

OPTIMIZED SWITCH DEVICE – "TOZ"

Load capacity-optimized, reinforced switch assembly

Description

Switch devices of turnouts are exposed to particularly high strains and stresses. The curved switch rails in turnouts with medium and small radii are exposed to high horizontal track guiding forces, which will lead to an increased lateral wear of the switch blade. This will result in a high maintenance expenditure and a restricted lying period of the switch blade.

For the load capacity-optimised, reinforced switch device „TOZ“ the switch is reinforced in the critical front area.

Added value

- » reinforcement of the switch tip width in the sensitive front area (i.e. more material available as a wear reserve)
- » reduction of pinching and breakouts at the switch
- » extension of the service life of the switches by a factor of 2 to 3
- » best performance in curved turnouts
- » optimised price-performance ratio

Technical description

- » meets EN13232 standard
- » significant reinforcement of the switch width in the sensitive area

OPTIMIZED SWITCH DEVICE – „TOZ“

Description

For the load capacity-optimised, reinforced switch assembly, the switch rail is reinforced in the most critical front area (blue dashed lines). To the same extent, the stock rail is taken back on the machined contact area, in such a way that the head of the stock rail increases and decreases continuously.

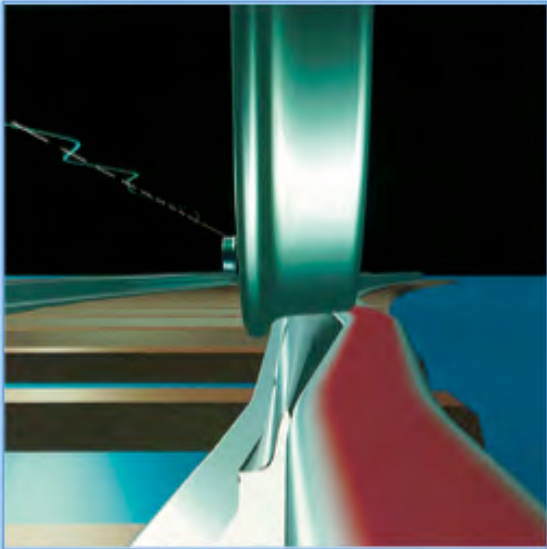
The deviation of the running edge at the stock rail from the straight (red dashed line) is very small and thus will not lead to any impairment on the running behaviour.

This has been confirmed by a simulation calculation and in practice. The transition from the machined contact area to the head of the stock rail is designed as to highly reduce occurring of squeezing in this area of the stock rail during operation.

In addition, a changed lowering on the switch blade will help to improve the contact geometry between the wheel and switch blade. The same principle can also be used for the straight switch blades.

Material

- » all materials used for switch and stock rails (R260, R350HT, R400HT)
- » corrosion protection: according to requirements



OPTIMIZED SWITCH DEVICE – KGO

Kinematics Gauge Optimized Switch Device

Description

Switch devices of turnouts are exposed to particularly high strains and stresses. To further reduce the forces and as a consequence the wear created by a railway vehicle entering a turnout in diverging or straight route a method of optimizing the transition geometry in the switch area, the so-called "KGO" – Kinematic Gauge Optimization, is incorporated.

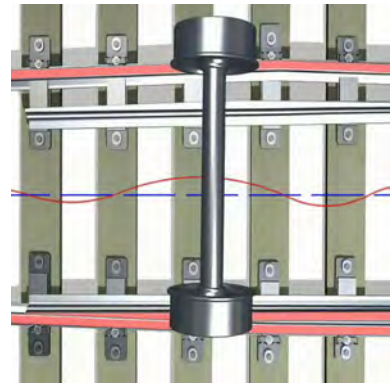
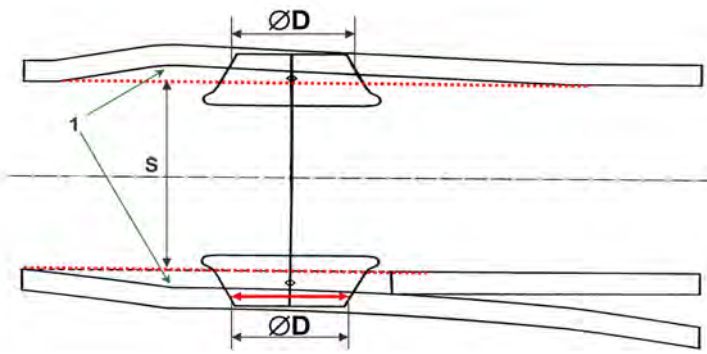
By slightly widening the gauge in the transition area of the switches the adverse steering effect caused by the rolling radius difference is reduced to a large extent. The running edge geometry of the stock rail are modified in such a way that the wheels steer in the right direction at the right time. This avoids hard flange contact of the wheels and the switch points, reduces the lateral forces and so also reduces wear of the components.

Technical description

- » optimization of the wheel transfer in the switch device
- » significant reinforcement of the switch width in the sensitive area

Added value

- » reinforcement of the switch tip width in the sensitive front area (i.e. more material available as a wear reserve)
- » reduction of the horizontal track guiding forces
- » reduction of pinching and breakouts at the switch
- » extension of the service life of the switches
- » optimised price-performance ratio



OPTIMIZED SWITCH DEVICE – KGO

Description

In such optimized turnouts the thickness of the switch rails increases rapidly in the front switch area.

Thus the lifetime of the switch rail is considerably increased.

Material

- » all materials used for switch and stock rails (R260, R350HT, R400HT)
- » corrosion protection: according to requirements