Bearing production process rational design of structural space

Mechanical design generally first determine the size of the shaft, and then allow for the design of the rolling bearing and its surrounding space is limited. Must be within the limits, select the bearing structure, size. Rolling Many have standardized dimensions and structure of the series, you can choose the most suitable bearing structure.
Usually a small diameter shaft, use deep groove ball bearings. Large diameter shaft, you should consider using cylindrical roller bearings or tapered roller bearings. When the machine radial space is limited, the selection of special light and ultra-light series bearings, double-row ball bearings or double row roller bearings. When the axial position of the bearing is limited, the choice of narrow or narrower range of ball bearings or roller bearings.
General standard bearing production process is divided into four steps: forging; heat treatment; monitoring the grinding process; identity management.
(1): Forged

In the forging process must maintain strict control over the processing temperature, hydronic heating and cooling conditions after forging, especially after the final forging rings to larger species, at temperatures above 700 ?, shall not be stacked display. If the control in the forging process caused by improper overheating, burning, within the fragmented network carbide, etc., will reduce the ferrule toughness and strength.



(2): Heat treatment

Before the heat treatment, must be on the instrument, thermocouples and other important thermostat closely monitored to ensure accurate and reliable test data is strictly prohibited with trouble-free operation of error

exceeded should be promptly replaced. Reliability and closely monitoring surveillance equipment is an important work shop.

(3): a step of monitoring the grinding

If the pickling should be carried out after full inspection rings, excised burn products, severe burns can not repair or rework defective and should be scrapped, not allowed to enter the grinding burn ferrule assembly process, the finished bearing rings are not allowed grinding burn and grinding cracks exist, especially with the inner surface of a screwdriver-degree burns may not have.

(4): identity management

After grinding steel storage to the front ferrule, each step must be strict management and strict zone GCr15SiMn and GCr15 two different materials materials and products.

Quality bearings are generally high, although bearing rings is a common standard, but his high precision machining, machining process is more complex, in the next article, "bearing rings super finishing process analysis," we will detailed interpretation about the bearing rings of processing.