

MCC-070 Controlled Charger



INSTRUCTION MANUAL

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Safety Guidelines

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

⚠ CAUTION
Risk of explosive gases Batteries generate explosive gases during normal operation, and when discharged or charged.

- 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 marking on these products and on the engine, and on the vehicle or equipment containing the battery.

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

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 Always have someone within range of your voice, or close enough to come to your aid, when working around lead acid batteries.
- 2.2 Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing or eyes.
- 2.3 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.
- 2.4 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.
- 2.5 NEVER smoke or allow a spark or flame in vicinity of a battery or engine.
- 2.6 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.
- 2.7 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
Non-rechargeable batteries may burst when charging causing personal injury and damage. 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.

- 2.8 **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 nonmetallic material as a fan.
- 3.3 Clean the battery terminals. Be careful to keep corrosion from coming into contact with your eyes.
- 3.4 For flooded cell batteries, add distilled water in each cell until the battery acid reaches the level specified by the manufacturer. This helps purge excessive gas from the cells. Do not overfill. For a battery without caps, carefully follow the manufacturer’s recharging instructions
- 3.5 Study all battery manufacturer’s specific precautions such as removing or not removing cell caps while charging and recommended rates of charge.

4 Grounding & Power Cord Connections

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

- 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.

IF THE PLUG DOES NOT FIT THE OUTLET, HAVE A PROPER OUTLET INSTALLED BY A QUALIFIED ELECTRICIAN.

- 4.2 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, make sure:

- a. that the pins on plugs of the extension cord are the same number, size, and shape as those of the plug on the charger;
- b. that the extension cord is properly wired and in good electrical condition;
- c. that the wire size is large enough for the AC ampere rating of charger.

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 fail device may generate and emit sparks.

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

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

- 5.1 The charger must be located in an area with sufficient air space to allow unrestricted airflow in and around the charger.
- 5.2 Locate the charger as far away from the battery as the charger cables permit.
- 5.3 Never place the charger directly above the battery being charged; gases from the battery will corrode and damage the charger.
- 5.4 Never allow battery acid to drip on the charger when taking gravity readings or filling a flooded cell battery.
- 5.5 Operate the charger only in a well-ventilated area that is free of dangerous vapors.
- 5.6 Store the charger in safe, dry location and maintain it in perfect condition.
- 5.7 Do not set the battery on top of the charger or where its acid might drip onto the charger.

6 DC Connection Precautions

- 6.1 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.

7 Installing The Battery

⚠ CAUTION

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.

- 7.1 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.
- 7.2 Turn **OFF** all vehicle loads, including door lights, and correct any defects in the vehicle's electrical system that may have caused low battery.
- 7.3 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.

⚠ CAUTION

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.

⚠ CAUTION

Risk of explosive gases.

Make sure all vehicle loads are **OFF** 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 free end of the cable.
- 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, fasten them with the proper tool. 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 use the red tabs on each side of the power cord connector to release it from the charger's power socket.



Storage

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

When not in use, always keep the charger on the stabilizing base that came with the unit. Make sure it is secured using the two (2) included Phillips-head screw and the appropriate threaded holes.



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.

Product Specifications

Charge Cables

- 2m (Standard)
- 3m
- 5m

Power Cord

Accepts locking C13 connector for region-specific power cables:

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

Applications

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

Battery Chemistries

- Lead acid
- AGM
- EFB
- Lithium ion

Rating System

- CCA
- CA
- MCA
- JIS
- DIN
- SAE
- IEC
- EN

Operating Parameters

- Input Voltage:
120 VAC; 60 Hz; 12A maximum
- Output:
15VDC; 70A maximum

Humidity

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

Dimensions

(without handle or base)

- Height: 4.80 in (12.19 cm)
- Width: 13.1 in (33.27 cm)
- Length: 12.0 in (30.48 cm)
- Weight: 18 lbs

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
- TUV
- FCC
- RoHS
- CEC

Connectivity

Wi-Fi

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

Bluetooth

- 2.0
- USB 2.0 connection
- BTLE

CAN bus interface

Safety Features

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

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
- 3.5” color display
- 5-button keypad

Chapter 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

Inspect the battery for damages and check the electrolyte level. If the electrolyte level is too low, replenish it and fully charge the battery. 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.

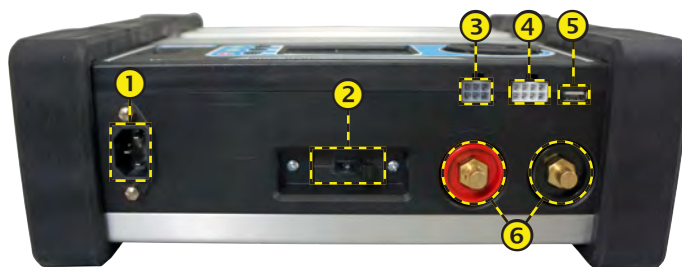
- ✓ Battery acid is highly corrosive. If acid enters your eyes, immediately flush them thoroughly with cold running water for at least 15 minutes and seek medical attention. If battery acid gets on your skin or clothing, wash immediately with a mixture of water and baking soda.
- ✓ Always wear proper 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 jump starting.
- ✓ Never charge a frozen battery. Gases may form, cracking the case, and spray out battery acid.

Manual Conventions

This manual uses these symbols and typographical conventions:

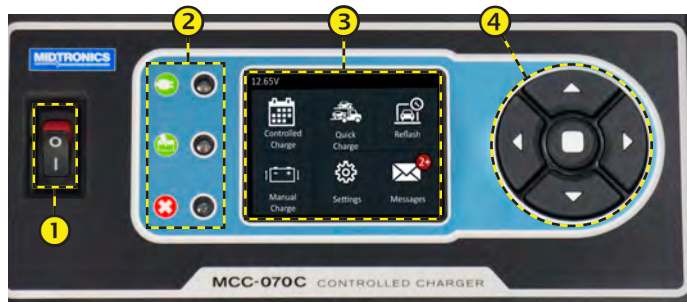
Symbol	Description
	The safety symbol indicates instructions for avoiding hazardous conditions and personal injury.
	The safety symbol with the words CAUTION , WARNING , or DANGER indicates instructions for avoiding hazardous conditions and personal injury.
	The wrench symbol indicates procedural notes and helpful information.
	These symbols indicate which arrow keys on the keypad to press for a given function.
Bold Letters	The text for screen options are in Bold letters.

Top View



- | | |
|---|---|
| 1 Power Connection | 4 Connector: Charge Cables |
| 2 DC Output Circuit Breaker | 5 USB Port |
| 3 Serial Connector (for LIN/CAN) | 6 Charge Cable Quick Connector Locking Posts |

Control Panel

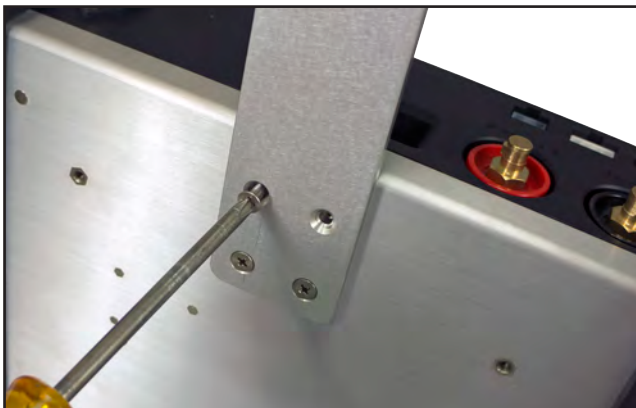


- ① ON - OFF Switch
- ② Status Lights
 - Charger Power
 - Charging / Operating
 - Error
- ③ Charger Display Screen
- ④ Control Buttons
 - Left Arrow / Back
 - Up Arrow
 - Down Arrow
 - Right Arrow
 - Enter

Connections

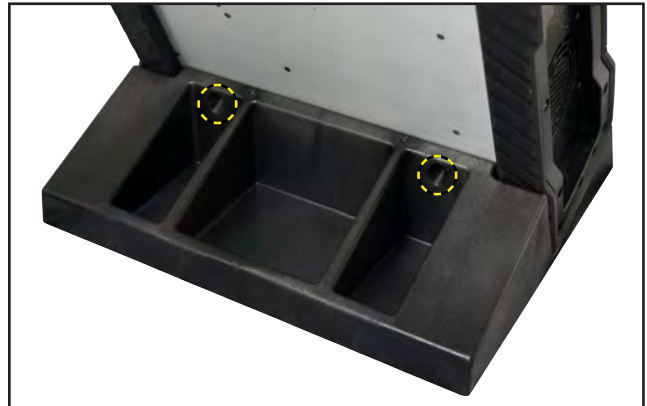
Carrying Handle (Optional)

Mount the carrying handle to the back of the charger using the four (4) included Phillips-head screw and the appropriate threaded holes.



Stabilizing Base

Secure the stabilizing base to the back of the charger using the two (2) included Phillips-head screw and the appropriate threaded holes.



Locking Power Cord

Press in the red tabs on each side of the connector to release the power cord from the charger's power socket.



Charging Cables

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



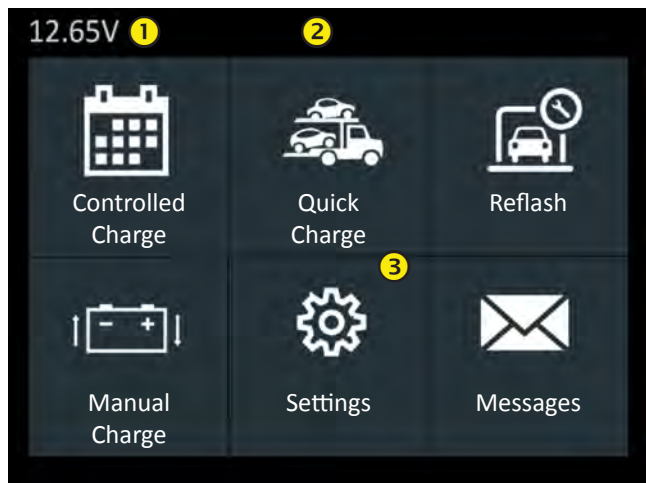
2. Insert the control connector.



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



Menu Layout



1 Voltmeter
When the charger is connected to a battery the voltage reading appears in the top left corner of the Main Menu Title Bar.

2 Title Bar
The title bar shows the name of the current menu, test tool, utility, or function.


3 Selection Area
The selection area below the **Title Bar** contains selectable items or dialog boxes that display information or require a response.





Main Menu

The Main Menu is the starting point for all tools and utilities, which are depicted as icons. Some icons lead directly to the function they represent, while others are menu icons that lead to two or more options.

Icon	Description
Controlled Charge	For charging situations when battery information (chemistry, rating, etc) is available.
Quick Charge	Quickly start a charging session with minimal user input.
Refresh	Evaluates and maintains battery voltage at 13.5 volts to provide uninterrupted reprogramming and retention of a vehicle's system settings.
Manual Charge	Charge a battery while specifying the voltage, current, and charging time.
Settings	Includes functionality to setup the charger defaults and preferences.
Messages	Displays alerts and notifications for upcoming tests and activities, including scheduled testing as well as tool software updates and maintenance opportunities.




Settings Menu

 Settings	Use these functions to setup the charger display, date settings, power supply defaults, shop, user, WiFi, phone, and BMIS settings. Access to these functions is password-protected (if enabled).
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Icon	Description
 Tool	For setting the charger Display, Date and Time, and Power Supply settings.
 Shop Settings	Access additional Admin functions, Shop Information, and User functions.
 Network	Settings for the tool's WiFi network communications and connections to the Midtronics cellphone application.
 BMIS Settings	Use to adjust the update settings, test records, connected Midtronics devices, and view notifications including email address and phone number.

Settings Sub-Menus



Tool

Icon	Description
 Display	Adjust the screen Brightness, Contrast, default Language, Temperature Units, Number Separator, and Screen Orientation.
 Date & Time	Make adjustments to the Date Format, the actual Date, Time Format, and the actual Time.
 Power Supply	Set the default maximum and minimum voltages used when the tool is in Power Supply mode.





Shop Settings

Icon	Description
 Admin	Use the Admin function enable or disable Administrative access and reset the Admin password PIN.
 Shop Info	Set up Shop Information including name, location, city, and country.
 Users	Add, edit, and delete registered tool users as well as enable or disable current users.

Network

Icon	Description
 WiFi	Configure the charger's WiFi settings. Options include Automatic, Manual, IP Setup, and Configuration File.
 Phone	Use a smart phone application to download a WiFi configuration and setup.

BMIS Settings

Icon	Description
 Update	Enable or disable the communication method used to update the charger software. Tool configurations can also be loaded, saved, and deleted.
 Records	Review individual or a group of test results.
 Devices	Enable or disable external devices that can communicate with the charger.
 Notifications	Setup, enable or disable email notifications, phone number, and communications with a Midtronics DSS-7000.

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.

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.

⚠ CAUTION

Do not test at the battery’s steel bolts.

Failure to properly install lead terminal adapters, or using adapters that are dirty or worn, may cause false test results. Always use lead terminal adapters provided with the charger when testing side-post or Group 31 batteries.

IMPORTANT: To avoid damage, never use a wrench to tighten the adapters more than ¼ turn.

IMPORTANT: There must be a formatted data card installed in the charger in order for it to work properly.

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.

To make sure both sides of the clamps are gripping the terminals, rock the each clamp back and forth. 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.

Initial Setup

Several default parameters can be configured when the charger is powered up for the first time.

Date & Time

- *Date Format:* Select between month/day/year (MM/DD/YYYY) or day/month/year (DD/MM/YYYY).
- *Date:* Adjust the current day, month, and year.
- *Time Format:* Select AM/PM or 24-hour.
- *Time:* Adjust the current time.

Wi-Fi

- *Automatic:* Automatically scan for detectable WiFi networks and select a network from the displayed list for which to connect.

The selected network parameters are displayed including security, SSID, Password, WEP Encryption, and WEP Keys. Select **Connect** to save and connect to the WiFi network.

- *Manual:* Manually configure the WiFi Setup including Security, SSID, Password, WEP Encryption, and WEP Keys. Select **Connect** to save and connect to the WiFi network.
- *IP Setup:* Manually enter the IP settings including, IP Type, IP Address, Gateway, Subnet Mask, Primary DNS, and Secondary DNS.
- *Configuration File:* Load a WiFi configuration file from a connected USB jump drive.

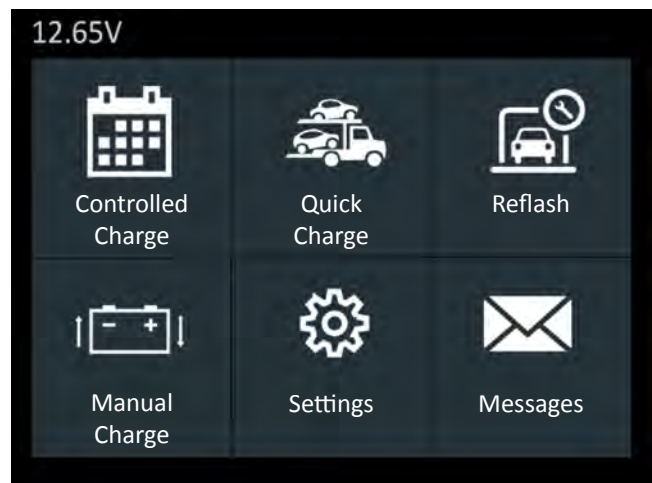
Shop Info

- *Shop Info:* Highlight alphanumeric characters by using the arrow keys and press to select each one. Select **SAVE** to save the selected characters or **ESC** to exit without saving.

Language

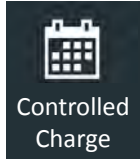
- *Language:* Select 1 of 3 available languages as the default for all charger screens.

The Main Menu is displayed on the charger screen.



Chapter 2: Charging

Controlled Charge

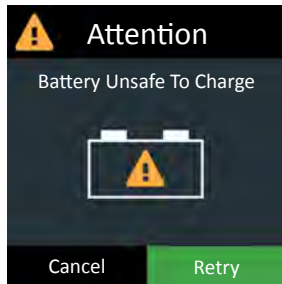


For charging situations when battery information (chemistry, rating, etc) is available.

Use ▲▼◀▶ to navigate around the charger screen. Press □ to Enter the selection.

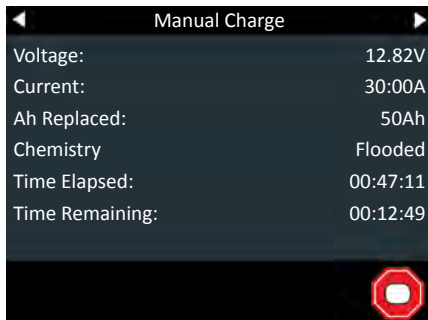
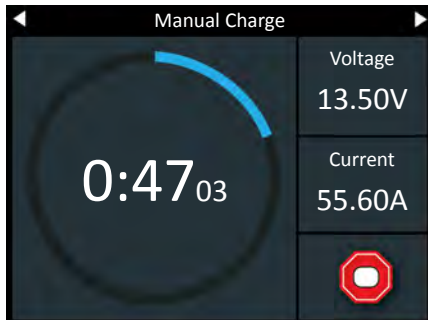
1. At the Main Menu, select the Controlled Charge icon.
2. Select the battery Chemistry.
3. Select Start.

The charger performs a Safety Check on the connected battery.



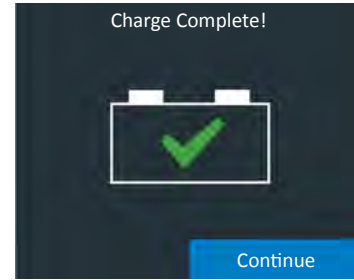
If the battery passes, the charging process begins.

Use ◀ or ▶ to view the charging screens while the battery is being charged.



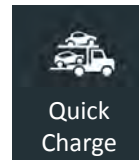
4. Press □ to abort the charging session.

5. The Charge Complete screen is displayed at the end of the charge cycle.



6. While this screen is displayed the charger is actually continuing to charge the battery in the background, filling it to maximum capacity. The charger will continue to do this until the battery's acceptance of the charge is 100%.
7. Press Continue to exit the top-off charge and display the Charge Results.

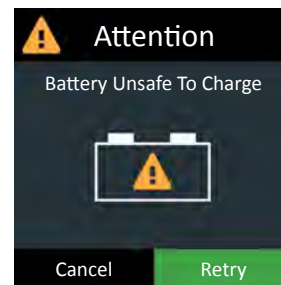
Quick Charge



This function provides a simple, one-touch charge for a battery.

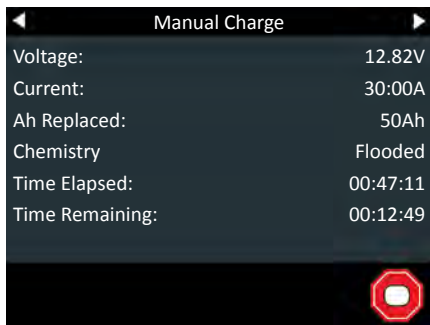
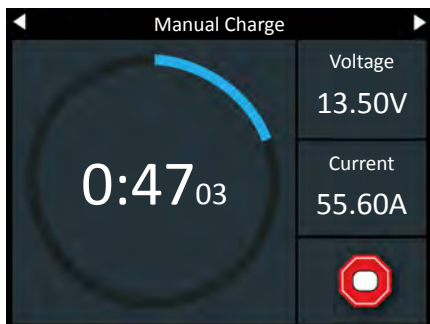
1. At the Main Menu, select the Quick Charge icon.


The charger performs a Safety Check on the connected battery.

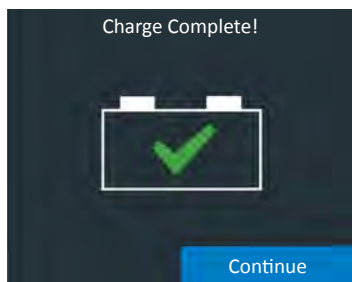


If the battery passes, the charging process begins.

Use ◀ or ▶ to view the charging screens while the battery is being charged.

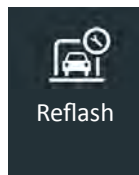


2. Press  to abort the charging session.
3. The Charge Complete screen is displayed at the end of the charge cycle.



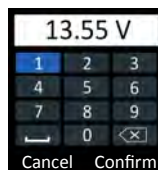
4. While this screen is displayed the charger is actually continuing to charge the battery in the background, filling it to maximum capacity. The charger will continue to do this until the battery's acceptance of the charge is 100%.
5. Press Continue to exit the top-off charge and display the Charge Results.


Refresh



Use Refresh to test and maintain battery voltage in a vehicle at 13.5 volts to allow for uninterrupted reprogramming of vehicle's computer, retain vehicle system settings, or simply to maintain battery voltage.

1. At the Main Menu, select the Refresh icon.
2. Select the battery Chemistry.
3. Select the refresh Voltage Level.

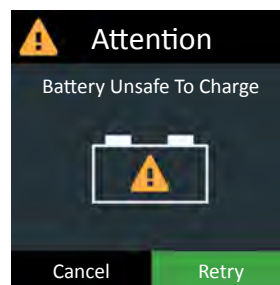


Use ▲▼◀▶ to highlight each number and press .

Select Confirm to save and continue or Cancel to return to the Refresh screen.

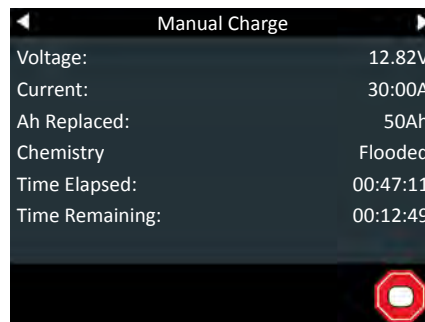
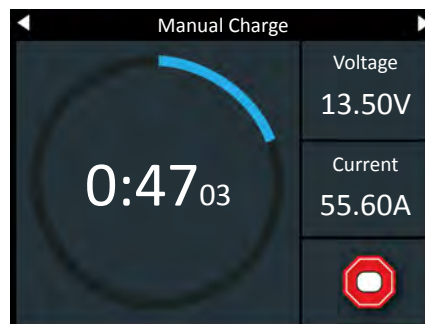
4. Select Start.

The charger performs a Safety Check on the connected battery.

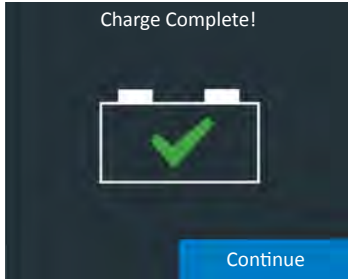


If the battery passes, the charging process begins.

Use ◀ or ▶ to view the charging screens while the battery is being charged.

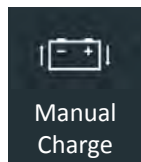


- Press to abort the charging session.
- The Charge Complete screen is displayed at the end of the charge cycle.



- While this screen is displayed the charger is actually continuing to charge the battery in the background, filling it to maximum capacity. The charger will continue to do this until the battery's acceptance of the charge is 100%.
- Press Continue to exit the top-off charge and display the Charge Results.

Manual Charge



Use Manual Charge for a user-customized timed charge ranging from 5 to 120 minutes or a continuous charge that ends when the **STOP** button on the charger is pressed.

- At the Main Menu, select the Reflash icon.
- Select the battery Chemistry.
- Select the Charge Limit Type.
- Select the Charge Limit Value.



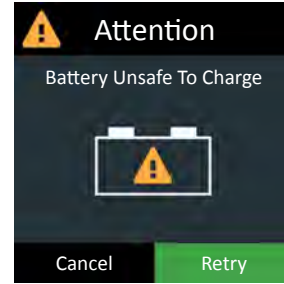
Use ▲▼◀▶ to highlight each number and press . Select Confirm to save and continue or Cancel to return to the Reflash screen.

- Select the Time Limit Type.
- Select the Time Limit Value.

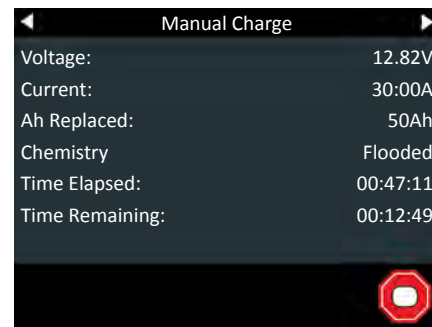
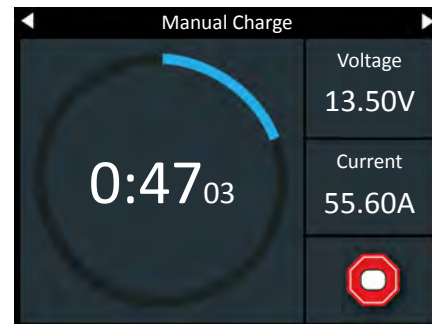


Use ▲▼◀▶ to highlight each number and press . Select Confirm to save and continue or Cancel to return to the Reflash screen.

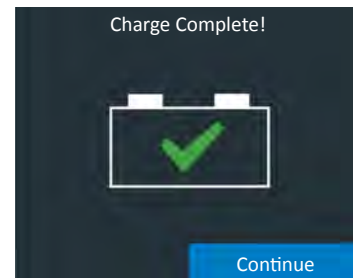
- Select Start. The charger performs a Safety Check on the connected battery.



If the battery passes, the charging process begins. Use ◀ or ▶ to alternate the charging screen view while the battery is being charged.

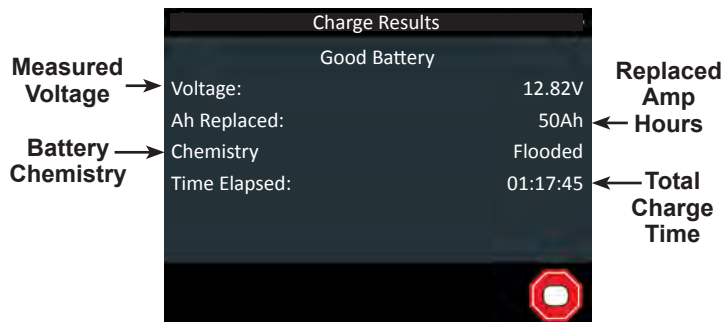


- Press to abort the charging session.
- The Charge Complete screen is displayed at the end of the charge cycle.



10. While this screen is displayed the charger is actually continuing to charge the battery in the background, filling it to maximum capacity. The charger will continue to do this until the battery's acceptance of the charge is 100%.
11. Press Continue to exit the top-off charge and display the Charge Results.

Charge Results



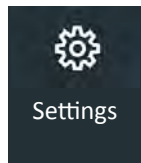
Good Battery: Battery is fully charged and ready to use.
Voltage: Measured voltage at the battery terminal.
Ah Replaced: Amp hours replaced in the battery.
Chemistry: Battery chemistry selected by the technician.
Time Elapsed: The elapsed time for the total charging session.

Possible Battery Decisions

Battery Decision	Recommended Action
GOOD BATTERY	Return the battery to service.
CHECK CONNECTION	Possibly a poor connection between the charging cables and the battery.
BATTERY UNSAFE TO CHARGE	Use a battery tester or diagnostic charger to further analyze the battery. <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p style="text-align: center;">⚠ WARNING</p> <p>Risk of explosive gases Charging a battery with a bad cell may cause the battery to explode.</p> </div>

Chapter 3: Settings

Admin PIN Enabled or Not

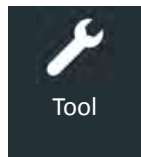


Use the Setup options to setup and adjust WiFi, printer selection, default language, display and sound settings, connected accessories, and device information.



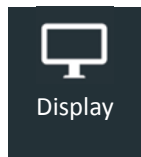
IMPORTANT: Access to the functions in the Settings menus is password-protected (if enabled).

Tool



Use the Tool options to set and select the charger Display, Date & Time, and Power Supply setting.

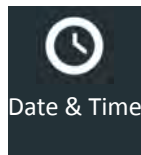
Display



Adjust the screen display options for the charger.

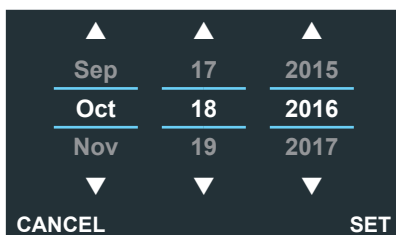
- *Language:* Select 1 of 3 available languages as the default for all charger screens.
- *Temperature Units:* Select Celsius or Fahrenheit.
- *Number Separator:* Select comma or decimal.
- *Screen Orientation:* Select the default view or inverted to rotate the screen 180°.

Date & Time

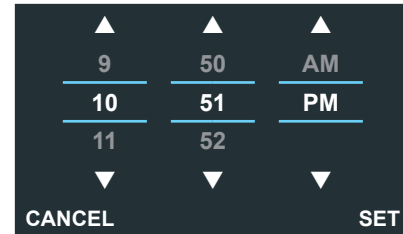


Adjust the charger day and day display, time format, and current time.

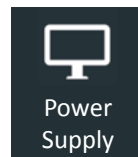
- *Date Format:* Select between month/day/year (MM/DD/YYYY) or day/month/year (DD/MM/YYYY).
- *Date:* Tap ▲ or ▼ to enter the month, day, and year. Tap Set to save the date or Cancel to exit without saving.



- *Time Format:* Select AM/PM or 24-hour.
- *Time:* Tap ▲ or ▼ to enter the hours, minutes, and AM/PM. Tap Set to save the date or Cancel to exit without saving.



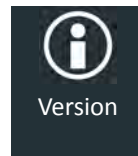
Power Supply



Adjust the minimum and maximum voltage settings for the charger when used in Power Supply mode.

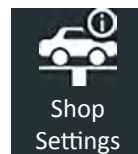
- *Min Voltage:* Default value is 12:00V
- *Max Voltage:* Default value is 15:00V

Version



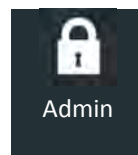
Selecting the VERSION icon from the Info menu will display configuration, firmware, eeprom, flash, build date, build number, and the charger serial number.

Shop Settings



Use the Shop Settings to enable and/or change the Admin PIN, create and edit Shop information, and manage registered Users.

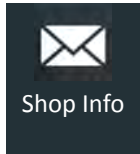
Admin



Options under the ADMIN function include enabling PIN-access and setting up or editing the Administrative PIN.

- *Admin Enable:* The Admin PIN is enabled when the box is checkmarked.
- *Admin Pin:* Use the displayed keyboard to highlight each digit of the PIN and press to select it. Highlight and select **OK** to save the PIN or **Cancel** to return to the Admin Settings screen.

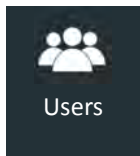
Shop Info



Use the SHOP INFO to create a header with the shop business location information.

- *Shop Info:* Highlight alphanumeric characters by using the arrow keys and press to select each one. Select **SAVE** to save the selected characters or **ESC** to exit without saving.

Users

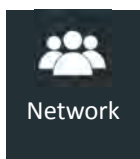


Use this utility to create, edit, delete and turn the Users function ON or OFF.

Enable the Users function and manage registered charger users.

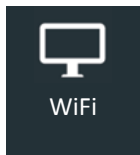
- *Enable Users:* Press to enable or disable the Users function. A checkmark in the box indicates the function is enabled.
- *Add Users:* Use the displayed keyboard to select a unique user label, pressing to select each character. Select **SAVE** to save the selected characters or **ESC** to exit without saving.
- *Edit Users:* Select the User ID to edit and press . Use the displayed keyboard to modify the user label, pressing to select each character. Select **SAVE** to save the modified characters or **ESC** to exit without saving.
- *Delete Users:* Select the User ID from the list to be deleted and press to delete it.

Network



Use the Shop Settings to enable and/or change the Admin PIN, create and edit Shop information, and manage registered Users.

Wi-Fi



Select WiFi to select and configure WiFi networks automatically or manually, configure the charger IP Setup, and load a WiFi configuration files from a connected USB-type jump drive.

- *Automatic:* Automatically scan for detectable WiFi networks and select a network from the displayed list for which to connect.

The selected network parameters are displayed including security, SSID, Password, WEP Encryption, and WEP Keys. Select **Connect** to save and connect to the WiFi network.

- *Manual:* Manually configure the WiFi Setup including Security, SSID, Password, WEP Encryption, and WEP Keys. Select **Connect** to save and connect to the WiFi network.
- *IP Setup:* Manually enter the IP settings including, IP Type, IP Address, Gateway, Subnet Mask, Primary DNS, and Secondary DNS.
- *Configuration File:* Load a WiFi configuration file from a connected USB jump drive.

Phone



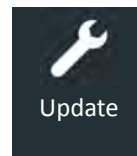
For future expansion.

BMIS Settings



Use the BMIS Settings to enable and/or change the Admin PIN, create and edit Shop information, and manage registered Users.

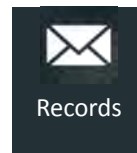
Update



Use this function to manage the charger software update options and manage tool configurations.

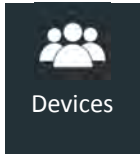
- *Over The Air:* Checked box indicates data transmission via WiFi network is enabled.
- *USB Drive:* Checked box indicates data transmission using a connected USB-type jump drive is enabled.
- *USB PC Link:* Checked box indicates data transmission using PC Link via a connected cable is enabled.
- *Save Tool Configuration:* Saves the charger's current BMIS settings to a USB-type jump drive.
- *Load Tool Configuration:* Loads a saved Tool Configuration file from a USB-type jump drive.
- *Delete Tool Configuration:* Deletes a saved Tool Configuration file.

Records



Display either individual test records or a list of records including VIN, Year, Make, and Model information.

Devices



Manage the Midtronics peripheral equipment with which the charger can communicate.

Notifications



Manage shop email and phone information used when the tool is communicating data. Also manage DSS-7000 communication settings.

- *Email:* Checked box indicates email notifications is enabled.
- *Email Address:*



Use ▲ ▼ ◀ ▶ to highlight each number and press □.

Select Confirm to save and continue or Cancel to return to the Reflash screen.

- *Phone:* Checked box indicates the phone number function is enabled.
- *Phone Number:* (U.S. Only)



Use ▲ ▼ ◀ ▶ to highlight each number and press □.

Select Confirm to save and continue or Cancel to return to the Reflash screen.

- *DSS-7000:* Checked box indicates DSS communication is enabled.
- *DSS-7000 SN:*



Use ▲ ▼ ◀ ▶ to highlight each number and press □.

Select Confirm to save and continue or Cancel to return to the previous screen.

Notes

Notes

Notes

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 at 866-592-8052. 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

Corporate Headquarters

Willowbrook, IL USA
Phone: 1.630.323.2800
Canadian Inquiries
Toll Free: +1 1 866 592 8052

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
Asia/Pacific (excluding China)
Contact Corporate Headquarters
Phone: +1.630.323.2800