



Having a system for heating water is one thing, but making it useable in your van is a very different thing! Here is the Bobil guide to filling and emptying your water tank. Note that information here is for guidance only, please make up your own mind as to what is suitable for your van, and ensure all components for emptying your tank are rated for hot water. You can choose the upper temperature limit on the Bobil System, but we would suggest everything you buy should be rated for 60 degrees.

## The Bobil Way

Some hot water systems work on continuous replenishment, i.e. when some water is used it is replaced straight away by your pressurised system. This is not recommended with the Bobil system because Diesel heaters are not easy to simply turn on and off. Instead we recommend that you use the system as follows:

For showers, fill the tank to no more than 80% full, heat your water to your shower temperature, turn your heater off, fine tune the temperature by adding some cold water before using the tank to wash. This avoids the need to have a shower mixer valve, or mess around getting the temperature right when you are showering which wastes water. For washing up, just heat and use, and mix hot and cold in the bowl rather than the tank.

## Filling your tank

If you have a water pump in your van already, we would recommend a manual fill valve running into a tank connector which can be fitted on the top of the tank by drilling a hole in the top of the tank. These are both made by Hep20 and fit 15mm plastic pipe.

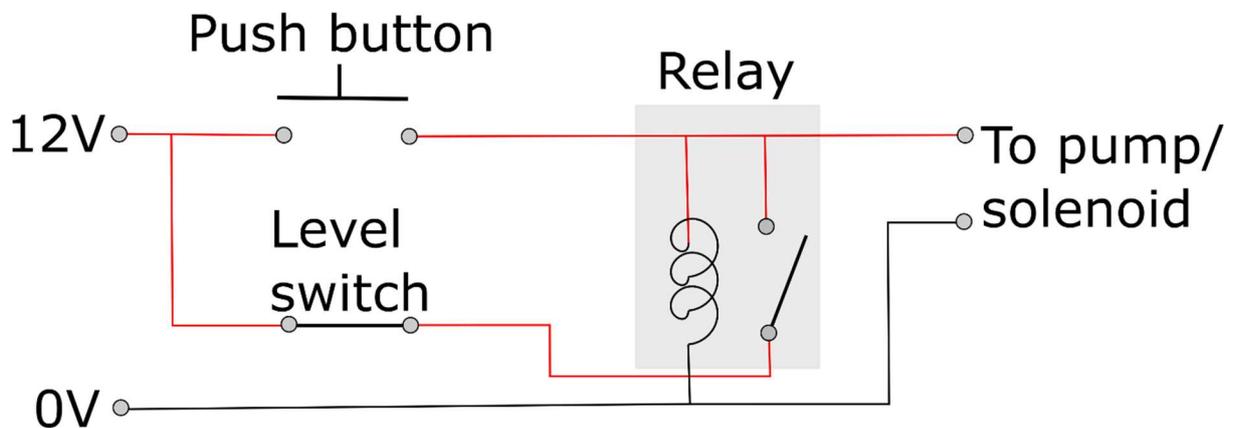


If you wanted an automatic 'push to fill' option, you could use a solenoid and a level detector with a relay.





The relay circuit looks complicated, but in reality is quite simple. Pressing the push button momentarily switches the relay, which shorts 12 volts through the relay contacts even when the button is released. The circuit will only release when the float on the level switch moves upwards, breaking the circuit and resetting the relay to its default position. Relays are very cheap, and 12v automotive relays also come with mounting brackets.



## Using the hot water

There are many ways of getting the water from your tank, here are just a few suggestions. Remember that if you are pumping the water over a long distance you may wish to use small diameter pipe which will reduce the amount of cold water that will have to be pumped out of the pipe before the hot water is pumped out.

### 1. Diaphragm pump.

This can be the most expensive option, but the most convenient. Diaphragm pumps work as self-priming pumps. The pump has an integral pressure switch which is used to switch the pump motor on and off. When the pressure is released (by opening a tap or turning on a shower) the pump starts pumping, when the tap is shut off the pressure increases until the switch deactivates the pump.

Shurflo are the biggest manufacturer of diaphragm pumps but there are plenty of other manufacturers available. You can connect this pump to the tank by either using one of the Hep20 tank connectors, or an extra tank connector available from the Bobil Vans webshop. The Seaflo pump pictured here is rated to 60 degrees.





## 2. Submersible pump

Companies such as Whale make pumps that can be dropped into the tank when you arrive at your destination. They are inexpensive and easy to use, but you will have to constantly take the lid on and off your tank when you travel around, or empty it before travelling.

## 3. DC water pump.

These pumps are capable of around 6-8 litres per minute and usually come with 1/2" BSP fittings. You can purchase 8mm barbed fittings to go onto the thread, but to stop leaks you should add a washer between the fitting and the thread (a shower washer will be perfect). To use this pump, you should purchase an extra tank connector from the webshop, and our silicone tube to supply your outlets. These pumps are operated with a switch and should not be run dry. They may also struggle to pump large vertical distances.



## 4. Gravity

One novel solution would be to mount your tank high in your van, use your regular cold water pump to pump the water up and use gravity to bring it back down again! You can have your heat exchangers mounted on the floor, just purchase extra lengths of silicone hose to connect the tank to the heat exchanger.

## 5. Circulation pump (can be purchased from the Bobil Vans webshop)

Note that these are cheap and cheerful and directly compatible with our silicone hose but are not recommended for higher flow rates or pressures. To use this pump, you should purchase an extra tank connector from the webshop, and our silicone tube to supply your taps. Like the pump above, this should be powered by a switch and should never run dry.



## Helpful links

Please note that these products are not endorsed by Bobil Vans, and we do not get paid when you click on these links. Please decide which system is right for you!



Ball valve <https://www.screwfix.com/p/hep2o-hx22-15ws-ball-valve-15mm/1375f>

Solenoid valve: <https://www.solenoid-valve.world/rpe-srl/15mm-solenoid-valve-nylon-normally-closed-water-appliance-1175bc>

Float switch <https://www.ebay.co.uk/itm/Stainless-Steel-Vertical-Water-Level-Sensor-Switch-Float-Switches-Range-of-Sizes/124054484204>

Automotive relay <https://www.ebay.co.uk/itm/12V-Automotive-Relay-40A-Metal-Bracket-SPDT/253029095720>

Push button <https://www.ebay.co.uk/p/9004374758?iid=253020113292>

Shurflo diaphragm pump: <https://www.ebay.co.uk/i/283819272773?chn=ps>

Seaflo diaphragm pump <https://www.ebay.co.uk/itm/Seaflo-12V-4-3-LPM-Water-System-Pump/274355180596>

Submersible pump <https://www.gooutdoors.co.uk/15898492/whale-standard-submersible-electric-galley-pump-15898492>

DC water pump: <https://www.ebay.co.uk/itm/Water-Pump-800L-H-12V-DC-Brushless-Small-Submersible-Motor-Pump-Garden-Pond-DW/193427169799?hash=item2d09286207:g:tQcAAOSw3BRemX03>

Barbed fittings <https://www.ebay.co.uk/itm/8mm-Hose-Barb-Tail-1-2-BSP-Female-Thread-Straight-Brass-Connector-Fitting-UK/302815063166?hash=item46812f2c7e:g:CLIAAOSwY~1Z-5pP>

Bobil Vans pump <https://www.bobilvans.co.uk/product-page/water-pump-plus-fittings>