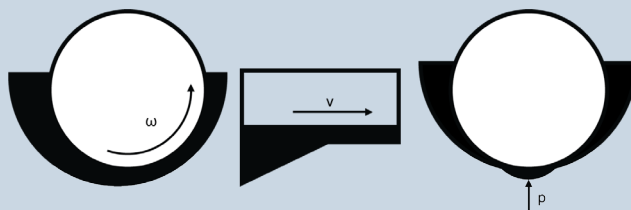


ABOUT US

HISTORY

- › 1996 Founding of GTW in Příšov, North Region Pilsen, Czech Republic
- › 1998 Building of the first production hall
- › 2003 Building of the second production hall
- › 2006 ISO 9001 Certification
- › 2007 Building of the administration building
- › 2010 Building of the third production hall
- › 2012 ISO 14001 Certification
- › 2014 Building of the fourth production hall
- › 2016 OHSAS 18001 Certification
- › 2017 Reached 135 employees and increased production capacity



TECHNICAL SPECIFICATION

› White Metal Hydrodynamic Bearings

- Fixed Profile Journal Bearings
- Tilting Pad Journal Bearings
- Tilting Pad Thrust Bearings
- Bearings for Special Applications
- Bearings Systems

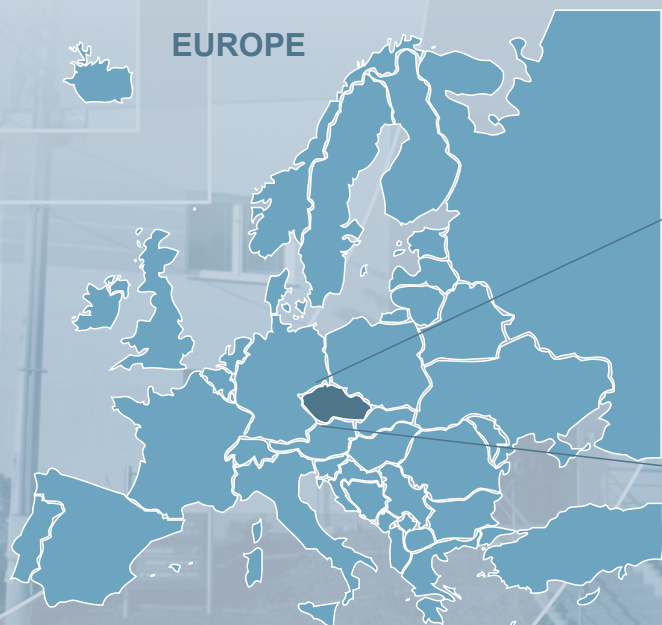


› Technical Infrastructure

- Milling up to 3 t
- Turning up to 1,6 m
- Grinding up to 1 m
- Static casting up to 10 t
- Centrifugal casting up to Ø 1,1 m
- 3D Zeiss measuring machine



EUROPE

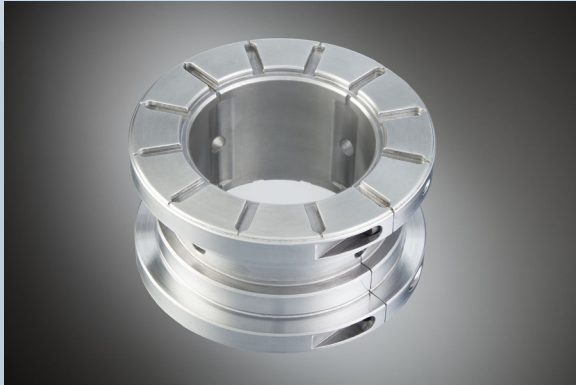


CZECH REPUBLIC

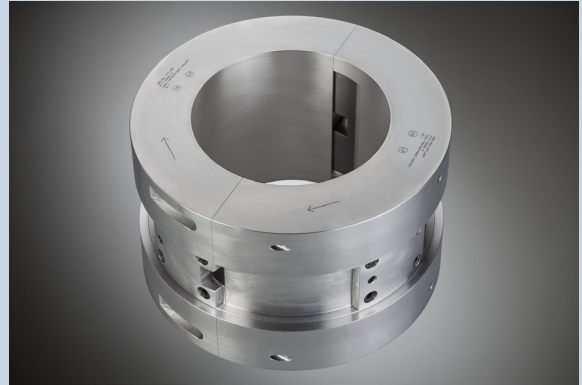


RADIAL COMPONENTS

Fixed Profile Journal Bearings



- diameter up to 1600 mm
- with or without hydrostatic jacking



- various types of profiles and white metal
- with or without adjustable outer diameter

Tilting Pad Journal Bearings



- shaft diameter from 30 up to 500 mm



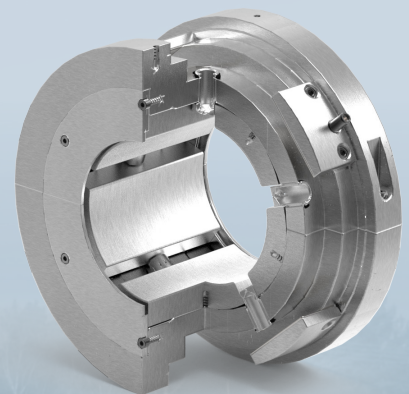
- variable range of properties
- stable properties of bearing run

Advantages of Tilting Pad Journal Bearings:

- maximum possible stability of rotating parts
- low sensitivity to load direction
- oil flow can be minimised, which reduces loss caused by friction
- standard components can be used

Advantages of GTW Tilting Pad Journal Bearings:

- designed for the transfer of radial loads with optimal dynamic features and minimum power loss
- optimised lubrication of bearings enables minimum power loss and decreased temperature
- simple and universal design, which enables the combination of axial/radial loads
- provision of static and dynamic performance data are standard



General Information:

These bearings are used in high speed machines, mostly in turbo gearboxes, industrial turbines and turbocompressors.

AXIAL COMPONENTS

Thrust Pads type WK



- pad sizes ranging from 90 to 710 mm
- main application for WK thrust bearings is in vertical roller mill gearboxes, where high static and dynamic loads have to be absorbed
- the support of the axial tilting pads on a spherical surface guarantees an all-round tilting movement and therefore perfect hydrodynamic function of the bearing

Thrust Pads type WA



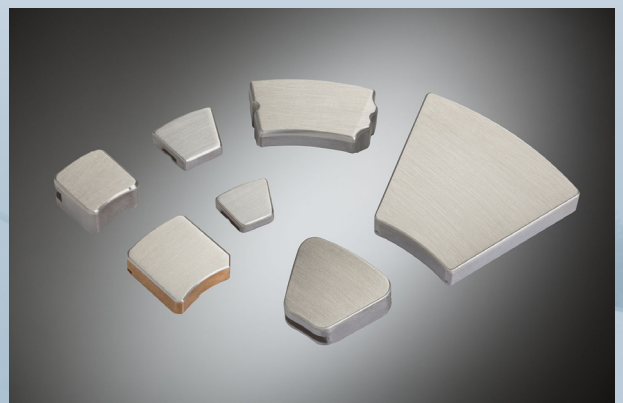
- pad diameters ranging from Ø 20 to Ø 630 mm
- WA thrust pads are circular and have an attached spherical surface on the back, enabling an all-round tilting movement

Thrust Pads type WD



- pad diameters ranging from Ø 16 to Ø 315 mm
- WD thrust pads are sliding components with a disk spring support

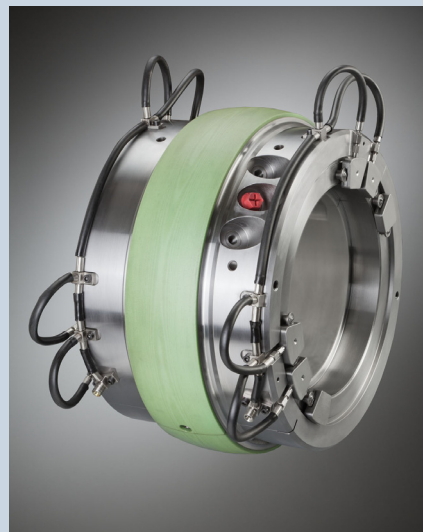
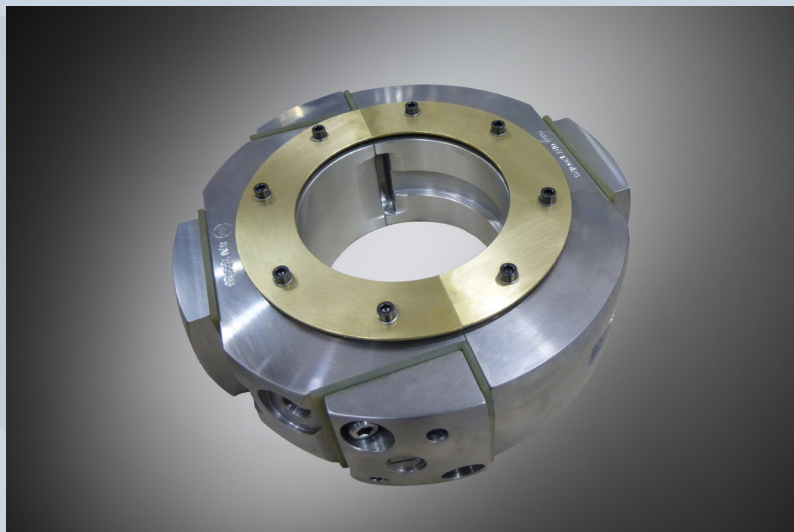
Other types of Thrust Pads



- GTW also offers a number of thrust pads, which can be designed either by us or by the customer

BEARINGS FOR SPECIAL APPLICATIONS & SERVICES

Electrically Insulated Bearings



- these bearings are designed with insulated fitted plates
- GTW uses only materials with the highest-graded mechanical and electrical properties

- these bearings meet all requirements for the electrical insulation of the complete outer diameter

REPAIRS

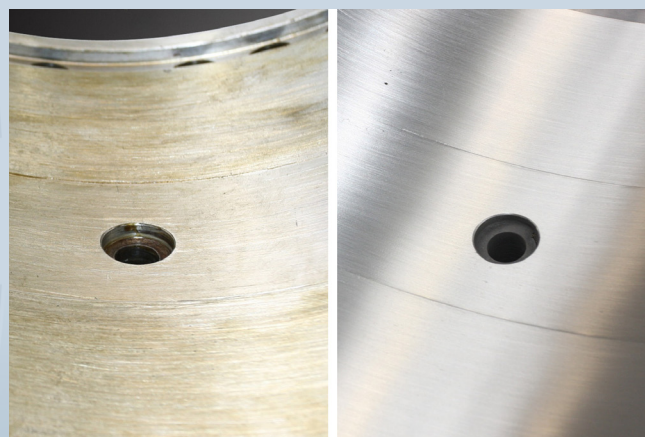
› Repairs of Damaged Bearings

- time and cost-effective solution for your bearings



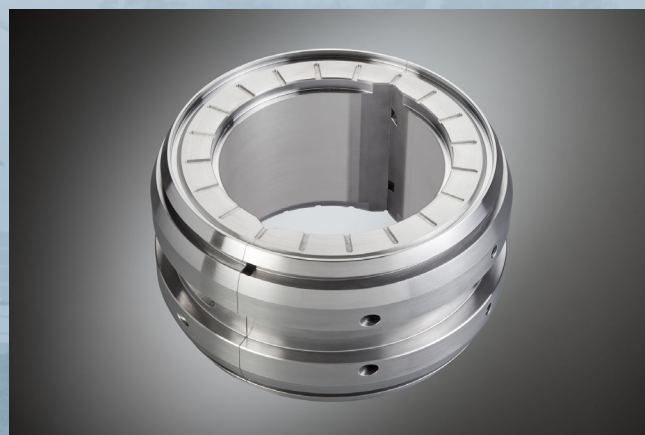
› Bearings Damage Analysis and Statistics

- comparison with vast internal database



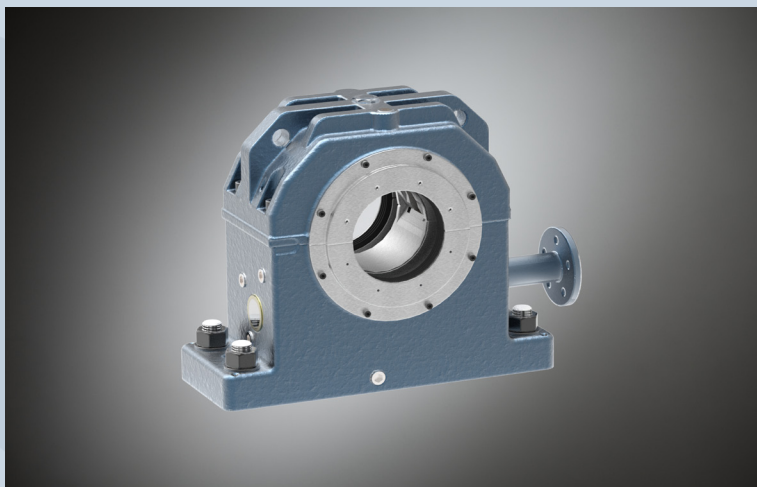
AFTERMARKET

- machine downtimes due to damaged bearings can lead to considerable losses to the affected enterprise; GTW specializes in the remanufacturing of journal bearings and also the professional repair of your damaged journal bearings
- for your bearings, GTW offers aftermarket products: such as New, Refurbished or Repaired spare parts and accessories



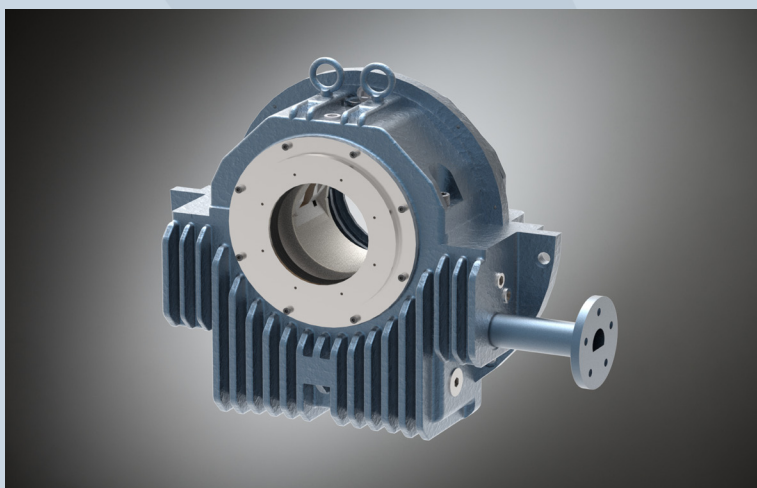
BEARING SYSTEMS

Pedestal Bearings WP



- according to DIN 31 690, these bearings are manufactured for shaft diameters ranging from 140 to 900 mm
- due to their versatility, Pedestal Bearings are used in a wide variety of applications, such as turbo generators, hydro generators, water turbines and pumps, blowers, motors and generators

Centre Flange Bearings WM



- according to DIN 31 694, these bearings are manufactured for shaft diameters ranging from 140 to 450 mm
- these bearings are usually applied in horizontal electrical machines such as generators and motors
- they are mounted directly into the machine shield with one side extending into the machine

Side Flange Bearings WF



- according to DIN 31 693, these bearings are manufactured for shaft diameters ranging from 140 to 450 mm
- these bearings are usually applied in horizontal electrical machines such as generators and motors
- they are mounted directly to the outside of the machine

• we offer more detailed information in a supplemental catalogue

RESEARCH & DEVELOPMENT

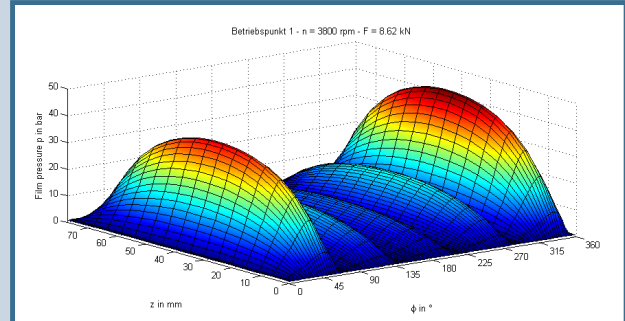


BEARINGS DESIGN & CALCULATION

- Member of German Research Association for Combustion Engines **FVV**
- Bearings Calculations with special software **COMBROS**

• our R&D department develops new products and follows through with the testing process at testing stations in the Czech Republic

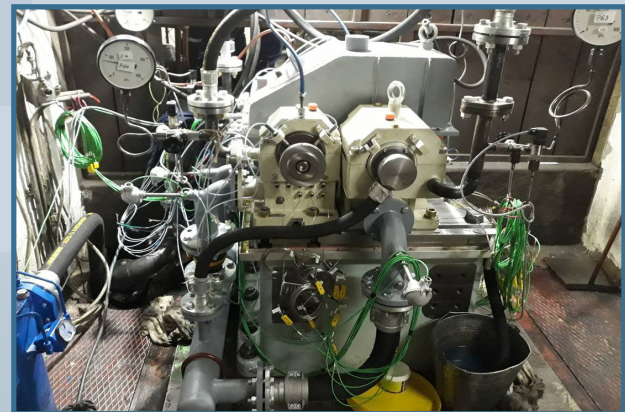
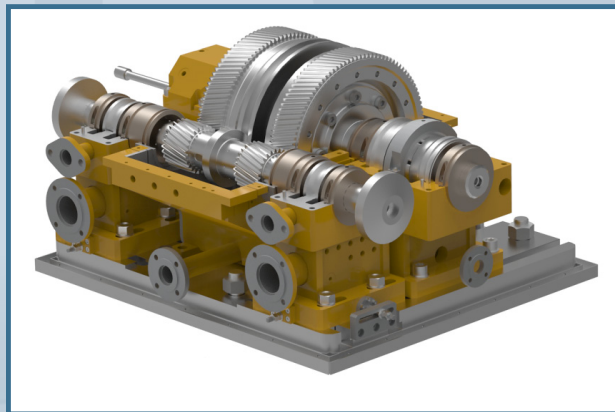
• our R&D department also custom-designs bearings for multiple types of machines, based on technical calculations



- outputs from technical calculations include matrixes of stiffness and damping, power losses, determination of temperatures, minimal oil film thickness in a bearing and many other important factors

GTW JOURNAL AND THRUST BEARING TEST RIG

- we thoroughly test each of our new products before launch, both in terms of materials used and in-use behavior
- we also test in order to refine the calculations precisely, allowing us the ability to compare the calculated values with the measured values
- measured values include: oil flow through each bearing separately, oil inlet and outlet temperatures, power loss, bearing temperature, eccentricity ratio, thrust load and vibration

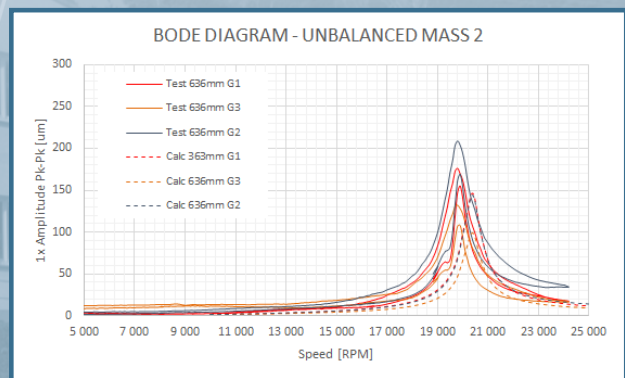


JOURNAL BEARING TESTING

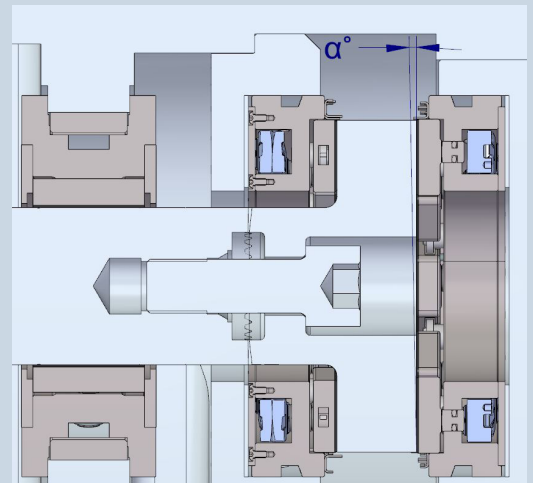
- the maximum speed on a low-speed shaft 10,000 rpm (pinion speed 40,380 rpm)
- pitch velocity 150 m/s
- maximum load 7 MPa ~ 25 kN

THRUST BEARING TESTING

- the maximum speed on a low-speed shaft 5,000 rpm (pinion speed 20,190 rpm)
- pitch velocity 120 m/s
- maximum load 5 MPa ~ 50 kN

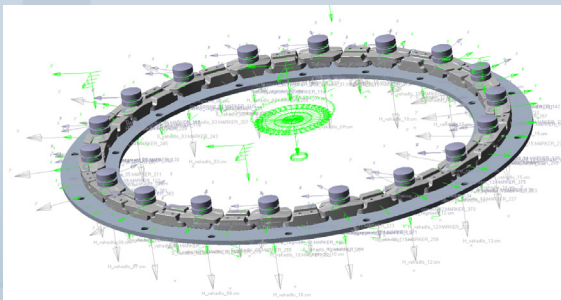


SELF-EQUALIZING THRUST BEARINGS

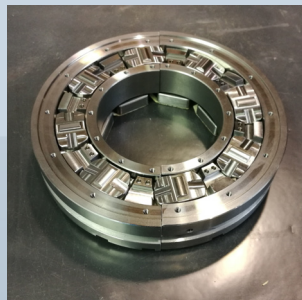


- The system of self-equalizing elements is used in cases where, due to thermal deformation or bending of the shaft, there occurs a misalignment between the collar and the bearing.
- GTW Self-equalizing Thrust Bearings:
 - can be **combined** with several types of journal bearings, including the unique modular design of GTW bearings
 - can be **custom-designed** to fulfill all customer specifications and requirements, which is also used for retrofits
 - can be equipped **with load cells** to measure the actual thrust load
 - can be used for a variety of applications

› Kinematic Verification in the MSC Adams software

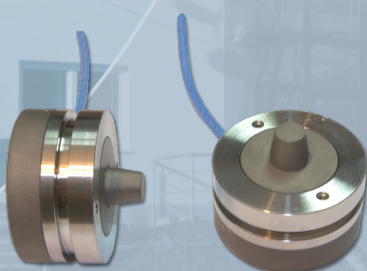


› Testing on GTW Test Rig (incl. measuring of thrust load)



› Load Cells

- self-equalizing bearings can be equipped with load cells to measure the actual thrust load



› Combined Bearing with self-equalizing system



CUSTOMER REFERENCE

SIEMENS

FLENDER
GRAFFENSTADEN

FLENDER
A Siemens Company



BRUSH


Howden



HYOSUNG Power & Industrial Systems
Performance Group

[pekrun]

 **Santasalo**
David Brown Santasalo



FLSMIDTH
MAAG GEAR



DOOSAN
Doosan Škoda Power

VOITH

ANDRITZ



Ingeteam

