During normal usage, recharge the battery as soon as possible and practical after a discharge, especially after a complete discharge.

The battery does not need to be completely discharged prior to charging. Lithium Ion batteries do not have "memory effect" and their total cycle life can actually benefit from shallow discharges.

End of useful life is generally considered to be when the battery can no longer provide sufficient operating hours to meet minimum mission requirements. It should be noted that a lack of proper maintenance on the battery can cause irreversible damage.

2.5 Safety

There are many automatic safety features which protect the battery and its cells from potentially hazardous conditions.

Over current on discharge: Can occur above 6A
Battery will attempt to reset every 10 seconds
Over current on charge: Can occur above 5.5A
Battery will attempt to reset every 10 seconds
Over Voltage: Preliminary cutoff can occur around 8.4V (4.35V per cell)
Battery can only discharge, not charge, until voltage drops.
Permanent cutoff can occur around 8.7V (4.5V per cell)
Under Voltage: Preliminary cutoff can occur around 5.0V (2.5V per cell)
Battery can only charge, not charge, until voltage rises.
Permanent cutoff can occur around 3.8V (1.9V per cell)
Hi Temp.: Temporary Cutoff 73°C +/- 5°C
Battery will reset when it is cooled to +50degC or below.
Permanent Cutoff 93°C +/- 5°C

Also See MSDS (Material Safety Datasheet) for info about safety.
(http://www.bren-tronics.com/)

2.6 Transportation

The battery has been tested and complies with "UN Recommendations on the Transport of Dangerous Goods" and can be transported as an "Excepted Item". See MSDS for details.

2.7 Disposal

The Li-Ion Batteries are, in general, considered Environmental Friendly. However, recycling is advised.
Check with local Disposal Regulations.

Bren-Tronics, Inc.
Intelligent Military Batteries & Charging Systems™
10 BRAYTON COURT, COMMACK, NY 11725

USER GUIDE for BT-70483CE

WARNING

Batteries can produce explosive gases during charging or discharge cycles. Never smoke or allow open flames near the charging station.

WARNING
NO SMOKING NOR FIRE IS PERMITTED NEAR A CHARGING OR DISCHARGING BATTERY

WARNING
DON'T THROW ANY LI-Ion BATTERY IN FIRE.

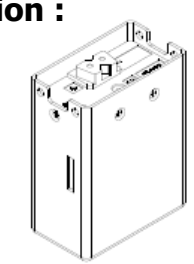
CAUTION

ACID CONTAMINATES NICKEL-CADMIUM, LITHIUM-ION, LITHIUM-POLYMER and NICKEL-METAL HYDRIDE BATTERIES

Every effort must be made to keep Nickel-Cadmium, Lithium-Ion, Lithium Polymer and Nickel-Metal Hydride batteries as far away as possible from Lead-Acid batteries because Lead-Acid batteries contain sulfuric acid. Do Not use the same tools and materials, such as screwdrivers, wrenches, syringes, hydrometers, and gloves for both types of batteries. Any trace of acid or acid fumes will permanently damage Nickel-Cadmium, Lithium-Ion, Lithium Polymer and Nickel-Metal Hydride batteries on contact.

1. BT-70483CE Presentation :

1.1 Battery Specification



Type	Lithium Ion, rechargeable
Dimensions	67 x 23 x 88 mm (2.625 x 0.905 x 3.463 in)
Weight	405 g (0.9 lbs.)
Nominal Voltage	7.2Vdc Range 6 - 8.4V
Nominal Capacity	8.2Ah
Max discharge	6A

1.2 Battery Description

The battery is built in a strong aluminum housing and is accessed electrically via the three recessed surface contacts located on the top face of the battery. These contacts have the following marking and functions.

Top face	*Used for*
+	Charge / Discharge Positive
-	Negative
ID	Provides identification for charging system

The battery has a "State of Charge" gauge with 5 LCD segments. This gauge displays available energy at the actual battery temperature, in increments of 20%.

1 segment: 1 to 20 % energy remaining
2 segments: 21 to 40 % energy remaining
3 segments: 41 to 60 % energy remaining
4 segments: 61 to 80 % energy remaining
5 segments: 81 to 100 % energy remaining

*If battery is not displaying accurate SOC information, resynchronize it by discharging until cutoff, then recharging.

The battery contains several automatic electrical protections. These include temperature, voltage, and current protection devices (see 2.5).

1.3 Lithium Ion Chemistry

The battery utilizes rechargeable Lithium Ion cells. This system has major benefits when compared to prior rechargeable types such as Nickel Cadmium and Nickel Metal Hydride.

The Lithium Ion chemistry provides both a weight saving and an increase in electrical capacity of greater than 24% when compared to the best of the Nickel systems.

Additionally, the internal self-discharge of Lithium Ion cells is significantly lower than with the Nickel cells, and the "memory" effect caused by partial discharge does not occur.

2. Battery use :

2.1 Upon Receipt

Before being placed into storage or put into use, the battery must be fully charged. After twelve (12) months of storage the battery must again be recharged.

Upon initial receipt by user, or after removal from storage, the battery must first be fully charged, after which it can be placed in service.

2.2 Charging

The battery should be charged using only an approved charger, including the appropriate charge adapter where applicable.

Refer to the charger's Operation Manual for further instructions.

Maximum Capacity can be obtained only when charging between –10°C to +40°C.

2.3 Storage

During any storage period, batteries will lose energy even if not attached to an external device. This self-discharge is due to both the chemical activity in the cells and the internal electronic circuitry. This circuitry utilizes the latest components and design features to minimize dormant current drain.

The battery can be stored between -40°C and +55°C. Ideal storage conditions are between 0°C and +30°C. This minimizes both energy loss (recoverable by charging) and capacity loss (non-recoverable).

To minimize the capacity loss, start the storage with the batteries 100% charged (**SOC showing 5/5 segments**).

After storage periods of up to twelve (12) months, the battery must be recharged **until five (5) segments** (100%) are again displayed on the SOC gauge. The battery can then be returned to storage.

2.4 Maintenance

The battery is a sealed unit and is non-repairable. It should be kept reasonably clean and dry. The contacts and their recesses should be kept clean of dirt, etc.