

# COMMERCIAL VEHICLE BATTERY SOLUTIONS

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WE MAKE YOUR FLEET  
**UNSTOPPABLE**



# BATTERIES THAT MEAN BUSINESS

## High-performance batteries to keep your business moving

Logistics is more important than ever, with customers expecting faster and more predictable deliveries. In this competitive environment, fleet owners are focusing on total cost of ownership. After all, when a truck is off the road, it leads to customer dissatisfaction, unused labor and capital, and potential fines and penalties.

Exide designed its battery range to reduce the risk of breakdowns and give customers a competitive advantage. You get battery options for any use case, market-leading performance, lower total cost of ownership.

## TRUSTED BY LEADING COMMERCIAL VEHICLE MANUFACTURERS

Exide has been supplying lead-acid batteries to car and truck makers for more than 130 years. We design the most technically advanced products in the industry, and were the first to introduce High Vibration Resistant (HVR®) batteries for trucks back in 2008. Vehicle manufacturers trust the quality of our products and our commitment to excellence in manufacturing.

**Exide works with leading commercial vehicle manufacturers, including:**

**Isuzu, Iveco, MAN, Nissan, Renault Volvo Trucks, Scania, Bobcat, Case, Claas, SAME Deutz-Fahr, Evobus, John Deere, Komatsu, New Holland, Wacker Neuson, and many others...**





# SELECT THE RIGHT EXIDE BATTERY FOR YOUR NEEDS

As a true expert in OE batteries, Exide helps you select the right battery. For fleet owners and installers alike, it is vital to make the right choice for the conditions of use. Three important criteria to consider in battery performance are: vibration resistance, cycling endurance and cranking power.

## THREE MAIN FACTORS WHEN SELECTING THE RIGHT BATTERY



### VIBRATION RESISTANCE

For trucks with rear-chassis battery installations (e.g. Euro 5/ Euro 6 trucks), robust and high vibration-resistant batteries are mandatory to avoid breakdowns. Vibration resistance is also required for any vehicle operating on bad roads or rough terrain.



### CYCLING ENDURANCE

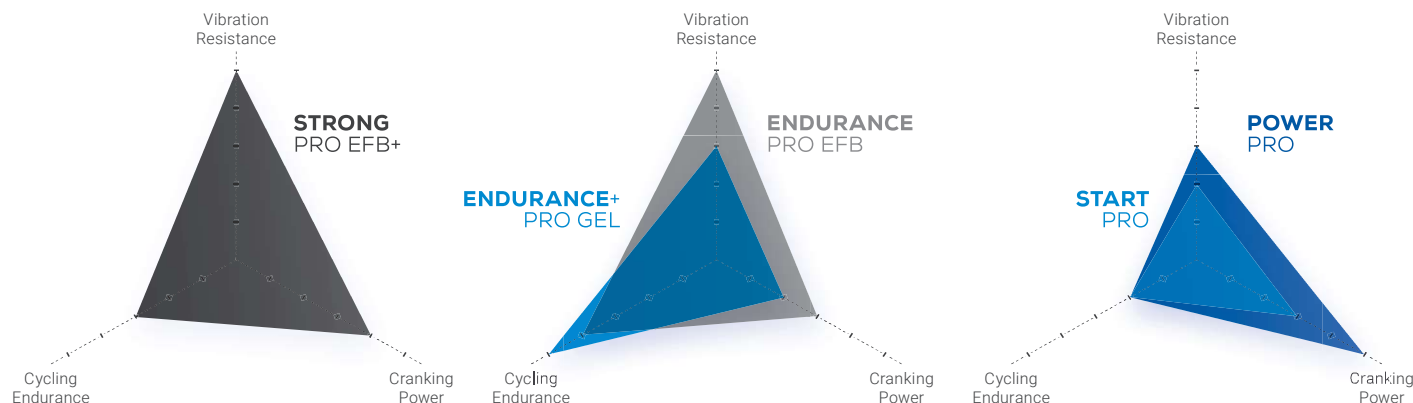
High cycling endurance is important in batteries for long-haul trucks with life on-board, commercial vehicles doing intensive urban deliveries, and any commercial vehicle with extensive energy requirements. This maximizes battery lifespan and ensures a safe battery start.



### CRANKING POWER

High cranking power allows for engine starts in cold climates and is required from many agriculture and construction vehicles with reliable starting power requirements.

## THE PERFECT BATTERY FOR EVERY NEED





## RANGE OVERVIEW & FEATURES

|                      |       |       |       |       |       |       |
|----------------------|-------|-------|-------|-------|-------|-------|
| VIBRATION RESISTANCE | ■■■■■ | ■■■■■ | ■■■■■ | ■■■■■ | ■■■■■ | ■■■■■ |
| CYCLING ENDURANCE    | ■■■■■ | ■■■■■ | ■■■■■ | ■■■■■ | ■■■■■ | ■■■■■ |
| CRANKING POWER       | ■■■■■ | ■■■■■ | ■■■■■ | ■■■■■ | ■■■■■ | ■■■■■ |
| CHARGE ACCEPTANCE    | ■■■■■ | ■■■■■ | ■■■■■ | ■■■■■ | ■■■■■ | ■■■■■ |
| MAINTENANCE          | Free  | Low   | Free  | Free  | Free  | Low   |

## BATTERY RECOMMENDATION BY VEHICLE TYPE & APPLICATION

| TYPE OF VEHICLES   | APPLICATION  | STRONG PRO EFB+ | ENDURANCE PRO EFB | ENDURANCE+ PRO GEL | POWERPRO | POWERPRO AGRI & CONSTRUCTION | STARTPRO       |
|--|--|-----------------|-------------------|--------------------|----------|------------------------------|----------------|
| <br>Long-haul modern trucks, standard trucks                         | REAR-CHASSIS INSTALLATION / ROUGH TERRAIN, HIGH VIBRATIONS | ✓               | ✓ <sup>1</sup>    |                    |          |                              |                |
| <br>Express delivery (lifters), city bus                             | POWER-HUNGRY EQUIPMENT, DEEP CYCLING APPLICATIONS          | ✓               |                   | ✓ <sup>2</sup>     |          |                              |                |
| <br>Long-haul modern trucks  | OVERNIGHT STOP / HOTEL FUNCTION                            | ✓               | ✓ <sup>1</sup>    |                    |          |                              |                |
| <br>Standard trucks or vehicles with large/highly compressed engines | EXTREME CLIMATE AND/OR HIGH CCA REQUIREMENTS               |                 |                   |                    | ✓        |                              |                |
| <br>Tractors, construction machines                                  | SPECIAL VEHICLES   |                 |                   |                    |          | ✓ <sup>3</sup>               |                |
| <br>Standard trucks  | STANDARD REQUIREMENTS / OLDER VEHICLE                      |                 |                   |                    |          |                              | ✓ <sup>3</sup> |

### NOTES

1  
• Please top up the battery with distilled water if needed  
• The charging system must be compatible with Sb/Ca alloy  
If these conditions are not met, choose the **STRONG PRO EFB+**

2  
ENDURANCE+ PRO GEL requires charging voltage limitation to max 14,4V. If not compatible, choose the **STRONG PRO EFB+**

3  
Top up with distilled water when needed (depending on battery model)

# STRONGPRO EFB+



## Exide's Strong battery is now "EFB+".

Exide's StrongPRO battery range is now stronger than ever. A new carbon-based formula of negative active mass enhances the rechargeability and charge acceptance of StrongPRO EFB+ battery. Additionally, the HVR® (high-vibration-resistant) technology enables StrongPRO EFB+ to pass the extreme vibration tests under the new European V4 standard (EN 50342-1:2015).

A more robust and more lasting battery means reduced total service cost for fleet owners and truck drivers, allowing less replacements over vehicle's service life and minimized risk of unexpected and premature battery failure.

### RECOMMENDED TYPE OF VEHICLES / USE CONDITIONS:

Long-haul modern/ standard trucks with rear chassis installations and/or «hotel functions», express delivery and city bus. Ideal for vehicle running on rough terrain, with power hungry equipment and deep cycling applications.



## Benefits

- **Better rechargeability and charge acceptance than previous generation StrongPRO** NEW
- **Better control over gassing and stronger anti-stratification effect** NEW
- Extremely robust – with HVR® technology, meeting V4 requirements
- Up to 70% savings on TCO within 2 years period when compared with standard batteries
- Maximum starting reliability after overnight stay
- OE experience inside
- First class safety features
- Maintenance free - no topping up



REAR CHASSIS INSTALLATION



ROUGH TERRAIN



SUPER FAST RECHARGE



SUPERIOR EQUIPMENT



SAFE START



MAINTENANCE FREE

### REINFORCED CONTAINER

wall with additional ribs\*

### LABYRINTH INTEGRATED

into the lid with flame arrestor and central degassing outlet for maximum safety

### ADDITIONAL HOT MELT

spots locking the cell group\*

### 3DX NEGATIVE GRIDS

with Carbon Boost® for super-fast recharge and improved cycling

### NEW EXTENDED SIDE

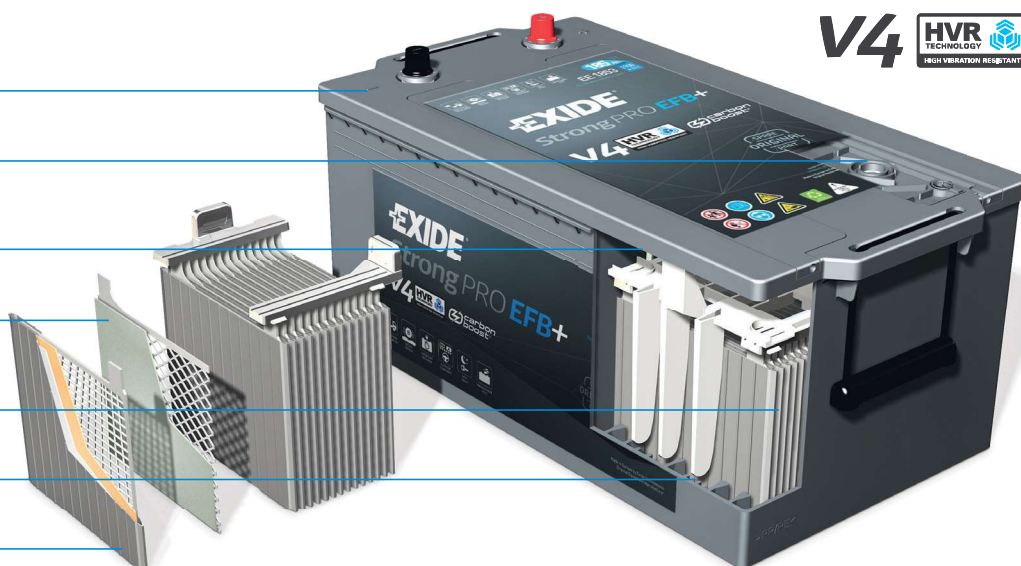
and top fixation\*

### BOTTOM PLATE

adhesion for extra fixation\*

### FRAMED POSITIVE GRIDS

with heavy-duty polyethylene separator and glass mat for homogeneous compression



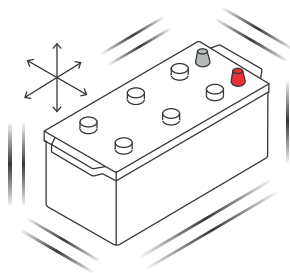
\*Latest generation of Exide's leading HVR® design, meeting V4 requirements (EN 50342-1:2015)

# HVR® TECHNOLOGY

## New features in the robust battery design

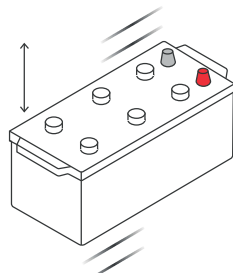
Several economic factors (higher fuel costs, higher road taxes, higher toll & parking charges, and higher charges to enter low emission zones) have led fleet owners to upgrade by purchasing new Euro 5 or Euro 6 vehicles, thus reducing particulate matter and NOx emissions.

Many Euro 5/Euro 6 vehicles have a new chassis layout to integrate the Selective Catalytic Reduction (SCR) system and AdBlue tank, leading truck manufacturers to move batteries into the rear-chassis position.



### NEW THREE AXIS TEST

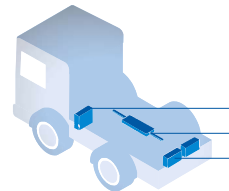
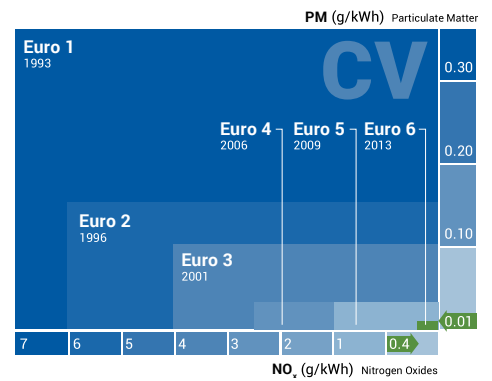
HVR technology allows Exide batteries to pass the strict V4\* vibration test, which uses three-axis motion simulating real-life conditions.



### SINGLE AXIS TEST

The V1-3 tests used single-axis vibration only.

## EMISSION STANDARDS AS DEFINED BY EU DIRECTIVES



ADBLUE® TANK  
SCR CATALYST  
BATTERIES



## New challenges, new solution

The lifespan of ordinary batteries is greatly reduced by higher vibrations at the rear of the chassis of the vehicle. In 2016 Exide worked with truck manufacturers to develop the new High Vibration Resistant (HVR®) battery in the market, one of the first to meet the new V4\* vibration test.

HVR guarantees a longer battery lifespan even when installed in the rear chassis of a truck.

\* EN50342-1

# THE CARBON BOOST® EFFECT

## Exide's smart electrochemical solution for longer battery life.

Early battery failures are common in commercial vehicles, caused by exposure to deep discharge conditions. Challenges to the battery include frequent starting and stopping for urban deliveries, and overnight heating and lighting for long-haul trucks. This strain leads to sulphation and acid stratification, damaging battery lifespan.

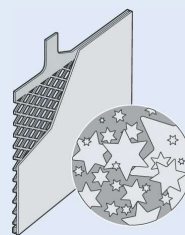
With Exide Carbon Boost™, unique carbon additives increase the speed at which sulphate particles dissolve. This leads to faster recharging, protection from sulphation and less stratification.

The carbon additives also promote controlled gassing during recharging, which keeps the electrolyte mixed and further reduces stratification.

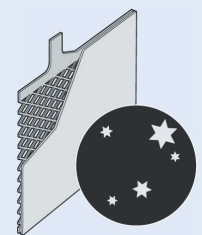
## The benefits of Carbon Boost:

- Improved charge acceptance
- Faster recharging
- Reduced acid stratification
- Enhanced cycling endurance

**Sulphation:** Lead sulphate particles progressively cover the negative plates. This makes recharging less efficient, because energy is used to dissolve the lead sulphate.

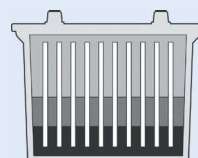


**WITHOUT CARBON BOOST®**  
The plates are covered with sulfate

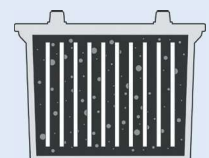


**WITH CARBON BOOST®**  
Sulfate is reduced due to Carbon Boost technology

**Acid stratification:** Sulphate particles turn into sulphuric acid during charging. This is heavier than the electrolyte, so it sinks to the bottom, creating a range of negative effects, including reduced capacity.



**WITHOUT CARBON BOOST®**  
Sulphuric acid sinks to the bottom of the cell



**WITH CARBON BOOST®**  
Controlled gassing mixes the electrolyte and reduces stratification



# ENDURANCEPRO EFB

## Exide's top cycling battery is now indestructible

Exide's EndurancePRO range evolves: the "made for severe cycling" battery range features the innovative HVR® (High Vibration Resistance) design, that assures an incomparable level of robustness and minimized risk of unexpected and premature battery failure. Not only it guarantees excellent cycling performances and reduced stratification: the new EndurancePRO EFB battery now exceed the highest requirements in the industry's reference vibration test (V4 level in EN50342-1 vibration test) and it is perfectly adapted to be installed into vehicles running on rough terrain.

**All this means less risk of breakdowns, more starting reliability and longer lifespan.**

## RECOMMENDED TYPE OF VEHICLES / USE CONDITIONS:



Long-haul modern/ standard trucks with rear chassis installations and /or hotel functions. Ideal for vehicle running on rough terrain. It requires water topping.

## Benefits

- **Extremely robust – Now with HVR® technology, meeting V4 requirements** NEW
- **Perfect for deep cycling applications** : 2x more cycle life compared to standard truck battery (advanced SHD technology with glass matt layers pasted on active mass) allowing excellent cycling performance (up to 200 cycles at 50% DoD)

- Improved durability
- OE experience inside



SUPERIOR  
CYCLING



SUPERIOR  
EQUIPMENT



SAFE  
START



URBAN  
DELIVERY



LOW  
MAINTENANCE





# ENDURANCE+PRO GEL

## Out-performing state-of-the-art technology

Exide Technologies is the inventor of Gel technology, the ultimate choice for the most demanding commercial vehicles applications.

Instead of being in liquid form, the electrolyte is fixed in a gel. This leads to unmatched cycle life. The new Exide Endurance+PRO GEL battery is highly robust, with best-in-class deep cycle properties. It allows unmatched safe depth of discharge of 90%, which improves Total Cost of Ownership (TCO) and minimizes the risk of breakdowns.

## RECOMMENDED TYPE OF VEHICLES / USE CONDITIONS:

Express delivery trucks and city bus with power hungry equipment and deep cycling needs.



## Benefits

- **Impressive energy throughput over the battery lifetime:** safe DoD of 90%, vs 50% of standard flooded batteries, and 5 times more cycles than a comparable standard flooded battery
- Withstands deep discharges for maximum reliability
- Valve regulated: maximum safety and highly vibration resistant
- Very low self discharge
- Maintenance free
- Designed for OE applications



ORIGINAL  
GEL



EXTREME  
CYCLING



SAFE  
START



URBAN  
DELIVERY



MAINTENANCE  
FREE



HIGH ENERGY  
DENSITY



## MORE INFORMATION

The new Endurance+PRO GEL battery is the most effective and efficient option compared to any other VRLA battery. In fact, it cycles more and has 90% safe DoD (compared to 75% of any other VRLA battery), which means more energy available over time, leading to a minimized TCO.

# POWERPRO

Impressive power at every start

## RECOMMENDED TYPE OF VEHICLES / USE CONDITIONS:



Standard trucks or vehicles with large/highly compressed engine working in extreme climate and/or high CCA requirements.

## Benefits

- Superior cranking power (more plates and active material to maximize grid surface)
- Robust and reliable design with hot melt fixation of plate groups
- Maintenance free - no topping up
- OE experience inside



SUPERIOR POWER



COLD TEMPERATURE



MAINTENANCE FREE



# POWERPRO AGRI & CONSTRUCTION

Choose the original part

## RECOMMENDED TYPE OF VEHICLES / USE CONDITIONS:



Tractors and construction machines (agriculture, forestry and construction machinery)

## Benefits

- Superior cranking power (more plates and active material to maximize grid surface)
- Robust design with hot melt fixation of plate groups
- Wide range including special types
- True OE design and construction (original part)



TRUE OE AGRI FIT



TRUE OE CONSTRUCTION FIT



SUPERIOR POWER



MAINTENANCE FREE



# STARTPRO

Reliable starting power for standard use

## RECOMMENDED TYPE OF VEHICLES / USE CONDITIONS:



Standard truck without specific vibration, cycling or cranking needs.

## Benefits

- Ideal for trucks without special requirements in terms of vibration resistance, cycling or cranking power
- Robust and reliable design with hot melt fixation of plate groups
- Complete range covering almost 100% of vehicle parc, including special types



LOW MAINTENANCE



- Low maintenance - may need water topping up

# TYPE LIST

| CODE    | Performance |            | Dimensions |        |        | Technical Characteristics |           |     |
|---------|-------------|------------|------------|--------|--------|---------------------------|-----------|-----|
|         | Capacity Ah | CCA A (en) | L (Mm)     | H (Mm) | W (Mm) | Polarity                  | Hold down | Box |
|         |             |            |            |        |        |                           |           |     |
| EE1403  | 140         | 800        | 513        | 223    | 189    | ETN 3                     | B0        | D04 |
| EE1853  | 185         | 1100       | 513        | 223    | 223    | ETN 3                     | B0        | D05 |
| EE2353  | 235         | 1200       | 518        | 240    | 279    | ETN 3                     | B0        | D06 |
|         |             |            |            |        |        |                           |           |     |
| EX1803  | 180         | 1000       | 513        | 223    | 223    | ETN 3                     | B0        | D05 |
| EX2253  | 225         | 1150       | 518        | 240    | 279    | ETN 3                     | B0        | D06 |
|         |             |            |            |        |        |                           |           |     |
| ED2103  | 210         | 1030       | 518        | 240    | 279    | ETN 3                     | B0        | D06 |
| ED2103T | 210         | 800        | 518        | 240    | 279    | ETN 3                     | B0        | D06 |
|         |             |            |            |        |        |                           |           |     |
| EF1202  | 120         | 870        | 349        | 235    | 175    | ETN 0                     | B1        | D02 |
| EF1420  | 142         | 850        | 349        | 290    | 175    | ETN 0                     | B0        | D03 |
| EF1421  | 142         | 850        | 349        | 290    | 175    | ETN 1                     | B0        | D03 |
| EF1453  | 145         | 900        | 513        | 223    | 189    | ETN 3                     | B0        | D04 |
| EF1853  | 185         | 1150       | 513        | 223    | 223    | ETN 3                     | B0        | D05 |
| EF2353  | 235         | 1300       | 518        | 240    | 279    | ETN 3                     | B0        | D06 |
|         |             |            |            |        |        |                           |           |     |
| EJ050C  | 50          | 800        | 260        | 206    | 173    | ETN 1                     | B7        | G34 |
| EJ110B  | 110         | 950        | 330        | 240    | 173    | ETN 9                     | B0        | G31 |
| EJ1102  | 110         | 900        | 349        | 235    | 175    | ETN 0                     | B1        | D02 |
| EJ1100  | 110         | 900        | 349        | 235    | 175    | ETN 0                     | B0        | D02 |
| EJ1000  | 100         | 850        | 353        | 190    | 175    | ETN 0                     | B13       | L05 |
| EJ165A  | 165         | 850        | 354        | 285    | 241    | ETN 6                     | B0        | D67 |
| EJ1805  | 180         | 1000       | 510        | 225    | 218    | ETN 3                     | B3        | D09 |
| EJ1523  | 152         | 1130       | 513        | 223    | 189    | ETN 3                     | B0        | D04 |
| EJ1723  | 172         | 1390       | 513        | 223    | 223    | ETN 3                     | B0        | D05 |
| EJ1355  | 135         | 1000       | 514        | 210    | 175    | ETN 3                     | B3        | DB8 |
| EJ2353  | 235         | 1450       | 518        | 240    | 279    | ETN 3                     | B0        | D06 |
|         |             |            |            |        |        |                           |           |     |
| EG110B  | 110         | 1000       | 330        | 240    | 173    | ETN 9                     | B0        | G31 |
| EG1100  | 110         | 750        | 349        | 235    | 175    | ETN 0                     | B0        | D02 |
| EG1101  | 110         | 750        | 349        | 235    | 175    | ETN 1                     | B0        | D02 |
| EG1102  | 110         | 750        | 349        | 235    | 175    | ETN 0                     | B1        | D02 |
| EG1250  | 125         | 760        | 349        | 290    | 175    | ETN 0                     | B0        | D03 |
| EG1251  | 125         | 760        | 349        | 290    | 175    | ETN 1                     | B0        | D03 |
| EG145A  | 145         | 1000       | 360        | 240    | 253    | ETN 6                     | B0        | F21 |
| EG1008  | 100         | 680        | 413        | 220    | 175    | ETN 0                     | B3        | D01 |
| EG1109  | 110         | 800        | 413        | 220    | 175    | ETN 1                     | B3        | D01 |
| EG1402  | 140         | 900        | 508        | 205    | 175    | ETN 0                     | B1        | ATM |
| EG1206  | 120         | 680        | 510        | 225    | 175    | ETN 4                     | B3        | D08 |
| EG1406  | 140         | 800        | 510        | 225    | 175    | ETN 4                     | B3        | D08 |
| EG1806  | 180         | 1000       | 510        | 225    | 218    | ETN 4                     | B3        | D09 |
| EG1203  | 120         | 680        | 513        | 223    | 189    | ETN 3                     | B0        | D04 |
| EG1403  | 140         | 800        | 513        | 223    | 189    | ETN 3                     | B0        | D04 |
| EG1553  | 155         | 900        | 513        | 223    | 223    | ETN 3                     | B0        | D05 |
| EG1803  | 180         | 1000       | 513        | 223    | 223    | ETN 3                     | B0        | D05 |
| EG1355  | 135         | 1000       | 514        | 210    | 175    | ETN 3                     | B3        | DB8 |
| EG1353  | 135         | 1000       | 514        | 210    | 218    | ETN 3                     | B0        | DB9 |
| EG1705  | 170         | 950        | 514        | 210    | 218    | ETN 3                     | B3        | DB9 |
| EG2153  | 215         | 1200       | 518        | 240    | 279    | ETN 3                     | B0        | D06 |
| EG2154  | 215         | 1200       | 518        | 240    | 279    | ETN 4                     | B0        | D06 |

## MORE INFORMATION

Exide has the most comprehensive fitment list on the market. The list is constantly updated to include the latest vehicles, so you will always find the right battery for your vehicle. Contact your local Exide sales representative to request a paper copy or visit [www.exide.com](http://www.exide.com) to view our online catalogue.

You can also download the FREE Exide Battery Finder app to access fitment information on the go.



**Exide Technologies**, with operations in more than 80 countries and more than 130 years of experience, is one of the world's largest producers and recyclers of lead-acid batteries. The company develops state-of-the-art energy storage solutions for the automotive and industrial market. Leading car, truck and lift truck manufacturers trust in Exide Technologies as an original equipment supplier. Exide also serves the aftermarket through a portfolio of successful and well-known brands.

Exide Transportation manufactures batteries for light and commercial vehicles, as well as agricultural and marine leisure applications. Industrial markets – under the division **GNB Industrial Power** – include efficient energy storage solutions for motive power applications such as lift trucks, cleaning machines and other commercial electrical vehicles, and network power applications such as telecommunications systems, renewables, and uninterruptible power supply (UPS).

Exide's engineers have always been at the forefront of bringing important innovations to the industry. Exide's IATF 16949 certified manufacturing facilities ensure that customers receive products that are produced with maximum efficiency and fulfill the highest quality standards, while minimizing impact on the environment.

Exide's extensive sales and distribution network provides quality service and delivers on time to its customers. Its world-class recycling facilities ensure that batteries will be reused, helping to make a positive contribution to the environment. Exide also provides services, accessories and energy consulting to its clients.

- 
- EMEA headquarters
  - Manufacturing plants
  - Recycling plants
  - Distribution centers
  - Main sales offices
  - R&D centres

Manufacturing plants ISO 9001 and ISO 14001 certified

Automotive plants IATF 16949 certified

#### EMEA HEADQUARTERS

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