat, the factory fuel pump wires are soldered to the underside of the top hat, these can be unsoldered or cut flush to the terminals. The DW440 comes with its own 4 wire bulkhead terminal so the OEM pump wiring will not be reused.



3 – Separate the center section and top hat from the bucket, be sure to remove any remaining plastic shavings that may have gotten into the bucket. Remove the filter sock from the OEM fuel pump by prying the three clips around the perimeter of the pump.

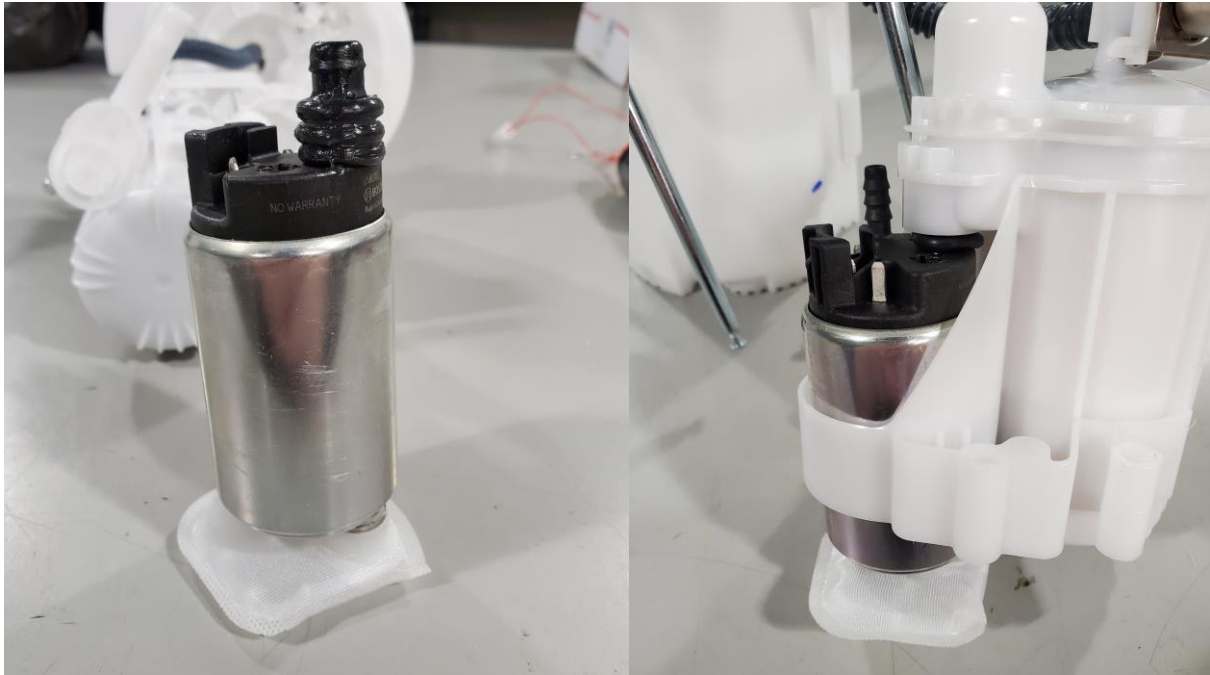


4 – You can remove the OEM fuel pump once the filter sock has been removed, in order to fit the DW440 pump into the module, the plastic cage the OE pump sits inside must be removed, there are three clips around the outside that can be pried up to remove the cage.

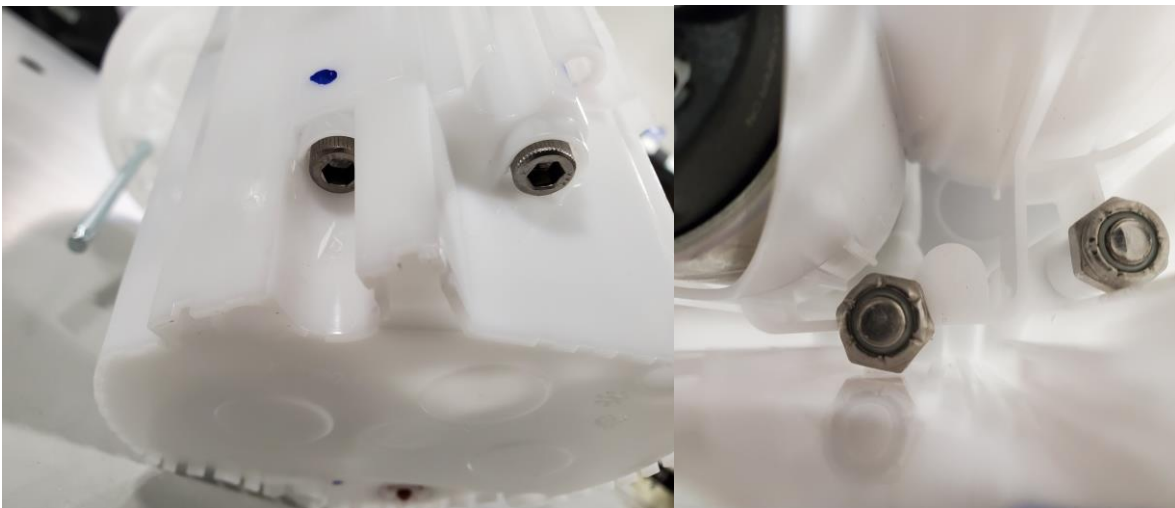


Installation of the DW440 Pump

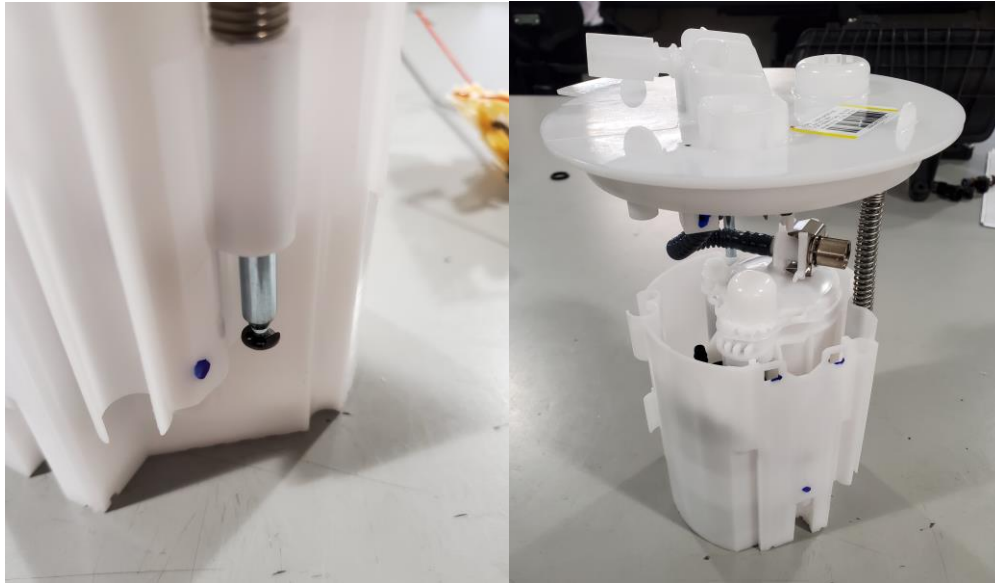
5 – Prep the DW440 pump for installation, install the provided filter sock, and the three O-rings, be sure to lubricate the O-rings with the supplied super lube to ease installation. Slide the pump into the module line up the outlet with the port on the center section and press the pump firmly till at least 2 of the O-rings are covered, one O-ring may remain uncovered, this will not effect performance, this O-ring is acting as a spacer.



6 – Insert the center section back into the bucket and align with the holes you drilled from step 1. Slide the bolts up from the bottom so the socket heads seat into the plastic bucket, and drop the center section over the threads, secure with the supplied nyloc nuts. You will need a 3/16" hex wrench and a 7/16" socket to tighten these bolts, do not over tighten, you can crack the plastic, they only need to be tight, the nyloc nuts will keep them from coming loose over time.

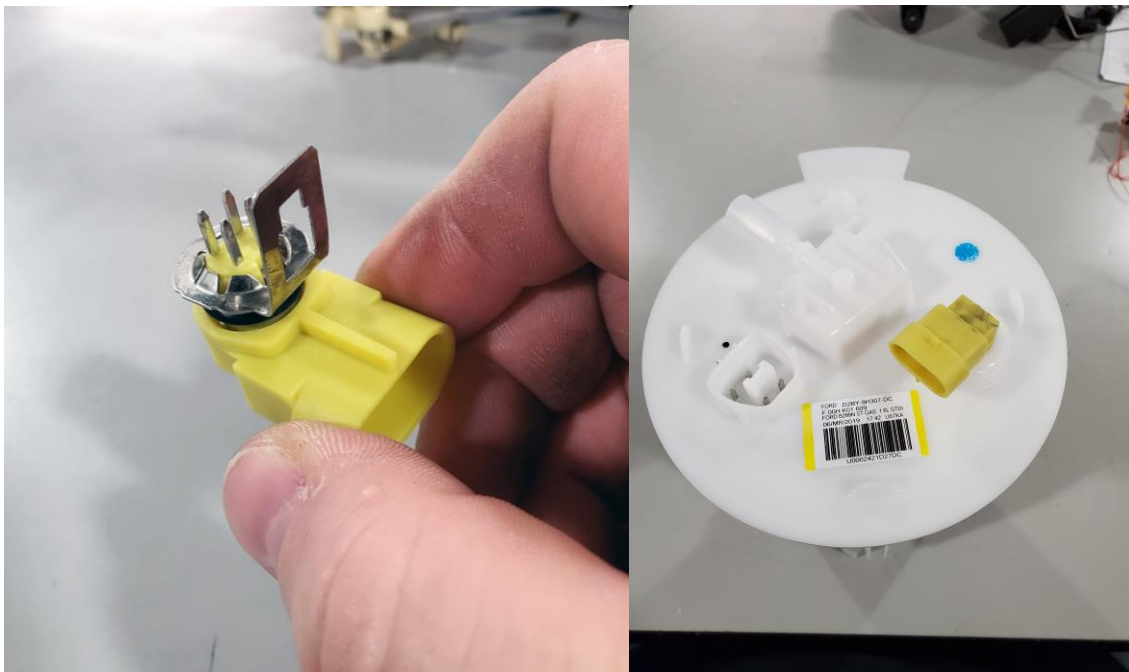


7 – Reinstall the top hat by aligning the rods with their holes and re-compressing the hat and installing the E-clip, do not forget the spring when re-installing the top hat.



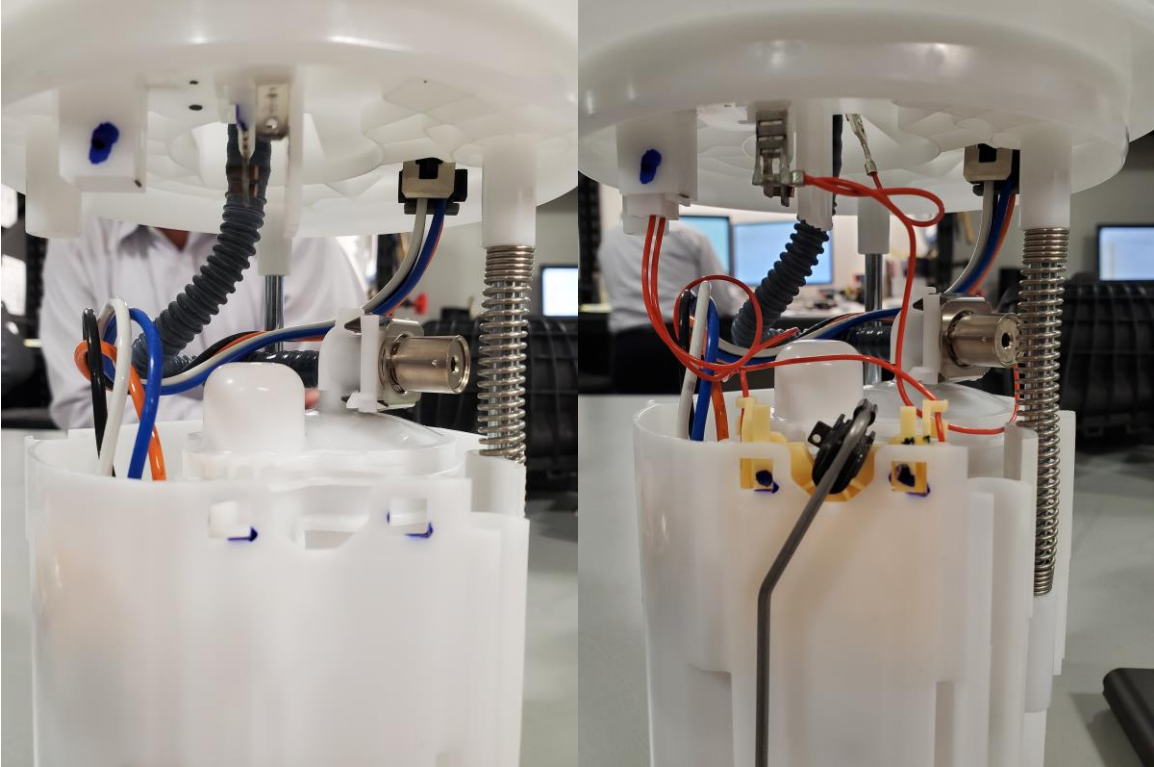
Installing the Bulkhead

8 – The DW440 Brushless pump requires its own 4 wire bulkhead to power the pump. Locate a hole in the top hat that has no obstructions on the bottom side and drill a 10.3mm or 13/32" hole for the electrical bulkhead. The bulkhead uses an O-Ring on the top to provide a seal and a metal push style retainer on the bottom side to secure. The metal retainer also acts as a latch for the electrical connector, make sure the latch is facing the pins of the bulkhead (see Picture).



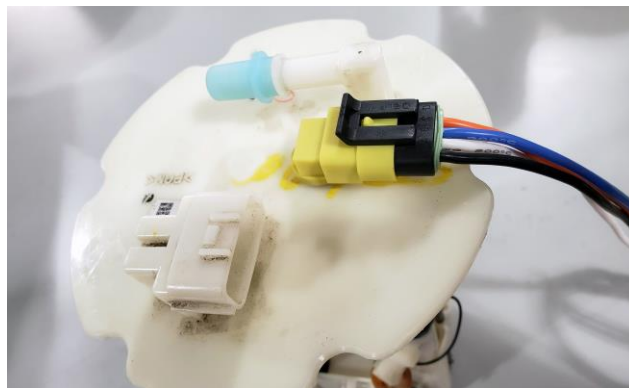
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9 – The factory fuel pump power and ground wires can be removed or covered so they will not short on the module. Attach the supplied Brushless pump harness to the bulkhead and the DW440 pump. Reattach the fuel level sending unit wiring and the static ground wiring.



Wiring the Controller and Pump

10 – Plug the 4-wire harness from the controller into the bulkhead wiring connector.



11 – Plug the 3-wire pigtail harness into the controller.



Wiring the Two Speed High/Low Version (PN# 9-441-C102-09xx)

12a – The Two Speed version of the DeatschWerks Brushless controller, gives you the ability to run two staged pumps in one. A low flow pump for idle and light duty driving, and a high flow pump for maximum performance.

Note: To bypass the Low Speed setting permanently ground the White wire, when power is applied to the controller, this will permanently switch the pump to the full 440LPH High Speed mode. (This is the same function as the discontinued C101 part number)

- Attach the **Red** wire on the controller to a known solid +12v key on switched power source.
- Attach the **Black** controller wire to a known solid clean ground source.
- Attach the White wire to a switched ground to activate the High flow mode.
 - You can activate this many ways, popular solutions would be a pressure activated switch like a “Hobb switch”, a second fuel pump output on your ECU, or a RPM/WOT switch could also be used to trigger the high flow mode. All options should be switched ground.
 - Low flow mode is 68% duty cycle outputting 265 LPH at 40psi.
 - High flow mode is 100% duty cycle outputting 440 LPH at 40psi.



Wiring the PWM Version (PN# 9-441-C103-09xx)

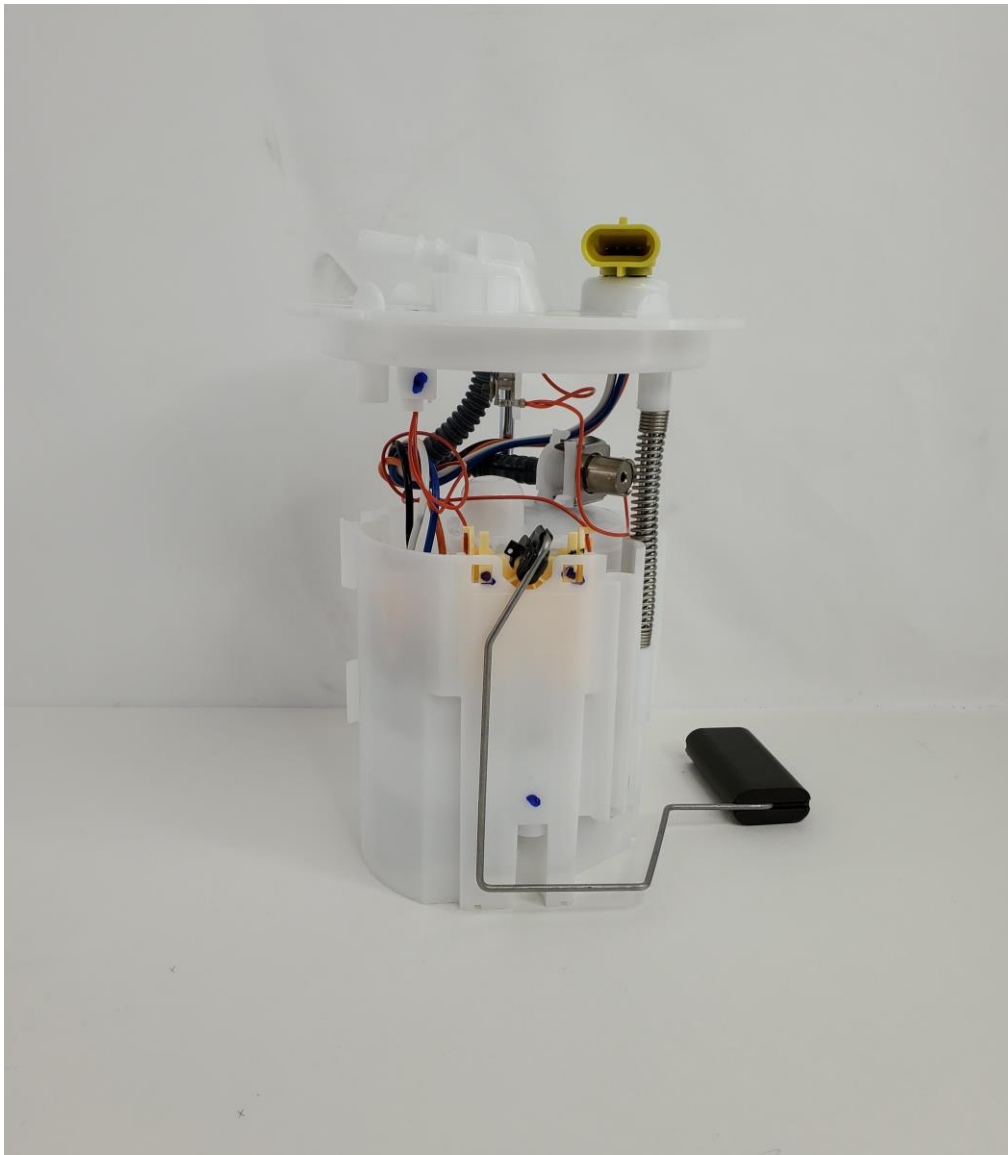
12b – The PWM version of the DeatschWerks Brushless controller, gives you the ability to use your ECU's Pulse Width output signal to infinitely adjust the pumps output from low to max flow. Wiring the C103 controller can be tricky, knowledge of your cars factory fuel pump wiring system is mandatory. If your car is not factory PWM or your Standalone ECU cannot control a PWM output, you will need to use the C102 controller instead. Most applications will use a ground pulsed signal provided by the ECU or an separate fuel pump control module.

- Attach the **Red** wire on the controller to a known solid non pulsed +12v key on switched source.
- Attach the **Black** controller wire to a known solid non pulsed ground source.
- Attach the White wire to the PWM output on your ECU or Fuel Pump Control Module.
 - The 2014-2018 Ford Fiesta ST uses a Yellow w/Violet stripe wire from the ECU to the FPDM to control PWM output.
 - The PFDM is located on the driver's side b-pillar for the 2014-2018 Fiesta ST.



Flushing and Priming the System

- 13 – Reinstall the assembly into the fuel tank and attach a length of hose to the outlet of the pump assembly allowing it to drain into a fuel safe container and prime the fuel pump assembly
- 14 – Cycle the key to the on position as many times as required to prime the pump assembly and evacuate the air introduced during the pump installation process
- 15 – Attach supply line to the outlet of the pump assembly



For additional technical support please contact us at: TechSupport@Deatschwerks.com or 405.233.3991