



19755 Nordhoff Pl., Chatsworth, CA 91311, Tel: 818 700 8488, Fax: 818 700 8466, www.logicube.com

Battery Pack™ User's manual



Please refer to the Limitation of Liability and Warranty information at the end of this manual.

Introduction

Congratulations on your purchase of the Logicube Battery Pack. The Logicube Battery Pack is designed to provide power to your Logicube hand-held IDE drive duplication device. When used properly, it can provide power to your Logicube duplication device for years to come.

Features

The Logicube Battery Pack provides the following features:

- Always available 12VDC power and continuous power provided for cloning operations for up to 1.5 hours.¹
- Compatible with existing Logicube products including the Echo, Solitaire, Solitaire Turbo, Sonix, Solitaire Forensic, SF-5000, SF-5000u and MD-5. The battery is also compatible with the Desktop Write PROtect and Web Guard².
- Glitch-free, uninterrupted operations when external power is attached or removed from the battery during a cloning operation.
- The Battery Pack can be used as a UPS – style Battery Back-up for your cloning session by plugging it into external power while it powers the Logicube duplication device.
- A built-in, easy-to-read “Power Gauge” that shows the useful battery life in 20% increments.
- Battery Pack units can be “Daisy-Chained” to extend the useful battery life during an especially long cloning operation.

The Battery Pack comes with the following items:

- One complete Logicube Battery Pack unit.
- This manual.

NOTE: The Logicube Battery Pack does not come with its own power supply. It uses the power supply of your Logicube IDE Drive duplication device to charge.

If any of the above is missing, please call Logicube’s Technical support at 1-818-7008488 x3, and a replacement will be shipped ASAP.

Unit Description

The Logicube Battery Pack is made up of the following parts, (please refer to Figure 1 for more details):

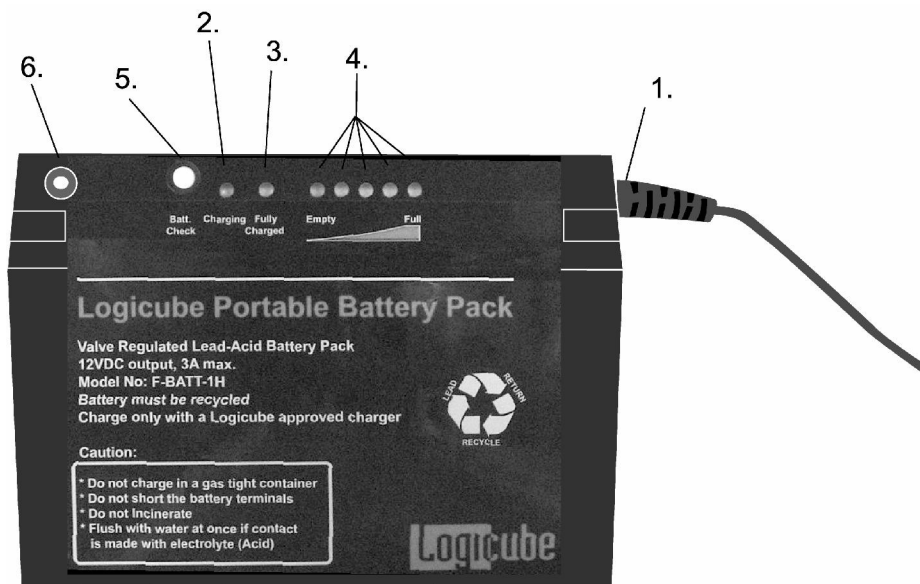


Figure 1. Logicube Portable Battery Pack.

¹ Battery life is dependent on the type of Logicube drive duplication device and hard drives used.

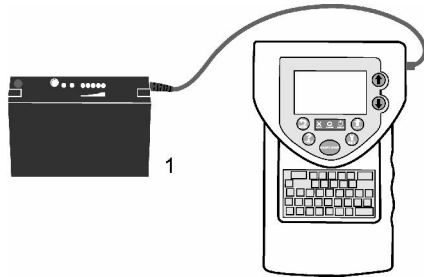
² Never attach a Logicube Omniclone-2u or similar multi-drive cloning device into the Battery Pack. Doing so will damage the battery and void your warranty.

1. **12VDC Power Output Jack** - This provides constant 12VDC power as long as the battery has a charge.
2. **“Charging” indicator LED** - This indicator light will flash as the battery is being charged.
3. **“Fully Charged” indicator LED** – This indicator light will be lit once the battery is fully charged.
4. **“Power Gauge” indicator LED’s** – The five indicator lights represent the battery’s stored power. Each indicator LED represents a 20% increment of the total stored power. The 20% indicator LED will flash when the power level drops to less than 10%.
5. **“Check Batt.” Button** – This button activates the “Power Gauge” when pressed. The Power Gauge does not always stay lit so that it can conserve power.
6. **DC Power Receptacle** – This is the socket for the external power supply jack used to charge the battery.

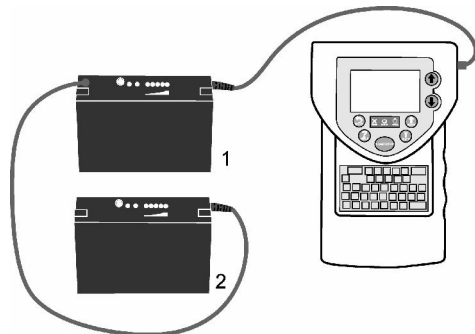
Operations

The Logicube Battery Pack is designed to be very simple to use. Just follow this procedure:

1. Attach the DC Power Output Jack from the Battery Pack to your Logicube Drive Duplication device, refer to the diagram below.

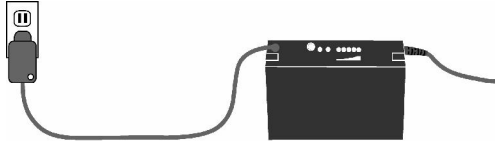


2. Set up your Logicube Drive Duplication device according to the device’s operations manual.
3. Start the cloning session. Watch the time remaining and verify that it will fall into the Battery Pack’s time range.
4. If the battery does not have enough power to complete the cloning session, attach a second Battery Pack by plugging its DC Output Jack into the first battery’s charging slot, please refer to the diagram below. Or you can plug a Logicube External Power Supply into the first battery.



Likewise, charging the Battery Pack is also very simple. Just follow this procedure to charge your battery:

1. Attach a Logicube external power source or a second Battery Pack to the DC Power receptacle; please refer to the diagram below.



2. The red charging light will start to flash. After 60 – 120 seconds it will stop flashing and stay lit.
3. The Power Gauge will slowly increase until the battery reaches full charge.
4. Once the battery is fully charged, the green “Fully Charged” light will come on.

The charging process will take about three hours. It may take longer if the battery is trying to recover from a “deep discharge state”.

Discharging

During discharging, the system automatically displays the current stored power of the battery. The total discharge time is a function of the hard-drives. The total time can be estimated by correlating the power gauge changes with elapsed time.

The following charts illustrate the rate of discharge with different hard drives and Logicube Drive Duplication devices. The first chart is for one Battery Pack and the second chart covers two Battery Packs “Daisy-chained” together:

Chart 1. Single Battery Pack Discharge Rates.

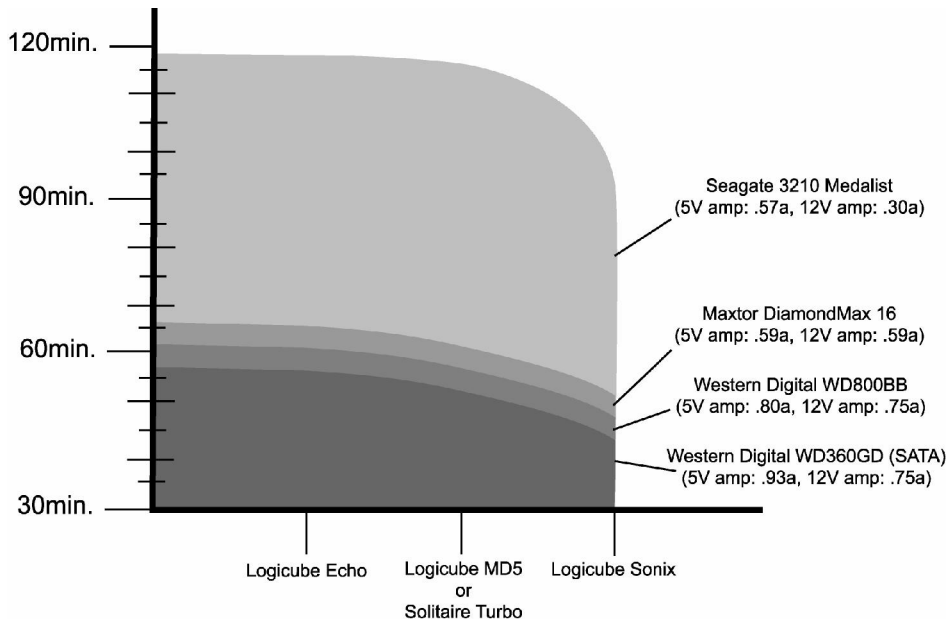
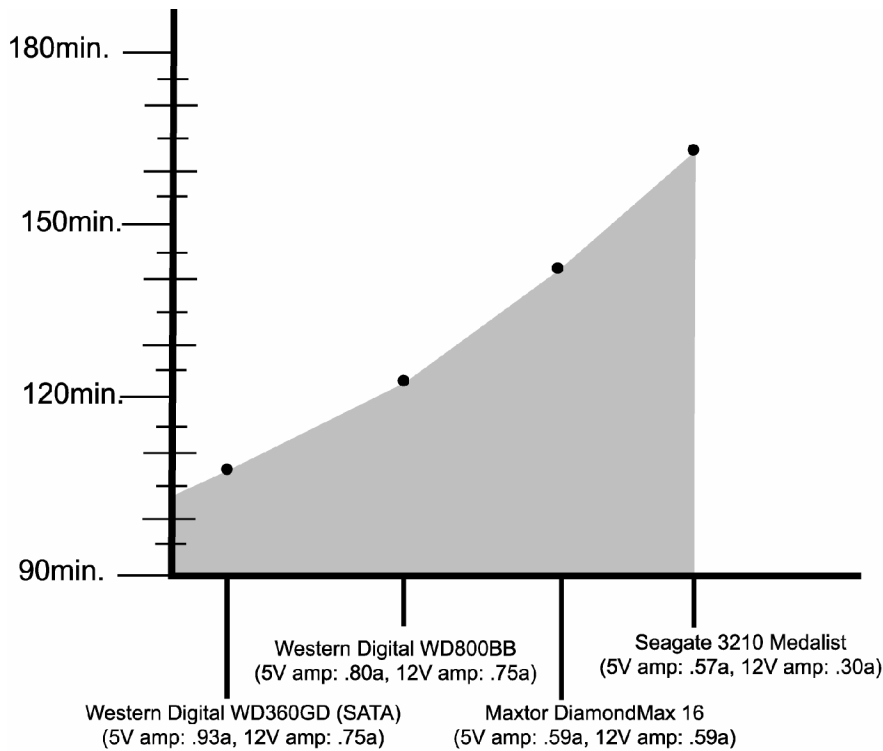


Chart 2. Discharge Rates for two Battery Packs “Daisy-Chained” together.



When the remaining battery capacity is estimated at less than 10% the red lamp will flash. This is a good time to find an external power source (i.e. a 2nd BATTERY PACK unit or an external power source), or be prepared for the device operations to end abruptly.

Units may be “daisy-chained” to increase the operating time. It is recommended to not cascade beyond two BATTERY PACK units. When “daisy-chained”, the BATTERY PACK that is not connected to the Logicube device will discharge first, while simultaneously charging the 2nd BATTERY PACK unit. This operation allows for additional BATTERY PACK swapping without a power interruption to the device.

As the battery discharging “personality” changes (time, number of discharge, temperature, etc.), the BATTERY PACK unit automatically learns the current battery characteristics with each charge and discharge cycle.

Deep Discharge

Leaving a Logicube device power on the Battery Pack indefinitely, with no external power, will cause the battery to go into a “deep-discharge” state. The Battery Pack units can recover from this state (during the next charging cycle), but the overall battery life has been reduced. Also, the Power Gauge might be affected as it now represents the total battery capacity, not the useful battery capacity. This Power Gauge problem will correct itself with the next full discharging and full charging cycle.

NOTE: The Battery Pack unit should be recharged at least one every 3 to 6 months, to prevent the battery from entering a “deep-discharge” state.

Things to Note

Orientation and Low Gas Emission:

The unit can be used in any orientation except Battery Pack top side down (vents on the bottom). The batteries are Sealed-Lead-Acid (SLA) type, and under charging operations, a small, but virtually negligible amount of hydrogen gas emission is possible. This gas normally dissipates rapidly into the atmosphere.

Transportation and Storage:

The SLA batteries are “non-spillable wet electric storage batteries” and may be shipped by air or ground transportation without restriction. The batteries, their shipping container and external packaging must be labeled “non-spillable battery”. Batteries should be stored in a cool, dry area. High temperature increases the rate of self-discharge and reduces storage life.

Disposal:

SLA batteries are recyclable. Scrap batteries must be sent to a licensed recycling facility for disposal. Scrap batteries must be packaged, transported and recycled in accordance with local and national regulations. A list of licensed recyclers and additional information on battery disposal can be found on the web site: www.recycle.net/battery.

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For technical assistance, please call Logicube's technical support line at: (818) 700-8488 x3, or visit our website at: www.logicube.com