

Services

Services

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Services

Features Schaeffler offers, irrespective of manufacturer, a wide range of services relevant to the lifecycle of a rolling bearing: starting with mounting and progressing through maintenance to the reconditioning of rolling bearings.

During the operational phase, the Schaeffler experts provide support through services in the fields of condition monitoring and corrective maintenance. Companies that wish to build up their knowledge in the areas of rolling bearings and condition monitoring also have access to the Schaeffler training and consultancy portfolio on site, centrally or online. Our e-learning portfolio on the Internet provides the first steps into this field. In this way, customers benefit from the expertise of a leading supplier of rolling and plain bearings.

Mounting and dismounting

The Schaeffler Industrial Service experts offer mounting and dismounting services for rolling bearings that are applicable across industrial sectors. They have detailed knowledge and extensive experience in all industrial sectors, *Figure 1*.



Figure 1
Mounting service
provided by Schaeffler experts

The experts in the Industrial Service function are trained and skilled personnel who can provide reliable, rapid and competent assistance. The services are provided either at the customer's location or in the Schaeffler workshop facilities.

The mounting and dismounting services include:

- mounting and dismounting of rolling bearings and bearing systems of all types
- measurement and condition analyses
- problem solving and preparation of concept solutions
- design and manufacture of special tools
- rental of tools
- emergency service
- training courses on products and mounting
- certification of mounting and dismounting processes.

Services

- Advantages
- The mounting services give the following advantages:
- rapid availability worldwide of experts in bearing arrangement technology with extensive experience in almost every application
 - rapid mounting or dismantling by means of professional preparation and implementation
 - increased plant availability and productivity as a result of reduced unplanned downtime
 - optimisation of mounting and dismantling processes
 - professional mounting and dismantling using special high-quality tools
 - training and awareness measures for employees relating to the correct handling of bearings of all types.

- Rental of tools**
- Customers who require special mounting and dismantling tools or measuring equipment only infrequently can rent these from Schaeffler for a fee.
- Our service includes:
- prompt rental in Europe
 - free-of-charge, rapid delivery to the installation site
 - checked quality products in keeping with the latest technological developments
 - delivery of the tools, including all add-on parts
 - user manuals available in several languages.
- If one of our qualified experts in the Industrial Service function is commissioned to carry out the particular activity, rental costs are not generally incurred.

Certification

Approximately 25 percent of all premature bearing failures can be attributed to mounting errors. In order to achieve a long bearing operating life, it is particularly important to have not only basic knowledge of rolling bearings but also theoretical and practical knowledge of their correct mounting and dismounting. In order to ensure that the training received by mounting personnel is as close to reality as possible, Schaeffler offers certification of individual mounting and dismounting processes, *Figure 2*.



Figure 2
Theoretical training

Here, information on the correct handling of rolling bearings and the avoidance of mounting errors is imparted by our rolling bearing experts. This is carried out with direct reference to the specific application and the individual circumstances of the customer.

A practical demonstration of the mounting and dismounting process is then provided, which also covers adherence to the necessary processes and regulations.

Finally, the training participants must put their acquired knowledge to the test. Only then do they receive application-specific certification from Schaeffler.

Services

Reconditioning of rolling bearings

It is often the case that new rolling bearings are fitted although the existing bearings could be restored to as-new condition by means of appropriate reconditioning. In many cases, reconditioning of rolling bearings is significantly more cost-effective than using new rolling bearings, *Figure 3*.

- ① Before reconditioning
- ② After reconditioning



Figure 3
Rolling bearing raceway and rollers
before and after reconditioning

Advantages

The advantages for the customer are as follows:

- reductions in life cycle costs (LCC = Life Cycle Costs)
- increases in operating life
- savings in material and energy costs
- reductions in inventory costs
- high flexibility through short lead times
- feedback on the characteristics and frequencies of damage.

The operations necessary in reconditioning are dependent on the condition of the rolling bearing. In order to allow a reliable statement of the work required, the rolling bearing must be disassembled, cleaned and then carefully examined. Beyond this requalifying process (Level I), which is always necessary, further reconditioning steps may be appropriate, *Figure 4*, page 7.

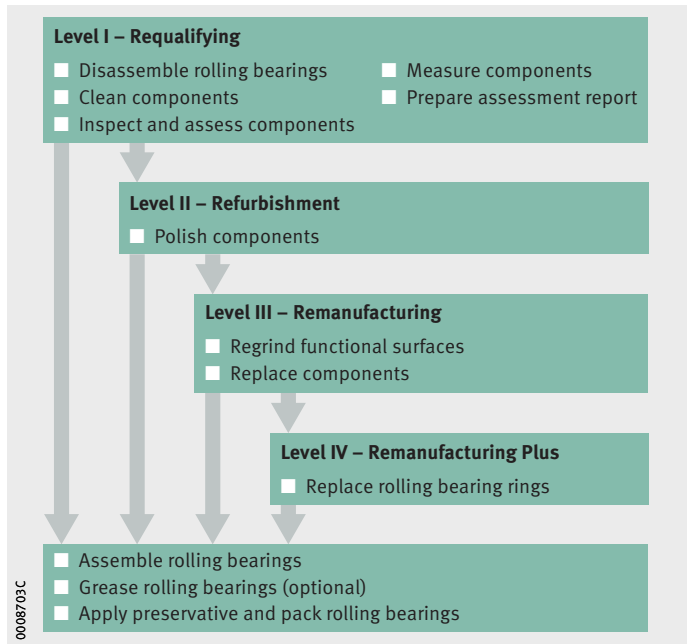


Figure 4
Reconditioning levels

Quality

Schaeffler performs reconditioning of rolling bearings to uniform standards throughout the world. All sites apply identical processes and guidelines. Schaeffler rolling bearings are processed in accordance with the original drawings. In the case of all bearings, work is carried out using only original components and original replacement parts. High quality reconditioning is achieved as a result of our comprehensive knowledge of rolling bearings.

Market sectors

Reconditioning is carried out irrespective of manufacturer and is thus not restricted to products of Schaeffler Technologies. Before reconditioning, the condition of the bearings can be assessed on site in consultation with experts from the Global Technology Network.

Reconditioning of rolling bearings is of particular interest if these are used in machinery or vehicles in the following market sectors:

- raw material extraction and processing
- metal extraction and processing
- pulp and paper
- railways.

Dimensions

Reconditioning and, where required, modification can be carried out on rolling bearings with an outside diameter D of 100 mm to 4 500 mm. Please contact us for information on reconditioning or modification of bearings with other outside diameters.

Further information

- For detailed information, see TPI 207, Reconditioning and Repair of Rolling Bearings.
- Enquiries: industrial-services@schaeffler.com, Tel. +49 9721 91-1919, Fax +49 9721 91-3639

Services

Training courses

The operating life of rolling bearings is determined to a substantial degree by their correct mounting and dismounting. Appreciating the use of rolling bearings, linear guidance systems and plain bearings as indispensable elements in thousands of applications requires the necessary understanding of these machine elements. Schaeffler has its own training centres worldwide certified to ISO 9001, *Figure 5*.



Figure 5

Training course at the Eltmann site

Training courses on mounting and dismounting generally comprise a theoretical part and a practical part. Thorough knowledge is communicated, for example, on the mounting and dismounting of rolling bearings using the optimum tools and on the condition monitoring of bearing arrangements, especially through the use of noise, vibration and torque measurements.

In general, the initial steps are provided by basic training covering the different characteristics, features and types of rolling bearings, plain bearings and linear guidance systems as well as their combination to form systems, extending all the way to mechatronic units. Application examples reflect the selection criteria and the customer benefits achieved. These product-oriented training courses are followed by modules covering rolling bearing theory as well as selected applications. Rolling bearing theory conveys the necessary knowledge on subjects such as bearing clearance, load distribution in the bearing, rating life and lubrication. In workshops, the participants concentrate on applications, for example the bearing arrangements in a machine tool or a shaft bearing arrangement. All process steps are covered, from bearing selection and bearing calculation through to mounting, *Figure 6*, page 9. We also offer workshops in the field of mechatronics.



Figure 6
Training course on mounting
of rolling bearings

Several training modules cover the mounting and dismounting of rolling bearings and linear guidance systems. Based on perception and exercises, the participant gains the mounting knowledge and skills that he will require in practice. Our training courses on mounting cover a large number of applications. Mounting exercises on individual products are followed by work on more complex systems such as gearboxes, rail wheelsets or machine tools. The possibilities for plannable and economical design of maintenance work on machines, plant and rolling bearings are communicated to the training participant in appropriate courses.

Services

Mounting cabinet

Literature on the correct mounting of bearings is readily available, however there is a general lack of appropriate equipment on which apprentices can practise in as practical a sense as possible. The trainers from the Schaeffler training workshops therefore compiled a basic course, *Figure 7*.



Figure 7
Basic course: Mounting cabinet

The aim of this rolling bearing course is to communicate knowledge on the selection of the correct bearing, correct mounting and dismounting and the maintenance of bearing positions. It is divided into two parts.

The theoretical part communicates basic knowledge on rolling bearing technology, illustrating the subject areas of technical drawing, technical calculation and technical theory by means of state-of-the-art media. In the practical part, the basic skills in the mounting and dismounting of common types of bearings are practised with the aid of exemplary simplified mating parts (shafts, housings). Various methods and tools are used here.

The learning content comprises smaller learning stages and is available in various languages. They correspond in their full scope to the degree of difficulty that is currently required in vocational training. On the basis of this basic course, training can also be given on individual content by means of various mounting sets, *Figure 8*.



Figure 8
Exercises
using the mounting cabinet

Mounting cross

In order to provide professional training courses on the correct mounting and dismounting of rolling bearings, Schaeffler has developed the so-called mounting cross, *Figure 9*. This piece of equipment allows the skilled trainer to communicate the correct handling procedure visually, using a variety of different bearings, and under realistic conditions. The degree of difficulty corresponds to the basic training of persons who work on a regular basis with rolling bearings.



Figure 9
Training equipment:
Mounting cross

The mounting cross is of a modular structure and can be supplemented and expanded by a large number of different exercises. The initial configuration contains the basic tools required, the mounting cross itself and four different exercises on the most frequently used bearing types. Each one of the exercises contains the bearings, adjacent parts and tools required. Mechanical, thermal and hydraulic methods are communicated.

The training documents enclosed give precise explanations of the correct procedure and the correct use of bearings and tools. The necessary safety measures and alternative procedures are also explained.

Further information

This PDF file is part of “medias” (medias.schaeffler.de). Please also take note of all other information provided there (Internet pages, PDF files), where this information is applicable to your task.?

**Schaeffler Technologies
AG & Co. KG**

Industriestraße 1–3
91074 Herzogenaurach
Germany
Internet www.schaeffler.de/en
E-mail info.de@schaeffler.com

In Germany:

Phone 0180 5003872

Fax 0180 5003873

From other countries:

Phone +49 9132 82-0

Fax +49 9132 82-4950

**Schaeffler Technologies
AG & Co. KG**

Georg-Schäfer-Straße 30
97421 Schweinfurt
Germany
Internet www.schaeffler.de/en
E-mail faginfo@schaeffler.com

In Germany:

Phone 0180 5003872

Fax 0180 5003873

From other countries:

Phone +49 9721 91-0

Fax +49 9721 91-3435

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