

TOSHO Inc.

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THK's LM Guide Improves the Repeat Accuracy and Speed of Dispensing Medicine



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Did you know?

On average, people in inpatient care receive three injections (including IVs) per day. Furthermore, each injection administered is compounded, containing three types of medication. Therefore, if there were 1,000 patients, that would mean roughly 10,000 doses of medicine would be administered per day (approximately 3 types of medicine x 3 injections x 1,000 people). Naturally, each individual patient uses different medications, which means that an extraordinary amount of work goes into providing injections at hospitals every day.

In the past, pharmacists or nurses would go through the process of gathering and compounding (adjusting) medications. However, this was an onerous task in extremely busy clinical settings, and it would lead to medical errors. While it takes time for oral medicine to be absorbed and take effect after use, a higher percentage of injections are fast-acting, so there is the risk that a mistake in compounding could be irreversible and directly impact the life of the patient.

When visiting a pharmacy, you have probably had the experience of receiving your medications inside individual bags. In fact, some of our company's main products are machines that dispense powder medicines and tablets into bags. Utilizing the experience we have gained since our founding, we have created a fully automatic injectable medicine dispensing machine to eradicate compounding errors and to reduce the workload of pharmacists and nurses.



UNIPUL 5000, the latest fully automatic injectable medicine dispensing machine

The roles of fully automatic injectable medicine dispensing machines and THK's products

Our previous models would dispense one day's worth of injectable medicine for patients, but our latest model, UNIPUL 5000, is able to dispense one injection's worth—the smallest dose. That means that nurses simply need to mix the medicines that are dispensed and then inject them. This machine also checks the dosage and combination of drugs on the doctor's prescription, enhancing its ability to eradicate medical errors.

The UNIPUL contains ampoules for approximately 200 types of medicine, and it can reliably dispense injectable medicines into ampoules, vials, or other containers based on the practitioner's electronic medical records. What allowed us to achieve what other company's products could not were the THK LM Guides used in our new UNIPUL 5000. With previous models, the difference in how the assembler tightened each bolt affected the dispensing accuracy. In our attempt to eradicate medical errors, the accuracy of each component has been crucial in eliminating elements of uncertainty. By utilizing THK's LM Guides for the internal components that move vertically and horizontally, we were able to improve the repeat accuracy and accelerate the process of dispensing medicine. Using special seals on the LM Guides also made our products maintenance-free. No problems have occurred with any of the delivered products.

The customers who have installed our product have praised it highly. When one was reassigned to a different facility in Japan's national hospital system as part of a routine transfer and encountered problems with a similar, non-TOSHO product, they remarked, "This wouldn't happen with a UNIPUL."

At TOSHO, we work day and night to find ways of automating the process of handling medicine in the pharmaceutical field. To prevent the accidental loss of precious human life through medical errors and automate manual daily tasks, we will continue proposing equipment that will allow health care providers to focus solely on practicing medicine.