ISSN 2181-3187

THE USE OF BELT ELEMENTS IN MECHANISMS TO INCREASE THE PERIODICITY OF BEARINGS

Jumaev Akbarjon Sayfullaevich
Almalyk branch of Tashkent State Technical University named after Islam Karimov Doctor of Philosophy in Technical Sciences (PhD), Associate Professor
E.mail: akbarjon.jumayev@mail.ru
Suyunov Sherali O'ktam o'g'li
Almalyk branch of Tashkent State Technical University named after Islam Karimov student
E.mail: sheralisuyunov0@gmail.com
Madatov Jasurbek Samadovich
Almalyk branch of Tashkent State Technical University named after Islam Karimov student
E.mail: madatovjasurbek94@gmail.com

All-round development of machine-building industry, mining industry, chemical industry and other industries, improvement of production efficiency, and improvement of product quality depend on scientifically based techniques and technology. In order to ensure the vibration resistance of the parts, it is necessary to eliminate the reasons that cause the phenomenon of resonance. It is known that the phenomenon of resonance occurs when the specific vibration frequency generated in the part itself and the vibration frequency under the influence of an external force become the same. Therefore, it is necessary to calculate these two frequencies and ensure that they are not equal to each other. Static and dynamic balancing, as well as the use of vibration dampers, that is, special elastic elements, are recommended to reduce the phenomenon of vibration in machines. In order to reduce vibrations in the base of technological machines, it can be achieved by using multi-layer pads with different thicknesses. Also, it is possible to prevent vibration effect by making the bolts of the base of the machine. However, the scientific basis of the problem of delaying shivering in general has not completely found its solutions. To solve this problem, it is necessary to conduct new scientific research.

When the rotation number of the shaft with the bearing is $P > 10\ min^{-1}$, the dynamic load capacity is calculated according to S, and the required bearing is selected from the table, that is, the condition $S_x < S$ must be fulfilled. S_x - calculated dynamic load capacity; S is taken from the table for each bearing (Fig. 1) [1].

ISSN 2181-3187

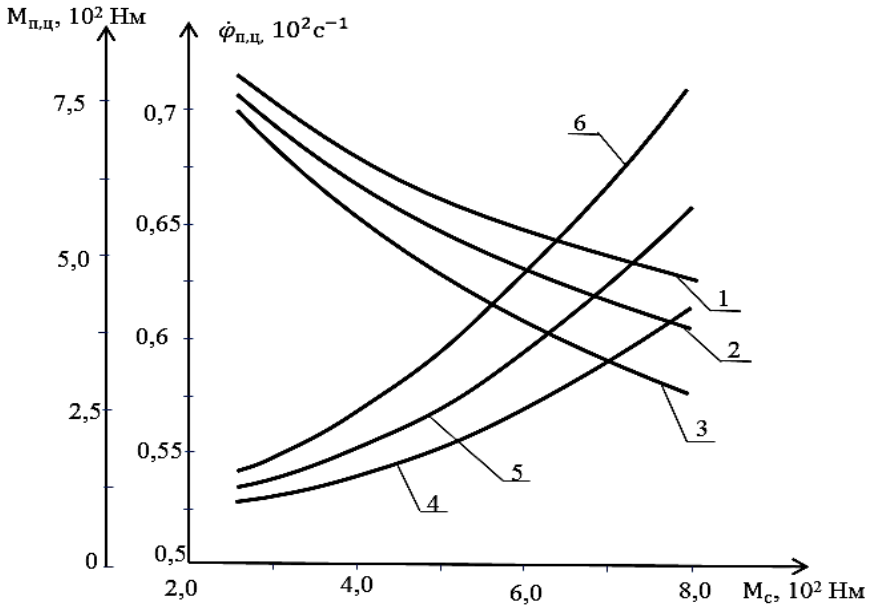
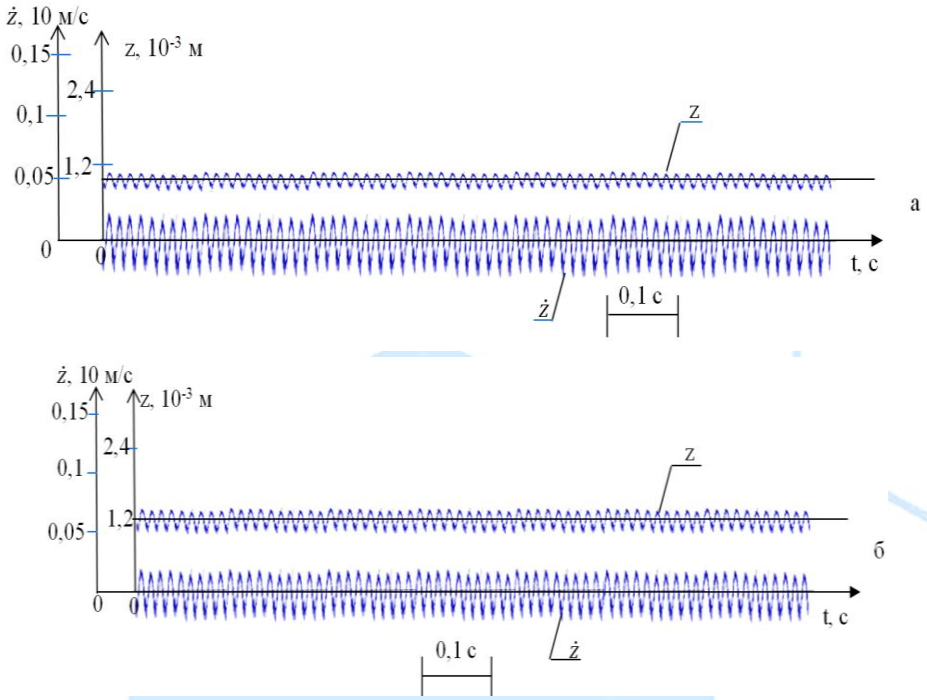


Figure 1. Graph of rotation speed on the axis of the cylinder, change of torque, law of loading on the cylinder

As a result of vibration of the machine during operation, additional dynamic forces are generated in the parts, which causes their fatigue and accelerates their failure. (Figure 2).



Here, for a - $F_0 = 1.2\ N \pm (0.05 \div 0.12)\ N$; b - for $F_0 = 1.5\ N \pm (0.08 \div 0.15)\ N$;

Figure 2. The laws of change of vertical vibrations of the working mechanism

In the process of operation, its integrity must be sufficiently ensured so that the elastic deformation of the part does not exceed the permissible value. For example,

ISSN 2181-3187

under the influence of a certain force and torque, a rotating shaft can bend beyond the permissible value without becoming stable. Bending of the shaft beyond the permissible value causes premature failure of the parts installed on it. Therefore, in addition to the strength of such details, uniqueness should be ensured. Some details have a negative impact on their durability [2].

REFERENCES

1. A.Djuraev, B.N.Davidbaev, A.S.Jumaev. Improvement of the design of the belt conveyor and scientific basis for calculation of parameters. Monograph & Textbook Publisher. Copyright 24 may 2022 by GBPS. 10.37547/gbps – 03. ISBN 978-1-957653-03-7. 1211 Polk St, Orlando.

2. Jumaev Akbarjon Sayfullaevich, Djuraev Anvar, Abduraxmanova Muattar Musurmankulovna. Analysis of the influence of the properties of oil products on the performance of belt conveyor guide roller mechanisms. Harvard Educational and Scientific Review International Agency for Development of Culture, Education and Science. Har. Edu.a.sci.rev. 0362-8027 Vol.2. Issue 2. Pages 44-52. 10.5281/zenodo.7170607. https://doi.org/10.5281/zenodo.7181271.

3. Джураев А.Ж., Давидбаев Б.Н., Мирзахонов Ю.У., Давидбаева Н.Б., Умаров Б.Х. Плоскоременная передача с натяжным роликом. // Патент Узбекистан FAR 00780 № 12. 2012г.