TROJAN BATTERY COMPANY

36V / 48V / 72V

TROJAN® LITHIUM ONEPACK™ SERIES

USER'S GUIDE

OnePack™
OnePack™ Extended-Range
OnePack™ High Performance

© 2026 Trojan Battery Company, LLC

CONGRATULATIONS

on your purchase from Trojan Battery Company, LLC (“Trojan”), manufacturers of the world’s most trusted batteries. Trojan Lithium-ion batteries are engineered for safety and performance—delivering faster charge times and longer runtimes with virtually zero required maintenance. It’s the next innovation in battery power backed by 100 years of expertise. We’re proud to continue our tradition of delivering clean, long-lasting and reliable batteries to power your world.

100
YEARS OF TRUSTED POWER
1925 2025

TROJAN BATTERY COMPANY WITH QUALITY SYSTEM CERTIFIED BY DNV
= ISO 9001:2015 =

THIS USER'S GUIDE

was created by Trojan's application engineers and contains vital information regarding proper care and maintenance of your new battery. Please read through this User's Guide carefully and completely before using your battery. It will help you achieve optimum performance and long life from your new investment. If you have any questions concerning safety precautions or for any assistance in installing or using the battery in your system, contact Trojan's technical support engineers at one of the following numbers, or send us an email through our website at www.trojanbattery.com/tech-support/.

www.trojanbattery.com

TECHNICAL SUPPORT
800-423-6569 Ext. 3045 / +1-562-236-3045
technical@trojanbattery.com

CONTENTS

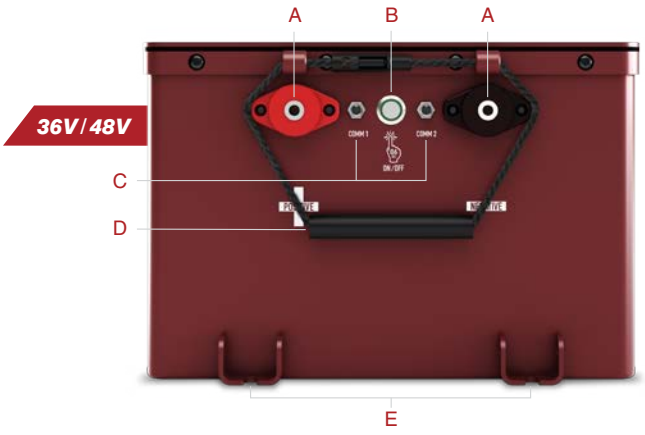
1 YOUR TROJAN LITHIUM-ION BATTERY

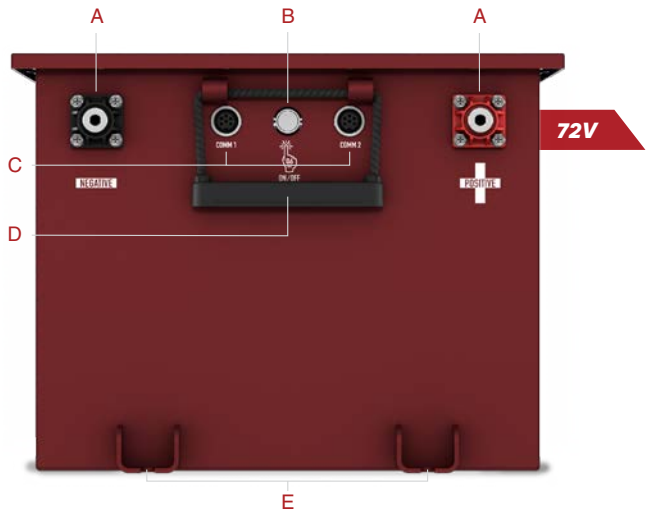
The Trojan Battery OnePack is a lithium-ion battery that uses a lithium-iron-phosphate (LFP) cell chemistry. Key attributes of the battery include:

KEY ATTRIBUTES					
	TR-36-105-M	**TR-48-110-M**	**TR-48-170-M**	**TR-48-170-HP**	**TR-72-105-M**
Nominal Voltage	38.4V	51.2V	51.2V	51.2V	70.4V
Capacity	105Ah	105Ah	170Ah	170Ah	105Ah
Case Size (LxHxW)	15.7" x 10.0" x 11.8"	21.4" x 12.6" x 8.6"	21.4" x 12.8" x 10.5"	21.4" x 12.8" x 10.5"	21.4" x 14.1" x 10.6"
Weight	86 lbs	120 lbs	170 lbs	170 lbs	141 lbs
Terminal Configuration	M8-1.25 Female	M8-1.25 Female	M8-1.25 Female	M8-1.25 Female	M8-1.25 Female
Communication Connector	M16	M8	M8	M8	M16

1.1 BATTERY TERMINAL

Check terminal position on batteries before connecting cables.





A. Power Terminals (M8 threads)
B. ON/OFF Power Switch
C. Communications Port 1 & 2
D. Handle
E. Mounting Feet

*Temperature, load, state of charge, and battery age can affect battery performance and capacity.

2 SAFETY

ALWAYS	NEVER
Always wear proper personal protective equipment (PPE) (eye protection, gloves and safety toe shoes).	Never wear jewelry or other metal objects when working on or around batteries.
Always use insulated tools when working on batteries.	Never place objects on top of batteries.
Always check connections for proper torque.	Never attempt to charge a battery when the temperature is below 32°F (0°C) or above 131°F (55°C).
Always keep sparks and flames away from batteries. This includes sources of static electricity.	Never store batteries below 30% State of Charge.
Always use short cables of appropriate size to minimize voltage drop.	Never exceed maximum charging currents for the battery's temperature.
Always make sure charger is set as recommended.	Never dispose of batteries as household waste. Use recycling channels in accordance with local, state and federal regulations.
Always charge batteries to 100% SOC before installing.	Never connect or disconnect terminals from batteries without first disconnecting loads.
Always make sure chargers are off or disconnected while working on batteries.	Never attempt to open the battery case.
Always install batteries while powered off.	Never use pressure washers to clean the battery or immerse the battery in water.
Always use team-lift techniques or mechanical assistance when lifting the OnePack.	Never short-circuit the battery terminals.
Always review product warning labels and Trojan OnePack Lithium-Ion battery User's Guide.	Never physically damage the battery (this includes, without limitation): Puncturing, dropping, crushing, burning, penetrating, shaking, hammering, and misconnecting terminals.
Always verify that battery voltage is compatible with vehicle motor controller and accessories.	Never lift the battery by the cover or terminals. Only lift battery using the handles.
Always verify correct polarity when connecting cables to battery terminals.	Never over-charge or over-discharge the battery.

WARNING! RISK OF FIRE, EXPLOSION OR BURNS. DO NOT DISASSEMBLE, HEAT ABOVE 140°F (60°C) OR INCINERATE.

THE MOST EFFECTIVE FIRE EXTINGUISHER TYPES FOR TROJAN LITHIUM-ION BATTERIES ARE CO_2 OR WATER. SEE SAFETY INSTRUCTIONS.

WARNING!

HOST SYSTEMS POWERED BY LITHIUM-ION BATTERIES, INCLUDING THE TROJAN® ONEPACK LITHIUM-ION BATTERY, MAY BEHAVE DIFFERENTLY THAN WHEN POWERED BY LEAD-ACID BATTERIES. LITHIUM-ION BATTERIES MAY DISCONNECT FROM THE HOST SYSTEM WITHOUT WARNING UNDER A VARIETY OF CONDITIONS IN ORDER TO AVOID INTERNAL DAMAGE ("AUTOMATIC DISCONNECTION"). AUTOMATIC DISCONNECTION WILL RESULT IN TOTAL POWER LOSS.

EXAMPLES OF CONDITIONS THAT CAN LEAD TO AUTOMATIC DISCONNECTION INCLUDE, WITHOUT LIMITATION:

- HIGH VOLTAGE FROM EXTERNAL POWER SOURCES (CHARGERS) OR REGENERATIVE BRAKING
- BATTERY LOW VOLTAGE OR LOW STATE OF CHARGE
- HIGH CURRENT
- EXTERNAL SHORT CIRCUIT
- HIGH OR LOW TEMPERATURES
- SELF DIAGNOSTICS

FOR ADDITIONAL INFORMATION PLEASE SEE SECTION 3.9: "PROTECTION LIMITS: AUTOMATIC DISCONNECTION."

IN EQUIPMENT WITH ESSENTIAL SYSTEMS THAT RELY ON BATTERY POWER (FOR EXAMPLE, LOW-SPEED VEHICLES WITH ELECTRONIC ACCELERATION AND BRAKING SYSTEMS) (EACH AN "AFFECTED APPLICATION"), AN ABRUPT INTERRUPTION OF POWER MAY RESULT IN UNDESIRABLE, UNEXPECTED AND POTENTIALLY DANGEROUS EQUIPMENT BEHAVIOR, INCLUDING BUT NOT LIMITED TO BRAKING LOSS OR IMMEDIATE BRAKING.

USERS AND INSTALLERS OF THE TROJAN® ONEPACK LITHIUM-ION BATTERY MUST UNDERSTAND THE CONSEQUENCES OF INSTALLING LITHIUM-ION BATTERIES IN AN AFFECTED APPLICATION. THE USER AND/OR INSTALLER OF THE ONEPACK BATTERY ("USER AND/OR INSTALLER") ASSUMES ALL RISK AND LIABILITY FOR ANY DAMAGES, INJURIES TO PERSONS OR PROPERTY (INCLUDING BUT NOT LIMITED TO DEATH), OR ACCIDENTS ARISING RELATED TO SUCH USE OR INSTALLATION.
USERS AND/OR INSTALLERS SHOULD CONSULT THE MANUFACTURER OF ANY AFFECTED APPLICATION FOR RISK MITIGATION OPTIONS RELATED TO USE WITH LITHIUM-ION BATTERIES.

WARNING!

LITHIUM-ION BATTERIES, INCLUDING THE TROJAN® ONEPACK LITHIUM-ION BATTERY, WEIGH SUBSTANTIALLY LESS THAN LEAD-ACID BATTERIES OF COMPARABLE CAPACITY. MANY TYPES OF EQUIPMENT ARE DESIGNED TO UTILIZE THE WEIGHT OF LEAD-ACID BATTERIES TO ACHIEVE THE MANUFACTURER'S INTENDED WEIGHT DISTRIBUTION. IF THE ONEPACK BATTERY INSTALLED AS REPLACEMENT BATTERIES IN EQUIPMENT DESIGNED TO USE LEAD-ACID BATTERIES AS BALLAST, THE WEIGHT DISTRIBUTION OF THE EQUIPMENT COULD BE IMPACTED. THE USER AND/OR INSTALLER OF THE ONEPACK BATTERY IN SUCH EQUIPMENT MUST UNDERSTAND THE CONSEQUENCES OF MODIFIED WEIGHT DISTRIBUTION AND ENSURE THAT STABILITY REMAINS WITHIN A SAFE RANGE FOR THE INTENDED USE. THE PROPER INSTALLATION OF ONEPACK BATTERY MAY REQUIRE ADDITIONAL BALLAST WEIGHTS OR OTHER ADJUSTMENTS OR EQUIPMENT MODIFICATIONS TO ENSURE STABILITY AND SAFE WEIGHT DISTRIBUTION. THE IMPROPER INSTALLATION AND/OR USE OF ONEPACK BATTERY COULD COMPROMISE THE WEIGHT BALANCE AND PHYSICAL STABILITY OF THE EQUIPMENT LEADING TO UNSAFE CONDITIONS. THE USER AND/OR INSTALLER OF THE ONEPACK BATTERY IN SUCH EQUIPMENT ASSUMES ALL RISK AND LIABILITY FOR ANY DAMAGES, INJURIES TO PERSONS OR PROPERTY (INCLUDING BUT NOT LIMITED TO DEATH), OR ACCIDENTS ARISING OUT OF OR RELATED TO DEGRADED STABILITY RESULTING FROM IMPROPER INSTALLATION AND/OR USE OF THE ONEPACK BATTERY.

3 GETTING TO KNOW YOUR BATTERY

Before getting started, be sure to register your Trojan OnePack Lithium-ion battery to activate the 10 year warranty. Register at www.trojanbattery.com/register-onepack

3.1 POWERING BATTERY ON & OFF

The Trojan OnePack can be powered on by the ON/OFF power switch, or the remote dashboard push button.

3.1.1 ON & OFF POWER SWITCH

The ON/OFF power switch is located in between the power terminals.

Perform the following steps to turn the battery on using the ON/OFF Power Switch:

- Verify that the battery is either completely disconnected or correctly connected to the equipment it will be powering.
- Be sure you are able to see the ON/OFF Power Switch on the side of the battery.
- Press and hold the ON/OFF Power Switch for approximately 6 seconds then release. The LED will blink 4 times while being held.
- A green blinking LED light will appear on the ON/OFF Power Switch to indicate the battery is on.

Perform the following steps to turn the battery off and place it in storage mode:

- Press and hold the On/Off switch for approximately 6 seconds then release. The LED will blink 4 times while being held.
- The green blinking LED switch light will no longer be illuminated. The battery is off if no illumination is present.

Power On/Off: Locate the ON/OFF Power Switch on the side of the battery in between the power terminals.

Turning On: Press the button, hold for approximately 6 seconds, and release. A green blinking LED light will appear to indicate the battery is on.

Turning Off: Press the button, hold for approximately 6 seconds, and release. Verify that the green LED is no longer blinking.

3.1.2 REMOTE DASHBOARD BUTTON

The remote dashboard push button is a recommended accessory of the Trojan OnePack. If using the dashboard push button to turn the battery on or off, push and hold the button for 1 second. The SOC gauge display will be your indication that the battery is on or off. The use of the dashboard push button is disabled while the battery is being charged or discharged, or when the battery has been disabled due to low voltage. In these circumstances, the ON/OFF Power switch located on the battery must be used to enter or exit storage mode.

DO NOT ATTEMPT TO TURN THE BATTERY OFF WHILE THE VEHICLE IS IN MOTION.

3.2 CHARGING

The Trojan OnePack Lithium battery may be used in applications where lead-acid batteries have previously been utilized. Trojan OnePack Lithium batteries should only be charged using a Trojan recommended charger and charging profile (algorithm). Refer to documentation on your specific charger for more information. Charging due to regenerative braking should also be reduced in environments below 68°F or above 113°F.

3.2.1 INITIAL CHARGING & CHARGING PROFILES

Unless your dealer has charged your battery prior to delivery, it will be received at partial state of charge.
Prior to installation, fully charge the battery to 100% SOC and allow to rest a minimum of 5 hours in storage mode, or 9 hours after charging cycle completes.

The Trojan OnePack Lithium battery should be charged using a lithium-ion charging profile. Use of a compatible charging profile is required to obtain a fully balanced battery pack. Using charging profiles designed for lead-acid or other battery types may result in a sudden voltage increase that will cause permanent damage to the battery BMS and render the battery inoperative. Damage caused by incompatible chargers or profiles will void product warranty. For a list of compatible chargers and charging profiles, scan QR code or visit www.trojanbattery.com.

SCAN FOR PRODUCT RESOURCES, CHARGER GUIDE, APP & WARRANTY REGISTRATION.
10-YEAR LIMITED WARRANTY REQUIRES REGISTRATION WITHIN 90 DAYS OF PURCHASE.
Products not registered within this period are covered by a 1-year limited warranty only.

ATTENTION! USE ONLY WITH COMPATIBLE LITHIUM-ION CHARGERS

3.2.2 CHARGING PROCEDURES

- Verify that the battery is correctly connected to the charger with the positive wire on the positive (+) terminal and the negative wire on the negative (–) terminal.
- Ensure the charger is set to run the appropriate profile.
- Confirm that the battery is powered on. Many chargers will not start if no battery voltage is detected.
- Start charging, following the charger manufacturer's instructions.
- After the charge has completed, the charger may be shut off and disconnected, or if it remains in a "maintenance mode" within the recommended charging range, it can remain connected to the battery indefinitely.

3.2.3 BALANCING

One function of a lithium-ion battery BMS is to maintain balance between each group of cells within the battery. This allows the battery to deliver full capacity without any cells experiencing an over or under-voltage condition. Balancing is performed when a parallel group of cells reach a specified threshold voltage corresponding to nearly 100% state of charge (SOC). At that point, the highest-charged cells "bleed down" a small amount to enable the remaining groups of cells to "catch up." Balancing may cause small changes in state of charge up to 2%.

Using a charger not designed for use with a lithium-ion battery may result in an imbalance between cells over time that requires charging maintenance to recover. Recovery of an imbalance condition requires one or more charging cycles to 100% state of charge using a lithium-ion specific charger or charging algorithm. Failure to do so may result in a battery lockout condition.

3.2.4 CHARGING AT TEMPERATURES BELOW 68°F (20°C)

Maximum charging currents must be reduced at temperatures below 68°F (20°C) and charging is disabled below 32°F (0°C). Measures need to be taken to ensure that charging currents do not exceed the values shown on the product datasheet. Charging due to regenerative braking should also be reduced in environments below 68ºF. Vehicles that use regenerative braking at cold temperatures may force the battery to shut off if too much current is applied back into the battery.

3.2.5 CHARGING AT TEMPERATURES ABOVE 113°F (45°C)

Maximum charging currents must be reduced at temperatures above 113°F (45°C) and charging is disabled above 131°F (55°C). Measures need to be taken to ensure that charging currents do not exceed the values shown on the product datasheet. Charging due to regenerative braking should also be reduced in environments above 113ºF. Vehicles that use regenerative braking at hot temperatures may force the battery to shut off if too much current is applied back into the battery.

NOTE: All temperatures refer to cell temperature internal to the battery, not external ambient temperatures. Cell temperatures increase when the battery is charging or discharging under heavy load. Additional impacts to cell temperature can be caused by, but not limited to, direct sunlight or parking vehicle on a black top surface.

DO NOT ATTEMPT TO COOL BATTERY USING ICE OR WATER.

3.2.6 CHARGING FROM 0% STATE OF CHARGE

If the battery is discharged to 0% state of charge, voltage to the battery terminals will be disabled and the battery will enter into storage mode. The battery should be recharged as soon as possible. Failure to do so may render the battery permanently unusable.

A battery at 0% state of charge may interfere with the operation of battery chargers with voltage-sensing protection and prevent the charge cycle from starting. If the battery is at 0% state of charge and will not charge, use the following steps to recover the battery:

- Plug in the charger and connect it to the battery.
- Power on the battery using the ON/OFF Power Switch.
  Note that the battery will not turn on using the dashboard push button accessory.
- The battery will remain powered on for 5 minutes to allow for the charging cycle to begin. If it does not begin, verify power to the charger and the connection to the battery and repeat this process.
- Depending on the battery voltage, it may be necessary to repeat these steps until regular charging resumes.

3.2.7 OTHER CHARGING INFORMATION

- **Chargers which utilize an automatic desulfation or equalization mode are not recommended.**
- Depending upon the initial state of charge and the size of the load, even small quiescent loads such as motor controllers and on-board chargers can fully discharge batteries in as little as a few days. For instance, a 25mA load amounts to 0.6Ah discharge per day. Be sure to understand the quiescent loads in your application and set an appropriate charging interval. If the batteries will not be used for extended periods of time, turn them off.
- It is not recommended to use power outlets controlled by switches, peak shaving controllers or that rely solely on non-continuous power sources such as solar or wind generation to charge batteries. Interruption of the charge cycle may prevent the battery from reaching full state of charge or prolong charging times.

3.3 STATE OF CHARGE

The Trojan OnePack battery features an advanced state of charge reporting function that provides users a digital state of charge display either through the optional state of charge gauge, or through the Trojan SmartBattery® App. The reported state of charge is dependent on multiple factors and may vary +/- 5%.

It is safe to use the Trojan OnePack battery at states of charge from 1% to 100% however to optimize performance of the battery, it is recommended to charge before reaching 30% state of charge. When operating below 20% state of charge, high discharge currents may cause a drop in voltage, resulting in a temporary loss of battery power. Vehicles that are carrying more than 2 passengers, have been modified for high speeds, or have oversized tires are more likely to experience this. When the battery reaches 30% state of charge or less, users should connect the battery to a charger as soon as possible.

To ensure the accuracy of the state of charge gauge, the Trojan OnePack resets the state of charge periodically. If your battery state of charge gauge fails to show at least 90% state of charge after a complete charging cycle with a compatible charger, disconnect it from the charger and reconnect, allowing the charge cycle to run again then allow the battery to sit without being used or charged overnight (minimum of 5 hours). This will allow the battery to reset the reported state of charge.

3.4 CAN COMMUNICATION

The battery includes a Controller Area Network (CAN) bus communications interface. The communication connectors are on the side of the battery to enable communication with the battery and support battery accessories such as the Dashboard SOC Gauge Kit.

For normal battery operation, the CAN bus feature is not required. The battery operates and protects autonomously; it does not require any CAN bus communication or external devices such as external controllers. Keep the two black caps installed on the communication connectors to protect them from the environment when not used.

Certain vehicles, motor controllers, or chargers are able to communicate with the Trojan Lithium OnePack battery. Integration may require vehicle specific update to the battery. Contact your Trojan sales representative for additional details.

Trojan's field service can retrieve the battery usage history and view status over the CAN bus interface to help resolve issues or questions. A certified field service technician can update the battery firmware over the CAN bus as needed. Contact Trojan's technical support engineers if you have any questions about the CAN bus interface and its use.

3.5 STORAGE MODE

The Trojan OnePack is equipped with a storage mode that reduces the BMS function to minimal levels so that the battery state of charge is maintained. Storage mode also disables the battery terminals to make installation and handling of the OnePack safer. When at idle, the battery will automatically enter storage mode after 4 hours. If the battery capacity drops below 25% SOC while idle, it will enter into storage mode after 1 hour of inactivity. To manually enter or exit storage mode, the ON/OFF Power Switch or the optional dashboard push button can be used. Note: the Trojan SmartBattery® App cannot be used to enter or exit storage mode.

3.6 BATTERY PERFORMANCE AT HIGH & LOW TEMPERATURES

BATTERY PERFORMANCE

When operating batteries at low temperatures, they will deliver less than the rated capacity. When operating batteries at high temperatures, battery life will be reduced. The life of a battery is difficult to predict and will vary by application, frequency of usage, and load characteristics. Note that battery life diminishes as temperature increases.

COLD WEATHER PERFORMANCE

The published discharge ratings for the Trojan OnePack are based on a cell temperature of 77°F (25°C). The chemical reactions that happen inside of Lithium-ion batteries are affected by cold temperatures, and performance will decrease as temperature drops. Cold-weather performance limitations are a normal characteristic of lithium-ion battery chemistry and do not indicate a defect in the battery.

As temperatures fall below 68°F (20°C), a moderate reduction in available capacity will occur. For most applications this will only be noticeable as a reduction in overall battery range. As temperatures approach 32°F (0°C) or lower, internal resistance increases and the battery's ability to discharge at high rates is decreased. Under these conditions, high current demand may cause cell voltage to drop rapidly. If cell voltage falls below the battery's safe operating range, the Battery Management System (BMS) may temporarily disable the battery to protect the cells. In very cold environments, this protective response can occur even when the battery indicates a high state of charge, especially with high current demand. The cells may be unable to sustain required voltage under load until they are warmed to a higher temperature.

For optimal performance and to prevent unexpected shutdowns:

- Maintain the battery above 32°F (0°C) whenever possible.
- Avoid heavy acceleration, full throttle conditions and use of high current accessories such as winches, heaters and large lights while driving at low temperatures.
- Driving the vehicle with moderate acceleration and at moderate speeds or using accessories while stationary will cause the battery to warm up and performance will increase.

Cold temperatures (<5°C or 41°F) reduce the battery's ability to accept regenerative charging current, particularly when the battery is at or near a full state of charge. In vehicles equipped with regenerative braking, this can result in a change in braking feel, including intermittent brake engagement during coasting. To minimize this effect, avoid regenerative braking immediately after a full charge in cold conditions. Allow the vehicle to warm up with light use before operating on hilly terrain. If unusual braking behavior is observed, reduce speed and avoid steep descents until the battery has warmed.

3.7 CLEANING

Check the battery for cleanliness at regular intervals and keep terminals and connectors free of corrosion. Terminal corrosion may adversely affect the performance of the battery and present a safety hazard.

- Power off battery before cleaning.
- Disconnect the battery from the charging source and the load.
- Clean the top of battery, sides, and terminals with a damp cloth or non-metallic brush.
- Dry with a clean cloth.
- Keep the area around batteries clean and dry.

NOTE: Do not use any chemicals to clean the battery. Do not clean battery using a pressure washer.

3.8 CHARGING SPECIFICATIONS

CHARGING SPECIFICATIONS					
	TR-36-105-M	**TR-48-110-M**	**TR-48-170-M**	**TR-48-170-HP**	**TR-72-105-M**
Charge Voltage Cutoff	43.8V	58.4V	58.4V	58.4V	80.3V
Peak Charge Current (max.)	230	230	230	230	230
Charge Current (max. continuous) @ Temperature					
< 32°F (0°C)	0A	0A	0A	0A	0A
32°F to 50°F (0°C - 10°C)	30A	30A	50A	50A	30A
50°F to 68°F (10°C - 20°C)	50A	50A	80A	80A	50A
68°F to 113°F (20°C - 45°C)	100A	100A	171A	171A	100A
113°F to 131°F (45°C - 55°C)	20A	20A	30A	30A	20A
> 131°F (55°C)	0A	0A	0A	0A	0A

3.8.1 DISCHARGING SPECIFICATIONS

DISCHARGING SPECIFICATIONS					
Performance and System Specifications @ 77°F (25°C)					
	TR-36-105-M	**TR-48-110-M**	**TR-48-170-M**	**TR-48-170-HP**	**TR-72-105-M**
Discharge Current (max. continuous)	180A	180A	180A	300A	180A
Discharge Current (time < 30 sec)	300A	300A	300A	425A	300A
Discharge Current (time < 2 sec)	525A	525A	525A	750A	525A

3.9 PROTECTION LIMITS: AUTOMATIC DISCONNECTION

As outlined in the following table, the Trojan OnePack Lithium-Ion battery will automatically shut down under excessive use conditions in order to prevent damage to the battery and connected equipment. This will generally result in total loss of power to equipment. Systems must be implemented, and precautions must be taken to ensure that sudden loss of power does not result in hazardous system behavior.

AS NOTED IN SECTION 2: "SAFETY," THE SYSTEM INSTALLER/USER ASSUMES ALL RESPONSIBILITY AND LIABILITY FOR ANY DAMAGES THAT MAY OCCUR DUE TO SUDDEN LOSS OF POWER.

PROTECTIVE SHUTOFF AND RESTART CONDITIONS			
	SHUTOFF	RESTART	OTHER RESTART CONDITIONS
Over Voltage	Any cell voltage > 3.74V	All cell voltages < 3.64V	Load attached and discharging
Low Voltage	Any cell voltage < 2.53V	All cell voltages > 2.63V	Charger attached and charging
Short Circuit Current	>800A instantaneously; >1000A instantaneously (TR-48-170-HP)	No automatic restart	Use the ON/OFF Power Switch on the side of the battery to manually wake up the battery.
Over Temperature Discharge	140°F (60°C)	131°F (55°C)	
Over Temperature Charge	131°F (55°C)	122°F (50°C)	
Under Temperature Discharge	-4°F (-20°C)	14°F (-10°C)	
Under Temperature Charge	32°F (0°C)	41°F (5°C)	
Automatic Sleep	No use for 4 hours or 1 hour if the battery state of charge is lower than 25%	No automatic restart	Use the ON/OFF Power Switch on the side of the battery or the dashboard push button accessory to manually wake up the battery.

4 BATTERY SET UP, INSTALLATION & ACCESSORIES

4.1 EQUIPMENT NEEDED

Before installation or maintenance of your battery, have the following equipment available:

- Proper personal protective equipment* (eye protection, gloves and safety toe shoes)
- Battery charger
- 13mm deep well socket
- 2" hole saw (for SOG Gauge installation)
- Insulated tools including torque wrench
- Voltmeter (optional)
- Cables
- Vehicle specific sockets or drive bits
- 7/8" hole saw (for remote push button installation)

*Battery voltage exceeding 50V nominal may require additional PPE for electrical and burn protection. Refer to local codes for additional information.

Team lifting is recommended when installing the battery.

4.2 INSPECTION

Inspect the battery prior to installation. Before inspection, verify that the battery is off. Check for visible damage including cracks, dents, deformation and other visible abnormalities. The top of the battery and terminal connections should be clean, free of dirt and corrosion, and dry. If any problems are detected with the battery, contact Trojan technical support or your battery distributor.

4.3 BATTERY START-UP

Your battery may be shipped at 50% state of charge (SOC) or lower. Before installation, connect the battery to a charger programmed with the recommended charging algorithm and allow the charger to complete a full cycle. Then leave the battery idle overnight. This will set the battery state of charge, ensuring accuracy.

4.4 VEHICLE INSPECTION

The Lithium-ion battery voltage and current rating of component must be matched to the vehicle where it is installed.

CABLE SIZE

Battery cables should be sized to handle the expected load and be of sufficient length and flexibility to avoid applying undesirable mechanical loads on the battery terminals. Refer to Table 1 for the maximum amperage based on the cable/ wire gauge size.

4.4 VEHICLE INSPECTION (CONT.)

WARNING! SHOCK HAZARD – DO NOT TOUCH UN-INSULATED BATTERY, CABLES, OR TERMINALS. ALL TOOLS SHOULD BE ADEQUATELY INSULATED TO AVOID THE POSSIBILITY OF SHORTING CONNECTIONS. DO NOT LAY TOOLS ON THE TOP OF THE BATTERY.

CABLE/WIRE GAUGE SIZE, AWG (mm2)	AMPACITY (Amps)
14 (2.08)	20
12 (3.31)	25
10 (5.26)	35
8 (8.36)	50
6 (13.3)	65
4 (21.1)	85
2 (33.6)	115
1 (42.4)	130
1/0 (53.5)	150
2/0 (67.4)	175

TABLE 1

Table values are from NEC Table 310.15(B)16 for copper cables rated at 167°F (75°C), operating at an ambient temperature of no more than 86°F (30°C). Lengths in excess of 6 feet (1829mm) may require heavier gauge wire to avoid unacceptable voltage drop. For more information refer to the National Electrical Code for correct cable/wire size, which can be located at www.nfpa.org

4.5 INSTALLATION & SYSTEM SET-UP

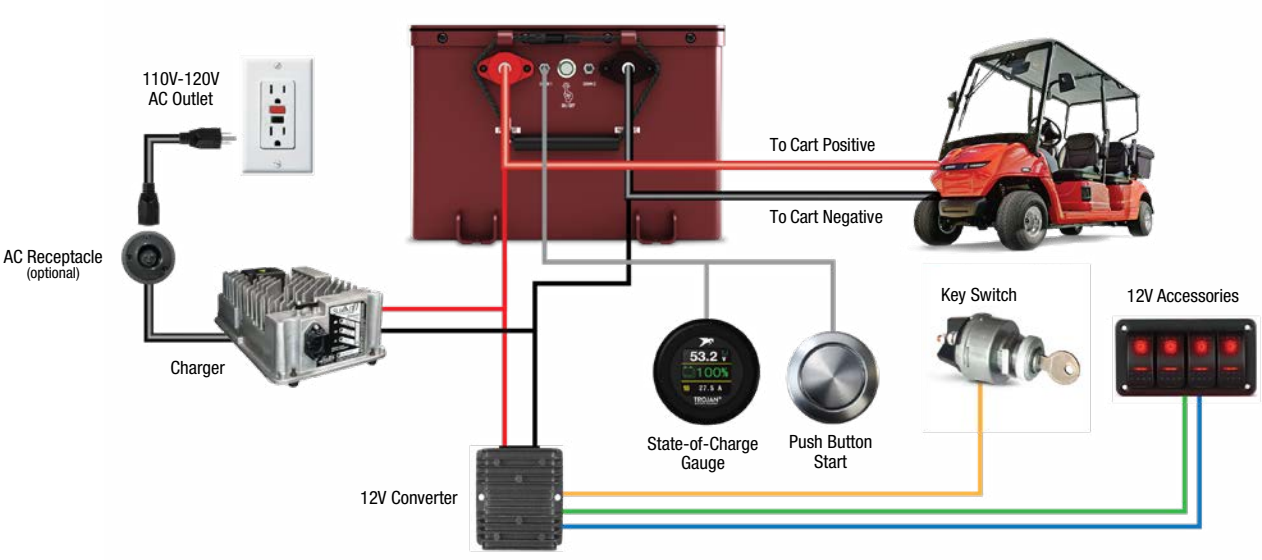
MOUNTING BRACKETS

Secure battery to the vehicle using the battery mounting feet. It is suggested to use a mounting bracket designed for your vehicle to mount the battery. Secure bracket to the vehicle and the battery to the bracket with the supplied hardware. M8 bolt hardware shall be torqued to 88.5-106.0 in-lbs (10-12 Nm).

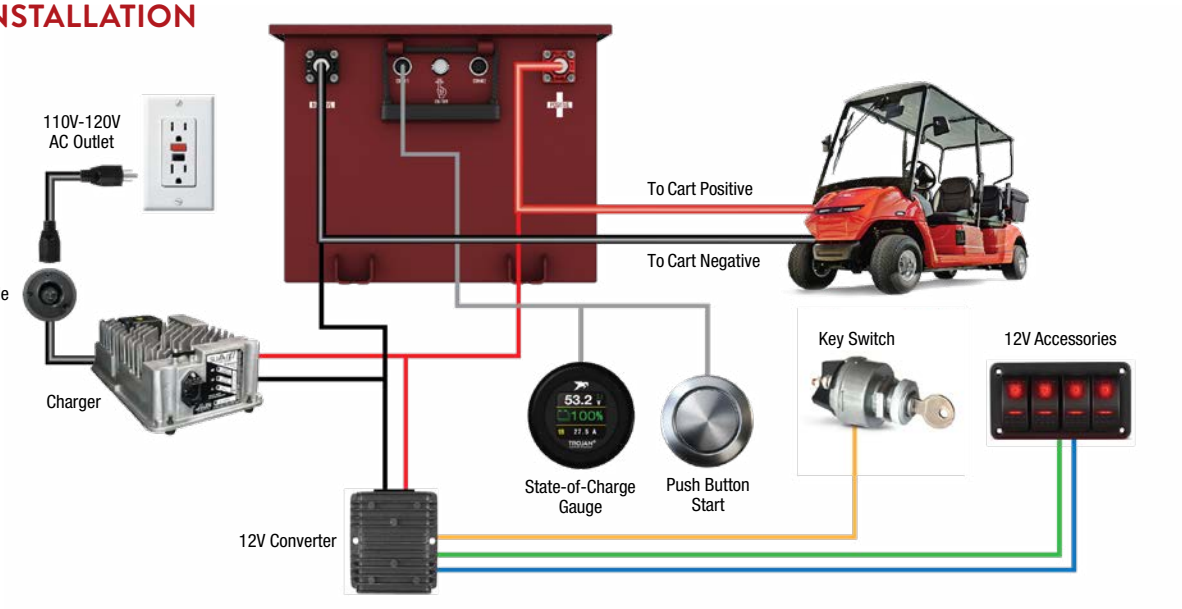
BATTERY INSTALLATION

Do not attempt to operate a vehicle with a battery that is not secured.

36V/48V INSTALLATION



72V INSTALLATION



DO NOT CONNECT BATTERIES IN A SERIES OR PARALLEL CONFIGURATION. SERIES & PARALLEL CONNECTION MAY POSE DANGER TO USER AND/OR INSTALLER AND CAUSE DAMAGE TO THE BATTERY.

HARDWARE INSTALLATION & TERMINAL TORQUES

If using flat or lock washers, it is very important to ensure the battery cable lug is contacting the top surface of the terminal, and the washer is placed on top of the lug. DO NOT PLACE A WASHER BETWEEN THE BATTERY TERMINAL AND THE LUG, AS THIS WILL CREATE HIGH RESISTANCE AND CAUSE EXCESSIVE HEATING OF THE CONNECTION, WHICH CAN RESULT IN FIRE. If assistance is needed in determining the appropriate hardware configuration, contact Trojan Battery technical support.

Both the positive and negative terminals of the battery are M8-1.25 female threads. Ensure the hardware is tightened to the proper dry torque of 88.5-106.0 in-lbs (10-12 Nm). OVER-TIGHTENING TERMINAL CONNECTIONS CAN CAUSE TERMINAL BREAKAGE, AND LOOSE CONNECTIONS CAN RESULT IN TERMINAL MELTDOWN OR FIRE.

4.6 ACCESSORIES

4.6.1 STATE OF CHARGE (SOC) GAUGE KIT

The SOC Gauge Kit includes the SOC gauge, remote dashboard button, wiring harness & CAN termination resistor. The SOC gauge provides the following information:

- **Battery Voltage:** Display of live battery voltage.
- **State of Charge:** Display of battery remaining capacity in form of percentage (%) or bar chart.
- **CAN Connections:** Display of how many batteries are connected over CAN.
- **Battery Current:** Display of live battery current. Charge current and discharge current will both show as positive current.

4.6.1 STATE OF CHARGE (SOC) GAUGE KIT (CONT.)

The dashboard push button allows users to turn the battery on and off from the vehicle's dashboard without having to access the battery directly. Both the SOC gauge and the dashboard push button must be wired directly to the battery using the supplied wiring harness, it is not recommended to interrupt the wiring harness using the vehicle's key switch. The CAN termination resistor is required to be installed on the remaining open communication port on the battery to provide reliable communication between the battery and the SOC gauge.

The SOC gauge is powered by the battery. A fuse is installed within the harness that connects the SOC gauge and battery. The fuse protects the electronics in the SOC gauge from an overcurrent event. In rare cases, high regenerative braking currents can cause the protective fuse to open. In the event of the fuse opening, the SOC gauge will lose power, but the battery will continue to operate normally. The fuse in the SOC gauge harness is a user serviceable component and can be replaced. Contact Trojan Battery Service for additional information regarding fuse replacement.

NOTE: Standard automotive fuses are typically rated to 36V and are not recommended for use with the SOC gauge harness.

4.6.2 CHARGER

The Trojan Battery fan chargers are preinstalled with a lithium-ion charging profile compatible with Trojan Lithium-ion batteries and are designed for on-board use. The charger has M8 ring lugs for the DC output cables and a NEMA 5-15P connector on the AC input cable. The charger (excluding 720W fan charger) also includes charger interlock and a connector for firmware updates.

The charger interlock includes a two-wire interlock cable (blue and brown wires) that must be connected to the vehicle's charger interlock input. This interlock circuit is normally closed, meaning the two wires are connected internally within the charger when the charger is not powered on, allowing the vehicle to operate normally. When the charger is connected to AC power and begins charging, the interlock circuit opens, signaling the vehicle's controller to disable drive operation and prevent the vehicle from moving during a charge cycle. To ensure correct installation, route the interlock cable to the designated interlock connector on the vehicle and verify continuity of the closed circuit before operating the vehicle.

NOTE: The fan charger does not provide a normally open interlock output. Vehicles that require a normally open interlock signal, such as the Club Car Onward, are not compatible with this charger's interlock circuit and will require a different charging solution.

4.6.3 AC RECEPTACLES

The AC receptacle is vehicle specific and designed to be mounted on the body of the vehicle. It connects to the NEMA 5-15P connector on the onboard charger so that users can connect chargers to AC power without accessing the charger directly. It is designed for use with 12-gauge extension cords less than 25' in length with a ground prong.

4.6.4 MOUNTING BRACKETS

OnePack mounting brackets are designed to secure the battery to the vehicle to prevent any damage to the battery while the vehicle is in use. Mounting brackets are intended for use with specific vehicle models to minimize modifications needed, ensure proper fitment and allow the battery to be secured in the vehicle. The mounting bracket shall be mounted to the vehicle and all hardware is to be torqued to 88.5-106.0 in-lbs (10-12 Nm). The bracket shall be aligned with the studs on the mounting bracket and all hardware is to be torqued to 88.5-106.0 in-lbs (10-12 Nm).

4.6.5 VEHICLE ACCESSORIES / QUIESCENT LOADS

Lithium-ion batteries are more susceptible to permanent damage from parasitic loads than other battery types. If a continuous load such as a light, USB charger, voltage reducer, GPS, or other accessories are left connected to the battery for an extended period of time, a low voltage fault will occur. If left in this condition, the battery could become unrecoverable. Therefore, all accessories (except for the SOC gauge) should be connected through the vehicle ON/OFF switch.

To prevent damage to 12V accessories in the vehicle, first verify the voltage requirement of accessories like lights or other items in the vehicle. For accessories that cannot be connected to higher voltage systems, the use of a voltage reducer will be required. It is recommended to use a voltage reducer that can be powered off using the vehicle ON/OFF switch to prevent unwanted loads on the battery.

These unwanted loads are called quiescent loads. A quiescent load and can consume 5-10% of the battery's capacity per day even when not in use. Quiescent loads will vary from vehicle to vehicle. To limit these types of loads, it is important that all vehicle accessories are wired through a switched power source that is disconnected with the vehicle's key-switch. To prevent over discharge, the Trojan OnePack Lithium-Ion battery uses an automatic sleep feature that puts the battery into storage mode.

5. STORAGE AND SHIPPING

STORAGE / WINTERIZATION

A fully charged OnePack can be safely stored in climate-controlled conditions for up to one year (12 months) while in storage mode. It is recommended that the battery state of charge is checked every 4-6 months. Temperatures exceeding 77ºF (25ºC) will cause the battery to self-discharge faster and will require more frequent checks.

The following tips below for winterization or safe storage prior to vacation/long trip:

- Never put the battery into prolonged storage (>1 month) if the state of charge is below 30%.
- Prior to long-term storage of the battery, fully charge the battery. Storing a discharged battery can result in permanent damage or decreased run time.
- Battery should be stored in a clean, cool, and dry place. Keep water, oil, and dirt away from battery.
- Place the **battery in storage mode** to eliminate potential parasitic loads that may discharge the battery.

When batteries are taken out of storage, they should be given an initial charge prior to use.

SHIPPING

In order to ship the Trojan OnePack, it should be installed in its original packaging. To obtain the Trojan Lithium OnePack packaging, please contact your local Trojan Battery sales representative.

IF YOU SHIP THIS BATTERY, YOU MUST COMPLY WITH STATE, FEDERAL AND INTERNATIONAL LAWS, RULES, REGULATIONS AND REQUIREMENTS REGARDING LITHIUM BATTERIES. YOU MUST UTILIZE A QUALIFIED SHIPPING AGENT PROPERLY CERTIFIED FOR HAZARDOUS MATERIALS ("HAZMAT") SHIPMENTS.

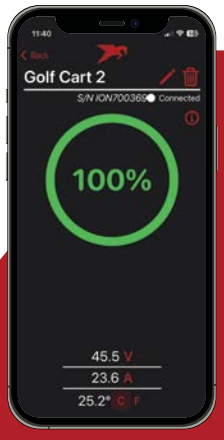
6. BATTERY RECYCLING

The Trojan OnePack Lithium-Ion battery is recyclable and should not be disposed as household or landfill waste. If you need assistance in recycling your battery, contact your dealer or Trojan's technical support engineers as outlined at the front of this manual.

NOTES

ABBREVIATIONS

A	Ampere
Ah	Ampere-hour
AWG	American Wire Gauge
BMS	Battery Management System
°C	Degrees Celsius
DOD	Depth of Discharge
°F	Degrees Fahrenheit
M8	8mm terminal
SOC	State of Charge
T	Temperature
V	Volt
VDC	Volts DC



Download on the App Store

GET IT ON Google Play

The Trojan SmartBattery App provides the status of your battery at your fingertips.

TROJAN BATTERY COMPANY

would like to thank you for selecting our battery.

With over a 100 years of experience, Trojan Battery is the world's most trusted name in deep-cycle battery technology backed by our outstanding technical support.

We look forward to serving your battery needs.

100 YEARS OF TRUSTED POWER

1925 2025

Do not mix with lead-acid batteries when recycling

TECHNICAL SUPPORT
800-423-6569 Ext. 3045 / +1-562-236-3045
technical@trojanbattery.com

FAILURE TO ABIDE BY THE CARE AND MAINTENANCE REQUIREMENTS OUTLINED HEREIN MAY RESULT IN VOIDING THE WARRANTY, AS APPLICABLE.

This publication is protected by copyright and all rights are reserved. No part of it may be reproduced or transmitted by any means or in any form, without prior consent in writing from Trojan Battery Company, LLC.

Trojan Battery Company and the Trojan Battery logo are registered trademarks of Trojan Battery Company.

© 2026 Trojan Battery Company, LLC. All rights reserved. Trojan Battery Company is not liable for direct, indirect, special, exemplary, incidental or consequential damages that may result from any information provided in or omitted from this manual, under any circumstances. Trojan Battery Company reserves the right to make adjustments to this manual at any time, without notice or obligation.

12380 CLARK STREET, SANTA FE SPRINGS, CA 90670

2026003-OnePack-Users - 04/30/26

TROJAN® BATTERY COMPANY

800.423.6569 +1.562.236.3000

TROJANBATTERY.COM