

# TS 1033520 New Tool for Troubleshooting DTNA Powernet Issues

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## Tool Letters

Link to tool letter - <https://ddcsn-ddc.freightliner.com/cps/rde/xchg/ddcsn/hs/6466.htm>

## Tool Letter Numbers

BCT-460DTNAK PowerNet Assessment Tool - 18 TL-5

AC-107 Adaptor Kit - 18 TL-6

AC- 105 Replacement Clamps and Lead set - 18 TL-7

AC-94 20' Voltage Drop Test Lead Set - 18 TL-8

AC-90 Charging Station - 18 TL-9

## Video

Refer to the ARC Video Channel in ARC for training video's. The video's are in the "Tools" section, in ARC.

Link to Video - <https://daimler.videonitch.com/LearningPrograms/Pass/7828?CategoryID=1153>

## Applicable Vehicles

All

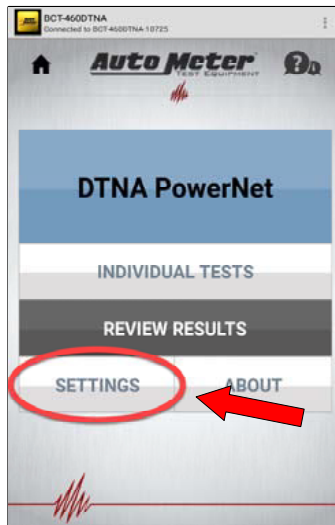
## Issue/Solution

The AutoMeter BCT-460DTNA PowerNet Assessment Tool is now available. The BCT-460DTNA is the only Daimler-approved tool for troubleshooting vehicle powernet issues. The tool is required for all Battery, Starter, Alternator and Heavy Electrical Cable diagnostics and warranty.

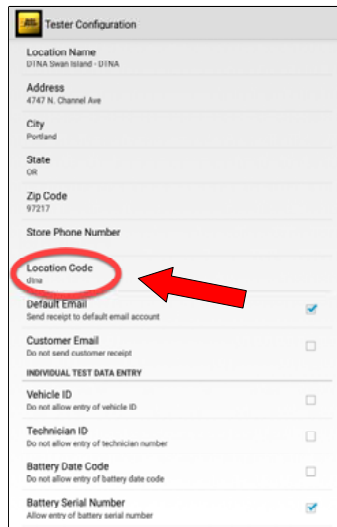
See the attached PDFs for complete instructions for using the tool.

This document was generated from the following discussion: [New Tool for Troubleshooting DTNA Powernet Issues](#)

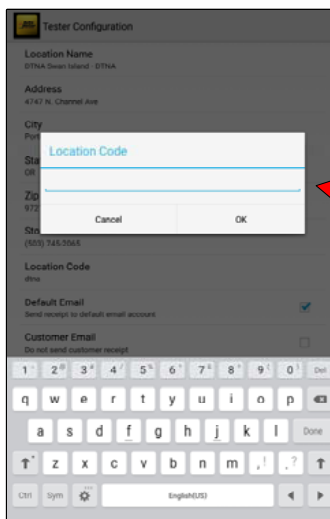
# Changing Location Code in the BCT-460DTNA



Select "Settings"  
from the main  
screen



Select "Location  
Code" from the  
settings screen.



Delete the location  
code.  
Enter new location  
code.

**Note:**  
Non dealer must  
enter the location  
code received from  
the AmpNet setup  
email, for non  
dealers.



# BCT-460DTNA PowerNet Assessment Tool Work Instructions

**Note:** The BCT-460DTNA performs a complete electrical system test (PowerNet Test) that checks the Battery Pack state of charge, Battery Interconnect cables voltage drop, Individual Batteries, Starter Cables voltage drop, Starter, Alternator Cable voltage drop, and Alternator test. **A completed PowerNet Test must be completed for all warranty claims.**

# SAFETY

- Carefully read all operating instructions before using the BCT-460DTNA
- Wear eye protection when working around batteries.
- Be sure each test is completed before removing load clamps to prevent arcing and potential explosion from battery gases. Never remove load clamps while testing. Keep sparks, flames, or cigarettes away from batteries.
- Keep hair, hands, and clothing as well as tester leads and cords away from moving blades and belts.
- Provide adequate ventilation to remove vehicle exhaust.
- In extremely cold temperatures, check for frozen electrolytic fluid before applying load. Do not attempt to Load Test or charge a battery under 20 degrees. Allow the battery to warm to room temperature before testing or charging.
- **Warning!** Never attach the BCT-460DTNA to a battery that is connected to any other tester or charging unit. Damage may result.



## WARNING!

### TESTING OF HYBRID VEHICLES

**DO NOT** test the starter, alternator and/or 12 volt starting battery while it is in the vehicle.

**DO NOT** remove, service or test the hybrid battery pack under any circumstances.

**Remove** the 12 volt starting battery, starter or alternator from the vehicle prior to testing.

## CAUSE OF BATTERY FAILURE

- **Incorrect Application:** Wrong size battery may have inadequate cold cranking rating for original vehicle specifications.
- **Incorrect Installation:** Loose battery hold-downs cause excessive vibration, which can result in damage to the plates.
- **Improper Maintenance:** Low electrolytic fluid and corrosion on battery connections can greatly reduce battery life and affect battery performance.
- **Age of Battery:** If the date code on the battery indicates it is fairly old, the failure may be due to natural causes.
- **Overcharging:** Overcharging caused by a high voltage regulator setting or incorrect battery charging can cause excessive gassing, heat and water loss.

**Undercharging:** Undercharging caused by a faulty charging system or low voltage regulation can cause lead sulfate to gradually build up and crystallize on the plates greatly reducing the battery's capacity and ability to be recharged.



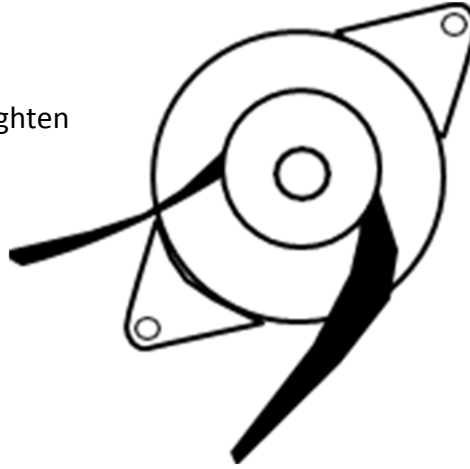
# INSPECTION



Valid heavy duty electrical system testing depends on all the components being in good operating condition. In addition, the battery **MUST** have sufficient charge for testing. Carefully perform the following steps before attempting any electrical diagnosis.

## Visual Check

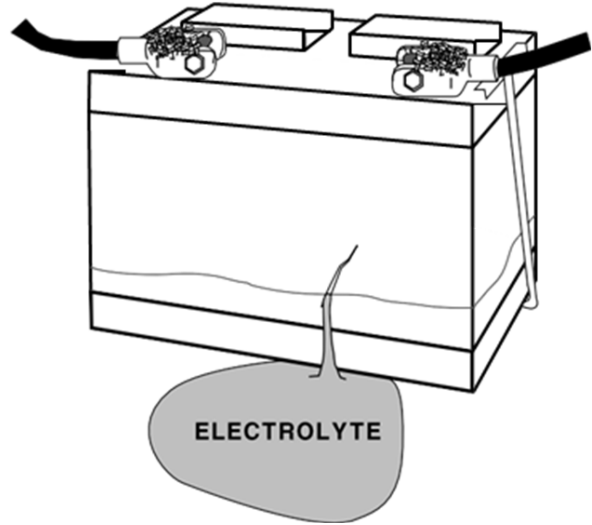
**Inspect Belts** for cracks, glazed surface and fraying. Tighten loose belts before proceeding.



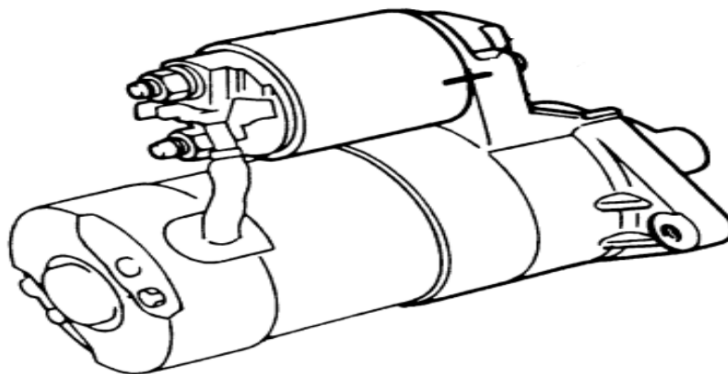
**Inspect Battery** for terminal corrosion, loose or broken posts, cracks in the case, loose hold-downs, low electrolyte level (if possible), moisture and dirt around the terminals.

If the battery terminals are corroded or dirty, clean terminals before performing any tests

**Important Note: A damaged battery must be replaced before proceeding.**



**Inspect Starting System** – Check starter, solenoid for loose connections, loose mounts and frayed or cracked cables



# WIRELESS COMMUNICATION



## Bluetooth

The BCT-460DTNA uses Bluetooth to communicate between the control module and load module. This allows you to make the connections, remove the control module and the run the tests from inside your vehicle.

The BCT-460DTNA control module and load module come paired from the factory.

Bluetooth will work as long as the distance between the load module and control module is less than 30 feet. Walls, windows and other objects between the control module and load module will affect the range.

If you do experience any communication issues please look at the troubleshooting guide at the back of this manual on how to correct them.

## Wi-Fi

The BCT-460DTNA uses Wi-Fi to communicate between the control module and AMPNET server. The AMPNET service will provide firmware updates for the control module and the load module. You will need to pair the control module with your local wireless LAN. See Wi-Fi section for instructions on setting up the wireless connection.

## AMPNET

The data from your BCT-460DTNA can be downloaded to the data management software known as AMPNET. This is software that can be used to display and track your battery, starting system, and charging system test results in graphical form.

# CONTROLS AND FUNCTIONS

**Control Module (CM) and Load Module (LM)  
mated and latched**



**Control Module (CM)**



**Load Module (LM)**



**Load Module (LM)  
Push Button Power**

### **Load Module (LM) Push Button Power**

**On:** Push and Hold button for 1 second

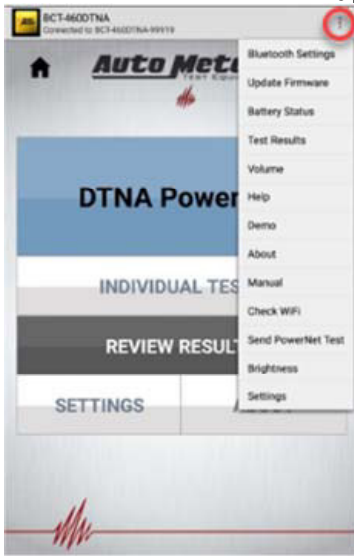
**Power Off:** Push and hold for more than 5 seconds

**Reboot/Reset:** Push and hold button for 3-4 seconds

# CONTROLS AND FUNCTIONS cont.



The following screens are located in the option menu, by selecting the 3 Dots icon in the upper right corner on the main screen.



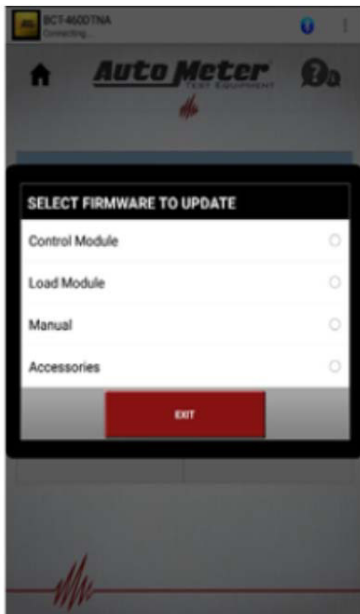
## Options Menu

Click on the 3 dots to access the drop down menu. The drop down menu is for options of the tool.



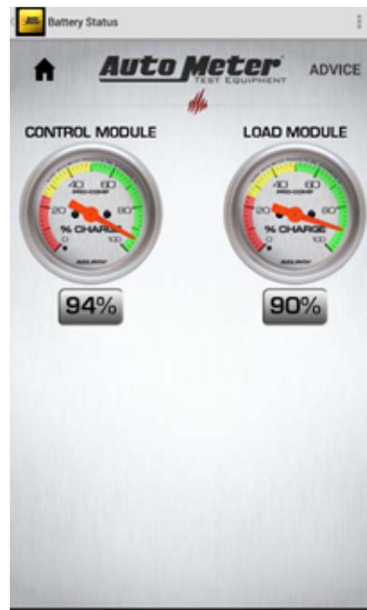
## About Screen

The About screen gives user the information about the applications version and how to contact Auto Meter.



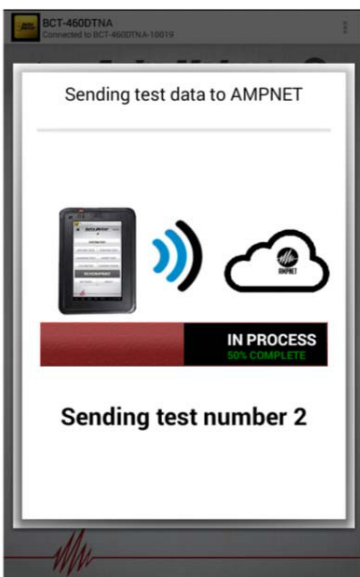
## Update Firmware

Update software screen allows the user to update both the Control modules application or the Load module firmware.



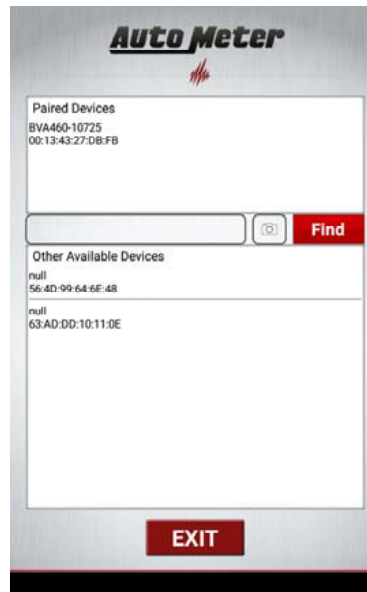
## Battery Status

Display the state of charge of the batteries in the Control module (CM) and the Load module (LM). This screen can also be used to verify the CM and LM are connected.



## Send PowerNet Test

If the test results are not showing up in AmpNet, use this option to manually send the test to AmpNet.



## Bluetooth Settings

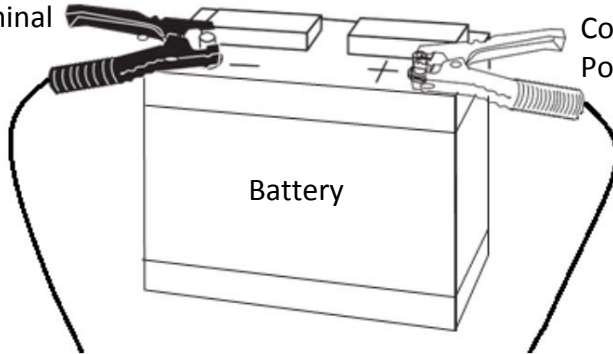
Use this screen to connect or verify the CM and LM Bluetooth connection.

# Hook Up



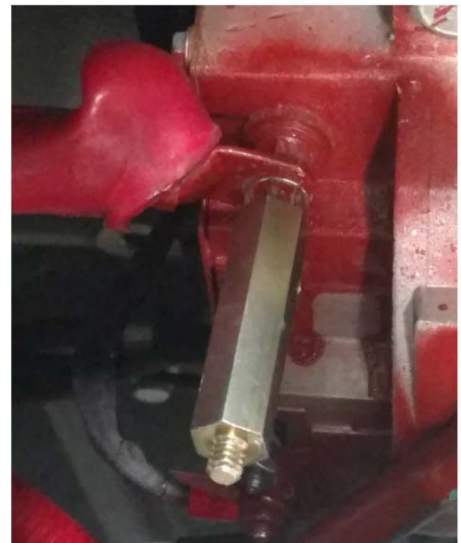
Connect Black Clamp to  
Negative (-) Terminal

Connect Red Clamp to  
Positive (+) Terminal



## CONNECTING ADAPTORS TO COMPONENT

- Clean mating surface for adaptor with a wire brush to remove any dirt, grime or corrosion protection covering
- Make sure the adaptor is properly torqued to component.



## CONNECTION ERRORS

- If the clamps are reversed the Reversed Connection warning will be displayed on the Control Module with an audible beeping.
- If one or both of the clamps are not in complete contact (both of each clamp jaws) A "Check Connections" screen will appear on the control module.
- Clean battery terminals with a wire brush if battery terminals are corroded or dirty. Clean clamp jaws with 1 part ammonia and 10 parts water if clamp jaws are corroded or dirty.



Clean Clamps



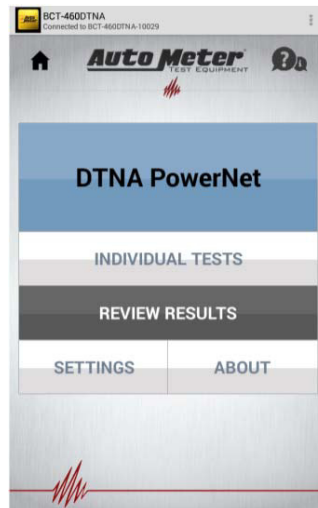
Dirty Clamps

# PowerNet Test (Info Screen)



Note – the tool has to have been set up and connected to Wi-Fi before these work instructions can be followed. Refer to manual for Wi-Fi connections and set up.

To start the PowerNet test. Press the Blue Icon that says “DTNA PowerNet” on the main screen

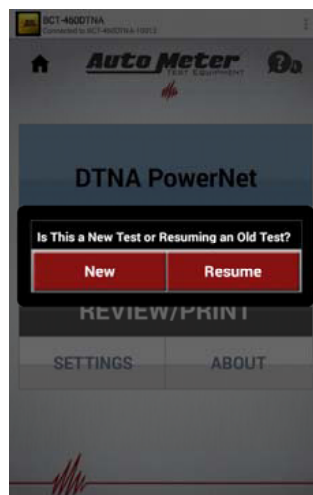


Safety screen



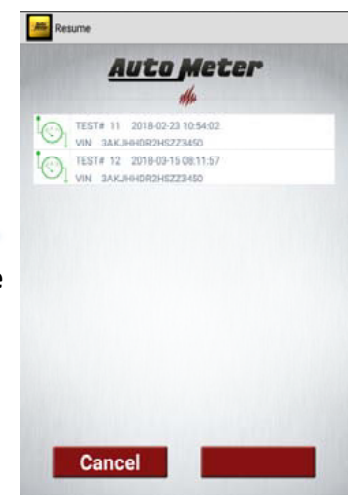
Go to page 7

New



The user will be asked if this is a “New” test or do they want to “Resume” a previous test that was already started.

Resume

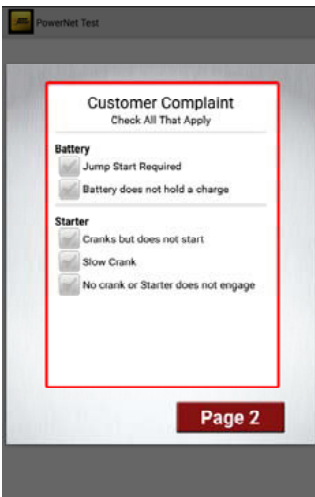


The test will start at retesting the battery pack to verify the pack is charged. After the pack test, the test will resume at last step that hasn't been completed.



# PowerNet Test (Info Screen)

Continued from page 6



PowerNet Test

Customer Complaint  
Check All That Apply

**Battery**

☐ Jump Start Required

☐ Battery does not hold a charge

**Starter**

☐ Cranks but does not start

☐ Slow Crank

☐ No crank or Starter does not engage

Page 2

Check all that apply

Click on  
page 2 to  
continue  
to the next  
screen

The complete 18  
digit Vehicle VIN  
must be entered.



PowerNet Test

Vehicle VIN

Repair Order ID

Vehicle Odometer

Technician ID

Comments  
(max 300 characters)

Page 2 Done

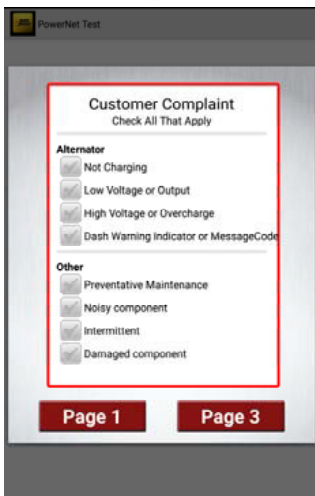


Click on the  
Camera Icon to  
open screen for  
scanning vehicle  
QR code.



**VIN QR Code Locations**

**Freightliner** – Driver  
door jamb by striker  
**Western Star** – Driver  
door jamb by door  
hinges



PowerNet Test

Customer Complaint  
Check All That Apply

**Alternator**

☐ Not Charging

☐ Low Voltage or Output

☐ High Voltage or Overcharge

☐ Dash Warning Indicator or MessageCode

**Other**

☐ Preventative Maintenance

☐ Noisy component

☐ Intermittent

☐ Damaged component

Page 1 Page 3

Check all that apply

Click on  
page 3 to  
continue  
to the next  
screen



PowerNet Test

Vehicle VIN

Repair Order ID

Vehicle Odometer

Technician ID

Comments  
(max 300 characters)

Page 2 Done

The complete  
Repair Order ID  
must be entered.



PowerNet Test

Vehicle VIN

Repair Order ID

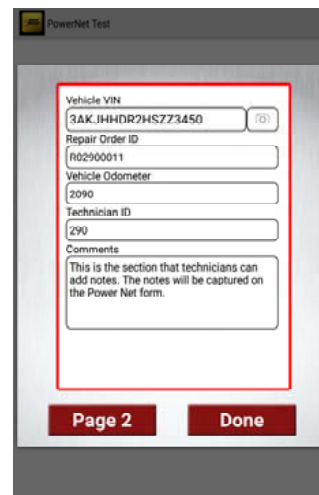
Vehicle Odometer

Technician ID

Comments  
(max 300 characters)

Page 2 Done

Click on the page  
number to return  
to the previous  
screen.



PowerNet Test

Vehicle VIN

Repair Order ID

Vehicle Odometer

Technician ID

Comments  
This is the section that technicians can  
add notes. The notes will be captured on  
the Power Net form.

Page 2 Done

Vehicle Odometer, Tech  
ID and repair  
comments, can also be  
entered. Press Done on  
the keypad when  
finished entering data.  
Move on to next screen  
by pressing Done  
button on the bottom.

Continue to page 8



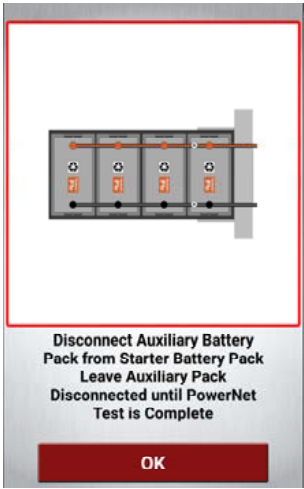
# PowerNet Test (Battery Pack Test)



No

Yes

If “No” is selected for “Does the Vehicle Have an Auxiliary Battery Pack” the tester will skip over testing the Auxiliary battery pack.



Continue to page 9

# PowerNet Test (Starting Battery Pack Test)



Continued from page 8

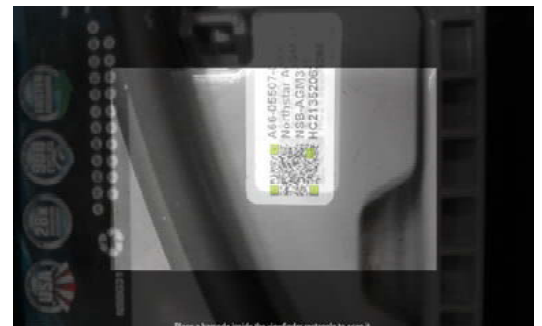
**Note:**  
If an error has been made in any of the battery data fields. Just reselect the battery data field to change the data.

Select Battery Rating to bring up screen for scan or manual entry option.

"Manual Entry"

"Scan Battery QR Code"

When the battery QR code is scanned, the battery rating, type, and serial number are entered into the tool.



Continue to page 10  
Section B

Continue to page 10  
Section A

# PowerNet Test (Starting Battery Pack Test)



Continued from Page 9 - Section A

ENTER RATING OF SINGLE BATTERY: 1150 CCA

SELECT BATTERY TYPE: Enter

MEASURE BATTERY TEMP: Enter

START BATTERY TEST

VOLTS: 12.79V

Select "Battery Type" to input the type of battery

If an error has been made in any of the battery data fields. Just reselect the battery data field to change the data.

Continued from Page 9 - Section B

ENTER RATING OF SINGLE BATTERY: 1150 CCA

SELECT BATTERY TYPE: AGM

MEASURE BATTERY TEMP: Enter

START BATTERY TEST

VOLTS: 12.79V

ENTER RATING OF SINGLE BATTERY: 1150 CCA

SELECT BATTERY TYPE: AGM

MEASURE BATTERY TEMP: 69° F

START BATTERY TEST

VOLTS: 12.79V

ENTER RATING OF SINGLE BATTERY: 1150 CCA

SELECT BATTERY TYPE: Enter

SELECT BATTERY TYPE: STANDARD/FLOODED, AGM

VOLTS: 12.79V

Select the type of batteries that are in the battery pack.  
**Gray Case - AGM**  
**Black Case - Standard/Flooded**



SELECT BATTERY RATING: 1150 CCA

SELECT BATTERY TYPE: AGM

MEASURE BATTERY TEMP: 66° F

IN PROCESS 30% COMPLETE

VOLTS: 12.79V

ENTER RATING OF SINGLE BATTERY: 1150 CCA

SELECT BATTERY TYPE: AGM

MEASURE BATTERY TEMP: Enter

START BATTERY TEST

VOLTS: 12.79V

Select "Measure Battery Temp" to input the battery temperature.

If battery pack has a low state of charge. Charge the battery pack before proceeding. The PowerNet test can be resumed after the battery pack has been charged and tested.

RESULTS FOR TEST TEST# 254

LOADED VOLTAGE: N/A

STATE OF CHARGE (SOC): 75%

Battery pack is at a low state of charge. Please charge battery pack before resuming test.

INITIAL VOLTAGE: 12.50V

STATE OF CHARGE: 75%

AMPNET Next

If the truck does NOT have an Auxiliary Battery Pack Continue to page 13

RESULTS FOR TEST TEST# 210

INITIAL VOLTAGE: 12.66V

LOADED VOLTAGE: 12.18V

STATE OF CHARGE (SOC): **PASS** 86%

POSITIVE BATTERY PACK: **PASS** 150mV

INTERCONNECT VDROP: **PASS** 121mV

NEGATIVE BATTERY PACK: **PASS** 121mV

INTERCONNECT VDROP: **PASS** 121mV

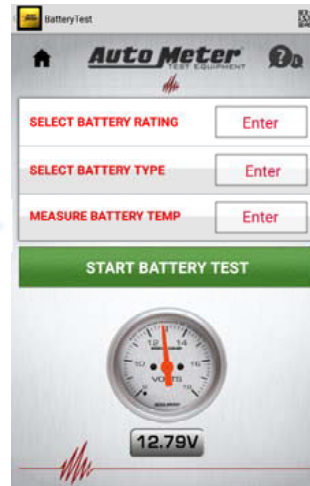
AMPNET Next

If the truck has an Auxiliary Battery Pack Continue to page 11

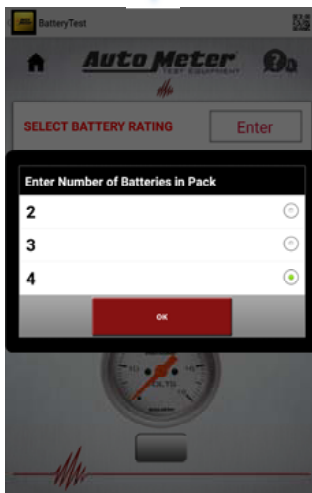
# PowerNet Test (Auxiliary Battery Pack Test)



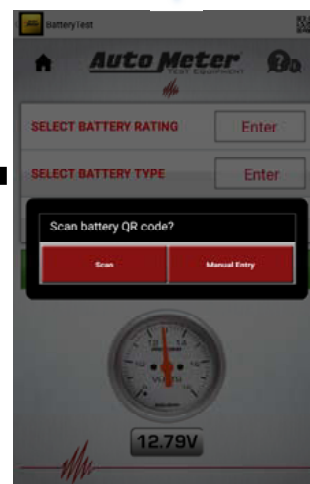
Continued from page 10



**Note:**  
If an error has been made in any of the battery data fields. Just reselect the battery data field to change the data.

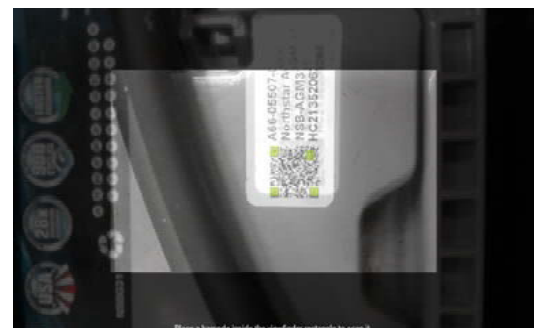
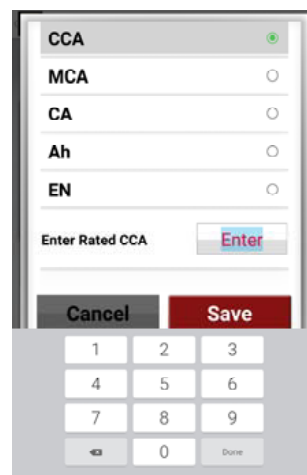
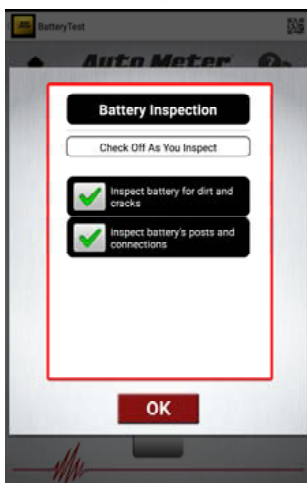


"Manual Entry"



"Scan Battery QR Code"

When the battery QR code is scanned, the battery rating, type, and serial number are entered into the tool.



Continue to page 12  
Section B

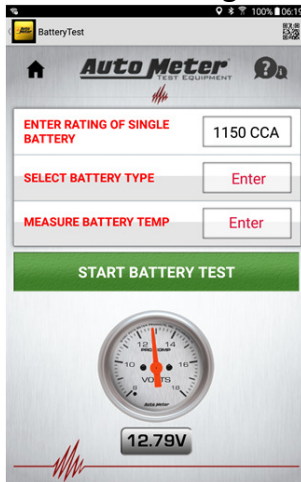
Continue to page 12  
Section A



# PowerNet Test (Auxiliary Battery Pack Test)

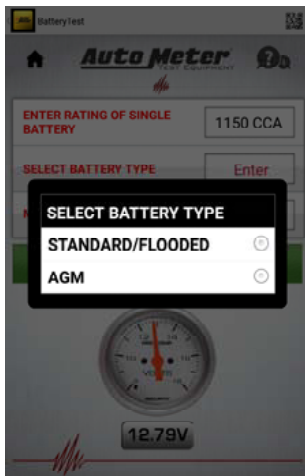
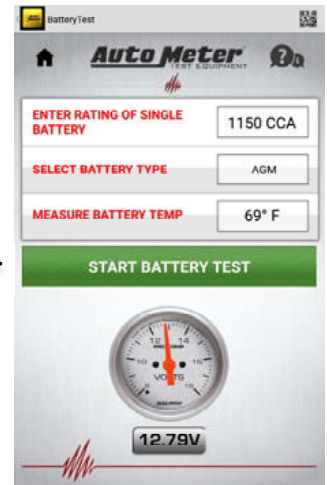
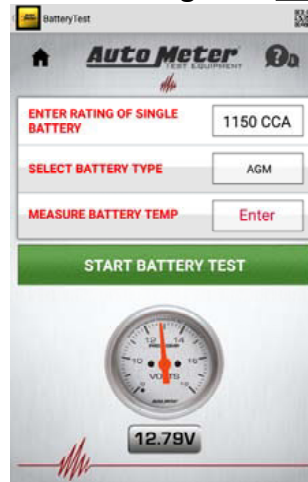
Continued from Page 11 - Section A

Continued from Page 11 - Section B

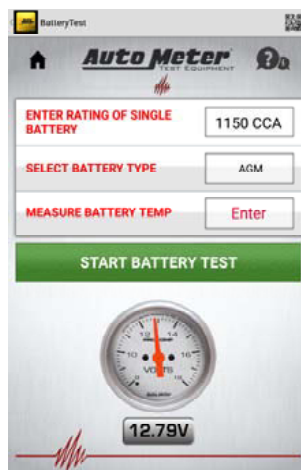
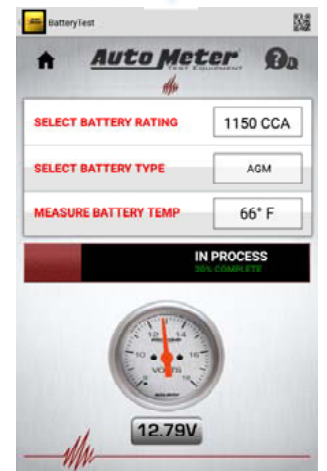


Select "Battery Type" to input the type of battery

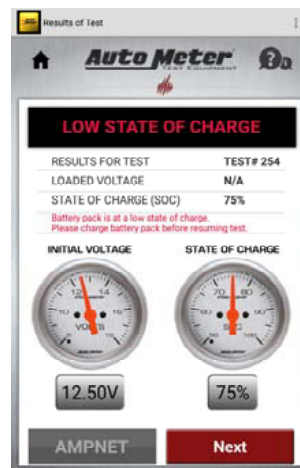
If an error has been made in any of the battery data fields. Just reselect the battery data field to change the data.



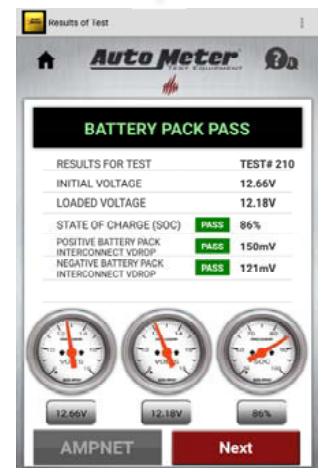
Select the type of batteries that are in the battery pack.  
**Gray Case - AGM**  
**Black Case - Standard/Flooded**



Select "Measure Battery Temp" to input the battery temperature.



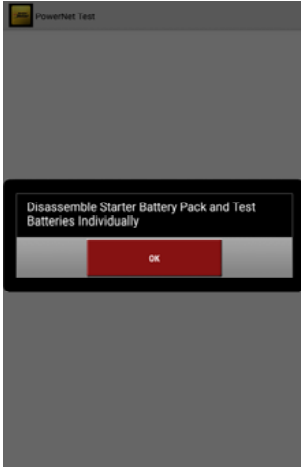
If battery pack has a low state of charge. Charge the battery pack before proceeding. The PowerNet test can be resumed after the battery pack has been charged and tested.



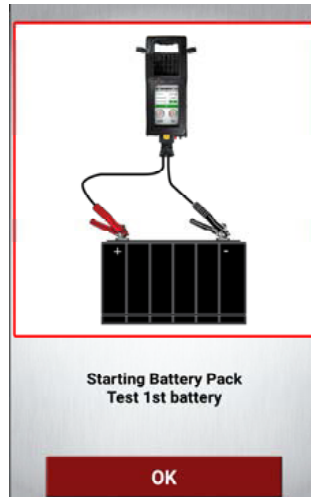
Continue to page 13

# PowerNet Test (Individual Battery Test)

Continued from page 10 or 12



Disassemble battery pack to test individual battery.

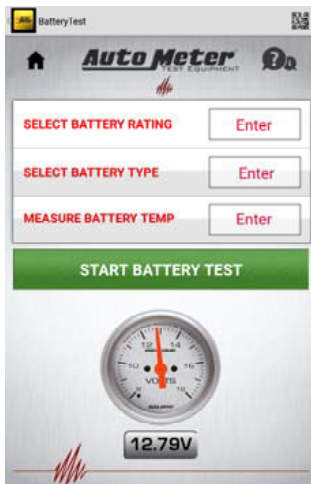


**Note:**  
Disconnect positive and negative battery interconnect cables to test batteries individually.

Standard battery testing



Select all that apply



Continue to page 14



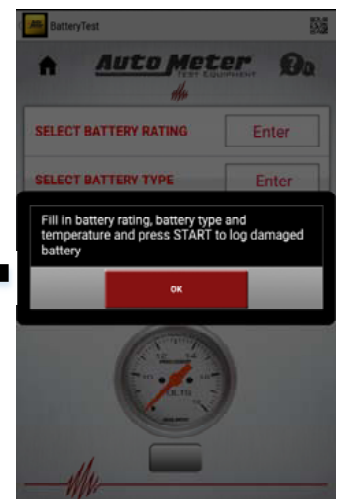
Battery damaged and cannot be tested



**“Battery damaged and cannot be tested” prompt**

By selecting this prompt you acknowledge that the battery is physically damaged and unsafe to test. There will be no battery test performed. The test result of “Damaged Battery” will be captured on the test data.

If “Battery Damaged and Cannot be Tested” is selected.



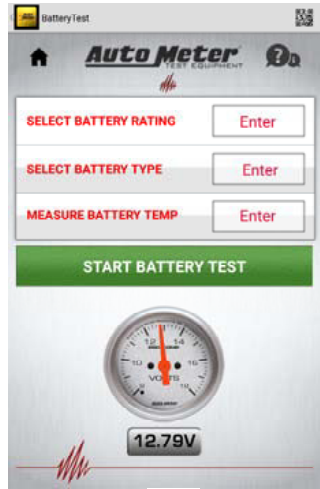
If “Battery Damage” is selected. The test will resume at the next individual battery test. If the last battery is selected as “Battery Damaged” the test will stop and direct to replacing faulty battery.



# PowerNet Test (Individual Battery Test)



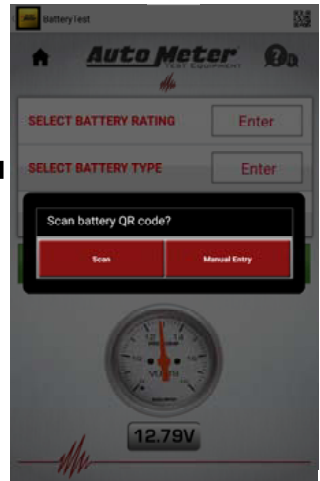
Continued from page 13



Select Battery Rating to bring up screen for scan or manual entry option.

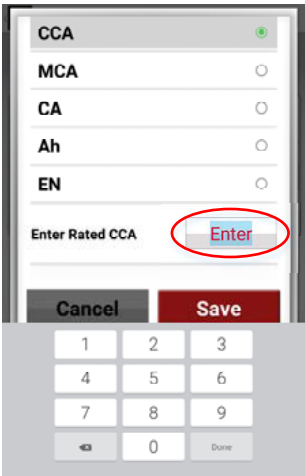
“Manual Entry”

“Scan Battery QR Code”

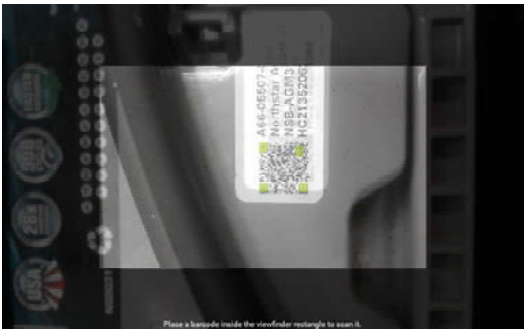


When the battery QR code is scanned, the battery rating, type, and serial number are entered into the tool.

Select “Enter Rated CCA” to input the battery CCA rating.



Continue to page 15  
Section A

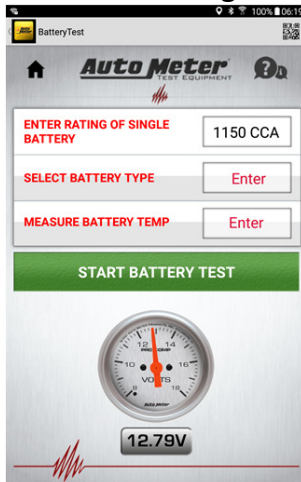


Continue to page 15  
Section B

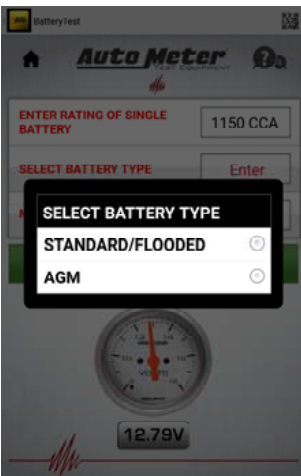
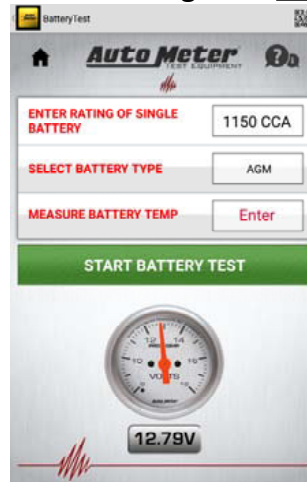
# PowerNet Test (Individual Battery Test)

Continued from Page 14 - Section A

Continued from Page 14 - Section B



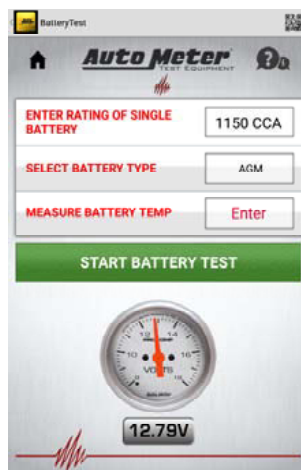
Select "Battery Type" to input the type of battery



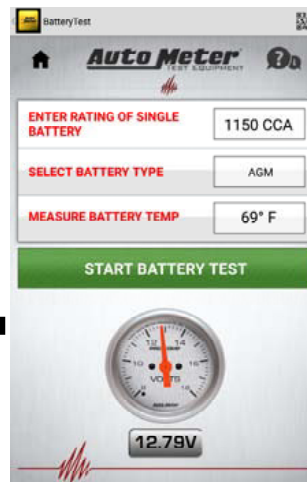
Select the type of batteries that are in the battery pack.  
**Gray Case - AGM**  
**Black Case - Standard/Flooded**



**Note:**  
If an error has been made in any of the battery data fields. Just reselect the battery data field to change the data.



Select "Measure Battery Temp" to input the battery temperature.



Select "Start Battery Test" to continue

If the "Battery Damaged and cannot be tested" prompt was NOT selected. Continue to Section A on page 16

If the "Battery Damaged and cannot be tested" prompt was selected. Continue to Section B on page 16

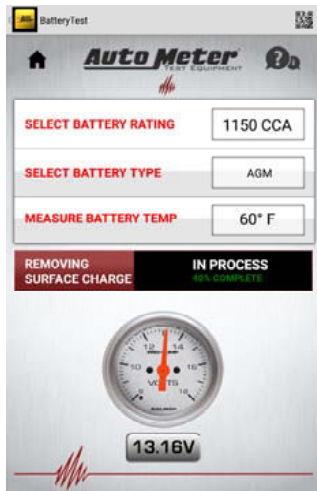
# PowerNet Test (Individual Battery Test)



**Note:**

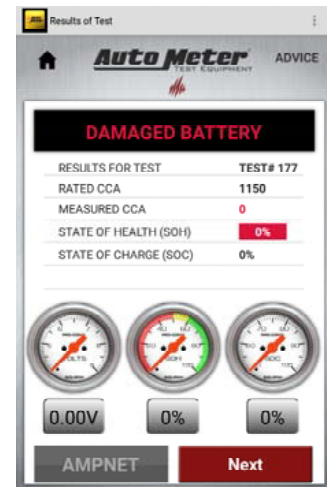
When Needed, the tester will apply a load to the battery to remove surface charge.

**Continued from Page 15 - Section A**



If the battery QR code **was** scanned, the test will **not** ask to enter the battery serial number. If the battery QR code **wasn't** scanned then the battery serial number **must** be entered.

**Continued from Page 15 - Section B**



Steps will be the same on any battery that is labeled as damaged.

**Continue to page 17**

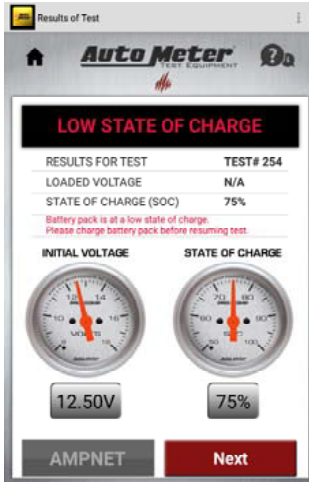
**Note:**

Battery testing will repeat for as many battery as the user inputted into the tester, that are in the battery pack

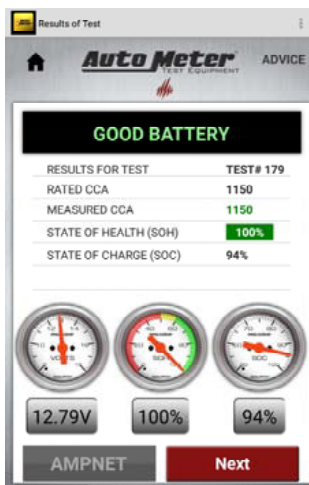
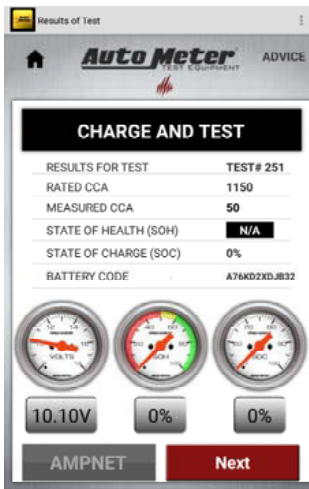
If Equipped with AUXILLARY battery pack  
Continue to page 19

If **Not** Equipped with AUXILLARY battery pack  
Continue to page 17

# PowerNet Test (Individual Battery Test)



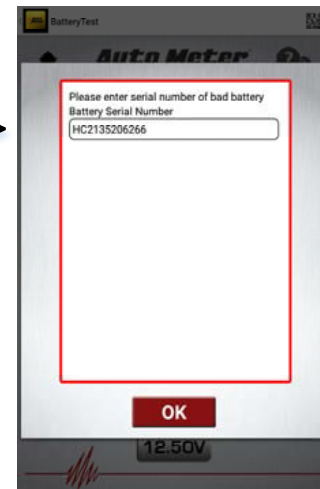
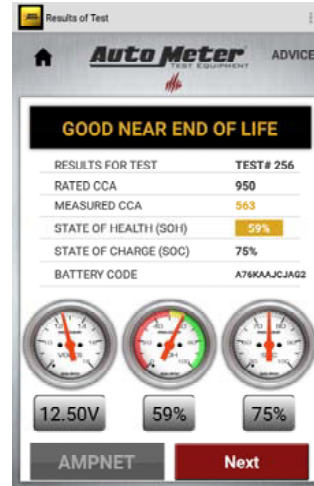
Battery will need to be charged before PowerNet can be continued



If all batteries test good, no further battery repairs are required. Continue to page 25

**Note:**  
Depending on the outcome of the battery test. Any one of these test results could show up.

Continued from page 16

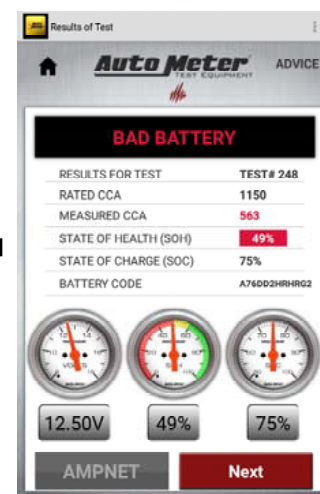


If the battery QR code **was** scanned, the test will **not** ask to enter the battery serial number. If the battery QR code **wasn't** scanned then the battery serial number **must** be entered.

**Note:**  
Battery testing will repeat for as many battery as the user inputted into the tester, that are in the battery pack

If Equipped with AUXILLARY battery pack Continue to page 19

If **Not** Equipped with AUXILLARY battery pack Continue to page 18



# PowerNet Test (Individual Battery Re-Test)



Continued from page 16 or 17



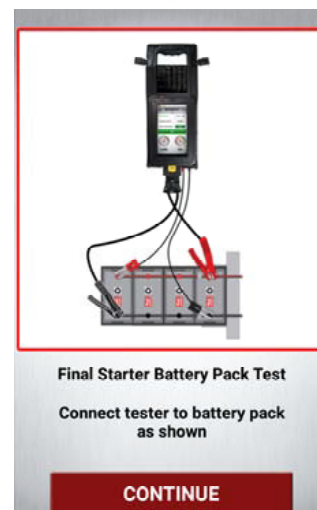
**Tip:**  
There will be a prompt to replace the battery for each battery that has failed. If multiple batteries have failed. Replace all the batteries that have failed at the same time.



Every battery, that has been replaced, will need to be retested. Battery testing prompts are all the same as regular battery testing.



The PowerNet test will not continue until all batteries pass the individual battery test



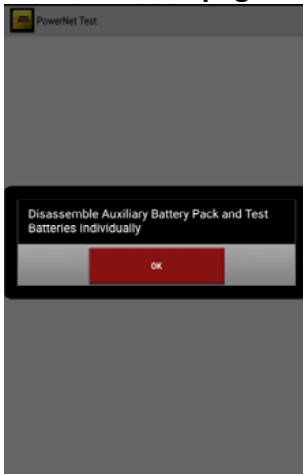
Continue to page 19 or 25



# PowerNet Test (Aux Individual Battery Test)



Continued from page 17



Select "Next" to Continue



Battery damaged and cannot be tested

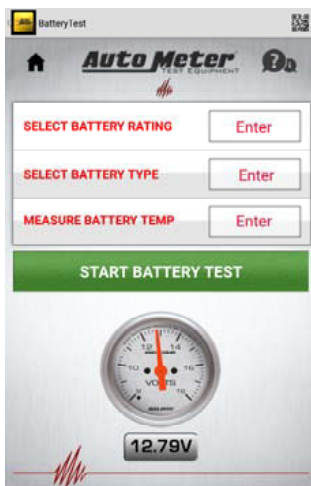


**"Battery damaged and cannot be tested" prompt**

By selecting this prompt you acknowledge that the battery is physically damaged and unsafe to test. There will be no battery test performed. The test result of "Damaged Battery" will be captured on the test data.

If the battery QR code is scanned, the battery serial number will be inputted automatically, and no serial number needs to be entered if the battery fails the battery test.

Standard battery testing

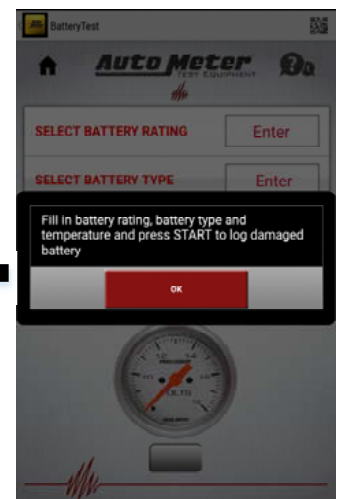


Continue to page 20



Select all that apply

If "Battery Damaged and Cannot be Tested" is selected.



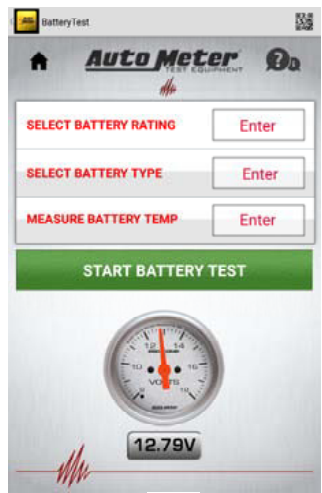
If "Battery Damage" is selected. The test will resume at the next individual battery test. If the last battery is selected as "Battery Damaged" the test will stop and direct to replacing faulty battery.



# PowerNet Test (Aux Individual Battery Test)



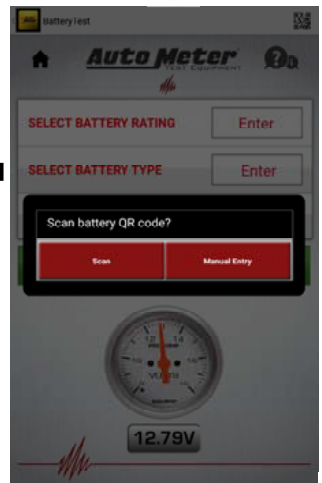
Continued from page 19



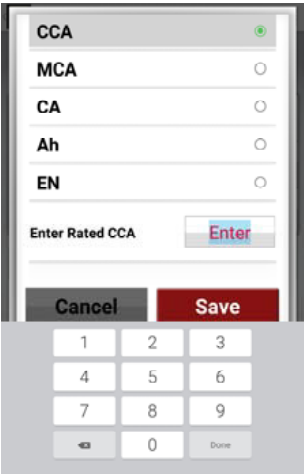
Select Battery Rating to bring up screen for scan or manual entry option.

“Manual Entry”

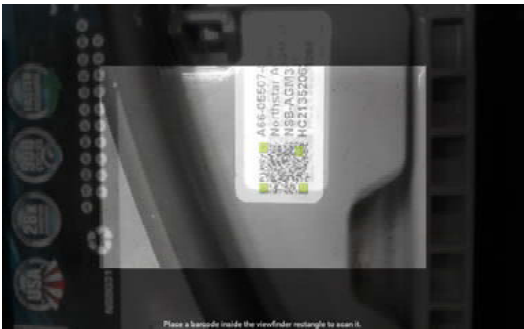
“Scan Battery QR Code”



When the battery QR code is scanned, the battery rating, type, and serial number are entered into the tool.



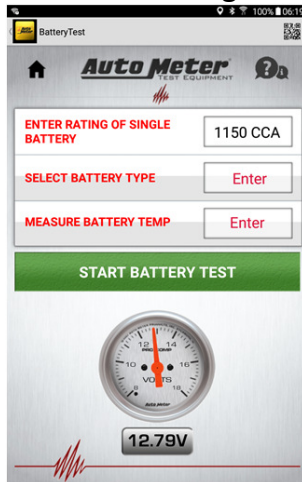
Continue to page 21  
Section A



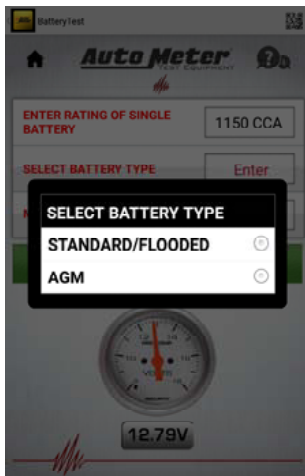
Continue to page 21  
Section B

# PowerNet Test (Aux Individual Battery Test)

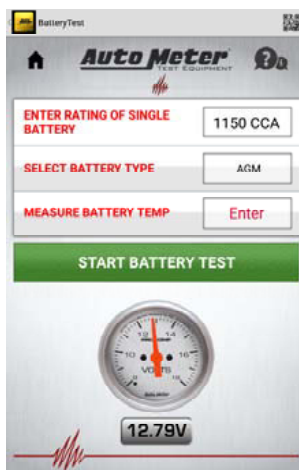
Continued from Page 20 - Section A



Select "Battery Type" to input the type of battery



Select the type of batteries that are in the battery pack.  
**Gray Case - AGM**  
**Black Case - Standard/Flooded**

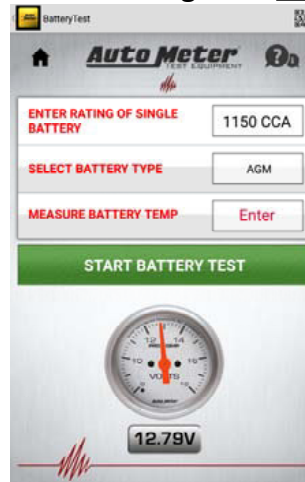


Select "Measure Battery Temp" to input the battery temperature.

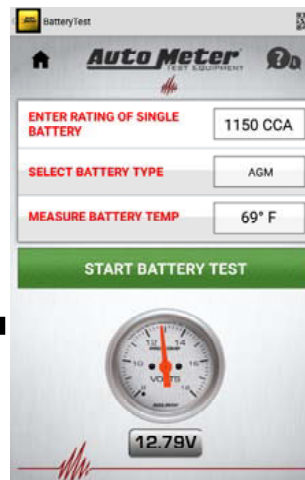


If the "Battery Damaged and cannot be tested" prompt was NOT selected. Continue to Section A on page 22

Continued from Page 20 - Section B



**Note:**  
If an error has been made in any of the battery data fields. Just reselect the battery data field to change the data.



Select "Start Battery Test" to continue



If the "Battery Damaged and cannot be tested" prompt was selected. Continue to Section B on page 22



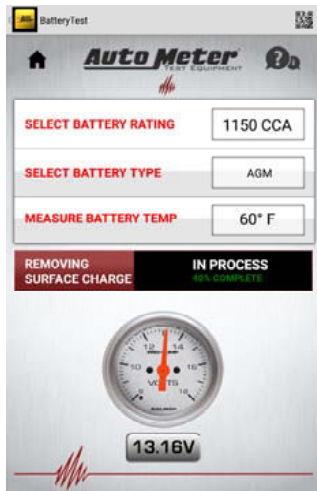
# PowerNet Test (Aux Individual Battery Test)



**Note:**

When Needed, the tester will apply a load to the battery to remove surface charge.

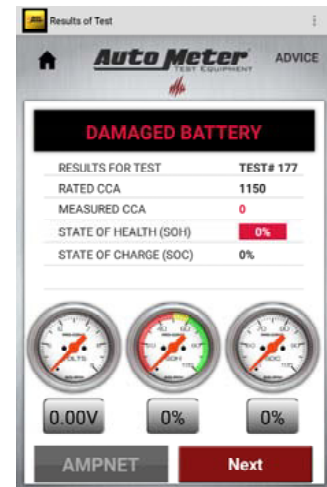
## Continued from Page 21 - Section A



Continue to page 23

If the battery QR code **was** scanned, the test will **not** ask to enter the battery serial number. If the battery QR code **wasn't** scanned then the battery serial number **must** be entered.

## Continued from Page 21 - Section B

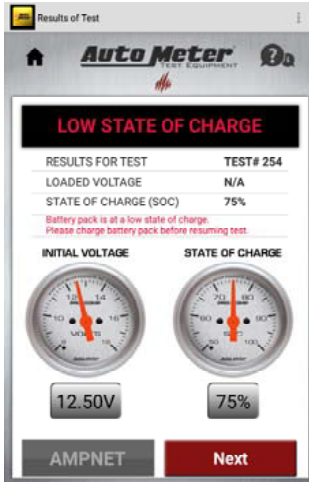


Continue to page 24

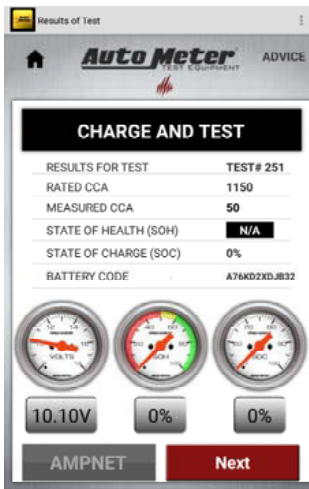
**Note:**

Battery testing will repeat for as many battery as the user inputted into the tester, that are in the battery pack

# PowerNet Test (Aux Individual Battery Test)



Battery will need to be charged before PowerNet can be continued

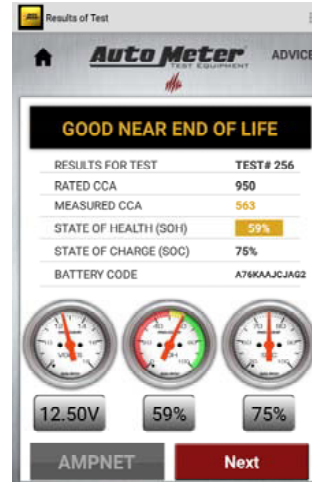


If all batteries test good, no further battery repairs are required.

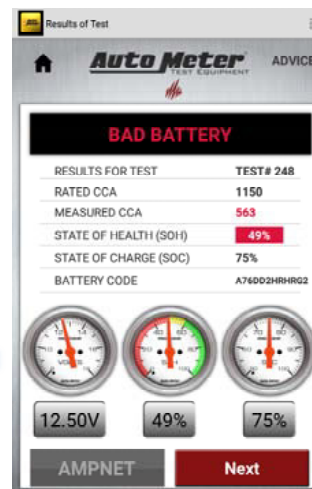
Continue to page 25

**Note:**  
Depending on the outcome of the battery test. Any one of these test results could show up.

Continued from page 22



If the battery QR code **was** scanned, the test will **not** ask to enter the battery serial number. If the battery QR code **wasn't** scanned then the battery serial number **must** be entered.



**Note:**  
Battery testing will repeat for as many battery as the user inputted into the tester, that are in the battery pack

Continue to page 24

# PowerNet Test (Individual Battery Re-Test)



Continued from page 22 or 23

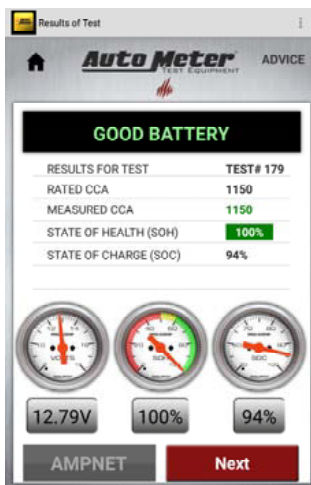


**Tip:**  
There will be a prompt to replace the battery for each battery that has failed. If multiple batteries have failed. Replace all the batteries that have failed at the same time.

**After repairs are finished. PowerNet Test must be resumed to complete the PowerNet form.**



Every battery, that has been replaced, will need to be retested. Battery testing prompts are all the same as regular battery testing.



The PowerNet test will not continue until all batteries pass the individual battery test



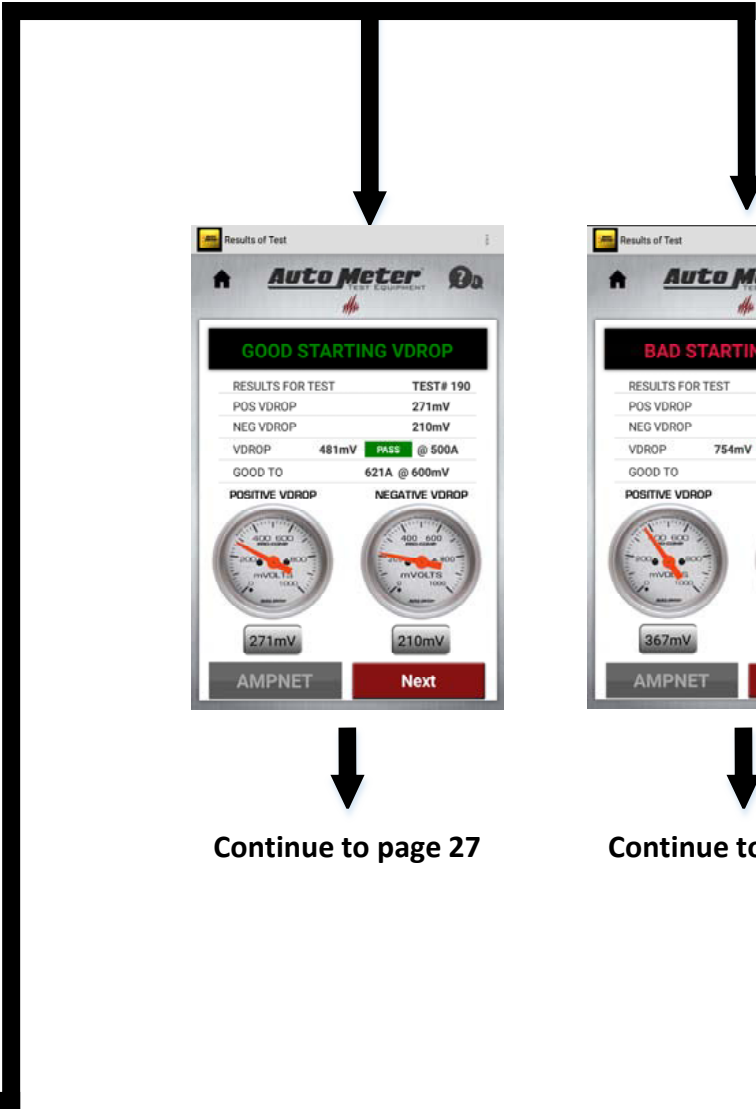
After battery pack passes testing. Continue to page 25



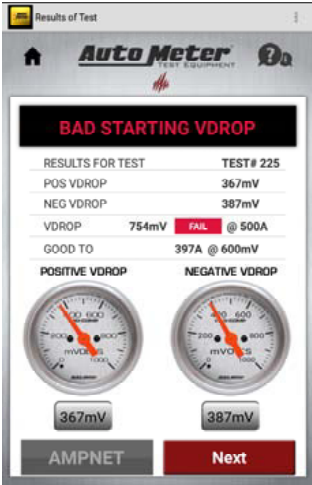
# PowerNet Test (Starter Cable Test)



Continued from page 18 or 24



Continue to page 27

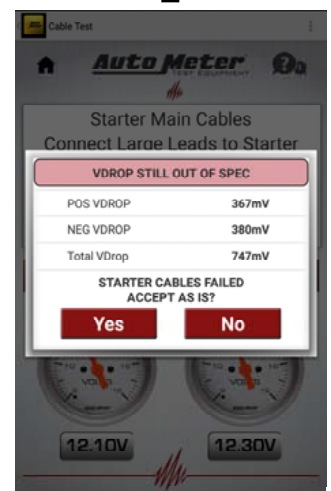
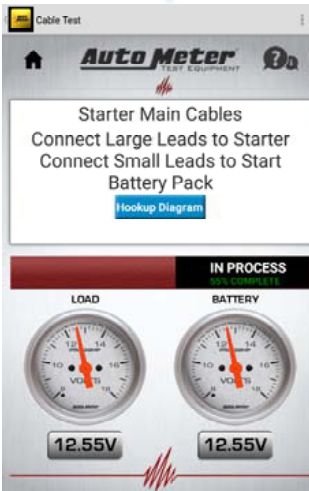
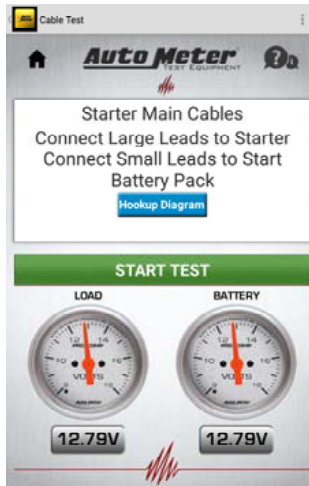


Continue to page 26



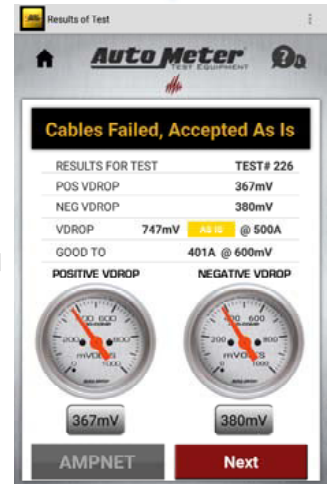
# PowerNet Test (Starter Cable Test)

Continued from page 25



**Note:**  
After the Voltage Drop test has failed 2 times. There is an option to accept the voltage drop "As Is". If yes is selected, the test continues to next test.

After repairs are finished. PowerNet Test must be resumed to complete the PowerNet form.



Continue to page 27

# PowerNet Test (Damaged Starter Test)

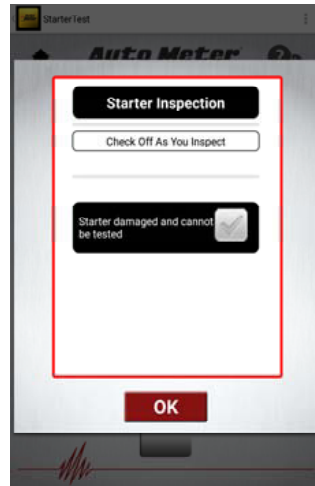


## “Starter damaged and cannot be tested” prompt

By selecting this prompt you acknowledge that the Starter is physically damaged and unable to test. There will be no starter test performed. The test result of “Damaged Starter” will be captured on the test data.

Leave the box unchecked if the starter is **NOT** damaged.

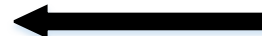
Continued from page 25 or 26



If “Starter damaged and cannot be tested” is selected a verification prompt will pop-up.



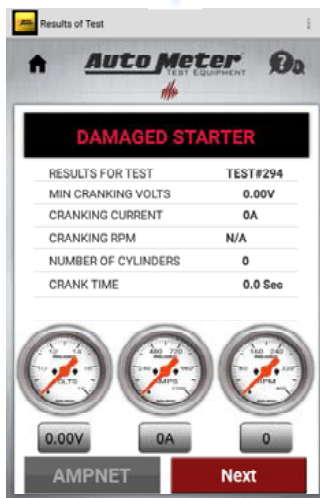
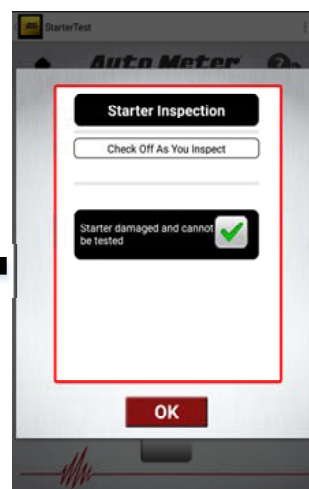
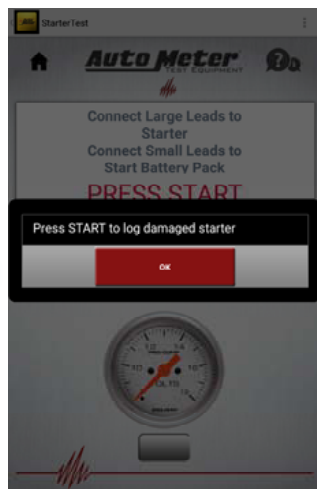
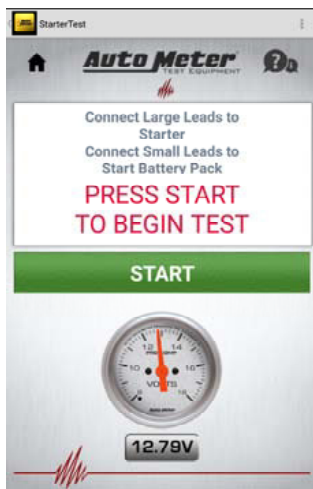
No



Yes



If “Starter damaged and cannot be tested” is **NOT** selected.  
Continue to page 28



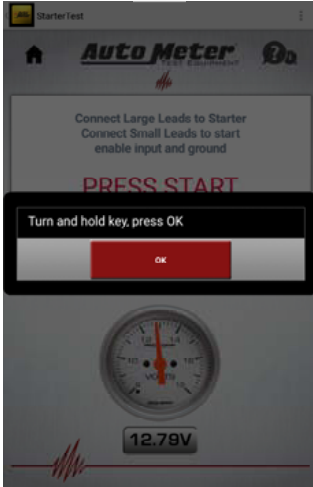
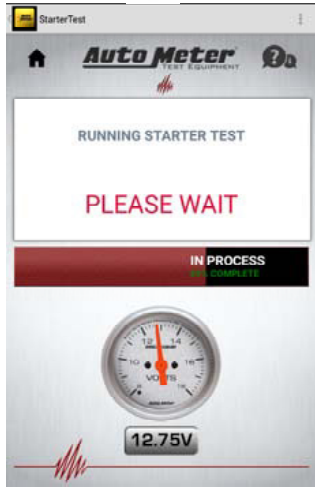
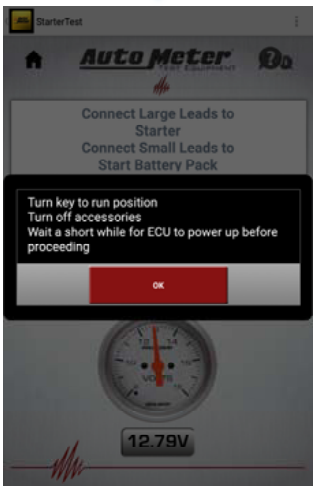
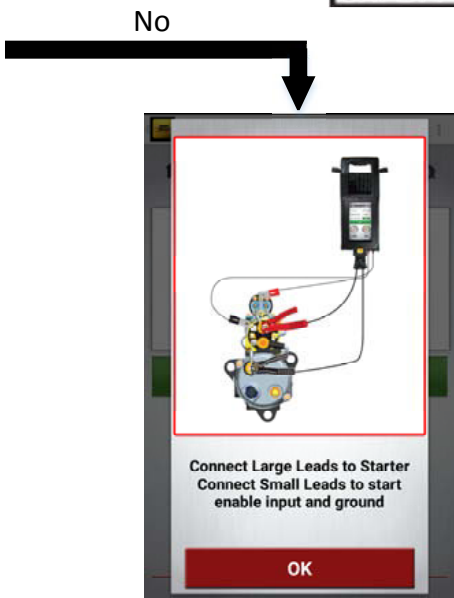
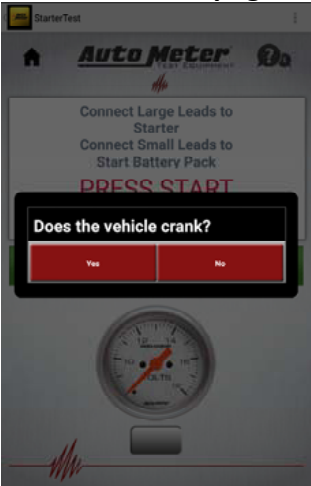
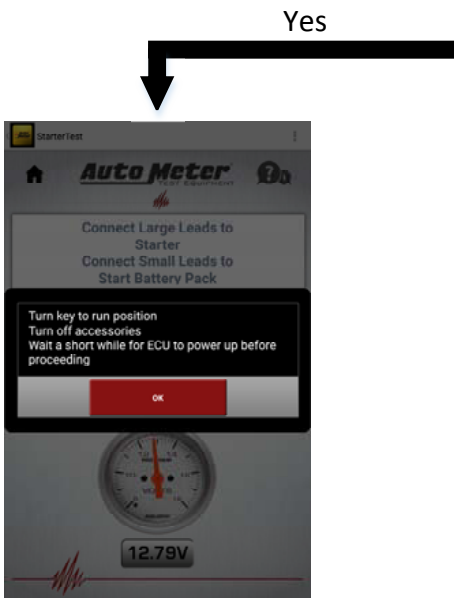
After repairs are finished.  
PowerNet Test must be resumed to complete the PowerNet form.

The test will start off retesting the starting battery pack, then will continue to page 28

# PowerNet Test (Starter Test)



Continued from page 27



Continue to page 29

Continue to page 30 Page 28

# PowerNet Test (Starter Test)



Continued from page 28

Continue to page 31

**Abutment** is when a start is requested – the starter pinion gets extended to initiate the crank – but the pinion runs into the side of the ring gear and the engine doesn't rotate

**Note:**  
Depending on the outcome of the starter test. Any one of these test results could show up.

**Fail Low RPM** means that the engine spun over too slow to start the engine. Root cause of why the engine is rotating too slowly needs to be done.

After repairs are finished.  
**PowerNet Test must be resumed to complete the PowerNet form.**

**See Engine Diagnostics** is when the engine takes too long to start. The starter is not at fault

**Bad Starter** means that the starter is failed and needs to be replaced.

The test will start off retesting the starting battery pack, then will continue to page 28

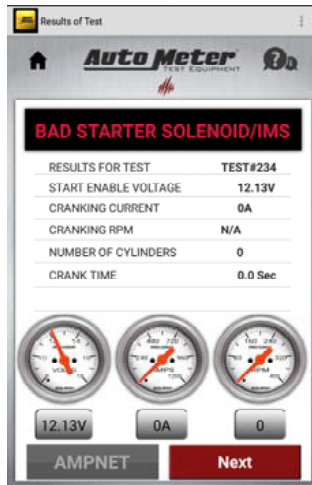


# PowerNet Test (Start Enable Circuit Test)



Continued from page 27

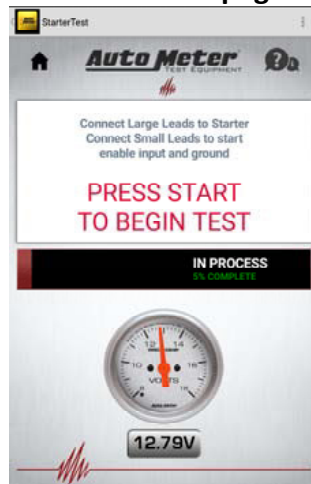
If there is **NOT** low voltage on IMS Circuit



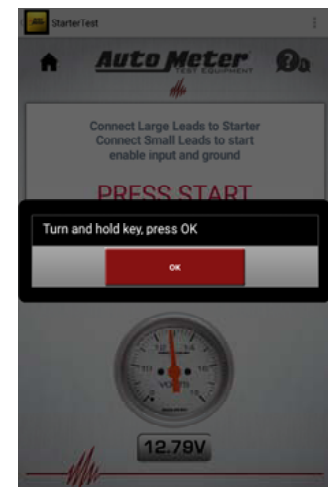
The test will start off retesting the starting battery pack, then will continue to page 28

**After repairs are finished. PowerNet Test must be resumed to complete the PowerNet form.**

If there is low voltage on IMS Circuit



**Note:**  
PowerNet Test must be completed for all warranty repairs of the PowerNet system



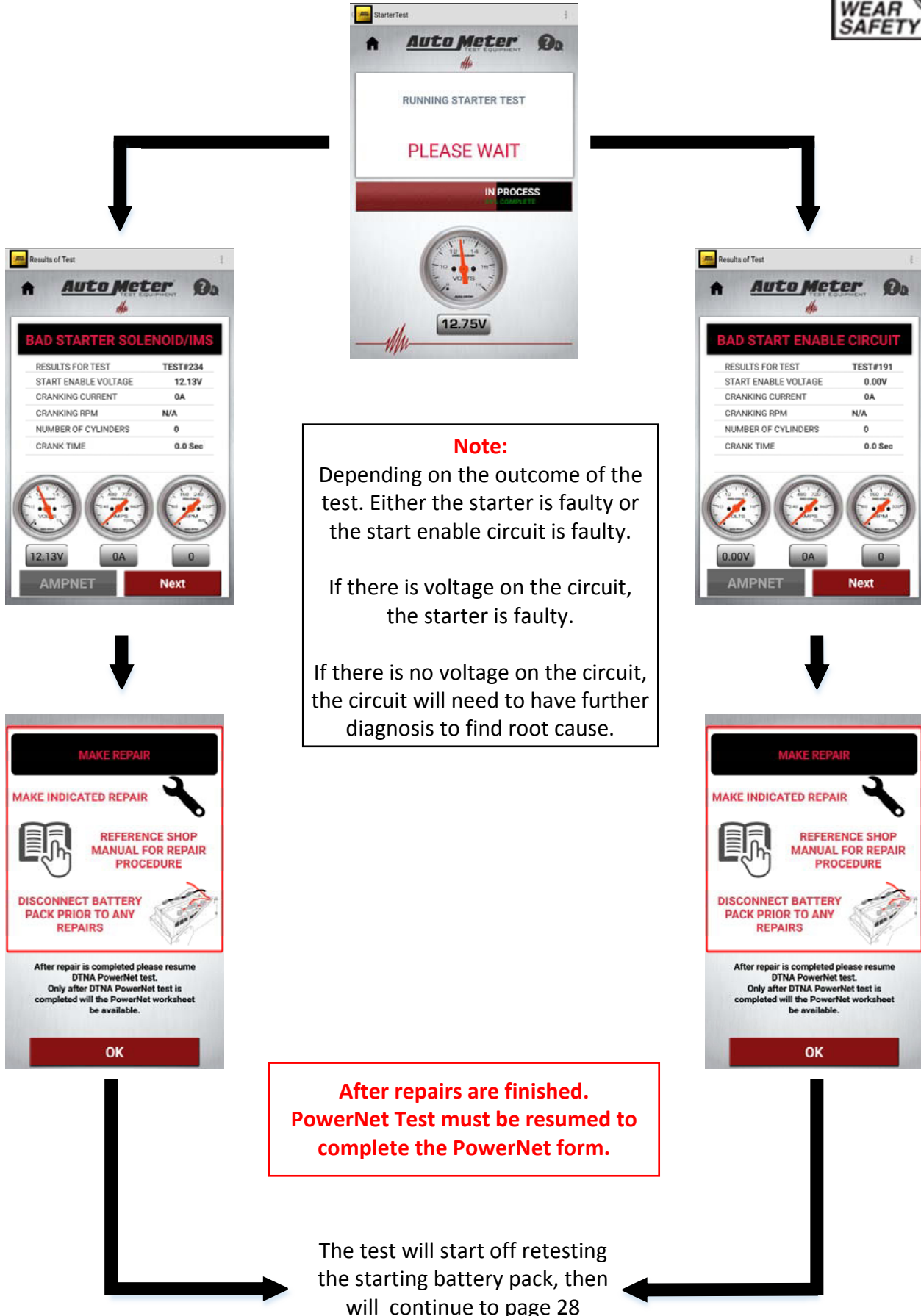
Continue to page 31



# PowerNet Test (Start Enable Circuit Test)



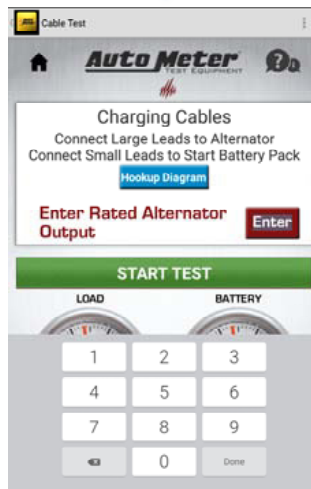
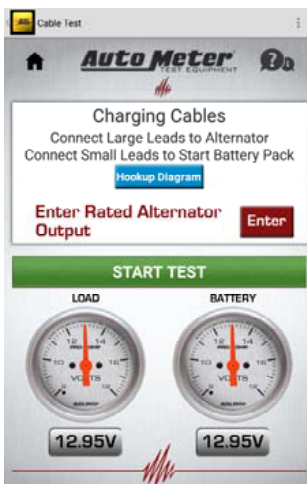
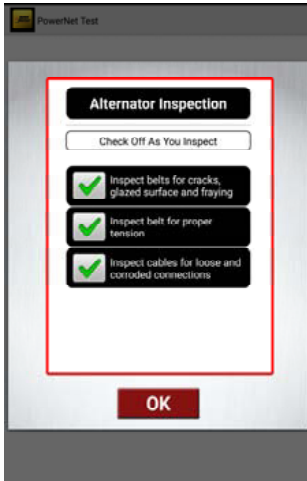
Continued from page 30



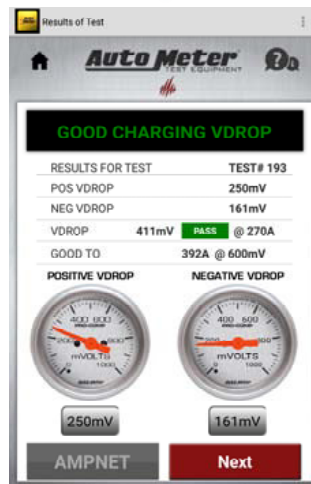
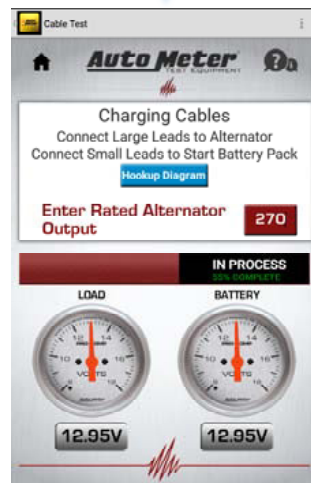
# PowerNet Test (Alternator Cable Test)



Continued from page 29



Select "Start Test"



Continue to page 34

To enter the alternator rating.  
Select  
**Enter**  
Select **done** when done entering rating.

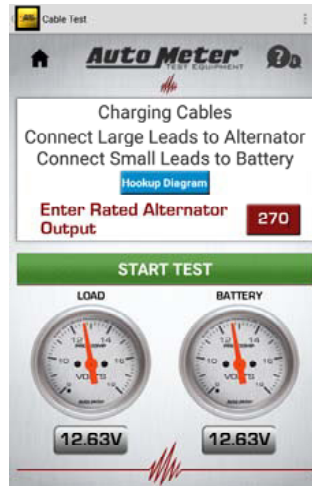
**Note:**  
If the incorrect rating has been entered, re-select alternator rating box to change the alternator rating.



Continue to page 33

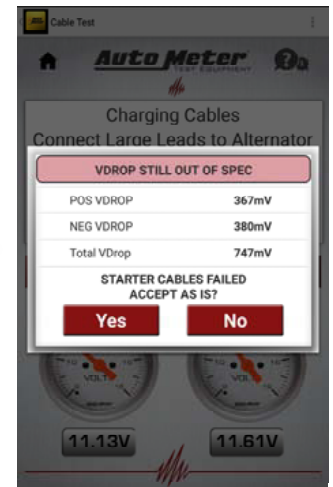
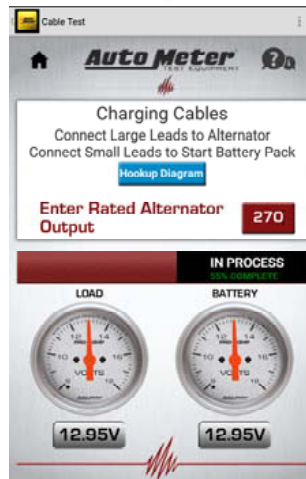
# PowerNet Test (Alternator Cable Test)

Continued from page 32



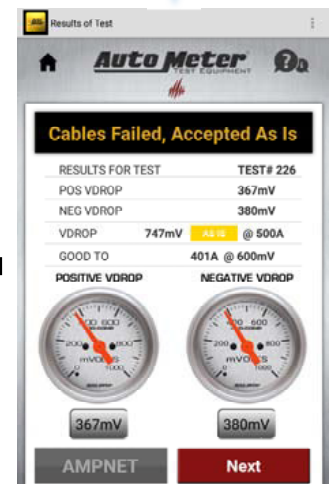
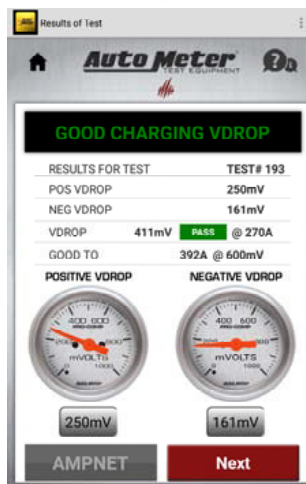
No

After repairs are finished.  
PowerNet Test must be resumed to complete the PowerNet form.



Yes

**Note:**  
After the Voltage Drop test has failed 2 times. There is an option to accept the voltage drop "As Is". If yes is selected, the test continues to next test.



Continue to page 34

# PowerNet Test (Damaged Alternator Test)



## **“Alternator damaged and cannot be tested” prompt**

By selecting this prompt you acknowledge that the alternator is physically damaged and unable to test. There will be no alternator test performed. The test result of “Damaged alternator” will be captured on the test data.

**Leave the box unchecked if the alternator is not damaged.**

Continued from page 32 or 33

If “Alternator damaged and cannot be tested” is selected a verification prompt will pop-up.

If “Alternator damaged and cannot be tested” is NOT selected. Continue to page 35

Select the alternator type

Yes

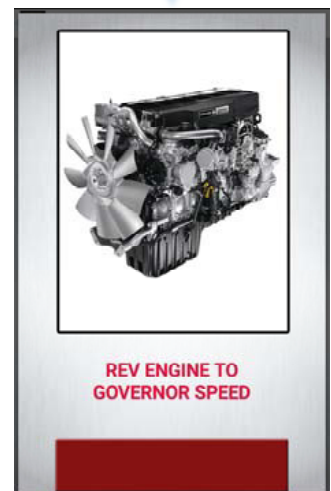
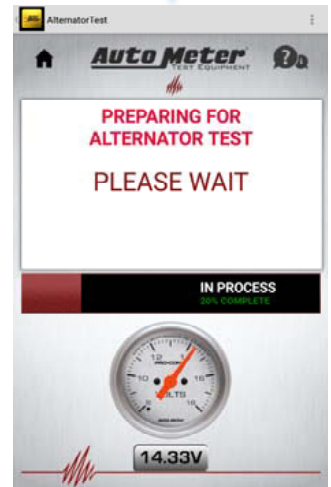
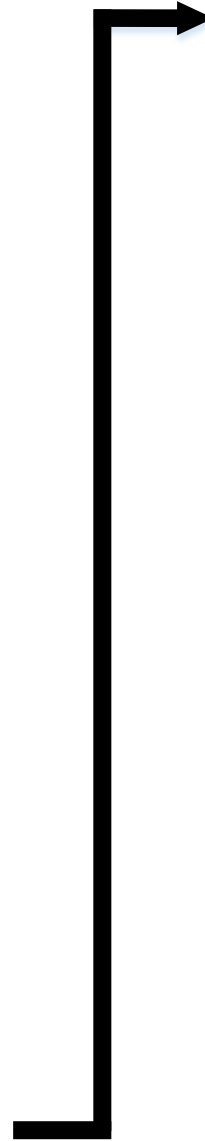
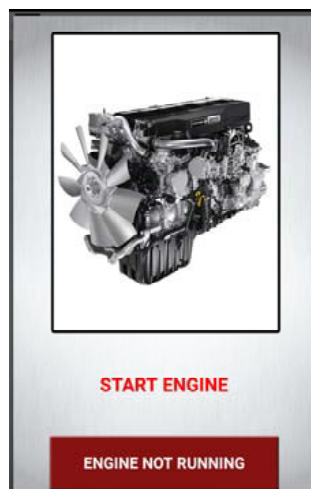
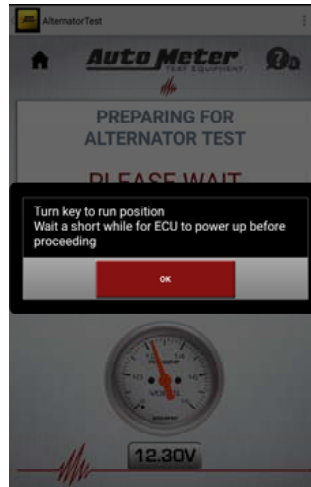
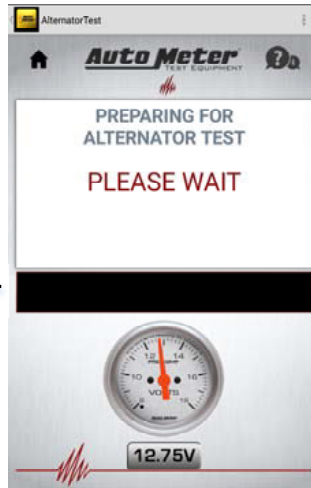
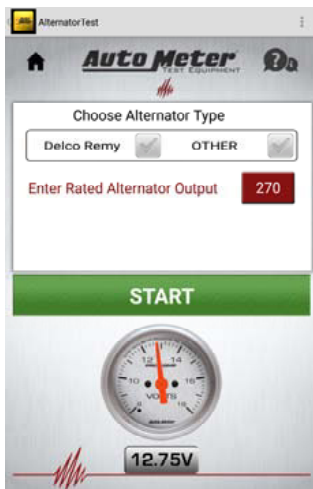
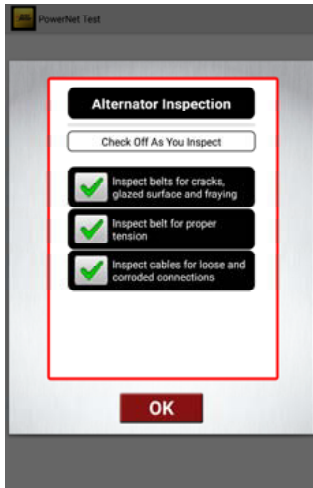
**After repairs are finished. PowerNet Test must be resumed to complete the PowerNet form.**

The test will start off retesting the starting battery pack, then will continue at page 35



# PowerNet Test (Alternator Test)

Continued from page 33 or 34



Continue to page 36



# PowerNet Test (Alternator Test)



Continued from page 35

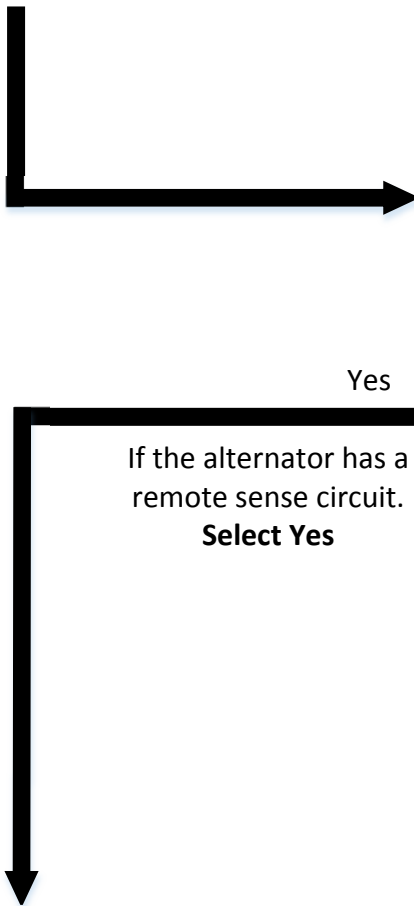


When testing higher current alternators, there might be this prompt

Optional Prompt

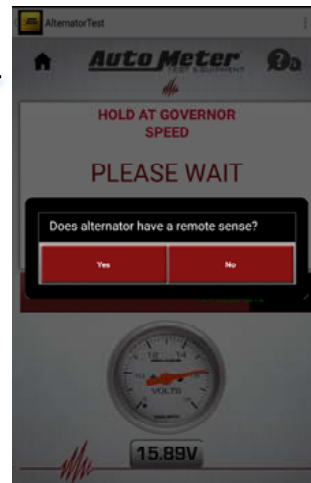


If required, there will be a prompt to turn on headlights and accessory.  
**Turn on Headlights, HVAC blower to high, and any other higher current accessory.**

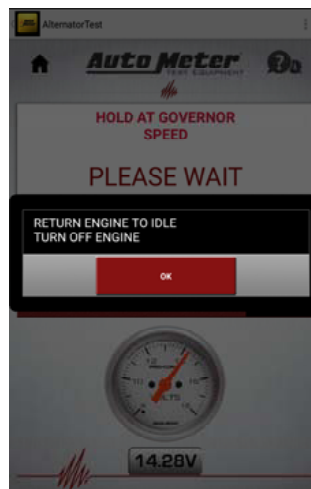


Yes

If the alternator has a remote sense circuit.  
**Select Yes**

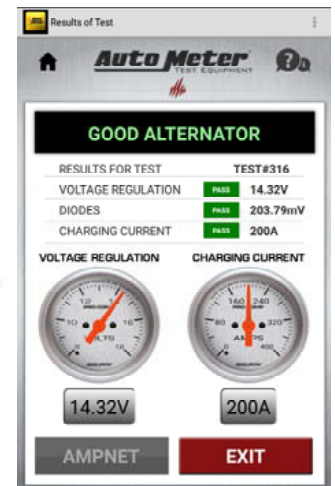


No



Continue to page 38

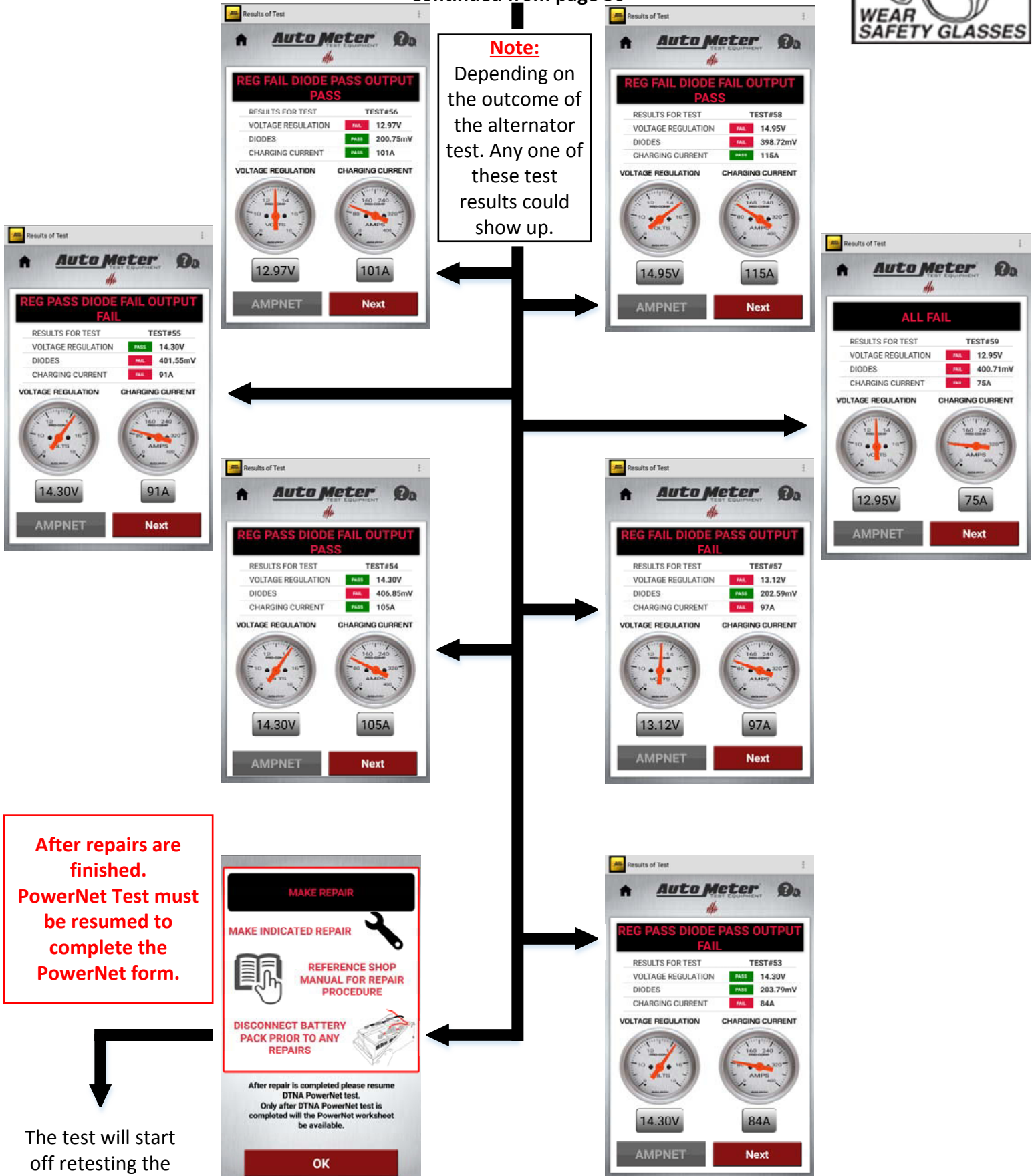
Continue to page 37 for alternator failure modes



Continue to page 39

# PowerNet Test (Alternator Test)

Continued from page 36



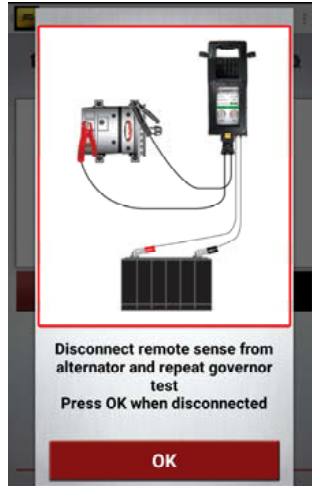
After repairs are finished. PowerNet Test must be resumed to complete the PowerNet form.

The test will start off retesting the starting battery pack, then will continue to page 35

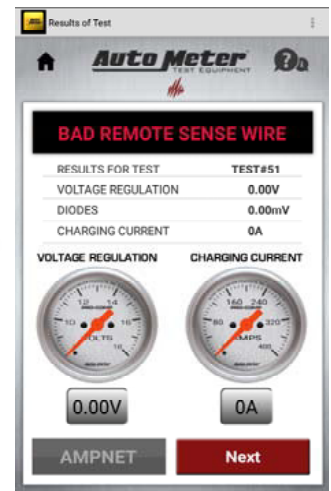
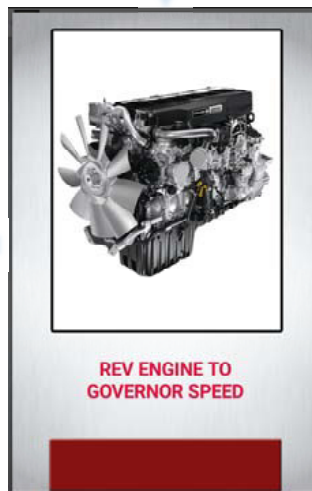
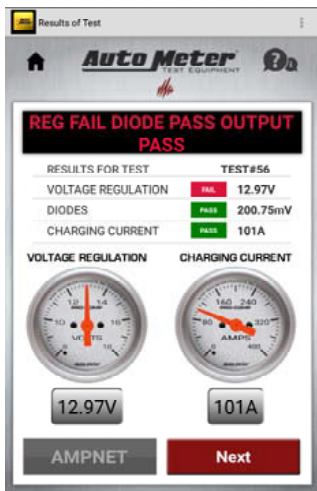
# PowerNet Test (Alternator Remote Sense Test)



Continued from page 64



Diagnose the alternator remote sense circuit for this type of failure.



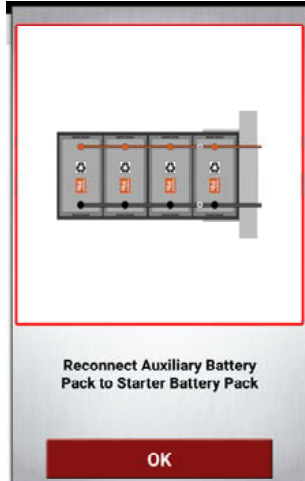
After repairs are finished. PowerNet Test must be resumed to complete the PowerNet form.

The test will start off retesting the starting battery pack, then will continue at page 35

# PowerNet Test (Completion of Testing)

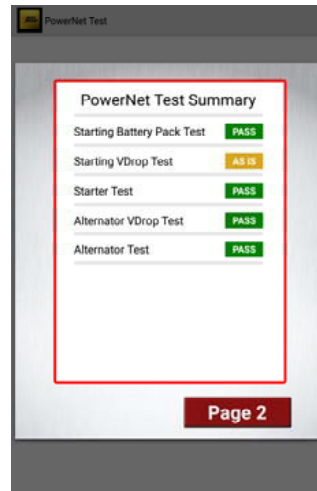


Continued from page 36

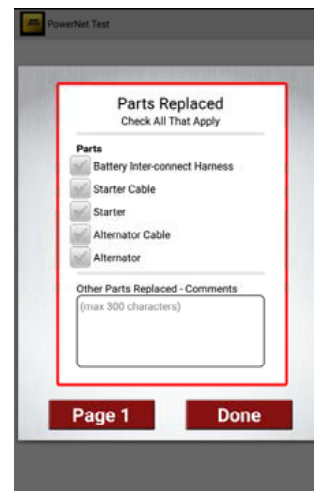
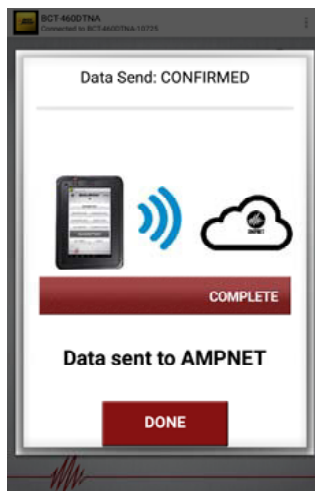
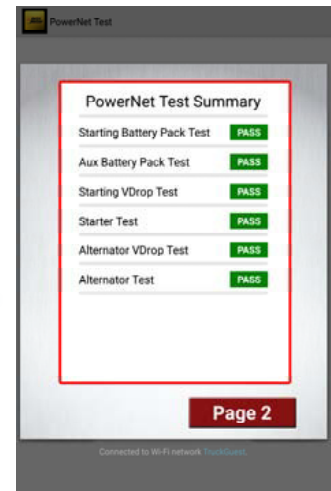


If equipped with auxiliary battery pack, there will be a prompt to reconnect the auxiliary battery pack

Continued from page 36



If the starter and/or alternator cables failed, but the user selected to accept the cables As Is. The results will be captured in the summary.



Select all that apply. In this section the user can enter any notes, as needed

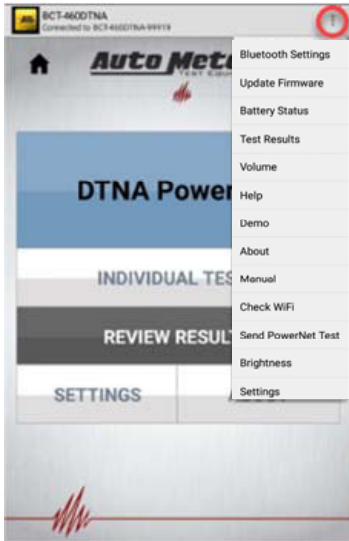
This prompt confirms that the PowerNet test is completed and all test results are sent to AmpNet. After this step you will be able to access the PowerNet form on the AmpNet website.

**Link to AmpNet website.**

[dtna.autometer.com](http://dtna.autometer.com)



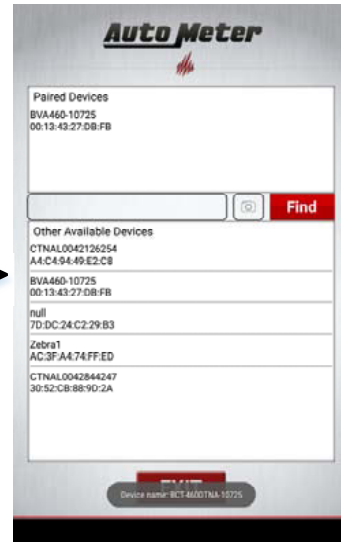
# Control Module (CM) and Load Module (LM) Pairing



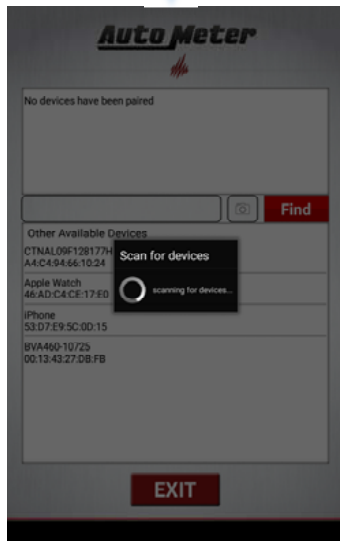
Click on the options menus (3 dots) and select "Bluetooth Settings"



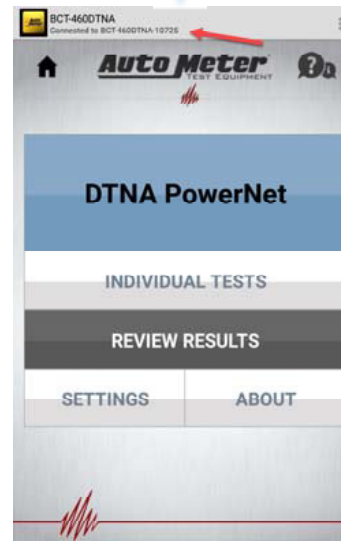
If there is a Bluetooth symbol next to the options menu, the CM and LM are not paired



Once the CM and LM are paired the unit will show up under "Paired Devices" on the screen.



Make sure the Load Module (LM) is turned on before scanning for devices start.



There will be a message at the top of the main screen showing the CM is Paired with the LM.



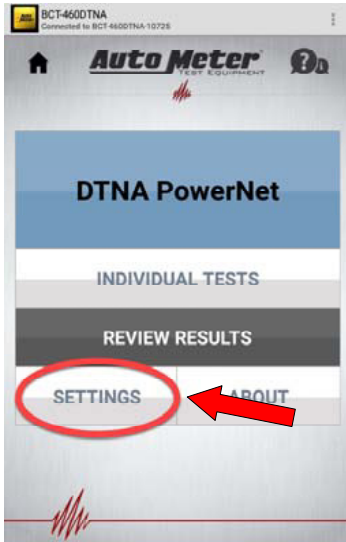
After the scan is completed. Select the BVA-460-XXXXX and click on "Pair" to pair the CM and LM. The XXXXX represent the serial number of the tool that the CM is pairing with.



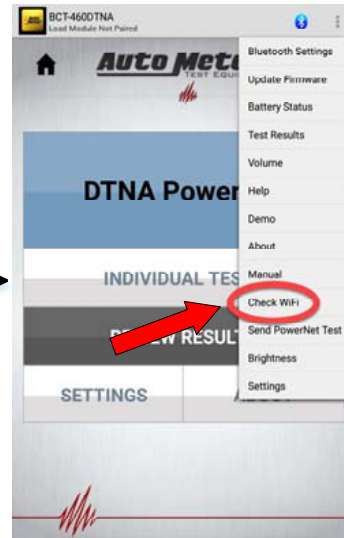
Another way to verify that the CM and LM are paired. Go into the "Battery Status" screen under the options menu. If the Load Module (LM) is showing 0%, the CM and LM are not paired.



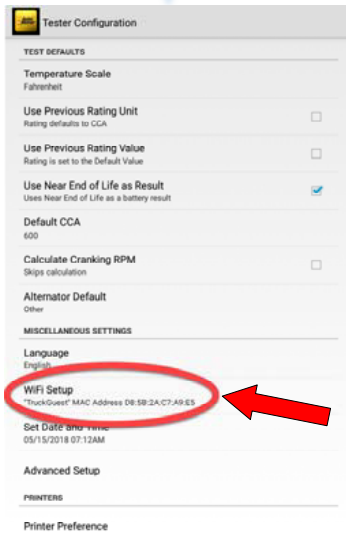
# Wi-Fi Set Up



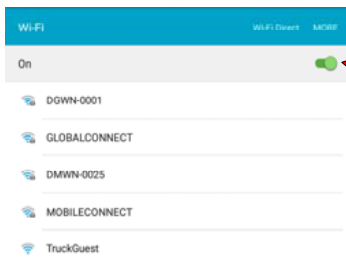
Select "Settings" from the main screen



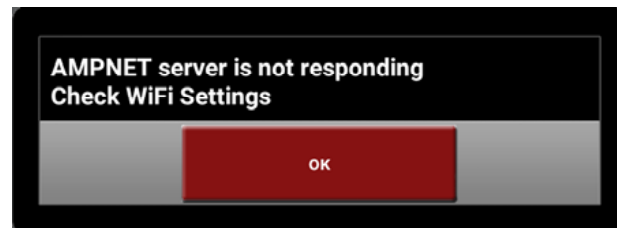
To verify that the BCT-460DTNA is connected to the selected Wi-Fi network. Select the Options menu and select "Check WIFI"



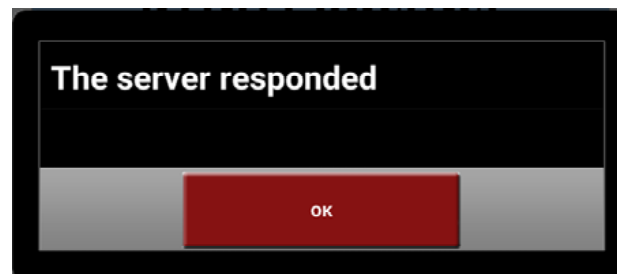
Select "WiFi Setup" from the settings screen



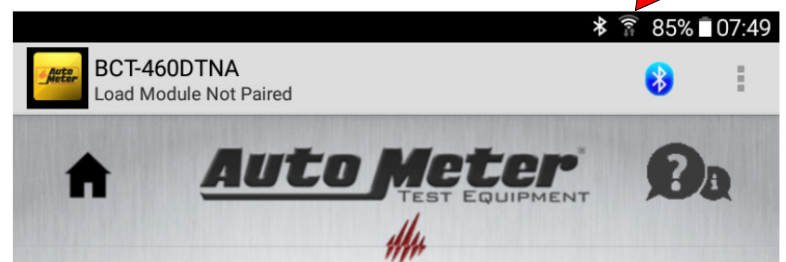
Make sure the Wi-Fi is turned on. Select the correct Wi-Fi network to connect to.



If Wi-Fi is not connect this message will show up.



If Wi-Fi is connected, this message will show up.



If there is a Wi-Fi symbol in the upper task bar, the unit is connected to Wi-Fi

# Signing into AmpNet



- Step 1: Set up an AmpNet account
- Step 2: Sign into the AmpNet account

A screenshot of the AmpNet login page. At the top is the AmpNet logo, which consists of a blue circle with a white waveform inside, followed by the word "AMPNET" in a blue, outlined, sans-serif font. Below the logo is a white rectangular box with a blue border. Inside this box, the text "Please Sign In to your Account" is centered. Below this text are two input fields: the first is for an email address, with a placeholder "xxxxx@autometer.com" and an envelope icon; the second is for a password, with a placeholder "Password" and a lock icon. Below the password field is a checkbox labeled "Remember Me". To the right of the input fields is a blue button with the text "Sign In >". Below the entire white box is a link that says "Forgot Password?".

Once logged in go to page 2

## **AmpNet Account Set up**

Click on the link to sign up for a  
AmpNet account.

<https://dtna.autometer.com/signup>

## **Note:**

Refer to BCT-460DTNA PowerNet  
Assessment Tool letter for links and  
instructions.

## **AmpNet Account Link**

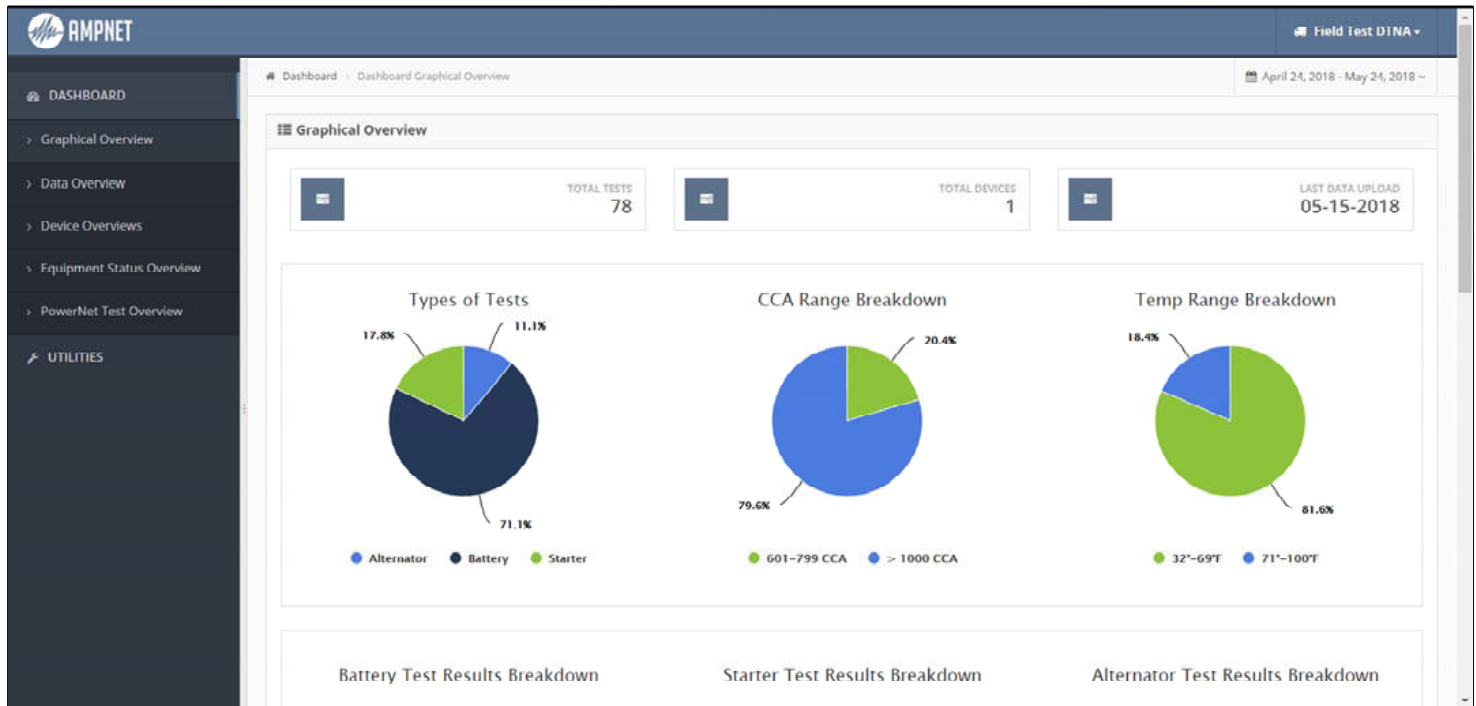
Click on the link to go to  
AmpNet login page.

[dtna.autometer.com](https://dtna.autometer.com)

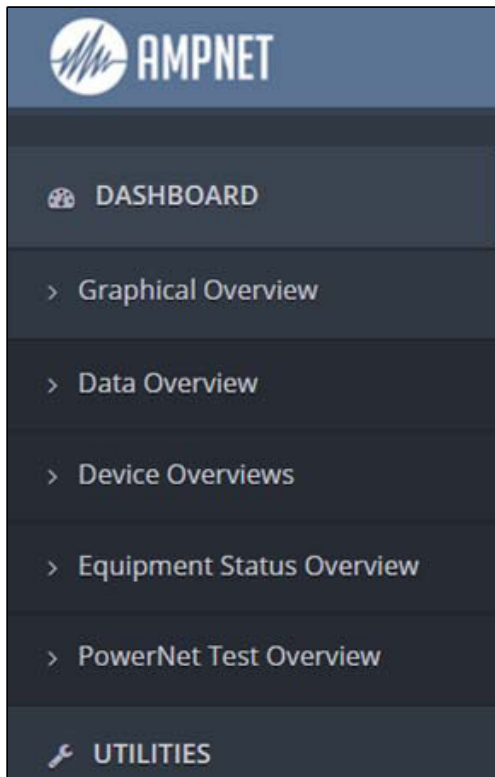
# Where to Find PowerNet Tests



Login to AmpNet to gain access  
to the BCT-460DTNA tester data



Graphical Overview



## Note:

On the left side of AmpNet  
start page, click on the  
PowerNet Test Overview.



**PowerNet Test Overview** – This section is where the PowerNet test forms are located, and downloaded from.

# AmpNet Date Filtering



DASHBOARD

- Graphical Overview
- Data Overview
- Device Overviews
- Equipment Status Overview
- PowerNet Test Overview

UTILITIES

Dashboard > Dashboard Data Overview

Field Test DTNA

April 24, 2018 - May 24, 2018

Data Overview

Export Overview

All Data Types

50 rows per page

Date of Test	Test ID	VIN	Customer Repair ID	Result of Test	Test Type
05-11-2018 - 10:52:06 AM	319	3AKJHHR2HSZZ3450	290	Bad Interconnect VDrop	Battery Bank
05-11-2018 - 10:51:35 AM	318	3AKJHHR2HSZZ3450	290	Bad Remote Sense Wire	Alternator
05-11-2018 - 10:26:19 AM	317	3AKJHHR2HSZZ3450	290	Charging Cables Pass	Voltage Drop - Charging System
05-04-2018 - 12:38:04 PM	316	3AKJHHR2HSZZ3450	HHJ	Pass	Alternator
05-04-2018 - 12:36:51 PM	315	3AKJHHR2HSZZ3450	HHJ	Charging Cables Pass	Voltage Drop - Charging System
05-04-2018 - 12:36:05 PM	314	3AKJHHR2HSZZ3450	HHJ	Good	Battery Bank
05-04-2018 - 12:35:36 PM	313	3AKJHHR2HSZZ3450	HHJ	Damaged Alternator	Alternator
05-04-2018 - 12:35:06 PM	312	3AKJHHR2HSZZ3450	HHJ	Charging Cables Pass	Voltage Drop - Charging System
05-04-2018 - 12:34:11 PM	311	3AKJHHR2HSZZ3450	HHJ	Pass	Starter
05-04-2018 - 12:33:32 PM	310	3AKJHHR2HSZZ3450	HHJ	Starter Cables Pass	Voltage Drop - Starter
05-04-2018 - 12:33:19 PM	309	3AKJHHR2HSZZ3450	HHJ	Good	Battery Bank

Data Overview

April 17, 2018 - May 17, 2018

04/17/2018

05/17/2018

Today

Yesterday

1 Week

2 Weeks

1 Month

3 Months

6 Months

1 Year

Custom Range

Filter Data

Cancel

April 2018							May 2018								
W	Mo	Tu	We	Th	Fr	Sa	Su	W	Mo	Tu	We	Th	Fr	Sa	Su
13	26	27	28	29	30	31	1	18	30	1	2	3	4	5	6
14	2	3	4	5	6	7	8	19	7	8	9	10	11	12	13
15	9	10	11	12	13	14	15	20	14	15	16	17	18	19	20
16	16	17	18	19	20	21	22	21	21	22	23	24	25	26	27
17	23	24	25	26	27	28	29	22	28	29	30	31	1	2	3
18	30	1	2	3	4	5	6	23	4	5	6	7	8	9	10

To filter dates, select the date range in the upper right corner. Select what date range you want to filter on.

# AmpNet PowerNet Test Overview



DASHBOARD

Graphical Overview

Data Overview

Device Overviews

Equipment Status Overview

PowerNet Test Overview

UTILITIES

Field Test DTNA

April 24, 2018 - May 24, 2018

Dashboard > PowerNet Test Overview

PowerNet Test Overview - DTNA Swan Island - DTNA

Export Overview

50 rows per page

	Test ID	Date	Tool ID	Vehicle ID	Repair Order	Parts Replaced	Comment	Complaint
	1	05-02-2018	10725	3AKJGLD56ESFN6780	05022018DP	Start Battery (1), -	-	No crank or Starter does not engage
		04-24-2018	10725	3AKJHHR2H5ZZ3450	290	Start Battery (2), Starter	-	Intermittent

Showing 1 to 2 of 2 entries

Previous 1 Next

Click on the PDF symbol to download the PowerNet form

## PowerNet Test Overview

PowerNet Test Overview is where to download the PowerNet test form.

**Powernet System Test**  
BCT-460DTNA

Page 1 of 3 Rev. 3b

DTNA Swan Island - DTNA  
4747 N. Channel Ave  
Portland, OR

Test ID: 10725  
Date: 04-24-2018  
Technician: CM1.02.03-yr, LM-1.05  
VIN: 3AKJHHR2H5ZZ3450  
RDO: 290

Complaint: Intermittent  
Parts Replaced: Start Battery (2), Starter

**Batteries Check - Main**

Battery Type	Number of Batteries	Battery Temp	CCA Rating	OCV of Bank	Result
Starting AGM	4	71	1100	12.75V	

# of Batteries Required: 2

**Battery Interconnect Test**

Voltage Drop - Neg	Voltage Drop - Pos	Total Voltage Drop	Result
-	-	-	-
Battery	Battery	100mV	Good

**Battery Bank Test - Main - 2nd Test**

Battery Type	Number of Batteries	Battery Temp	CCA Rating	OCV of Bank	Result
Starting AGM	4	64	1100	12.75V	Good

**Batteries Check - Auxiliary**

**Battery Bank Test - Auxiliary - 1st Test**

Battery Type	Number of Batteries	Battery Temp	CCA Rating	OCV of Bank	Result
-	-	-	-	-	-

# of Batteries Required: -

**Battery Interconnect Test**

Voltage Drop - Neg	Voltage Drop - Pos	Total Voltage Drop	Result
-	-	-	-
-	-	-	-

**Battery Bank Test - Auxiliary - 2nd Test**

Battery Type	Number of Batteries	Battery Temp	CCA Rating	OCV of Bank	Result
-	-	-	-	-	-

**Powernet System Test**  
BCT-460DTNA

Page 2 of 3 Rev. 3b

DTNA Swan Island - DTNA  
4747 N. Channel Ave  
Portland, OR

Test ID: 10725  
Date: 04-24-2018  
Technician: CM1.02.03-yr, LM-1.05  
VIN: 3AKJHHR2H5ZZ3450  
RDO: 290

Complaint: Intermittent  
Parts Replaced: Start Battery (2), Starter

**Individual Batteries Check - Main**

Battery Position	Battery Type	Battery Temp	CCA Rating	OCV	Battery Ohm	Battery Code	Result
1	Starting AGM	64	1100	12.67	1021000006	ATN000000002	Good
2	Starting AGM	64	1100	12.67	1021000006	ATN000000002	Good
3	Starting AGM	64	1100	12.75	1021000006	ATN000000002	Good
4	Starting AGM	64	1100	12.67	1021000006	ATN000000002	Good

**Failed Individual Battery Bank Tests - Main**

Battery Position	Battery Type	Battery Temp	CCA Rating	OCV	Battery Ohm	Battery Code	Result
1	Starting AGM	71	1100	0.0	PF00	ATN000000002	Bad Damaged Battery
2	Starting AGM	71	1100	0.0	1021000006	ATN000000002	Bad Damaged Battery

**Individual Batteries Check - Auxiliary**

**Individual Battery Bank Tests - Auxiliary**

Battery Position	Battery Type	Battery Temp	CCA Rating	OCV	Battery Ohm	Battery Code	Result
-	-	-	-	-	-	-	-

**Failed Individual Battery Bank Tests - Auxiliary**

Battery Position	Battery Type	Battery Temp	CCA Rating	OCV	Battery Ohm	Battery Code	Result
-	-	-	-	-	-	-	-

**Powernet System Test**  
BCT-460DTNA

Page 3 of 3 Rev. 3b

DTNA Swan Island - DTNA  
4747 N. Channel Ave  
Portland, OR

Test ID: 10725  
Date: 04-24-2018  
Technician: CM1.02.03-yr, LM-1.05  
VIN: 3AKJHHR2H5ZZ3450  
RDO: 290

Complaint: Intermittent  
Parts Replaced: Start Battery (2), Starter

**Starting System Check**

**Starter Cables**

Pos Voltage Drop	Neg Voltage Drop	Total Voltage Drop	Result
400mV	200mV	600mV	Starting Cables Fail
400mV	210mV	610mV	Starting Cables Pass

**Starter Test**

Engine Type	Number of Cycles	Begin Voltage	Cranking Voltage	Cranking Current	Cranking RPM	Start Stroke Count	Result
Diesel	5	12.67V	12.18V	750A	150	-	Pass

**Charging System Check**

**Alternator Cables**

Neg Voltage Drop	Neg Voltage Drop	Total Voltage Drop	Result
-	-	-	-
200mV	100mV	300mV	Charging Cables Pass

**Alternator Test**

Rated Output	Regulated Voltage	Phase	Charging Current	Result	#3 Terminal Voltage
DTNA	14.54V	117.20mV	DTNA	Pass	-

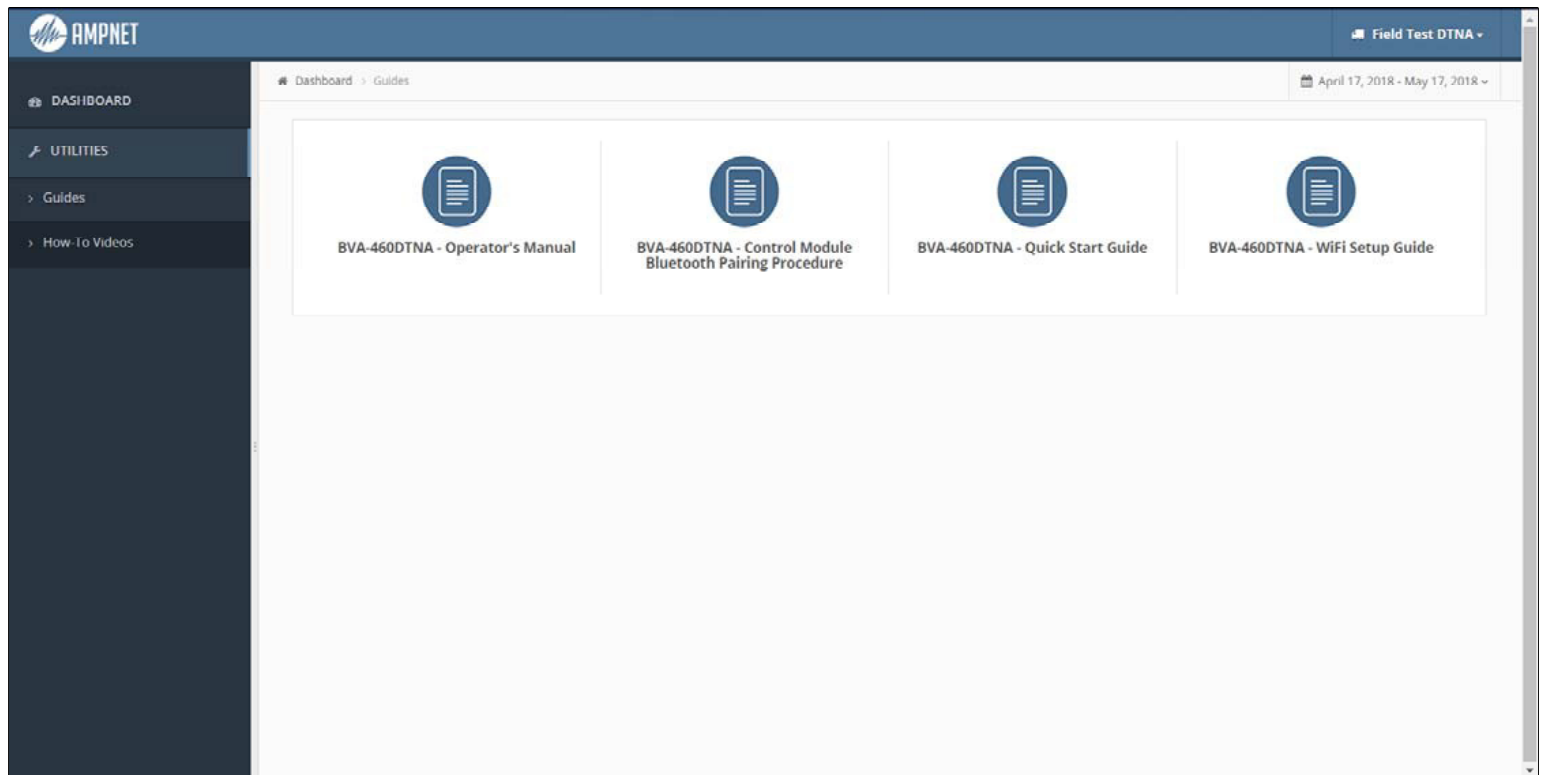
**Summary**

**Preload Comments**

**Post Test Comments**

Replaced starter

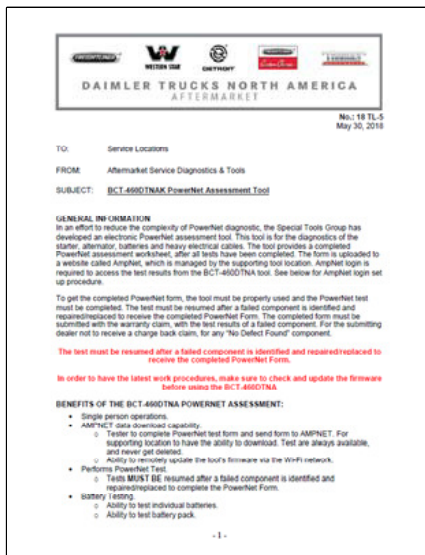




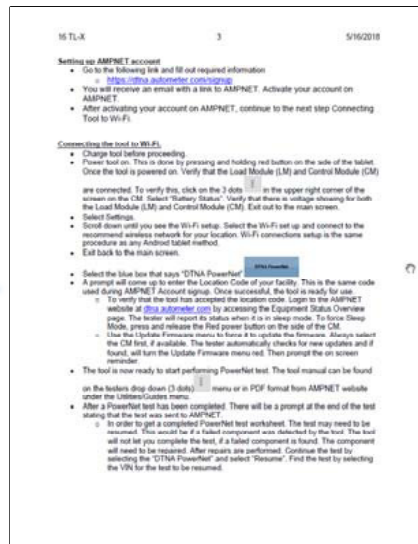
## Utilities

Utilities section is where to find guides and how-to videos

# Setting up AmpNet Account



Refer to BCT-460DTNA PowerNet Assessment Tool letter for link and instructions.



Refer to page 3 of the tool letter for the BCT-460DTNA PowerNet Assessment Tool.

Refer to section titled "Setting up AmpNet Account"

Click on the link to sign up for AmpNet account.  
<https://dtna.autometer.com/signup>

New Account Sign Up

CPWA, DWC, or non-dealers, please click the button below:

Click here to be taken to the non dealer sign up page. Refer to page 2 for sign up page.

Dealer Code: \*

The Dealer code of your store store.

Account Name: \*

The account name of the user as you want it to appear.

Email Address: \*

The unique email address of the user.

Freightliner Dealer Fill out this section

**Location Code** – This is the dealer/location code the tool will be registered for.

**Account Name** – This is the name for the account that is being set up, use dealer/location name.

**Email Address** – This is the email address of who is responsible for the account.

**Note:**

More than 1 account can be set per location. Repeat this step for each account that is required to be set up.

# AmpNet Non Dealer Sign-Up



## Non-Dealer, CPWA, or DWC Account Activation

[Please fill out the form below to complete your AMPNET Account Activation.](#)

- All fields marked with a red \* are required and must be filled out.
- The Account Name and Email Address below will become the default account for the store that is created during the activation process.
- **This email address must be unique and valid. It will be used to log into AMPNET.**
- Upon submission of this page, you will receive an email that contains a link that completes the AMPNET Activation process.

### Activation Code Information

Dealer Code: \*

The Dealer code of the store you are assigned to.

### Store Information

Store Number: \*

The store's number.

Store Name: \*

The name of the store as you want it to appear

Store Address: \*

The physical location of the store.

Country: \*

United States of America

Address: \*

Extended Address:

City: \*

State: \*

Zip Code:

Store Phone Number: \*

Contact information for the Store

### Default Account Information

Account Name: \*

The account name of the user as you want it to appear.

Email Address: \*

The unique email address of the user.

Language:

The preferred language of the user.

English

✓ Submit Activation

Fill out all required fields. An email will be sent to the email address that is entered under "Email Address". Refer to that email to finish the sign up process.

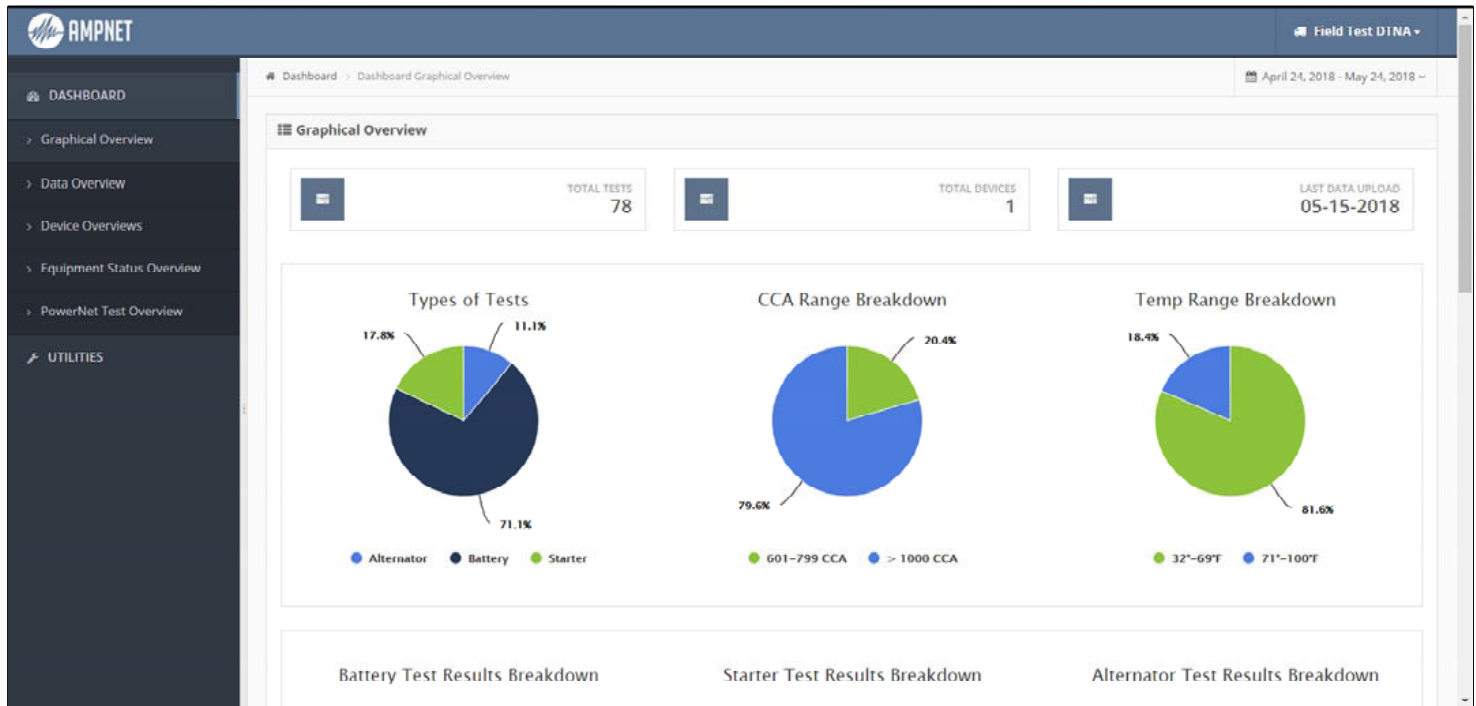
### Note:

The email will contain the "location code" required to register the tool.

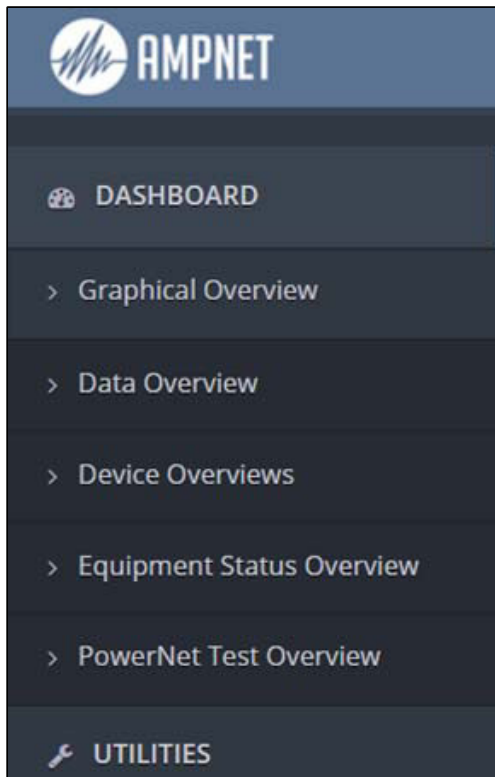
# AmpNet Graphical Overview



Login to AmpNet to gain access  
to the BCT-460DTNA tester data



Graphical Overview



- ← **Main Page** – Shows quick graphs and an overview of tests performed, of all the testers at the location the tester is at.
- ← **Data Overview** – All the individual test are in the Data Overview. Test can be downloaded and printed from this section.
- ← **Device Overview** – This section shows all the individual tests performed by each tool.
- ← **Equipment Status Overview** – This section shows all the device information and location.
- ← **PowerNet Test Overview** – This section is where the PowerNet test forms are located, and downloaded from.
- ← **Utilities** – this section is where to find manuals, how-to video's and other documentation for the BCT-460DTNA tool.

# AmpNet Data Overview



The screenshot shows the AmpNet dashboard with a sidebar on the left containing navigation links: DASHBOARD, Graphical Overview, Data Overview, Device Overviews, Equipment Status Overview, and PowerNet Test Overview. The main content area is titled "Data Overview" and features a date range selector at the top right (April 24, 2018 - May 24, 2018) with a red arrow pointing to it. Below the selector are buttons for "Export Overview" and "All Data Types". A table with 6 columns (Date of Test, Test ID, VIN, Customer Repair ID, Result of Test, Test Type) displays test data. The table has a "50 rows per page" selector and a search bar.

Date of Test	Test ID	VIN	Customer Repair ID	Result of Test	Test Type
05-11-2018 - 10:52:06 AM	319	3AKJHHDR2HSZZ3450	290	Bad Interconnect VDrop	Battery Bank
05-11-2018 - 10:51:35 AM	318	3AKJHHDR2HSZZ3450	290	Bad Remote Sense Wire	Alternator
05-11-2018 - 10:26:19 AM	317	3AKJHHDR2HSZZ3450	290	Charging Cables Pass	Voltage Drop - Charging System
05-04-2018 - 12:38:04 PM	316	3AKJHHDR2HSZZ3450	HHJ	Pass	Alternator
05-04-2018 - 12:36:51 PM	315	3AKJHHDR2HSZZ3450	HHJ	Charging Cables Pass	Voltage Drop - Charging System
05-04-2018 - 12:36:05 PM	314	3AKJHHDR2HSZZ3450	HHJ	Good	Battery Bank
05-04-2018 - 12:35:36 PM	313	3AKJHHDR2HSZZ3450	HHJ	Damaged Alternator	Alternator
05-04-2018 - 12:35:06 PM	312	3AKJHHDR2HSZZ3450	HHJ	Charging Cables Pass	Voltage Drop - Charging System
05-04-2018 - 12:34:11 PM	311	3AKJHHDR2HSZZ3450	HHJ	Pass	Starter
05-04-2018 - 12:33:32 PM	310	3AKJHHDR2HSZZ3450	HHJ	Starter Cables Pass	Voltage Drop - Starter
05-04-2018 - 12:33:19 PM	309	3AKJHHDR2HSZZ3450	HHJ	Good	Battery Bank

## Data Overview

The screenshot shows a date range selection interface. At the top, it displays "April 17, 2018 - May 17, 2018". Below this are two calendar views for April 2018 and May 2018. The date 17 is selected in both months. To the right of the calendars is a list of date range options: Today, Yesterday, 1 Week, 2 Weeks, 1 Month (selected), 3 Months, 6 Months, and 1 Year. At the bottom right are buttons for "Filter Data" and "Cancel".

To filter dates, select the date range in the upper right corner. Select what date range you want to filter on.



# AmpNet Data Overview



**AMPNET** Field Test DINA

Dashboard > Dashboard Data Overview April 24, 2018 - May 24, 2018

**Data Overview**

50 rows per page

Export Overview

All Data Types

Q

Date of Test	Test ID	VIN	Customer Repair ID	Result of Test	Test Type
05-11-2018 - 10:52:06 AM	319	3AKJHHDR2HSZZ3450	290	Bad Interconnect VDrop	Battery Bank
05-11-2018 - 10:51:35 AM	318	3AKJHHDR2HSZZ3450	290	Bad Remote Sense Wire	Alternator
05-11-2018 - 10:26:19 AM	317	3AKJHHDR2HSZZ3450	290	Charging Cables Pass	Voltage Drop - Charging System
05-04-2018 - 12:38:04 PM	316	3AKJHHDR2HSZZ3450	HHJ	Pass	Alternator
05-04-2018 - 12:36:51 PM	315	3AKJHHDR2HSZZ3450	HHJ	Charging Cables Pass	Voltage Drop - Charging System
05-04-2018 - 12:36:05 PM	314	3AKJHHDR2HSZZ3450	HHJ	Good	Battery Bank
05-04-2018 - 12:35:36 PM	313	3AKJHHDR2HSZZ3450	HHJ	Damaged Alternator	Alternator
05-04-2018 - 12:35:06 PM	312	3AKJHHDR2HSZZ3450	HHJ	Charging Cables Pass	Voltage Drop - Charging System
05-04-2018 - 12:34:11 PM	311	3AKJHHDR2HSZZ3450	HHJ	Pass	Starter
05-04-2018 - 12:33:32 PM	310	3AKJHHDR2HSZZ3450	HHJ	Starter Cables Pass	Voltage Drop - Starter
05-04-2018 - 12:33:19 PM	309	3AKJHHDR2HSZZ3450	HHJ	Good	Battery Bank

## Data Overview

### Note:

The same menus can be used on each section of AmpNet

1

Select Export Overview to download data to an Excel Form. This form can be edited for customers copy of tests performed.

2

All Data Types

All Data Types

Alternator

Battery

Starter

Voltage Drop

To filter data, select the drop down and select the type of data that is wanted for download.

3

To search for a particular serial number of data point. Use the search bar.

# AmpNet Device Overview



AMPNET

DASHBOARD

Graphical Overview

Data Overview

Device Overviews

Equipment Status Overview

PowerNet Test Overview

UTILITIES

Dashboard > Store Device Overview

Field Test DTNA

April 24, 2018 - May 24, 2018

Store Device Overview - DTNA Swan Island - DTNA

Export Overview

50 rows per page

					Battery Tests				Starter Tests		Alternator Tests	
Lat	Lon	Serial #	Model	Total Tests	Good	C&T	NEOL	Bad	Good	Bad	Good	Bad
Lat	Lon	10725	BCT-460DTNA	78	22	0	0	10	0	0	3	0

Showing 1 to 1 of 1 entries

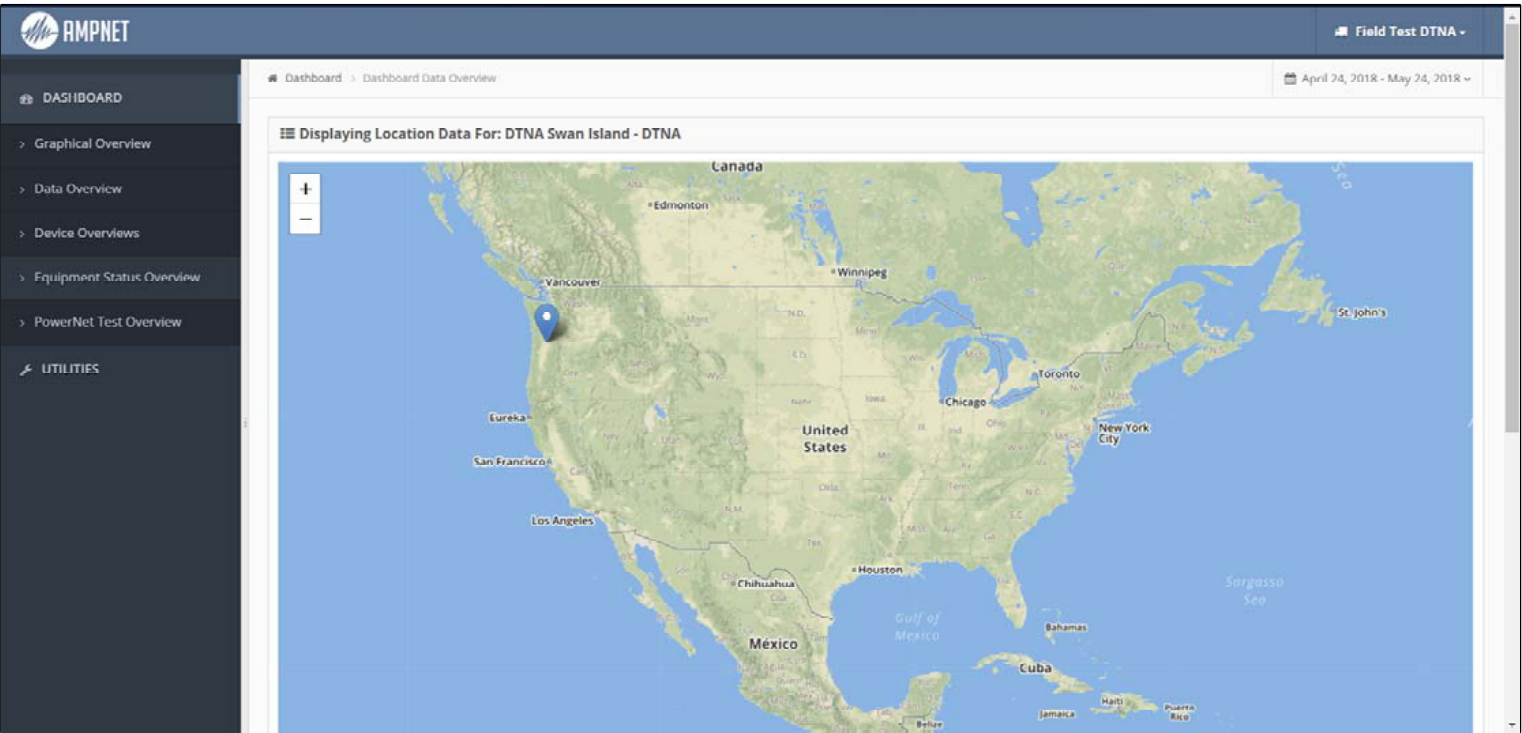
Previous 1 Next

## Device Overview

### Note:

In this section, all the testers that are registered at the location will show up. Device overview gives the number of individual tests performed by tool serial number

# AmpNet Equipment Status Overview



Equipment Status Overview

Equipment Status overview gives the location of where the tool is. When the tool is connected to Wi-Fi it will give the location of the tool.

**Note:**  
Equipment overview also gives the current firmware level the tool is at.

# AmpNet PowerNet Test Overview



DASHBOARD

Graphical Overview

Data Overview

Device Overviews

Equipment Status Overview

PowerNet Test Overview

UTILITIES

Field Test DTNA

April 24, 2018 - May 24, 2018

Dashboard > PowerNet Test Overview

PowerNet Test Overview - DTNA Swan Island - DTNA

Export Overview

50 rows per page

	Test ID	Date	Tool ID	Vehicle ID	Repair Order	Parts Replaced	Comment	Complaint
	1	05-02-2018	10725	3AKJGLD56SFN6780	05022018DP	Start Battery (1), -	-	No crank or Starter does not engage
		04-24-2018	10725	3AKJHHR2H5ZZ3450	290	Start Battery (2), Starter	-	Intermittent

Showing 1 to 2 of 2 entries

Previous 1 Next

Click on the PDF symbol to download the PowerNet form

## PowerNet Test Overview

PowerNet Test Overview is where to download the PowerNet test form.

**Powernet System Test**  
BCT-460DTNA

Page 1 of 3 Rev. 3b

DTNA Swan Island - DTNA  
4747 N. Channel Ave  
Portland, OR

Test ID: 10725  
Date: 04-24-2018  
Technician: CM1.02.03-pr, LM-1.05  
VIN: 3AKJHHR2H5ZZ3450  
RDO: 290

Complaint: Intermittent  
Parts Replaced: Start Battery (2), Starter

**Batteries Check - Main**

Battery Type	Number of Batteries	Battery Temp	CCA Rating	OCV of Bank	Result
Starting AGM	4	71	1100	12.75V	

# of Batteries Required: 2

**Battery Interconnect Test**

Voltage Drop - Neg	Voltage Drop - Pos	Total Voltage Drop	Result
-	-	-	-
Safety	Safety	100mV	Good

**Battery Bank Test - Main - 2nd Test**

Battery Type	Number of Batteries	Battery Temp	CCA Rating	OCV of Bank	Result
Starting AGM	4	64	1100	12.75V	Good

**Batteries Check - Auxiliary**

**Battery Bank Test - Auxiliary - 1st Test**

Battery Type	Number of Batteries	Battery Temp	CCA Rating	OCV of Bank	Result
-	-	-	-	-	-

# of Batteries Required: -

**Battery Interconnect Test**

Voltage Drop - Neg	Voltage Drop - Pos	Total Voltage Drop	Result
-	-	-	-
-	-	-	-

**Battery Bank Test - Auxiliary - 2nd Test**

Battery Type	Number of Batteries	Battery Temp	CCA Rating	OCV of Bank	Result
-	-	-	-	-	-

**Powernet System Test**  
BCT-460DTNA

Page 2 of 3 Rev. 3b

DTNA Swan Island - DTNA  
4747 N. Channel Ave  
Portland, OR

Test ID: 10725  
Date: 04-24-2018  
Technician: CM1.02.03-pr, LM-1.05  
VIN: 3AKJHHR2H5ZZ3450  
RDO: 290

Complaint: Intermittent  
Parts Replaced: Start Battery (2), Starter

**Individual Batteries Check - Main**

Battery Position	Battery Type	Battery Temp	CCA Rating	OCV	Battery Ohm	Battery Code	Result
1	Starting AGM	64	1100	12.67	H0211000006	ATN00000402	Good
2	Starting AGM	64	1100	12.67	H0211000006	ATN00000402	Good
3	Starting AGM	64	1100	12.75	H0211000006	ATN00000402	Good
4	Starting AGM	64	1100	12.67	H0211000006	ATN00000402	Good

**Failed Individual Battery Bank Tests - Main**

Battery Position	Battery Type	Battery Temp	CCA Rating	OCV	Battery Ohm	Battery Code	Result
1	Starting AGM	71	1100	0.0	PF01	ATN00000402	Bad Damaged Battery
2	Starting AGM	71	1100	0.0	H0211000006	ATN00000402	Bad Damaged Battery

**Individual Batteries Check - Auxiliary**

**Individual Battery Bank Tests - Auxiliary**

Battery Position	Battery Type	Battery Temp	CCA Rating	OCV	Battery Ohm	Battery Code	Result
-	-	-	-	-	-	-	-

**Failed Individual Battery Bank Tests - Auxiliary**

Battery Position	Battery Type	Battery Temp	CCA Rating	OCV	Battery Ohm	Battery Code	Result
-	-	-	-	-	-	-	-

**Powernet System Test**  
BCT-460DTNA

Page 3 of 3 Rev. 3b

DTNA Swan Island - DTNA  
4747 N. Channel Ave  
Portland, OR

Test ID: 10725  
Date: 04-24-2018  
Technician: CM1.02.03-pr, LM-1.05  
VIN: 3AKJHHR2H5ZZ3450  
RDO: 290

Complaint: Intermittent  
Parts Replaced: Start Battery (2), Starter

**Starting System Check**

**Starter Cables**

Pos Voltage Drop	Neg Voltage Drop	Total Voltage Drop	Result
40mV	20mV	60mV	Starting Cables Fail
40mV	20mV	60mV	Starting Cables Pass

**Starter Test**

Engine Type	Number of Cycles	Begin Voltage	Cranking Voltage	Cranking Current	Cranking RPM	Start Stroke Count	Result
Diesel	5	12.67V	12.18V	75A	150	-	Pass

**Charging System Check**

**Alternator Cables**

Neg Voltage Drop	Pos Voltage Drop	Total Voltage Drop	Result
-	-	-	-
20mV	10mV	30mV	Charging Cables Pass

**Alternator Test**

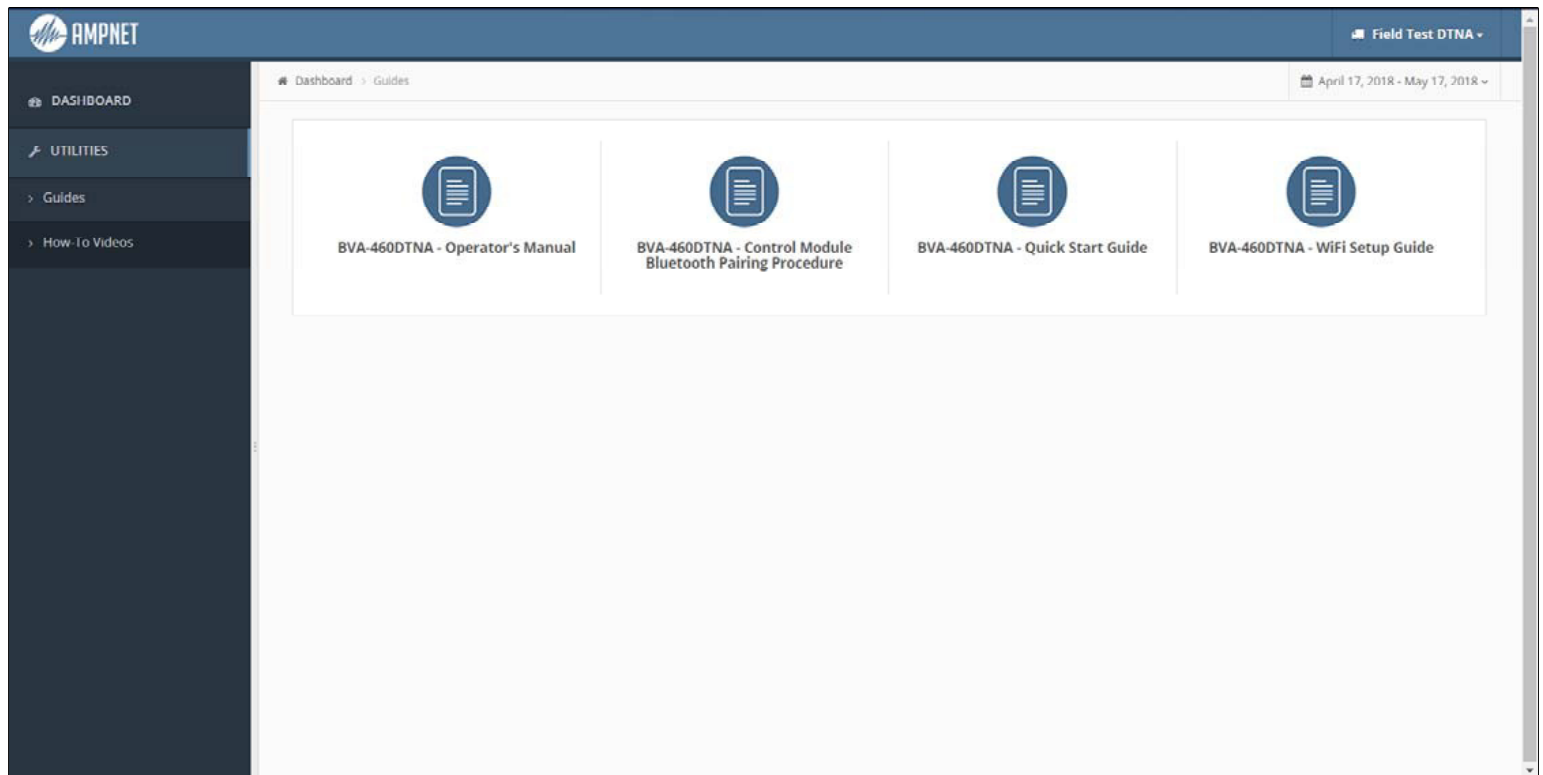
Rated Output	Regulated Voltage	Phase	Charging Current	Result	#3 Terminal Voltage
DTNA	14.5V	-	117.20mV	DTNA	Pass

**Summary**

**Product Comments**

**Field Test Comments**

Replaced starter



## Utilities

Utilities section is where to find guides and how-to videos