Water on both sides of the trapped air causes the compressed air to store energy like a coiled spring.

As the water is forced from the trap, the weight of the water blocking the air stays the same. The height of the bottom pipe to the outlet does not change therefore the head pressure will not change.

Water starts to climb higher inside the pipe cap as the level in the prefilter increases.

As the water level in the filter rises, the air pocket pressure increases, and more water is forced up the outlet to trickle out of the trap.

When the air reaches the bottom of the trap, it rushes around the bend and up the other side. The air expands pushing the water ahead of it and out of the pipe. The weight of the water is gone, allowing all of the air to escape the trap. This opens a direct path for the water in the prefilter to flow through the trap piping and into the next filter stage.

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