

Press information for Agritechnica 2015

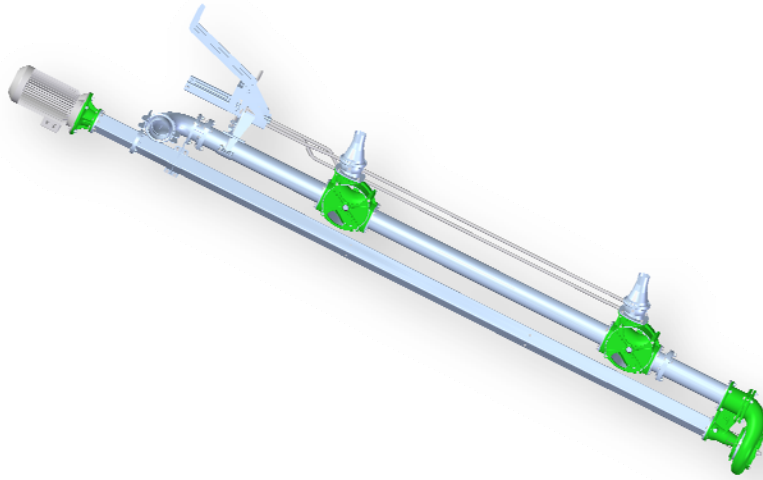
Hannover, November 2015
Booth: 23 A05

New: BAUER Long -shaft pump „Magnum LEE“and „LEC“

Durable, robust and energy efficient thick matter pump to convey and homogenize liquid manure and waste water

The long-shaft pump from Bauer, consisting of pump, drive shaft and electric motor is used for conveying and homogenizing/stirring liquid manure and waste water. A distinctive feature is that the actual hydraulic components are always immersed in the medium, like it is the case with the submersible motor pump. The electronic motor, however, is outside the medium. Furthermore, the motor is connected with the hydraulic components (pump) by a drive shaft (see picture) which length varies depending on the pit depth.

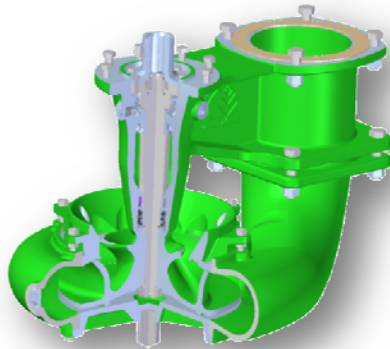
The advantage of this type of pump is based on the physical fact that the components which are not immersed in the medium do not require sealing and cannot be damaged due to defective seals. In order to benefit from this advantage it is necessary to install a drive shaft between motor and pump, which has different length depending on the depth of the pit. This basic concept and high quality material combined with hydraulically and strength-optimized geometry finally lead to a durable, robust and energy efficient thick matter pump: the BAUER – long-shaft pump.



picture 1: BAUER-long-shaft pump Magnum LEE / LEC

Sturdy bearing for the most demanding use

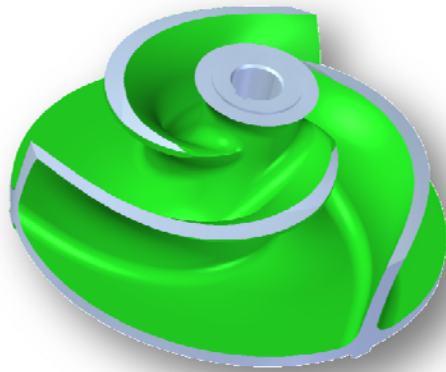
The core of the Bauer long-shaft pump is the pump body, which has an extremely robust, permanently lubricated bearing designed for the most demanding use. The sealing on the fluid side is triple sealed and ensures a high degree of security against the loss of oil and prevents that slurry/waste water gets into the bearing housing (see pic. 2).



picture 2: pump body – the core

Hydraulically optimized impeller ensures high efficiency

The hydraulic components impeller and spiral housing are arranged directly after the bearing housing (see pic. 3). By using modern methods of calculation and simulation programmes as well as hydraulic measurements and optimizations on our pump test bench we were able to design an efficient hydraulic geometry for this pump type which has a higher efficiency compared to the competitors.



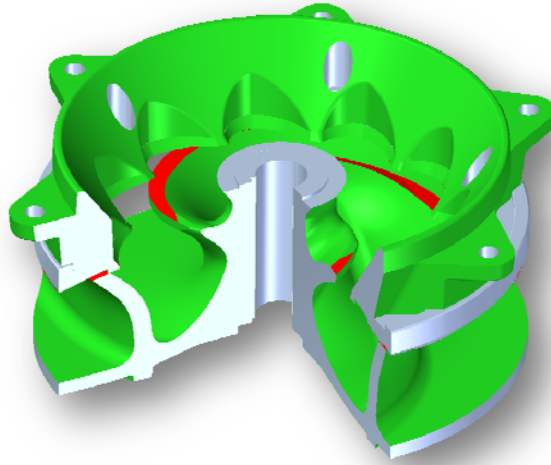
Picture 3: optimized impeller

Highly efficient cutter effortlessly shreds food remains and straw

In order to ensure high process reliability of this pump and to minimize downtime costs a highly efficient cutter was designed. This cutter has been used in other BAUER- thick matter pumps for years and has reached the most incredible results. The cutter has been constantly improved until it finally is used in its most optimized form in the BAUER- long-shaft pumps.

(see

Picture 4).



Picture 4: BAUER-cutter

Cutter made of spheroidal graphite iron, ensures long service life

By doing intensive thick matter endurance tests under extreme conditions the cutting efficiency could have been optimized and the wear resistance by using hardened material enormously could have been increased in order to reach a high lifespan even with highly abrasive mediums. To guarantee this, spheroidal graphite iron is used. The spheroidal graphite iron has special

For all circumstances

The BAUER long-shaft pump **LEC** which is used for cattle slurry with a high straw content and feed remains in slurry, is equipped with a highly efficient and durable cutter which shreds straw and feed remains with **30** cuts per revolution or **43.500** cuts per minute. If there are no straw or feed remains in the slurry or in the waste water the BAUER long-shaft pump **LEE** is used without a cutter (effluent pump). This design comes without a cutter, however, promises an even higher hydraulic efficiency when conveying slurry/waste water.

Top feeder prevents the intake of foreign bodies

Top feeder means that the conveyed medium does not flow to the impeller from below, like it is the case with submersible pumps, but from above (on the drive side) (see pic. 2). The advantage of this design is that heavy objects like screwdrivers, stones or similar objects cannot get into the cutter in order to cause damage.

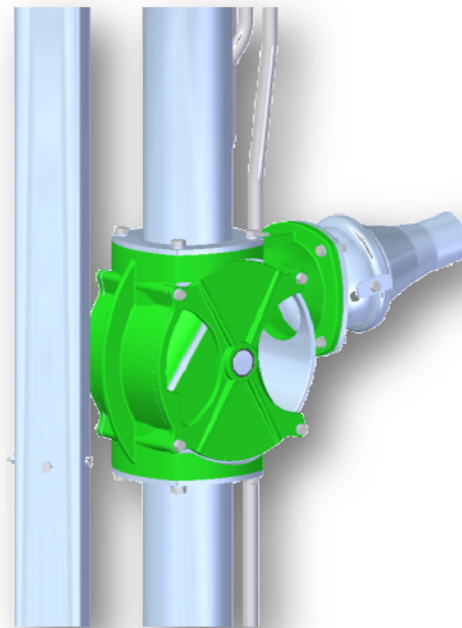
Pressure pipeline on 6inch version for less friction loss

The BAUER-long shaft pump is equipped with a 6 inch pressure pipeline in order to reduce the friction losses in the pipe. An increase of the pressure pipe from 5 inch to 6 inch results in up to 20% savings regarding friction loss with 100 m³/h and 12 % dry matter content in cattle slurry.

Three way cock for switching between mixing and conveying under load

With the help of the BAUER-three way cock it is possible to switch easily between mixing and conveying during pumping (see

Picture 5). This way the pump does not have to be switched off and remains in continuous operation when switching between mixing and filling the tanker. By using the BAUER-three way cock the switch-on frequency is being reduced. This has a positive effect on the lifespan of the electric motor and the pump as such.



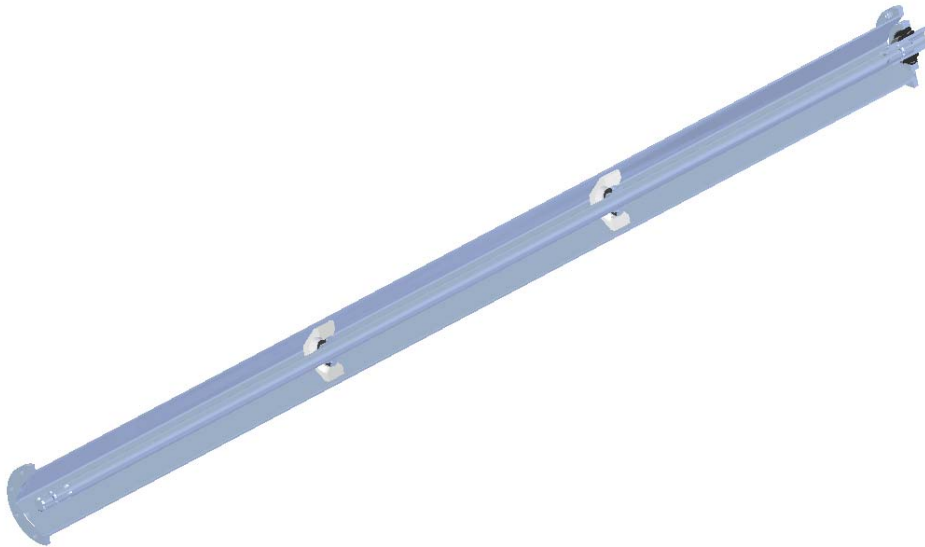
Picture 5: Agitator nozzle with BAUER-three way cock

Agitator nozzle with large swivel range:

Especially for the use in round and in rectangular pits an agitator nozzle was designed, which has a horizontal swivelling range from up to 180°. Moreover, the nozzle can be swivelled 15° upwards and downwards. This leads to a bigger mixing area and the pit can be mixed thoroughly in a very short time. (see pic. 5).

Robust drive-shaft with multiple bearings for quiet operation

The drive shaft of the BAUER-long-shaft pump was designed for extreme operating conditions and has proven its strength already in use with the BAUER-slurry mixers Turbomix MTXH. This drive train has a drive shaft with specially developed multiple bearings and sits in a massive shaped tube 120x120x4. This leads to an energy efficient and quiet operation. (see pic.6). The Bauer-long-shaft pump is available for pits with depth of 2 to 6 meters in 0,5-meter gradations.



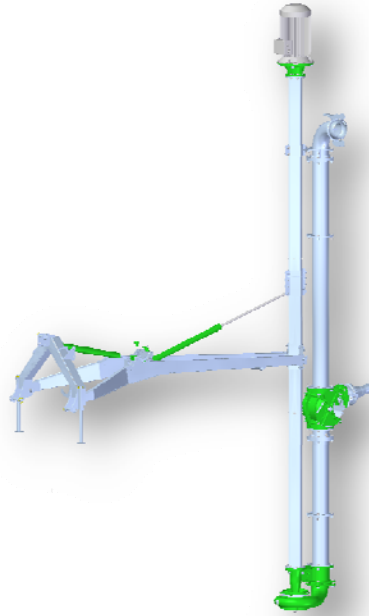
Picture 6: drive train module with bearing

Four performance classes for powerful use

The BAUER-long-shaft pump is available in four performance classes in 11 kW; 15 kW; 18,5 kW and 22 kW and promises a high hydraulic efficiency and process reliability in all designs.

Stationary or mobile

For the stationary use the BAUER-long-shaft pump can be used in pits by mounting a wall bracket. If the pump, however, is used in more than one pit, the BAUER – long shaft pump is mounted on a robust lifting frame for easy handling (see pic 7).



Picture 7: Long shaft pump with lifting frame

Design galvanized or stainless steel

The galvanized BAUER – long-shaft pump is perfectly suitable for the conventional use in agriculture. However, it cannot be ruled out, that due to a special chemical composition of the medium the pump is damaged by corrosion. For this case Bauer provides the pump also in stainless steel. All components, which are in risk of corrosion (drive pipe and pressure pipe) are made of V4A and prevent premature failure of the pump due to corrosion damages.

The Bauer Group at a Glance

Since its foundation in 1930, the BAUER Group - headquarters in Voitsberg, Styria, has been focused on irrigation and slurry management technology. Whilst initially producing wastewater and slurry pumps, the company first became an international player in the sector of irrigation technology in 1947 with the patent-protected Bauer lever lock coupling - named after Rudolf Bauer, the company founder.

Today the company is developing rapidly in the biotechnology sector with wastewater treatment & biogas plants and it is focusing on three main sectors: irrigation management, waste management as well as energy management.

BAUER is the Global market leader in irrigation technology: A total of more than 2,5 million hectares is globally irrigated. A major part of sales representing 50% of the total turnover is achieved in the sectors of slurry and environmental waste processing. The BAUER Group exports to more than 90 countries of the world. With approx. 610 employees, Bauer generated consolidated net proceeds of about 111 million Euros in the financial year 2013/14 (an increase of 13,6% compared to 2012/2013). With an export ratio of 90%, the main markets of the BAUER Group are Germany, France, the CEE countries, China, the USA, South-America and Australia.

The BAUER Group currently consists of 17 companies worldwide.

Product Range

- Various irrigation systems
 - Automated pivot and linear systems, i.e.: Centerstar, Centerliner, Linestar
 - Irrigation machines, i.e.: Rainstar, A3 or ProRain
 - Traditional irrigation, i.e.: pipe systems and solid-set plants
- Slurry transportation (slurry tanks)
- Innovative slurry treatment: mixers, pumps, separators, composting and distribution
- Pipes and fittings
- Wastewater treatment and separation technology for the food and paper industry
- Components for Biogas plants
- BRU Bedding Recovery Unit

Internet Services

- Configuration of all machines
- Ordering of all spare parts

For further information see: www.bauer-at.com/en/ and www.fan-separator.de

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