

SOLAR AND BATTERY WATER PUMPS

Water supply solution from Hotline



Hotline
horizont group

Introduction

There is an increasing requirement for land owners and managers to keep livestock away from watercourses. The European Water Framework Directive (WFD) has been establishing a framework for the protection of inland waters, transitional waters (estuaries), coastal waters and groundwater. This is covered in the UK by The Water Environment Regulations 2003 for England and Wales; the Water Environment and Water Services (Scotland) Act 2003 and The Water Environment Regulations 2003 for Northern Ireland.

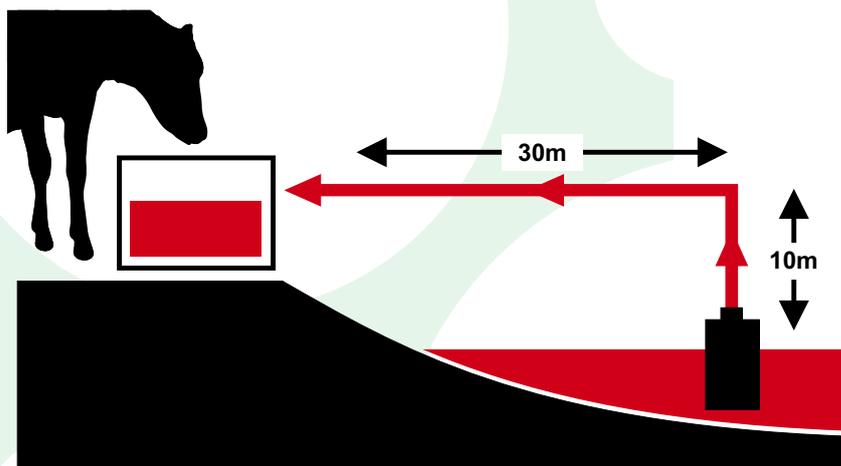
Diffuse water pollution from agriculture accounts for 61% of nitrogen entering rivers, up to 40% of phosphorus and 75% of sediment. Fencing off watercourses protects from river bank erosion and relieves poaching so contributes greatly to cleaner water and promotes growth of healthy native flora and fauna. We can all agree that this is great for our environment, but for land owners who rely on watercourses to water their livestock, it can be very problematic. Our battery and solar water pumps have been developed in response to this problem.

We have been working with livestock farmers, Natural England and the Catchment Sensitive Farming initiative (CSF) to provide an easy, reliable and self sufficient way of providing water to livestock when watercourses are fenced off. We have been manufacturing electric energisers for over 40 years and so we are accustomed to making and supplying products which need to operate out in the elements, in remote areas and from independent power sources. Like our energisers, the system needed to be reliable, easily transportable and capable of catering for large numbers of different types of animals.

The Pump kits

The solar and battery kits easily integrate with all standard water troughs so there is no need to train animals as with traditional pasture pumps which are also limited in the number of animals they can supply. The solar kit has supplied groups of 90 cattle with all their water requirements, without any need to change or charge batteries. Although, the kit is marginally more expensive than a pasture pump, it is far more flexible in application and compared with the cost of mains water, they are very economical.

The water pump kits are simple 12v pumping systems based upon proven water-pumping technology which allows the transference of large volumes of water. The trough is fitted with float switch which turns on the submersible pump as the water level drops. There is no need for balancing tanks or header tanks, just a standard water trough. The pump is connected to 30m of hose which feeds back from the water source to the trough. The kit is powered by 12v battery* which sits in a weatherproof control box. The solar option includes a sturdy 5' steel stand and a high efficiency 30w solar panel.



*Battery not included. We recommend a minimum of 75ah.





Capacity

Water requirements vary greatly for livestock and are influenced by temperature, humidity and feed source. Always make allowances for this. The majority of grazing animals are herd animals and will want to drink socially together so trough size should allow for this. Increasing head will reduce pump outputs. At 10m head the pump will run at approximately 65% of peak output. Increasing the distance the pump works over will also increase head and therefore reduce pump output. Solar recharge times vary with weather conditions. The below recommendations allows for 4 hrs recharge time daily and so outputs in summer are likely to be much higher. If not using solar option the periods between battery charges will depend on the level of usage.

Head (m)	0	1	2	3	4	5	10
Output litres per hour	320	305	300	285	275	265	210

Approximate daily requirements. Supply based on 4hr run time per day @ 2m of head

	Cattle<200kg	Cattle>400kg	Dry cows	Milking Beef	Milking Dairy	Horses	Sheep
Approx. Water Requirement	10-35L	30-50L	30-50L	70-80L	80-200L	30-50L	2-5L
Animal capacity per pump	77	54	54	33	18	54	540

	20kg pigs	50kg pigs	90kg pigs	Pigs dry sow	pig milking
Approx. Water Requirement	1L	5L	9L	9-18L	18-36L
Animal capacity per pump	2700	540	300	150	75



Contents

Control box and battery compartment

- Weather proof polypropylene
- Battery life monitor
- Holds up to 110amp hour (12v) batteries



Submersible pump.

- With 30m cable



30w solar panel and stand

- Mono-crystalline 30w solar panel with 5m lead
- Powder coated, heavy duty stand (1.65m high)



30m hose

- 30m 1/2" dia. re-inforced hose



Float switch

- With 5m lead



Benefits of fencing off watercourses

- River bank vegetation is re-established, helping to reduce erosion.
- Establishes a buffer strip between rivers and fields that intercepts soil run off.
- Reducing soil run-off helps to keep important nutrients on the land, often reducing the need and cost of using fertiliser.
- Keeping livestock out of rivers may help reduce the spread of waterborne disease.
- Ensures clean fishing waters by separating livestock from watercourses.
- Failing to address soil erosion can affect single farm payments. Focus on water quality will increase under the new basic payment scheme.
- Provision of water supplies for livestock fenced out of watercourses can attract grant funding from a number of bodies in specific catchment areas.

Useful Links

<http://www.wfduk.org/>

<http://academy.fwi.co.uk/Courses/Arable/Water-Protection>

<http://www.legislation.gov.uk/uksi/2003/3242/introduction/made>

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Solar kit - Part no. SPK30
Battery only kit - Part no. BPK30

