Quick Charge™
CORPORATION

O P E R A T I N G I N S T R U C T I O N S

Model BD3648 Battery Discharger

INTRODUCTION:

This discharge unit is designed to measure the remaining capacity or useful energy for which a 36 or 48 volt battery set is capable. The discharge rate, time, and shut off voltage are programmable.

Specifications:

- Operates from battery voltage, either 36 or 48 volt battery packs. (no AC power required)
- Electronically controlled (uses microcontroller)
- Programmable voltage or time shutoff. 3 rates of discharge.
- LCD digital display for easy reading
- Built-in thermal protection
- 9 foot DC cord with cord wrap brackets
- Large 200 amp clamps for battery connections

IMPORTANT SAFETY INSTRUCTIONS:

1.) Before using discharge unit, read all instructions and cautionary markings on electric vehicle, battery, battery charger, and all accessories using battery.
2.) Position the discharger on a foundation of stone, brick, concrete or grounded metal.
3.) **To reduce the risk of fire, do not use the discharger near flammable materials or vapors.**
4.) Do not expose discharge unit to rain or snow.
5.) Use of an attachment not recommended or sold by the discharge unit manufacturer may result in a risk of fire, an electric shock, or injury to persons.
6.) Make sure DC cord is located so that it will not be stepped on, tripped over, or otherwise subjected to damage or stress.
7.) Do not operate discharge unit with damaged cord or clamp; replace it immediately.
8.) **To permit free air flow for cooling, allow eighteen inches (18") minimum between the discharger and any wall or other equipment.**
9.) **Do not touch the back or sides of the case during or just after operation of the discharge unit. A large amount of energy is being dissipated by the unit and the case will become hot.**
10. **NEVER disconnect the clamps from the batteries while the unit is operating. The resulting arcing could cause an explosion resulting in personal injury, and property damage.**
11. Do not operate discharge unit if it has received sharp blow, been dropped, or otherwise damaged in anyway; take it to a qualified service center.
12. Do not disassemble discharge unit; take it to a qualified service center when service or repair is required. Incorrect reassembly may result in a risk of electric shock or fire.
13. Disconnect discharge unit from batteries before attempting any maintenance or cleaning.

PROPER CARE AND USE OF BATTERIES:

CAUTION: Always wear protective eye shields and clothing when working with batteries. Batteries contain acids which can cause bodily harm. Do not put wrenches or other metal objects across the battery terminal or battery top. Arcing or explosion of the battery can result. Do not wear jewelry when working around batteries. Arcing can cause sever burns.

New batteries will not deliver their full performance until after several cycles.

The tops of the batteries and battery hold downs must be kept clean and dry at all times to prevent excessive self discharge and flow of current between the battery post and frame.

Maintain the proper electrolyte level by adding water when necessary. Never allow the electrolyte level to fall below the top of the battery plates. Electrolyte levels fall during discharge and rise during charging. Therefore, to prevent the overflow of electrolyte when charging, add water ONLY AFTER the batteries have been fully charged DO NOT OVERFILL. Old batteries require more frequent additions of water than do new batteries.

Do not over discharge the batteries. Excessive discharge can cause polarity reversal of individual cells resulting in complete battery failure.

USING THE DISCHARGER:
Testing should be done in a cool, clean, dry, and well ventilated environment. Position the discharger on stone, brick, concrete or grounded metal.

DANGER: To reduce the risk of fire, do not use the discharger near flammable materials or vapors.

The purpose of using a discharge unit on battery sets is to determine battery capacity, and to find defective cells or batteries in the set.

Battery energy is measured in minutes obtained upon discharging a fully charged 36 or 48 volt battery set. This standard is used by all major battery manufactures' of lead acid deep cycle marine, golf car, or floor scrubber type batteries.. For both 36 and 48 volt, the discharger places a 25, 56 or 75 amp resistive load until a shut-off voltage of 31.5 volts for 36 volt, or 42 volts for 48 volts. (1.75 volts per cell) is reached. If the shut off voltage is not reached in 240 minutes, the discharger will time out and shut off.

1. Before the test, fully charge the battery pack. It is important that all the batteries in the pack are fairly even. By voltage, monitor each battery towards the end of the charge cycle. Any battery(s) that are 3/4 – 1 volt lower than the rest of the pack should be charged individually.

2. To start the test, observe polarity, red+ black – , and connect the clamps to the pack. The solenoid will close, and the system voltage will be displayed, along with the rate of discharge. (S*ee reprogramming section to change*). Press the START/STOP/PAUSE button. The cycle will start, and the running time and battery volts will be displayed.

3. The cycle may be interrupted by pressing the button, and restarted by pressing it again. If it is not pressed again, the tester will shut off. The fan will continue to run for about 3 minutes after shut down.

DANGER: Never move the clamps while the red LED is lit, the resulting arcing can cause injury and damage to personnel and equipment.

In case of an over temp, “OT” will be displayed, and the cycle will pause until the temperature comes down, then restart. To avoid intermittent starting and stopping, tests should be conducted at temperatures below 95 degrees Fahrenheit .

4. When complete, minimum voltage, actual voltage, and cycle time can be viewed by using the menu button. Cycle time refers to the time it took to reach 1.75 volts per cell. To figure capacity, you must know how many minutes the battery is rated for at the discharge rate selected, you then divide the actual time by the rated time to find the percent capacity.

Example:
An 18 cell battery set is rated at 107 minutes @ a 75 amp discharge rate. The actual time it took to reach 1.75 volts per cell is 90 minutes therefore capacity is 84%.

Identifying defective cells/batteries:
During the discharge cycle, batteries should be monitored by voltage individually and should stay fairly even. Batteries that drop faster than the others are probably defective. Batteries that fall much below 1.75 volts per cell should be replaced. Bad batteries are obviously related to lower capacity ratings. Some experience is required to judge if the pack capacity is sufficient for the actual use it will be subjected to.

Reprogramming the discharger:
To change time; press and hold the menu button until MAX TIME is displayed. Press the START/STOP/PAUSE button to initiate change, then press either button to increase or decrease. Stop pressing, and time will be held in memory. **To change shut off voltage;** press the button a second time after MAX TIME is displayed. Change in the same fashion. **To change the discharge rate;** press the button four times, select 25, 56 or 75 amps.

History:
The discharger holds previous tests’ in the history menu. To access, press the menu button 5 times. The display will show run time, start voltage, and shut off voltage. The first record is the last cycle run.

ATTENTION:
The cable length and size is critical to volt meter accuracy; Therefore, do not change. Clamp tightness is also critical. If the clamps become hot during discharging have them replaced.

WARNING: Failure to disconnect clamps from battery pack before moving or driving equipment will result in damage to cords, clamps, and equipment.

QUICK CHARGE BD3648 Battery Discharger
"LIMITED WARRANTY"

Quick Charge Corporation warrants the BD3648 discharger for two (2) years from the date of purchase. After the warranty period, dischargers returned to the factory for repair will be charged a minimum rate of $25.00. discharger will be returned, freight and repair charges, C.O.D. unless other arrangements have been made This warranty covers all defects in manufacture and performance, provided the unit is operated in compliance with manufacture's operating instructions. For repairs to be made at the Quick Charge factory, a charger and/or component(s) should be sent, freight prepaid to Quick Charge at::

Quick Charge Corp.
1032 S.W. 22nd St.
Oklahoma City, OK. 73109

Quick Charge, will at it's option, repair or replace the discharger or component in question. The repaired item will then be returned, freight prepaid by Quick Charge. This warranty is void if the charger or component have been altered, changed, or repaired by anyone not authorized by Quick Charge, or if the charger or component, have been subjected to misuse, negligence, or harsh environmental conditions. (Except those chargers designed for such conditions)
If returning the discharger to the factory is not practical, replacement parts may be shipped to the customer for field repair at no charge. On parts such as circuit boards, the customer will be required to return the board suspected to be defective to Quick Charge, freight prepaid. If such defective parts are not returned, the customer will be invoiced for the repair parts. Field repairs are made at the user's own risk. "Authorization" by Quick Charge to repair refers to maintaining the warranty only. Quick Charge assumes no responsibility or liability for field servicing, and shall not be responsible for incurred travel or labor charges.
Quick Charge corporation shall not in any event be liable for the cost of any special, indirect or consequential damages to anyone, product or thing. This warranty is in lieu of all other warranties expressed or implied. Quick Charge neither assumes nor authorizes any representative or other person to assume for us any liability in connection with the sale of this product.