



VOTING SOLUTIONS FOR ALL PEOPLE

VSAP BALLOT MARKING DEVICE PAPER PATH AND PRINT HEAD

The Voting Solutions for All People (VSAP) Ballot Marking Device (BMD) is a voting innovation that improves the voting experience for all voters using technology while retaining a paper ballot as the official, durable, and auditable record of the vote. The BMD uses a touchscreen to present the voting experience in a way that is intuitive, usable and accessible, and a printer to print the voter's selections to paper. To ensure the integrity and security of the paper ballot, it is essential that the BMD printer only print on the paper ballot once, and that after the ballot is printed and verified by the voter, it does not print on the paper ballot again.

The VSAP BMD accomplishes this while keeping the printer light and compact in support of the device's overall design for usability and accessibility and ensuring a simple and straight paper path that minimizes the cost of the printer and physical stress on the paper ballot itself.

HOW DOES THE PRINT HEAD AND PAPER PATH WORK?

When the ballot is inserted into the BMD, the ballot travels through the aperture at the top of the BMD deck and into the main paper path, as shown in Figure 1 below.

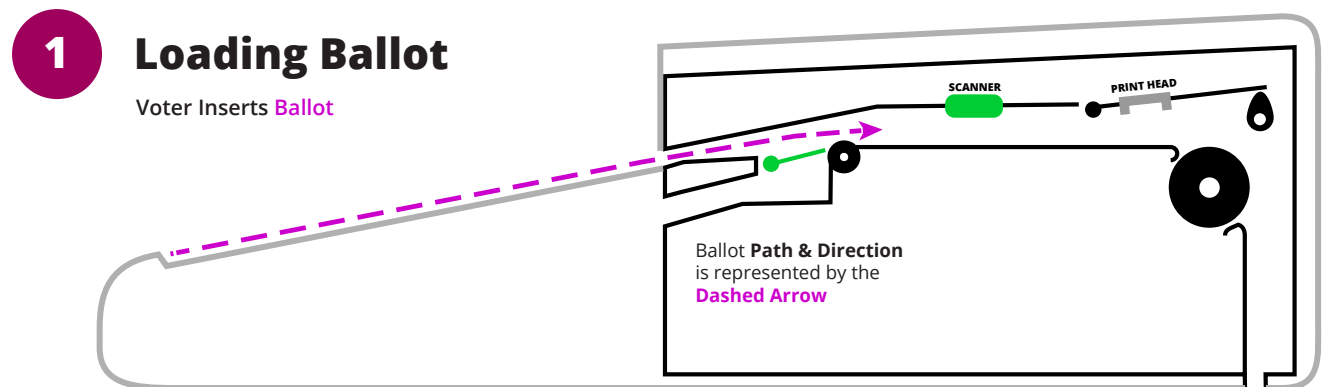


Figure 1





VSAP BALLOT MARKING DEVICE PAPER PATH AND PRINT HEAD

As the ballot travels down this main paper path, the Ballot Activation QR, which was printed in the upper left corner of the ballot by the electronic pollbook, is read by the activated scanner shown in solid green. As Figure 2 below shows, once the ballot is fully inside the BMD, a gate closes preventing the ballot from exiting the BMD, or other ballots from entering the paper path, while the ballot is presented to the voter. Note also that the camshaft highlighted in the upper right corner of the figure is in an upright position, keeping the thermal print head elevated out of the paper path, preventing any heat application to the thermal paper.

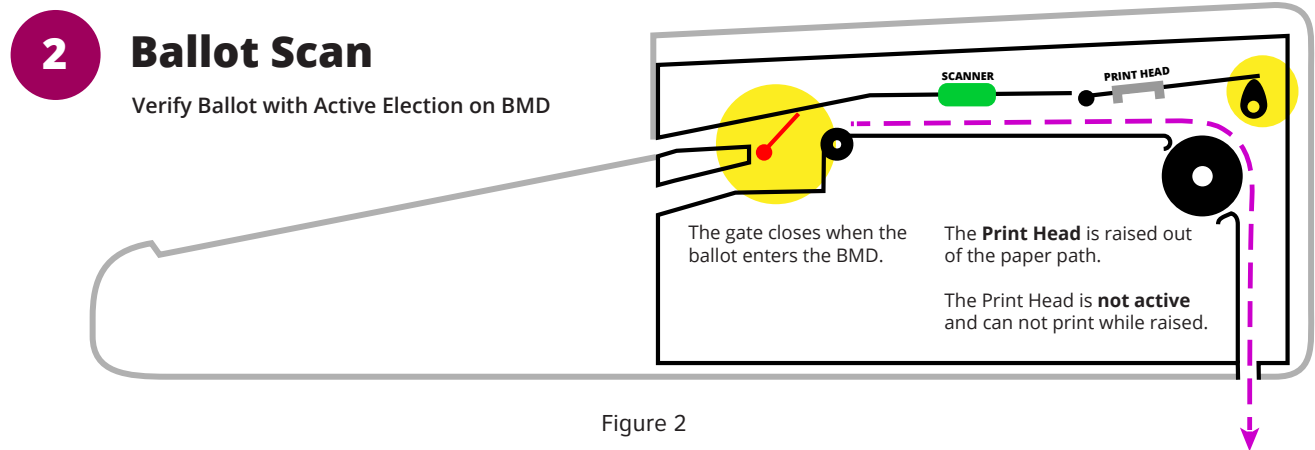


Figure 2

As the electronic ballot is being presented to the voter on the touchscreen, the paper ballot moves down the alternate path created by the closed gate and is parked securely within the housing of the BMD device underneath the BMD deck, as shown in Figure 3. This area where the ballot is parked is referred to as a “blind alley.”

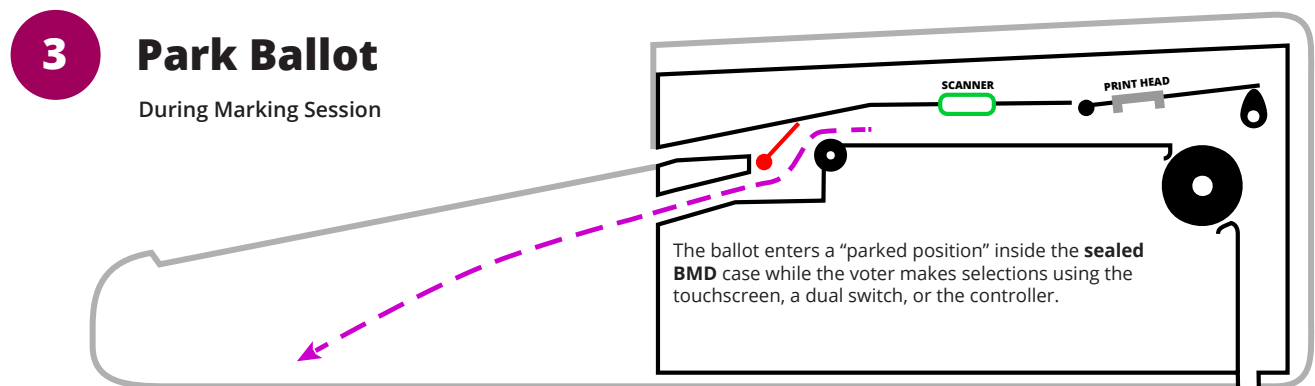


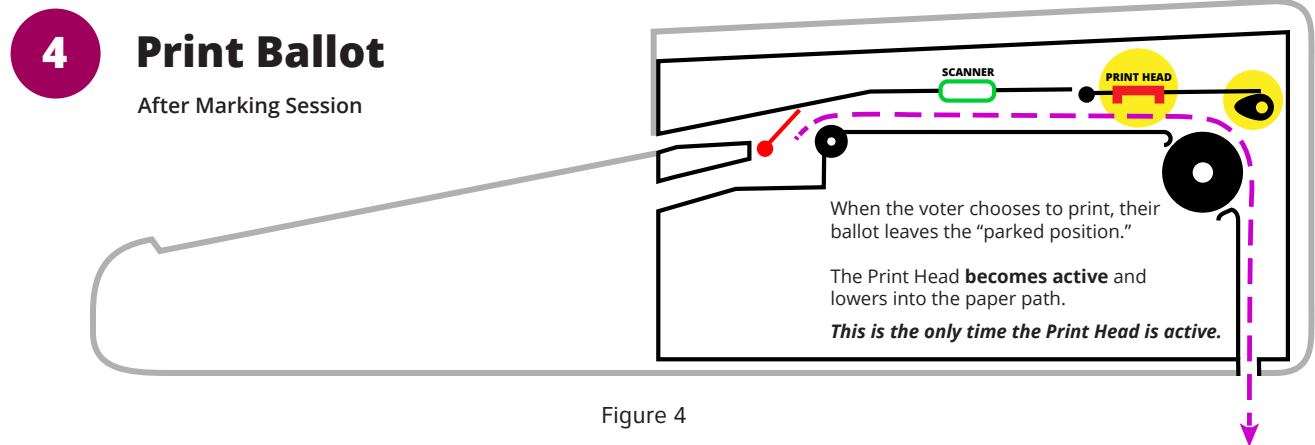
Figure 3



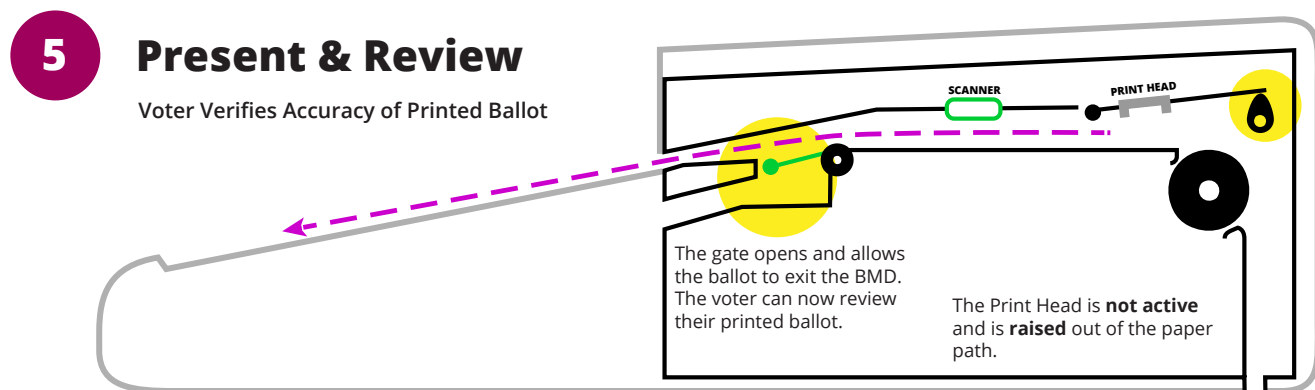


VSAP BALLOT MARKING DEVICE PAPER PATH AND PRINT HEAD

When the voter has finished voting and has reviewed their selections, they have the option to print the ballot. Upon choosing to print, the ballot moves back down the main paper path, as shown in Figure 4. This time, however, the camshaft has rotated, allowing the print head to drop down into the paper path, where heat can be applied to the thermal paper to print the vote selections. This is the only time the print head is placed in the paper path during the entire voting process.



After the ballot prints, the camshaft again rotates, lifting the print head out of the paper path (see Figure 5 below). As the same time, the gate opens, allowing the printed ballot to be presented to the voter for verification on top of the BMD deck.





VSAP BALLOT MARKING DEVICE PAPER PATH AND PRINT HEAD

After verification of the printed paper ballot, the voter has the option of casting the ballot into the integrated ballot box. As Figure 6 below shows, casting the ballot causes it to travel again down the main paper path, however the camshaft remains in the upright position keeping the print head lifted away from the paper, preventing any heat from being applied to the ballot.

6

Cast Ballot

Ballot Exits BMD & Enters Ballot Box

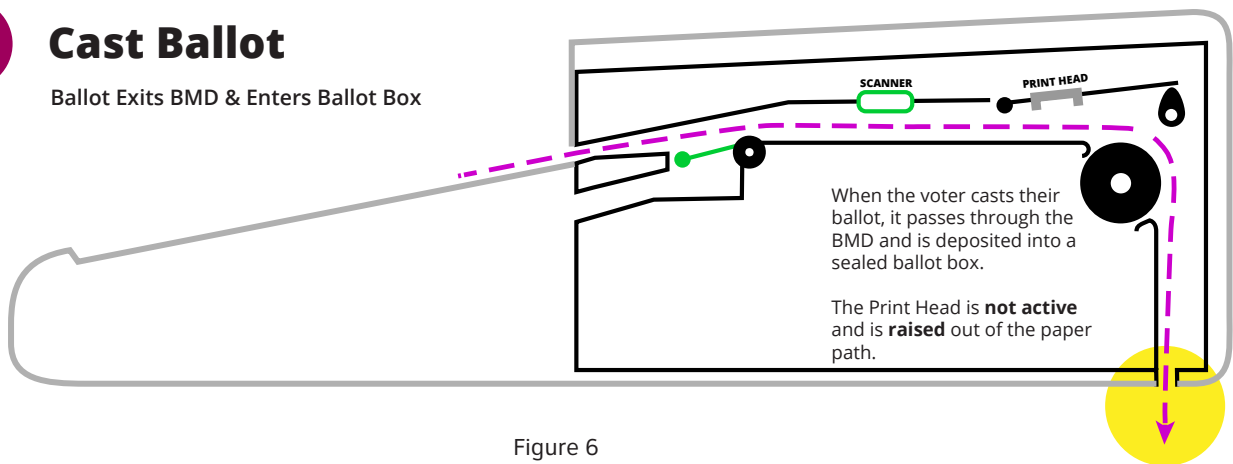


Figure 6

