Quotation for the supply of Rainwater Harvesting Equipment

Client :

Tom Glynn
HDC Drainage

Site Reference :

GRO7 220315 - 7 The Grove

Prepared by:

Ian Woodcock

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01733 405104 / 07736 45 46 45

Our reference : IMW231933

Date of proposal : 23/03/2022

Your Proposal

Thank you for your email containing additional information and as requested please find the following information regarding our proposed system.

SHALLOW DIG F-LINE TANK		
	3000	**5000**
Weight Kg	170	250
Length	2400	2960
Width	2400	2220
Overall Height	1015 - 1415	1350 - 1750
Ground to Invert VS60 (Pedestrian 635mm Shaft)	320 - 720	345 - 745
Invert to Outlet	162	162
EXCAVATION		
Length	2800	3360
Width	2800	2620
Overall height VS60	1115 - 1515	1450 - 1850

Overall height allows for 100mm compacted aggregate

The overall height difference above is because up to 400 mm can be cut off of the 635 mm shaft on site so as to achieve your exact invert level.

Rainwater Harvesting Limited is a private family owned company, our strong service ethos has been built on many years of experience and this is reflected in our ability to offer both simple to install rainwater harvesting systems and mix and match components to provide bespoke solutions reflecting clients needs. At our 100,000sq ft warehouse in Peterborough we hold over 3000 stock items, we are the largest stockholder of the Shallow Dig Rewatec tanks in the UK and we regularly despatch to site complete rainwater harvesting systems within 5-7 days of order.

Generally a rainwater harvesting system is simple in concept however the differences in design and performance vary greatly from supplier to supplier, the fact that we manufacture as well as supply enables us to help you specify the right system for your project at an aggressive price, we also provide full technical support on all our products.

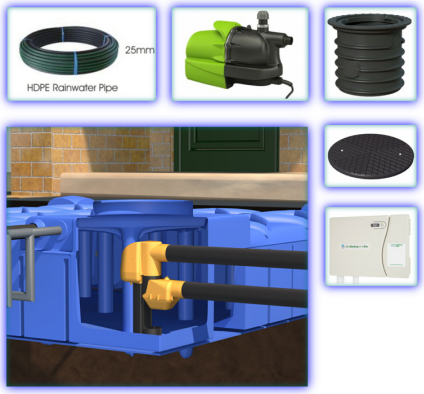
We would welcome the opportunity of supplying your rainwater harvesting system and I can easily be contacted either by phone or email as shown on the previous page

Components and Prices – Supply Only

Option 1

Product Code **: RWH-3099FL-DUK2.**

3000 Litre Shallow Dig Direct Feed System



Components

Product Code	Description	Qty
RWFT3000	F-LINE 3000L TANK	1
RWDS0062	F-LINE TANK 635mm EXTENSION SHAFT - VS60	1
RWDS0066	F-LINE TANK WALK ON LID	1
RWH-RV01	RAINVANTAGE FILTER KIT INC SIPHON & OVERFLOW	1
RWH-HYD04	HYDROFORCE SERIES 4 PUMP / INC STRAINER	1
RWH-HDPE25/25	25mm HDPE RAINWATER PIPE - 25m ROLL	1
RWH-BUB03	RAIN BACKUP IN A BOX / SD	1
RWH-PKFLINE-STD	FLINE INSTALLATION PACK STANDARD / INC LABELS & 90° ELBOW	1

Price : £2,200.00 (£2,640.00 Inc. VAT)

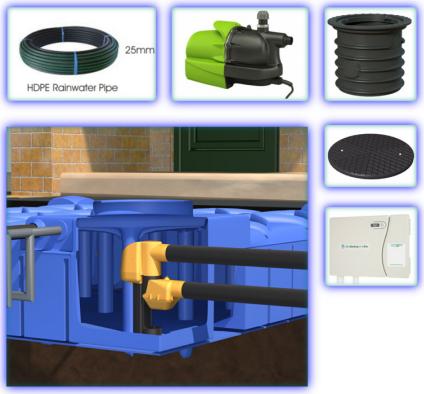
UK delivery is included in the price (Highlands and islands extra)

Components and Prices – Supply Only

Option 2

Product Code **: RWH-5099FL-DUK2.**

5000 Litre Shallow Dig Direct Feed System



Components

Product Code	Description	Qty
RWFT5000	F-LINE 5000L TANK	1
RWDS0062	F-LINE TANK 635mm EXTENSION SHAFT - VS60	1
RWDS0066	F-LINE TANK WALK ON LID	1
RWH-RV01	RAINVANTAGE FILTER KIT INC SIPHON & OVERFLOW	1
RWH-HYD04	HYDROFORCE SERIES 4 PUMP / INC STRAINER	1
RWH-HDPE25/25	25mm HDPE RAINWATER PIPE - 25m ROLL	1
RWH-BUB03	RAIN BACKUP IN A BOX / SD	1
RWH-PKFLINE-STD	FLINE INSTALLATION PACK STANDARD / INC LABELS & 90° ELBOW	1

Price : £2,575.00 (£3,090.00 Inc. VAT)

UK delivery is included in the price (Highlands and islands extra)

Tank size calculator: your required size

The system and tank size is designed, if possible, to reduce by at least 50% the amount of mains water used in each site (BREEAM norms). Toilet flushing will be the biggest use of water; the tank size calculations below show that all the toilet flushing needs can be handled by the available rainwater. Drought protection period is set at 21 days, ideally. The results can be checked against the "5% rule" of the Code for Sustainable Homes / BS 8515.

1) We attach the Tank Size calculator completed with your figures showing

a roof area of	**70**	square metres,
annual rainfall in your area of	**64**	centimetres
and, therefore, total annual collectable rain of	**35840**	litres

2) We have then calculated your typical daily usage of rain water indoors and in the garden

The number of people in the building is taken as	**4**	
A washing machine cycle needs 50 litres and we assume	**1**	cycles per day
Toilets require 4.42 litres per (low) flush, and we assumes	**10**	flushes per day
We assume some water needed in the garden etc. of	**0**	litres per day
This makes a total daily use of	**100**	litres per day
which is the same as	**36500**	litres per year

Are you able to collect sufficient water from the roof to supply your annual needs? **YES**

3) We have assumed you would require drought protection of **21** days.

The optimal quantity of stored water is **2100** litres

The tank size required – either in the bestselling Carat range **USE 3000 LITRE Shallow Dig TANK**

Based on the above a 3000L tank is the right size, however, a 5000L tank will offer greater drought protection during the summer months and as the water is stored below ground it will not stagnate or 'go off' .

Mains backup and rainwater management

Direct feed with simple, 12v automatic float switch & solenoid valve for mains water backup

Most often used on a direct feed system, the automatic electrically-actuated solenoid valve (or tap) admits some mains water into the rainwater storage tank as a simple means of maintaining water flow to toilets and washing machine fed by a rainwater harvesting system. This method is sometimes referred to as a trickle-feed mains backup.

a) Filtered rainwater flows as normal to the tank

b) The home is plumbed with a separate pipe network for toilets and washing machine.

c) When there is rainwater in the tank the pump supplies rain water to the toilets and washing machine. The principle is the same whether the pump is indoors or submerged in the tank.

d) The pump is a pressure sensitive type or fitted with a pressure-sensitive switch which turns off when water is not being used in the house.

e) When the tank is nearly empty a float switch turns ON a mains-powered solenoid valve which allows some mains water to flow into the rainwater tank.

f) The provision of a “Air Gap” is a regulation requirement. This i) provides a visible warning of water flow if the valve sticks open and ii) prevents any possibility of rain water flowing into the mains (drinking) water. After a few moments the floating switch turns the solenoid valve OFF.

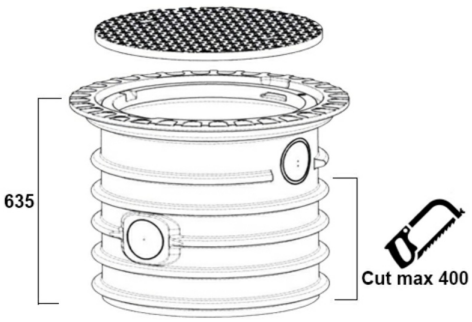
g) Although this simple mains backup can be criticised by some for admitting mains water back into the rainwater tank, it should be pointed out that the tank remains largely empty and can receive new rain water from a downpour at any time.

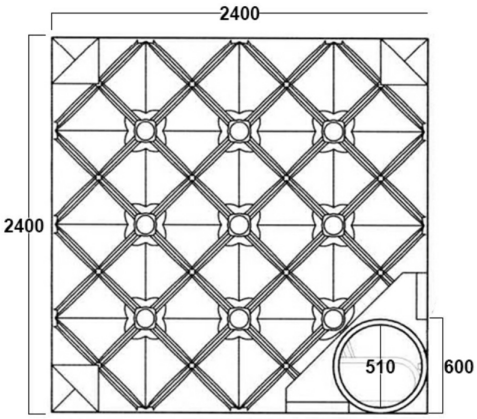
h) This is sometimes referred to as “trickle feed” because the tank does not get filled up with water; the level is simply lifted to the level (about 10 cms) where the inlet of the pump can draw water when next called upon.

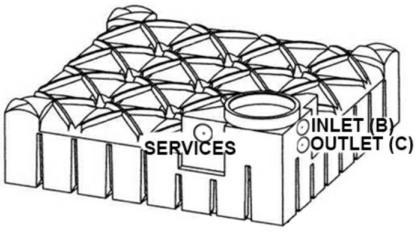
i) There is no risk of rainwater being drawn into the mains water supply so there is no risk of breaching building regulations in this respect.

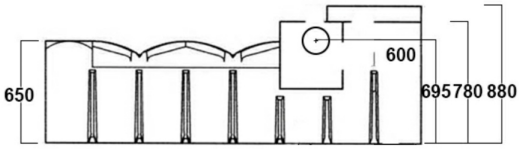
j) To ease the installation of a variety of components and rather complex wiring, RainWaterHarvesting.co.uk introduced in early 2009 the Rain Backup in a Box® which replaced the higgle piggle of components with a single wall mounted unit, one 12v electric plug to a wall socket, mains water input and a pipe to the underground storage tank. This is supplied as a default with “standard” DUK-2 kits.

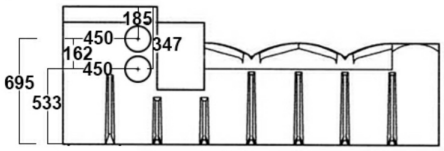
3000L F-Line

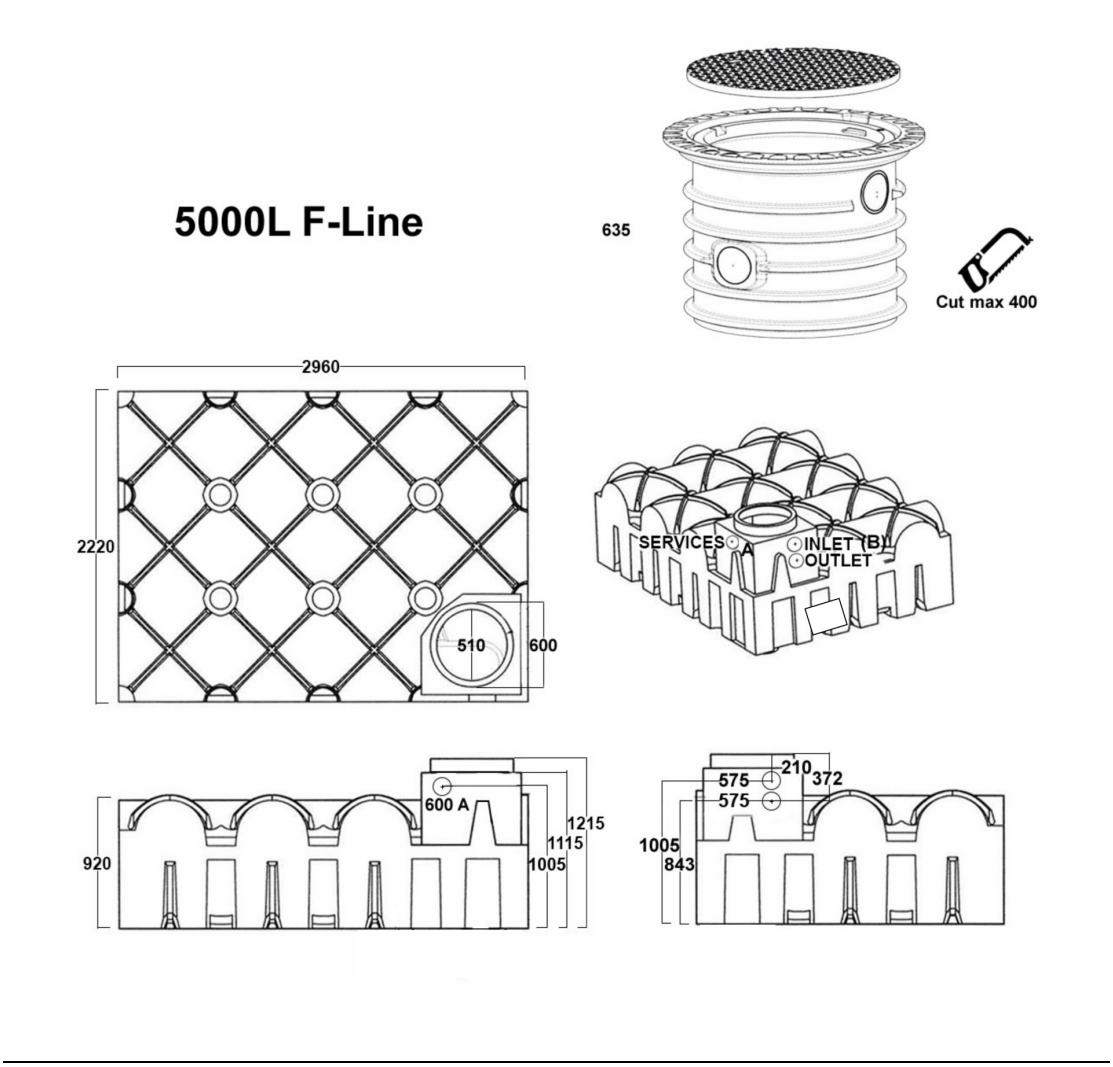

635
Cut max 400


2400
2400
510
600


SERVICES
INLET (B)
OUTLET (C)


650
600
695
780
880


185
450
162
450
347
695
533

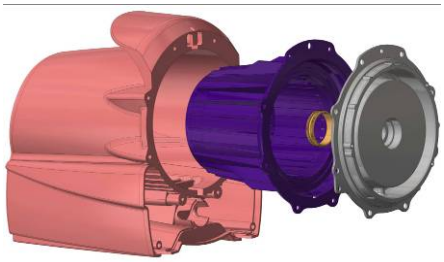

5000L F-Line
635
Cut max 400
2960
2220
510
600
SERVICES
A
INLET (B)
OUTLET
600 A
1215
1115
1005
920
210
575
575
372
1005
843

The **Series 4** water pump from HydroForce Pumps Ltd.

The Series 4 pump has been engineered by HydroForce Pumps Ltd in Peterborough to respond to the demand for the highest quality pump for use underwater in rainwater harvesting tanks. Using the most rugged components it has been exhaustively tested for trouble-free running. The pump features a self-controlling pressure switch and dry run protection. It is suitable for total immersion in rainwater or it can be externally connected to the tank above ground. The Series 4 will deliver up to 3.5 bar (household pressure is around 2.5-4.0 bar). If connected to a hose or tap, the pump will automatically start to pump water when the tap or hose is turned on. The pump delivers over 2500 litres per hour using a 1" connector and runs at 230v AC delivered by a 5 metre cable.

Specifications

- Submersible: for underwater use in a rainwater tank, or can be used above ground
- Extended two year guarantee
- Nominal pump pressure at outlet 3.5 bar
- Max head 35 metres
- Pressure-sensitive (demand) pump: turns itself off until there is demand for water
- Dry-run Protection: when no water is detected for 8 seconds, the pump is turned off in order to protect the motor and pump from burning out. Automatic reset after a period of 30 minutes.
- Radial flow centrifugal roto-dynamic pump with no reciprocating parts
- **New:** Alloy bulkhead, pressure release gap and twin chamber design prevents ingress of water to motor, electrical components and to bearing oil.
- **New:** Double bearing seal prevents egress of bearing oil.
- **New:** Alloy bulkhead dissipates motor heat to water in the second chamber.
- **New:** Logic processors in Series 4 printed circuit board prevent other pump anomalies and permit factory programming of reset timings.

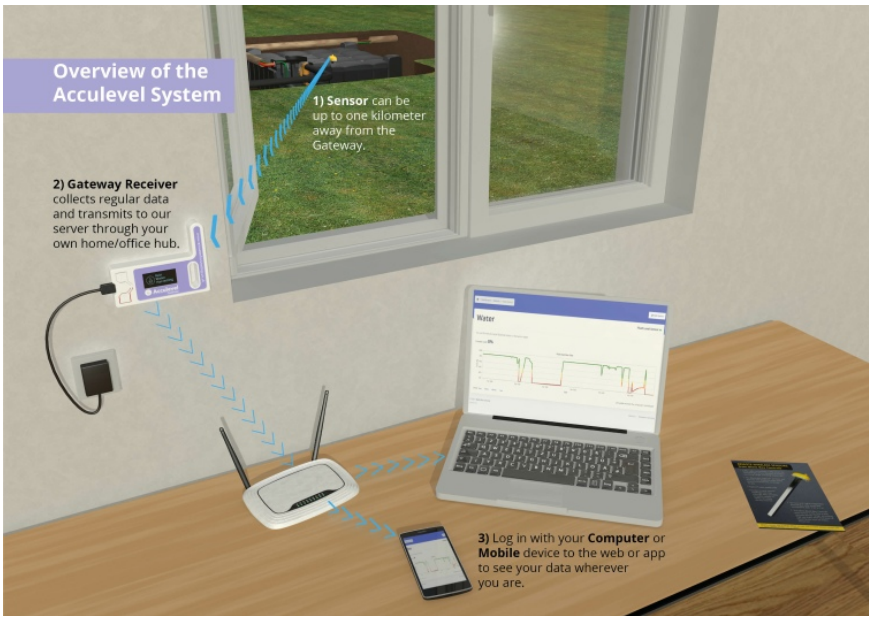


- **New:** Each pump is tested before leaving our factory. Factory measurements are on record for each individual pump. No user-serviceable parts
- Electricity consumption 800 watts at 230 Volts AC 50 Hz (requires 10 or 13 amp fuse and RCD mains socket). Connection cable 10m H07RN-F.
- Dimensions L 565 W 185 H 260 mm, weight 12 kg
- Max suction 8 metres deep, preferable operating regime 4 metres deep
- Inlet port to the non-removable cartridge filter 1 inch (25mm) female BSP
- Outlet port 1 inch (25mm) female BSP provided with push-fit connector for 1 inch (25mm) MDPE pipe.
- Supplied with an inline filter, 1" intake strainer and 1" outlet connection.

Rain Acculevel
Rainwater Level Sensor

Add to your system for
£149.00 ex VAT

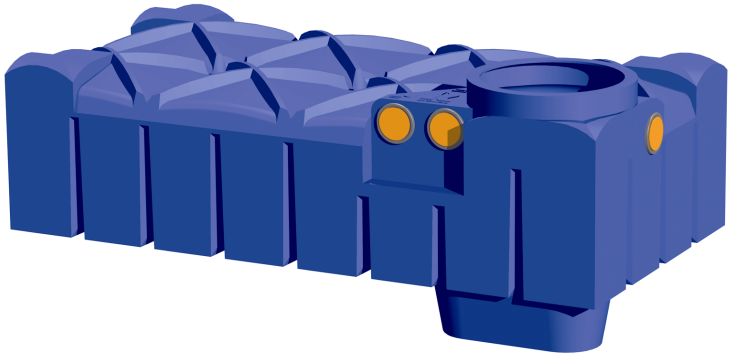
Wireless Tank Level Sensor for the F-Line Tank



The Rain Acculevel will accurately measure the water level in your rainwater tank giving readings that you can view on a PC or smart device. Using the latest wireless technology it works on tanks below or above ground and over long distances.
The level is measured every 15 minutes enabling you to build up a history of your water use.

Once placed in your water tank the Rain Acculevel sends signals to a small receiver called a Gateway. The gateway sends the data via your home hub to your own on-line account at tanklevels.co.uk
The Acculevel is powered by a long life battery (up to five years) and the Gateway via USB port or plug.
The Acculevel will work anywhere as long as the Gateway is within signal distance of your a home hub (or router).

F-Line Flat Tank shallow dig underground tank



Why buy this tank?

- The F-Line is a high quality, rotationally moulded, one piece rainwater tank that can be installed without the need for concrete, thereby minimising installation costs and supported by our long term 25 year tank guarantee.
- Minimal installation depth
- Easy and quick to install
- Small excavation pit and little earth excavation preserves your garden
- Ideal for installation in new or existing properties
- Can be installed in ground water up to tank shoulder
- Easy to install

The F-line flat tank can be installed into much higher water tables than a standard round tank. If you don't know what your water table will be like in the winter, you're safer to install a flat tank. The F-Line tanks are flat and the installation depth is up to 60% less than other rainwater tanks. The excavation can be up to 70% less, meaning little earth excavation, easy handling and less cost for you! The small excavation pit is easily filled in and your garden will look just like it did before.