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DeatschWerks 2012-2020 Toyota GT86, Subaru BRZ and Scion FRS X2 Dual Pump Module Installation Guide



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This module is designed to fit the following applications:

- 2012-2016 Scion FR-S
- 2012-2020 Subaru BRZ
- 2017-2020 Toyota GT86

Included Parts:

- Billet Aluminum GT86 X2 Module
- DW300 340 LPH Fuel Pumps (x2)
- 10" Pump Electrical Connectors (x2)
- Convoluted Tube 6" x 5/16"
- Convoluted Tube 12" x 5/16"
- Convoluted Tube 5" x 1/8"
- Convoluted Tube 4" x 5/16"
- 5/16" Barb to 3/8" EFI Quick Connect Fitting
- Fuel Sock Pump Pre-Filter (x2)
- 3/8" Pinch Hose Clamp (x2)
- 5/16" Pinch Hose Clamp (x4)
- 6mm Hose Clamp (x3)
- 12-10awg #10 Ring Terminals (x3)
- 14-16awg #10 Ring Terminals (x4)
- 18-22awg #10 Ring Terminals (x4)
- 6AN ORB to 5/16" Hose Barb Fitting
- 6AN ORB to Fuel Pump Adapter Fittings (x2)
- 4AN ORB to 5/16" Hose Barb Fitting (x2)
- 4AN ORB to 1/8" Hose Barb Fitting (x2)
- M5 Stainless Electrical Terminals (x3)
- M4 Stainless Electrical Terminals (x2)
- OEM Style Plastic Bucket Assembly
- OEM Style Fuel Level Sensor
- OEM Style Fuel Level Arm and Float (GT86 Specific)
- OEM Style Rubber One Way Valve
- Module Support Springs
- M5 Flange Head Allen Bolts (x3)
- 1/4"-20 Flange Head Allen Bolt
- 1/4"-20 Nyloc Nut

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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 X2 DW300 pump module. The factory manual should supersede any contradiction.

Important Notes: The Toyota GT86 X2 module is intended to be used with Standard 39mm DW100, 200, 300 fuel pumps. The kit includes OEM replacement components, these are required for fitment.

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



Assembly of the X2 Module

1 – Remove the E-clips and remove the center plate. Loosen the 6AN to Pump Adapter fitting retaining nut and remove along with the O-rings. Slide the nut and O-ring on to the DW300 fuel pumps. Install the pumps back into the fittings and tighten.



2 – Install the supplied longer 6" x 5/16" convoluted tube onto the return fitting and secure with the supplied 5/16" pinch clamp. Slide the center plate over the pumps and return tube, reinstall the e-clips, cut the return hose flush with the bottom of the return plate when its fully extended.



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3 – Using the 4" x 5/16" hose, cut it down to 2-2.25" (50-57mm) and attach it to the single 5/16" hose barb fitting on the bottom side of the orange center plate, secure with a 5/16" clamp.

Note: The length of this hose is extremely important, it needs to be long enough, so it stays submerged but short enough it doesn't bend and kink during installation. If you run into fuel starve issues at 1/2 tank, re-check this hose.



4 – Install the supplied 1/8" convoluted hose onto the 1/8" nipple on the billet X2 top hat secure with one of the 6mm pinch clamps. Install the 12" x 5/16" hose onto the 5/16" fitting on the pump center plate and secure with a 5/16" pinch clamp.

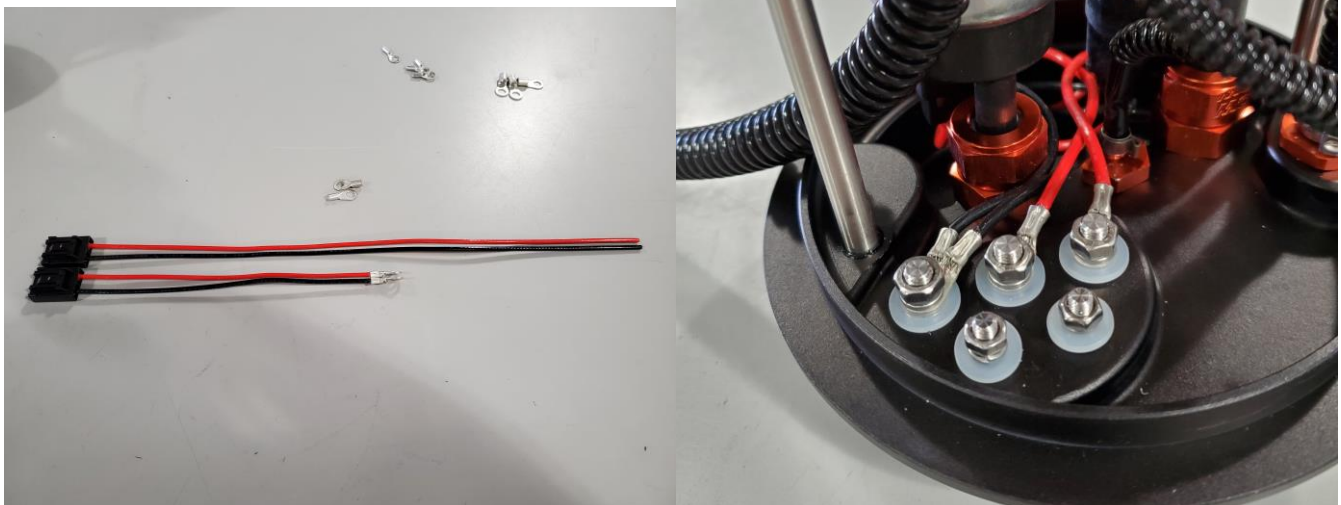


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5 – Attach the free end of the 1/8" hose to the orange center plate. Add the support springs to the top hat rods and slip the center plate over the return hose and top hat rods. Compress slightly and add the e-clips. Install the two supplied fuel filter socks onto the bottoms of the pumps, be sure to remove the clear plug from the filter sock, and the red cap from the fuel pump.

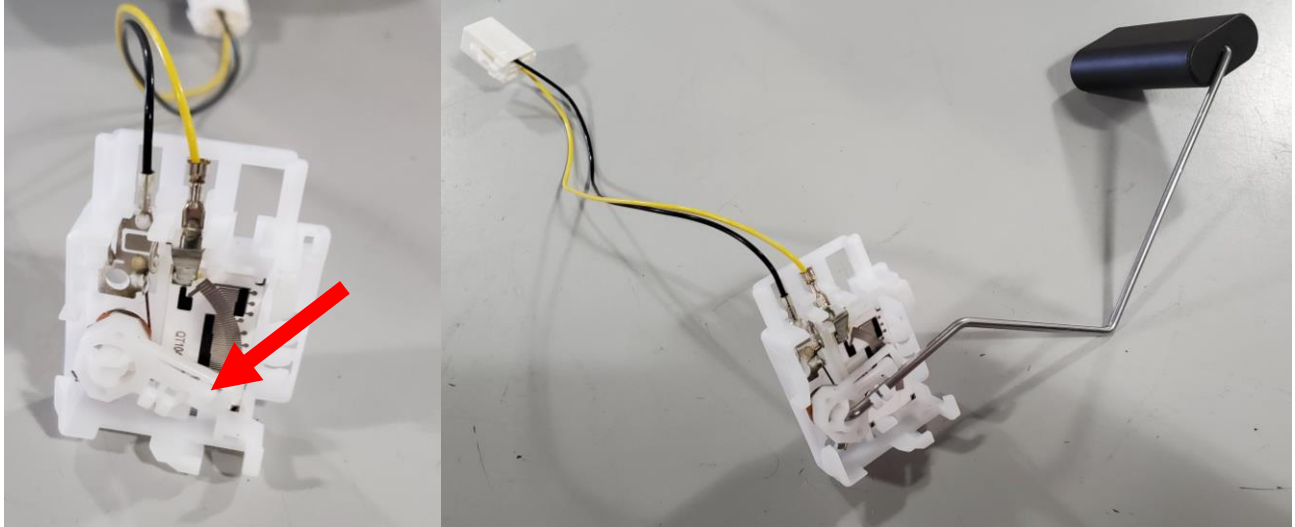


6 – Shorten the supplied wiring harness to approx. 8-inch (205mm) and crimp on the supplied 14-16awg ring terminals. Attach both ground wires to the pump negative terminal and attach each pump power wire to its separate positive terminal. Tuck the remaining wire into the cavity provided above the pumps.

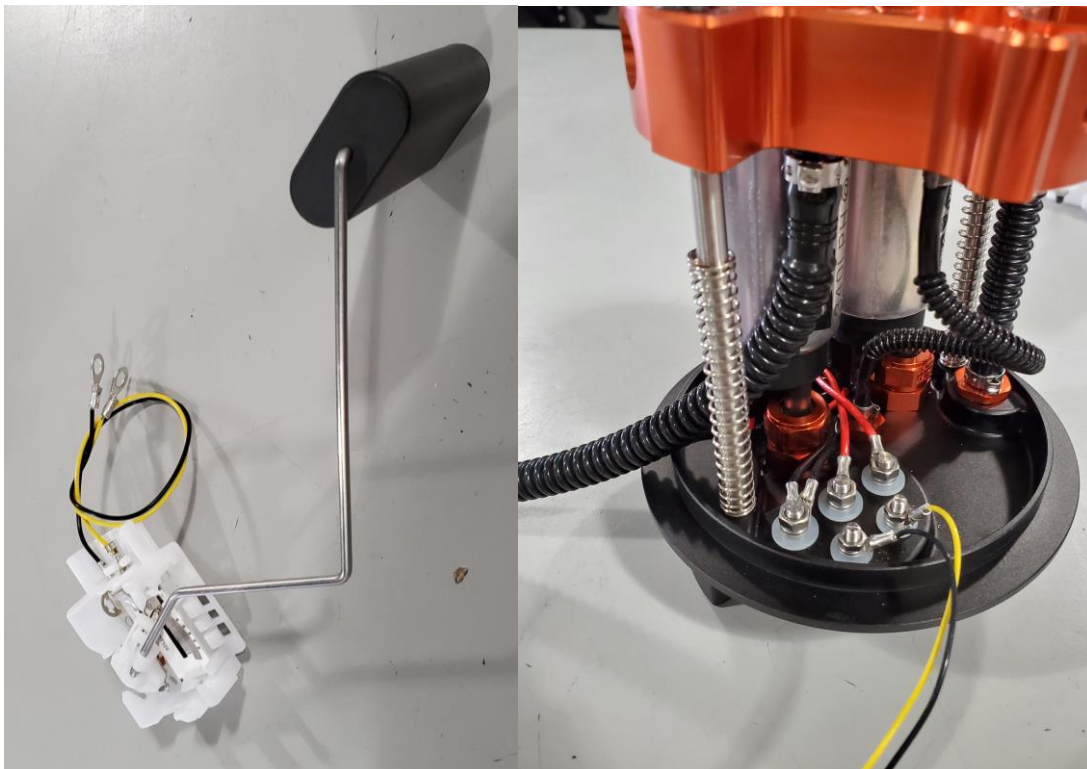


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7 – Locate the supplied fuel level sensor, remove the arm and triangle float that is pre-installed, and replace it with the supplied longer arm that has the square float. To remove the supplied float, press in the lock tab and rotate the metal rod up to unlatch it, pull straight out and the rod will slip out. Re-install the square float and longer arm, this arm and float is specific for the BRZ, FRS and GT86 models.

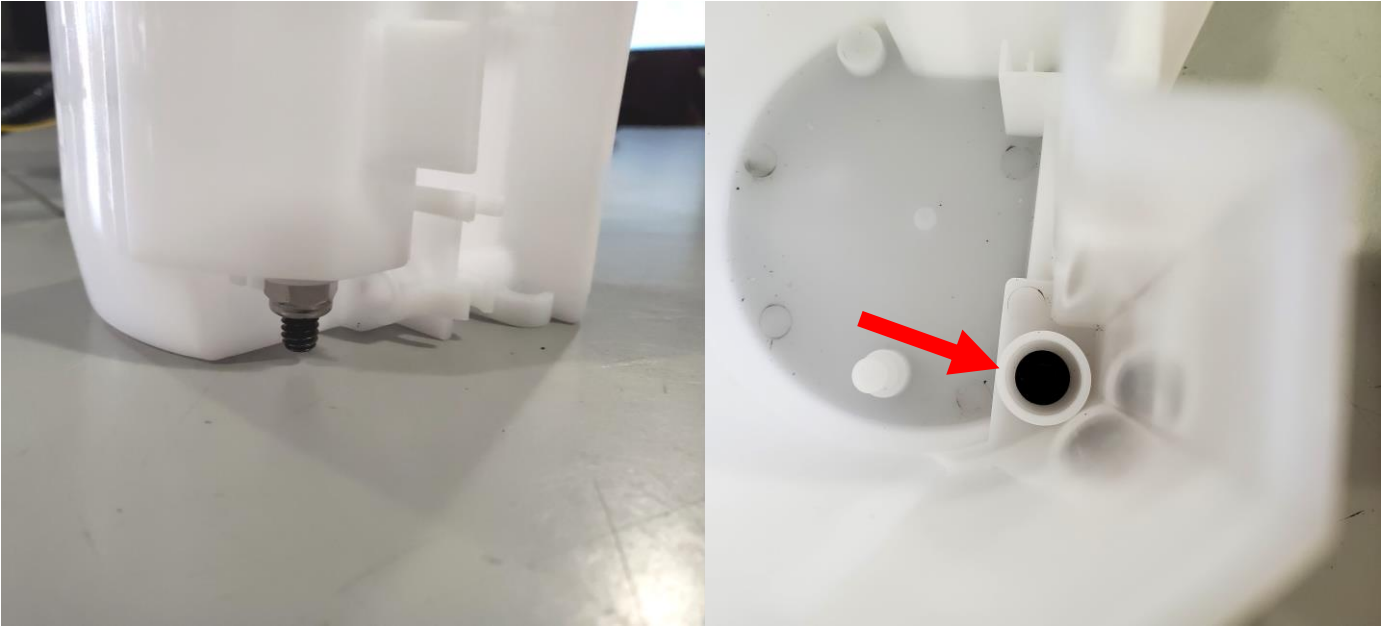


8 – Cut the factory connector off the fuel level sensor, leaving the maximum amount of wiring available, strip the ends and crimp on two of the supplied 22-18awg ring terminals. Attach the yellow level sensor wire to the positive level wire and the black to the negative.

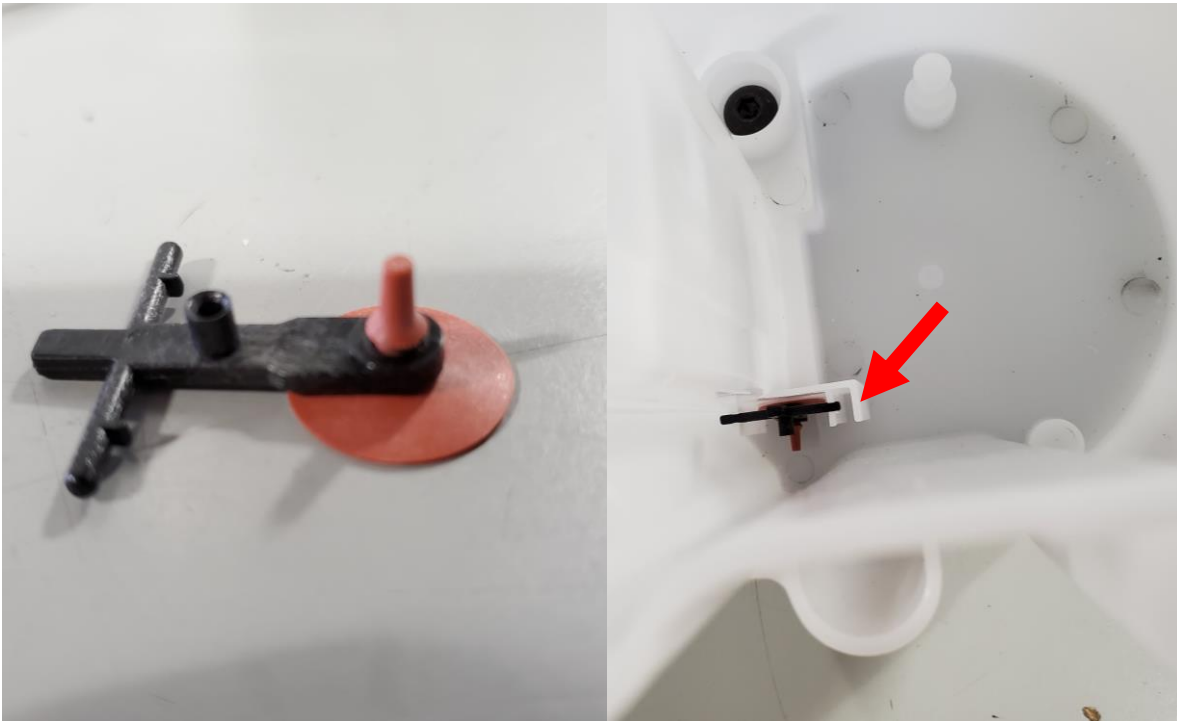


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9 – Using the supplied 1/4" Allen bolt and nut, install them into the bucket at the location shown, this is important, or the return fuel flow will exit the bucket instead of helping keep it full.



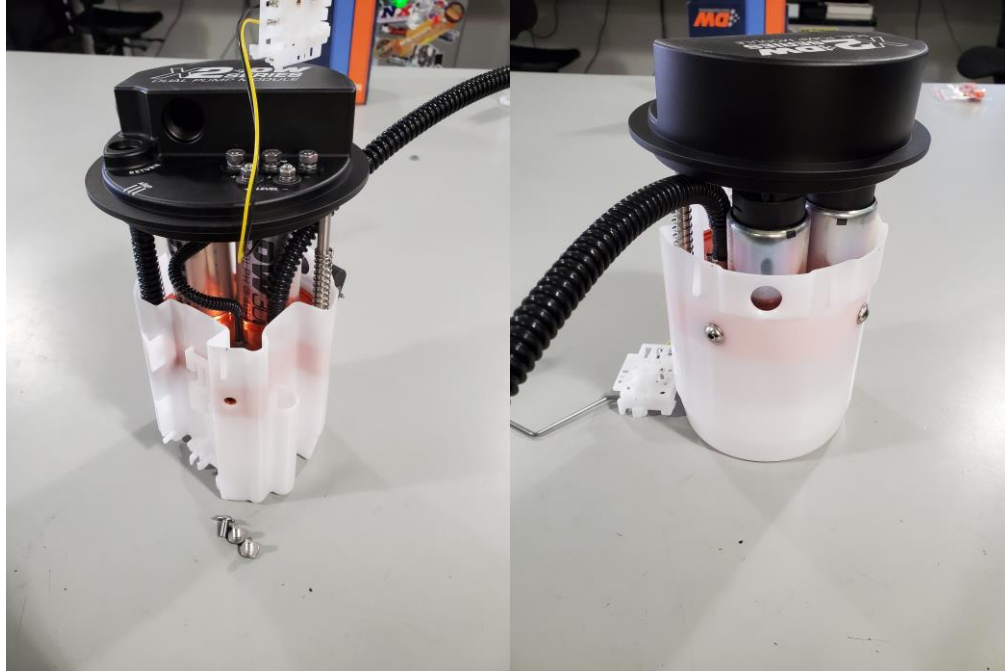
10 – Assemble and install the rubber one way valve into the bottom of the bucket. Once it snaps into place it should pivot freely.



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11 – Install the completed X2 module into the supplied bucket, it may be necessary to enlarge the pre-drilled holes in the bucket to line up with the threads for the supplied flange head M5 bolts.

Note: Do not over tighten these bolts, they should be tightened but not torqued.



12 – Slide the 12" x 5/16" convoluted tube through the hole in the back side of the bucket like shown below. Locate the 5/16" hose barb to 3/8" Female EFI Quick Connect fitting and install it into the open end of the 12" tube, secure it with one of the 13.3mm clamps.

Note: Do Not install the fitting first, it will obstruct getting the tube through the hole in the bucket.

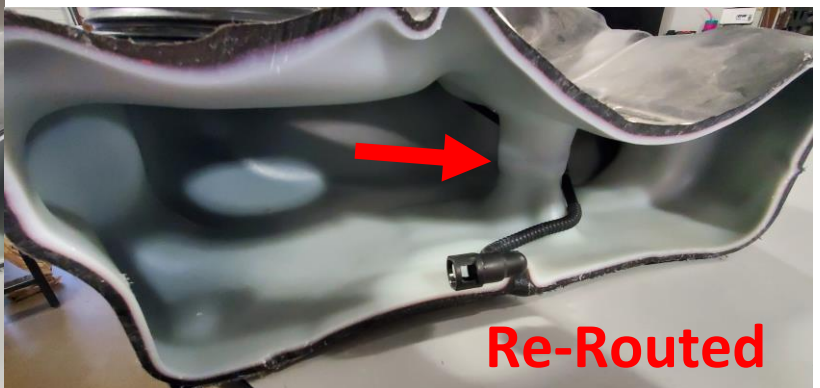


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13 – Install the fuel level sending unit onto the bucket, it keys into the bracket then slides to lock into place.

**Installing the X2 Module**

14 – The venturi suction line inside the fuel tank needs to be re-routed during installation of the DW X2 module. Factory routing the line will interfere with the fuel level sensor movement. Reach into the fuel tank and route the line around the post just behind the fuel pump opening.



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15 – Before installing the module into the tank opening, connect the venturi suction line first. Installation may be difficult due to the added hose, angle the fuel level sensor into the tank first, then slide the module and venturi hose through the opening.



16 – There are no physical alignment tabs or notches on the GT86 module and fuel tank. Instead, there is an alignment marking on the DW X2 module and a corresponding marking on the OEM fuel tank.



Wiring the X2 Module

17 – The DW X2 Series GT86 module comes with supplied ring terminals, the pump terminals are designed for up to 10awg wiring the fuel level for 22-18awg. The level sending unit wires should be connected to the factory level sending unit wires.

Due to the OEM fuel pump controller, it may be necessary to either turn off the variable voltage/duty cycle options or bypass the FPDM completely. This is easily accomplished with a hardwire kit like the PN# **FPHWK-10-DP** (Fuel Pump Hardwire Kit 10AWG Dual Pump), this will ignore the variable signal delivered by the FPCM and use a direct battery voltage to run the fuel pumps.

The factory fuel pump positive trigger wire is Green, this will connect to the blue wire on the Hardwire Kit.

The factory fuel level sending unit wires are Red (+ Positive) and Violet (- Negative)

Note: If fuel level gauge does not work correctly after installation, swap the Level + and – wires.



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