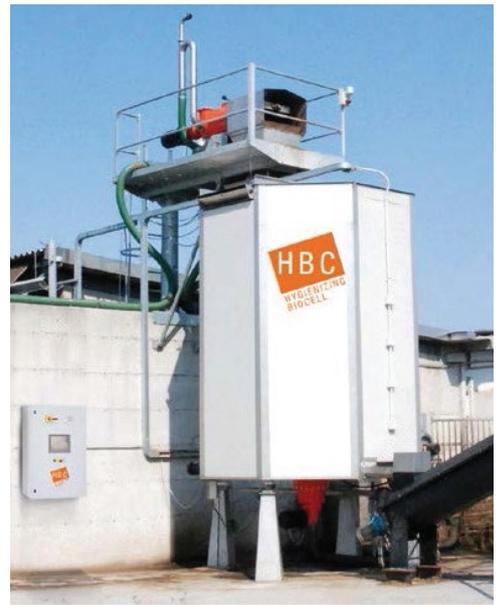


Agricultural Pumping and Slurry Handling Products



T-T Agricultural & Environmental is a division of T-T and was formed to focus on effluent treatment and anti-pollution products. Many of these products have been in our portfolio for sometime, but demand has made us realise that many of our clients benefit from our ability to provide a combination of products and skills from a single source.

T-T have a distinctive advantage when dealing with sensitive environmental systems. We are able to merge our vast experience and expertise in pumps, controls, valves and service with the support of our internal design capabilities. As a sole distributor in the UK and Ireland, T-T Agricultural & Environmental is made up of a range of T-T and Cri-man products.



What are the benefits of T-T Agricultural & Environmental products and services?

- A fully qualified team of technical advisors to help you choose the right product for your application, including expertise in both agricultural and biogas application
- All technical documentation datasheets and manuals available on request
- We visit multiple trade shows across the UK and are on hand to meet and discuss your requirements.

APPLICATION AREAS:



Visit our website to find out more information on where we will be this year.

PTH/PTD BENEFITS

1 Double chopping system

The first chopping system is composed of two carbon steel blades, running up against a rotating cutter.

The second part of the chopping system is between the impeller and the reverse cutter, both these components are manufactured from high grade cast iron for longevity.

In a pump with a speed of 2550 rpm the chopping system operates at over 510 cuts per second!

2 Oil immersed mechanical seal

Mechanical seal made from tungsten carbide immersed within an oil bath to lubricate and cool

5 High performance output

The PTH/PTD range offer a wide range of performance for every application providing a flow rate of up to 460m and a closed valve pressure of 15.5 bar

3 High grade cast iron

The PTH/PTD pump range is manufactured from the same grade of cast iron as the chopping system

4 HD gearbox design

Improved gearbox design to allow longer service life and provide uninterrupted operation

6 Oil cooler

A transfer pump mounted within the gearbox to pump oil through a suction inlet mounted heat exchanger (KK model only)



PTH SERIES

A range of high pressure, centrifugal, chopper pumps, ideal for particularly heavy-duty applications

- Cast iron construction
- Tungsten mechanical seal within oil bath
- Multi-channel impellers and double-chopping system
- Recommended for applications that require a substantial head and adequate chopping of the solid materials, present in the liquid being pumped such as umbilical and irrigation systems
- The PTH100KK is a high headed version, ensuring pumping at an even longer distance and at a higher volume



PTD/PTO SERIES

A range of horizontal, centrifugal, chopper pumps, ideal for particularly heavy-duty applications.

- Can be coupled with diesel engines by a flexible coupling
- Cast iron construction
- Tungsten mechanical seal within oil bath
- Multi-channel impellers and double-chopping system
- Adaptable design
- Recommended for applications that require a substantial head and adequate chopping of the solid materials, present in the liquid being pumped such as umbilical and irrigation systems
- PTO version can be run by electric motor



TECHNICAL SPECIFICATIONS

- Max capacity:	460m³/h
- Head:	158m
- Tractor rated power:	100-240Hp
- Suction:	100-200mm
- Discharge:	65-150mm

TECHNICAL SPECIFICATIONS

- Max capacity:	460m³/h
- Head:	158m
- Driven power:	65-240Hp
- Suction:	150-200mm
- Discharge:	80-150mm

WORLD-CLASS LAYFLAT HOSE



Flexitex Extra

A reinforced fluid transfer hose for agricultural systems, predominantly used as a feed hose from farm to field.

SIZES AVAILABLE: 102MM (4") INTERNAL DIAMETER
127MM (5") INTERNAL DIAMETER



Ultraman (Standard PU)

A multi-purpose transfer hose, which is suitable as a feeder hose or even a drag hose in smaller umbilical systems.

SIZES AVAILABLE: 102MM (4") INTERNAL DIAMETER
127MM (5") INTERNAL DIAMETER



Dragman (Heavy Duty PU)

This hose is especially designed to withstand extreme tensile stress, pulling forces and abrasion from umbilical slurry systems.

SIZES AVAILABLE: 102MM (4") INTERNAL DIAMETER
127MM (5") INTERNAL DIAMETER



Dragman Premium (Heavy Duty PU)

This hose is intended for use with umbilical drag systems and has abrasion resistance four or five times of that commonly used in rubber.

SIZES AVAILABLE: 102MM (4") INTERNAL DIAMETER
127MM (5") INTERNAL DIAMETER

Benefits

- Maximise your investment with the correct hose
- Durable and wear-resistant
- Resistant to most industrial and agricultural chemicals
- High abrasion resistance and tensile strength
- Cost-effective slurry distribution Ranges suitable for drag, irrigation and feeder systems

Speak to a member of the team for assistance selecting the correct hose for your application

PUMP BENEFITS

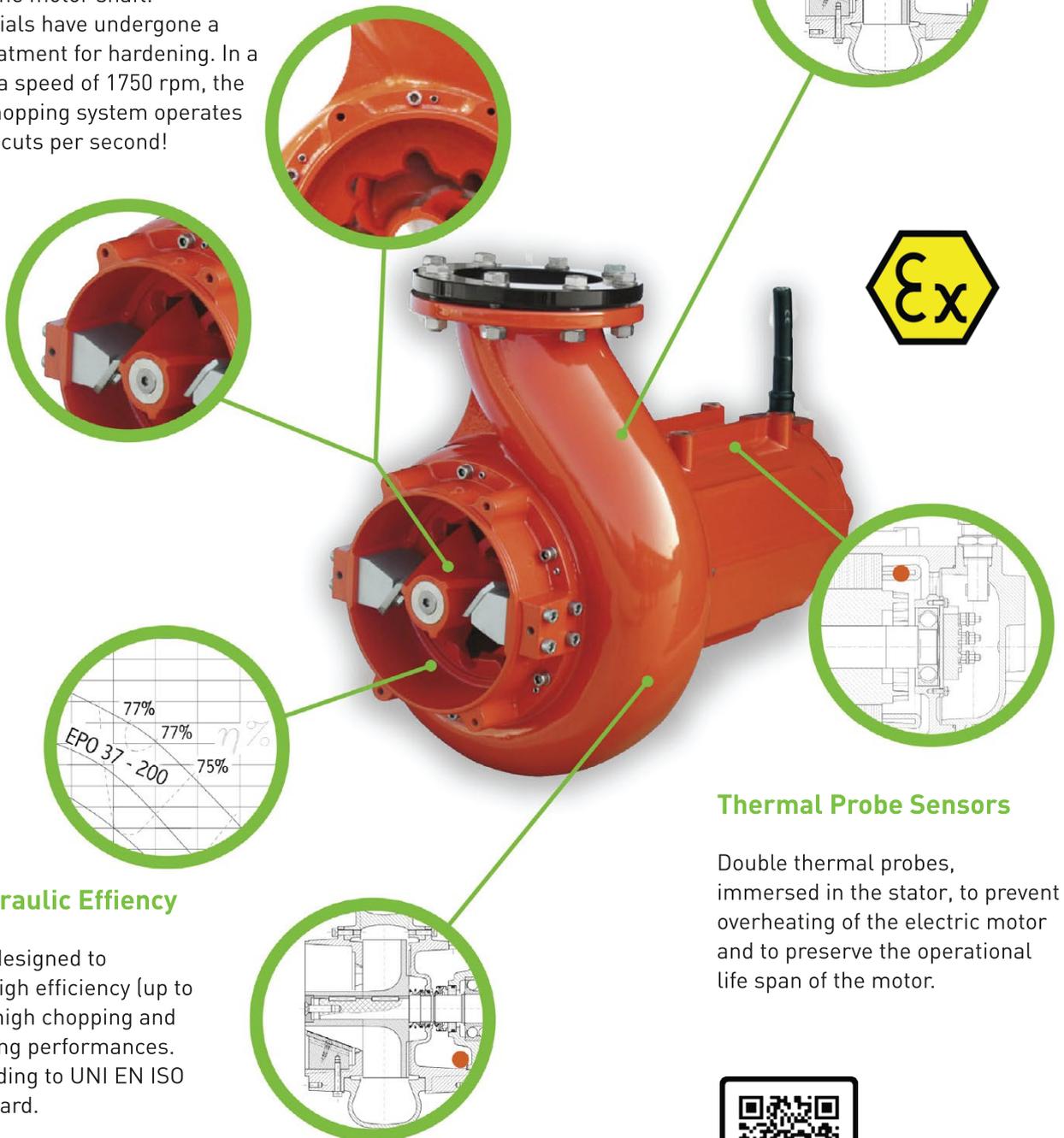
Double chopping System

The first chopping system is composed of two blades made of chrome steel, fixed on the body inlet, that work against a spiral conveyor made from high grade cast iron and is fitted to the motor shaft. Both materials have undergone a specific treatment for hardening. In a pump with a speed of 1750 rpm, the only first chopping system operates at over 170 cuts per second!

The second chopping system is composed of a shear cutting plate of special high grade cast iron that works against the impeller, also in high grade cast iron, blades with sharp profile.

Double Mechanical Seal

Mechanical seals in silicon carbide and graphite-ceramics.



High Hydraulic Efficiency

Hydraulic designed to correlate high efficiency (up to 77%) with high chopping and anti-clogging performances. Data according to UNI EN ISO 9906 Standard.

Humidity Probe (on request)

Humidity probe installed in the oil chamber to prevent damages in case of leakage.

Thermal Probe Sensors

Double thermal probes, immersed in the stator, to prevent overheating of the electric motor and to preserve the operational life span of the motor.



SCAN ME

PTS 65-200 SERIES

A range of heavy-duty submersible, chopping pumps, ideal for particularly heavy applications that require a preliminary chopping of the solid material suspended in the liquid being pumped

- Large, through passage, open multi-channel impeller and double cutting system in suction inlet
- Cast iron construction
- Double mechanical seal within oil bath
- Auto coupling available



TECHNICAL SPECIFICATIONS

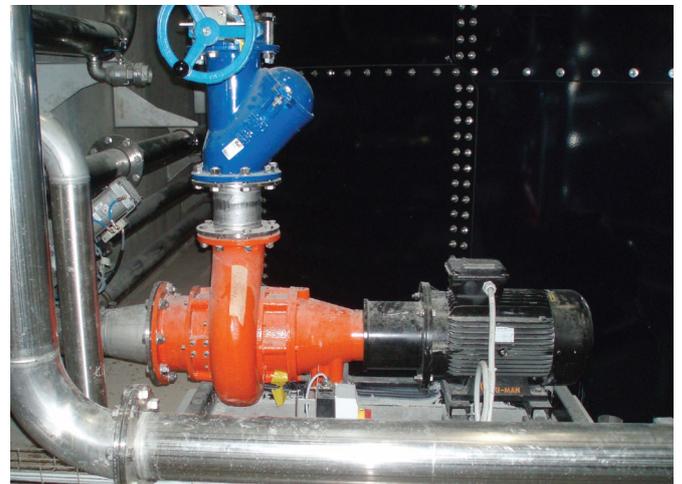
- Max capacity:	720m³/h
- Max head:	51m
- Motor power:	2.2-45kW
- Discharge:	65-200mm

ETO SERIES

A range of electric, horizontal chopper pumps, ideal for particularly heavy duty applications.



- Mounted on a frame and coupled with electric standard motors by a flexible coupling
- Equipped with a multi-channel impeller and double chopping system in the suction
- Cast iron construction
- Mechanical seal (double on request) within oil bath
- Suitable for applications that require adequate chopping of solid materials present in the liquid being pumped.



TECHNICAL SPECIFICATIONS

- Max capacity:	710m³/h
- Head:	106m
- Motor power:	0.75-75kW
- Suction:	150-200mm
- Discharge:	40-200mm

ETV SERIES

A range of electric, vertical chopper pumps, ideal for particularly heavy duty applications.

- Mounted on a vertical frame, which includes the suction inlet and they are coupled with electric standard motors by a flexible coupling
- Equipped with a multi-channel impeller and double chopping system in the suction
- Cast iron construction
- Double mechanical seal within oil bath
- Suitable for applications that require adequate chopping of solid materials present in the liquid being pumped such as biogas processes and agriculture



TECHNICAL SPECIFICATIONS

- Max capacity:	340m³/h
- Head:	106m
- Motor power:	0.75-22kW
- Suction:	100-200mm
- Discharge:	80-150mm

PT SERIES

The PT chopper pumps feature a heavy duty, robust construction designed for agricultural applications.

- Cast iron construction
- Double mechanical seal within oil bath
- Available from 2m-5m shaft length
- Mixing nozzle also available (PTEM)



TECHNICAL SPECIFICATIONS

- Max capacity:	340m³/h
- Max head:	53m
- Motor power:	4-22kW
- Suction:	150-200mm
- Discharge:	100-150mm

CASE STUDY - CHOPPER PUMPS

PTS CHOPPER PUMP AND TBM SUBMERSIBLE MIXER

A lot of issues with moving slurry around farms tends to start with the viscosity. Farm slurry in particular dairy slurry contains large volumes of water which aids with moving it from reception pit to lagoon, however, as is most often the case mixing the slurry is an afterthought until it can no longer be pumped.

A large dairy/arable herd in Staffordshire with over 250 head of cattle.

On this farm some of the cattle slurry is used for a mini anaerobic digestion plant producing electricity to run parts of the farm, from commission the mini-AD plant was supplied by a long shaft pump with a manual mixing nozzle. This original pump utilised a 15kW motor and was specified to pump slurry from the reception pit to the plant at just over 110 meters and approximately 4-5 mtrs of static head. What seems to be the current trend with a lot of slurry applications a 15kW motor is very oversized and the job could in fact be completed using less power.

Now that the original pump has failed a replacement system was needed, a few companies had demonstrated their pumps on the application however none had given the results Richard required.

The original pump that was installed had historically provided a lower flow rate than what was required by the plant, this was something that both Charlie and the farmer stated from the beginning needed to be improved as the AD plant required a specific feed in volume at a target of 15m³/h to maintain the correct gas production.

The original pump was also fitted with a manually operated jet mixer nozzle which would be used to agitate the reception pit, with this nozzle arrangement being a manually operated system and the feed system of the AD plant being automated it meant that the mixer had to be manually switched over and then switched back so it could feed in.

As the AD plant was set for 8 feed-in periods per day it made it very difficult to balance between mixing and pumping whilst also taking man hours off an employee's working day to complete the task.

After visiting the site with Charlie Bell, an engineer who maintains mini-AD plants across the UK T-T Pumps offered a combination of a submersible chopper pump and separate submersible mixer.

With keeping the mixer and the chopper pump separate the system could maintain its automated feed-in sequence and reception pit mixing without the need for human intervention.

The mixer is controlled by a separate control panel that allows the farmer to set how often throughout the day the mixer would energise, this can be tailored to run either for xx minutes of every hour or to become active for xx minutes prior to the feed pump starting. Currently the mixer is set to start 10 minutes prior the feed-in process is active.

This guarantees that each time the feed pump activates the slurry is always perfectly homogenised without the need to incorporate anymore water, perfect for anaerobic digestion.

Once the PTS chopper pump was installed it was noted on the flow meter within the plant that the pump was delivering between 21 – 30m³/h far more than was historically seen on the existing pump.

This improved performance was subject to a few factors however the correct mixing of the raw cattle slurry something that had been neglected over the years was a key factor in the process.

Another big tick in the box was the reduction of kilowatts being used to carry out this process.

The motor sizes of the PTS chopper pump and TBM submersible mixer combined equate to less kilowatts than the original pump/jet mixer, this has also been enhanced by the way the TBM mixer is controlled. As the mixer is operated via a time clock the mixer runs for short periods prior to the pump starting, meaning that over 24-hour period the TBM mixer runs for approximately 80 minutes.

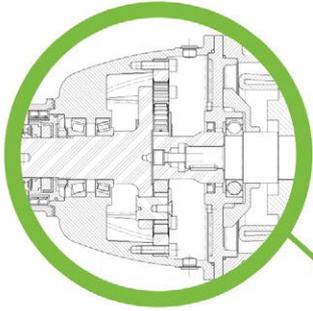
This is also echoed by the pump as the higher flow rate produced by the PTS chopper pump provides the required volume of slurry the AD plant needs in less time.

In summary the farmer believes that the products that have been installed at on his farm have greatly improved the existing systems whilst at the same time provide a cost-effective solution to a historically troublesome site.

PUMP BENEFITS

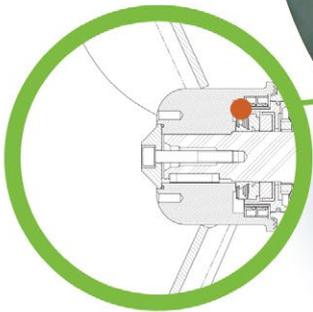
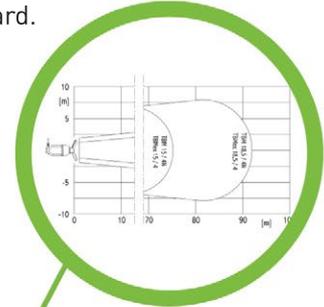
Planetary Gearbox (TBM Series only)

Reduced energy consumption and longer gear life.



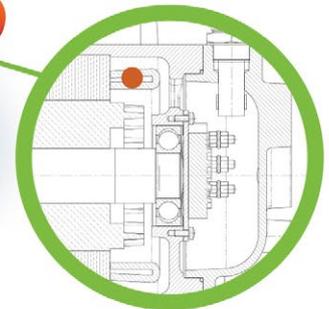
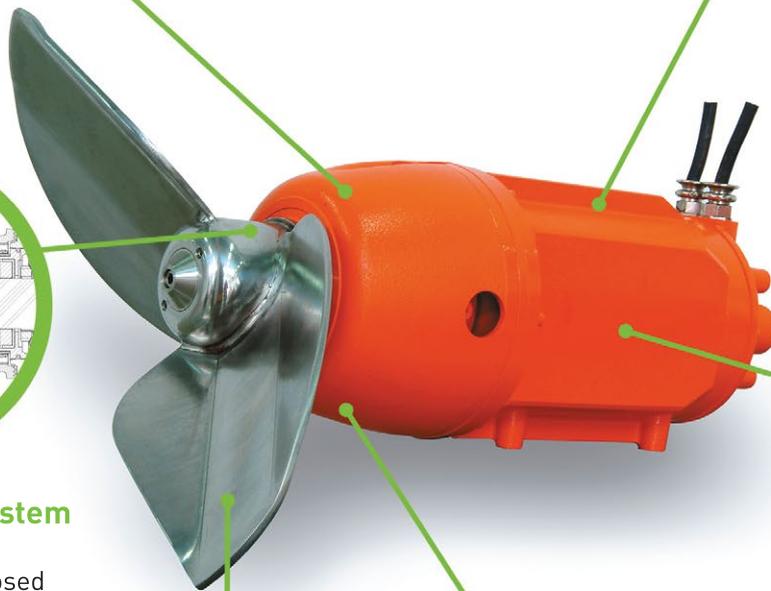
High Axial Thrust Efficiency

Electric motor, mechanical components and propeller profile designed to achieve high efficiency in terms of axial thrust and low energy consumption. Data according to ISO 21630 Standard.



Double Sealing System

Sealing system composed of two lip seals on ceramic bushing (TBM Series only) and tungsten carbide mechanical seal.

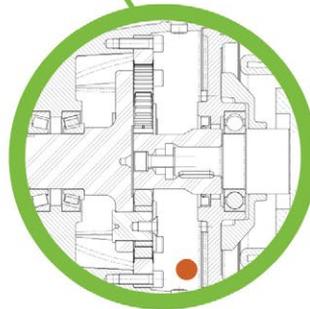


Thermal Probe Sensors

Double thermal probes, immersed in the stator, to prevent overheating of the electric motor and to preserve the operational life span of the motor.

Self-cleaning Propeller

Propeller in stainless steel with self-cleaning profile.



Humidity Probe (on request)

Humidity probe installed in the oil chamber to prevent damages in case of leakage.

TBM/TBX-E MIXER RANGE

These submersible, horizontal mixers are fully manufactured in cast iron and AISI 316 stainless steel. They are recommended for mixing and homogenizing processes in sewage treatment plants and applications in very corrosive liquids.

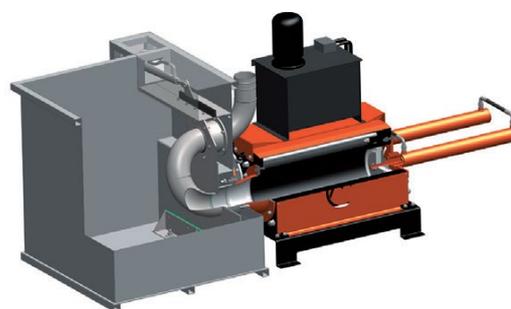
- Propellers with self-cleaning profile to ensure durability and efficiency even in the most extreme conditions
- TBX-E: 316 stainless steel construction
- TBM: cast iron construction
- Mechanical seal
- Max. submergence: 20m
- Max. solid content in liquid: 12%



PISTON PUMP

The PLD piston pumps is designed for high density fluid. The system comprises of a materials loading tank supplying the double pump pistons and an automatic valve system that permits alternating loading and unloading of the pistons

- Hardox cylinders
- Heat exchange option
- Max 20% TS



TECHNICAL SPECIFICATIONS

- Capacity:	643-10138m³/h
- RPM:	275-1400
- Motor power:	0.75-25kW
- Axial thrust:	117-5396N
- Max working temp:	40°C

TECHNICAL SPECIFICATIONS

- Capacity:	10-30m³/h
- Head:	80m
- Motor power:	5.5kW
- Piston stroke:	900mm

SEPARATOR BENEFITS

Planetary Gearbox

Reduced energy consumption and longer gear life.



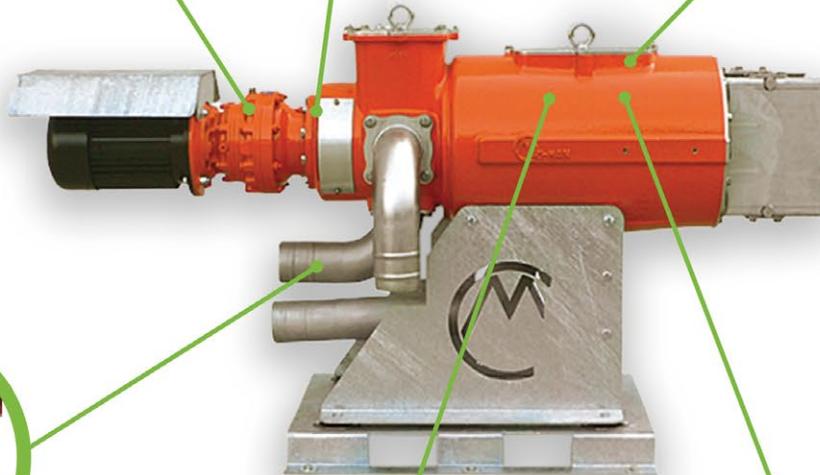
Sealing System

System of three lip seal with grease for a secure sealing between the separator and the gearbox.



Screen Inspection Window

Top inspection window for easy and quick check of screen cleaning.



Smart Piping Input

Inlet piping designed to leave them empty, and avoid the possible freezing, during the inactivity of the machine.



Screens

Stainless steel screens with geometrical structure, strength and material chemical composition specifically designed for each application.



Screw Treatment

Innovative coating treatment with mixtures of tungsten carbide and metallic matrix which ensures very high hardness and low brittleness.

T-T SEPARATOR RANGE

The separator range is recommended for solid-liquid separation of slurry



- Rotary, double-threaded screw, in an engineered wedge wire screen.
- Components are made in treated stainless steel.
- Can reduce moisture content on sludges by up to 30%
- Heavy duty construction in cast iron and stainless steel
- Biogas, process and agriculture applications
- High dry matter versions available

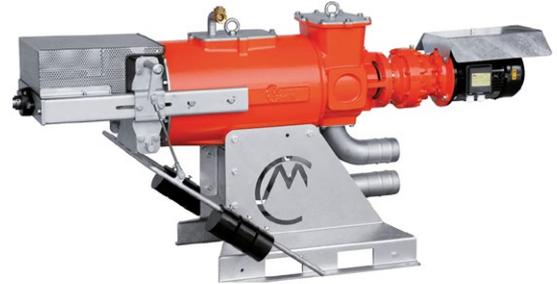


TECHNICAL SPECIFICATIONS

- Capacity:	4.5-72m³/h
- RPM:	22-33 (50Hz)
- Motor power:	3-5.5kW
- Screen mesh:	0.25-1mm
- Up to 30% dry matter:	
- Bespoke systems available on request	

T-T HIGH DRY MATTER SEPARATOR RANGE

The high dry matter range of separators have been designed to remove more liquid from the solid fraction than a standard separator. This allows for a drier end product that can be used for recycled manure solid applications



- Heavier duty double rotary screen with a tighter flight profile
- Larger motor sizes for increased torque
- Dry matter up to 40%
- Over engineered design compared to standard version
- 4 versions available



TECHNICAL SPECIFICATIONS

- Capacity:	4-32m³/h
- RPM:	11-14 (50Hz)
- Motor power:	5.5-11kW
- Screen mesh:	0.50-1.00 mm
- Up to 40% dry matter:	

TECHNICAL FEATURES

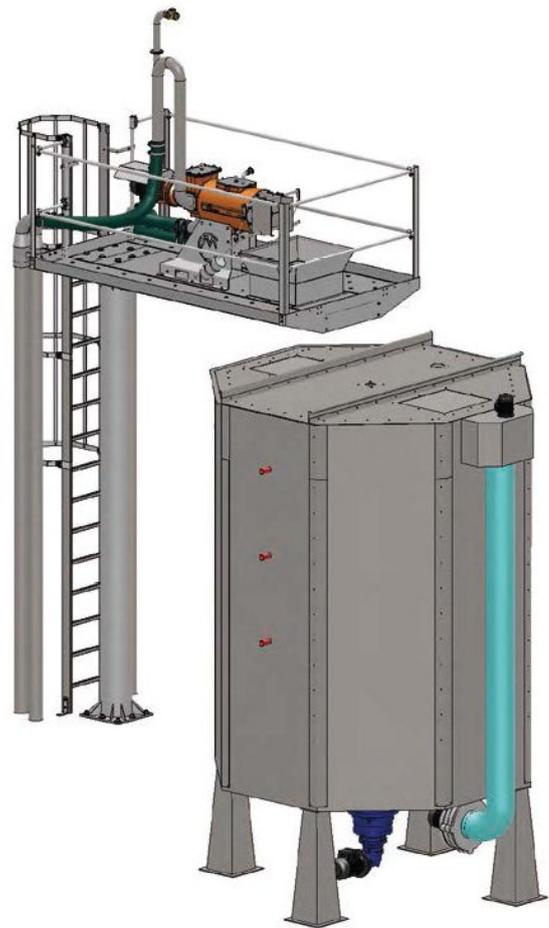


REVOLUTIONARY NEW PRODUCT

HBC BIOCELL

The HBC Biocell transforms slurry into comfortable and hygienic bedding. It guarantees consistent quality and sanitisation of the bedding produced from recycled separated solids even under the most unfavourable conditions, permitting substitution of straw bedding.

- Consistent quality. The machine's electronic control system ensures hygienisation of the material through a pasteurization process
- Financial saving. By balancing the savings obtained from using hygienized solids in the place of traditional bedding (straw etc.) it can easily be verified that return on investment can be achieved within a few years
- Improved and more economic management of manure. The quality of manure to be managed is reduced since traditional bedding materials are not present
- Low energy consumption. Maximum power consumption is 10.5kW
- Additional storage is not required. The hygienized solid material is produced daily and so additional storage is not required (in barns) as is the case with traditional bedding materials.



OPERATING PERFORMANCE

- | | |
|------------------|--|
| - Production: | Up to 20t/day of hygienised solids |
| - Hygienisation: | Guaranteed pasteurisation system (1 hour at 70°C) |
| - Drying: | Up to 55% of dry material (by adjustment of HRT) |

HIDRO BOOST



TT have designed, manufactured, supplied and maintained pumping equipment for over 63 years. With this knowledge over the last 5 years we have designed the Hidro Boost range that has all the benefits and durable features that we know and understand our customers need from domestic, commercial and industrial applications.

FEATURES

- Single Twin, Triple and Quadruple set available.
- Robust and fully servicable design.
- WRAS approved components.
- Produced and tested at our head office in the UK.
- Stainless steel pumps, manifolds and baseplate.
- Anti-vibration mounts to reduce resonance and vibration within the system available on request.

OPTIONS

- Fixed Speed.
- Variable speed drive with touchscreen technology pump or panel mounted.
- In house and on site support direct from manufacture.
- Installation / commissioning
- Bespoke systems available



PERFORMANCE RANGE

- Flow range: **0.5 - 60 litres/sec per pump**
- Heads (Pressure): **1.5 - 16 Bar**
- Max Pressure: **25 Bar**
- Max Temperature: **40°C**
- Control options: **Fixed Speed, VSD Pump or Panel Mounted**
- **Higher pressures available on request**



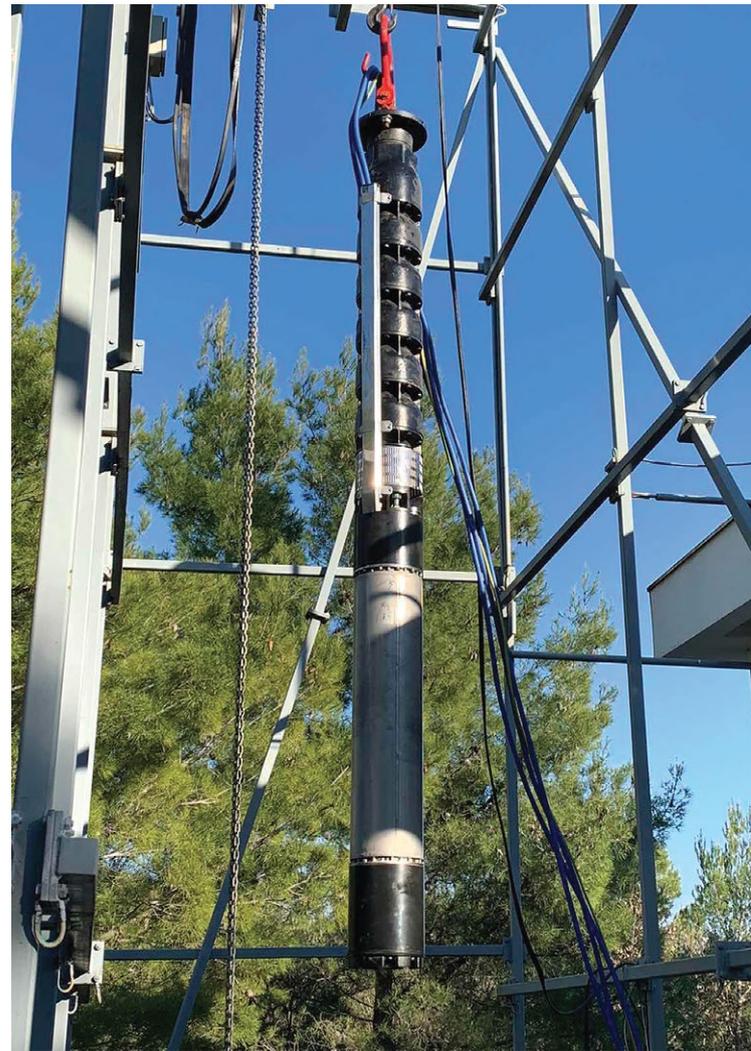


WASHDOWN



A range of powerful washdown sets suitable for general farm use and washing. A full kit comprising of a pump mounted on a stainless steel base complete with auto-stop/start, 25m 1" hose, fittings and an adjustable brass nozzle.

- Suitable for agricultural washdown, general high volume washing, parlour washing, vehicle washing and abattoirs
- Heavy robust design
- Compact
- Heavy duty stainless steel base
- Automatic stop/start
- Dry run protected
- Heavy duty adjustable brass nozzle
- 25m high quality hose
- Custom built versions available



BI-DIRECTIONAL KNIFE GATE VALVE

Bi-directional knife gate valves designed for medias with suspended solids. These knife gate valves are designed to suit PN16 flanges

Options

- Stainless steel body and stem
- Alternative seat material (EPDM, PTFE or Viton)
- Position indicator with optional switch(es)



BOREHOLE AND WELL PUMPS

We offer a range of submersible borehole and well pumps to suit your needs. Providing a cost effective solution we can select a borehole pump for you that can be used for clean water and irrigation pumping applications.

- Suitable for wells up to 50m deep
- Stainless steel construction and impeller
- Noyrl diffuser
- Liquid temperature up to 35°C
- Mechanical seal within oil bath

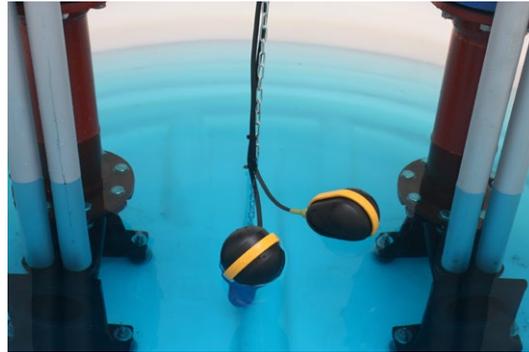


CONTROL SYSTEMS

TT Controls have a long history supplying many industries, especially the Farming Industry relating to irrigation and pumping farm effluents and slurry.

In addition to our standard range including motor starters, level control, alarms, and monitoring systems, we also provide bespoke control solutions tailored for individual sites and applications.

STANDARD PRODUCTS



MADE IN BRITAIN



LIBRA MAX

Durable, versatile range of readily available Motor starters, with Customisable options.

LEVEL CONTRL FLOAT SWITCHES

For complete control of a range of liquids, from clean water, to fuel oils and effluent.

VASCO

Offering variable speed control for motor and enhancing efficiency

MONITORING

SEER MONITORING

MADE IN BRITAIN



Nano



Micro



Junior



Advanced

Our Seer Range will give full monitoring your systems 24/7/365 days a year and will allow you to have advance warning of issues. Problems can be identified remotely and many cases be resolved without having to visit site.

Data logging facility allows you to build up a history of performance and evaluate the system to improve future performance.

With reduced maintenance costs SEER Monitoring will help improve the bottom line and allow operators peace of mind.

BESPOKE CONTROL SYSTEMS

From concept, to commissioning and beyond with our full after sales support. Knowledgeable staff with a wealth of experience in many applications, well versed to offer a complete solution.



CONVEYOR BELT CONTROL SYSTEM



200kW Multi-motor variable speed drive panel serving a large conveyor belt on a waste recycling plant.

IRRIGATION BOOSTER SET AND ASSOCIATED CONTROL PANEL



Irrigation set manufactured with triple booster pumps and computer-controlled variable speed drive operated electrical panel

OUTDOOR WEATHERPROOF MOTOR CONTROLLER



Outdoor weatherproof control panel, with both manual operation and remotely governed speed control.

CASE STUDY, FARM SLURRY, LIABILITY TO AN ASSET?

William and James Goodwin run Hill House Farm, Haywards Heath, in Sussex, a 324-hectare (800-acre) unit, which is home to 700 cows. It is a zero-grazing system, with cows milked three times a day through a 32-point rotary parlour.

William says: "We both thought that the principle of pasteurised bedding was a very positive one, with 60% of our cubicles on sawdust and mattresses and the other 40% deep lying sand cubicles. Bedding was costing us 1.2ppl and we liked the idea of pasteurised bedding and the benefits it can bring as well as the cost savings."

The brothers installed a Biocell HBC, a system which transforms slurry into comfortable and hygienic pasteurised bedding after seeing the product at the Grassland and Muck event at Stoneleigh Park.

William says when they started using the pasteurised bedding they asked Quality Milk Management Services to test the product coming out of the HBC. The results showed there was a huge reduction in bacterial growth within the product.

It is estimated the system reduces the amount of slurry entering the slurry tower by 30%

He says: "We initially dug out all deep lying beds and put everything on pasteurised bedding including dry cows.

It has been a constant learning process from day one, in terms of how long to run the machine, the importance of using only freshly produced bedding for that day, how often to bed up, how much lime to use and how often to sweep the cubicles. We finally feel that we have the right routine for the bedding." James says the cows seem to like the product and he estimates the system reduces the amount of slurry entering the slurry tower by 30%. "What does go into the tower is now far more liquid and easier to pump. We have saved directly in bedding costs nearer to 1ppl."

Overcome

He adds that as with all new modern technology, there were a few teething problems and mechanical issues to start, which were soon overcome. While there are costs associated with the running of the machine and electricity use, yearly replacement of wearing parts, plus any unforeseen mechanical failures, there is still a cost saving to be had, he says. "The benefits it has brought in terms of slurry management have been extensive."

Environmental considerations are now at the fore when looking at the initial storage, and subsequent distribution of slurry. But what can farmers do to reduce the environmental impact of handling farm slurry, and what does this mean for the financial bottom line? Dairy Farmer reports.

Farm slurry is considered by many as a liability particularly when considering upcoming changes in legislation. But, Rob Lowe of T-T Pumps, says that with careful planning and investment there is an opportunity to turn what is historically a waste product into an asset while giving the bottom line a much needed boost.

With upcoming legislation involving the covering of slurry storage areas by 2027, or before, Mr Lowe says there could be some justification in reducing solids content in storage tanks. He says: "Reducing storage volumes by separation allows greater storage while allowing distribution of solid content throughout the year without restriction, leaving the liquid to be stored until the permitted time for spreading."

He adds that farmers will be increasingly aware that slurry spreading is becoming increasingly demanding with the low emission slurry spreading equipment (LESSE) requirements.

He says: "LESSE aims to minimise ammonia and avoid pollution while still gaining the maximum nutrient value from the slurry to the soil. "Through exhaustive tests it has become apparent that the splash plate distribution has the poorest performance for controlling ammonia. The dribble bar, trailing shoe and shallow injection distribution require chopped slurry to perform effectively without the risk of blockage. "Shallow injection has shown to give best performance overall. LESSE systems can reduce the risk of nitrogen loss by up to 60% and shallow injection has been shown to reduce ammonia pollution by 70-80%."

Data

Mr Lowe says data coming from the Department of Agriculture, Environment and Rural Affairs shows slurry should be chopped to allow efficient distribution and minimise the ammonia discharge. And, he says, as many contractors now run LESSE spreading systems, it has become essential to pre-chop the product prior to spreading.

"This pre-chopping process reduces the risk of blockages at the applicator. It also allows the system to deliver slurry evenly on to the ground."

He says the forthcoming requirement to have all slurry and digestate storage covered to reduce atmospheric emissions means everyone should be seriously planning to separate their slurry.



"Separation frees up available storage by removing the dry matter from the liquid fraction and allows you to apply available nutrients within the liquid and solid fraction at the right times to maximise response.

"These benefits alone will give you payback on the investment. Then think of the challenges of mixing high dry matter slurry under a floating cover and then separation becomes a no-brainer."

Utilising farm slurry solids

Utilising the solids from farm slurry, also known as green bedding, has received mixed results in the past, with issues of hygiene and disease transmission making some farmers unsure about its use. However, Mr Lowe says by pasteurising the solids from separated slurry it is possible to produce a sanitised, comfortable alternative to straw or sawdust.

"The process is environmentally friendly, and the bedding can be returned to the land after its use as bedding, or it can be reprocessed again for further hygienic bedding," he says. "Significant cost savings can be gained when the process is balanced to bedding demand as the provision and purchase of bedding is eliminated. The pasteurising process kills off the harmful bacteria and pathogens to such a degree that the bedding is considered inert and does not transmit disease."

