



HYUNDAI

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Technical Service Bulletin

GROUP

**ENGINE
ELECTRICAL**

NUMBER

13-EE-003

DATE

NOVEMBER, 2013

MODEL(S)

ALL MODELS

SUBJECT:

GR8 DIAGNOSTIC TESTER/CHARGER TOOL AND BATTERY WARRANTY POLICY

THIS TSB SUPERCEDES TSB 10-EE-003 to include information about using the GR8 Battery Charger/Tester on Absorbent Glass Mat (AGM) Batteries.

Description: This bulletin describes operation of the GR8 for battery related repair work. The GR8 is a state of the art tool that checks battery health, and then performs a reliable intelligent safe charge which can quickly restore some batteries to good condition. For example, a battery may be fully revived within 1.5 hours if it has not been in a discharged state for an extended period of time.

★ NOTE

Two types of batteries are installed on Hyundai vehicles: Flooded (wet cell) type and AGM type. The same type of battery must be replaced.

You must enter the correct battery type during GR8 Testing and Charging to ensure correct results.

Be sure to check the battery information label affixed on top of the battery and select the appropriate battery type.

AGM Battery



Flooded Battery



Circulate To: General Manager, Service Manager, Parts Manager, Warranty Manager, Service Advisors, Technicians, Body Shop Manager, Fleet Repair

Basic Operation and Battery Warranty Policy using the GR8:

1. Perform a quick test in the Battery Test mode. If the Battery Test mode provides a “Replace Battery” result, the battery can be replaced without further steps.
2. If the Battery Test Mode produces a “Charge and Retest” result, you are then required to conduct a Diagnostic Charge that will determine whether the battery is able to be brought to a “Good Battery” condition by a full GR8 charge. If the initial diagnostic charge test finds that the charge will not revive the battery, it will usually indicate “Replace Battery” within 20 minutes on average.
3. Should the battery pass the “Diagnostic Charge” test, it will continue charging until the battery reaches a full charge condition (which can take up to 1.5 hours) and indicate “Good Battery” when completed successfully.
4. The GR8 produces printouts of the results in both the Battery Test and Diagnostic Charge modes. Both printouts must be attached to the warranty repair order with proper VIN and RO numbers entered via the GR8’s keyboard.

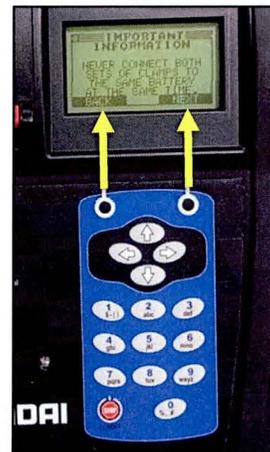
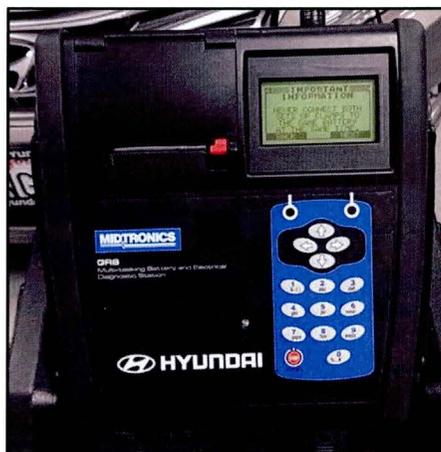
*** NOTE**

A “Diagnostic Charge” must be performed if the battery test resulted in “Charge & Retest”.

GR8 Battery Tester/Charger Assembly:



GR8 Battery Tester Unit: Performs battery testing and initial control of the diagnostic charger. Tester can be used independent of the charger unit after a battery charge is in process. The cable from the base may be disconnected and wireless communication exists to the Charger unit. The cable should be reconnected when docked on the charger.



*** NOTE**

Either the small battery tester clamps or large charger clamps can be connected to a battery at a time.

CAUTION

NEVER connect both set of small and large clamps to a battery as it can cause internal damage to the GR8 assembly.

Service Procedure:

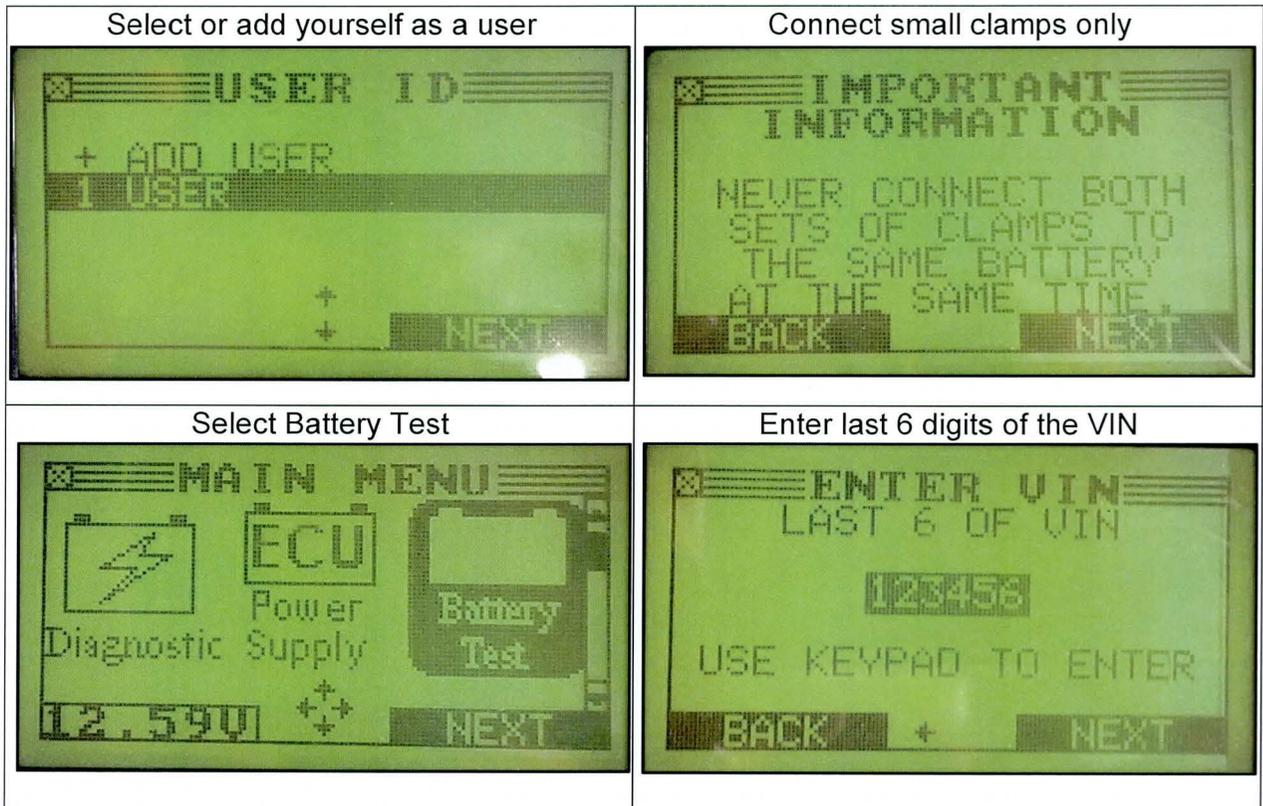
First step – Battery Test (always the initial test):

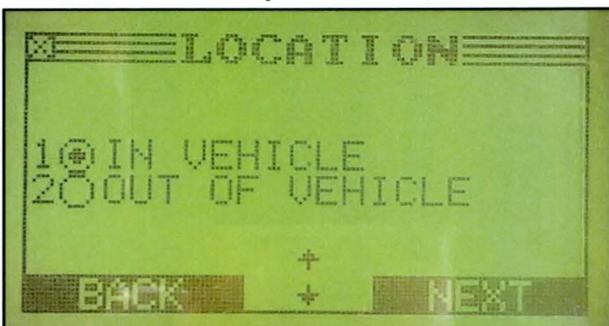
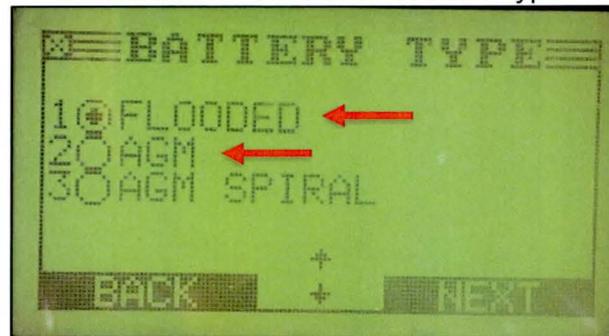
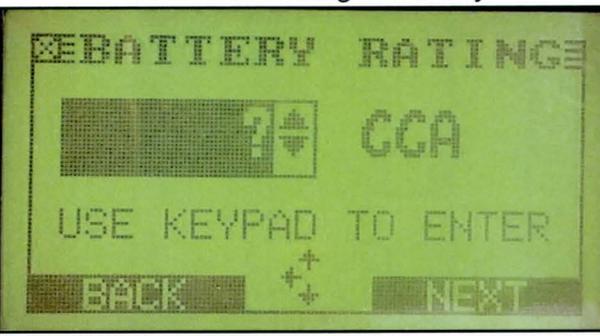
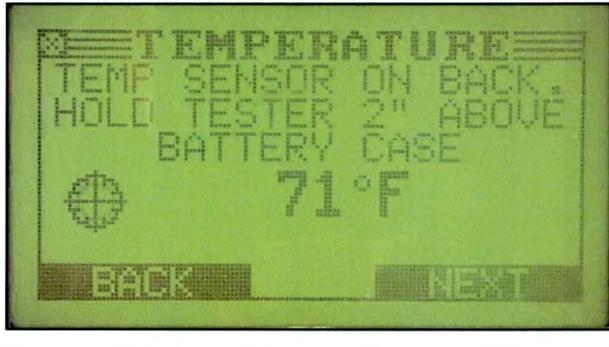
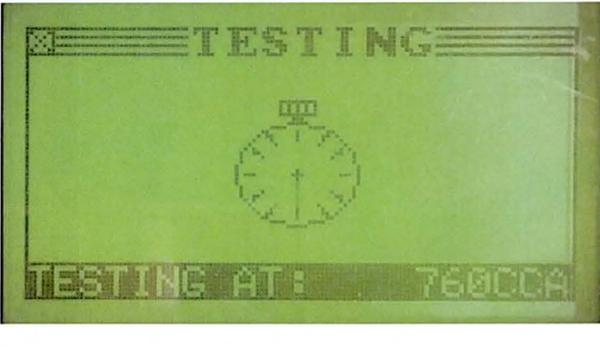
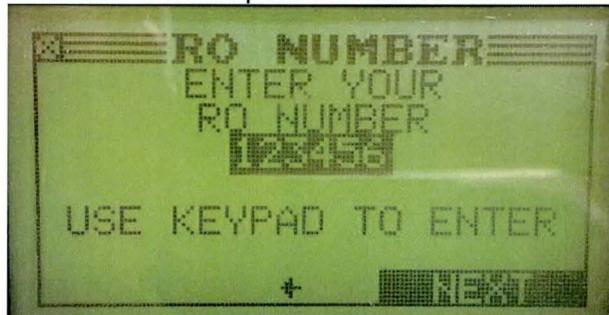
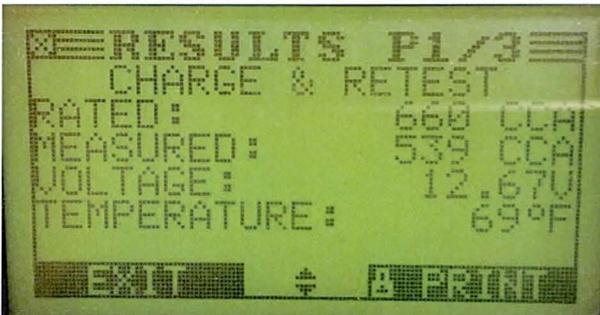
1. Press the power button on the GR8 if the Battery Tester unit is docked on the Charger unit. You should hear the Charger unit’s fan come on and the Tester unit’s display will light up.
2. Connect **only the Battery Tester unit’s small clamps** to the vehicle’s battery making sure that the black clamp is connected to the battery negative “-” terminal and the red cable’s clamp is connected to the battery positive “+” terminal. GR8 display will warn if you connected it backwards.

*** NOTE**

For Genesis, Equus & Sonata Hybrid, connect the Battery Test or Charger clamps directly to the battery in the trunk, not to the Underhood jumper terminals.

3. Follow these screen by screen instructions from left to right for each row. This example shows screens that will occur for the battery condition of “Charge & Retest”:



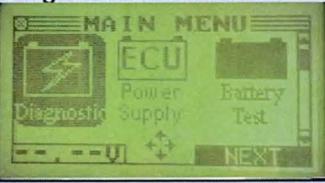
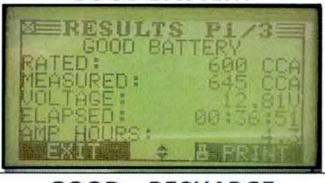
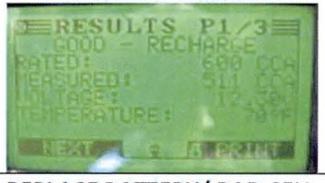
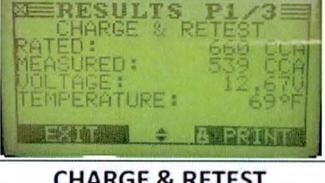
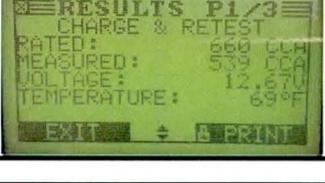
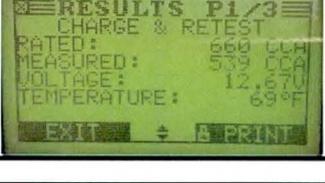
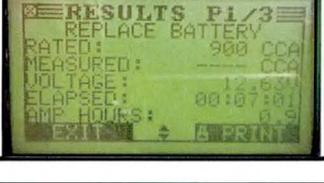
<p>Select battery IN/OUT of vehicle</p>  <p>LOCATION</p> <p>1 IN VEHICLE 2 OUT OF VEHICLE</p> <p>BACK + NEXT</p>	<p>Select CUSTOMER CAR</p>  <p>VEHICLE TYPE</p> <p>1 CUSTOMER CAR 2 OPDI 3 DEALER INVENTORY</p> <p>BACK + NEXT</p>
<p>Select either FLOODED or AGM type</p>  <p>BATTERY TYPE</p> <p>1 FLOODED 2 AGM 3 AGM SPIRAL</p> <p>BACK + NEXT</p>	<p>Enter CCA rating of battery</p>  <p>BATTERY RATING</p> <p>CCA</p> <p>USE KEYPAD TO ENTER</p> <p>BACK + NEXT</p>
<p>Select NEXT</p>  <p>TEMPERATURE</p> <p>TEMP SENSOR ON BACK. HOLD TESTER 2" ABOVE BATTERY CASE</p> <p>71°F</p> <p>BACK NEXT</p>	<p>Testing is in progress</p>  <p>TESTING</p> <p>TESTING AT: 760CCA</p>
<p>Enter Repair Order number</p>  <p>RO NUMBER</p> <p>ENTER YOUR RO NUMBER</p> <p>USE KEYPAD TO ENTER</p> <p>BACK + NEXT</p>	<p>Test Result. Print for the R.O.</p>  <p>RESULTS P1/3</p> <p>CHARGE & RETEST</p> <p>RATED: 660 CCA MEASURED: 539 CCA VOLTAGE: 12.67V TEMPERATURE: 69°F</p> <p>EXIT + RETURN</p>

*** NOTE**

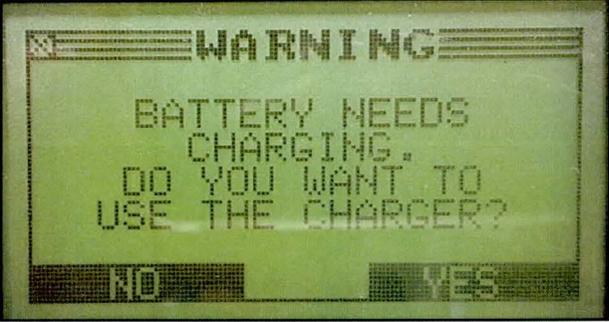
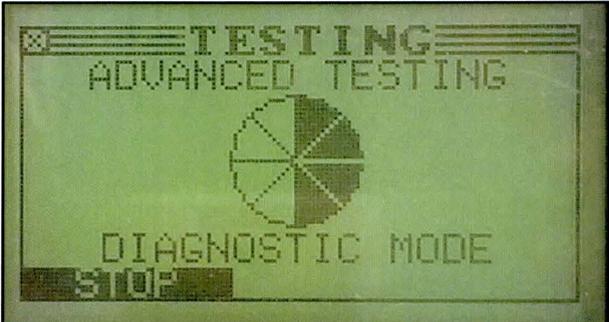
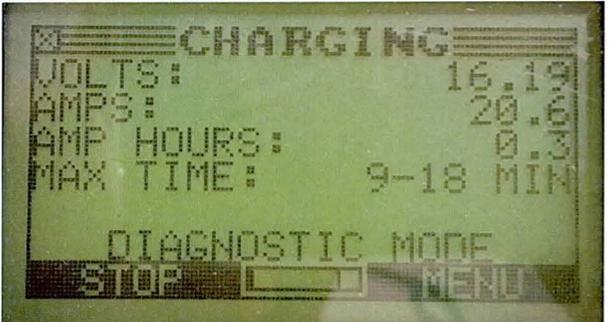
Always print out the Battery Test result to attach to the Repair Order.

SUBJECT: GR8 DIAGNOSTIC TESTER/CHARGER TOOL AND BATTERY WARRANTY POLICY

4. Follow the directions in this table based on the result of the **Battery Test** (first column). PRINT results at **Battery Test** and then after **Diagnostic Charge**:

GR8 BATTERY DIAGNOSTIC TEST/CHARGE REPAIR PROCEDURE AND WARRANTY POLICY			
1 ST STEP	2 ND STEP	3 RD STEP	CLAIM
<p>ALWAYS BEGIN WITH BATTERY TEST FIRST:</p> 	<p>PERFORM DIAGNOSTIC CHARGE AS APPLICABLE:</p>  <p>Press YES or select Diagnostic at Main Menu:</p> 	REPAIR ACTION	WARRANTY CLAIM TYPE
BATTERY TEST RESULT:	DIAG. CHARGE RESULT:		
<p>GOOD BATTERY</p> 	Charge is not applicable	None	None
<p>GOOD – RECHARGE</p> 	Dealer optional charge method as per →	CHARGE BY GR8 or, run engine at idle for 20 minutes	None
<p>REPLACE BATTERY/ BAD CELL</p> 	Charge is not applicable	REPLACE BATTERY	REPLACE 37110R00 only (Add to R.O. Print Ticket #A)
<p>CHARGE & RETEST</p> 	COMPLETE – GOOD BATTERY	GR8 CHARGE ONLY	CHARGE 37110A00 only (Add to R.O. Print Ticket #B)
<p>CHARGE & RETEST</p> 	<p>COMPLETE GOOD BATTERY</p> 		
<p>CHARGE & RETEST</p> 	<p>REPLACE BATTERY/ BAD CELL</p> 	GR8 CHARGE ATTEMPT NO GOOD → REPLACE BATTERY	CHARGE 37110A00 + REPLACE 37110R00 (Add to R.O. Print Ticket #C)

5. Connect only the Charger unit's large clamp set to the vehicle's battery making sure that the black clamp is connected to the battery negative "-" terminal and the red clamp is connected to the battery positive "+" terminal. GR8 display will warn if you have connected it backwards.
6. Perform the following instructions showing the GR8 screens (as shown from left to right of each row) that will occur when a "Good Battery" result is reached after charging:

Press YES to start charging	Connect large clamps
	
Diagnostic charge is in progress	Charge status being displayed
	
Good Battery condition reached	Full Charge Complete
	

*** NOTE**

If the Diagnostic Charge results in "Good Battery", attach both Battery Test print tickets of the "Charge & Retest" result and the Diagnostic Charge "Good Battery" result per example of "Print Ticket #B" on page 9.

SUBJECT: GR8 DIAGNOSTIC TESTER/CHARGER TOOL AND BATTERY WARRANTY POLICY

7. The GR8 will show the following screens when “Replace Battery” results after a Diagnostic Charge attempt:

Charge Status Being Displayed	Enter R.O. number	Charge NG – Replace Battery
		

*** NOTE**

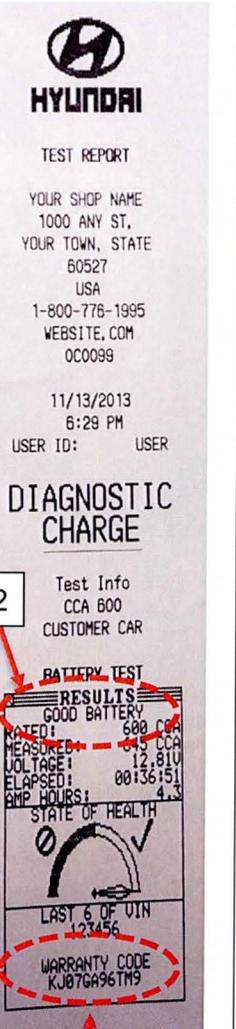
If the Diagnostic Charge resulted in “Replace Battery”, claim the Op Code 37110A00 for the battery charge attempt and Op Code 37110R00 for “Replace Battery”. The Battery Test print tickets for “Charge & Retest” result and the “Diagnostic Charge” result must be attached as per example “Print Ticket #C” of the page 9.

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*** NOTE**

Print Tickets that must be attached to the Repair Order based on the Battery Test result and Diagnostic Charge result are shown below. Also listed are the warranty claim types.

<u>Print Ticket# A</u>	<u>Print Ticket# B</u>	<u>Print Ticket# C</u>
	(Both tickets as shown must be attached with matching VIN, close in date, and with correct RO#)	(Both tickets as shown must be attached with matching VIN, close in date, and with correct RO#)
REPLACE 37110R00 only	CHARGE 37110A00 only	CHARGE 37110A00 + REPLACE 37110R00
BATTERY TEST=REPLACE BATTERY	1. BATTERY TEST = CHARGE & RETEST	1. BATTERY TEST = CHARGE & RETEST
	2. DIAGNOSTIC CHARGE = GOOD BATTERY	2. DIAGNOSTIC CHARGE = REPLACE BATTERY

Print Ticket# A	Print Ticket# B	Print Ticket# C
 <p>HYUNDAI TEST REPORT</p> <p>YOUR SHOP NAME 1000 ANY ST. YOUR TOWN, STATE 60527 USA 1-800-776-1995 WEBSITE.COM 0C0099</p> <p>11/13/2013 6:11 PM USER ID: USER</p> <p>BATTERY TEST</p> <p>Test Info CCA 900 CUSTOMER CAR</p> <p>RESULTS REPLACE BATTERY RATED: 900 CCA MEASURED: 12.63V VOLTAGE: 12.27V ELAPSED: 00:10:01 AMP HOURS: 0.9</p> <p>STATE OF HEALTH</p> <p>USE MIDTRONICS DIAGNOSTIC CHARGER</p> <p>LAST 6 OF VIN 123456</p> <p>WARRANTY CODE K1NB9SH6TA9</p>	 <p>HYUNDAI TEST REPORT</p> <p>YOUR SHOP NAME 1000 ANY ST. YOUR TOWN, STATE 60527 USA 1-800-776-1995 WEBSITE.COM 0C0099</p> <p>11/13/2013 5:01 PM USER ID: USER</p> <p>BATTERY TEST</p> <p>Test Info CCA 660 CUSTOMER CAR</p> <p>RESULTS CHARGE & RETEST RATED: 660 CCA MEASURED: 412 CCA VOLTAGE: 12.27V TEMPERATURE: 69°F</p> <p>STATE OF HEALTH</p> <p>USE MIDTRONICS DIAGNOSTIC CHARGER</p> <p>LAST 6 OF VIN 123456</p> <p>WARRANTY CODE J198366TM9</p>	 <p>HYUNDAI TEST REPORT</p> <p>YOUR SHOP NAME 1000 ANY ST. YOUR TOWN, STATE 60527 USA 1-800-776-1995 WEBSITE.COM 0C0099</p> <p>11/13/2013 6:29 PM USER ID: USER</p> <p>DIAGNOSTIC CHARGE</p> <p>Test Info CCA 600 CUSTOMER CAR</p> <p>RESULTS GOOD BATTERY RATED: 600 CCA MEASURED: 645 CCA VOLTAGE: 12.81V ELAPSED: 00:13:51 AMP HOURS: 4.3</p> <p>STATE OF HEALTH</p> <p>USE MIDTRONICS DIAGNOSTIC CHARGER</p> <p>LAST 6 OF VIN 123456</p> <p>WARRANTY CODE KJ076A96TM9</p>
 <p>HYUNDAI TEST REPORT</p> <p>YOUR SHOP NAME 1000 ANY ST. YOUR TOWN, STATE 60527 USA 1-800-776-1995 WEBSITE.COM 0C0099</p> <p>11/13/2013 5:01 PM USER ID: USER</p> <p>BATTERY TEST</p> <p>Test Info CCA 660 CUSTOMER CAR</p> <p>RESULTS CHARGE & RETEST RATED: 660 CCA MEASURED: 412 CCA VOLTAGE: 12.27V TEMPERATURE: 69°F</p> <p>STATE OF HEALTH</p> <p>USE MIDTRONICS DIAGNOSTIC CHARGER</p> <p>LAST 6 OF VIN 123456</p> <p>WARRANTY CODE J198366TM9</p>	 <p>HYUNDAI TEST REPORT</p> <p>YOUR SHOP NAME 1000 ANY ST. YOUR TOWN, STATE 60527 USA 1-800-776-1995 WEBSITE.COM 0C0099</p> <p>11/13/2013 6:29 PM USER ID: USER</p> <p>DIAGNOSTIC CHARGE</p> <p>Test Info CCA 600 CUSTOMER CAR</p> <p>RESULTS REPLACE BATTERY RATED: 900 CCA MEASURED: 12.63V VOLTAGE: 12.27V ELAPSED: 00:10:01 AMP HOURS: 0.9</p> <p>STATE OF HEALTH</p> <p>USE MIDTRONICS DIAGNOSTIC CHARGER</p> <p>LAST 6 OF VIN 123456</p> <p>WARRANTY CODE K1NB9SH6TA9</p>	

Enter this 11-digit warranty code into the claim based on results as indicated.

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Warranty Claim Information:

GR8 RESULTS	OP CODE	OPERATION	OP TIME	CAUSAL P/N	NATURE /CAUSE
Battery Test = "REPLACE BATTERY" (Ex: Print Ticket#A)	37110R00	REPLACE BATTERY	(per LTS)	Use Part Number shown in Battery Chart for models until 2011MY	N69/C40
Battery Test = "CHARGE & RETEST" and Diagnostic Charge = "GOOD BATTERY" (Ex: Print Ticket#B)	37110A00	CHARGE BATTERY	0.3 M/H		
Battery Test = "CHARGE & RETEST" and Diagnostic Charge = "REPLACE BATTERY" (Ex: Print Ticket#C)	Must be entered in order as below:				
	37110R00 +	REPLACE BATTERY +	(per LTS) +		
	37110A00	CHARGE BATTERY	0.3 M/H		

*** NOTE**

Attach the Print Tickets to the Repair Order as per examples shown on the page 9 based on the GR8 results.

*** NOTE**

Enter the 11-digit warranty code into the claim submission as per below:

Initial Step: BATTERY TEST Printout Result	2 nd Step: DIAGNOSTIC CHARGE Printout Result	Warranty Code is entered from:	
		BATTERY TEST Printout	DIAGNOSTIC CHARGE Printout
REPLACE BATTERY	not applicable (do not attach to R.O.)	X	
BAD CELL - REPLACE		X	
CHARGE & RESTEST	GOOD BATTERY		X
	REPLACE BATTERY or BAD CELL- REPLACE		X

Hyundai Battery Replacement Application Chart:

Dealers can find the Battery Application Guide at:

http://www.hyundaiflashdrive.com/storage/reference-material/pn-reference-charts/battery_app_guide.pdf

REPLACEMENT BATTERY APPLICATION GUIDE

MODEL	YEAR	ENGINE	PART NUMBER	GROUP	CCA	RC
ACCENT	1995-	4 cyl	00275-15001	121R	600	110
AZERA	2006-	6 cyl	00275-16001	124R	700	120
ELANTRA	1992-1995	4 cyl	00275-14000	25	550	100
	1996-2010	4 cyl	00275-15001	121R	600	110
GT	2013-	4 cyl	00275-18001	H5	600	100
COUPE	2013-	4 cyl	00275-18001	H5	600	100
SEDAN	2011-	4 cyl	00275-18001	H5	600	100
ELANTRA TOURING	2009-2012	4 cyl	00275-15001	121R	600	110
ENTOURAGE	2006-2008	6 cyl	00275-16001	124R	700	120
EQUUS	2011-	8 cyl	00275-17000	H8	95 amp	
EXCEL	1985-1994	4 cyl	00275-14000	25	550	100
GENESIS						
COUPE	2010-	ALL	00275-16001	124R	700	120
SEDAN	2009-	ALL	00275-17000	H8	95 amp	
SANTA FE	2010-	ALL	00275-16001*	124R	700	120
SPORT	2013-	4 cyl	00275-16001*	124R	700	120
SCOUPE	1991-1995	4 cyl	00275-14000	25	550	100
SONATA	1989-1998	4 cyl	00275-14000	25	550	100
	1999-2013	ALL	00275-16001	124R	700	120
	2014-	4 cyl	00275-20000	H6A	760	120
HYBRID	2011-	4 cyl	00275-19000^	H6R	600	110
TIBURON	1997-2008	ALL	00275-16001	124R	700	120
TUCSON	2005-	ALL	00275-16001	124R	700	120
VELOSTER	2012-	ALL	00275-18001	H5	600	100
VERACRUZ	2007-2012	6 cyl	00275-16001*	124R	700	120
XG300/350	2001-2005	6 cyl	00275-16001	124R	700	120

Some OEM batteries are smaller. Discard the battery insulation cover if it is too small to fit the service battery.
 ^This battery is only stocked at the Battery Redistribution Center, not your local Distributor. Please add an additional one to two days to the normal delivery process to receive this battery.
 *Some Veracruz and Santa Fe models may require a Hyundai battery post shim (P/N. 00220-G8000) to fit the battery connections tight.