rothe erde® Slewing bearing service
Maximum flexibility for continuous operation
We are there when you need us.

As a customer, you are important to us. As a result, thyssenkrupp Bearings offers you comprehensive service – worldwide!

As a leading global manufacturer of slewing bearings, we at thyssenkrupp Bearings are also your first port of call when it comes to obtaining services for these demanding products. After all, only regular maintenance and expert servicing will ensure that the rotary connections reach a long service life, with trouble-free operation and so that your installations will remain available without restrictions – an important factor in your success.

Expertise, experience, global presence and competence in solving problems are the building blocks of first-class service from our highly qualified and specialized team – as well as guaranteeing satisfaction for our customers with their challenging requirements. Also make thyssenkrupp Bearings your partner for all services relating to slewing bearings!

There are good reasons for doing this:

- **Flexibility**
  For us, being flexible means consistently orientating ourselves towards the requirements and demands of our customers. We carry out the tasks that you give us: efficiently, on schedule and with good value. In the process, our Service team not only looks after slewing bearings from our own production, but also inspects, maintains and repairs bearings for you irrespective of their manufacturer. On request, we can also carry out optimizations of bearings that have already been fitted.

- **International stance**
  We are available wherever you need us. Currently, we have seven Service facilities in Europe, USA, Brazil, China, India, Australia and Japan, and we are constantly expanding our network further. You benefit from fast response times, which are within 24 hours worldwide in most cases.

- **Experience**
  We have decades of experience not only in design and production, but also in service and maintenance. Our Service team features outstanding experts who can be deployed worldwide. We have qualified personnel even for specialist tasks, such as working on offshore installations, in aerospace as well as special technologies.
Maximum reliability through comprehensive services

From installation to inspection, from maintenance to repair and even training courses: Our service concept is comprehensive and is divided into three areas:

1. **In-house service**
   On our own premises, we carry out maintenance, inspection, repair and overhaul activities on your bearings – irrespective of which company manufactured them.

2. **On-site service**
   We can also carry out all the stated works on your premises. In addition, on request we handle the installation and commissioning of bearings in your plant.

3. **Proactive service**
   Quite apart from the actual work on the bearings, we prepare service concepts for you, analyse the status of bearings in your plants and provide you with detailed reports. In addition, we offer you individual service such as training and service reminders.

The availability of your systems as well as long service life of the bearings are important components in your success!

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Our service is always at your side!

You can rely on our Service team one hundred percent. Wherever you need us, our experts are at your disposal at any time — wherever your premises are in the world. Alternatively, we offer you online support.

1. Inward warehouse movements / spare parts management

   a. Packaging check
      To allow the permitted storage times to be complied with optimally, we check and evaluate packaging and the storage conditions.

   b. Renewal of packaging
      It is recommended for the packaging to be renewed or optimized so that spare parts will be available over long periods, such as extending storage by up to five years.

2. Preliminary laser measurement

   a. Bolt-on warranty after the storage period has been exceeded
      Once the storage period has been exceeded, a bolt-on warranty can be provided following a check on the raceway system. We will be pleased to submit an offer.

   b. Evaluation of the connecting surfaces prior to bearing installation
      We use our rotation laser measuring systems to measure the levelness of connecting surfaces according to DIN EN ISO 1101.

3. Bearing installation / bearing exchange

   a. Bearing positioning
      Correct positioning of the slip positions “S” is of elementary importance in operational reliability and for the service life of a slewing bearing.

   b. Bearing screw connection
      The high expectations on quality and service life of rothe erde® slewing bearings also require efficient handling of screw connections. For this purpose, we accompany and check the process of pre-tightening screws including provision of tools.

   c. Setting the backlash
      The backlash must be set on the teeth marked in green, between the drive pinion and bearing splines.

   d. Basic measurement
      A basic measurement must be carried out as a preliminary for the follow-on measurements to evaluate the progress of wear in a slewing bearing.
Bearing inspection in the plant

1. General bearing condition
   During the check of the general bearing condition, the slewing bearing as well as adjacent machine parts are checked visually. The characteristics that are examined include the level of contamination, status of the seals, lubrication condition, noise, etc.

2. Bolt check
   An adequately high screw preload must be provided throughout the entire service life of a slewing bearing, and we check this in the course of screw preload checks.

3. Wear measurements (settlement/movement measurements)
   Wear measurements provide precise information about the operational reliability and compliance with wear limits in a slewing bearing.

4. Grease samples including lubricant analyses
   Lubricant analyses combined with settlement and movement measurements provide an optimum way of assessing the progress of wear and the status of the raceway system in a slewing bearing.

5. Wear status and evaluation of the contact pattern of the bearing splines
   Experience shows that the permitted wear can be $0.1 \times$ modulus. The general evaluation is conducted visually; the drive pins are also considered. Wear measurements are carried out using special tools and measuring equipment.

6. Determining the function value
   The function values are determined using proven and tested processes. These provide information about the status of the slewing bearing as well as whether it can be reused.

7. Detailed examination of the bearing splines if necessary
   In addition to the visual inspection and wear evaluation, a crack test can be carried out.

8. Detailed inspection of the raceway
   The best way of assessing the status of the raceway is following removal and cleaning of the individual parts.

9. Crack test of raceways and splines
   A crack test provides information about whether a slewing bearing can be reused. For example, following an accident it will be necessary to establish whether a bearing is still suitable for operation.

10. Status analysis and reporting with repair recommendations
    Following each check/inspection, a detailed report is prepared including digital images. This describes, amongst other things, the status and repair capability; in addition, the document contains recommendations from our experts regarding further operation.

Examination of the removed bearing

- Wear measurements (settlement/movement measurements)
- Grease samples including lubricant analyses
- Determining the function value
- Detailed examination of the bearing splines if necessary
- Detailed inspection of the raceway
- Crack test of raceways and splines
- Status analysis and reporting with repair recommendations

Removal of the bearing

- General bearing condition
- Bolt check
- Wear measurements
- Grease samples
- Determining the function value
- Detailed examination of the bearing splines
- Detailed inspection of the raceway
- Crack test of raceways and splines
- Status analysis and reporting with repair recommendations
Training on-site and at thyssenkrupp

We adapt the content of our training courses to your individual needs, meaning that the focus is always on the specific plants of the customer in question. For example, the content of the training includes bearing installation, bearing checks, seal renewal, wear measurements, relubrication, etc.

Repair of the removed bearing on the spot

Manual reworking of damaged areas

If the extent of damage is significant, it is possible for a slewing bearing to be repaired by manual reworking. For example, seals can be renewed, new roller bodies installed or the splines can be smoothed manually.

Packaging (standard or long-term)

Following an examination/inspection, we offer the choice of standard packaging or long-term packaging. With long-term packaging, storage is possible for up to five years in temperature-controlled rooms.

An overview of the benefits to you.

You benefit from optimally maintained bearings in a wide variety of ways: Plant safety and availability are increased, service life is extended. This minimizes the risk of downtimes and the resulting financial losses. Additionally, you reduce your own service commitment, you no longer need to worry about spare parts management, and this frees up valuable resources. And even if your bearings are not malfunctioning or damaged, you will receive extensive documentation from us concerning the plant condition so that you can plan optimally for the future.