SWING NOSE CROSSING

Description

The swing nose crossing was developed in order to counteract the disadvantages of fixed crossings, i.e. a bumpy and jerky wheel overrun, a transversely accelerated wheelset and the associated high strain on the components. The advantage is the uninterrupted running edge. Check rails are no longer necessary. The tip of the crossing is fit snuggly to the wing rail at a flat angle over a large length. This allows a long, homogeneous wheel overrun.

This design creates track-like guidance conditions in the crossing area. The swing nose crossing consists basically of the two wing rails and the crossing block.

System advantages

- Different rail profiles and rail fastening systems possible
- Track-like conditions for deflection and load distribution
- Reduction of structure-borne and airborne noise during wheel transition from crossing block to wing rail and vice versa
- Connection of various setting and monitoring systems possible
- High wear resistance due to suitable hardening and tempering processes

Further description

The crossing block represents the movable element of the swing nose crossing. Depending on the direction of travel/position of the crossing, it can be in contact either with the right or left wing rail.

The most widely used design in high-speed lines consists of a solid crossing block being milled from a forged block and then hardened and tempered, and two heel rails butt-welded to the block.

Materials and quality inspection

- Uninterrupted running edge
- Contact area almost like that of a standard rail
- If necessary, equipped with an expansion joint to reduce the setting forces of the crossing
- Crossing block rests on coated sliding plates or sliding chairs for easier setting and to prevent corrosion
- Elastic support with variable plate elasticity for constant track stiffness in the crossing and homogeneous properties of the superstructure, also in the crossing area
- High-strength bolted connections between heel and wing rails via filling pieces to reduce the longitudinal forces caused by temperature variations