

# Electromagnetic Bearing

The role of bearings in industry can not be ignored. Mechanical transmission achieves fixed and reduced friction. Other components produce relative motion on the shaft. The effect of bearings is manifested, reducing the friction coefficient and the center of the fixed shaft. Up to now, we are inseparable from bearings, and there are various kinds of bearings, such as deep groove ball bearings, aligning ball bearings, combined needle roller bearings, spherical roller bearings, tapered roller bearings and so on. These bearings are closely related to our life. Small to instrument instruments, large aircraft carriers are using bearings, but because of the use of a large number of friction coefficient, power loss, processing accuracy is not high, load and speed and working temperature range is narrow and so on a series of shortcomings, so there is an electromagnetic bearing. The electromagnetic technology has made great achievements in the middle of twentieth Century. By using the static power and magnetic force, the shaft has completely floated up to achieve a non-contact electromagnetic bearing. It just overcomes the shortcomings of the original bearing, and goes far beyond the original bearing. The period is also improving and technology is not backward.

The standard of measuring the electromagnetic bearing is determined as follows: bearing capacity, stiffness, maximum speed, damping and other performance indicators will lay the foundation for future application. Because the electromagnetic bearing has no direct contact, it eliminates the unnecessary steps such as initial lubrication and other advantages, and is not affected by speed and resistance limits in the vacuum. It is used in high speed and high precision ultra high speed trains, ultra high speed centrifuges, hydrogenerators, flowmeters, densitometer and so on. However, the application needs large magnetic field support, and the application is limited. It is not suitable for mass production to apply to life. Wind energy is a renewable green energy. It can be used as the direction of the development of bearings, so that wind turbine bearings are applied to various wind power stations, which has brought great benefits to the country. In the future, bearings may be used in all kinds of green energy sources, so that the earth will be free from pollution. Technology will not stop and will continue to progress. With the continuous progress of magnetic materials and electronic technology, the technology of electromagnetic bearings will be increasingly updated.