Truck World

A Bosch magazine
for the aftermarket
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Invented for life

BOSCH

Dear truck fans,

the developments towards new drive systems and software-defined mobility in the commercial-vehicle and transportation industry are driven by innovative technologies. This applies to both workshop solutions and original equipment. Whether diesel, electric, fuel cell, or hybrid drive systems, commercial vehicles need to be maintained and repaired.

New solutions at the IAA
The IAA Transportation is one of the most important platforms for global information exchange on commercial-vehicle topics. This year, Bosch once again showcased a range of innovations for the commercial-vehicle sector. In addition to solutions concerning altenative drive systems, this year's focus was on connectivity and digital service offerings.

Enjoy reading and have a great journey into a connected workshop future!

Your Commercial Vehicle Team

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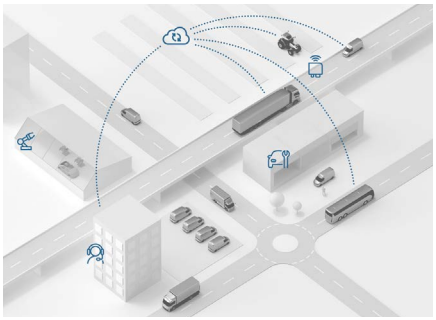
Innovations for commercial vehicles

Bosch presents new technologies at the 2024 IAA Transportation

A global economy without freight transport? Impossible – and commercial vehicles play a crucial role in keeping it moving. However, a major transformation is currently taking place in this sector. Much like the passenger-car sector, it's shifting from hardware- to software-defined vehicles. Bosch contributes to this evolution providing both hardware and software products, tailored solutions, and smart services. These innovations provide technological support for truck manufacturers, commercial-vehicle workshops, fleet operators, and logistics providers as they move into the future. Here's a selection of innovations for the freight transport of tomorrow that Bosch showcased at IAA Transportation.

Automotive connectivity hub
Fleet operators and vehicle manufacturers can improve the efficiency of their vehicles by using digital services – as long as they are connected. Bosch automotive connectivity hub offers an independent and standardized platform for the connectivity of vehicles of different brands. This system can be installed as a



Automotive connectivity hub: cloud-managed digital services

retrofit solution without need for modifications to the vehicle itself. Data collected from the vehicle is pre-processed by the CCU (connectivity control unit) and then transmitted to the cloud via mobile networks, where intelligent algorithms process the data. This processed information is then available in a standardized and harmonized form for use in data-driven services. The CCU device management is also cloud-operated. This allows for over-the-air status monitoring, feature updates, and security upgrades. In this manner, the CCU remains up to date – even while on the road.

Optimized fuel consumption using the Retrofit efficiency module

Retrofit efficiency module

The fuel consumption of their commercial-vehicle fleet makes up about one third of the total operating costs of logistics providers. Accordingly, haulage companies strive for making vehicle operation more economical. Bosch thus developed the retrofit efficiency module, a retrofit solution that intelligently regulates vehicle speed in real time without need for driver intervention. Unlike cruise control, the system dynamically adjusts the speed based on current conditions, selecting the optimum speed at any given moment. This results in average fuel savings of 4 %.

More efficient fleet management using Bosch vehicle health services

Vehicle health services

With Bosch vehicle health services, mobility and logistics service providers have a range of solutions to transport customers and goods more reliably and efficiently. Based on diagnostic data from the vehicle, the cloud diagnostics and predictive diagnostics services, for instance, offer real-time assessments of the vehicles‘ state of health, optimizing fleet availability and reliability. They facilitate not only the time- and cost-optimized planning and execution of maintenance tasks, but also the prevention of costly breakdowns. The digital vehicle health services by Bosch enable mobility and logistics service providers to make more informed and faster decisions in the event of problems. Fleet operators can thus maximize their fleet performance.

Electrohydraulic steering system for automated driving up to SAE level 4

Servotwin (4th generation)

Servotwin steering systems combine hydraulic Servocom steering systems with electric servo units and software. This allows the use of steering assistance, driver assistance and automated driving functions. Combined with a lane-departure warning system, for instance, this reduces the risk of accidents and thus contributing to road safety.

EPSapa highload with more rack power

EPSapa highload

The EPSapa (electric power steering with parallel-axle servo unit) enhances vehicle steering by means of a new, modular generation of the steering control unit (comprising both the control unit and electric motor). It provides a precise and comfortable steering feel while allowing additional safety in case of faults. On the steering market, the new highload version stands out for its particularly high rack force. Being exceptionally robust, the EPSapa highload is designed for driving on asphalt, gravel or rough terrain, making it particularly suitable for heavy SUVs, vans, and off-road pick-ups.

IAA Transportation

Scan the QR code to read more about Bosch at the IAA Transportation.

Diesel workshop business still attractive

Ongoing growth of diesel truck and OHW segment

Despite the ongoing mobility trends towards new powertrain solutions, the diesel aftermarket will continue being an attractive business – particularly concerning the truck and off-highway segments with clear growth and long-term potential. At the following interview, Volker Eberlein, Vice President Diesel Aftermarket Business at Bosch, discusses current developments at the diesel workshop sector.

Mr. Eberlein, how are current mobility trends affecting the diesel workshop business?
VE: Around the world, we are witnessing changes – particularly with regard to electrification. At the same time, diesel systems still play an important role on all markets. As one of the global leaders in diesel fuel injection technology, Bosch offers systems for a wide range of vehicles. This includes passenger cars, light and heavy commercial vehicles, off-highway vehicles (OHW), industrial applications, as well as marine and large engines. While the electrification trend is accelerating with regard to passenger cars, growth is primarily driven by the commercial-vehicle and off-highway markets. Here, the use of diesel injection technology is currently increasing on a global scale. Accordingly, the prospects for high demand for workshop services remain good.

How does Bosch provide support?
VE: Bosch is heavily investing into new technologies and powertrains, but clearly continues being a long-term and reliable partner for diesel technologies. At the workshop market, the focus is on continuously delivering outstanding solutions for various segments, which we achieve through a comprehensive parts, diagnostics and workshop services approach. This is supported by our broad product portfolio, which consists of new parts, exchange parts, and spare parts for component repair. We are also investing in the development and provision of advanced diagnostic equipment and tools. Additionally, we offer continuous support for the Bosch Diesel Network, including training, test equipment services, as well as consulting in marketing and technology for diesel specialists. In this way, Bosch supports the entire product and vehicle lifecycle with economical solutions.

Volker Eberlein Vice President Diesel Aftermarket Business

How are workshops adapting to this development?
VE: First of all, it is important to recognize the long-term attractiveness of the diesel workshop business. Despite changes concerning the passenger car segment, there are growth opportunities with commercial and off-highway vehicles, particularly concerning sophisticated technologies such as common-rail systems. Customer needs in these segments include high quality standards, fast processing and competent support. Therefore, it is important to have a reliable partner with a broad portfolio by the side, in order to be able to comprehensively meet these requirements.

Bosch remains being such a reliable partner in the diesel sector, pursuing a long-term approach with a strong focus on customers and partners in the aftermarket business.

Clear! Bosch commercial-vehicle wiper blades

Equipped for all weather conditions – with high-quality Bosch wiper blades

Wiper blades for professional use must deliver outstanding wiping performance under all weather conditions. They need to wipe quietly and last as long as possible. The requirements placed on truck wipers are particularly complex as they are subject to heavy strains throughout the year. As a solution, Bosch developed a comprehensive truck wiper program with two different technologies and a high vehicle coverage.

Bosch Aerotwin flat wiper blades deliver outstanding performance even under extreme weather conditions. They are equipped with Power Protection Plus wiper rubber technology and with a preassembled adapter for a variety of commercial vehicles. They produce only minimum wiping noise and provide a long service life – even in extreme heat or cold.

Bosch Twin conventional wiper blades ensure effective, quiet windshield cleaning throughout their long service life. These wiper blades feature a wiper rubber made of two natural rubber materials with a smooth graphite coating and a preassembled Quick-Clip adapter, enabling compatibility with a wide range of commercial vehicles. Their wiper rubber with smooth-glide coating, robust and resilient full-metal frame with dual corrosion protection, and especially robust end caps make them an outstanding solution within the Bosch range.

Commercial-vehicle wiper blades: Bosch Twin and Bosch Aerotwin

Testing the wiping performance
To ensure very good wiping performance, Bosch wipers are subject to strict performance and durability tests. Here, they must prove their resistance to environmental factors such as UV radiation, high temperatures, and salt mist. In addition to freeze tests at -20°C, the wipers pass endurance tests simulating 500,000 wiping cycles. Moreover, specialized tests assess their mechanical strength and resistance to chemicals. The objective is well defined: Bosch wiper blades have to meet high quality standards to provide truckers with clear vision and safety on the road.

boschwiperblades.com
The new website, optimized for mobile devices, provides support with videos, tips and tricks as well as detailed product pages on all aspects of wiper blades.

Workshop professionals rely on Bosch wiper blades

HCR 100: new Bosch high-current relay for trucks

Bosch HCR 100 high-current relay

As electromagnetic switches, relays convert low current in vehicles into high working current, thus enabling the functionality of lamps and electrical components. Bosch relays reliably execute switching operations – both in mobile and stationary applications. The comprehensive range includes 12 V and 24 V relays of various sizes for almost any application. Manufactured with precision and made from high-quality materials, Bosch relays last for up to 250,000 switching cycles, ensuring particularly long service lives. Designed for ambient temperatures reaching from -40 °C to up to +100 °C, they also stand out for their high robustness. With over 40 years of development experience, Bosch is a competent and reliable partner for all inquiries related to relay applications. Continuous further development of the whole range ensures state-of-the-art technology at all times.

HCR 100 for industry, transportation and agricultural applications

The HCR 100 has now been added to the Bosch range of high-current relays. The 100 A relay supports control units, glow plugs, windshield heaters, preheating systems, loading ramp switches, and start/stop systems. Available for both 12 V and 24 V systems, the HCR 100 resists heat, water, and vibrations, while featuring an IP54 dust protection rating.

Bosch relays

Bosch relays switch high voltages in commercial vehicles – electromagnetically, safely and reliably.

Bosch fuses

As protective switches for electrical voltages in commercial vehicles, Bosch also offers a wide range of fuses.

HCR 100: long service life

Thanks to their high rated switching current of up to 100 A, HCR 100 relays are not only particularly powerful, they are also built to last: Their robustness and the use of high-quality materials contribute to both durability and reliability (see specifications table).

Bosch HCR 100 and Bosch LR 75: comparison of the electrical service lives of 24 V relays

Relays	Load current	On/off	Switching cycles	DC at 85 °C	Coil voltage	Short-term capacity
LR 75	50 A	2 sec/2 sec	>50,000	30 A	27 V	150 A/1 sec/1 cycle
LR 75	75 A	1 sec/45 sec	>20,000	30 A	27 V	150 A/1 sec/1 cycle
HCR 100	100 A	1 sec/4 sec	>100,000 (75 A)	100 A	28 V	600 A/1 sec/1 cycle

BAT 191: modern battery tester for trucks

New Bosch battery tester checks batteries of tractor units, boats and much more

BAT 191 battery tester

New generations of commercial vehicles are equipped with ever more sophisticated electrical and electronic systems. They gradually replace mechanical and hydraulic components. This enhances the driving comfort at the "workplace" on the steering wheel. As a result, workshops are challenged to improve their battery service capabilities. Flexibility is crucial when checking battery conditions. The new BAT 191 battery tester easily and quickly tests starter batteries, alternators, and even starters. Additionally, it measures the internal resistance – for example in battery connections.

Battery tests are a key step of repairs on commercial and OHW vehicles.

BAT 191 with a wide range of testing options

Modern workshop equipment needs to be space-saving and powerful. Weighing only 240 grams, the BAT 191 is versatile and capable of testing 6 V, 12 V, and 24 V starter batteries. It is equally suitable for lead-acid, EFB, gel, AGM and $LiFePO_4$ batteries – and even for Harley-Davidson motorcycle batteries. With multiple programmed test routines, the BAT 191 delivers quick, precise, and reliable results. Particularly for commercial vehicles, this includes the practical function of testing two 12 V batteries connected in series – without having to disconnect the setup beforehand. It also features an optimized test algorithm to test brand-new, unused and stored batteries. The BAT 191 can store up to 100 test results. Its USB port can be used to share these test results and carry out software updates. In 2025, Bosch Connected Repair will further enhance the flexibility of the BAT 191 by connecting it with other Bosch workshop equipment. For more flexibility, the tool also supports battery switching between AA batteries (6 cells) or 18650x2 lithium batteries. The battery holder is part of the scope of delivery.

Data	BAT 191
Scope of application	
Test standards	EN, EN2, DIN, SAE, IEC, JIS, MCA
Start / charge system test	6 V / 12 V / 24 V
Menu languages	24
Dimensions	192 x 64 x 31 mm
Weight	240 g
Service temperature	0 °C to +50 °C
Order number	0 687 000 191

Bosch commercial-vehicle batteries

are specifically designed for the demanding conditions of continuous operation. They are extremely powerful and vibration-resistant. Their special grid design optimizes the current flow, reduces the corrosion, and meets the huge energy demands of various hotelling functions, long-distance travel, as well as off-highway and heavy-duty applications.

Jochen Hahn for the fifth time ETRC vice-champion

Photo: Bartscher/Team Hahn Racing

Bosch inside 2024 Hahn truck

- batteries
- crankshaft sensor
- camshaft sensor
- common-rail system
- fuel-filter replacement box
- fuses
- heavy-duty alternator
- intake-manifold pressure sensor
- oil filter
- relays
- ribbed V-belts
- wiper blades

Throughout the 2024 season of the FIA European Truck Racing Championship, spectators appreciated exciting races with close competition at a high level.

Hahn faces strong competitors up to the last racing day

Six-time European Truck Racing champion and now vice-champion for the fifth time – the Iveco pilot Jochen Hahn from Altensteig continues his success story. But the 2024 season of the FIA European Truck Racing Championship (ETRC) was once again very tight. The truck racers compete at a very high level. Even at the last racing weekend in Jarama, Spain, spectators experienced once again scenes like this one at the second race: While Steffi Halm at the pole position was heading towards a commanding victory, Hahn improved from fifth to fourth position on the

Photo: Bartscher/Team Hahn Racing

A rare sight in 2024: Hahn and his truck on the track – unchallenged

grid. In the second half of the race, he constantly followed the rear bumper of Norbert Kiss, who in turn was right on the tail of second-placed Mark Taylor. In this formation, the trio fought for the second rank, but with none of them making any mistakes, the ranking remained unchanged. That's racing at the highest level and an extremely exciting experience for the spectators. "I'm absolutely thrilled that we've managed to win the vice-championship here in front of this amazing crowd," Jochen Hahn said on Sunday evening, more than satisfied. "Our big thank you from the entire Team Hahn Racing goes to all of our partners, sponsors, and fans. Without their great support, this successful season would not have been possible."

www.team-hahn-racing.de

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