www.wordlyknowledge.uz Volume: 2, Issue: 2, 2023

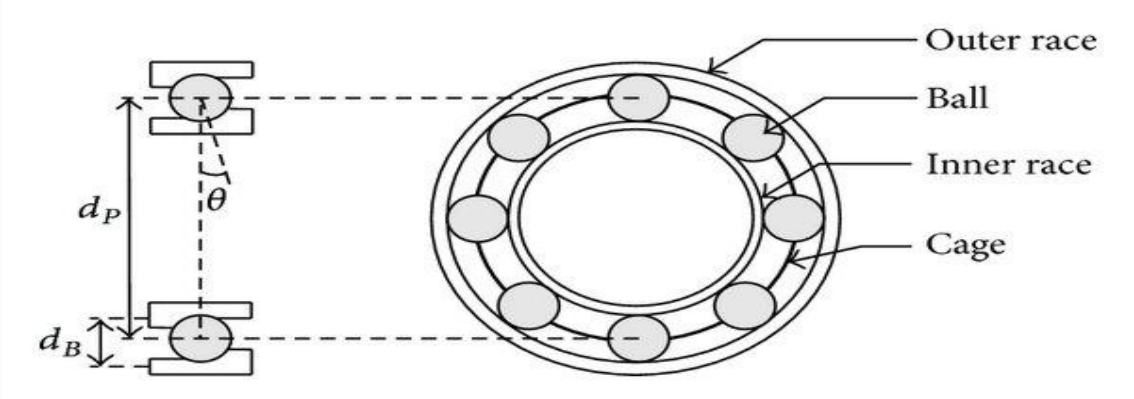
RESEARCH ON THE PRODUCTION OF IMPORT-SUBSTITUTE PARTS FROM IRON WASTE USING A MODERN METHOD

A.R.Baymirzaev
PhD, Department of Materials Science and Technology of New Materials,
Andijan Machine-Bulding institute, Andijan, Uzbekistan
Email id: akbarshoxashox@gmail.com

Annotation: Data on the methods of obtaining rings from bearing details were studied based on the results of research and the results obtained by the proposed method. Here's a few basic facts about a stomp pad and how it is used. It has been suggested that the ring bearing be removed from the bearing details in a ring and cast method.
Keywords:bearing details, ring, casting method, material, shaft, hardness, content, vacuum, impact viscosity.

Introduction: In Uzbekistan, the production or import of bearings faces a number of problems. The solution to the problem lies in the production of materials, which is not the case in Uzbekistan. But bearing production is one of the areas that needs to be set up. In the manufacture of bearings, the only way to solve the material problem is to cast the bearing rings. The problem is related to the casting of the bearing ring material, mainly due to the complexity of obtaining its chemical composition by casting, bringing the casting part to the level of stresses that the bearing can withstand.

Material and Methods: If we take into account the fact that the bearings have a very high point stress and at the same time slip resistance, the removable bearing material must be able to withstand very high stresses and friction. However, the impact viscosity should be close to that required by the bearings. To do this, we have proposed this method. Sufficient viscosity can be obtained by removing the bearing casting and then influencing its impact viscosity with the casting. The main problem is the chemical integrity of the bearing material, the absence of liquids and the increase in the impact viscosity. The above properties of bearing steel can be obtained, which can solve part of the problem of import of metal by bearing manufacturers. The proposed method is to make bearing rings by casting steel in induction furnaces and increasing the density by casting. In this case, the cut is left only on the swing path. The remaining parts are machined to a minimum. The essence of the problem is that the method of cast-in-place models is used as a single technology with vacuum injection, and this method can meet the demand for bearing steels.



Pic 1. Schematic representation of a roller bearing.

The main advantages of swing bearings

www.wordlyknowledge.uz Volume: 2, Issue: 2, 2023

• Resistance to high acceleration
• Impact viscosity resistance and high load resistance
• Uncomplicated construction
• Can work in water as well
and a number of advantages

Discussion: The bearing is a support for a rotating shaft and shafts. The rotating or vibrating parts of the mechanism limit the position of the shaft relative to other parts, allowing the shaft to rotate smoothly and easily by directly absorbing the forces acting on the shaft. There are sliding and rolling bearings. The base surface of the sliding bearings may be cylindrical, conical or spherical, and the shaft neck may be dry (oil-free), semi-dry or lubricated (ie lubricated). There are detachable and non-detachable types of bearings. In detachable bearings, the bushing is usually mounted in a hole in the housing between the support surface and the shaft neck.

The proposed method is to take the bearing steel in an induction melting furnace and prepare it in a vacuum casting and circulating spreader to bring its density and dimensions to the level of technical requirements.

To do this, the steel is melted in an induction furnace, taking into account the follow-up of ШХ15Л, and the steel is melted and the molten metal composition ШХ15Л is cast in the form of a bushing using ferroalloys.

After casting, the dimensions are determined on rotary spreaders and transferred to machining sites.

Conclusion: The main point is that such steels are not produced in our country. The production of steels of this brand is more complicated for factories, which hinders their main production. Because the production volume is so small that it exceeds 100 t / month, the bearing manufacturers cannot afford to buy more than that. Therefore, it is advisable to set up production in small furnaces so that the process can be implemented without affecting their production program. The proposed technological process meets the requirements for bearing steels and is of sufficient quality.

Taking the bearing balls (grains) by twisting method when removing the bearing bearings allows to prolong the service life of the bearing. The steel obtained by this method reduces the refractive index of the bubbles, that is, the linear bands formed by the torsion of the bubbles to some extent prevent breakage. According to research, custom-made swing bearings are more likely to be used in industry in the future, especially in machinery.

REFERENCES:

1. Baymirzayev A. R. (2021). Obtaining And Efficiency Of Steel Casting In Local Conditions In Mechanical Engineering. “Academicia Globe” Scientific Journal, Tom-2, 21-25.
2. Baymirzayev A. R. (2022). Research on the Production of Bearing Details in a Modern Method. “International Journal on Integrated Education” Scientific Journal, Tom-4, 269-271.
3. Baymirzayev A. R. (2022). Investigation of Innovative use Methods in Bearing Rings Manufacturing. “AMERICAN JOURNAL OF SCIENCE AND LEARNING FOR DEVELOPMENT” Scientific Journal, Tom-1, 21-23.
4. Baymirzayev A. R. (2022). Use of Innovative Logical Programs in the Design of Bearing Rings. “JournalNX” Scientific Journal, Tom-6, 183-184.
5. Baymirzayev A. R. (2023). OPTIMIZATION OF THERMAL TREATMENT METHODS FOR LOCAL PROCUREMENT OF INDUSTRIAL BEARING MATERIALS. “Modern Scientific Research International Scientific Journal” Scientific Journal, Tom-1, 5-9.
6. Baymirzayev A. R. (2022). METHODS AND TOOLS OF RESEARCHING THE TECHNOLOGIES OF BEARING RINGS FROM COMPOSITE MATERIALS.

www.wordlyknowledge.uz Volume: 2, Issue: 2, 2023

"CENTRAL ASIAN JOURNAL OF MATHEMATICAL THEORY AND COMPUTER SCIENCES" Scientific Journal, Tom-3, 328-330.

7. Baymirzayev A. R. (2022). METHODS OF CHOOSING THE MATERIAL COMPOSITION AND JUSTIFYING THEM WHEN CREATING BEARING DETAILS. "Академические исследования в современной науке" Scientific Journal, Tom-1, 8-10.
8. Baymirzayev A. R. (2022). RESEARCH OF TECHNOLOGIES OF RINGS MADE OF COMPOSITE MATERIALS. INTERNATIONAL SCIENTIFIC AND PRACTICAL CONFERENCE" THE TIME OF SCIENTIFIC PROGRESS", Tom-1, 120-123.
9. Baymirzayev A. R. (2022). Production of Bearing Parts by Means of Vacuum Casting. "International Journal of Trend in Research and Development" Scientific Journal, Tom-5, 62-63.