

AxiSeal®

Mechanical propeller shaft seals



The AxiSeal® is applied in water lubricated propeller shaft systems. Blokland Non Ferro will be delighted to give its recommendations about the conversion of a grease lubricated system into a water lubricated one.

How does the AxiSeal® work?

The AxiSeal® is a truly unique mechanical seal, a totally different way of sealing in comparison to a radial seal, such as the conventional stuffing box or lip-type seal.

In the case of a radial seal the sealing rings run directly onto the propeller shaft surface. Inevitably, this causes wear of the sealing rings and the propeller shaft within a relatively short period of time, leakage being the unwanted result.

The AxiSeal® performs its task in the axial mode (parallel with the shaft's centerline). The Silicon Carbide (SiC) rotary face runs together with the propeller shaft, against a Silicon Carbide (SiC) stationary seat. The minuscule coefficient of friction, combined with a lubricating water film results in a very long life span of the AxiSeal® sealing system.



Advantages of the AxiSeal® by Amartech:

- › No shaft wear (mechanical sealing principle)
- › Maintenance-free
- › Easy installation
- › Compact installation dimensions
- › Perfect shaft sealing
- › Very long life span
- › Rigid duplex stainless steel housing (1.4462)
- › Environmentally friendly water lubrication
- › Allowed propeller shaft movements: axial ±10 mm, radial ±2 mm
- › Optionally available: inflatable 'Stand-by Seal'

Technical Specifications

Shaft diameters from	Ø 35 to Ø 185 mm and Ø 1½" to Ø 7¼"
Lubrication medium, to be sealed	raw (sea)water
Water temperature	-5 to + 40° C
Operating water pressure	0,05 - 1,5 bar
Gliding speed at sealing surfaces	max. 12 m/s
Allowed axial shaft movement	-10 to +10 mm (total 20 mm)
Allowed radial shaft movement	-2 to +2 mm (total 4 mm)

The major advantages of the AxiSeal®, compared to conventional axial sealing systems

1. The AxiSeal® is very easy to install (also on existing propulsion systems) and can be fitted into both pleasure craft and commercial vessels. The environmentally friendly AxiSeal® (no grease in the bilge water and in the sea water) will eliminate all your worries about leakages at the propeller shaft seal.
2. The AxiSeal® is maintenance-free. Conventional stuffing boxes require very regular inspection and maintenance, a permanent supply of grease and periodical replacement of the stuffing box packing. Insufficient inspection and maintenance will result in ever increasing leakage, followed by expensive repairs and eventually even replacement of the propeller shaft and the shaft seal.
3. A sea water resistant Duplex 1.4462 stainless steel housing instead of a vulnerable rubber bellow or sleeve.
4. The sealing surfaces (rotary face and stationary seat) are made of extremely hard and resistant materials.
5. The cooling/lubricating medium (the raw water) remains on the outside diameter of the sealing rings. Thanks to the centrifugal force the raw water, and possible dirt in this water are forced away from the sealing rings instead of towards or between them. This is often a prominent cause of leakage problems.
6. The unit comes as a pre-assembled seal. For proper

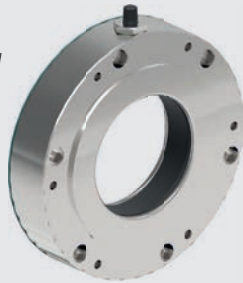
adjustment a split synthetic adjusting ring is placed. This adjusting ring must be removed after the installation of the AxiSeal®.

7. The rotating element on the propeller shaft is sealed with a static seal at the "wet" side. This way no corrosion can occur underneath the seal.

8. The clamping ring, which clamps the rotating inner element onto the propeller shaft, is located inside the engine room, the "dry" side. This way the rotating inner part of the seal cannot disintegrate as a result of galvanic corrosion in water.

The AxiSeal® is supplied with stainless steel fittings to ensure an adequate raw water supply.

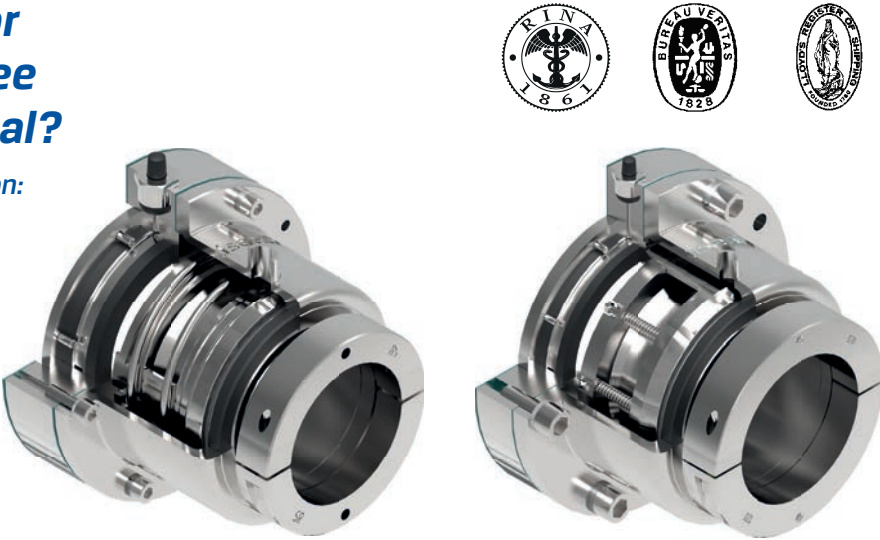
As an option we also offer an efficient "Stand-by" Seal. This seal may be fitted in between the shaft tube flange and the AxiSeal®. By using an air pump the rubber bellow is inflated. The resulting watertight sealing allows for the disassembly of the AxiSeal® and the replacement of damaged parts (if any) while the ship remains afloat.



The AxiSeal® is inclusive and fullfils the requirements of all major classification bureaus, such as the American Bureau of Shipping, Bureau Veritas, Det Norske Veritas, Germanischer Lloyd, Lloyds Register of Shipping, RINA, etc.

You are looking for a maintenance free propeller shaft seal?

Then there is only one solution: the AxiSeal® by Amartech.





Blokland Non Ferro bv

Blokland Non Ferro is a Dutch family business, founded in 1962 and active on the global marine market. The company specializes in designing, producing and supplying complete propulsion- and rudder systems for yachts and small commercial vessels as well as box coolers and heat exchangers for inland- and commercial vessels and industrial applications.

With extended possibilities for design and production of our products we offer you an attractive combination of superior know-how, experience and production possibilities.

We offer two kind of propulsion systems:

- › Fixed pitch propeller system
- › Retractable propeller system

With numerous national and international references Blokland Non Ferro has built a reputation of a highly

dependable quality player. We provide shipyard and naval architects around the world with our solutions. For (small) yachts as well as megayachts (both motor- and sailing yachts). Blokland Non Ferro also produces technical propulsion components and holds a comprehensive stock so that customers can be serviced promptly.

Blokland Non Ferro offers you the following services:

- › Standard and custom designed propulsion- and rudder systems
- › Design and supply of box coolers and heat exchangers
- › Sales and distribution of technical marine equipment

Blokland Non Ferro is committed to offer quality solutions and products only. Comfort and noise reduction are basic elements in our process of engineering.

Blokland Non Ferro operates worldwide from its premises in Sliedrecht, The Netherlands.



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