


Mantena



WE TAKE CARE OF YOUR ASSETS

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On the right track

As a specialist in the maintenance of railway vehicles, Mantena is continuing a long tradition of railway operations in Scandinavia. Today our expertise encompasses everything from the largest and heaviest locomotives to the smallest and most intricate components.

Mantena is characterised by its talented, dedicated employees who spend each and every day working to keep everything on the rails - literally. Our unique experience and knowledge of maintenance requirements and logistics management make us a critical partner for anyone operating in the rail sector.

Our clear ambition is to maintain our position as an innovative operator in a future-oriented industry. By continuously strengthening our expertise and improving our processes, we are contributing to further growth and development in the sector.

Strategic location, more easily available

Mantena is a state-owned limited company, based in Oslo, with a number of maintenance locations in Norway and Sweden. Swedish operations are managed through our subsidiary, Mantena Sverige AB, with a head office in Helsingborg.

All of our bases are situated in central locations on the railway network, which ensures efficient logistics and excellent accessibility. Our aim is to create more predictability and increased profitability in relation to our customers' production requirements and the utility value of rolling stock.

Business concept

Mantena will with skilful employees deliver competitive maintenance services. We will make an important contribution to the development of a sustainable and effective transportation system.

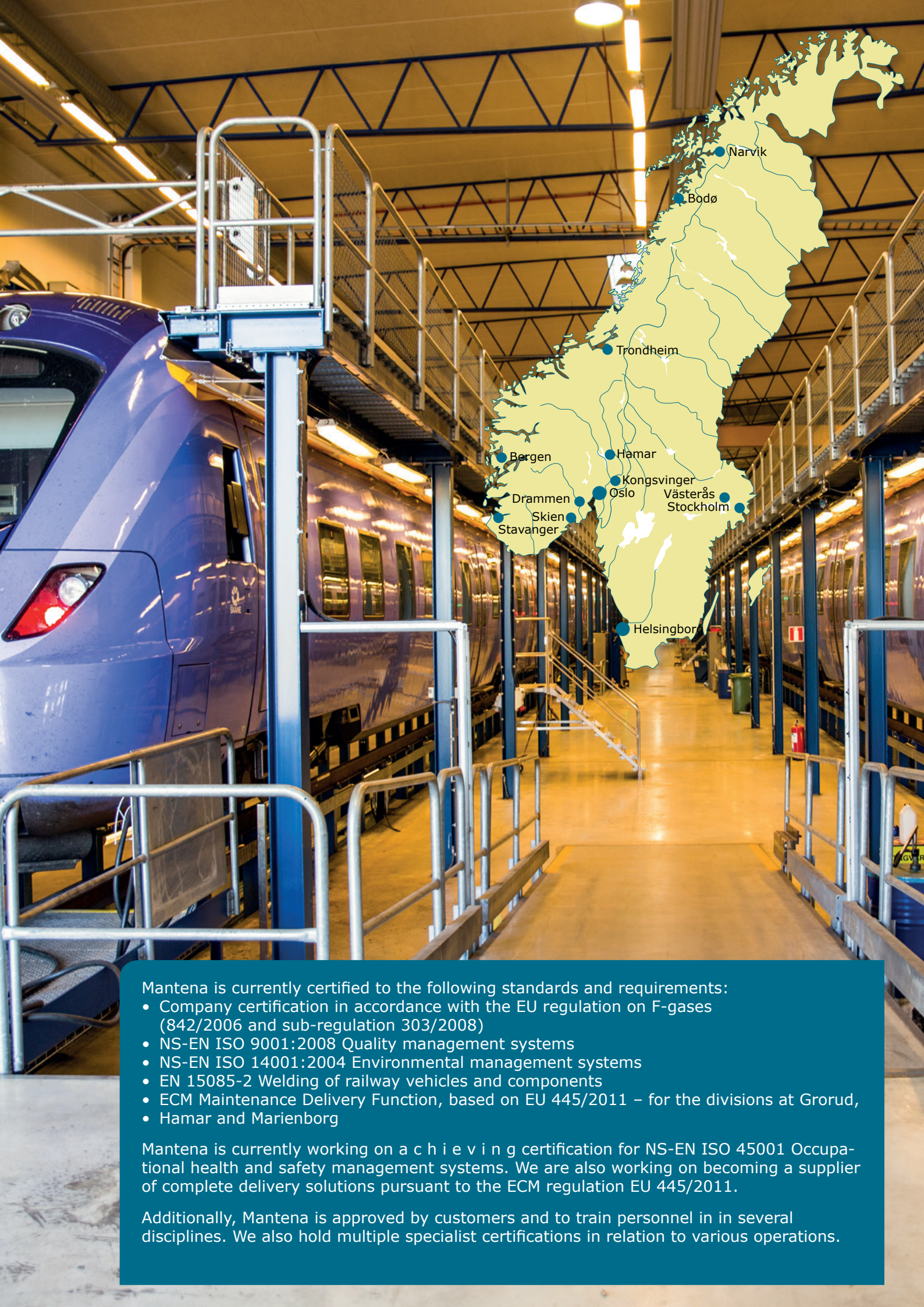
Certifications

At Mantena we work systematically to achieve our vision. We work continuously to adapt to a more open European railway system, and to ensure compliance with existing and new requirements, regulations and standards. Formal certifications are an important part of this work.

Vision

"To be the leading provider of maintenance services for rail vehicles in Europe."






Mantena is currently certified to the following standards and requirements:

- Company certification in accordance with the EU regulation on F-gases (842/2006 and sub-regulation 303/2008)
- NS-EN ISO 9001:2008 Quality management systems
- NS-EN ISO 14001:2004 Environmental management systems
- EN 15085-2 Welding of railway vehicles and components
- ECM Maintenance Delivery Function, based on EU 445/2011 – for the divisions at Grorud, Hamar and Marienborg

Mantena is currently working on achieving certification for NS-EN ISO 45001 Occupational health and safety management systems. We are also working on becoming a supplier of complete delivery solutions pursuant to the ECM regulation EU 445/2011.

Additionally, Mantena is approved by customers and to train personnel in in several disciplines. We also hold multiple specialist certifications in relation to various operations.

A photograph showing three men in a workshop or office environment. Two men are wearing bright yellow high-visibility safety vests over their clothing. They are standing and talking to a third man who is not wearing a vest. In the background, there are shelves with various items, a computer monitor, and a calendar on the wall. The scene is lit with overhead fluorescent lights.

Maintenance systematised

At Mantena, we possess exceptional knowledge about railway vehicles. We keep track of required preventative maintenance and which upgrades different types of rolling stock - while also exercising expertise in applicable standards and safety requirements set by both our customers and the authorities.

Mantena carries out all services necessary for state of the art maintenance. This means that rolling stock is maintained at the right time and in the correct manner - in line with technical specifications, according to approved documentation and with consideration of its operational context.

Our flexible M R O s o f t w a r e has significant capacity and a high degree of control over the vehicle fleet - from the assembled vehicle right down to a detailed component level. Furthermore, it can be easily s e t u p t o i n t e r f a c e with other systems for maintenance, production and finance.

The ability to be efficient and flexible is made possible the use of a combination of experience, smart methods and technology. Our h i g h l y s k i l l e d planners, engineers and skilled mechanics ensure that the right tasks are done p e r f o r m e d a t t h e r i g h t t i m e - and that they are performed in accordance with best practice and applicable requirements. In other words - maintenance is systematised.



Our services

- Maintenance of passenger trains
- Maintenance of goods trains
- Maintenance of components
- Maintenance of construction site machinery
- Rebuilding and modifications
- Other workshop services
- Technical services

Always on time

Passenger train operators set high standards for safety, comfort and not least punctuality. With excellent experience, state of the art systems and effective procedures for preventative maintenance,

Mantena helps to ensure that technical defects are controlled so that they do not interrupt the train is in operation. Mantena carries out all types of maintenance across the complete spectrum of passenger trains - from traditional railcars to modern high speed trains. This makes us an important contributor to the passenger rail sector.





OSM

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Services / expertise

- Line maintenance (1st line maintenance)
- Heavy maintenance
- Corrective maintenance
- Technical modifications

Vehicles / rolling stock

- Locomotives (electric / diesel)
- Railcars (DMU/EMU)
- Passenger cars
- Sleeping cars





www.gu.no

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Gudbrandsdalens Uldvarefabrik AS is a prize-winning and innovative manufacturer of design textiles. We guarantee flexibility, fast delivery and custom-made fabrics because we have the entire production process, from raw material to finished product, in our own mill. We can turn any idea, big or small, into a reality.

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Predictable = cost efficient

Just like today's passenger trains, modern goods transportation on the railway sets strict requirements in relation to safety and punctuality. This is why at Mantena we have an ongoing focus on maintenance systems that are based on being proactive.

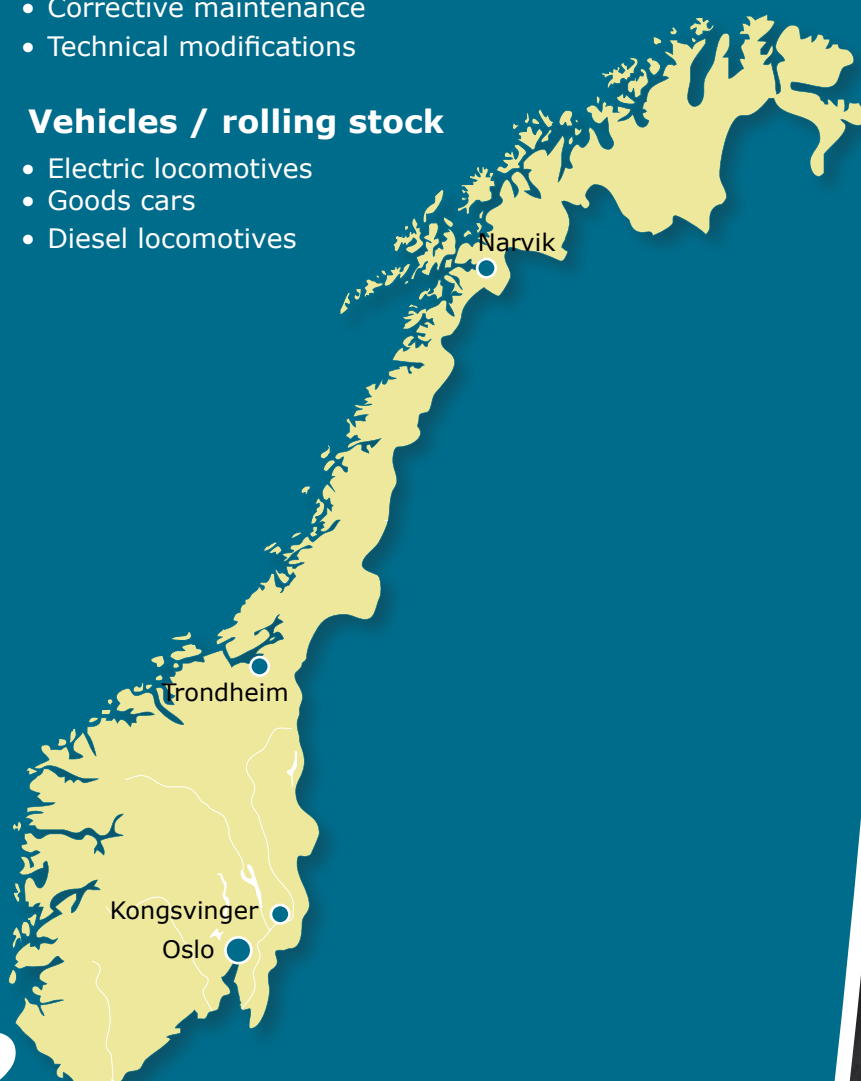
By rectifying potential faults and replacing worn parts during the vehicle's scheduled downtime, we limit the possibility of unforeseen downtime. This allows us to contribute to the goods companies' day-to-day predictability and therefore cost efficiency.

Services / expertise

- Line maintenance (1st line maintenance)
- Heavy maintenance
- Corrective maintenance
- Technical modifications

Vehicles / rolling stock

- Electric locomotives
- Goods cars
- Diesel locomotives







Vi gjør oppdrag for Mantena AS og er i videre utvikling med spesialtransport. Vi har en egen verksted avdeling på Mantena AS Grorud, der vi tar på oss små og store jobber.

Vi håper på godt samarbeid i fremtiden.

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Carbon Technology

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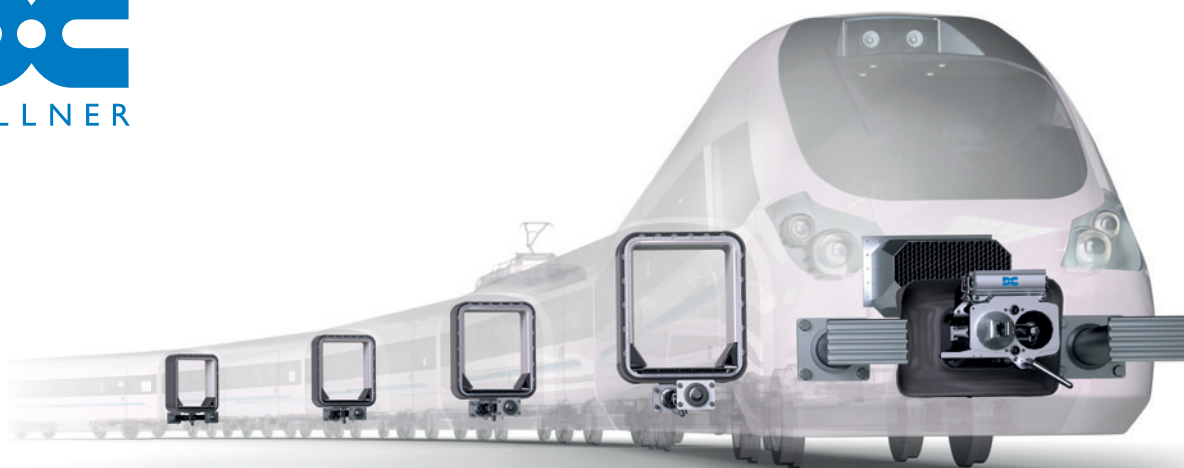


www.schunk.se | Phone +46 474 295 00



Schunk Carbon Technology has been developing and manufacturing top quality products for railway technology for more than 90 years. Schunk products such as carbon brushes, brush holders, brush rockers, earthing contacts, as well as carbon sliding strips, pantographs and third rail systems are used world-wide by reknown producers and operators of high speed trains, long-distance trains as well as trams and traction vehicles.

Schunk carbon sliding strips are used in AC-systems as well as in DC-systems. For increased operating security Schunk offers sliding strip designed with integrated carbon coated end horns or in fully carbon design with internal carrier (All carbon design). Constructions with rupture detector (ADD) contribute to active security.



Dellner is the world leading supplier of complete Train Connection Systems. We provide couplers, gangways, hatches, dampers and Crash Management Systems as well as global aftermarket services for the train manufactures and operators all over the world. The head office is located in Vika, outside Falun in Sweden. Dellner has sales and service organizations in 13 countries. The turnover is 100 MEUR with around 500 employees located across the globe.

WWW.DELLNER.COM



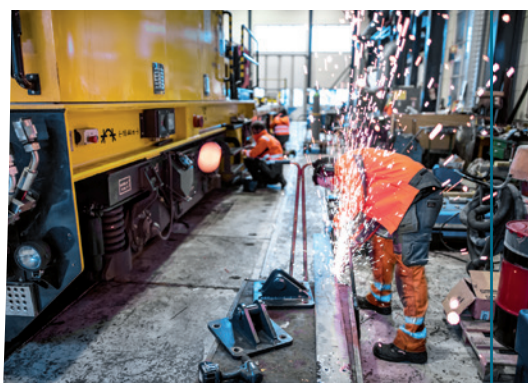
Unique expertise, diverse customers

Mantena has extensive experience in maintenance and modifications of various types of construction site machinery and work cars. We can also custom manufacture components and spare parts for such types of vehicles and equipment.

Our unique expertise in this area makes us an important partner for many operators in the market.

Services / expertise

- Maintenance of rail-based construction site machinery
- Modification and rebuilding of rail-based construction site machinery
- Production of components and spare parts
- Production and delivery of lightweight construction vehicles
- Design / installation and commissioning of ATC
- Delivery of electric and diesel driven shunting stock (Zephir)



An important part of the bigger picture

Mantena carries out repairs, modifications and maintenance on all types of components on various railway vehicles - from pneumatic and mechanical to electric and diesel-based.

With our highly qualified and skilled professionals, including high technology equipment, we are proud to offer a complete line of services for repair and overhaul of components.

Battery workshop

- Audits and repairs all types of alkaline batteries
- One of the few workshops in Norway with the necessary expertise
- Batteries for railway related operations
- High levels of expertise and delivery on time



MSX Ni-Cd battery Compact high power for railways

MSX delivers the high power capacity demanded for electrical system backup, including magnetic braking (tram-trains, tramways, EMUs and high speed trains), and for diesel engine starting (locomotives and DMUs).

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- High power performance, even at extreme temperatures
- Compact footprint, saving weight and space
- Minimal and simplified maintenance
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- Optimized life cycle costs





Services / expertise

Pneumatic

- Maintenance of valves and pneumatic components for all railway vehicles
- Maintenance and repair of compressors

Mechanical

- Maintenance, repair, overhaul and modifications wheels, bogies and shock absorbers
- Maintenance and overhaul of couplings
- Overhaul, service and maintenance of all types of gear boxes and ZF gear boxes
- Thermal spraying for rebuilding of worn down components
- Warm and cold pressing wheel discs

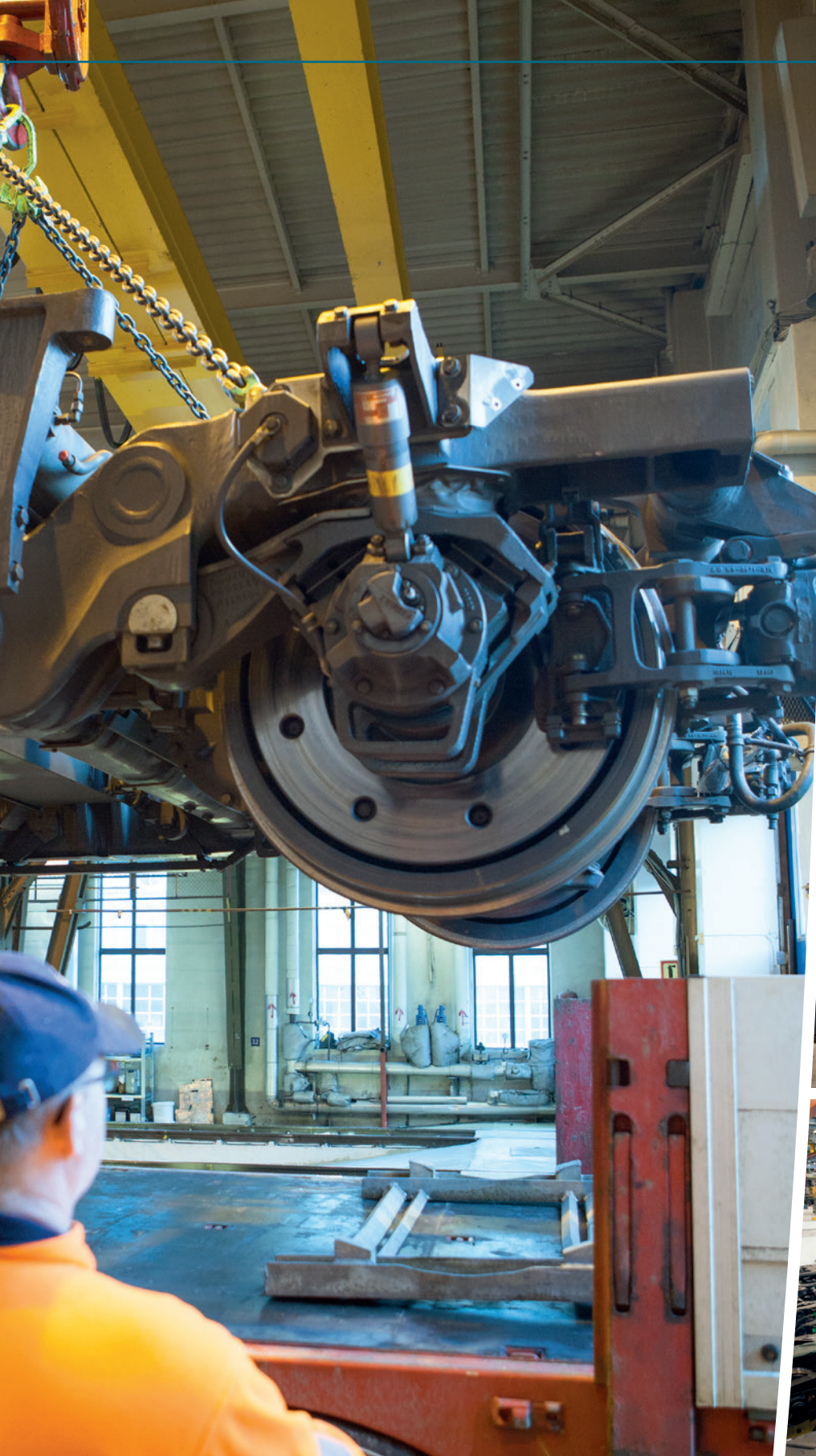
Electrical

- Maintenance, overhaul and repair of transformers, traction motors and motors
- Maintenance, overhaul and repair of pantographs, inverters and batteries
- Maintenance overhaul and repair of contact bridges for switch traction motors

Diesel

- Overhaul / repair of injectors / diesel nozzles
- Overhaul / repair of diesel pumps / regulators
- Test running on the bench with optimisation and analysis of diesel engines in relation to emissions and performance
- Overhaul and repair of diesel engines





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Lesjöfors produserer boggifjærer og fjærer for bremsesystem til de fleste boggiprodusenter i Europa. Stort utvalg av lagerførte industrifjærer og gassfjærer i Oslo.

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Slapp av.

FORCE Technology har sikret tilstanden, sånn at du kan tenke på noe annet.



FORCE Technology Norway AS har en betydelig kapasitet innenfor inspeksjon, og kan i tillegg hente både kapasitet og spisskompetanse fra søsterselskap i Sverige og morselskap i Danmark. I Norge har vi over 65 NDT- og sveiseinspektører lokalisert over hele landet.

Siden starten av år 2000 har FORCE Technology Norway vært en aktiv aktør innenfor inspeksjon/ kontroll av forskjellige typer rullende materiell som trikk, t-bane, lokomotiv, gultmateriell og flere typer togsett.

Vi utfører Nivå 3-tjenester og NDT-inspeksjon på boggi, akslinger, hjulbandasjer på lokomotiv, t-bane, tog og trikk. Vi har i tillegg utviklet ultralyd- og virvelstrømskanner for flere kunder innenfor rullende materiell.

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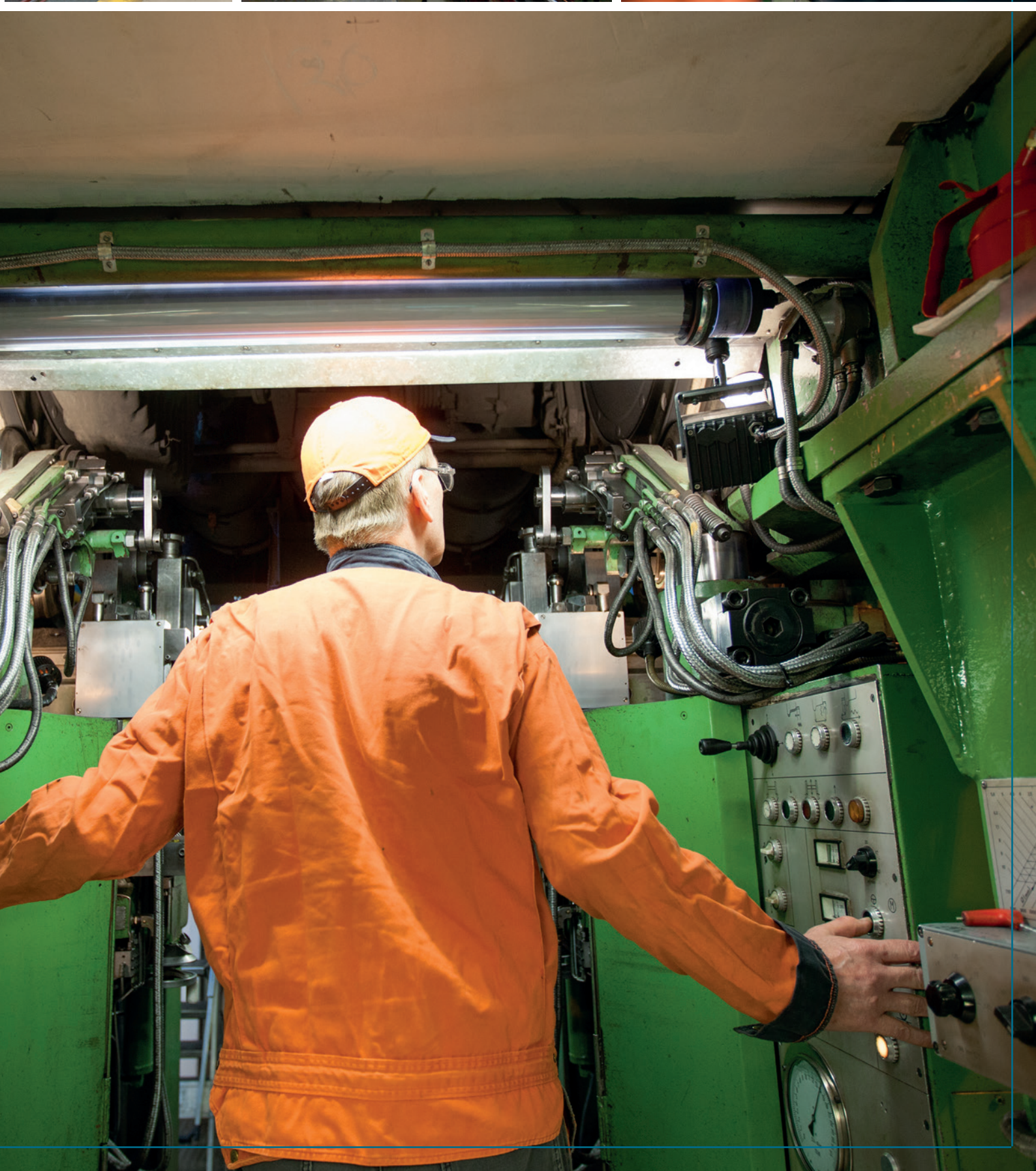
O.J. DAHL

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Effective Wheel turning

Located at our three maintenance sites in Oslo, Drammen and Trondheim we have modern and efficient subfloor lathes. The lathes make it possible to rapidly turn wheels as we run the rolling stock through the turning process without having to remove the wheels.





From repairs to modifications

Mantena has extensive experience in rebuilding, modifying and repairing damaged railway vehicles. These services are organised within a separate project department located at Grorud in Oslo, which has at its disposal customised facilities for this type of work.

The 7000 sqm workshop has 400 m of tracks - including 320 metres above pits - that allow us to carry out extensive complex work, as well as less complicated tasks, on passenger trains, trams, goods trains and infrastructure rolling stock. The project division department also cooperates closely with our component production division, who have expertise in power units and pneumatics.

The facilities include a 64 metre long paint shop, a sandblasting facility for vehicles of up to 30 metres, fully equipped carpentry shop, machinery for bending and cutting metal plates and a welding table. Mantena is one of the few workshops in Scandinavia that is certified for welding railway vehicles in accordance with EN 15085-2.

All work is carried out by highly qualified personnel, using various types of specialized equipment. We also have our own mobile repair team for smaller assignments in the areas of with regard to painting and mechanical and electrical modifications to minimize downtime and to increase flexibility for customers.

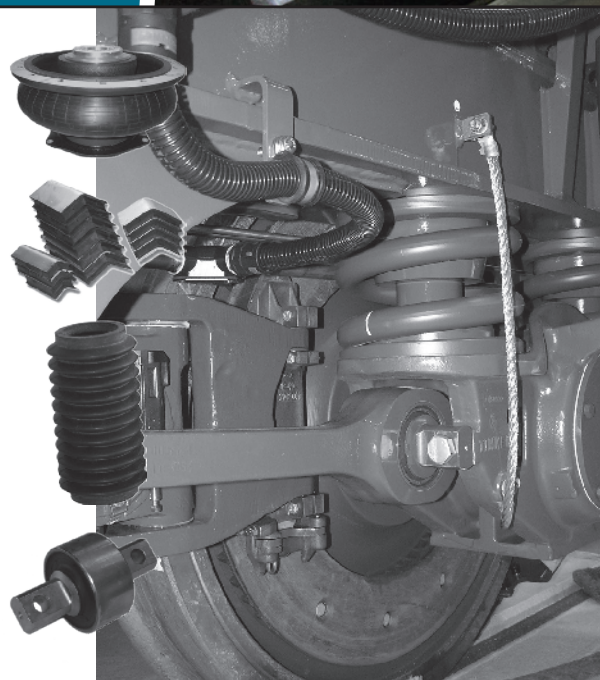


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Fra vårt store lager i Haslev sør for København, leverer vi daglig viktige deler til både primærfjæring og sekundærfjæring på skinnegående kjøretøy i hele Norden.

I tillegg leverer vi andre nødvendige deler til tog, som profiler til vinduer, snøbeskyttelse eller gjennomgangsbjelger. Ikke nøl med å kontakte oss før en planlagt revisjon eller ved akutte behov. Vi hjelper dere med stort og smått.

Vi lagerfører produkter fra GMT, Contitech SchwingMetall og MEGI samt Polyurethan Technik Wagenfeld.









Modern paint shop

Mantena has one of Northern Europe's biggest and most modern paint facilities.

Our paint shop is 64 metres long, and has capacity for large vehicles. We have at our disposal a separate area for fibreglass repairs and a separate paint box for smaller components.



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Foto: NSB / Ole Walter Jacobsen

På sporet av fremtiden

Tog er miljøvennlig. En jernbane med dobbeltspor kan frakte like mange passasjerer som to firefelts motorveier. Det gjør toget til fremtidens transportmiddel. For NSB er derfor den viktigste oppgaven å bidra til at flere kan reise med toget.

For å kunne møte den kraftige økningen i antall reisende, kjøper og moderniserer NSB nå tog for flere milliarder kroner. Økte investeringer gir økt kapasitet på både lokaltog og regiontog. Sammen med utbygging av ny infrastruktur i østlandsområdet og endringer i ruteplanen har tilbudet blitt betydelig bedre – med hyppige avganger og kortere reisetid. Kundene har svart med å strømme til toget.

nsb.no



Down to the smallest detail

Mantena has extensive experience with train maintenance and demanding technical challenges using state of the art methods to achieve the highest availability and reliability related to rail vehicles.

The technical department at Mantena is focused on improving the technical standard and the operational statistics for our customers. The department works closely with 1st line maintenance to find solutions tailored to each individual assignment - always to the benefit of the customer.

Technical expertise

- Drawing / constructional design
- Online Condition Monitoring
- Project management
- Technical analysis
- Troubleshooting (system errors)
- Technical inspection
- Documentation
- Technical reports / metrics
- Engineering of technical solutions / modifications
- Replacement components
- Maintenance programme development
- Maintenance plans optimization

Engineering expertise

- Power electronics / electrical engineering
- Cybernetics
- Mechanical
- Mechanical engineering
- Pneumatic



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Only the best is good enough

Mantena works in a market with increasingly stringent safety and quality requirements. In order to be the leading provider of maintenance services for of railway vehicles in Europe, we strive to do things right the first time and we work continuously to improve our work.

In order to avoid injuries to people and damage to rolling stock, effective tools for safety and risk management are used. With the aid of well established processes, risk areas are identified, incidents evaluated, and preventative and corrective measures implemented.

Mantena has established and implemented a processorient-ed management system by which the requirements of customers, the authorities and ourselves are all taken into account. We also have process improvement teams to ensure that at all times we are using best practices across the company.

C o n t i n u o u s improvements are a part of our daily practices. Management and control of our processes is crucial to ensure compliance with customer demands. Mantena works in accordance with LEAN - a philosophy that aims to do more with less, in order to increase added value for the customer.





Mantena is certified according to NS-EN ISO 9001 and authorised by customers to carry out maintenance on railway vehicles and related components.



Mantena is certified according to NS-EN ISO 14001. Assessments of the company's environmental initiatives and significant environmental aspects are carried out annually.

A red passenger train is traveling through a vast, open landscape. The train consists of several red passenger cars and a red locomotive. The landscape is a mix of green and brown vegetation, with a body of water in the foreground. In the background, there are large, rocky mountains with patches of snow. The sky is a deep blue.

We are aware of our responsibilities!

The market is setting increasingly stringent environment requirements, and trains are a climate-friendly mode of transportation for both goods and passengers. As a key supplier of maintenance services in Europe, Mantena aims to cause no harm to the external environment.

Mantena considers environmental awareness and energy saving in all areas to be key goals. We have implemented a range of initiatives - in relation to energy saving, the use of chemicals, waste management, in addition to environmental training for our employees.

There are several major railway lines that are not yet electrified and where diesel rolling stock continue to be used. Mantena has a high level of expertise and some of the best equipment available for the fine calibration of diesel locomotives - both in terms of fuel consumption and emissions.

The environment is at the heart of the modern railway. This is why at Mantena we are always striving to improve ourselves with this in mind. Through thoroughly surveying the environmental aspects of our operations, we form the basis for our continuous work in this area.

The railway is the future

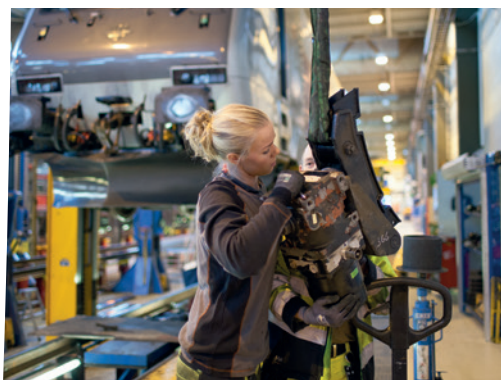
In an era when greater attention is being paid to the environment, trains as a form of transportation are becoming increasingly more important. Combined with the fact that the railway is becoming ever more technologically advanced, this means Mantena requires a constant addition of incoming, fresh expertise.

Our knowledge and experience in maintenance of railway vehicles has created a unique competence comparatively speaking - both in Norway and internationally. In order to maintain our position in the years to come, we have a continuous focus on recruitment of talented professionals.

The employment of apprentices is a natural element of our recruitment policy. Several of our employees in leading roles have come through our ranks. If you have the right competence, desire and ambition, then Mantena may be the right employer for you!

Mantena provides interesting, challenging assignments in a future-oriented field. We offer great opportunities for development both professionally and personally in close collaboration with customers and colleagues.

If you would like to become an apprentice at Mantena, register at vigo.no







Mantena

Mantena AS

Karl Johans gate 2
0154 Oslo

E-post: salg@mantena.no
post@mantena.no

www.mantena.no

Mantena Sverige AB

Lokmansgatan 10
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Tel: +46 42 44 22 120

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