



SKF marine solutions

Improving fleet efficiency and predictability in a sustainable way



The Power of Knowledge Engineering

Working together to bring benefits throughout the ship life cycle



In today's global fleet of increasingly specialized vessels, staying profitable means exploring every possibility for improvement, especially in light of rising fuel costs, increasingly stringent environmental regulations, and growing health and safety concerns. System designers and suppliers have to develop more predictable, reliable and fuel-efficient products. Shipyards need to drive productivity and cut manufacturing and repair costs. Ship operators need to maximize time at sea, reduce maintenance costs, and provide a safe working environment for the crew.

SKF has been in the marine industry for more than 70 years, applying innovative thinking and expertise to critical machinery. With the incorporation of the Blohm + Voss Industries portfolio, the SKF marine product range has been increased to also include shaft components such as stern tubes, seals and hydrodynamic bearings as well as stabilizers and oily water separators. From couplings and shaftline transmission products to integrated units for propulsion systems, SKF solutions cut operating costs across the marine market while helping operators meet the challenges of reduced environmental impact. In addition, SKF provides a full range of condition-based maintenance solutions, plus expert 24-hour service to solve problems and help maximize fleet availability.

SKF knowledge is helping vessels operate more efficiently. Throughout the ship life cycle, partnering with SKF helps to:

- **Increase availability and reliability**
- **Cut operating and maintenance costs**
- **Reduce health and safety concerns**
- **Problem solving and 24-hour worldwide service**

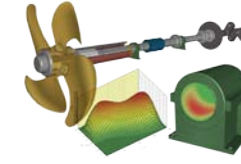
Specification



Close cooperation with regulatory bodies, institutes and maritime agencies enables support in defining and meeting standards and requirements

- Calculations
- Simulations
- Verifications
- Engineering consultancy services

Design and develop



Engineering services to enable new design and minimize risk of machinery failures and warranty costs

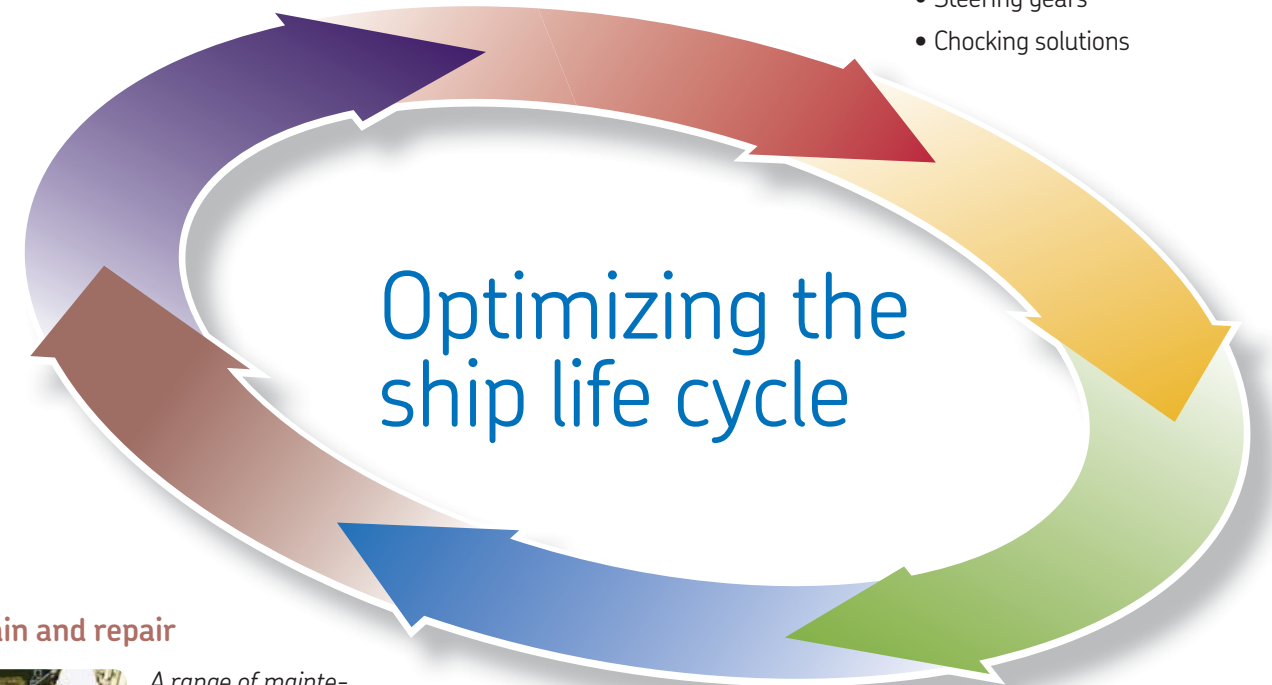
- Propulsion shaft design
- Application engineering
- Engineering consultancy services

Manufacture and test



A one-stop source for proven, world-class products and systems, delivered and available worldwide

- Bearings and housings
- Sealing solutions
- Couplings and bolts
- Lubrication systems
- Stabilizers
- Oily water separators
- Steering gears
- Chocking solutions



Optimizing the ship life cycle

Maintain and repair



A range of maintenance engineering and consulting services to boost asset uptime

- Alignment services
- On-site machining
- Engineering services
- Root Cause Failure Analysis
- Design improvement
- Asset management services
- Energy and sustainability management

Operate and monitor



Safer and more profitable operations with increased availability through class approved solutions for condition-based maintenance

- Condition-based maintenance programmes
- Condition monitoring hardware
- Condition monitoring software
- Data analysis and reporting
- Remote monitoring

Install and commission



Optimized operational performance through best practice installation services

- Complete propulsion line installation
- Supervision of alignment and installation
- Mounting and alignment services and systems
- Lubrication systems
- Coupling services



Providing a complete range of products, equipment and services to the industry

SKF offers a wide range of solutions for the marine industry. Our products and services apply to many areas of a ship, making us a valued system and services engineering partner for designers, builders and operators of many types of ships including:

- Offshore workboats – supply vessels, anchor handlers, tugs and dredgers
- Transportation – tankers, bulk carriers and container ships
- Cruise and passenger ships, including yachts
- Naval vessels
- Specialized vessels – ice-breaking vessels, wind turbine installation vessels, pipe and cable layers and research vessels

SKF is focused on meeting the future needs of next-generation vessels with solutions for diesel electric and gas electric propulsion systems.

Stabilizers

- Retractable stabilizers
- Non-retractable stabilizers
- Zero-speed stabilizers

Rudders and steering gear

- Steering gear
- Rudder roll stabilization
- Customised bearing housings
- Electromechanical actuation systems
- Bearings, seals, chocks, lubrication systems

Propeller systems

- Mounting solutions
- Propeller sleeves
- Hydraulic nuts
- Seals

Mechanical services

- Alignment and 3D measurement services
- On-site machining services
- Chocking and mounting solutions

Thrusters, pods and waterjets

- Application engineering services
- Condition monitoring solutions
- Bearings: roller bearings, customized bearing units, slewing bearings and hydrodynamic bearings
- Seals: including Simplex-Compact lip seals and face seals
- Couplings
- Lubrication systems

Shafts and stern tubes

- Shaft alignment calculations and software
- Complete sterntube solutions
- Bearing housings
- Bearings: Intermediate shaft bearings, safe return to port bearings, thrust bearings
- OK couplings and Supergrip bolts
- Chocks including SKF Vibracon
- Seals: Simplex-Compact lip seals, face and bulkhead seals
- Auxiliary systems
- Lubrication systems

Deck equipment

- Slewing bearings
- Bearings, chocks, seals, couplings, lubrication systems

Gearboxes

- Application engineering services
- Condition monitoring solutions
- Lubrication systems
- Bearings, seals, chocks, couplings and bolts

Engines

- Turbocharger monitoring
- Cylinder lubrication systems
- Crank web deflection measurement
- Hydrocam bolt tensioners
- Bearings, seals, chocks, couplings and bolts

Hull

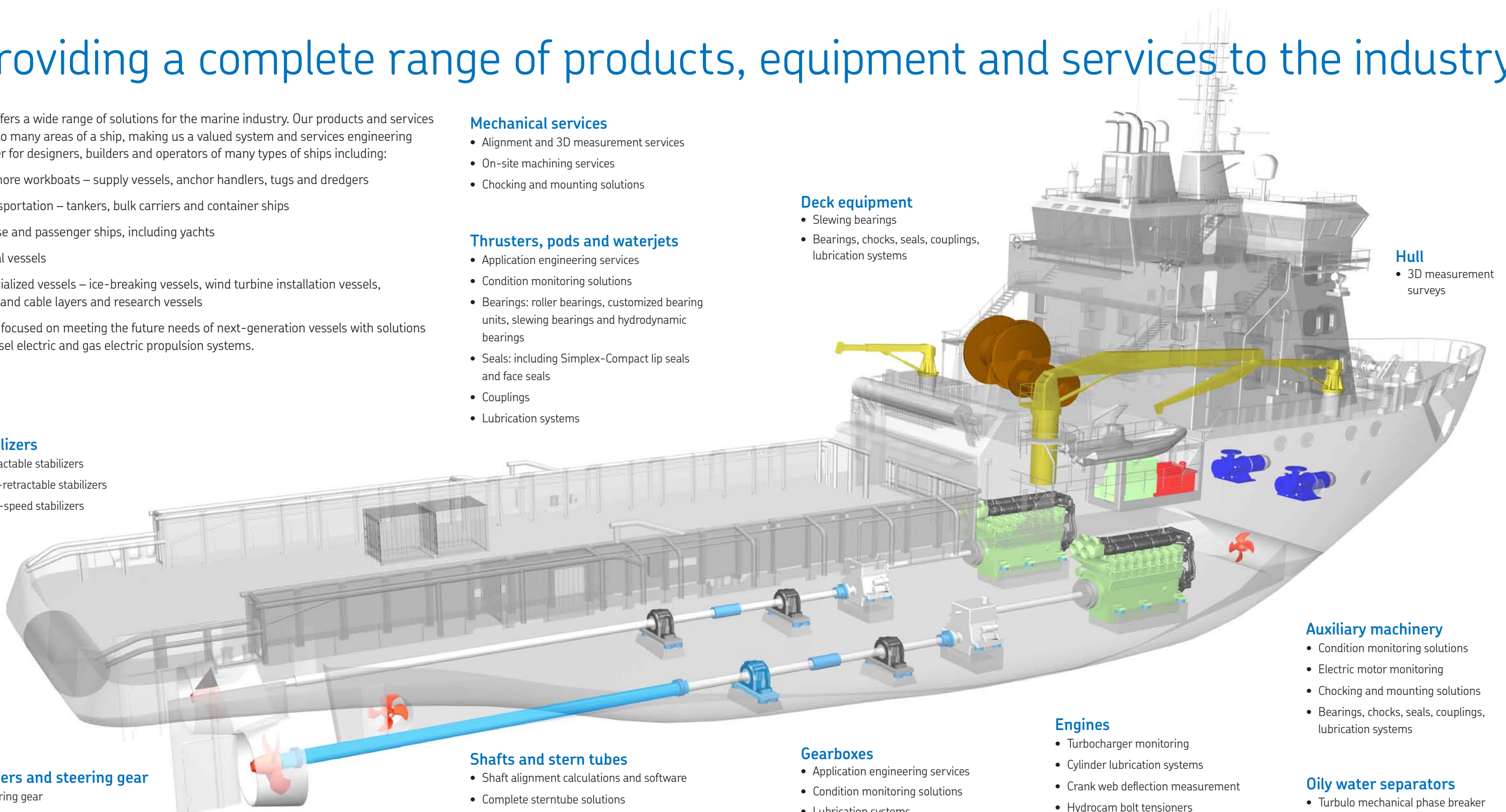
- 3D measurement surveys

Auxiliary machinery

- Condition monitoring solutions
- Electric motor monitoring
- Chocking and mounting solutions
- Bearings, chocks, seals, couplings, lubrication systems

Oily water separators

- Turbulent mechanical phase breaker including special explosion proof edition





Providing global support



To provide seamless global support for the marine industry, SKF has created a Marine Business Unit. Bringing together SKF experts with decades of relevant experience, this hub provides a single point of entry for a complete range of SKF products and services, delivered with world-class logistics through the industry's best distribution system. The Marine Business Unit personnel have significant experience working with:

- **Classification agencies**
- **OEMs**
- **Ship designers**
- **Shipyards**
- **Ship owners and operators**
- **Technical managers**

Whatever your location or wherever your operations take you, the Marine Business Unit assures timely accessibility to services, products and solutions needed to optimize ship performance, safety and reliability. With a presence in more than 130 countries, 110 production sites in 28 countries and distributors, sales agents and service stations in more than 15,000 locations, SKF can deliver the right solutions anytime, anywhere around the globe.

Marine product portfolio

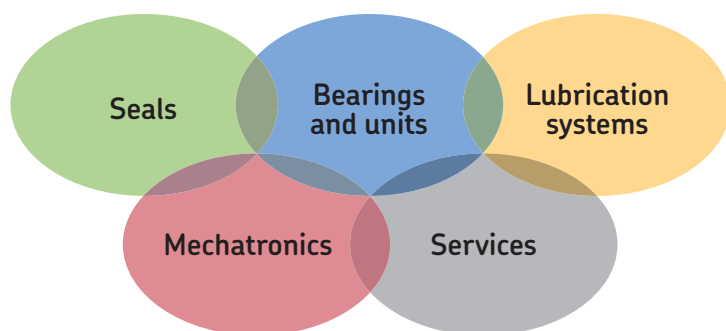
- ✓ Condition monitoring hardware and software
- ✓ Shaft alignment and vibration calculation software
- ✓ Bearings: roller bearings, customized bearing units, slewing bearings, intermediate shaft bearings, bushes, safe return to port bearings and thrust bearings
- ✓ Bearing housings
- ✓ OK couplings and Supergrip bolts
- ✓ Lubrication systems and lubricants
- ✓ Complete sterntube solution
- ✓ Oily water separators
- ✓ Stabilizers
- ✓ Steering gears
- ✓ Rudder roll stabilization
- ✓ Chocking solutions including SKF Vibracon
- ✓ Sealing solutions and auxiliary systems: including Simplex-Compact lip seals, face seals, bulkhead seals and customized seals
- ✓ Wear sleeves including SKF SPEEDI-SLEEVE
- ✓ Propeller sleeves
- ✓ Hydraulic nuts
- ✓ Maintenance products and tools
- ✓ Power transmission products
- ✓ Electromechanical actuation systems
- ✓ Hydraulic bolt tensioners
- ✓ Steer-by-wire systems
- ✓ Sensorised bearings

Marine service portfolio

- ✓ Alignment (static and dynamic)
- ✓ Shaft alignment calculations
- ✓ 3D measurement surveys
- ✓ On-site machining
- ✓ Chocking and calculations
- ✓ Mounting
- ✓ Balancing
- ✓ Engineering
- ✓ Testing and validation
- ✓ Condition-based maintenance
- ✓ Vibration analysis
- ✓ Oil analysis
- ✓ Dynamic motor analyzing
- ✓ Torsional vibration analysis
- ✓ Turbocharger monitoring
- ✓ Electric motor monitoring
- ✓ Thermographic measurement
- ✓ Remote monitoring
- ✓ Training and certification
- ✓ Asset management
- ✓ Bearing analysis
- ✓ Remanufacturing services

See inserts and skf.com/marine for more details about SKF solutions for the marine industry





The Power of Knowledge Engineering

Combining products, people, and application-specific knowledge, SKF delivers innovative solutions to equipment manufacturers and production facilities in every major industry worldwide. Having expertise in multiple competence areas supports SKF Life Cycle Management, a proven approach to improving equipment reliability, optimizing operational and energy efficiency and reducing total cost of ownership.

These competence areas include bearings and units, seals, lubrication systems, mechatronics, and a wide range of services, from 3D computer modelling to cloud-based condition monitoring and asset management services.

SKF's global footprint provides SKF customers with uniform quality standards and worldwide product availability. Our local presence provides direct access to the experience, knowledge and ingenuity of SKF people.

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