Disassembly method and analysis of common bearing

1. introduction

In order to avoid unnecessary influence on the normal operation of bearings, this paper focuses on the methods of disassembly and assembly of common bearings. Some suggestions for future bearing and disassembly of common bearings are provided.

2. rolling bearing dismantling

The removal of rolling bearings should be carried out on special bearing puller or press machine (pull-out or press in). Under unconditional conditions, the most commonly used method is to clamp the shaft vertically on the vise, and use low carbon steel to flush (or special head) to tighten up on the bearing inner ring (not directly beating the bearing to avoid deformation and damage), and use hand hammers to alternately and evenly place them in symmetrical positions, so as to prevent the skew, and make the shaft steadily and steadily retreat. Next. When you operate, you must stabilize the punch and prevent it from slipping to the cage.

The force of disassembly and assembly is applied to the stationary seat ring as far as possible. It is not allowed to transmit external force through rollers or balls. The force should be tightened on the tight seat ring (the pressing tool should be directly mounted on the inner ring or outer ring of the bearing) to avoid dents or even damage to the work surface of the rolling body and raceway. If there is interference between the bearing inner ring and the shaft, it is best to heat the bearing in the oil at a temperature of 80~90 degrees, but the bearing can not be contacted with the groove bottom, because the temperature at the bottom of the groove exceeds the oil temperature, which may cause the bearing to overheat. Remove bearings from the shaft or hole should be pulled out or pressed out so as to avoid damage. In actual work, it is also difficult to disassemble the bearing and shaft because of the large interference fit. When the bearing is damaged, it can not continue to use, and it can not be removed. Without damaging the relevant parts, it can directly percussion the bearing seat with hand hammers, shatter and crack, and then take off.

2.1. outer ring dismantling

Remove the interference fit outer ring, advance the outer circumference of the shell on the circumference of the screw, screw the screw evenly on one side, and remove the screw one by one. These screw holes are usually covered with blind bearings, tapered roller NSK bearings, etc., with several cuts on the outer shoulder of the housing, using cushion blocks, dismantling with a press, or tapping and dismantling.

Dismantling of 2.2.NSK cylindrical bore bearing

The dismantling of the inner ring can be extracted by pressure machine. At this point, we should pay attention to the inner ring bearing its pulling force. The inner ring of large bearing is disassembled by oil pressure method. By setting the oil holes on the shaft to oil pressure, it is

easy to draw. The bearing with wide width is used for oil pressure method and drawing fixture. The inner ring of NU and NJ cylindrical roller bearings can be removed by induction heating. The method of heating local parts in a short time and expanding the inner ring.

Demolition of 2.3. tapered hole NSK bearing

Remove small relatively tight sleeve bearing, support the inner ring with the fastening block on the shaft, turn the nut back several times, and use the pad to hammer and remove it. The large bearing is easier to remove by hydraulic pressure. The oil is pressurized in the oil hole of the cone hole, so that the inner ring expands and the bearing is dismantled. In operation, it is better to use the nut as the gear block.

2.4. operator should wear asbestos boxing to prevent burns. Deep groove ball bearings press the bearing with punch. The task is bumpy and reliable without damaging tools and bearings.

3. installation of rolling bearings

3.1. bearings should first check the clearance of the bearing, whether it is flexible to rotate with the hand, clean and check whether there are metal particles and other foreign objects between the ball column and the raceway, so as to prevent the bearing from being damaged by clamping.

When 3.2. is installed, the bearing end shall be tightly attached to the bearing surface of the shaft shoulder or hole. The check of the bearing adjustment must be carried out when fastening the bearing cap. The tightening torque of the bolts should be ensured according to the factory standard.

3.3. bearings should be installed to their proper positions. The inner shoulder of the outer ring hole should be tightly attached to the shoulder of the inner table. The inner ring has shoulders on the shaft, and the shoulders must be compacted. The retaining ring, bearing collar, retaining ring, adjusting gasket, washer, adjusting nut, fixing nut, locking plate, bearing outer cover and oil seal will directly affect the normal operation of the bearing, and the correct position must be installed to ensure good technical condition.

3.4. installation of bearing outer ring and seat hole surface, bearing inner ring and neck surface, coated with a thin layer of oil, to prevent abrasions, so that the installation is smooth.

When the inner ring of the 3.5. is installed on the axle, if it is too tight, do not use hand hammering. The bearing can be boiled in oil until 100~120 degrees centigrade, and then quickly loaded into the shaft. The installation of the peripheral holes should not be hammered by hammers or pressed by a press or Jack.

3.6. when installing beating bearings, it is not possible to use steel parts, brass bars or

hard wood.

The advantages of 3.7. grease lubrication are:

It is not easy to leak, easy to seal, long to use, easy to maintain and high in oil film strength, but the friction torque is bigger than oil lubrication. It is not suitable for high speed. The load of bearing grease should not exceed 1/3 ~ 1/2 of bearing space, otherwise the bearing will overheat due to excessive lubricant.

3.8. should be kept clean during installation. Clean the bearing hole carefully, and allow dust and debris to be immersed in the bearing. If there is a fixed nut, it must be fastened and locked. When the bearing cap is installed, the gasket must be complete and tight, and the fastening nut must be tightened evenly.

4. remove the bearing of the stamping bearing housing.

When the 4.1. bearing has an eccentric sleeve, it first looses the locking screw on the eccentric sleeve, then inserts or strikes the sunken hole on the eccentric sleeve with a small iron bar, and looses the eccentric sleeve against the rotation direction of the shaft.

4.2. after the screw punching of the fixed stamping bearing block under the lemon, the bearing and the bearing block are lowered from the shaft. One end of the shaft is removed.