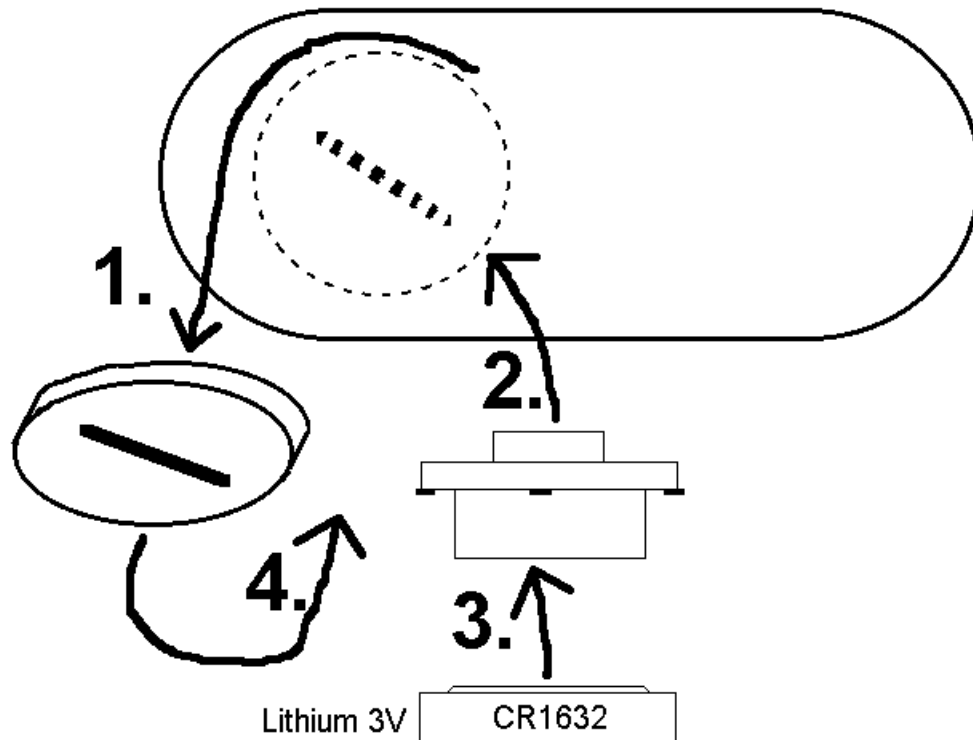


# PX640 Battery Replacement Installation Guide

This device is designed to drop into the battery well of an older Asahi Pentax Spotmeter 1/21 or the Pentax Spotmeter III's PX640 mercury cell and regulate a lithium cell's 3 Volts down to the 1.35 Volts needed for consistent high-level light readings. The device is only specified for those battery wells that have metal sides for conducting the "+" side of the old battery down to the meter. The spotmeter has a screw-in cap that closes the compartment. Other applications may or may not be suitable for this solution.



1. First open up the battery well and remove any old mercury cell that is inside, and ensure that there is no significant corrosion inside.

2. Then insert the regulator into the battery well, **AND THIS IS IMPORTANT**, with the little brass tip side down into the well. The little 7-millimeter tip is the same diameter as the old mercury cell tip, and is the negative regulated output side of the device. The larger 12-millimeter diameter brass cap should be showing after inserting the regulator. There are four springs on the outside of the regulator and they should compress a bit while going into the battery well. These springs provide the connection to the positive side of the battery, while the 12-millimeter brass cap provides the connection to the negative side of the battery. True regulators require access to both the positive and negative side of the battery supply. If the regulator is tight going in, you can try rotating it into place while pushing it down into the bottom of the well. Also consider slightly compressing the springs to get all four down into the battery well before bottoming the regulator. Ensure (by the feel of how far down it goes into the well) that the small 7-millimeter tip is down touching the negative spring tip in the bottom of the well. Try to make the regulator as flat-seated as reasonable.

3. Then drop a CR1632, 3 Volt lithium coin cell (16 millimeters diameter and 3.2 millimeters thick) into the well, negative (tip) side down; positive side visible. The regulator is designed to provide the extra thickness such that when added to the CR1632's thickness, it exactly equals the thickness of the original mercury cell.

4. Once the lithium cell is in place, you may screw the battery cover back in place. To test the installation, test the spotmeter using the high-intensity range. The spotmeter uses the 9-Volt battery for low-intensity readings, and the 1.35 Volts for high-intensity range readings.

You do not need to remove the adapter when you change lithium batteries. It may stay down in the bottom of the well, and you just change the lithium cell in the normal manner.

The lithium CR1632 cell is inexpensive (under a dollar apiece if you shop around on the web), and is available and nontoxic to the environment. With the adapter, a true, rock-steady, 1.35 volts is provided to the spotmeter for the life of the battery. It bypasses the short-idle lifespans of zinc-air solutions. The lithium cells are cheaper than the silver-oxide cell solutions that incorporate a dropping diode. The output voltage does not sag any during the life of the cell. The adapter does use a miniscule amount of standby current. The six microAmperes of standby current results in a self-discharge time of over two years.