

# Electrifying the future of xEVs.

The 12V lead-acid battery – the crucial energy source in e-mobility that keeps everything running.



**ENERGIZING  
A NEW  
WORLD**

**EXIDE®**  
TECHNOLOGIES

Creating the future – the Exide way:



Innovation



Reliability



Sustainability



High Performance

[exidegroup.com](http://exidegroup.com)



# Stay one step ahead of what is coming.

But always mindful of our CO<sub>2</sub> footprint.

The automotive industry is on the threshold of a major transition. The swift advancement of drive system electrification technologies is paralleled by evolving EU regulations reshaping the market. Exide Technologies is in pole position in the race towards e-mobility and sustainability.



**The electrification of the future is in full progress.**



**The quality and durability of batteries is becoming increasingly evident.**



**It's imperative to have someone by your side that can meet all criteria and requirements perfectly.**



# Batteries that every vehicle is keen on.

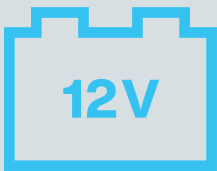
## The electrification of vehicles has evolved.

Here is an overview of electrified vehicles. The special term xEV is the collective term for all types – whether micro hybrid or fully electric. **EV** stands for **E**lectric **V**ehicle and the **x** stands for **the different variants**.

Feature	Start-Stop Micro hybrid	Mild hybrid	Full hybrid	Plug-in hybrid	Electric
Propulsion	Internal combustion engine	Internal combustion engine	Internal combustion engine + electric drive (10-30km)	Internal combustion engine + electric drive (50-100km)	Electric drive (200-500km)
Fuel	Petrol/diesel	Petrol/diesel	Petrol	Petrol + electric	Electric
(Hybrid) type	Micro	MHEV (mild)	FHEV	PHEV	BEV

## The essential role of the 12V lead-acid battery.

The job description of the 12V battery does not fit on a business card. It is responsible for so many things; **nothing works without it**. It provides the necessary energy to activate the safety relay and connect the high-voltage battery to the board net and electric engine.



## On eye-level with progress.

ADAS and AV continue to evolve, so at some point, you will be able to drive from A to B fully autonomously. It makes the role of 12V batteries increasingly crucial to ensure reliability and safety in every moment and in every electric vehicle.



Advanced Driver Assistance Systems (ADAS)



Autonomous vehicles (AV)



### Parked

Main electrical loads are on the 12V battery

- Standby power for security systems (alarm system, sensors, cameras)
- Standby power to several ECUs and memory
- Door locking (+ possibly BT or WiFi for hands-free access via mobile, or remote access/ control via app etc.)



### Charging

Main electrical loads are on the 12V battery

- Initialization and monitoring of the charging process



### Starting

Main electrical loads are on the 12V battery

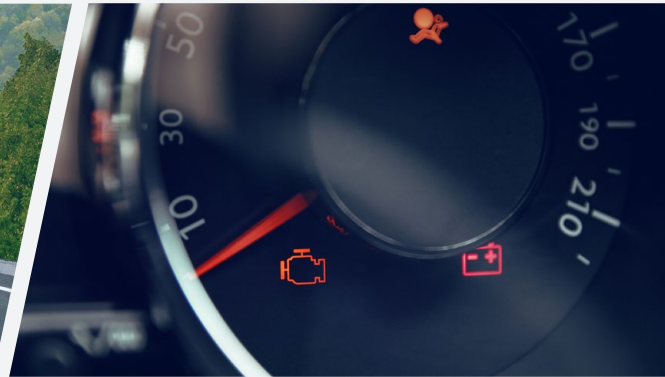
- When the lead-acid battery is discharged, the car cannot start
- Provide power to the relays/ safety contactors to activate the HV battery



### Driving

Main electrical loads on the DC/DC converter, 12V battery as backup

- Backup system capable of directly powering specific secondary loads
- Stabilizes overall electrical system voltage



### System failure

Main electrical loads are shifted from DC/DC to 12V battery

- Power support to safety-critical loads such as power steering, ABS and brake boosting, door locks, emergency lights and e-call system (if installed) as the main power unit
- Critical function in case of system failure



# System relevant.

The high-voltage and low-voltage functions.

Electric cars have two main electrical systems that handle everything: The first is a powerful **high-voltage** system (300-800V) that makes the car move. Those lithium-ion battery cells deliver all the power to motors that crank out torque and spin the wheels.

The secondary system is just as important, and the **low-voltage** 12V battery powers almost everything else. The regular 12V car battery controls the vehicle's ECU (electronic control unit) or the car's brain.



## Exide recycles!

Exide Technologies has three recycling facilities in Europe. 99% of automotive lead acid batteries are recycled in Europe. 100% of a lead-acid battery can be recycled.

# Dedicated to power.

12V batteries – auxiliary energy source.



## Exide AGM

For the toughest xEV demands.



High life span and performance stability over lifetime



Lower Internal resistance, limited voltage drops on high power demands



Best response for safety loads with high voltage threshold requirements (e.g. break/steer by wire) during evasive maneuvers, safe states, side-laning situations

## Exide EFB

OEM experience for the aftermarket.



High dynamic charge acceptance over battery lifespan



High-level safety features



Ideal 12V power source for auxiliary systems in xEV vehicles.



ADAS Support: Crucial for safety integrity, supports critical functions in driver assistance and vehicle safety.



Scan the code for battery details.



## Exide Start-Stop Auxiliary

The reliable power source.



Absorbent glass mat



High cycle life



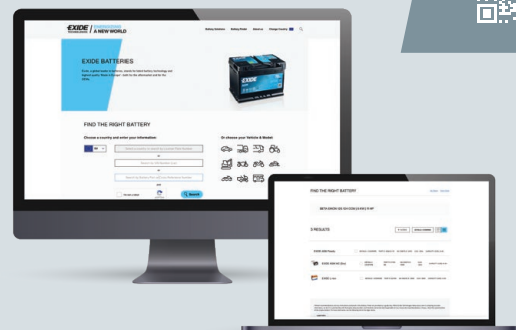
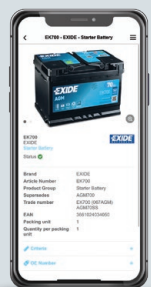
# Whatever drives the world, **we have the right solution.**

More than batteries – our xEV portfolio.

## Selecting

### Battery Finder

The Exide Battery Finder guides to easily find the right battery.



Scan the code to open the Battery Finder.

Get specific information about:

- Battery location
- Replacement process
- Task time calculation
- BEV: 12V battery replacement instructions
- Battery technical datasheet
- Batteries comparison

Find your right battery, search by ...

- License plate number
- VIN number
- Battery part or cross reference number
- Vehicle & model
- Browse all batteries

## Replacing

### Battery replacement instructions

Our essential installation and replacement guide for installers provides comprehensive information for a wide range of xEVs – including labor times. Available free of charge in the Exide Battery Finder (online and app).



## Charging

### Battery Charger



## Testing

### Battery Tester EBT965P & Battery Tester app



## Replacing

### Battery Replacement Tool BRT-12



## Aiming high but keeping costs low.

Solution Powerbooster facilitates the electric evolution.

The perfect solutions to overcome grid limitations and to enable garage owners, fleet managers and others to integrate self-generated renewable energy, e.g. from PV panels. It supports the charging of electrical vehicles during peak energy demand periods with buffered power and energy.



Tailormade for these applications:



E-mobility



Agriculture



Hotels



Commercial and industrial applications



# The perfect match.

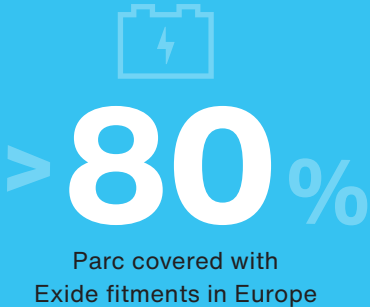
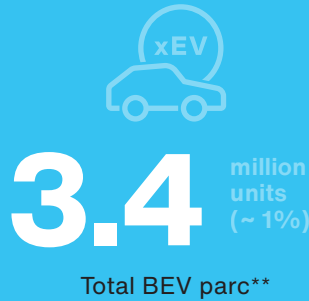
12V batteries for every type of vehicle.

In addition to the mentioned AGM, EFB and auxiliary 12V batteries, we serve the entire electric vehicle market by including Exide Premium and Exide Excell. These ones, that are also utilized as 12V xEV batteries. With Exide Technologies everyone gets the chance to rely on the highest quality. **Always check Exide Battery Finder for up to date information.**

## Finally, a few figures to demonstrate this.

Brand	Model	Type	Exide Part No.					Total current* VIO
TESLA	MODEL 3 (5YJ3)	EV, EV AWD, EV Performance AWD	EB454					174.415
RENAULT	ZOE (BFM_)	ZOE (BFMC, BFMD)	EA530	EB500	EL550			135.131
NISSAN	LEAF (ZE0)	Electric	EA456	EA530	EB454	EL550		116.915
HYUNDAI	KONA (OS, OSE, OSI)	EV	EA530	EB500	EL550			101.724
PEUGEOT	208 II (UB_, UP_, UW_, UJ_)	e-208	EA640	EB620	EL600			95.852
NISSAN	LEAF (ZE1)	Electric	EA530	EB500	EL550			93.497
VW	GOLF VII (5G1, BQ1, BE1, BE2)	e-Golf	EL600					91.530
KIA	NIRO I (DE)	E-NIRO	EA530	EB500	EB504	EL550		83.561
RENAULT	ZOE (BFM_)	ZOE	EL550	EA530	EB500			81.499
RENAULT	ZOE (BFM_)	ZOE	EA530	EB500	EL550			80.898
VW	UP! (121, 122, BL1, BL2, BL3, 123)	e-Up	EA530	EB440	EB500	EC400	EC440	60.148
RENAULT	KANGOO Express (FW0/1_)	Z.E. (FW0Z, FW1Z)	EA770	EB740	EL700			56.619
RENAULT	ZOE (BFM_)	ZOE	EA530	EB500	EL550			51.026
PEUGEOT	2008 II (UD_, US_, UY_, UK_)	e-2008	EL700					49.196
VW	ID.3 (E11, E12)	1st	EA530	EB500	EL550			47.928
BMW	i3 (I01)	s Electric	AGM12-23					45.766
VW	ID.4 (E21)	Performance	EA530	EB500	EL550			44.858
RENAULT	TWINGO III (BCM_, BCA_)	Z.E. (BCA1)	EL600	EA640	EB620			40.497

\*data for 2022    \*\* data for 2022 (EU + RU + ME)





# As you see, we're already electrifying the future.

Workshops are evolving to meet changing vehicle needs, including fitments, replacements, and advanced diagnostics. We offer the products, the services and the program that makes them fit for the future.

Whether it be training, tools, battery replacement data, or innovative energy storage solutions that are becoming increasingly important with the rise of e-mobility.

We are already setting standards today with the supply of future-proof solutions to our customers.

**We are more than a battery producer.**

**We are a trusted partner in shaping the future of electric mobility.**



AXELVBEPDF00224  
Subject to alterations



**ENERGIZING  
A NEW  
WORLD**

**EXIDE<sup>®</sup>**  
TECHNOLOGIES

[exidegroup.com](http://exidegroup.com)