

Driven by efficiency.

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:
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Invented for life



Bosch Automotive Aftermarket Brochure





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Battery

Power you can rely on

100 Years

Batteries from Bosch
1922 – 2022

Why Bosch Battery?

Modern cars today are fitted with features that require higher power than you think. With the increasing on-board electrical consumables, Bosch batteries provide consistent power supply ensuring the highest standards are met at all times.




What is an EFB battery?


Enhanced Flooded Batteries (EFBs) are built for higher performance and reliability than standard batteries. Designed to support entry level Start-Stop engines.


EFB also enhances starting performance for standard engines and meets the increasing electrical demands of modern vehicles.


EFB provides increased cyclic stability and faster recovery from deep discharge. EFB maintains power supply in Start-Stop vehicles and restarts in a fraction of a second.


Benefits at a glance

-  **Extra Long Service Life**
High density active material and optimized particle size for longer service life

-  **Start / Stop**
Special negative additives are added to reduce the shrinkage of active materials which increases charging acceptance

-  **Extra High Performance**
Small-sized windows of the expanded grid lowers resistance and improves conductivity for consistently high performance

-  **Higher Durability**
Optimized negative grid alloy inhibits corrosion and prolongs the battery life cycle with a high depth of discharge

-  **Higher Depth of Discharge (DOD)**
Suitable for additional electrical load prevalent in modern vehicles to give you the extra power needed

ST Hightec AGM / Passenger car

AGM technology for Advanced Start-Stop systems

Start-Stop technology reduces fuel consumption and CO₂ emissions. In city traffic, the vehicle's electrical system consumes more power than the alternator can supply. Due to less charging opportunity in start-stop systems, it's crucial to have a battery that is able to recharge quickly with superior starting power to enable engine-off mode.



Benefits at a glance



Extra Service Life

Special Lid Structure

- ▶ Double lid with labyrinth construction prevents water loss

Wide Cast on Strap

- ▶ High vibration resistance minimizes shedding of active material

Polypropylene Case

- ▶ Made of highly durable material that can withstand high internal pressure



Absorbent Glass Mat

- ▶ Electrolyte absorbed by micro-porous glass separators eliminates acid spills and terminal corrosion
- ▶ Optimized component compression minimizes loss of active material
- ▶ Maximizes charge reaction due to evenly distributed electrolyte



Assured Safety

- ▶ 100% leakage proof with AGM technology
- ▶ Eliminates emission of gases due to the recombinant nature
- ▶ Safety valves relieve excess pressure



Centralized Grid Lug / Fine Mesh Grid

- ▶ Higher charging and discharging performance
- ▶ Designed for maximum current flow and high charge efficiency
- ▶ Made of Tin-Calcium material with high corrosion resistance
- ▶ Low internal resistance translates into higher power output



Auxiliary

AGM

Mercedes Benz with dual battery system.
Provides backup power in case of emergency

Absorbent Glass Mat (AGM) ★★★★★

AGM technology offers long service life and is highly resilient to deep discharges



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Battery Charger

Backup charging for efficiency



Why Bosch Battery Charger?

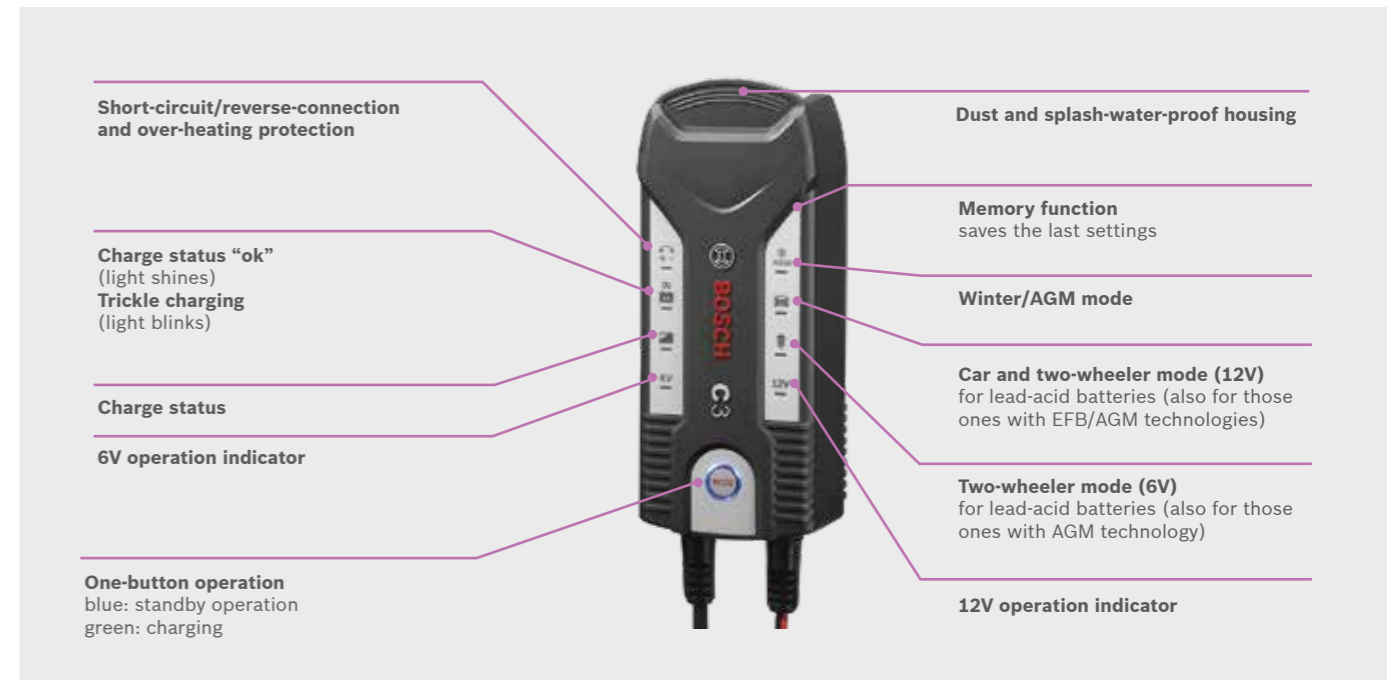
- First aid for exhausted batteries & return them to top condition



	C3	C7
	Practical battery charger for 6V and 12V car and two-wheeler batteries – automatically detects the type of battery and correct charge.	Versatile battery charge for 12V and 24V starter batteries of LCVs, motor homes and large motorcycles – suitable for mobile electric devices.
Type of batteries	6V/12V; lead-acid, AGM, EFB	12V/24V; lead-acid, AGM, EFB
One-button operation	•	•
Automatic charge control (MCU)	•	•
Protection against sparks	•	•
Trickle charging	•	•
Short-circuit/reverse-connection protection	•	•
Overheating	•	•
Memory function	•	•
Regenerative function (for deeply discharged batteries)	•	•
Power supply 13.6V/5A	•	•
Dust/splash-water protection (IP 65)	•	•
Scope of application	Cars, scooters, motorcycles, vans, LCVs, motor homes, motorboats, classic and vintage cars	Cars (also AGM/EFB), big motorcycles, LCVs, commercial vehicles, motor homes, motorboats, classic and vintage cars, mobile electric devices
Bosch Part No.	018999903M	018999907M

Advantages at a glance

- Practical and easy-to-use battery charger: Automatically detects the type of battery
- Increases the battery service life: C3 monitors the battery once connected, keeping charge levels constantly high
- Long-term installation onto the vehicle battery is possible: screw-mountable



Advantages at a glance

- Quick and easy charging to increase the battery service life: automatic detection of battery types
- Versatile: regenerative function for deeply discharged batteries, trickle charging for high-quality batteries with AGM or EFB or seasonally used vehicles
- Suitable for supportive charging: vehicle setting preserved when replacing battery
- Suitable for mobile devices: continuous 13.6V/5A power supply
- Long-term installation onto vehicle battery is possible: Screw-mountable



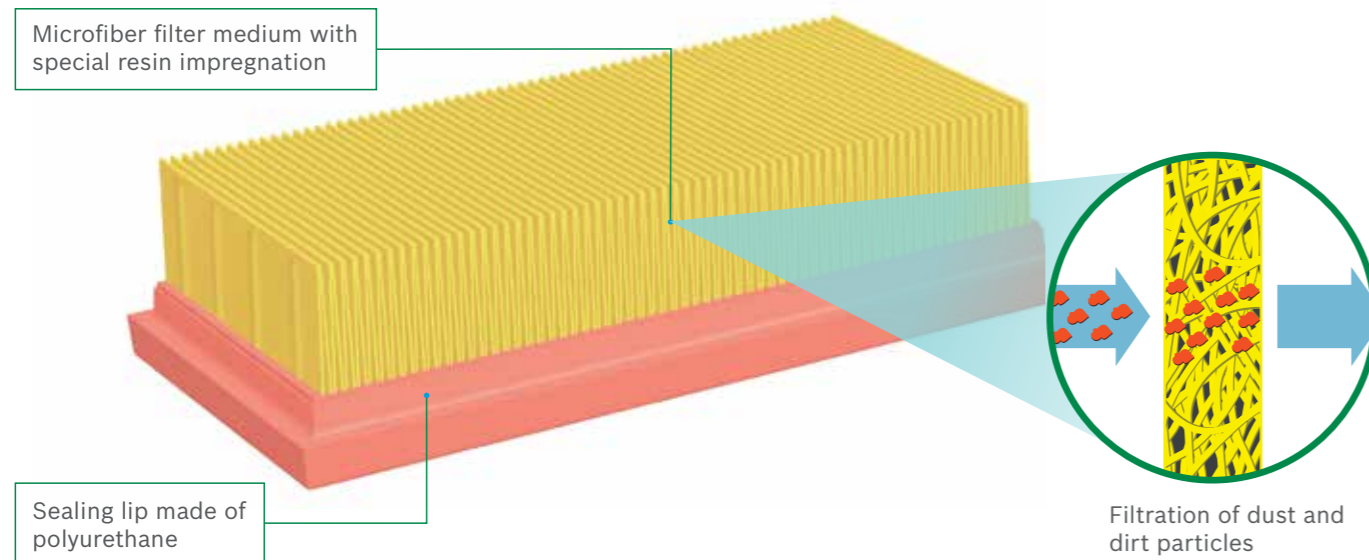
Air Filter

Final stop for dirt particles

Why Bosch Air Filter?

Design and operation

on the example of an air filter with polyurethane frame



Bosch air filter protect the engine and support a proper function of the sensors in the intake air duct. They reliably separate particles from intake air and contribute to optimum engine performance.



Advantages at a glance

- ▶ Long service life, excellent filter efficiency, moisture resistance and tensile strength
- ▶ High dust holding capacity and low flow resistance
- ▶ Robust fold geometry
- ▶ Appropriate fit

Possible consequences of silted-up filters:

- ▶ Increase fuel consumption
- ▶ Reduced engine power
- ▶ Increased pollutant emissions

Hot-film air mass meter for precise mixture preparation

- ▶ Sensors measuring the mass intake of air
- ▶ Sends information to the engine control unit for an exact mixture preparation
- ▶ Fitted at the intake duct behind the air filter

For flawless operation, they need:

- ▶ Clean air
- ▶ Constant airflow without any disruptive turbulences

! Workshop tip:

Change air filters regularly as specified by the vehicle manufacturer!

? Did you know?

To burn one liter of fuel, a combustion engine needs 10,000 liters of clean air.



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Cabin Filter

Easy breathing for allergy sufferers

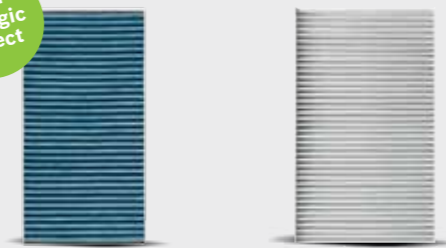


Bosch Cabin Filter

- ▶ Provides relief as allergic reactions can be annoying when driving
- ▶ Bosch cabin filters provide relief
- ▶ Traps allergens, bacteria and fine dust before reaching the car cabin
- ▶ Market coverage of 95%

Specifications

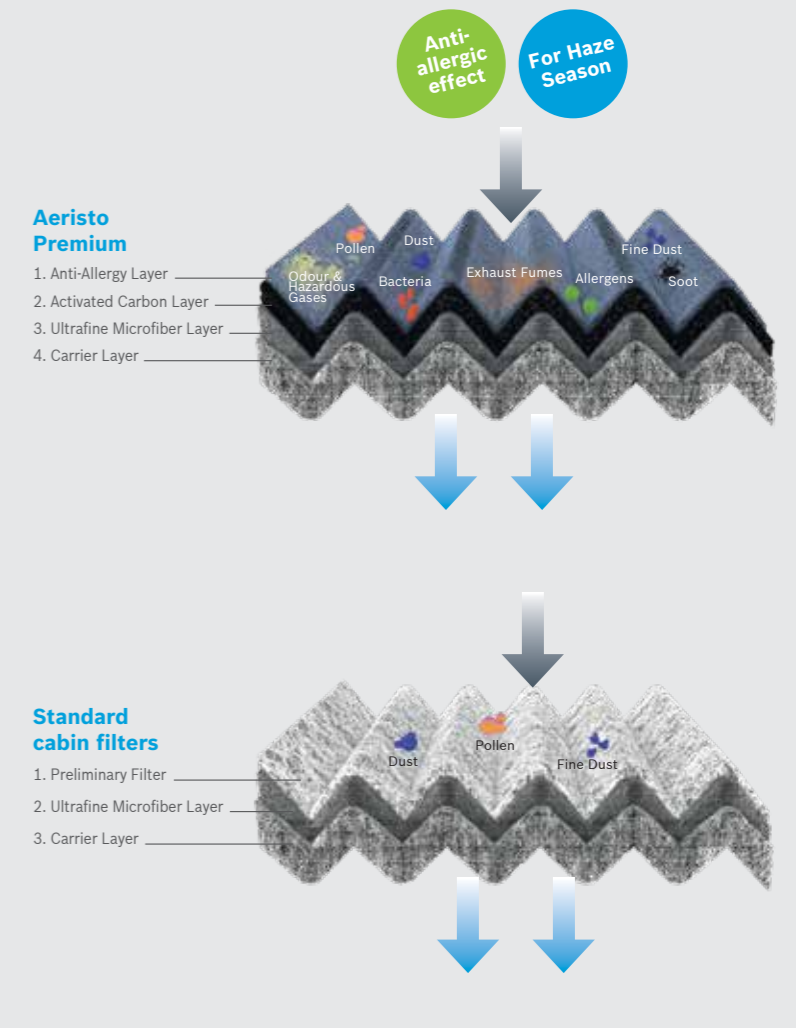
Anti-allergic effect



Function	Aeristo Premium	Aeristo (Standard)
	Anti-allergic and anti-bacterial effects	Clean air inside the car
Neutralizes allergens and bacteria	•	
Separates fine dusts (up to 99% of PM _{2,5} µm)	•	
Separates foul-smelling and harmful gases (ozone, smog, exhaust gases)	•	
Separates pollen and fine dusts (up to 100% of PM ₁₀ µm)	•	•
Protects the air conditioning	•	•
Reduces dazzling effects	•	•
Coverage		

Possible consequences of silted-up filters:

- ▶ Poor vision due to misted windows, reducing safety
- ▶ Increased pollutants in the car
- ▶ Allergic reactions
- ▶ Restricted operation of air conditioning system due to deposits



Workshop tip:

Bosch recommends changes of cabin filters every 15,000 km or yearly.

Did you know?

Allergies are on the rise. In Germany, approximately 16%* of the population suffer from pollen allergies.

*Source: www.daab.de



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Fuel Filter

Effective filtration of extremely small particles

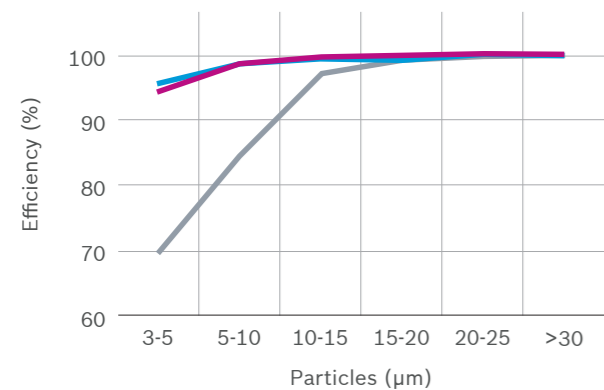
Bosch Fuel Filter

Bosch filters combine high-quality materials, meticulous processing and high development efforts. Tests at the laboratory reveal the differences between Bosch quality filters and cheap filters.



Efficiency

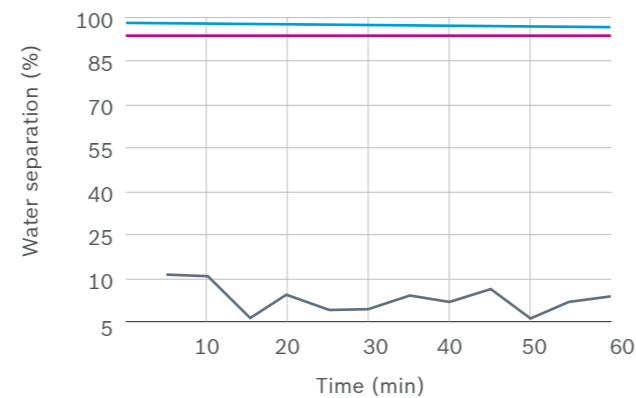
Lower efficiency of cheap filters
 → 6 times more particles get into the injection system!



■ Standard (ISO TR 13353)
■ High-quality filter, e.g. Bosch ■ Low-quality filter

Water separation

Water separation does not fulfill the standard requirements
 → Risk of corrosion within fuel injection system!

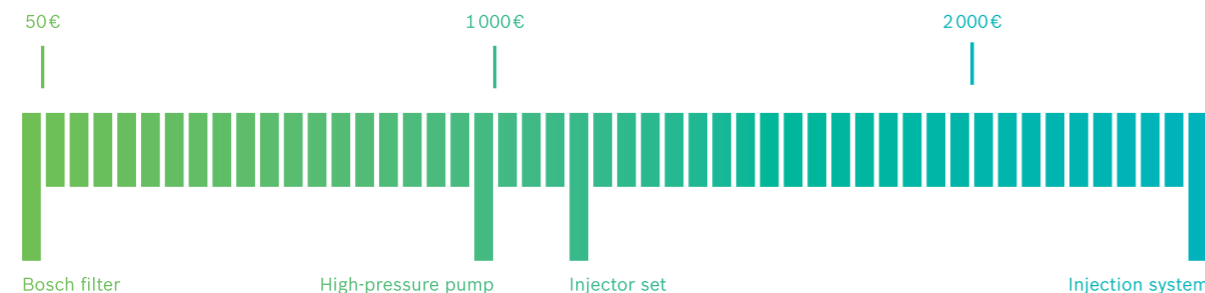


■ Standard requirements (ISO / TR 16332)
■ High-quality filter, e.g. Bosch ■ Low-quality filter

Cheap today, expensive tomorrow

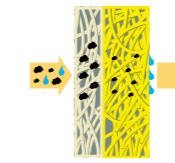
With respect to fuel filters, those willing to save on the wrong things may risk expensive damage, for example to nozzles or the high-pressure pump.

Cost relations



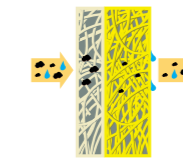
On the safe side with Bosch filters

High particle separation rate thanks to microporous multilayer filter medium

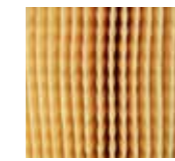


Cheap filters – possible expensive consequences!

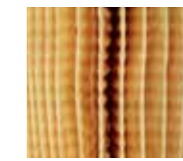
Low-quality filter medium
 ▶ Increased engine wear
 ▶ Injector clogging
 ▶ Corrosion



Large dust-holding capacity through high number of pleats



Lower number of pleats
 ▶ Increased engine wear due to particles
 ▶ Reduced service life



Reliable filtration thanks to stable pleat geometry



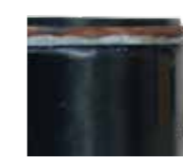
Unstable pleat geometry
 ▶ Insufficient fuel filtration
 ▶ Increased engine wear



Corrosion-resistant housing prevents fuel leakages



Corrosion caused by spray water
 ▶ Hazards caused by leaking fuel
 ▶ Environmental pollution
 ▶ Increased engine wear



Robust connection of the end pleats



Bypass of unfiltered fuel caused by missing connection of end pleats
 ▶ Increased engine wear



High-quality seal made out of a special rubber prevents any fuel leakage



Damaged, porous seal
 ▶ Hazards caused by leaking fuel
 ▶ Environmental pollution



Protection cap on the clean side (outlet) of the filter to prevent any soiling during transport and storage



Missing protection cap facilitates filter soiling
 ▶ Increased engine wear caused by dirt particles
 ▶ Reduced filter service life



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Oil Filter

For your engine to run smoothly



Bosch Oil Filter

- ▶ High particle holding capacity
- ▶ Reliable engine lubrication at almost all temperatures and oil pressures
- ▶ No oil leaks

Advantages at a glance

Customer benefits	Product features
Long service life of both filter and engine oil	Microporous, specially impregnated filter medium
High particle holding capacity	Large filter surface
High particle separation rate	Specially designed and well balanced filter components
Reliable engine lubrication at almost all temperatures and oil pressures	Integrated bypass valve and backstop
No oil leaks	Seals made of a special rubber, corrosion-resistant housing materials

Oil filter designs



Oil filter insert

The oil filter housing is permanently connected to the engine block. When changing the filter, only the filter insert and the seals are replaced.



Oil filter exchange box

When changing the filter, the entire oil filter is replaced and screwed right onto the engine block using a connector flange.

Oil filters – types

Main flow filter

- ▶ With each cycle, all of the oil passes the filter

Combined main-flow/bypass filter

- ▶ 100 % of the oil is filtered by the main flow filter
- ▶ In addition, 10 % of the oil are subject to a fine filtration at the bypass filter – slowing down oil aging

Bosch oil filters in comparison:

On the safe side with Bosch filters		Cheap filters – possible expensive consequences!
High particle separation rate thanks to microporous filter medium with special impregnation		Low-quality filter medium ▶ Increased engine wear ▶ Possible increase in fuel consumption
Large dust-holding capacity through large number of pleats		Low number of pleats ▶ Poor filtration ▶ Increased wear or even engine damage ▶ Reduced service life
Reliable filtration thanks to meticulous processing and stable pleat geometry		Unstable pleat geometry, excess of adhesives ▶ Increased engine wear ▶ Possible increase in fuel consumption
Corrosion-resistant housing prevents oil leakages		Corrosion caused by spray water ▶ Increased wear or even engine damage ▶ Environmental pollution caused by leaking oil
Robust felt ring prevents oil leakages		Poorly fitting felt ring ▶ Loss of internal integrity, poor filtration of oils ▶ Increased wear up to engine damage
High-quality seal made of a special rubber prevents oil leakages		Damaged, porous seal ▶ Increased wear or even engine damage ▶ Environmental pollution caused by leaking oil
Accurately set valve-opening pressure ensures reliable engine lubrication – even under cold conditions and in case of a clogged filter.		Poor functioning of the bypass valve ▶ Increased wear or even engine damage ▶ Bursting of the oil filter



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Horn


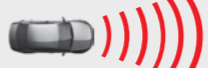

Reliable and audible presence



Why Bosch Horn?

- ▶ First patent worldwide for automotive horns
- ▶ ECE-compliant

The Construction of Sound

Stage	Disc Horn	Fanfare Horn	Compressor Trumpet
Sound Generation	<ul style="list-style-type: none"> ▶ The armature collides with the core ▶ Sound is being generated by impact of repeated metallic collisions 	<ul style="list-style-type: none"> ▶ Diaphragm vibrates repeatedly via free oscillation ▶ Diaphragm design and trumpet length dictates pitch and timbre of sound 	<ul style="list-style-type: none"> ▶ Compressed air generated produces alternating air pressure states ▶ Diaphragm oscillation results in an air column in trumpet ▶ Movement of air column generates sound
Sound Amplification	<ul style="list-style-type: none"> ▶ The vibrator creates sound by resonance ▶ Sound is amplified by the tone disc 	<ul style="list-style-type: none"> ▶ Trumpet resonates and amplifies the sound 	<ul style="list-style-type: none"> ▶ Trumpet resonates and amplifies the sound
Sound Propagation	<ul style="list-style-type: none"> ▶ Harsh metallic sound travels in straight line ▶ Sound is projected forward 	<ul style="list-style-type: none"> ▶ Harmonic and fuller sound propagates in fan-like pattern ▶ Sound reach is wider, especially within near radius 	<ul style="list-style-type: none"> ▶ Sound propagates in fan-like pattern with high volume strength ▶ Wide sound reach 

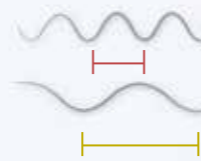
The Acoustics Highs & Lows

Frequency

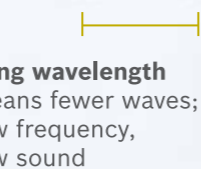
Refers to the number of oscillations made by the diaphragm system per second. This determines the deep or high-pitched tone. Frequency is measured in hertz (Hz); 1 Hz equals to 1 oscillation per second.

If the oscillations are slow, frequency is low and deep. If it is rapid, frequency is high.

Short wavelength
means lots of waves;
high frequency,
high-sound



Long wavelength
means fewer waves;
low frequency,
low sound

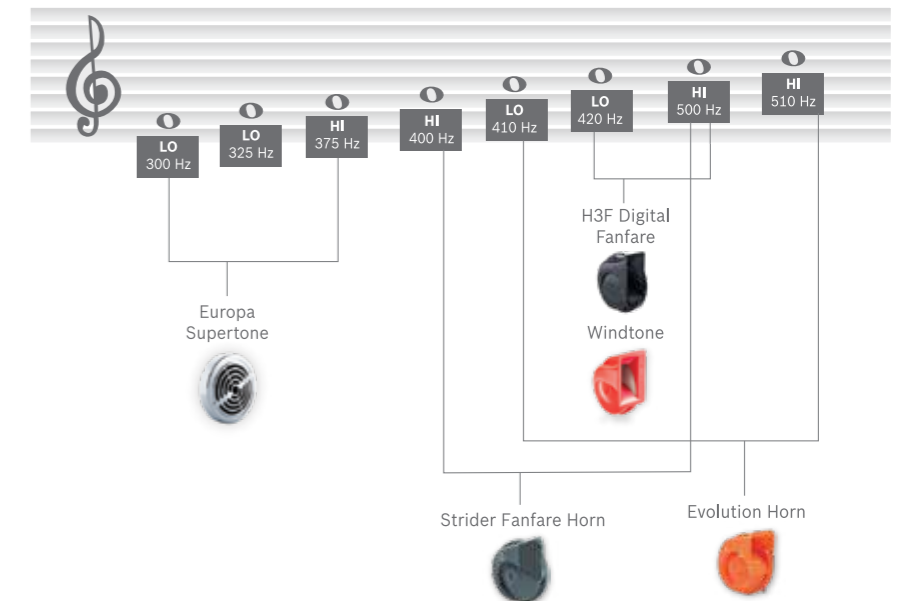


Sound pressure / volume

Measured in decibels (dB), it relates to how far and fast the oscillating diaphragm system is being deflected during activation.

The distance heard depends on the direction of the sound wave, power and volume.

ECE standards call for all audible warning devices to have sound pressure of between 105 and 118 dB. All Bosch horns are within the range.



Specifications

Models	DISC HORNS						FANFARE HORNS				COMPRESSOR TRUMPETS	
	Europa Supertone	Piccolo	FC2 Disc Compact	Motorcycle Mini	FC4 Disc Standard	FD4 Disc Duty	H3F Digital Fanfare	EC9C Fanfare Wafer	Evolution Fanfare Horn	Strider Fanfare Horn	Windtone	Trucker
CHARACTERISTICS												
Weather-Resistant	✓		✓		✓	✓	IP54*	IP54*	IP54*	IP56*		
Impact-Resistant	✓				✓	✓		✓				✓
Corrosion-Resistant	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EMC Protection	✓				✓	✓	✓	✓	✓	✓	✓	
Teflon Filter	✓		✓		✓			✓				
DESIGN & TUNING FACTORS												
Compact Design		✓	✓				89mm	93mm	80mm +/-1	80mm +/-1		
Serviceable				✓								
Extra-high Durability		✓					✓			✓		
Privileged Vehicles	✓											
Suitable for external mounting	✓					✓	✓					✓

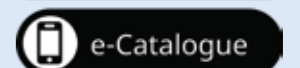
* Mini option available

*IP54 Protected from limited dust ingress, protected from water spray from any direction, limited ingress protection

*IP56 Protected from limited dust ingress, protected from high pressure water jets from any direction, limited ingress protection



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Lighting

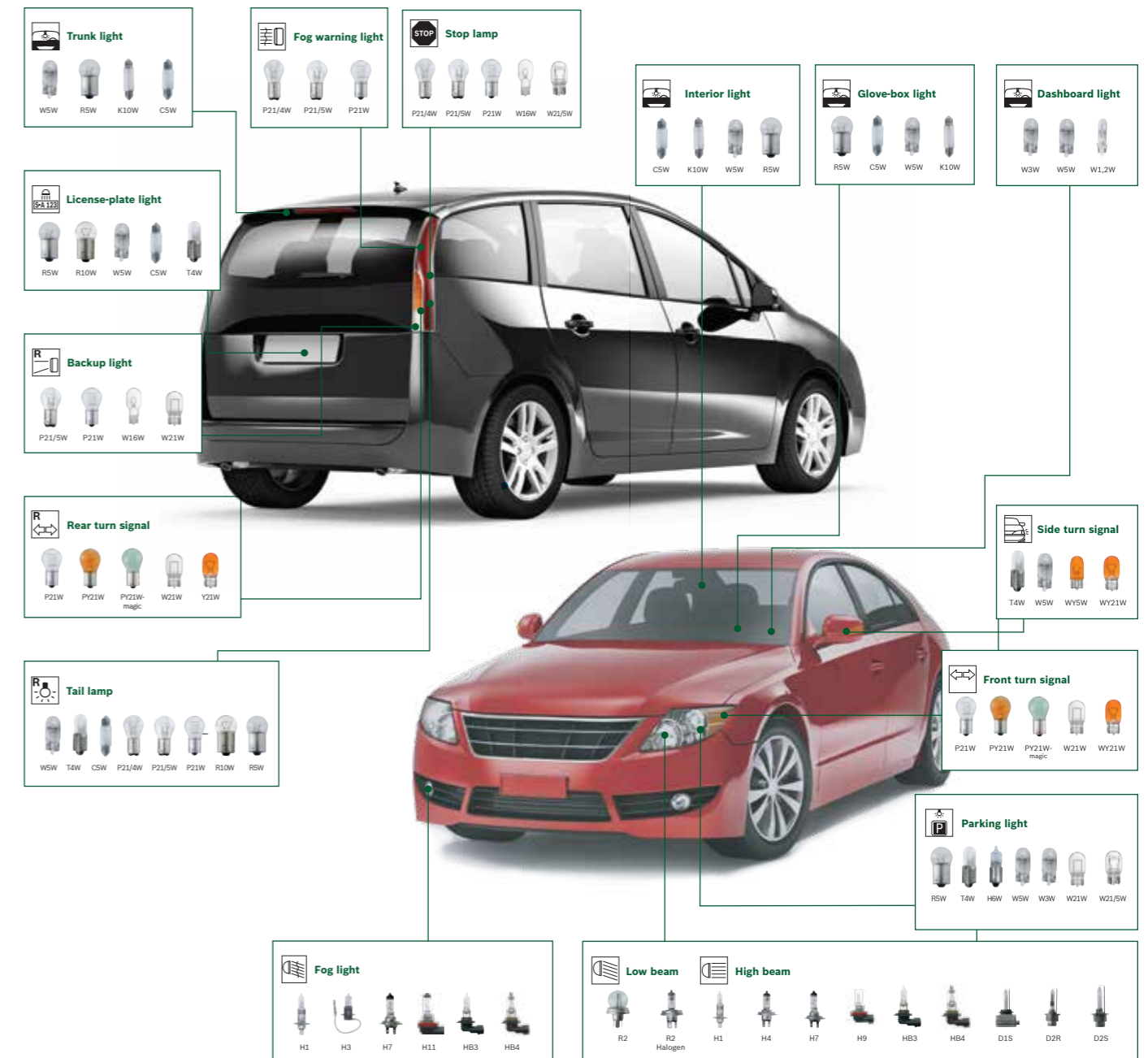
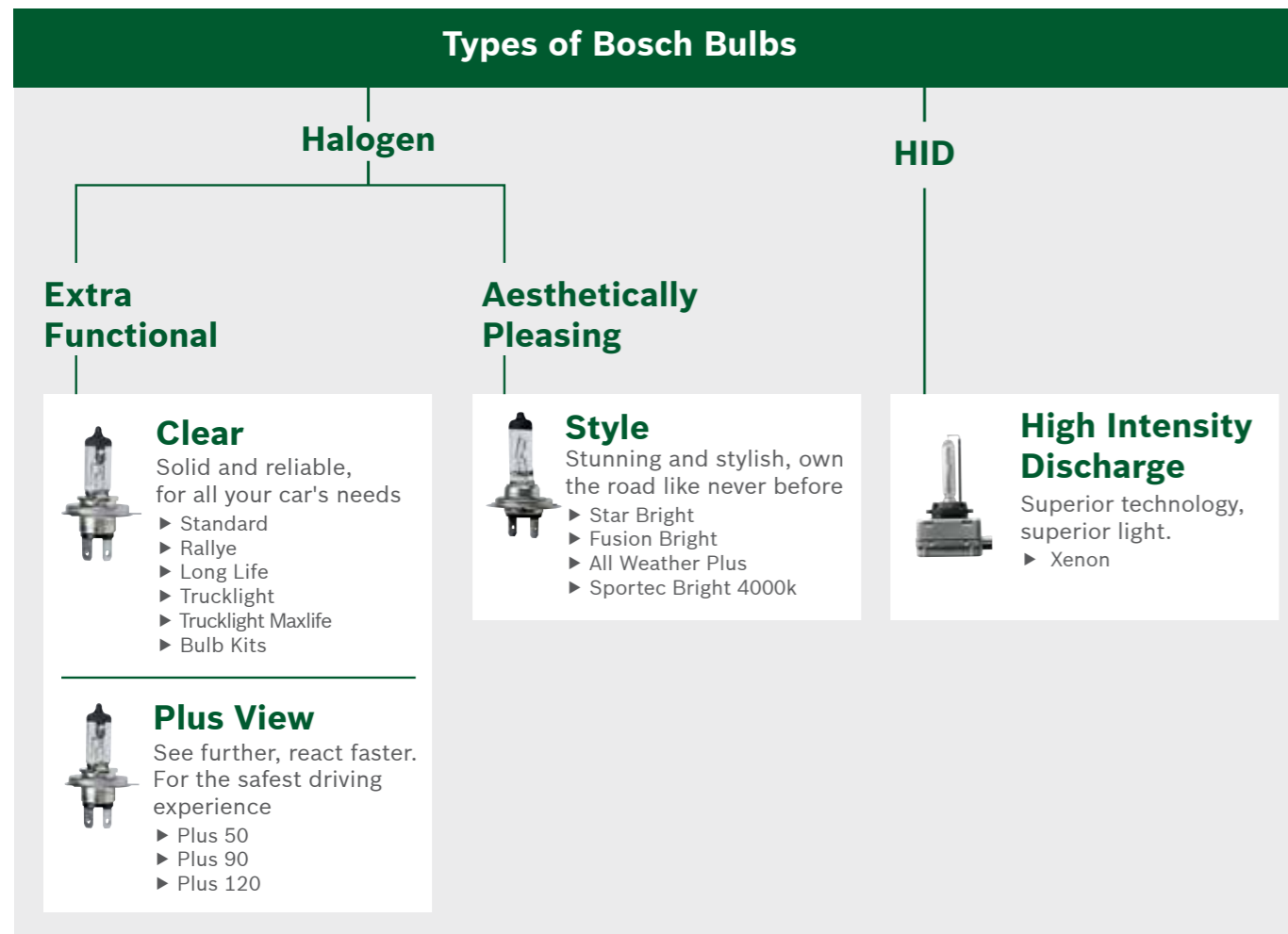
For a safe and relaxing journey

Why Bosch bulbs?

Wide range of bulb products ranging from classic replacement to various high-performance options



Our products are in multiple packaging. Check with your local dealer or Bosch sales office for available packaging options.



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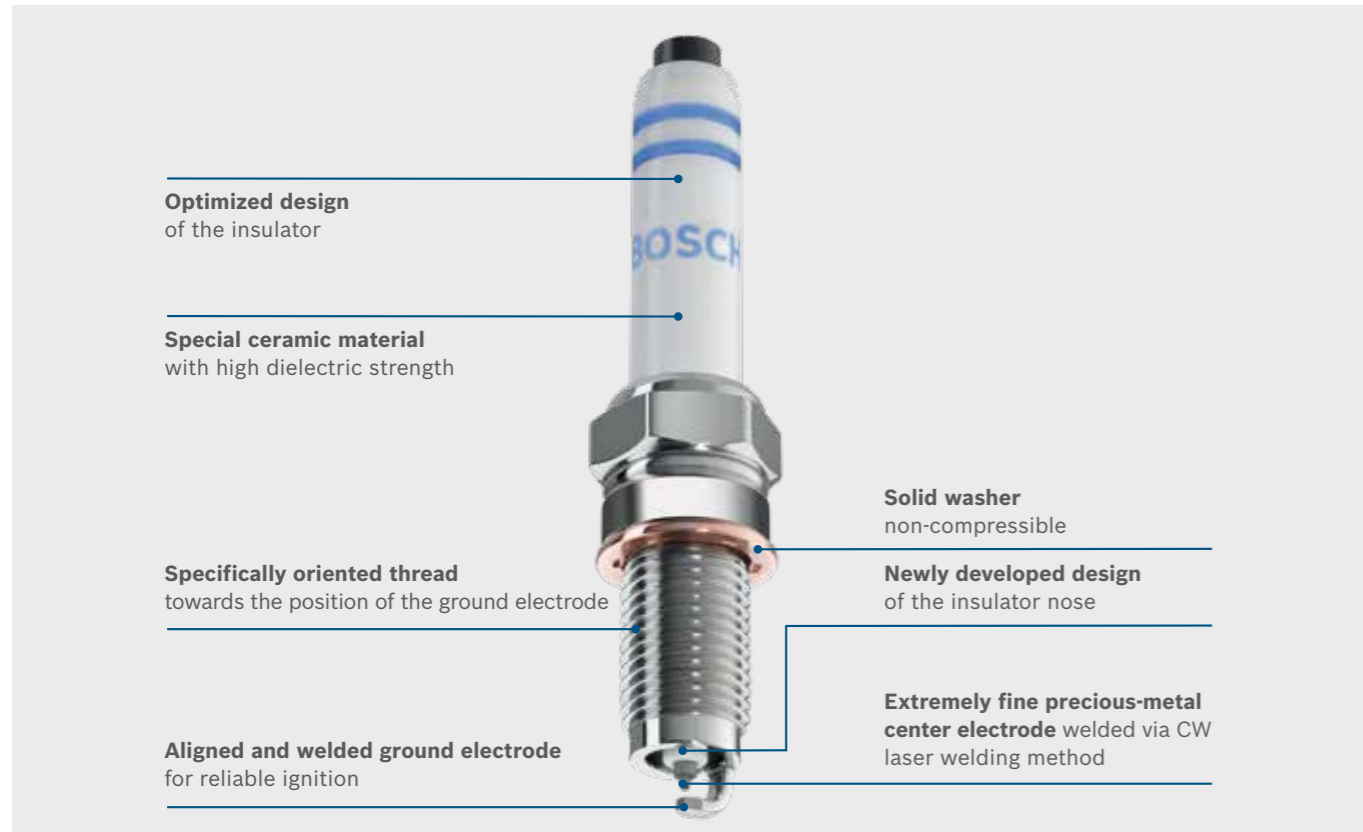
Spark Plug

Always subject to high voltages

120 Years

Spark plugs from Bosch
1902 – 2022

Why Bosch Spark Plug?



	Bosch Platinum	Bosch Double-Platinum	Bosch Iridium	Bosch Double-Iridium
Scope of application	Bosch Platinum, Double-Platinum, Iridium or Double-iridium spark plugs offer 1st class technology based on original equipment and engineered to the requirements of the respective engine.			
Application				
Advantages at a glance	<ul style="list-style-type: none"> ▶ Outstanding engine protection due to nickel-plated housing and thread ▶ First-class ignitability for high performance ▶ Hassle-free spark plug replacement ▶ High wear resistance due to a highly heat-conductive center electrode ▶ Reliable thermal characteristics due to heat-shrink assembly 			



i Pin-to-pin spark plugs

- ▶ Tailored to gasoline engines with demanding flammability characteristics
- ▶ E.g. at high exhaust gas recirculation rates or lean air/fuel mixtures
- ▶ Two thin precious-metal electrodes ensure high energy transfer rates and reliable ignition



i Solid washer

- ▶ Equip with a solid and non-compressible washer and a specifically oriented thread
- ▶ Tailored for engines with modern gasoline direct injection system
- ▶ The ideal alignment decides the accurate ignition of the fuel mixture



i Cup terminal

- ▶ Features a longer insulator for improved flashover resistance
- ▶ Engines with reduced displacement or less cylinders and increased boost pressure need higher ignition voltage

! Workshop tip:

Installation

1. Unbox
2. Screw in the spark plug by hand until it is seated at the cylinder head. Do not lubricate
3. Tighten with a spark plug wrench and the mandatory, type-specific torque, e.g. 23Nm



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Wiper

Outstanding visibility in any weather

Why Bosch Aerotwin?

- Intelligent adapter systems**
 - Facilitate easy fitting onto the wiper arm
- Aerodynamic spoiler**
 - Maintains firmly on windshield while keeping wind noise low especially at higher speeds
- Power Protection Plus coating**
 - Wiping without juddering or squeaking – even with extreme weather conditions
- Custom-made spring strips**
 - Outstanding wiping results with two parallel high-tech spring strips

The Bosch Wipers Differences

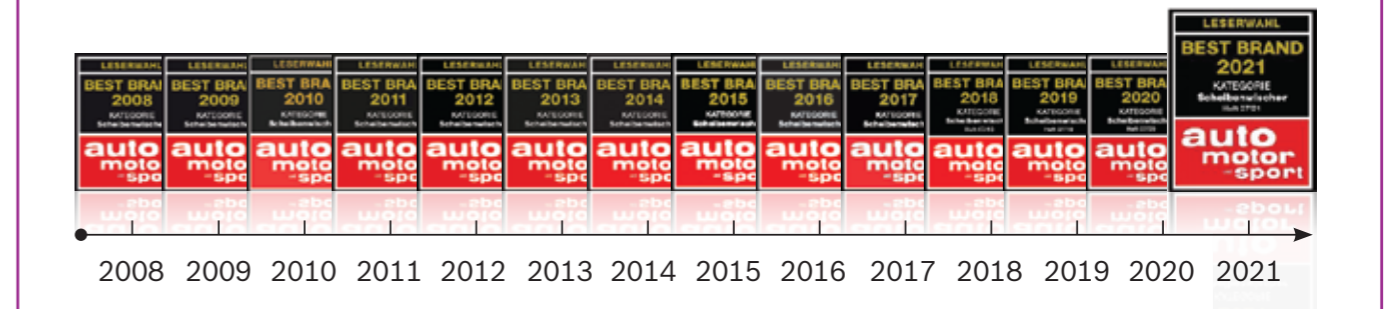


- Perfect wiper performance**
 - Enhances wiper performance without leaving streaks or deposits
 - Delivers optimum visibility regardless of weather
- Longer service life**
 - Makes the lip of the blade robust and resistant, even under extreme heat or cold
- Gentle wiper action**
 - Reduces friction between blade and windshield
 - Less noise, shaking or buckling whether windshield is wet or relatively dry

Specifications

	Advantage Suitable for vehicles with hook-type wiper arms	Clear Advantage Suitable for vehicles with hook-type wiper arms	Aerotwin Retrofit Suitable for vehicles with hook-type wiper arms	Aerotwin Plus Suitable for vehicles with OE-type wiper arms
Design	Conventional Steel Design	Flat blade technology with mono steel spring	Flat Blade Technology with Double Evodium steel	
Wiper-rubber Technology	Tropicalized natural rubber		Synthetic rubber	
Adapter System	Pre-assembled original adapter		Pre-assembled original adapter	Modular system with 4 adapters to fit 10 types of wiper arms
Installation	★★★★★	★★★★★	★★★★★	★★★★☆
Lifetime	★★★	★★★★	★★★★★	★★★★★
Wiping Performance	★★★	★★★★	★★★★★	★★★★★
High Speed	★★★	★★★★	★★★★★	★★★★☆
Silence	★★★	★★★★	★★★★★	★★★★★

14 years Auto Motor and Sport Best Brand



Workshop tip: Fitting is effortless

- Easy fitting:** Scan the QR code for installation video
- OR** Step-by-step assembly instructions

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