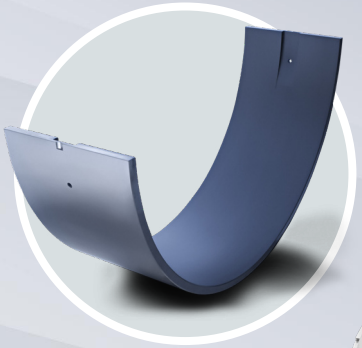
Innovation in Motion

Miba Bearing Group

Durable & flexible hydrodynamic bearings balancing performance, reliability and cost



Miba bearings keep your systems running

At Miba, we believe that systems should perform to their full potential. That's why we develop and produce durable and flexible bearing solutions that enable our customers to increase the performance and reliability of their systems. All of our bearings are metallic and lead-free on request. In this way, we are sure to fulfill all specific requirements.

We produce bearings for various applications

- Compressors
- (Turbo) Gearboxes
- Pumps
- Engines
- Electric motors
- (Turbo) Generators
- Expanders
- Turbines (Gas & Steam & Hydro)
- Blowers
- Heat pumps
- Presses

- Jet engines
- Turbochargers
- Roller drives
- Synchronous condensers
- Test rigs

Merging material and design competence

Miba technology is unique on the market

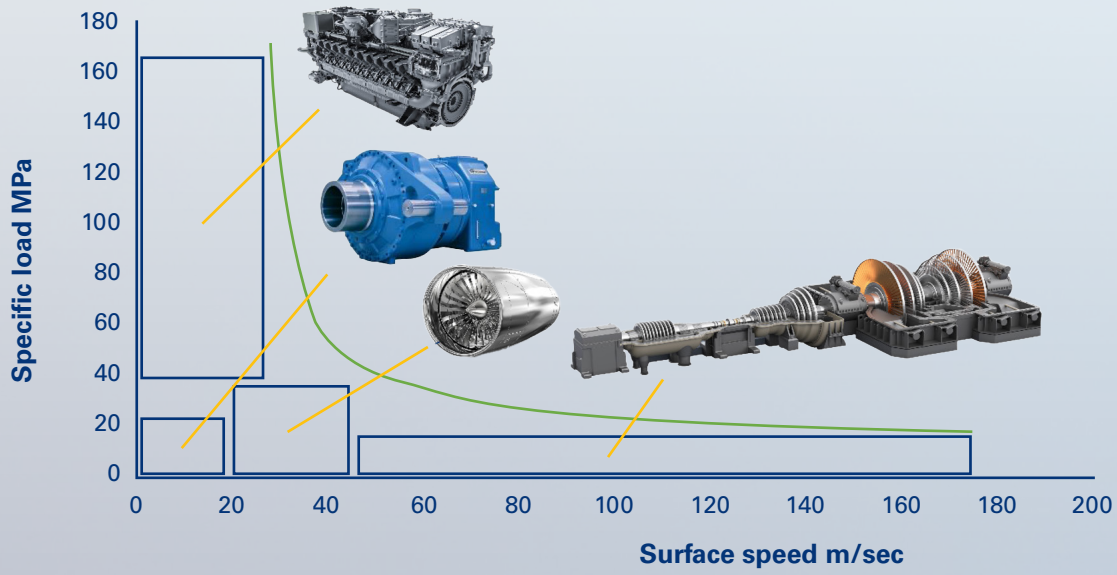
Miba Bearing Group combines material and design expertise in hydrodynamic bearing technology.
We support our customers with excellent material expertise for highly loaded applications. Customers with applications with very high circumferential speeds rely on our broad design expertise. With our interdisciplinary knowledge, we offer solutions for a wide range of applications and requirements and provide our customers with optimum support.

The advantages of hydrodynamic bearing technology

The use of hydrodynamic bearings opens up new opportunities for our customers and can be an excellent alternative to other bearing solutions in many industries.

- Higher rotation speeds to enable next level systems
- Increased load capacity to enable next level systems
- Reduced assembly space and lower weight for higher power density
- Easy installation and reduced service cost
- Reduced noise emissions for noise-sensitive applications
- Long service life due to hydrodynamic operation and reduced lifetime costs
- More resilient to shock load ensuring longer lifespan

Broad field of application
Miba´s unique expertise



The best material solution and surface technology for any application

Lining compound

Aluminium

- All standard aluminium-tin and self developed advanced aluminium materials for high load applications
- Belt caster for aluminium development and production
- Roll bonding

Bronze

- All standard lead bronze and self developed lead free copper based materials from own production (thin and heavy wall)
- Micro cast plant for material development
- In line cast plant – leaded and lead free bronze
- Spin casting – bronze bushings

Babbitt

- Tin based materials
- Offers excellent tribological and damping properties

Electroplating

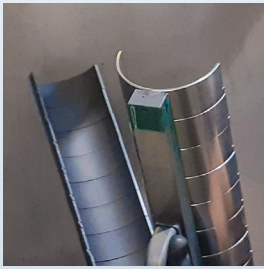
Lead and tin based overlays

- Tower rack device:
  Diameter > 200 mm and bushings
- Slot rack device
  High volume up to about 200 mm
- Experimental plating shop

SYNTHEC® coatings

Lead free overlay completely environmental friendly during coating and in the application

- High volume coating device
- Experimental coating device



PVD - coating

Aluminium-tin based overlays coated within a special coating process based on central cathode delivering a completely uniform layer

- High volume coating device
- Large bearing coating device:
  Diameter 150 to 350 mm
- Direct coating on products provided, e.g. inner diameter of gear wheels

Advanced engineering and design capabilities

A deep understanding of the complex interactions between materials, geometry and operating conditions is necessary to find the optimum design for each application. Our customers rely on the experience and knowledge of our design engineers:

Geometry and design

We are able to design and manufacture complex structures such as offset halves, 3-face, 4-face bearings or tilting pads. This allows us to achieve the best damping and stiffness characteristics, as well as high speeds and vibration prevention.

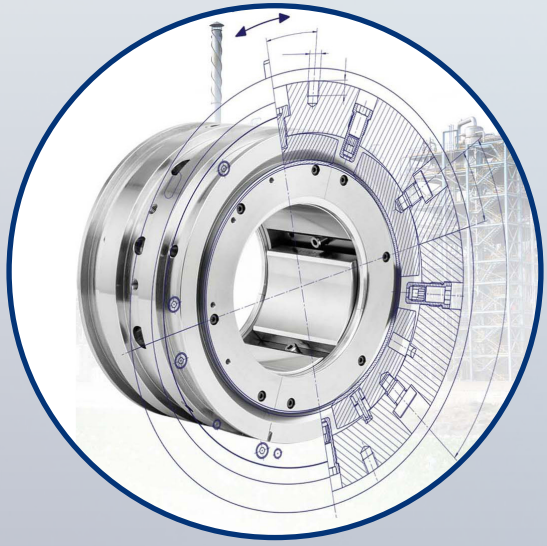
The design of the hydrodynamic bearing, including its geometry and tolerances, influences its performance and service life. The correct selection of bearing length, diameter and tolerances is crucial for optimum function.

Lubrication

Lubrication plays a crucial role in reducing friction and wear in the hydrodynamic bearing. Selecting the correct lubricant type and method is critical to bearing performance.

Load carrying capacity and service life

Our hydrodynamic bearings are designed to function reliably even under extreme loads and guarantee a long service life. Lifetime-determining factors such as load, speed, lubrication and environmental influences are taken into account during development.



Your development partner

for a hidden component in flexible design

Our main focus is always on understanding the customer's unique challenges and to deliver the most cost effective and technologically appropriate solution.

We offer the right balance between function, performance, reliability and cost.

Technological edge thanks to our R&D expertise

Thanks to our many years of experience in integrated product development, we can actively support our customers in the realization of their application - starting from the first concept along the whole product lifecycle.

CONCEPT

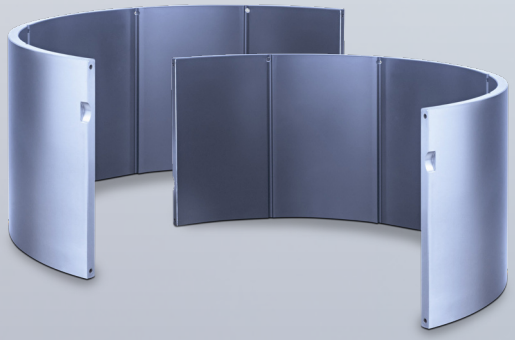
Feasibility study

- Hydrodynamics
- Technical specifications
- Bearing loading
- Target costs

DESIGN

Bearing design

- Assembly situation
- Hydrodynamic simulation
  - Housing optimization support
  - Fretting risk
  - Cavitation risk
  - Lifetime estimation
  - Oil flow system
- Model testing
- Bearing type recommendation
- Validation program



VALIDATION

Bearing validation

- Prototype supply
- Assembly test
- Bearing inspection
  - Lifetime
  - Phenomena analysis
  - Improvement opportunity
  - Lifetime accompanying program

PRODUCTION

Bearing supply

- Production of bearing and supply

SERVICE

Service

- Remaining bearing life program
- Special investigation services
- Improvement support on demand
- Bearing judgment criteria

Global manufacturing footprint

Local for Local. Our network spanning three continents allows us to respond quickly and flexibly to the different needs of our customers.

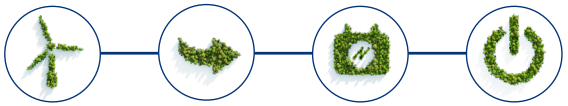
Miba Bearing Group

Miba Bearings US
McConnelsville, OH, USA
ABM Advanced Bearings Materials
Greensburg, IN, USA
Miba Gleitlager Austria
Laakirchen, Austria
Miba Bearings Materials
Aurachkirchen, Austria
Miba Precision Components
Suzhou, China
Miba Industrial Bearings US
Grafton, WI, USA
Miba Industrial Bearings US
Columbus, NE, USA
Miba Industrial Bearings US (Houston)
Deer Park, TX, USA
Miba Industrial Bearings Germany Osterode
Osterode, Germany
Miba Industrial Bearings Brazil
Cataguases, Brazil
Admos Gleitlager
Berlin, Germany

Miba Group Technologies for a Cleaner Planet

Miba develops and produces functionally critical components along the entire energy value chain. Our products make an important contribution to the efficient and sustainable generation, transmission, storage and use of energy. Miba sintered components, engine and industrial bearings, friction materials, power electronics components and coatings are used around the world in motor vehicles, trains, ships, aircrafts, wind turbines, power plants, refineries, compressors and industrial pumps.

OUR MISSION:
TECHNOLOGIES FOR A CLEANER PLANET



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