



Universally
deployable



Switches
and rails



+100%
Rails last
longer

Factory or mobile machining of new rails

Technical Datasheet

vossloh
enabling green mobility



Benefits

- / Exact reprofiling
- / Stationary processed rails are ready for use immediately after laying
- / Any rail damage sustained during installation is removed by mobile rail machining
- / New rails can be tested and machined at the same time
- / Subsequent clean-up of track area not necessary
- / Ideal basis for rail maintenance

Applications

- / Can be used on all types of rail networks
- / Rails and turnouts
- / Vignoles and grooved rails
- / Track gauges of 1,000 mm to 1,520 mm

Machining new rails for a longer service life

Removing the relatively soft external decarburized layer left over from the manufacturing process is integral to ensuring a rail's long service life. Studies on the effects of mill-scale and decarburization confirm that removing this layer reduces wear and mitigates damage that results from rolling contact fatigue such as squats, corrugations, slip waves and wheel burn. Besides saving the operator enormous amounts of time and money, machining new rails is also the best possible first step for preventive rail care. The process removes from 0.3 mm of metal from the rail depending on the procedure used.



Perfect new surface thanks to milling and grinding technology

Milling new rails at the plant removes the mill scale and renders subsequent time-intensive machining at the work site unnecessary. The rails are ready for unrestricted use as soon as they are laid down.

Giving the rails an initial milling on site after installation makes the most sense when construction vehicles have been using the new rails during the course of large-scale construction works. Machining the new rails after the last construction vehicle has left not only ensures exact reprofiling, it's also an effective way of removing any surface damage sustained during construction, e.g. indentations that can occur during tamping works when ballast is unloaded and leveled out.



Vossloh's **road-rail milling truck** can also machine more than 95 % of newly-laid switches including their wing rails, frogs and switch rails. Specially designed for maintaining switches, the **Flexis System** is then used to grind the transition points of the wing rails, frog point and switch rails. This combined method allows several switches and the various lengths of rail connected to them to be machined in a single shift.

Flexis can also be commissioned as a **stand-alone service** if there aren't many switches that need machining. All of the system's machines are manually guided and the system is designed so that 3 people can on-rail and off-rail a machine very quickly. Flexis can use track possessions of as little as ten minutes to carry out track maintenance, and the work does not delay the railway network's operations even when working on closed tracks is the only option.

Machining new rails using High Speed Grinding (HSG) technology is an attractive prospect thanks to its high operating speed and the flexibility that high speed provides. It can be done at the same time as test runs on the track are carried out, for example.

Grinding wheels with two different grit sizes are used when machining the rails: rough grinding stones for removing metal and fine ones to give the rail a surface finish that mitigates the noise emitted by subsequent wheel-rail contact.

The high feed rate and passively-driven grinding wheels always produce a rail surface that is free of facets, corrugations, periodic grinding patterns or "blueing". Subsequent clean-up work of the track area involving the collection of grinding residue ("slag") is also not required.



rough grinding



fine grinding

