PANDROL
Partners in excellence

Stressing Rollers

Rail and Sleeper Handling

Adding Value

Feasibility study by Ian Saul, Project Engineer, Network Rail, High Output Renewals, MP&I

> "There is strong evidence of a technical improvement, a much safer operation method, significant time saving and very high cost-saving benefits."



The Vortok Stressing Roller (VSR) is a fast fit and fast removal roller system designed to reduce friction during stressing operations. It offers a very safe alternative to traditional methods, as well as achieving significant cost and time savings.

The system is designed to raise unclipped rail from sleepers, keeping it centralised between the fastening shoulders. The VSR attaches to the rail fastening and a rotating lift arm and bearing contact the underside of the rail head and lift the rail. The lift action moves the bearing over centre, self-locking the VSR in the raised position. Once lifted, the rail can be moved with very low friction, optimising stress distribution.

TECHNICAL FEATURES

Versatility

VSR has been designed for use with the majority of Pandrol rail fastenings and common rails, irrespective of sleeper material. It can be used on all rail profiles on continuous welded rail, including curves, straights and cants.

Ball races

The VSR uses deep groove ball bearings rather than plain rollers and these are in contact with the underside of the rail head rather than the foot or web of the rail. This reduces friction and results in more evenly distributed stress over longer rail lengths.

Rotating lift arm and bearing

A rotating lift arm and bearing contact the underside of the rail head and lift the rail from the sleeper (tie). This results in a smooth lift and drop action.

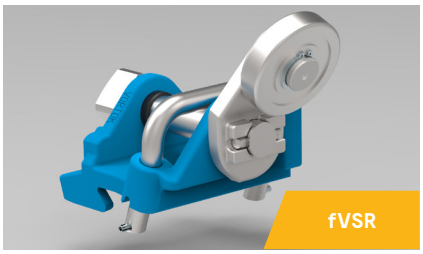
Lightweight and portable

The VSRs are supplied in plastic boxes with a total mass of less than 25kg.

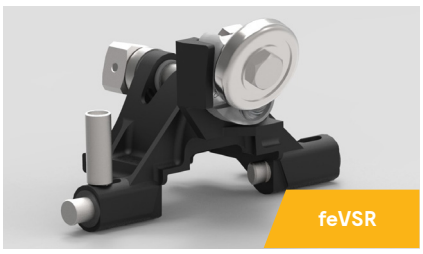
ADVANTAGES

- The system offers higher productivity than traditional methods used in stressing operations. A standard 900m stressing operation is over two hours quicker using VSRs.
- High-quality stress distribution means that rail breaks at the weld are reduced, as the localised tension is optimised. In addition, the stress-free temperature throughout the pull length achieves target more consistently than when other methods are used.
- Using VSRs is very safe. There is no need for rail jacks, which can slip during use. Operators no longer need to reach under the rail to fit under-rollers.
- The smooth lift and drop action eliminates insulator and pad damage.
- The system is easy to use, portable and eliminates the need to carry rail hammers and rail jacks.
- The input load needed from hydraulic rail tensors used in the stressing operation is reduced.
- VSRs have a life expectancy up to 10 times longer than conventional under-rollers.

VARIANTS







INSTALLATION TIMES

Method	Time taken to set up 190m	Time taken to remove 190m	Time taken to set up 800m	Time taken to remove 800m
Vortok eVSR	10 minutes (2 people)	6 minutes (2 people)	42 minutes (2 people)	28 minutes (2 people)
Traditional	24 minutes (4 people)	17 minutes (4 people)	102 minutes (4 people)	73 minutes (4 people)
Time Saved Using Vortok eVSR	14 minutes	10 minutes	59 minutes	45 minutes
Manpower Saved Using Vortok eVSR	2 people	2 people	2 people	2 people

INSTALLATIONS

- Australia
- Brazil
- Bulgaria
- Canada
- Denmark
- France
- India
- Norway
- South Africa
- Sweden
- United Kingdom
- USA

UK APPROVALS

- eVSR

– Network Rail – PA05/03301
– LUL No. – Plant/8715_Rev.00

- fVSR

– Network Rail – PA05/02578

LEARN MORE

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