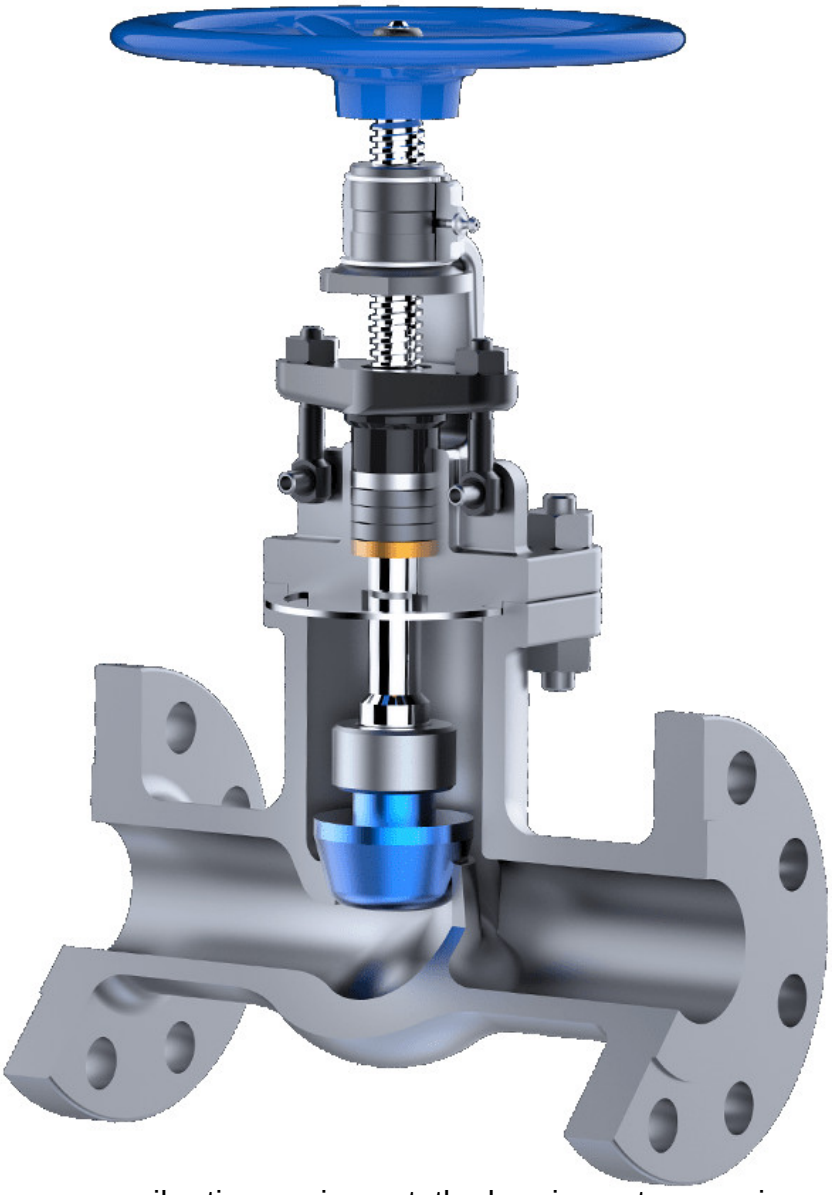
Lubrication problems of bearings in high frequency vibration environment



In the field of high-frequency vibration equipment, the bearing acts as an important component to support the mechanical rotating body, reduce the motion resistance and ensure the rotation accuracy. The lubrication of the bearing is mostly grease-lubricated. During the working process, the bearing will vibrate frequently, the grease will be pulled out of the bearing raceway and attached to the dust cover, resulting in a decrease in bearing lubrication performance. For applications without seal bearing, even grease will be present. The risk of pulling out the bearing causes insufficient lubrication, premature wear failure of the bearing, and the grease that is thrown out causes great pollution to the environment and work in progress. Therefore, solving the problem of bearing lubrication under vibration conditions has become an urgent problem to be solved.

The plastic oil bearing developed by Part Design Guide Pte Ltd can solve the problem of

lubrication continuity of the bearing under high frequency vibration environment. The plastic oil bearing adopts the latest microporous polymer lubrication technology, which is a polymer body containing saturated lubricating oil, which fills all the remaining space in the bearing. The lubricant of the plastic oil bearing is solid and will not Pull out from the bearing raceway. In operation, the polymer material releases lubricating oil into the narrow gap formed between it and the bearing component, thereby providing the least amount of the most efficient amount of lubricating oil; when the work is stopped, the lubricating oil is adsorbed into the material and stored under capillary action.

Plastic oil bearings are irreplaceably surpassing customer expectations in low temperature and ultra low temperature, dust pollution, high humidity, difficulty in lubricating grease, zero tolerance to grease leakage, long requirements for lubrication life and host systems. The best choice.

Characteristics and advantages of plastic oil bearings

Longer lubrication life: Compared with traditional grease bearings, plastic oil bearings have an effective oil content of 2 to 4 times higher. High-quality synthetic oils have oxidation resistance, while solid-form lubricants mean no grinding. Pressurization and agitation greatly extend the life of the bearing.

Preventing the intrusion of contaminants: After the plastic oil is filled into the bearing, it forms close contact with the rolling elements and the channel, and almost fills the entire remaining space inside the bearing, thus effectively preventing the contaminants from entering the inside of the bearing, providing a normal working condition. Very good protection.

Strong anti-flushing ability: The plastic oil bearing adopts solid form lubricant, which is not easy to be washed away. In addition, it can fully support the integral seal, so that the whole bearing has better anti-flushing ability.

Eliminate lubricant leakage: The polymer body of a plastic oil bearing is to store the lubricating oil inside the micropores by surface tension. In operation, the lubricating oil is transferred to the surface of the polymer under the action of capillary force to provide a continuous and uniform lubricating oil film for the bearing; when the work is stopped, the lubricating oil is again adsorbed into the micropores inside the polymer, even if it is plasticized. Under the action of high centrifugal force, the oil bearing can also be stored well inside the polymer, which virtually eliminates the environmental pollution caused by the leakage of lubricating oil.

At present, plastic oil bearings are basically divided into standard type, food type, heavy load type and low temperature type. In addition, other plastic oil bearing types are available upon request to meet specific application needs.

Precautions

1. During the use of plastic oil bearings, it is forbidden to contact with lubricating oil (kerosene, gasoline, petroleum ether, etc.) with degreasing ability to avoid the bearing lubrication performance degradation or failure.

If the plastic oil bearing needs to be installed hot, it should be installed with the induction heater heating belt at 120 °C. The heating plate or heating oil bath is not suitable for plastic oil bearing heating.