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| **How to select the correct battery pack (General Knowledge)?** |
| * First of all, you must get to know your device:   + What is device's input voltage? ( V)   + What is its power consumption ( Wattage ) ?   + What is Maximum current drain ( A) ?   + What is your expected running time by a battery pack ? * Decide battery pack voltage you will choose   + Battery pack voltage must be equal or a little higher than your device’s need.   + If you need an exact voltage, which battery pack can not provide, you may consider to use a[DC-DC regulator](http://www.batteryspace.com/index.asp?PageAction=VIEWCATS&Category=880) * Decide Battery pack's Capacity  ( mAh or Ah) * Battery capacity is depended on how long you need to run your device ( hours ), which can be calculated as the follow: * ( Ah) = Device's Wattage (W) x Time to run ( Hours) / Battery Voltage (V) * For example, if using a 12V battery pack, and run 10W DC device for 10 hours, you need choose a battery pack with capacity > 8.3Ah, e.g (10x10)/12 = 8.3 * 1000 mAh =1 Ah,  higher mAh will provide longer running time. * 1000mAh=1Ah, * Decide Battery pack’s Max. discharging current   + Before order battery pack, you must pay attention on battery pack’s Max. discharging rating on the specification or description. Please don’t think any battery can take any current drain   + You shall know your device’s max. discharging current. If you don’t know , you must measure it by a multi-meter.   + The battery pack’s Max. discharging rate of the chosen Battery must be higher than that device requires * Choose Li-Ion, NiMH or Lead acid battery?   + What type of rechargeable battery will work for you. Question is size and weight. The table below lists the advantages and disadvantages of these batteries for your reference  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | Chemistry | Cost | Weight | Temp(ºC) | Cycle Life | Shelf Life (months) | Volts / Cell | | Lead Acid | $$ | Very Heavy | -65 to 80 | 300 | 12 | 2.0 | | Nickel Cadmium | $$ | Heavy | -20 to 65 | 500+ | 6 | 1.2 | | Nickel Metal Hydride | $$$ | Moderate | -10 to 65 | 500 | 12 | 1.2 | | Lithium Ion | $$$$ | Light | -20 to 60 | 500 | 12 | 3.7 | | Lithium Polymer | $$$$$ | Light | -20 to 60 | 500 | 12 | 3.7 |  * Li-Ion batteries has the highest energy density ( mAh/weight), and become more and more popular. However, Li-Ion may explode and cause a fire if it dose not use properly. * Choose a Battery Charger   + Please always follow our suggestion to choose a smart charger. So called smart charger must has automatic cut-off function when battery is full.   + Never use NiMH/Li-ion battery charger for Li-ion/Nimh battery pack, it will cause battery exploded   + Always charging your battery with attention, and put battery in a fire-proof container box to avoid accident. * Understand risk to use NiMH and Li-ion battery. Please read our [safety warning](http://www.batteryspace.com/index.asp?PageAction=Custom&ID=32) before buying a battery | |
| **How to choose the correct** **razor battery?** |
| There are too many models of Razors on market , we can not tell you which battery is for which model. However, you can find a suitable battery from our website by yourselves following the procedure blow:   * Get a ruler and voltage meter in hand * Determine your battery pack voltage --- Account how many cell in your original battery pack.  Each cell has 1.2V.  For example, if there are two single cells in your pack, its voltage is 2.4V.  You can double check battery voltage by voltage meter if battery is not dead. * Determine battery pack's size  ( length x width x Height) * Choose a battery pack from [Razor battery](http://www.batteryspace.com/index.asp?PageAction=VIEWCATS&Category=496) with smaller size and same voltage * Please be advised  as long as battery voltage is correct, and battery pack can put in your razor, you can use it to replace your original battery   + Whatever mAh rating,  higher mAh always is better   + Whatever  shape same or not,  as long as it can put in razor * Warning:  Battery pack must be connected to razor with correct polarity, e,g positive to positive and negative to negative.  Please double check polarity on the both of Razor and battery before using. |
| * **How to change connector and Cable**   + All brands bike light's connectors and cable are customized in special size , and can not be exchanged   + You shall keep the connector in your old battery pack and install it to new battery modules   + For HID light, you must connect cable in right polarity : positive to positive and negative to negative , otherwise, HID light can not be fired.   + You shall use Iron gun to solder junctions well, and use electric tape wrapping the the junctions. |