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# LTI Lithium Built-in Batteries

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Liberating Technologies, Inc. has expanded the line of Built-in Lithium Batteries for prosthetic applications. These Lithium-Ion and Lithium-Polymer cells offer ample battery capacity in a relatively small, light-weight package. Five capacities and configurations are now available:

**BP88S** Lithium Split-cell AA – 750 mAh

**BP98S** Lithium Standard AA – 750 mAh

**BP102S** Polymer Split-cell – 750 mAh

**BP103S** Polymer – 450 mAh

**BPI2000S** Polymer – 2000 mAh

The Standard Lithium-ion battery series (BP88S & BP98S) are AA-cell configurations for maximum density in a compact space. With 750 mAh capacity, this battery is suitable for both pediatric and adult prostheses. It is offered in two configurations to suit the application and the cells can be either attached cells (BP98S) or separated/split cells (BP88S):

The small Lithium-Polymer battery (BP103S) is intended for pediatric applications such as the VASI electric hands for children and most single-motor adult hands. This battery has a capacity of 450 mAh, almost twice that of the old Otto Bock 757B8 Ni-Cad. If more capacity is needed, a 750 mAh Lithium battery is a good alternative.

The next battery in the series is the split-cell BP102S. This configuration was chosen to give clinicians the ability to separate these relatively thin cells and place them in a convenient location within the socket. At 750 mAh, they are suitable for all pediatric and adult single-motor hands.

The largest of this family of batteries is the 2000 mAh Lithium-Polymer battery (BPI2000S). This is used primarily with multi-articulating hands (Bebionic & iLimb Ultra/Revolution) that have multiple motors and require a large capacity battery.

Lithium-ion batteries have several advantages over conventional Nickel-Cadmium and Nickel-Metal-Hydride. Most significant is their high-density which accounts for their large capacity, light-weight and relatively small size. Lithium cells are about 35% lighter than Ni-Cad and 50% lighter than NI-MH cells. For a given size, they deliver more than twice the capacity of Ni-Cad and about 20% greater voltage (7.4V nominal). In addition, they have a protection circuit to prevent over-discharging and they can be recharged in about 90 minutes, depending on the state of charge. They also don't suffer from "memory" problems often encountered with Ni-Cad batteries. They can be topped-off with a brief charge at any time to assure that they are always at or near full charge.

These new built-in Lithium batteries are supplied with LTI's proprietary recharge connector and on/off switch (Fig 1). This is compatible with all manufacturer's components. A 5 volt regulated on/off switch recharge module can be provided on request for systems requiring 5 Volts (like the Otto Bock 2000 hands). Built-in batteries provide versatility for the prosthetist because they can be installed in any convenient space within the socket. This eliminates unsightly bulges in the outer shell resulting in better cosmesis and weight distribution.

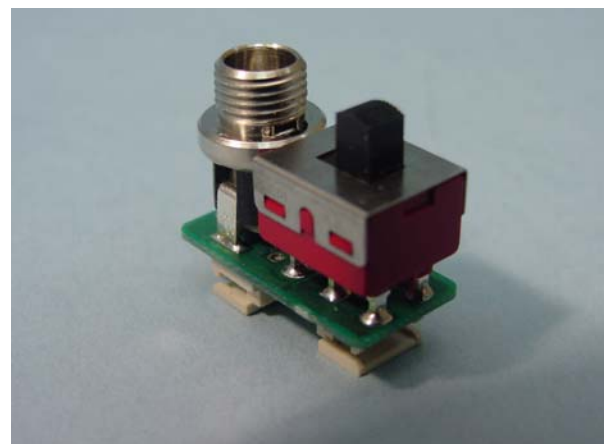


Fig 1 – LTI on/off switch & recharge connector

For more information about built-in or removable batteries, contact **Liberating Technologies** at **1-800-437-0024**.

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Fig 2 – LTI BP88S Split-cell Li-ion Built-in Battery

**BP88S** Lithium-ion AA Split-cell Built-in Battery

Capacity: 750 mAh  
 Voltage: 7.4 volts (nominal)  
 Current: 3 Amps  
 Weight\*: 53 grams  
 Dimensions: 14 x 27 x 50 mm (combined cells)  
 Charger: LTI model BC96

\* weight includes on/off switch module



Fig 3 – LTI BP98S Standard Li-ion Built-in Battery

**BP98S** Standard AA Lithium-ion Built-in Battery

Capacity: 750 mAh  
 Voltage: 7.4 volts (nominal)  
 Current: 3 Amps  
 Weight\*: 53 grams  
 Dimensions: 14 x 27 x 50 mm  
 Charger: LTI model BC96

\* weight includes on/off switch module

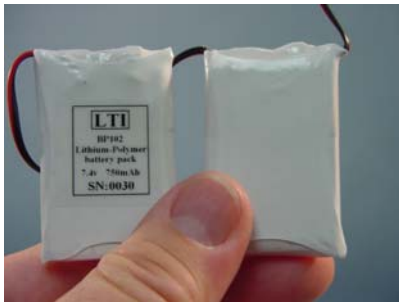


Fig 4 – LTI BP102S Split-cell Li-Polymer Built-in Battery

**BP102** Lithium-Polymer Split-cell Built-in Battery

Capacity: 750 mAh  
 Voltage: 7.4 volts (nominal)  
 Current: 3 Amps  
 Weight\*: 44 grams  
 Dimensions: 6 x 30 x 47 mm each cell  
 Charger: LTI model BC96

- weight includes on/off switch module



Fig 5 – LTI BP103S Li-Polymer Built-in Battery

**BP103S** Lithium-Polymer Split-cell Built-in Battery

Capacity: 450 mAh  
 Voltage: 7.4 volts (nominal)  
 Current: 2 Amps  
 Weight\*: 35 grams  
 Dimensions: 10 x 20 x 60 mm each cell  
 Charger: LTI model BC100

- weight includes on/off switch module



Fig 6 – LTI BPI2000S Li-Ion Built-in Battery

**BPI2000S** Lithium-Ion Built-in Battery

Capacity: 2000 mAh  
 Voltage: 7.4 volts (nominal)  
 Current: 2 Amps  
 Weight\*: 100 grams  
 Dimensions: 20 x 35 x 70 mm each cell  
 Charger: LTI model BCI2000

- weight includes on/off switch module