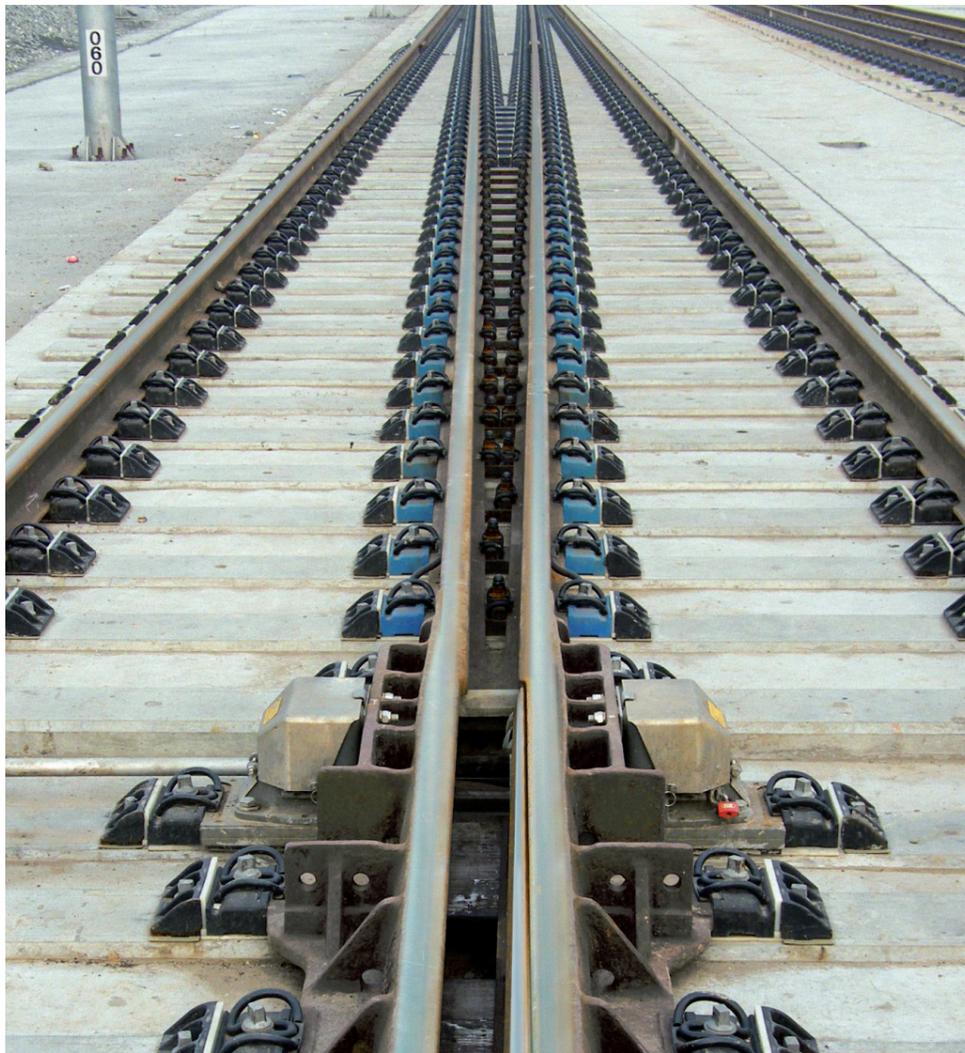
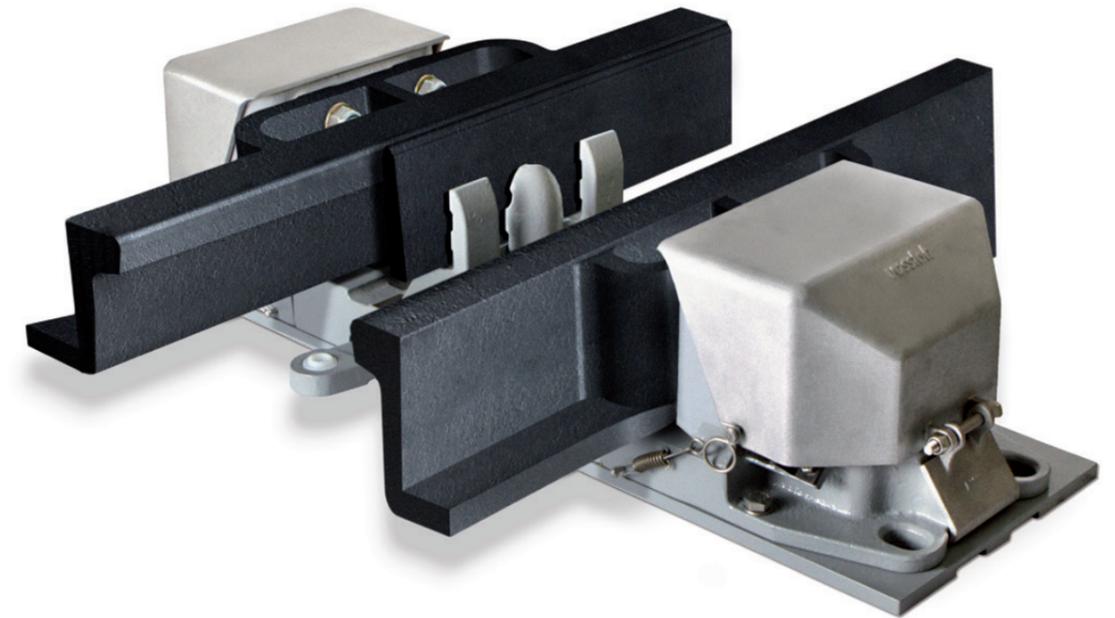


Our references include:

- France:** SNCF (conventional lines and high-speed lines), Eurotunnel
 - Belgium:** Infrabel, Brussels STIB (Metro)
 - Great Britain:** Network Rail (high speed line)
 - Italy:** RFI
 - Poland:** PKP
 - Spain:** RENFE (standard track and high-speed lines)
 - Portugal:** REFER
 - Turkey:** TCDD (high-speed line)
 - Sweden:** TRAFIKVERKET (high-speed and heavy haul line),
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- Morocco:** ONCF (high speed line)
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- Venezuela:** Caracas (Metro)
 - Brazil:** Rio de Janeiro (Metro), Salvador de Bahia
-
- South Korea:** KR (high-speed line)
 - Hong Kong:** KCRC
 - Australia:** ARTC (Railway)
 - China:** high-speed lines



High-speed line, XI'AN-ZHENGZHOU, China

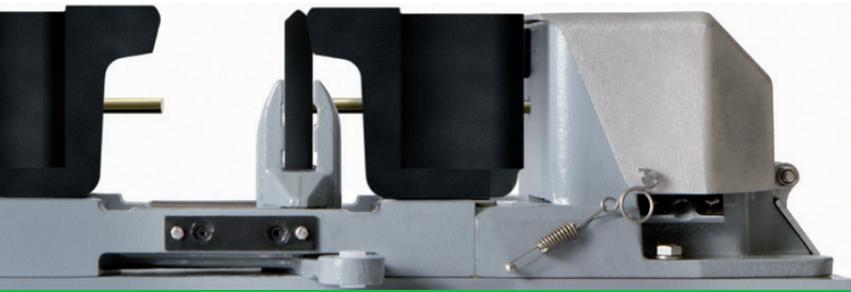


VPM Swing nose clamp lock

"Locking under control with safety as close to the swing nose as possible..."

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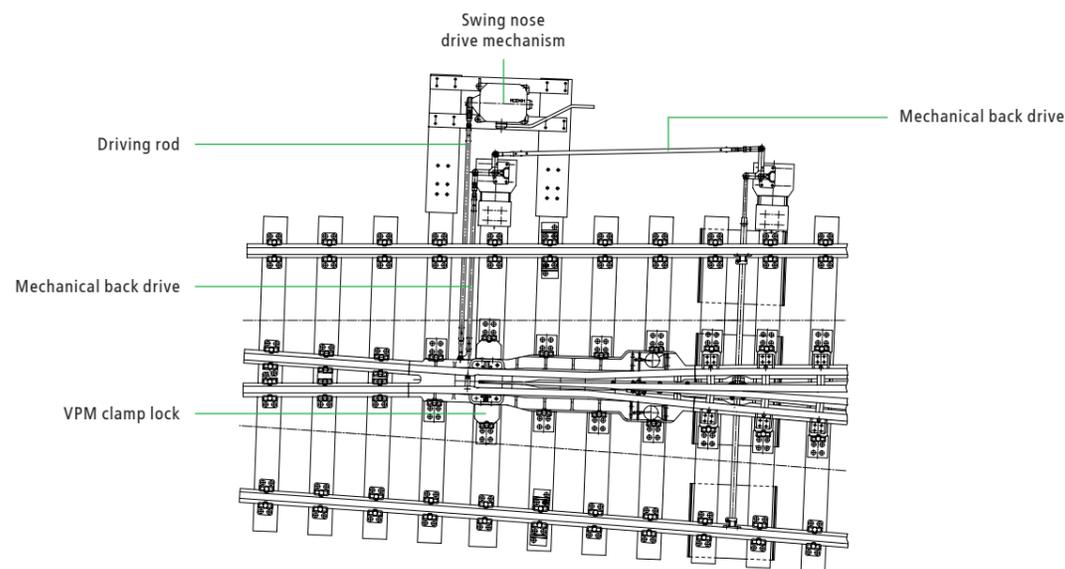
www.vossloh.com



'The VPM swing nose clamp lock provides positive locking and clamping of the swing nose simultaneously for each direction, thus preventing any derailment risk.'

With the benefit of a century of experience, throughout the world, Vossloh offers detected locking solutions that are recognized and have been tested in extreme conditions by the world's largest rail networks.

With its robust and innovative design, the Swing Nose Clamp Lock (VPM) offers unequalled characteristics and safety level. Used and nose fixed at the swing-end of the common crossing swing nose, VPM clamp lock is an integral part of the swing nose. This special configuration provides the positive locking function, offers greater control of swing nose drive and enables mechanical tamping operations between bearers.

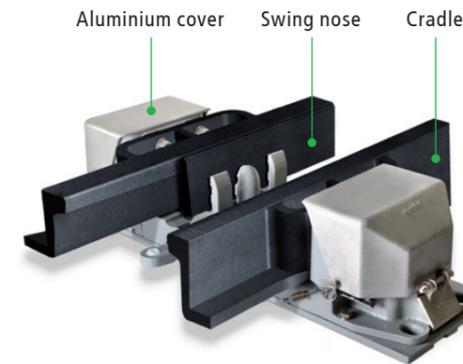


Endorsed by the most demanding networks, the swing nose clamp lock (VPM) meets the NF F 52-163 and NF F 52-164 safety standards. The UIC recommends it for high-speed lines (see UIC 734R) and the SNCF requires it on TGV (French high-speed rail network) lines (see NF 52-151).

Installation and application

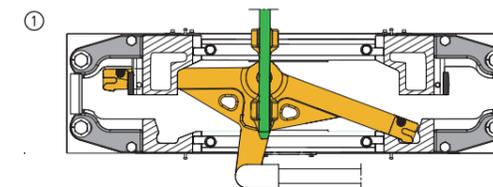
In terms of application, the VPM clamp lock offers unequalled flexibility:

- Can be adapted to casted cradles or built-up common crossings
- Compatible with all bearers: wooden bearers, concrete bearers, metal bearers, concrete slab track, etc.
- Accepts all types of mountings: coachscrews, bolting, etc.
- Designed for high-speed rail, metros and heavy haul

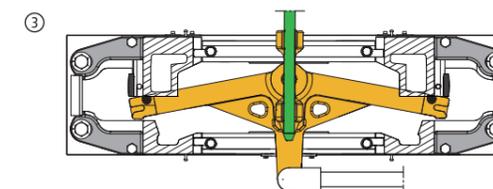


Operation

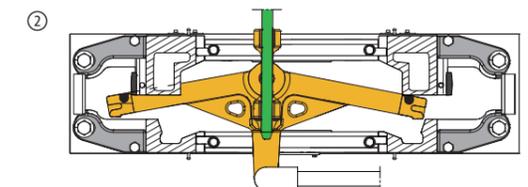
The maneuver is done in four distinct phases.



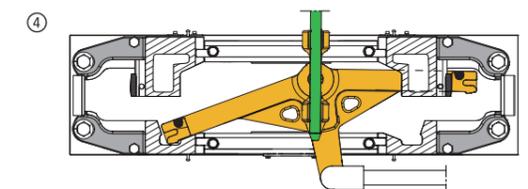
The VPM configuration is as follows: the swing nose is locked by the left-hand square head and wedged by the right-hand square.



The translational motion of the square causes the translational motion of the swing nose.



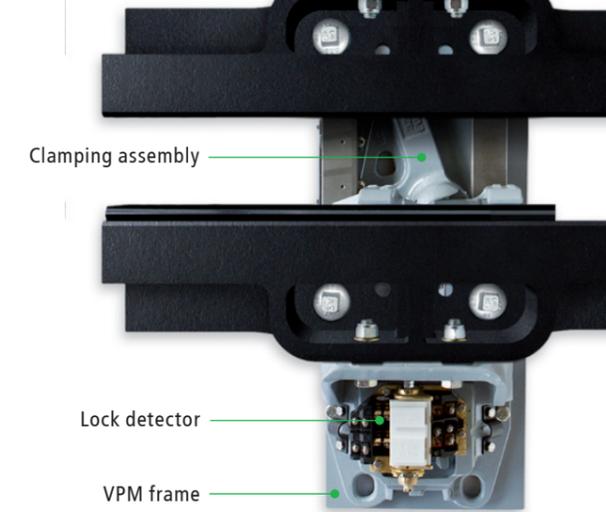
The movement of the drive rod will cause the rotation of the square and thus unlock the left-hand square head and disengage the right-hand square head from the wedging chamber.



The movement of the drive rod will cause the rotation of the square and lock the right-hand square head and engage the left-hand square head into the wedging chamber.

The position and locking of the swing noses are detected by the clamp lock detectors (see technical sheet), which provide information about the position of the swing nose and swing nose locking. The detectors are installed as closely as possible to the swing nose, thus offering unequalled reliability (switch rail expansions and track vibrations, however significant, do not affect the precision of detection in any way). This system is suitable not only for conventional networks, but also for networks where demands are high (high-speed, metro, heavy haul, etc.).

Position is strengthened by a secondary safety device that stabilises locking in the worst conditions.



Technical specifications

- Swing nose travel: 115 mm
- Nose crossing speed: up to 560 km/h
- Operating temperature: -55°C to +70°C
- Permitted thermal expansion: +/- 55 mm
- Electric heating: protection against freezing between swing nose and the cradle (optional)
- Anti-vandalism protection: Lockable covers
- Amagnetic covers
- MTBF: over 30 years
- Service life: 30 years
- Reduced maintenance