

Replacing the Batteries in the Patriot SPS 850

This PAT describes how to replace the batteries in Patriot SPS 850 units. Replacing the batteries should take about 30 minutes.

Batteries should be replaced by a qualified technician. If you have any questions or problems, please call BEST's Technical Support Center at 800-356-5737. (Outside of the U.S. and Canada, call your local BEST office.)

To replace the batteries, you will need the following:

- Needle Nose Pliers
- Black Electrical Tape
- Phillips Screwdriver — 6" long below handle*

***Note:** The screwdriver should be six inches long below the handle so you can replace the inside screws easily. Using a magnetic screwdriver makes removing and replacing the screws easier.

Before you go on to Section 1, read the important safety warnings on the next page.

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IMPORTANT SAFETY INSTRUCTIONS - SAVE THESE INSTRUCTIONS

This publication contains important instructions that should be followed during battery replacement.

WARNING

The batteries used in this system are capable of producing dangerous voltages and high currents. They may cause severe injury if terminals are shorted together or to ground (earth). Extreme care must be taken to avoid electrical shock and burns from contacting battery terminals or shorting terminals during battery replacement.

BEST's batteries come with a one-year warranty. Using batteries not supplied by BEST invalidates any BEST service agreement.

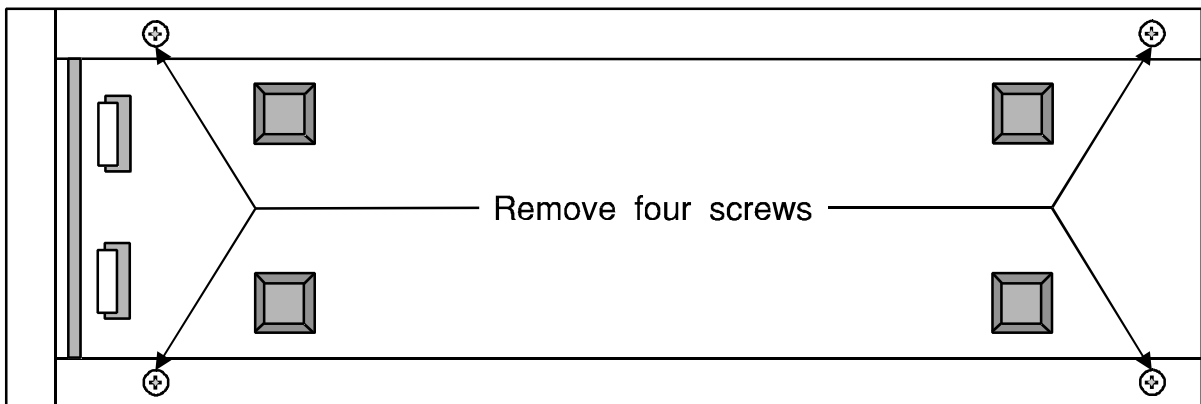
A qualified technician who is familiar with the Patriot should replace the batteries. The technician must take these precautions:

1. Protective clothing and eye wear must be worn. Batteries contain caustic acids and toxic materials and can rupture or leak if mistreated. Remove rings and metal wristwatches or other jewelry. Don't carry metal objects in pockets where they can fall into the Patriot.
2. Tools must be insulated so that they will not short battery terminals. At no time can a tool be allowed to short a battery terminal to another battery terminal or to the Patriot's cabinet. Do not lay tools or metal parts on top of batteries.
3. When connecting cables, never allow a cable to short across a battery's terminals or the string of batteries or to the Patriot's cabinet.
4. Align the cables on the battery terminals so that the connector will not contact any part of the Patriot's cabinet even if the battery is moved. Keep the cable away from any sharp metal edges.
5. Install the battery cables so they cannot be pinched by the Patriot's cabinet.

Section 1: Removing the Patriot's Cover

1. Before you replace the batteries, shut off the equipment plugged into the Patriot and unplug the equipment.
2. Next, follow these three steps:
 - Turn the On/Off (1/0) switch on the back of the Patriot off (to 0).
 - Unplug the Patriot.
 - Remove the power cord from the back of the unit.
3. Carefully turn the Patriot on its side, and look at the bottom of the unit. Remove the four screws and washers in the corners (shown in Figure 1 below).

Figure 1



4. Stand the Patriot on its feet again.
5. Make sure the On/Off (1/0) switch on the back of the Patriot is off.
6. Slide the unit's cover back until it comes off.

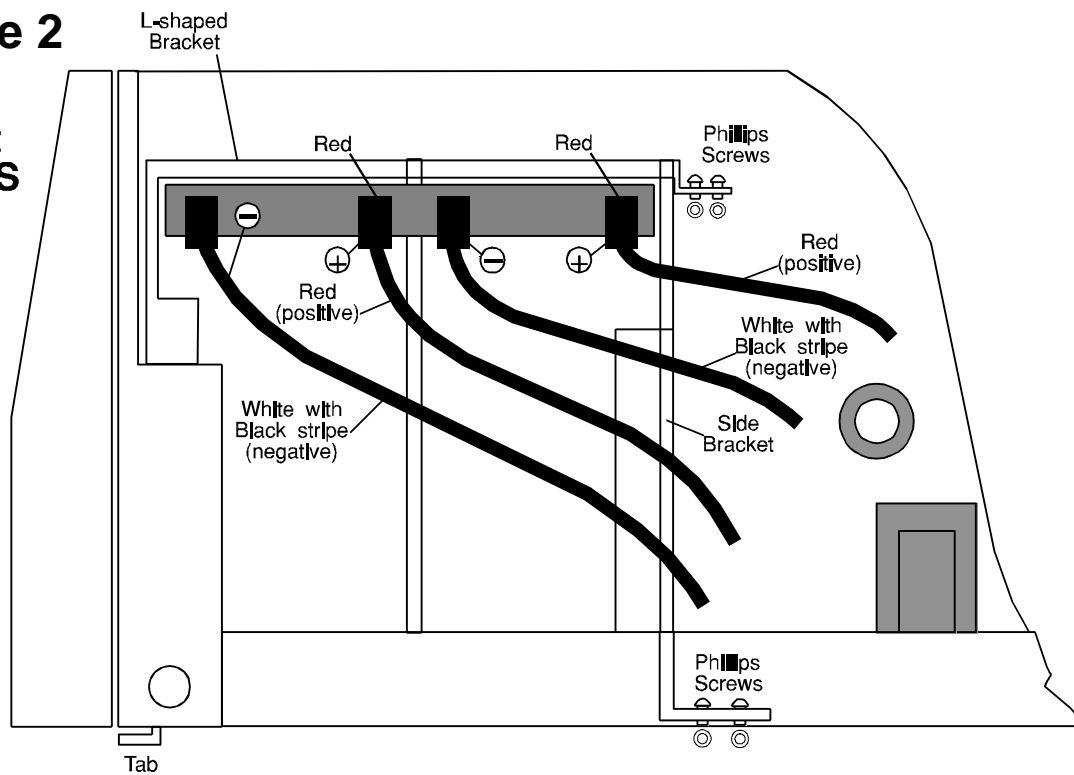
Section 2: Removing the Batteries

Figure 2 on the next page shows the battery and battery connections.

SPS 850:

Figure 2

Front
of SPS



Check Figure 2 and read step 7 before you continue.

7. Using the needle nose pliers, disconnect both positive (red) cables from the batteries by gently pulling the connectors down, away from the battery terminals. (See Figure 2 for terminal locations.)

Put a piece of black electrical tape over the end of both positive (red) cables so they cannot accidentally touch another metal part.

8. Now, turn the On/Off switch on the back of the Patriot on (to 1) for about four seconds to discharge the capacitor. (The capacitor is discharged when the front panel light is no longer lit.)

Then, turn the switch off again.



WARNING!

Make sure you turn the switch off before you continue. When you connect the new batteries, there will be dangerous voltage inside the Patriot if the On/Off switch is on. This is true because the Patriot's battery supplies power even if the unit is not connected to its AC input source.

9. Disconnect both negative cables (white with black stripes) using the needle nose pliers. (See Figure 2 to locate the cables.)
10. Now, refer to Figure 2 to find the Phillips screws holding the battery brackets in place. Remove **all four** screws and washers.
11. **Remove the side bracket first.** To remove the bracket, carefully slide it away from the batteries and lift it out. **Note:** If there is a thin piece of insulation next to the side bracket, remove the insulation and save it to use again.

The tabs in the front of the L-shaped bracket fit into the slots in the bottom of the Patriot. (See Figure 2.) Slide the bracket and batteries toward the back of the unit until the tabs come out of the slots.

Now, remove the top (L-shaped) bracket.

12. Before you remove the old batteries, note the arrangement of the batteries and their terminals. When you put the new batteries in (in step 13), use the same arrangement.

Read the caution below; then, lift out the old batteries.



Caution:

Make sure that the terminals do not touch the cabinet or any metal part. Assume that the old batteries are fully charged, and use the same precautions you would use when handling new batteries. Batteries contain lead. Dispose of the old batteries properly.

Do not dispose of a battery or batteries in a fire; the battery may explode. Do not open or mutilate batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic.

Section 3: Replacing the Batteries

13. **When you put in the new batteries, be careful not to hit the LED wires between the circuit board and the front of the Patriot; these wires could be damaged if the new battery or the bracket hits them.**

Put the new batteries in place. Figure 2 shows how the batteries should be arranged and where the battery terminals should be.

14. Put in the L-shaped bracket that fits over the top and one side of the batteries. Make sure that the L-shaped bracket fits into the two slots in the bottom of the Patriot; then, put the side bracket back in place. If there was a thin piece of insulation next to the side bracket, put the insulation back in place. (See step 11.)

15. Before you put the Phillips screws and washers back in, make sure you read the following two tips:

- **Put the top two screws in first.**
- **The two shortest screws are meant to attach the side bracket to the bottom of the Patriot.**

Now, put in the Phillips screws to attach the side bracket to the L-shaped bracket, the bottom of the Patriot, and the side of the unit.

16. Before you connect any battery cables, make sure the On/Off switch on the back of the unit is still off.
17. **Carefully check the terminal arrangement in Figure 2. When you reconnect the cables, make sure you connect them to the correct terminals.**



WARNING!

Connect the cables exactly as shown in Figure 2. Connecting the cables to the wrong terminals can short the batteries. Shorting the batteries will damage the batteries and the Patriot; shorting the batteries could also cause severe personal injury.

Use the needle nose pliers to reconnect the negative cables (white with black stripes) to the terminals marked "Black (negative)" in Figure 2.



Caution: When you reconnect the first positive battery cable, (in step 18), there will be an arc at the battery terminal.

18. Now, remove the tape from the red (positive) cables and use the needle nose pliers to connect these cables to the red (positive) terminals. (See Figure 2.)

Section 4: Replacing the Patriot's Cover

19. As you put the cover back on the Patriot, make sure the vent holes are on the side opposite the circuit boards. To secure the cover, carefully turn the Patriot on its side and put the four cover screws back in the bottom of the unit.
20. Stand the Patriot on its feet again.
21. Plug the Patriot's power cord back into the unit and the input receptacle.
22. Turn the Patriot's On/Off switch on (to 1). To make sure the Patriot's battery is fully charged, let the unit charge the battery for at least 12 hours. (The battery charges automatically whenever the front panel light is on but not blinking.)
23. To finish the procedure, follow these three steps:
 - Turn the Patriot's On/Off switch off (to 0).
 - Turn off the loads (the equipment the Patriot protects) and plug them into the Patriot's receptacles.
 - Turn the Patriot's On/Off switch on (to 1), and switch on the equipment plugged into the unit.