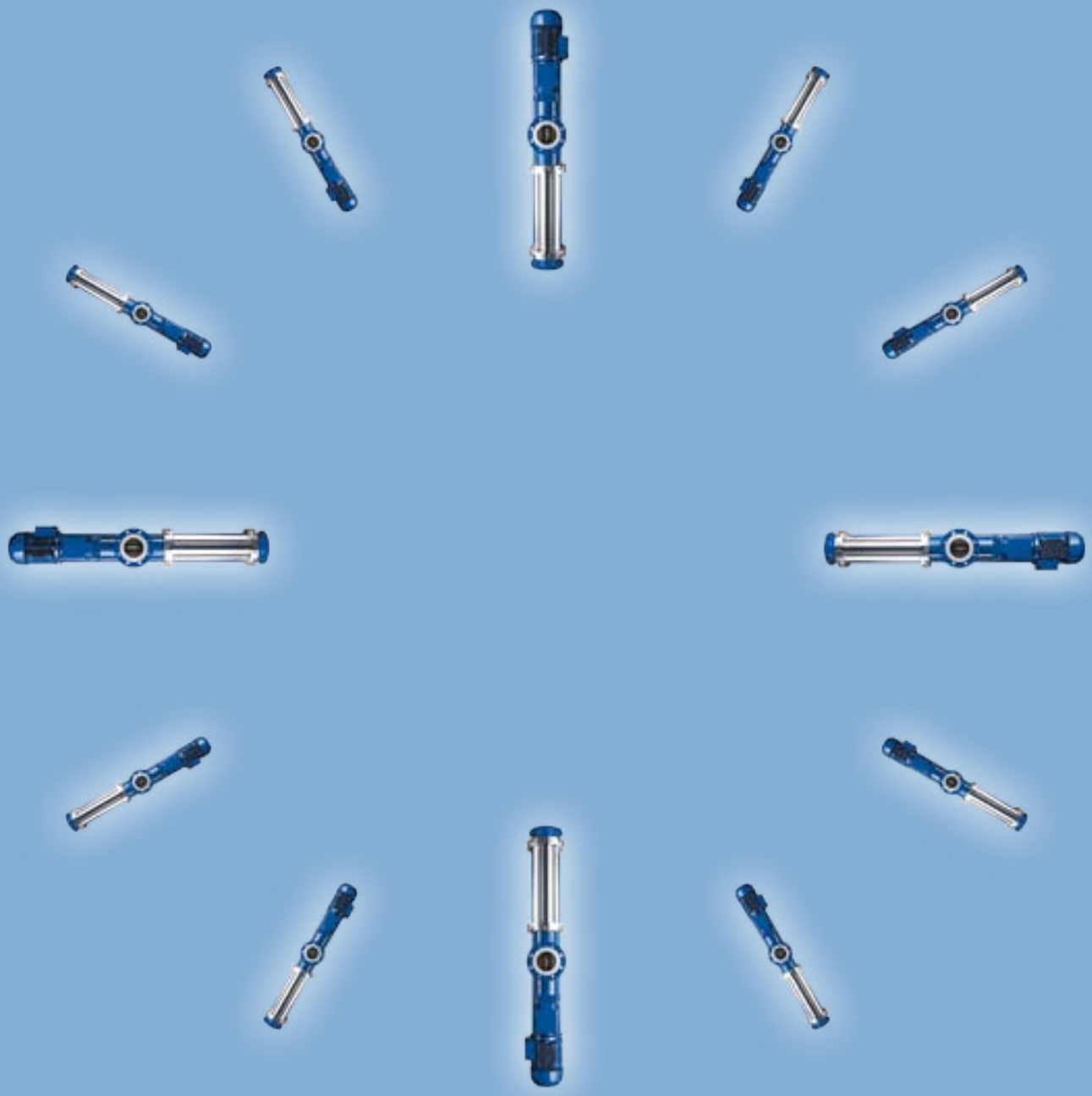
seepex.com
all things flow

Time Matters.
Smart Stator Technology.



Aristotle was right

He said, "The whole is more than the sum of its parts." In our case, it means "less"! Because time is something that you can save with the new "Smart Stator Technology" from seepex … and saving time means saving money. With regards to our new technology, though, a whole range of benefits exists in addition to saving time.

You need to first ask why seepex has rethought the mechanics of pumping in the first place and why from such a holistic perspective. The point was to construct solutions in such a manner that all aspects of environmental technologies and efficiencies were taken into account. In a global market that conveys millions of tons of the most varied wastes, economical and ecologically sensible technologies can create enormous savings potentials – for your processes, as well as for the environment.

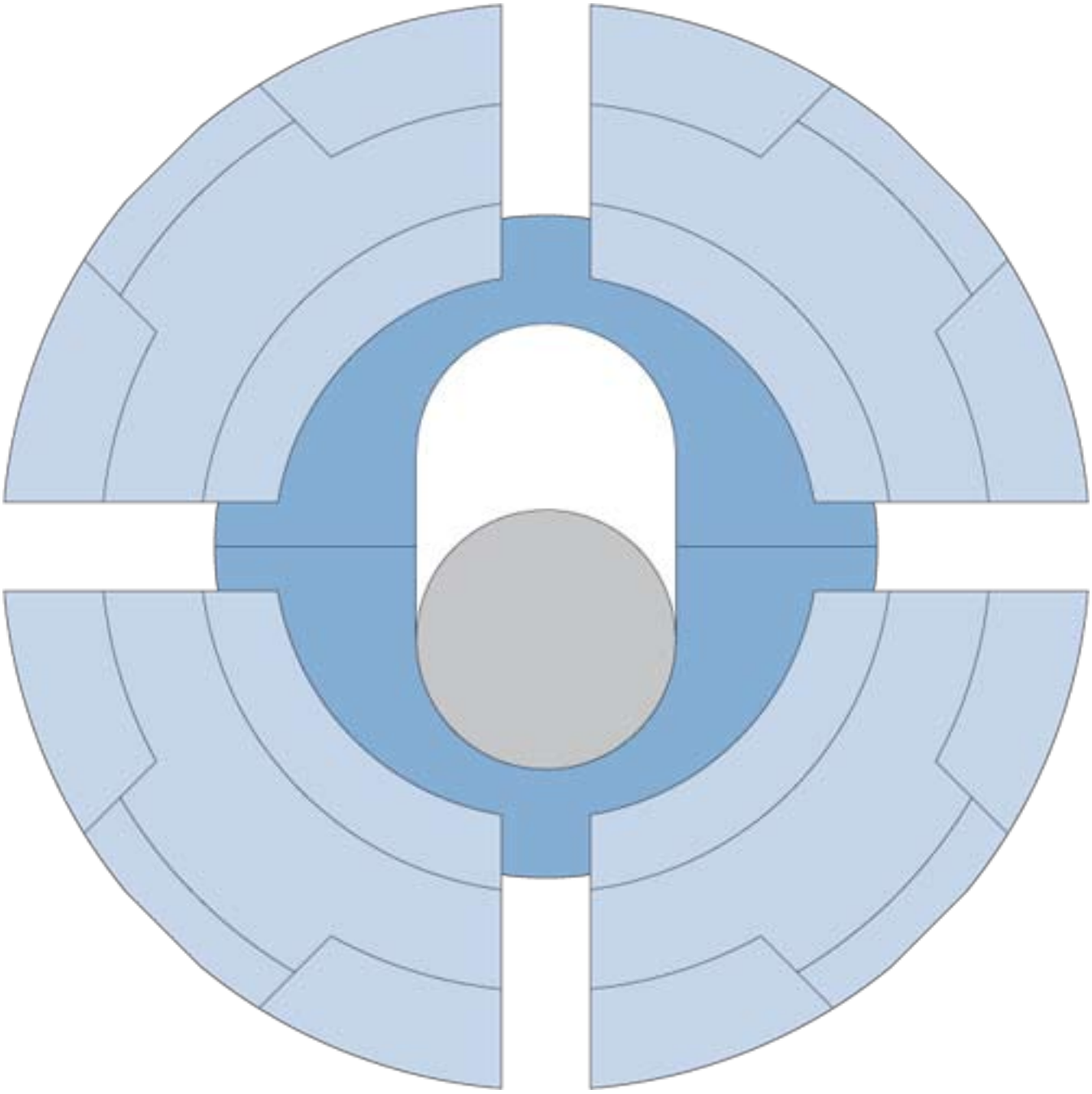
In this context, seepex has taken a step – actually, two steps – in the right direction.

Using "Smart Stator Technology" we have effected a fundamental improvement of pump technology by dividing the stator into two parts. Progressive cavity pumps in the pressure range to 3 bar, about 80% of the existing applications, can be operated with significantly greater efficiencies in the future with this innovation.

Maintenance times are reduced to an unprecedented minimum, as a result. Your requirements for high performance, efficiency and the minimal investment costs of a pump are taken into consideration. In short: fluids reach their destination more cost-effectively.

Progressive cavity pumps with "Smart Stator Technology" not only convey sludge, but a number of further products in other industries as well.

Our motto "All things flow" is reiterated with the "Smart Stator Technology".



Systems presentation of Smart Stator Technology as a cross-sectional graphic

Smart Stator Technology

"Time matters" – especially for environmental technologies, time is an important factor. Due to rising global consumption, environmental engineering has developed into one of the most important industrial disciplines. Efficiency plays an important role in this field. Reduction of maintenance time is extremely relevant for companies in terms of investment and the calculation of Life Cycle Cost.

But modern technology must contribute even more – it must ensure a reduction in environmental pollution by the intelligent use of materials to save resources. It has to guaranty a reduction in energy consumed, while performing the necessary hydraulic functions required by a pump. As a result the challenges of increasingly more stringent limits in countries and municipalities can be dealt with confidently. This also applies to the growing quantity of hazardous substances and their problematic components.

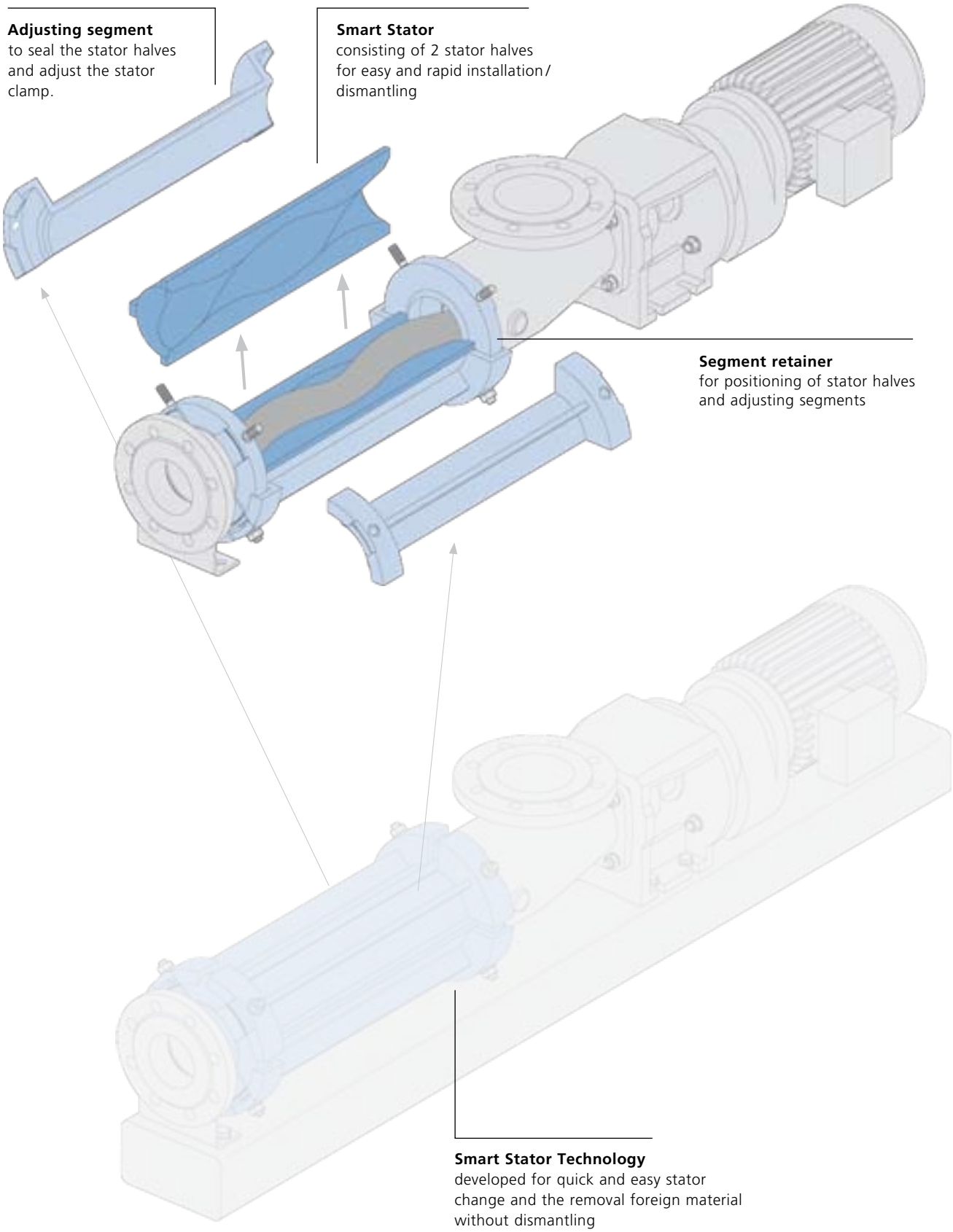
"Smart Stator Technology" represents this modern reality. High-performance pumps equipped with divided stators are the heart of these new pumps, benefiting the entire process and the overall productivity of the facility. It will be even easier in future to make investment decisions that are ecologically both responsible and economically viable.

Pumps in the seepex product group N, which have proven themselves in environmental technology, can now be equipped with this innovative technology.

The division of the stator into two parts allows maintenance work on the stator or the rotor of the pump to be done in a few motions and with the least expenditure of time and effort. The pump with "Smart Stator Technology" also reduces space requirements, since installation and dismantling occurs without having to disassemble the entire pump or any piping.

While it sounds simple, this technology was preceded by a lengthy research and development process. Many prototypes and test runs of pumps were required in order to ensure that it could be used in almost all conceivable situations.

The results of these efforts to create an innovative conveying technology are on the following pages.


Adjusting segment
to seal the stator halves
and adjust the stator
clamp.
Smart Stator
consisting of 2 stator halves
for easy and rapid installation /
dismantling
Segment retainer
for positioning of stator halves
and adjusting segments
Smart Stator Technology
developed for quick and easy stator
change and the removal foreign material
without dismantling

Open, shut, open, shut, open …

Pumps with “Smart Stator Technology” are designed for up to 3 bar and they cover the majority of applications in the environmental technology, food and chemical industries. This flexible stator concept allows rapid and uncomplicated pump maintenance. This could be either to change the stators or rotors due to wear and tear (after many thousands of hours of work) or to remove foreign materials.

The speed at which this happens is astonishing and saves up to 60% of the usual assembly time. Both the maintenance staff and facility management are pleased.

Big performance, small space

Progressive cavity pumps with “Smart Stator Technology” no longer have to be removed from the installation for maintenance. The laborious and time-consuming work of dismantling and assembly of piping and the removal of other equipment components are eliminated as a consequence. Furthermore, the smaller component sizes and weights mean that the burden on maintenance staff is less.

Short-term relief and long-term space savings are the result of this new technology.

Tight, tighter, the tightest

The possibility that flexible stator construction does not remain sealed in the conveying process is eliminated. Stress tests lasting months of up to 300% of the rated operating pressure in our main plant in Bottrop were conducted without faults – the pumps passed comprehensive measurements, examinations and checks with flying colors.

The result: "Smart Stator Technology" holds – tight – true to its promises.

Smart Service

"Smart" not only means fast, but clever, as well. It almost goes without saying, therefore, that we thought about guarantying ease of servicing by means of simple principles in construction. With a few simple motions even mechanics that are not experts in progressive cavity pumps can perform pump maintenance.

No special tools are required with the seepex "Smart Stator Technology".

Affordable cost of living

Everyone knows the relevance of cost of living from his own experience. Plant constructors and investors are now also experiencing this factor with our pumps. seepex has committed itself to Life Cycle Cost (LCC) in the development and construction of conveying solutions. LCC can no longer be ignored in environmental technology when deciding on any capital purchase. Given the constant rise in energy prices, high personnel cost and high materials costs only a very few pumps can claim to be living affordable lives.

From this perspective the "Smart Stator Technology" pump can be said to be living at a very affordable level – and with an above-average life span.

All for one

Division of the stator into two parts is extremely "smart" from an ecological point of view. Material replacement in the case of an exchange is limited to the major elements of wear and tear and is, therefore, resource-friendly. From a holistic perspective the ecological balance for the manufacture and disposal of pump parts is considerably improved and transport and freight costs reduced by 40% on average.

The holistically conceived construction concept of "Smart Stator Technology" is, really, also good for the environment.

Exemplary operating costs

	Unit	SST	Conventional
Operating hours per year		6.000	6.000
Energy costs	Euro/KWh	0,05	0,05
Labour costs	Euro/h	70	70
Pump lifetime	Years	10	10
Interests	%	8	8
Amortization of investment	%	10	10
Pump			
Power requirement per pump	KW	4	4
Number		15	15
Wearing part reduction (stator) per pump	%	20%	
Maintenance time saving per pump	%	60%	
Number of service technicians		1	1,2
Costs			
Investment volume for 15 pumps	Euro	60.000	60.000
Maintenance, spare parts and energy costs per year	Euro	32.000	42.000
Savings			
per year	**Euro**	**10.000**	
in 10 years	**Euro**	**100.000**	

(non-binding model calculation)

Less is more?

Less is not always more. “Smart Stator Technology” shows that two halves can be of more value than the original whole part – and entails less time and cost in the long run. Our many years of experience as pumping specialists shows us again and again that more research and development leads to fewer problems or – more positively expressed – better solutions, more customer satisfaction and more secure processes.

So, when it comes to R&D, more really is more!

From … to

"Smart Stator Technology" is used for the current models in the product group N. Their features and performance are customised individually to your process, but here is a brief overview:

- Maximum operating pressure: 3 bar
- Equipment protection: 4.5 bar
- Maximum pump speed: 350 rpm
- Preservation of standard systems measures
- Undersize rotors are no longer required
- Ease of servicing (stator can be changed without dismantling pump, pipe disassembly not required)
- Low Life Cycle Cost (shorter assembly times, less downtime, lower spare part prices, lower capital costs for parts storage, lower transport/freight costs)
- Significant improvement in the ecological balance in the manufacture and disposal of pump parts due to resource-conscious materials use and disposal
- Lower space requirements, since no space is required for stator disassembly
- Easier handling due to lower weight

Divided stator, one opinion

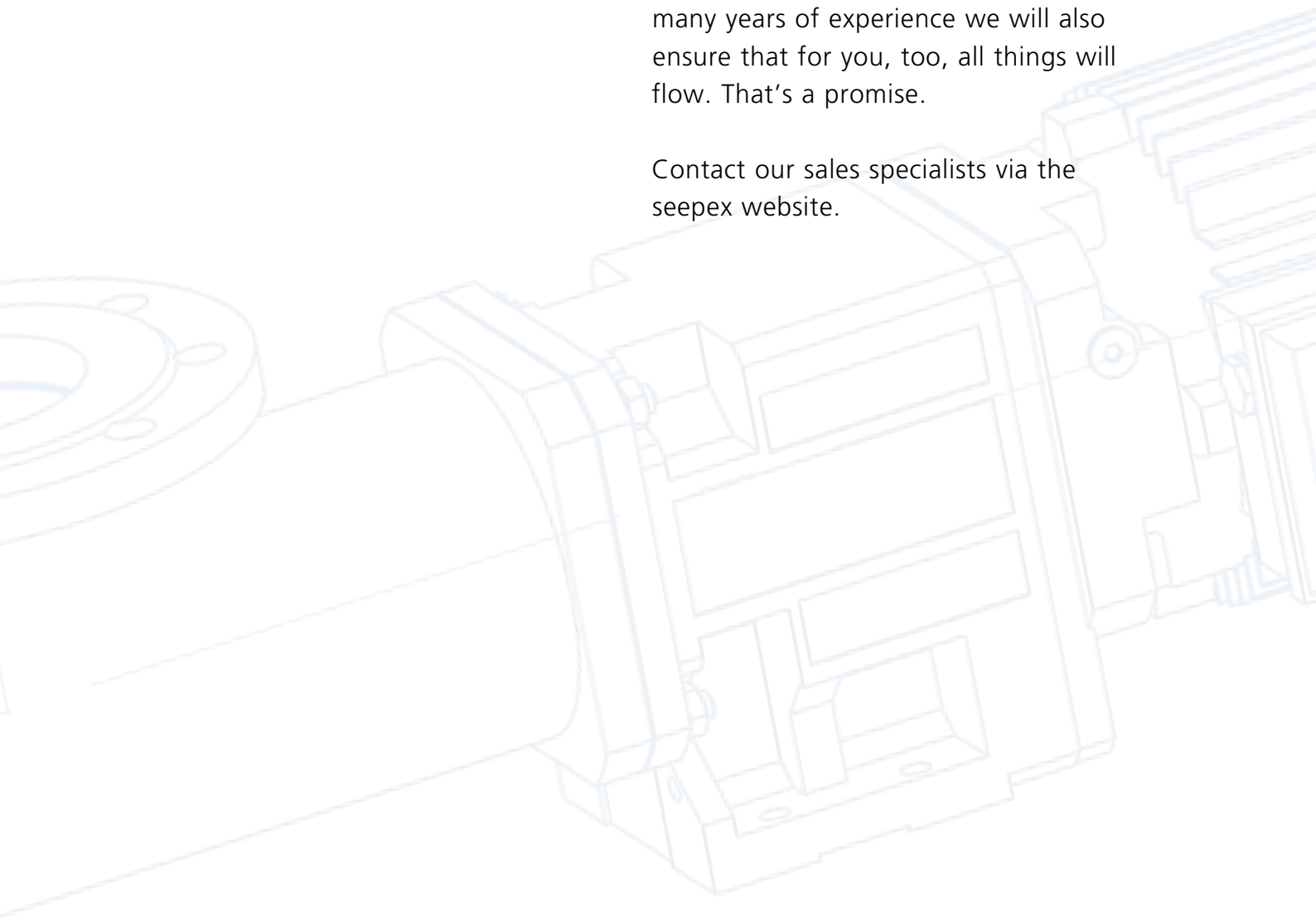
Innovation is the basis of our success. As a leading international provider of products and services in pumping and treatment of fluids, the development of technology is of great importance to us. We were convinced of the performance of "Smart Stator Technology" from the very first development steps for economic and ecological reasons.

More than 500 employees worldwide have an unanimous opinion on the divided stator: Only a smart technology is a good technology.

Time Matters

Ask our experts for an offer that will also convince you about the benefits of "Smart Stator Technology". Based on our many years of experience we will also ensure that for you, too, all things will flow. That's a promise.

Contact our sales specialists via the seepex website.



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all things flow

And what can we get flowing for you? Your nearest contact:

Or visit www.seepex.com

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