Consistent dispense results start with even fluid delivery from the reservoir. Feeding fluid from a reservoir under constant pressure does not account for stopper stiction or fluid level. Different fluid materials, batches, and levels in the syringe or reservoir can affect flow when fluid is fed from a syringe.

Any fluid fed from a reservoir with constant pressure applied, may flow at varied rates. This is very evident with large reservoirs of thermal grease, gasketing material, or RTVs. When starting to feed fluid from a large, full reservoir into the pump, a certain pressure is required. If that pressure remains constant as reservoir fluid is depleted, the flow rate of the fluid entering the pump will vary, causing a difference in pump output and/or performance.

When using smaller reservoirs to feed solder paste or conductive adhesive, dispensing results are also highly variable as reservoir content diminishes. The fluxes used with solder pastes and conductive adhesives make the walls of the reservoir sticky which hinders the stopper/plunger when under constant pressure. Dispensing results show a diminished size or, if the stopper surges forward, an increased size.

Couple this real time process control feature with our Weight Scale for the best in dispense process control. These options combine to (1) set a pump flow rate via the weight scale while (2) FPC maintains consistent results during processing.

Active Process Compensation

Fluid Pressure Control (FPC) is a patented real time dispense compensation system that maintains a consistent fluid pressure to the inlet of the pump regardless of fluid levels and pressure in the reservoir. Dispense compensation happens during the process, not only at calibration.

FPC is available to interface with a variety of dispense pumps. It can be seamlessly integrated with existing GPD Global dispense platforms or, with an offline control box, it can easily interface with your robot or control system for operation and messaging. For special materials or environments, the backlight calibration routine can be used in conjunction with our standard on-axis illumination or other variant of Dark-Field lighting.