

9-442-C10x-0906

DeatschWerks 2015-2019 Ford Mustang and F-150 DW440 Brushless Pump Installation Guide

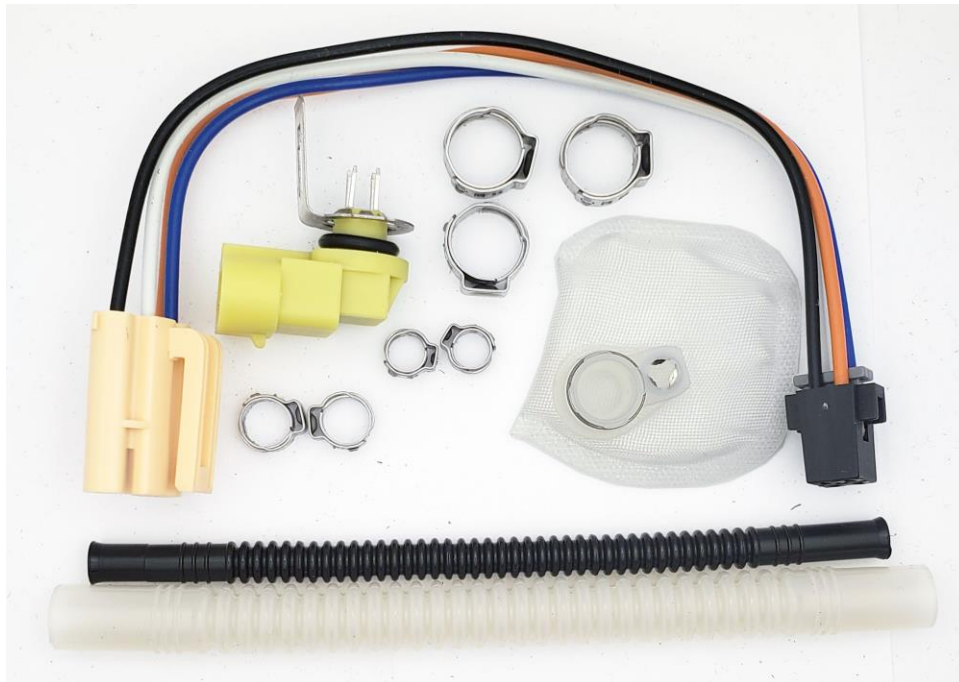


Table of Contents

Included Parts	Page 2
Important Notes	Page 3
Suggested Tools	Page 3
Disassembly OEM Module	Page 4
DW440 Pump Install	Page 5
Installing the Bulkhead	Page 6
DW440 Pump Wiring	Page 7
Flushing and Priming	Page 10

Included Parts:

- DW440 Brushless 440LPH Fuel Pump
- 8" Pump Electrical Connector
- Electrical Bulkhead w/Retainer and O-Ring
- Fuel Sock Pump Pre-Filter
- 6" x 3/8" Convoluted Tube
- 6" x 1/4" Convoluted Tube
- 13.3mm Hose Clamps (x2)
- 8.7mm Hose Clamp
- 7mm Hose Clamp

2015-2019 Ford Mustang/F-150 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 2015-2019 Ford F-150 assembly is nearly identical to the Mustang assembly, use the following steps to remove/install the DW440 pump, the placement of the wiring bulkhead will be different than the Mustang due to the change in the top plate design, both are shown during the installation step.

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

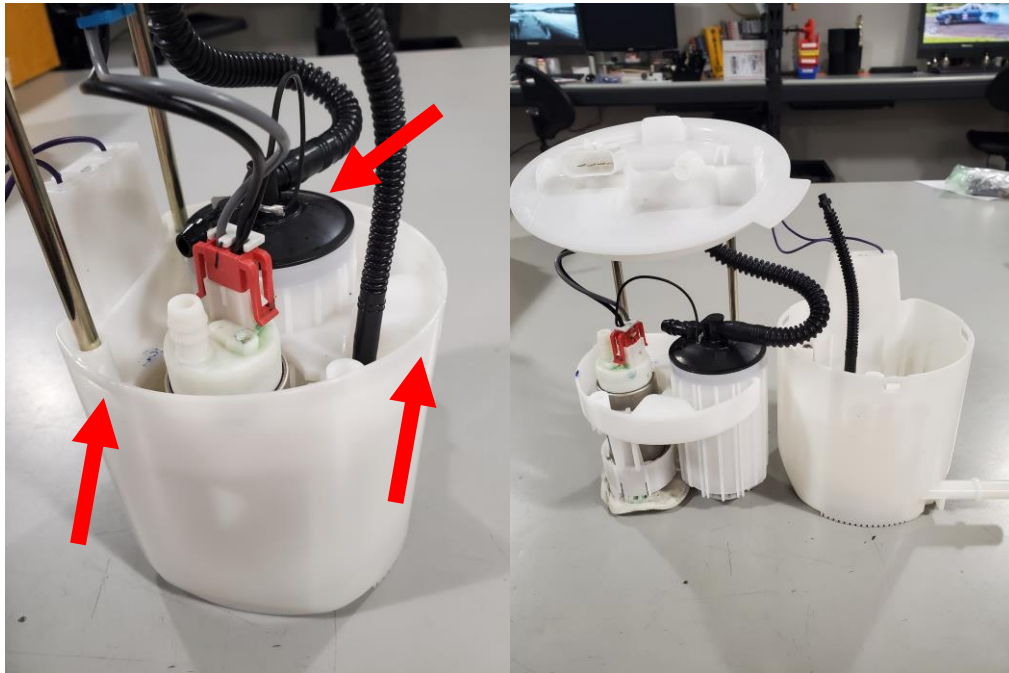


Disassembly of OEM Module

1 – Remove the factory feed and venturi hoses, the venturi hose must be removed to separate the bucket from the center section. The kit comes with replacements for both hoses.

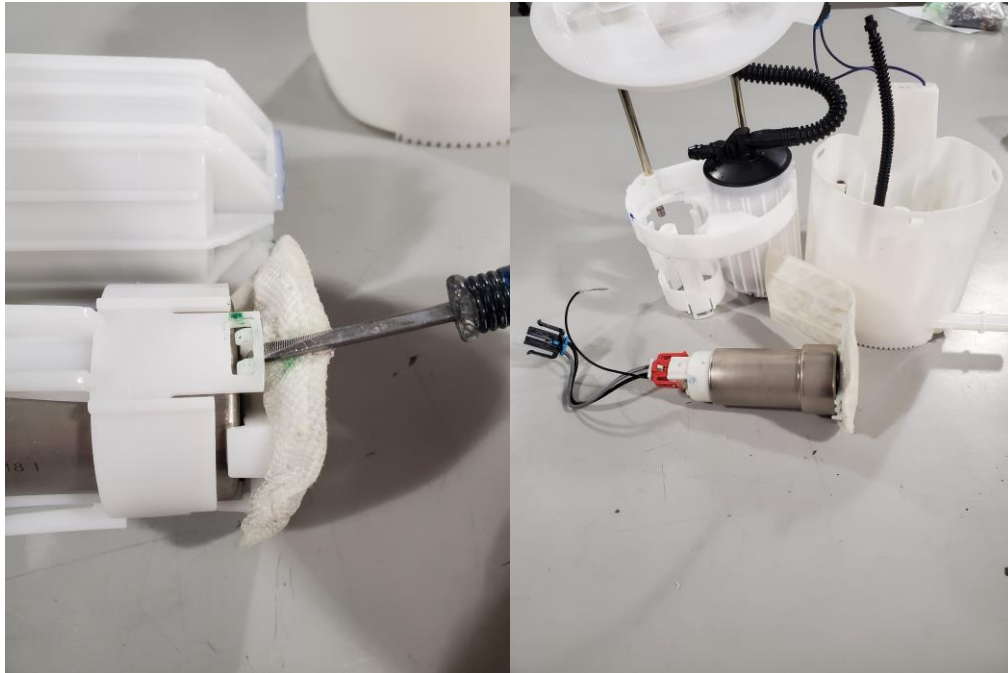


2 – Separate the bucket from the center section by unlatching the 3 clips around the edge of the bucket.

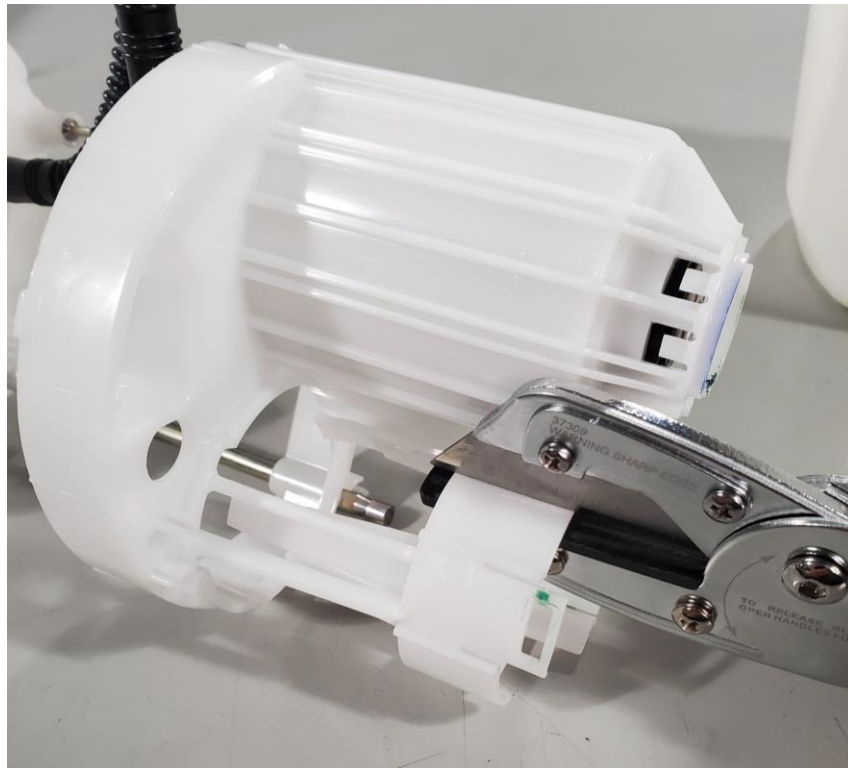


2015-2019 Ford Mustang/F-150 DW440 Brushless Installation Guide

3 – Remove the factory pump, filter and wiring harness by prying the latches on either side of the filter sock.

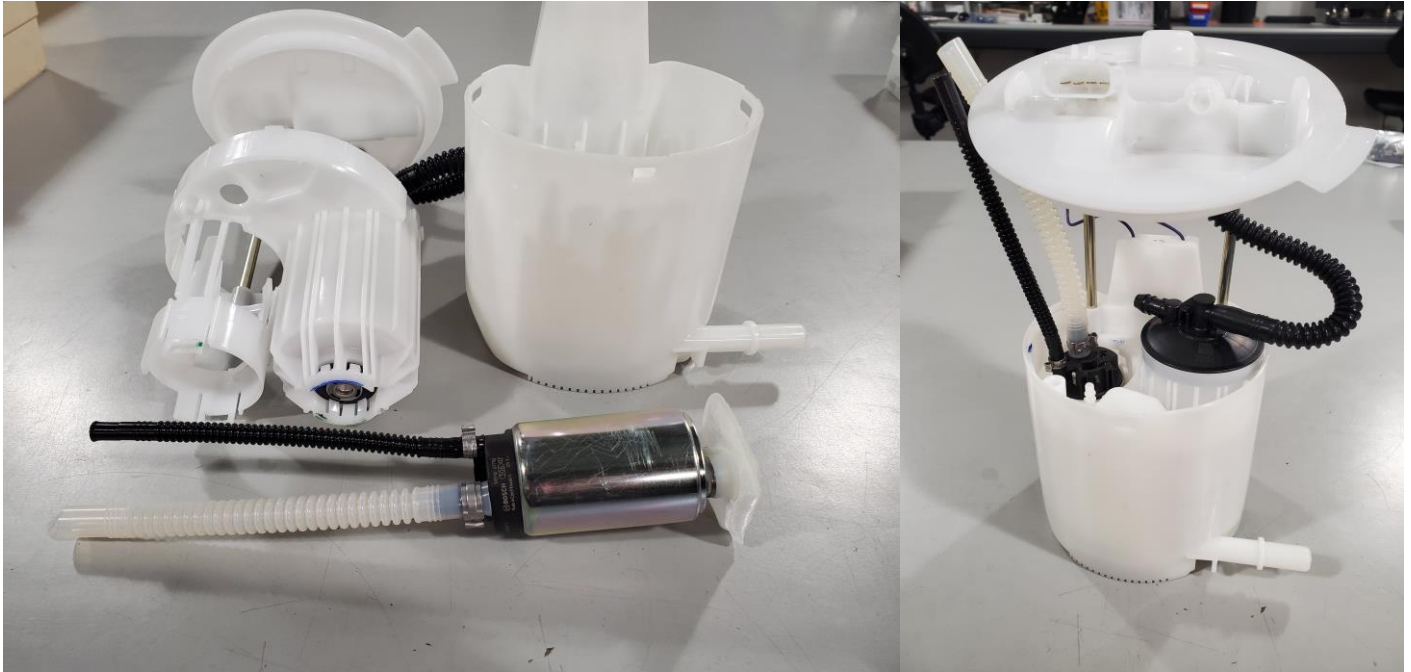
**Installation of the DW440 Pump**

4 – To accommodate the slightly larger diameter of the DW440 pump, the pump retainer cage needs to be split to expand.



2015-2019 Ford Mustang/F-150 DW440 Brushless Installation Guide

5 – Prep your DW440 pump by installing the supplied filter sock, 3/8 and 1/4" convoluted tubing. Secure the 3/8" hose with the supplied 13.3mm clamp, and the 1/4" hose to the pump with the 8.7mm clamp. Slip the pump assembly into the center section, then install the assembly back into the bucket.



6 – Trim off the flare at the very end of the 1/4" venturi hose so you can apply the 7mm hose clamp over the hose. Attach the hose to the venturi jet inlet on the bucket and clamp with the 7mm clamp.



7 – Attach the end of the 3/8" tube to the inlet on the filter assembly and secure with the remaining 13.3mm clamp.



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).

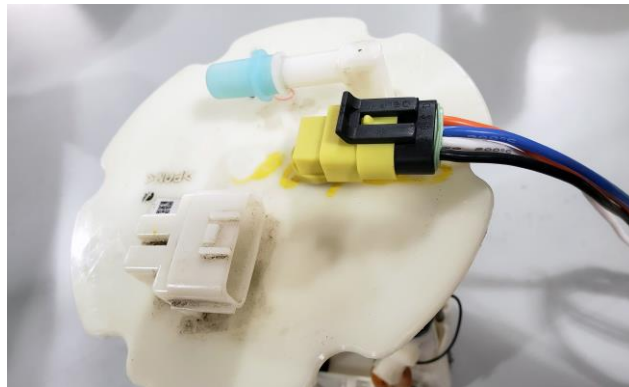


2015-2019 Ford Mustang/F-150 DW440 Brushless Installation Guide

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.

**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.



2015-2019 Ford Mustang/F-150 DW440 Brushless Installation Guide**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 2015-2020 Ford Mustang and F-150 use a Yellow w/Orange stripe wire from the ECU to the FPDM to control a PWM output.
 - The FPDM is located on the driver's side beneath the rear seat on the Mustang, and under the bed above the fuel tank for the F-150.



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