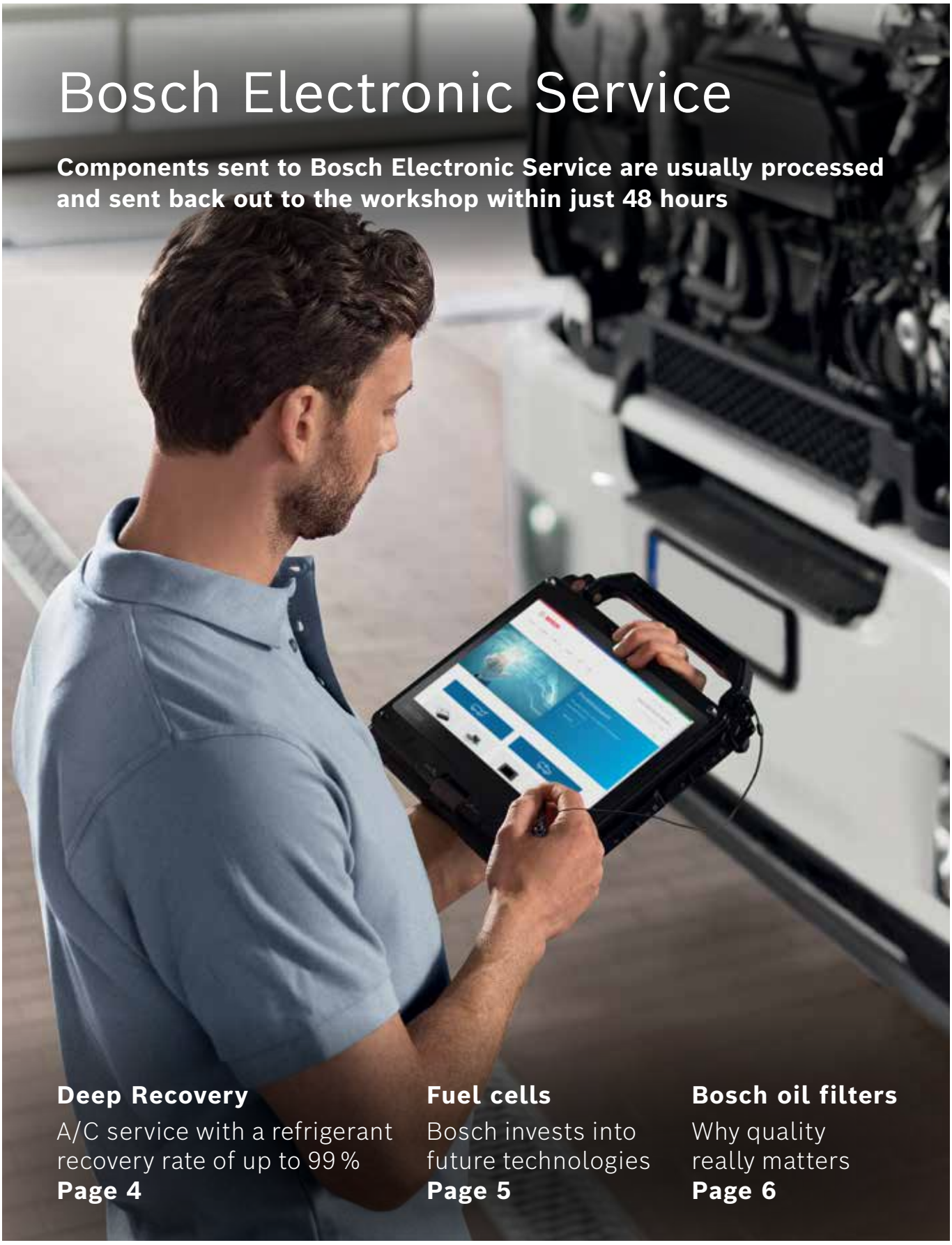
Truck World

A Bosch Automotive Aftermarket magazine | Edition 30 | June 2021



Bosch Electronic Service

Components sent to Bosch Electronic Service are usually processed and sent back out to the workshop within just 48 hours

EDITORIAL

COMMERCIAL-VEHICLE TECHNOLOGIES – TODAY AND IN FUTURE

Dear truck fans,

Hardly any other sector needs to manage the balancing act between present age and future as intensely as the commercial-vehicle sector. After all, commercial-vehicle workshops have to deal with common technologies at everyday repairs and maintenance. At the same time, they need to keep an eye on future technological developments and powertrain concepts. Bosch acts on both sides; as a developer of modern technologies and as partner of commercial-vehicle workshops. Legitimate demands for sustainability and resource efficiency promote the development of new technologies such as hybrid, electric or fuel-cell powertrains. Some of them are already about to be serviced at the workshops. At the same time, workshops also need the equipment required to meet current repair demands. This edition of the Truck World magazine informs about latest commercial-vehicle technologies – and takes a look ahead into the future.

On behalf of the commercial-vehicle team, I wish you an enjoyable read and a great journey into the connected workshop future!

Best wishes, Tobias Weiss

Expert service!

Bosch electronic repair know-how

Buses, trucks, off-highway and agricultural vehicles – there is a large variety of commercial vehicles used for professional purposes. And yet, "time is money" is what counts the most on this sector. If buses break down, trucks stand still and off-highway vehicles suffer hydraulic failures, they still cost money. Passengers must be cared for and goods must get to their destination. And even the work on constructions sites must go on. That's where professionals need a quick and reliable high-quality repair service. No easy task, but a challenge Bosch Electronic Service assumes every day.

EXPERIENCE AND SPEED

At the Bosch Electronic Service repair centers, technicians who specialized on these requirements repair Bosch devices from around the world. Based on the experience obtained at thousands of repairs and using modern and powerful equipment, they provide top-quality repairs. At the same time, they are backed by the comprehensive know-how of one of the world's leading developers and manufacturers of vehicle systems of the automotive industry. Based on these facts, they provide workshops with an outstanding exchange and repair service for electronic vehicle components – at just the right pace: Usually, repaired electronic components are shipped back to the workshop only 48 hours after their arrival. In many cases, replacement ECUs programmed with specific vehicle data leave the plants after just 24 hours – and without need for programming right on the vehicle.

BUSES AND COMMERCIAL VEHICLES

What started off as factory service for Blaupunkt radios and navigation systems has by now become a high-tech

repair shop for complex control units for different applications in vehicles of a large variety of different makes. Bosch Electronic Service thus meets OE quality throughout.
Comprehensive test equipment is used for reconditioning. It allows Bosch Electronic Service to perform in-depth tests and to repair components such as radios, screens, engine control units, navigation systems, operating panels, audio systems and

DVD players of different types of buses and commercial vehicles. All situations the devices might have to face in daily operation can be simulated on the test stations. A large inspection depth is achieved by the simulation of different temperatures and signal inputs. Only genuine parts are used for the repair. In case a component cannot be repaired, Bosch Electronic Service often offers replacement devices in exchange. Even in case of repairs at flat-rate prices, the Bosch Electronic Service warranty applies to the complete device rather than only the repaired fault.

MOBILE HYDRAULICS

The control electronics of mobile hydraulics are also increasingly sophisticated and ever more connected.

Bosch Electronic Service thus also repairs electronics of Rexroth mobile hydraulic components. In this case, the most suitable solution for each client is analyzed in detail. In case replacement doesn't make much sense, a flat-rate repair is offered. In case the product cannot be repaired, Bosch Electronic Service will help on offering a replacement device.

SERVICE AS REQUIRED: BOSCH ELECTRONIC SERVICE REPAIRS

Advanced replacement: Within 24 hours, a reconditioned unit is sent to the workshop. The defective device is then sent to Bosch Electronic Service.

New

New and spare parts: New and spare parts are delivered once they have been ordered.

Repair: The defective unit is sent to Bosch Electronic Service and sent back once it has been repaired

As new

As new: You get a reconditioned unit in mint condition – without having to send in the defective one.

REPAIRED BY BOSCH

RECONDITIONING AND REMANUFACTURING OF TEST EQUIPMENT

BOSCH ELECTRONIC SERVICE REPAIR RANGE

Computers
- DCU 220
- DCU 220 docking station
- DCU 100

Diagnostic equipment
- KTS 250
- KTS 350
- KTS 515
- KTS 560
- KTS 590
- KTS Truck

Emission testers
- BEA 030
- BEA 050
- BEA 055
- BEA 060
- BEA 065
- BEA 070

Battery chargers and testers
- BAT 115
- BAT 121
- BAT 131
- BAT 645
- BAT 690

Vehicle system analyzers
- FSA 050
- FSA 500
- FSA 720

Special equipment
- SMT 300 smoke tester
- CRR 420 electronic dial indicator
- TIFXP-1A leak detector
- TIFRX-1A leak detector
- TIFZX-E leak detector
- ACT 200 leak detector
- EPS 118 display

www.bosch-repair-service.com

Deep Recovery helps to recover more refrigerant

Workshops often service automotive air conditioning systems several times a day. A/C service includes functional and visual inspection as well as refrigerant replacement. During the standard procedure, the compressor of the A/C service unit recovers the refrigerant and stores it at its own tank. Doing so, up to 95 % of the refrigerant are recovered. The rest is released by the vacuum pump and when separating used oil by its respective tank. Especially the loss of refrigerant, the increased environmental burden and the time-consuming procedure led to the development of an optimized function: Deep Recovery.

Deep Recovery included: Bosch ACS Air Conditioning service units

BOSCH A/C SERVICE UNITS WITH DEEP RECOVERY

Bosch ACS 863, ACS 763, ACS 753, ACS 663 and ACS 653 A/C service units are already equipped with the Deep Recovery function. This is possible due to the use of a particularly powerful vacuum pump at the recovery circuit specifically developed for this purpose and perfectly matched software. At a second recovery stage after the standard procedure, the vacuum pump extracts as much of the remaining refrigerant as possible, separates it and returns it for its reuse. Depending on the A/C configuration and its operating conditions, this allows recovery of up to 99 % of the refrigerant.

In the subsequent vacuum phase, only a very small amount of remaining refrigerant is released into the atmosphere. Especially in the case of expensive R1234yf refrigerant, this means a significant cost reduction. Another advantage of Deep Recovery: the vacuum pump starts dehumidifying the air conditioning system as early as possible, during the refrigerant recovery. For workshops this means additional time savings when performing A/C services, significantly reducing any additionally required vacuum phase. A/C refilling can thus be started earlier.

RECOVERING MORE REFRIGERANT MORE EFFECTIVELY AND PROTECTING THE ENVIRONMENT

Therefore, the recovery process comprises two different stages performed at once thus easing the A/C service and making it faster. At the vacuum phase, the loss of refrigerant is reduced most noticeably. This helps protecting the environment and saving money – with each any every A/C service.

Deep Recovery helps to recover more refrigerant, reducing the environmental impact and saving working hours. (Figures depending on AC system's specific configuration and operating conditions)

As a special commercial-vehicle A/C service unit without Deep Recovery function, Bosch offers ACS 810 units. Their advantage over the mentioned ACS units: faster service times and the integrated truck database.

Bosch and Qingling: cooperation on fuel cells

Bosch is gathering pace concerning the industrialization of fuel cells

BOSCH HYDROGEN POWERTRAIN SYSTEMS FOUNDED IN CHINA

Particularly in case of large, heavy vehicles covering large distances, fuel cells provide clear advantages over battery-driven powertrains. In the Chinese town of Chongqing, Bosch and the premium-class commercial-vehicle manufacturer Qingling Motors started the Bosch Hydrogen Powertrain Systems joint venture. The new company will develop, assemble and sell fuel cell systems. Bosch contributes with its expertise concerning fuel cell systems. Qingling offers a wide range of commercial vehicles – reaching from light to medium and heavy commercial vehicles – and many years of experience on the Chinese truck market.

The common objective is to pool the technological and market expertise of both partners in order to contribute to the development of the fuel cell market. Bosch Hydrogen Powertrain Systems plans, for instance, to supply Chinese vehicle manufacturers with fuel cell systems –preferably all of them. Most of the components required – fuel cell stack, air compressor and power electronics as well as the control unit equipped with the respective sensors, for example – are produced at the Bosch plant in Wuxi. Once the small-series production started, a test fleet consisting of 70 Qingling commercial vehicles equipped with a Bosch fuel cell power module will be released onto the roads yet in 2021. The market launch of this fuel cell system is scheduled for 2022/2023.

FUEL CELL: BOSCH INVESTS IN FUTURE POWERTRAIN TECHNOLOGIES

Right from the beginning, Bosch has been involved in the development of fuel cells. Early plans already included the integration of related know-how into the future aftermarket. Besides spare parts supply for fuel cell powertrains, Bosch also plans on offering tailor-made services, diagnostic solutions and trainings.

SYSTEMATIC INDUSTRIALIZATION OF FUEL CELLS

Believing in a hydrogen-powered future, Bosch continuously invests into this sector. Accordingly, the company already gained experience in research and development through its fuel cell activities in China. Last year, the fuel cell center was built in Wuxi. Now, it's all about getting ready for the required production capacities for components the new joint venture shall also be supplied with. Bosch thus expands its operations on the Chinese market.

Bosch fuel cell system

Bosch oil filters in comparison: quality pays off

Bosch oil filter for commercial vehicles

USE BOSCH FILTERS, BE SAFE

Especially in case of professionally operated commercial vehicles often featuring a high annual mileage, being able to rely on oil filters is crucial. Only high-quality filters provide stability, a long and reliable service life and protection for the engine and its components. Engine damage, increased fuel consumption and environmental pollution caused by oil leaks are possible consequences of low-quality filters which are no options for professionals.

Bosch high-quality oil filters with their multi-layer filter medium with special impregnation ensure a long service life of both filter and engine oil. Their individual components are perfectly geared to one another thus providing a very high particle separation rate. Bosch filters successfully prevent oil losses special rubber seals and corrosion-resistant housing materials.

BEWARE OF LOW-QUALITY OIL FILTERS!

Low-quality filters with lower number of pleats do not provide the high particle separation rate of Bosch oil filters equipped with a filter medium featuring a large number of pleats. Insufficient filtration, increased wear, engine damage and a reduced service life are among the possible consequences. Even an instable filter medium pleat geometry or excessive use of glue can cause increased engine wear and fuel consumption.

In case the felt ring is not seated properly, the filter integrity can be affected thus causing insufficient filtration. Corrosion on the filter housing caused by splash water and damaged or porous seals may lead to increased wear – or even to engine damage – and result in an environmental threat due to possible oil leaks. Therefore, relying on Bosch quality pays off for professionals.

IN COMPARISON: BOSCH FILTERS VS. LOW-QUALITY FILTERS

Large dust-holding capacity by high number of pleats

Lower number of pleats

Reliable filtration thanks to meticulous processing and stable pleat geometry

Unstable pleat geometry, excess of glue

Robust felt ring prevents oil leakages

Poorly fitting felt ring

Corrosion-resistant housing prevents oil leakages

Corrosion caused by splash water

High-quality seal made of a special rubber prevents oil leakages

Damaged, porous seal

High voltage technician (HVT): ready for future truck repairs

The high-voltage technician (HVT) training is performed on passenger cars, even for the staff of commercial-vehicle workshops.

Alternative powertrains have long since arrived at the logistic sector as well. These transport solutions are often used for inner-city traffic on the so-called “last mile.” Companies use this chance to become more sustainable and – in part – to attract new customers. These days, this is not just about heavy commercial vehicles with a high load capacity. And yet the business is of increasing interest for workshops, logistic companies and mixed fleet operators.

Bosch thus offers suitable trainings teaching know-how related to the repair business concerning alternative drive systems and the legal prerequisites. Ever since the first electric and hybrid vehicles appeared on the market, the high-voltage technician training has become compulsory and a prerequisite for all tasks related to intrinsically safe HV vehicle systems – for safety reasons. After all, repairing vehicles with combustion engine is much less dangerous than working on high-voltage systems.

Voltage measurement via Bosch FSA 050

TWO-DAY HIGH-VOLTAGE TECHNICIAN (HVT) TRAINING

Bosch Service Training Centers offer a two-day additional training to become a high-voltage technician (HVT) entitled to work on intrinsically safe HV motor-vehicle systems such as e.g. hybrid, electric and fuel-cell vehicles. Passing the final exam of the training as an evidence of the learning success allows the participants to de-energize high-voltage (HV) systems, to work on de-energized HV components and to instruct and supervise members of staff.

TYPICAL FOR BOSCH TRAININGS: SAFETY AND PRACTICE

The training teaches electrotechnic basics, explains alternative drives as well as the setup, function and mode of operation of HV vehicles. Safety is a key topic of the training. Safety instructions, protective measures against electric shocks and arcs, electric hazards and first-aid measures are explained. As usual at all trainings held at Bosch Service Training Centers, practical work is yet another main focus. Instructions, practical exercises and demonstrations are performed on intrinsically safe HV vehicles.

The trainings can be ordered online via Bosch Automotive Campus: **www.bosch-training-solutions.com**.

WELL-PREPARED FOR THE HVT THANKS TO WEB-BASED “ELECTRICS INTENSIVE TRAINING”

The combination of two web-based trainings with a virtual diagnostic simulation provides a great preparation option for the HVT. This practical „bundle“ teaches the **application of Ohm’s law, measuring electrical values, in-depth knowledge about batteries and general basics on electronics** (series and parallel circuits, switching symbols etc.). In addition, the participants can also train diagnoses and repair tasks at a virtual workshop.

2021 ETRC season opening: podium position on Hungaroring

Photo: Team Hahn Racing

BOSCH INSIDE 2021 HAHN TRUCK

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

Dates: 2021 FIA ETRC

Nürburgring	July 17 – July 18, 2021
Most	Aug. 28. – Aug. 29, 2021
Zolder	Sept. 11 – Sept. 12, 2021
Le Mans	Sept. 25 – Sept. 26, 2021
Jarama	Oct. 2 – Oct. 3, 2021
Misano	Oct. 16 – Oct. 17, 2021

After the first race weekend of the 2021 FIA ETRC and with a total of 27 points, Jochen Hahn ranks fourth on the overall standings.

First race weekend with spectators results in 27 points

With selected fans and spectators on site, Jochen Hahn finished the first race of the season ranking second – first race, first podium. Unfortunately, that was the best result of the weekend. After some 3,000 hours of work invested into the new Iveco race truck, the team from Altensteig, was – obviously – not too happy about that. Already after the first laps of the free practice on Saturday morning, they noticed a technical issue on Hahn's truck which could not be fixed on the race circuit. It was only due to Jochen's and his team's huge experience, they still made the best out of it throughout the subsequent races. The second race was stopped due to an accident of race pilot Steffen Faas resulting in damaged barriers. The skirmish at the start of the first race on Sunday resulted in a damaged tire on the Hahn truck. Nevertheless, Jochen Hahn took his truck across the finish line ranking sixth. At the final race of the weekend, he closed up to the leaders and finished fifth within this field.

Photo: Team Hahn Racing

Tight and accurate maneuvering at the pit

OPTIMISTIC REGARDING THE NÜRBURGRING

"We will intensely use the time left until the Truck Grand Prix to solve our technical issues. I'm very confident, we will be attacking well again on Nürburgring," Jochen Hahn said highly determined.

www.team-hahn-racing.de

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Published by:
Robert Bosch GmbH
Automotive Aftermarket
AA/MBC2

Editor:
Benedikt Elser

Errors and omissions excepted

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