

# Truck World

A Bosch AA magazine | edition 21 | March 2018

## Reliable start-up

Starters are to provide top performance. The Bosch starters and spare-parts range facilitates repairs getting trucks ready to start off.

### **Xenon White HID**

The brightest light for professional truckers

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Bosch supports future drive systems

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2018: new Bosch range of trainings

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## EDITORIAL

### POWERFUL PRODUCTS TRUCKERS CAN FULLY RELY ON



**Jochen Hahn's IVECO race truck also includes Bosch technology. Soon, the European vice champion starts into the 2018 ETRC season.**

**Dear truck fans,**

as professionals, you know your customers' trust is your greatest asset. Therefore, you invest in powerful technology and cooperate with reliable partners. Bosch knows your business and the extreme demands placed on your trucks. They have to work properly for your customers to be satisfied and for you to work profitably. A lot of commercial vehicles are thus equipped with Bosch technology – this includes the range of truck starters (pages 2-3). It allows efficient repairs at the workshop for you and your truck to “get started”. Proper light settings are yet another “must”. Top of the line in this regard: Bosch Xenon White Light HID lamps (page 4) for optimum vision when driving at night.

Logistics is a business with a bright future. Today, Bosch thus already develops the technology used in tomorrow's trucks (page 5).

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

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



# Starting reliability

## Bosch truck starters and spare parts

Whether temperatures below zero on the company parking area or after a night on a truck stop next to the highway – no matter when or where, truckers need to be able to rely on the engine starting up reliably in order to meet the delivery deadlines. Accordingly, starters need to remain fully operational at all times – after all the logistics sector very much depends on reliability. Therefore, the broad Bosch range for commercial vehicles includes powerful 12- and 24-volt starters and spare parts. These high-quality products feature service lives exceeding 1.2 million km. They are perfectly suitable for demanding applications and tough on- and off-highway operating conditions.

### 24-VOLT STARTERS

Bosch 24-volt starters stand out for their good cold starting performance caused by the optimized design of their armature and stator housing.

With their robust, compact and space-saving design, these starters are well protected against vibrations, dirt and water ingress. Ensuring particularly safe and smooth two-stage pinion engagement, both the sprocket and the starter pinion also contribute to the high reliability and long service life of these starters. Thanks to the modular starter concept, they can efficiently be adapted to the specific requirements of the respective commercial vehicle. For use in large engines or engines with additional hydraulic loads, Bosch developed parallel-starter systems consisting of two or three linked





starters. These systems start up diesel engines with up to 90 liters and gasoline engines with up to 180 liters of displacement.

### 12-VOLT STARTERS

Just as several other products, starters are also continuously optimized and further developed. At the 12-volt range, for instance, further increase in performance was achieved by four-pole multiple-circuit winding.

### BOSCH STARTER SPARE PARTS

In order to ensure a long service life of commercial-vehicle starters despite the heavy strains they have to cope with, Bosch provides a high-quality spare-parts range. In case repairs become necessary, the experts will thus receive key spare parts having passed the functional tests in line with the same standard as is the case with original equipment. These parts allow easy and quick starter repairs.

### ENGAGEMENT RELAY

Only high-quality plastics and metals are used for the engagement relay in order to ensure a particularly long service life. Fully sealed engagement relays are available for special installation positions. All versions feature excellent switching reliability. They all come with copper contacts and a specifically developed contact design.



and hardening processes. Particularly sturdy bearing bushes at the overrunning clutch increase the service life.

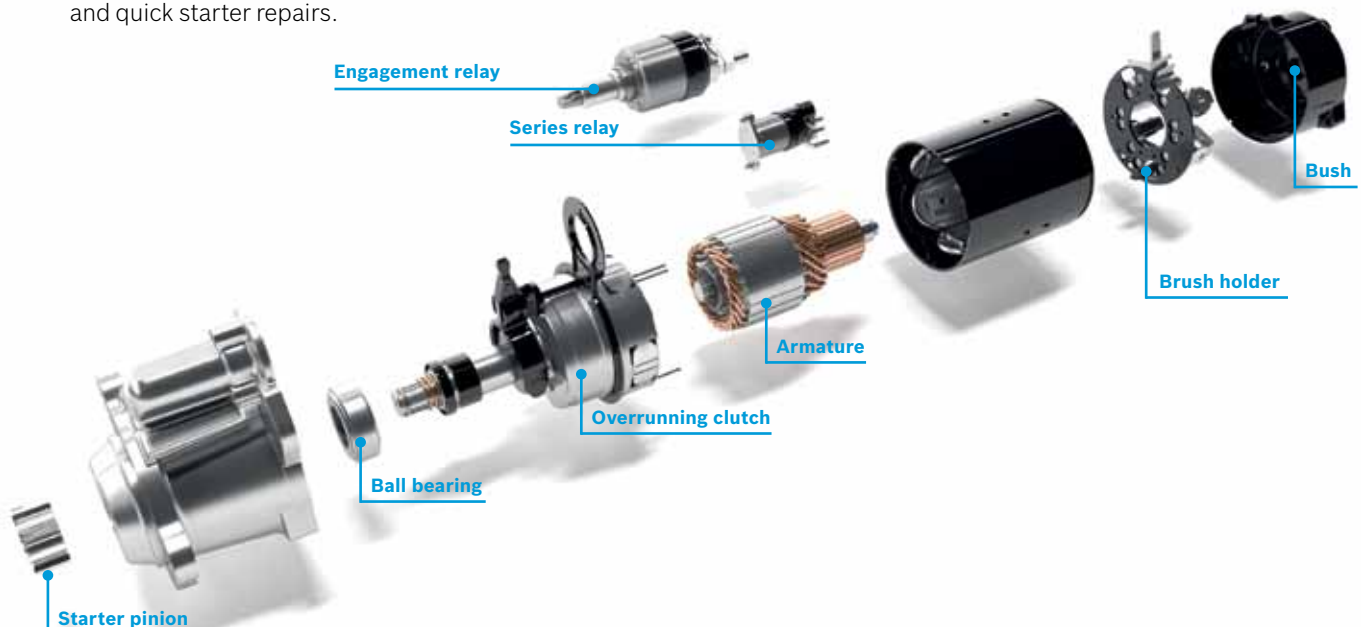
### BRUSH HOLDER

Bosch starters are equipped with particularly durable carbon brushes featuring a special material composition. To protect them against corrosion, they are placed into a holder made of plastic or coated metal. Coil springs achieve optimum brush pressure. In this way, the performance values remain consistent throughout the complete service life.



### STARTER PINION WITH OVERRUNNING CLUTCH

Due to their optimized system with a special pinion geometry and engagement spring and thanks to the use of high-quality materials, Bosch starter pinions ensure flawless engagement. Wear is reduced by optimized greases





# When night turns into day – with Xenon White HID

The xenon lamp with high light output and up to 5 500 kelvin

Out on the roads, optimum visibility is more important than ever as traffic density is increasing. To make trucks even more economical, part of the transport volume is hauled at night. With this, there is a growing risk of drivers getting tired. Light as bright as possible is thus all the more important. Only very good vision allows quick reactions in dangerous situations.

## XENON WHITE HID AND XENON HID

For challenging demands reaching from close-to-perfect vision to light bright as daylight, top safety and reduced fatigue of the driver, Bosch developed Xenon White HID lamps. They feature a color temperature of up to

5 500 K and a light output increased by 20% in comparison with standard xenon lamps. Thanks to their high light output, Xenon White HID lamps also illuminate those parts of the road halogen bulbs don't. As glow-discharge lamps, they work without filament. Accordingly, they feature increased service life and reliability. The reduced energy consumption is easy on the environment and a benefit for the wallet.

## INTELLIGENT TECHNOLOGY

The glass bulb of Xenon White HID lamps is filled with xenon inert gas and a special mixture of metal halides. Due to the very high voltage, the gas between both of the electrodes is ionized and thus begins to glow. Usually, the



Bosch HTD 815: digital headlight tester

particles are fully ionized within seconds. To ensure optimum brightness right from the start, however, an electronic ballast provides an increased "starting voltage" accelerating the particle ionization. Once full light output is reached, the voltage is limited again.



Bosch Xenon White HID and Xenon HID

## BOSCH COMMERCIAL-VEHICLE BULBS

- ▶ **Trucklight Maxlife:** particularly durable and robust commercial-vehicle halogen bulb
- ▶ **Trucklight:** reliable commercial-vehicle halogen bulb
- ▶ **Eco Truck:** halogen bulb with an attractive price/performance ratio – for value-based repairs
- ▶ **Xenon White HID:** xenon lamp with the highest light output within the Bosch range – for optimum visibility
- ▶ **Xenon HID:** xenon lamp with high light output

# Bosch technology for Nikola e-trucks



Bosch and Nikola electrify trucks with fuel cells and electric powertrains.

Trucks are now also electrified. Until 2021, the startup company Nikola Corporation based in Salt Lake City (Utah, USA) plans to launch the hydrogen-powered heavy trucks Nikola One and Nikola Two onto the



market. Both of these electric trucks will deliver more than 1 000 hp and some 2 700 Nm of torque. With this, they deliver almost twice the power of today's tractor units – concomitantly saving resources on the go.

This is possible thanks to the new and highly efficient electric drive Nikola

developed together with Bosch. Their ambitious objective: In terms of performance, this engine seeks to be at the very top of its market segment and it shall not exceed the total cost of ownership of comparable conventional powertrains. Bosch's many years of experience in the production of electric motors and power electronics will now help in getting both of the e-truck models launched until 2021.

## A VISION BECOMES REALITY

"We have been aggressively pursuing our goal of bringing the most advanced semi-truck ever built to market," said Nikola Founder and CEO Trevor Milton. "The powertrain requires an innovative and flexible partner able to adapt quickly to the speed of our team. With its know-how, Bosch has empowered us to come to market quickly so our vision can become a reality." Based on

Bosch expertise, close-to-the-wheel drive systems are developed. For this purpose, Bosch's electric machine technology for commercial vehicles and SMG (separate motor generator) drives will be used. Paired with a fuel cell system, it is designed to deliver benchmark vehicle range. Even the trucks' vehicle electrical architecture will be based on Bosch hard- and software.

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

## ELECTROMOBILITY WITH BOSCH

"Bosch is an incubator of electromobility solutions. No matter whether at established OEMs or start-ups, Bosch is accelerating development and helps achieve fast breakthroughs on the market."

*Dr. Markus Heyn, member of the Bosch board of management*

# Managing heavy-weights: Bosch tire service

## Solutions for commercial-vehicle tire changing and wheel balancing

Because of their sheer size, buses, tractor-trailer units, construction machinery and agricultural vehicles are part of the heavyweight class. Effective tire changing and wheel balancing is quite a challenge when it comes to wheels with more than 2 meters of diameter exceeding 100 kg of weight. By means of its ergonomic tire service equipment designed for heavy weights, Bosch provides suitable solutions for these cases.

### CHANGING HEAVY TIRES

The TCE 5335 tire changer can be used to change tires with a diameter of up to

2 280 mm and a width of up to 1 230 mm. Via remote control (radio version TCE 5335 or cable version TCE 5330), two speeds can be selected for both directions. An integrated fitting carriage eases the positioning of rims on the assembly claws. The large clamping range of 14" to 40" (up to 60" with special accessory) is suitable for almost all commercial vehicles on European roads.

### BALANCING HEAVY WHEELS

The universal electronic WBE 5210 wheel balancer can be used for wheels of trucks, vans and LCVs. Its auto-



TCE 5330 tire changer

matic measuring process and four programs specifically for commercial vehicles ease the balancing. Thanks to automatic speed range adjustment, wheels are always balanced with the proper speed. The device is suitable for wheels with a weight of up to 160 kg, a diameter of up to 1 200 mm and a width of up to 650 mm. The integrated pneumatic lift allows the operator to lift



Universal WBE 5210: the wheel balancer for both passenger-cars and commercial-vehicle wheels

the wheels with almost no effort at all. A comprehensive range of accessories for commercial vehicles is included within the scope of delivery.

# Bosch trainings on commercial vehicle technology

## LOGISTICS AWARD

**VIA IOT, BOSCH CUTS LOGISTICS COSTS BY 15 PERCENT**



**Bosch received German Award for Supply Chain Management 2017 by the German federal logistics association BVL.**

With this award, the BVL honors logistics concepts of industrial, commercial and service companies that have been put into practice. The latest award-winning Bosch project stood out because of its cross-company approach and the exemplary consistency, in particular. Instead of optimizing individual supply-chain segments, Bosch logistics followed the principle "Striving for Supply Chain Excellence". Within four years, it assumed an important role within the company. By means of the total cost of ownership (TCO) principle, it achieved remarkable results. During the realization, the special focus was on increasing connectivity via Internet of Things (IoT), sensors, software and services. At the same time, the four segments – transport, warehousing, packaging and foreign trade – were redesigned and realigned both each of them on its own towards each other. By means of Supply Chain Network Design (SCND), a comprehensive logistics approach for all was developed. The measurable result: Thanks to this comprehensive change process, Bosch managed to cut the logistics costs worldwide by some 15 percent. [www.bvl.de/dlp](http://www.bvl.de/dlp)



[www.automotive-campus.com](http://www.automotive-campus.com) – the website for training courses about commercial-vehicle repairs

Throughout the last years, the number of trucks out on the roads has risen ever more. The demand for commercial-vehicle maintenance and repairs at automotive workshops has increased accordingly. But the vehicle technology mechanics working on trucks have to face has advanced, too. Again and again, workshops have to face increasing electric and electronic equipment, modern high-pressure diesel systems and components of alternative drives challenging their know-how. For this reason, special courses have been developed and integrated into the Bosch range of trainings teaching target-oriented service know-how concerning commercial vehicles. These truck trainings prepare mechanics for areas such as ESI[tronic] Truck and KTS Truck (software and test equip-

ment for troubleshooting and diagnoses), powertrain (diesel systems), exhaust-gas treatment (DNOX) and electronic systems.

### BOSCH AUTOMOTIVE CAMPUS

Information on all of the courses on truck technology can be accessed at the online training catalog – on the so-called Automotive Campus. It provides a quick and simple overview of the courses and allows booking them right away.

#### THE COURSES YOU WANT

We care about your opinion! To improve the alignment of the Bosch range of trainings with the requirements of commercial-vehicle workshops, there is a corresponding questionnaire on the website: On which subjects or topics would you like additional trainings or seminars to be added next year? Please fill in the form and send it back.

[www.automotive-campus.com](http://www.automotive-campus.com)



A lot of practical training on the vehicle and modern media ease learning about new technologies



# “If I managed to rank up just one position, ...”



## Dates: 2018 FIA ETRC

Misano	May 26 – May 27
Hungaroring	June 16 – June 17
Nürburgring	June 29 – July 1
Slovakia Ring	July 14 – July 15
Most	Sept. 1 – Sept. 2
Zolder	Sept. 15 – Sept. 16
Le Mans	Sept. 29 – Sept. 30
Jarama	Oct. 6 – Oct. 7

Photo: Hahn Racing

## ETRC vice champion Hahn starts into the 2018 season

As usual, Team Hahn Racing from the Black Forest and four-time European Truck Racing Champion Jochen Hahn started the preparations for the upcoming season right after the final of the last one. Besides tough work at the workshop, this includes numerous PR and sponsor meetings across Europe.

### TEST RIDES TO START THE SEASON

By now, building the new Iveco race truck is almost done. Soon, it will be painted and by Easter, it will be all set. The first test rides will take place on the oval track of Iveco-Magirus AG in Ulm (Germany). At the second half of April, three days of actual racing cases will be practiced under almost real racing conditions on the Czech Autodrom in Most. On this occasion, the new “Die Bullen von Iveco Magirus” (literally: The Bulls on Iveco



3<sup>rd</sup> generation at the wheel: In April 2018, Lukas Hahn (on the right) will perform his first test rides in Most.

Magirus) team consisting of Jochen Hahn and his new teammate Steffi Halm will be presented. And Lukas Hahn, the vice champion's 20-year-old son will also complete some first test laps on a race truck.

### FIRST RACE IN ITALY

At the last weekend in May, the 2018 ETRC season opening will take place on Misano World Circuit close to the

### BOSCH INSIDE 2018 HAHN TRUCK

- ▶ Batteries
- ▶ Diesel injection system with high-pressure pump, EDC 7 control unit and unit injectors
- ▶ Alternator
- ▶ Ribbed V-belts
- ▶ Fuel-filter replacement box
- ▶ Crankshaft sensor
- ▶ Camshaft sensor
- ▶ Oil filter
- ▶ Relays
- ▶ Fuses
- ▶ Intake-manifold pressure sensor
- ▶ Wiper blades

Italian Adriatic coast. With his typical humor, the reigning vice champion describes his objectives for the new season: “If I managed to rank up just one position, I'd be more than happy.”  
[www.Team-Hahn-Racing.de](http://www.Team-Hahn-Racing.de)

### IMPRINT

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

**Editor:**  
Peter Markert  
  
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