

Wärtsilä Enviroguard PSE seal

Cost-effective seals designed for optimal performance

PRODUCT DATASHEET



The Wärtsilä Enviroguard PSE seal is a high performance, elastomer bonded, radial face type seal, that has been designed for operation in dirty or silty waters. Developed to be a cost-effective, high quality, water lubricated sealing solution, the Wärtsilä Enviroguard PSE seal is environmentally compliant and highly robust.

TRIED AND TESTED

The Wärtsilä Enviroguard PSE seal has been developed to withstand aggressive silty or sandy waters. After years of use and extensive testing, it benefits from a solid track record of outstanding performance in aggressive conditions such as coastal waters and rivers. With minimal risk of polluting the marine environment, this makes the Wärtsilä Enviroguard PSE seal one of our most sought-after seals.

Comprised of hard-wearing interfaces for abrasion resistance, the Wärtsilä Enviroguard PSE seal is ideal for new build and retrofit for a wide range of vessels. Partially and fully split options are available for easy maintenance and seal replacement.

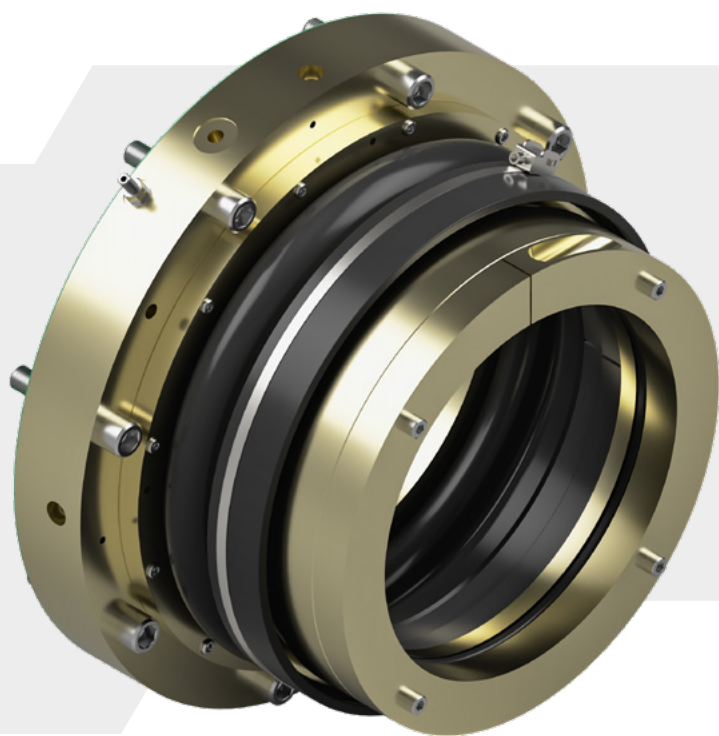
FIT AND FORGET

Ships that sail in coastal or aggressive water conditions need a 'fit and forget' stern tube seal that benefits from robust design, high reliability and long service intervals – all of which the Wärtsilä Enviroguard PSE seal has. Its simple design provides maximum sealing capability, reducing costs incurred from worn shafts or liners, leaking glandplates and any associated maintenance. The high resistance interface materials along with a design that minimises galvanic corrosion, dramatically reduces maintenance costs.

A cost-effective seal designed for you

In order to give you an affordable seal that maintains watertight integrity, we created the Wärtsilä Enviroguard PSE seal that:

- can easily be installed on new vessels or retrofitted to existing vessels;
- is designed to perform well in aggressive water conditions; and
- benefits from a long lifetime expectancy.

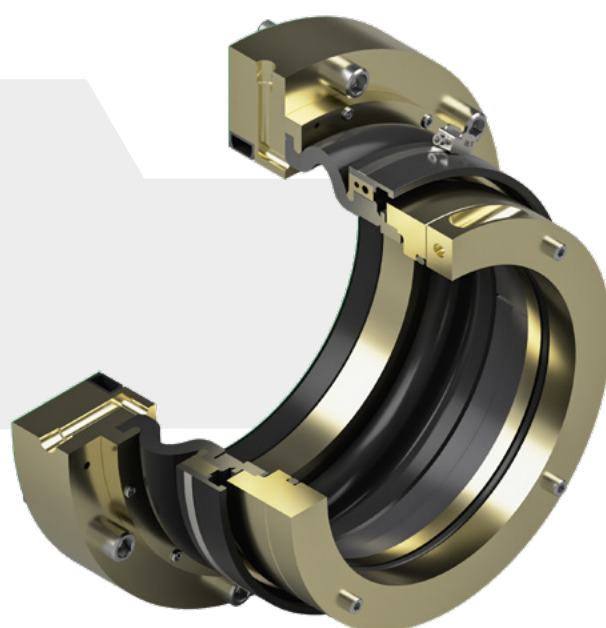


Pressure balanced, environmentally compliant

FEATURES	ADVANTAGES	BENEFITS
Fully and partially split designs.	Seal can be easily installed or retrofitted with the shaft in-situ (fully split version).	Reduced vessel downtime and maintenance costs.
Statically mounted elastomeric sealing body.	Accepts shaft line misalignment and vibration.	Longer seal life.
Silicon carbide with low-friction interfaces.	Operates at high speeds and low temperatures due to reduced friction.	Seven year operating life when in shallow water.
High abrasion-resistant interface.	Can operate efficiently in abrasive conditions.	Leads to low through life costs and longer service intervals.
Inflatable emergency/maintenance seal fitted as standard.	Facilitates low risk repair and maintenance whilst afloat.	Minimises maintenance costs.
Low maintenance design.	Minimum of five years between overhauls with no maintenance required.	Reduces lifecycle costs.

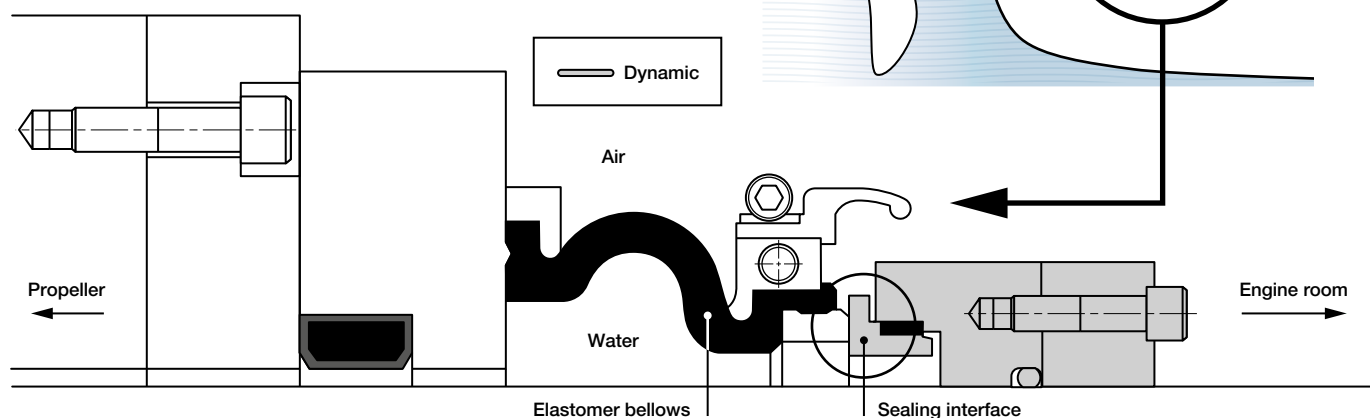
A SEAL SUITABLE FOR ALL

With its statically mounted elastomeric body, the Wärtsilä Enviroguard PSE seal accepts misalignment and compensates for axial and radial shaft movements. This is inherent on coastal trade vessels, making it an ideal solution for ferries, general cargo, fishery workboats and river craft and vessels operating in sandy or silty waters. In fact, it's suitable for any small water lubricated shaft line.



How it works

The Wärtsilä Enviroguard PSE seal is a balanced design as the force applied to the interface is a combination of the rubber bellows 'spring' force and hydraulics. The fluid film is kept optimum as a result of the draft pressure, which supports maximum sealing with minimum wear. The seal design can accommodate both axial and radial shaft movements. The silicon carbide interface provides low wear/friction resistance against high abrasion environments.



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Lubrication system

As the Wärtsilä Enviroguard PSE seal is for use in open water lubrication systems, no lubricants are necessary. For optimal efficiency, the flow rate must be maintained at all times when the propeller shaft is rotating.

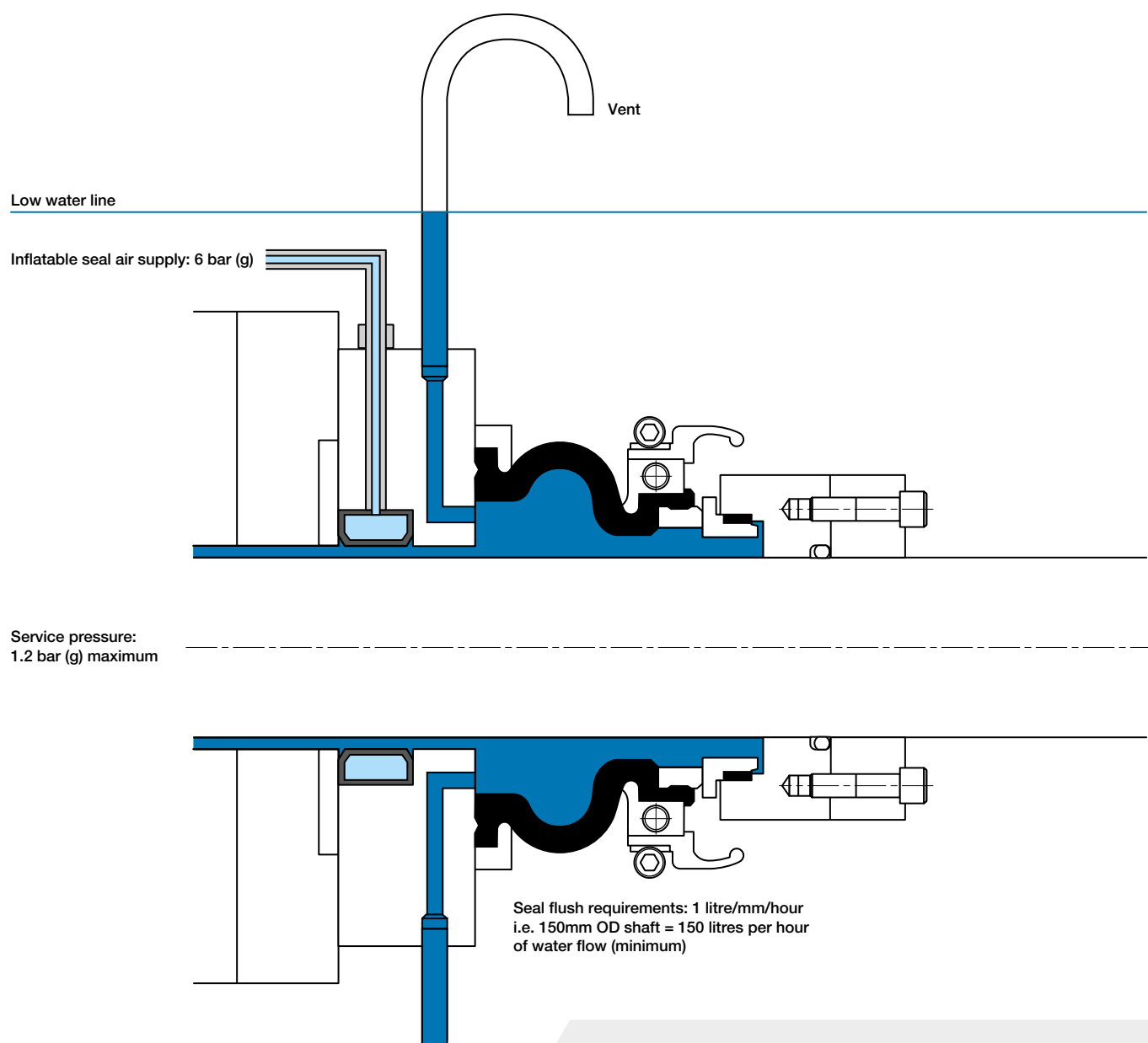
WATER FLUSH FILTRATION REQUIREMENTS

Recommended filtration for water flush:

Clear water basic strainer/screen.

Dirty water 300µm filter.

A pumped (positive displacement) constant source is preferred over a scooped supply.



Designed with performance in mind

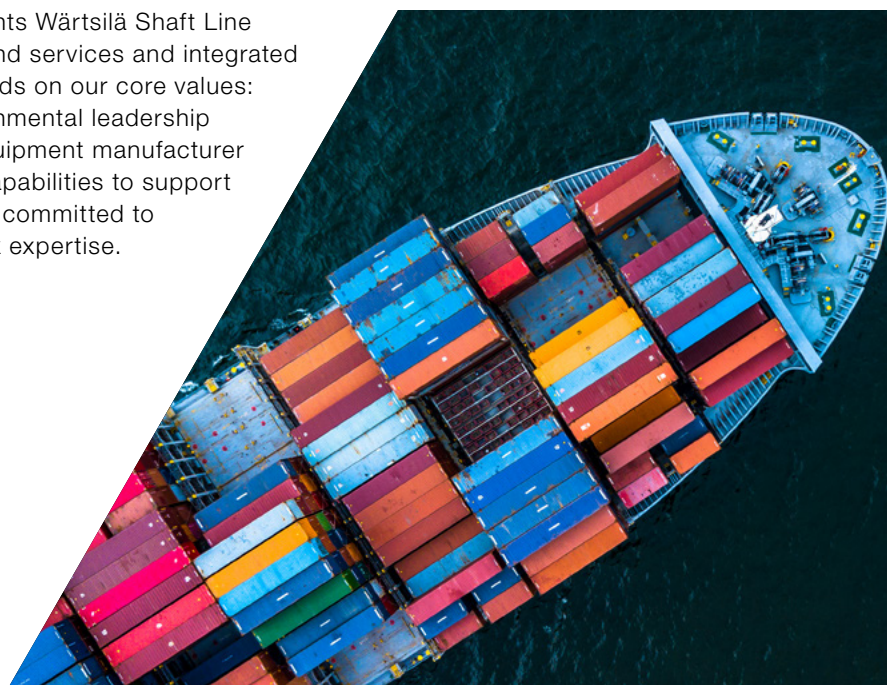
The partially split design of the Wärtsilä Enviroguard PSE seal, along with its silicon carbide face and seat, makes it durable, robust and simple to install and replace when necessary. It can be replaced with “split” spares during an overhaul without removing the shaft or propeller. This allows for a simple but very effective sealing arrangement that accommodates both radial and axial shaft movements, resulting in a solution that’s high performing with low maintenance.

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TECHNICAL SPECIFICATION		METRIC ^	IMPERIAL >
FEATURES	Shaft diameter	Ø70 to Ø450mm	
	Service pressure	1.2bar maximum	
	Axial movement	+/- 8mm	
	Radial movement	Up to 5mm	
	Operating temperature	-5°C to 40°C	
	Speed	Up to 1872RPM*	
	Weight	26kg up to 177kg*	
MATERIALS OF CONSTRUCTION	Seal face and seat interface	Silicon carbide	
	Mounting ring	Aluminium bronze	
	Seat housing	Aluminium bronze	
	Drive clamp ring	Aluminium bronze	
	Bellows	Elastomer	

*dependent on seal size.

An industry leader in shaft line components Wärtsilä Shaft Line Solutions delivers a portfolio of end-to-end services and integrated solutions for the marine markets that builds on our core values: lifecycle efficiency, risk reduction, environmental leadership and design excellence. As an original equipment manufacturer operating in 75 countries, we have the capabilities to support customers on a global scale, and remain committed to providing in-country and round-the-clock expertise.



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