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Dynamic
Efficiency
Performance
Power
Perfection
Innovation
Reliability
Know-how
Economy
High-Tech
Fascination
Solutions

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The performance principle.
MAN Engines & Components.

MAN Truck & Bus
A member of the MAN Group

MAN Engines
A Division of MAN Truck & Bus





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HIGH-TECH, PRODUCED IN SERIES



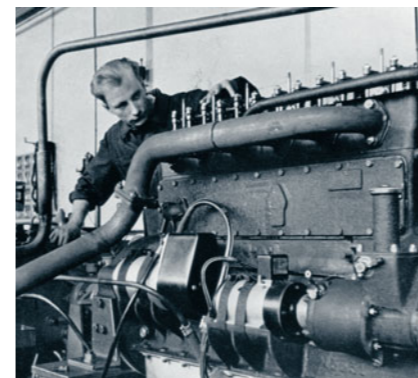
“PERFORMANCE HAS BEEN OUR PASSION SINCE RUDOLF DIESEL’S TIME.”

→ It all began with Rudolf Diesel’s discovery. The diesel engine which he developed at Maschinenfabrik Augsburg between 1893 and 1897 brought with it a new era of mobility and also marked the foundation stone for the MAN Group. In order to capitalise on the opportunities presented by this new engine technology, Maschinenfabrik Augsburg and Maschinenbau-Actien-Gesellschaft Nürnberg merged in 1898 to form Maschinenfabrik Augsburg-Nürnberg, or MAN for short. The first engine was built that same year in Nuremberg, and sold to America.

OVER 100 YEARS OF EXPERIENCE



It was in the year 1915 that MAN really got its show on the road. The Nuremberg factory began to manufacture MAN trucks in 1916. Just one year later, they created the world’s first large-scale diesel engine, a two-stroke, six-cylinder unit developing 12,000 horsepower. MAN then established another important milestone when it developed direct diesel injection in 1924 – a sensation at the time. Trucks began to roll off the production line again at the Nuremberg factory soon after the Second World War, followed quickly by buses. The first German truck to feature an exhaust gas turbocharger was on the road by 1951 – another innovation from MAN’s engineers. When the MAN Group was re-structured in 1955, its factories in Munich and Salzgitter took over the production of vehicles. The Nuremberg factory then focused solely on the development and production of engines, becoming MAN’s centre of expertise.



Innovation by the truckload

This Nuremberg driving force produced a continuous spate of technical innovations: intercooling in turbo engines (1979), the introduction of high-pressure injection (1987), four-valve technology (1997) and common-rail technology (2004) are among the highlights. A production record of more than 120,000 engines a year demonstrates the competence and performance of the MAN team. More than 4,300 employees in the international centre for engine expertise are currently behind the company’s world-renowned MAN Power.





→ MAN's Nuremberg factory is the world's sole centre of expertise for the MAN Truck & Bus Group's entire engine-building activities. It is there that they develop and produce the diesel and gas engines which are the driving force in MAN and Neoplan commercial vehicles, keeping them at the forefront of global progress. But our seal of quality – Powered by MAN – is also valued by clients in many other industries.

**“PERFORMANCE IS A
POWERFUL PRINCIPLE.”**

MAN ENGINES & COMPONENTS

Streets ahead

Man Engines is one of the strategic business areas of MAN Truck & Bus AG, which in turn is one of the world's leading suppliers of commercial vehicles and complete transport solutions. Quality, innovative technology and consistent customer orientation are the foundation of MAN's success, by which it has set standards in all the relevant market segments.

MAN's base in Nuremberg is a unique centre of expertise for engines because it gathers together all of our technical knowledge in one place, from engine development and construction, to production and sales, to after-sales.

Driving force

Powerful, dynamic, efficient, environmentally sound – our engines are the driving force behind not only MAN commercial vehicles. Customers all over the world benefit from MAN's enormous expertise, utilising the benefits of the diesel and gas engines that come out of Nuremberg. Our engines are put to work in road and rail vehicles, yachts and commercial vessels, generators and cogeneration units, construction and agricultural machinery. With them come impressive performance, efficient fuel consumption and almost legendary reliability – top-level achievements that belong to every one of our engines. MAN's innovative components also boast the utmost quality and efficiency: driven and non-driven axles that give vehicles a genuine head start.





OUR SERVICE IS ALSO HIGH-POWERED

MAN Technology & Installation Consulting

MAN Technology & Installation Consulting
MAN's experts are there to assist you with advice and action. Expert technical advice in the planning phase guarantees that the engine and its system environment are perfectly matched, and that all of the components work well together. With their technical knowledge, MAN's specialists can help ensure that the units are installed properly.

MAN Service

MAN is there for you always and everywhere. More than 1,200 service points in Europe alone provide qualified advice as well as fast, competent maintenance and repair services. Our Mobile24 mobility service is available 365 days a year for commercial vehicles. Additional contract partners secure our global service presence in the areas of On-Road, Off-Road, Power and Marine.

MAN Parts Management

Our centralised MAN spare parts facility ensures that our service points are supplied quickly and reliably. MAN genuine parts can be made available particularly quickly when required.

MAN Repowering

MAN offers a special service known as Repowering, which fits the latest drive units into older vehicles, ships and mobile machinery, bringing them up to par with the latest engine technology and in line with the lowest possible emission figures.

MAN Engine Academy

Anyone who attends the MAN Engine Academy at Nuremberg can expect to gain true first-hand knowledge of engines. Modern facilities for the practical training of service technicians and customers extend over an area of approximately 1,100 square metres. One of the highlights is our innovative training test bed, on which two engines can run under realistic conditions. Customers can choose modules that build on the basis of our standard training courses.

“PERFORMANCE MEANS BEING THERE FOR OUR CUSTOMERS.”

→ Good service forms the basis of good partnerships. If you rely on the power of a MAN engine, you can also depend on our expertise. Either there will be a MAN service point near you, or a qualified local partner agency will be able to assist you. Advice, maintenance or repair: we will be there for you.





“PERFORMANCE PROMOTES MOBILITY.”

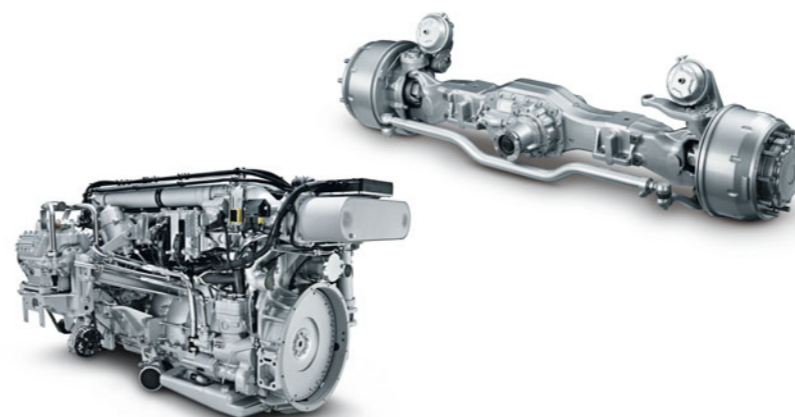
→ Buses mean mobility for all. City buses bring children to school, workers to work, fans to their stadiums and music-lovers to the opera. Coaches bring us to other cities and countries, and drive us on weekends away in the country. But wherever your journey takes you, as a system supplier of engines and axles, we provide drive solutions that can be the driving force behind any bus, while our comprehensive engineering knowledge and qualified installation consulting are sure to make the journey a good one.



ENGINES FOR EVERY KIND OF BUS AND COACH.

City, country or long-distance: wherever buses go they are currently among the most comfortable and safest means of getting around – and among the most environmentally friendly. MAN offers powerful, efficient four- and six-cylinder diesel engines for buses and coaches of every type, ranging from 132 kW (180 hp) to 371 kW (505 hp), fulfilling standards

up to Euro 6. For extra cleanliness, there are also our six-cylinder gas engines ranging from 180 kW (245 hp) to 228 kW (310 hp). Our new EGC4 engine control system and evolved catalytic converter technology help these engines to achieve Euro 6 exhaust emission levels.



On the road

Smoothing your way: MAN axles combine innovative technology with uncompromising quality and outstanding technical performance. Our range includes planetary and hypoid axles, leading and trailing axles, tandem axle units, and centre axles for articulated buses.



“PERFORMANCE BEARS A RICH HARVEST.”

→ Alongside traditional agricultural products, the cultivation of plants used for eco-friendly fuels and for the generation of heat and energy is becoming evermore important. To tackle all of the various tasks involved, modern machinery is being developed which is capable of remarkable things. MAN engines have the power and stamina required.



ENGINES FOR AGRICULTURAL AND ENVIRONMENTAL EQUIPMENT

Tractors, harvesters and choppers: all of them work to harvest the fruits of farm labour. The applications involved in field, woodland and meadow range from forestry equipment all the way to recycling machines. MAN's compact, robust and highly reliable diesel engines are the perfect means of driving

such vehicles and machinery. With a power spectrum from 110 kW (150 hp) to 882 kW (1,200 hp) and 4.6 litres to 24.2 litres of displacement, they can provide the answers whenever action is required.





**“PERFORMANCE TO
BUILD UPON.”**

→ From sea level to mountain-top, high-performance modern machinery has to deal with many pressures everywhere to meet the ever-growing challenges involved in building spectacular, ground-breaking new structures amid difficult conditions.



ENGINES FOR CONSTRUCTION AND SPECIAL MACHINERY.

People build their future. Buildings are erected, goods flows are directed and every day there are new ideas to be put into practice. Coping with all these tasks requires highly specialised machines. MAN diesel engines drive progress on building sites,

in ports and in the mountains. Four-, six-, eight- and twelve-cylinder engines with capacities ranging from 4.6 to 24.2 litres deliver the power and reliability that construction and special machinery requires. Anyone who builds will find a firm foundation in MAN.





**“PERFORMANCE LAYS
DOWN THE TRACKS FOR
THE FUTURE.”**

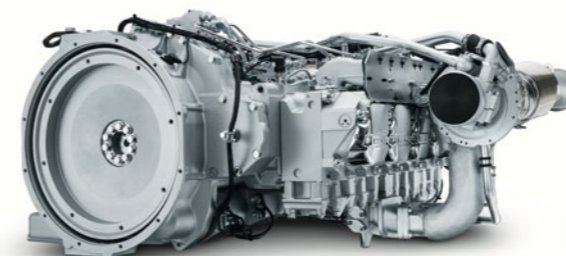
→ Travelling by train is comfortable and enjoyable. You can watch the landscape go by, read a paper, listen to music, browse documents or surf the Internet. When you arrive you're relaxed, you've made good use of your time, you've avoided traffic jams, and you've been kind to the environment. Trains, in other words, are streets ahead.



ENGINES FOR RAIL VEHICLES

MAN engines developed specially for railway use are built with one destination in mind: the future. These powerful diesel engines for locomotives, motor coaches, maintenance vehicles and working machinery boast long service intervals and enormous durability. They deliver power while sipping frugally on fuel, bringing remarkable efficiency to the tracks.

With power outputs ranging up to 735 kW (1,000 hp), these compact six-cylinder in-line engines and V12 engines deliver first-class tractive performance.





**“PERFORMANCE
MEANS MORE
COMFORT.”**

→ Press a switch and the lights go on, turn up the thermostat and things get nice and warm: nowadays we take a reliable power supply for granted. Securing our energy future will require efficient solutions that protect our valuable resources and reduce emissions.



ENGINES FOR GENERATING ELECTRICITY

An electrifying performance – MAN engines for generators and cogeneration units truly are power packs in their own right. They respond quickly to load changes, cope perfectly with emergency power, peak load and long-term operation, and demonstrate power and stamina in cogeneration plants. There are MAN diesel engines designed for

use in power and emergency current generators – keeping the lights working when things get dark. With powers ranging from 270 kW (300 kVA) to 1,117 kW (1,250 kVA) they are capable of taking up loads quickly in emergency power operation and running for long periods at peak load.



Cogeneration in thermal power plants is becoming increasingly widespread as a highly ecological means of generating power and heat. One reason for this is that MAN's low-emission gas engines, powered by biogas and natural gas, achieve outstanding efficiency levels at outputs ranging from 37 to 550 kW.



**“PERFORMANCE GIVES
POWER ITS BEAUTY.”**

→ Seventy-one per cent of the earth’s surface is water, which is reason enough to enjoy life on the ocean. And you certainly will on a yacht with a MAN diesel engine below deck, since the experience of freedom and adventure at sea is then coupled with the fascination of extraordinary technology in the engine compartment.



ENGINES FOR LUXURY YACHTS

Straight six-cylinder or V8/V12, with their innovative and dependable technology, MAN yacht engines open up new dimensions on the water. They develop enormous torque even at low revs – the kind of power you feel as a tingling down the spine. Breathtaking acceleration and high speeds are experiences to be savoured, yet our compact, lightweight power units are decidedly modest when it comes to fuel consumption.



They also impress in terms of comfort, with pleasantly quiet noise levels and highly cultivated running characteristics. Last but not least, MAN diesel engines are exemplary in environmental terms, meeting all of the world’s major exhaust regulations.

With powers ranging from 730 to 1,800 hp, MAN yacht engines are Europe’s number one.



“PERFORMANCE KEEPS THINGS NICELY ON COURSE.”

→ Passenger vessels plying rivers and lakes, barges transporting valuable goods, dredgers digging channels, fishing boats fishing, rescue and patrol boats providing safety on the waves – the types of working ship are many, but all of them require a reliable driving force.

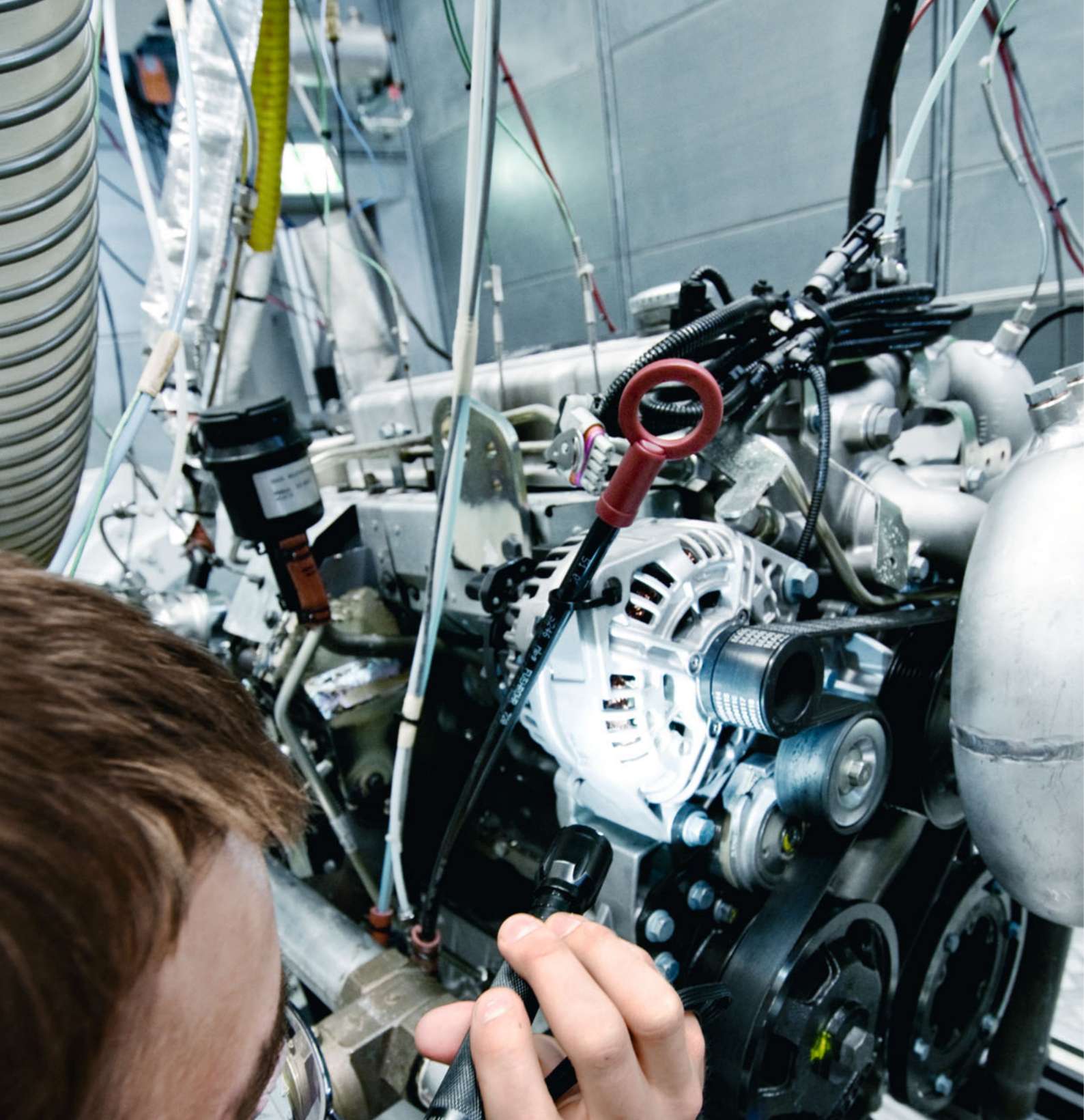


ENGINES FOR WORKING VESSELS.

They must be strong, robust and economical: high-efficiency engines are exactly the right source of power for working boats, deployment vessels and passenger ships, all of which are used come rain or shine. MAN's reliable ship engines, with powers ranging from 190 kW (258 hp) to 1,213 kW (1,650 hp), develop considerable thrust, yet are highly efficient and fulfil all the major exhaust standards and classification guidelines worldwide.



Our six-, ten- and twelve-cylinder diesel engines, with powers ranging from 190 kW (258 hp) to 653 kW (888 hp), provide dependable and economical power generation on board and in emergency and port facilities. Their compact design and low weight mean you can save space when installing them.



THE FUTURE HAS YET TO BE INVENTED

Development centre

In order to keep building upon its position as a technology leader in engine construction, and in order to surmount future challenges even more efficiently, MAN has extended its development facilities in Nuremberg by opening another new development centre covering an area of 10,000 square metres and incorporating 16 engine test beds, one vehicle test bed, development laboratories and workrooms for 150 highly qualified technicians.

Passing with flying colours

The dynamic engine test beds form the heart of the test centre and enable our engineers to simulate real-life driving situations, thus moving test drives off the roads and onto the test bed. One of the centre's special features is its vehicle test bed with a 640 kW power rating, on which engine designs can be optimised in conjunction with the vehicle as a whole to extract maximum efficiency from whole drive trains.

On-site ecology

Sustainability is essential to MAN. The brake energy produced on the engine test beds is fed back into the site's internal electricity network, and the heat generated by the engines is used by absorption coolers for cooling purposes. The building's technical systems incorporate triple energy recycling in the form of electricity, heat and refrigeration, making a major contribution to the protection of resources.

Cold tests without diesel

Just three minutes to test an engine to the utmost. What is unusual about our innovative cold-test process is that the engine does not have to be started at all, but instead is pulled by an electric motor. This saves a million litres of diesel each year and 3,000 tons of CO₂ – which is good for the climate, and good for resources.

→ The engine developers at MAN have one key objective: while keeping performance the same or improving it, they aim to reduce consumption, reduce emissions and protect resources. MAN has always conducted intensive research and development work to play a leading role in the ongoing improvement of diesel and gas engine efficiency. Our highly developed Euro 6 technology for trucks and buses is yet more proof of this.

“PERFORMANCE NEVER RESTS ON IT LAURELS.”





EVERY ENGINE A TRUE MASTERPIECE