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
RADIAL COMPONENTS

Fixed Profile Journal Bearings
- diameter up to 1600 mm
- with or without hydrostatic jacking

Tilting Pad Journal Bearings
- shaft diameter from 30 up to 500 mm
- various types of profiles and white metal
- with or without adjustable outer diameter
- 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

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
• 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

GEN

DOOSAN
Doosan Škoda Power

VOITH

ANDRITZ

ELECON
GEARING THE FUTURE

AERZEN

HYOSUNG
Power & Industrial Systems Performance Group

[pekrun]

Santasalo
David Brown Santasalo

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POWER TRAIN SOLUTIONS

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