

FenLock Point Setting Systems

Trend-Setting Technology

Innovative, intelligent, international

Fenix Rail Systems' point machines are built on nearly a century of specialist rail engineering expertise. They are manufactured in partnership with Hanning and Kahl, a company with a heritage in producing components for rail-based public transport dating back to 1928. These systems benefit from continuously refined core competencies and proven engineering know-how.

Fenix Rail Systems delivers point-setting systems with established technical benchmarks and a strong track record of successful operation across global rail networks. In the UK, these solutions are known as FenLock point machines. They are used across tramways, metro and light rail systems, secondary lines, industrial railways, and factory sidings. They also support point manufacturers serving operators who require high levels of safety, reliability, and performance.

Through its partnership model, Fenix Rail Systems provides customers with a comprehensive and structured portfolio of point-setting solutions. Each system is selected and supplied to meet the specific performance requirements of the application. This ensures optimal operational efficiency and lifecycle value.



Innovative, intelligent, international

FenLock point-setting systems are the result of a symbiosis of economic series production and customised design. The outcome is practical and reliable integrated solutions from a single source, delivering quick returns on investment for operators. There is a clear reason why our products are used worldwide. The fundamental advantages of FenLock point-setting systems will convince you.

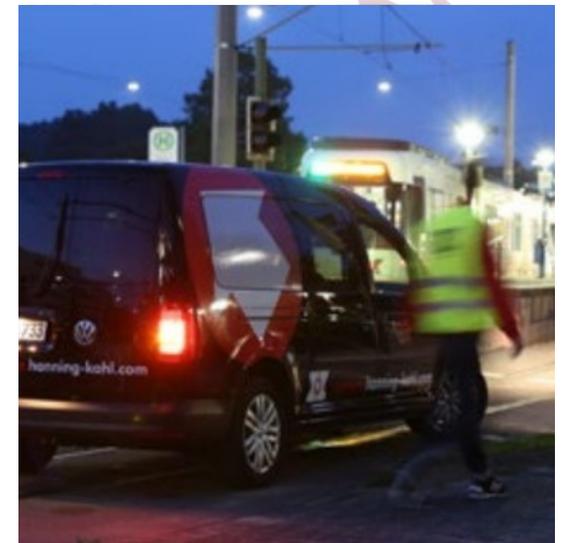
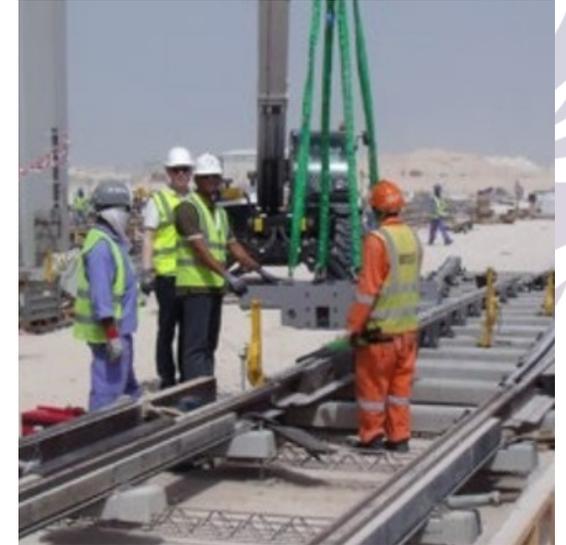
- A wide product range for all requirements
- Insensitive to environmental influences
- Fulfilment of all specifications of BOStrab, VDV, DIN and CENELEC
- Detailed quality control and documentation
- Diagnostic systems can be added for remote monitoring

With Fenix Rail Systems, you have a committed, recognised and reliable partner at your side. We offer:

- Practically oriented workshops for you and your staff
- Testing and service equipment for professional maintenance and upkeep
- 24-hour on-call service

This brochure provides an initial overview of FenLock point-setting systems and the accompanying products and services. If you would like further information, please let us know or visit our homepage at:

www.fenixrailsystems.com



Electric Point Machines

Safety, functionality, and economic efficiency define FenLock point machines. Their modular structure ensures high versatility and reliable performance across a wide range of applications.

For use in depots and rail networks, Fenix offers point machines that combine strong economic efficiency with long service life and minimal maintenance requirements. Electric point machines are also available for flat-bottom rail applications. These systems are designed to perform reliably under harsh conditions, including shunting operations and mainline protection applications.

Trend-Setting Technology. The advantages at a glance:

- Drive form can be freely selected: electro-magnetic or electro-hydraulic, with all common operating voltages available
- Compact design for all gauges, suitable for concrete-based prefabricated tracks, open tracks, and bridges
- Fast and simple installation
- Modular structure, available for all point types in multiple functional variants
- Low maintenance, with no function-relevant wear between overhauls
- Patented and verified safety engineering
- Optional remote monitoring for condition-based maintenance
- Adaptable to other makes of point housings
- Mechanical manual setting capability



Electric point machines in the depot

Electric Point Machines



Electric point machines in the depot



Crossable electric point machine

Electric Point Machines

1.1 FenLock 61.1 Series Point Machines

The modular point machine of the 61.1 series can be deployed across all transport authority requirements. Positive locking of the drive rods and an independent detector lock device ensure SIL 4 compliance in line with CENELEC EN 50129 specifications. The system is supplied with four-wire activation for use in electrically operated locally set points or with electronic interlocking controllers in mainline applications.

Attributes of the 61.1 series:

- Redundant locking concept
- Protection class IP67 in compliance with EN 60529
- Suitable for all gauges
- Designed for use in line networks, on bridges, and in tunnels
- Drive and detector rod connection for all point types
- Compatible with interlocking technology across all system houses
- All track installation options available
- Optional lever box protection against unauthorised manual activation

1.2 FenLock 61.1-Metro Series Point Machine

The point machine of the 61.1-Metro series is designed for train protection applications in metro, underground, and suburban railway systems. This compact, robust, and safe unit meets all safety requirements. Certified to SIL 4 in compliance with CENELEC EN 50129, the 61.1-Metro series is built for the demands of high-frequency metro operations.

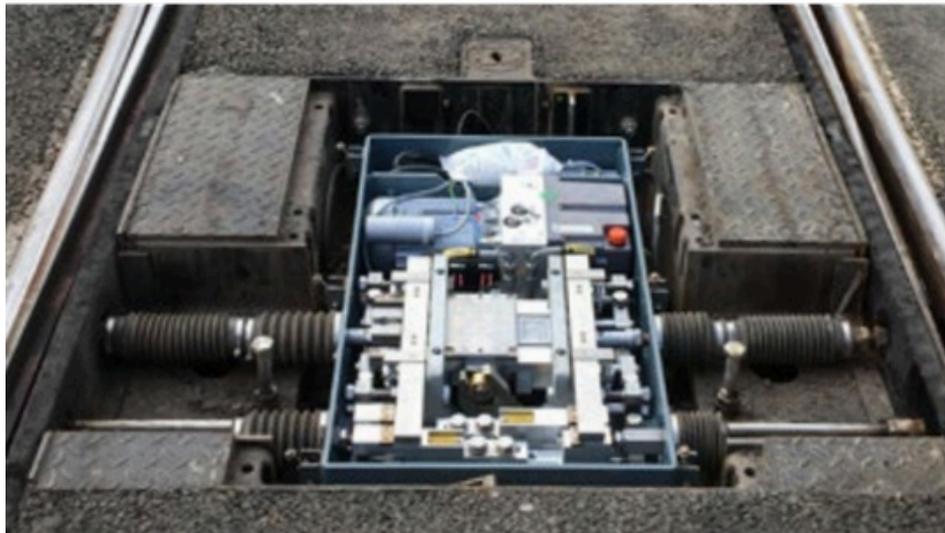
Attributes of the 61.1-Metro series:

- Redundant locking concept
- Protection class IP67 in compliance with EN 60529, suitable for all gauges
- Suitable for driverless systems such as people movers, with installation in the centre or alongside the track
- Designed for use in line networks, on bridges, and in tunnels
- Drive and detector rod connection for all point types
- Compatible with interlocking technology across all system houses
- All track installation options available
- Optional lever box protection against unauthorised manual activation
- Optional vandalism protection cover
- Manual setting with fast and simple single-stroke operation

Electric Point Machines

Technical data 61.1 series

Drive	electro-magnetic, electro-hydraulic
Point type	grooved rail (flat-bed, deep-bed), flat-bottom
Operating voltage	DC 600 V to DC 1,000 V* AC 230/400 V*
Point opening	up to 70/100 mm
Operating force	5,000 N
Overall height	300 mm incl. earthcase



Technical data 61.1-Metro series

Drive	electro-hydraulic
Point type	flat-bottom
Operating voltage	AC 230/400 V*
Point opening	120 mm
Operating force	5,000 N
Overall height	205 mm



*Other operating voltages on request

Electric Point Machines

1.3 FenLock 500 Series Point Machine

The 500 series point machines provide a practical and cost-effective solution for depots and stabling areas for light rail vehicles and trams. Points are typically equipped with this compact unit. Within the 500 series, railways can choose between electro-hydraulic or electro-magnetic operation. The point machine is installed in a space-saving position in the middle of the track, with the option for side installation where required.

Attributes of the electric 500 series:

- Protection class IP67 in compliance with EN 60529
- No rod openings or bellows
- Compact sub-assembly design
- Corrosion protection across all components
- Simple manual activation with a single stroke of the setting lever
- Adjustable fatigue-proof pressure spring assembly
- Certified to SIL 2 in compliance with CENELEC EN 50129

1.4 FenLock 715 Series Point Machine

This innovative setting system covers a wide range of applications, from heavy rail line networks and public transport to freight operations, as well as industrial and harbour railways. The point machine H715 can be integrated into all types of flat-bottom points. Existing installations can be upgraded by replacing older machines with the H715, which is certified to SIL 4 in compliance with CENELEC EN 50129. Both mechanical and electrical interfaces are fully compatible.

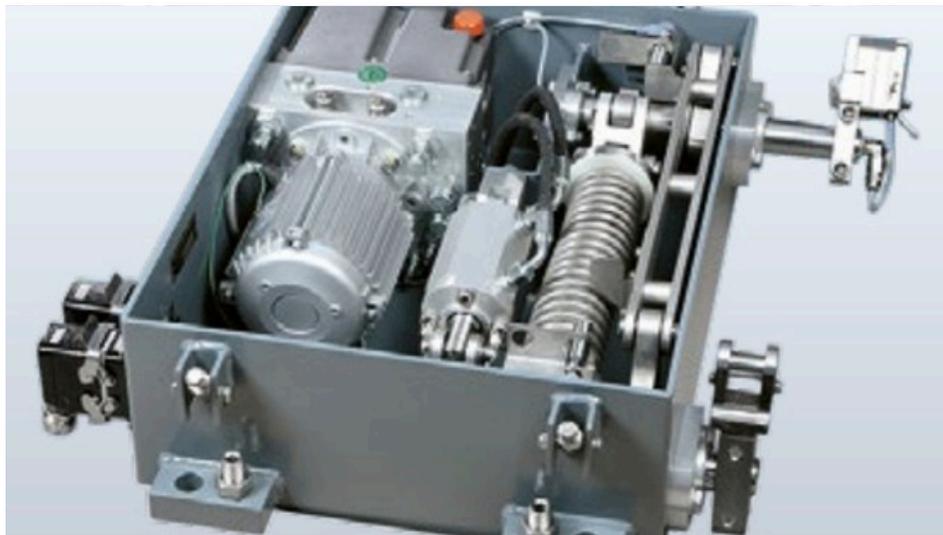
Attributes of the 715 series:

- Fast switching between left and right installation without retrofitting the hydraulic unit
- Unique visual check of lock engagement and monitoring elements
- Open electric interface allows simple adaptation to different control and interlocking requirements
- Hydraulic drive system delivers consistent setting force across the entire service life
- Low maintenance due to lubrication-free ball and sliding bearings
- Top cover opening enables manual setting with all available cranks
- Installation in hollow bearers available as an option
- Protection class IP54 in compliance with EN 60529

Electric Point Machines

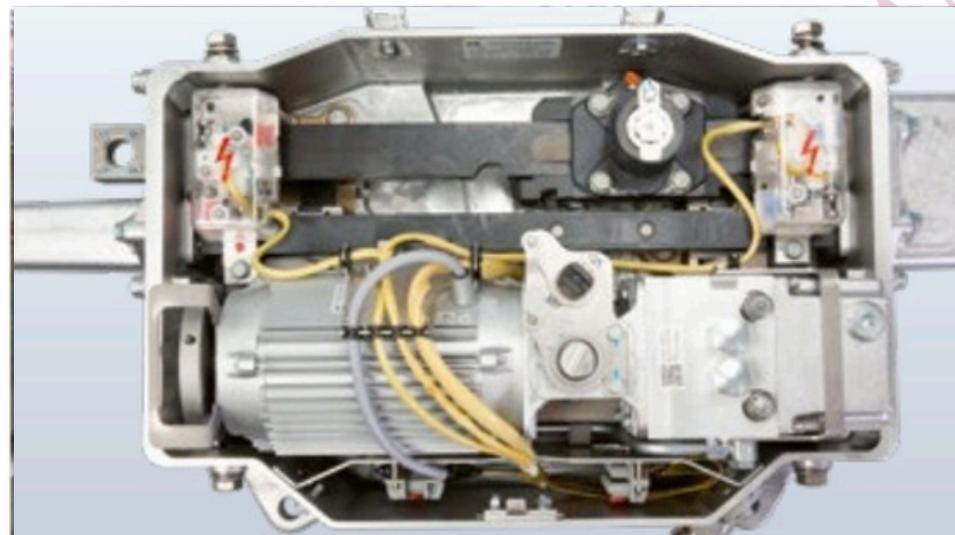
Technical data 500 series

Drive	electro-magnetic, electro-hydraulic
Point type	grooved rail (flat-bed, deep-bed), flat-bottom
Operating voltage	DC 600 V to DC 1,000 V* AC 230/400 V*
Point opening	up to 65 mm
Operating force	5,000 N
Overall height	300/430 mm incl. earthcase



Technical data 715 series

Drive	electro-hydraulic
Point type	flat-bottom
Operating voltage	AC 400 V*
Point opening	up to 240 mm
Operating force	up to 9,000 N
Overall height	305 mm



*Other operating voltages on request

Manual Point Machines

At many locations within line networks, such as trailed or facing points that are seldom used, a manual setting mechanism is the most economical solution. The strong cost to benefit ratio of manual setting machines makes them an effective choice.

FenLock manual point machines for installation in flat-bottom points offer high flexibility. They can be installed either at the side or in the centre of the track. Manual setting mechanisms include a fail-safe design with an over-centring function, ensuring the point remains securely locked at all times without the need for additional components. Manual operation is achieved with a single stroke of the hand lever.



Manual point machine in the depot

2.1 FenLock 40 Series Point Machine

This manual point machine from the 40 series, manufactured by Hanning and Kahl, features a compact design and robust technology. The 40 series provides an economical solution for points with a trailing or facing configuration that are only seldom operated.

Attributes of the 40 series:

- Robust technology
- Compact design
- Configurable as spring-back or throw-over with the same components, adjustable on site
- Suitable for most point types, openings, and gauges
- Manual setting with low force requirement, operated by a single stroke
- Redundant, progressively adjustable spring assembly for secure positioning of point blades
- End-position damping to reduce noise
- Adaptable for use in point housings from other manufacturers

Manual Point Machines

Technical data 40 series

Drive	manual, in throw-over and trailable function
Point type	grooved rail (flat-bed, deep-bed)
Retention	up to 2,000 N
Point opening	up to 60 mm
Overall height	450 mm incl. earthcase



Manual point machine in the line network

Manual Point Machines

Fenix and our partners have driven forward the technological development for trailed points and also for faced points which are seldom reset. Manual point machines in this innovative, reliable design with particularly low installation height.

Attributes of the 42 series:

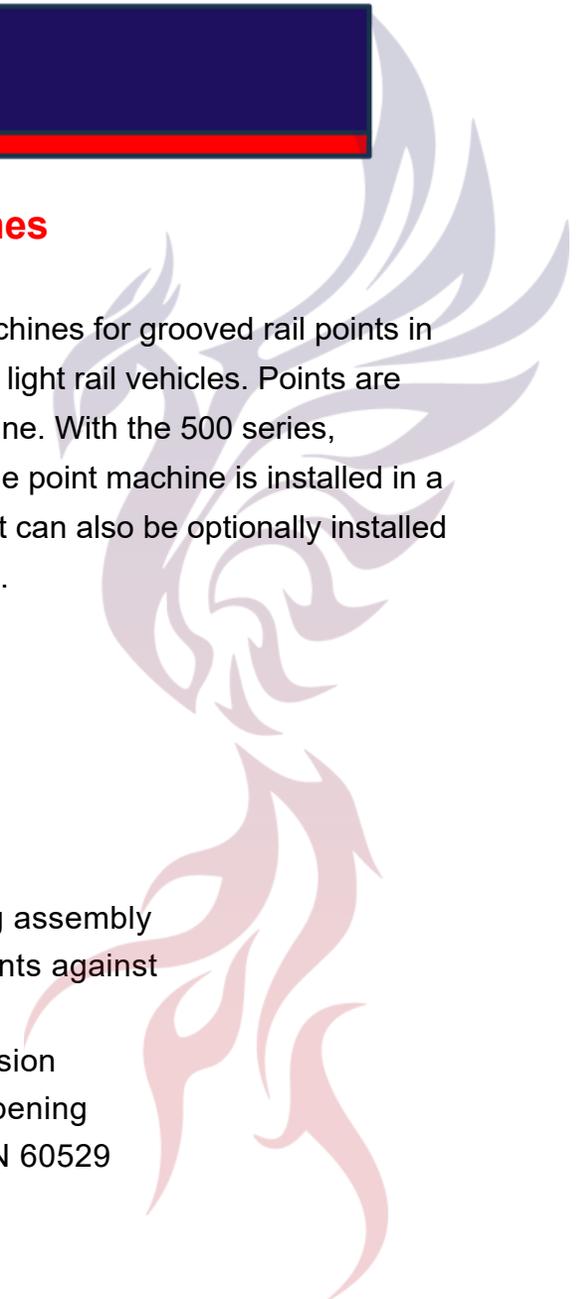
- Very low installation height of just 180 mm
- Spring-back or throw-over function. Simply set with the same components on site
- For most point types, gauges and point openings up to 60 mm
- Manual setting with low force requirement with just one stroke
- Progressively adjustable spring force for securing point tongues in end positions
- Progressively adjustable damping means noise reduction and wear protection
- Can be adapted in earth cases of other makes and in earthcase of the 60 and 61.1 series
- Corrosion-protected components

2.3 FenLock 500 series Point Machines

With the 500 series, developed manual point machines for grooved rail points in throw-over and spring-back function for tram and light rail vehicles. Points are optimally equipped with this compact point machine. With the 500 series, grooved rail points can be operated manually. The point machine is installed in a space-saving manner in the middle of the track. It can also be optionally installed on the side and it can be trailable where required.

Attributes of the manual 500 series:

- Manual setting with very little effort
- Just one mechanical stroke required
- Adjustable fatigue-resistant pressure-spring assembly
- Damping to reduce noise and to protect points against wear
- All components are protected against corrosion
- External rod connection, without housing opening
- Protection class IP67 in compliance with EN 60529



Manual Point Machines

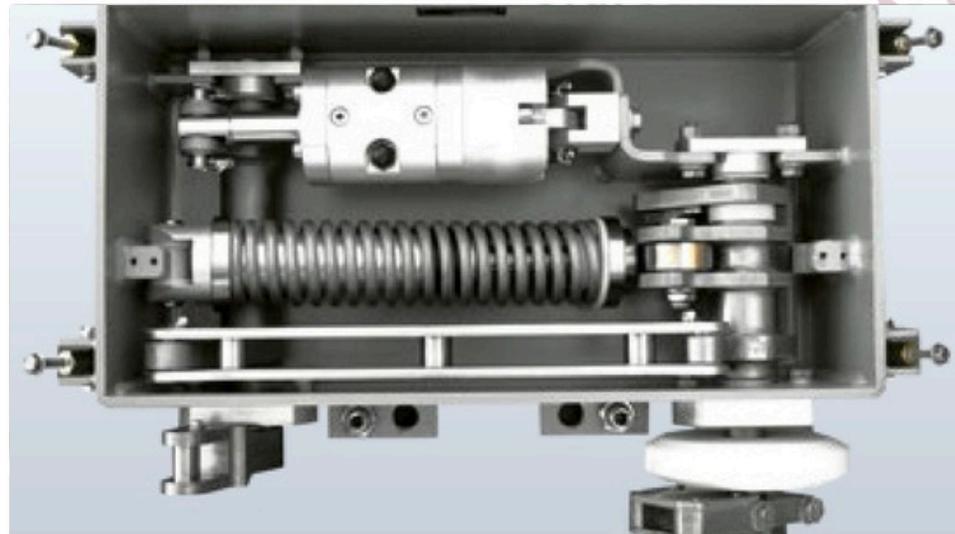
Technical data 42 series

Drive	manual, in throw-over and trailable function
Point type	grooved rail (flat-bed, deep-bed)
Retention	up to 2,500 N
Point opening	up to 60 mm (throw-over up to 45 mm)
Overall height	180 mm incl. earthcase



Technical data 500 series

Drive	manual, in throw-over and trailable function
Point type	grooved rail (flat-bed, deep-bed)
Retention	up to 4,000 N
Point opening	up to 65 mm
Overall height	280 mm incl. earthcase



Manual Point Machines

2.4 Point Machines 160 series

The manual point machines for installation in flat-bottom and deep-bed points offer flexible deployment possibilities. Installation is possible beside or between the tracks. As with all manual point machines supplied by Fenix, the throw-over and spring-back function are possible at all times without replacing components. The point can be manually set with just one stroke of the setting lever.

Attributes of the 160 series:

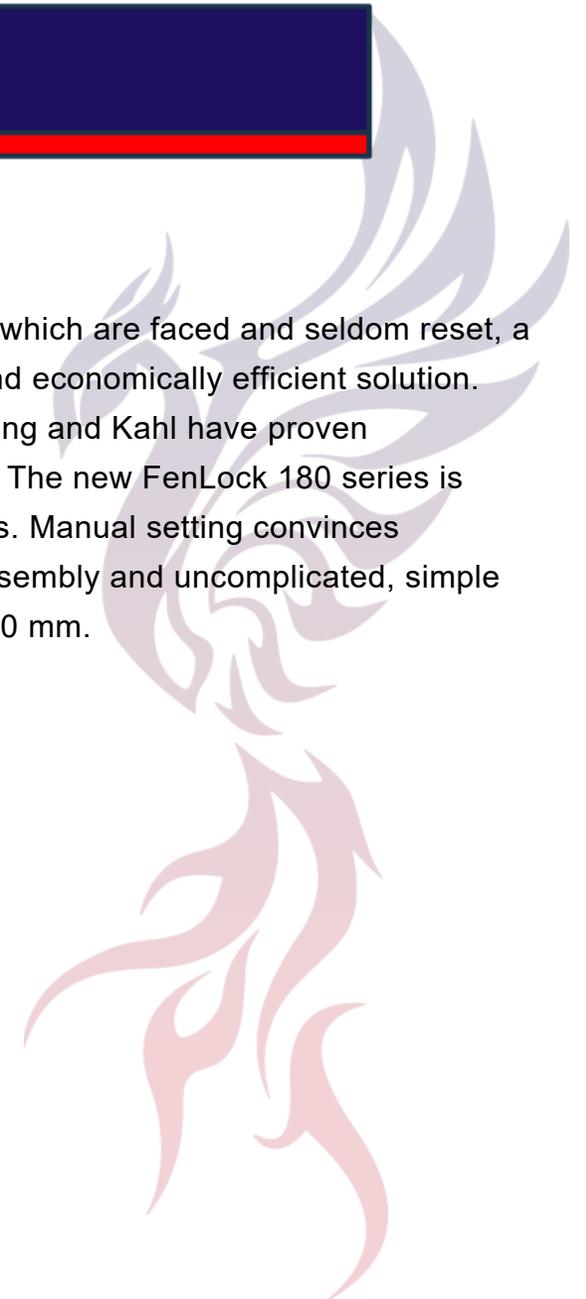
- Suitable for different point types, point openings and gauges
- Redundant, progressively adjustable spring force for safe positioning of point tongues
- End-position damping for noise reduction

2.5 Point Machines 180 series

For points which are trailed and also for points which are faced and seldom reset, a manual point machine is the most pragmatic and economically efficient solution. Manual point machines manufactured by Hanning and Kahl have proven themselves in decades of worldwide operation. The new FenLock 180 series is ideal for robust deployment in flat-bottom points. Manual setting convinces operators with an extremely powerful spring assembly and uncomplicated, simple manual activation, with point openings up to 160 mm.

Attributes of the 180 series:

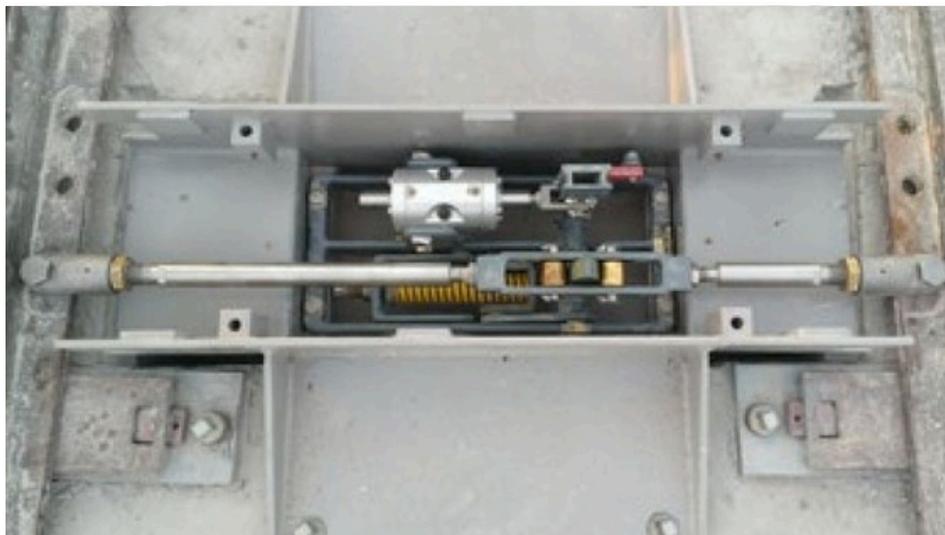
- High spring forces
- Low manual setting forces
- High availability
- Low maintenance requirement
- Effortless installation



Manual Point Machines

Technical data 160 series

Drive	manual, in throw-over and trailable function
Point type	grooved rail (deep-bed), flat-bottom
Retention	up to 2,000 N
Point opening	up to 100 mm (up to 80mm in spring-back function)
Overall height	450 mm incl. earthcase



Technical data 180 series

Drive	manual, in throw-over function
Point type	flat-bottom
Retention	up to 4,000 N
Point opening	up to 160 mm
Overall height	300 mm



Further Applications

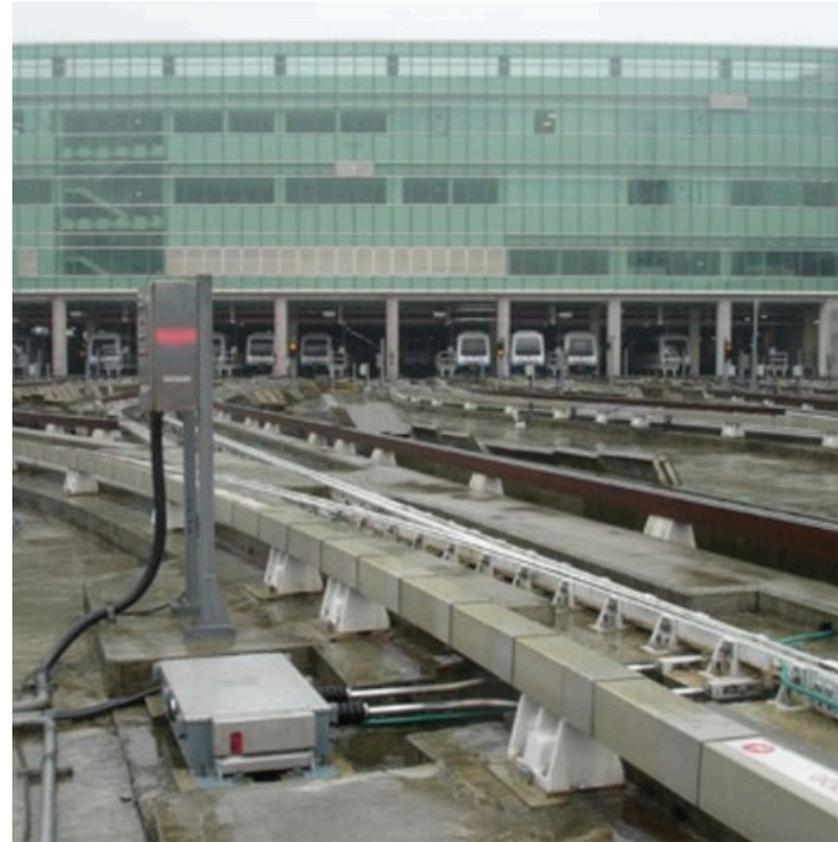
Exporting expertise

Unconventional tasks call for extraordinary expertise and commitment. At Fenix Rail Systems, we welcome challenges. In teamwork with customers, we put innovative solutions into practice. The experience and innovative strength of our manufacturer Hanning and Kahl are appreciated all over the world, including Asia and the USA, where sophisticated projects are often realised.

3.1 People mover point machines

People movers are driverless transport systems. Trains drive on rubber tyres and are guided by a rail in the centre of the trackway, or they use the customary wheel-rail system. Here too, international operators rely on the superior and proven systems for point setting and locking technology.

All FenLock point machines lock points with positive locking. Vehicles are not given the go-ahead until end position and locking have been double-checked. The point-setting system is installed individually within each application. All electrical drive variants can be catered for.



Manual point machine in the line network

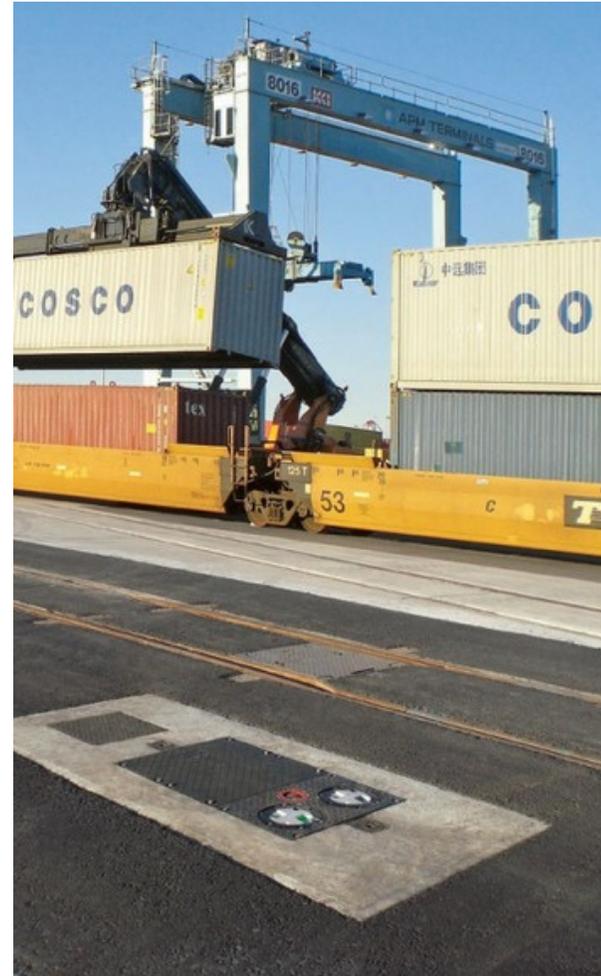
Further Applications

3.2 Switch & Control

Technical equipment deployed in container terminals is exposed to extreme conditions. Engineers and operators all over the world are convinced by the legendary stability of FenLock point machines manufactured by our partner Hanning and Kahl.

FenLock by Fenix Rail Systems represents a new era in rail signalling and point machine technology, engineered for maximum safety, reliability, ease of maintenance, and operational efficiency across modern train facilities, depots, yards, and intermodal terminals.

Seamless integration with FenLock Control means FenLock point machines are part of the wider FenLock Train Facility Control ecosystem.



Manual point machine in the line network

Further Applications

3.3 Specialised Point Machines for frogs and wing rails, sequence and multi-tongue points

Increasing networking of tram and light rail systems is creating new demands on modern line management. Today, vehicles increasingly operate on infrastructure that combines both 1,000 mm metre gauge and 1,435 mm standard gauge tracks, requiring highly adaptable and precisely controlled point technology.

The solution lies in specialised point-setting systems, such as frog and wing rail points, designed to ensure reliable guidance across mixed-gauge networks. In these applications, the movable point components are actuated using proven FenLock point technology. The system securely locks the switch elements in their end positions and continuously monitors their status, ensuring maximum operational safety and availability.

Further specialised configurations, including sequence points and multi-tongue points, can also be implemented without limitation using established point-setting technology. This guarantees consistent performance, high reliability, and seamless integration, even in complex layouts.



Double diamond points

Further Applications

3.4 ILASS® Integrated Locking And Switch System

ILASS® combines point lock and point machine in one system. The outstanding advantages of the CDP point lock EVZ and H715 series point machines are integrated into a compact, robust system.

The result:

superior performance, greater convenience, and high reliability. ILASS® is SIL 4 compliant with CENELEC EN 50129, approved as an all-in-one system and predestined for all flat-bottom rail networks with its compact design.

- Main line, high-speed and heavy-duty traffic
- Secondary and industrial lines, metro and underground railways
- Tram and light rail lines

ILASS® can replace existing point machines with minimum retrofitting effort. The standard interfaces, such as detector and drive rods, can be used. Installation side can be freely chosen and easily changed.

3.5 Solar Series Point Machines

In order to electrically set points even when they are on remote track lines, the HWE solar point machine gets its drive energy directly from solar radiation. A solar panel mounted beside the installed point machine charges a battery in a controller. To set the point, the train driver operates the push button on the controller. The point is then electrically set, and the point end position can be visually displayed.

This improves rail operations and supports vehicle staff on branch lines, factory sidings, and industrial railways. The point-setting system provides flexible and efficient sequences, along with convenient and safe operation, with low investment and minimal follow-on costs.



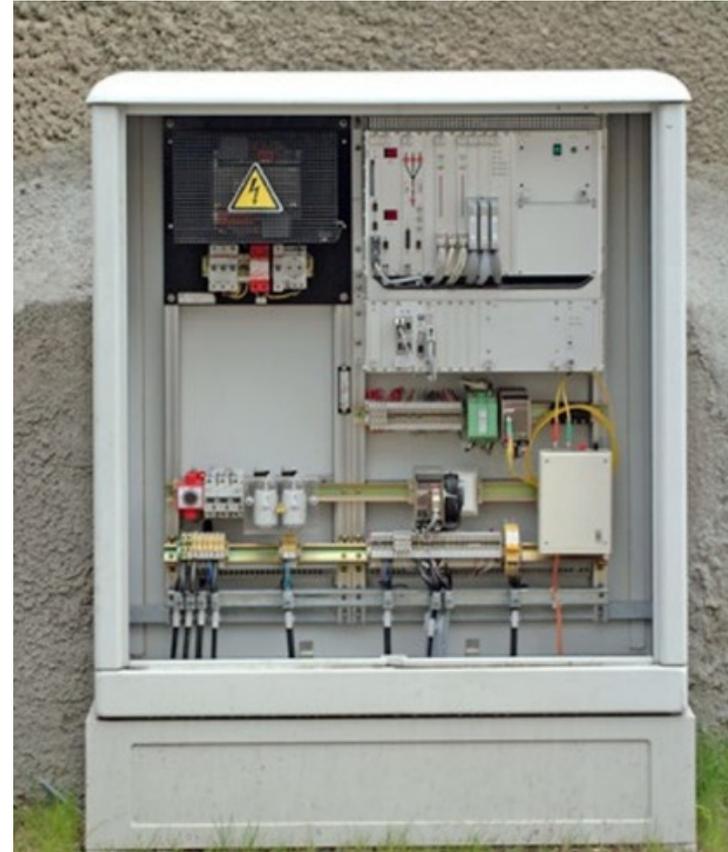
ILASS® installation

Service and Accessories

4.1 Point Control

FenLock Control Systems offer economically efficient solutions in modular design, even for the control of single points. After analysis of requirements, Fenix Rail Systems configure customer-specific point controllers which function safely.

Engineered for efficiency, with reduced routine maintenance requirements and plug-and-play system integration, FenLock technology lowers the total cost of ownership compared with older point machine systems, while still delivering cutting-edge performance and future-proof design.



Single point controller

Service and Accessories

4.2 Track accessories

The requirements for track installation materials are very versatile:

- **Rail boxes**
- **Screw-on track drainage boxes**
- **Insulated tie bars**

Grooved rails pose particularly demanding challenges as they are crossed by road traffic in rough conditions. In addition to simple assembly and straightforward commissioning, high availability and minimum maintenance are essential. Screw connections must endure while subjected to a high degree of contamination and be easily disconnected when required.

As regards corrosion resistance, rail boxes must remain intact for years, regardless of environmental impact from stray currents or winter salting. Fenix Rail Systems provides a large range of track accessory components which meet all requirements.



Rail boxes on grooved rail



Rail boxes on grooved rail

Service and Accessories

4.3 Documentation

In line with their high level of safety, all point-setting systems are documented in a detailed and precise manner. For every product, customers receive structured and clearly designed operating manuals with graphic representations and photos in the file format of their choice.

The technical data and functional descriptions of all individual components are documented with precision. All setting, maintenance, and service work is illustrated in a clear and self-explanatory manner with photos.

Product documentation contains, among other things:

- 3D point installation drawings
- Electrical and hydraulic diagrams
- Final post-assembly inspection protocol
- Commissioning protocol
- Safety data sheet and declaration of conformity
- Spare-parts catalogue



Quality inspection during assembly



THANK YOU

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