



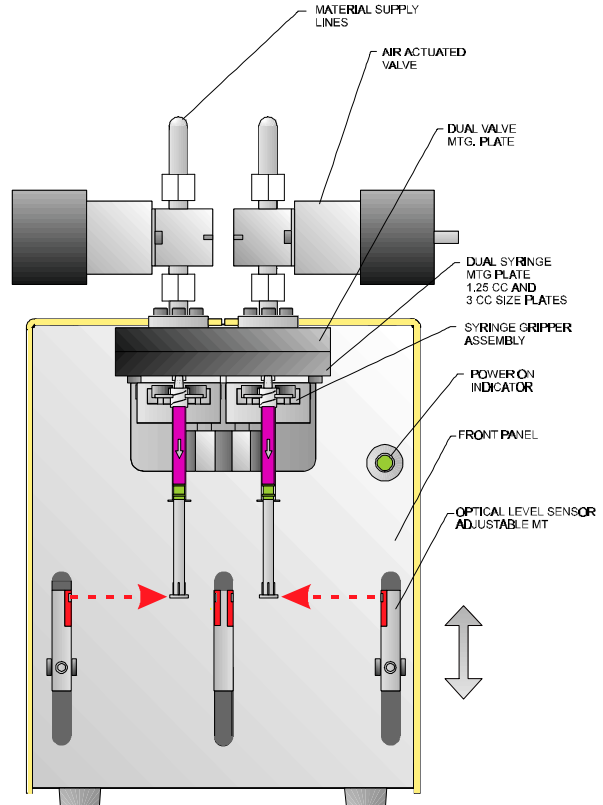
Syringe Filling Machine - Automatically Fills and Ejects Two Syringes Simultaneously

Dispensing Systems, Valves and Controls

Filling syringes quickly when run lengths are too short to warrant fully automatic machinery is a continual problem for both manufacturers and contract packagers. Typical systems fill one syringe at a time and require the operators' presence during the entire operation. The amount of fill is either controlled by eyeball, time, or positive displacement. Eyeball has the obvious problems of accuracy, time/pressure is feed and viscosity dependent, and positive displacement requires involved clean-up, and in the case of abrasive materials, high wear rates and potential contamination.

To solve these problems TRIDAK designed its Dual Filling System (Patents Pending). This system overcomes the problems described as follows:

- A. Two syringes are handled simultaneously (Although the dispense cycles are actually independent)
- B. The operator does not have to hold or watch the syringes during a cycle. Once the syringes are located on the nozzles the machine automatically grips and holds the syringe so the operator is free to get two more syringes while the first two are filling.
- C. The adjustable level dual photo sensor automatically senses the syringe plunger when they reach the full position. This provides as accurate fill while avoiding the problems previously described.
- D. When the cycle is complete the same gripping system that holds the syringe in place pulls the syringe off the luer taper and ejects the syringe into a waiting container or onto a conveyor.



The machine can be adapted to accept virtually any type of common syringe. Total machine cycle time is dependent on fill volume but is generally between 2 and 5 seconds.

