

## Eccentric bearing housing use in crane

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The horizontal deflection value of the crane running mechanism wheel is an important technical parameter of the crane. The deviation of the skew value will cause the rail to be railed, increase the running resistance, generate vibration and noise, increase the wear of the track and the wheel, and reduce the service life of the crane. Therefore, all types of crane manufacturing technical conditions must specify the allowable values.

In the application, the corresponding process measures are taken according to different product structures to control the horizontal skew value of the wheels of the operating mechanism. The more common and relatively simple design measures are: assembling the wheel to the bracket to form a wheel set, such as a wheel set in the form of an [angular bearing](#) box and a wheel set

in the form of a 45° split bearing box, and the main structure of the crane is installed after installation. Adjust the horizontal direction and fix it. The disadvantage of this type of construction is that the wheel set only acts as a fixed wheel and the wheel cannot be swung after assembly. If the manufacturing error of the main structure makes the wheel assembly installation position adjustable in the horizontal direction, a large amount of repair work must be performed to assemble, which increases the manufacturing cost and cycle. In addition, when the wheel horizontal deflection is out of tolerance, the maintenance workload is large, and it is necessary to remove the wheel set and re-adjust the assembly. In view of the above situation, our company adopted a wheel set with an eccentric bearing box structure, which can adjust the horizontal deflection of the wheel in a small amount. Even if the main structure manufacturing error is large after installation, it can be considered to meet the horizontal deflection requirement of the wheel by adjusting the wheel itself. This type of wheel set is used on 2 250 t/h ship unloaders and 30.5 t shore container cranes.



Attention should be paid to the design and application of [eccentric bearing housing](#)

#### (1) Structural design

The strength design of the bearing housing and the wheel set bracket should meet the bearing requirements. It is required that the wheel deflection angle cannot be made larger than the maximum allowable inclination angle of the self-aligning bearing during assembly, and generally not more than 1°. In addition, the bearing box runs

The sliding system should be convenient and reliable.

#### (2) Manufacturing aspects

The wheel set bracket shall be manufactured to control the spacing dimension C of the two support plates of the bracket. The bolt set index of the wheel set bracket and the wire hole index of the eccentric bearing box should be consistent. To ensure the shape tolerance of the end face. The [bearing housing](#) must have a permanent eccentric mark after machining.

#### (3) Installation and adjustment aspects

The bearing housing eccentric mark on the 2nd end of the wheel axle should be installed in the same position. The contact surface between the bearing housing and the bracket support plate should be tight and seamless, and the fastening bolt should have sufficient torque. Need to install and adjust the wheel set

It is necessary to take into account the same position difference and vertical skew value of each wheel group on the same side.

#### (4) Operation check

During the operation of the crane, attention should be paid to checking whether the wheel set has abnormal vibration, temperature rise and iron chip fatigue peeling. If abnormality is found, it is analyzed whether it is caused by bearing installation and is promptly eliminated.

#### 3 Conclusion

The eccentric bearing box enables the adjustment of the wheel of the running mechanism in the horizontal direction. The application of the basic principle and structural features is not limited to the wheel set of the running mechanism. Other applications have yet to be studied and practiced.

