AUTOMOTIVE BATTERY ASSESSMENT 2025

Presented by

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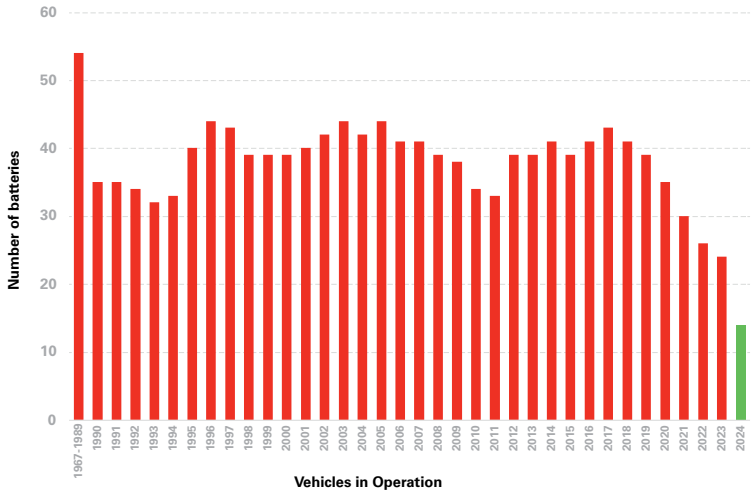
Automotive Battery Industry Snapshot

Since 1990, the number of Battery Council International (BCI) group sizes installed in new Original Equipment Manufacturer (OEM) vehicles has dropped by a staggering 68%. By the end of 2024, only 14 BCI group sizes accounted for the batteries installed in new vehicles. This dramatic decline reflects an ongoing shift in automotive market trends, with auto manufacturers aligning on the latest technologies to meet the power demands of today's vehicles.

Vehicles in Operation (VIO)
Battery Group Size Count By Year

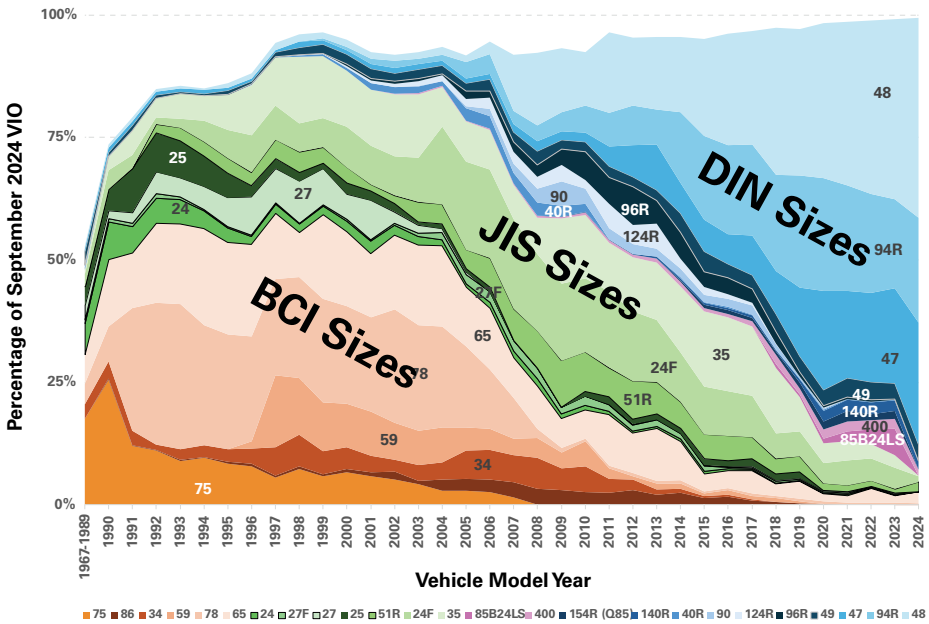


Source: Experian Vehicles in Operation (VIO) Market Data Report, September 2024

The DIN Tsunami

By the year 2000, automotive OEMs began incorporating more DIN battery sizes in their vehicle designs. What began as a slow adoption has grown into what EnerSys calls "The DIN Tsunami", with 80% of the last three years of Internal Combustion Engine (ICE) vehicles now using DIN battery sizes. Today, the top 3 DIN sizes will cover more than 40% of all the vehicles in operation in North America in 2025.

The DIN TSUNAMI
TOP 25 Group Sizes VS Current VIO Over Model Year Record



Source: Experian Vehicles in Operation (VIO) Market Data Report, September 2024

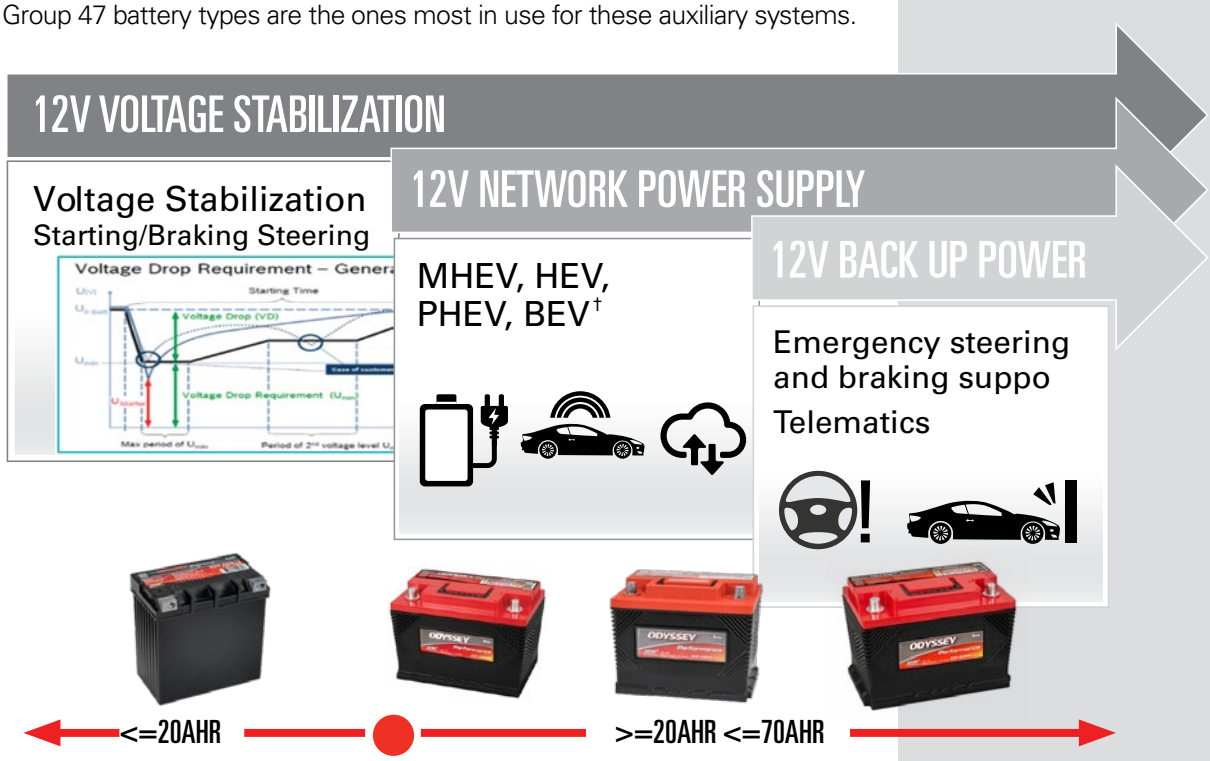
DID YOU KNOW?

DIN stands for **"Deutsches Institut für Normung"**, which is German for "German Institute for Standardization".

Automotive Technologies Driving AGM Adoption

The growth of DIN batteries reflects growing demand for Absorbed Glass Mat (AGM) batteries, which is in turn being driven by new vehicle technologies that need more power, reliability and Depth of Discharge (DOD) than flooded lead acid batteries can deliver. Consider some of the key factors at play:

- Approximately 2.3 million electric vehicles* are currently in operation in North America. 12-volt Enhanced Flooded Battery (EFB) and AGM batteries are being marketed to replace the standard OEM batteries in those vehicles.
- Start/Stop technology has reached full adoption in new ICE and hybrid vehicles in North America, helping to increase AGM battery demand.
- Auxiliary electronics and accessories in vehicles – including smartphone connectivity/charging, heated/cooled seats, adaptive cruise control and more – require the deep cycling capabilities of AGM batteries.
- Similarly, a wide and growing range of auxiliary safety and driving assistance systems – everything from cameras, reverse brake assistance, collision avoidance and lane departure warnings to emergency tracking and security systems – also require the significant DOD capabilities of AGM batteries.
- The bottom line is that for ALL of these auxiliary systems, cranking is not required. Instead, these systems need auxiliary batteries that can deliver deep cycling and a lifecycle of seven years or more. Today, AUX 14 and Group 47 battery types are the ones most in use for these auxiliary systems.



* https://www.statista.com/forecasts/1439225/volume-electric-vehicles-electric-vehicles-market-united-states

† Mild Hybrid Electric Vehicle (MHEV), Hybrid Electric Vehicle (HEV), Plug-in Hybrid Electric Vehicle (PHEV), and Battery Electric Vehicle (BEV)

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The Immediate Future is AGM

In 2022, 57% of all new vehicles were equipped with AGM batteries, largely to support auxiliary systems. In 2025, analysts estimate that more than 50 million vehicles in the aftermarket will need AGM battery replacements. By 2027, analysts predict that up to 19% of all replacement automotive batteries will be AGM – nearly 3X that of 2022.

Source: S&P Global Powertrain Forecast

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analysts estimate
50+million
will need AGM BATTERY
replacements

2X POWER + 3X THE LIFE OF CONVENTIONAL BATTERIES

ODYSSEY® TPPL batteries – an Advanced AGM solution

ODYSSEY® batteries offer a premium AGM solution that's uniquely well-positioned to help retailers and repair shops handle the DIN sizing, power and cycling demands of the vehicles in operation for the next decade. Featuring Thin Plate Pure Lead (TPPL) technology, **ODYSSEY batteries deliver 2X the power and 3X the life of conventional lead acid batteries**. The ODYSSEY battery product line includes all common DIN size batteries along with a wide range of Group sizes, with the ability to service 90% of the market as a direct fit.

Visit **www.odysseybattery.com** for additional product specifications.

EnerSys
Power/Full Solutions

EnerSys World Headquarters
2366 Bernville Road
Reading, PA 19605, USA
Tel: +1-800-964-2837

EnerSys EMEA
EH Europe GmbH
Baarerstrasse 18
6300 Zug, Switzerland

EnerSys Asia
No. 85, Tuas Avenue 1
Singapore 639518
Tel: +65 6558 7333

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