



Water Control 



Archimedes Screw Pumps

Installation, maintenance, repair and refurbishment

Design, manufacturing and R&D

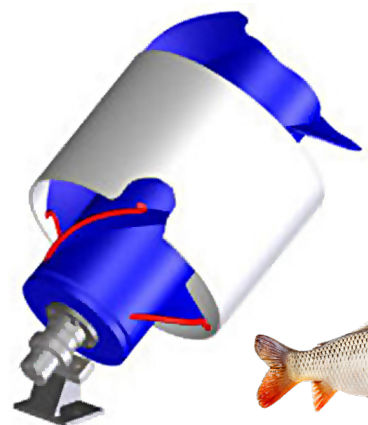


- An engineering team assesses the requirements of each application and designs the best solution possible.
- Individual screw pumps can be up to 25 metres long.
- A screw pump can be designed to lift up to 12 m in height with a maximum flow of 12,000 l/s.

Durable & trouble free

Archimedes screw pumps operate at a relatively low rotational speed, which results in very low levels of wear and tear on the mechanical components and ensures decades of trouble free operation. The screw is able to cope with large debris, resulting in a system that operates with only a low level of maintenance.

There is a wide range of applications that can benefit from a screw pump, including those with a high grit content or acidic fluid conditions. It is therefore crucial to ensure that the correct materials and coatings are selected in order to guarantee long lasting reliability for years to come.





APPLICATIONS

Landustrie screw pumps are currently operating, from the cleanest swimming water to debris-laden storm water.

Examples are:

- Inlet pumping stations in waste water treatment plants
- Intermediate pumping stations in waste water treatment plants
- Return sludge pumping stations
- Irrigation projects
- Drainage projects
- Reclamation of wetlands
- Storm water applications
- Industrial processes
- Wild water rides in fun parks

Environmentally friendly

All Landustrie screw pumps have a high level of fish friendliness as standard, based on the low rotational speed and large openings between the blades that have been proven by several scientific tests in which Landustrie has participated.

In addition, Landustrie has developed a special 'wristband' around the outside diameter of the

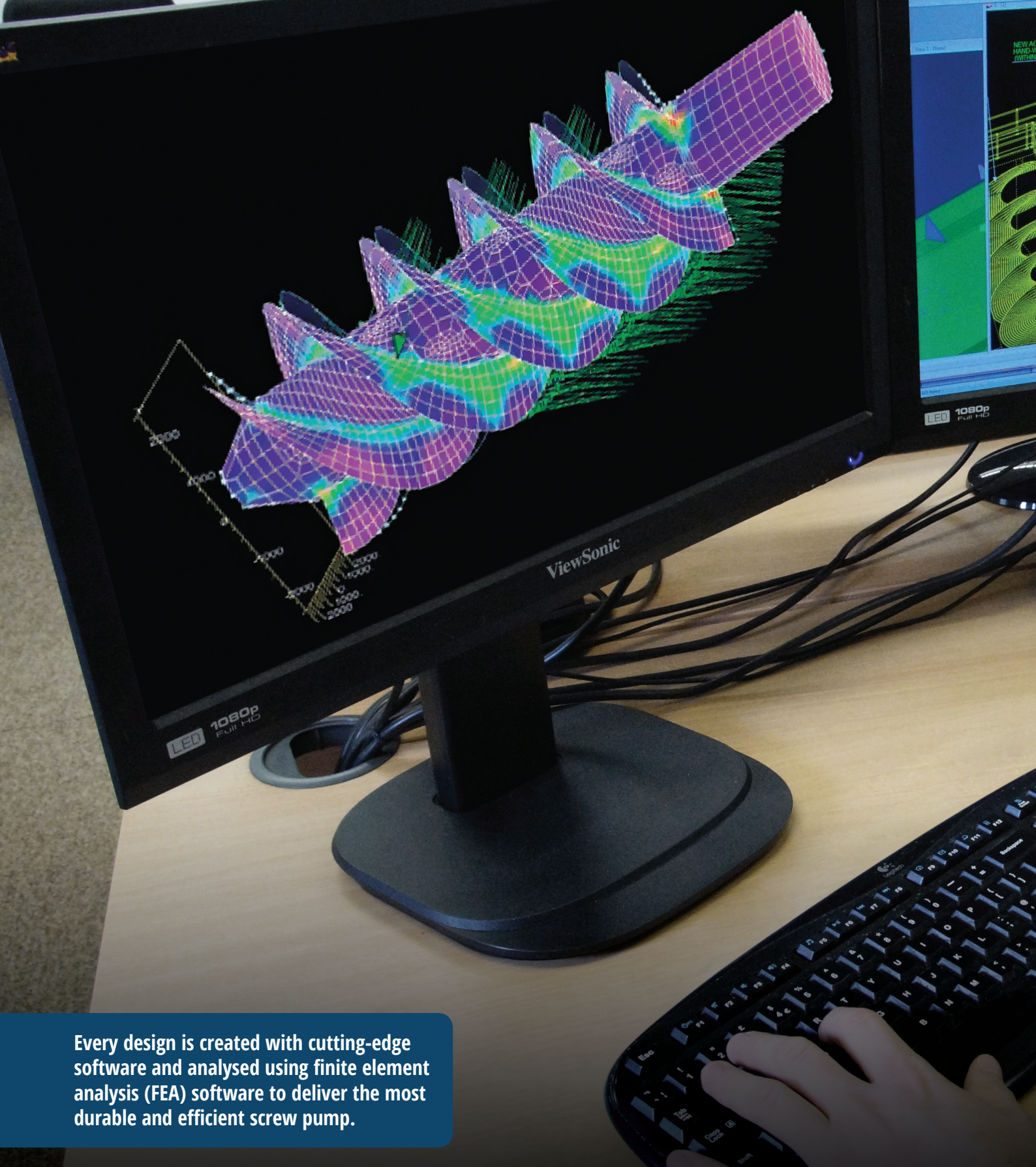


screw that rotates in the trough with minimal clearance. This unique design prevents damage to fish at the inlet where the blade and trough interfaces meet. .

A thicker, round edge at the beginning of the blades causes pressure waves that are recognised by the fish, leading them away

from the blades. The result is the most fish-friendly screw pump available that allows fish migration where previously it was impossible.



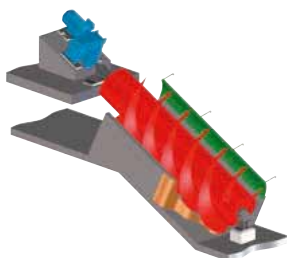


Every design is created with cutting-edge software and analysed using finite element analysis (FEA) software to deliver the most durable and efficient screw pump.

Design Options

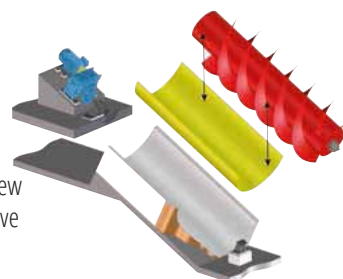
Concrete trough

The trough shape is made of concrete. The screw is used to create the exact clearance, by using a special mortar and rotating at low speed. The drive unit is attached to a concrete foundation.



Casting mould

A Landustrie casting mould (yellow) is used for concreting the trough. After casting, the mould is removed and the screw is placed into position. The drive unit is attached to a concrete foundation.



Bearings, installation and upgrade options



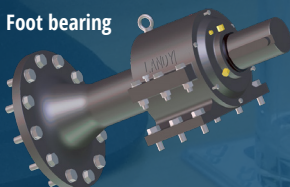
Lower Bearing

At the lower end of the screw, a bearing is installed to keep the screw in place and to absorb the radial forces. Landustrie has developed three types of lower bearings to suit different applications:

The ECO-friendly bearing is sealed for life and requires no annual maintenance. The design of the ECO-friendly bearing allows for 3-dimensional self-alignment, which also absorbs the expansion and contraction of the screw in changing temperatures. With no grease pump or lubrication lines, it is quicker and easier to install and it can be retro-fitted to existing installations to reduce maintenance costs.

Alternatively, there are two grease-type bearings: conventional and long life. These more conventional bearings have a similar installation time and operational costs. The long life bearing offers a longer operational lifetime due to its special 3-dimensional self-alignment.

Foot bearing



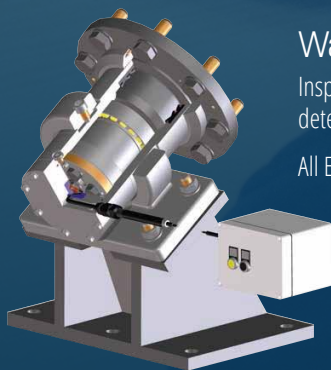
Upper Bearing

The standard upper bearing is a foot-mounted bearing, which is specially-designed by Landustrie and is mounted on a foundation adjacent to the drive unit. If a watertight connection between the drive unit and the screw is not required, a foot-mounted bearing is the one to choose.

The wall-mounted bearing is a unique bearing fully designed, tested and patented by Landustrie. The bearing is mounted to the wall with special anchors instead of to the floor. Using a special seal on the outside and an extra concrete closure on the inside, the connection between the drive unit and the screw can be made completely gas and airtight. This is a clear advantage when hazardous gases may be present with the water that is being pumped.



Wall bearing



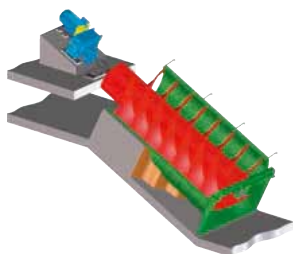
Water-in-oil detection

Inspection of the lower bearing can be challenging so Landustrie invented the water-in-oil detection alarm, which can be installed as part of a new project or on existing installations.

All Eco-friendly lower bearings can be fitted with the water in-oil detection system.

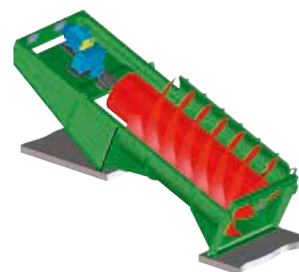
Steel trough suitable for grouting

The steel trough is fastened to the structure and then cast with concrete. The drive unit is attached to a concrete foundation.



Compact trough

This trough is fully self supporting, including the drive unit. At both ends there will be a small foundation where the trough will be attached.



Service for any screw pump

ECS offers both maintenance and repair solutions for any screw pump installation. Our experienced service department can handle both routine maintenance as well as urgent repairs when or wherever they may occur.

In addition, replacement parts are usually available from stock and can be quickly dispatched to site for quick maintenance, ensuring that any down-time for maintenance is minimised.



Our Archimedes screw pumps are installed by dedicated ECS service teams. The team can also carry out re-screeding troughs, service work and general maintenance of screw pumps.

Additional services

More than Archimedes Screw Pumps

ECS Engineering Services has over 20 years experience in delivering high quality, reliable and cost effective engineering solutions, specialising in bespoke design and construction of water, energy and environmental processing and management projects.

Metal Fabrication

Using our large capacity in-house fabrication services, which have CE Marking approval to EXC4 in combination with our well equipped and highly skilled engineers we can complete structural steelwork, bespoke fabrication work and access metalwork to the highest standards.

Water Control

ECS has the expertise and capacity to design and install a wide range of water control engineering products and projects from Archimedes screw pumps to high quality weirs, flap valves, sluices, water barriers and penstocks.



Refurbishment

ECS can restore the quality, performance and reliability of any existing screw pump installation. These projects offer improved cost and energy efficiency compared to the original installation

After sales

The extensive knowledge of the manufacturing process and decades of experience of operating and maintaining Archimedes screw pumps, makes ECS the clear choice to provide full after sales support for any screw pump. The specially-trained engineers can deliver on-site support as well as repairs, problem solving, training and upgrades to all types of screw pump.

ECS provides Sales & Service support for all makes and models of Archimedes Screw Pump.

For more information: info@ecseng.co.uk



Site Services

With a complete range of site services available, ECS offers a full turnkey project managed service for mechanical and electrical installations. Typical projects include managing civils contractors and supplying pipework, mobile cranes and dive teams, to ensure that every project is installed and commissioned to the highest standard.

Environmental

While we maintain accreditations in BS EN ISO 9001, 14001 and 18001, our safety systems have also been recognised as some of the best in the industry by UVDB and RoSPA. ECS offers a range of energy saving products and services, providing designs, construction, materials and working practices that have a lower impact on the environment.

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