

***Question:*** *How does a priming system work?*

An electric vacuum priming pump is a positive displacement air pump. Activating the vacuum primer removes air from inside the suction and discharge casings of the fire pump. Removing air lowers the pressure inside the pump casing below atmospheric pressure. It is atmospheric pressure - 14.7 pounds per square inch absolute (psia) at sea level - pushing on the static supply source that ultimately provides the force to move water into the hard sleeve suction hose and up to the eye of the impeller. This activity happens simply because of pressures trying to reach equilibrium - the higher pressure exerted by the atmosphere on the static water supply moves water toward the low pressure area inside the fire pump casing. Once the fire pump is flooded (primed) and then discharging water, it creates its own vacuum at the impeller eye to carry on this low-pressure area for continuous operation.