RG® SERIES – SEALED LEAD ACID TECHNOLOGY

CONCORDE RG® SERIES SEALED VALVE REGULATED LEAD ACID BATTERIES (VRLA) – SUPERIOR TECHNOLOGY SUPERIOR RESULTS

- Maintenance Free
- Increased Cranking Power
- Highest Efficiency Lead Acid Design
- Lower Rate of Self Discharge
- Shipped Ready to Install
- Highest Quality Standards
- Hand Crafted in the U.S.A.

RG® SERIES AGM BATTERY CONSTRUCTION

Concorde's Valve Regulated Sealed Lead Acid Batteries (VRLA / SLAB) aka Absorbed Glass Mat (AGM) utilize Recombinant Gas (RG®) technology. Cell plates are tightly packed and sandwiched between layers of a proprietary micro porous polyethylene separator and micro fiber glass mat. The glass mat consists of a blend of glass fibers of varying length and diameter that have good wicking characteristics and promote maximum retention of electrolyte (AGM). During manufacturing, the plates are soaked with electrolyte and charged allowing the electrolyte to be absorbed and held in place by the capillary action between the fluid and the glass mat fibers. Excess electrolyte is drained from the batteries and the glass mat remains over 90% saturated. Just enough void space is left to provide channels by which oxygen travels from the positive to the negative plates during charging and reacts with the lead sulfate created on the negative plate during discharge. The hydrogen and oxygen gases are recombined to form water resulting in maintenance free operation. Each cell is sealed with pressure relief valves that contain the gases within the battery. RG® batteries are fully charged and electrically tested prior to shipment from the factory.

CB SERIES FLOODED BATTERY CONSTRUCTION

Concorde CB flooded batteries' plates are sandwiched between layers of micro porous polyethylene separators to prevent shorting and loosely packed into cells. When flooded lead acid batteries are charged, oxygen gas is generated at the positive plates and hydrogen gas is generated at the negative plates. These gases are released through a vent cap resulting in a loss of water which periodically needs to be replaced. As batteries are used, the positive active material softens and is shed from the plates. This material can cause shorts if not given a path to travel away from the plates. Therefore, the plates are shortened to create a space at the bottom of the battery container for the sediment to accumulate. Shorter plates means that the current producing surface area in the same container size (i.e. 25 or 35 group size) is reduced which equates to less cranking power. Inherent to this technology, all flooded batteries are shipped dry preventing the opportunity to perform electrical testing before shipping. Prior to installation, a flooded battery must be activated by adding electrolyte followed by a charging cycle. After the charging cycle, a capacity test is necessary to ensure activation was properly performed, followed by another charge to bring the battery back to full charge.

THE DIFFERENCE

In addition to the obvious maintenance free, non-spillable, benefits of RG® batteries because the plates are tightly compressed together and larger there is lower internal resistance resulting in more cranking / starting power. By contrast, flooded battery plates are separated so free flowing electrolyte can surround them and this arrangement increases internal resistance thereby reducing cranking / starting power. Tight sandwiching of the AGM and plates in an RG® battery also provides more support against shock and vibration than in the flooded battery type by limiting the shedding of active material. Finally, RG® batteries are electrically tested during the manufacturing process and are ready for installation at the time of shipment whereas flooded batteries require activation and electrical testing by the end user prior to installation.

RG® SERIES – SEALED LEAD ACID TECHNOLOGY

SEALED VS. FLOODED TECHNOLOGY MYTHS

Myth: A flooded battery will last longer than a sealed battery if I don't fly often.

Because electrolyte is absorbed into the glass mat and the battery is sealed with pressure relief vents, an AGM RG® battery self discharges at 1/3 the rate of a flooded battery with vents open to the atmosphere exposing the water within the battery to evaporation. All lead acid batteries self discharge with a byproduct of sulfate developing on the plates. Replenishing the lost water in a flooded battery does not reverse sulfation. To extend life, all lead acid batteries should be stored fully charged in a cool environment (where self discharge occurs at a slower rate) or maintained by an aircraft battery specific float charger.

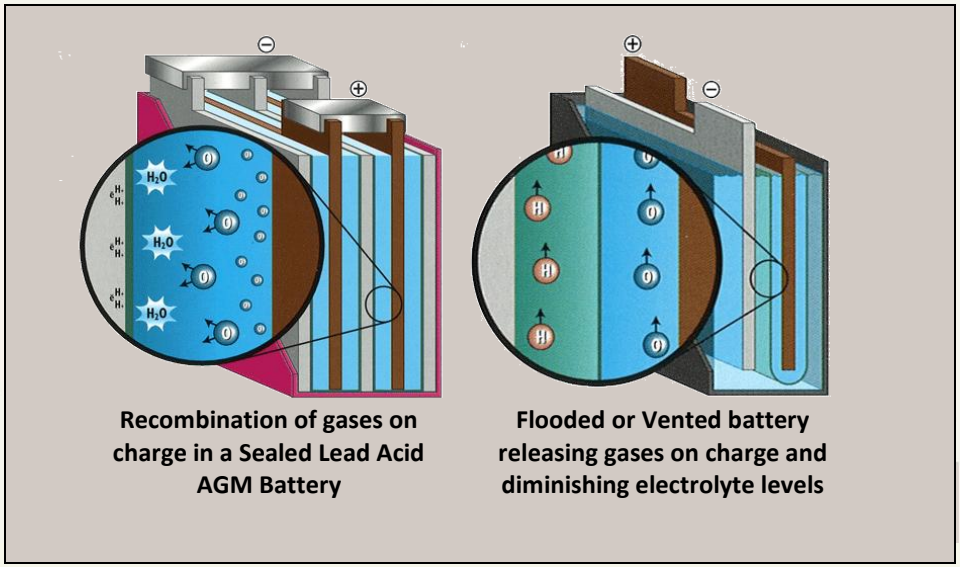
Myth: A flooded battery lasts longer because I maintain the electrolyte levels.

Electrolyte is absorbed within the glass mat of RG® AGM batteries and the recombinant design maintains the electrolyte levels needed to provide equal or longer life than a flooded battery. Overcharging causes water to vent and damages both AGM and flooded batteries. Continually undercharging leads to sulfation which also affects the life of both battery types. Review Concorde's Component Maintenance Manual for optimal charge voltage information.

Myth: Flooded batteries are cheaper.

All flooded batteries require labor to activate. They must first be filled with electrolyte and charged to activate, then a capacity test must be performed to ensure airworthiness and finally a cycle is required to bring the battery back to full charge. RG® batteries are tested at the factory and have passed both high rate and one hour performance standards. This hidden cost of flooded battery activation adds to the total cost of purchase.

Over the years, customers have become more knowledgeable about the high quality RG® Series product line's benefits of increased performance and efficiency, proven reliability, maintenance free design and overall cost savings per flight hour. As a result, orders for the CB Series of flooded products have declined dramatically which has had the effect of increasing production costs of the CB Series product line. In many cases, the initial cost of a CB battery is now more expensive than its RG® counterpart.



Recombination of gases on charge in a Sealed Lead Acid AGM Battery

Flooded or Vented battery releasing gases on charge and diminishing electrolyte levels

RG® Batteries are certified for installation in hundreds of applications. Please visit www.concordebattery.com or contact us for installation approvals to convert from flooded to sealed lead acid technology today.