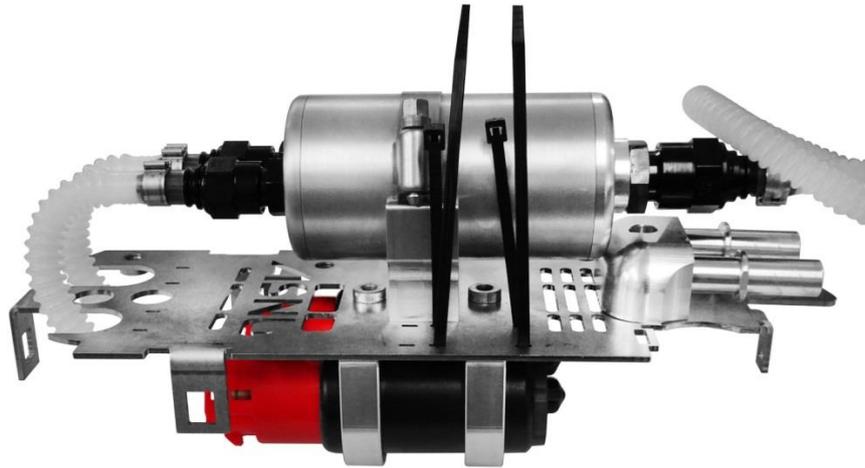




## ASNU Baby Battleship Installation Instructions



The "Baby Battleship" is a filter replacement kit capable of accepting the OE and common upgrade pumps, whilst reusing the top plate, pump prefilters and module housing from the OE system.

The kit comes in 3 specifications:

- ASNU 92/BBSB** (bare with no fuel pumps - ASNU fitment)
- ASNU 92/BBSBW** (bare with no fuel pumps – Walbro 41mm fitment)
- ASNU 92/BBS660** (with Twin ASNU 330E pumps)

You will be required to disassemble certain parts from the stock fuel system and then integrate them into the baby battleship, before reinstalling the system into the tank. If you are unsure of your ability to fit this kit we advise that you consult ourselves or a trained mechanic before you start.

- Before you commence any work, log any security or access codes that are battery dependant before disconnecting the battery.
- Please ensure that this work is carried out in a well ventilated area away from any possible point of ignition as fuel or fuel vapour will be present and could present a fire hazard.
- We advise the use of appropriate clothing and safety glasses.
- Also ensure that a fire extinguisher of the appropriate type is available.
- When working with fuel we advise that the correct protective equipment is worn including glasses and gloves where appropriate.



The kit comprises of:

- Filter assembly with filter, complete with hoses
- Filter mount with clip
- Spare 6 micron micro glass filter



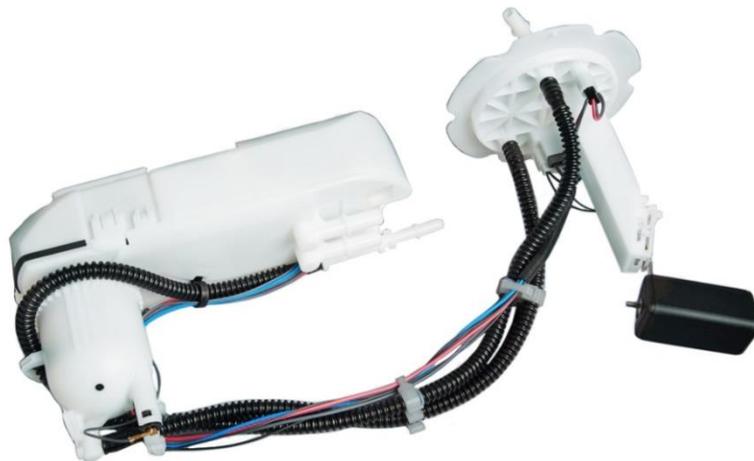
- Stainless steel fuel module lid complete with QC scavenge connectors
- Pump mounts
- Pre Filter retaining plate
- Appropriate mounting bolts for the above parts
- Zip ties
- Hose clamps

### Section 1: System removal

Depending on the kit ordered, the system will be built up to different levels when it is received. However for clarity, the following instructions are for a bare "Baby Battleship" as this will cover all other assemblies.

1. Prepare car by running it until the fuel warning lamp is illuminated leaving only 15 / 20 litres of fuel in the tank
2. Open vehicle windows fully to allow fumes to vent
3. Disconnect vehicle battery and remove any sources of ignition from the work area
4. Remove rear seat squab in line with Nissan workshop manual
5. Remove tank cover plate from floor plan
6. Disconnect fuel module electrical harnesses
7. Remove OE fuel module in line with Nissan workshop manual
8. Refit tank cover plate temporarily to prevent excess fuel vapour entering the car whilst the fuel system is being prepared.

You now have a fuel module out of the tank - we would advise that this is drained of any residual fuel, and if possible left in a well ventilated area for 30 to 60 minutes before work is commenced to minimise the contact with liquid fuel.



### Section 2: Module Disassembly

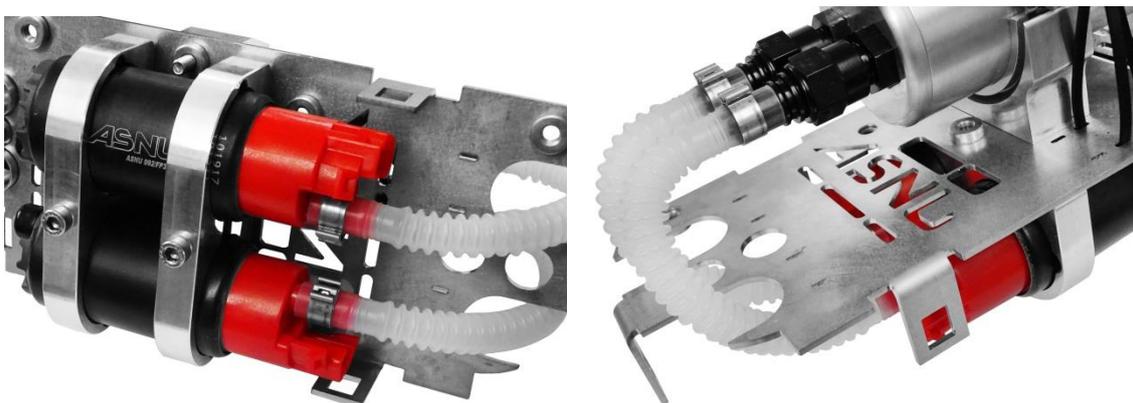
1. Unclip and unfasten from its port the blue siphon jet feed located at the nose of the surge tank.
2. Using a pair of pliers and a screw driver, release the fuel return pipe and the siphon jet flow regulator from the lid of the surge tank



3. Remove the fuel feed hose from the tank top plate by cutting along the axis of the pipe carefully with a scalpel or similar (several light cuts in the same place are more effective than one heavy cut). Take care not to damage the spigot underneath, as the top plate is required in the new system
4. Unclip the fuel temp sensor from the clip in the fuel filter (if fitted)
5. The surge tank can now be disassembled. Around the side of the surge tank are 4 locking tags. Starting at the front of the tank unclip with a small flat blade screw driver each of the lock tab in turn. It may be necessary to wedge the lock tab up to prevent it relocking when you move onto the next tab. We advise the use of a wooden coffee stirrer cut into short lengths for this.
6. Separate the fuel filter and pump baskets from the surge tank.
7. Undo the fuel pump connectors from the top of the pumps
8. Remove the pre-filter socks from the basket releasing the pumps. If the filters are dirty, these need to be cleaned by blowing clean with compressed air from the inside out
9. Disconnect earth tag from the fuel module and zip tie to the pump loom out of the way.
10. Take pre-filter socks. Block the outlet port and wash the outside clean in soap and water. Remove the plug and wash the filters clean from the inside out by allowing water to flow into the outlet port to the pump, if possible also blow clean with compressed air in the same way. Leave to dry. The pre-filters should be inspected/washed out whenever the main filter is changed.

### Section 3: Reassembly of Fuel Module and top plate

1. Remove the pair of short hoses from the filter
2. Inset hose ends ( without screw connectors ) into a cup of boiling water and leave to soften for 5 min - it may need to be stretched slightly this can be performed by inserting a pair of long nose pliers and gently opening them using them to stretch the hose
3. Fit hose clips over end of hose
4. Fit hose to the pump outlet until hose is flush with the main body of the pump
5. Crimp hose clip in place over the pump outlet - Repeat for the second pump



6. Fit zip tie to the pre-filter plate, and pass round the central retaining bolt on the front pump mount



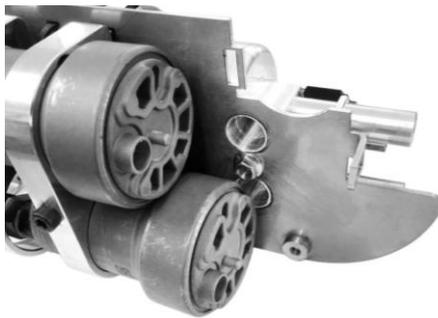
## 7. PUMPS

### 7. A - Stock Denso 265 series or ASNU FP330E fitment

Fit the pumps into the 39mm internal diameter pump mounts and loop the hoses round to the filter assembly. Loosely screw the hoses back onto the filter and then tighten the pump mounting frame bolts aligning as shown above ensuring the pipe runs are not kinked and are as shown.

### 7. B - Walbro 450 or Walbro 485 series

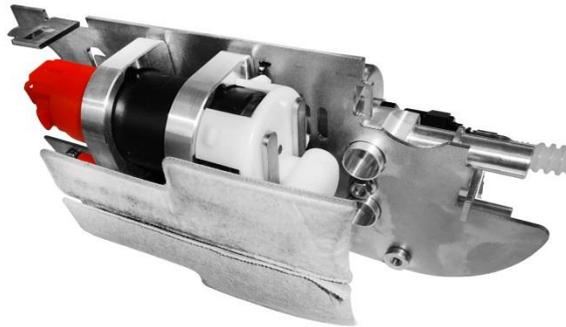
Fit the pumps into the 41mm internal diameter pump mounts. The pump heads must sit offset from each other as shown below. **Only one pump will engage in both mounts.**



The pump below the scavenge fitting must sit forward of the other unit. Loop the hoses round to the filter assembly. Loosely screw the hoses back onto the filter and then tighten the pump mounting frame bolts aligning as shown above ensuring the pipe runs are not kinked and are as shown. The wiring for the Walbro pumps uses a different connector to stock - adaptor kits are available from Walbro that contain the mating connector. Trim the OE plug away and fit connector to OE loom; ensuring the correct polarity. The Walbro pumps will slightly bow the original fuel module sides but this does not affect operation of the kit. Some small amount of alignment may be required to get the filters and hoses to fit into the surge tank so trial fit before pushing the module top plate fully home.



8. Refit the pre-filter sock to the pump - Install the pre-filter retaining plate to both pre filters and push home over the nose of the pump. There should be a small gap between the pump mount and the retaining clips on the pre-filter of 1-2mm. Tighten the zip tie on the plate evenly, A small wiggle on the zip tie may be required to even the tension on the plate



9. The retainer plate is not designed for use with Walbro pumps
10. To use the OE pre-filter on the Walbro series pumps, the filter needs to be trimmed (removing at least 2 of the side location clips.) In this case the pre-filter will need to be wired or zip tied in place - for this purpose there is a small cut out on the outside of the pump mount to allow wire or zip tie to be passed through.
11. If you are having problems with fitting the pumps - check the pump is the correct size for the mount, as the 660 kit has a 39mm diameter.
12. Connect the fuel pump electrical plugs to the fuel pumps
13. Clip down the top plate and ensure the locking tabs are fully home
14. Zip tie the fuel pump cables loosely to the fuel pipes where they pass through the metal top plate, taking care not to kink the fuel hoses
15. Remove the long hose on the filter assembly



16. Insert hose end (without screw connector) into a cup of boiling water and leave to soften for 5 minutes
17. Fit hose clip over end of hose
18. Fit to underside of tank top plate - fuel feed fitting spigot. The hose may need to be stretched slightly which can be performed by inserting a pair of long nose pliers and gently opening them to stretch the hose. DO NOT install hose clip at this point
19. Refit fuel return line and priority valve to the module and re-attach the blue siphon jet fitting
20. Fit the anti static ground to the top deck by pushing the original fitting removed from the top of the filter module into one of the two round holes to the rear of the filter. The anti static ground looks similar to the fuel temp sensor but has a single brown wire instead of the twin black wires of the temp sensor.

#### **Section 4: System installation**

1. Loosen the pump to filter feed hose fittings and unscrew from filter



2. Mark filter in the filter mount to allow re-alignment in the same position with the twin inlet ports horizontal / parallel to the top of the module
3. Remove filter from filter mount by undoing the Jubilee clip
4. Remove filter mount from top plate - keep mounting screws in the same location as they are different lengths. Long screw is on the outside, short screw is in the middle next to the fuel return pipe. Installing the screws the wrong way round may damage the pumps
5. Install fuel module (minus filter and filter mount) into the tank
6. Locate fuel module into the retaining clip on the tank base but do not slide fully forward to the lock position
7. Refit the filter mount
8. Refit the QC scavenge fittings to the module nose
9. Place the filter into the tank and align so that the twin outlets are horizontal
10. Refit Jubilee clip and tighten on the filter
11. Attach the feed fittings from the pumps to the filter and tighten.
12. Refit the fuel temperature sensor into the clip in the surge tank
13. Clip the wiring loom back onto the fuel feed and return lines line, to prevent it becoming tangled with the fuel level sensor
14. Slide the surge tank forwards until the locking tab is released and then pull back to lock in place
15. Rotate the tank top plate whilst holding the feed hose until the hose is free from stress and lies correctly in-line with the fuel pump module as per the original system
16. Install the hose over the barbed spigot on the top plate and crimp the fuel line in place now that the alignment is correct

**From this point forward, please refit and reconnect as per the OE manual instructions**

Once complete, cycle the ignition several times to bleed air from the system or use the pump diagnostic software in ECUtek to check operation of the pumps.

#### **Filter life**

For kits using the standard OE pumps, the filter should be inspected for debris build up every 12 months, and changed every 3 years or 30,000 miles.

For kits using the ASNU 330E pumps or similar updated units, the filter should be inspected for debris build up every 12 months, and changed every 2 years or 20,000 miles due to the significantly increased flow of the updated pumps.

If used in competitive events or with race or mixed fuels, the element should be inspected every 4- 6 months and changed as required.

#### **Removal of the filter for maintenance**

1. Remove top plate in accordance with OE instructions and safety precautions stated earlier in the instructions
2. Undo the rear facing -6 AN fittings with the hoses attached from the filter
3. Loosen the retaining band clamp and withdraw over the end of the filter. Leave the clip in situ over the end of the -6 fittings so it can easily be located for re-fitment later.



4. The filter can now be moved backwards and removed from the tank. Undo the -8 fitting on the nose of the filter.
5. Insert a screwdriver between the shoulder of the twin -6 fittings and using a spanner on the -8 nose of the filter, unscrew the assembly.
6. Replace filter assembly and replace orings. Lubricate orings and before reassembly
7. Re-installation is the reverse of removal.