VERDERHUS®

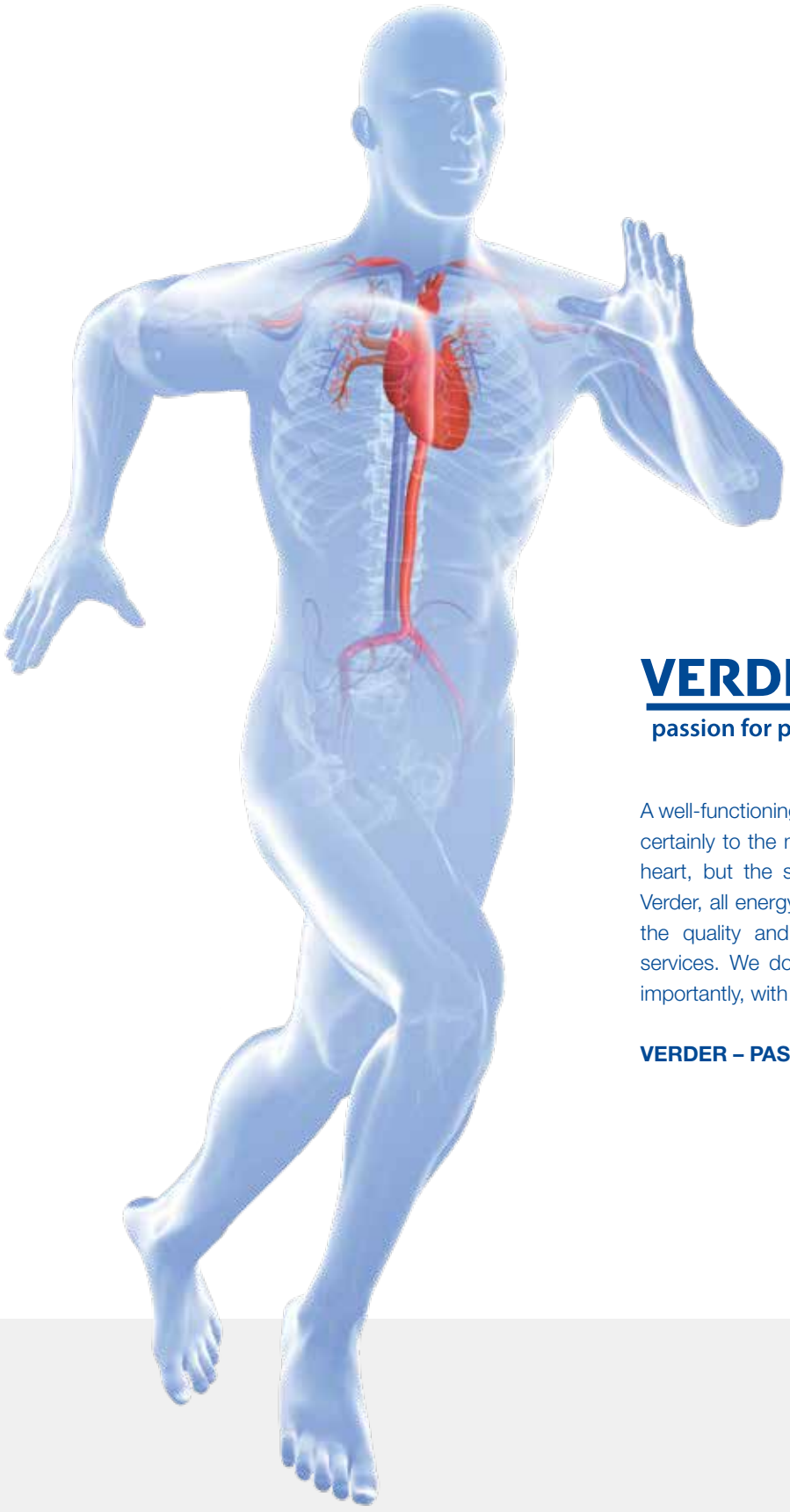
VERDERHUS **PRODUCT OVERVIEW**

Stainless steel screw centrifugal pumps

Benefits

- *Reduced maintenance cost*
- *Clog free pumping*
- *High efficiency*

VERDER
passion for pumps



VERDER
passion for pumps

A well-functioning pump helps you succeed. That applies certainly to the most important pump in life, the human heart, but the same goes for pumps in business. At Verder, all energy and attention is focused on improving the quality and performance all of our pumps and services. We do so with energy, dedication and most importantly, with our heart.

VERDER – PASSION FOR PUMPS

- *1 Company*
- *28 Countries*
- *60 Years of expertise*
- *Global network*
- *Local distributors*
- *In-house service & maintenance*
- *A solution for every application*

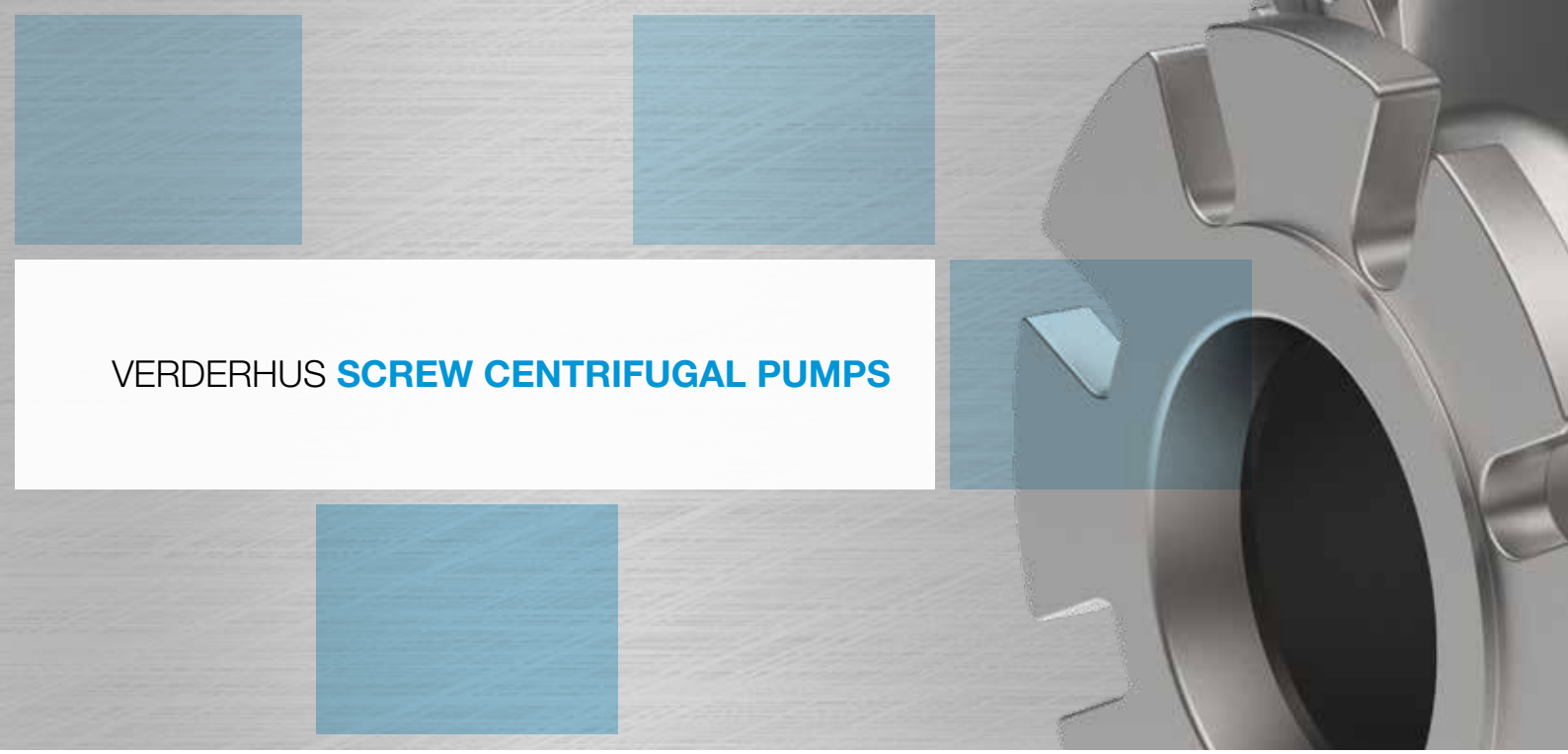
THE VERDER GROUP

The Verder group is a family owned business formed 60 years ago in the Netherlands; the group consists of a worldwide network of production and distribution companies. Group companies are involved in the development and distribution of industrial pumps, pumping systems, high-tech equipment for quality control, research and development into solid material (solids sample preparation and analytical technologies). The Verder Group employs over 1850 people and has an annual turnover in excess of 400 million Euros.

Among the most successful of Verder's technologies is its innovative Verderhus screw centrifugal pump range.

Verderhus stainless steel screw centrifugal pumps

Verderhus stainless steel screw centrifugal pumps combine the best features of centrifugal and positive displacement pumps to define a new standard for low head, high flow pumping. Each Verderhus pump has a large screw impeller gently feeding product into the pump chamber and efficiently transferring it to the discharge line. The open impeller allows large solids to be easily pumped, whilst the screw design is ideal for high solid contents or viscous liquids and produces a high efficiency, low NPSHr pump, lowering both energy use and ownership costs.



VERDERHUS **SCREW CENTRIFUGAL PUMPS**

Features

- *High viscous pumping:* The combination of properties of a centrifugal and positive displacement technology enables pumping of high viscous fluids up to 3000cPs.
- *Low shear pumping:* The gentle action of the impeller shape avoids any emulsification and protects from floc damage in active sludges for example.
- *Solid Handling:* The free passage of the screw impeller design can enable large solids up to 80% of the discharge flange and that can mean particles up to 80 mm in diameter.
- *High efficiency:* Due to the innovative design efficiencies can be up to 70% at BEP that reduces energy costs over more traditional technologies.
- *Wear protection:* Using the best choice of materials and coatings can protect the pump from abrasion, also assisted by the ability of adjusting the impeller casing gap which extends the life of the pump and maintains efficiency.

Materials

*Impeller housing/Cone**	*Stainless steel 1.4408 (316) (Nitrided)*
*Intake socket**	*Stainless steel 1.4408 (316) (Nitrided)*
*Impeller**	*Stainless steel 1.4408 (316) (Nitrided)*
*Bearing housing**	*Stainless steel 1.4408 (316) (Nitrided)*
*Cooling flange***	*Stainless steel 1.4408 (316) (Nitrided)*

* *Impeller housing, Intake socket, Impellers, Bearing housing and Cooling flange will now be Nitrided as standard to increase wear resistance and surface hardness.*

** *Cooling flange is only available in pump range 100-80 to 150-100.*

Seal Specification	Product Side	Motor Side
Rotating Face	*SIC*	*Carbon*
Static Face	*SIC*	*Ceramic*
Elastomer	*Viton*	*NBR*

HOW DOES **A SCREW CENTRIFUGAL PUMP** WORK?

The Verderhus stainless steel screw centrifugal pump is unique in that it operates a hybrid principle of both a centrifugal and positive displacement action. The hybrid pumping principle is possible due to the screw centrifugal impeller and cone assembly; unique to this category of pump. The contour and shape of the impeller produces compression, similar to a positive displacement pump.

This principle is combined with an open screw to allow the easy passage of large solids. Towards the discharge end of the impeller the diameter increases and the channel contour steepens. In this way the velocity of the fluid is increased, generating centrifugal force, typical of a radial action centrifugal pump. The cone shape of the pump casing matches the impeller's increasing screw diameter. The screw provides a close tolerance to achieve efficiencies as high as 70%. The impeller provides easy passage for larger solids, slurry and sludge.

What are **your benefits** using a Verderhus stainless steel screw centrifugal pump?

Reduced maintenance cost

In a screw centrifugal pump, the screw is the part most prone to wear. Verderhus impellers are designed oversize and available in hardened materials to decrease this effect meaning less maintenance and downtime to your process.

Clog free pumping

Solid sizes up to 80% of the discharge size which in some case can mean solids up to 80 mm in diameter.

Efficient pumping of high viscous fluids

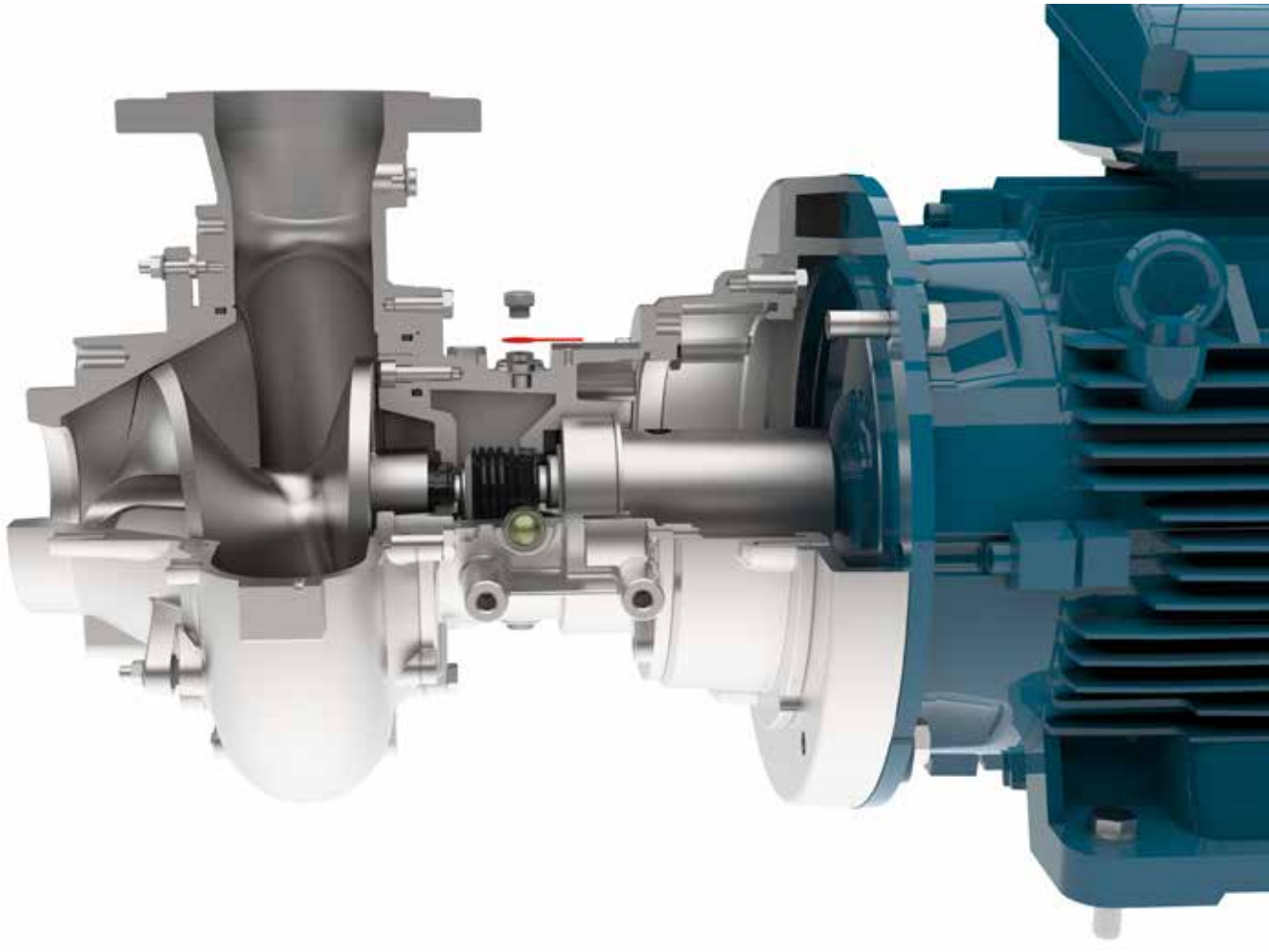
The hybrid nature of the pump creates high efficiencies for high viscous fluids that can contain solids. These will be pumped with much lower power requirements than traditional technologies.

VERDERHUS
Overview of pump models

Verderhus® HSB stainless steel pumps

Stainless steel horizontally orientated close coupled pump mounted on a base plate handling high viscosities and large solids up to large flowrates. Available in pump sizes 50-50 to 150-100.

Max. flow	*360 m³/h*	*Max. head*	*24 mwc*
Fluid temperature	*-20 to +100 °C*	*Max. solids size*	*80 mm*
Max. viscosity	*3000 cP*	*Solids content %*	*Sludge 10%*
Ambient temp.	*-5 to + 40 °C*		*Slurry 30%*



A **PUMP SOLUTION** FOR EVERY APPLICATION

Lime slurry (Calcium hydroxide, Ca(OH)2 or Kalkmilch) is used globally to correct waste water pH levels and to neutralize incinerator exhaust emissions.

The process
Lime slurry is used to neutralize incinerator emissions and remove Dioxins and similar hazardous chemicals.

The problem
The existing vortex tank feed pump had to be serviced every month because abrasive wear caused by the lime slurry.

The solution
The Verderhus B close coupled pump has been running for 36 months without any maintenance.

Pumping Lime

A UK manufacturer required precise blending and gentle handling of lubricant oils, critical to all types of industrial processes.

The process
A 220cPs anti-foaming additive lubricant is transferred between tanks.

The problem
Previously a series of centrifugal pumps, each with a 4kW motor, transferred a 220cPs anti-foaming additive lubricant mix between tanks. The viscosity was too high for the closed impeller design requiring an over-sized pump resulting in high-energy costs and frequent planned pumping maintenance cycles.

The solution
An initial Verderhus 80 x 50A pump proved it could pump the lubricant blend whilst drawing only 1.25kW, a 70% power reduction and has resulted in the installation of a further 7 pumps.

Pumping Industrial Oils

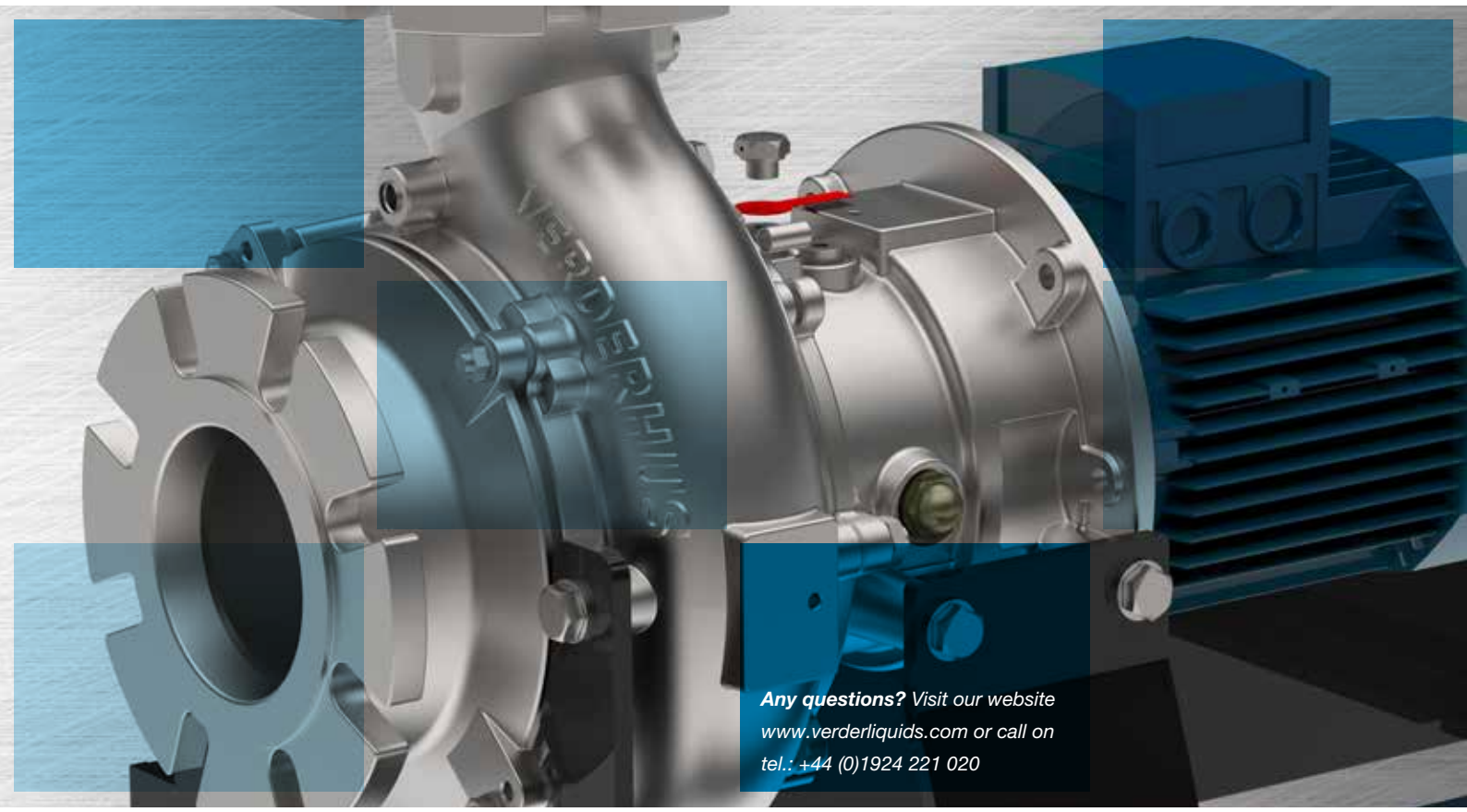
A Bavarian Brewery produces malt, an extremely difficult medium to pump.

The process
The malt is pumped at 120-130 m^3/h against a head of 10 – 12 mwc.

The problem
The customer previously used a semi-open vortex impeller pump. After the pump was stopped, the solid content of the malt solution changed resulting in clogging issues on pump restart. This required both the pump and pipe to be opened and to be cleaned.

The solution
An initial Verderhus 150 x 100B close coupled pump was installed, ran without problems and the satisfied customer ordered an additional 4 Verderhus pumps.

Pumping Malt



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