

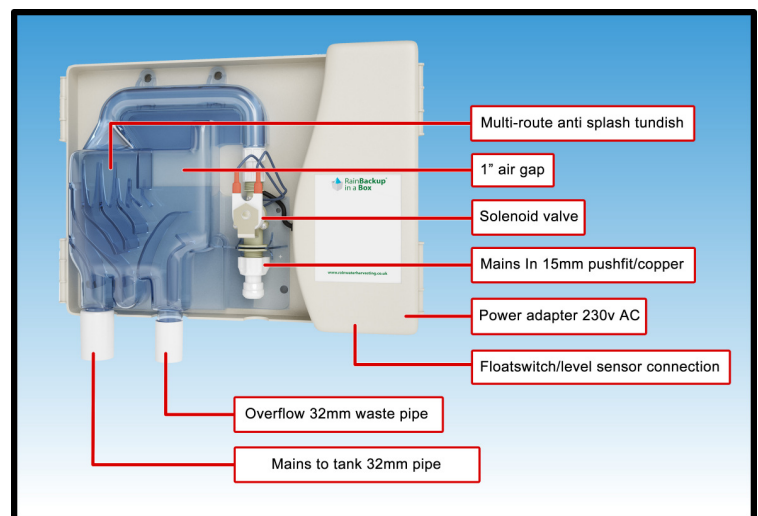


# RainBackup in a Box<sup>®</sup> SD

## Plug-and-play mains water backup for rainwater harvesting systems using shallow dig tanks. **RWH-BUB02**

This system guarantees water will be available to appliances in times of drought when the Rainwater tank is empty. The system uses a level sensor within the tank to open a solenoid valve within the control unit when water reaches a critical level. A PCB board within the control unit replaces water for a set amount of time (around 45 minutes) to replenish the water for approximately one days use.

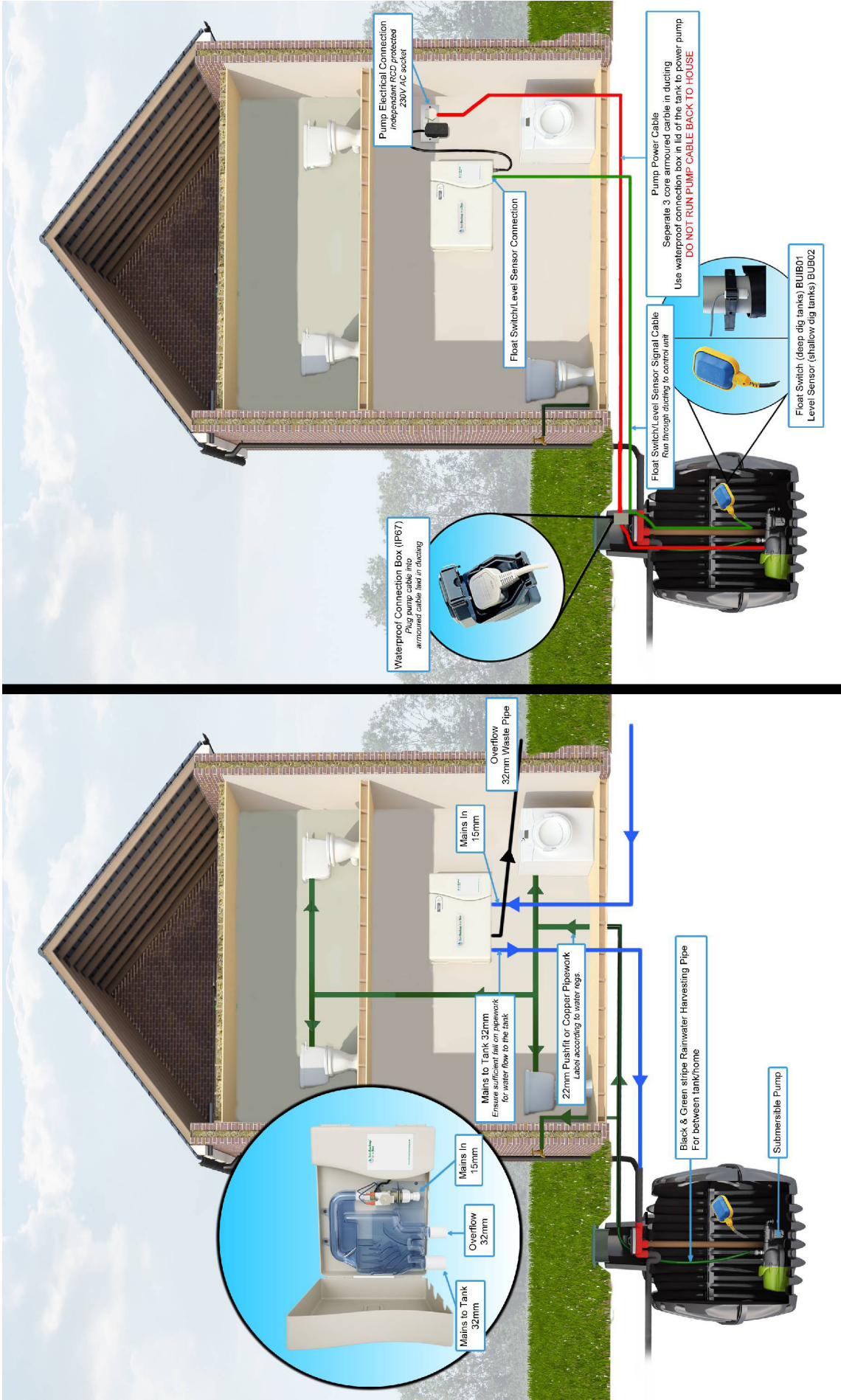
U.K. Building Regulations require that rainwater cannot possibly flow back into the mains water supply.



For this reason all mains backup devices must have an air gap where the mains water flows into the rainwater tank. The air gap in this system is an anti-splash tundish and overflow incorporated into one; the transparent blue moulded part. The level sensor is provided with 15 metres of cable and uses a push connection under the right hand panel.

The **Rain Backup in a Box<sup>®</sup>** is fitted inside the building where the occupiers can, when rainwater has run out, hear any mains water running from the solenoid valve. Wall mounting is with screws through holes in the back of the control unit.

**MAKE SURE THE FLOATSWITCH IS CONNECTED  
BEFORE THE POWER IS SWITCHED ON**

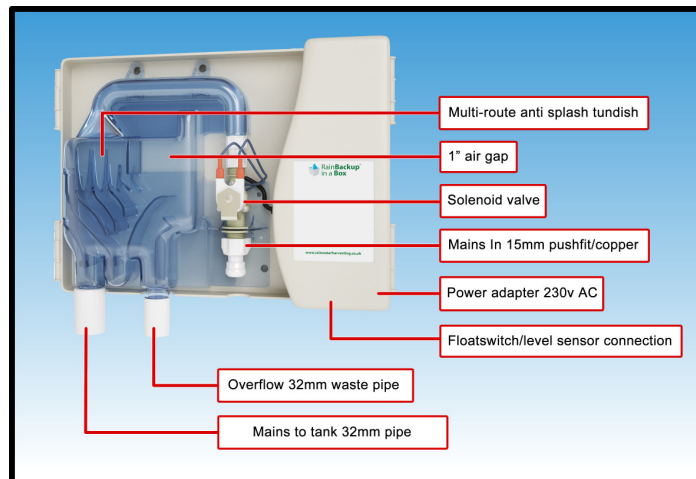


# Installation Instructions

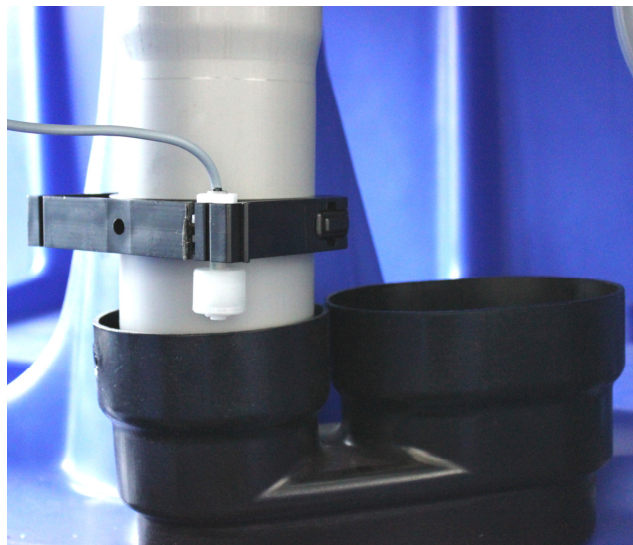
These instructions assume the exterior tank is fully fitted to the specification of the instructions provided.

Rainwater should be taken from roof space, through a filter into an underground storage tank and a pump to take the rainwater through a separate pipe network for toilets, washing machine and outdoor use.

- 1) Locate the best position for the **Rain Backup in a Box**<sup>®</sup> unit.
  - a. Inside the building where the occupiers can see and hear it, accessible for occasional checks.
  - b. Within a metre of a 220v AC wall socket into which to connect the plug.
  - c. Accessible to a mains water pipe.
  - d. Above the top of the underground storage tank so that the backup mains water flows by gravity.



- 2) Mount the unit securely to the wall and pipe the mains water to the inlet at the bottom right of the unit.
- 3) Pipe the outlet of the tundish using 32mm waste pipe from the bottom left of the unit to the rainwater storage tank. **The first 300mm must be a straight fall**, with the remaining pipe having sufficient fall for the water to run **under gravity** to the below ground tank. Any angle close to the unit risks the water backing up and flowing back out of the tundish. In most installations this outlet can be channelled to the closest possible rainwater downpipe from the roof. This backup water supply does not have to be piped separately to the storage tank.
- 4) The overflow pipe in the middle of the Rain Backup in a Box should flow to the exterior through a pipe which offers no constriction. It is designed to avoid flooding of the house if the pipe from the tundish to the underground tank is blocked up, and to provide a visual alert to the building occupants. Run the overflow to the exterior of the building to discharge over the ground or gully.
- 5) Channel the level sensor cable to the underground storage tank. Typically this is through a service pipe made of 4 inch (110 mm) plastic which also carries the mains electricity supply to the submerged pump (if so fitted), and the return pipe carrying rainwater from the storage tank back to the appliances in the house.



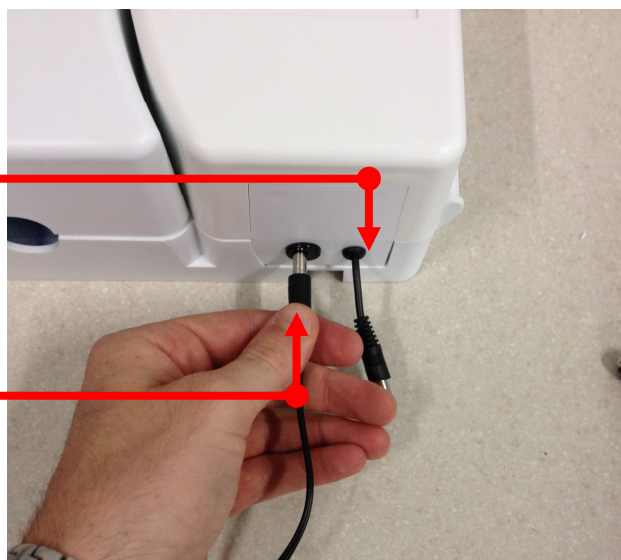
- 6) Attach the level sensor bracket to the 4" calmed inlet down pipe as shown. The bracket clips into place and the signal wire should face upwards towards the rood of the tank. NB the level sensor must be free from obstructions. **Make sure the bracket is not positioned too low so the sensor catches on the calmed inlet boot.** The bottom of the sensor must be 5-10cm above the highest point of the pump inlet.
- 7) **MAKE SURE THE FLOATSWITCH IS CONNECTED BEFORE THE POWER IS SWITCHED ON**  
Connect the unit's 12 volt DC adapter to a 220V AC mains socket. Power should be maintained to the unit at all times.
- 8) The installation is finished. Mains water will continue to flow into the storage tank until water reaches the level sensor. The system will then provide its first timed cycle.
- 9) Note that the rate of refill of the rainwater tank with mains water by this product is typically slower than the water flow out of the submersible pump. If you are watering the garden and the rainwater tank runs low it is possible that the pump will shut down due to absence of water, even if the backup mains is flowing. Some pumps need a mains electricity reset (turn switch off and then on).

## Wiring Instructions

The Backup in a Box SD uses two simple plug connectors.

Level sensor  
connection

12V Power  
Connection



Further installation guidance can be found online at: [www.rainwaterharvesting.co.uk](http://www.rainwaterharvesting.co.uk)

The **Rain Backup in a Box**<sup>®</sup> is reliant on a constant power supply, as such we recommend at least one WC on mains at install to prevent disruption in the event of power failure.

Please follow the instructions provided carefully. Not doing so could cause damage to the unit and invalidate the warranty. If you have questions or require assistance please contact one of our technical team:

Telephone: 01733 405 100

Email: [info@rainwaterharvesting.co.uk](mailto:info@rainwaterharvesting.co.uk)