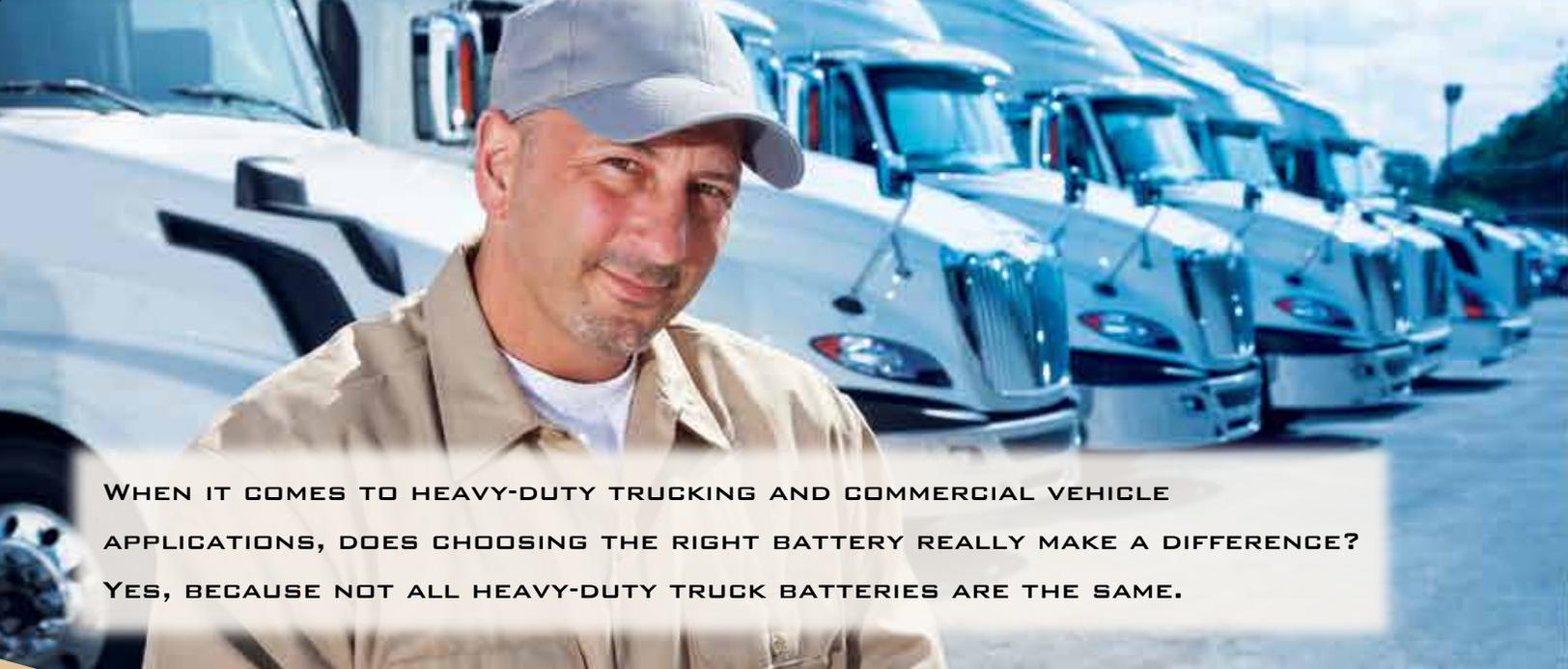


TR TRANSPORTATION



 **Trojan**[®]
BATTERY COMPANY
Clean energy for life[™]

Made in the USA



WHEN IT COMES TO HEAVY-DUTY TRUCKING AND COMMERCIAL VEHICLE APPLICATIONS, DOES CHOOSING THE RIGHT BATTERY REALLY MAKE A DIFFERENCE? YES, BECAUSE NOT ALL HEAVY-DUTY TRUCK BATTERIES ARE THE SAME.



APU and HVAC Systems



Liftgate Systems

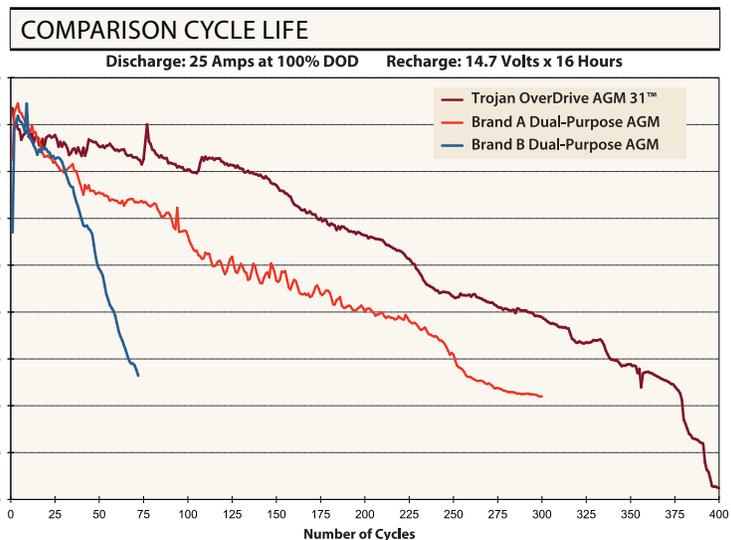


Heavy-duty Truck, Commercial Vehicle and Refrigeration Units

The Trojan OverDrive AGM 31™ battery is a true deep-cycle battery. Engineered to withstand the rigors and abuse of deep discharge applications, the OverDrive AGM 31 incorporates a series of design features essential to deliver the long duration energy storage required for heavy-duty APU, inverter and liftgate applications.

Selecting the wrong type of battery will cause disappointing performance, shortened lifetime and wasted money. Most flooded starting and dual-purpose batteries are best suited for intermittent use and not deep-cycle applications. The Trojan OverDrive AGM 31 delivers high power cycling for extended periods of time, with the ability to provide 730 cold cranking amps.

BATTERY APPLICATION GUIDE					
	Daycab	Daycab/ Highway Tractor	Highway Tractor w/APU	Trailer Liftgate	Refrigeration Unit
Engine Starting	✓	✓	✓	✓	✓
# Batteries (Starting)	2 - 4	2 - 4	4		1
# Batteries (Auxiliary)			4	2-3	
Hotel Loads (Inverter, etc.)		✓	✓		
Electric APU			✓		
Minimum Alternator Size	160 AMP	160 AMP	240 AMP	200 AMP	65 AMP
Truck Battery	OverDrive	OverDrive	OverDrive		
Auxiliary Battery			OverDrive	OverDrive	OverDrive



* As tested in Trojan's state-of-the-art R&D centers and in accordance with BCI test procedures

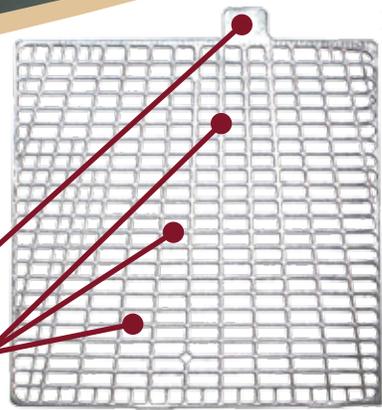
THE RIGHT BATTERY FOR THE RIGHT APPLICATIONS



No other North American Group 31 is manufactured this way

Energy is channeled to/from point of contact for maximum power, maximum recharge efficiency and low resistance

Increased structure for superior vibration handling



1 Robust Plate Construction

Trojan's OverDrive AGM 31 is designed with a thick plate construction, which is more robust and more resistant to the stresses encountered during deep discharge cycling. During repeated discharge and recharge, active materials expand and contract causing erosion of the active material. The robust plate structure prevents erosion of the active material resulting in longer cycle life.

2 High Density Paste

The OverDrive AGM 31 features a high-density paste formulation that optimizes the grid's current flow providing exceptional battery performance. This high-density paste optimizes porosity development utilizing the active material more effectively resulting in longer life.

3 Heavy-Duty Corrosion Resistant Grid – Cast Not Stamped

Unique to Trojan's OverDrive AGM 31 is the sunburst array grid design that is cast not stamped, which ensures that no hairline fractures develop during the manufacturing process that will inhibit the performance of the battery. This grid design features large cross sectional areas that securely support the active material making the battery highly resistant to corrosion – a typical failure mode in starting batteries. It also ensures peak starting performance by guiding all of the battery's power to its focal point of charge resulting in 730 cold cranking amps.

4 Rugged Polypropylene Case

For heavy-duty truck applications, increased battery protection is key. Trojan's OverDrive AGM 31 battery is packaged in a rugged polypropylene case, rigid enough to protect the internal components from damage caused by shock and vibration. Resistant to oil, gasoline and other road chemicals, Trojan's polypropylene case can withstand the rigorous abuse over-the-road truck applications can cause.

BCI GROUP SIZE	TYPE	VOLTAGE	CAPACITY ^A Minutes			CRANKING Performance		CAPACITY ^B Amp-Hours (AH)		TERMINAL Type	DIMENSIONS ^C Inches (mm)			WEIGHT lbs. (kg)
			@25 Amps	C.C.A. ^D @0°F	C.A. ^E @32°F	5-Hr Rate	20-Hr Rate	Length	Width		Height ^F			
31	OverDrive AGM 31	12 VOLT	180	730	875	84	102	3/8 Stud	13.44 (341)	6.81 (173)	9.25 (235)	69 (31)		

A. The number of minutes a battery can deliver when discharged at a constant rate at 80°F (27°C) and maintain a voltage above 1.75 V/cell. Capacities are based on peak performance.
 B. The amount of amp-hours (AH) a battery can deliver when discharged at a constant rate at 80°F (27°C) for the 20-Hour and 86°F (30°C) for the 5-Hour rate and maintain a voltage above 1.75 V/cell. Capacities are based on nominal performance.
 C. Dimensions are based on nominal size. Dimensions may vary depending on type of handle or terminal. Batteries to be mounted with .5 inches (12.7mm) spacing minimum.

D. C.C.A. (Cold Cranking Amps) - the discharge load in amperes which a new, fully charged battery can maintain for 30 seconds at 0°F at a voltage above 1.2 V/cell.
 E. C.A. (Cranking Amps) - the discharge load in amperes which a new, fully charged battery can maintain for 30 seconds at 32°F at a voltage above 1.2 V/cell. This is sometimes referred to as marine cranking amps @ 32°F or M.C.A. @ 32°F.
 F. Dimensions taken from bottom of the battery to the highest point on the battery. Heights may vary depending on type of terminal.

Clean energy for life™



Experience The Trojan Difference – Reputation Built on Quality, Leadership and Innovation

Leadership

Founded in 1925 by co-founders George Godber and Carl Speer, Trojan Battery Company is the world's leading manufacturer of deep-cycle batteries. From deep-cycle flooded batteries to deep-cycle AGM and gel batteries, Trojan has shaped the world of deep-cycle battery technology with over 85 years of battery manufacturing experience. With the invention of the golf car battery for the Autoette vehicle in 1952, Trojan pioneered the development of deep-cycle battery technology for the golf industry; successfully introducing mobilization to the game of golf. For Trojan, this began a legacy of leadership and innovation that prevails today in the global, deep-cycle markets spanning applications for transportation, aerial work platforms, renewable energy, golf, floor machines, marine and recreational vehicles. Today, Trojan batteries are available worldwide through our global network of master distributors.

Headquartered in Santa Fe Springs, CA, Trojan's operations include ISO 9001:2008 certified manufacturing plants in California and Georgia, three advanced research and development centers dedicated exclusively to deep-cycle battery technologies and international offices located in Europe, UAE and Asia. Trojan is a proud member of the Battery Council International (BCI) and a technical research partner with the Bulgarian Academy of Sciences.

Research and Development

Quality and innovation are the cornerstones of our product development. Engineering teams, backed by over 200 years of deep-cycle development expertise, work together to innovate and bring to market advanced battery technologies that exceed our customers' expectations for outstanding battery performance.

To ensure the quality and superior performance of our batteries, Trojan applies the most rigorous testing procedures in the industry to test for cycle life, capacity, charger algorithms and both physical and mechanical integrity. Trojan's battery testing procedures adhere to both BCI and IEC test standards. Trojan's state-of-the-art R&D facilities include charger characterization and analytical labs, battery prototype and evaluation labs and battery autopsy centers all dedicated to providing you with a superior battery that you can rely on.



Prototype development and evaluation

Environmental Stewardship

At Trojan Battery, when we say, "Clean energy for life™"; we mean every word. As proactive supporters of environmental sustainability, our environmental stewardship focuses on clean energy initiatives and recycling programs.

- Trojan batteries are 97% recyclable. The container plastic, battery lead and electrolyte from old deep-cycle batteries can be recycled to produce new Deep-Cycle batteries.
- Through its partnership with Southern California Edison (SCE) Trojan saves over 8 million kilowatt hours and cuts CO2 emissions by over 12 million pounds significantly reducing our annual energy consumption and carbon foot print.



**TROJAN BATTERY
COMPANY WITH
QUALITY SYSTEM
CERTIFIED BY DNV
= ISO 9001:2008 =**



Your Local Trojan Battery Representative:



**For more information,
call 800.423.6569
or + 1.562.236.3000
or visit www.trojanbattery.com**

