



BOSCH

Invented for life

Driven by

COMFORT



Reliable energy supply:
Bosch commercial-vehicle
batteries with PowerFrame®

Reliability and profitability along the way

Reduced idle times, increased planning certainty



Did you know?

Every year, some

13.4 million

commercial vehicles with more than 6 tons of GVW circulate on European roads – covering an annual overall distance of some 145,000 km in long-haul traffic.

Today Paris, tomorrow already heading towards Barcelona. Where asphalt glows in midday heat today, the rising sun will make frosty roads glow in half a year. What sounds like idyllic trucker lifestyle is rather a race against the clock. Anyone knows: trucks can only make money if they are out on the roads. Whoever wants to increase profitability doesn't make any compromises and relies on excellent Bosch quality.



Commercial vehicle parts, diagnostics and workshop services

The workshop and retail range includes high-quality spare parts, diagnostics and workshop equipment as well as special training courses and a technical hotline. The diagnostic software ESI[tronic] Truck covers 90% of the European commercial vehicle market and works with diagnostic tester Bosch KTS Truck.



Global presence

More than 17 000 associates in 150 countries as well as an extensive dealer network, reliably ensure target-oriented workshop support and local availability of the spare parts range.



Value-based solutions

Bosch eXchange provides a high-quality alternative for value-based repairs. During this industrial remanufacturing process, replacement parts are subject to the same standards as at the production of new ones and to the same functional and quality tests. This ensures high quality and a long service life with the same warranty as for new parts.



Competence and know-how

Bosch knows the technical requirements of commercial vehicles very well and offers innovative and reliable solutions within its aftermarket range.



Reliability and profitability along the way

Reduced idle times, increased planning certainty

Today Paris, tomorrow already heading towards Barcelona. Where asphalt glows in midday heat today, the rising sun will make frosty roads glow in half a year. What sounds like idyllic trucker lifestyle is rather a race against the clock. Anyone knows: trucks can only make money if they are out on the roads. Whoever wants to increase profitability doesn't make any compromises and relies on excellent Bosch quality.



Commercial vehicle parts, diagnostics and workshop services

The workshop and retail range includes high-quality spare parts, diagnostics and workshop equipment as well as special training courses and a technical hotline. The diagnostic software ESI[tronic] Truck covers 90% of the European commercial vehicle market and works with diagnostic tester Bosch KTS Truck.



Value-based solutions

Bosch eXchange provides a high-quality alternative for value-based repairs. During this industrial remanufacturing process, replacement parts are subject to the same standards as at the production of new ones and to the same functional and quality tests. This ensures high quality and a long service life with the same warranty as for new parts.



Global presence

More than 17 000 associates in 150 countries as well as an extensive dealer network, reliably ensure target-oriented workshop support and local availability of the spare parts range.



Competence and know-how

Bosch knows the technical requirements of commercial vehicles very well and offers innovative and reliable solutions within its aftermarket range.



Did you know?

Every year, some

13.4 million

commercial vehicles with more than 6 tons of GVW circulate on European roads – covering an annual overall distance of some 145,000 km in long-haul traffic.



ESI[tronic] Truck

In Europe,

2,600

workshops subscribed to ESI[tronic] Truck software.



Commercial-vehicle batteries

Overview



A tough job for today's commercial-vehicle batteries

Reliability

On an average, modern trucks cover some 145 000 km every year. Often, the drivers sleep inside the cab up to 5 nights per week. And yet the batteries need to provide enough starting power to start the engine the next day.

Performance

Even in case of stationary operation, the batteries power a wealth of safety and convenience features. And yet they are to cope with frequent charge and discharge cycles.

Economy

Low maintenance efforts help reducing the fleet operating costs.

Vibration resistance

As commercial-vehicle batteries are installed close to the rear axle more and more often, they are subject to increased vibrations. High robustness and vibration resistance are thus required.

As batteries have to cope with increasing strains, according to several statistics, they are one of the key reasons for breakdowns. Good to know, you can fully rely on Bosch commercial-vehicle batteries. They are powerful, vibration-resistant and even maintenance-free. This will cut the fleet operating costs.



Did you know?

Vibration resistance is of increasing importance for commercial-vehicle batteries. More and more often, the battery is installed close to the rear axle thus clearing the space required for AdBlue® and SCR catalytic converters. In order to cope with the strong vibrations at the rear axle, however, a high vibration resistance is absolutely indispensable.



Commercial-vehicle batteries: EFB (Enhanced Flooded Batterie)

Product range



TE EFB





Extremely powerful and vibration-resistant commercial-vehicle battery with EFB technology and patented PowerFrame® (grid) for optimized current flow and reduced corrosion – designed to cope with the huge energy demands of long-distance traffic, numerous convenience and comfort functions as well as off-highway and heavy-duty applications

Technology	 <p>EFB (Enhanced Flooded Battery): positive plate coated with polyester scrim ensures additional retention of the active material and a high deep-cycle resistance</p>
Scope of application	 <p>Long-haul trucks, distribution traffic/trucks with tail lift, construction machinery and off-road trucks, coaches and buses, municipal vehicles with a high rate of city traffic and fire-fighting vehicles, agricultural vehicles, applications with numerous electrical consumers</p>
Service life	●●●●
Cold starting performance	●●●
Deep-cycle resistance	●●●
Number of electrical consumers	●●●
Vibration resistance	●●● V4/EN-50342-1
Maintenance and water consumption	100% maintenance-free – reduces fleet operating costs very low water consumption thanks to labyrinth lid
Installation inside the vehicle	Yes
Installation angle	0°
Shelf life	18 months

Commercial-vehicle batteries: Lead-acid SLI

Product range



	T5 SLI	T4 SLI	T3 SLI
	<p>Particularly powerful and deep-cycle-resistant commercial-vehicle starter battery with patented PowerFrame® (grid) for optimized current flow and reduced corrosion – for high energy demands on long-distance trips</p>	<p>Persistent commercial-vehicle starter battery with patented PowerFrame® (grid) for optimized current flow and reduced corrosion – for average energy demands</p>	<p>Reliable commercial-vehicle starter battery with patented PowerFrame® (grid) for optimized current flow and reduced corrosion – ideal for vehicles with low energy demands</p>
Technology	 <p>Lead-acid SLI: Starting-Lighting-Ignition / starter battery</p>		
Scope of application	 <p>Long-haul trucks, distribution traffic/ trucks with tail lift, construction machinery and off-road trucks, coaches, applications with numerous electrical consumers</p>	 <p>Long-haul trucks, distribution traffic/ trucks with tail lift, construction machinery and off-road trucks, coaches</p>	 <p>Distribution traffic/ trucks with tail lift, vans and LCVs</p>
Service life	● ● ●	● ● ●	● ●
Cold starting performance	● ● ●	● ● ●	● ●
Deep-cycle resistance	● ●	● ●	●
Number of electrical consumers	● ●	● ●	●
Vibration resistance	● ● V3/EN-50342-1	● ● V3/EN-50342-1	● V1, V2 oder V3* / EN-50342-1 * depending on type
Maintenance and water consumption	100% maintenance-free – reduces the fleet operating costs Very low water consumption thanks to labyrinth lid	100% maintenance-free – reduces the fleet operating costs Very low water consumption thanks to labyrinth lid	Low maintenance requirement – hybrid lid allows topping up with water
Installation inside the vehicle	Yes	Yes	No
Installation angle	0°	0°	0°
Shelf life	18 months	15 months	12 months

TE EFB commercial-vehicle battery

Product details

Extremely powerful and vibration-resistant commercial-vehicle battery with EFB technology – designed to cope with the huge energy demands of long-distance traffic, numerous convenience and comfort functions as well as off-highway and heavy-duty applications

Extremely powerful
meeting
V4 vibration
resistance
standard



Advantages at a glance

- ▶ **The most powerful commercial-vehicle battery within the Bosch range – for tremendous electrical demands as well as several convenience and comfort functions in stationary operation:** EFB (Enhanced Flooded Battery) technology ensures twice the deep-cycle resistance of conventional batteries – the battery copes much better with frequent discharging and charging
- ▶ **Particularly vibration-resistant and for safe installation at the rear axle, off-highway vehicles and heavy-duty construction machinery, meeting V4 standard:** specially glued polyester fleece reliably keeps the battery plates in position, additional reinforcements and stabilized connectors make the battery highly vibration-resistant
- ▶ **Above-average service life and starting power:** material quality and standards equivalent to the ones used for original equipment
- ▶ **Absolutely maintenance-free and leakproof – reducing fleet operating costs:** the labyrinth lid ensures evaporated liquid to remain inside the battery; this results in very low water consumption

EFB (Enhanced Flooded Battery) Technology

Patented PowerFrame® (grid) for optimized current flow and reduced corrosion

The special grid-stamping technique makes this battery particularly corrosion-resistant and durable. The flow-optimized PowerFrame® grid design ensures consistently high starting power. This results in a very low self-discharge rate.

Labyrinth lid

The double lid with labyrinth design returns condensed water to the battery. As a result, TE batteries are absolutely maintenance-free and leak-proof. They consume very little water. The integrated central degassing, back-fire protection and an additional sealing ring ensure high operational safety.

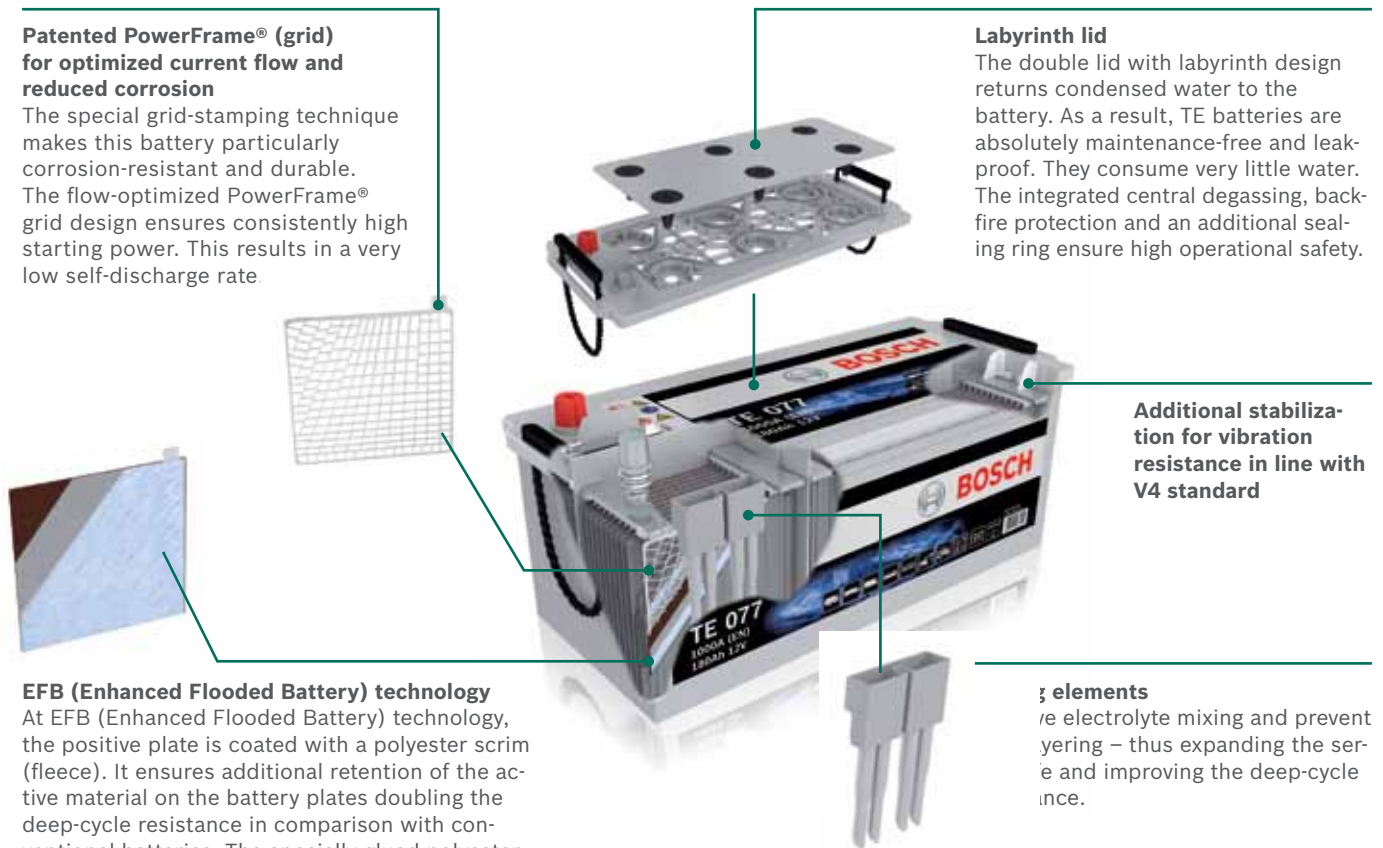
Additional stabilization for vibration resistance in line with V4 standard

EFB (Enhanced Flooded Battery) technology

At EFB (Enhanced Flooded Battery) technology, the positive plate is coated with a polyester scrim (fleece). It ensures additional retention of the active material on the battery plates doubling the deep-cycle resistance in comparison with conventional batteries. The specially glued polyester fleece reliably keeps the battery plates in position. As a consequence, the battery remains operational even if subject to strong and lasting vibrations.

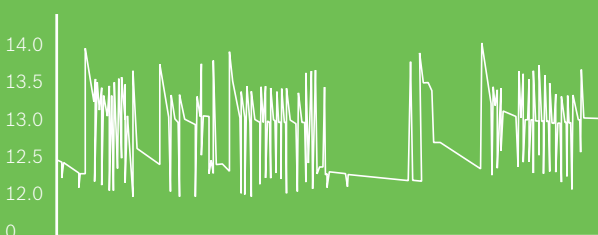
3 elements

1. Electrolyte mixing and prevent gassing – thus expanding the service life and improving the deep-cycle resistance.



Straining of batteries due to frequent starts and stops as well as a large number of electrical consumers

Frequent starts and stops, e.g. in inner-city traffic, and a lot of electrical consumers, such as convenience functions in long-distance traffic, often cause a negative energy balance.



With their high capacity, Bosch TE EFB batteries cope better with frequent charging and discharging. As a result, the energy efficiency, for instance in start/stop traffic, is increased significantly. The high deep-cycle resistance is particularly beneficial for long-haul trucks. At these vehicles, the battery supplies the large number of convenience functions. The result: reliable long-term operation.

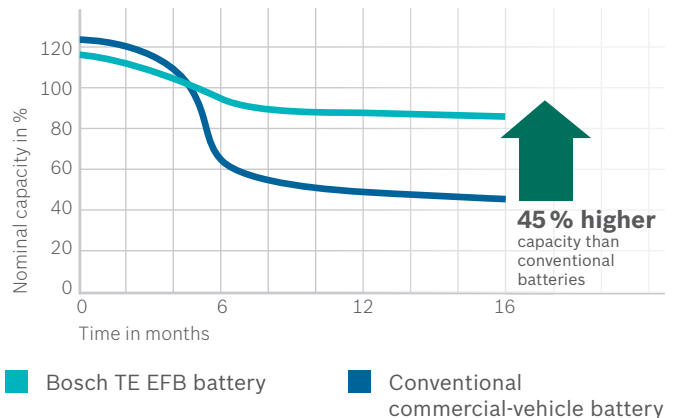
EFB (Enhanced Flooded Battery)

Quality tests

High performance, long service life

Field test with renowned commercial-vehicle manufacturers proves:

- ▶ Capacity of 85% after 16 months – despite large amount of comfort and convenience functions
- ▶ Noticeably longer service life and higher reliability



Above average

A benchmark test proves:

- ▶ There is hardly any other battery meeting the test criteria as Bosch TE batteries do

Test criteria and results of Bosch TE EFB battery

Capacity according to EN at 20h:

Low loss of capacity throughout the complete service life

Cold starting performance according to EN at -18 °C:

Very high

Deep-cycle resistance according to EN at 50% DOD*:

Above average

Water consumption according to EN:

Extremely low thanks to labyrinth lid

Vibration resistance according to EN:

Meets V4 (highest vibration resistance within the EN requirements)

Acid layering:

None – thanks to effective mixing elements

* DOD: depth of discharge

High quality pays off

Cutting fleet operating costs:

Choosing the right battery, the general maintenance costs, the fuel costs and the costs for servicing and repairs can be cut. Wear and maintenance efforts are reduced as well.

Bear in mind: The outstanding battery management reduces the risk of losses of earnings caused by unexpected downtimes or repairs.

Example:

Type of costs	Not maintenance-free battery	Bosch commercial-vehicle battery
Acquisition costs	EUR 300.00	EUR 425.00
Maintenance costs	EUR 350.00	EUR 0
Downtime costs	EUR 131.25	EUR 0
Total:	EUR 781.25	EUR 425.00

T5 SLI lead-acid commercial-vehicle battery

Product details

Particularly powerful and deep-cycle-resistant commercial-vehicle starter battery with patented PowerFrame® (grid) for optimized current flow, reduced corrosion and high energy demands on long-distance trips



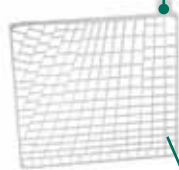
Advantages at a glance

- ▶ **Very long service life and reliable starting power, even after extended downtimes:** special grid stamping technique for optimized current flow, reduced corrosion and a long service life
- ▶ **Reliably covers the high energy demands of long-distance operation:** very high quality standards for materials and production
- ▶ **Very high resistance to vibrations:** thanks to their robust design, T5 batteries meet vibration-resistance standard V3
- ▶ **Absolutely maintenance-free and leak-proof – reducing fleet operating costs:** the labyrinth lid ensures evaporated liquid to remain inside the battery; this results in very low water consumption

PowerFrame® Technology

Patented PowerFrame® (grid) for optimized current flow and reduced corrosion

The special grid-stamping technique makes this battery particularly corrosion-resistant and durable. The flow-optimized PowerFrame® grid design ensures consistently high starting power. This results in a very low self-discharge rate.



Labyrinth lid

The double lid with labyrinth design returns condensed water to the battery. As a result, T5 batteries are absolutely maintenance-free and leak-proof. They consume very little water. The integrated central degassing, back-fire protection and an additional sealing ring ensure high operational safety.



Ion-permeable pocket separator

Prevents any contact between positive and negative plates – thus increasing both service life and starting power.



KTS Truck: ECU diagnoses for modern commercial-vehicle electronics

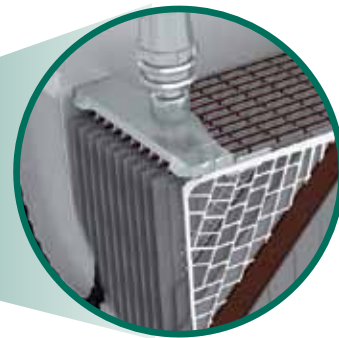
- ▶ KTS Truck module for trucks, vans, LCVs, trailers and buses
- ▶ Can be connected to DCU 220 and all common laptops/PCs thanks to USB interface
- ▶ Integrated long-distance Bluetooth connection (up to 100 m)
- ▶ Bluetooth-USB adapter included within scope of delivery
- ▶ Robust housing



T4 SLI lead-acid commercial-vehicle battery

Product details & technology

Persistent commercial-vehicle starter battery with patented PowerFrame® (grid) for optimized current flow and reduced corrosion – for average energy demands



Patented PowerFrame® (grid) for optimized current flow and reduced corrosion

The special grid-stamping technique makes this battery particularly corrosion-resistant and durable. The flow-optimized PowerFrame® grid design ensures consistently high starting power. This results in a very low self-discharge rate.

Advantages at a glance

- ▶ **Long service life and high starting power:** special grid stamping technique for optimized current flow and reduced corrosion – prevents early battery failure
- ▶ **High resistance to vibrations:** the battery design prevents changes to the mechanical structure and meets vibration-resistance standard V3
- ▶ **Absolutely maintenance-free and leakproof – thus reducing fleet operating costs:** the labyrinth lid ensures evaporated liquid to remain inside the battery, this results in very low water consumption

 **Did you know?**

Battery expert since 1922

In 1922, Bosch produced its first battery in Stuttgart-Feuerbach.



T3 SLI lead-acid commercial-vehicle battery

Product details

Reliable commercial-vehicle starter battery with patented PowerFrame® (grid) for optimized current flow and reduced corrosion – ideal for vehicles with low energy demands



Advantages at a glance

- ▶ **Average service life and reliable starting power:** special grid stamping technique for optimized flow of current and reduced corrosion – prevents early battery failure
- ▶ **Vibration-resistant:** T3 batteries meet vibration-resistance standard V1, V2 or V3 (dependant on type)
- ▶ **Low maintenance requirement:** hybrid lid with seal plugs allows topping up with water



**Bosch Automotive catalog
eCat-online**



**The quick way to find
the matching product**

- ▶ Free-of-charge online spare-parts catalog
- ▶ With a wealth of additional information
- ▶ Available in 28 languages

www.bosch-automotive-catalog.com

What drives you, drives us.

Bosch technologies are used worldwide in almost all vehicles. People, and assuring their mobility, is what we are focused on.

Therefore, we have dedicated the last 125 years of pioneering spirit and expertise in research and manufacturing to achieving this.

We continue to work on our unique combination of solutions for spare parts, diagnostic devices, workshop equipment and services:

- ▶ Solutions for efficient vehicle repairs
- ▶ Innovative workshop equipment and software
- ▶ The world's most comprehensive range of new and replacement parts
- ▶ Large network of wholesale customers, for quick and reliable parts supply
- ▶ Competent hotline support
- ▶ Comprehensive educational and training offers
- ▶ Targeted sales and marketing support

Find out more at:
www.bosch-automotive-aftermarket.com

Your local retailer:



Robert Bosch GmbH
Automotive Aftermarket

Auf der Breit 4
76227 Karlsruhe
Germany

www.bosch.com