



burkert
FLUID CONTROL SYSTEMS

Customer Testimonial – Rainharvesting Systems

Burkert Valves provide top-up duty on rainwater harvesting systems aimed at reducing drinking water consumption.

Burkert servo- assisted solenoid valves are providing the top-up facility on rainwater collection systems provided by Rainharvesting Systems, a UK specialist in the technology. Used in both commercial and domestic premises, the collection systems are helping to offset the ever- growing demand for drinking water, providing an alternative water source for facilities such as toilets, washing machines, garden irrigation systems and swimming pools. In addition, the large amounts of water they collect also helps to reduce the risk of flooding.

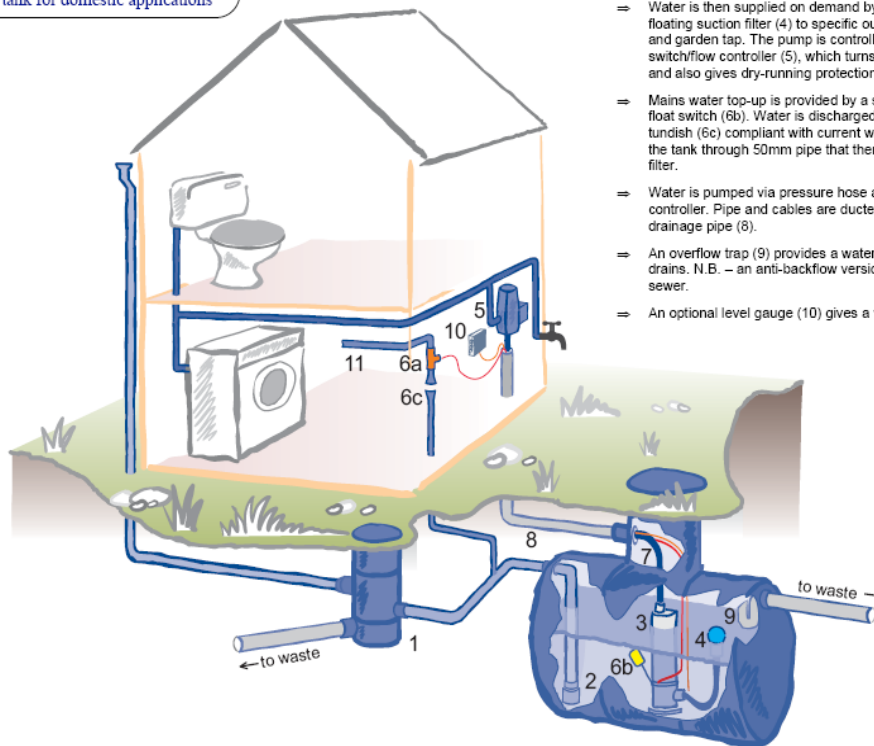
Although rainwater harvesting has traditionally been practised in arid and semi-arid areas, the effects of Global Warming mean that even UK householders need to reduce their water consumption substantially over the next few decades. This is because of the projected fall in the volume of water provided by UK rivers over the next 40- years. Rainwater harvesting has a significant role to play in achieving this reduction. Presently, up to 50% of the 160 litres of water used by each person per day in the UK need not be drinking quality water; so using rainwater from the roofs of buildings would greatly reduce consumption. In addition, collecting rainwater also helps to prevent flooding – especially in urban areas - by reducing the amount of storm water discharged to soakaways or storm drains.

UK company, Rainharvesting Systems, based in Stroud, has been designing rainwater collection systems since 1994. The company provides systems for domestic, as well as for schools, offices and industrial and agricultural buildings. The systems are fully automatic, and only activate when water is required. Moreover, in the event that there is insufficient rain water in the collection tank to meet demand, the system has the facility for mains water top-up. This is provided by the Mains Water Top-Up Unit, via a solenoid valve that operates to let mains water fill the tank to the minimum level required.

The solenoid valve is a Burkert 6213, 2/2 servo assisted unit, which can be used universally on fluids. Operated by a remote low-level float switch on the rainwater tank, the 6213 is IP65 rated, and is characterised by its switching from zero bar, its high flow rate, and its low noise, anti-water hammer design: the valve is actually designed to close slowly. Moreover, the optimised design of the valve means that it requires minimal servicing, keeping maintenance requirements to a minimum.

In addition to the 6213 top-up valve, Burkert is also offering its 8175 ultra sonic level sensor and 8035 flow meter as a package for easy integration with the control systems used for rainwater collection. Designed for liquid level or volume measurement in open or closed vessels, the 8175 level sensor provides the benefits of non contact, sensing over distances up to 10m. The unit can be easily integrated into almost any building management system, due to its 4–20 mA output signal.

The 8035 flow meter completes the package providing users with the ability to easily totalise the amount of water they are using. Available as compact version, or for control cabinet or remote mounting, the 8035 is a robust IP65- rated, inline unit which also has a 4-20mA output for connection to building management control systems.



- ⇒ Rainwater is collected from the roof drainage system by the underground Wisy WFF vortex filter (1). This filters out the debris from the water and diverts about 95% of it into the storage tank. The remaining water goes to soakaway or storm drain in the usual manner, as does the excess water from the tank. As water enters the tank it passes through a calmed inlet (2) which calms the flow of water and prevents disturbance of the float switch and any sediments.
- ⇒ Water is then supplied on demand by the submersible pump (3) through a floating suction filter (4) to specific outlets, usually WCs, washing machine and garden tap. The pump is controlled by a combined pressure switch/flow controller (5), which turns the pump on and off when required and also gives dry-running protection to the pump if it should be necessary.
- ⇒ Mains water top-up is provided by a solenoid valve (6a) controlled by a float switch (6b). Water is discharged to the tank via a type AA air gap tundish (6c) compliant with current water regulations. This gravity-feeds to the tank through 50mm pipe that then connects to the outlet pipe from the filter.
- ⇒ Water is pumped via pressure hose and 32mm MDPE (7) up to the flow controller. Pipe and cables are ducted to the house through a 110mm drainage pipe (8).
- ⇒ An overflow trap (9) provides a water seal against any foul odours from drains. N.B. – an anti-backflow version is available when connecting to sewer.
- ⇒ An optional level gauge (10) gives a visual indication of tank water level.

Burkert would like to thank Rainharvesting Systems in Stroud for their kind permission to develop and reproduce this customer testimonial.

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