

Quite often small pharmaceutical operations are forced to create large clean room areas to house their production facilities. With K-Systems International Inc. revolutionary machine designs the clean environment is actually incorporated within the machine. Through this technology millions of dollars can be saved in building construction and expensive cleaning services. The Bottling and Capping machine is constructed entirely from stainless steel and has a positive airflow through a hepa filter (high-efficiency particulate air filter) which creates a clean atmosphere in the filling and capping area.

- Systems

Clean Room in a Microcosm



Operator in clean room environment.

K-System's bottling and capping machine with integrated clean room.

The machine is operated via touch screen user interface.

Because of the high quality required by the pharmaceutical industry, all data on the process needs to be recorded and stored in various formats; both in a secure as well as in a standard .csv format. This can easily be achieved with the use of the B&R Power Panel 200 control system which incorporates PC like features with a PLC architecture.

Precise Weight Control

Two ACOPOS servo drives control the bottle indexing and the filling process, the latter of which gets feedback after the bottle has been filled to achieve the maximum accuracy of filled weight. The system can handle various bottle weights and sizes including 15/20/35 and 55 ml at a rate of 30 bottles per minute. The weighing system incorporates two freestanding weight devices, which are also connected back to the Power Panel 200 via RS232 interfaces. These devices check the weight before and after the filling process therefore establishing the weight of the liquid, creating a precise and repeatable fill every time.

The recorded data can then be managed remotely off-machine by other PCs on the Ethernet network at no additional cost to the customer using standard office PCs and standard software. With

these office PCs the management personnel can navigate through the machine features using standard HTML screens. These screens give the customer access to production information, data files and diagnostics. The customer can retrieve and delete as well as move files for future inspection or for shipment with batches of bottles.

Space and Cost Reduction

With the introduction of this machine, K-Systems had incorporated in one single control solution what was previously achieved using multiple processors and more. They have lowered the cost of their machine control and increased the functionality to their customers. [a](#)