

# BATTERY AND SOLAR PUMP SPECIFICATION SHEET

There is an increasing requirement for landowners 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 against riverbank erosion and relieves poaching, contributes greatly to cleaner water and promotes the growth of healthy native flora and fauna. We can all agree that this is great for our environment, but for landowners who rely on watercourses to water their livestock, it can be problematic. Our battery and solar water pumps have been developed in response to this problem.

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 supplying the agricultural sector for over 40 Years and so we are accustomed to supplying products which need to operate out in the worst of the elements, from independent power sources. This system is reliable, easy to transport and capable of catering for large numbers of different types of animal.

## The Pump Kits

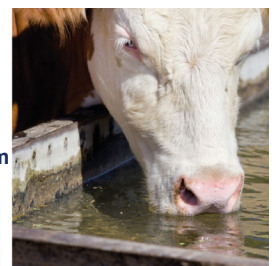
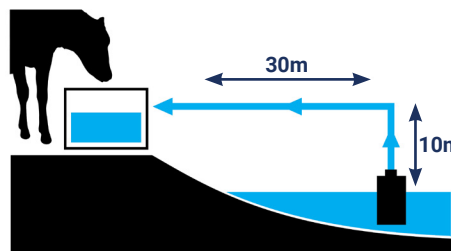
The solar and battery kits easily integrate with all standard water troughs so there is no need to train animals as with traditional pasture pumps which are also limited in the number of animals they can supply. The solar kit has supplied groups of 90 cattle with all their water requirements, without 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 in comparison to the cost of mains water, they are very economical.

The water pump kits are simple 12v systems based on proven water-pumping technology which allows the transference of large volumes of water. The trough is fitted with a 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 a 12v battery\* which sits in a weatherproof control box. The basic solar option includes a high efficiency 60w solar panel.\*\* The system is compatible with a solar array of up to 300w

**Example: for 4 hours run time per day we would recommend 3 x 60w solar panels**

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

\*\*Depending on daily run time and time of year, a 60w panel alone may not be sufficient to achieve complete self-sufficiency. Additional Panels may be required.



## Contents

### Control box and battery compartment

- Weather proof polypropylene
- Battery life monitor
- Holds up to 86amp hour (12v) batteries

### 60w solar panel and stand

- Mono-crystalline 60w solar panel with lead
- Adjustable mounting frame

### 30m hose

- 30m 1/2" dia, reinforced hose

### Submersible pump

- With 30m cable



## Capacity

Water requirements vary greatly for livestock and are influenced by temperature, humidity and feed source. Always make allowances for this. Most grazing livestock are herd animals and will want to drink 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 that the pump works over will also increase head and therefore reduce pump output. Solar recharge times vary with weather conditions. The recommendations below allow for 4 hours recharge time daily and so outputs in summer are likely to be much higher. If not using the solar option the periods between battery charges will depend on the level of usage.

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

	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	up to 120	up to 40	up to 40	up to 17	up to 15	up to 40	600

	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	up to 1200	up to 240	up to 133	up to 130	66