

Motor bearing too high temperature and vibration abnormality treatment

Generators are an important part of power plants, and they have a direct impact on the quality of power generation. Therefore, in order to ensure the stable power generation of power plants, it is necessary to first ensure the performance of the generators. During the use of high-voltage motors, high bearing temperatures and abnormal vibrations are frequent problems, and they have always been difficult in troubleshooting. In order to ensure good performance of high-voltage motors, it is necessary to have high bearing temperatures. The cause of vibration anomalies has a clear understanding, and the corresponding faults are processed in a timely and effective manner.

1. [generator bearing wear](#)

The cause of the failure:

The rear bearing of the generator may be deformed, which leads to a small tightening force.

The generator bearing is mainly a rolling bearing. If the bearing has a certain sliding, the bearing will appear.

Wear, once wear occurs, the surface quality of the bearing changes, which leads to the generation of voids, vibration and noise increase. At the same time, the generator will be accompanied by an increase in bearing temperature during operation. The inner diameter of the bearing produces thermal expansion, which will lose the corresponding tightening force between the outer diameter of the shaft. Under the influence of the gravity of the rotor, the inner ring and the shaft surface of the bearing will also rotate a certain amount, which will cause the rotation speed of the bearing. Failure to meet the expected requirements, long-term in this situation, will increase its wear and tear, resulting in failure.

Troubleshooting:

For the fault of the generator bearing, first of all, it is necessary to do a comprehensive inspection of the bearing to understand the overall situation of the generator, check whether the stator of the motor has a broom, and the bearing on the front side of the rotor and The mating force of each component is tested, and the rear surface of the bearing block of the rear side can be sprayed to replace the front and rear bearings. If necessary, the inner and outer oil retaining caps of the rear bearing need to be re-installed. After processing and turning, the electrical test is required after the completion of the loading. After the test is qualified, the no-load test is carried out.

2. [Lubricating oil failure](#)

The cause of the failure:

Lubricating oil plays an important role in the operation of the generator. It not only can protect the generator bearing from lubrication, but also effectively cool the bearing, but in the lubricating oil of the generator. During use, it will change with the performance of the grease as the bearing runs for a long time. During the use of lubricating oil, the grease needs to be repeatedly sheared, which may lead to changes in the structure of the grease. The base oil may gradually oxidize, and some impurities such as dust and moisture will gradually increase, resulting in its Lubrication failure occurs, and once the lubrication fails, it will further deteriorate, the bearing will be rubbed, causing damage to the surface, which will affect the normal operation of the

generator. In addition, too much or too little lubricating oil in the bearing chamber will affect the motor. Bearing operation has an impact.

Troubleshooting:

Lubricating oil lubrication of the bearing is the guarantee of its normal operation, and it is also the basis for the permanent operation of the bearing. However, the amount of grease needs to have certain limits. After the bearing is assembled, it is necessary to apply a certain amount of grease on both sides and inside of the bearing to lubricate the bearing. If the lubricating oil is too much, it will cause the bearing to heat up. If the situation is too small, the bearing noise may occur without the effect of lubrication. When the oil quantity is 2P, it is necessary to reach 1/2 of the bearing chamber. If the oil quantity is 4P or more, it needs to be reached. 2/3 of the bearing chamber, at the same time, keep the lubricating oil clean at all times, check the lubricating oil to ensure that it does not deteriorate or mix impurities, and if necessary, replace the lubricating oil in time to ensure The performance of the lubricant meets the requirements for use.

3. [Long-term outage causes bearing damage](#)

The cause of the failure:

In the development of power plants, since power energy cannot be stored on a large scale, in the period of low power consumption, certain shutdowns are required. Due to the long-term shutdown of the generator set, it may cause certain existence. Failure problem. In the case of generators that are out of service for a long period of time, there is generally a phenomenon of stripping of the bearing track, and at the same time, due to the action of gravity, the rotor shaft system may cause a certain deformation of the bearing or a pocket of the racetrack. If the rolling bearing is in a static state for a long time and the corresponding rolling occurs under the action of the external force, the bearing surface of the bearing may be damaged or prematurely fatigued, and the damaged bearing may be carried out without failure treatment. If it is used, it may cause abnormal vibration of its bearing, which will cause the temperature of its operation to rise. If abnormal vibration and overheating occur in the bearing operation, it will further accelerate the damage of the bearing, which will cause the rotor to sink and the bearing housing. Wear and tear, affecting its normal use.

Troubleshooting:

The damaged position of the bearing stator core can be short-circuited, and the inner ring of the bearing on the rear side of the upper lathe of the rotor can be removed to trim the bearing block. For the replacement bearing housing and the oil cap of the inner and outer gears. It is also necessary to expand the gap of the explosion-proof surface.