



2G DSM AWD FUEL SYSTEM

ASSEMBLY AND INSTALLATION INSTRUCTIONS

Thank you for choosing the bulletproof racing fuel system for your 2G awd DSM, we truly appreciate it, in case there is any questions that you may have, please reach to us via email:

alex@bulletprofr.com

warning

this product is intended for OFF-ROAD use only

Never use any type of flame type instruments when installing a fuel system, work on a ventilated area and remove any excess of fuel inside the tank, if possible empty the fuel tank, don't use any tools that can create sparks and ignite any fuel residuals for example a grinder.

what's included:

- 1- Billet top hanger
- 2- Billet pump brace
- 3- Billet pump brace
- 4- Billet siphon tube
- 5- Billet fuel level sensor
- 6- SS bulkhead
- 7- DPT4 connector with wiring
- 8- All necessary hardware
- 9- Fittings



Parts you will need from your OEM fuel assembly (hanger)

1- OEM connector



2- OEM ring gasket



3- OEM fuel lever sensor



Let's begin with the assembly of the fuel hanger, we will cover all possible scenarios like when 1 or 2 pumps are needed to be installed by you and when pumps come installed from us.

We highly recommend that you get the pumps from us when ordering since wiring both pumps is somewhat tedious and requires certain soldering skills

- 1- Remove the rear seat and set it aside so it doesn't get in the way**
- 2- Remove the 4 Phillips screws holding down the fuel assembly cover**



3- In order to properly remove the OEM fuel assembly and to ease the installation of the new Billet hanger, we recommend to cut around the opening to better access the hanger. You can use some snips and cut around the opening (**NEVER USE A TOOL THAT CAN CREATE A SPARK AND POSSIBILITY IGNITE A FIRE**), make sure you don't leave any sharp edges to prevent cutting yourself



4- Once you have cut the metal around the access to the hanger, remove the hoses connected to the top of the hanger, the feed line is easier to disconnect from underneath the car as from the top is very hard.



- 5- Once you have all lines removed, use a decent size flat head screw driver and hammer gently the plastic ring, make sure you go easy with this step to avoid any damage to the threads on the ring
- 6- With the plastic ring completely unscrewed, pull out the OEM hanger and proceed to remove the parts needed for the new billet hanger (parts needed are mentioned above in the first page)
- 7- Now let's proceed to assemble the new billet hanger, let start with how the different configurations you could have received the hanger from us depending on what you choose when placing the order.
- 8- **CONFIGURATION #1: COMPLETE FUEL SYSTEM WITH TWIN PUMPS AND RELAY BOX**

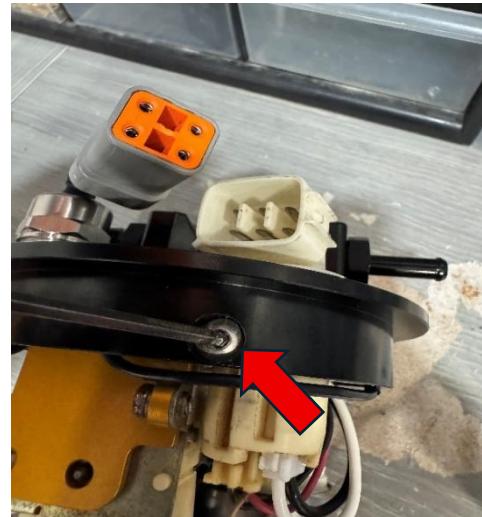
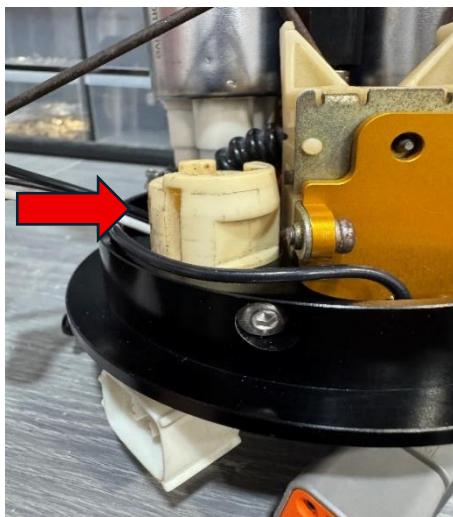
- If you order a complete fuel system, then you are about to be finished as installation becomes a breeze now. Just a few more mins.....



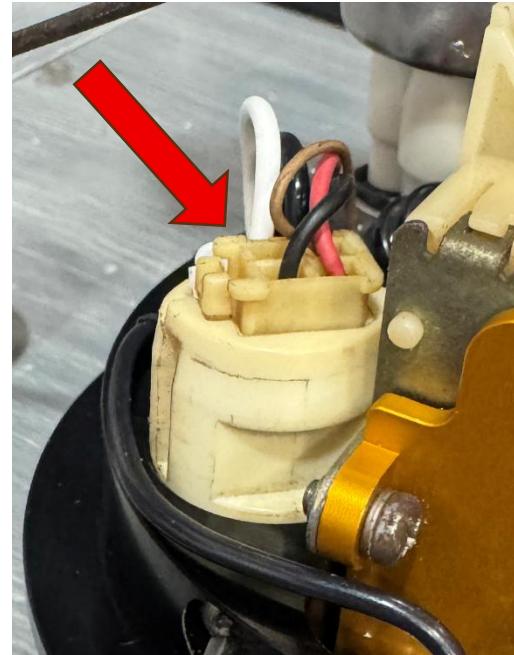
- Use the OEM fuel level sensor that you previously removed from the OEM hanger with the 2 screws and install it in the bracket provided with the new hanger.
NOTE: it might be a little tight with the flexible hose but it will fit, it has to go this way due to the lack of space for all the wiring. Also make sure that all wiring is move aside like in the pic to make room for the fuel level sensor, if a wire is caught Underneath, the sensor wont seat right and the screws that hold it in place wont line up with the billet bracket.



- With the fuel sensor installed in place now you can proceed to install the OEM connector. Insert the connector in the hole, it is a tight fit, push it all the way in and pointing in the same direction as it was in the OEM hanger. You will notice a screw on the side of the hanger where the connector hole is, this screw is to retain the connector in place, once you slide in the connector tight the screw gently (3MM ALLEN HEAD), this will keep the connector firm in place.



- Now with the connector installed in place you can connect both, the fuel level sensor and primary fuel pump connectors.



- The new bulletproof racing hanger is completely assembled now and is ready to drop in the tank and if you purchased a relay box along with the hanger, it makes the entire fuel system plug and play. The relay box directly connects to the 4pin DTP connector off the hanger and it can be installed to the nearest point to the battery, if you have the battery in the trunk or in the engine bay (most customers install the relay box under the passenger seat. From there the relay box have 3 wires.
 1. Thick red wire goes straight to the battery positive +
 2. Black wire is ground and attach to any bare surface on the chassis or directly extend it to the battery negative -

(this is very important, make sure there is a good clean contact between the ground wire and the ground surface)

 3. blue thin wire, only used to activate the secondary pump via standalone ECU.

When using a stock ECU, the secondary pump is only activated via the boost pressure switch off the relay box



9- CONFIGURATION #2: BILLET HANGER WITH NO PUMPS INSTALLED

- When purchasing a billet hanger without pumps it makes the assembly a little more complicated since the connectors off the pumps have to be removed and soldered to the provided wiring off the hanger due to the lack of space. But don't worry, it shouldn't be that hard. If you don't feel comfortable doing a little bit of wiring and soldering, please take the car to a reputable shop for proper installation to prevent any damages.

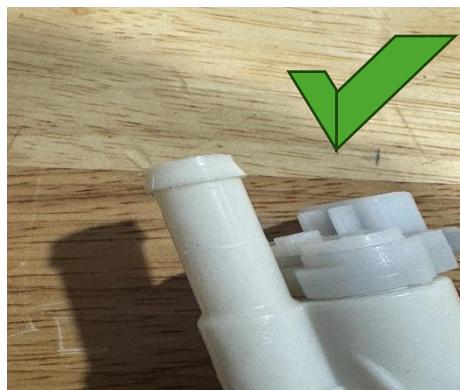
- First let's install both pumps, the hanger comes with the connecting hoses for both the primary and secondary pumps installed with EAR clamps, same clamps are provided with the kit for you to secure the pumps to the hoses. To the left is a picture of the tool used to compress the ear clamps.



- You can also use fuel clamps if you don't have the tool to compress the ear clamps. Pic of the fuel clamps recommended below.

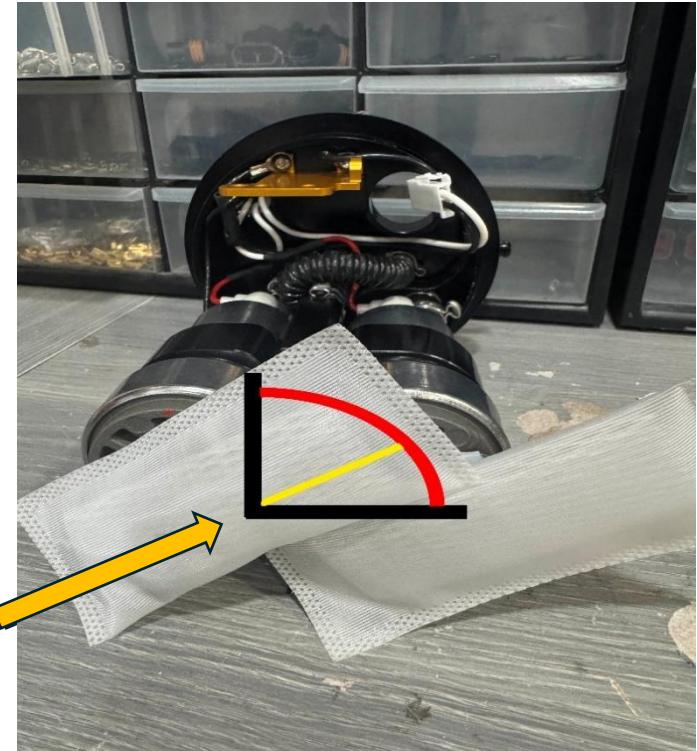


- Before proceeding to installing the pumps, the first barb has to be removed in order to achieve the proper height and to prevent the pump from hitting the bottom of the saddle basket. Cut the first barb with a very sharp blade to prevent damage.



- Slide one pump at a time now, you will notice the pumps can go in only one way as dictated by the location of the hoses, now the filters have to go in certain angle to allow a proper seating in the saddle basket, please refer to the picture below on how the filter should be oriented.

Approximately
30 degrees
using this view
as reference



- **NOTE:** when installing the pumps, the corrugated hose might be in the way and prevent the pump from going all the way in, wiggle around the hose until you are able to fit all the way both pumps. Make sure the edge in where the pumps start to change shape is as close as possible to the bracket as shown in the pic to the right.



10- Once you have both pumps installed, lets proceed now to do the electrical work,

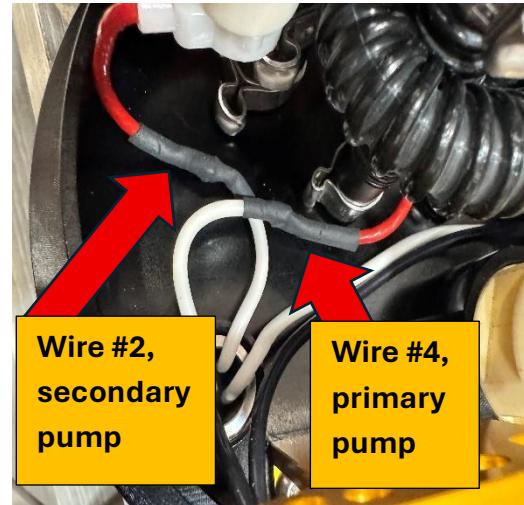
- Cut both connectors off the pumps, make the cut as close as possible to the connector as you will need the max length of the pump wires.
- The wires coming off the bulkhead are labeled with numbers; each number correspond to a pump wire. Let's start with wire #2, this wire is positive for the secondary pump which is the closer to the wiring coming off the bulkhead. Strip the wires as shown in the picture. Cut it as short as possible.



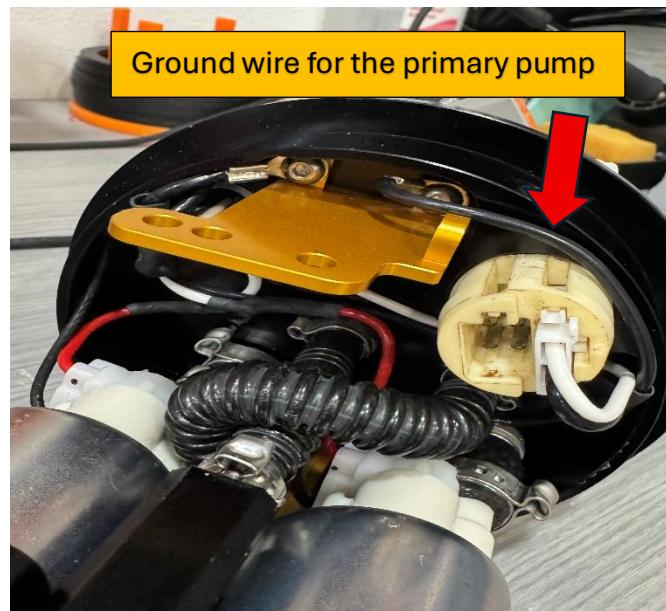
- Insert the provided heat shrink sleeve in the longer of the 2 wires, solder both wires together and heat the sleeve to seal it.
- Tuck the wire in nice and tight to prevent any contact with the fuel level sensor once is installed in a later step



- Do the same procedure above for the positive wire off the primary pump that will connect to wire #4.



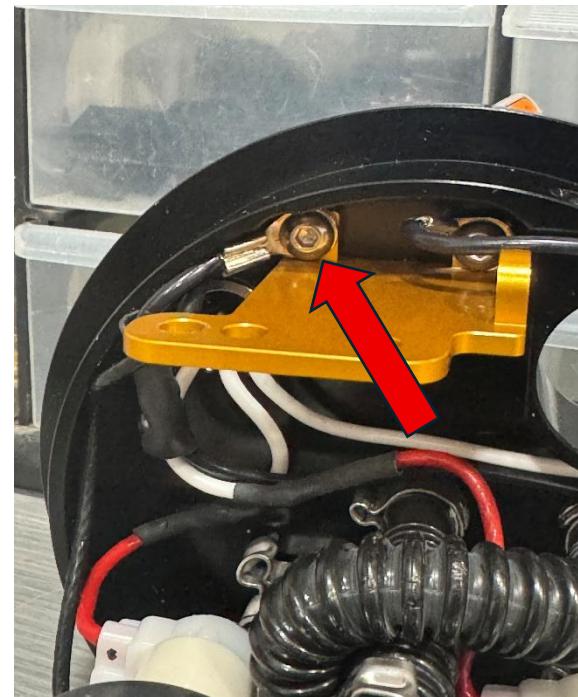
- The ground for the primary pump comes directly from one of the bolts holding the fuel level sensor bracket, this wire that is traced around the OEM connector have to be soldered together to the primary pump ground wire as shown in the picture.



- The ground for the secondary pump, use the terminal ring included in the kit and install it in the pump negative wire as shown in the pic



- Remove one of the bolts marked in the picture that holds the fuel level sensor bracket. Install and attach the pump negative wire with the terminal ring back in using the same bolt that was removed



- With the previous step completed now you have finished installing both pumps and the configuration #2 is finished, you only need to install the OEM fuel level sensor which is explained above in the STEP -8.

11- Let's go ahead and install the double pumper in the fuel tank. First install the plastic ring in the hanger. In order to do this all fittings have to be removed from the hanger, like shown in the picture.



12- Install all fittings in the hanger (feed, return and siphon)

13- Place the OEM ring gasket in the tank lid. Spray some DW40 around the ring gasket to facilitate the installation of the hanger since is a tight fit with the gasket.



14- With the hanger in place, secure it tightening the plastic ring, make sure it is threaded all the way down.



15- Install all fuel lines, feed, return and siphon.

16- For the siphon line you will have to remove the OEM hose connected to the hard pipe coming from the other side of the tank and install a new longer hose making a loop in order to connect to the barb fitting off the hanger and prevent any kinks. Picture to the right.



17- Another option for the step 16 is to purchase a 90-degree 3/8 barb to 6an ORB fitting and replace the included straight barb fitting, please refer to the picture.

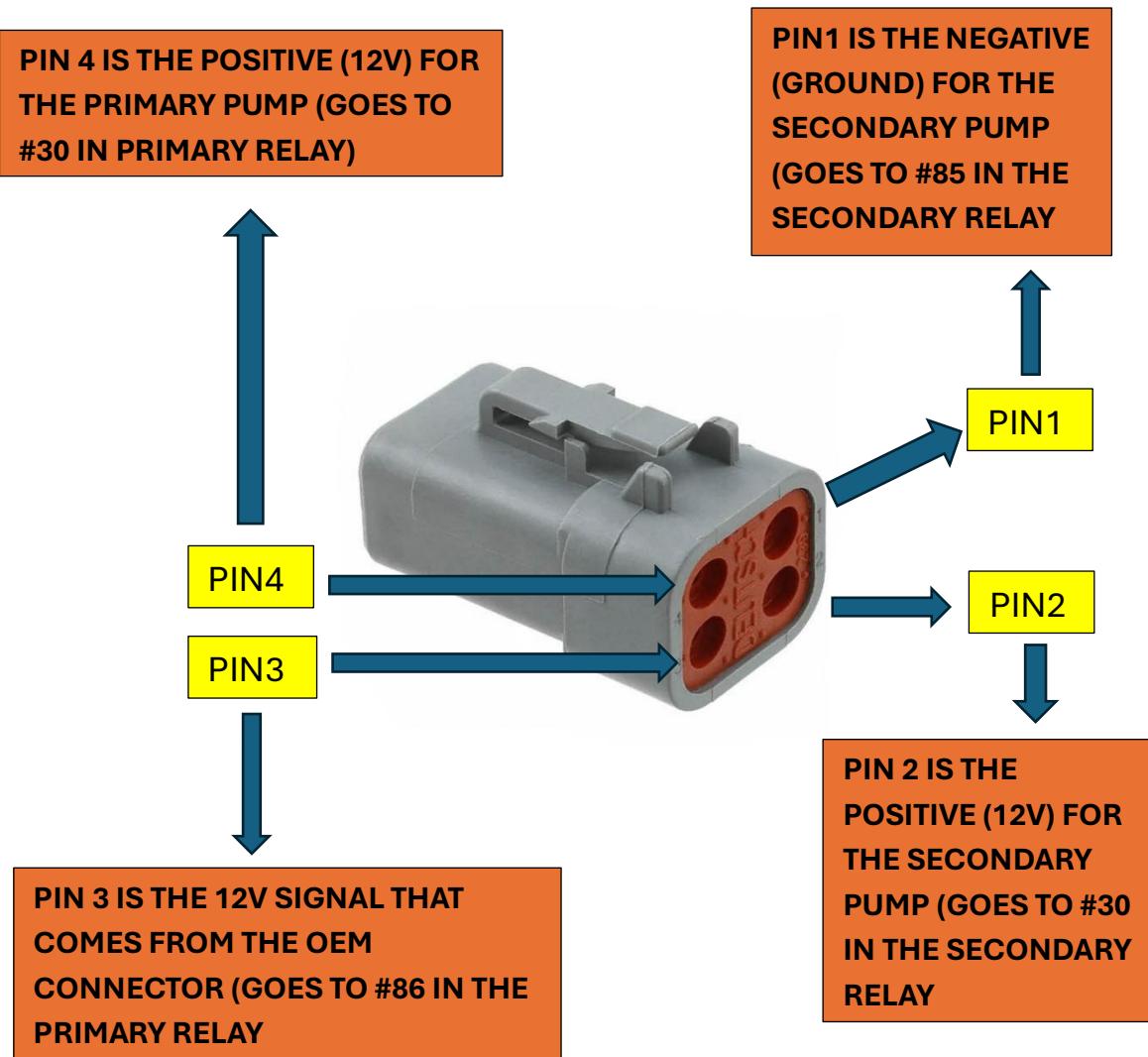


With the last step the installation of the double pumper is completed.

If you purchased the double pumper along with the relay box, please refer to step 8 (configuration #1) for how and where to install the relay box

If you purchased only the hanger, after is installed you will have to do the wiring in order to get it running (highly recommended to get the relay box along with the hanger, it makes the entire kit plug & play). Below is a diagram on how to connect to the 4-pin connector off the hanger.

In the back side of the connector the pins are numbered 1 thru 4.



THIS CONCLUDES THE INSTALLATION OF THE BULLETPROOF RACING FUEL SYSTEM FOR THE 2G DSM (AWD ONLY)

IF YOU HAVE ANY QUESTIONS PLEASE FEEL FREE TO EMAIL US AT alex@bulletproofer.com

You can also reach out to us via social media, below are the links for both of our pages, Instagram and Facebook.

<https://www.instagram.com/bpracinglv/>



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THANK YOU