

High Speed Syringe Assembly Machine



Challenge

A pharmaceutical manufacturer needed an automated, high-speed tool to orient, lubricate, assemble, and output medical syringes to a packaging line. Due to increasing demand, the system needed to produce 1,800 completed assemblies per hour.

Solution

Bulk components are operator loaded into four vibratory bowls grouped around a rotary index table. Parts are then inspected by machine vision technology, which automatically rejects failed components prior to the assembly process.

Parts arriving from the vibratory bowls are held in dead nests, where pneumatic actuators with custom grippers transfer singulated parts to pneumatic nests on the 10-station index table. Critical parts are automatically lubricated prior to component assembly. The completed syringe assemblies are tested on a load cell, with failed assemblies being pneumatically ejected into a reject bin.



Result

Completed syringe assemblies are output into trays on a packaging line at a **rate of <2 seconds per assembly**, which exceeded the client's throughput requirement. The automated system also reduced manual labor costs, as the operator only needs to maintain supplies in the vibratory bowls. Finally, the two-step inspection process improved overall product quality.

About DWFritz Automation

Established in 1973, DWFritz Automation provides world-class build-to-print manufacturing capabilities to clients, in addition to designing, building, and supporting engineered-to-order automation systems and high-speed, non-contact metrology products.

