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**Reference:**

ITB09-015g

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## 12 VOLT BATTERY STORAGE AND MAINTENANCE FOR NEW VEHICLES IN DEALER INVENTORY

This bulletin has been amended to include a statement on page 3 for an Infrared (IR) sensor on the back of the GR8 head unit. Please discard all previous versions of this bulletin.

**APPLIED VEHICLES:** All new (unsold) Infiniti vehicles in dealer inventory

### SERVICE INFORMATION

Design and process changes have been made to improve battery voltage at dealer receipt. Our goal is to deliver vehicles to customers with a 12 volt battery in excellent condition. Proper dealership storage and maintenance of vehicle 12 volt batteries is essential to insuring good battery operating life and customer satisfaction.

Dealers are responsible for maintaining vehicles in their inventory. 12 volt batteries in vehicle inventory should always be kept at a full charge to prevent excessive discharge during storage and so they are ready for delivery to customers at any time.

If 12 volt batteries in new vehicles are allowed to discharge for a prolonged period of time, battery life may be drastically reduced which can lead to premature replacement and customer dissatisfaction.

It is expected that each dealer will have a process to monitor and maintain battery State Of Charge (SOC) for vehicles in dealer inventory. NNA field representatives may request dealers to demonstrate their battery maintenance process and confirm its effectiveness.

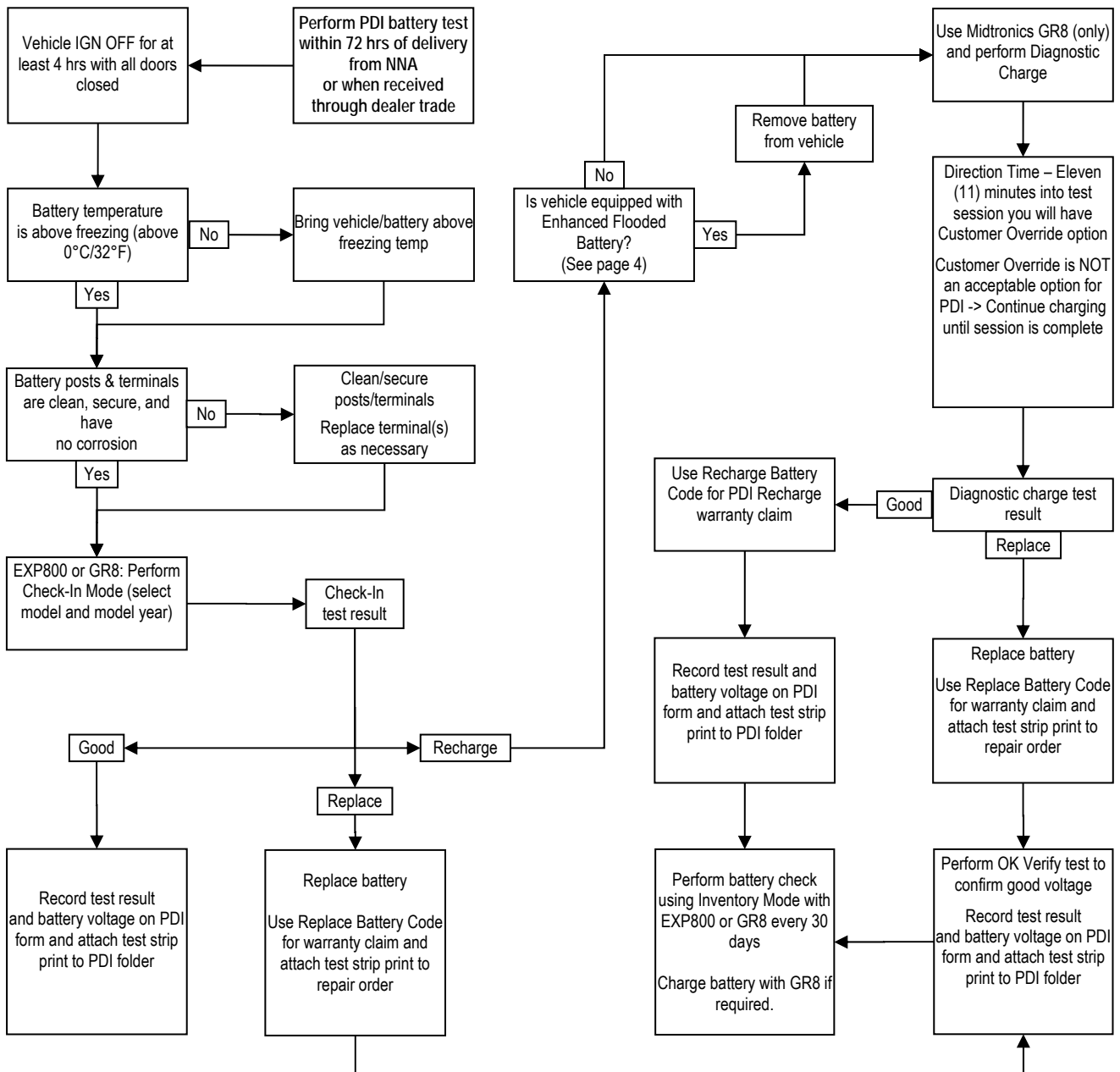
Infiniti Bulletins are intended for use by qualified technicians, not 'do-it-yourselfers'. Qualified technicians are properly trained individuals who have the equipment, tools, safety instruction, and know-how to do a job properly and safely. NOTE: If you believe that a described condition may apply to a particular vehicle, DO NOT assume that it does. See your Infiniti dealer to determine if this applies to your vehicle.

## Required 12 Volt Battery Maintenance for Dealer's New Vehicle Inventory

NOTE: See page 4 for additional information regarding Enhanced Flooded Batteries.

For unsold vehicles:

- Maintain vehicles with transit mode and storage switch in inventory condition (storage-mode) to reduce battery drain.
- Have a process in place to test and maintain battery SOC for vehicles in dealer inventory.
- Have in place a robust pre-delivery inspection process to ensure the vehicle is not sold or delivered in storage-mode.
- Test each vehicle's 12 volt battery during vehicle Check-In (within 72 hours if delivered from NNA or upon receipt if dealer trade) and retain the Check-In battery tester printout in the vehicle folder. This is the PDI battery test.



## Battery Testing

NOTE: See page 4 for additional information regarding Enhanced Flooded Batteries.

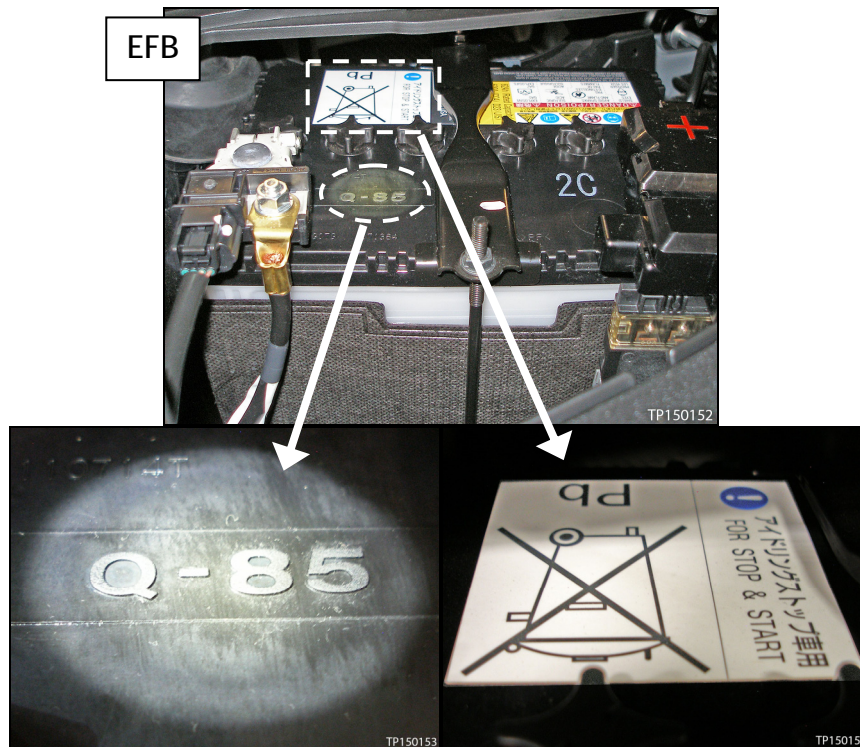
- The Midtronics EXP-800 or Midtronics GR8 must be used to obtain the Check-In printout. Refer to page 9 (EXP-800) or page 13 (GR8) for Check-In Test procedure.
- Effective 11/16/2015, GR8 diagnostic charge testing will incorporate use of the Infrared (IR) sensor on the back of the head unit to help insure the battery is not too cold to obtain accurate test results.
- Effective 4/1/2015, testers must have SD cards installed to perform battery tests. Prior to this date, SD cards were not needed. After this date, testers will not perform without a SD card installed. For this reason, standard 4GB SD cards have been distributed to all dealers.
- Make sure the ignition is OFF, all doors closed, and then wait at least four (4) hours before starting battery testing.
- Make sure both tester cable clamps are securely attached to clean exposed battery terminals or connectors, ensuring a good electrical connection.

NOTE: In some instances when the tester cables do not have a good connection, or there is interference from the vehicle electrical systems, the testers can give a result showing good voltage (greater than 12.5V) and 0 CCA. If this result is observed and there are no signs of a weak battery when starting the vehicle, reattach the tester leads making sure they have a good connection, and recheck the battery. If subsequent testing provides the same result, replace the battery as directed.

- Testing a “cold” battery (below freezing) may result in incorrect test decisions. If a “REPLACE” decision is reached yet the vehicle starts without hesitation, perform a re-test after the vehicle (or battery only) has been in the shop overnight (to ensure battery is warm enough [above freezing]).
- The EXP-800 is the first tool of choice for checking battery SOC due to its portability and ease of use. The GR8 may also be used.
- Charge as directed by the battery tester.
  - Make sure both tester cable clamps are securely attached to clean exposed battery terminals or connectors, ensuring a good electrical connection.
  - If the tester indicates that the battery requires a charge, use the GR8 and allow the tester to complete the charging process.
  - A “REPLACE” decision after a long charging session may indicate the battery did not reach the SOC threshold (typically 80%) within the allocated time, not that it is a failed battery. Retesting the battery is likely to provide a more accurate result the second time.
  - The use of the “customer override” function in Midtronics’ diagnostic test mode is not permitted for batteries that are identified as needing a recharge during Pre Delivery Inspection (PDI) nor an option for PDI battery claims.
- The time allowance for the Check-In battery check is included in the total PDI flat rate time and will be reimbursed as part of the current PDI payment, even though the remainder of PDI activities may take place at a later time.

## Enhanced Flooded Batteries

- A Midtronics battery testing software update, released 2/12/2015, contains new charging software for Enhanced Flooded Batteries (EFB). EFBs require an equalization charge to address electrolyte stratification that can occur in this type of battery.
- The Q50 with Direct Adaptive Steering (DAST) is, up to this bulletin's publication date, the only Infiniti model using the "Q-85" Enhanced Flooded Battery.
- EFBs also come in ranges other than Q-85 for example, Q-95.
- Charging requirements for EFBs are different from standard flooded batteries:
  - The equalization charge for EFBs may take up to 5 hours.
  - The EFB must be removed from the vehicle during the charge to eliminate the risk of leakage or venting that can occur during the extended charge.
  - Failure to properly identify an EFB could result in inaccurate test results (for example, calling a good battery bad). Also, if a non-EFB is subjected to an EFB diagnostic charge, it will be damaged beyond repair.



Identification number and label unique only to EFBs

## Battery Maintenance

NOTE: See page 4 for additional information regarding Enhanced Flooded Batteries.

Proper storage and maintenance of vehicle batteries is essential to ensuring good 12 volt battery operating life.

If a vehicle is being stored on the dealer lot, routinely check the battery SOC and charge the battery as needed. Recommended checking intervals are:

- Both battery cables connected: every 30 days.
- Negative battery cable disconnected: every 90 days.

### NOTE:

- If a vehicle is moved, it will affect the battery SOC (very short drives reduce the battery SOC while long drives increase it).
- Anytime an engine is started, test the battery to confirm the SOC. If needed, charge the battery to replenish the power consumed when starting.
- Dealers should discontinue the practice of starting an engine to see if the battery is “good.” Batteries may still start an engine even with a low SOC and the battery may be further damaged if the battery is not recharged after starting. Battery checks should always be performed with one of the approved testers.
- Disconnecting the negative battery cable reduces the chance of battery damage due to low SOC.  
**IMPORTANT:** The battery must be fully charged before disconnecting the negative cable.
- For display vehicles, be sure to check and charge daily to avoid low voltage conditions.
- For accurate battery testing use the EXP-800 or the GR8. Refer to page 10 (EXP-800) or page 14 (GR8) for battery inventory testing.

## Battery Charging

NOTE: See page 4 for additional information regarding Enhanced Flooded Batteries.

Battery charging should be done with an appropriate battery charger:

- The GR8 is recommended for charging Infiniti batteries.
  - The GR8 Diagnostic Charging program provides the best charging results for Infiniti batteries.
- With exception to EFB equipped vehicles (see page 4), any automotive battery charger set to a low charge rate can be used.
  - Intelligent chargers with low charge rate and “pulsing” technology are preferred. Any charger used should have an automatic shut-off to prevent overcharging.
- Make sure both cable clamps are securely attached to clean exposed battery terminals/clamps, ensuring a good electrical connection.
- Idling the engine to charge the battery is **NOT recommended** since effectiveness is highly dependent on vehicle storage conditions such as temperature, vehicle type, and initial SOC.

### NOTE:

- After any of the above charging methods, test the battery, using the EXP-800 or the GR8 “OK Verify” function, to confirm it is fully charged.
- Any time a battery is recharged or replaced; the EXP-800 or the GR8 “OK Verify” function should be run to confirm that the battery is returned to specification and that there are no other underlying vehicle issues. Retain the printout of these test results in the vehicle folder for future reference.
- A “REPLACE” decision after a long charging session may indicate the battery did not reach the SOC threshold (typically 80%) within the allocated time, not that it is a failed battery. Retesting the battery is likely to provide a more accurate result the second time.
- Make sure the ignition is OFF (dash lights are out) before exiting the vehicle.

## Midtronics GR8 and EXP-800 Information

### IMPORTANT:

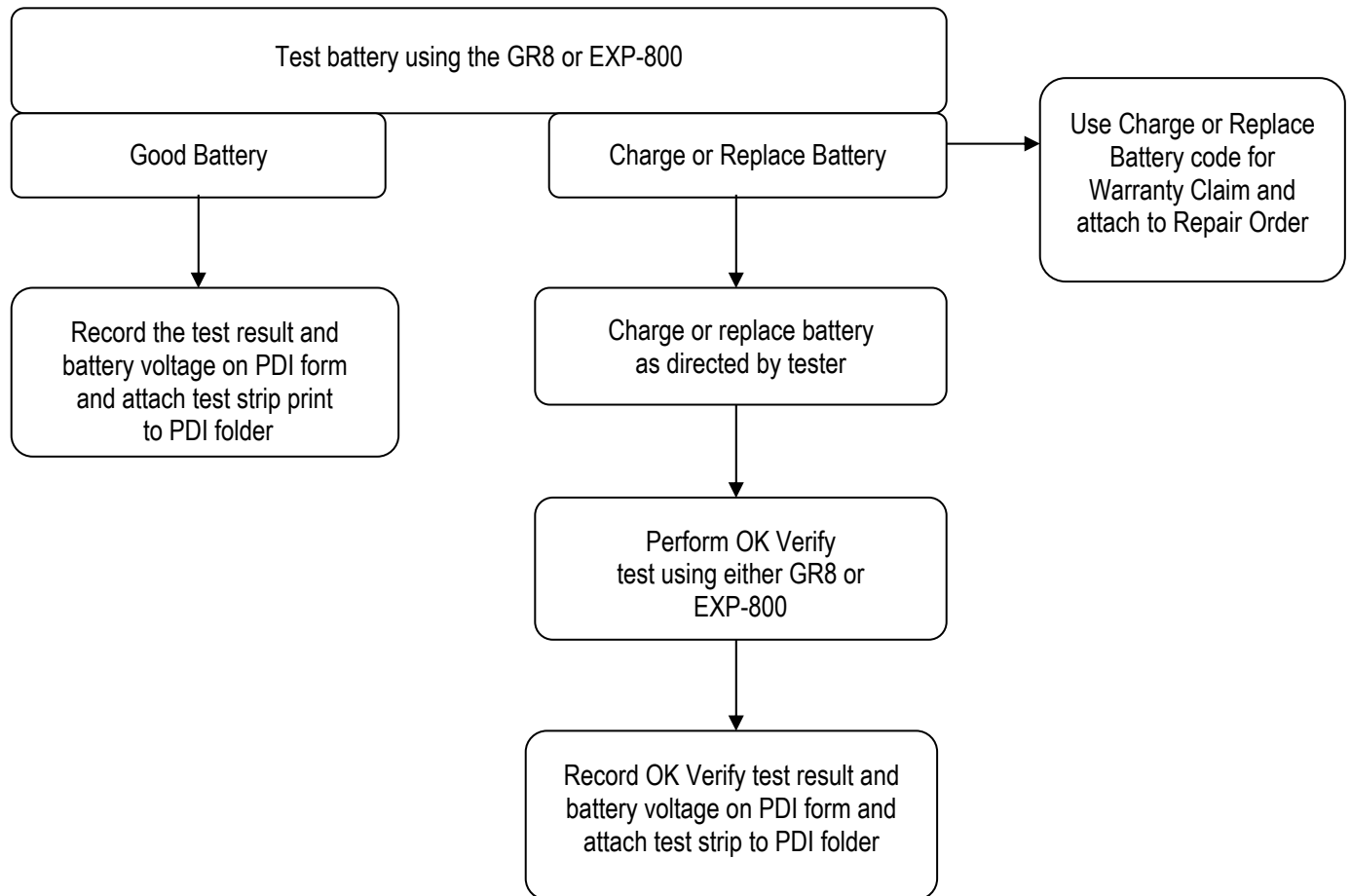
- A feature was added to the Midtronics GR8 and EXP-800 testers to ensure the latest software is installed.
- Throughout the year, the testers will inform the user if an update is due and a warning countdown will be displayed (approximately a 5 day period).
- If updates are not performed within the countdown timeframe, the battery service functions will stop working until the update is installed.

## Record Keeping

NOTE: See page 4 for additional information regarding Enhanced Flooded Batteries.

As batteries are maintained through testing and charging, Infiniti recommends keeping a detailed maintenance record in the vehicle folder.

In the case where a battery warranty claim is submitted for a battery condition found during vehicle Check-In (within 72 hours if delivered from NNA or upon receipt if dealer trade) the dealer may be asked in an audit to show the following battery records:



### NOTE:










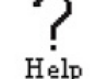
- "Good Battery" codes and test strips from "Check-In" and "OK" verification tests should be kept in the vehicle folder.
- "Replace" or "Recharge" codes should be submitted with warranty claims.
- DO NOT submit "Good Battery" test codes with warranty claims.
- Refer to Claims Policy Bulletin IWPB/11-016 for additional information on battery claim policy/procedures.

## CLAIMS INFORMATION

Reference the current Infiniti Assurance Products Resource Manual and the latest claims bulletins for battery claims procedures.

## SERVICE PROCEDURE

### USING THE EXP-800

Menu Icon	Description
 CHECK-IN	Check In is done when the vehicle comes off the truck at delivery (new vehicles delivered to the dealer). <b>Output Includes Warranty Code</b>
 CUST DEL.	For use after a sale to verify the battery and electrical system of a vehicle is working properly before delivery to a customer. <b>Output Includes Warranty Code</b>
 VERIFY	Verifies the battery and electrical system of a vehicle brought in for service is working properly prior to returning to the customer. <b>Output Includes Warranty Code</b>
 ROADSIDE	For testing the battery, starter, and charging systems of vehicles requiring roadside assistance. <b>Output Includes Warranty Code</b>
 Inventory Test	Enables you to test up to 100 batteries in succession without re-entering battery information each time.
 Battery Test	Tests a battery, either in a vehicle or out, using battery information you select in a series of screens. <b>Output Includes Warranty Code</b>
 System Test	Tests the battery starting and charging systems of a vehicle. A test code is generated for all completed tests. <b>Output Includes Warranty Code</b>
 Info	Utility to view and print test results, a test counter, a data transfer utility, and information on the analyzer software version and serial number.
 Admin	Provides access to the Admin Menu, which allows you to customize the analyzer and administrative functions that include setting passwords.
 Help	Provides tips for troubleshooting problems with the printer, the cables, and loss of power. Also includes Midtronics Customer Service phone numbers.

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## CHECK-IN MODE



NOTE: See page 4 for additional information regarding Enhanced Flooded Batteries.

The Check-In function enables you to quickly check-in new vehicles as they arrive at your dealership for the first time.

A unique test code is generated showing that the vehicle was properly tested before being placed in dealer inventory. On average this test will take approximately 10 to 15 seconds to complete.

### Performing a Check-In Test

1. Select the CHECK-IN icon in the Main Menu.
2. Enter the last 8 alphanumeric digits of the VIN for the vehicle being tested and press NEXT to continue.

NOTE: You must enter the VIN before a Check-In test can be performed.



3. Follow the on-screen directions. The results are printed out and displayed on the screen once the test has been completed.

### Battery Decisions: Check-In

Decision	Recommended Action
GOOD BATTERY	Return the battery to service.
USE GR8 & RETEST	Charge the battery with your Midtronics diagnostic charger and retest the battery. Failure to do so may cause a false test result.
REPLACE	The battery has tested bad and should be removed from your inventory.

4. If the decision is "GOOD BATTERY", the vehicle is ready for delivery to the customer.
5. For a "USE GR8 & RETEST" decision, remove the small test clamps from the battery and fully charge the battery. Charging with the GR8 is recommended. Idling the engine to charge the battery is NOT recommended.
  - EFB equipped vehicles: The EFB must be removed from the vehicle before charging (see page 4).
  - Make sure both cable clamps are securely attached to clean exposed battery terminals/clamps, ensuring a good electrical connection.
  - For a "REPLACE" decision, remove the battery and replace it with a good battery before delivering the vehicle to the customer.

NOTE: A "REPLACE" decision after a long charging session may indicate the battery did not reach the SOC threshold (typically 80%) within the allocated time, not that it is a failed battery. Retesting the battery is likely to provide a more accurate result the second time.

## INVENTORY TEST MODE



**NOTE:** See page 4 for additional information regarding Enhanced Flooded Batteries.

The Inventory Test in the Main Menu enables you to quickly check vehicles that have been in your inventory for an extended period of time.

You can test the batteries in up to 100 vehicles in succession without re-entering the battery information each time. It differs from the Battery Test in that the decision is either pass or fail. Neither decision will tell you if a battery is bad, but rather that the measured voltage and CCA fall in or out of specification.

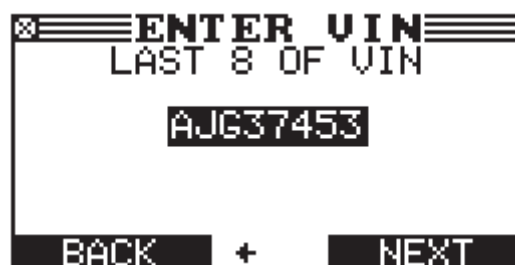
### Selecting Test Parameters

1. Select the Inventory Test icon in the Main Menu. The INVENTORY STATS screen is displayed on the Control Module screen.

**IMPORTANT:** Be sure to monitor the number of tests performed and be ready to print the test result totals as the number approaches 100. When the limit is reached you will no longer be able to test until you clear all results from memory.

2. Enter the last 8 alphanumeric digits of the VIN for the vehicle being tested and press NEXT to continue.

**NOTE:** Entering the VIN is optional when performing an Inventory Test.



3. The Inventory Test now begins. On average this test will take approximately 5 to 10 seconds to complete. The results are printed out and displayed on the screen once the test has been completed.

Use ▲ or ▼ to view previous battery results.

### Battery Decisions: Inventory Test

Decision	Recommended Action
GOOD BATTERY	Return the battery to service.
USE GR8 & RETEST	Charge the battery before testing. Failure to do so may cause a false test result.
REPLACE	The battery has tested bad and should be removed from your inventory.

4. Connect the clamps to the next battery to continue testing identical battery types. The analyzer will begin automatically using the same parameters. To test another type of battery press END, and then follow steps 1 and 2.
  - Make sure both cable clamps are securely attached to clean exposed battery terminals/clamps, ensuring a good electrical connection.

## Printing Additional Test Results

You can print additional results for individual tested batteries or a summary of the last 100 batteries tested using the Inventory Test.

1. For individual battery test results, use ▲ or ▼ to scroll to the specific Inventory Test result screen you want to print.
2. Select PRINT.
3. Use ▲ or ▼ to select INVENTORY PRINT.
  - 1  INVENTORY BATTERY
  - 2  INVENTORY SUMMARY
4. Use ▲ or ▼ to select the LANGUAGE of the printout.
  - 1  ENGLISH
  - 2  ESPAÑOL
  - 3  FRANÇAIS

The Inventory Test results are now printed out.

5. To print additional copies press PRINT. Press END to return to the Main Menu.

## Clearing Test Tools

1. Select the Inventory Test icon in the Main Menu. The INVENTORY STATS screen is displayed on the Control Module screen.
2. Press ◀ and ▶ at the same time to erase the Inventory Test totals from the tool's memory.

Please refer to the EXP-800 instruction manual for descriptions of other functions.

## USING THE GR8

### Required test leads



Battery test clamps



Large clamps



DMM clamps or probes



Amp clamp

Menu Icon	Description
 Diagnostic	Tests and charges a battery using information you select in a series of screens. Generates a test code for all in-vehicle final decisions. <b>Output Includes Warranty Code</b>
 System Test	Tests the battery starting and charging systems of a vehicle. A test code is generated for all completed tests. <b>Output Includes Warranty Code</b>
 ECM Power Supply	Tests and maintains battery voltage at 13.5 volts to provide uninterrupted reprogramming of ECMs and retain vehicle system settings.
 Jump Start	Makes high output current available to boost charge an in-vehicle battery and assist in starting the engine.
 Bench Test	Tests a battery using the battery information you select in a series of screens. Does not generate a test code.
 Manual	Provides a timed charge that ranges from 5 to 120 minutes or a continuous charge that ends when you press the <b>STOP</b> key.
 Inventory Test	Test up to 100 vehicles that have been on your lot for extended periods without re-entering battery information each time.
 CUST DEL.	For use after a sale to verify the battery and electrical system of a vehicle is working properly before delivery to a customer. <b>Output Includes Warranty Code</b>
 OK VERIFY	Verifies the battery and electrical system of a vehicle brought in for service is working properly prior to returning to the customer. <b>Output Includes Warranty Code</b>
 CHECK-IN	Check In is done when the vehicle comes off the truck at delivery (new vehicles delivered to the dealer) <b>Output Includes Warranty Code</b>
 Info	Includes a utility to view and print test results, a total test counter, a data transfer utility, and the software version and date, and GR8 serial number for the control module.
 Cable Drop Test	Tests both sides of a circuit simultaneously for voltage. Three preset tests and 1 user-defined.

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## CHECK-IN MODE



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The Check-In function enables you to quickly check-in new vehicles as they arrive at your dealership for the first time.

A unique test code is generated showing that the vehicle was properly tested before being placed in dealer inventory.

**CAUTION:** Never connect both sets of clamps to the same battery at the same time. Connecting both sets of clamps to the same battery at the same time may damage the GR8. Only use the small clamps from the Control Module when performing a Check-In Test.

### Performing a Check-In Test

1. Select the CHECK-IN icon in the Main Menu.
2. Enter the last 8 alphanumeric digits of the VIN for the vehicle being tested and press NEXT to continue.  
**NOTE:** You must enter the VIN before a Check-In test can be performed.



3. Follow the on-screen directions. The results are printed out and displayed on the Control Module screen once the test has been completed.

### Battery Decisions: Check-In

Decision	Recommended Action
GOOD BATTERY	Return the battery to service.
USE GR8 & RETEST	Fully charge the battery before testing. Failure to do so may cause a false test result. Follow the procedures described in Chapter 4 of the GR8 instruction manual – Diagnostic Charging.
REPLACE	The battery has tested bad and should be removed from your inventory.

4. If the decision is “GOOD BATTERY”, the vehicle is ready for delivery to the customer.
5. For a “USE GR8 & RETEST” decision, remove the small test clamps from the battery and fully charge the battery. Charging with the GR8 is recommended. Idling the engine to charge the battery is NOT recommended.
  - EFB equipped vehicles: The EFB must be removed from the vehicle before charging (see page 4).
  - Make sure both cable clamps are securely attached to clean exposed battery terminals/clamps, ensuring a good electrical connection.
  - For a “REPLACE” decision, remove the battery and replace it with a good battery before delivering the vehicle to the customer.

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**CAUTION:** Never connect both sets of clamps to the same battery at the same time. Connecting both sets of clamps to the same battery at the same time may damage the GR8. Only use the small clamps from the Control Module when performing an Inventory Test.

### Selecting Test Parameters

1. Select the Inventory Test icon in the Main Menu. The INVENTORY STATS screen is displayed on the Control Module screen.

**IMPORTANT:** Be sure to monitor the number of tests performed and be ready to print the test result totals as the number approaches 100. When the limit is reached you will no longer be able to test until you clear all results from memory.

2. Enter the last 8 alphanumeric digits of the VIN for the vehicle being tested and press NEXT to continue.

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3. The Inventory Test now begins. On average this test will take approximately 5 to 10 seconds to complete. The results are printed out and displayed on the Control Module screen once the test has been completed. Use ▲ or ▼ to view previous battery results.

### Battery Decisions: Inventory Test

Decision	Recommended Action
GOOD BATTERY	Return the battery to service.
USE GR8 RETEST	Fully charge the battery before testing. Failure to do so may cause a false test result. Follow the procedures described in Chapter 4 of the GR8 instruction manual – Diagnostic Charging.
REPLACE	The battery has tested bad and should be removed from your inventory.

4. Connect the clamps to the next battery to continue testing identical battery types. The analyzer will begin automatically using the same parameters. To test another type of battery press END, then follow steps 1 and 2.
  - Make sure both tester cable clamps are securely attached to clean exposed battery terminals or connectors, ensuring a good electrical connection.

## Printing Additional Test Results

You can print additional results for individual tested batteries or a summary of the last 100 batteries tested using the Inventory Test.

1. For individual battery test results, use ▲ or ▼ or the keypad to scroll to the specific Inventory Test result screen you want to print.
2. Select PRINT.
3. Use ▲ or ▼ or the keypad to select INVENTORY PRINT.
  - 1  INVENTORY BATTERY
  - 2  INVENTORY SUMMARY
4. Use ▲ or ▼ or the keypad to select the LANGUAGE of the printout.
  - 1  ENGLISH
  - 2  ESPAÑOL
  - 3  FRANÇAIS

The Inventory Test results are now printed out.

5. To print additional copies press PRINT. Press END to return to the Main Menu.

## Clearing Test Totals

1. Select the Inventory Test icon in the Main Menu. The INVENTORY STATS screen is displayed on the Control Module screen.
2. Press ◀ and ▶ at the same time to erase the Inventory Test totals from the tool's memory.

Please refer to the GR8 instruction manual for descriptions of other functions.