

AGM Battery technology

Diagnostic Solutions has been asked lately, by a number of people, about the new battery technology called “AGM”, so they thought that we would explain a little about it.

Firstly, AGM is an abbreviation for Absorbent Glass Mat.

As you are aware, until now, lead acid batteries had an electrolyte liquid within the battery. AGM batteries have a fibreglass mat separator, which stores the electrolyte and leaves no free acid in the battery.

The benefit of this technology is that if we had a normal flooded lead acid battery, and we subjected it to the high charging rates capable of today’s modern charging systems, we would damage the battery plates and severely shorten the life span.

Because the AGM battery does not lose oxygen, formed at the positive plate during high charge rates like the flooded battery would, rather it combines with hydrogen produced at the negative plate to form water, the AGM battery is maintenance free and is capable of handling the high charge rates of today’s and future systems.

The combination of systems such “stop-start”, alternator management and regenerative braking, is leading to a wider use of AGM technology.

Alternator management monitors the state of the battery charge and switches off the alternator when the battery is fully

charged. An alternator can absorb 10% of the engine’s output, so switching it off saves fuel. With some systems, the alternator produces its charge on the over-run, that is when you lift off the accelerator, also saving fuel.

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Regenerative braking uses the braking of the car to charge the battery, but a conventional lead acid battery can only accept 20% of this charge burst.

Unfortunately the benefits of an AGM battery come at a price, with an AGM unit typically costing three times more than a conventional lead acid flooded unit.

They also require the use of smarter battery chargers for maintenance and recharging.

On replacing a battery, it is commonly required to use a scan tool to inform the charging system of which type of battery has been fitted. It is important to pay attention to which type of battery is fitted when you are replacing them. Fitting a non AGM unit to save on price will cause all kinds of problems in a very short space of time.

We recently heard of someone who fitted a lead acid battery in place of an AGM and the vehicle was back in his workshop within two weeks with a host of other problems. These included battery management faults, because of the incorrect battery, CAN Bus drop outs on start up, which were due to the system voltage dropping low when the starter engaged.

So take care with these new batteries, as it is possible to have two seemingly identical vehicles but one has the new AGM because it has stop/go, while its companion will have a lead acid battery because it uses conventional technology.

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