

OG

OIL & GAS



Trojan[®]
BATTERY COMPANY

Clean energy for life™

Made in USA



When it Comes to Oil and Gas, Trojan's AGM Batteries *Keep the Industry Moving!*

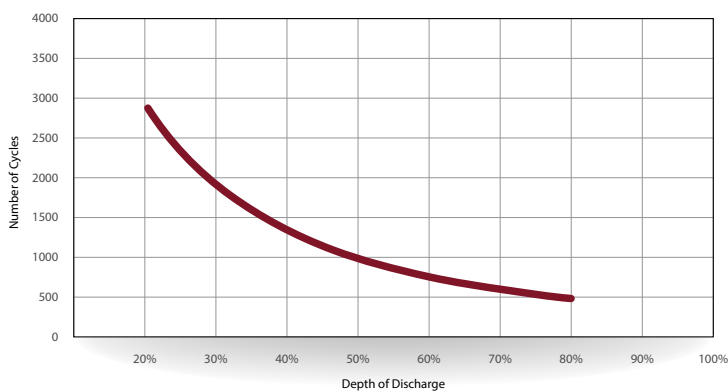
Trojan's AGM Batteries feature a true deep-cycle design that delivers reliable energy storage demanded by heavy-duty equipment used in the Oil and Gas industry.

Maintenance-free AGM batteries are ideal for use in harsh operating environments, as well as remote locations where the lack of infrastructure, such as electricity, requires a reliable, highly efficient power source.

Whether operating a solar-powered chemical injection pump, supporting remote SCADA monitoring, or powering lighting and surveillance equipment, Trojan's AGM batteries deliver maximum sustained performance and increased total energy output.



Cycle Life Chart



SCADA Monitoring & Control



Chemical Injection Pumps



Mobile & Temporary Facilities



Telecommunications



Security & Surveillance



Central Power Stations



Tank Monitoring



Wind Turbine

Advantages of Trojan AGM Batteries



1 Robust Plate Construction

Trojan's AGM batteries are 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.

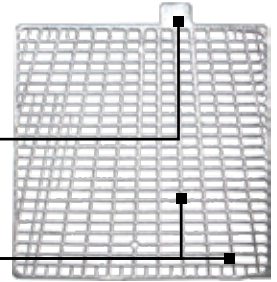
2 High Density Paste

Trojan AGM batteries feature 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.

Trojan's Thick Cast Grid

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

Increased structure for superior vibration handling



3 Heavy-Duty Corrosion Resistant Grid - Cast Not Stamped

Unique to Trojan's AGM batteries, 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.

4 Extreme Temperature Tolerance

Trojan's AGM batteries have the ability to perform in extreme climates such as the frigid Alaska terrain (-40°F, -40°C) to the ultra-high temperatures of the Southwest. It can withstand temperatures up to 160°F – delivering up to 40% greater heat tolerance over the competitions' AGM technology.

5 Rugged Polypropylene Case

Trojan's AGM batteries are packaged in a rugged polypropylene case that is rigid enough to protect the internal components as well as being resistant to oil, gasoline and other chemicals.



ADVANTAGES OF TROJAN AGM BATTERIES

SAFE AND EFFECTIVE ENERGY STORAGE SOLUTIONS

- ▶ Provide a safe (non-spillable), efficient power source
- ▶ Maintenance-Free (no watering)
- ▶ Provides required power to meet autonomy needs (if properly sized) to ensure no loss in monitoring
- ▶ Minimal gassing
- ▶ All Trojan AGM batteries contain flame/spark arrestors

- ▶ Ideal for remote locations
- ▶ Low self-discharge
- ▶ Can be placed on their sides
- ▶ Good shock and vibration resistance
- ▶ Rugged Polypropylene Case
- ▶ Works at very low temperatures - rated at -40°F (-40°C)
- ▶ Works at very high temperatures - rated at 160°F (71°C)
- ▶ High charge/discharge capability
- ▶ Reaches full capacity in a few cycles
- ▶ Does not require expensive ventilation equipment
- ▶ May be installed in a human environment
- ▶ Good choice for high power applications
- ▶ Regulatory requirements favor AGM technology adoption
- ▶ Can be air shipped



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 90 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

Product Specifications

| BCI GROUP SIZE | TYPE | CAPACITY ^A Minutes | CRANKING Performance | | CAPACITY ^B Amp-Hours (Ah) | | | | ENERGY (kWh) | TERMINAL Type | DIMENSIONS ^C Inches (mm) | | | WEIGHT lbs. (kg) ^G |
|---|-------------------|-------------------------------|--------------------------|-------------------------|--------------------------------------|------------|------------|-------------|--------------|---------------|-------------------------------------|-------------|---------------------|-------------------------------|
| | | @25 Amps | C.C.A. ^D @0°F | C.A. ^E @32°F | 5-Hr Rate | 10-Hr Rate | 20-Hr Rate | 100-Hr Rate | 100-Hr Rate | | Length | Width | Height ^F | |
| 12 VOLT DEEP-CYCLE AGM BATTERIES | | | | | | | | | | | | | | |
| 31 | OverDrive AGM 31™ | 180 | 730 | 875 | 84 | 93 | 102 | 112 | 1.34 | 11 | 13.42 (341) | 6.81 (173) | 9.21 (234) | 69 (31) |
| 27 | 27-AGM | 158 | 550 | 660 | 77 | 82 | 89 | 99 | 1.19 | 6 | 12.05 (306) | 6.84 (174) | 9.32 (237) | 64 (29) |
| 24 | 24-AGM | 137 | 500 | 600 | 67 | 70 | 76 | 84 | 1.01 | 6 | 10.77 (274) | 6.84 (174) | 8.62 (219) | 54 (24) |
| U1 | U1-AGM | 42 | 240 | 306 | 29 | 31 | 33 | 34 | 0.41 | 15 | 7.78 (198) | 5.20 (132) | 6.75 (171) | 27 (12) |
| 12 VOLT DUAL-PURPOSE AGM BATTERY | | | | | | | | | | | | | | |
| 8D | 8D-AGM | 460 | 1450 | 1850 | 179 | 210 | 230 | 254 | 3.05 | 6 | 20.47 (520) | 10.64 (270) | 9.08 (231) | 161 (73) |

- 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) and maintain a voltage above 1.75 V/cell. Capacities are based on peak 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.
 G. Weight may vary.



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

