

**HYUNDAI**NEW THINKING.  
NEW POSSIBILITIES.**Technical Service Bulletin**

GROUP

NUMBER

**ENGINE  
ELECTRICAL****13-EE-004**

DATE

MODEL(S)

**DECEMBER, 2013****SONATA, ELANTRA**

SUBJECT:

**ABSORBENT GLASS MAT (AGM) BATTERY****Description:**

Starting with the 2014 model year, there are two types of batteries installed on Hyundai vehicles: Conventional Flooded (wet cell) type and Absorbent Glass Mat (AGM) type.

Although the battery external appearances are similar, the internal construction and characteristics of the batteries are different.

**★ IMPORTANT**

The replacement battery must be the same type of battery originally installed from the factory.

The correct battery type, either Flooded or AGM, must be selected for the GR8 Testing and Charging to ensure correct results.

Charging with an incorrect battery type selection will damage and shorten the life of the battery.

Always check the battery specification label affixed on top of the battery before working on the battery and be sure to select the appropriate battery type.

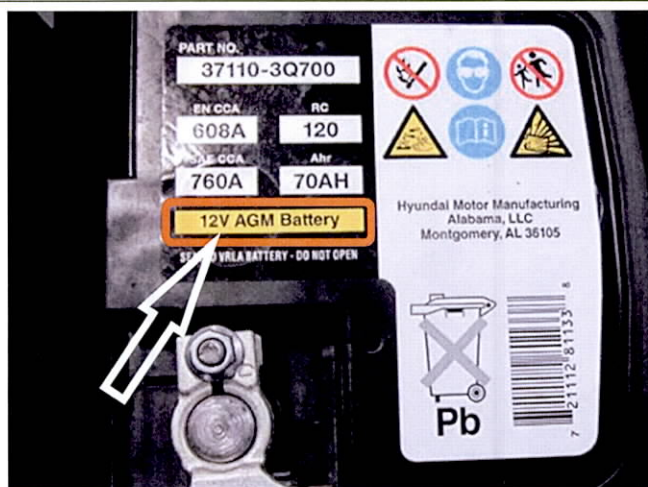
**Applicable Vehicles:**

Sonata YF 2.4L: 2014

Elantra (UD/MD) 1.8L with Automatic Transmission: 2014

**Warranty Information:**

Normal warranty applies.

**SUBJECT:****ABSORBENT GLASS MAT (AGM) BATTERY**Example of Sonata **AGM** Battery Specification LabelExample of Sonata **Flooded** Battery Specification LabelExample of Elantra **AGM** Battery Specification LabelExample of Elantra **Flooded** Battery Specification Label

AGM batteries used in Hyundai vehicles are flat plate style and the case resembles that of a conventional flooded battery.

The AGM battery uses a fiberglass mat separator that is wrapped around the positive plates and holds the electrolyte in place with capillary action.

The battery cells consisting of the lead plates, electrolyte, and fiberglass mat are tightly packed into the case partitions. This tight packing or compression holds the electrolyte absorbed in the glass matting resulting in a battery that is spill proof, impact and vibration resistant. As a result, it has very low internal resistance.

The lower internal resistance increases the voltage output, decreases charging time, and reduces losses to heat as power flows through the battery.



**SUBJECT:****ABSORBENT GLASS MAT (AGM) BATTERY**

In general, AGM batteries may provide a longer service life than conventional flooded batteries.

**Key benefits of AGM batteries:**

- 3 times higher cycle capability
- Higher deep discharge capability
- Faster current delivery
- Faster charge capability
- Low self-discharge
- Maintenance Free
- Low / No gas output
- Spill proof

The AGM battery is sensitive to overcharging and heat. Severe overcharging can damage and deform the battery.

- Always use a voltage regulated battery charger (The GR8 battery tester/charger has AGM battery settings).
- Never allow the battery temperature to exceed 125°F during charging.
- Immediately stop charging any battery that becomes very hot or makes hissing noises.

When testing or charging an AGM battery using the Midtronics GR8 Diagnostic Battery Tester/Charger, it is important to select the correct battery type in the setup menu. The GR8 will configure the optimum voltage and current charge rates for the type of battery that is selected.

Refer to **TSB 13-EE-003** for more details on how to use the GR8 Battery Tester.

The latest Battery Application Guide can be found at:

[http://www.hyundaiflashdrive.com/storage/reference-material/pn-reference-charts/battery\\_app\\_guide.pdf](http://www.hyundaiflashdrive.com/storage/reference-material/pn-reference-charts/battery_app_guide.pdf)