



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 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. 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

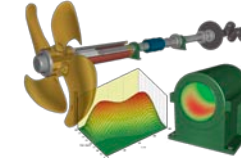
Specification



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, delivered and available worldwide

- Bearings and housings
- Lubrication systems
- Couplings and bolts
- Chocking solutions
- Sealing solutions
- Mechatronics
- Testing



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
- Spare part optimization

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
- Logistics services



Providing a complete range of products and services to the marine 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 and tugs
- Transportation – tankers, bulk carriers and container ships
- Cruise and passenger ships, including yachts

- Dredgers and mining vessels
- Naval vessels – frigates, destroyers, submarines and aircraft carriers
- 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.

Thrusters, pods and waterjets

- Alignment and 3D measurement services
- On-site machining services
- Application engineering services
- Condition monitoring solutions
- Customised bearing units
- Slewing bearings
- Bearings, seals, couplings, lubrication systems

Shafts and stern tubes

- Alignment and 3D measurement services
- On-site machining services
- Chocking and mounting solutions
- Shaft alignment calculations and software
- Couplings and bolts
- Lubrication systems

Rudders and steering gear

- Alignment and 3D measurement services
- On-site machining services
- Chocking and mounting solutions
- Customised bearing housings
- Electromechanical actuation systems
- Bearings, seals, chocks, lubrication systems

Propellers

- Mounting solutions
- Propeller sleeve
- Hydraulic nuts
- Seals

Intermediate bearings

- Alignment and 3D measurement services
- On-site machining services
- Chocking and mounting solutions
- Bearing housings
- Bearings, chocks, seals, lubrication systems

Deck equipment

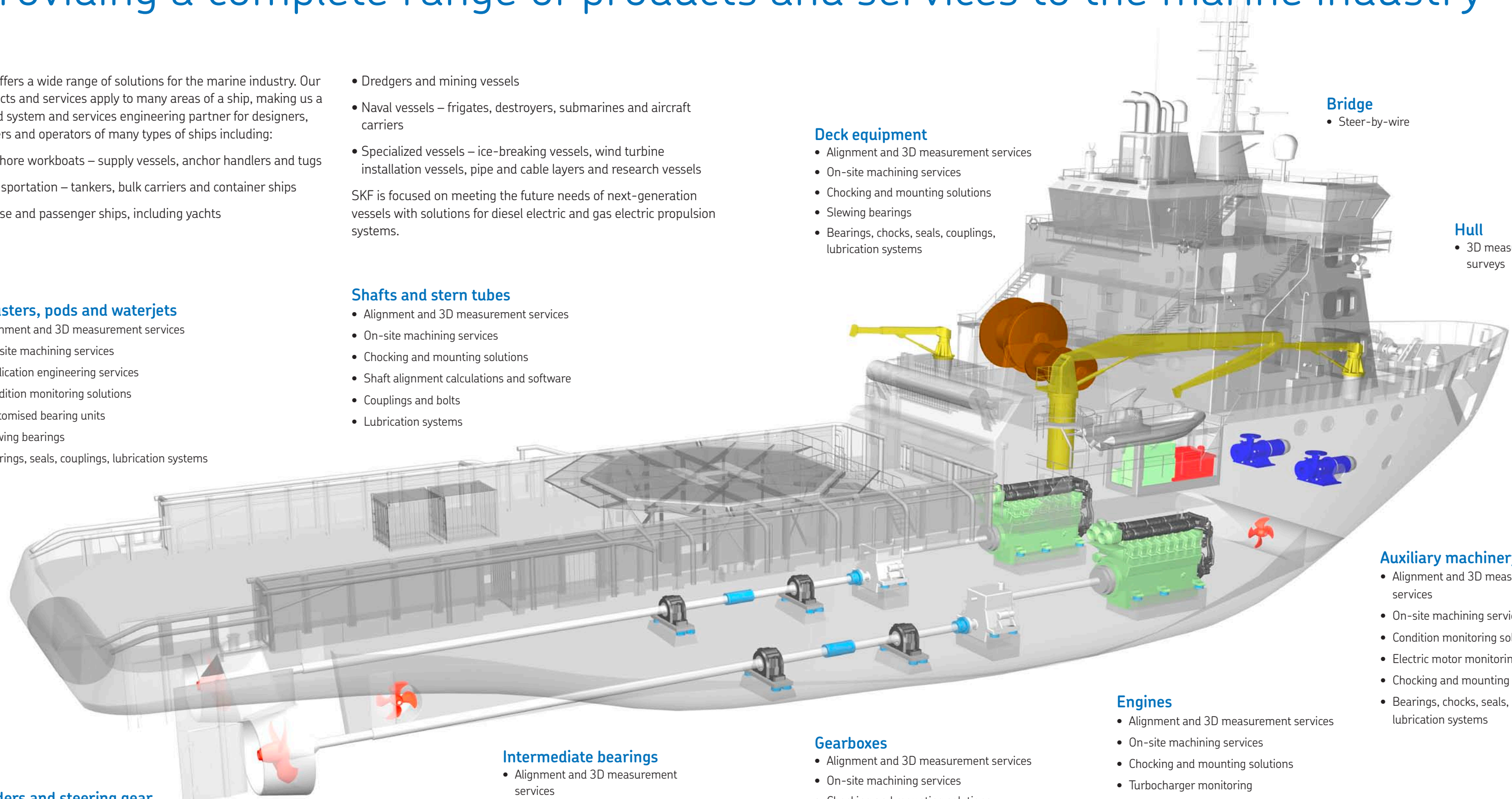
- Alignment and 3D measurement services
- On-site machining services
- Chocking and mounting solutions
- Slewing bearings
- Bearings, chocks, seals, couplings, lubrication systems

Bridge

- Steer-by-wire

Hull

- 3D measurement surveys



Auxiliary machinery

- Alignment and 3D measurement services
- On-site machining services
- Condition monitoring solutions
- Electric motor monitoring
- Chocking and mounting solutions
- Bearings, chocks, seals, couplings, lubrication systems

Engines

- Alignment and 3D measurement services
- On-site machining services
- Chocking and mounting solutions
- Turbocharger monitoring
- Cylinder lubrication systems
- Crank web deflection measurement
- Hydrocam bolt tensioners
- Bearings, seals, chocks, couplings and bolts

Gearboxes

- Alignment and 3D measurement services
- On-site machining services
- Chocking and mounting solutions
- Application engineering services
- Condition monitoring solutions
- Lubrication systems
- Bearings, seals, chocks, couplings and bolts



Providing global support through the SKF Marine Industry Service Centre



To provide seamless global support for the marine industry, SKF has created the SKF Marine Industry Service Centre. Bringing together SKF experts with decades of relevant experience, the centre 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. SKF Marine Industry Service Centre personnel have significant experience working with:

- **Classification agencies**
- **OEMs**
- **Ship designers**
- **Shipyards**
- **Registered owners**
- **DOC companies**
- **Ship/line operators**
- **Technical managers**
- **Ship managers**
- **Charterers**

Whatever your location or wherever your operations take you, the SKF Marine Industry Service Centre 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 in more than 15,000 locations, SKF can deliver the right solutions anytime, anywhere around the globe.

Marine product portfolio

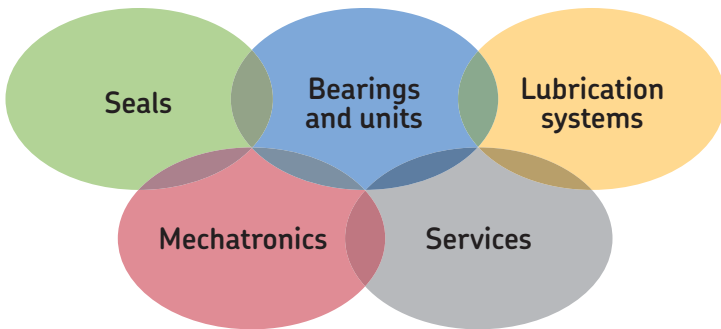
- ✓ Condition monitoring hardware and software
- ✓ Shaft alignment and vibration calculation software
- ✓ Bearings
- ✓ Slewing bearings
- ✓ Bearing housings
- ✓ Bolts
- ✓ Couplings
- ✓ Lubrication systems
- ✓ Lubricants
- ✓ Chocking solutions
- ✓ Sealing solutions
- ✓ Wear sleeves
- ✓ Propeller sleeves
- ✓ Hydraulic nuts
- ✓ Maintenance products and tools
- ✓ Power transmission products
- ✓ Electromechanical actuation systems
- ✓ Hydraulic bolt tensioners
- ✓ Steer-by-wire systems
- ✓ Sensorised bearings
- ✓ Magnetic 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
- ✓ Spare part optimisation
- ✓ Logistics services
- ✓ 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

Drawing on five areas of competence and application-specific expertise amassed over more than 100 years, SKF brings innovative solutions to OEMs and production facilities in every major industry worldwide. These five competence areas include bearings and units, seals, lubrication systems, mechatronics (combining mechanics and electronics into intelligent systems), and a wide range of services, from 3-D computer modelling to advanced condition monitoring and reliability and asset management services. A global presence provides SKF customers uniform quality standards and worldwide product availability.

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