

# Truck World

A Bosch AA magazine | edition 23 | October 2018

## Connectivity increases safety

At the IAA Commercial Vehicles 2018 fair, Bosch presents a new connectivity platform and cloud-based services



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The app replacing key boards

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## EDITORIAL

### BOSCH AT IAA CV 2018 – TOMORROW IS ALREADY HERE



**Bosch automates, connects and electrifies freight traffic.**

**Dear truck fans,**

in future freight traffic, accidents, stress and emissions shall be avoided. Bosch works on achieving these objectives by means of innovative products. One of the highlights in this regard is the new Bosch connectivity platform. It allows a series of cloud-based services reaching from on-the-air software updates to predictive diagnosis transmitting information on the vehicle components' and systems' condition to a cloud – and making a workshop appointment for the truck in good time.

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

**Your commercial-vehicle team**  
**Christoph Bratzler Tobias Weiss**



Jochen Hahn is European Truck Racing Champion



# Future starts now!

## Commercial-vehicle solutions at IAA

Bosch automates, connects and electrifies commercial vehicles thus increasing efficiency and safety in logistics. This cuts the expenses and is a relief for the driver. At the 67<sup>th</sup> International Automobile Exhibition (IAA) for commercial vehicles in Hannover, Bosch presents innovations for tomorrow's freight traffic – a highly interesting topic for workshops as well. After all, a lot of technical innovations are based on systems which are already out on the roads – and require workshop services and know-how.

### CONNECTED SERVICES AND PREDICTIVE DIAGNOSIS

By means of a new connectivity platform, Bosch connects commercial vehicles throughout their complete lifespan. This allows cloud-based services enabling fleet managers to organize and analyze vehicle data. Routing and vehicle utilization can also be optimized. Even a **predictive diagnosis** allowing the prediction of failures based on information on the condition of components or systems has become feasible. It eases scheduling and planning of service and repair tasks.



Central Gateway



Predictive diagnosis



Predictive emergency braking system

### INCREASED SAFETY AND RELIEF VIA ASSISTANCE SYSTEMS

Especially in downtown areas, truck drivers need to keep an eye on traffic, traffic lights and road signs while watching out for pedestrians and cyclists. In future, the Bosch **turn warning** will assist them in cases of unclear turning maneuvers. Radar sensors detect crossing pedestrians and cyclists in good time and warn the truck drivers of an imminent collision – allowing them to brake on time or to take evasive actions.

By means of radar sensors, the **blind-spot recognition** monitors the areas next to the vehicle, detects other road users, and warns the driver. The same function is also used to alert the driver in case of an imminent collision when changing lanes.

Since autumn 2015, **automatic emergency braking systems for commercial vehicles** have become compulsory for all trucks with a gross vehicle weight of more than eight metric tons throughout the complete EU. A combination of a multi-purpose camera and a radar sensor installed at the front end



Lane-departure warning system

of the truck detects objects in front of the vehicle and determines their speed and position. If there is a risk of collision, the system first warns the driver. In case he doesn't react, the system automatically triggers an emergency braking maneuver.

**Lane assistants** use camera data to make sure trucks don't unintentionally leave their lane. **Lane-departure warning** systems alert drivers – e.g. by means of vibrations on the steering wheel – if they run the risk of drifting out of their lane. On the other hand, **lane-keeping assistants** keep vehicles on their lane by gentle steering interventions.

The 3<sup>rd</sup> generation of Servotwin, the basis for automated driving in trucks

### BOSCH STEERING SYSTEMS

With its **Servotwin electrohydraulic steering system**, Bosch improves the efficiency and comfort of heavy commercial vehicles. It features speed-dependent steering support and consumes less fuel than purely hydraulic steering systems. With its electronic interface, this steering system also forms the basis for driver assistance functions such as lane assistants or cross-wind compensation.

In case of commercial vehicles with three or more axles, the **electric rear-axle steering system (eRAS)** makes



Bosch rear-axle steering system

the leading and trailing axles steerable. This reduces both the turning radius and wear on the tires. Based on the steering angle of the front axle, transmitted via CAN bus, the steering system determines the optimum steering angle for the rear axle. Once the vehicle passed the curve, the system moves the wheels back into straight-ahead position. Energy is only consumed during the actual steering maneuver.



### MODULAR COMMON-RAIL SYSTEM

The modular CRSN common-rail injection system for commercial vehicles and off-highway applications ensures efficient fuel supply in diesel engines. It can be used for engines with up to eight cylinders and outputs of up to 850 kilowatts.

Depending on the segment and market, the system can last up to 1.6 million kilometers in on-highway operation, or 15,000 hours off-highway. Compared with conventional systems, it allows lowering the fuel consumption by up to 1 percent – in heavy-duty trucks, this corresponds to savings of up to 450 liters of diesel per year. The system is also designed for the electrification of the powertrain.

# Perfectly keyless app for commercial vehicles: good bye key rack!

## Digital vehicle key – available anywhere and anytime

Even with private cars, personalized digital keys supplied via smartphone and app ease things a lot. Talking about vehicle fleets with several drivers, however, the Bosch Perfectly keyless app makes the most of its talents. Key delivery won't be required anymore. By means of the app, fleet managers and forwarding companies just grant vehicle access to the respective drivers. This makes it a highly appealing solution for some 15 000 forwarding companies in Germany – after all, most of them have to manage at least a dozen vehicles and drivers.

### ON THE WAY WITHOUT A KEY

Hundreds of keys hanging on a long row of boards and racks, that's how several forwarding companies try to organize their vehicle keys – even today. Imagine the search if one of them is missing.

Especially with commercial vehicles, however, the name of the game is: "A truck standing doesn't make any money." Every minute counts. The Perfectly keyless app, however, is installed on the smartphones of both the dispatcher and the truck driver. With just a few clicks, it allows granting access to the respective vehicle. The Bosch solution even allows the integration of a digital key management into the dispatching and planning system of forwarding companies. In case driver and truck are assigned to a specific tour within the demand management tool, a digital key is generated automatically and sent to the driver's smartphone. In case the tours are changed, the software adjusts the keys likewise. This provides forwarding companies with planning certainty and flexibility alike – and it increases the efficiency of logistic procedures.



Using Perfectly keyless, dispatchers grant vehicle access permissions to the respective drivers.



Sensors detect the digital key and unlock the vehicle doors.

### SECURITY VIA APP AND CLOUD

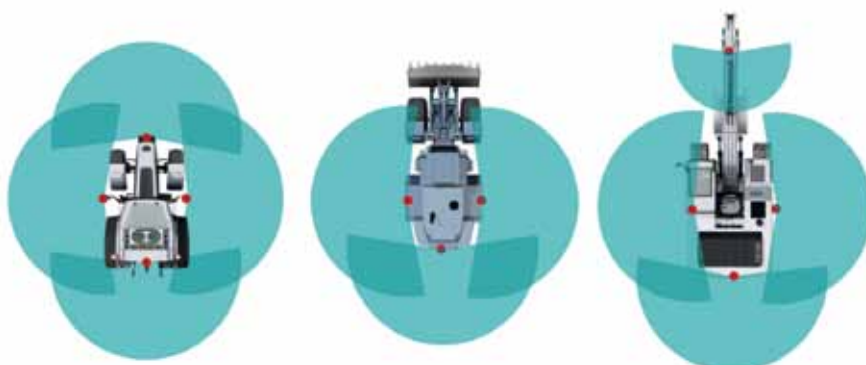
Bosch's digital key management connects the smartphone app and the truck via cloud. Once the driver approaches the truck with his smartphone, sensors installed into the vehicle detect the personalized and protected key generated by Perfectly keyless via radio signal – even with an empty battery. In case the key on the smartphone matches the digital lock on the truck, he will be able to open the doors. Even inside the truck, sensors locate the driver starting the engine via start/stop button. After the journey, the sensors lock the doors.



Safe access: Perfectly keyless app provides access via cloud and smartphone



# Bosch Surround View EasyFit: eliminates blind spots!



**Tractor**  
360 degree view (4 cameras)

**Wheeled loader**  
270 degree view with emphasis on safe backing up (3 cameras)

**Excavator**  
270 degree view, 1 camera keeping an eye on the bucket (4 cameras)

Buses, construction machinery and agricultural vehicles were designed for specific purposes. They all have one thing in common: Due to their design, the overview of the surrounding traffic they provide is anything but ideal. Huge horizontal and vertical equipment and engine covers and hoods often limit the vehicle operator's view. In these cases, EasyFit eases the detection of any obstacles increasing the safety by means of a panoramic view covering up to 360° and eliminating several blind spots.

#### 4 CAMERAS FOR ALL-ROUND VIEW

The basic EasyFit system consists of 4 cameras and a control unit. Displays for installation inside the cabin displaying the pictures captured by the cameras are also available. In case the vehicle already comes with a display able to process NTSC or PAL signals,

however, the vehicle display can be used instead.

#### ONE SYSTEM BRINGING ABOUT MULTIPLE ADVANTAGES

EasyFit bears a wealth of advantages – easing the workflow for drivers and companies alike. It's not just its intuitive handling making it a real relief for the driver. The 360° view on the display – shown even in aerial perspective – allows for much more accurate working with big machines. What has been impossible due to the vehicle's blind spots has now become feasible. This increases the working safety significantly and prevents damage to the vehicle and its surroundings. Each camera covers 180 degrees and the display can be configured flexibly thanks to different viewing modes. This makes maneuvering large

vehicles much more efficient. On the other hand, companies can also save a lot of money avoiding accidents, damages and rising insurance premiums.

#### EASYFIT – EASY CALIBRATION

EasyFit can be installed on practically any vehicle and can be adjusted afterwards. Prior to its first use, the system is calibrated first. The optional calibration kit includes all required materials – reaching from calibration triangles and distance parameters to adjustment measures. Based on a calibration schemes placed on the floor around the vehicle, camera positioning data can be stored into the control unit. The intuitive software is based on Windows. It allows geometric display



EasyFit – calibration prior to its use

of zooms, vehicle pictograms and motion patterns. In case EasyFit is installed on several vehicles of the same type and with the same camera positions, the same calibration dataset can be used for all of them. This video available online provides additional information:

[www.youtube.com/watch?v=Ot9N8dCICQI](http://www.youtube.com/watch?v=Ot9N8dCICQI)



Bosch Surround View EasyFit: camera and control unit

# DCI 700: testing and repairing commercial-vehicle injectors

## A new injector test bench prepares the sector for future challenges

Due to current emission standards and future guidelines, efficient testing of common-rail injectors of modern commercial-vehicle diesel engines has become more important than ever.

### DIESEL DIVERSIFIES

Since Bosch first invented the common-rail system, almost two decades of research and improvements have contributed to constant modernization of these systems. This resulted in a huge system variety coexisting on the market. All of these systems require regular maintenance or repairs carried out by commercial-vehicle workshops

and diesel specialists. This includes old and new generations of Bosch injectors – some of them even with VCC/ NCC technology often used in LCVs and vans as well as those with pressure-intensified commercial-vehicle technology – and third-party injectors produced by VDO-Siemens or types of Delphi, Denso, Caterpillar and Cumming injectors.

### ACCURACY AND SPEED

For all of these injectors, Bosch developed the DCI 700, a quick measurement system integrated into a modern injector test bench.

Workshops buying a diesel test bench these days want to make a technology- and future-proof investment. To the present day, DCI 700 is the Bosch test bench on the market suitable to test new VCC and NCC technologies. Its compatibility with technological developments is ensured by means of projected retrofitting kits.

In order to comply with the increased time pressure on the repair market, DCI 700 features very short fitting and testing times. Four injectors can be connected and removed within less than 5 minutes. The test routine takes 12 minutes on average. Ergonomic workflow and the intuitive operating concept increase the efficiency even further. The screen can be turned, pivoted and adjusted in height. For the operation, there is a touch screen, a keyboard and a mouse. Software updates and test plans are available online for quick and comfortable download. DCI 700 works reliably and transparent thanks to its quick and accurate testing including IMA/NIMA coding. In addition, even the maintenance costs were successfully cut even further – after all, the high-pressure hoses of the high-pressure circuit which used to be sensitive to failures now belong to the past.



Bosch DCI 700 injector test bench



QualityScan: In order to identify the injector, the data matrix code can be read via scanner

# Alltrucks Protect: the powertrain insurance



The European Alltrucks service network comprises ca. 600 partner workshops for assistance in case of damage or breakdowns – 270 of them in Germany, Austria and Switzerland.

## ALLTRUCKS PROTECT – ONCE THE MANUFACTURER WARRANTY EXPIRES

Especially in case of forwarding companies with rather smaller vehicle fleets, defective gearboxes or engines can result in financial straits. Depending on the specific repair costs, they can even endanger the existence of small businesses. In case of younger vehicles, manufacturer warranties and service agreements provide an effective protection against potential financial damages. Once they expire, however, the companies bear this risk on their own. Alltrucks Truck & Trailer Service thus cooperates with representatives of the workshop network to develop a solution for trucks with a GVW of more than 7.49 t – including vehicles used on construction sites and rental vehicles – to support the customers with these kinds of vehicles. Alltrucks Protect is an insurance for repairs on the powertrain of commercial vehicles produced by DAF,

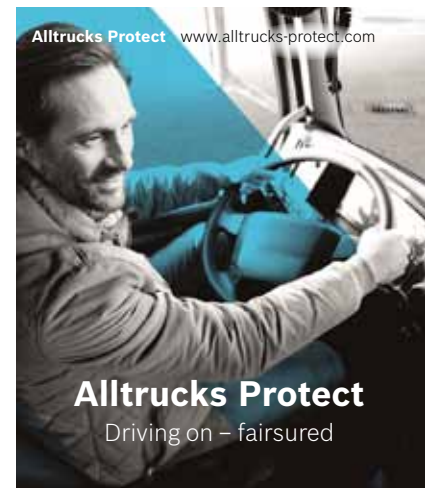
Fuso, Iveco, MAN, Mercedes-Benz, Renault, Scania and Volvo.

Alltrucks Protect is exclusively available for Alltrucks partner workshops – and as a first step only in Germany.

An insurance of such an extend requires a strong contract partner. The powertrain insurance for trucks was thus developed together with Europ Assistance, a subsidiary of the Generali Versicherung insurance company. Alltrucks Protect covers damages to the engine, the gearbox, hydrostatic ancillary drives, the fuel system, and the power transmission. Besides the large number of different truck makes, it also covers application purposes reaching from long-haul and distribution traffic to construction-site vehicles. The Alltrucks Protect insurance can be taken out at any maintenance – even once warranty or service agreement have expired – and for vehicles with an age of up to 7 years\* and a mileage of up to 1 050 000 km\*.

## CUSTOMER LOYALTY

### ADDITIONAL SERVICE OFFER FOR ALLTRUCKS CUSTOMERS



Strong publicity for Alltrucks Protect

## ALLTRUCKS PROTECT – A PRODUCT EMERGES

At events back in June 2018, Alltrucks already invited its partner workshops to hold detailed talks with an associate of the contract partner Europ Assistance. Multiple questions were asked and a lot of details were discussed.

Gratifyingly, the result has shown that Alltrucks Protect experiences a considerable support by the partners. 50 partners are already offering Alltrucks Protect. In this manner, they benefit from an effective tool of long-term customer loyalty – especially of those customers with rather small and mixed vehicle fleets comprising different makes.

Participation is free of any risks and particularly easy. Participating Alltrucks partners are supplied with an advertising-material starter package. Once they signed the referrer agreement, they can immediately start recommending Alltrucks Protect to their customers.

[www.alltrucks-protect.com](http://www.alltrucks-protect.com)

\* for additional information, please have a look at [www.alltrucks-protect.com](http://www.alltrucks-protect.com)



# 5-time European champion uses Bosch technology

## BOSCH INSIDE 2018 HAHN TRUCK

- ▶ Alternator
- ▶ Batteries
- ▶ Crankshaft sensor
- ▶ Camshaft sensor
- ▶ Diesel injection system with EDC7U control unit and unit injectors
- ▶ Fuel-filter replacement box
- ▶ Fuses
- ▶ Intake-manifold pressure sensor
- ▶ Oil filter
- ▶ Relays
- ▶ Ribbed V-belts
- ▶ Wiper blades



Photo: Hahn Racing

After the 7<sup>th</sup> round of the FIA ETRC in Le Mans, the result was clear: Jochen Hahn would be the new European champion

## Jochen Hahn is European Truck Racing Champion 2018

With beautiful late-summer weather and some 27 000 spectators on site, the 8<sup>th</sup> and last round of this year's FIA European Truck Racing Championship took place on Circuito del Jarama in San Sebastián de los Reyes north of Madrid. Jochen Hahn had already secured his fifth title one week earlier on Circuit Bugatti in Le Mans. He won the top rank on the driver standings and – together with his teammate Steffi Halm – also on the team standings as “the bulls on IVECO Magirus”. And still, Hahn and his team wouldn't give in. Throughout the complete session in Jarama, they showed that they really deserve these titles.



Photo: Faforke

### A prediction came true:

In 2017, year of the rooster, this statue at Hanoi airport was decorated with 5 (!) gold medals. Jochen Hahn whose last name translates as “rooster” drew level in 2018.

“At all of the four races, we achieved podium positions at both the driver and the team championships thus proving extreme consistency,” Hahn said. Together with his family, he thanked his relentless team – and his sponsors and partners for their support. “Without them, all of this would not have been possible,” the new European champion stated.

**At Bosch, we're happy and proud of having been able to contribute to this great success with our Bosch technologies – and we use the chance to congratulate by heart!**

### IMPRINT

**Published by:**  
Robert Bosch GmbH  
Automotive Aftermarket  
AA/MBC2

**Editor:**  
Verena Bachmann  
Errors and printing mistakes  
reserved

[www.bosch.com](http://www.bosch.com)



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