



Switch Repair Instructions for SOLITAIRE® FLASHLIGHTS

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The Solitaire® Single Cell AAA flashlight is covered by one or more pending patent applications and U.S. Patent Nos. 4,577,263; 4,656,565; 4,658,336; 4,819,141; 4,851,974; 4,864,474; 4,899,265; 4,942,505; 5,003,440; 5,052,602; 5,113,326; 5,143,441; 5,207,363; 5,207,502; 5,293,307; 5,349,506; 5,135,611; 6,170,960; Des. 308,109. and by foreign patents.

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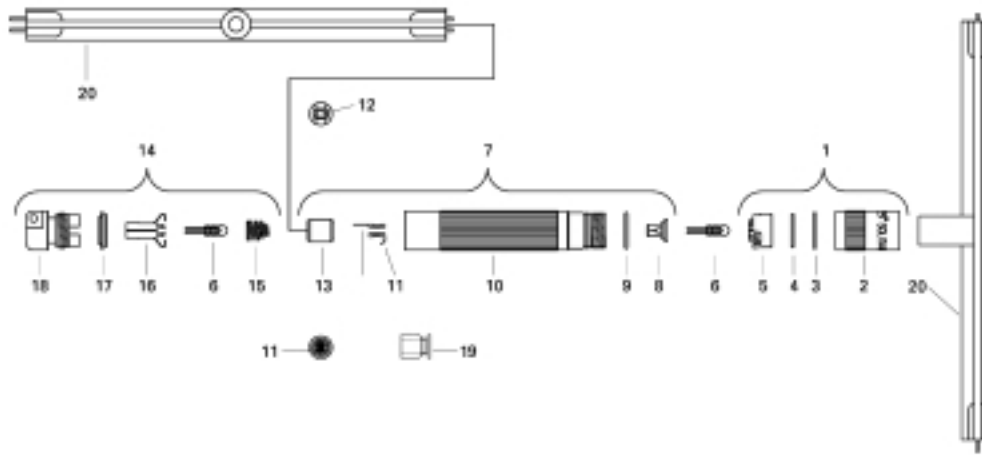
Tool required to replace the switch in the Solitaire®. (included)



Tool has a long and short pin end. The long pins remove the switch. The short pins are to install the switch.



SCHEMATIC - FLASHLIGHT



Parts List for Standard Black Solitaire® Flashlight

ITEM NO	QTY.	PART NUMBER	DESCRIPTION
1	1	108-000-089	Head Sub-Assembly
2	1	220-000-055	Head, Black
3	1	108-000-067	'O' Ring, Head
4	1	108-000-083	Clear Lens
5	1	108-000-084	Reflector
6	1	LK3A001	Bulb
7	1	108-000-269	Barrel & Switch Sub-Assembly
8	1	*	Upper Insulator Receptacle
9	1	108-000-067	'O' Ring, Barrel
10	1	220-000-067	Barrel, Black
11	1	*	Lamp Receptacle, Side Contact
12	1	*	Lamp Receptacle, Center Contact
13	1	*	Lower Insulator Receptacle
14	1	108-000-190	Tail cap Sub-Assembly
15	1	108-000-069	Spring, Tail cap
16	1	108-000-618	Electrical Contact
17	1	108-000-204	Lip Seal
18	1	220-000-156	Tail cap, Black
19	*	108-000-085	Switch Assembly
20	1	112-000-003	Short/Long Pin Tool

Switch Removal

STEP 1

Unscrew (counter clockwise) and remove the entire TAIL CAP ASSEMBLY (14) and the battery.

Note: A spare LAMP (8) is located in the TAIL CAP (20).



STEP 2

Unscrew (counter clockwise) and remove the entire HEAD ASSEMBLY (1)



STEP 3

Remove the LAMP (6) by pulling it straight out of the receptacles.

WARNING: Do not allow children to install or tamper with the lamp. Protect the lamp from bending or twisting. If the lamp is installed improperly or if the leads from the lamp are twisted so as to contact one another, this could short circuit the flashlight and cause heat generation.



STEP 4

Insert the end of the TOOL (20) with the longest pin protrusion into the bottom of the BARREL (10). Rotate the tool until the two pins enter the two holes in the bottom of the LOWER INSULATOR (13).



STEP 5

Place the TOOL (20) and the BARREL (10) on a flat surface and push down on the BARREL (10). The UPPER INSULATOR (8) will move upward and separate from the LOWER INSULATOR (13).



STEP 6

You can now remove the UPPER INSULATOR (8) from the BARREL (10).



STEP 7

Slowly lift the BARREL (10) off of the TOOL (20), the LOWER INSULATOR (13) should be on the TOOL (20). If not, tap the BARREL (10) lightly and the LOWER INSULATOR (13) should fall out.



Preparing Replacement Switch Assembly



Replacement switches come assembled.



To separate the SWITCH ASSEMBLY (19) prior to installation, place the SWITCH ASSEMBLY (19) on the LONG PIN TOOL (20).



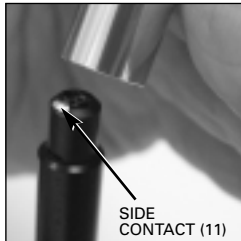
Push down on the lower half of the SWITCH ASSEMBLY (19) prior to installation, this will cause the UPPER INSULATOR (8) to pop up.

Replacing the Switch



STEP 8
Place the CENTER CONTACT (12) on the TOOL (20) making sure the pins of the TOOL (20) are in the holes of the LOWER INSULATOR (13).

*Note: make sure the SIDE CONTACT (11) and CENTER CONTACT (12) are in the switch.



STEP 9
Insert the TOOL (20) with the LOWER INSULATOR (13) into the bottom of the BARREL (10). Push the TOOL (20) into the BARREL (10) until it stops at the top of the BARREL (10).



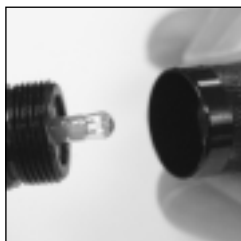
STEP 10
While firmly holding the TOOL (20) and BARREL (10), line up the pins of the UPPER INSULATOR (8) with the holes of the LOWER INSULATOR (13). Push the UPPER INSULATOR (8) down into the LOWER INSULATOR (13) until it presses into place.

ALL VISIBLE SEALS (3, 9, & 17) SHOULD HAVE A LIGHT COAT OF OIL ON THEM. IF NOT, LIGHTLY COAT WITH PETROLEUM JELLY (VASELINE®)



STEP 11
Reinstall the LAMP (6) in the receptacles of the UPPER INSULATOR (8). Adjust the LAMP (6) so it is as vertical and straight as possible. Using a clean soft cloth, gently wipe the moisture and oil from the glass on the LAMP (6).

WARNING: Do not allow children to install or tamper with the lamp. Protect the lamp from bending or twisting. If the lamp is installed improperly or if the leads from the lamp are twisted so as to contact one another, this could short circuit the flashlight and cause heat generation.



STEP 12
Replace the HEAD ASSEMBLY (1)



STEP 13
Before installing the batteries, check for leakage or corrosion. Reinstall or replace the batteries, (one/AAA series alkaline only) install with the positive (+) end toward the lamp. Reinstall TAIL CAP (14).

*Note: always make sure the TAIL CAP (14) is tight for good positive electrical contact.

Solitaire® Lens / Reflector Replacement



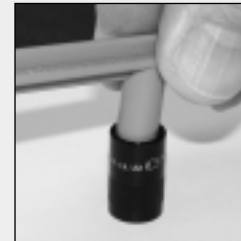
Tool Required (Included)



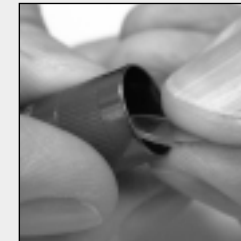
STEP 1
These are the components of the HEAD ASSEMBLY (1), HEAD (2), LENS (4), REFLECTOR (5).



STEP 2
Place the TOOL (20) against the LENS (4).



STEP 3
Apply a hard even pressure on the TOOL (20) until the LENS (4) and REFLECTOR (5) are pushed out the back of the HEAD (2).
NOTE: The pressure required to remove the LENS (4) & REFLECTOR (5) will be considerably more than to replace them and you will usually destroy the REFLECTOR (5) upon removal.



STEP 4
To replace the components, first insert the LENS (4).
Note: You should wear a glove when replacing the LENS to avoid fingerprints.



STEP 5
Replace the REFLECTOR (5), Place the REFLECTOR (5) into the opening of the HEAD (2) being careful not to get fingerprints on the reflective surface.



STEP 6
Place the TOOL (20) over the rear portion of the REFLECTOR (5).



STEP 7
Push down firmly applying firm even pressure until the LENS (4) and REFLECTOR (5) meet the LENS (4).



Make sure the LENS (4) is seated evenly.