

Girth gear manufacturer CHAENG: The key to preventing girth gear from deformation

With the expansion of the scale of cement production, the specifications of the rotary kiln are also increasing. As one of the important components of the rotary kiln, the diameter and weight of the large girth gear increase accordingly (such as the girth gear produced by CHAENG for the $\phi 4.8\text{m}\times 72\text{m}$ rotary kiln has a net weight of up to 32t), and the strength and rigidity of the girth gear become lower. During the operation of the rotary kiln, the girth gear often suffers from deformation problems.

The girth gear produced by CHAENG has high hardness, strong impact resistance, and strong anti-deforming capability.



In view of the girth gear deformation problem that often occurs in cement plants, CHAENG has optimized the girth gear manufacturing process on the basis of summing up the traditional processing technology, improved process details, and greatly increased the life of the girth gear.

The traditional girth gear manufacturing process is: scribing → rough milling on half surface → combination → rough machining → fine milling on half surface → drilling reaming, combination → finishing → hobbing → disconnect → delivery.

The main problems of traditional process are:

- (1) After roughing, due to no aging treatment, the internal stress of the girth gear cannot be eliminated, and the deformation problem exists in the entire process.
- (2) There is no repair and grinding on the half surface during the fine milling, which can not eliminate the stress deformation and the form and position error caused by the insufficient precision of the machine tool, resulting in the large flash gap of the joint surface after the

two half gears are combined.

(3) In the hobbing process of the gear with large modulus and large modification, the tooth profile after machining is incomplete, and jacking-up phenomenon occurs during use.

In response to the above problems, CHAENG has made innovative improvements. The new process adds the following five procedures to the traditional process:

(1) Coarse teeth-making. Eliminates part of the casting stress, shortens the finishing time of the girth gear on the hobbing machine, and improves production efficiency.

(2) Flaw detection. Carry out flaw detection on the girth gear after rough machining and the rough tooth making, check whether there are casting defects such as air holes, sand holes and cracks, and repair according to the requirements.

(3) The special lengthening hob is used to roll the girth gears with large module and large modification, so as to complete the tooth shape and avoid the jacking-up phenomenon in the use process.

(4) Annealing. Eliminates the internal stresses caused by casting and roughing, as well as the welding stresses during repairs to avoid deformation.

(5) Optimization according to operation conditions. CHAENG adopts high-strength steel for girth gear production, and optimizes the girth gear according to the operating characteristics of the rotary kiln to ensure the stability of the girth gear and prevent deformation due to pressure during operation.

The girth gear produced by CHAENG is sold at home and abroad and has been unanimously approved by our customers. CHAENG can process and produce various types of girth gears according to the drawings and dimensions provided by customers. Welcome to visit us!

CHAENG (Great Wall Steel Casting Co., Ltd)

www.partscasting.com

Email: casting@chaeng.co

Tel: 86-371-55019878

Skype ID: greatwall1958