

# BIOGAS



CHOPPER PUMPS  
AND MIXERS

**Landia**<sup>®</sup>

# The Challenge

The production of substrate for optimum anaerobic digestion requires a thorough pre-treatment before the medium is pumped to the reactor tank. Different mediums and biomass must be mixed completely and harsh dry matter particles must be chopped.

## The valuable raw material and what Landia can do to it:

Chop, mix and pump mediums containing:

- hair, straw lumps and shreds
- bones, feathers, fat and intestines
- long plant fibres
- organic residual



Biomass from domestic waste, restaurants, food industry etc.



By-products from fish processing, poultry and meat processing industry.



Agricultural mediums containing straw, grass, silage and other plant fibres.



The end substrate before it is pumped to the anaerobic digester tank.

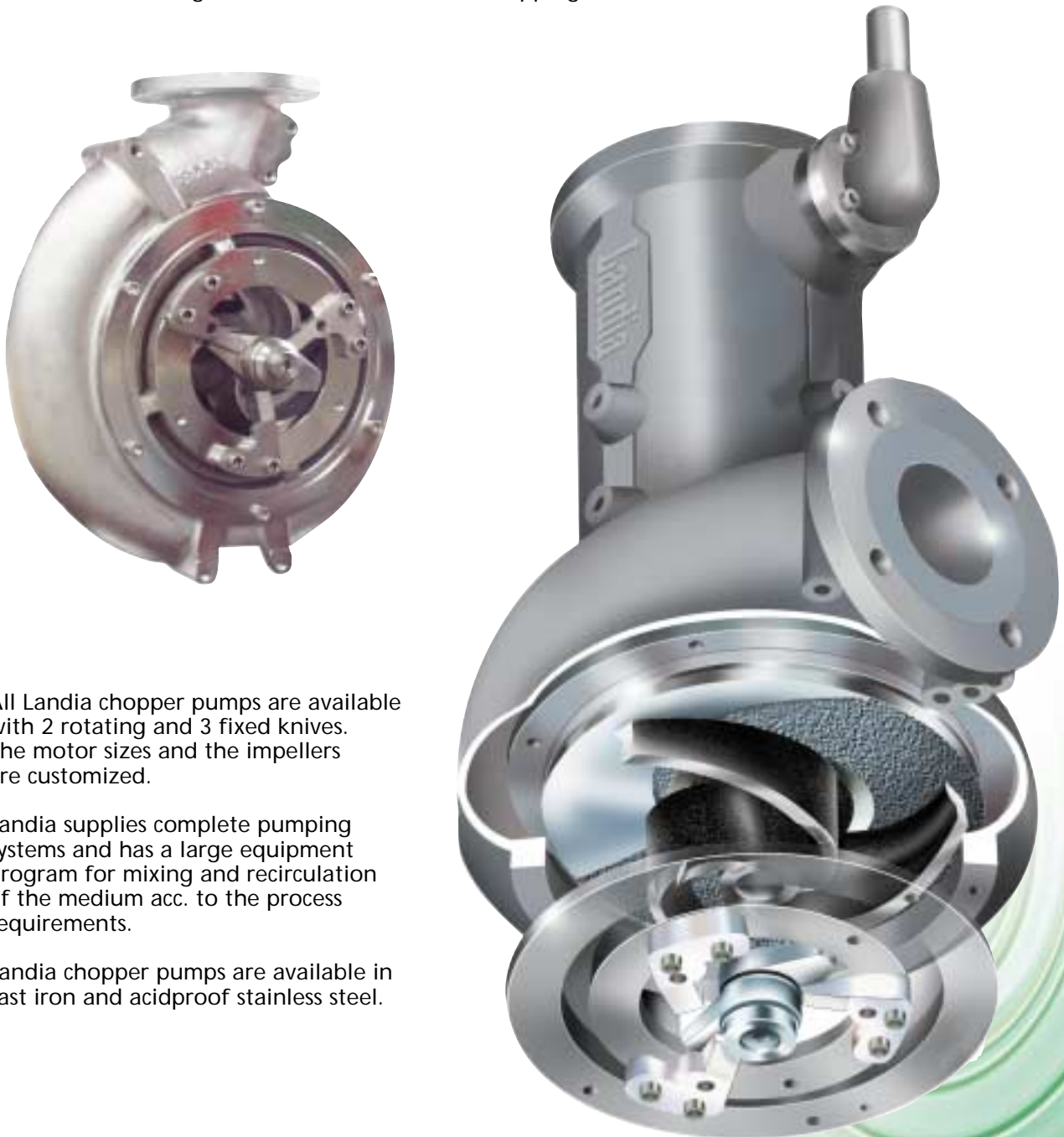


Efficient agitation and mixing in:

- reception tanks, e.g. in connection with the addition of bleach clay
- anaerobic digesters
- storage tanks, prior to application

# Complete solutions for chopping and pumping

The knife system in the Landia chopper pumps is clearly separated from the pump casing and the impeller. The chopping takes place before the medium enters the pump. This prevents blocking of the pump and its subsequent piping, and the pump casing, the impeller and the sealing system from being worn or damaged in connection with the chopping.



All Landia chopper pumps are available with 2 rotating and 3 fixed knives. The motor sizes and the impellers are customized.

Landia supplies complete pumping systems and has a large equipment program for mixing and recirculation of the medium acc. to the process requirements.

Landia chopper pumps are available in cast iron and acidproof stainless steel.

# Long shaft motor pump for wet installation

Type: MPG-I

Motor sizes: 9.0-48 hp.  
Available in 4", 5" and 6".



Pump with shredder propeller and extended knife system. The shredder propeller is designed for rough comminution of large lumps of solids before they get in touch with the knife system. The shredder propeller also transports the medium to the pump inlet.

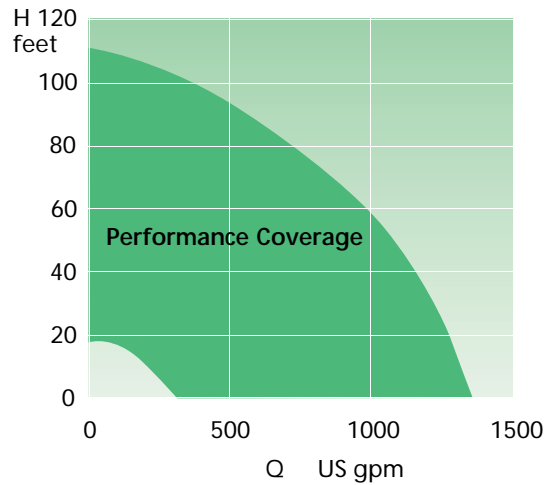


Pump with auger, counter knife and extended knife system. Especially suited for effluents with solids or grease tending to float on the surface. The auger mixes the effluent with the solids and transports it to the pump inlet.

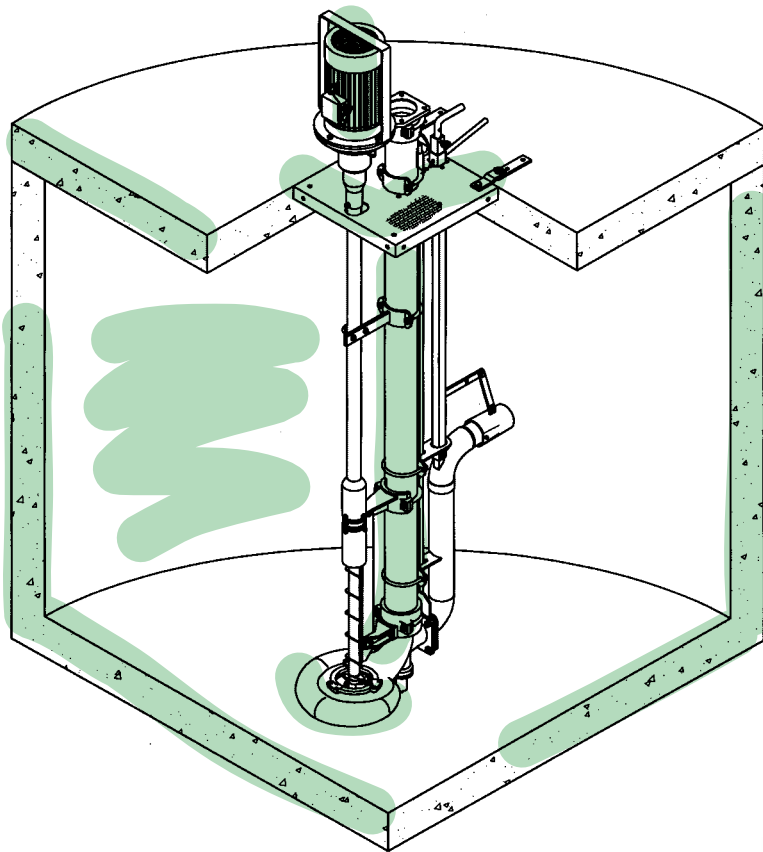


# Landia long shaft motor pumps are built to work under extreme operation conditions

All bearings are liquid lubricated. All wear parts are easily exchanged. A safety shear device between the motor and the pump shaft protects the pump from impurity damage.



Long shaft motor pump with bottom flushing system in reception tank.



# Motor pump for dry installation

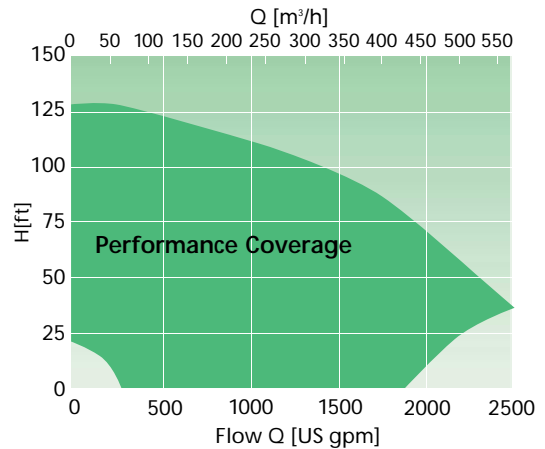
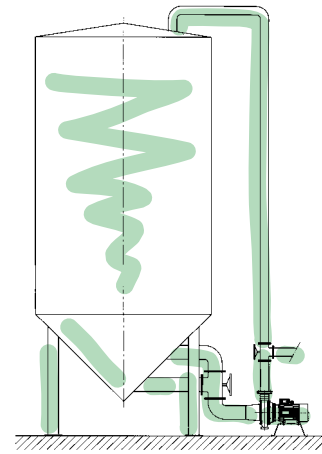
Type: MPTK-I

Motor sizes:  
0.9-48 hp



In-line mounting. Vertical or horizontal installation.

Chopper pump with recirculation system in homogenization tank.



# Submersible pump

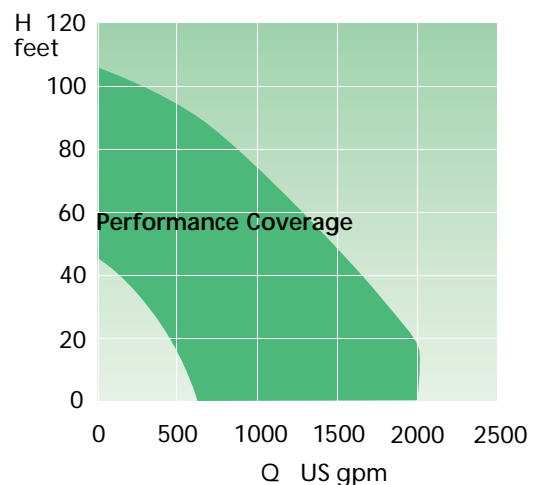
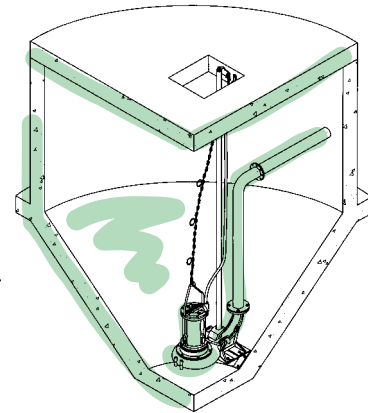
Type: DG-I

Motor sizes:  
0.9-30.2 hp



Vertical or horizontal installation, with or without coupling system.

Complete submersible pump installation in reception tank.



# Complete solutions for mixing and homogenization



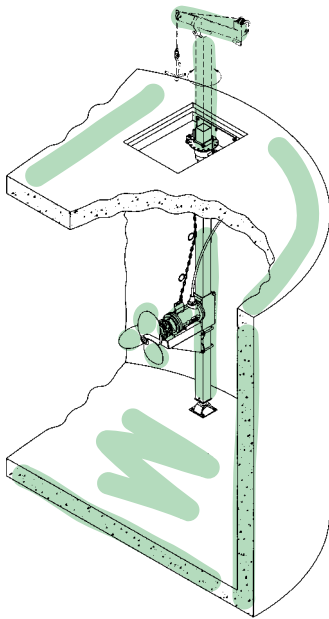
The Landia mixing systems for biogas plants are based on many years of experience. We guarantee our clients an efficient mixing solution for mediums with a large dry matter content, such as hair, straw, plastic parts and rags. Landia's engineers will work out customized solutions based on short and heavy mixing with a minimum energy consumption and mixer wear.

The sealing system of the Landia mixers installed at biogas plants consists of a labyrinth system of seals, wear bushes and a grease chamber against the medium as well as a mechanical seal between the oil chamber and the motor. The system has proven very resistant in connection with the very harsh conditions at biogas plants.

## Submersible mixer

Type: POP-I 300 rpm

Motor sizes: 1.8-30.2 hp



Typical mixer installation with portable crane arm in covered tank.

Landia mixers have large-blade propellers without volute insert but with a low number of revolutions. This makes them well suited and efficient for mixing and homogenization of sludge with a high dry matter content.



Landia offers solutions and systems to pump and mix difficult liquids. We develop, manufacture and distribute pumping and mixing systems. Pumps to chop, shred, cut, macerate, grind and comminute. Mixers to agitate, homogenize and create liquid currents.

Landia products are distributed worldwide. Our distributors offer consultancy and after sales service by Landia trained personnel.

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