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# Removable Lithium Batteries

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In addition to the wide variety of Built-in Lithium Batteries offered by Liberating Technologies, there are also Removable Batteries available for prosthetic devices. Generally a built-in battery is preferred if the prosthesis has adequate space to house a properly sized built-in battery. Removable Batteries, like those shown below, are ideal for circumstances where a built-in battery cannot supply adequate capacity to operate a prosthesis for a full day and the patient requires more power. In this case, the user can operate their prosthesis until their first removable battery is depleted and then replace it with the second battery. Obviously, this requires the user to carry a spare battery and also to keep both batteries charged. However, most chargers for removable batteries have two battery receptacles and can charge two batteries at a time.

Two capacities and configurations of removable batteries are presently available. One has voltage regulation (6.6V) for use with older prosthetic components and the other is a nominal 7.2V battery for new prosthetic devices.

**BP90** Power-Plus Lithium Battery - 6.6V, 520 mAh

**BP72** Lithium Polymer Battery - 7.2V, 800 mAh

The BP90 Power-Plus Battery was designed to replace the popular Otto Bock 757B8 Ni-Cad battery which was the industry standard battery until new chemistry made Ni-Cad batteries obsolete. This and the other removable batteries now use lithium-ion or lithium-polymer chemistry because of its superior characteristics and performance. Its high energy density means that the battery can be smaller and lighter than older batteries and have considerably greater capacity (sometimes double). The PB90 is a drop-in replacement for the old 757B8 Ni-Cad battery and therefore an ideal battery for upgrading an older prosthetics that has the battery receptacle for the 757B8 battery.



Fig 1 – BP90 Removable Battery

The BP72 Lithium Polymer Battery is a larger capacity (800 mAh), 7.2 volt battery designed for present prosthetic devices. The industry switched from 6 volts to 7.2 volts prosthetic devices a decade ago and most prosthetic terminal devices and wrist rotators now operate on nominal 7.2 volts. The capacity of this battery makes it suitable for all modern single motor prosthetic devices. It is not suitable for the new multi-articulating prosthetic hands like the bebionic and iLimb Ultra hands. These require more current and often larger capacity batteries, seldom found in removable batteries.

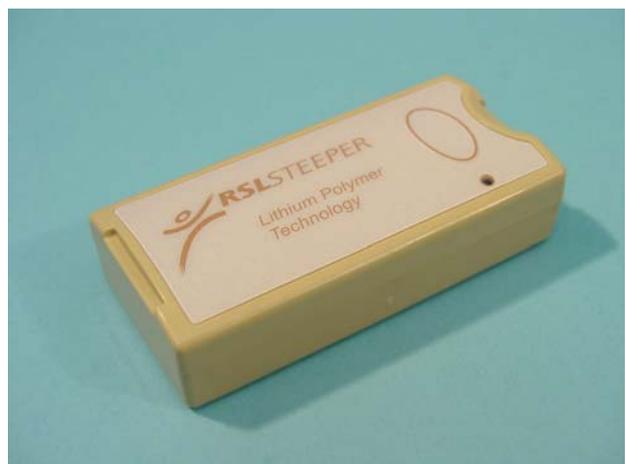


Fig 3 – BP72 Lithium Polymer Battery

Rev. 7/12

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## **Battery Specifications:**

### **BP90 Power-Plus Battery**

Chemistry: Lithium-polymer  
Capacity: 520 mAh  
Voltage: 6.6 volts regulated  
Weight\*: 39 grams  
Dimensions: 16 x 28 x 80 mm  
Charger: BC90

### **BP72 Lithium Polymer Battery**

Chemistry: Lithium-polymer  
Capacity: 800 mAh  
Voltage: 7.2 volts (nominal)  
Weight\*: 45 grams  
Dimensions: 16 x 34 x 68 mm  
Charger: BC72