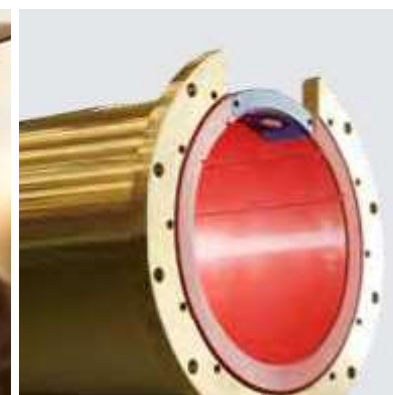


SKF Simplex BlueRun

Water-lubricated sterntube systems



CONFORM TO THE
REQUIREMENTS OF
VGP 2013 +
POLAR CODE



Innovative technology for eco-friendly applications

The maritime industry is controlled by strict rules and regulations, whether environmental requirements or construction specifications. These stipulations play a decisive role whenever new vessels are designed and built or when older vessels are retrofitted to the latest technical and ecological standards.

For this reason, water-lubricated sterntube systems, including polymer bushes, are becoming increasingly popular for marine applications. These solutions, including our new Simplex BlueRun products, have turned out to fulfill the most stringent environmental requirements, such as the VGP 2013 or Polar Code.

Simplex BlueRun delivers the perfect solution for water-lubricated applications. The innovative products are part of the Simplex portfolio, including 70 years of market experience in shaft line solutions as well as excellent technological expertise in the area of shaft components. This means you not only receive the most advanced technology and service from a single source, but also every possible component like polymer bushes, sterntube seals and various accessories.

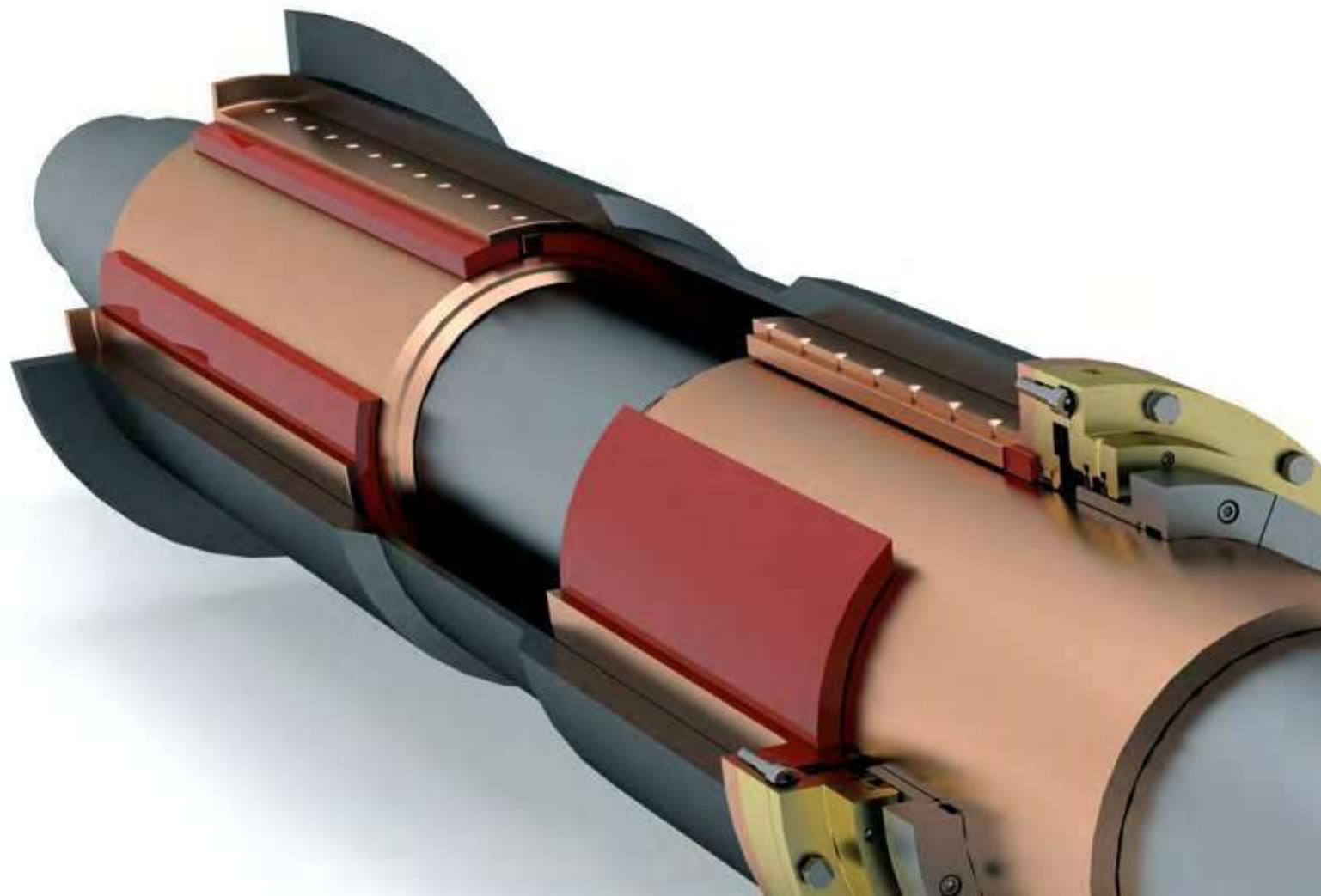
Last but not least, the Simplex BlueRun system is easy to install – and easy to use. Thanks to their numerous advantages the Simplex BlueRun water-lubricated sterntube systems offer an attractive option for today's maritime demands.

Spectrum of applications

The special qualities of the SKF Simplex BlueRun water-lubricated sterntube systems make them the eco-friendly solution for all kinds of vessels, especially:

- cruise vessels and yachts
- ferries
- offshore supply vessels
- commercial vessels, such as container vessels (US waters, Polar Code)
- coast guard, governmental vessels and harbour authorities' vessels
- inland waterway vessels (including tug boats and dredgers)
- fishing boats
- naval vessels

which operate primarily in coastal or special protected areas.

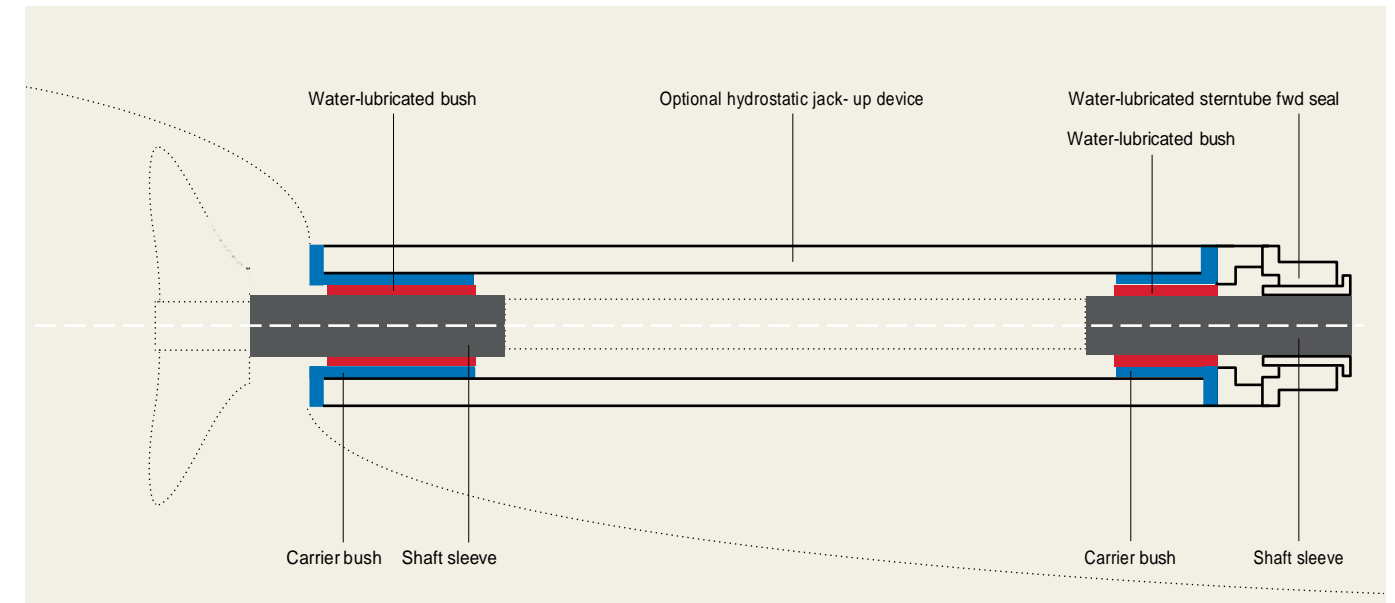


Closed and open systems

Solutions for various water-lubricated sterntube systems

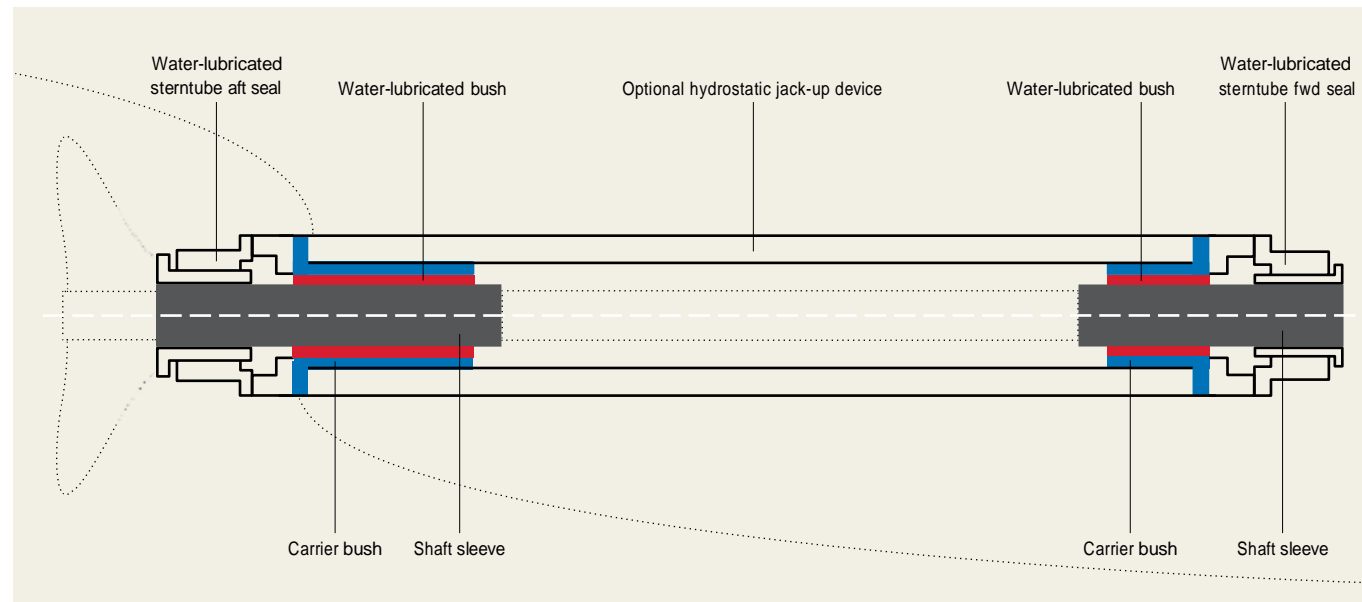
The main advantage of closed stern-tube systems is evident in reduced wear and, therefore, longer service life of the bushes. There is no risk of fouling and the water can be treated with anti-corrosion substances if necessary. Furthermore, there is no risk posed when navigating sediment-rich waters and the sterntube's shaft and inner surface do not require coating – depending on the additive used in the sterntube.

Open sterntube systems offer the benefit of low investment costs compared to the closed water-lubricated sterntube system, which makes them perfectly suited for integration into existing vessels. SKF Marine offers closed and open sterntube systems as well as solutions for open sea water-lubricated propeller shaft bearings, fulfilling the different requirements of our customers.



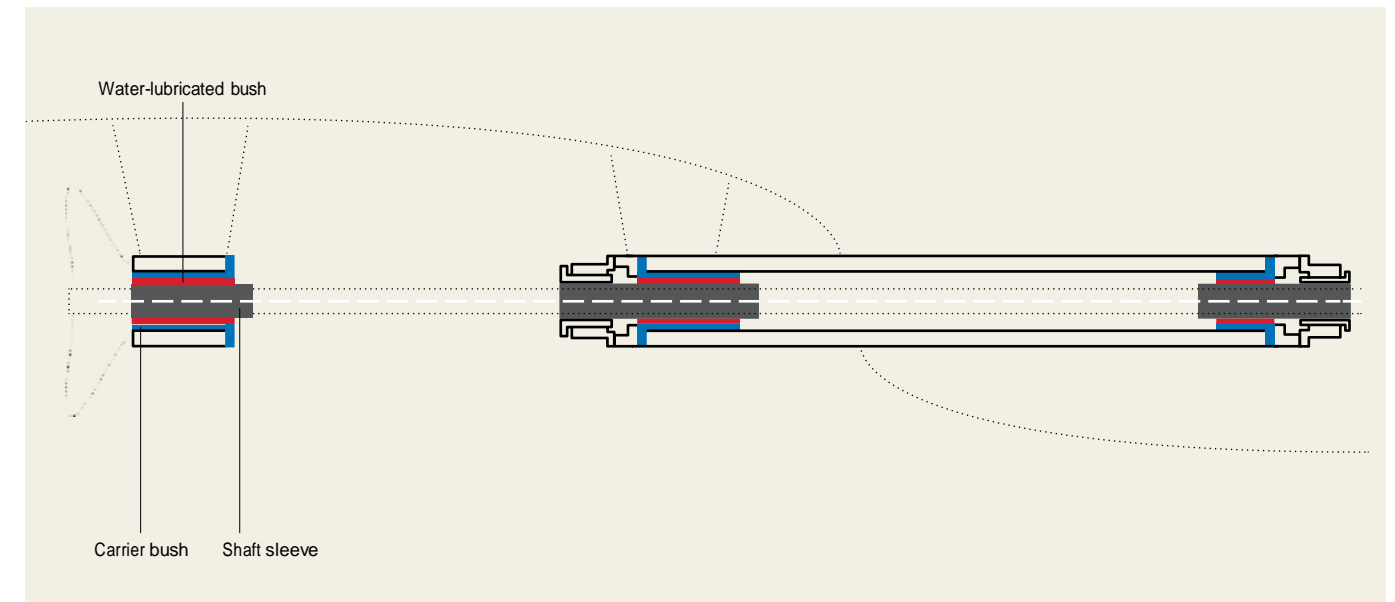
Type 2: Open water lubricated sterntube system

- Closed with a sterntube seal at the forward end - no water can reach the engine room
- Open at the aft end – water can flush out from the inside of the sterntube system into the sea
- Water is provided by a filter and pump unit
- Water for lubrication, cooling and flushing purposes
- Bronze sleeves protect the propeller shaft at the bearing positions
- As an option, the propeller shaft can be made of stainless chrome steel
- In addition, a special coating protects the shaft and the sterntube against corrosion



Type 1: Closed sterntube system with fresh water filling and anti-corrosive protection additive

- Closed with a forward and aft stern-tube seal
- Aft seal: protection against sea water at the aft section
- Forward seal: no sterntube fluid can reach the engine room
- Fresh water as the lubricant for the rotating propeller shaft, bearings and seals
- Anti-corrosive fluid to be added to the fresh water
- Water-lubricated bushes bear the propeller shaft
- Bronze sleeves protect the propeller shaft at the bearing positions
- As an option, the propeller shaft can be made of stainless chrome steel

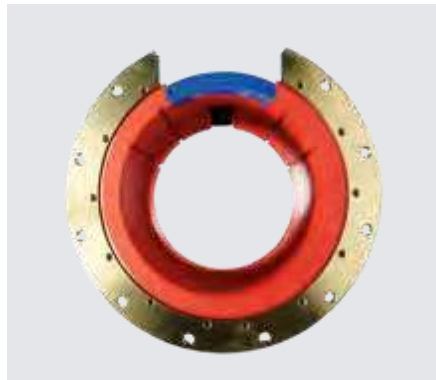


Type 3: Open sea water-lubricated propeller shaft bearings

- The shaft strut (or struts) outside the vessel's hull is/are completely submerged by seawater
- Bronze sleeves protect the propeller shaft at the bearing positions
- As an option, the propeller shaft can be made of stainless chrome steel

Innovative solutions for modern requirements

The Simplex BlueRun portfolio



Simplex BlueRun stern tube bush

The Simplex BlueRun product range includes water-lubricated polymer bearing bushes, TWP, which have been designed for a long service life. Both non-split and split versions are available. The non-split version uses a plain key which is fixed to a carrier bush for anti-twist protection. The split bush version includes a pair of taper keys which provide the tension. There is no need to remove the shaft in order to exchange the bearings. Both variants can be used for all types of water-lubricated stern tube systems: for fresh and sea water as well as for open and closed systems. Our solutions are available for shaft diameters up to 500 mm.

Carrier bushes

Simplex carrier bushes are fixed to the stern tube. They are made of bronze and contain the Simplex BlueRun water-lubricated bearing bush, according to the so-called "bush-in-bush principle".

Simplex BlueRun water quality system

The seawater is cleaned by filtration and then pumped through the stern tube bushes for lubrication, cooling and flushing purposes. Overheating is therefore avoided and any solids which might damage the system are removed reliably. The water connection is placed between the forward seal and the stern tube bush. This system is designed to operate on a standalone basis or can be fully integrated into the ship's control and monitoring systems. This means it can be also operated in an unmanned engine room.

The Simplex BlueRun water quality system consists of two pumps (one standby). A single filter is connected to the pumps. Sensors continuously measure the temperature, pressure and flow rate of the water. All measurement results will be shown on the system's display. The water source can be either the sea water itself or an on-board fresh water supply. All parts of the Simplex BlueRun water quality system, together with the piping, are mounted in a welded frame.

Tail shaft monitoring

The tail shaft monitoring solution provides continuous and reliable monitoring of the aft bearing bush condition. The user-friendly digital visualisation will support vessel operator in its proactive maintenance measures, such as planned replacement of the bush bearing depending on actual condition. Therefore, two identical sensors are installed in the bearing bush. The sensors are connected to an evaluation unit and contactlessly measure the position of the shaft. The measurement takes place with a non-rotating shaft, so that only the wall thickness of the shaft's bearing bush determines its position. The optimum performance of the bearing is ensured until the specific wear limit is reached.

Water-lubricated stern tube seals

Depending on the specific application and our customers' requirements, the following Simplex seals can be combined with the Simplex BlueRun stern tube solutions:

- Simplex lip-type seals
- Simplan axial face-type seals
- Carboplan Surface axial face-type seals

All these seal designs feature standstill seals and split components, providing excellent fail-safe operation and serviceability.

Simplan seals are available from 50 to 419 mm shaft diameter and the Carboplan Surface seal has been approved and already delivered for shafts up to 800 mm diameter. Both types are extremely resistant to sediments, e.g. when operating in shallow water areas.

The Simplex lip-type seal range is available from 80 mm to 1100 mm shaft sizes and covers the widest range of applications.

Simplex services

When choosing Simplex BlueRun you benefit from the complete Simplex service range. This includes initial consulting and installation, regular docking service, retrofitting service, emergency service as well as global spare parts delivery.

With Simplex BlueRun you will meet the highest standards relating to eco-friendliness and technological innovation while benefiting from practical handling and 24/7 customer service.

Contact

Available around the world, highly qualified and fast –
that's the Simplex sales and service network.



SKF Marine

Hermann-Blohm-Straße 5
20457 Hamburg, Germany
sales@skf-marine.com

skf.com | skf-simplex.com | skf-marine.com

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