

MCC-070 EU Controlled Charger



INSTRUCTION MANUAL

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General Safety Precautions

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

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

1 General Safety Precautions

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

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

⚠ CAUTION

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

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

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

3 Preparing To Charge The Battery

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

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

4 Grounding & Power Cord Connections

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

⚠ DANGER



Hazardous voltage.
An improper connection can result in electric shock

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

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

- 4.2 This battery charger is for use on a nominal 120-volt circuit and has a grounding plug that looks like the plug illustrated in Figure A. A temporary adapter, which looks like the adapter illustrated in Figures B and C, may be used to connect this plug to a two-pole receptacle as shown in Figure B, if a properly grounded outlet is not available. The temporary adapter should be used only until a properly grounded outlet can be installed by a qualified electrician.

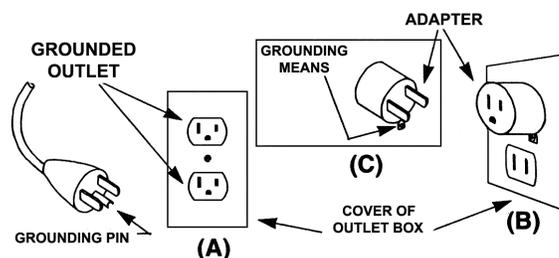
⚠ DANGER



Hazardous voltage.
An improper connection can result in electric shock

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

USE OF AN ADAPTER IS NOT ALLOWED IN CANADA. IF A GROUNDING-TYPE RECEPTACLE IS NOT AVAILABLE, DO NOT USE THIS APPLIANCE UNTIL THE PROPER OUTLET IS INSTALLED BY A QUALIFIED ELECTRICIAN.



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

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

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.

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

ALWAYS use in the horizontal position or mounted securely to the stabilizing base.

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

- Operate the charger only in a well-ventilated area that is free of dangerous vapors.
- Store the charger in safe, dry location and maintain it in perfect condition.
- Do not set the battery on top of the charger or where its acid might drip onto the charger.

6 DC Connection Precautions

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

⚠ DANGER



Hazardous voltage. Can cause death or serious personal injury.

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

7 Installing The Battery

⚠ WARNING

Risk of explosive gases.

Prevent flames and sparks. Provide adequate ventilation during charging.

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

8 Removing the Battery

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

WARNING

Risk of explosive gases.

Prevent flames and sparks. Provide adequate ventilation during charging.

WARNING

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



Storage

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

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

Power

Input: 240V \sim , 50 Hz, 10A Max
120V \sim , 60Hz 12A Max

Output: 15.5 V --- , 70A

Charge Cables

- 5m

Power Cord

Accepts C13 locking connector for region-specific power cables:

- NEMA 5-15 for US IEC 60906-2 – (125VAC/15A)
- GB 2099 Type 1 for China (250VAC/10A)
- JIS C 8303 Class 1, Type B for Japan (125VAC/15A)
- CEE 7/7 Type E/F Hybrid for EU (250VAC/10A)
- BS 1363 Type G for UK (250VAC/10A)
- AS 3112 Type 1 for Australia and New Zealand (250VAC/10A)

Applications

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

Battery Chemistries

- Lead acid
- AGM
- Gel
- EFB
- Lithium (LiFePo4)

Rating System

- CCA
- EN2
- EN
- JIS
- DIN
- SAE
- IEC

Operating Parameters

- Input Voltage:
120 VAC; 60 Hz; 12A maximum
240 VAC; 50Hz; 10A maximum
- Output:
15.5 VDC; 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: 16.75 lbs (7.6 kg)

Temperature

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

Certifications

- CUL
- TUV
- FCC
- RoHS
- CEC
- CE

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:

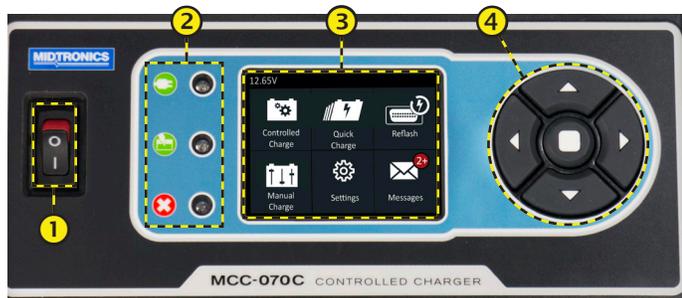
Symbol	Description
	The safety symbol indicates instructions for avoiding hazardous conditions and personal injury.
	The safety symbol with the words CAUTION , WARNING , or DANGER indicates instructions for avoiding hazardous conditions and personal injury.
	The wrench symbol indicates procedural notes 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 (r LIN/CAN)	6 Charge Cable Quick Connector Locking Posts

Control Panel

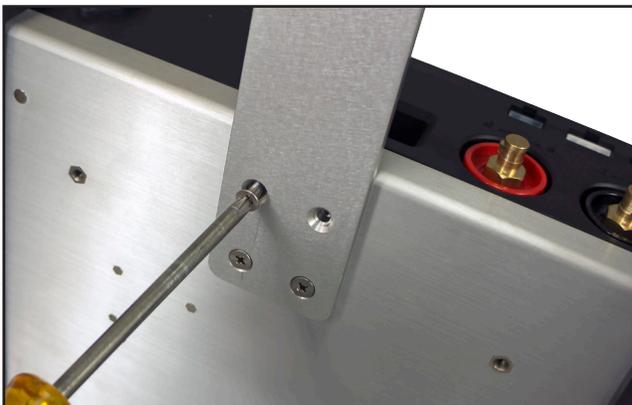


- ① ON - OFF Switch
- ② Status Lights
 - Charger Power
 - Charging / Operating
 - Error
- ③ Charger Display Screen
- ④ Control Buttons
 - Left Arrow / Back
 - Up Arrow
 - Down Arrow
 - Right Arrow
 - Enter

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

Pull up on the red tab on top of the connector to release/remove 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	<p>Use these functions to setup the charger display, date settings, power supply defaults, shop, user, WiFi and BMIS settings.</p> <p>Access to these functions is password-protected (if enabled).</p>
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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.
 BMIS Settings	Use to adjust the update settings, test records, connected Midtronics devices, and view notifications including email address.

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.
 Version	Check the software version and tool data.

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.

BMIS Settings

Icon	Description
 User Credential	Enter your username + corresponding password to get access to your BMIS account.
 Location Settings	Enter the location address.
 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.

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 batteries.

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

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.

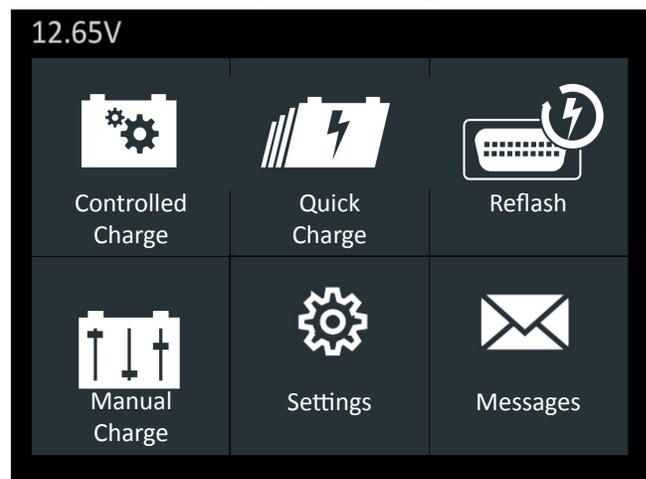
Shop Info

- *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 24 available languages as the default for all charger screens.

The Main Menu is displayed on the charger screen.



Chapter 2: Charging

Controlled Charge

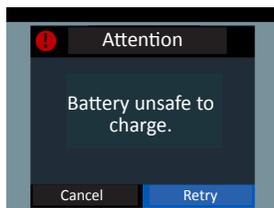


For charging situations when battery information (chemistry, rating, etc) is available.

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

1. At the Main Menu, select the Controlled Charge icon.
2. The VIN number can be added to the charge. If at the top no VIN is shown, you can add the VIN through manual entry, CVG entry or selecting the vehicle in the vehicle list.
3. Select the battery Chemistry, Units and Rating.
4. Select Start.

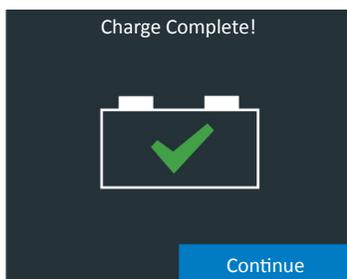
The charger performs a Safety Check on the connected battery.



If the battery passes, the charging process begins.

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

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



7. 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%.
8. 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.

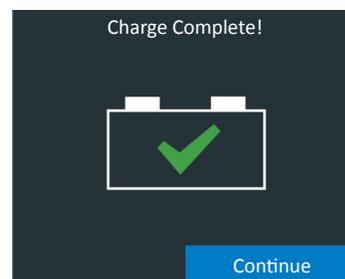
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If the battery passes, the charging process begins.

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.

Reflash



Use Reflash (also known as Power Supply) 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 Reflash icon.
2. The VIN number can be added to the charge. If at the top no VIN is shown, you can add the VIN through manual entry, CVG entry or selecting the vehicle in the vehicle list.
3. Select the battery Chemistry
4. Select the reflash Voltage Limit.

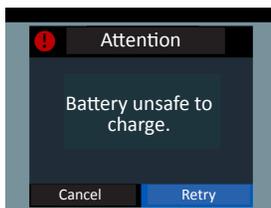


Use ▲▼◀▶ to highlight each number and press □.

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

5. Select Start.

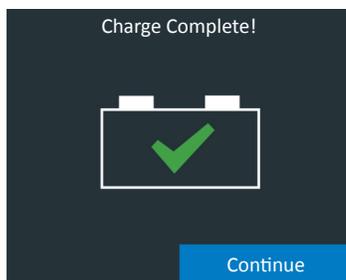
The charger performs a Safety Check on the connected battery.



If the battery passes, the charging process begins.

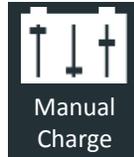
Use ◀ or ▶ to view the charging screens while the battery is being charged.

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



8. 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%.
9. 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.

1. At the Main Menu, select the Manual Charge icon.
2. Select the battery Chemistry.
3. Select the Charge Limit Type; Voltage or Current.
4. 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.

5. Select the Time Limit Type.
6. Select the Time Limit Value.



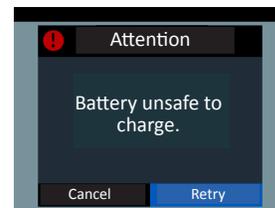
Use ▲▼◀▶ to highlight each number and press □.

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

7. Select the Temperature Limit.

Select Start.

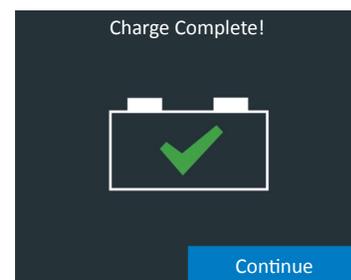
The charger performs a Safety Check on the connected battery.



If the battery passes, the charging process begins.

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

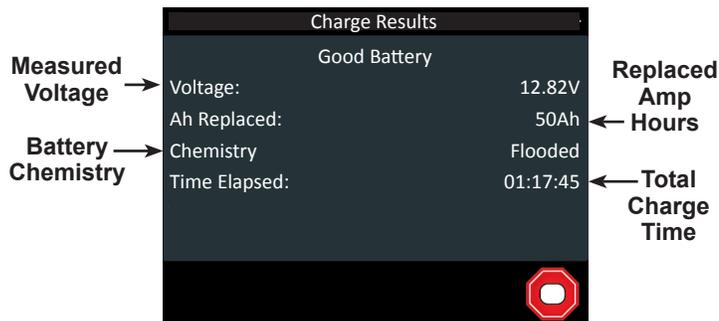
8. Press □ to abort the charging session.
9. The Charge Complete screen is displayed at the end of the charge cycle.



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.

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.

⚠ WARNING

Risk of explosive gases
 Charging a battery with a bad cell may cause the battery to explode.

Possible Warnings

Warning	Recommended Action
OVERVOLTAGE	The charge cannot be continued due to an overvoltage problem.
UNDERVOLTAGE	The charge cannot be continued due to an undervoltage problem.
HIGH TEMPERATURE	The charge cannot be continued due to an overheating problem.
OVERCHARGE PROTECTION	The charge cannot be continued due to an overcharging problem.

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.



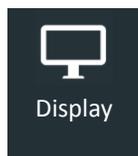
IMPORTANT: Access to the functions in the Settings menu is password-protected (if enabled).

Tool



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

Display



Adjust the screen display options for the charger.

- *Language:* Select 1 of 24 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



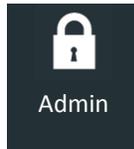
Selecting the VERSION icon from the Info menu will display configuration, firmware, eeprom, flash, build date, build number, and the charger serial number.

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 check marked.
- *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

Shop Info

Use the SHOP INFO to enter 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. You can edit the Shop name, Shop Address, City, State, Zipcode, Country, Phone Number, Email Address and Website.

Users



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 check mark 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. A maximum of 10 users can be saved.
- *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



Network

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

Wi-Fi



WiFi

Select WiFi to select and configure WiFi networks automatically or manually, configure the charger IP Setup, and set up a CVG3.

- *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 and Subnet Mask.
- *CVG3 Setup:* Enables the tool to automatically communicate with the attached CVG-3.

BMIS Settings



BMIS Settings

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

User Credentials



User Credentials

Enter the Username and Password that is linked to your BMIS account.

Location Settings



Location Settings

Enter the location code, which is linked to your BMIS contact.

Update



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.

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 battery testers and does not cover any other equipment, static damage, water damage, overvoltage, 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.

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