

Future research and development direction of bearing steel

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Mainly reflected in four aspects

1 [economic cleanliness](#)

Under the premise of considering economy, further improve the cleanliness of steel, reduce the oxygen and titanium content in steel, and reach the level of oxygen and titanium in bearing steel of less than 6×10^{-6} and 15×10^{-6} respectively. , reduce the content and size of inclusions in the steel, and improve the distribution uniformity.

2 Organization refinement and homogenization

Through the application of [alloying design and controlled rolling](#) and controlled cooling process, the uniformity of inclusions and carbides is further improved, the network and ribbon carbides are reduced and eliminated, and the average size and maximum particle size are reduced to achieve an average carbide size smaller than The target of 1 μm ; further increase the grain size of the matrix structure to further refine the grain size of the bearing steel.

3 reduce low-fold tissue defects

Further reduce the center looseness in the bearing steel, the center shrinkage hole and the center component segregation, and improve the uniformity of the low-fold structure.

4 [High toughness of bearing steel](#)

Through the research of new alloying, hot rolling process optimization and heat treatment process, the toughness of bearing steel is improved.