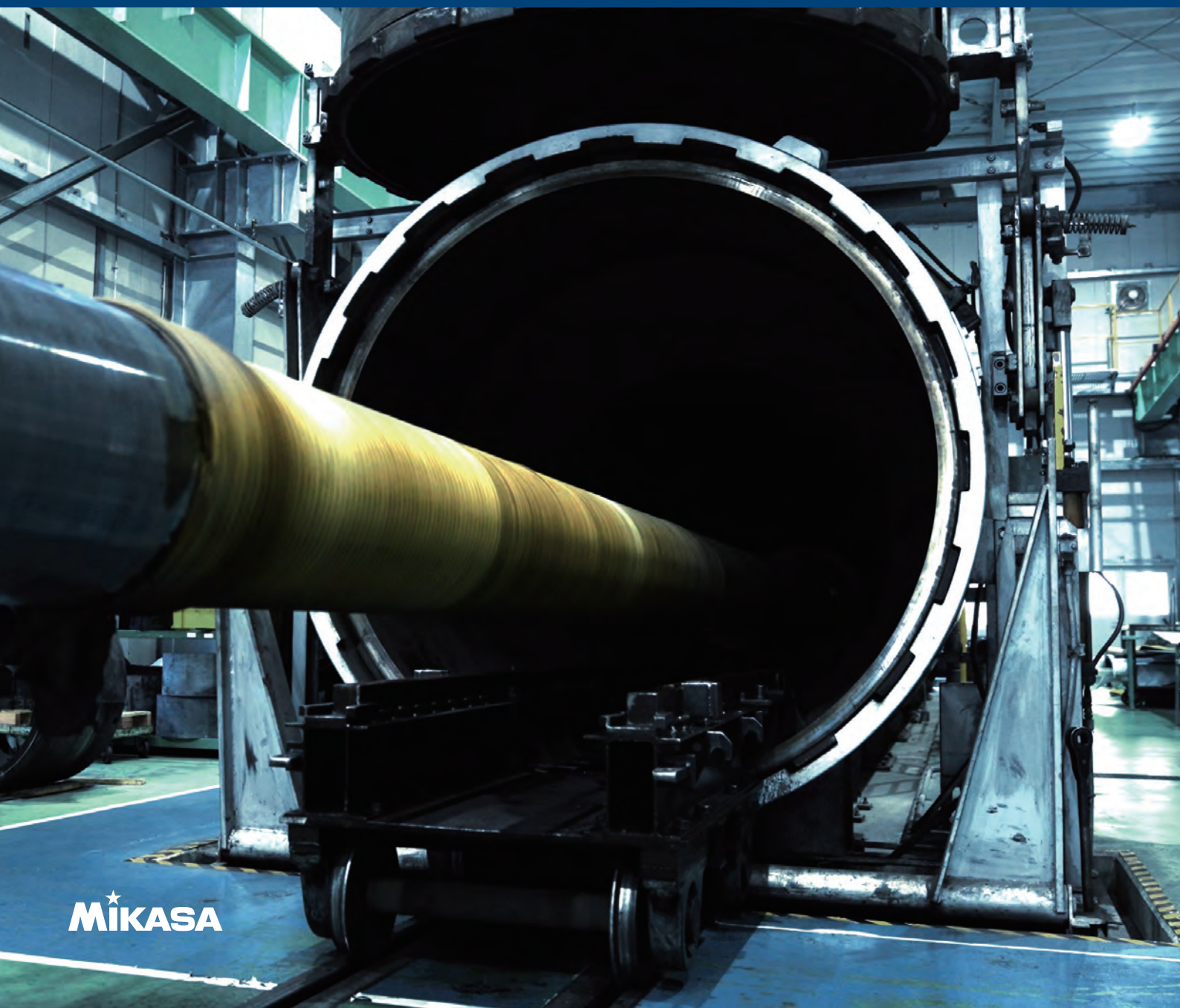




**FAST MARINE
SERVICES**

BEARINGS & STERN TUBE SOLUTIONS

PRODUCTS CATALOG



MIKASA

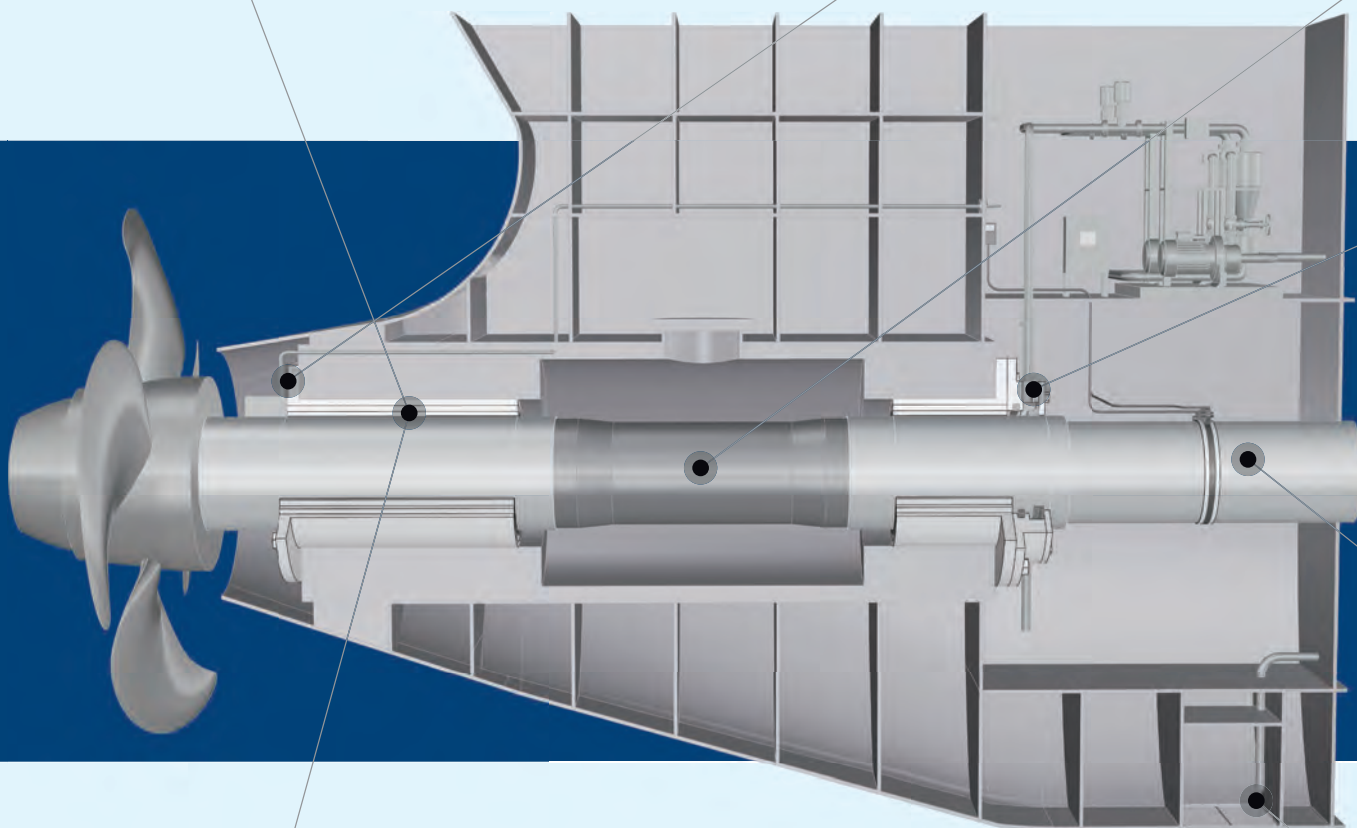
PRODUCT LINEUP

In ship operations, oil is used to lubricate engines, while seawater is used as a lubricant for propeller shafts in stern tubes. The benefits of water lubrication of stern tubes are manifold and include efficient rotation of propeller shafts, reduced fuel consumption, no risk of oil leaking into seawater, and significant environmental benefits such as reduced GHG emissions. We offer the best solution for your ESG management.



Water-Lubricated Stern Tube Bearing FF-Bearing/FF-Bearing CR

FF-Bearing, which utilizes the elasticity that is a feature of rubber bearings and has sliding surfaces made of polytetrafluoroethylene (PTFE), has a frictional resistance of 1/8 compared to conventional rubber bearings. It can achieve a significant reduction in fuel consumption, contributing to a reduction in GHG emissions, the main cause of global warming.



Water-Lubricated Stern Tube Bearing MR-Bearing

Since 1917, we have been manufacturing and selling various rubber products at our former company, Hiroshima Rubber Co. Utilizing its unique rubber processing and manufacturing technologies, we compound rubber with excellent sliding characteristics and abrasion resistance and bond it to metal shells through a special manufacturing process. We provide superior rubber bearings with strong and long-term stability.



Tail Shaft Condition Monitoring System

It is the sensor that continuously measures the gap between the propeller shaft and the bearing. By monitoring the degree of wear, it can provide real-time information on the condition of bearings, reducing the number of inspections and maintenance costs.



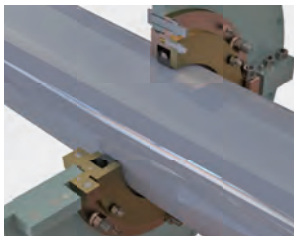
Rubber Linings for Propulsion Shafts

It is the anticorrosive rubber lining for propulsion shafts that is extremely tough against shaft expansion, contraction, torsion, and external impact due to rotational torque, and temperature changes. It does not peel off easily.



Stern Tube Sealing Type-SKC

It solves all the problems and issues of conventional ones by preventing the inflow of water from outside the vessel through the hull penetration of the shafting system. It combines ease of use and high safety throughout, including a fixed sliding ring that can be used on both sides and a highly safe emergency seal.



Bulkhead Sealing System Type-SKH

It is a bulkhead sealing device to protect vessels from flooding. It minimizes shaft wear and features a compact structure for easy installation. Designed with high safety in mind, it can automatically self-seal in the case of an emergency, ensuring the safety of the vessel.



TRERUS

It is an earthing device, with silver alloy bands for the slip rings on the propeller shaft, and brushes made of silver-graphite are used. It includes a potentiometer with an mV meter to monitor potential differences to visualize any increased resistance between the hull and propeller shaft system.

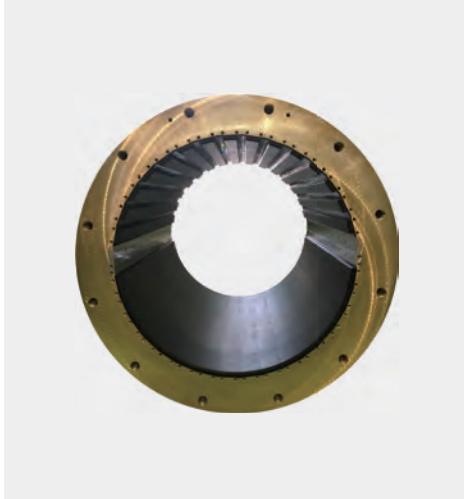


Anti-fouling & Corrosion Control System

A pair of two types of electrodes is attached to the sea chest and a DC is sent from the control unit (power supply control panel) to form a thin protective film on the inner surface of the sea chest and piping, creating an environment unsuitable for Marine growth.

PRODUCT INTRODUCTION

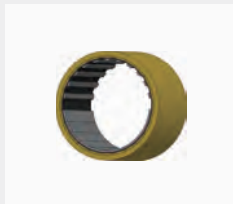
Here we introduce our main products of water lubrication systems including MR-Bearing and FF-Bearing.



FF BEARING

FF-Bearing was launched in 1982. FF-Bearing with sliding surfaces made of slippery tetrafluoroethylene resin reduces frictional resistance to 1/8 that of rubber bearings. This reduces the loss of energy transmitted from the engine to the propeller, greatly reducing fuel consumption and contributing to the reduction of CO₂ emissions, which is considered to be the main cause of global warming. In 2019, FF-Bearing CR was launched, which eliminates the water groove on the underside of the sliding surface to maximize low-friction performance.

FFB FUNCTIONAL THREE-LAYER STRUCTURE



Intermediate layer: Rubber

- Dispersion of Local Surface Pressure
- Wedge Effect
- Self-alignment Effect

Inner layer: PTFE

- Low Coefficient Of Friction
- Fluorine Transfer Film Effect

MERITS OF FF-Bearing

01.Lower Fuel Consumption

The friction coefficient is extremely low, approximately 1/8 of that of conventional rubber bearings, resulting in significantly reduced energy loss and an expected energy-saving effect.

02.Resistance to Seizure

The low friction coefficient minimizes heat generation in sliding parts, making it less prone to seizure even with reduced water supplization. Coolant requirements can also be set at a lower level compared to conventional rubber bearings.

03.Quietness

With inherent self-lubrication and excellent friction characteristics at low rotational speeds, it effectively suppresses stick-slip phenomena during startup and shutdown.

04.History and Reference

It has a cumulative delivery record of over 700 vessels. With a long history and numerous successful adoptions, the technology and experience, enriched by abundant data and continuous improvements, provide confidence for safe usage.

05.Suitable for Large Vessels

Its self-lubricating properties, coupled with a moderate softness even under high loads, enable the realization of self-alignment. It can be applied to large vessels operating under substantial weight conditions.



MR BEARING

MR-Bearing was launched in 1975. Leveraging the rubber processing techniques cultivated since our establishment in 1917, we utilize specially developed synthetic rubber with superior weather resistance, seawater resistance, oil resistance, and wear resistance. This unique synthetic rubber contributes to the smooth rotation of the shaft as an underwater bearing. The outer casing is available in various materials, such as copper alloy, and resin.



Tail Shaft Condition Monitoring System

The monitoring device was launched in 2021, a sensor that continuously measures the gap between the propeller shaft and the bearing. It monitors wear levels, providing real-time insights into the condition of components. Simplifying inspections enables cost reduction.

MODEL AND DETAILS

	Sensor head	Control panel
Model	MWS-0011	MWS-0014
Allowable temperature	-2 ~ +45 °C	-25 ~ +45 °C
IP grade	IP 68 (2 bar.)	IP 56
Input voltage	100 ~ 240 V AC (45 ~ 65 Hz)	
Size	115x56x125 mm	370x150x300 mm
Sensor cable	Φ6 mm / max 40 m	
Measurable clearance	0.0 ~ 10.0 mm	
Out put	4 ~ 20 mA	

CHARACTERISTICS

- Adjusted to the extension of shaft removal inspection period for seawater lubrication (OPEN LOOP)
- Easy bolt-on Installation/Replacement
- Bearing clearance can be measured during the operation.
- In advance of dry docking, it is possible to assess the extension feasibility of shaft withdrawal inspection.
- The sensor head is made of resin with excellent corrosion resistance.
- Obtained DNV type approval TAA00002YW(according to IEC CG-0339)
- LR POLAR CODE ENV 5 CATEGORY (-25°C) compliant
- Obtained NK usage approval

KOREA

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SERVICE NETWORK

CERTIFICATION

Our products have been inspected and approved
by various classifications and have received numerous
classification certifications.

MR BEARING



FF BEARING



TAIWAN

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MIKASA, LTD.

Location	1, Kuchi, Asa-cho, Asakita-ku, Hiroshima, Japan
CEO	Yuji Saeki
Establishment	1-May-1917
Capital	100 million yen (as of October, 2020)
Business overview	BALL / SPORTING GOODS INDUSTRIAL PRODUCTS

TRATEC, LTD.

Established	8 Dec. 1975
Shareholder	Mikasa Corporation, Hiroshima, JAPAN (100%)
Business Overview	Design, Manufacturing, Engineering, Marketing, Sales, Distributor, Importing, Exporting

DELIVERY RECORDS

We are proud to have delivered our FF-Bearing to a wide range of ship types since its launch, and here are the delivery records of ships equipped with FF-Bearing.



SHIRASE

Shipowner : Ministry of Education,
Culture, Sports, Science and
Technology (MEXT)
Bearing ID : φ810



TAKAOKIMARU

Shipowner : UBE SHIPPING &
LOGISTICS, LTD.
D/W : 16,000t
Bearing ID : φ470



MSC World Europa

Shipowner : MSC Cruises
G/T : 215,836t
Bearing ID : φ710



JP



EN

<https://mikasa-industry.com/>

