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AGM Batteries and Charging (Absorbed Glass Mat)

AGM Batteries

- When testing or inspecting batteries please wear proper PPE.
- We recommend using a appropriate battery tester when testing AGM batteries. A volt meter will not give you accurate results.
- Crosspoint Solutions does not warranty batteries. For warranty info please respond to the battery manufacturer for replacement.
- When cleaning corrosion build up please use baking soda and water. A three to one mixture will work.

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AGM Batteries

- AGM technology was developed in 1985 for military aircraft to reduce weight, increase power handling and improve reliability. The acid is absorbed by a very fine fiberglass mat, making the battery spill-proof. This enables shipment without hazardous material restrictions. The plates can be made flat to resemble a standard flooded lead acid pack in a rectangular case; they can also be wound into a cylindrical cell.
- AGM has very low internal resistance, is capable to deliver high currents on demand and offers a relatively long service life, even when deep-cycled. AGM is maintenance free and provides good electrical reliability. It stands up well to low temperatures and has a low self-discharge. The leading advantages consist of a charge cycle that is up to five times faster than the flooded version, and the ability to deep cycle. AGM offers a depth-of-discharge up to 80 percent; the flooded, on the other hand, is specified at 50 percent Depth of Discharge to attain the same cycle life.

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AGM Batteries Cont.

- AGM batteries are commonly built to size and are found in high-end vehicles to run power-hungry accessories such as heated seats, steering wheels, mirrors and windshields. NASCAR and other auto racing leagues choose AGM products because they are vibration resistant. Being sealed, AGM reduces acid spilling in an accident, lowers the weight for the same performance and allows installation at odd angles. Because of good performance at cold temperatures, AGM batteries are also used for marine, motor home and robotic applications.

Battery Voltage information between Start and AUX

- During normal truck operation, the truck's start bank batteries will charge first. Once the start bank batteries have reached 13V, the PMM internal charger turns on and begins to charge the ClimaCab batteries or auxiliary bank.

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Charging system Components

Alternator

PMM

Aux Batteries

Cables and fuses

Battery Testing

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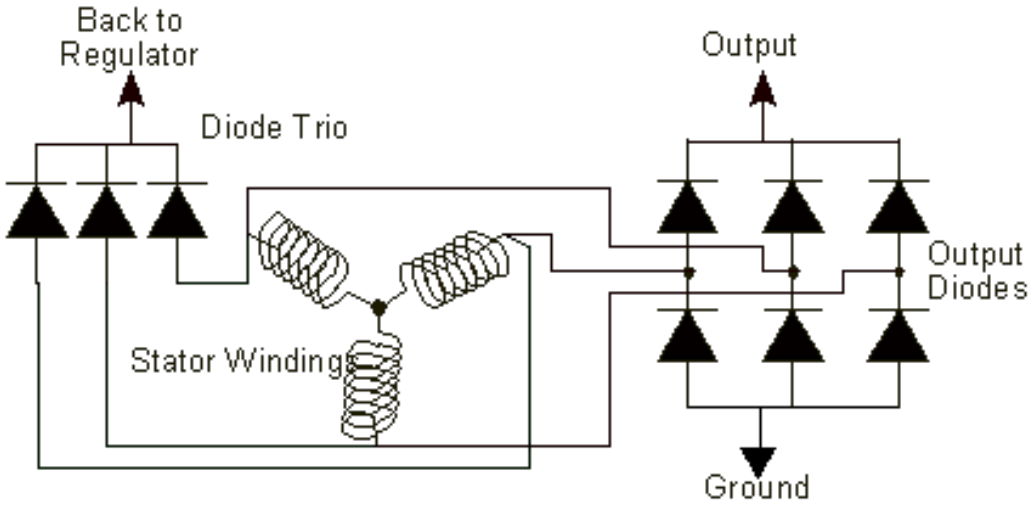
Alternator

- If you lose any component in the Alternator you will lose at least 33% capacity
- Our recommendation is to use a 200 Amp Alternator minimum, for supporting the electrical load of the truck and to have sufficient capacity remaining to charge the ClimaCab batteries.
- To test the Batteries use a EXP1000HD Tester.



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PMM

- One of the four major functions to the PMM is the Charging feature.
- PMM monitors the Voltage of the start bank and starts charging when the start bank reaches an acceptable voltage.
- When you turn off the truck, the PMM goes from charging the AUX batteries to turning them in to a power source.
- Competitor's systems use a solenoid to connect the batteries to the trucks charging system.
- The ClimaCab system uses the PMM with a built-in 3 stage battery charging process for more efficient charging.

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Aux Batteries

- Each battery has 100 Amp hours. The ClimaCab is programmed for a 80% Depth of Discharge.
- With four batteries you would have 320 Amp hours available.
- This is why a larger Alternator would provide a quicker charge.
- A quicker charge would also give you a full battery more often and help preserve the life of the battery.

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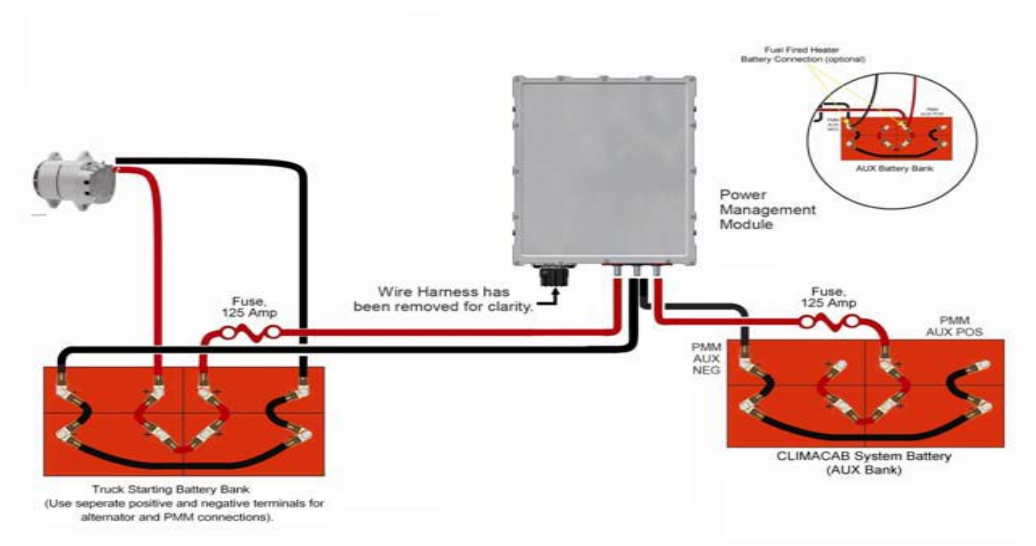
Cables and fuse Layout



- With the right cable configuration you ensure all four batteries are charged and discharged equally.

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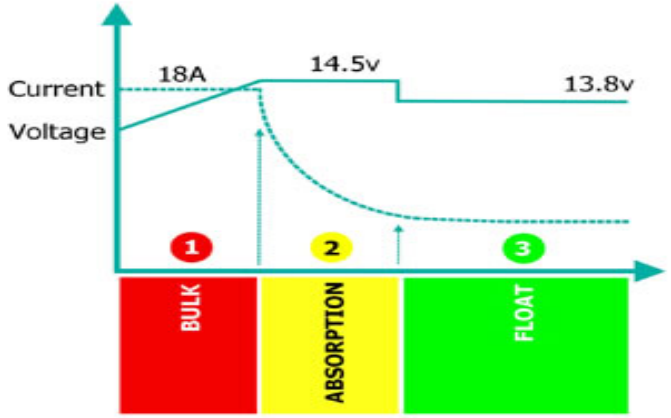
The PMM provides a 3 Stage Charge

Stage 1 is called Bulk Charge. When a battery is 50% to 80% charged it will take a charge very quickly.

Stage 2 is called Absorption (or Acceptance). At this stage voltage is held at a preset maximum level (typically 14.5 volts) while current slowly tapers off until the battery is 95% charged.

Stage 3 is called Float. After a battery is fully charged it requires a lower voltage to maintain its charge while waiting to be used.



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AGM Batteries testing.

- You will need to Aquire a Battery Load Tester, they are much better tool for testing batteries.
- They provide a much better test result on your battery life.
- There are two options. A full battery bank tester and a single battery tester.

http://www.midtronics.com

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