



EuroMaint Rail



English



Complete maintenance solutions that keep trains rolling

EuroMaint Rail strengthens its customers' competitiveness via services and products that increase the availability, reliability and service life of rolling stock. Our comprehensive range of maintenance and refurbishment services consists of qualified technical maintenance, provision of spare parts, refurbishments and component servicing. We are experts in all types of passenger and freight transport as well as infrastructure work. Our network of workshops stretches from Luleå in northern Sweden to Bavaria in southern Germany, and our mobile service teams are called out when damage needs to be dealt with at trackside or at the customer's premises.

Our workshops are environmentally and quality certified. We have been influenced by modern production philosophies and have introduced our own version of lean production – Rail Production System – as a means of developing our workshops, work processes and employees.

Turnkey responsibility for maintenance

Availability and reliability are essential to our customers. Rolling stock must, as far as possible, be available for use. We take complete responsibility for rolling stock availability through effective maintenance, so that our customers can concentrate on their core activities – offering passenger



transport, transporting freight or developing infrastructure.

Our maintenance offering covers everything from traffic maintenance and mobile maintenance to overhauls, technical consultancy services and development of maintenance concepts. Together with our customers, we have developed partnership models and availability contracts, where the maintenance work and costs are based on the customer's rolling stock being available for service.

Spare parts and components onsite on time

Our spare parts and logistics system is fully adapted to the rail transport industry. Our purchasing and logistics organisation ensures that we have access to the right spare parts at the right time and at the right price. Our warehouse supplies our own workshops and external customers with spare parts for all types of rolling stock.

For maintenance of high-cost components, we offer component servicing as an independent service or as an integrated part of our maintenance offering.

Refurbishments that extend the service life of rolling stock

Through our refurbishment services, we help to extend the service life of rolling stock, to optimise maintenance and improve performance, comfort and design. We carry out external surface renovations, extensive refurbishment with new functions and new layouts, as well as technical upgrades.

Quality and traffic safety

The demands on traffic safety and quality are extremely high for both passenger and freight transport. We play our part in the industry's traffic safety and quality work, and our extensive technical and systems expertise, in combination with our structured work methods, create the right conditions for safe rolling stock and safe transport.

Quick facts about EuroMaint Rail:

- Leading independent maintenance company with more than 100 years of experience
- From Luleå in northern Sweden to Bavaria in southern Germany
- Quality and environmentally certified workshops in Sweden, Germany, Latvia, Belgium, Poland and the Netherlands.
- 2,300 employees
- Turnover of approx. EUR 314 million
- Customers include: AAE, Arlanda Express, DB, Green Cargo, Infranord, NSB, SJ, SL, Transwaggon and Veolia



Maintenance for punctual and safe passenger transport

With effective technical maintenance and refurbishment of rolling stock, EuroMaint Rail is contributing to making passenger transport rolling stock safe, punctual and comfortable. We offer maintenance for all types of rolling stock for passenger transport.

Thanks to comprehensive maintenance and refurbishment services, high technical expertise and efficient component and spare parts management, we can strengthen the competitiveness of our customers. We are a proactive partner with a focus on availability, reliability and cost-effectiveness. The quality of our services corresponds to high safety requirements, and our offer covers everything from daily rolling stock maintenance to comprehensive overhauls and refurbishments.

We also support our customers in developing maintenance plans and technical investigations. All this ensures that the availability and reliability of rolling stock is increased further.

Turnkey commitments for maximum availability

The main offering within maintenance of rolling stock for passenger transport is usually the turnkey commitment, where maintenance work and reimbursement models are based on the customer's rolling stock being available for use.

In order to ensure that rolling stock is available when required for service, preventive and corrective maintenance are divided up and carried out during operational breaks, such as at night time.

Preventive maintenance is carried out in accordance with the maintenance schedule for rolling stock at our traffic workshops. Corrective maintenance is carried out in connection with preventive maintenance or during scheduled workshop visits. If a fault needs to be corrected quickly, our mobile service teams offer help at trackside.

Turnkey commitments presuppose a flexible maintenance organisation and efficient provision of spare parts and components. They also require specialist expertise, control and continuous development of maintenance.

We are also continuously searching for innovative ways to additionally improve the availability of the rolling stock and streamline maintenance. By equipping the rolling stock with systems for remote monitoring, we can follow the trains and vital systems in real time, better analyse errors and facilitate planning of maintenance measures. For those customers who have problems with graffiti, we offer a unique foiling method for protection against graffiti, which results in shorter downtime during repainting and simple, cost-effective and environmentally friendly removal of graffiti. Two examples of how our experience, in combination with innovative solutions, contributes to more punctual and safe traffic.

Examples of customers:

- A-Train – maintenance and refurbishment of Arlanda Express
- SJ – maintenance and refurbishment, including for high-speed trains, motor coaches, locomotives and carriages for passenger transport
- Stockholmståg – maintenance of commuter trains
- Veolia – maintenance of motor coaches





Effective maintenance of Sweden's most punctual train service

Punctuality and comfortable travel are vital competitive advantages for Arlanda Express, which every year has 55,000 departures between Stockholm city and Stockholm Arlanda Airport. Availability and reliability are vital for both the customer and travellers. Arlanda Express has a partnership with EuroMaint Rail, which means that EuroMaint Rail takes full responsibility for all train maintenance. Available today is more than 99 per cent.

“Our objective is rolling stock with high availability and reliability. The partnership with EuroMaint Rail fulfils the demands and requirements we have to be able to offer our customers a first-class service,” says Martin Byström, Technical Director at A-Train AB.

The partnership between A-Train and EuroMaint Rail has been extended further. A-Train is investing almost SEK 100 million in upgrading Arlanda Express, and EuroMaint Rail is refurbishing the rolling stock in order to improve traveller comfort, as well as to increase train capacity.

Efficient maintenance for reliable freight transport



EuroMaint Rail offers all types of maintenance services for rolling stock for freight transport. Cost efficiency and reliability are essential to our customers. Faults that cause downtime to a fully laden freight train can often mean delays and large costs.

Our workshops carry out all types of preventive and corrective maintenance, including for goods wagons, special and tanker carriages. They also carry out more extensive maintenance and provide technical upgrades for locomotives in order to extend the service life of rolling stock.

The maintenance of rolling stock for freight transport is becoming more mobile. Damage is rectified at trackside or onsite at the customer's premises in ports and terminals. Our mobile service teams are currently so well equipped that rolling stock can almost always be made serviceable at the location where the damage occurred. Our service vehicles are equipped with cranes, portable turning equipment and equipment to test brakes.

Unique equipment for turning and brake inspection in the field

Wheel problems are the most common reason for a freight train being stationary due to damage. Costs for a freight train which has stopped are high - reloading, replacement transport, delays and costs for transfer of the damaged train to the workshop.

EuroMaint Rail's unique solution for turning the wheels in the field provides huge time and cost savings. Once wheel damage has been dealt with and the necessary brake inspections have been carried out, the train is ready for operation again.

The equipment used for both turning and brake inspection was developed by EuroMaint Rail. Repairing wheel damage and carrying out the necessary brake inspection does not need to take more than three to four hours, then the train can be moving again.

Examples of customers:

- AAE – maintenance of freight carriages
- Green Cargo – overhauls and maintenance of locomotives
- Hector Rail – refurbishment of locomotives
- Transwaggon – maintenance of goods wagons and special rolling stock



Maintenance of 300 freight carriages for Switzerland's AAE

EuroMaint Rail has very extensive cooperation with AAE, one of the largest private companies to let wagons in Europe. Among other things, we are responsible for the maintenance of 300 freight carriages in traffic between Luleå and Borlänge. AAE's carriages are used in the 'stålpendel' (the steel train) operated on behalf of SSAB. EuroMaint Rail's commitment includes preventive and corrective maintenance and mobile service.

"It was EuroMaint Rail's extensive experience and broad expertise within maintenance of freight carriages that led us to choose them for this partnership. Efficiency and reliability are extremely important for us, not least when our freight carriages are operating on heavily loaded stretches and in the tough climate of northern Sweden," says Markus Vaerst, COO at AAE.



Customised maintenance for efficient infrastructure work



EuroMaint Rail offers maintenance and component servicing for all types of rolling stock for rail work and overhead cable work.

Thanks to long experience, extensive product knowledge and a high degree of technical expertise, we guarantee the function of rolling stock. We have specialist expertise within technical systems for various types of work machines and, thanks to a complete maintenance offering, huge spare part expertise and a flexible organisation, our customers always get the help they need quickly.

From operator expertise to complete maintenance

For infrastructure work, the reliability of rolling stock is vital – one work machine stopping can lead to significant delays and costs. EuroMaint Rail's offering within equipment maintenance for infrastructure work includes both preventive and corrective maintenance, maintenance of electronic equipment and hydraulics, as well as refurbishments.

For large-scale projects, we assist with machine operators who can also attend to carry out maintenance, should

that be required. In this way, we can contribute to minimising the risks associated with major projects.

Our experienced service technicians are specialists in remedying faults that cause malfunctions and are available 24 hours a day for telephone support in the event of important projects. Our mobile service teams are also always ready to resolve problems at short notice.

EuroMaint Rail's unique solution for turning the wheels in the field provides huge time and cost savings in case of wheel damages to work machines. Re-profiling of wheels can be carried out at trackside and after we have completed the necessary brake inspections, the rolling stock can quickly be taken back into operation again.

Examples of customers:

- Infranord
- Jernbaneverket
- SL
- Strukton





Maintenance of track-replacement machines for maximum availability

EuroMaint Rail is responsible for maintenance of Infranord's track-replacement machines. The partnership between the companies also means that EuroMaint Rail provides staff for certain elements of the track-replacement work, carries out field work and looks after the annual workshop maintenance.

“We have chosen to cooperate with EuroMaint Rail because they have more than 25 years' experience of track-replacement machines. They are skilled at field servicing and have extensive expertise within both maintenance and operation of machinery,” says Dan Lindstrand, Team Leader at Infranord.

A complete maintenance offering

Through effective maintenance, EuroMaint Rail contributes to making rail transport safe and punctual – both for passengers and freight.

Our conveniently-located services include everything from day-to-day maintenance to split-based preventive maintenance and corrective maintenance in the event of damage. We use our experience and expertise to continuously develop maintenance; we monitor recurring faults and propose long-term development solutions.

Our customers are constantly demanding better availability and reliability. This contributes to our development of control, planning and follow-up systems. We improve logistical solutions for spare parts and streamline the handling of high-value components.

We use the latest technology to assess the condition of brakes and wheels, for instance, and to develop systems for



fault indication in real time – all to be better equipped to get rolling stock back into service again quickly and efficiently. We actively seek out innovative solutions to time-consuming and costly problems. Our anti-graffiti method using foil is one example. Foil means shorter downtime than for repainting, and rolling stock can be cleaned of graffiti easily, cost-effectively and in an environmentally-friendly way.

Mobile maintenance increases availability

Faults that interrupt service are costly, and the quicker they can be dealt with, the faster that service can be resumed, with few delays in train traffic as a result.

Most of EuroMaint Rail's workshops have mobile service teams who can assist with everything from comfort-related faults to derailments or breakdowns. The mobile units work trackside, onsite at the customer's premises or at strategic loading sites.

Our mobile service teams carry out emergency repairs on all types of rolling stock, both passenger trains and freight trains, as well as rail and overhead cable machines.

Freight rolling stock in cold climates is often affected by wheel damage. Our heavy service vehicles have equipment for replacing axletrees or for turning wheels in the field, as well as for brake inspection. The freight does not need to be unloaded and reloaded, which leads to huge savings in respect of both time and money.

Workshops specialising in effective overhauls

Trains should run for a long time. But for them to live up to expectations, the investment must be well managed.

All rolling stock and their components must be maintained according to schedule for safe traffic and so that operators can get the best out of their equipment. During the course of its service life, rolling stock is taken to the workshop on a number of occasions for more comprehensive maintenance procedures, so-called overhauls. A number of EuroMaint Rail's workshops specialise in overhauling different types of rolling stock.

Development of maintenance solutions increase the value and life of rolling stock

Maintenance costs for rolling stock can amount to at least as much as the initial investment. Effective maintenance therefore affects the direct maintenance costs as well as rolling stock's service life and value. EuroMaint Rail's technical organisation has worked for decades with different types of rolling stock, maintenance assignments and technical upgrades. The organisation's collective experience is used to develop optimal maintenance solutions, and we offer our customers the following:

- Technical investigations of rolling stock or consultations
- Development of maintenance plans
- Development of technical documentation
- LSC analyses (Life Support Cost)
- Support in the event of new procurements or refurbishment of rolling stock



The most effective component servicing you can find

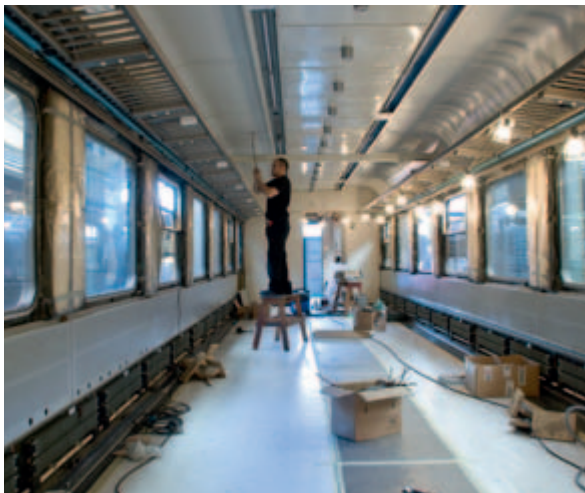
High-value components in rolling stock require separate maintenance solutions. EuroMaint Rail replaces and reprocesses components at scheduled maintenance intervals or at the same time as damage repairs are performed.

Component servicing constitutes an integral part of our maintenance service, something that reduces the time rolling stock spends in the workshop. Components such as wheels, bogies, traction motors, transformers and electronics are removed and replaced with new, reprocessed components. The removed components are cleaned, maintained and repaired. After completed reprocessing, the components are placed in our component stock to be installed into the next piece of rolling stock. We have a well-developed system with replacement components for the vast majority of rolling stock in operation. This means

that the lead time does not need to be longer than the time for transport and installation.

When a reprocessed component is missing, for example, if the rolling stock item is new or uncommon, we send for a new component via our international contact network of subcontractors. If necessary, we can also reprocess a component whilst rolling stock is in the workshop for maintenance.

Cost-efficient component servicing requires huge volumes, as well as industrial handling for short through-put times and high delivery reliability. We are constantly developing our quality and our production processes, and we always ensure that complete documentation is available for complete control and traceability of each individual component.



Refurbishments that bring added value

EuroMaint Rail is a complete partner for the refurbishment of rolling stock. We increase the working life and value of the vehicles, optimise maintenance and improve performance, comfort and design.

The aim of refurbishments is often to improve comfort for travellers and extend the service life of the rolling stock. Thanks to our expertise within both maintenance and refurbishment, we can also eliminate traffic safety deficiencies and maintenance problems so that future maintenance assignments are reduced.

Comfort-related refurbishment involves, among other

things, external design, internal surfaces and seating, sanitation areas, luggage storage and refreshment solutions. We also carry out customisation for disabled passengers and install information systems, HVAC systems and internet solutions, among other things.

In terms of technical refurbishments, we upgrade safety systems, brake systems and disabled facilities, as well as modify electricity, control and operating systems.

Refurbishment of electronic components and motors is carried out by our dedicated component workshops. When suitable, we carry out refurbishments at our conveniently-located workshops at times when the train is not in service.

EuroMaint Rail strengthens its customers' competitiveness via services and products that increase the availability, reliability and service life of rolling stock. The company offers qualified technical maintenance and refurbishment of rolling stock and its components.

The Head Office is located in Solna and the business operates at sites in Sweden, Germany, Belgium, Poland, the Netherlands and Latvia. The company has 2300 employees and a turnover of EUR 314 million. EuroMaint Rail is part of the EuroMaint Group, which is owned by Ratos, one of Europe's largest quoted holding companies.

