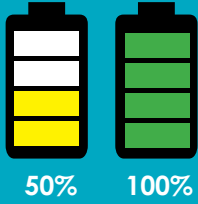


# HVAD<sup>®</sup> System Power Management

The HVAD System Patient Manual provides information on how to manage the system and how it works. In addition to the Patient Manual, your physician, nurse or VAD coordinator will give you instructions on operating your VAD and necessary medical care.



**HeartWare<sup>®</sup>**

## Monitor Your Power Sources

Description: Abnormal Behavior	Controller Display	Actions
A controller that <b>changes to the second battery</b> when the first battery has greater than (>) 25% capacity (2 or more indicator lights) still remaining.		<b>Replace the first battery and remove from service. Notify your VAD team.</b>
There is a <b>sudden change in charge capacity</b> on a battery (for example, a sudden change from 4 lights to 1 light).		<b>Replace the abnormally behaving battery and remove from service. Notify your VAD team.</b>
You hear “ <b>beeping</b> ” and the controller rapidly switches back and forth between batteries.		<b>Replace the battery with more indicator lights first, then replace the battery with fewer lights. Remove the battery with more lights from service as it may be a faulty battery. Notify your VAD team.</b>

**Refer to your Patient Manual for a full list of precautions, warnings and potential complications.**

**CAUTION:** Federal law (USA) restricts this device to sale by or on the order of a physician. Refer to the “Instructions for Use” for complete Indications for Use, Contraindications, Warnings, Precautions, Adverse Events and Instructions prior to using this device. The IFU can be found at [www.heartware.com/clinicians/instructions-use](http://www.heartware.com/clinicians/instructions-use).

**WARNING:** Serious and life-threatening adverse events, including stroke, have been associated with use of this device. A user must fully consider the risks of this device with that of other treatment modalities before deciding to proceed with device implantation.

In the USA the HVAD System is intended for use as a bridge to cardiac transplantation in patients who are at risk of death from refractory end-stage left ventricular heart failure.

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**HeartWare<sup>®</sup>**

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**Now that you are living with the HVAD System, it is important to manage your power sources and identify when batteries are not working properly or may need to be replaced.**

**Using battery power:**

Your HVAD® Pump must be connected to the HeartWare® Controller and power (battery or AC/DC Adapter) in order to run. Never disconnect both power sources, as this will result in your pump stopping.

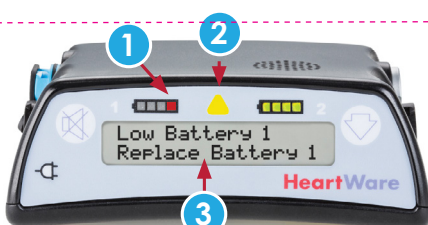
Each fully charged battery is expected to last 4-6 hours. A controller alerts and changes to the second power source when the battery has less than (<) 25% capacity remaining.

The controller will tell you when to change batteries through three indicators:

**1** Battery indicator will show **1 red light**.

**2** Alarm indicator  will be **solid yellow**.

**3** Display will read **“Low Battery”** and **“Replace Battery.”**



**Battery replacement:**

Similar to the battery in a mobile phone, the HeartWare® Batteries lose charge over time. If a fully charged battery lasts less than 2 hours, take it out of service and replace it with a new one.



**Less than 2 Hours**  
Time to Replace

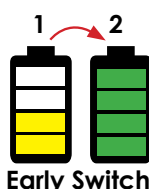
When you go in for clinic visits, remember to bring all of your batteries with you. During your clinic visit, your VAD Team may inspect your battery and download information from your controller to determine the number of times your battery has been charged and discharged.

**Recommended practices for power management:**

Check your batteries throughout the day. Pay attention to any unusual activity.

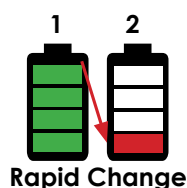
**Abnormal behavior:** A controller that changes to the second battery when the first battery has greater than (>) 25% capacity (2 or more indicator lights) still remaining.

**Actions: Replace the first battery and remove from service. Notify your VAD team.**



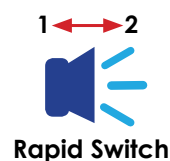
**Abnormal behavior:** There is sudden change in charge capacity on a battery (e.g., a sudden change from 4 lights to 1 light).

**Actions: Replace the abnormally behaving battery and remove from service. Notify your VAD team.**



**Abnormal behavior:** You hear “beeping” and the controller rapidly switches back and forth between batteries.

**Actions: Replace the battery displaying more indicator lights first then replace the battery with fewer lights. Remove the battery with more lights from service as it may be a faulty battery. Notify your VAD team.**



Any of these abnormal behaviors could lead to a critically low battery or possible loss of power. Batteries that exhibit abnormal behavior must be taken out of service and replaced.

**Reporting a problem:**

Be sure to let your VAD Team know of any problems or concerns with your equipment. For example:

- Broken or bent pins on your batteries or power adapters.
- Battery that does not charge when placed on the charger.
- Battery or adapter that does not stay connected to the controller.
- Visible damage to cables, batteries, or adapters.