

Deep Dive into **RKB 's** technological bearings

RKB has genuine knowledge of designing, manufacturing, and serving high-value technological bearings for OEM and MRO companies worldwide. We effectively combine up-to-date technological developments with experience and expertise gained over many successful years to produce quality technological bearings with outer diameters of up to 1.925 mm.

To learn more about RKB technological bearings and the challenges involved in their production, installation, and after-sales service, we spoke with Sr. Eng. Vasile Nitu from the Technical Team Unit. This new interview continues the mission begun in the previous issue of BearingNews, in which we want readers to learn more about our products while meeting various RKB specialists.



Good morning, Vasile! Thank you for agreeing to answer a few questions about RKB technological bearings. Let us start with a focused question. What is the role of technological bearings?

Let me begin by saying that technological bearings have a high level of complexity in terms of requirements to which the manufacturer must respond. They support and guide the machines with which the processed material interacts, as well as the semi-finished products during processing and the finished products at the end of the process.

The almost direct interaction with the processed material and the variety of requests they must deal with add to the technical complexity of their production. Handling heavy weighting machines while maintaining high rotation precision and combating difficult working environment conditions because of the high temperature of the processed material, as well as atmospheric contaminants like dust and water, is not a simple task. In addition,

extreme reliability is required because an unexpected bearing failure can halt an entire factory's production process. These are just a few of the difficulties we must overcome to deliver a competitive product.

How does RKB respond to these demands?

In two different ways. The first method is found in RKB's manufacturing approach: no two applications in the field of technological bearings are identical. One company can manufacture many pieces of equipment of the same type, but the applications for technological bearings differ. The products are different, as are the environmental conditions, the technological materials used and, finally, the people who operate the equipment.

RKB places detailed knowledge of the applications as a core element of any collaboration in the field of technological bearings. A constant of the RKB model is the presence of its qualified teams at the partners' locations from the moment a request for an offer is received until the

bearing installation is completed and the operation phase starts.

The activity of the Advanced Calculations and Technological Engineering Department of RKB Group is based on information gathering. The proposed solutions are issued, mathematically modelled, and evaluated in this department. Every time the ideas are materialized into a bearing that appears to have general parameters that are equivalent to all other bearings, RKB tests it again because there could be many differences that can only be studied with special equipment.

The second method is distinguished by the following characteristics:

- Ensuring and verifying that the raw material meets our internal standards. The accuracy of the composition and the high purity of the steel in terms of dissolved H and O₂ are important components.
- Realization of primary mechanical processing on CNC equipment.





- Performing secondary heat treatments on equipment with automatic control of the main parameters - temperature, atmosphere composition, cooling speed, and so on - depending on the type of steel used - through hardening steel or case hardening steel.
- The realization of the final geometry of the bearing elements on innovative equipment ensures the special microgeometry profiles and surface quality requirements.
- We assemble the bearings under the element mating diagrams generated by dimensional measurements in the metrological laboratory.
- RKB ensures surface chemical treatments for bearings intended for applications requiring special surface conditions.
- Technological bearings are inherently more prone to non-conformities. Thus, we use a multi-level platform for quality assurance. Control of the various transformation and processing operations, as well as a final inspection of the finished bearing, are all part of this. The RKB metrology analysis laboratories conduct all the quality tests.

You mentioned the presence of RKB engineers on-site. Could you please explain what RKB's technical support involves?

During the pre-sale period, we evaluate the application together with the client. We identify its particularities, analyse the problems faced in the operation of the

previously installed bearings and proceed to identify the bearing variant according to the application.

However, there are times when a bearing with new characteristics is required due to changes made to the equipment structure or the work process. In this case, the application engineer collaborates with people from the RKB Research and Development Department to design a bearing specifically for that application. We provide our clients with technical support for bearing installation, maintenance, staff training, and the participation of an application engineer at the bearing installation, either on-site or via video conference.

Following installation, the bearings are jointly monitored by the client and RKB; data on their performance is collected by RKB via the "RKB Follow-Up Form" system.

The collected data is analysed regularly, and if necessary, the client is informed of the corrective actions he must take.

A fact-based conclusion is that RKB offers inclusive solutions, not just bearings!

Are there numerous applications for technological bearings?

My knowledge of RKB's technological bearings allows me to give examples of a wide variety of applications.

For instance, I recall installing technological bearings at a 4HI Cold Rolling Mill almost

two years ago. The application to which I am referring is not noteworthy for its novelty. RKB provides technological bearings for a wide range of other applications.

High maintenance costs prompted the respective customer to seek advice from RKB. Following collaboration with the client for the application evaluation, RKB proposed a solution that addressed a number of issues.

RKB's solution aimed at reconditioning some of the parts matched with bearings, changing the bearing installation procedure, training maintenance personnel, establishing the bearing maintenance procedure, and determining the best bearing that met the application requirements.

As a result, the RKB bearings have outlasted the previously installed bearings and are still in operation.

What else does RKB provide besides technological bearings?

Aside from technological bearings, RKB provides a diverse range of industrial rolling bearings and accessories to meet the performance requirements of its customers. Over 12,000 parts numbers are available in our catalogue.

Thank you, Vasile!

Thank you!

Learn more about our bearings at www.rkbbearings.com