MARITIME SEALS

KEEPS YOU GOING
YOUR PEACE OF MIND

LAGERSMIT
THE ORIGIN OF SEALING SOLUTIONS

HOW WE DELIVER PEACE OF MIND WITH THE BEST SEALING SOLUTIONS FOR SHIPS, PUMPS AND TIDAL TURBINES

Disclaimer: Subject to modifications / errors and omissions excepted / although the information contained in this brochure has been compiled with the utmost care, it is subject to change without notice. It is therefore your responsibility to verify its accuracy before acting on it.

COMPANY INTRODUCTION

LAGERSMIT HAS BEEN IN THE MARITIME INDUSTRY SINCE 1856. WITH THIS FACT IN COMBINATION WITH MORE THAN 50,000 SEALS DELIVERED, YOU CAN SAY WE HAVE GAINED THE RIGHT SEALING KNOWLEDGE, RESOURCES AND CAPACITY TO DEVELOP SEALS FOR YOU AND WILL CONTINUE TO DO SO IN THE FUTURE.

It is important that all sealing components are of the highest quality and are perfectly compatible with each other. In the production facility at our headquarters in the Netherlands we make sure Supreme® seals meet these high standards – adding quality and reliability to your propulsion system.

Fast delivery times are an absolute must. We have therefore adapted our processes accordingly, offer committed 24/7 support and can have an expert on site within 48 hours when you need us. In addition, our Supreme seals are suitable for both new-build and retrofit applications. In a nutshell, we deliver you Peace of Mind.

since 1856

FOUNDED IN 1856

BASED IN THE NETHERLANDS

24/7 WORLDWIDE SERVICE & SPARE PARTS

50,000

DELIVERED OVER 50,000 SEALS

DEDICATED RESEARCH & DEVELOPMENT

ONE STEP AHEAD

LAGERSMIT CAN BUILD ON A RICH HISTORY OF DESIGNING, PRODUCING AND INSTALLING STERN TUBES, BEARINGS AND SEALS. OUR GOAL AS AN INDEPENDENT SEAL AND BEARING SUPPLIER IS TO WORK CLOSELY WITH OUR CUSTOMERS, PROVIDING THEM WITH A SOLUTION THAT EXCEEDS THEIR EXPECTATIONS.

Our Research and Development department is continuously working on product improvements, line extensions and new products for our customers to have sustainable, reliable, green and cost efficient sealing solutions. With our Supreme Ventus®, we have managed to improve seal performance, extend docking intervals and are in compliance with the Vessel General Permit (VGP) requirements and the Vessel Incidental Discharge Act (VIDA).

Our Custom Design Engineering department spends its time on seal retrofit applications and custom-designed sealing solutions for all sorts of applications relating to marine propulsion, dredging, (clean) power generation and offshore equipment. Even if it seems there is no solution at hand, our engineers often do find one.

Towards the future, Lagersmit is focusing more and more on predictive maintenance of the seal and further extending the seal's lifetime by enhancing the seal design and developing real-time auxiliary systems. Always one step ahead, delivering customers Peace of Mind.

Your needs and questions inspire us. Contact us any time!

PEPIJN SWARTE
R&D Manager
info@lagersmit.com

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SEALING SOLUTIONS FOR STERN TUBES

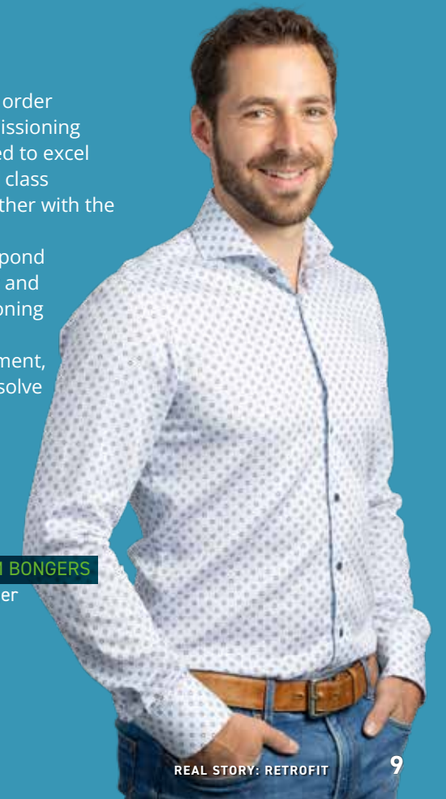
MINERVA MARINE INC.

Minerva Marine is one of the largest shipping companies in Greece. They used to apply conventional stern tube seals incorporating Environmentally Acceptable Lubricants (EALs) for meeting the VGP requirements, but they weren't satisfied with these sealing solutions any more due to the poor long-term performance and efficiency. Another motivation for a new sealing solution is that they needed to comply with the demands from harbours. Zero emissions stern tube seals were not simply desired, but a requirement. Addressing the issues decisively from both engineering and financial perspectives Minerva Marine initiated a project for retrofitting conventional seals to the Supreme SeaGuard Ventus® air-type seal.

Minerva Marine started researching several air-type seals, including the Supreme Ventus®. The organisation compared the advantages of this sealing solution with features of other air-type seals. After extensive research, Minerva Marine made the decision to retrofit their current seals to the Supreme Ventus, starting with the Medium Range 2-size tanker MT Minerva Mediterranea. The company is known for its thorough examinations before they implement something new within the company and its attitude towards the Supreme Ventus is very positive.

> **"BASED ON A THOROUGH, ASSESSMENT THE SUPREME (SEAGUARD) VENTUS OUTPERFORMS OTHER AIR-TYPE SEAL SOLUTIONS DUE TO ITS UNIQUE DESIGN CHARACTERISTICS, I.E. SIMPLICITY, RELIABILITY AND COST EFFECTIVENESS."**
>
> Minerva Marine Inc.

Given the limited time between order confirmation and retrofit commissioning – roughly a month – we managed to excel and deliver a factory tested and class approved system on time. Together with the technical engineer of our agent UMAR–WSR we managed to respond strongly, collaborated smoothly and ensured a successful commissioning of the system. Minerva Marine deeply appreciates the commitment, team spirit and eagerness to resolve issues in a thorough and timely manner during the installation.



JAN WILLEM BONGERS
Sales Manager

SUPREME® SEALS

We believe a seal should deliver top performance, keep you going and offer you Peace of Mind. This idea led to the development of the Supreme seal. Introduced in the 1980s and further developed ever since, Supreme seals offer a 'plus' to many propulsion systems and vessels worldwide.

The Supreme stern tube seals and Supreme thruster seals are produced with high quality housing parts, lip seals and liners. Our Modular, Made-to-Measure philosophy enables us to deliver customer-specific designs combined with short quotation, lead and delivery times. In addition, the Supreme seals are suitable for both new-build and retrofit applications.

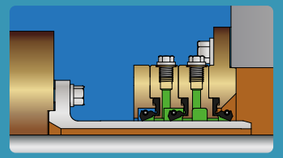
The list of advanced options like an HML coating for extra durable liners and environmentally acceptable lubricant (EAL) compatible lip seals allows you to enhance your seal design to your preferences.

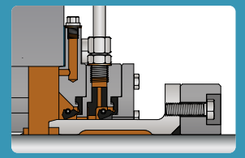
APPLICATIONS

- STERN TUBES - FPP, CPP
- THRUSTERS - AZIMUTH, AZIPULL, TUNNEL, PODS
- BULKHEADS
- FIN STABILISERS
- RUDDER STOCK
- GEARBOX

VARIOUS SEAGOING VESSELS, NAVAL SHIPS, INLAND VESSELS, YACHTS, CRUISE SHIPS, FERRIES, DREDGE VESSELS

SUPREME® STANDARD (AFT + FWD)





BASIC, MODULAR MADE-TO-MEASURE

MODULAR DESIGN

SPLIT TYPE OPTIONAL

Looking for a reliable stern tube sealing solution?
The Supreme Standard is the basic design of the Supreme range. Consisting of bronze housing parts (or cast iron to fit inland vessels), and also available in a split version, the aft seal prevents water ingress and oil leakage to the outside environment.
The forward seal consists of cast iron housing parts and contains two oil-repellent lip seals preventing oil leakage to your engine room. Both seals are executed with a stainless steel liner.

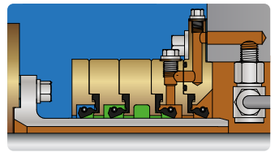
Complemented with a broad range of options, the Supreme seal can be fully customised to your specific sealing need to guarantee your Peace of Mind.

BENEFITS

- Highly corrosion resistant
- Modular, Made-to-Measure
- Effective separation of water and lubricants
- Optimised Total Cost of Ownership
- Available with a broad range of options
- Suitable for both new-build and retrofit applications
- Bonding in situ possible

VARIOUS SEAGOING VESSELS, NAVAL SHIPS, DREDGE VESSELS

SUPREME SEAGUARD® (AFT)



EXTRA SAFETY

REDUNDANT LIP SEAL

Do you prefer extra safety? The Supreme SeaGuard gives you extra security against oil leakage into the marine environment. How? – with an additional redundant lip seal.

The chamber between the two oil-repellent lip seals is pressurised by the stern tube header tank. This way the pressure on both sides of the fourth lip seal remains equal.
By closing off the oil supply to this chamber, the fourth lip seal can be used as a new oil-repellent lip seal. In case of leakage, docking and maintenance can be postponed by putting this redundant (fourth) lip seal to work.

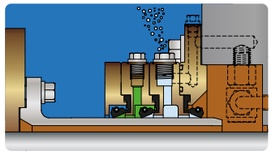
ADDITIONAL BENEFITS

The Supreme Standard advantages plus:

- Extra safety due to its redundant lip seal
- Extra safety against oil leakage
- Safely postpone maintenance

VARIOUS SEAGOING VESSELS, NAVAL SHIPS, INLAND VESSELS, YACHTS, CRUISE SHIPS, FERRIES, DREDGE VESSELS

SUPREME VENTUS® (AFT)



100% INTELLIGENT, ZERO EMISSIONS

VGP COMPLIANT · CONDITION MONITORING · LARGE VARYING DRAUGHTS

In search of a durable, self-regulating sealing solution that guarantees zero emissions of oil? The Supreme Ventus has an advanced self-regulating air control unit that enhances the seal's lifetime by minimising wear. Additionally, leakage is drained into a monitoring tank in order to prevent an oil-to-water interface and guaranteeing zero emissions of oil. The air control unit will monitor and display the condition of the aft seal. It will let you know when maintenance is due and warns you in case the aft seal shows intolerable leakage.

ADDITIONAL BENEFITS

The Supreme Standard advantages plus:

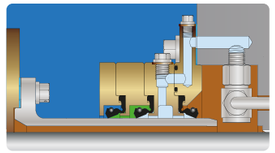
- 24/7 (remote) condition monitoring
- Five year warranty (ask for details)
- Instant adjustment to varying draughts
- Minimised wear on lip seals and liner
- Approved by DNV GL, in compliance with VGP/VIDA, Green Award, Green Passport and more

OPTIONAL SUPREME SEAGUARD VENTUS®

Combines the benefits of the Supreme Ventus and Supreme SeaGuard into one seal. The picture shows the typical set-up.

INLAND VESSELS, YACHTS, CRUISE SHIPS, FERRIES

SUPREME ATHMOS® (AFT)



ZERO EMISSIONS AND CONDITION MONITORING FOR SHIPS WITH SHALLOW DRAUGHTS

VGP COMPLIANCE · CONDITION MONITORING · LIMITED DRAUGHT

A sealing solution that ensures zero emissions of oil for ships with a shallow draught. The Supreme Athmos features condition monitoring to deliver you optimal Peace of Mind.

The Supreme Athmos system drains any leakage from the aft seal into the vessel. Additionally, the Supreme Athmos system monitors the condition of the aft seal and displays all relevant data. It lets you know when maintenance is due.

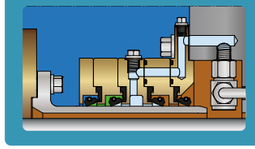
ADDITIONAL BENEFITS

The Supreme Standard advantages plus:

- 24/7 condition monitoring
- Compact, self-regulatory system
- Approved by DNV GL, in compliance with VGP/VIDA, Green Award, Green Passport and more

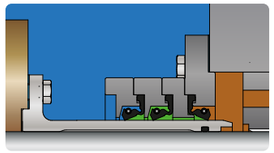
OPTIONAL SUPREME SEAGUARD ATHMOS®

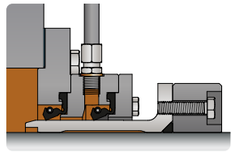
Combines the benefits of the Supreme Athmos and Supreme SeaGuard into one seal. The picture shows the typical set-up.



INLAND VESSELS

SUPREME® INLAND VESSEL (AFT + FWD)





SEAL FOR SMALL SHAFT DIAMETERS

MODULAR DESIGN

Are you sailing with an inland vessel? Our Supreme seal specially designed for all types of Inland vessels has a clever and high quality design. With its cast iron housing parts, chrome steel liner, oil-repellent and water-repellent lip seals, it is optimised to ensure a long service life.

Complemented with a broad range of options, the Supreme seal can be customised to your specific sealing needs, creating Peace of Mind.

ADDITIONAL BENEFITS

The Supreme Standard advantages plus:

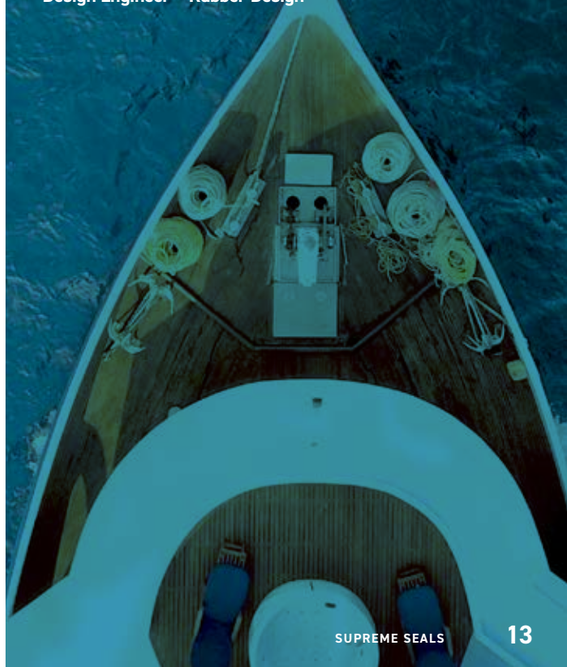
- Targeted design for inland vessels
- Available with a broad range of options
- Suitable for small shaft diameters

REAL STORY: **SUPER YACHTS**

RUBBER DESIGN

"Key words for super yachts are high quality, eye for detail and an excellent service level. The environment they operate in also demands for sustainability. The Supreme Athmos is highly reliable, protecting owners from unexpected maintenance and ensures zero emissions. For decades now Rubber Design and Lagersmit have been working together to provide yacht builders and yacht owners with the best sealing solutions and service."

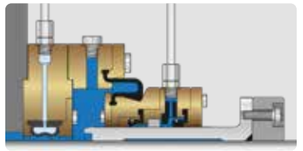
ROBERT DE GOEIJ
Design Engineer – Rubber Design



SEALING SOLUTIONS FOR WATER LUBRICATED SYSTEMS

VARIOUS SEAGOING VESSELS, INLAND VESSELS

SUPREME®
HYDROFUSE - STF WLC



EXTRA SAFETY AND ADAPTABILITY

VGP COMPLIANT | LARGE RADIAL PLAY | WATER-LUBRICATED

Are you looking for extra safety for your open water-lubricated stern tube system? The Supreme Hydrofuse system monitors and displays the status of your seals and let you know when maintenance is due. Through the Supreme radial lip seals, large axial shaft displacement is allowed, without compromising the functioning of the seal.

In case of in situ maintenance while afloat the Supreme Hydrofuse is equipped with an inflatable safety seal that can be activated, keeping a Peace of Mind.

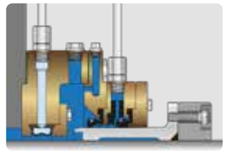
ADDITIONAL BENEFITS

The Supreme Standard advantages plus:

- Radial play up to 5mm
- Extra safety due to incorporated inflatable seal
- Approved by DNV GL, in compliance with with VGP/VIDA, Green Award, Green Passport and more
- Condition monitoring

VARIOUS SEAGOING VESSELS, INLAND VESSELS

SUPREME®
WATER LUBRICATED (FWD) - STF WL



ADDED SAFETY

VGP COMPLIANT | WATER-LUBRICATED

An environmentally friendly water-lubricated solution that is specially developed in accordance with the VGP/VIDA regulations. Through the incorporated inflatable seal additional safety and the possibility of maintenance afloat is provided.

ADDITIONAL BENEFITS

The Supreme Standard advantages plus:

- Extra safety due to incorporated inflatable seal
- Optimised and extended seal lifetime
- Approved by DNV GL, in compliance with with VGP/VIDA, Green Award, Green Passport and more

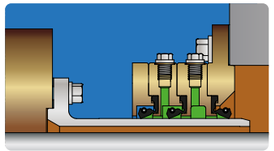
SEALING SOLUTIONS FOR THRUSTERS

Lagersmit delivers excellent solutions for new and existing thrusters. These may be simple and basic solutions, up to pressure-compensating, zero emissions and 100% condition-monitored solutions. Existing thrusters can be enhanced with a broad set of retrofit possibilities. In need for a new or retrofit thruster seal? Our experts are ready to find the best possible sealing solutions for you!

ERIC DE PAAUW
Key Account Manager

TUNNEL/BOW THRUSTERS

SUPREME® STANDARD



MODULAR, MADE-TO-MEASURE

MODULAR DESIGN

SPLIT TYPE OPTIONAL

Looking for a basic, reliable tunnel thruster sealing solution? The Supreme Standard is the basic design of the Supreme range. Consisting of bronze housing parts, the aft seal prevents water leakage ingress and oil leakage to the outside environment.

Complemented with a broad range of options, the Supreme seal can be custom designed to your specific sealing needs to guarantee you Peace of Mind.

The Supreme Standard seal is applicable to a fully oil-filled lower gearbox.

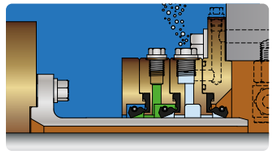
ADDITIONAL BENEFITS

The Supreme Standard advantages plus:

- Highly corrosion resistant
- Modular, Made-to-Measure
- Optimised Total Cost of Ownership
- Available with a broad range of options
- Suitable for both new-build and retrofit applications

TUNNEL/BOW THRUSTERS, AZIMUTH THRUSTERS, AZIPULL THRUSTERS

SUPREME VENTUS®



100% INTELLIGENT, ZERO EMISSIONS

VGP COMPLIANT

CONDITION MONITORING

LARGE VARYING DRAUGHTS

In search of a durable, self-regulating sealing solution that guarantees zero emissions of oil? The Supreme Ventus has an advanced self-regulating air control unit that enhances the seal's lifetime by minimising wear. Additionally, leakage is drained into a monitoring tank in order to prevent an oil-to-water interface and guaranteeing zero emissions of oil. The air control unit will monitor and display the condition of the seal. It will let you know when maintenance is due and warns you in case the aft seal shows intolerable leakage.

Suitable for pressurised oil-filled thrusters

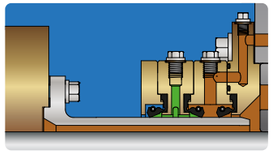
ADDITIONAL BENEFITS

The Supreme Standard advantages plus:

- 24/7 (remote) Condition Monitoring
- Five year warranty (ask for details)
- Instant adjustment to varying draughts
- Minimised wear on lip seals and liner
- Approved by DNV GL, in compliance with EPA's VGP requirements with VGP/VIDA, Green Award, Green Passport and more

AZIMUTH THRUSTERS, AZIPULL THRUSTERS

SUPREME® TS3



CUSTOM-MADE DESIGN

SPECIAL THRUSTER DESIGN

Looking for a reliable sealing solution to protect your thrusters? The Supreme TS3 seal is a targeted design for azimuth and azipull thrusters. It protects your thruster against water ingress and is custom-made for every application.

The chamber between the two oil-repellent lip seals is filled with oil and the resulting pressure effectively keeps water outside and oil inside the thruster gearbox.

The Supreme TS3 seal can be applied to spray-lubricated and fully oil-filled lower gearboxes.

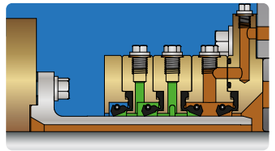
ADDITIONAL BENEFITS

The Supreme Standard advantages plus:

- Condition Monitoring
- Small build-in length
- Optimal design for azimuth and azipull thrusters

AZIMUTH THRUSTERS, AZIPULL THRUSTERS

SUPREME® TS4



EXTRA SAFETY PREVENTING WATER INGRESS

SPECIAL THRUSTER DESIGN

REDUNDANT LIP SEAL

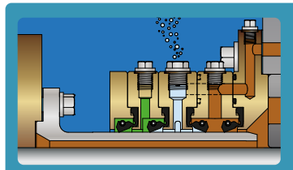
Want extra safety preventing water ingress? The Supreme TS4 seal is a targeted design for azimuth and azipull thrusters that deal with heavy-duty operations. It provides extra safety for the thruster against water ingress and oil leakage to the outside environment. The chamber between the two oil-repellent lip seals is filled with oil and the resulting pressure effectively keeps water outside and oil inside the thruster gearbox. The Supreme TS4 is equipped with an additional water-repellent lip seal and is suitable for heavy-duty operation.

The Supreme TS4 seal is applicable in a spray-lubricated and fully oil-filled lower gearbox.

ADDITIONAL BENEFITS

The Supreme Standard advantages plus:

- Condition monitoring
- Special thruster design
- Safety measure preventing water ingress



OPTIONAL
SUPREME TS4 VENTUS®
Combines the benefits of the Supreme Ventus and Supreme TS4 seal into one seal. The picture shows the typical set-up of this seal.

OTHER SEALING SOLUTIONS

IMAGE: COURTESY OF ROYAL IHC

REAL STORY: **GEARBOX SEALS**

KUMERA GETRIEBE GMBH

Kumera Getriebe GmbH (Kumera), formerly known as Keller GmbH, delivered gearboxes on Asia's largest and most advanced dredging vessel, the Tian Kun Hao. For the sealing system on these gearboxes Kumera has closely cooperated with Lagersmit.

The delivery was made in October 2016 to be fitted on this extraordinary dredge vessel for Tianjin Dredging Corporation (TDC). Kumera built the most essential part of the drive train: the cutterhead gearbox. In total the project involved gearing systems for two inboard pumps and an underwater pump, and a cutterhead gearbox with a nominal engine power of 5000 kW.

The self-propelled vessel, launched in November 2017 in Qidong, East China's Jiangsu Province, is a staggering 140 metres long, has a width of 27.8 metres and is able to operate in depths of between 6 and 35 metres. Just imagine the pressures and the rough and abrasive environment this cutter has to operate in.

> **"THE TREND FOR LARGER AND LARGER GEARBOXES FOLLOWS THE TREND FOR LARGER AND MORE POWERFUL DREDGERS."**

'Larger cutters have longer ladders and thus are able to cut deeper than smaller ones. There are not too many classified sealing manufacturers worldwide. In Lagersmit, Kumera finds a partner that

- knows the operational conditions
- supplies quality
- is flexible
- provides the necessary support during design stage
- provides the necessary support in case of emergency.

We feel comfortable with the technical and quality package Lagersmit delivers.'

Kumera Getriebe GmbH

DUSTIN VAN HORIK
Commercial Director

SUPREME® BULKHEAD SEAL

SAFE RETURN TO PORT

Safety on board should always be a priority. The Supreme Bulkhead seal is generally used to prevent flooding of the bulkhead seal's adjacent compartments in the unlikely event of an accident. The bulkhead seal consists of split aluminum housing parts, comprising Supreme® lip seals that are fitted on the shaft by ball chains. The lip seals can be bonded in situ, making it easy to install and perform maintenance.

Lagersmit also provides gas-tight bulkhead seals on request.

BENEFITS

- Seals off non-flooded compartments if flooding occurs
- Ensures a safe return to port
- Allows large radial (5 mm) and axial (30 mm) play
- Can be used for low- and high-speed shafts

SUPREME® RUDDER STOCK SEAL

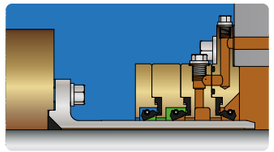
PREVENTS WATER INGRESS INTO THE RUDDER STOCK BEARINGS

Our rudder stock seals are custom designed to seal the upper and lower rudder stock bearings. Lagersmit can offer various type of lip seal materials depending on the type of lubricant used.

BENEFITS

- Fully customised upper and lower rudder stock bearing seals

SUPREME® FIN STABILISER SEAL



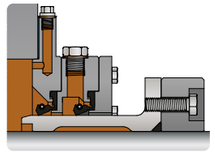
PREVENTS WATER INGRESS INTO THE DRIVE TRAIN

In the cruise and yacht industry many fin stabilisers are already equipped with our custom-made, state-of-the-art Supreme seal. The seal prevents water ingress into the drive train of the fin stabiliser and can withstand the abrasive environment of coastal waters and harbours.

BENEFITS

- Highly corrosion resistant

SUPREME® GEARBOX SEAL



SEALING THE GEARBOX FOR INTERMEDIATE SHAFT DIAMETERS 116 MM UP TO 1150 MM

Different custom seal designs are engineered for gearboxes and bearing blocks operating under varying conditions.
Supreme seals can be applied to propulsion gearboxes as well as submerged cutter shaft gearboxes for cutter dredgers, operating under harsh conditions.

The gearbox seals are engineered as a fully split design and can have a floating set-up to ensure extreme shaft movements are followed smoothly.

BENEFITS

- Reliable
- Durable

REAL STORY: **MEYGEN PROJECT**

SEALING SOLUTION FOR TIDAL TURBINES

SIMEC ATLANTIS ENERGY

We have been specialised in tidal generation shaft seals since 2003. Due to our expertise in the tidal energy field, tidal turbine supplier Atlantis Resources got in touch in order to develop a suitable sealing solution for their tidal turbines for the MeyGen project. Engineers from both companies formed one team, to go through the various design stages: from primary design until the finalization of the sealing solutions within the tidal turbine unit. After various design revisions and testing stages, we delivered and installed the Supreme TG-850 seals for Atlantis' AR1500 Tidal generator unit in the beginning of 2016.

"WE ARE IMPRESSED BY THE QUALITY OF LAGERSMIT'S PRODUCTS. THE DEDICATION OF ITS TEAM AND THE PROFESSIONALISM THAT HAS BEEN DISPLAYED IN WORKING WITH OUR TECHNICAL TEAM WAS EXCELLENT"

SUPREME® TIDAL GENERATION

Looking for an especially designed seal for your tidal turbine?
The Supreme Tidal Generation is your solution.

ADVANTAGES

- Optimised maintenance interval
- Environmentally friendly

Want more information about our sealing solutions for tidal turbines?
Contact us **info@lagersmit.com**

CUSTOMISED OPTIONS

Fairly simple additions may add big benefits to your seal design.
Take for instance wire winders and net cutters, to prevent fishing lines from entering your seal, or the HML liner coating that protects the liner against heavy wear. These popular options are commonly used to ensure an optimised seal life time!

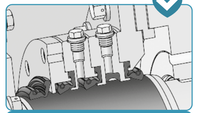
BART VAN LEE
Key Account Manager

SUPREME® OIL COLLECTOR RING

Do you prefer a clean engine room if lip seal wear occurs? Equip the Supreme® forward seal with an oil collector ring and prevent oil droplets from entering the engine room.

BENEFITS
- A clean engine room
- Prevents a slippery floor and the risks of accidents

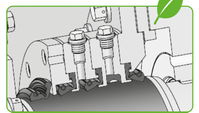
NBR OR FKM LIP SEALS



What is your speed and draught? Depending on the vessel's operating conditions we recommend you to use Supreme® FKM lip seals or Supreme® NBR lip seals.

BENEFITS
- Supreme FKM lip seals are more resistant to higher temperatures than Supreme NBR lip seals
- Supreme NBR lip seals are more resistant to abrasive particles than Supreme FKM lip seals

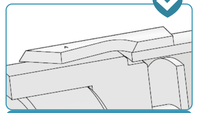
FKM-EAL LIP SEALS



Are you using an EAL instead of mineral oil? An especially developed Supreme® FKM-EAL lip seal is available, which is more chemically resistant against hydrolysed ester-based EALs.

BENEFIT
- More chemically resistant to aggressive acidic lubricants; swelling of the lip seal is prevented

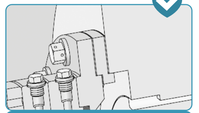
NET CUTTERS



Need to protect your Supreme® aft seal against fishing nets? Choose stainless-steel double-sided net cutters.

BENEFIT
- Safety measure for the Supreme aft seal against fishing nets and similar hazards

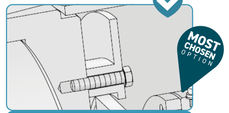
DISTANCE RING



Looking for a way to extend the lifetime of your stainless-steel liner? A divisible distance ring can be added to your Supreme seal. By removing the distance ring during maintenance, the entire seal can be repositioned to create a new running surface for your lip seals.

BENEFITS
- Extends mean time between liner maintenance jobs
- Reduces docking time and saves costs by not having to machine the liner

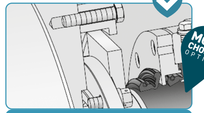
WIRE WINDERS



Do you want to avoid fishing lines from damaging the seals? Use our wire winders which need to be mounted on to the propeller hub.

BENEFITS
- Split type
- Available for every Supreme® aft seal size
- Unique design

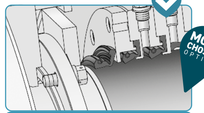
CATHODIC PROTECTION



Choose extra anodes to deliver improved corrosion protection on your liner. Sailing in US waters? We also offer aluminum anodes to be compliant with the VGP/VIDA!

BENEFITS
- Safety measure for the Supreme® aft seal against galvanic corrosion
- VGP/VIDA compliant with aluminum anodes

DIRT BARRIER



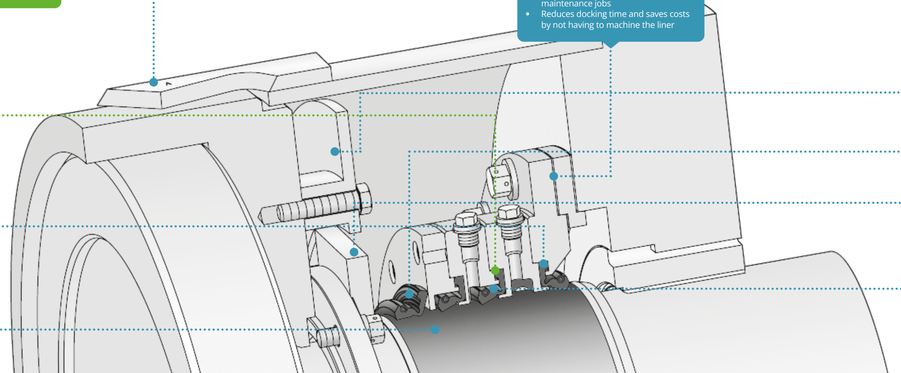
Would you like to avoid damage to the aft seal caused by sand and debris? Choose a dirt barrier which also prevents small fishing lines from entering the seal.

BENEFIT
- Safety measure for the Supreme® aft seal against debris

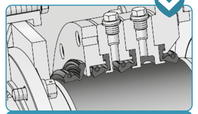
HARD METAL LINER COATING

Looking for a way to lengthen the lifetime of your whole seal? Install a liner with a hard metal coating.

BENEFITS
- Improved liner lifetime
- Good effective heat transfer, reduced ageing of the Supreme® lip seals
- Less docking time, and cost savings by not having to machine the liner
- Minimizing wear



HASTELLOY® C4 SPRINGS



Looking for lip seal springs that are more resistant to corrosion? Equip the Supreme® lip seals with Hastelloy® garter springs.

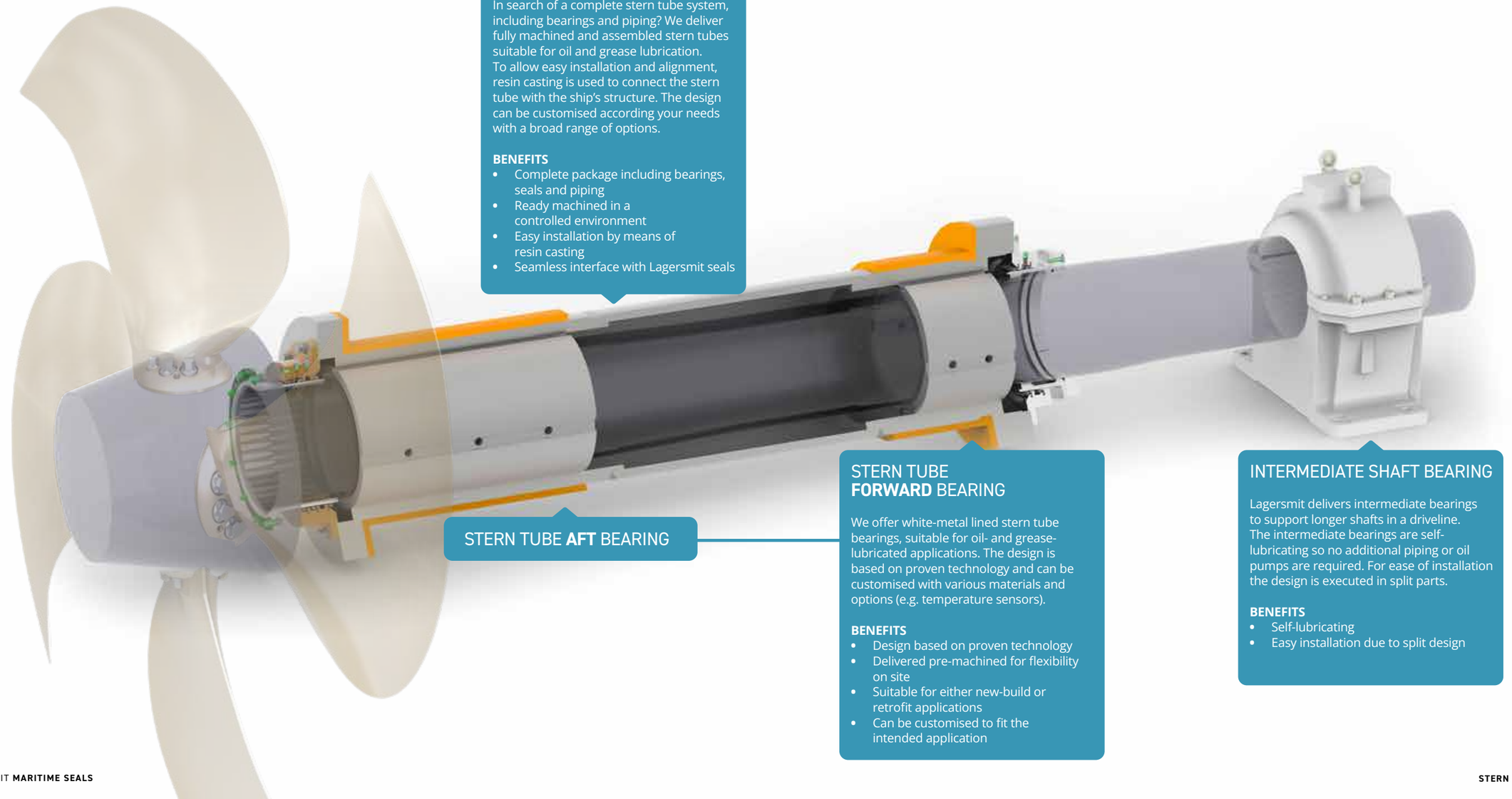
BENEFITS
- Highly corrosion-resistant spring material
- Increased reliability of the sealing function

STERN TUBES AND BEARINGS

Using a complete set of stern tube, bearings and seals by Lagersmit, ensures that all elements are perfectly attuned to each other. It also means that our team is your single point of contact for the complete stern tube and sealing system.

Did you know we have been delivering Peace of Mind with high quality castings of bearings since 1856?

VINCENT VAN DER HEIDEN
Account Manager



STERN TUBE

In search of a complete stern tube system, including bearings and piping? We deliver fully machined and assembled stern tubes suitable for oil and grease lubrication. To allow easy installation and alignment, resin casting is used to connect the stern tube with the ship's structure. The design can be customised according your needs with a broad range of options.

BENEFITS

- Complete package including bearings, seals and piping
- Ready machined in a controlled environment
- Easy installation by means of resin casting
- Seamless interface with Lagersmit seals

STERN TUBE **AFT** BEARING

STERN TUBE **FORWARD** BEARING

We offer white-metal lined stern tube bearings, suitable for oil- and grease-lubricated applications. The design is based on proven technology and can be customised with various materials and options (e.g. temperature sensors).

BENEFITS

- Design based on proven technology
- Delivered pre-machined for flexibility on site
- Suitable for either new-build or retrofit applications
- Can be customised to fit the intended application

INTERMEDIATE SHAFT BEARING

Lagersmit delivers intermediate bearings to support longer shafts in a driveline. The intermediate bearings are self-lubricating so no additional piping or oil pumps are required. For ease of installation the design is executed in split parts.

BENEFITS

- Self-lubricating
- Easy installation due to split design

FUTURE PROOF, YOUR PEACE OF MIND

We believe in creating sealing solutions that excel in performance and contribute to a cleaner, greener world. That's why we're thrilled to present our revolutionary Supreme® Ventus air-type sealing system. It is designed to meet the highest sustainability standards while offering a range of significant advantages.

THE FUTURE OF SUSTAINABLE SEALING SOLUTIONS: SUPREME VENTUS®
The Supreme® Ventus is a champion of environmental compliance. It achieves zero emission of oil. As a result, it aligns seamlessly with the VGP (Vessel General Permit) and VIDA (Vessel Incidental Discharge Act) regulations. The secret is a constant airflow and smart drainage into a monitoring tank. This is what we call 100% intelligence. This clever system helps to protect delicate ecosystems and safeguards the marine environment. Sail confidently, knowing that your vessel is leaving no harmful footprint behind.

In addition, say goodbye to exorbitant maintenance costs. The Supreme® Ventus delivers substantial cost savings by allowing the use of more affordable mineral oils. Embrace a solution that is both sustainable and economical.

But there is more. The Supreme® Ventus takes maintenance to a whole new level. Through condition monitoring and predictive analytics, maintenance can be proactively planned. This means no more unexpected breakdowns or costly unplanned repairs. Stay in control of your maintenance schedule and optimize your vessel's operational efficiency.

Experience peace of mind with our sustainable sealing solution. Choose the Supreme Ventus® for a brighter, cleaner, and more cost-effective future. Join the ranks of environmentally conscious ship owners and operators who understand that sustainability and success go hand in hand.

PEPIJN VAN DAM
Account Manager

VESSEL INCIDENTAL DISCHARGE ACT (VIDA/VGP)

Want more information about our class approved sealing solutions which are in line with the VIDA? We can assist you.

On October 26, 2020, EPA's Notice of Proposed Rulemaking – Vessel Incidental Discharge National Standards of Performance – was published in the Federal Register for public comment. The proposed rule will reduce the environmental impact of discharges, such as ballast water, that are incidental to the normal operation of commercial vessels. This new rule streamlines the current patchwork of federal, state, and local requirements that apply to the commercial vessel community and better protect US waters.

VIDA APPLIES TO

- Commercial vessels greater than 79 feet in length;
- Other non-recreational, non-Armed Forces vessels, such as research and emergency rescue vessels; and
- Ballast water only from small vessels (vessels less than 79 feet in length) and fishing vessels of all sizes.

Until the USCG regulations are final, effective, and enforceable, ships are subject to the existing discharge requirements established in EPA's 2013 Vessel General Permit (VGP) and the U.S. Coast Guard's ballast water regulations, as well as any other applicable state and local government requirements.

EAL OR MINERAL OILS?

In case you have to be in compliance with the VIDA or VGP criteria, Lagersmit is there to assist you. We serve the market with options when using EAL or mineral oils.

We can equip your seal with special FKM-EAL seals that are compatible with a broad range of EALs. An updated list of compatible lubricants can be found at **www.lagersmit.com/eal**.

As an alternative to using an EAL, it's also possible to use an alternative zero emissions seal design. Think of the Supreme Ventus®, and Supreme Athmos® which are verified by DNV GL to be in line with the (s)VGP. Alternatively, the Supreme Hydrofuse® and Supreme® Water Lubricated Forward make excellent water lubricated solutions.

NICOLETTE VAN HOUWELINGEN
Customer Support

REAL SERVICE

SERVICE

Our service engineers are your seal experts and can be on location within 48 hours worldwide.
Every engineer is specifically trained to ensure optimal quality. Their focus ranges from installation to supervision, and from troubleshooting to regular maintenance.

After every service job, we carefully store all relevant information to ensure your Peace of Mind during the next maintenance job. This enables you to keep going, 24/7, worldwide.

- Commissioning
- Extended warranty
- Troubleshooting
- Installation
- Retrofit
- Maintenance
- Overhaul

service@lagersmit.com

+31 (0)88 0216 300

GET IN TOUCH

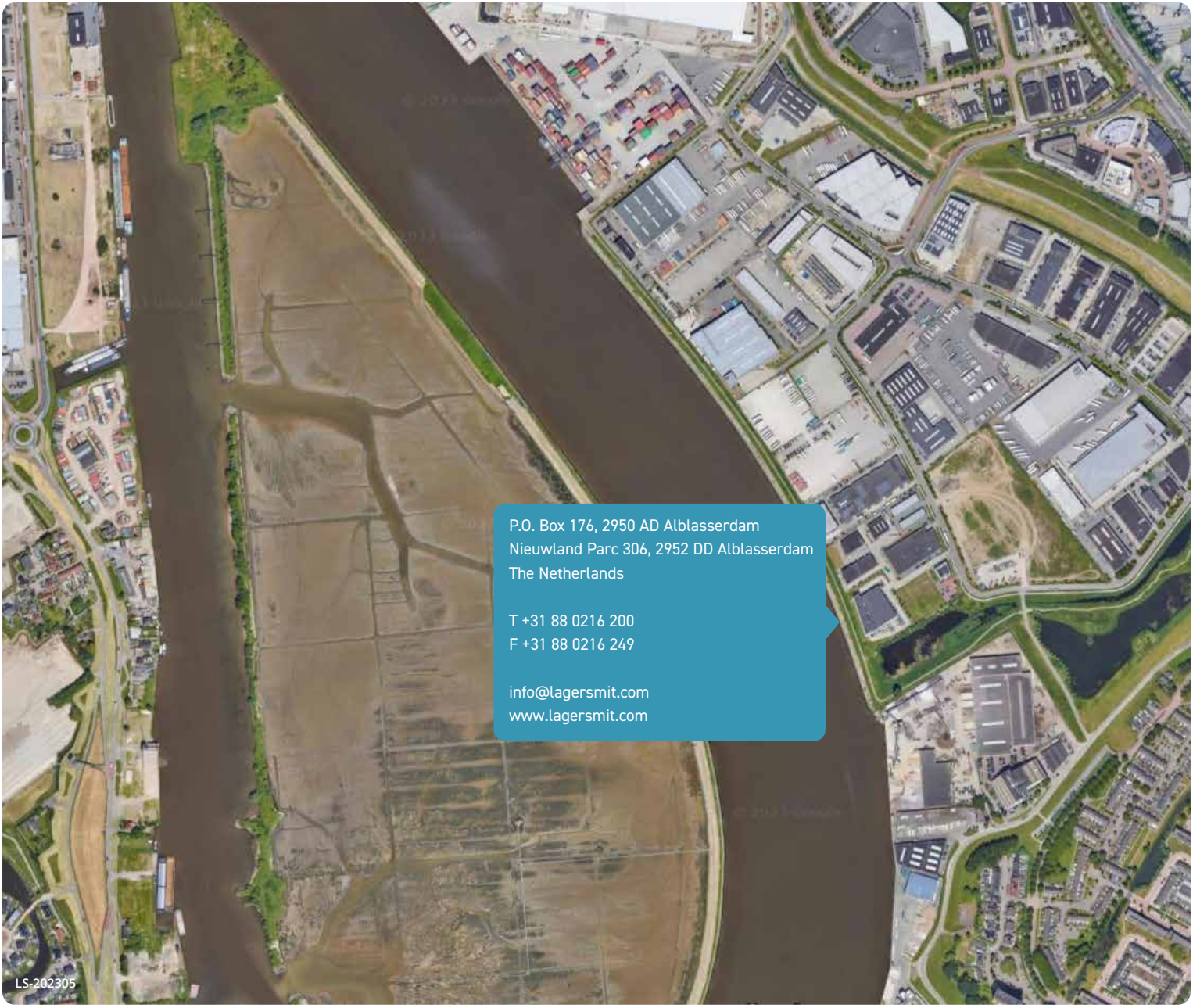
CONTACT

For more information, please contact us!

sales@lagersmit.com

+31 (0)88 0216 200

LAGERSMIT.COM



P.O. Box 176, 2950 AD Alblasserdam
Nieuwland Parc 306, 2952 DD Alblasserdam
The Netherlands

T +31 88 0216 200
F +31 88 0216 249

info@lagersmit.com
www.lagersmit.com

LS-202305

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THE ORIGIN OF SEALING SOLUTIONS