



# DCA-8000

## Battery Diagnostic Tool

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# User Guide

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*For additional support materials and the latest information go to [toyota.dca8000.com](http://toyota.dca8000.com)*



## Contents

<b>General Safety Precautions</b>	<b>5</b>	<b>7 – Inventory Charge</b>	<b>23</b>
General Safety Precautions	5	Inventory Charge Results	23
Personal Precautions	5	<b>8 – History</b>	<b>24</b>
Preparing To Charge The Battery	6	Tool History	24
Grounding & Power Cord Connections	6	Totals By Test Decision	24
Charger Location	7	Totals By Charge Decision	24
DC Connection Precautions	7	Totals By Test Type	24
Installing The Battery	7	Totals By Date And Location	24
Removing the Battery	8	Vehicle History	24
Maintenance & Storage	8	Vehicle Select Option	24
Locking Power Cord	8	<b>9 – Messages</b>	<b>25</b>
Wireless Safety	8	Accessing Messages	25
<b>Product Specifications</b>	<b>9</b>	Message Types	25
<b>1 – Introduction &amp; Overview</b>	<b>10</b>	<b>10 – Settings</b>	<b>26</b>
Safety Reminder	10	WiFi	26
Safety Precautions	10	Adding A Network	26
Manual Conventions	10	Deleting A Network	26
Front View	10	Printer Settings	26
Rear View	10	Adding A WiFi Printer	26
Charging Cables	11	Deleting A Printer	26
Locking Power Cord	11	Email	26
Wireless Barcode Scanner Cable	11	Add Address	27
Initial Setup	11	Edit Address	27
Main Menu	14	Deleting An Address	27
Additional Screens	14	Server Settings	27
Main Menu Icons	14	User Settings	27
Help	14	User Management	27
Connecting To The Battery	15	Language Settings	27
Charging Out-of-Vehicle (Battery Test)	15	System Language	27
<b>2 – Advanced Battery Test</b>	<b>15</b>	Test Result Language	27
Battery Test	15	Email Language	27
System Test	17	Print Language	27
System Test Results-Summary	17	Display Settings	27
<b>3 – ECU Reflash</b>	<b>19</b>	Brightness	27
ECU Reflash Results	19	Sleep Time	27
<b>4 – PDS/PDI</b>	<b>20</b>	Dim Time	27
PDS/PDI Charging Results	20	BMIS Login	28
<b>5 – Manual Charge</b>	<b>21</b>	Shop Information	28
Manual Charge Results	21	Shop Information	28
<b>6 – Boost Charge</b>	<b>22</b>	Test Settings	28
Boost Charge Summary	22	<b>Appendix A: Battery Information Definitions</b>	<b>30</b>
		<b>Appendix B: Test Results Decision Tables</b>	<b>31</b>
		Battery Test Results	31
		Charge Acceptance Results	32
		Starter Test Results	32
		Alternator Test Results	32
		Diode Test Results	32

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## General Safety Precautions

**IMPORTANT SAFETY INSTRUCTIONS.** WORKING IN THE VICINITY OF A LEAD-ACID BATTERY IS DANGEROUS. BATTERIES GENERATE EXPLOSIVE GASES DURING NORMAL BATTERY OPERATION. FOR THIS REASON, IT IS OF THE UTMOST IMPORTANCE THAT THESE INSTRUCTIONS ARE FOLLOWED EACH TIME THE CHARGER IS USED.

For safe, efficient, and accurate charging and testing, review the safety and operating instructions in this manual before using the analyzer. In addition, follow all manufacturers' instructions and BCI (Battery Council International) safety recommendations.

### 1 General Safety Precautions

<b>⚠ CAUTION</b>	
	<p><b>Charging a non-rechargeable battery may cause the battery to burst.</b></p> <p>To reduce the risk of injury, only charge rechargeable lead-acid type batteries including maintenance-free, low-maintenance, or deep-cycle batteries.</p>

<b>⚠ WARNING</b>	
<p><b>Risk of explosive gases.</b></p> <p>Batteries generate explosive gases during normal operation, and when discharged or charged.</p>	

- 1.1 To reduce risk of battery explosion, follow these safety instructions and those published by the battery manufacturer and the manufacturer of any equipment you intend to use in the vicinity of a battery. Review cautionary markings on these products and on the engine, and on the vehicle or equipment containing the battery.

If you are uncertain as to the type of battery you are attempting to charge, or the correct procedure for checking the battery's state of charge, contact the seller or battery manufacturer.

- 1.2 Use of an attachment not recommended or sold by the battery charger manufacturer may result in a risk of fire, electric shock, or injury to persons.
- 1.3 To reduce risk of damage to the electric plug and cord, pull by the plug rather than by the cord when disconnecting the charger.
- 1.4 Position the AC and DC leads to avoid tripping over them and to prevent damage from moving engine parts; protect from heat, oil, and sharp edges.
- 1.5 Do not operate the charger if it has received a sharp blow, been dropped or otherwise damaged in any way; take it to a qualified service center.

- 1.6 Do not disassemble charger; take it to a qualified service center when repair is required. Incorrect reassembly may result in a risk of electric shock or fire.
- 1.7 To reduce risk of electric shock, unplug the charger from the AC outlet before attempting any maintenance or cleaning. Turning off the controls will not reduce this risk.
- 1.8 Connect and disconnect the battery leads only when the AC supply cord is disconnected.
- 1.9 Do not overcharge the battery.
- 1.10 Charge the battery in a dry, well-ventilated area.
- 1.11 Never place articles on or around the charger, or locate the charger in a way that will restrict the flow of cooling air through the cabinet.
- 1.12 An extension cord should not be used unless absolutely necessary. (See paragraph 4.2)
- 1.13 Have a damaged cord or plug replaced immediately.
- 1.14 Do not expose the charger to rain or snow.

### 2 Personal Precautions

- 2.1 This charger is not to be used by people with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction.
- 2.2 Children should be supervised to ensure they do not play with the equipment.
- 2.3 Always have someone within range of your voice, or close enough to come to your aid, when working around lead acid batteries.
- 2.4 Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing or eyes.
- 2.5 Wear complete eye protection, clothing protection, and wear rubber soled shoes. Place damp cloth over battery to protect against acid spray. When ground is very wet or covered with snow, wear rubber boots. Avoid touching eyes while working near battery.
- 2.6 If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters the eye, immediately flush with cold running water for at least 10 minutes, and seek medical attention.
- 2.7 NEVER smoke or allow a spark or flame in vicinity of a battery or engine.
- 2.8 Be extra cautious to reduce risk of dropping a metal tool onto the battery. It might spark or short circuit the battery or other electrical part that may cause an explosion.

2.9 Before working with a lead-acid battery, remove personal metal items such as rings, bracelets, necklaces, watches, etc. A lead-acid battery can produce a short circuit current high enough to weld such items causing a severe burn.

**⚠ CAUTION**

To avoid electrical shock or burn, never alter the charger's original AC cord and plug. Disconnect plug from outlet when charger is idle.

The charger is not intended to supply power to a low-voltage electrical system other than applications using rechargeable, lead-acid type batteries. Do not use the battery charger for charging dry-cell batteries commonly used with home appliances. These batteries may burst and cause personal injury and property damage.

2.10 **NEVER** charge a frozen battery; thaw it out first.

### 3 Preparing To Charge The Battery

- 3.1 If it is necessary to remove the battery from vehicle to charge it, always remove the grounded terminal from the battery first. Make sure all accessories in the vehicle are off, so as not to cause an arc.
- 3.2 Be sure the area around the battery is well ventilated while the battery is being charged. Gas can be forcefully blown away by using a piece of cardboard or other non-metallic material as a fan.
- 3.3 Clean the battery terminals. Be careful to keep corrosion from coming into contact with your eyes.
- 3.4 Study all battery manufacturer's specific precautions.
- 3.5 Determine the voltage of the battery by referring to the car owner's manual and make sure that the output voltage selector switch is set at the correct voltage. If the charger has an adjustable charge rate, charge the battery initially at lowest rate. If the charger has only one voltage, verify that the battery voltage matches the voltage of charger.

For a charger not having an output voltage selector switch, determine the voltage of the battery by referring to car owner's manual and make sure it matches the output rating of the battery charger.

### 4 Grounding & Power Cord Connections

4.1 The charger must be grounded to reduce risk of electric shock. The charger is equipped with an electric cord having an equipment grounding conductor and a grounding plug. The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances.

**⚠ DANGER**

**Hazardous voltage.**  
An improper connection can result in electric shock.

To avoid electrical shock or burn, never alter the charger's original AC cord and plug. Disconnect plug from outlet when charger is idle.

**⚠ IMPORTANT:** If the plug does not fit the outlet, have a proper outlet installed by a qualified electrician.

4.2 This battery charger is for use on a nominal 120-volt circuit and has a grounding plug as illustrated in Figure A.

**NOTE:** A dedicated circuit is recommended for use with the DCA-8000.

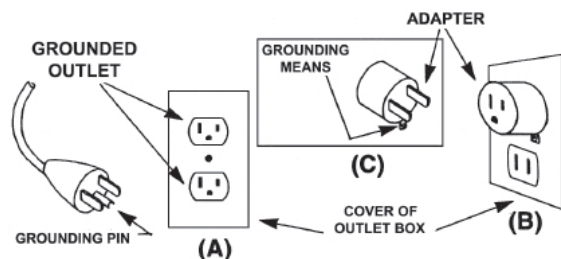
A temporary adapter, which looks like the adapter illustrated in Figures B and C, may be used to connect this plug to a two-pole receptacle as shown in Figure B, if a properly grounded outlet is not available. The temporary adapter should be used only until a properly grounded outlet can be installed by a qualified electrician.

**⚠ DANGER**

**Hazardous voltage.**  
An improper connection can result in electric shock.

Before using an adapter be certain the center screw of the outlet plate is grounded. The rigid ear or lug extending from the adapter must be connected to a properly grounded outlet. Make certain it is grounded. If necessary, replace the original screw that secures the adapter ear or lug to the cover plate and make the ground connection to the grounded outlet.

**⚠ IMPORTANT:** Use of an adapter is not allowed in Canada. If a grounding-type receptacle is not available, do not use this equipment until the proper outlet is installed by a qualified electrician.




- 4.3 An extension cord should not be used unless absolutely necessary. Use of an improper extension cord could result in a risk of fire and electric shock. If an extension cord must be used:
- The pins on plugs of the extension cord must be the same number, size, and shape as those of the plug on the charger;
  - The extension cord must be properly wired and in good electrical condition;
  - The wire size must be large enough for the AC ampere rating of charger as specified in the table below.

- Operate the charger only in a well-ventilated area that is free of dangerous vapors.
- Store the charger in safe, dry location and maintain it according to the guidelines in this manual.
- Do not set the battery on top of the charger or where battery acid may drip onto the charger.


Recommended minimum AWG* size for extension cords for battery chargers					
AC input rating Amps		AWG* size of cord			
Equal or greater than:	But less than:	Length of cord, feet (m)			
		25 (7.6)	50 (15.2)	100 (30.5)	150 (45.6)
8	10	18	14	12	10
10	12	16	14	10	8
12	14	16	12	10	8
14	16	16	12	10	8
16	18	14	12	8	8


\*American Wire Gauge

 **NOTE:** The Recommended minimum AWG chart is also printed on the back of the DCA-8000 charger.

## 6 DC Connection Precautions

- Connect and disconnect the battery leads only when the AC supply cord is disconnected.
- Never allow the charger clamps to touch each other.
- When attaching the charger clamps, be certain to make the best possible mechanical as well as electrical connection. This will tend to prevent the clamps from slipping off the connections, avoid dangerous sparking, and assure safer and more efficient charging. The clamps should be kept clean.

 **DANGER**




**Hazardous voltage.**  
Can cause death or serious personal injury.

Setting the switches to "OFF" does not always disconnect the charger electrical circuit from the AC power cord or the DC charger clamps.

## 5 Charger Location

Not for permanent installation: Modifying this charger for permanent installation in a vehicle or installing this charger in a vehicle for permanent use is not recommended.

 **WARNING**


**In the event of failure, the device may generate and emit sparks.**

Only charge rechargeable flooded maintenance-free, low-maintenance or deep-cycle batteries.

This charger is **NOT** designed for outside use or wet location mounting. The charger must always be protected from direct contact with water.

- The charger must be located in an area with sufficient air space to allow unrestricted airflow in and around the charger.
- Locate the charger as far away from the battery as the charger cables permit.
- Never place the charger directly above the battery being charged; gases from the battery will corrode and damage the charger.
- Never allow battery acid to drip on the charger when taking gravity readings or filling a flooded cell battery.

## 7 Installing The Battery

 **WARNING**

**Risk of explosive gases.**

A spark near the battery may cause a battery explosion. Follow these steps when the battery is installed in the vehicle to reduce the risk of explosion.

- Locate the charger as far away from the battery as the charger cords permit and position the AC and DC cords to avoid stepping on or tripping over them and to prevent damage by moving engine parts.
- Turn **OFF** all vehicle loads, including door lights, and correct any defects in the vehicle's electrical system that may have caused low battery.
- First connect the **POSITIVE (RED)** clamp from the charger to the **POSITIVE (POS., P, +)** ungrounded post of the battery. Then connect the **NEGATIVE (BLACK)** clamp to the **NEGATIVE (NEG., N,-)** post of the battery. Do not connect the clamp to the carburetor, fuel lines, or sheet-metal body parts.

## 8 Removing the Battery

- 8.1 If it is necessary to remove the battery from the vehicle or equipment, always remove the grounded terminal from the battery first.

<b>⚠ WARNING</b>
<b>Risk of explosive gases.</b> A spark near the battery may cause a battery explosion. Follow these steps when the battery is installed in the vehicle to reduce the risk of explosion.

<b>⚠ WARNING</b>
<b>Risk of explosive gases.</b> Make sure all vehicle loads are <b>OFF</b> to prevent a possible arc.

- 8.2 Check the polarity of battery posts.
- 8.3 Connect the **POSITIVE (RED)** charger clamp to the **POSITIVE (POS., P, +)** post of battery.
- 8.4 Position yourself and the free end of cable as far away from the battery as possible—do not face the battery when making the final connection—then connect the **NEGATIVE (BLACK)** charger clamp to the **NEGATIVE (NEG., N, -)** post of the battery.
- 8.5 When disconnecting the charger, always do so in the reverse sequence of the connecting procedure; break the first connection while staying as far away from the battery as practical.

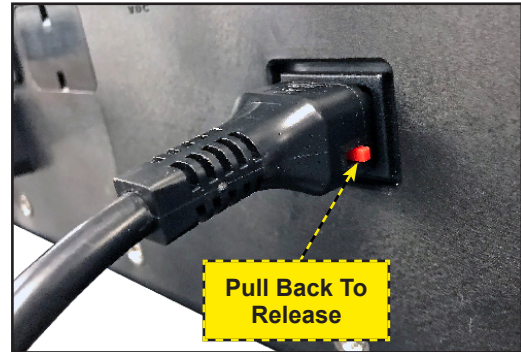
## 9 Maintenance & Storage

Follow these guidelines to protect the charger and test cables from damage and premature wear:

- 9.1 The grease, dirt, and sulfation that build up on battery terminals are highly corrosive and can damage the clamps over time. Before connecting the clamps, ensure accurate test readings and protect the clamps by cleaning the battery case and terminals using a wire brush and a mixture of water and baking soda.
- 9.2 Periodically clean the clamps using a mixture of baking soda and water, or a mild hand-soap, and a small bristle brush.
- 9.3 Clean the battery terminals. If stud adapters are required, hand tighten only. Do not use the battery clamps to tighten adapters.
- 9.4 Never remove the clamps from a battery to abort an active charging session. Always press the red **STOP** button before removing the clamps.
- 9.5 Do not leave the clamps laying in battery acid.

## Locking Power Cord

Always pull back on the red tab on the side of the power cord connector to release/remove it from the charger's power socket.



## Storage

Always store the charger in safe, dry location and maintain it in perfect condition.

## 10 Wireless Safety

The operation of this equipment is subject to the following two conditions.

1. This equipment or device may not cause harmful interference.
2. This equipment or device must accept any interference. Including interference that may cause undesired operation.

**SAVE THESE INSTRUCTIONS**

## Product Specifications

### Power

Input: 100 – 240  $\sim$ , 50/60 Hz; 12A max.

Output: 12 V  $\text{---}$ , 70A

### Charge Cables

- 5m

### Power Cord

Accepts C19 locking connector for region-specific power cables:

- United States: NEMA 5-15 termination, rated at 15A/125V UL CSA

### Applications

- |                |                    |
|----------------|--------------------|
| • Automotive   | • Marine           |
| • Heavy-Duty   | • Group 31         |
| • Power Sports | • Commercial 4D/8D |

### Battery Chemistries

- |             |               |
|-------------|---------------|
| • Lead acid | • EFB         |
| • AGM       | • Lithium ion |

### Rating System

- |       |       |
|-------|-------|
| • CCA | • JIS |
|-------|-------|

### Operating Parameters

- Input Voltage:  
100 – 240  $\sim$ , 50/60 Hz; 12A max.
- Output:  
14VDC  $\text{---}$ ; 70A maximum

### Humidity

- 15% to 85% R.H., non-condensing

### Dimensions

(without handle or base)

- Weight: 34 lbs (15.45 kg)

### Temperature

- Operating temperature range: 0°C to +60°C (32°F to +140°F)
- Storage temperature range: -10°C to +85°C (14°F to 185°F)

### Certifications

- |       |        |
|-------|--------|
| • CUL | • RoHS |
| • ETL | • VL   |
| • FCC |        |

### Connectivity

#### Wi-Fi

- 802.11 b/g/n 2.4GHz
- Security – WEP, WP, WPA-2 Enterprise

#### Bluetooth

- 2.0
- USB 2.0 connection

CAN bus interface

### Protection Features

- |                              |                                     |
|------------------------------|-------------------------------------|
| • Reverse polarity           | • Battery voltage too low (< 5.5 V) |
| • Non-12V battery connection | • Clamp high temperature detection  |
| • Clamp connection           |                                     |

### BMIS-Enabled

- Remote “over the air” software updates
- Remote diagnostics
- Enterprise asset management
- Reporting and analytic tools
- Communication with next generation Midtronics platforms and tools

### User Interface

- Advanced navigation and charge applications
- Remote notifications (Wi-Fi- or Bluetooth-enabled)
- Intuitive charge cycle feedback
- 5” Touch Screen

# 1 – Introduction & Overview

## Safety Reminder

For safe, efficient, and accurate charging and testing, review the safety and operating instructions in this manual before using the analyzer. In addition, follow all manufacturer instructions and BCI (Battery Council International) safety recommendations.

## Safety Precautions

Always use the necessary safety precautions when working with batteries to prevent severe injury or death. Follow all manufacturers' instructions and BCI (Battery Council International) safety recommendations, which include the following precautions:

### ⚠ DANGER

**Risk of explosive gases. Never smoke or allow a spark or flame in the vicinity of a battery.**

Batteries can produce a highly explosive mix of hydrogen gas and oxygen, even when the battery is not in operation. Always work in a well-ventilated area.

### ⚠ CAUTION

**Wash hands after handling.**

REQUIRED BY CALIFORNIA PROP. 65: Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the state of California to cause cancer and birth defects or other reproductive harm.

- ✓ Battery acid is highly corrosive. If acid enters your eyes, immediately flush them thoroughly with cold running water for at least 15 minutes and seek medical attention. If battery acid gets on your skin or clothing, wash immediately with a mixture of water and baking soda.
- ✓ Always wear proper safety glasses or face shield when working with or around batteries.
- ✓ Keep hair, hands, and clothing as well as the analyzer cords and cables away from moving engine parts.
- ✓ Remove any jewelry or watches before you start servicing the battery.
- ✓ Use caution when working with metallic tools to prevent sparks or short circuits.
- ✓ Never lean over a battery when testing, charging, or boost charging.
- ✓ Never charge a frozen battery. Gases may form and crack the case, causing battery acid to spray out.

## Manual Conventions

This manual uses these symbols and typographical conventions:

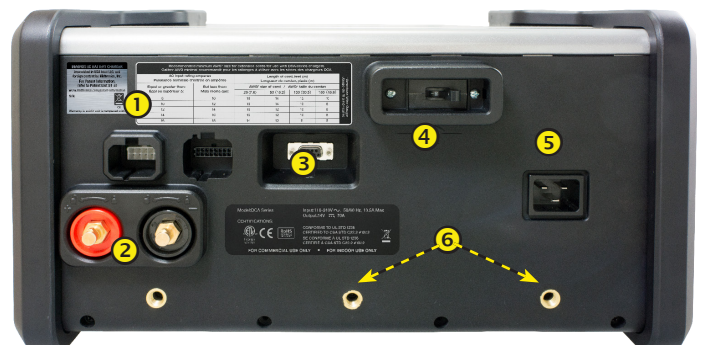
Symbol	Description
	The safety symbol indicates instructions for avoiding hazardous conditions and personal injury.
	The safety symbol with the words <b>CAUTION</b> , <b>WARNING</b> , or <b>DANGER</b> indicates instructions for avoiding hazardous conditions and personal injury.
	The wrench symbol indicates procedural notes and helpful information.
<b>Bold Letters</b>	The text for screen options are in <b>Bold</b> letters.

### Front View



- |  |   |
|--|---|
| <p>① Thermal Printer</p> <p>② Touch Screen Display</p> | <p>③ Charger Power Button</p> <p>④ USB Port</p> |
|--|---|


### Rear View

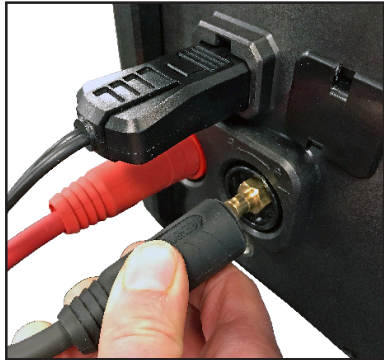


- |  |  |
|--|--|
| <p>① Communication Cable Connection</p> <p>② Charge Cable Connections</p> <p>③ VIN Scanner Connection (DB-9)</p> | <p>④ Circuit Breaker Reset</p> <p>⑤ Power Cord Socket</p> <p>⑥ For Charger Cart Mounting Bolts</p> |
|--|--|

### Charging Cables

1. Insert the communication cable.
2. Insert and rotate the charge cable quick connectors clockwise 180° to lock them onto the Quick Connector Locking Post on the charger.

 **NOTE:** Pre twist the charge cables counter clockwise before installing in order to avoid putting excess strain on the cables.



3. The connection process is complete when all three cables are connected to the charger.

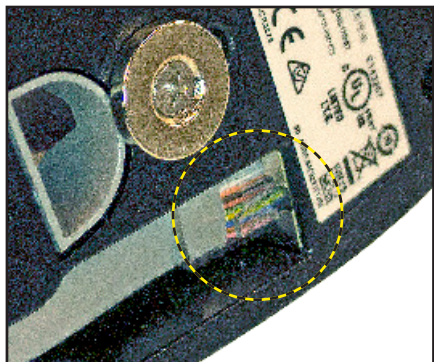
### Locking Power Cord

Pull back on the red tab on the side of the connector to release/remove the power cord from the charger’s power socket.

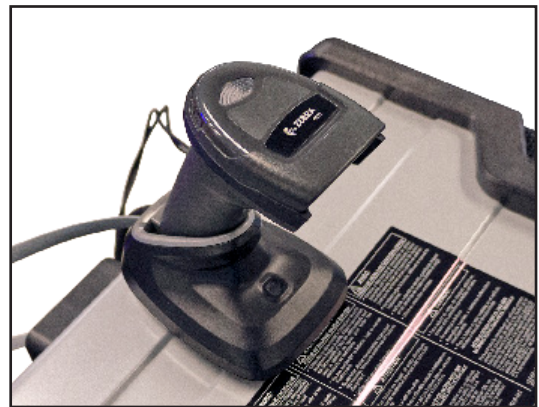


### Wireless Barcode Scanner Cable

1. Insert the RJ50 connector in the bottom of the scanner base.

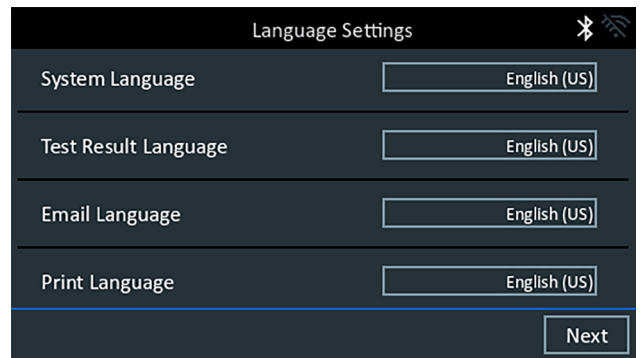


2. With a flat blade screwdriver, pry off the plastic cover over the DB9 connection on the back of the charger.
3. Use the screws on the DB9 connector to secure the cable from the dock to the charger.



### Initial Setup

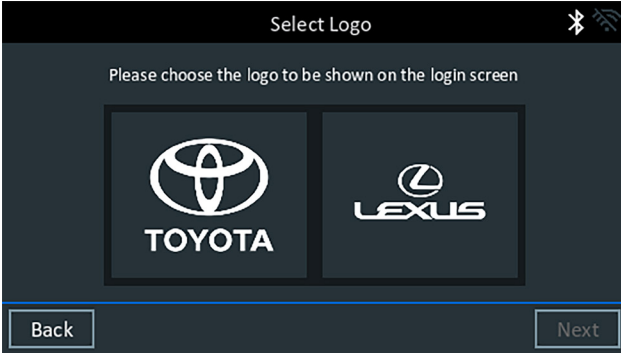
1. Upon initial power-up, select the Region.
2. The Language Settings screen is displayed. Tap **Next** to continue.



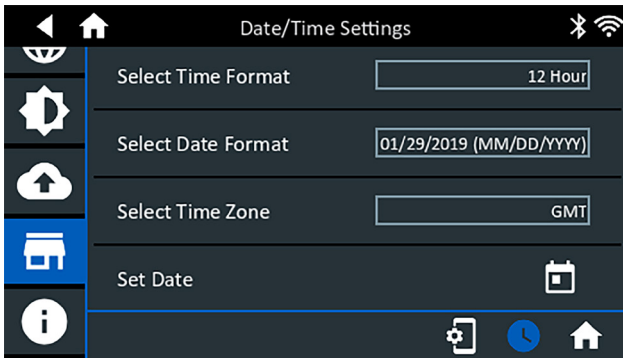
<i>System Language</i>	Select the Controller default language displayed on the screen.
<i>Test Result Language</i>	Select the Controller default language for all displayed tests and test results.
<i>Email Language</i>	Select the default standard language for the analyzer to use for all tests and results sent via email.

<i>Print Language</i>	Select the default standard language for the analyzer to use for all tests and results printed using a networked printer.
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- A Consent to collect data screen is displayed. Read the terms for collecting data, tap the Consent check box and then tap **Next** to continue.
- Select the appropriate logo: Toyota or Lexus.

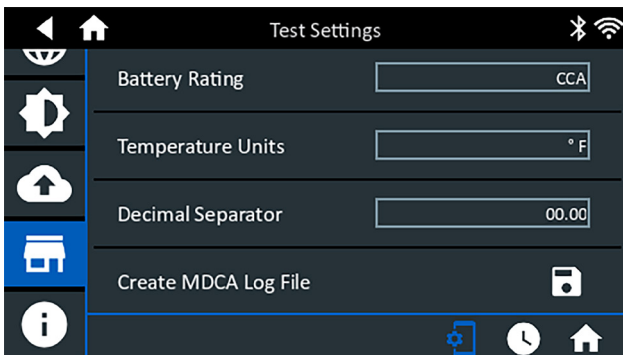


- The Date/Time Settings are displayed. Tap **Next** to continue after making any adjustments.



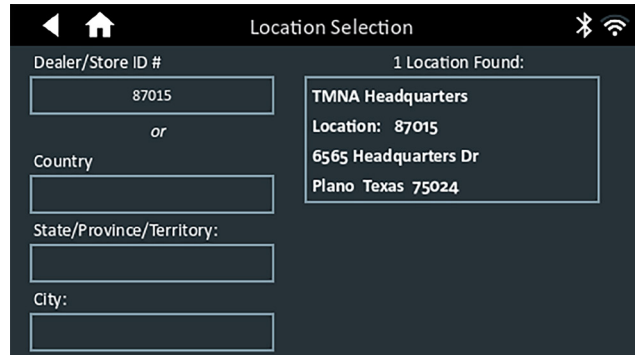
<i>Select Time Format:</i>	12-hour or 24-hour format
<i>Select Date Format:</i>	DD/MM/YYYY, MM/DD/YYYY, or YYYY/MM/DD
<i>Select Time Zone:</i>	Time zone offset from Greenwich Mean Time
<i>Set Date:</i>	Set the current date
<i>Set Time:</i>	Set the current time in the selected time zone

- The Test Settings are displayed. Tap **Next** to continue after making any adjustments.

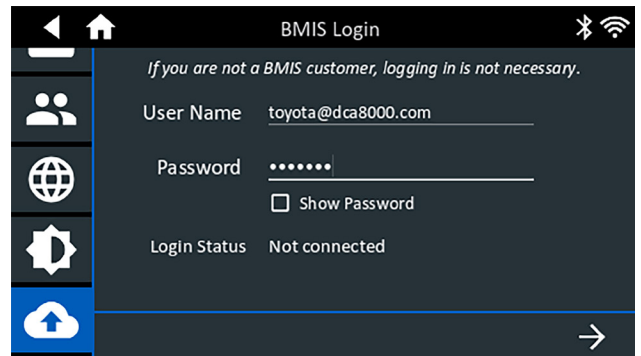





<i>Battery Rating</i>	CCA (Cold Cranking Amps)
<i>Temperature Units</i>	Select Fahrenheit or Celsius
<i>Decimal Separator</i>	Select decimal point or comma

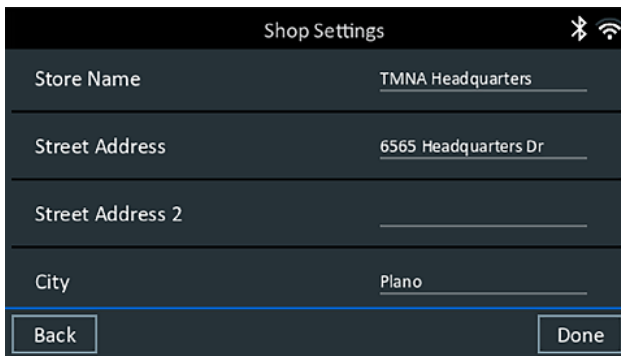
- A list of detected Configured WiFi networks is displayed.
  - To select a network:** For initial setup, no networks will be displayed here yet.
  - To add a network:** Tap the plus (+) sign, then select from one of the displayed detected networks. To manually add a network, tap the plus (+) sign again. Follow the on-screen instructions to select the Network SSID, Security, and IP Settings. Tap **Next** when finished. Use the onscreen keypad to manually enter the Network SSID, security type, and IP settings. If necessary, enter the WiFi network password. Tap **Next** when finished. A confirmation screen is displayed when the analyzer has successfully connected to the WiFi network.
  - To delete a network:** Tap a displayed network to select it. Tap trash can icon (🗑️) to delete it.
- Press → to download the list of BMIS locations.
- Enter the Dealer/Store ID# or location information. The selected dealer information is displayed.



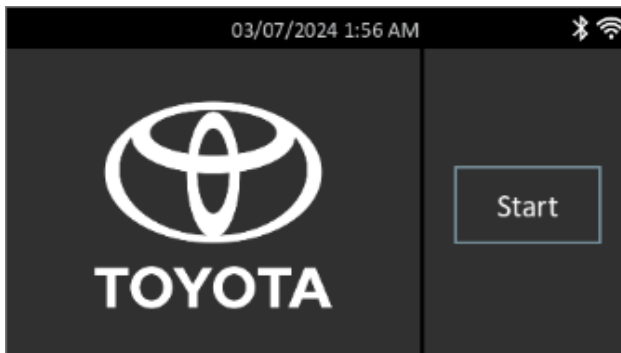
- Tap on the displayed location if it is correct. If it is incorrect, re-enter your proper ID. If it still does not work properly, contact Midtronics support.
- Press **Verify** to confirm your selection, or **Reconfigure** if you need to go back.
- The BMIS login screen will be displayed. Press **Next** to continue.



13. The Email Address Book screen is displayed.
- To add an email address:** Tap the plus (+) sign, then use the displayed keyboard to add the address.
- To edit an email address:** Tap the pencil  icon, then use the displayed keyboard to edit the address.
- To delete an email address:** Tap a displayed email address to select it. Tap trash can icon () to delete it.
- To use the Default Email Server Settings:** Tap the gear  icon to use the default.
14. The Shop Information screen is displayed. Use the on-screen keypad to enter the store name, address, and phone number. Tap **Next** to continue.



15. The login screen is displayed. Tap **Start** to access the Main Menu.



### Main Menu



#### 1 Menu Bar

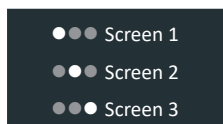
Log Out	Log out current user		Bluetooth connectivity status
	Measured battery voltage (When a battery is connected)		WiFi signal strength

#### 2 Main Menu Selection Area

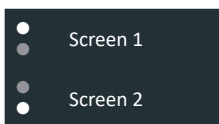
Icon	Description
	Use this application to maintain the battery's charge if it is in your inventory for an extended time.
	Access archived test histories or search test history by VIN or by technician.
	Displays alerts and notifications for upcoming tests and activities including scheduled tests, tool software updates and maintenance opportunities.
	Setup/adjust: WiFi, printer setup, email settings, user information, default language, display/sound settings, BMIS, shop info, connected devices, tool software version information.
	Access the DCA's Self-Test.
	Use the version application to check the tool's serial number and software version level.

### Additional Screens

Swipe left, right, up or down across the screen to view all results.



Swipe Horizontally



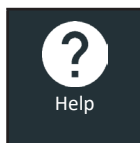
Swipe Vertically

### Main Menu Icons

Icon	Description
	Use In Vehicle Test to perform Battery Tests on in-vehicle batteries based on test parameters entered by the user. A System Test is also available.
	Evaluates and maintains battery voltage between 13V and 15.5V for uninterrupted reprogramming and retention of a vehicle's system settings.
	Use to ensure the vehicle battery is in optimal condition before delivery to customer.
	Provides a timed charge that ranges from 5 to 120 minutes or a continuous charge that ends when <b>STOP</b> is pressed.
	Makes high output current available to boost charge an in-vehicle battery and assist in starting the engine.

**IMPORTANT:** Leave the DCA-8000 plugged into power overnight so the tool can automatically check for and install any available software updates.

### Help



Use the Help function to access built-in Self-Testing functions or to view a digitized version of the Instruction Manual.



<i>WiFi Self-Diagnostics</i>	Tests connectivity to the BMIS server via the selected WiFi network
<i>WiFi PrinterSelf-Diagnostics</i>	Use to configure a WiFi printer
<i>Display Self-Diagnostics</i>	Tests Controller pixel display
<i>Touchscreen Self-Diagnostics</i>	Tests Controller touchscreen responsiveness
<i>Load Coil Self-Diagnostics</i>	Measures the internal health of the load coils and sends the results to BMIS

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<i>Power Supply Self-Diagnostics</i>	Measures the internal health of the power supply and sends the results to BMIS
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### **Inspecting the Battery**

Before starting the test visually inspect the battery for:

- Cracked, buckled, or leaking case. If you see any of these defects, replace the battery.
- Corroded, loose, or damaged cables and connections. Repair or replace them as needed.
- Corrosion on the battery terminals, and dirt or acid on the case top. Clean the case and terminals using a wire brush and a mixture of water and baking soda.
- Low electrolyte level. If the electrolyte level is low, add distilled water to fill up to ½" above the top of the plates and fully charge the battery. Do not overfill.
- Corroded or loose battery tray and hold-down fixture. Tighten or replace as needed.

### **Connecting To The Battery**

Connect the charging clamps to the battery in accordance with all precautions and safety instructions. **Do not connect either clamp to the vehicle's chassis.**

Connect the **Red** clamp to the positive (+) terminal and the **Black** clamp to the negative (-) terminal. An alert is displayed if the clamps are reversed on the battery terminals.

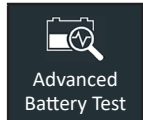
Make sure both sides of the clamps are firmly gripping the terminals. A poor connection will prevent testing, and the analyzer will display the message CHECK CONNECTION. If the message reappears after you have correctly reconnected the clamps, clean the terminals and reconnect.

### **Charging Out-of-Vehicle (Battery Test)**

The preferred battery charging location is in the vehicle. However, if you plan to charge out of the vehicle:

- Always disconnect the negative cable from the battery first and reconnect it last.
- Always use a carry tool or strap to lift and transport the battery.

## 2 – Advanced Battery Test



Use In Vehicle Test to perform Battery Tests on in-vehicle batteries based on test parameters entered by the user. A System Test is also available.

At any time during the test tap ◀ to return to the previous screen or 🏠 to return to the Main Menu.

### Battery Test

1. Connect the charger clamps to the appropriate battery posts.
2. At the Main Menu tap **Advanced Battery Test**. The Acquire VIN screen is displayed.
3. Use the wireless barcode scanner to scan the VIN barcode, located on the drivers side door frame. Scanning the VIN from a different location could lead to an incorrect reading.



The VIN can also be entered manually.

For best results, scan the barcode located on the driver's side door frame. A two-tone beep indicates the scan was successful. A single beep indicates an unsuccessful scan.



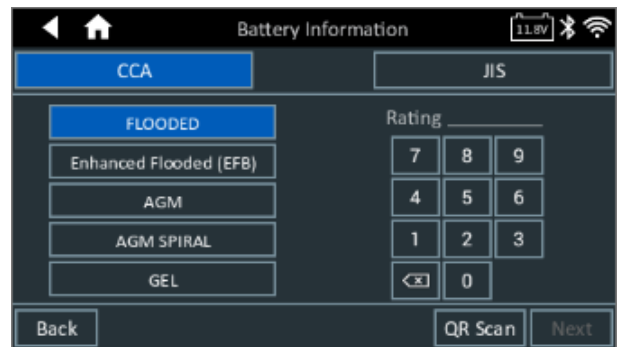
**Drivers Door Frame**

**Manual Entry:** Use the on-screen keypad to manually type the 17-digit VIN and tap **Next**.

4. Select the correct vehicle and battery information shown based on the VIN scan. If the VIN was correlated to a battery from the tool's database, the battery specs should populate on the next screen. Confirm the specs match by comparing to the battery's label. If they do, Press Next to proceed. If they do not, you will need to manually edit the battery specs before pressing Next. If the VIN was not in the tool's database, you will have to manually enter the chemistry and rating of the battery you are testing.

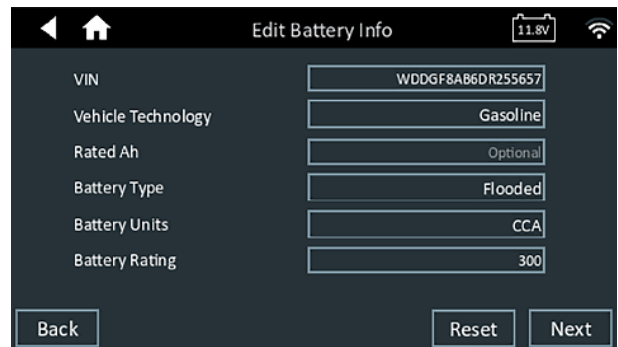


For Manual Entry, enter the Battery Rating Units, Type, and Rating.



<b>Battery Rating Units</b>	CCA	Cold Cranking Amps: Battery current at 0 °F (-17.8 °C).	100 to 3000
	JIS	Japanese Industrial Standard: Usually printed on battery label.	26A17 to 245H52
<b>Battery Type</b>	Flooded, AGM (Absorbed Glass Mat), AGM Spiral, Gel, EFB		
<b>Battery Rating</b>	Enter the Battery Rating Units value.		

5. At the Edit Battery Info screen, tap on the corresponding box to edit the parameter information.



**NOTE:** The Battery Type, Units, and Rating fields must be filled in before proceeding.

6. Tap **Next** to advance to the Customer Complaint screen. At this screen, you are prompted to select **Yes** or **No** based on whether the vehicle came in with a battery related complaint (i.e.: slow crank, no crank, suspected bad battery, etc.). The differences in the two options are explained below:

“Yes”, for Customer Complaint: The entire battery process (diagnosing and charging to the recommended 85% SOC) will be completed before a final decision is rendered. The only possible decisions are: **Good, Replace or Aborted**. The test time will vary depending on the condition of the battery, the battery is being charged and tested until a decision is rendered.

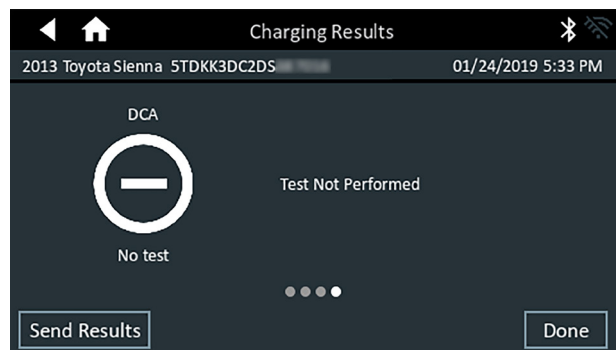
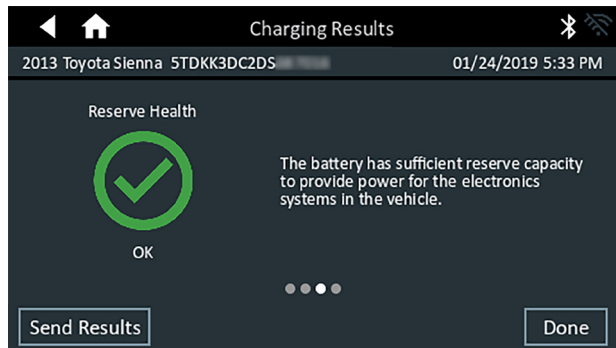
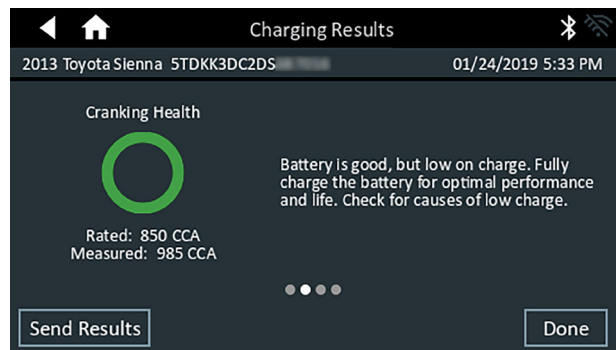
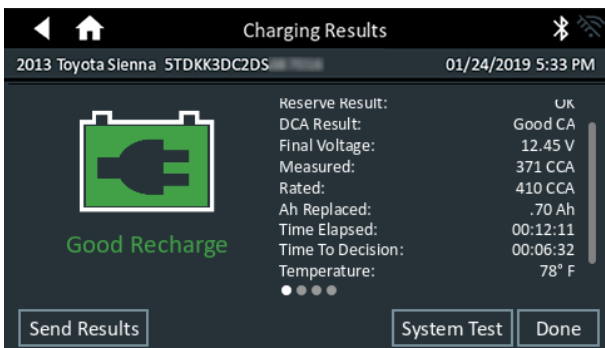
“No”, for Customer Complaint: The diagnostic test will run the same as previous software versions. It’s possible that some battery issues can be missed without charging the battery. The DCA will automatically start charging the battery after the test is completed with a “**Battery is Good – Charging for Service**” result. During this charging process, the DCA will continue testing the battery, it’s possible for the decision to update from “**Battery is Good – Charging for Service**” to “**Replace**”. The differences between the result decisions are below:

“**Battery is Good – Stop charge and return to service**”: The battery is charged to 85% SOC, and no issues were found.

“**Battery is Good – Charging for service**”: The initial battery assessment is Good, but the battery has a low state of charge. This low state of charge could be an indication of a battery issue that can be identified during a charge and testing cycle. Stopping the test at this state will render a final decision of Good Recharge.

“**Replace**”: A battery fault was found (i.e.: bad CCA, bad reserve capacity, bad cell, etc.), and the battery should be replaced.

**Battery Test Results**



Icons are color-coded to indicate status.

<b>Green:</b>	All test parameters were completed and have passed.
<b>Yellow:</b>	Some test parameters may require further testing.
<b>Red:</b>	The battery has failed the test.
<b>White:</b>	Insufficient data to perform the test.

To print or send the test results to a configured printer or via email tap **Send Results** and select an option. To return to the Home Screen, tap **Done** or **System Test** to continue with the System Test.

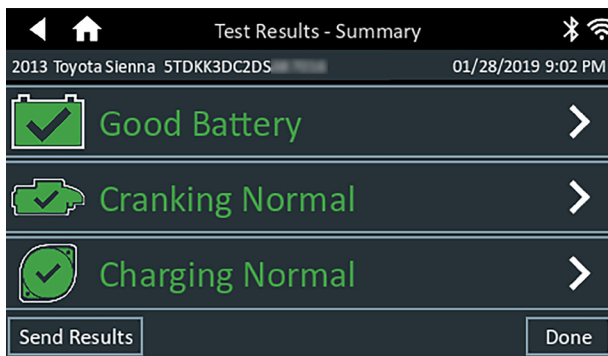


**NOTE:** Refer to Appendix B: Test Result Decision Tables for a complete explanation of possible test results.

### System Test

1. Start the engine and let it idle.
2. Turn off all electrical accessories such as headlights and the interior ventilation blower fan and tap **Next**.
3. The analyzer tests the alternator output at idle.
4. When prompted, rev and hold the engine to between 2000 to 3000 RPM and tap **Next**. The analyzer tests the alternator output again.
5. Idle the engine when prompted. Turn on the high beam headlights and interior ventilation blower motor and tap **Next**.
6. The analyzer tests the alternator output at idle.
7. When prompted, rev and hold the engine to between 2000 to 3000 RPM and tap **Next**.
8. The analyzer tests the alternator output again.
9. When prompted turn off all loads and Idle the engine.
10. Tap **Next** to display the test results.

### System Test Results-Summary



**Test Results - Summary**

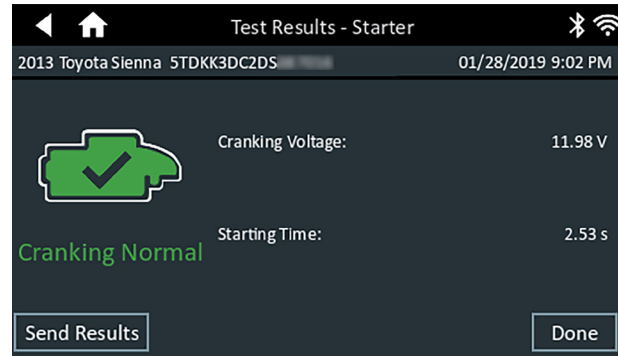
A Test Results-Summary screen is displayed following a System Test. Tap > to view detailed test results for each part of the test.



**NOTE:** Refer to Appendix B: Test Result Decision Tables for a complete explanation of possible test results.

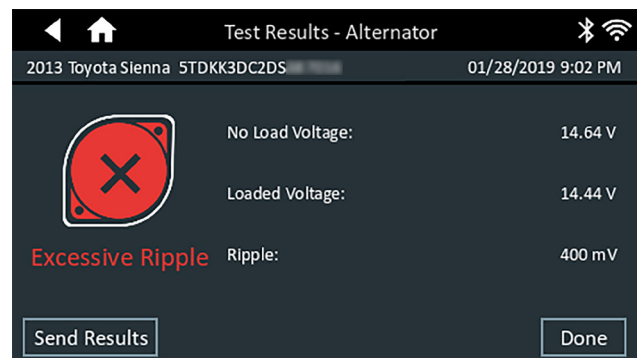
To send the test results to a configured printer or via email tap **Send Results** and select an option. To return to the Home Screen, tap **Done** or to return to the Main Menu.

### Starter Test Results



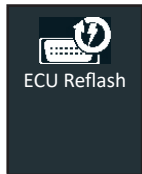
**Test Result - Starter Test**

### Alternator Test Results



**Test Result - Alternator Test**

### 3 – ECU Reflash



Use ECU Reflash to maintain battery voltage in a vehicle between 13.00V and 15.5V to allow for uninterrupted reprogramming of vehicle's computer, retain vehicle system settings, or simply to maintain battery voltage.

At any time during the test tap ◀ to return to the previous screen or 🏠 to return to the Main Menu.

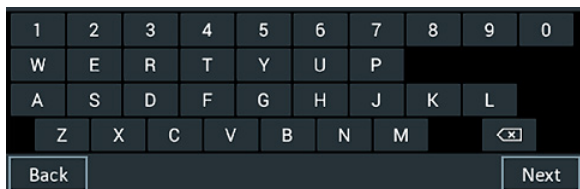
1. Connect the Diagnostic Device test clamps to the battery.
2. At the Main Menu tap **ECU Reflash**. The Acquire VIN screen is displayed.
3. Use the wireless barcode scanner to scan the VIN barcode, located on the drivers side door frame. Scanning the VIN from a different location could lead to an incorrect reading. A two-tone beep indicates the scan was successful, a single beep indicates an unsuccessful scan.

The VIN can also be entered manually.



**Drivers Door Frame**

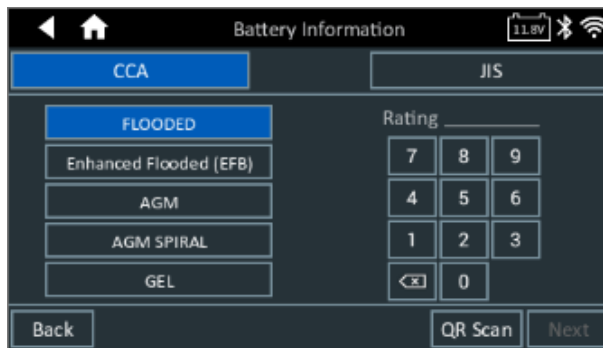
**Manual Entry:** Use the on-screen keypad to manually type the 17-digit VIN and tap **Next**.



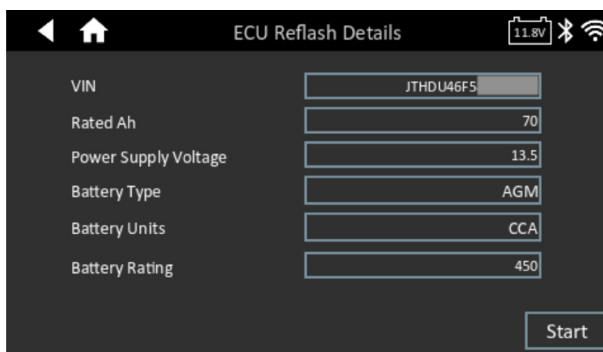
The displayed digit counter will count up the alphanumeric characters as they are entered on the keypad.

4. Select the correct vehicle and battery information shown based on the VIN scan. If the VIN was correlated to a battery from the tool's database, the battery specs should populate on the next screen. Press **Next** to proceed. If the VIN was not in the tool's database, you will have to manually enter the chemistry and rating of the battery you are testing.

<b>Battery Rating Units</b>	CCA	Cold Cranking Amps: Battery current at 0 °F (-17.8 °C).	100 to 3000
	JIS	Japanese Industrial Standard: Usually printed on battery label.	26A17 to 245H52
<b>Battery Type</b>	Flooded, AGM (Absorbed Glass Mat), AGM Spiral, Gel, EFB		
<b>Battery Rating</b>	Enter the Battery Rating Units value.		



5. At the Edit Battery Info screen, tap on the corresponding box to edit the parameter information.



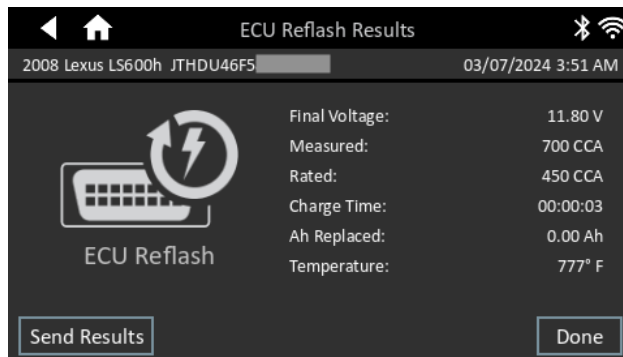
6. If the displayed information is correct, tap **Start** to begin.

**NOTE:** The Battery Type, Units, and Rating fields must be filled in before proceeding.

The charger goes through a series of pre-tests before power is applied. Those steps include measuring ambient temperature, Cranking Health, Reserve Capacity, Charge Acceptance, and applying a Load Test on the battery.

#### ECU Reflash Results

The test results are displayed on the charger screen.



To send the test results to a configured printer or via email tap **Send Results** and select an option. To return to the Home Screen, tap **Done** or 🏠 to return to the Main Menu.


## 4 – PDS/PDI



Use PDS to charge vehicle batteries while performing a checklist before delivery to a customer to ensure it is in optimal condition.

1. Connect the charger clamps to the appropriate battery posts.
2. At the Main Menu tap **PDS/PDI**. The Acquire VIN screen is displayed.
3. Use the wireless barcode scanner to scan the VIN barcode, located on the drivers side door frame. Scanning the VIN from a different location could lead to an incorrect reading. A two-tone beep indicates the scan was successful, a single beep indicates an unsuccessful scan.

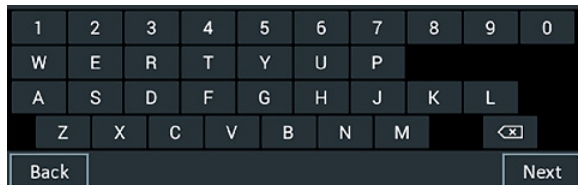
The VIN can also be entered manually. The VIN is also displayed behind the windshield on the driver's side dashboard.

 **NOTE:** Refer to Appendix A for recommended scanning procedures and VIN scanning help.



**Drivers Door Frame**

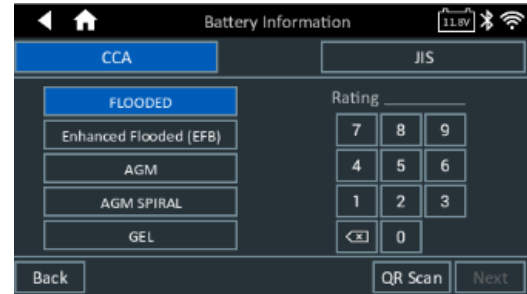
**Manual Entry:** Use the on-screen keypad to manually type the 17-digit VIN and tap **Next**.



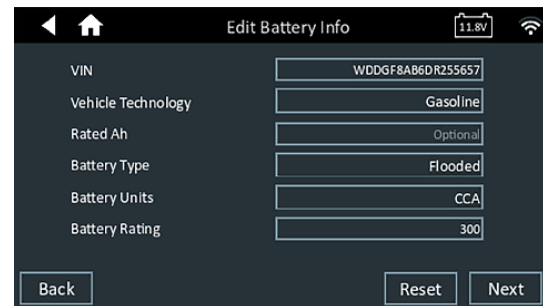
The displayed digit counter will count up the alphanumeric characters as they are entered on the keypad.

4. Select the correct vehicle and battery information shown based on the VIN scan. If the VIN was correlated to a battery from the tool's database, the battery specs should populate on the next screen. Press **Next** to proceed. If the VIN was not in the tool's database, you will have to manually enter the chemistry and rating of the battery you are testing.


<b>Battery Rating Units</b>	CCA	Cold Cranking Amps: Battery current at 0 °F (-17.8 °C).	100 to 3000
	JIS	Japanese Industrial Standard: Usually printed on battery label.	26A17 to 245H52
<b>Battery Type</b>	Flooded, AGM (Absorbed Glass Mat), AGM Spiral, Gel, EFB		
<b>Battery Rating</b>	Enter the Battery Rating Units value.		




5. The Edit Battery Information screen displays vehicle and battery information based on the VIN.



If the displayed information is correct, tap **Next** to begin the Battery Test.

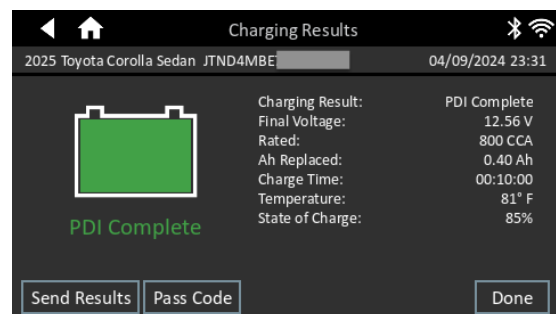
 **NOTE:** The Battery Type, Units, and Rating fields must be filled in before proceeding.


Tap the box across from each displayed parameter and select the correct information from the displayed list.

 **NOTE:** See Appendix A for complete parameter descriptions.

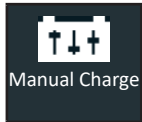
The results are then displayed on the charger screen.

### PDS/PDI Charging Results



To send the test results to a configured printer or via email tap **Send Results** and select an option. To return to the Home Screen, tap **Done** or  to return to the Main Menu.

## 5 – Manual Charge



Use Manual Charge to charge a battery using user-selectable parameters including voltage, current, or time.

At any time during the test tap ◀ to return to the previous screen or 🏠 to return to the Main Menu.

1. Connect the Diagnostic Device test clamps to the battery.
2. At the Main Menu tap **Manual Charge**. The Acquire VIN screen is displayed.
3. Use the wireless barcode scanner to scan the VIN barcode, located on the drivers side door frame. Scanning the VIN from a different location could lead to an incorrect reading. A two-tone beep indicates the scan was successful, a single beep indicates an unsuccessful scan.

The VIN can also be entered manually.

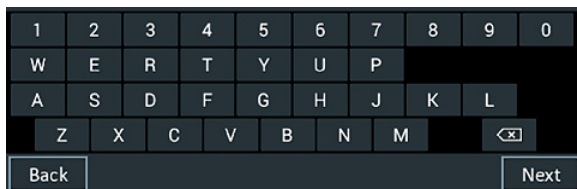


**NOTE:** Refer to Appendix A for recommended scanning procedures and VIN scanning help.



**Drivers Door Frame**

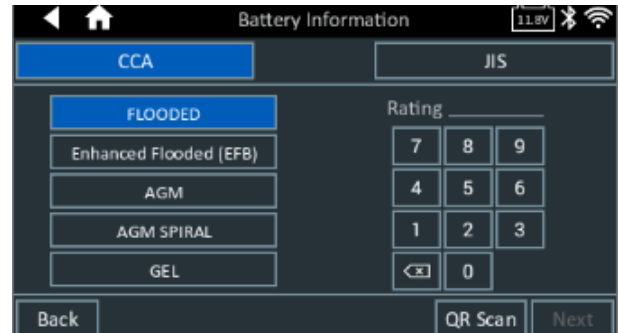
**Manual Entry:** Use the on-screen keypad to manually type the 17-digit VIN and tap **Next**.



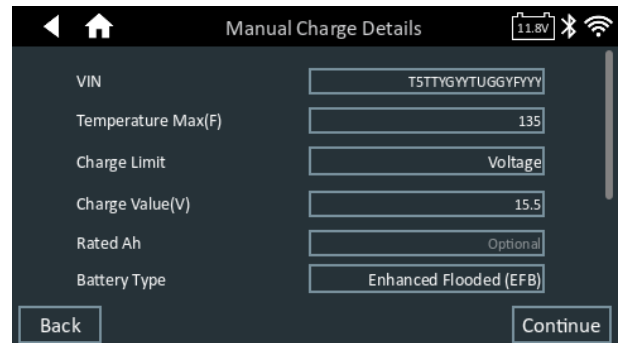
The displayed digit counter will count up the alphanumeric characters as they are entered on the keypad.

4. Select the correct vehicle and battery information shown based on the VIN scan. If the VIN was correlated to a battery from the tool's database, the battery specs should populate on the next screen. Press Next to proceed. If the VIN was not in the tool's database, you will have to manually enter the chemistry and rating of the battery you are testing.

<b>Battery Rating Units</b>	CCA	Cold Cranking Amps: Battery current at 0 °F (-17.8 °C).	100 to 3000
	JIS	Japanese Industrial Standard: Usually printed on battery label.	26A17 to 245H52
<b>Battery Type</b>	Flooded, AGM (Absorbed Glass Mat), AGM Spiral, Gel, EFB		
<b>Battery Rating</b>	Enter the Battery Rating Units value.		



5. Enter the battery information and charging parameters.



If the displayed information is correct, tap **Start Charge** to begin the Battery Test. Tap on the corresponding box to edit the parameter information.



**NOTE:** The Battery Type, Units, and Rating fields must be filled in before proceeding.

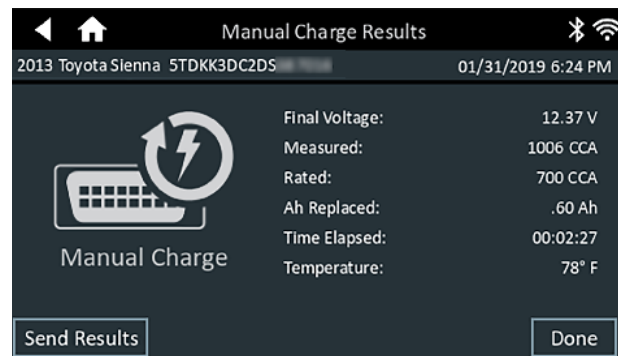


**NOTE:** See Appendix A for complete parameter descriptions.

The charger goes through a series of pre-tests before power is applied. Those steps include measuring ambient temperature, Cranking Health, Reserve Capacity, Charge Acceptance, and applying a Load Test on the battery.

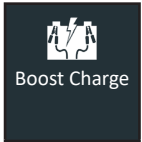
### Manual Charge Results

The test results are displayed on the charger screen.



To send the test results to a configured printer or via email tap **Send Results** and select an option. To return to the Home Screen, tap **Done** or 🏠 to return to the Main Menu.

## 6 – Boost Charge



Makes high output current available to boost charge an in-vehicle battery and assist in starting the engine. Press **STOP** to abort at any time.

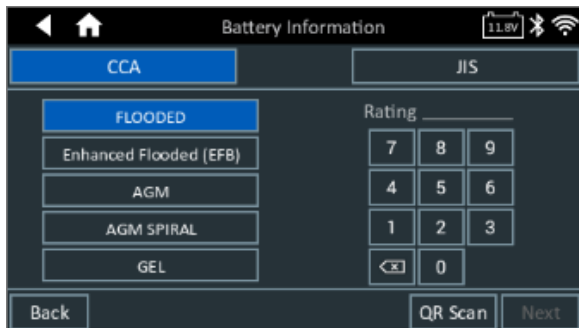


**IMPORTANT:** Before starting Boost Charge, verify that all vehicle loads are off and the key is not in the ignition.

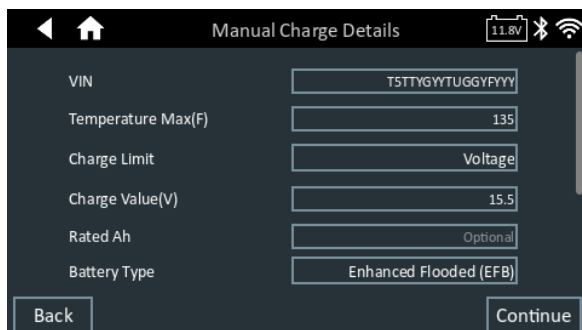
At any time during the test tap ◀ to return to the previous screen or 🏠 to return to the Main Menu.

1. Connect the charger clamps to the appropriate battery posts.
2. At the Main Menu tap **Boost Charge**.
3. Select the correct vehicle and battery information shown based on the VIN scan. If the VIN was correlated to a battery from the tool's database, the battery specs should populate on the next screen. Press **Next** to proceed. If the VIN was not in the tool's database, you will have to manually enter the chemistry and rating of the battery you are testing.

<b>Battery Rating Units</b>	CCA	Cold Cranking Amps: Battery current at 0 °F (-17.8 °C).	100 to 3000
	JIS	Japanese Industrial Standard: Usually printed on battery label.	26A17 to 245H52
<b>Battery Type</b>	Flooded, AGM (Absorbed Glass Mat), AGM Spiral, Gel, EFB		
<b>Battery Rating</b>	Enter the Battery Rating Units value.		



4. Enter the battery information and charging parameters.



**NOTE:** The Battery Type, Units, and Rating fields must be filled in before proceeding.

5. Tap the box across from each displayed parameter and select the correct information from the displayed list.
6. Tap **Begin Boost Charge** to begin the Boost Charge process.

The charger performs a series of tests to determine the overall condition of the battery before applying a boost charge to the battery.

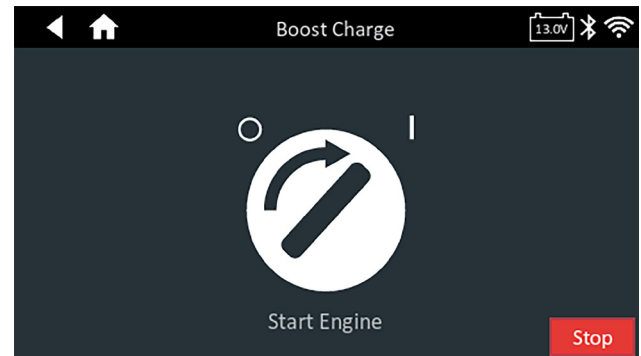


**IMPORTANT:** *Do not* crank the engine during the boost charging process.



**NOTE:** The charger will not boost charge a battery that has tested unsafe.

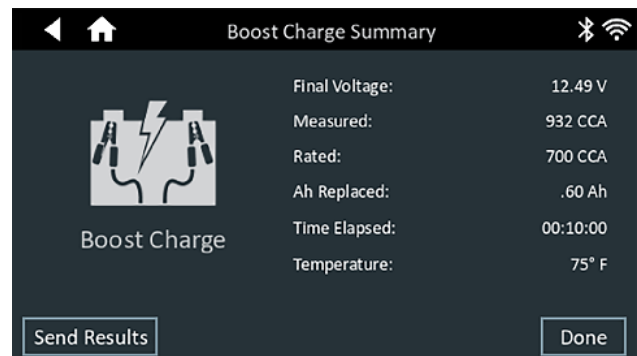
7. Following a successful boost charge, the charger displays **CRANK ENGINE NOW**. The engine can now be cranked for up to five seconds.



8. When the charger displays "Start Engine," press **STOP** key. (The warning tone sounds every second until you press **STOP**.)

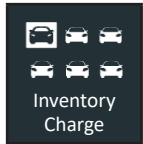
### Boost Charge Summary

The results of the Boost Charge session are displayed on the charger screen at the end of session.



To send the test results to a configured printer or via email tap **Send Results** and select an option. To return to the Home Screen, tap **Done** or 🏠 to return to the Main Menu.

# 7 – Inventory Charge



Use Inventory Charge to charge vehicle batteries that have been in inventory for some time to maintain them before delivery to a customer to ensure it is in optimal condition to be delivered.

1. Connect the charger clamps to the appropriate battery posts.
2. At the Main Menu tap **Inventory Charge**. The Acquire VIN screen is displayed.
3. Use the wireless barcode scanner to scan the VIN barcode, located on the drivers side door frame. Scanning the VIN from a different location could lead to an incorrect reading. A two-tone beep indicates the scan was successful, a single beep indicates an unsuccessful scan. The VIN can also be entered manually.

The VIN is also displayed behind the windshield on the driver's side dashboard.



**NOTE:** Refer to Appendix A for recommended scanning procedures and VIN scanning help.



**Drivers Door Frame**

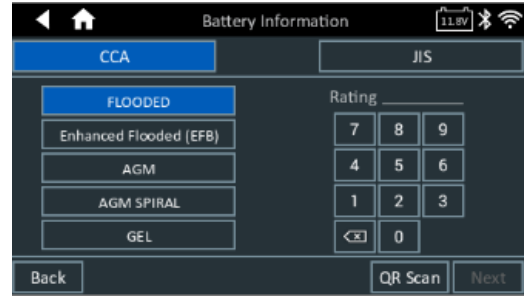
**Manual Entry:** Use the on-screen keypad to manually type the 17-digit VIN and tap **Next**.



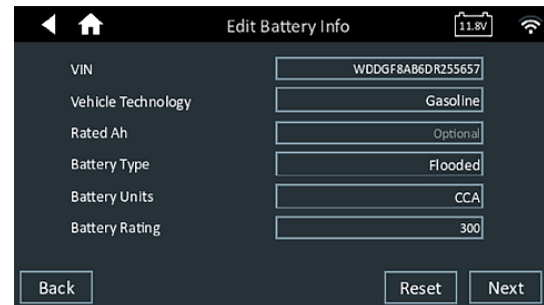
The displayed digit counter will count up the alphanumeric characters as they are entered on the keypad.

4. Select the correct vehicle and battery information shown based on the VIN scan. If the VIN was correlated to a battery from the tool's database, the battery specs should populate on the next screen. Press **Next** to proceed. If the VIN was not in the tool's database, you will have to manually enter the chemistry and rating of the battery you are testing.

<b>Battery Rating Units</b>	CCA	Cold Cranking Amps: Battery current at 0 °F (-17.8 °C).	100 to 3000
	JIS	Japanese Industrial Standard: Usually printed on battery label.	26A17 to 245H5
<b>Battery Type</b>	Flooded, AGM (Absorbed Glass Mat), AGM Spiral, Gel, EFB		
<b>Battery Rating</b>	Enter the Battery Rating Units value.		



5. The Edit Battery Information screen displays vehicle and battery information based on the VIN.



If the displayed information is correct, tap **Next** to begin the Battery Test.



**NOTE:** The Battery Type, Units, and Rating fields must be filled in before proceeding.

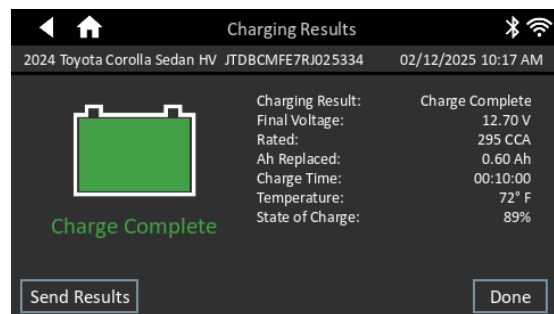
Tap the box across from each displayed parameter and select the correct information from the displayed list.



**NOTE:** See Appendix A for complete parameter descriptions.

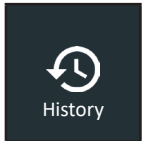
The results are then displayed on the charger screen.

## Inventory Charge Results



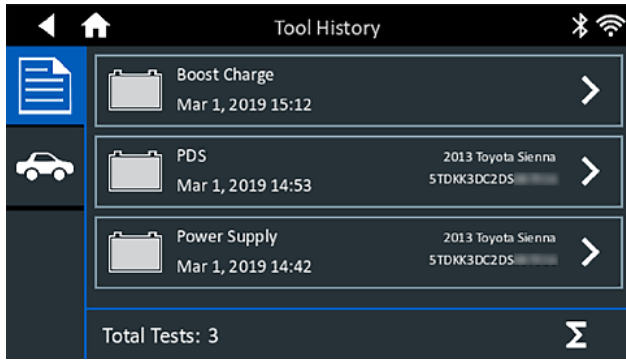
To send the test results to a configured printer or via email tap **Send Results** and select an option. To return to the Home Screen, tap **Done** or **Home** to return to the Main Menu.

## 8 – History



Use History to access the tool usage history, a vehicle history based on VIN, and user histories. The search function can also be used to find test records for specific vehicles and technicians.

At the Main Menu, tap **History**. By default the Tool History screen is displayed.



### Tool History



Use Tool History to view test total history as well as in vehicle and out of vehicle test totals. Individual test results are also displayed.

Tap > to view individual test details.

Tap  $\Sigma$  to view Total By Test Decision, Total By Test Type, and Total By Date And Location.

Tap **Done** to return to the Tool History screen.

### Totals By Test Decision

Good Battery	Replace Battery
Good Recharge	Badcell Short Replace
Aborted	

### Totals By Charge Decision

Good Battery	Replace Battery
Good Recharge	Badcell Short Replace
Aborted	NO DECISION

### Totals By Test Type

Advanced Battery Test	PDS
Power Supply	Boost Charge
Manual Charge	

### Totals By Date And Location

Last 7 Days	In Vehicle
Last 30 Days	Out of Vehicle
Last 90 Days	

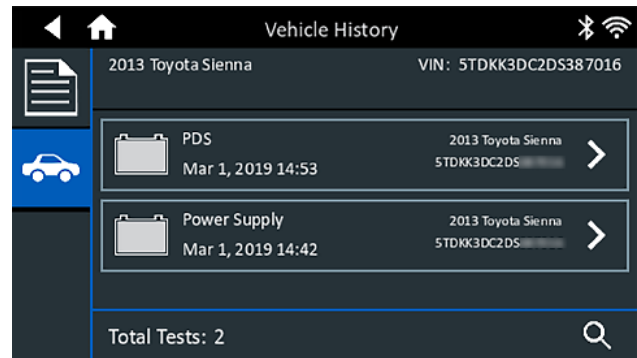
### Vehicle History



Vehicle History displays test totals conducted on specific vehicles based on the VIN. It is also possible to enter a VIN to search for test records for a specific vehicle by tapping the displayed buttons.

Tap on the records displayed on the right side of the screen to view the individual test results.

**NOTE:** Refer to Appendix B: Test Result Decision Tables for a complete explanation of possible test results.



### Vehicle Select Option

Tap **Q** to select vehicle search option.

**Manual VIN Lookup:** Use the on-screen keypad to manually type the 17-digit VIN and tap **Next**.

**VIN Scan:** Use a connected scanner to capture a VIN barcode, usually located on the driver's side door frame.

**Search:** Search records by Vehicle Year, Make, and Model.

# 9 – Messages




The Messages function displays alerts and notifications for upcoming tests and activities. This includes scheduled testing as well as tool software updates and maintenance opportunities.

 Mark Read Or Unread
  Delete Notification

---

 Perform Message Action

Tap ◀ to return to the previous screen or 🏠 to return to the Main Menu.



 **IMPORTANT:** An alert is displayed when tester has not communicated with BMIS for more than 24 hours. The “No” option is not available for 30 seconds.

The DCA-8000 will automatically lock-out and the user will not be able to use the tool if: 1) Tool is not connected to Wi-Fi for 10 or more days; or 2) An available software update is not installed after 10 or more days.

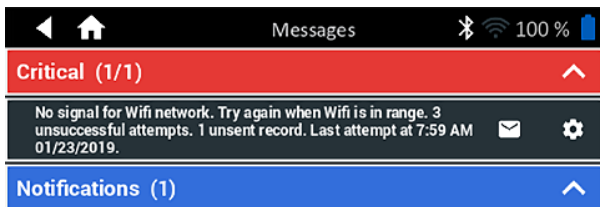
## Accessing Messages






A number is displayed next to the Messages icon when the analyzer has received any critical messages. The number does not include non-critical Notifications.

-  Unread Critical Messages
-  Read Critical Messages

1. Tap **Messages** on the Main Menu screen.



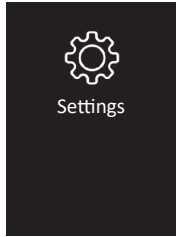
2. Tap  to read a message.  
 Tap  to perform the message action item.  
 Tap  to delete a message.
3. Tap ^ to collapse a list of messages or v to expand the list.

## Message Types

**Critical:** An important action cannot be performed and may require user action.

**Notifications:** Indicates an action has been performed or data has been sent.

# 10 – Settings



Use the Setup options to setup and adjust WiFi, printer setup and selection, email settings, user information, default language, display settings, sound settings, BMIS login information, shop information, user management, connected accessories, and device information.

Tap ◀ to return to the previous screen or ▶ to return to the Main Menu.

## WiFi



Use WiFi to view, add, and delete wireless networks.

Tap on the WiFi icon to display a list of detected and configured WiFi networks.

	Add Network		Delete Selected Network
	Connect Highlighted Network		Refresh Network List

## Adding A Network

1. Tap ⊕ to add a WiFi network.  
A list of detected wireless networks is displayed with ● next to the selected network.
2. Tap > to access the network Security and IP Settings.

Security	None
	WEP
	WPA/WPA2 PSK
IP Address	DHCP
	Static

3. Tap → to configure the selected network.
4. Once the network has been successfully configured, tap → to return to the list of available configured networks. A ● indicates the selected network.

## Deleting A Network

1. Tap a displayed network.
2. Tap 🗑 to delete the network and tap Yes to confirm.

## Printer Settings



The Printer Setup function detects and displays a list of connected and available WiFi and Bluetooth printers.



**NOTE:** WiFi network communication must be successfully established before a printer or printers can be detected and setup.

Tap on the Printer icon to display a list of available printers on the configured WiFi and Bluetooth networks.

	Edit Printer Settings		Printer Setup
	Delete Selected Network		Configured Printers
	Print Test Page		

## Adding A WiFi Printer

1. Tap ⚙ to access the Printer Setup functions.
2. Tap ⊕ to add a WiFi printer.  
Make sure the printer is on and connected to the same wireless network as the analyzer.
3. Tap → to add the printer to the list of eligible printers.
4. Tap > to connect to the selected printer. A message is displayed when the configuration is successful.
5. Tap > to return to the printer list.

## Deleting A Printer

1. Tap ⚙ to access the Printer Setup functions.
2. Tap a displayed printer.
3. Tap 🗑 to delete the printer and tap Yes to confirm.


## Email




Displays all entered email addresses. Addresses can be added, edited, and deleted. Entered email accounts are added to the email address book. Frequently used email addresses can be selected from the displayed address list rather than being re-typed each time.

	Add Address		Server Settings
	Edit Address		Address Book
	Delete Selected Address		Send Test Email


### Add Address

1. Tap  to add an email address.
2. Use the displayed keypad to enter the contact name and email address.
3. Tap Add to add the address to the email list or Cancel to exit and return to the email list.

### Edit Address





1. Select a displayed email address by tapping it.
2. Tap  to edit the address.
3. Use the displayed keypad to edit the contact name and email address.
4. Tap Add to add the address to the email list or Cancel to exit and return to the email list.

### Deleting An Address

1. Select the email address by tapping it.
2. Tap  to delete the address and tap Yes to confirm or Cancel to exit and return to the email list.

### Server Settings

Enter and edit the email settings for sending outgoing email.

1. Tap  to access the email server settings.
2. Tap  to enter or modify existing server settings including Host, Port, Login, Password, SMTP Authorization, Enable TLS, and From Email Address information.
3. Tap  to clear all server settings.
4. Tap  to return to the email Address Book.

### User Settings



Modify Usernames and Passwords..



Edit Users



User Settings







Delete Users



User Management

### User Management

1. Tap  to access User Management functions.
2. Tap  to display the current logged in Admin user.
3. Select a displayed user by tapping it.
4. Tap  to edit the Username, Password, and User Type (Standard or Admin).
5. Tap **X** when complete to return to the User Management screen.
6. Tap  to delete the selected user and Yes to confirm.

### Language Settings



Use the Language & Input function to select the default system language used by the tool. User defaults also include Test Results, Email, and Print languages.

#### System Language

Select the charger default standard language.

#### Test Result Language

Select the default language for the charger to use for all displayed tests and results.

#### Email Language

Select the default standard language for the analyzer to use for all tests and results sent via email.

#### Print Language

Select the default standard language for the analyzer to use for all tests and results printed.

### Display Settings



Adjust the charger display including the Brightness, Sleep Time, and Dim Time.

#### Brightness

Adjust the display Brightness by tapping and holding the slider, then moving it right or left to make the screen brighter or darker.


#### Sleep Time

Adjust the amount of elapsed time before the charger goes into a power saving (Sleep) mode. Default = 2 minutes.

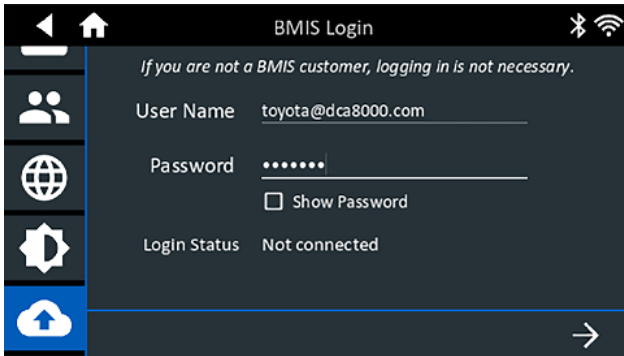
#### Dim Time

Adjust the amount of elapsed time before the charger goes into a power saving (Dim) mode. Default = 1 minute.

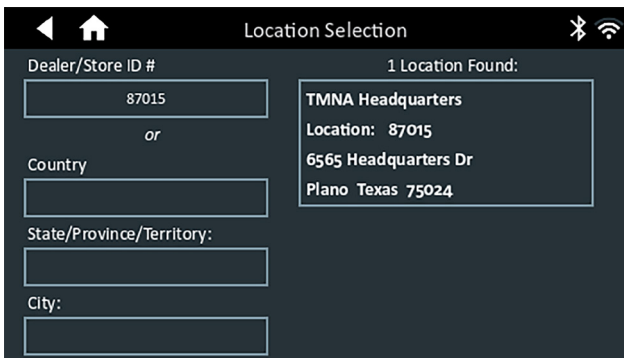
### BMIS Login

 Enter and edit BMIS Login and Password information. Log into a BMIS account.

**IMPORTANT:** If no WiFi connection has been made, follow the procedure described in the WiFi section of Chapter 8: Settings.










1. Press → to download the list of BMIS locations.
2. Enter the Dealer/Store ID# or location information. The selected dealer information is displayed.



3. Tap on a displayed location to connect the analyzer to an existing BMIS account.

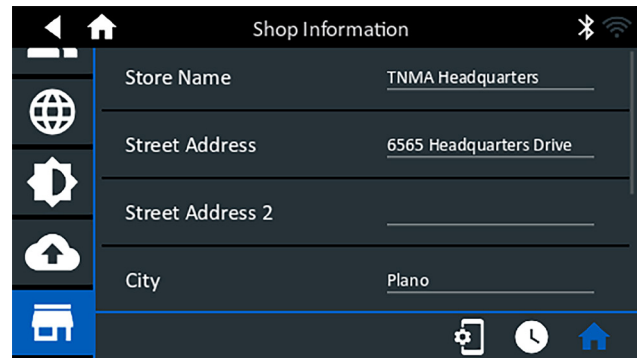
### Shop Information

 Access default Shop Information including Store Name, address, and phone number. Also access battery test defaults including rating, temperature units, and decimal separator. Use also to adjust the tester date and time settings.

	Settings Home		User Settings
	Test Settings		User Management
	Date/Time Settings		Create MDCA Log File

### Shop Information

Use the onscreen keypad to enter the store name, address, and phone number.



Store Name

Street Address

Street Address 2


City

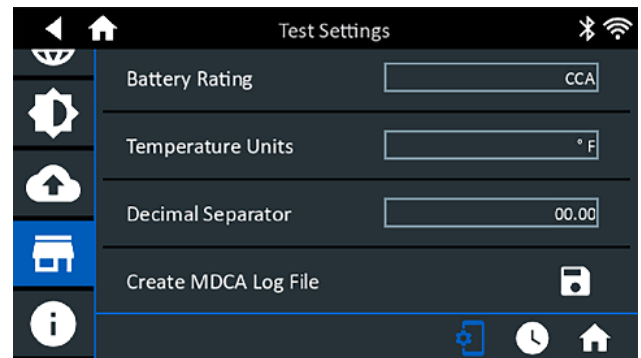
State

Zipcode

Phone #

### Test Settings

1. Tap  to access the test setting defaults. Tap the boxes or icons to change the values.



#### Battery Rating

Default battery rating units used when testing batteries.

#### Temperature Units

Default temperature units used when measuring battery temperature.

#### Decimal Separator

Default number display using commas or periods separators.

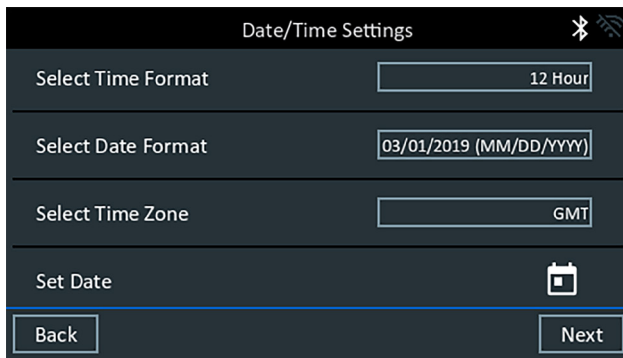
#### Create MDCA Log File

The MDCA function is used by Midtronics technical support.

2. Tap  to return to the Shop Information screen.

## Date/Time Settings

1. Tap  to access the Date/Time setting defaults.



### Select Time Format

12 or 24 Hour Format

### Select Date Format

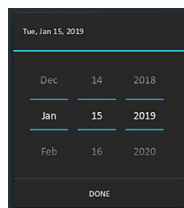
Month/Day/Year, Day/Month/Year, or Year/Day/Month

### Select Time Zone

Time zone in which the analyzer will be operated.

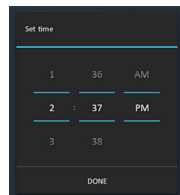
### Set Date


Tap ▲ or ▼ to enter the month, day, and year. Tap Set to save the date or Cancel to exit without saving.



### Set Time

Tap ▲ or ▼ to enter the hours, minutes, and AM/PM. Tap Set to save the date or Cancel to exit without saving.







2. Tap  to return to the Shop Information screen.

## Appendix A: Battery Information Definitions




<b>Battery Application</b>	Automotive		
<b>Battery Installation</b>	Single Battery or Dual Batteries		
<b>Battery Post</b>	Top Post, Side Post, Dual Post		
<b>Battery Rating</b>	Enter the Battery Rating Units value		
<b>Battery Type</b>	Flooded, AGM (Absorbed Glass Mat), AGM Spiral, Gel, Enhanced Flooded		
<b>Battery Units</b>	CCA	Cold Cranking Amps: Battery current at 0 °F (-17.8 °C).	100 to 3000
	JIS	Japanese Industrial Standard: Usually printed on battery label.	26A17 to 245H52
<b>Charge Limit</b>	Limit charge by Voltage or Amperage		
<b>Charge Value</b>	Maximum amount of applied charge (Voltage or Amperage)		
<b>Rated Ah</b>	Rating of battery being charged in Amp-hours (optional)		
<b>Temperature (Max)</b>	Maximum temperature of battery during a manual charge		
<b>Test Location</b>	Top Post, Side Post, Remote Post		
<b>Time Type</b>	Timed (10 to 120 minutes) or Continuous		
<b>Time Value (Timed Charge Only)</b>	Length (In Minutes) of Manual Timed Charge		
<b>VIN</b>	A unique code, including a serial number, used by the automotive industry to identify individual motor vehicles, motorcycles, scooters and mopeds, as defined by ISO 3833.		
<b>Vehicle Make</b>	Vehicle manufacturer		
<b>Vehicle Model</b>	Vehicle name or number		
<b>Vehicle Technology</b>	Hybrid, Gasoline, Electric, Start-Stop, Hybrid Start-Stop, Diesel		
<b>Vehicle Year</b>	Model year that a vehicle was manufactured.		

## Appendix B: Test Results Decision Tables







### Battery Test Results

Decision	Cranking Health	Reserve Capacity	SOH Message	RC Message
 Good Battery	Good	Good	The battery shows good cranking performance. Test the battery again at next service opportunity.	The battery has good reserve capacity. The battery is able to provide power for the electronics systems in the vehicle.
 Good Recharge	Good Recharge		The battery shows good cranking performance but low charge. Fully charge the battery for optimal performance and life. Check the starting and charging systems for causes of low charge.	
 Replace Battery	Good	Warning	The battery shows good cranking performance but low reserve capacity performance. Low reserve capacity will compromise the battery's ability to provide power to the vehicle and hold a charge over time.	The reserve capacity of the battery is low. Low reserve capacity of the battery could impact the ability of the battery to provide power for the electronics systems in the vehicle. The battery should be replaced.
	Good Recharge		The battery shows good cranking performance but low charge and low reserve capacity performance. Low reserve capacity will compromise the battery's ability to provide power to the vehicle and hold a charge over time. Check the starting and charging systems for causes of low charge.	
	Charge and Retest		The battery shows low charge and low reserve capacity performance. Low reserve capacity will compromise the battery's ability to provide power to the vehicle and hold a charge over time.	
	Warning	Warning		The battery shows low cranking performance. Replace the battery to prevent a no-start situation in your vehicle.
 Good Battery	Good	No Test	The battery shows good cranking performance. Test the battery again at next service opportunity.	System conditions have prevented a test of the battery reserve capacity in this vehicle. Before attempting any retest, ensure that all vehicle accessory loads are off, the key is not in the ignition, and the doors are closed.
	Good Recharge		The battery shows good cranking performance but low charge. Fully charge the battery for optimal performance and life. Check the starting and charging systems for causes of low charge.	
	Warning		The battery shows low cranking performance. Replace the battery to prevent a no-start situation in your vehicle.	
No Test	No Test	No Test	Conditions have prevented a test of the battery reserve capacity. Ensure that there are no loads on the battery before attempting any retest.	





### Charge Acceptance Results

Decision	Action
 OK	Battery has sufficient charge acceptance to recover for a proper system functionality.
 Warning	Battery has poor charge acceptance and might not be able to recover for a proper system operation.
 No Test	Test not performed or this test is not applicable for this battery application.






### Starter Test Results

Decision	Action
 Cranking Normal	The starter voltage is normal and the battery is fully charged.
 Low Voltage	The starter voltage is low and the battery is fully charged.
 Charge Battery	The starter voltage is low and the battery is discharged. Fully charge the battery and repeat the starter system test.
 Replace Battery	If the battery test result was REPLACE, the battery must be replaced before testing the starter.
 Low Current	The starter voltage is high but the cranking amps are low.
 No Start	The engine didn't start and the test was aborted or the vehicle's starting profile was not detected and the Starter Test was skipped.

### Alternator Test Results

Decision	Action
 Charging Normal	The output from the alternator is normal.
 No Output	No output detected. Check belts to ensure alternator is rotating when engine is running. <ul style="list-style-type: none"> <li>√ Check all alternator connections including to the battery. Clean or replace if necessary and retest.</li> <li>√ If the belts and connections are in good working condition, replace alternator or external voltage regulator.</li> </ul>
 Low Output	Alternator not providing enough current to power electrical loads and charge the battery. <ul style="list-style-type: none"> <li>√ Check belts to ensure the alternator is rotating with the engine running.</li> <li>√ Check alternator connections to and from the battery. If loose or heavily corroded, clean or replace the cable and retest.</li> </ul>
 High Output	Alternator voltage to the battery exceeds normal limits of a functioning regulator. <ul style="list-style-type: none"> <li>√ Check for loose and normal ground connections. If no connection problems are found, replace the regulator.</li> </ul> <p>The normal high limit of a typical automotive regulator is 14.5 volts +/-0.5. Refer to the manufacturer specifications for the correct limit, which may vary by vehicle type.</p>

### Diode Test Results

Decision	Action
 Normal Ripple	The output from the alternator is normal.
 Excessive Ripple	One or more diodes in the alternator are not functioning or there is stator damage, which is shown by an excessive amount of AC ripple current supplied to the battery. <ul style="list-style-type: none"> <li>√ Make sure the alternator mounting is sturdy and that the belts are in good shape and functioning properly. If the mounting and belts are good, replace the alternator.</li> </ul>
 Open Phase	Replace the alternator.
 Open Diode	
 Shorted Diode	

## PATENTS

This product is made by Midtronics, Inc., and is protected by one or more U.S. and foreign patents. For specific patent information, contact Midtronics, Inc. at +1 630 323-2800.

## LIMITED WARRANTY

Midtronics products are warranted to be free of defects in materials and workmanship for a period of one (1) year from date of purchase. Midtronics will, at our option, repair or replace the unit with a re-manufactured unit. This limited warranty applies only to Midtronics products, and does not cover any other equipment, static damage, water damage, overvoltage damage, dropping the unit, or damage resulting from extraneous causes including owner misuse. Midtronics is not liable for any incidental or consequential damages for breach of this warranty. The warranty is void if owner attempts to disassemble the unit or to modify the cable assembly.

## SERVICE

To obtain service, contact Midtronics Customer Service at 1-630-323-2800. Have your model and serial numbers ready. This first step is critical as we will trouble-shoot the problem(s) over the phone, and many problems are resolved during this step. If the problem cannot be resolved, then the Customer Service Agent will issue you a Return Material Authorization (RMA). This number becomes your tracking number. The final step is to return the unit to Midtronics freight prepaid (you pay), to the attention of the RMA number obtained.

### In USA:

Midtronics, Inc.

Attn: RMA # xxxxx (this is the RMA number that you must obtain from Midtronics)

7000 Monroe St.

Willowbrook, IL 60527

### In Canada:

Midtronics c/o FTN (FTN is Fed-ex Trade Networks –this is NOT a Midtronics facility)

Attn: RMA # xxxxx (this is the RMA number that you must obtain from Midtronics)

7075 Ordan Drive

Mississauga, ON L5T1K6

Midtronics will service and return the unit using the same type of service as received. If Midtronics determines that the failure was caused by misuse, alteration, accident, or abnormal condition of operation or handling, purchaser will be billed for the repaired product and it will be returned freight prepaid with shipping & handling charges added to the invoice. Midtronics products beyond the warranty period are subject to the repair charges in place at that time. Optional re-manufacturing service is available to return our products to like-new condition. Out-of-warranty repairs carry a 3-month warranty. Re-manufactured units purchased from Midtronics are covered by a 6-month warranty.



[www.midtronics.com](http://www.midtronics.com)

### Corporate Headquarters

Willowbrook, IL USA

Phone: 1.630.323.2800

Canadian Inquiries

Toll Free: +1 1 866 592 8052

### Asia/Pacific (excluding China)

Contact Corporate Headquarters

Phone: +1.630.323.2800

### Midtronics b.v.

European Headquarters

Houten, The Netherlands

Serving Europe, Africa, the Middle

East, and The Netherlands

Phone: +31 306 868 150

### Midtronics China

China Operations

Shenzhen, China

Phone: +86 755 2374 1010

### Midtronics India

Navi Mumbai, India

Phone: +91 22 2756 4103/1513