



# METATEK ENGINEERING

Building Trust through  
Dependability



## About Us

Incorporated in year 1977 as Shah Alloys, Metatek Engineering is a pioneer amongst Indian companies in manufacturer & re-conditioning of White Metal Lined Bearings & Thrust Pads. The Company's Manufacturing range includes large capacity Turbine Bearings to Thrust Pads. At the core of our manufacturing is our years of research and experience in understanding application of White Metal Alloy to Motion Engineering.



Our manufacturing facility boasts of State of the Art Machining Center from DMG, Heat Treatment Furnace and self-designed Centrifugal Casting Machine.

We cater diameters up to 5 mtr under various geometries. Centrifugal castings are done for diameters up to 1 mtr and weighing up to 5 tons. We also manufacture static castings for jobs of bigger sizes up to 7.5 tons.

## Our Vision

At Metatek we constantly endeavour to deliver best in class products to our customers on a sustainable basis while keeping all our stakeholders happy through our fair and honest actions.

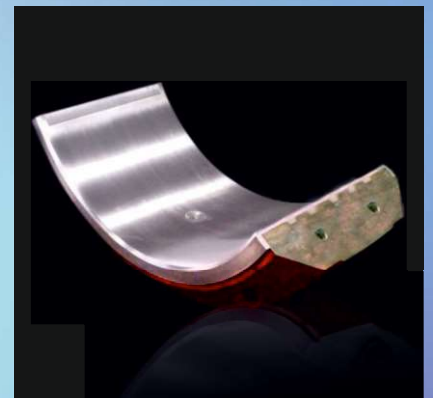
## Manufacturing Capabilities

### Centrifugal Casting:

- Single bearing weight up to 5000 Kgs.
- Bearing diameters up to 1000 mm.

### Static Casting:

- Single bearing Weight up to 7500 Kgs. For uneven geometries that cannot be centrifugally casted.
- Computer added designs.
- In house Liquid-penetrant and ultra-sonic examination of white metal lining.
- We follow DIN, IS, ASME & JIS standards or any other standards to customer specifications.
- Made to order in various lining material specifications.
- Provision of third party inspection.





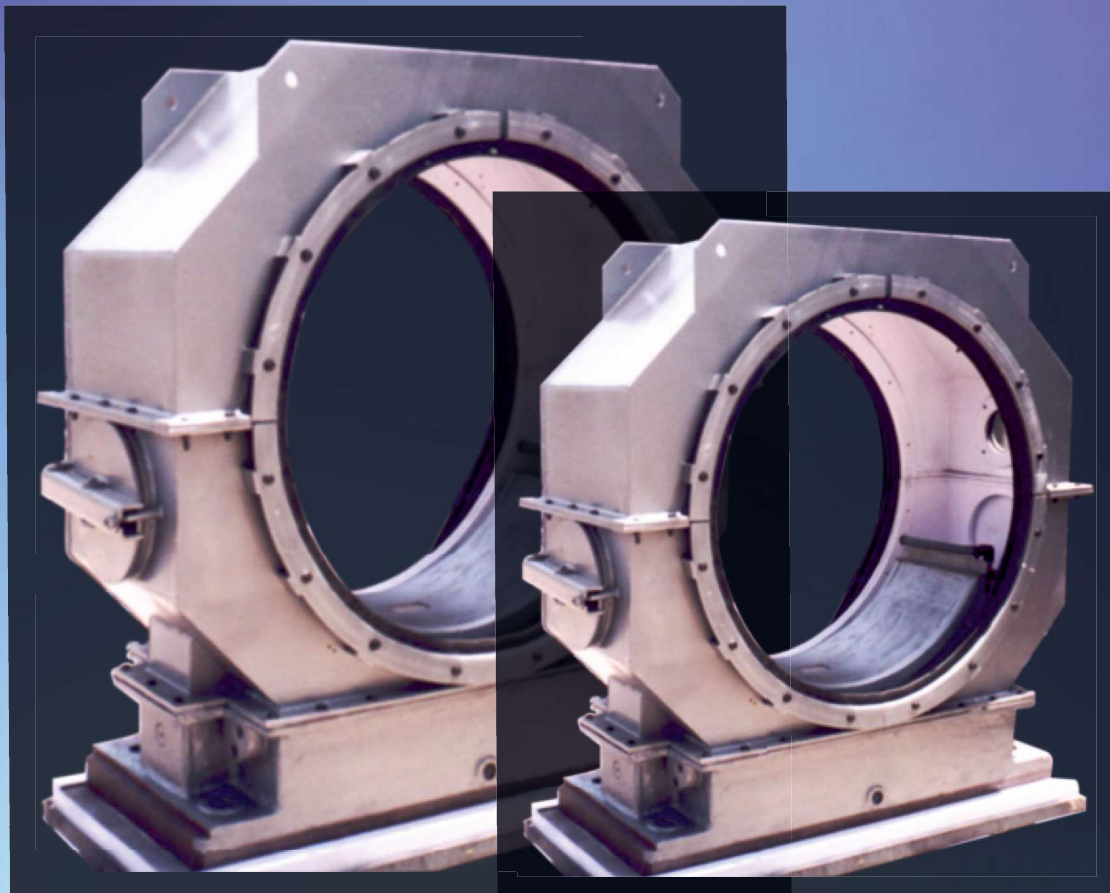


## Performance Capabilities

- Rotational speed from 100 RPM to 45000 RPM.
- Wide issues of axial vibration under control.
- Can achieve varying degrees of alignment in case of tilting pad.
- Meet the operating temperatures and bring significant enhancement in load capacity due to oil film support.

## Complete Bearing Housing Assembly

Design, Manufacturing, Testing & Supply

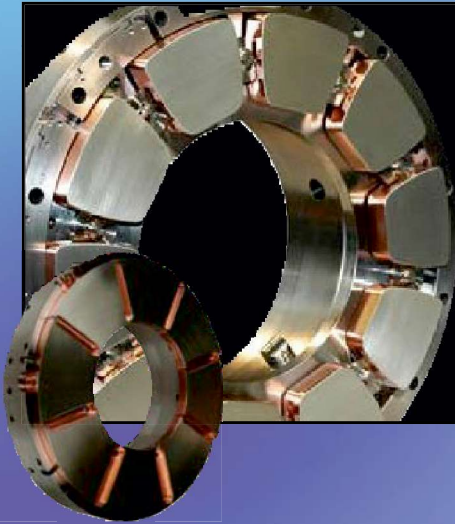


Bearing Housing typically, a bearing with matching housing will serve for long. We have manufactured bearings and housing sets that have served well exceeding the assured life span. These bearings and housings weigh from 150 Kgs to 10000 Kgs and speeds varying up to 45000 RPM based on applications.

### Product Features

- Housings available in fabricated as well as casted structures.
- Oil Jack-Up systems with pressure capabilities up 6000 PSI
- Water Cooling Systems
- Greasing Systems
- Rubber Seals
- RTDs
- One to One exact replacement (Retrofit)

# Types of Bearings



## TILTING PAD THRUST BEARINGS

Tilting pad thrust bearings are available with a variety of design features including directed lubrication, specially engineered pivot types and offsets, pad backing material and several different styles of thrust retainers, all designed to optimize performance and meet unique requirements in turbomachinery. These equalized and non-equalized bearings are of similar size and offer unprecedented choice and flexibility to machine builders. Custom solutions are also available that offer reduced power losses, oil flows and pad temperatures, and address industry-wide issues such as axial vibration.

For use with:

Pumps, Motors, Compressors, Turbines, Generators and Gearboxes

## FIXED PROFILE BEARINGS

Fixed profile bearings are optimized to meet the changing demands of various applications operating at a wide range of speeds. Specially engineered designs of multi-lobe bore versions are ideal for high-speed applications. Design options include thrust load capacity on the end faces, hydrostatic jacking for use at start-up and run-down and machining for instrumentation. In addition to standard steel, other material linings are readily available to meet individual customer or application requirements.

For use with:

Pumps, Motors, Compressors, Turbines, Generators and Gearboxes



## TILTING PAD JOURNAL BEARINGS

Tilting pad journal bearings are available with a broad range of design features that ensure high performance and optimal compatibility with a variety of turbomachinery. Available options include hydrostatic jacking, combined single or double acting thrust capability, spherical seats to meet the unique challenges of every application. To achieve varying degrees of alignment capability, a wide selection of pad pivot types and pad geometries are also available.

For use with:

Pumps, Motors, Compressors, Turbines, Generators and Gearboxes

## VERTICAL BEARING ASSEMBLIES

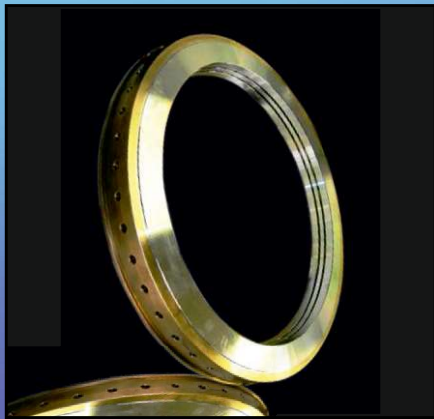
Vertical bearing assemblies are available in a wide range of sizes and include a variety of design options, hydrostatic jacking, and instrumentation. Proven designs range from large, self-contained combined journal and thrust units for hydro units to primary coolant pumps and motors used in nuclear power stations to small, self-contained air cooled units. Air cooling has been increasingly used as it avoids the complications associated with water-filled coils and allows operation on remote sites.

For use with:

Hydro Plants, Pumps, Motors and Generators







## SEAL RINGS

The most critical part in H2 Generator is the seal ring that prevents gas leakage, We have successfully manufactured new seal ring for import substitution, for replacement, and as a spares etc. We have rebabbitted seal rings to the satisfaction of our client for 120 and 210 MW power plant.

For use with:

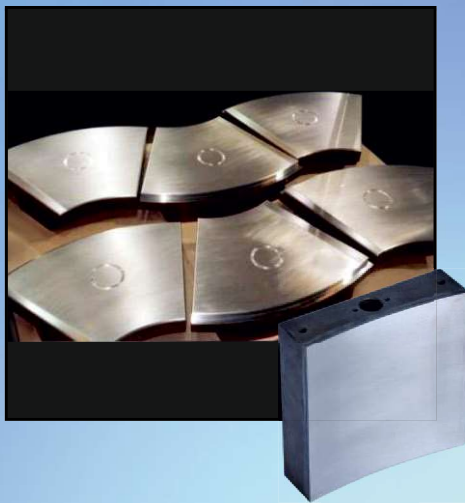
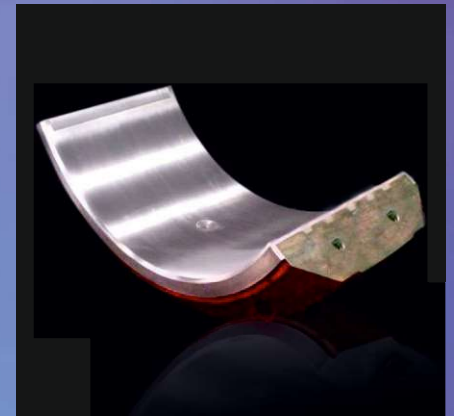
H2 Generators (Super Critical Application)

## NON CIRCULAR PROFILE BEARINGS

These bearings are mainly used in applications having bigger diameters. Machines such as mills and kilns. The key application industries are power plants, cement plants and steel plants. We have manufactured these bearings from 1000 MM dia to 6300 MM dia. Weights from 100 Kgs to 7500 Kgs.

For use with:

Mills, Crushers & Kilns



## SELF ALLING / FIXED / GUIDE PADS

Our babbitt lined thrust pads, self aligning pads, guide pads, pads with pivot are best suited to take on thrust load in variety of applications under demanding conditions in various industries.

For use with:

Pumps, Motors, Compressors, Turbines, Generators and Gearboxes

## NEW BEARINGS

The new bearings are made to customer requirements specifications / industry standards. Stringent checks from raw materials on to various stages of manufacturing and finished bearings ensures quality that lasts longer and fully satisfies customer needs. We have made bearings from 60mm dia to 1400 mm dia and from just 5 kg in weight to 2500 kgs.

For use with:

Pumps, Motors, Compressors, Turbines, Generators, Gearboxes, Mills, Crushers & Kilns



# PRODUCT - APPLICATION KEY

## PUMPS

Pumps are built in a wide variety of sizes and types, from nuclear primary to electric submersible. As a result they may employ the whole range of Bearings.

## COMPRESSORS

High-speed compressors can be very demanding of journal bearings due to their dynamic properties; 4 or 5 pad tilting pad journal bearings are commonly used. Thrust bearings are normally the tilting pad type with directed lubrication to minimize power losses.

## GENERATORS

Depending on size and orientation, generators use the full range of Bearings products as internal bearings or complete assemblies with a housing. With steady weight loading and modest synchronous speeds, generators tend to use the conventional material combination of babbitt.

## MOTORS

Similar to pumps make use of the entire range of Bearings. This is partly due to the fact that pumps and motors are often matched together as a motor/pump set.

## TURBINES

Depending on size, gas and steam turbines normally use tilting pad journal and thrust bearings; sometimes in combined assemblies. Directed lubrication is usually employed to minimize power losses and oil flows, and to reduce pad surface temperatures. Gas turbine thrust bearings are high-speed and high-load.

## GEARBOXES

Low speed shafts of gearboxes normally use fixed profile journal bearing, often with simple cylindrical bores; and high speed shafts use either multi-lobe fixed profile or, increasingly, tilting pad journal bearings. Very high-speed applications can require special material combinations and may utilize directed lubrication to reduce pad surface temperatures and improve efficiency.

## We Manufacture

- Turbine Bearings
- ID, FD, BFP, MOP, Bearings
- Hydrogen Seal Rings
- Generator Bearings
- Thrust Pads
- Journal Pads
- Pitman Bearings
- Trunion Bearings
- Low Metaling Alloys
- Fusible Plugs
- Piston Lining
- Journal Cum Thrust Bearings
- Gasket Rings.
- L.B.C. Packings



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